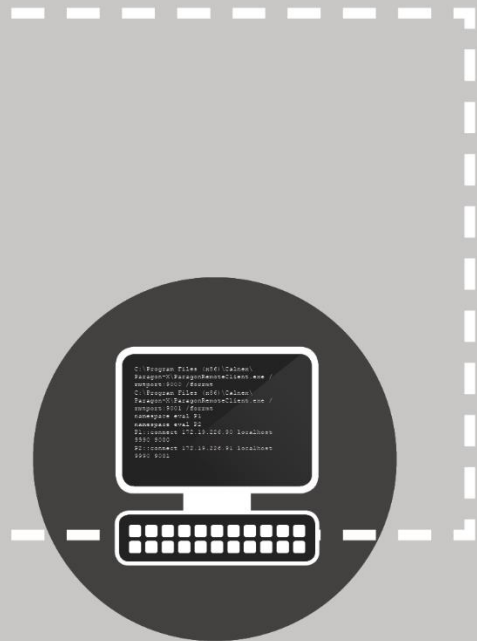


# Calnex Paragon-neo Calnex Paragon-100G Calnex Paragon-X



## REMOTE CONTROL GUIDE

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## Introduction

Many users of Paragon have a requirement to automate the testing of their devices. To support this, remote control functionality is built-in to the Calnex Paragon instruments as a standard feature.

This document details the remote control commands supported by Paragon-X, Paragon-100G and Paragon-neo. The commands available for the Paragon-100G and Paragon-neo are a subset of those supported by Paragon-X. There are additional remote control commands that can be used specifically with Paragon-100G and Paragon-neo (using the RESTful API) – these are not documented here (online documentation is available in the instrument).

## Physical Connection to the Paragon Instrument

### Paragon-X

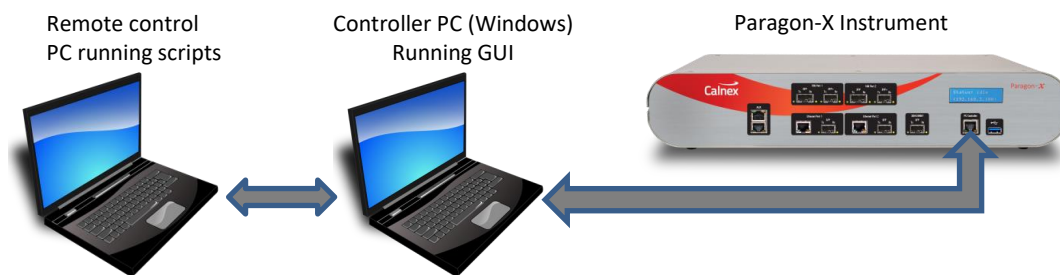
Remote control commands are sent to the Paragon-X GUI from your script and the GUI then executes those commands, controlling the Paragon-X instrument as required.



#### Notes:

- It is recommended that the PC controlling the Paragon-X is directly connected to the instrument but as a minimum, it should be within the same LAN.
- This document assumes that the PC controlling the Paragon-X is running Windows 7 Professional or Windows 10. Please see Application Note CX5006 "Paragon remote client application software - minimum PC requirements and PC management recommendations" for more details.

The computer executing your script can exist anywhere in the network as long as it has access to the PC connected to the Paragon-X instrument.



Note: Although the controlling PC can be connected over WAN, this is not recommended. This can be prone to significant network disruption which in turn can affect control of the Calnex equipment.

### Paragon-100G and Paragon-neo

Remote control commands are sent directly to the Paragon-100G / Paragon-neo from your script. The computer executing your script can exist anywhere in the network as long as it can access the instrument.

### Overview

Testing a device using a Paragon instrument (and associated remote control) involves 3 main components:

- Hardware configuration and capture control
- Metrics analysis and visualisation (using the Calnex Analyser Tool - CAT)
- PTP and ToD Message analysis (using the Calnex Field Verifier – PFV)

The CAT and PFV allow the in-depth analysis of captured data, both on previously captured data (which does not require access to hardware) and in real-time whilst running a live capture on an instrument.

This document describes how to use the remote control functionality for hardware configuration and capture control. Remote control for the CAT and PFV are detailed in separate documents. These documents can be


accessed from the Paragon-X GUI (**Help/Remote Control**) and from the Windows **Start** menu under **Calnex/Documentation**.

Tcl and Python are supported and the commands for each are provided.

## Generating Remote Control Scripts using the Script Recorder

The Paragon-X, Paragon-100G and Paragon-neo can record user operations and convert these into scripted commands. This makes script creation very simple – record keypresses in the GUI and then use the recorded script as part of your test program. The script recorder can log commands for the CAT and PFV as well as instrument control.

---

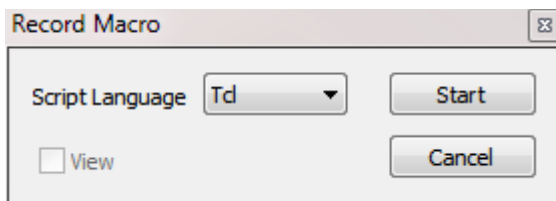
 **Note:** The commands recorded by the Paragon-X can be used as the basis for scripts to control Paragon-100G and Paragon-neo but only a subset of the Paragon-X commands and associated parameters are supported by Paragon-100G and Paragon-neo (since there are differences in the available functionality). The commands supported by each instrument are detailed in this document and the commands specific to each instrument are listed in Paragon-X Command List Index, Paragon-100G Command List Index and Paragon-neo Command List Index at the end of this document.

---

## Paragon-X

To use the script recorder, start the Paragon GUI and select the **Script Recorder...** option from the **Tools** drop-down menu.

A new dialog will appear as follows:



Select the scripting language that you are using and then click **Start**. A splashscreen and recording window will then be displayed.

Now configure the Paragon and perform the operations you would like scripted.

When you have completed your desired operations, select **View Recorded Script** from the **Tools** drop-down menu.

You can now save the script and run it when required. Alternatively, cut and paste the script snippet into your test program.

From the **Tools** drop-down you can now de-select the **Script Recorder...** option to stop recording.

## Using Remote Control from Tcl

A Tcl module is provided for remote control functionality. This module has been verified using ActiveState Tcl, version 8.5. It is recommended that this is the version you use.

The Tcl module provides a simple bridge between Tcl and the network interface protocol used to talk to the Paragon application.

### Paragon-X: Location of the Tcl Module

The Paragon Tcl module (`paragon.tcl`) is located under the **My Documents** folder. In Windows 7, the location is typically:

```
C:\Users\<<UserName>\Documents\Calnex\Paragon-X\RemoteControl\Tcl
```

For backward compatibility, the Tcl command library is also located in the same directory as the Paragon-X software; this is normally one of:

```
C:\Program Files\Calnex\Paragon-X\           or  
C:\Program Files (x86)\Calnex\Paragon-X\
```

### Paragon-100G and Paragon-neo: Location of the Tcl Module

To use the commands listed in this document with Paragon-100G or Paragon-neo, you should use the `paragon.tcl` file distributed with Paragon-X (see above).

### Using the Tcl Module

The Tcl library must be referenced using the Tcl `source` command prior to running Tcl commands or scripting i.e.

```
source c:/Program\ Files/Calnex/Paragon-X/paragon.tcl
```

### Running Commands or Scripts

To run a Tcl command from the command line:

1. Start a Tcl shell: `tclsh`
2. In the shell window, type: `source <path>/paragon.tcl`  
Where `<path>` is the path to the `paragon.tcl` file as detailed above.
3. Type your Tcl command e.g. `connect...` Note that you must connect to Paragon before executing other commands (see Connecting to the Instrument)

To run a Tcl script:

1. Start a Tcl shell e.g. `tclsh`
2. In the shell window, type: `source <path>/paragon.tcl`  
Where `<path>` is the path to the `paragon.tcl` file as detailed above.  
Alternatively, include the `source <path>/paragon.tcl` command in your script.
3. In the shell window, type `source` followed by the name of your script.

## Logging

Logging can be useful in debugging scripts and may be required by Calnex if a support request is raised. If logging is enabled, log messages may or may not be also sent to the console.

Logging is enabled or disabled from the user script at any time using the following call:

```
paragonWrapperLogging <enable> <toConsole> <logfileFolder>
```

Where:

*<enable>*, boolean: Enables or disables wrapper logging.

*<toConsole>*, boolean: Enables or disable logging to the console when logging is enabled.

*<logfileFolder>*, string: The path to the folder where log files should be stored. This may be relative to the folder in which your test script is running.

Log files are named "wrapperLogging\_<DateTime>.txt".

## Using Remote Control from Python

A Python module is provided for remote control functionality. This module has been verified using Python 3.4. It is recommended that the Python interpreter installed is the same version or newer otherwise Python functionality may not work correctly.

The Python module provides a simple bridge between Python and the network interface protocol used to talk to the Paragon application.

### Paragon-X: Location of the Python Module

The Paragon Python module (`paragon.py`) is located under the **My Documents** folder. In Windows 7, the location is typically:

```
C:\Users\<<UserName>\Documents\Calnex\Paragon-X\RemoteControl\Python
```

In this folder, you will also find two example test scripts (`test_simple.py` and `test_replay.py`) that use this module.

### Paragon-100G and Paragon-neo: Location of the Python Module

To use the commands listed in this document with Paragon-100G or Paragon-neo, you should use the `paragon.py` file distributed with Paragon-X (see above).

## Using the Python Module

The Python module must be imported before it can be used i.e.

```
import sys
sys.path.append(r'C:\Users\<<UserName>\Documents\Calnex\Paragon-
X\RemoteControl\Python')
import paragon as p
```

The path may need to be adjusted depending on the location of the Python module.

## Running Commands or Scripts

To run a Python command from the command line:

1. Start a Python shell: `Python`
2. In the shell window, type: `import sys`
3. Type the `sys.path.append` statement as described above.
4. Type `import paragon as p`
5. Type your python command e.g. `p.connect(...)`. Note that you must connect to Paragon before executing other commands (see Connecting to the Instrument)

To run a Python script:

1. Start a DOS command window
2. If you have not previously configured your path, then type the `sys.path.append` statement as described above.
3. Type `import paragon as p`. Alternatively, you can include the `import` statement in your script.
4. At the prompt, navigate to the directory where your script is stored e.g.  
`C:\Users\<<UserName>\Documents\Calnex\Paragon-X\RemoteControl\Python`
5. Type the name of the script including the `.py` filename extension e.g.  
`Test_simple.py`



## Logging

Logging can be useful in debugging scripts and may be required by Calnex if a support request is raised. If logging is enabled, log messages will also be sent to the console.

Logging is enabled or disabled from the user script at any time using the following command:

```
p.wrapper_logging(<enable>, <level>, <log file folder>)
```

Where:

*<enable>*, boolean: Enables or disables wrapper logging.

*<level>*, integer: The logging level above which a logging entry will be generated. The levels are debug=10, info=20, warning=30, error=40, critical=50. So, to see all info and above, set to 20.

*<log file folder>*, string: The path to the folder where log files should be stored. If the folder does not exist it will be created. Defaults to the same folder as the calling script.

Call `wrapper_logging(true)` at the point in your script where you want to log commands.

Call `wrapper_logging(false)` when you no longer want to log.

Note: The log file will only be closed when the calling script terminates.

Log files are named " WrapperLogging.txt".

## Using Remote Control from Perl

Perl is no longer supported.

## Connecting to the Instrument

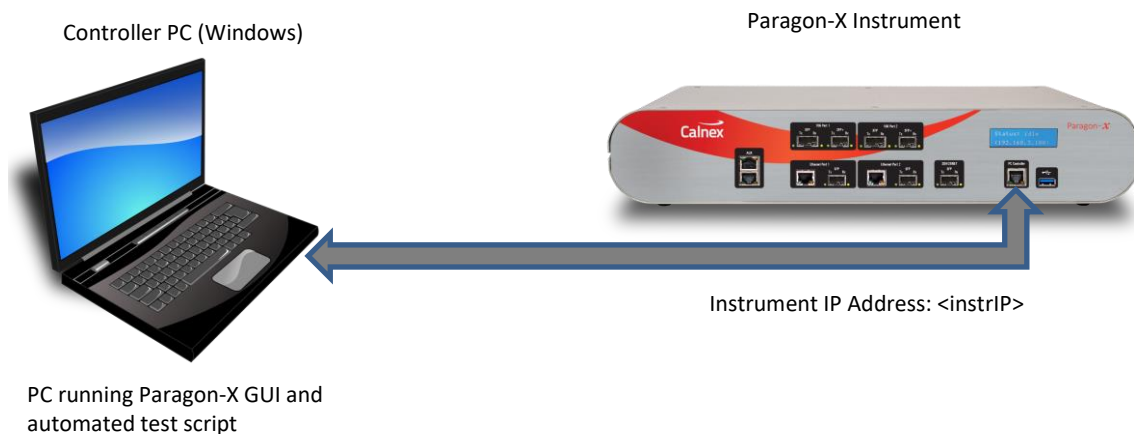
In order to control a Paragon remotely, you first have to connect to it.

It is possible to connect to more than one instrument at the same time and control each one from within the same test program. This is described in Appendix C – Connecting to Multiple Instruments.

### Paragon-X: Connecting to a Single Instrument

The Paragon-X GUI must be running on the controlling PC before any connection can be established.

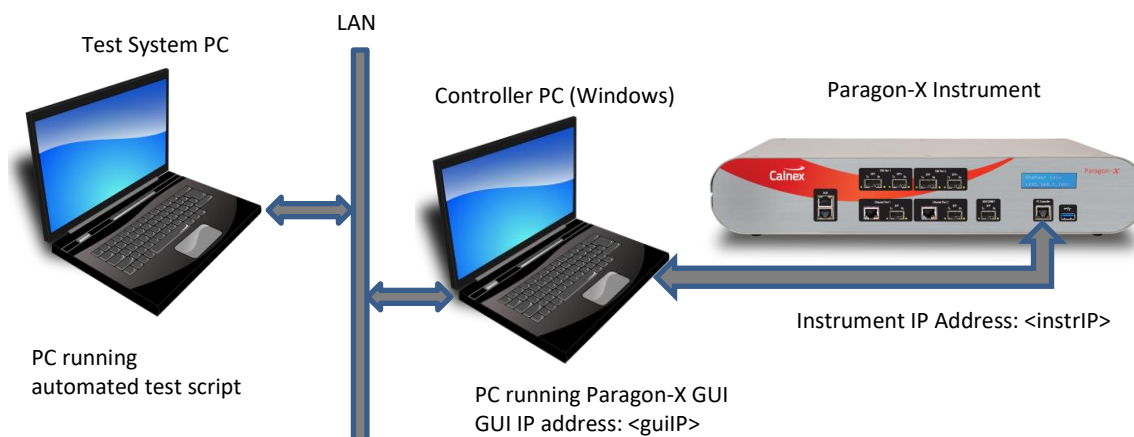
The simplest configuration involves a single controlling PC running both the Paragon-X GUI and the test script:



In this case, care must be taken not to overload the Paragon-X controller – this is particularly important if the PC is networked and there is no direct connection to the Paragon-X. You should minimise the number of open applications and minimise other network traffic where possible.

In many cases, the automated script will be running on a separate PC. In this case, two network connections are used:

- The first is between the PC executing the automated test script and the PC hosting the Calnex Paragon-X GUI.
- The second is between the PC hosting the Calnex Paragon-X GUI and the Paragon instrument.



## Paragon-100G and Paragon-neo: Connecting to a single instrument

The test system PC simply needs to have a network connection to the Paragon-100G / Paragon-neo instrument. This may be over LAN or directly connected.

### Filename specification within scripts/commands

Commands which take filenames must use a directory separator. The Windows directory separator ‘\’ must be written as ‘/’ and spaces must be prefixed with ‘\’ e.g.

```
recall "c:/Test\ Documents/sync-ethernet.cst".
```

### Error reporting

Errors are signalled using the usual ‘error’ call for the remote control interface being used i.e. Tcl or Python.

Often a command will have a dependency on an accompanying configuration or parameter - this will be reported in the error message.

### Product Options

Paragon instruments are procured with product options. These options provide additional functionality to the Paragon instrument. It is assumed that prior to attempting remote control (of an instrument) the relevant option has been enabled within the instrument.


### Firewall Settings

Remote control for Paragon-X and Paragon-t operates using a TCP socket connection to a specified port (the default is port 9000). Any firewall must therefore be configured to allow connections on the specified TCP port.

### Extending Paragon-X Scripts to Control Paragon-100G and Paragon-neo

Some of the functionality in Paragon-100G and Paragon-neo may not be available using Paragon-X style commands. In this case, the RESTful API in Paragon-100G and Paragon-neo can be used in conjunction with the commands in this document.

For more details on the RESTful API go to the **Help** page on your Paragon-100G or Paragon-neo instrument.

 **Note:** The use of the RESTful API may require you to install one or more additional packages for the script language you are using:

**ActiveTcl:** Requires the “REST” package. This can be installed using

```
teacup update
```

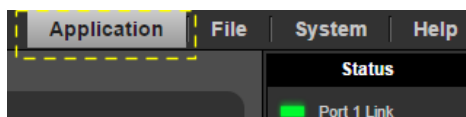
**Python:** Requires the “requests” package. This can be installed using:

```
<Python install directory>/Scripts/pip install requests
```

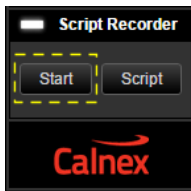
### Paragon-100G and Paragon-neo Script Recorder

The Paragon 100G and Paragon-neo web applications can record user operations and convert these into scripted (RESTful) commands. This makes script creation very simple – record actions in the browser and then use the recorded script as part of your test program.

To use script recorder, open a web browser and enter the URL for your instrument. Then select **Application** from the menu bar:

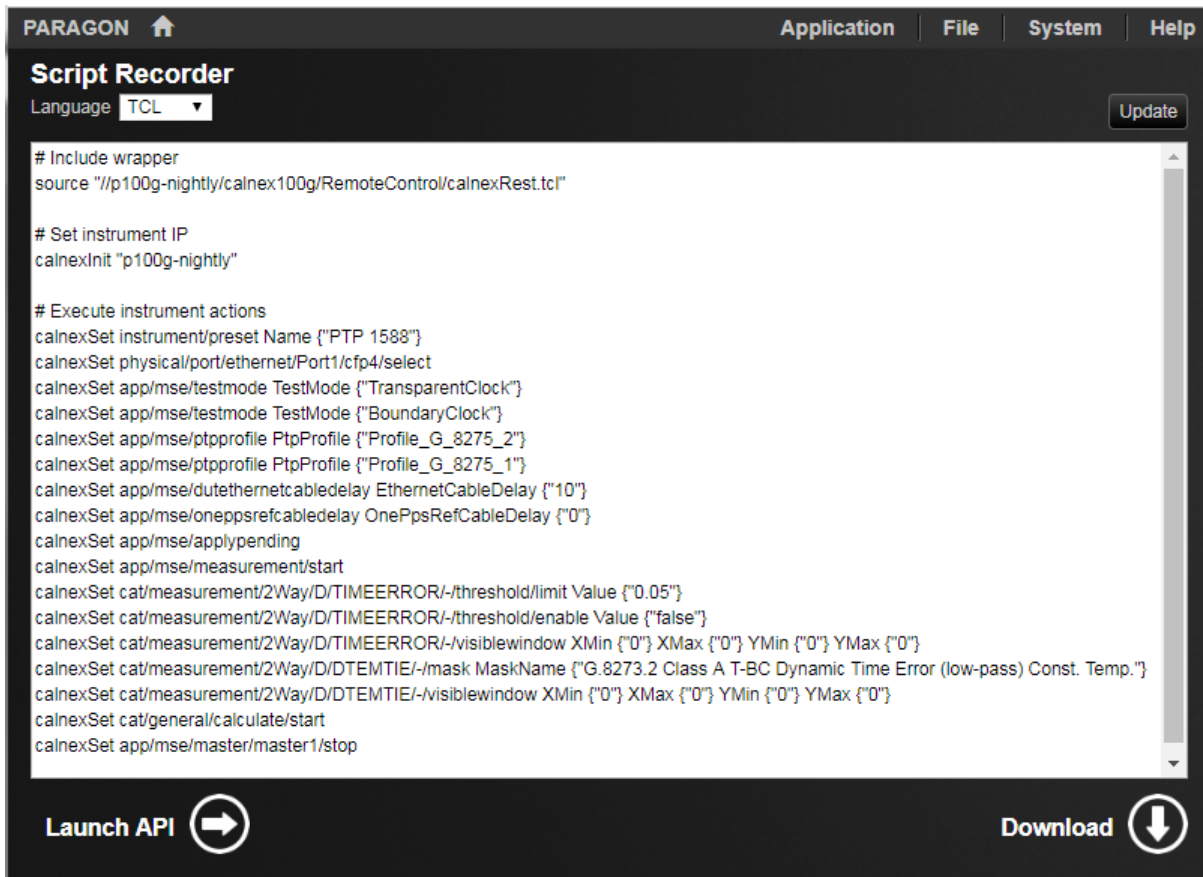


To start recording operations, select **Start** from the **Script Recorder** panel in the bottom left-hand corner of the browser window:



Now configure the Paragon and perform the operations you would like scripted

When you have completed your desired operations, click **Script**. You will now see a new page with your recorded script:



The default script language is Tcl. However, you can change this to Python from the **Language** pull-down. This is possible at any time even after the script has been recorded.

Clicking **Update** in the top-right hand corner of the recorded script window will update the script with any actions that have been recorded since the script window was last refreshed.

Click **Stop** on the main instrument page under **Script Recorder** to stop recording.

The recorded script can be copied from the script window or downloaded to your local PC.

### Using the RESTful API

To use the Paragon-100G or Paragon-neo RESTful API in conjunction with the commands in this document, the appropriate `calnexRest` wrapper for your script language must be referenced by your script. Two wrappers are provided: `calnexRest.tcl` (Tcl) and `calnexRest.py` (Python).

The wrappers are located in `//<instrumentIpAddress>/calnex100G/RemoteControl/`.

The wrapper must be referenced before it can be used. This is done in the same way as for the Paragon-X wrappers as described in [Using the Tcl Module](#) and [Using the Python Module](#).

For example:

**Tcl:**

```
source “//<instrumentIpAddress>/calnex100G/RemoteControl/calnexRest.tcl”
```

**Python:**


```
import sys
sys.path.append(r'\\<instrumentIpAddress>\calnex100G\RemoteControl')
from calnexRest import calnexInit, calnexGet, calnexSet, calnexCreate,
calnexDel, calnexGetVal
```

The main functions provided by the wrappers are shown below. Any equivalent Paragon-X command is shown in brackets:

- `calnexInit`: must be called before any other function. The parameter is the IP address of the instrument.
- `calnexSet (paragonset)`
- `calnexGetVal (paragonget)`: returns the value of a single specified setting
- `calnexGet`: can return a single value or a set of values

For more details on these commands, please consult the documentation on the **Help** page of your instrument.

---

 **Note:** The wrapper functions and documentation for Paragon-100G and Paragon-neo have been revised. The information in this document is relevant only for Paragon-100G versions later than 06.03 and Paragon-neo versions later than 00.05.

---

## Command Reference Concepts

The following concepts are common themes throughout the Paragon remote control manual.

### Indices

All indices are numbered starting from 0, i.e. 1<sup>st</sup> entry is 0, 2<sup>nd</sup> entry is 1 etc., unless stated otherwise in specific remote control command descriptions.

### Flows and Filters

The Paragon provides the facility to capture, measure or apply impairments to network traffic passing between the front panel ports labelled **Ethernet Port 1** and **Ethernet Port 2**.

The traffic of interest may be filtered by defining "flow filters". A flow filter is used either:

- To specify traffic that is to be measured or captured.
- To specify traffic that is to be impaired (e.g. delayed).

These flow filters can be used to select traffic by defining rules such as "Traffic received only from Ethernet Port 1" or "Traffic from both Ethernet ports" or "Traffic received only from Ethernet Port 1 where byte 0 of the packet has value 0x23 and byte 1 has value 0x99".

Each flow filter is defined by a direction ("Port1 to Port2", "Port2 to Port1", or "Both directions") and a set of "filters" used to match bytes in the packet against a pattern.

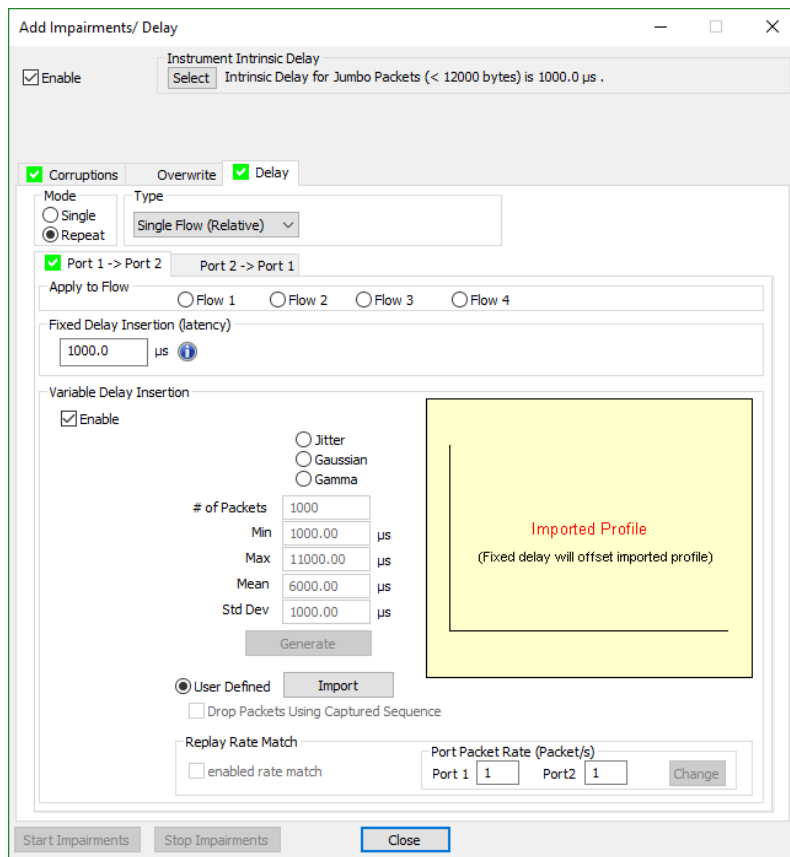
All other traffic is passed through unchanged. Any enabled impairments or capture will apply to all traffic if no flow filters are configured.

A number of remote control commands in the remainder of this document make reference to a **<flow>** parameter. The number of flow filters available and their numbering depend on the operating mode of the instrument:

Operation	Operating mode	Description and numbering
Capture / Measure	All	8 flows available. 4 flows operate on direction Port1->Port2; 4 flows operate on direction Port2->Port1. Flows numbered 0 - 3 operate on direction Port1->Port2 Flows numbered 4 - 7 operate on direction Port2->Port1
Corruption / Impair	Mode other than 'Services' – "Port based impairments"	Flow 0 operates on Port1->Port2 Flow 1 operates on Port2->Port1
Corruption / Impair	'Services' mode – "Multiflow based impairments"	8 flows available. 4 flows operate on direction Port1->Port2; 4 flows operate on direction Port2->Port1. Flows numbered 0 - 3 operate on direction Port1->Port2 Flows numbered 4 - 7 operate on direction Port2->Port1

Flow filter selection:

Impairment selection (Services mode):



Port 1-> Port 2 flows 1,2,3 and 4 map to remote control Flows 0,1,2 and 3.

Port 2 -> Port 1 flows 1,2,3 and 4 map to remote control Flows 4,5,6 and 7

## Settings

Individual instrument settings may be set or queried using remote control commands. Most settings can be set and queried individually, but some may only be queried. The general syntax for commands is as follows:

To **set** a setting:

```
paragonset <parameter name> <parameter value> [<parameter value>]
```

To **query** a setting:

```
paragonget <parameter name>
```

This will return one or more *<parameter value>* results.

The parameters taken by these commands are described in more detail later in this document.

*<parameter name>* is made up of one or more keywords. Multiple keywords are space separated e.g. `Physical LineRate`

The *<parameter value>* type depends on the command. It may be a number, a Boolean, a string or an enumerated value. String parameter values containing spaces must be quoted.

Certain commands take an index as their parameter. This index might be used (for example) to pick a byte position for a filter. Index parameters are shown as *<index>*.

The index value should be prefixed with a '#' character e.g.

```
paragonset Impair VariableDelay #1 ProfileType SAWTOOTH
```

If the index is a string parameter containing spaces then it must be quoted and must include the '#' prefix e.g.

```
paragonset Impair Overwrite #0 "#Ethernet II.Type" Mask "aa bb"
```

## Command Reference Format

In the command reference below, most commands are detailed independently of the scripting language used. Each scripting language has a different calling mechanism but the commands are the same. In general, `paragonset` and `paragonget` are omitted for clarity.

Some commands do not write to or read from a setting but are immediate action commands. In these cases, the full syntax for each scripting language is included.

Examples of set and get functions in each supported scripting language are shown below:

### Command **Physical Coupled <enable>**

**Tcl** `paragonset Physical Coupled TRUE`  
`paragonget Physical Coupled`

**Python** `paragonset("Physical Coupled", "TRUE");`  
`paragonget("Physical Coupled");`

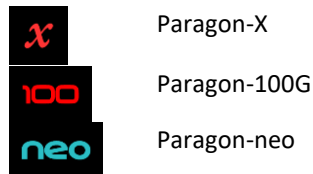
### Command **Capture SyncE SamplePeriod <period>**

**Tcl** `paragonset Capture SyncE SamplePeriod 10_MSECS`  
`paragonget Capture SyncE SamplePeriod`

**Python** `paragonset("Capture SyncE SamplePeriod", " 10_MSECS");`  
`paragonget("Capture SyncE SamplePeriod");`

## Instrument Compatibility

Commands that are supported in each Paragon instrument are indicated using the icons below:



Since there are differences in functionality between instruments, only a subset of commands are supported for each.

In addition, some functionality is controlled slightly differently for each instrument. The most significant differences are listed below.

### Connect

The syntax of the **connect** command is: `connect <instrIpAddress> [<guiHostname> [<instrPort> [<rmtPort>]]]`.

For Paragon-X, `<instrIpAddress>` is the IP address of the Paragon-X while `<guiHostname>` is the IP address of the controlling PC e.g.

```
connect 192.168.100.3 localhost
```

For Paragon-100G and Paragon-neo, the controlling PC is internal to the instrument and so `<instrIpAddress>` is localhost and `<guiHostname>` is the IP address of the instrument e.g.

```
connect localhost 192.168.100.3
```

### Line Rate and Interface

Paragon-X allows the separate configuration of line rate and physical interface. For Paragon-100G and Paragon-neo, many rates may be provided on a single interface type and so to maintain backwards compatibility, a new command has been added.

To select line rate and interface type for any Paragon instrument, the relevant commands are:

*Physical LineRate*: can select 100BASET (Paragon-X only), 1GBE and 10GBE

*Physical LineInterface*: can select ELECTRICAL, OPTICAL, ELECTRICAL\_SFP (Paragon-X only)

*Physical xFPSelect*: SFPPLUS, XFP



		LineInterface			xFPSelect	
		ELECTRICAL	ELECTRICAL_SFP Paragon-X only	OPTICAL	XFP	SFPPLUS
LineRate	100BASET Paragon-X only	✓	✓	✓		
	1GBE	✓	✓	✓		
	10GBE				✓	✓

For the additional rates and interfaces available in Paragon-100G and Paragon-neo, the new command is:

*Physical InterfaceExtended*: can select all available rates/interfaces on Paragon-100G and Paragon-neo.



Note: The rates and interfaces available on your instrument depend on the hardware variant you have and on the instrument options that are fitted.

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## General Commands


The commands in this section control the basic operation of the Paragon instrument. These commands are the baseline for further instrument operations.

Note: Several commands in this section do not use the `paragonset / paragonget` mechanism. The command format for these commands is listed explicitly for each supported scripting language.


### connect

<b>Description</b> 	Makes a connection to the specified GUI and instrument.
<b>Tcl</b>	<code>connect &lt;instrIpAddress&gt; [&lt;guiHostname&gt; [&lt;instrPort&gt; [&lt;rmtPort&gt;]]]</code>
<b>Python</b>	<code>p.connect("&lt;instrIpAddress&gt; [&lt;guiHostname&gt; [&lt;rmtPort&gt; [&lt;instrPort&gt;]]]")</code>
<b>Parameters</b>	<p><b>&lt;instrIpAddress&gt;</b> <b>Paragon-X:</b> The IP address of the Paragon instrument. <b>Paragon-100G, Paragon-neo:</b> Must be <i>localhost</i></p> <p><b>&lt;guiHostname&gt;</b> <b>Paragon-X:</b> This is an optional parameter, which specifies the IP address of the PC that is hosting the GUI; if this parameter is not specified then a connection to the local machine is assumed. <b>Paragon-100G, Paragon-neo:</b> The IP address of the instrument.</p> <p><b>&lt;instrPort&gt;</b> This is an optional parameter, which specifies the TCP Port on the Paragon instrument; if this parameter is not specified then the default port (9990) will be used</p> <p><b>&lt;rmtPort&gt;</b> This is an optional parameter, which specifies the remote control TCP Port used by the Paragon client application; if this parameter is not specified then the default port (9000) will be used</p>
<b>Result</b>	The command will only report on failure if an error occurs. This operation will block until a connection is made.


### isconnected

<b>Description</b> 	Returns a value indicating whether a Paragon instrument is currently connected
<b>Tcl</b>	<code>isconnected</code>
<b>Python</b>	<i>Not supported</i>
<b>Parameters</b>	None
<b>Result</b>	1: GUI has a connection to the instrument. 0: GUI has no connection to the instrument.




### disconnect

<b>Description</b> 	Disconnects the currently connected instrument.
<b>Tcl</b>	<code>disconnect</code>
<b>Python</b>	<code>p.disconnect()</code>
<b>Result</b>	Return with text displaying status of connection.


## disconnect\_rc\_only

<b>Description</b> 	Disconnects the remote control connection to the GUI without disconnecting the GUI from the instrument
<b>Tcl</b>	disconnect_rc_only
<b>Python</b>	p.disconnect_rc_only()
<b>Result</b>	Return with text displaying status of connection.




## Idn

Get											
<b>Description</b>   	Query instrument identity.										
<b>Command</b>	Idn										
<b>Result</b>	<p>Return the instrument serial number and firmware revisions in a formatted identity string: "CALNEX-SOLUTIONS, &lt;instrument&gt;, &lt;serialNum&gt;, SERVER=&lt;guiVersion&gt;; FIRMWARE=&lt;embeddedFwVersion&gt;; &lt;fpga1&gt;=&lt;fpga1Version&gt;, &lt;fpga2&gt;=&lt;fpga2Version&gt;..."</p> <p>Where:</p> <table border="0"> <tr> <td>&lt;instrument&gt;</td> <td>The instrument model</td> </tr> <tr> <td>&lt;serialNum&gt;</td> <td>The instrument's serial number</td> </tr> <tr> <td>&lt;guiVersion&gt;</td> <td>The GUI Software version</td> </tr> <tr> <td>&lt;embeddedFwVersion&gt;</td> <td>The embedded (hardware) firmware version</td> </tr> <tr> <td>&lt;fpga1&gt;, &lt;fpga2&gt; etc</td> <td>These are Paragon version dependent. The image type will always be displayed with the version</td> </tr> </table> <p>An example of the returned string is: <i>CALNEX-SOLUTIONS, Paragon-X,00021059, SERVER=X.10.23.22; FIRMWARE=E.12.00;sync=C034;sync=C034;oam=E006;oam=E006</i></p>	<instrument>	The instrument model	<serialNum>	The instrument's serial number	<guiVersion>	The GUI Software version	<embeddedFwVersion>	The embedded (hardware) firmware version	<fpga1>, <fpga2> etc	These are Paragon version dependent. The image type will always be displayed with the version
<instrument>	The instrument model										
<serialNum>	The instrument's serial number										
<guiVersion>	The GUI Software version										
<embeddedFwVersion>	The embedded (hardware) firmware version										
<fpga1>, <fpga2> etc	These are Paragon version dependent. The image type will always be displayed with the version										

## Personality OptionList

Get	
<b>Description</b> 	Query the options fitted and licenced on the instrument
<b>Command</b>	Personality OptionList
<b>Result</b>	CSV list of the options currently enabled. e.g. "10,100,110,120,160,201"


## Personality Opt<option> Fitted

Get	
<b>Description</b>   	Query to determine whether a specified option is fitted
<b>Command</b>	Personality Opt<option> Fitted
<b>Parameters</b>	<p>&lt;option&gt; The instrument option number e.g. 120 Note: There should be no whitespace between <i>Opt</i> and &lt;option&gt; e.g. Personality Opt120 Fitted</p>
<b>Result</b>	TRUE or FALSE text to indicate status.




---

## Rst

Set	
<b>Description</b> 	Reset the instrument to default settings.
<b>Command</b>	Rst [TRUE]
<b>Parameters</b>	<i>TRUE</i> This is an optional parameter. Note that use of TRUE as a parameter has ben deprecated and may be removed in future releases
<b>Result</b>	No response expected however the script/shell may exhibit a delay before continuing.


---

## store



<b>Description</b> 	Stores the instrument settings to the specified file. The settings file is saved in the file system of the PC hosting the GUI. If the specified file already exists, it will be overwritten without warning. Saved settings may be applied using the recall command (see below).
<b>Tcl</b>	store <filename>
<b>Python</b>	p. store(<filename>)
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system

---



## recall

<b>Description</b> 	Reads and applies saved settings from the specified file. The saved file may be generated using the store command detailed above, or manually by using the <b>Save</b> command in the <b>Setup</b> menu of the Paragon-X GUI.
<b>Tcl</b>	recall <filename>
<b>Python</b>	p. recall(<filename>)
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system
<b>Prerequisites</b>	File being loaded must be a complete settings file which was created with the release being run on the instrument.



## OperatingMode

Set	
<b>Description</b> 	Set the instrument operating mode.
<b>Command</b>	OperatingMode <mode>
<b>Parameters</b>	<mode> <b>Paragon-X:</b> CES, PTP, SERVICES, SYNCE, ETH_OAM, MPLS_TP_OAM, NTP <b>Paragon-100G, Paragon-neo:</b> PTP, SYNCE  Note: Setting the <i>OperatingMode</i> for both Paragon-100G and Paragon-neo will result in a change to the measurements enabled (and thus the captures that will be started using <i>starttimingcapture</i> ). When set to PTP, PTP generation from the Master is enabled as is PTP capture on the Slave. All other measurements are disabled. When set to SynCE, SynCE wander measurement is enabled. All other measurements are disabled.
<b>Prerequisites</b>	The availability of most operating modes is dependent on the appropriate instrument options being fitted.
Get	
<b>Description</b> 	Obtain the instrument's current operating mode.
<b>Command</b>	OperatingMode
<b>Result</b>	The text value will be one of those listed above

## SimulMeasImpairMode

Set	
<b>Description</b> 	Set the execution mode of the instrument to enable measurement/capture only or a combination of measurement/capture and simultaneous impairment. Simultaneous measurement capture and impairment is only available in the following Operating Modes: CES, PTP or SERVICES PDV data capture is unavailable in Simultaneous Measure and Impair Mode, unless Master-Slave Emulation mode is enabled.
<b>Command</b>	SimulMeasImpairMode <mode>
<b>Parameters</b>	<mode>      MEASUREONLY, MEASUREANDIMPAIR
<b>Prerequisites</b>	The availability of most operating modes is dependent on the appropriate instrument options being fitted.
Get	
<b>Description</b> 	Obtain the instrument's current measurement and/or impair mode.
<b>Command</b>	SimulMeasImpairMode
<b>Result</b>	MEASUREONLY, MEASUREANDIMPAIR



## TxRxMode

Set	
<b>Description</b> 	Determines how incoming data at Ethernet ports 1 and 2 is passed through the instrument. When <i>TxRxMode</i> is set FALSE (the default), incoming data on port 1 is routed through the Paragon to port 2 and vice-versa. Setting <i>TxRxMode</i> to TRUE breaks this through path.
<b>Command</b>	<i>TxRxMode</i> <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	The availability of most operating modes is dependent on the appropriate instrument options being fitted.
Get	
<b>Description</b> 	Obtain the instrument's current <i>TxRxMode</i> mode.
<b>Command</b>	<i>TxRxMode</i>
<b>Result</b>	The returned value will be either TRUE or FALSE. If the incoming data on port 1 is routed through the Paragon to port 2 or vice-versa then the returned value will be FALSE (default mode). TRUE if port 1 and 2 pass-through has been de-coupled.



## Physical Commands

This section details the commands which manage the physical interfaces on the Paragon front and rear panels.



### Physical Coupled

Set	
<b>Description</b> 	Enables or disables the coupling of port 1 and port 2 settings
<b>Command</b>	Physical Coupled <enable>
<b>Parameters</b>	<enable> TRUE to enable independent Tx/Rx, FALSE to disable
<b>Prerequisites</b>	The Operating Mode must be PTP or SYNCE. <i>TxRxMode</i> must be TRUE.
Get	
<b>Description</b> 	Queries whether port 1 and port 2 settings are coupled.
<b>Command</b>	Physical Coupled
<b>Prerequisites</b>	The Operating Mode must be PTP or SYNCE. <i>TxRxMode</i> must be TRUE.
<b>Result</b>	TRUE or FALSE.



### Physical #<port> LineRate

Set	
<b>Description</b> 	Sets the physical line rate
<b>Command</b>	Physical #<port> LineRate <lineRate>
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2) <lineRate> <b>Paragon-X:</b> 100BASET, 1GBE, 10GBE <b>Paragon-100G, Paragon-neo:</b> 1GBE, 10GBE
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. <i>Physical Coupled</i> must be FALSE.
Get	
<b>Description</b> 	Queries the physical line rate
<b>Command</b>	Physical #<port> LineRate
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2)
<b>Prerequisites</b>	The <i>Operating Mode</i> must be PTP or SYNCE. <i>TxRxMode</i> must be TRUE. <i>Physical Coupled</i> must be FALSE.
<b>Result</b>	The returned value will be one of the line rates listed above



## Physical LineRate

Set	
<b>Description</b> 	Sets the physical line rate on <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical LineRate <lineRate>
<b>Parameters</b>	<lineRate> <b>Paragon-X:</b> 100BASET, 1GBE, 10GBE <b>Paragon-100G, Paragon-neo:</b> 1GBE, 10GBE
<b>Prerequisites</b>	Physical Coupled must be TRUE.
Get	
<b>Description</b> 	Queries the physical line rate.
<b>Command</b>	Physical LineRate
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
<b>Result</b>	The returned value will be one of those listed above



## Physical #<port> LineInterface

Set	
<b>Description</b> 	Sets the physical line interface for the specified port.
<b>Command</b>	Physical #<port> LineInterface <lineInterface>
<b>Parameters</b>	<port>                    The Ethernet port: 0 (Port 1) or 1 (Port 2) <lineInterface> <b>Paragon-X:</b> ELECTRICAL, OPTICAL, ELECTRICAL_SFP <b>Paragon-100G, Paragon-neo:</b> ELECTRICAL, OPTICAL
<b>Prerequisites</b>	The selection of OPTICAL or ELECTRICAL_SFP is only valid if the correct SFPs are fitted in the appropriate port.
Get	
<b>Description</b> 	Queries the physical line interface for the specified port.
<b>Command</b>	Physical #<port> LineInterface
<b>Parameters</b>	<port>                    As above
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
<b>Result</b>	The returned value will be one of the line interfaces listed above

## Physical LineInterface

Set	
<b>Description</b> 	Sets the physical line interface on <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical LineInterface <lineInterface>
<b>Parameters</b>	<lineInterface> <b>Paragon-X:</b> ELECTRICAL, OPTICAL, ELECTRICAL_SFP <b>Paragon-100G, Paragon-neo:</b> ELECTRICAL, OPTICAL
<b>Prerequisites</b>	Physical Coupled must be TRUE. The selection of OPTICAL or ELECTRICAL_SFP is only valid if the correct SFPs are fitted.
Get	
<b>Description</b> 	Queries the physical line interface on <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical LineInterface
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
<b>Result</b>	The returned value will be one of those listed above



### Physical #<port> InterfaceExtended

Set	
<b>Description</b> 	Sets the interface for the specified port.
<b>Command</b>	Physical #<port> InterfaceExtended <Interface>
<b>Parameters</b>	<port>                   The Ethernet port: 0 (Port 1) or 1 (Port 2) <Interface>           CFP2, CFP4, CXP, QSFP28, SFP28
<b>Prerequisites</b>	The Paragon hardware must have a port supporting the specified interface. The rate supported by that interface must have the appropriate option fitted. <i>Physical Coupled</i> must be FALSE
Get	
<b>Description</b> 	Queries the interface for the specified port.
<b>Command</b>	Physical #<port> InterfaceExtended
<b>Parameters</b>	<port>                   As above
<b>Prerequisites</b>	<i>Physical Coupled</i> must be FALSE
<b>Result</b>	The returned value will be one of those listed above



### Physical InterfaceExtended

Set	
<b>Description</b>	Sets the interface on <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical InterfaceExtended <Interface>
<b>Parameters</b>	<Interface>           CFP2, CFP4, CXP, QSFP28, SFP28
<b>Prerequisites</b>	The specified interface must be present in the instrument and the appropriate option fitted. <i>Physical Coupled</i> must be TRUE.
Get	
<b>Description</b>	Queries the physical line interface on <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical LineInterface
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
<b>Result</b>	The returned value will be one of those listed above



### Physical #<port> Fec

Set	
<b>Description</b> 	Enables or disables FEC for the specified port.
<b>Command</b>	Physical #<port> Fec <enable>
<b>Parameters</b>	<port>                   The Ethernet port: 0 (Port 1) or 1 (Port 2) <enable>               TRUE or FALSE
<b>Prerequisites</b>	None
Get	
<b>Description</b> 	Queries the KEC setting for the specified port.
<b>Command</b>	Physical #<port> Fec
<b>Parameters</b>	<port>                   As above
<b>Prerequisites</b>	None
<b>Result</b>	The returned value will be one of those listed above



### Physical #<port> xFPSelect

Set	
<b>Description</b> 	Selects the xFP type for the specified port.
<b>Command</b>	Physical #<port> xFPSelect <type>
<b>Parameters</b>	<port>                    The Ethernet port: 0 (port 1) or 1 (port 2) <type>                    SFPPLUS, XFP
<b>Prerequisites</b>	The xFP must be present for the configuration to complete. <i>Physical Coupled</i> must be FALSE.
Get	
<b>Description</b> 	Queries the xFP type for the specified port.
<b>Command</b>	Physical #<port> xFPSelect
<b>Parameters</b>	<port>                    The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Prerequisites</b>	The xFP must be present to obtain the correct response.
<b>Result</b>	Returned text will be one of the xFP types listed above



### Physical xFPSelect

Set	
<b>Description</b> 	Sets the xFP type on <b>both</b> Ethernet ports (1 and 2).
<b>Command</b>	Physical xFPSelect <type>
<b>Parameters</b>	<type>                    SFPPLUS, XFP
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
Get	
<b>Description</b> 	Queries the physical line interface on <b>both</b> Ethernet ports (1 and 2).
<b>Command</b>	Physical xFPSelect
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE.
<b>Result</b>	The returned value will be one of the xFP types listed above

### Physical #<port> EthAutonegotiate

Set	
<b>Description</b> 	Enables or disables the Ethernet autonegotiation for the specified port.
<b>Command</b>	Physical #<port> EthAutonegotiate <enable>
<b>Parameters</b>	<port>                    The Ethernet port: 0 (port 1) or 1 (port 2) <enable>                TRUE to enable autonegotiation, FALSE to disable
Get	
<b>Description</b> 	Queries the Ethernet autonegotiation status for the specified port.
<b>Command</b>	Physical #<port> EthAutonegotiate
<b>Parameters</b>	<port>                    The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	TRUE if the autonegotiation is enabled and FALSE if it is disabled.



## Physical EthAutonegotiate

Set	
<b>Description</b> 	Enables or disables the Ethernet autonegotiation status for <b>both</b> Ethernet ports (1 and 2).
<b>Command</b>	Physical EthAutonegotiate <enable>
<b>Parameters</b>	<enable> TRUE to enable autonegotiation, FALSE to disable
<b>Prerequisites</b>	Physical Coupled must be TRUE.
Get	
<b>Description</b> 	Queries the Ethernet autonegotiation status for <b>both</b> Ethernet ports (1 and 2).
<b>Command</b>	Physical EthAutonegotiate
<b>Prerequisites</b>	Physical Coupled must be TRUE
<b>Result</b>	TRUE if the autonegotiation is enabled and FALSE if it is disabled



## Physical GbEMasterSlaveMode

The "FORCE" setting sets the physical interface's master/slave settings. Once set these settings will remain fixed during the link negotiation process.

'PREFERRED' will set the interface's master/slave settings' initial values, and allows the link negotiation process to modify them.


Set	
<b>Description</b> 	Sets the GbE Master Slave Mode.
<b>Command</b>	Physical GbEMasterSlaveMode <mode>
<b>Parameters</b>	<mode> FORCE, PREFERRED
<b>Prerequisites</b>	GbE is only applicable to GBE electrical interfaces.
Get	
<b>Description</b> 	Queries the GbE Master Slave Mode.
<b>Command</b>	Physical GbEMasterSlaveMode
<b>Result</b>	Returned value will one of those listed above

## Physical #<port> EthMasterSlave







Set	
<b>Description</b> 	Sets the Master/Slave settings for the specified Ethernet port. See the <i>Physical GbEMasterSlaveMode</i> command for details on how this setting is used.
<b>Command</b>	Physical #<port> EthMasterSlave <mode>
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2) <mode> SLAVE, MASTER
Get	
<b>Description</b> 	Queries the Master/Slave settings for the specified Ethernet port.
<b>Command</b>	Physical #<port> EthMasterSlave
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returned text will be one of the modes listed above





### Physical EthMasterSlave

Set	
<b>Description</b> 	Enables or disables the Ethernet autonegotiation status for <b>both</b> Ethernet ports (1 and 2)
<b>Command</b>	Physical EthMasterSlave <mode>
<b>Parameters</b>	<mode> SLAVE, MASTER
<b>Prerequisites</b>	Physical Coupled must be TRUE.



### Physical EthSyncEClock

Set	
<b>Description</b>   	Sets whether the SyncE Tx-Rx clock is passed through.
<b>Command</b>	Physical EthSyncEClock <enable>
<b>Parameters</b>	<enable> TRUE to enable pass-through, FALSE to disable
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE. <i>Operating Mode</i> must be SyncE
Get	
<b>Description</b>   	Queries whether the SyncE Tx-Rx clock is set for pass-through.
<b>Command</b>	Physical EthSyncEClock
<b>Prerequisites</b>	<i>Physical Coupled</i> must be TRUE. <i>Operating Mode</i> must be SyncE
<b>Result</b>	TRUE if pass-through is enabled and FALSE otherwise.



### Physical WanderGeneration

Set	
<b>Description</b> 	Enables or Disables wander generation.
<b>Command</b>	Physical WanderGeneration <enable>
<b>Parameters</b>	<enable> TRUE to enable Wander generation, FALSE to disable
Get	
<b>Description</b> 	Queries the enable status of the wander generation.
<b>Command</b>	Physical WanderGeneration
<b>Result</b>	TRUE if wander generation is enabled and FALSE otherwise.







### Physical WanderClock

Set	
<b>Description</b> 	Sets the clock to be used for wander generation.
<b>Command</b>	Physical WanderClock <clock>
<b>Parameters</b>	<clock> EXT_10M, EXT_R100_E1, EXT_R100_T1, EXT_R75_E1
Get	
<b>Description</b> 	Queries the clock to be used for wander generation.
<b>Command</b>	Physical WanderClock
<b>Result</b>	The text returned will be one of those listed above







### Physical E1WanderMeasPort

Set	
<b>Description</b> 	Selects the E1 Wander Measurement port interface.
<b>Command</b>	Physical E1WanderMeasPort <type>
<b>Parameters</b>	<type> R100_BAL, R75_UNBAL
Get	
<b>Description</b> 	Queries the E1 Wander Measurement port interface.
<b>Command</b>	Physical E1WanderMeasPort
<b>Result</b>	Returned text will be one of the values listed above



### Physical RefClkSource

Set	
<b>Description</b>   	Sets the clock to be used for timing reference.
<b>Command</b>	Physical RefClkSource <clock>
<b>Parameters</b>	<clock> INT, EXT_10M, EXT_R75_E1, EXT_R100_E1, EXT_R100_T1, EXT_K64
Get	
<b>Description</b>   	Queries the clock being used as the timing reference.
<b>Command</b>	Physical RefClkSource
<b>Result</b>	The text returned will be one of those listed above



### Physical OnePpsRefPort

Set	
<b>Description</b>   	Sets the 1PPS reference port.
<b>Command</b>	Physical OnePpsRefPort <type>
<b>Parameters</b>	<type> R100_BAL, R75_UNBAL, MASTER (only available in Master/Slave mode)
Get	
<b>Description</b>   	Queries the 1PPS reference port type.
<b>Command</b>	Physical OnePpsRefPort
<b>Result</b>	The returned value will be one of those listed above



### Physical OnePpsRefThreshold

Set	
<b>Description</b> 	Sets the 1PPS reference input port threshold in Volts.
<b>Command</b>	Physical OnePpsRefThreshold <threshold>
<b>Parameters</b>	<threshold> A voltage in the range: 0.5 to 2.5, step size 0.1
<b>Prerequisites</b>	Not available with generation 1 or 2 Paragon-X instruments.
Get	
<b>Description</b> 	Queries the 1PPS reference input port threshold in Volts.
<b>Command</b>	Physical OnePpsRefThreshold
<b>Result</b>	Returned value will a voltage in the range listed above



### Physical OnePpsRefTermination

Set	
<b>Description</b> 	Selects the 1pps Reference input termination type. If the 1pps source is not terminated then selecting 50 Ohm termination is recommended.
<b>Command</b>	Physical OnePpsRefTermination <termination>
<b>Parameters</b>	<termination> R50, HIGH_IMPEDANCE
<b>Prerequisites</b>	Not available with generation 1 or 2 Paragon-X instruments.
Get	
<b>Description</b> 	Queries the 1PPS reference input termination type.
<b>Command</b>	Physical OnePpsRefTermination
<b>Result</b>	Returned text will be one of the values listed above



### Physical AuxInputThreshold

Set	
<b>Description</b> 	Sets the Aux reference input port threshold in Volts.
<b>Command</b>	Physical AuxInputThreshold <threshold>
<b>Parameters</b>	<threshold> A voltage in the range: 0.5 to 2.5, step size 0.1
Get	
<b>Description</b> 	Queries the Aux reference input port threshold in Volts.
<b>Command</b>	Physical AuxInputThreshold
<b>Result</b>	Returned value will a voltage in the range listed above



### Physical AuxInputTermination

Set	
<b>Description</b> 	Selects the Aux input termination type. If the 1pps source is not terminated then selecting 50 Ohm termination is recommended.
<b>Command</b>	Physical AuxInputTermination <termination>
<b>Parameters</b>	<termination> R50, HIGH_IMPEDANCE
Get	
<b>Description</b> 	Queries the Aux input termination type.
<b>Command</b>	Physical AuxInputTermination
<b>Result</b>	Returned text will be one of the termination values listed above



### Physical OnePpsRefOutputWidth

Set	
<b>Description</b> 	Determines the 1PPS width ( $\mu$ s) from the Lower Front Aux Port.
<b>Command</b>	Physical OnePpsRefOutputWidth <value>
<b>Parameters</b>	<value> The pulse width ( $\mu$ s) in the range: 1 to 500000, step size 1
<b>Prerequisites</b>	Master/Slave Emulation must be enabled. If there is a reference output selection available it must be set to 1PPS, see the Physical RefOutPort command to select 1PPS output.
Get	
<b>Description</b> 	Queries the 1PPS width ( $\mu$ s) from the Lower Front Aux Port.
<b>Command</b>	Physical OnePpsRefOutputWidth
<b>Result</b>	Returned value will be the current 1PPS width in the range listed above



### Physical RefOutPort

Set	
<b>Description</b> 	Determines the Reference Output signal from the Lower Front Aux Port.
<b>Command</b>	Physical RefOutPort <type>
<b>Parameters</b>	<type> 10M, 1PPS
<b>Prerequisites</b>	1PPS selection requires Master/Slave Emulation.
Get	
<b>Description</b> 	Queries the Reference Output signal from the Lower Front Aux Port.
<b>Command</b>	Physical RefOutPort
<b>Result</b>	Returned text will be one of the types listed above



## Physical BaudRate

Set	
<b>Description</b> 	For Paragon-X, sets the baud rate for the GPS port. For Paragon-neo (v02.01 and later), sets the baud rate for the ToD Test Out port and the ToD Measurement port.
<b>Command</b>	Physical BaudRate <value>
<b>Parameters</b>	<value> 4800, 9600, 19200, 11520, 38400, 57600
Get	
<b>Description</b> 	This command retrieves the current baud rate setting.
<b>Command</b>	Physical BaudRate
<b>Result</b>	The value returned will be one of those listed above



## Physical StopBits

Set	
<b>Description</b> 	For Paragon-X, sets the number of stop bits for the GPS port. For Paragon-neo (v02.01 and later), sets the number of stop bits for the ToD Test Out port and the ToD Measurement port.
<b>Command</b>	Physical StopBits <value>
<b>Parameters</b>	<value> 1, 2
Get	
<b>Description</b> 	This command retrieves the current number of stop bits setting.
<b>Command</b>	Physical StopBits
<b>Result</b>	The value returned will be one of those listed above

## Physical Parity

Set	
<b>Description</b> 	For Paragon-X, sets the parity to be used on the GPS port. For Paragon-neo (v02.01 and later), sets the parity for the ToD Test Out port and the ToD Measurement port.
<b>Command</b>	Physical Parity <value>
<b>Parameters</b>	<value> NONE, ODD, EVEN
Get	
<b>Description</b> 	This command retrieves the current parity setting.
<b>Command</b>	Physical Parity
<b>Result</b>	The value returned will be one of those listed above

## Physical DataBits

Set	
<b>Description</b> 	For Paragon-X, sets the number of data bits for the GPS port. For Paragon-neo (v02.01 and later), sets the number of parity bits for the ToD Test Out port and the ToD Measurement port.
<b>Command</b>	Physical DataBits <value>
<b>Parameters</b>	<value>                      7, 8
Get	
<b>Description</b> 	This command retrieves the current number of data bits setting.
<b>Command</b>	Physical DataBits
<b>Result</b>	The value returned will be one of those listed above

## Filter Commands

### Common Filter Concepts

The commands in this section reference a number of common parameters:

#### <filterFlow>

Paragon instruments have a number of filter flows, as described in the Flows and Filters section of this manual.

Each *filterFlow* contains 64 *filterItems*.

Minimum Value	Maximum Value	Step Size
0	8	1

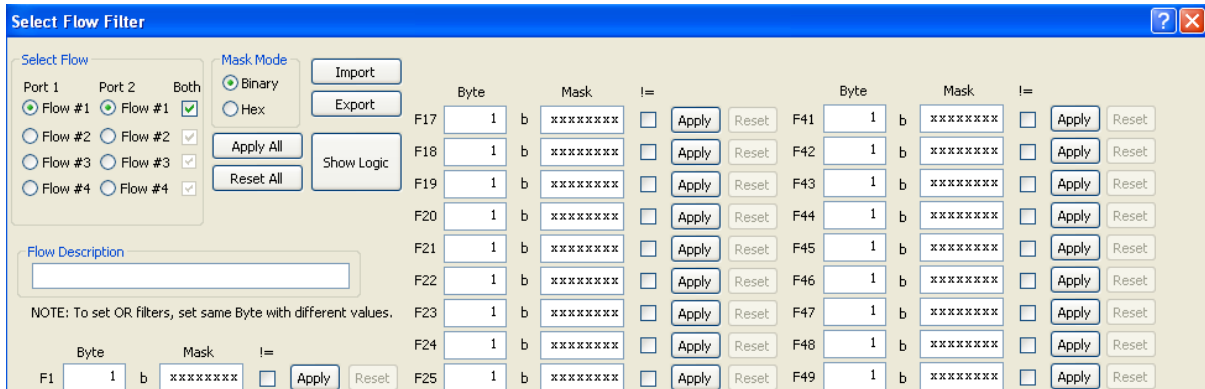
#### <filterItem>

Minimum Value	Maximum Value	Step Size
0	63	1

A filter item specifies how an individual byte is to be filtered. The filter item is defined by the following parameters:

- Byte Offset (in the packet)
- Byte Bit Mask

An example of the Flow Filter screen is shown below:




### Filter Export



Set	
<b>Description</b>	Export instrument's filter settings to a Paragon filter definition file.
<b>Command</b>	Filter Export <file>
<b>Parameters</b>	<file> is the fully qualified path and filename where the filter settings will be exported. This should include the ".cfd" extension. The file will be stored on the controlling PC.





## Filter Import

Set	
<b>Description</b> 	Import filter settings from a Paragon filter definition file ("*.cfd"), previously exported using the <b>Filter Export</b> command.
<b>Command</b>	Filter Import <file>
<b>Parameters</b>	<file> is the fully qualified path to an existing Paragon filter definition file on the controlling PC's file system.
<b>Prerequisites</b>	The file being imported must exist and be in the correct format.



## Filter #<filterFlow> #<filterItem> Offset

Set							
<b>Description</b> 	Sets the filter item's byte offset.						
<b>Command</b>	Filter #<filterFlow> #<filterItem> Offset <offset>						
<b>Parameters</b>	<table> <tr> <td>&lt;filterFlow&gt;</td> <td>0 to 8</td> </tr> <tr> <td>&lt;filterItem&gt;</td> <td>0 to 63</td> </tr> <tr> <td>&lt;offset&gt;</td> <td>The byte offset. This is an integer in the range 1 to 256, with a resolution of 1</td> </tr> </table>	<filterFlow>	0 to 8	<filterItem>	0 to 63	<offset>	The byte offset. This is an integer in the range 1 to 256, with a resolution of 1
<filterFlow>	0 to 8						
<filterItem>	0 to 63						
<offset>	The byte offset. This is an integer in the range 1 to 256, with a resolution of 1						
Get							
<b>Description</b> 	Queries the filter item's byte offset for the specified filter flow and filter item.						
<b>Command</b>	Filter #<filterFlow> #<filterItem> Offset						
<b>Parameters</b>	<table> <tr> <td>&lt;filterFlow&gt;</td> <td>See above</td> </tr> <tr> <td>&lt;filterItem&gt;</td> <td>See above</td> </tr> </table>	<filterFlow>	See above	<filterItem>	See above		
<filterFlow>	See above						
<filterItem>	See above						
<b>Result</b>	Returned value will be the byte offset in the range listed above						



### Filter #<filterFlow> #<filterItem> ByteMask

Set	
<b>Description</b> 	Sets the filter item's byte mask.
<b>Command</b>	Filter #<filterFlow> #<filterItem> ByteMask <mask>
<b>Parameters</b>	<filterFlow> 0 to 8 <filterItem> 0 to 63 <mask> The byte bitmask which will filter the corresponding byte (offset). This is a string formatted binary or hex mask of the form: <mask> = hh                  (hex mask) <mask> = bbbbbbbb      (binary mask) Each character in the mask specifies the filtering type to be applied to the bit or nibble: Character '0' = filter on bit or nibble value of 0 Character '1' = filter on bit or nibble value of 1 Character 2,3,4,5,6,7,8,9,AB,C,D,E,F = filter of nibble hex value Character x = No effect. This is the default.
Get	
<b>Description</b> 	Queries the filter item's byte mask in binary form.
<b>Command</b>	Filter #<filterFlow> #<filterItem> ByteMask
<b>Parameters</b>	<filterFlow> See above <filterItem> See above
<b>Result</b>	Query commands return a binary formatted string representing the active <mask> as defined above.


### Filter #<filterFlow> #<filterItem> Invert

Set	
<b>Description</b> 	Specifies how the ByteMask is to be interpreted.
<b>Command</b>	Filter #<filterFlow> #<filterItem> Invert <invert>
<b>Parameters</b>	<filterFlow> 0 to 8 <filterItem> 0 to 63 <invert> With <i>Invert</i> set FALSE (the default), the mask is interpreted as described by the <b>Filter #&lt;filterFlow&gt; #&lt;filterItem&gt; ByteMask</b> command. With <i>Invert</i> set TRUE, the bit mask logic is inverted.
Get	
<b>Description</b> 	Queries the ByteMask inversion parameter.
<b>Command</b>	Filter #<filterFlow> #<filterItem> Invert
<b>Parameters</b>	<filterFlow> See above <filterItem> See above
<b>Result</b>	TRUE or FALSE


### Filter #<filterFlow> #<filterItem> Apply

Set	
<b>Description</b> 	Enables <filterItem> to be an active part of <filterFlow>. Once applied, a filter item is first logically ORed with all other filter items in the filter flow that share the same offset, and then ANDed. The filter logic may be viewed using the "Show Logic" button on the Flow Filter summary pane.
<b>Command</b>	Filter #<filterFlow> #<filterItem> Apply <enable>
<b>Parameters</b>	<filterFlow>      0 to 8 <filterItem>      0 to 63 <enable>            TRUE to apply the filter item, FALSE to disable application
Get	
<b>Description</b> 	Queries the ByteMask apply parameter.
<b>Command</b>	Filter #<filterFlow> #<filterItem> Apply
<b>Parameters</b>	<filterFlow>      See above <filterItem>      See above
<b>Result</b>	TRUE indicates that the filter setting is being applied and FALSE indicates it is not being applied.

### Filter ApplyAll

Set	
<b>Description</b> 	This command effectively performs a <b>Filter #&lt;filterFlow&gt; #&lt;filterItem&gt; Apply &lt;apply&gt;</b> command call for ALL filter items in ALL filter flows. Filter items whose mask bits are all "no effect" bits are not applied.
<b>Command</b>	Filter ApplyAll <apply>
<b>Parameters</b>	<apply>            TRUE to apply all filters; FALSE to un-apply (reset) all filters



### Filter ClearAll

Set	
<b>Description</b> 	Resets or un-applies all the filter items in all filter flows. It follows this process: Un-applies each filter item Resets each filter item mask to no effect Resets each filter item offset to 1 Resets each filter item invert to FALSE
<b>Command</b>	Filter ClearAll


## Oam Filtering Commands

The commands in this section allow configuration of filters for OAM messaging.


### **Filter Oam Message #<message>**

Set	
<b>Description</b> 	Selects a message type on which to filter. Multiple message types can be selected with multiple calls to the command. Once all the required message types have been selected then the <b>Filter Oam ApplyMessages</b> command must be called to append/modify the selected message type(s) to the Flow Filter settings.
<b>Command</b>	Filter Oam Message #<message> <enable>
<b>Parameters</b>	<message>      1DM, AIS, APS, CCM, DMM, DMR, EXM, EXR, LBM, LBR, LCK, LMM, LMR, LTM, LTR, MCC, RAPS, TST, VSM, VSR <enable>      TRUE or FALSE
Get	
<b>Description</b> 	Queries whether a specified OAM message type is set for filtering.
<b>Command</b>	Filter Oam Message #<message>
<b>Parameters</b>	<message>      One of the messages listed above
<b>Result</b>	TRUE indicates that the specified message is included in the filter; FALSE indicates that it is not.


### **Filter Oam Message SelectAll**

Set	
<b>Description</b> 	Selects all the message types to filter on. The <b>Filter Oam ApplyMessages</b> command must be subsequently called to append/modify the selected message types to the Flow Filter settings.
<b>Command</b>	Filter Oam Message SelectAll

### **Filter Oam Message ClearAll**

Set	
<b>Description</b> 	Clears all the message type selections. At least one message type must be subsequently selected before calling the <b>Filter Oam ApplyMessages</b> command to append/modify the selected message types to the Flow Filter settings.
<b>Command</b>	Filter Oam Message ClearAll



### **Filter Oam ApplyMessages**

Set	
<b>Description</b> 	Appends/modify the selected message type(s) to the Flow Filter settings
<b>Command</b>	Filter Oam ApplyMessages



## PTP Filtering Commands

The commands in this section allow configuration of filters for PTP messaging.



### Filter Ptp Transport

Set	
<b>Description</b> 	Sets the PTP packet transport type to filter This command will also adjust the <b>Filter Ptp HeaderOffset</b> value in conjunction with the current <b>Filter Ptp IpHeaderLength</b> setting.
<b>Command</b>	Filter Ptp Transport <type>
<b>Parameters</b>	<type>                    UDP_IPV6, UDP_IPV4, ETHERNET
Get	
<b>Description</b> 	Queries the PTP Transport Type.
<b>Command</b>	Filter Ptp Transport
<b>Prerequisites</b>	None
<b>Result</b>	The PTP transport type will be one of those listed above



### Filter Ptp IpHeaderLength

Set	
<b>Description</b> 	Sets the PTP packet's IP Header length. This command will also adjust the <b>Filter Ptp HeaderOffset</b> value in conjunction with the current <b>Filter Ptp Transport</b> setting.
<b>Command</b>	Filter Ptp IpHeaderLength <length>
<b>Parameters</b>	<length>                    The header length in bytes in the range: 0 to 255
Get	
<b>Description</b> 	Queries the PTP packet IP Header Length in Bytes.
<b>Command</b>	Filter Ptp IpHeaderLength
<b>Result</b>	The header length in bytes


### Filter Ptp HeaderOffset

Set	
<b>Description</b> 	Sets the location in the packet of the PTP header. The <b>Filter Ptp Transport</b> and <b>Filter Ptp IpHeaderLength</b> commands also automatically update this parameter.
<b>Command</b>	Filter Ptp HeaderOffset <offset>
<b>Parameters</b>	<offset>                    The PTP header offset (integer). The first byte in the packet is at offset position 0. Numeric value must be in range: 0 to 255
Get	
<b>Description</b> 	Queries the location in the packet of the PTP Header.
<b>Command</b>	Filter Ptp HeaderOffset
<b>Result</b>	The location of the PTP header in the packet



### Filter Ptp Message #<ptpMessage>

Set	
<b>Description</b> 	Defines the set of PTP messages on which to filter. To de-select all PTP messages, use the <b>Filter Ptp Message ClearAll</b> command. Once all messages have been defined, the <b>Filter Ptp Apply</b> command must be used to transfer the message filters to the main filter.
<b>Command</b>	Filter Ptp Message #<ptpMessage> <select>
<b>Parameters</b>	<ptpMessage> SYNC, FOLLOW_UP, DELAY_REQUEST, DELAY_RESP, PDELAY_REQ, PDELAY_RESP, PDELAY_RESP_FOLLOW_UP, ANNOUNCE, SIGNALLING, MANAGEMENT <select> TRUE to select the message for filtering otherwise FALSE
Get	
<b>Description</b> 	Queries whether a specified message is being filtered.
<b>Command</b>	Filter Ptp Message #<ptpMessage>
<b>Parameters</b>	<ptpMessage> One of the message types listed above
<b>Result</b>	If the specified PTP message is being filtered then TRUE will be returned. If not filtered then FALSE will be returned.


### Filter Ptp Message ClearAll

Set	
<b>Description</b> 	All PTP message filters are de-selected (sets them to "not filtered" state).
<b>Command</b>	Filter Ptp Message ClearAll

### Filter Ptp ApplyMode

Set	
<b>Description</b> 	Defines how the PTP message filters are to be applied to the main filter.
<b>Command</b>	Filter Ptp ApplyMode <mode>
<b>Parameters</b>	<mode> MSG_AND_TRANSPORT, MSG_ONLY
Get	
<b>Description</b> 	Queries the <i>ApplyMode</i> setting.
<b>Command</b>	Filter Ptp ApplyMode
<b>Result</b>	The returned text will be one of the modes listed above

### Filter Ptp Apply

Set	
<b>Description</b> 	Transfers (applies) PTP message filters to the main filter.
<b>Command</b>	Filter Ptp Apply

## Measurement Status Commands

Integer results returned from status measurement queries have the following meaning:


Value	Description
<0 (e.g. -1)	Event (e.g. alarm, error condition)
0	No event (e.g. no alarm, error condition)
>0 (e.g. 1)	Information only

Status measurements which are not in context will return a "No Event" status.

The *History* commands indicate whether any event (see above) has occurred whilst capturing.


---

### Measurement Status AnyAlarms

Set	
<b>Description</b> 	Determine whether any status measurements have an active alarm/event.
<b>Command</b>	Measurement Status AnyAlarms
<b>Result</b>	TRUE if any status measurements have an active alarm/event, FALSE otherwise.


---

### Measurement Status AnyHistory

Set	
<b>Description</b> 	Queries whether any status measurements have history.
<b>Command</b>	Measurement Status AnyHistory
<b>Result</b>	TRUE if any status measurements have history, FALSE otherwise




---

### Measurement Status ResetHistory


Set	
<b>Description</b> 	Reset all status measurement history.
<b>Command</b>	Measurement Status ResetHistory

---


### Measurement Status Ethernet <meas>

Get	
<b>Description</b>   	Determines the Ethernet Clock Status.
<b>Command</b>	Measurement Status Ethernet <meas>
<b>Parameters</b>	<meas>      RefClk: Reference Clock status SyncELock: SyncE lock status
<b>Result</b>	Returned text will return for the specified clock status: 0 = In Lock. -1 = Out of Lock.


### Measurement Status Ethernet History <meas>

Get	
<b>Description</b> 	Determines the Ethernet Clock History Status.
<b>Command</b>	Measurement Status Ethernet History <meas>
<b>Parameters</b>	<meas>            RefClk: Reference Clock status SyncELock: Sunc-E lock status
<b>Result</b>	A history event for the specified <meas> is indicated as: FALSE = No history events TRUE = History event occurred

### Measurement Status Ethernet #<port> <meas>

Get	
<b>Description</b> 	Queries the Ethernet physical interface for status and alarms. Note: A sequence of calls to this command should have a minimum gap of 1 second between calls.
<b>Command</b>	Measurement Status Ethernet #<port> <meas>
<b>Parameters</b>	<port>            The Ethernet port: 0 (Port 1) or 1 (Port 2) <meas>            Link: link status RxPkts: received packet status BufOFlow: replay buffer overflow status SwSimBufOFlow: Switch Simulator Buffer Overflow status
<b>Result</b>	Returned text is dependent on the <meas> parameter passed in. When <meas> was set to Link: 0 = link present; -1 = link not present. When <meas> was set to RxPkts: 0 = good packets; -1 = bad packets; 1 = no packets When <meas> was set to BufOFlow: 0 = buffer OK; -1 = buffer overflow. When <meas> was set to SwSimBufOFlow: 0 = no overflow; 1 = buffer overflow – bandwidth limiting.


### Measurement Status Ethernet #<port> History <meas>

Get	
<b>Description</b> 	Queries the Ethernet physical interface for status and alarms history.
<b>Command</b>	Measurement Status Ethernet #<port> History <meas>
<b>Parameters</b>	<port>            The Ethernet port: 0 (Port 1) or 1 (Port 2) <meas>            Link: link status RxPkts: received packet status BufOFlow: replay buffer overflow status SwSimBufOFlow: Switch Simulator Buffer Overflow status
<b>Result</b>	A history event for the specified <meas> is indicated as: FALSE = No history events. TRUE = History event occurred.




---

**Measurement Status Wander <meas>**

Get	
<b>Description</b> 	Queries the Wander Measurement and reference ports input status.
<b>Command</b>	Measurement Status Wander <meas>
<b>Parameters</b>	<meas> Meas: T1/E1/10Mmeasurement input lock OnePpsRef: 1 PPS reference clock signal present GpMeas: 1 PPS / General Purpose wander clock signal present
<b>Result</b>	Returned text is dependent on the <meas> parameter. When <meas> was set to Meas: 0 = In Lock; -1 = Out of Lock. When <meas> was set to OnePpsRef: 0 = Signal present; -1 = No Signal Present. When <meas> was set to GpMeas: 0 = Signal present; -1 = No Signal Present.


---

**Measurement Status Wander History <meas>**

Get	
<b>Description</b> 	Queries the Wander Measurement and reference ports input history.
<b>Command</b>	Measurement Status Wander History <meas>
<b>Parameters</b>	<meas> Meas: T1/E1/10Mmeasurement input lock OnePpsRef: 1 PPS reference clock signal present GpMeas: 1 PPS / General Purpose wander clock signal present
<b>Result</b>	A history event for the specified <meas> is indicated thus: FALSE = No history events. TRUE = History event occurred.


---

**Measurement Status Jitter <meas>**


Get	
<b>Description</b> 	Determine the SyncE Jitter Measurement input status.
<b>Command</b>	Measurement Status Jitter <meas>
<b>Parameters</b>	<meas> MeasLock: SyncE jitter measurement lock status
<b>Result</b>	Returned text will return for the specified input status: 0 = In Lock -1 = Out of Lock

---



**Measurement Status Jitter History <meas>**

Get	
<b>Description</b> 	Determine the SyncE Jitter Measurement input history.
<b>Command</b>	Measurement Status Jitter History <meas>
<b>Parameters</b>	<meas> MeasLock: SyncE jitter measurement lock status
<b>Result</b>	A history event for the specified <meas> is indicated as: FALSE = No history events. TRUE = History event occurred.


### Measurement Capture NumSamples

Get	
<b>Description</b> 	Determines the number of records (samples) currently captured.
<b>Command</b>	Measurement Capture NumSamples
<b>Result</b>	Returned text will be a whole number for the number of records captured.


### Measurement Capture TimeMonitor PacketRate

Set	
<b>Description</b> 	Sets the nominal packet rate to be used when exporting TimeMonitor data. The <b>Filter Ptp Transport</b> and <b>Filter Ptp IpHeaderLength</b> commands also automatically update this parameter.
<b>Command</b>	Measurement Capture TimeMonitor PacketRate <rate>
<b>Parameters</b>	<rate> The nominal packet rate (packets/sec) as an integer in the range: 1 to 2000000
Get	
<b>Description</b> 	Queries the nominal packet rate to be used when exporting TimeMonitor data.
<b>Command</b>	Measurement Capture TimeMonitor PacketRate
<b>Result</b>	Returns the nominal packet rate as an integer in the range listed above

### Measurement Capture TimeMonitor Export

Set	
<b>Description</b> 	Exports the Time Monitor data to file.
<b>Command</b>	Measurement Capture TimeMonitor Export <file>
<b>Parameters</b>	<file> is the path to a file on the controlling PC's file system. The filename extension (.txt) should be included.

### Measurement Capture Esmc Transitions

Get	
<b>Description</b> 	Returns the last 5 ESMC transitions in the current capture.
<b>Command</b>	Measurement Capture Esmc Transitions
<b>Prerequisites</b>	This command is only valid in SyncE operating mode.
<b>Result</b>	A comma separated list containing data for the last 5 ESMC transitions (see below)

The comma-separated list returned from the above command is structured as follows:

```
{
(Transition, Port1Tx, Port1Rx, Port2Tx, Port2Rx, T1,T2,T3,T4, Seq#) n,
(Transition, Port1Tx, Port1Rx, Port2Tx, Port2Rx, T1,T2,T3,T4, Seq#) n-1,
(Transition, Port1Tx, Port1Rx, Port2Tx, Port2Rx, T1,T2,T3,T4, Seq#) n-2,
(Transition, Port1Tx, Port1Rx, Port2Tx, Port2Rx, T1,T2,T3,T4, Seq#) n-3,
(Transition, Port1Tx, Port1Rx, Port2Tx, Port2Rx, T1,T2,T3,T4, Seq#) n-4
}
```

Each record in the list has the following parameters:

**Transition:** Text indicating on which ports a new transition has been detected. Possible values are shown below:

No Transitions, All Ports, Port1 Tx, Port1 Rx, Port2 Tx, Port2 Rx or a combination of various ports. E.g. Port1 Tx + Port2 Rx

**Port1Tx:** The SSM level of the message being transmitted on Port 1. Possible values are shown below:

NO DATA YET	QL-SSU-A/TNC	QL-EEC2/ST3
NO DATA	QL-INV5	QL-EEC1/SEC
QL-STU/UKN	QL-INV6	QL-SMC
QL-PRS	QL-ST2	QL-ST3E
QL-PRC	QL-SSU-B	QL-PROV
QL-INV3	QL-INV9	QL-DNU/DUS

**Port1Rx:** The SSM level of the message being received on Port 1. Possible values are as above.

**Port2Tx:** The SSM level of the message being transmitted on Port 2. Possible values are as above.

**Port2Rx:** The SSM level of the message being received on Port 2. Possible values are as above.

**T1:** The time between the last transition on Port 2 Rx and the preceding transition on Port 1 Tx. This will be a floating point number or -1 if there has been no transition.

**T2:** The time between the last transition on Port 2 Rx and the preceding transition on Port 2 Tx. This will be a floating point number or -1 if there has been no transition.

**T3:** The time between the last transition on Port 1 Rx and the preceding transition on Port 1 Tx. This will be a floating point number or -1 if there has been no transition.


**T4:** The time between the last transition on Port 1 Rx and the preceding transition on Port 2 Tx. This will be a floating point number or -1 if there has been no transition.

**Seq#:** A unique 64-bit unsigned integer number identifying a new transition.


**n:** nth transition and n-1 is the one before etc.

---


### Measurement Capture SyncE Offset LongTerm

Get	
<b>Description</b> 	Queries the overall offset (in parts per million) of a SyncE signal.
<b>Command</b>	Measurement Capture SyncE Offset LongTerm
<b>Result</b>	The overall offset (in parts per million) of a SyncE signal.


### Measurement Capture SyncE Offset ShortTerm

Get	
<b>Description</b> 	Returns the last 8 short term offsets (in parts per million) of a Sync E signal. The user can set a short term window of 10, 100, 1000, or 10000 seconds (see <i>Capture SyncE ShortTermOffsetWindow</i> ). As the measurement progresses the offset over the selected window is calculated and a new window started. This allows the detection of shorter term effects.
<b>Command</b>	Measurement Capture SyncE Offset ShortTerm
<b>Result</b>	Returned text will be a comma separated list containing the last 8 short term offsets: { (<Offset>,<Sequence Number>)n, (<Offset>,<Sequence Number>)n-1, (<Offset>,<Sequence Number>)n-2, (<Offset>,<Sequence Number>)n-3, (<Offset>,<Sequence Number>)n-4, (<Offset>,<Sequence Number>)n-5, (<Offset>,<Sequence Number>)n-6, (<Offset>,<Sequence Number>)n-7, } Where: <ul style="list-style-type: none"> <li>• Offset = Offset (in parts per million) of a SyncE signal over a selected window.</li> <li>• Sequence Number = A unique 64-bit unsigned integer number identifying a new transition.</li> <li>• n = nth transition and n-1 is the one before etc.</li> </ul>




### Measurement Capture SyncEJitter ThresholdLimit LongTerm

Get	
<b>Description</b> 	Returns the result of the SyncE Jitter measurement long term threshold limit test.
<b>Command</b>	Measurement Capture SyncEJitter ThresholdLimit LongTerm
<b>Result</b>	Returned text will be: 1 (Pass) or 0 (Fail)

### Measurement Capture SyncEJitter ThresholdLimit ShortTerm


Get	
<b>Description</b> 	Returns the result of the SyncE Jitter measurement short term threshold limit test
<b>Command</b>	Measurement Capture SyncEJitter ThresholdLimit ShortTerm
<b>Result</b>	Returned text will be: 1 (Pass) or 0 (Fail)

### Measurement Capture SyncEJitter Results LongTermJitterPkPk

Get	
<b>Description</b>   	Queries the result of the SyncE long term Jitter peak-to-peak (in UI).
<b>Command</b>	Measurement Capture SyncEJitter Results LongTermJitterPkPk
<b>Result</b>	The SyncE long term Jitter peak-to-peak (in UI).


---

### Measurement Capture SyncEJitter Results LongTermJitterRms

Get	
<b>Description</b> 	Queries the result of the SyncE long term Jitter RMS.
<b>Command</b>	Measurement Capture SyncEJitter Results LongTermJitterRms
<b>Result</b>	The SyncE long term Jitter RMS.


---

### Measurement Capture SyncEJitter Results ShortTermJitterPkPk

Get	
<b>Description</b> 	Queries the result of the SyncE short term Jitter peak-to-peak (in UI).
<b>Command</b>	Measurement Capture SyncEJitter Results ShortTermJitterPkPk
<b>Result</b>	The SyncE short term Jitter peak-to-peak (in UI).


---

### Measurement Capture OnePps AccuracyPass

Get	
<b>Description</b> 	Queries the result of the 1pps accuracy limit check.
<b>Command</b>	Measurement Capture OnePps AccuracyPass
<b>Result</b>	Returns TRUE if 1pps accuracy limit check passed, FALSE if failed.


---

### Measurement Count Reset

Set	
<b>Description</b> 	Resets all measurement counters to zero.
<b>Command</b>	Measurement Count Reset


---

### Measurement Count Physical #<port> <meas>

Get	
<b>Description</b> 	Queries physical layer measurement counter for the specified port.
<b>Command</b>	Measurement CountPhysical #<port> <meas>
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2) <meas> The measurement to be queried: RxSymErr = Received symbol errors on this port TxSymErr = Transmitted (impaired) symbol errors on this port
<b>Result</b>	Returns an integer value for the count being queried.


---

### Measurement Count TestPacket TxTestPkt

Get	
<b>Description</b> 	Queries the total number of test packets transmitted.
<b>Command</b>	Measurement Count TestPacket TxTestPkt
<b>Result</b>	Returns an integer value for the number of test packets transmitted.


---

**Measurement Count TestPacket RxTestPkt**

Get	
<b>Description</b> 	Queries the total number of test packets received.
<b>Command</b>	Measurement Count TestPacket RxTestPkt
<b>Result</b>	Returns an integer value for the number of test packets received.


---

**Measurement Count TestPacket DroppedPkt**

Get	
<b>Description</b> 	Queries the number of test packets dropped.
<b>Command</b>	Measurement Count TestPacket DroppedPkt
<b>Result</b>	Returns an integer value for the number of test packets dropped.


---

**Measurement Count TestPacket OutOfSequenceCount**

Get	
<b>Description</b> 	Queries the number of test packets received out of sequence.
<b>Command</b>	Measurement Count TestPacket OutOfSequenceCount
<b>Result</b>	Returns an integer value for the number of test packets received out of sequence.


---

**Measurement Count TestPacket MinPacketLatency**

Get	
<b>Description</b> 	Queries the minimum measured packet latency calibration value.
<b>Command</b>	Measurement Count TestPacket MinPacketLatency
<b>Result</b>	Returns an integer value for the minimum packet latency calibration value.


---

**Measurement Count TestPacket MaxPacketLatency**

Get	
<b>Description</b> 	Queries the maximum measured packet latency calibration value.
<b>Command</b>	Measurement Count TestPacket MaxPacketLatency
<b>Result</b>	Returns an integer value for the maximum measured packet latency calibration value.


---

**Measurement Count TestPacket AvgPacketLatency**

Get	
<b>Description</b> 	Queries the average measured packet latency calibration value.
<b>Command</b>	Measurement Count TestPacket AvgPacketLatency
<b>Result</b>	Returns an integer value for the average measured packet latency value.

---

**Measurement Count TestPacket LastPacketLatency**

Get	
<b>Description</b> 	Queries the last measured packet latency calibration value.
<b>Command</b>	Measurement Count TestPacket LastPacketLatency
<b>Result</b>	Returns an integer value for the last measured packet latency calibration value.


## Instrument Status Commands

The commands in this section provide information on the current status of:


- Capture
- Impairment
- Interfaces

### Capture Status

#### InstrumentStatus Capture IsRunning

Get	
<b>Description</b> 	Queries the capture status.
<b>Command</b>	InstrumentStatus Capture IsRunning
<b>Result</b>	Returns TRUE if the Paragon is capturing data. Returns FALSE if capture is stopped.

#### InstrumentStatus Capture <measurement> IsRunning


Get	
<b>Description</b> 	Queries the status of the selected measurement capture
<b>Command</b>	InstrumentStatus Capture <meas> IsRunning
<b>Parameters</b>	<meas> <b>Paragon-X:</b> PTP, CES, SYNCE, WANDER, 1PPSTEABS, 1PPSTEREL <b>Paragon-100G, Paragon-neo:</b> PTP, SYNCE, WANDER, 1PPSTEABS
<b>Result</b>	Returns TRUE if the specified measurement is still actively capturing data. FALSE if the capture is stopped.



## Impairment Status


---

### InstrumentStatus Impair #<port> Delay IsRunning

Get	
<b>Description</b> 	Queries the packet delay impairment status for a specified port
<b>Command</b>	InstrumentStatus Impair #<port> Delay IsRunning
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if the delay impairment is being applied to the packet data on the specified port. FALSE if the impairment is not currently being applied.


---

### InstrumentStatus Impair #<port> Corruption IsRunning


Get	
<b>Description</b> 	Queries the packet corruption impairment status for a specified port
<b>Command</b>	InstrumentStatus Impair #<port> Corruption IsRunning
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if the corruption impairment is being applied to the packet data on the specified port. FALSE if the impairment is not currently being applied.

## Interface Status


### InstrumentStatus Interface #<port> Link Detected

Get	
<b>Description</b> 	Queries the Link status for the specified port
<b>Command</b>	InstrumentStatus Interface #<port> Link Detected
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if Link has been detected, FALSE if no link exists


### InstrumentStatus Interface #<port> Link History

Get	
<b>Description</b> 	Queries the Link History for the specified port
<b>Command</b>	InstrumentStatus Interface #<port> Link History
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if Link status has changed from TRUE to FALSE at any point during a capture. At start of capture this is reset to FALSE.


### InstrumentStatus Interface #<port> RxPackets Good

Get	
<b>Description</b> 	Queries the Good Packet status for the specified port
<b>Command</b>	InstrumentStatus Interface #<port> RxPackets Good
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if Good Packets have been detected, on the specified port. FALSE if no good packets are currently seen.


### InstrumentStatus Interface #<port> RxPackets History

Get	
<b>Description</b> 	Queries the Good Packet Status History for the specified port
<b>Command</b>	InstrumentStatus Interface #<port> RxPackets History
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if the Good Packet status has changed from TRUE to FALSE at any point during a capture. At start of capture this is reset to FALSE.


### InstrumentStatus Interface #<port> OverFlow Detected

Get	
<b>Description</b> 	Queries the Buffer OverFlow status for the specified port when in Delay Impairment mode
<b>Command</b>	InstrumentStatus Interface #<port> OverFlow Detected
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if Buffer OverFlow has been detected, on the specified port. FALSE if no OverFlow is currently seen.


### InstrumentStatus Interface #<port> OverFlow History

Get	
<b>Description</b> 	Queries the Buffer OverFlow Status History for the specified port
<b>Command</b>	InstrumentStatus Interface #<port> OverFlow History
<b>Parameters</b>	<port> The Ethernet port: 0 (port 1) or 1 (port 2)
<b>Result</b>	Returns TRUE if Buffer OverFlow status has changed from FALSE to TRUE at any point during a capture. At start of impairment this is reset to FALSE.

### InstrumentStatus Interface <SignalLock> Detected

Get	
<b>Description</b> 	Queries the lock status of the specified interface
<b>Command</b>	InstrumentStatus Interface <signalLock> Detected
<b>Parameters</b>	<signalLock>    RefLock    ----- for Reference Lock detection SyncELock ----- for SyncE signal detection WanderLock ----- for 2M, E1 wander signal detection 1ppsRefLock ----- for 1pps Reference detection 1ppsMeasLock --- for 1pps Measurement Signal detection JitterMeasLock -- for Jitter Measurement Signal detection
<b>Result</b>	Returns TRUE if signal is detected as being present. FALSE if no signal detected.

### InstrumentStatus Interface <SignalLock> History


Get	
<b>Description</b> 	Queries history of the lock status of the specified interface
<b>Command</b>	InstrumentStatus Interface <signalLock> History
<b>Parameters</b>	<signalLock>    RefLock    ----- for Reference Lock detection SyncELock ----- for SyncE signal detection WanderLock ----- for 2M, E1 wander signal detection 1ppsRefLock ----- for 1pps Reference detection 1ppsMeasLock --- for 1pps Measurement Signal detection JitterMeasLock -- for Jitter Measurement Signal detection
<b>Result</b>	Returns TRUE if status of the specified signal has changed from TRUE to FALSE during the measurement. The History status is reset at start of measurements

## Capture Commands

The commands in this section control the captures the instrument performs. These captures are the engines which generate the data for analysis.




---

### startpacketcapture

<b>Description</b> 	Starts an all packet capture.
<b>Tcl</b>	startpacketcapture
<b>Python</b>	p.startpacketcapture ()




---

### starttimingcapture

<b>Description</b>   	Starts a timing capture for the measurements that have been enabled. See <i>Capture SyncEJitter MeasurementEnable</i> , <i>Capture SyncE WanderCaptEnable</i> , <i>Capture Pdh T1WanderCaptEnable</i> , <i>Capture Pdh E1WanderCaptEnable</i> , <i>Capture Pdh M2WanderCaptEnable</i> , <i>Capture OnePps AccuracyCaptEnable</i> and <i>Capture OnePps WanderCaptEnable</i>
<b>Tcl</b>	starttimingcapture
<b>Python</b>	p.starttimingcapture ()


---

### stopcapture

<b>Description</b>   	Stops current capture.
<b>Tcl</b>	stopcapture
<b>Python</b>	p.stopcapture ()


---

### starttodcapture


<b>Description</b> 	Starts Time of Day capture.
<b>Tcl</b>	starttodcapture
<b>Python</b>	p.starttodcapture ()


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### stoptodcapture

<b>Description</b> 	Stops Time Of Day capture.
<b>Tcl</b>	stoptodcapture
<b>Python</b>	p.stoptodcapture ()


## exportdata


<b>Description</b> 	Saves the currently selected capture data to a file.
<b>Tcl</b>	exportdata <filename>
<b>Python</b>	p.exportdata (" <i>&lt;filename&gt;</i> ")
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system with a .cpd or .csv extension
<b>Prerequisites</b>	Filename extension must be supplied (the file format is determined by the file extensions).

<b>Description</b> 	Saves all the captured data to separate files, separated by measurement type with common prefix and suffix to each file.
<b>Tcl</b>	exportdata <prefix>:MeasType:<suffix>.<cpd or csv>
<b>Python</b>	p.exportdata (" <i>&lt;prefix&gt;:MeasType:&lt;suffix&gt;.&lt;cpd or csv&gt;</i> ")
<b>Parameters</b>	<prefix> Path and filename for a file on the local PC's file system <suffix> User specified identifier <cpd or csv> Supported filename extension
<b>Prerequisites</b>	Filename extension must be supplied. MeasType text is required to create the multiple export file.



<b>Description</b> 	Saves all the captured data to a Calnex capture data archive file (compressed).
<b>Tcl</b>	exportdata <filename>.clxz
<b>Python</b>	p.exportdata (" <i>&lt;filename&gt;.clxz</i> ")
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system
<b>Prerequisites</b>	Filename extension must be .clxz

## importdata



<b>Description</b> 	Loads the captured data from a single file. The importdata is equivalent to using the GUI toolbar menu item File>Import.
<b>Tcl</b>	importdata <filename>
<b>Python</b>	p.importdata (r" <i>&lt;filename&gt;</i> ")
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system with a .cpd or .csv extension
<b>Prerequisites</b>	Filename extension must be supplied.

<b>Description</b> 	Loads multiple captured data files. This is not port specific and in the bi-directional context should not be used for loading impairment data for replay.
<b>Tcl</b>	importdata <filename1>:: <i>&lt;filename2&gt;</i> ::<filename3>:: <i>&lt;filename4&gt;</i>
<b>Python</b>	Not supported
<b>Parameters</b>	<filename> Path and filename for a file on the local PC's file system system with a .cpd or .csv extension
<b>Prerequisites</b>	Filename extension must be supplied.



## Capture Control Mode

Set	
<b>Description</b> 	Defines how capture will be controlled.
<b>Command</b>	Capture Control Mode <mode>
<b>Parameters</b>	<mode> MANUAL, FIXED
<b>Prerequisites</b>	The FIXED period setting is configured by the <b>Capture Control FixedPeriod</b> command
Get	
<b>Description</b> 	Queries how capture is controlled.
<b>Command</b>	Capture Control Mode
<b>Result</b>	The returned value will be one of those listed above



## Capture Control FixedPeriod

Set	
<b>Description</b> 	Sets the fixed capture duration.
<b>Command</b>	Capture Control FixedPeriod <period>
<b>Parameters</b>	<period> 1SEC, 10SECS, 1MIN, 1HOUR, 1DAY, USER
<b>Prerequisites</b>	<i>Capture Control Mode</i> must be set to FIXED
Get	
<b>Description</b> 	Queries the fixed capture duration. This will return the last selected Fixed value and not the current value if <i>Capture Control Mode</i> is set to "Manual".
<b>Command</b>	Capture Control FixedPeriod
<b>Prerequisites</b>	<i>Capture Control Mode</i> must be set to FIXED
<b>Result</b>	Queries the current period in the range listed above



## Capture Control UserPeriod

Set	
<b>Description</b> 	Sets the user defined fixed capture duration.
<b>Command</b>	Capture Control UserPeriod <period>
<b>Parameters</b>	<period> The duration in seconds in the range 0 to 259200
<b>Prerequisites</b>	<i>Capture Control Mode</i> must be FIXED <i>Capture Control FixedPeriod</i> must be USER.
Get	
<b>Description</b> 	Queries the user defined fixed capture duration. This will return the last selected User value and not the current value if <i>Capture Control Mode</i> is set to FIXED.
<b>Command</b>	Capture Control UserPeriod
<b>Result</b>	Text value in seconds of the last entered user defined period.



### Capture SyncE WanderCaptEnable

Set	
<b>Description</b> 	Enables the SyncE wander capture.
<b>Command</b>	Capture SyncE WanderCaptEnable <enable>
<b>Parameters</b>	<enable> Set to TRUE to enable the capture, FALSE to disable
<b>Result</b>	No result is expected.
Get	
<b>Description</b> 	Queries the SyncE wander capture enabled status.
<b>Command</b>	Capture SyncE WanderCaptEnable
<b>Result</b>	TRUE if SyncE wander capture is enabled and FALSE otherwise.



### Capture SyncE SamplePeriod

Set	
<b>Description</b> 	Sets the SyncE sample period.
<b>Command</b>	Capture SyncE SamplePeriod <period>
<b>Parameters</b>	<period> 1_MSECS, 10_MSECS, 20_MSECS, 33.33_MSECS, 100_MSECS, 500_MSECS, 1_SEC, 10_SECS
Get	
<b>Description</b> 	Queries the SyncE sample period. The value returned will be correct for SyncE even if SyncE is not the currently selected operating mode.
<b>Command</b>	Capture SyncE SamplePeriod
<b>Result</b>	Returns the current period in the range listed above



### Capture SyncE ShortTermOffsetWindow

Set	
<b>Description</b> 	Sets the SyncE short term offset window.
<b>Command</b>	Capture SyncE ShortTermOffsetWindow <window>
<b>Parameters</b>	<window> 10_SECS, 100_SECS, 1000_SECS, 10000_SECS
Get	
<b>Description</b> 	Queries the SyncE short term offset window. The value returned will be correct for SyncE even if SyncE is not the currently selected operating mode.
<b>Command</b>	Capture SyncE ShortTermOffsetWindow
<b>Result</b>	Returns the current window in the range listed above



### Capture SyncE MeasurementPort

Set	
<b>Description</b> 	Sets the SyncE measurement port.
<b>Command</b>	Capture SyncE MeasurementPort <port>
<b>Parameters</b>	<port> PORT1, PORT2
Get	
<b>Description</b> 	Queries the SyncE measurement port.
<b>Command</b>	Capture SyncE MeasurementPort
<b>Result</b>	Returned value is one of: PORT1 or PORT2

### Capture SyncEJitter MeasurementEnable

Set	
<b>Description</b> 	Enables the SyncE Jitter Measurement.
<b>Command</b>	Capture SyncEJitter MeasurementEnable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the SyncE Jitter Measurement port enable status.
<b>Command</b>	Capture SyncEJitter MeasurementEnable
<b>Result</b>	Returned value is TRUE if the measurement is enabled and FALSE otherwise.



### Capture SyncEJitter Threshold Enable

Set	
<b>Description</b> 	Enables the SyncE Jitter Measurement threshold limit check.
<b>Command</b>	Capture SyncEJitter Threshold Enable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the SyncE Jitter Measurement threshold limit check status.
<b>Command</b>	Capture SyncEJitter Threshold Enable
<b>Result</b>	Returned value is TRUE if the measurement is enabled and FALSE otherwise.




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### Capture SyncEJitter Threshold Value



Set	
<b>Description</b> 	Determines the SyncE Jitter Measurement threshold limit value.
<b>Command</b>	Capture SyncEJitter Threshold Value <value>
<b>Parameters</b>	<value> The SyncE jitter measurement threshold limit value in the range: 0.01 to 2, resolution 0.01
Get	
<b>Description</b> 	Queries the SyncE Jitter Measurement threshold limit value.
<b>Command</b>	Capture SyncEJitter Threshold Value
<b>Result</b>	Returned value is the current threshold limit value in the range listed above

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### Capture SyncEJitter Threshold RestoreDefaults

Set	
<b>Description</b> 	Disables the SyncE Jitter measurement threshold limit check and restores the threshold limit value to the default value.
<b>Command</b>	Capture SyncEJitter Threshold RestoreDefaults



## Capture Byte #<byte> Offset

Set	
<b>Description</b> 	Define the set of (user defined) bytes to be captured in CES and Services operating modes.
<b>Command</b>	Capture Byte #<byte> Offset <offset>
<b>Parameters</b>	<p>&lt;byte&gt; The user defined byte (an integer index). The range is operating mode dependent:  <u>CES</u>: 0 to 3  <u>Services</u>: 0 to 7</p> <p>&lt;offset&gt; The byte position in the packet to be captured (an integer value): 0 to 255. A value of 0 will disable &lt;byte&gt; from being captured:</p>
Get	
<b>Description</b> 	Queries the set of (user defined) bytes to be captured in CES and Services operating modes.
<b>Command</b>	Capture Byte #<byte> Offset
<b>Parameters</b>	<p>&lt;byte&gt; The user defined byte (an integer index). The range is operating mode dependent:  <u>CES</u>: 0 to 3  <u>Services</u>: 0 to 7</p>
<b>Result</b>	<p>When a new capture is initiated, these bytes are sorted in ascending offset order, with any unused bytes placed at the end.</p> <p>For example, if the bytes are initially defined as:</p> <pre>paragonset Capture Byte ClearAll paragonset Capture #0 Offset 123 paragonset Capture #5 Offset 4</pre> <p>After a capture has been initiated, the following responses will be obtained:</p> <pre>foreach i { 0, 1, 2, 3, 4, 5, 6, 7 } {     puts -nonewline "[paragonget Capture #5 Offset]," } </pre> <p>Outputs:  4,123,0,0,0,0,0,0,</p>



## Capture Byte ClearAll

Set	
<b>Description</b> 	Clears all the user defined capture byte definitions.
<b>Command</b>	Capture Byte ClearAll



## Capture Sequence Msb

Set	
<b>Description</b> 	A sequence number may be defined using the current set of user defined capture bytes. This command Sets the byte (offset) which will form the most significant byte (MSB) of this sequence.
<b>Command</b>	Capture Sequence Msb <msbOffset>
<b>Parameters</b>	<msbOffset> The byte offset to be used as the MSB of the sequence number. This offset must be part of the current set of user defined capture bytes. It must be a numeric value in the range: 1 to 256
<b>Prerequisites</b>	This command works in conjunction with the <b>Capture Sequence Length</b> command.
Get	
<b>Description</b> 	A sequence number may be defined using the current set of user defined capture bytes. This command retrieves the byte (offset) which will form the most significant byte (MSB) of this sequence.
<b>Command</b>	Capture Sequence Msb
<b>Result</b>	Returned value will be the MSB of the sequence number in the range listed above



## Capture Sequence Length

Set	
<b>Description</b> 	Sets the sequence number length, in bytes starting at the <b>Capture Sequence MSB</b> .
<b>Command</b>	Capture Sequence Length <length>
<b>Parameters</b>	<length> The number of <b>adjacent</b> bytes starting at <b>Capture Sequence MSB</b> that will form the sequence number. Numeric value in the range: 1 to 4
<b>Prerequisites</b>	This command works in conjunction with the <b>Capture Sequence MSB</b> command.
Get	
<b>Description</b> 	This command retrieves sequence number length, in bytes at <b>Capture Sequence MSB</b> which will form the sequence number.
<b>Command</b>	Capture Sequence Length
<b>Result</b>	Returned value will be number of <b>adjacent</b> bytes starting at <b>Capture Sequence MSB</b> that will form the sequence number. It is a value in the range listed above



## Capture Sequence Enable

Set	
<b>Description</b> 	Enables or Disables the sequence number capture.
<b>Command</b>	Capture Sequence Enable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Result</b>	No result is expected.
Get	
<b>Description</b> 	Queries the sequence number enabled status.
<b>Command</b>	Capture Sequence Enable
<b>Result</b>	TRUE if sequence number capture is enabled and FALSE otherwise.



### Capture Ces HeaderOffset

Set	
<b>Description</b> 	Sets the location in the packet of the CES header.
<b>Command</b>	Capture Ces HeaderOffset <offset>
<b>Parameters</b>	<offset> The CES header offset (integer). The first byte in the packet is at offset position 1. Numeric value in the range: 1 to 125
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the location in the packet of the CES header.
<b>Command</b>	Capture Ces HeaderOffset
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returns the CES header offset (integer). The first byte in the packet is at offset position 1. The returned value will be in the range listed above.



### Capture Ces Service Type

Set	
<b>Description</b> 	Sets the CES service attributes to be used in measurement calculations.
<b>Command</b>	Capture Ces Service Type <type>
<b>Parameters</b>	<type> T1, E1, T3, E3, USERDEFINED
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the CES service attributes to be used in measurement calculations.
<b>Command</b>	Capture Ces Service Type
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returned value is one of those listed above



### Capture Ces Service Structure

Set	
<b>Description</b> 	Sets whether T1/E1 CES services are structure aware.
<b>Command</b>	Capture Ces Service Structure <structure>
<b>Parameters</b>	<structure> AGNOSTIC, AWARE
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries whether T1/E1 CES services are structure aware.
<b>Command</b>	Capture Ces Service Structure
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returned value is one of those listed above



### Capture Ces Service OctetAligned

Set	
<b>Description</b> 	Sets whether the T1 CES service is octet aligned.
<b>Command</b>	Capture Ces Service OctetAligned <align>
<b>Parameters</b>	<align> TRUE means the T1 CES is Octet aligned
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries whether the T1 CES service is octet aligned.
<b>Command</b>	Capture Ces Service OctetAligned
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returned value is TRUE if T1 CES is Octet aligned, FALSE otherwise.



### Capture Ces Service FramesPerPkt

Set	
<b>Description</b> 	Sets the number of CES frames per packet.
<b>Command</b>	Capture Ces Service FramesPerPkt <frames>
<b>Parameters</b>	<frames> Number of frames per packet. Numeric value in the range: 8 to 32
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the number of CES frames per packet.
<b>Command</b>	Capture Ces Service FramesPerPkt
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returns the number of frames per packet from within the range listed above



### Capture Ces Service BytesPerPkt

Set	
<b>Description</b> 	Sets the number of CES service bytes per packet.
<b>Command</b>	Capture Ces Service BytesPerPkt <bytes>
<b>Parameters</b>	<bytes> Number of service bytes per packet. Integer value in the range: 64 (256 for T3 and E3) to 10000
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the number of CES service bytes per packet.
<b>Command</b>	Capture Ces Service BytesPerPkt
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returns the number of service bytes per packet from within the range listed above



### Capture Ces Service Rate

Set	
<b>Description</b> 	Sets the service rate for user defined CES services.
<b>Command</b>	Capture Ces Service Rate <rate>
<b>Parameters</b>	<rate> CES Service rate (bits/sec). Integer value in the range: 50 to 5000000
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the service rate for user defined CES services.
<b>Command</b>	Capture Ces Service Rate
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returns the CES Service rate (bits/sec). Numeric value defined in the range listed above



### Capture Ces Service Nominallpg

Set	
<b>Description</b> 	Sets the nominal inter-packet gap for user defined CES services.
<b>Command</b>	Capture Ces Service Nominallpg <ipg>
<b>Parameters</b>	<ipg> CES IPG (in ms). Numeric value in the range: 0.1 to 10000, resolution 0.000001
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the nominal inter-packet gap for user defined CES services.
<b>Command</b>	Capture Ces Service Nominallpg
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Returns the CES IPG (ms). Numeric value in the range listed above



### Capture Ces Alarms DetectL

Set	
<b>Description</b> 	Specifies whether the CES Local TDM Failure Alarm is to be analysed for events during capture.
<b>Command</b>	Capture Ces Alarms DetectL <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the status as to whether the CES Local TDM Failure Alarm analysis is enabled.
<b>Command</b>	Capture Ces Alarms DetectL
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Boolean value is returned with TRUE indicating that analysis is enabled.



### Capture Ces Alarms DetectR

Set	
<b>Description</b> 	Specifies whether the CES Remote Receiver Alarm is to be analysed for events during capture.
<b>Command</b>	Capture Ces Alarms DetectR <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the status as to whether the CES Remote Receiver Alarm analysis is enabled.
<b>Command</b>	Capture Ces Alarms DetectR
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Boolean value is returned with TRUE indicating that analysis is enabled.



### Capture Ces Alarms DetectM

Set	
<b>Description</b> 	Specifies whether the CES Modifier Alarm is to be analysed for events during capture.
<b>Command</b>	Capture Ces Alarms DetectM <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Must be in the CES Operating Mode.
Get	
<b>Description</b> 	Queries the status as to whether the CES Modifier Alarm analysis is enabled.
<b>Command</b>	Capture Ces Alarms DetectM
<b>Prerequisites</b>	Must be in the CES Operating Mode.
<b>Result</b>	Boolean value is returned with TRUE indicating that analysis is enabled.



### Capture Ntp HeaderOffset

Set	
<b>Description</b> 	Defines the location in the packet of the NTP header.
<b>Command</b>	Capture Ntp HeaderOffset <offset>
<b>Parameters</b>	<offset> The NTP header offset (integer). The first byte in the packet is at offset position 1. Integer value in the range: 1 to 125
<b>Prerequisites</b>	Instrument must be in the NTP Operating Mode.
Get	
<b>Description</b> 	Queries the location in the packet of the NTP header.
<b>Command</b>	Capture Ntp HeaderOffset
<b>Prerequisites</b>	Instrument must be in the NTP Operating Mode.
<b>Result</b>	Outputs the NTP header offset (integer). The first byte in the packet is at offset position 1. Numeric value in the range listed above



### Capture Oam HeaderOffset

Set	
<b>Description</b> 	Defines the location in the packet of the OAM header.
<b>Command</b>	Capture Oam HeaderOffset <offset>
<b>Parameters</b>	<offset> The OAM header offset (integer). The first byte in the packet is at offset position 1. Integer value in the range: 1 to 55
Get	
<b>Description</b> 	Queries the location in the packet of the OAM header.
<b>Command</b>	Capture Oam HeaderOffset
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Outputs the OAM header offset (integer). The first byte in the packet is at offset position 1. Numeric value in the range listed above

### Capture Oam SvidPresent



Set	
<b>Description</b> 	Defines whether or not subsequent captured OAM messages will contain an S-VID value. The presence of an S-VID value will affect how captured messages are decoded.
<b>Command</b>	Capture Oam SvidPresent <present>
<b>Parameters</b>	<present> When TRUE, captured OAM messages will have an S-VID value
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether or not captured OAM messages contain an S-VID value. The presence of an S-VID value will affect how captured messages are decoded.
<b>Command</b>	Capture Oam SvidPresent
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates captured OAM messages have an S-VID value.

### Capture Oam CvidPresent



Set	
<b>Description</b> 	Defines whether or not subsequent captured OAM messages will contain a C-VID value. The presence of a C-VID value will affect how captured messages are decoded.
<b>Command</b>	Capture Oam CvidPresent <present>
<b>Parameters</b>	<present> TRUE commands the instrument to ensure captured OAM messages will have a C-VID value
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether or not captured OAM messages contain a C-VID value. The presence of a C-VID value will affect how captured messages are decoded.
<b>Command</b>	Capture Oam CvidPresent
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates captured OAM messages have a C-VID value.





### Capture Oam Errors DetectAis

Set	
<b>Description</b> 	Determines whether AIS messages are to be detected. If AIS error detection is enabled then AIS messages are colour coded red in the timing capture table.
<b>Command</b>	Capture Oam Errors DetectAis <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether AIS message are to be detected. If AIS error detection is enabled then AIS messages are colour coded red in the timing capture table.
<b>Command</b>	Capture Oam Errors DetectAis
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of AIS messages.



### Capture Oam Errors DetectRdi

Set	
<b>Description</b> 	Determines whether RDI messages are to be detected. If RDI error detection is enabled then CCM messages containing an RDI value set to 1 are colour coded red in the timing capture table.
<b>Command</b>	Capture Oam Errors DetectRdi <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether RDI messages are to be detected. If RDI error detection is enabled then CCM messages containing an RDI value set to 1 are colour coded red in the timing capture table.
<b>Command</b>	Capture Oam Errors DetectRdi
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of RDI messages.



## Capture Oam Errors DetectSequenceNumber

Set	
<b>Description</b> 	<p>Controls the detection of Sequence Number (or Transaction ID) anomalies in CCM, LBM, LBR, LTM, LTR, and TST messages.</p> <p>If the Sequence Number (or Transaction ID) error detection is enabled then messages containing Sequence Number (or Transaction ID) anomalies are colour coded red in the timing capture table.</p> <p>For CCM, LBM, LTM, and TST messages, the table entry will be colour coded red if the Sequence Number (or Transaction ID) value is out of sequence with the Sequence Number (or Transaction ID) value contained in the previous message of the same type that is received from the same source location.</p> <p>For LBR messages, the table entry will be colour coded red under the following circumstances:-</p> <ol style="list-style-type: none"> <li>1. If the Sequence Number (or Transaction ID) value is out of sequence with the Sequence Number (or Transaction ID) value contained in the previous LBR message received from the same source location.</li> <li>2. If the Sequence Number (or Transaction ID) value is out of sequence with the Sequence Number (or Transaction ID) value contained in the previous corresponding LBM message.</li> </ol> <p>For LTR messages, the table entry will be colour coded red under the following circumstances:-</p> <ol style="list-style-type: none"> <li>1. If the Sequence Number (or Transaction ID) value is out of sequence with the Sequence Number (or Transaction ID) value contained in the previous LTR message received from the same source location.</li> <li>2. If the Sequence Number (or Transaction ID) value is out of sequence with the Sequence Number (or Transaction ID) value contained in the previous corresponding LTM message.</li> </ol>
<b>Command</b>	Capture Oam Errors DetectSequenceNumber <i>&lt;enable&gt;</i>
<b>Parameters</b>	<i>&lt;enable&gt;</i> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	<p>Queries whether the detection of Sequence Number (or Transaction ID) anomalies in CCM, LBM, LBR, LTM, LTR, and TST messages is enabled.</p>
<b>Command</b>	Capture Oam Errors DetectSequenceNumber
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of anomalies.



### Capture Oam Errors DetectTxFCf

Set	
<b>Description</b> 	Determines whether TxFCf errors in LMR messages are to be detected. If TxFCf error detection is enabled then LMR messages will be colour coded red in the timing capture table if the TxFCf value does not match the TxFCf value contained in the previous corresponding LMR message.
<b>Command</b>	Capture Oam Errors DetectTxFCf <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether TxFCf errors in LMR messages are to be detected.
<b>Command</b>	Capture Oam Errors DetectTxFCf
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of errors.



### Capture Oam Errors DetectRxFCf

Set	
<b>Description</b> 	Determines whether RxFCf errors in LMR messages are to be detected. If RxFCf error detection is enabled then LMR messages will be colour coded red in the timing capture table if the RxFCf value does not match the RxFCf value contained in the previous corresponding LMR message.
<b>Command</b>	Capture Oam Errors DetectRxFCf <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether RxFCf errors in LMR messages are to be detected.
<b>Command</b>	Capture Oam Errors DetectRxFCf
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of errors.



### Capture Oam Errors DetectRxFCb

Set	
<b>Description</b> 	Determines whether RxFCb errors in CMM messages are to be detected. If RxFCb error detection is enabled then CMM messages will be colour coded red in the timing capture table if the RxFCb value does not match the RxFCb value contained in the previous corresponding LMR message.
<b>Command</b>	Capture Oam Errors DetectRxFCb <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether RxFCb errors in LMR messages are to be detected.
<b>Command</b>	Capture Oam Errors DetectRxFCb
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of errors.


### Capture Oam Errors DetectTxTimeStampf

Set	
<b>Description</b> 	Determines whether TxTimeStampf errors in DMR messages are to be detected. If TxTimeStampf error detection is enabled then DMR messages will be colour coded red in the timing capture table if the TxTimeStampf value does not match the TxTimeStampf value contained in the previous corresponding DMM message.
<b>Command</b>	Capture Oam Errors DetectTxTimeStampf <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether TxTimeStampf errors in DMM messages are to be detected.
<b>Command</b>	Capture Oam Errors DetectTxTimeStampf
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of errors.


### Capture Oam Errors DetectResponseTime

Set	
<b>Description</b> 	Determines whether Response Time warnings in LBR, LTR, LMR, and DMR messages are to be detected. If Response Time warning detection is enabled then messages will be colour coded yellow in the timing capture table if the response time has not been able to be calculated due to the corresponding transmit message not being captured.
<b>Command</b>	Capture Oam Errors DetectResponseTime <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
Get	
<b>Description</b> 	Queries whether Response Time warnings in LBR, LTR, LMR, and DMR messages are to be detected.
<b>Command</b>	Capture Oam Errors DetectResponseTime
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.
<b>Result</b>	Return value is a Boolean value where TRUE indicates detection of errors.



### Capture Oam Errors SelectAll

Set	
<b>Description</b> 	Turns on detection for all the OAM error types.
<b>Command</b>	Capture Oam Errors SelectAll
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.



### Capture Oam Errors ClearAll

Set	
<b>Description</b> 	Turns off detection for all the OAM error types.
<b>Command</b>	Capture Oam Errors ClearAll
<b>Prerequisites</b>	Instrument must be in the OAM Operating Mode.



### Capture Ptp ClockMode

Set	
<b>Description</b> 	Determines the PTP Clock mode as either 1 step or 2 step.
<b>Command</b>	Capture Ptp ClockMode <mode>
<b>Parameters</b>	<mode> 1_STEP, 2_STEP
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the PTP Clock mode.
<b>Command</b>	Capture Ptp ClockMode
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	Return text will be one of the values listed above



### Capture Ptp IncludeCorrectionField

Set	
<b>Description</b> 	Determines whether the PTP CorrectionField is to be used in delay calculations.
<b>Command</b>	Capture Ptp IncludeCorrectionField <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries whether the PTP CorrectionField is used in delay calculations.
<b>Command</b>	Capture Ptp IncludeCorrectionField
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	TRUE if PTP CorrectionField is used in delay calculations, FALSE otherwise.



### Capture Ptp PacketRate

Set	
<b>Description</b> 	Determines the nominal PTP Packet Rate.
<b>Command</b>	Capture Ptp PacketRate <rate>
<b>Parameters</b>	<rate> The nominal PTP Packet Rate (packets/sec). An integer in the range: 1 to 2000000
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the nominal PTP Packet Rate.
<b>Command</b>	Capture Ptp PacketRate
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	Return text will be in the range given above



### Capture Ptp WatPacketRate

Set	
<b>Description</b> 	Determines the PTP Packet Rate for a PDV file in the CAT.
<b>Command</b>	Capture Ptp WatPacketRate <rate>
<b>Parameters</b>	<rate> The nominal PTP Packet Rate (packets/sec). An integer in the range: 1 to 2000000
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the PTP Packet Rate for a PDV file in the CAT.
<b>Command</b>	Capture Ptp WatPacketRate
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	Return text will be in the range listed above



### Capture Ptp AlignToTopOfSecond

Set	
<b>Description</b> 	Determines whether the PTP capture waits for the next 1pps reference pulse before capturing packets.
<b>Command</b>	Capture Ptp AlignToTopOfSecond <enable>
<b>Parameters</b>	<enable> <b>Paragon-X:</b> TRUE, FALSE <b>Paragon-100G, Paragon-neo:</b> TRUE
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries whether the PTP capture waits for the next 1pps reference pulse before capturing packets.
<b>Command</b>	Capture Ptp AlignToTopOfSecond
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	TRUE if PTP capture is set to wait for the next 1pps reference pulse before capturing packets.



### Capture Ptp DUTCableCalibration

Set	
<b>Description</b> 	Determines the Ethernet cable delay between the DUT and Paragon. Values of 5.1ns per metre for electrical cable and 4.9ns per metre for optical cable are recommended (the value should be rounded to the nearest ns).
<b>Command</b>	Capture Ptp DUTCableCalibration <delay>
<b>Parameters</b>	<delay> The cable delay in integer nanoseconds: 0 to 5000
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the Ethernet cable delay between the DUT and Paragon.
<b>Command</b>	Capture Ptp DUTCableCalibration
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	Return text will be in the range listed above



### Capture Ptp UseMeasuredLinkDelay #<port>

Set	
<b>Description</b> 	For devices which timestamp internally, enabling this setting causes the CAT to calculate the link delay using peer delay messaging and so removes the requirement to know the delay between the Paragon and the DUT internal timestamp point.
<b>Command</b>	Capture Ptp UseMeasuredLinkDelay #<port> <enable>
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2) <enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have the MSE option fitted. Thru Mode Time Error measurement must be enabled.
Get	
<b>Description</b> 	Queries whether the CAT will use the measured link delay in time error calculations
<b>Command</b>	Capture Ptp UseMeasuredLinkDelay #<port>
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2)
<b>Prerequisites</b>	Instrument must have MSE option fitted. Thru Mode Time Error measurement must be enabled.
<b>Result</b>	TRUE or FALSE



### Capture Ptp DUTCALibration #<port>

Set	
<b>Description</b> 	Determines the Ethernet cable delay between the DUT and the specified Paragon port. Values of 5.1ns per metre for electrical cable and 4.9ns per metre for optical cable are recommended (the value should be rounded to the nearest ns).
<b>Command</b>	Capture Ptp DUTCALibration #port <delay>
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2) <delay> The cable delay in integer nanoseconds: 0 to 5000
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode. Thru Mode Time Error measurement must be enabled. Use Measured Link Delay must be off for the specified port
Get	
<b>Description</b> 	Queries the Ethernet cable delay between the DUT and the specified Paragon port.
<b>Command</b>	Capture Ptp DUTCALibration #<port>
<b>Parameters</b>	<port> The Ethernet port: 0 (Port 1) or 1 (Port 2)
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode. Thru Mode Time Error measurement must be enabled Use Measured Link Delay must be off for the specified port
<b>Result</b>	Return text will be in the range listed above



### Capture Ptp OnePpsRefCableCalibration

Set	
<b>Description</b> 	Determines the cable delay from the 1pps Reference source (e.g. GPS) into Paragon. If the PTP master does not compensate for 1pps Reference input cable delay then specify the Paragon input delay minus the PTP master input delay. A value of 5.1 ns per metre of cable is recommended (rounded to the nearest ns).
<b>Command</b>	Capture Ptp OnePpsRefCableCalibration <delay>
<b>Parameters</b>	<delay> The cable delay in integer nanoseconds: -5000 to 5000
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the current cable delay value as set for the 1pps Reference source (e.g. GPS) into Paragon.
<b>Command</b>	Capture Ptp OnePpsRefCableCalibration
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	Return text will be in the range listed above

### Capture Ptp ThruModeRevSyncTimeError



Set	
<b>Description</b> 	Enables the Thru Mode End Station Reverse Sync Time Error (802.1AS only) measurement.
<b>Command</b>	Capture Ptp ThruModeRevSyncTimeError <enable>
<b>Parameters</b>	<enable> TRUE to enable measurement, otherwise FALSE
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries whether the Thru Mode End Station Reverse Sync Time Error (802.1AS only) measurement is enabled.
<b>Command</b>	Capture Ptp ThruModeRevSyncTimeError
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	TRUE if the measurement is enabled, FALSE otherwise.

### Capture Esmc #<port> EnableMonitoring



Set	
<b>Description</b> 	Determines whether ESMC messages are to be captured on a specified port.
<b>Command</b>	Capture Esmc #<port> EnableMonitoring <enable>
<b>Parameters</b>	<port> 0 (Port 1), 1 (Port 2) <enable> <b>Paragon-X:</b> TRUE to enable ESMC capture, FALSE to disable <b>Paragon-100G, Paragon-neo:</b> TRUE
Get	
<b>Description</b> 	Queries whether ESMC message capture is enabled for a specified port.
<b>Command</b>	Capture Esmc #<port> EnableMonitoring
<b>Parameters</b>	<port> See above
<b>Result</b>	TRUE if the capture of ESMC messages on the specified port is enabled, FALSE otherwise.









### Capture Esmc #<port> TxMonVlanEncapsulation

Set	
<b>Description</b> 	Determines whether the ESMC message that is to be transmitted is to contain a VLAN tag.
<b>Command</b>	Capture Esmc #<port> TxMonVlanEncapsulation <enable>
<b>Parameters</b>	<port> 0 (Port 1), 1 (Port 2) <enable> TRUE to enable VLAN tags, FALSE to disable
<b>Prerequisites</b>	This command is only available in SyncE operating mode.
Get	
<b>Description</b> 	Queries whether the transmitted ESMC message that is to be transmitted is to contain a VLAN tag.
<b>Command</b>	Capture Esmc #<port> TxMonVlanEncapsulation
<b>Parameters</b>	<port> See above
<b>Prerequisites</b>	This command is only available in SyncE operating mode.
<b>Result</b>	TRUE if the ESMC message that is to be transmitted is to contain a VLAN tag, FALSE otherwise.



### Capture Esmc #<port> TxMonVlanId

Set	
<b>Description</b> 	Determines the VLAN tag within the transmitted ESMC message that is to be monitored.
<b>Command</b>	Capture Esmc #<port> TxMonVlanId <vlanId>
<b>Parameters</b>	<port> 0 (Port 1), 1 (Port 2) <vlanId> The VLAN ID contained in the VLAN tag of the transmitted ESMC message that is to be monitored. An integer value in the range: 0 to 4095
<b>Prerequisites</b>	This command is only available in SyncE operating mode.
Get	
<b>Description</b> 	Queries the VLAN tag transmitted within the ESMC message on the specified port.
<b>Command</b>	Capture Esmc #<port> TxMonVlanId
<b>Parameters</b>	<port> See above
<b>Prerequisites</b>	This command is only available in SyncE operating mode.
<b>Result</b>	The monitored VLAN tag transmitted within the ESMC message. Integer value in range listed above



### Capture OnePps AccuracyCaptEnable

Set	
<b>Description</b>   	Enables the 1pps absolute accuracy measurement
<b>Command</b>	Capture OnePps AccuracyCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable the measurement; FALSE: Disable the measurement
Get	
<b>Description</b>   	Queries whether the 1pps absolute accuracy measurement is enabled
<b>Command</b>	Capture OnePps AccuracyCaptEnable
<b>Result</b>	Return text will be 1 if the measurement is enabled, 0 otherwise.



### Capture OnePps WanderCaptEnable

Set	
<b>Description</b> 	Enables the 1pps relative accuracy measurements
<b>Command</b>	Capture OnePps WanderCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable the measurement, FALSE: Disable the measurement
Get	
<b>Description</b> 	Queries whether the 1pps relative accuracy measurement is enabled.
<b>Command</b>	Capture OnePps WanderCaptEnable
<b>Result</b>	Return text will be 1 if the measurement is enabled, 0 otherwise.



### Capture OnePps AccuracyLimit

Set	
<b>Description</b> 	Determines the 1pps accuracy limit.
<b>Command</b>	Capture OnePps AccuracyLimit <limit>
<b>Parameters</b>	<limit> The value of the acceptable limit in $\mu$ s. The range is: 0.005 to 50, resolution 0.005
Get	
<b>Description</b> 	Queries the 1pps accuracy limit.
<b>Command</b>	Capture OnePps AccuracyLimit
<b>Result</b>	The value of the acceptable limit in microseconds in the range listed above



### Capture OnePps AccuracyLimitEnable

Set	
<b>Description</b> 	Enables 1pps accuracy limit check. The limit used is set by the <b>Capture OnePps AccuracyLimit</b> command.
<b>Command</b>	Capture OnePps AccuracyLimitEnable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the 1pps accuracy limit check status.
<b>Command</b>	Capture OnePps AccuracyLimitEnable
<b>Result</b>	TRUE if the 1pps accuracy limit check is enabled, FALSE otherwise.



### Capture OnePps AccuracyRefCalibration

Set	
<b>Description</b> 	Determines the cable delay from the 1pps Reference source into Paragon. If the PTP master does not compensate for 1pps Reference input cable delay then specify the Paragon input delay minus the PTP master input delay. A value of 5.1 ns per metre of cable is recommended (rounded to the nearest ns).
<b>Command</b>	Capture OnePps AccuracyRefCalibration <value>
<b>Parameters</b>	<value> The value of the acceptable limit (in ns). The range is: -5000 to 5000, resolution 1ns
Get	
<b>Description</b> 	Queries the current value for the cable delay from the 1pps Reference source into Paragon.
<b>Command</b>	Capture OnePps AccuracyRefCalibration
<b>Result</b>	The value of the cable delay (in ns). The range is listed above

### Capture OnePps AccuracyMeasCalibration



Set	
<b>Description</b> 	Determines the cable delay from the 1pps Measurement source into Paragon. A value of 5.1ns per metre of cable is recommended.
<b>Command</b>	Capture OnePps AccuracyMeasCalibration <value>
<b>Parameters</b>	<value> The value of the acceptable limit in ns. The range is: -5000 to 5000, resolution 1ns
Get	
<b>Description</b> 	Queries the current value for the cable delay from the 1pps Measurement source into Paragon.
<b>Command</b>	Capture OnePps AccuracyMeasCalibration
<b>Result</b>	The value of the cable delay in nanoseconds. The range is listed above

### Capture Pdh T1WanderCaptEnable

Set	
<b>Description</b> 	Enables a T1 wander measurement
<b>Command</b>	Capture Pdh T1WanderCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable the measurement; FALSE: Disable the measurement
Get	
<b>Description</b> 	Queries whether the T1 wander measurement is enabled
<b>Command</b>	Capture Pdh T1WanderCaptEnable
<b>Result</b>	TRUE if the measurement is enabled, FALSE otherwise.



---

### Capture Pdh E1WanderCaptEnable

Set	
<b>Description</b> 	Enables an E1 wander measurement
<b>Command</b>	Capture Pdh E1WanderCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable the measurement; FALSE: Disable the measurement
Get	
<b>Description</b> 	Queries whether the E1 wander measurement is enabled
<b>Command</b>	Capture Pdh E1WanderCaptEnable
<b>Result</b>	TRUE if the measurement is enabled, FALSE otherwise.



---

### Capture Pdh M2WanderCaptEnable



Set	
<b>Description</b> 	Enables a 2.048MHz wander measurement
<b>Command</b>	Capture Pdh M2WanderCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable the measurement; FALSE: Disable the measurement
Get	
<b>Description</b> 	Queries whether the 2.048 MHz wander capture has started.
<b>Command</b>	Capture Pdh M2WanderCaptEnable
<b>Result</b>	TRUE if the measurement is enabled, FALSE otherwise

---



### Capture Pdh SamplePeriod

Set	
<b>Description</b> 	Sets the PDH sample period.
<b>Command</b>	Capture Pdh SamplePeriod <period>
<b>Parameters</b>	<period> 10_MSECS, 20_MSECS, 33.33_MSECS, 100_MSECS, 500_MSECS, 1_SEC, 10_SECS
Get	
<b>Description</b> 	Queries the PDH sample period.
<b>Command</b>	Capture Pdh SamplePeriod
<b>Result</b>	Returned value is one of those listed above



### Capture ToD ToDCaptEnable

Set	
<b>Description</b> 	Enables Time of Day (ToD) capture.
<b>Command</b>	Capture ToD ToDCaptEnable <enable>
<b>Parameters</b>	<enable> TRUE: Enable ToD capture; FALSE: Disable ToD capture
<b>Prerequisites</b>	ToD option must be enabled.
Get	
<b>Description</b> 	Queries whether the ToD capture has started.
<b>Command</b>	Capture ToD ToDCaptEnable
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	TRUE if enabled, FALSE otherwise



### Capture ToD RawCaptMsgFilterEnable

Set	
<b>Description</b> 	Enables raw Time Of Day message filter.
<b>Command</b>	Capture ToD RawCaptMsgFilterEnable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	ToD option must be enabled.
Get	
<b>Description</b> 	Queries whether the raw Time Of Day message filter is enabled.
<b>Command</b>	Capture ToD RawCaptMsgFilterEnable
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	TRUE if the filter is enabled, FALSE otherwise.



### Capture ToD RawCaptDisplayFormatEnable

Set	
<b>Description</b> 	Enables raw Time Of Day display format. If enabled, the received bytes are decoded and displayed with the relevant ToD field names.
<b>Command</b>	Capture ToD RawCaptDisplayFormatEnable <enable>
<b>Parameters</b>	<enable> TRUE: Decode; FALSE: Do not decode
<b>Prerequisites</b>	ToD option must be enabled.
Get	
<b>Description</b> 	Queries whether the raw Time Of Day display format is enabled.
<b>Command</b>	Capture ToD RawCaptDisplayFormatEnable
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	TRUE if the decoded format is enabled, FALSE for raw byte display



### Capture ToD MsgFilter

Set	
<b>Description</b> 	Sets the Time Of Day message filter to use.
<b>Command</b>	Capture ToD MsgFilter <filter>
<b>Parameters</b>	<filter> Type of ToD message filter to be used: CCSA, CISCO, NTP, NMEA, G8271
<b>Prerequisites</b>	ToD option must be enabled.
Get	
<b>Description</b> 	Queires the current Time Of Day filter.
<b>Command</b>	Capture ToD MsgFilter
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	One of the ToD formats listed above



### Capture ToD NMEAMsgType

Set	
<b>Description</b> 	Selects the Time Of Day NMEA message filter.
<b>Command</b>	Capture ToD NMEAMsgType <type>
<b>Parameters</b>	<type> The type of supported NMEA message: GPRMC, GPZDA
<b>Prerequisites</b>	ToD option must be enabled. <i>Capture ToD MsgFilter</i> must be set to NMEA.
Get	
<b>Description</b> 	Queries the current Time Of Day NMEA message filter selection.
<b>Command</b>	Capture ToD NMEAMsgType
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	Return text will be one of those listed above



### Capture ToD CCSAMsgType

Set	
<b>Description</b> 	Selects the Time Of Day CCSA message filter.
<b>Command</b>	Capture ToD CCSAMsgType <type>
<b>Parameters</b>	<type> The type of CCSA message on which to filter: INFORMATION, EVENT, INFOANDEVENT
<b>Prerequisites</b>	ToD option must be enabled. <i>Capture ToD MsgFilter</i> must be set to CCSA.
Get	
<b>Description</b> 	Queries the current Time Of Day CCSA message filter selection.
<b>Command</b>	Capture ToD CCSAMsgType
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	Return text will be one of the values listed above




### Capture ToD G2871MsgType

Set	
<b>Description</b> 	Selects the Time Of Day G8271 message filter.
<b>Command</b>	Capture ToD G8271MsgType <type>
<b>Parameters</b>	<type> The type of G.8271 message on which to filter: ALL, EVENT, ANNOUNCE, GNSS
<b>Prerequisites</b>	ToD option must be enabled. Capture ToD MsgFilter must be set to G8271.
Get	
<b>Description</b> 	Queries the current Time Of Day CCSA message filter.
<b>Command</b>	Capture ToD CCSAMsgType
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	Return text will be one of the values listed above

### Capture ToD Validate1ppsEnable

Set	
<b>Description</b> 	Enables Time of Day validation with 1pps.
<b>Command</b>	Capture ToD Validate1ppsEnable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	ToD option must be enabled.
Get	
<b>Description</b> 	Queries whether Time Of Day is being validated with 1PPS.
<b>Command</b>	Capture ToD Validate1ppsEnable
<b>Prerequisites</b>	ToD option must be enabled.
<b>Result</b>	TRUE if Time of Day is validated with 1PPS, FALSE otherwise.

### Capture Active


Get	
<b>Description</b>   	Queries whether a capture is active
<b>Command</b>	Capture Active
<b>Result</b>	TRUE if a capture is active, FALSE otherwise.

## Impair Commands

The commands in this section control the impairment activity. They do not configure the impairments to be performed.


---

### startimpairment

<b>Description</b> 	Starts applying impairments as configured in the settings
<b>Tcl</b>	startimpairment
<b>Python</b>	p.startimpairment()


---

### stopimpairment

<b>Description</b> 	Stops applying impairment
<b>Tcl</b>	stopimpairment
<b>Python</b>	p.stopimpairment()

---

### Impair ClearAll



Set	
<b>Description</b> 	Clears all the impairment as configured in the settings
<b>Command</b>	Impair ClearAll





## Packet Overwrite Commands

The commands in this section control the overwrite impairment via the provided flow.



### Impair Overwrite #<flow> ViewAs LinkEncap

Set	
<b>Description</b> 	Sets the link encapsulation protocols that will be used to display and access the packet overwrite bytes.
<b>Command</b>	Impair Overwrite #<flow> ViewAs LinkEncap <linkEncap>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document). <linkEncap> ETHERNET_II, IEEE_802.1Q, IEEE_802.1QINQ
Get	
<b>Description</b> 	Queries the link encapsulation protocol used to display and access the packet overwrite bytes.
<b>Command</b>	Impair Overwrite #<flow> ViewAs LinkEncap
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	The encapsulated protocol. The value will be one of the values listed above

### Impair Overwrite #<flow> ViewAs Service

Set	
<b>Description</b> 	Sets the service protocol stack that will be used to display and access the packet overwrite bytes.
<b>Command</b>	Impair Overwrite #<flow> ViewAs Service <stack>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <stack> All Operating Modes: RAW_BYTES, TEST_PDU, Not Available in Ethernet OAM or MPLS-TP OAM: ESMC_PDU Only Available in Ethernet OAM and MPLS-TP OAM: OAM_HEADER, OAM_CCM_PDU, OAM_LBM_PDU, OAM_LBR_PDU, OAM_LTM_PDU, OAM_LTR_PDU, OAM_AIS_PDU, OAM_LCK_PDU, OAM_TST_PDU, OAM_APS_PDU, OAM_R-APS_PDU, OAM_MCC_PDU, OAM_LMM_PDU, OAM_LMR_PDU, OAM_1DM_PDU, OAM_DMM_PDU, OAM_DMR_PDU, OAM_EXM_PDU OAM_EXR_PDU, OAM_VSM_PDU, OAM_VSR_PDU
<b>Prerequisites</b>	Options available depend on the Operating Mode.
Get	
<b>Description</b> 	Queries the service protocol stack used to display and access the packet overwrite bytes.
<b>Command</b>	Impair Overwrite #<flow> ViewAs Service
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be one of the stack values listed above

## Impair Overwrite #<flow> #<protocolFieldPath> Mask

Set	
<b>Description</b> 	Set the packet overwrite byte modifier mask for the specified protocol field in the current protocol stack context.
<b>Command</b>	Impair Overwrite #<flow> #<protocolFieldPath> Mask <mask>
<b>Parameters</b>	<p>&lt;flow&gt; The selected flow (see common flow section of the document)</p> <p>&lt;protocolField&gt; Specifies the protocol field. This is a dot separated string which represents the hierarchical path to the field e.g. "Ethernet II.Destination". The GUI display should be used to as a guide to constructing path strings.</p> <p>&lt;mask&gt; Specifies the byte modification mask to be applied to the protocol field. The mask is specified as string of binary or hex (whole) bytes (see below). The GUI display should be consulted to determine length.</p>
Get	
<b>Description</b> 	Queries the packet overwrite byte modifier mask for the specified protocol field in the current protocol stack context.
<b>Command</b>	Impair Overwrite #<flow> #<protocolFieldPath> Mask
<b>Parameters</b>	<p>&lt;flow&gt; The selected flow (see common flow section of the document)</p> <p>&lt;protocolField&gt; See above</p>
<b>Result</b>	The mask applied to the protocol field.

When <mask> = hh [hh ...] (hex mask)

When <mask> = bbbbbbbb [bbbbbbbb ...] (binary mask)

Each character in the mask specifies the modification type to be applied to the bit or nibble:

0 = Clear the bit or all bits in the nibble (to 0).

1 = Set the bit or all bits in the nibble (to 1).

2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.

- = Don't modify the bit/nibble, this is the default.

v = invert the bit/nibble.

Masks for protocol fields whose length is a non-integer multiple of bytes are rounded up to the nearest integer multiple; unused bits are don't cares.

### Examples:



Overwrite the Ethernet Destination field in flow 0

```
paragonset Impair Overwrite #0 "#Ethernet II.Destination" Mask "aa bb -v 00 12 cc"
```

Overwrite the ESMC SSM (quality level) code in flow 1


```
paragonset Impair Overwrite #1 "#ESMC PDU.ESMC QL TLV.SSM Code" Mask "----0001"
```

## Impair Overwrite #<flow> Enable

Set	
<b>Description</b> 	Enables packet overwrite for the specified flow.
<b>Command</b>	Impair Overwrite #<flow> Enable <enable>
<b>Parameters</b>	<p>&lt;flow&gt; The selected flow (see common flow section of the document)</p> <p>&lt;enable&gt; Enable (TRUE) or disable (FALSE) overwrite</p>
Get	
<b>Description</b> 	Queries the status for the packet overwrite impairment, for the specified flow.
<b>Command</b>	Impair Overwrite #<flow> Enable
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	TRUE if enabled, FALSE otherwise

---



### Impair Overwrite #<flow> Reset

Set	
<b>Description</b> 	Restores all packet overwrite byte modifiers to the default "no modification" state.
<b>Command</b>	Impair Overwrite #<flow> Reset
<b>Parameters</b>	<flow>            The selected flow (see common flow section of the document)



## Impairment Control Commands

The commands in this section control the enabling or disabling of the overwriting or delay impairments.




### Impair EnableOverwrite

Set	
<b>Description</b> 	Enables the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair EnableOverwrite <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Only applies to CES, SERVICES, SYNCE, ETH_OAM and MPLS_TP_OAM <i>OperatingModes</i>
Get	
<b>Description</b> 	Queries whether the Add Impairments and Delay function is enabled.
<b>Command</b>	Impair EnableOverwrite
<b>Result</b>	TRUE if impairment is enabled, FALSE otherwise.

### Impair DefineDelayPacketSize

Set	
<b>Description</b> 	When in replay mode, sets the Intrinsic delay through the instrument based on a predefined packet size.
<b>Command</b>	Impair DefineDelayPacketSize <packetsize>
<b>Parameters</b>	<packetsize> NORMAL, SMALL, JUMBO
Get	
<b>Description</b> 	Queries the packet size set in replay mode.
<b>Command</b>	Impair DefineDelayPacketSize
<b>Result</b>	One of the values listed above



### Impair Active

Get	
<b>Description</b>   	Queries whether any impairments are active
<b>Command</b>	Impair Active
<b>Result</b>	<b>Paragon-X, Paragon-neo:</b> TRUE if any impairments are active, FALSE otherwise. <b>Paragon-100G:</b> FALSE



## Corruption Commands

The commands in this section control the packet corruption impairments.



### Impair Corruption #<flow> ErrorEnable

Set	
<b>Description</b> 	Enables packet corruption in the Add Impairments and Delay function (Filtered Packets)
<b>Command</b>	Impair Corruption #<flow> ErrorEnable <enable>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the state of packet corruption in the Add Impairments and Delay function
<b>Command</b>	Impair Corruption #<flow> ErrorEnable
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	TRUE if the impairment is enabled, FALSE otherwise.



### Impair Corruption #<flow> ErrorType

Set	
<b>Description</b> 	Sets the type of packet corruption that will be applied to a specified <i>flow</i> when applying packet corruptions in the Add Impairments and Delay function (Filtered Packets)
<b>Command</b>	Impair Corruption #<flow> ErrorType <type>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <type> LOST, REPEATED, MISORDERED, ERRORED
Get	
<b>Description</b> 	Queries the type of the packet corruption set in the Add Impairments and Delay function
<b>Command</b>	Impair Corruption #<flow> ErrorType
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	One of the values listed above



### Impair Corruption #<flow> MisorderDepth

Set	
<b>Description</b> 	Determines the number of Misordered Packets that will be applied to a specified <i>flow</i> when applying Misordered Event errors within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Corruption #<flow> MisorderDepth <depth>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <depth> An Integer value for the number of misordered bytes in the range: 1 to 32
Get	
<b>Description</b> 	Queries the status of the Misordered Packets impairment feature within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Corruption #<flow> MisorderDepth
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Returned text will be an Integer value for the number of misordered bytes in the range listed above.



### Impair Corruption #<flow> Ces AlarmEnable

Set	
<b>Description</b> 	Enables the Alarm Injection feature within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmEnable <enable>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <enable> TRUE, FALSE
<b>Prerequisites</b>	This command is only available in CES operating mode.
Get	
<b>Description</b> 	Queries the Alarm Injection feature within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmEnable
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Returned text will TRUE if the impairment is enabled, FALSE otherwise.



### Impair Corruption #<flow> Ces AlarmRval

Set	
<b>Description</b> 	Determines the CES R type alarm bit to error when the Alarm Injection feature is active.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmRval <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> An Integer value for the alarm bit, in the range: 0 to 1
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
Get	
<b>Description</b> 	Queries the bit which has been configured as the CES R type alarm bit.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmRval
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
<b>Result</b>	Returned text will be an Integer value for the alarm bit. Value will be one of: 0 or 1



### Impair Corruption #<flow> Ces AlarmMval

Set	
<b>Description</b> 	Determines the CES M type alarm bit to error when the Alarm Injection feature is active.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmMval <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> The value for the alarm in the range: 00, 01, 10 or 11
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
Get	
<b>Description</b> 	Queries the bits which have been configured as the CES M type alarm bits.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmMval
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
<b>Result</b>	Returned text will be an Integer value for the alarm bits. Value will be one of those listed above



### Impair Corruption #<flow> Ces AlarmLval

Set	
<b>Description</b> 	Determines the CES L type alarm bit to error when the Alarm Injection feature is active.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmLval <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> An Integer value for the alarm bit, in the range: 0 or 1
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
Get	
<b>Description</b> 	Queries the bit which has been configured as the CES L type alarm bit.
<b>Command</b>	Impair Corruption #<flow> Ces AlarmLval
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	The Alarm Injection feature must be active for this setting to take effect.
<b>Result</b>	Returned text will be an Integer value for the alarm bit. Value will be one of: 0 or 1



### Impair Corruption #<flow> Oam AlarmEnable

Set	
<b>Description</b> 	Enables or disables OAM alarm generation.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmEnable <enable>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the status of the OAM alarm generation.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmEnable
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be Boolean. TRUE will indicate the alarm is enabled, FALSE otherwise.

### Impair Corruption #<flow> Oam AlarmPeriod

Set	
<b>Description</b> 	Determines the period of time that alarms will be generated on the outgoing signal for. This setting only applies to AIS and LCK alarms. RDI alarm generation will be continuous regardless of this setting.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmPeriod <period>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <period> 1_SEC, 1_MIN
Get	
<b>Description</b> 	Queries the period of time that the alarms are generated on for the outgoing signal.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmPeriod
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Returned text will be one of the values listed above

## Impair Corruption #<flow> Oam AlarmType

Set	
<b>Description</b> 	Determines the alarm type that is to be generated on the outgoing signal.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmType <type>
<b>Parameters</b>	<flow>        The selected flow (see common flow section of the document) <type>        AIS, LCK, RDI
Get	
<b>Description</b> 	Queries the alarm type configured for the outgoing signal.
<b>Command</b>	Impair Corruption #<flow> Oam AlarmType
<b>Parameters</b>	<flow>        The selected flow (see common flow section of the document)
<b>Result</b>	Returned text will be one of the values listed above

## Overview of "Impair Corruption #<flow> Distribution" sub-commands

These commands control the impairment injection distribution for all impairment commands under the **Impair Corruption #<flow>** and **Impair Overwrite #<flow>** groups.

Two components determine overall impairment distribution:

**Data signal based:** This is with respect to either the physical layer port flow or the logical filtered packets. Examples of this include erroring a percentage or ratio of incoming filtered packets. This component of the distribution is controlled by the following sub commands:

- Distribution Type
- Distribution BurstSize
- Distribution Ratio
- Distribution Percent

**Time based:** This component controls how above Data signal based component will be applied over time. This may be either continuously, for a specified 'one-shot' period, or a repeating on/off cycle. This component of the distribution is controlled by the following sub commands:

- Distribution Periodicity
- Distribution Duration
- Distribution RepeatInterval

The table below summarises the modes:





Sub-commands		GUI Graphic
Distribution Type <type>	Periodicity <type>	
SINGLE	CONTINUOUS	
SINGLE	DURATION	selection not permitted
SINGLE	REPEAT	
BURST	CONTINUOUS	
BURST	DURATION	selection not permitted
BURST	REPEAT	
CONSTANT	CONTINUOUS	
CONSTANT	DURATION	
CONSTANT	REPEAT	
RATIO, RATE, PERCENT	CONTINUOUS	
RATIO, RATE, PERCENT	DURATION	
RATIO, RATE, PERCENT	REPEAT	



### Impair Corruption #<flow> Distribution Type

Set	
<b>Description</b> 	Determines the "Data signal based" injection mode.
<b>Command</b>	Impair Corruption #<flow> Distribution Type <type>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <type> SINGLE, CONSTANT BURST: see <b>Impair Corruption #&lt;flow&gt; Distribution BurstSize</b> PERCENT: see <b>Impair Corruption #&lt;flow&gt; Distribution Percent</b> RATIO: see <b>Impair Corruption #&lt;flow&gt; Distribution Ratio</b> RATE: see <b>Impair Corruption #&lt;flow&gt; Distribution Rate</b> "DURATION" is also selectable although its use has been deprecated. The equivalent commands are: <b>Impair Corruption #&lt;flow&gt; Distribution Type CONSTANT</b> <b>Impair Corruption #&lt;flow&gt; Distribution Periodicity DURATION</b>
Get	
<b>Description</b> 	Queries the "Data signal based" injection mode.
<b>Command</b>	Impair Corruption #<flow> Distribution Type
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Returned text will be one of the values listed above



### Impair Corruption #<flow> Distribution BurstSize

Set	
<b>Description</b> 	Sets the burst size (in packets).
<b>Command</b>	Impair Corruption #<flow> Distribution BurstSize <burst>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <burst> An integer value to set the burst size in packets in the range: 1 to 10000
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "BURST"
Get	
<b>Description</b> 	Queries the current setting for burst size (in packets).
<b>Command</b>	Impair Corruption #<flow> Distribution BurstSize
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "BURST"
<b>Result</b>	An integer value for the burst size in packets, in the range listed above



### Impair Corruption #<flow> Distribution Ratio

Set	
<b>Description</b> 	Sets the ratio of packets to be impaired.
<b>Command</b>	Impair Corruption #<flow> Distribution Ratio <ratio>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <ratio> A numeric value to set the ratio in the range: 1E-7 to 9E-1. The mantissa has a range of 1 to 9; the exponent has a range of -7 to -1
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "RATIO"
Get	
<b>Description</b> 	Queries the ratio of packets to be impaired.
<b>Command</b>	Impair Corruption #<flow> Distribution Ratio
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "RATIO"
<b>Result</b>	Return text will be a numeric value for the ratio, in the range listed above



### Impair Corruption #<flow> Distribution Percent

Set	
<b>Description</b> 	Sets the percentage of packets to be impaired
<b>Command</b>	Impair Corruption #<flow> Distribution Percent <percent>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <percent> A numeric value to set the percentage in the range: 0.00001 to 99.99999, resolution 0.00001
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "PERCENT"
Get	
<b>Description</b> 	Queries the current setting for percentage of packets to be impaired.
<b>Command</b>	Impair Corruption #<flow> Distribution Percent
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "PERCENT"
<b>Result</b>	Return text will be a value for the percentage, in the range listed above



### Impair Corruption #<flow> Distribution Rate

Set	
<b>Description</b> 	Sets the symbol error rate to be impaired (sym/s)
<b>Command</b>	Impair Corruption #<flow> Distribution Rate <rate>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <rate> An integer value to set the rate in the range: 1 to 10000
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "RATE"
Get	
<b>Description</b> 	Queries the symbol error rate to be impaired.
<b>Command</b>	Impair Corruption #<flow> Distribution Rate
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Distribution Type</b> must be set to "RATE"
<b>Result</b>	The rate in the range listed above



### Impair Corruption #<flow> Distribution Periodicity

Set	
<b>Description</b> 	Sets the "time based" injection component mode.
<b>Command</b>	Impair Corruption #<flow> Distribution Periodicity <type>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <type> CONTINUOUS DURATION: see <b>Impair Corruption #&lt;flow&gt; Distribution Duration</b> REPEAT: see <b>Impair Corruption #&lt;flow&gt; Distribution RepeatInterval</b>
Get	
<b>Description</b> 	Queries the "time based" injection component mode.
<b>Command</b>	Impair Corruption #<flow> Distribution Periodicity
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	The period type. One of the values listed above



### Impair Corruption #<flow> Distribution Duration

Set	
<b>Description</b> 	Sets the duration in seconds during which the impairment will be applied
<b>Command</b>	Impair Corruption #<flow> Distribution Duration <duration>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <rate> A numeric value to set the rate: 0.1 to 60, resolution 0.1
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Periodicity</b> must be set to "DURATION" or "REPEAT"
Get	
<b>Description</b> 	Queries the duration in seconds for the impairment
<b>Command</b>	Impair Corruption #<flow> Distribution Duration
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Periodicity</b> must be set to "DURATION" or "REPEAT"
<b>Result</b>	Return text will be a value for the duration, in the range listed above



### Impair Corruption #<flow> Distribution RepeatInterval

Set	
<b>Description</b> 	Sets the duration of the repeat interval in seconds during which the impairment will be applied
<b>Command</b>	Impair Corruption #<flow> Distribution RepeatInterval <rate>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <rate> A numeric value for the repeat interval. It must always be set to a value higher than the current setting for <b>Impair Corruption #&lt;flow&gt; Distribution Duration</b> . It must be in the range 0.2 to 600, resolution 0.1
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Periodicity</b> must be set to "REPEAT"
Get	
<b>Description</b> 	Queries the repeat interval
<b>Command</b>	Impair Corruption #<flow> Distribution RepeatInterval
<b>Parameters</b>	<flow> See above
<b>Prerequisites</b>	<b>Impair Corruption #&lt;flow&gt; Periodicity</b> must be set to "REPEAT"
<b>Result</b>	The repeat interval in the range listed above

### Impair Corruption Physical #<port> Enable

Set	
<b>Description</b> 	Enables the physical layer impairment feature within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptionPhysical #<port> Enable <enable>
<b>Parameters</b>	<port> 0 (Port 1), 1 (Port 2) <enable> TRUE, FALSE
<b>Prerequisites</b>	<i>OperatingMode</i> must be one of: CES, PTP (not MSE), SERVICES, SYNCE
Get	
<b>Description</b> 	Queries whether the physical layer impairment feature within the Add Impairments and Delay function of the instrument is enabled.
<b>Command</b>	Impair CorruptionPhysical #<port> Enable
<b>Parameters</b>	<port> 0 (Port 1), 1 (Port 2)
<b>Result</b>	TRUE if the impairment is enabled, FALSE otherwise.

## Impair Corruption Physical #<port> Type

Set	
<b>Description</b> 	Specifies the physical Layer impairment type within the Add Impairments and Delay function of the instrument that will be applied to a specified <i>port</i> .
<b>Command</b>	Impair CorruptionPhysical #<port> Type <type>
<b>Parameters</b>	<port>        0 (Port 1), 1 (Port 2) <enable>     SYMBOL_ERRORS, LINK_FLAP
Get	
<b>Description</b> 	Queries whether the physical Layer impairment type within the Add Impairments and Delay function of the instrument that will be applied to a specified <i>port</i> .
<b>Command</b>	Impair CorruptionPhysical #<port> Type
<b>Parameters</b>	<port>        0 (Port 1), 1 (Port 2)
<b>Result</b>	One of the values listed above



## Impair Corruption Physical #<port> Distribution Commands

The "Distribution" sub-commands control the impairment specified by the Impair Corruption Physical #<port>Type commands. The operation of the commands in this group are identical to their equivalents documented under **Impair Corruption #<flow>**:

Command	See this command for documentation
Impair Corruption Physical #<port> Distribution Type	Impair Corruption #<flow> Distribution Type
Impair Corruption Physical #<port> Distribution BurstSize	Impair Corruption #<flow> Distribution BurstSize
Impair Corruption Physical #<port> Distribution Ratio	Impair Corruption #<flow> Distribution Ratio
Impair Corruption Physical #<port> Distribution Percent	Impair Corruption #<flow> Distribution Percent
Impair Corruption Physical #<port> Distribution Periodicity	Impair Corruption #<flow> Distribution Periodicity
Impair Corruption Physical #<port> Distribution Duration	Impair Corruption #<flow> Distribution Duration
Impair Corruption Physical #<port> Distribution RepeatInterval	Impair Corruption #<flow> Distribution RepeatInterval

## PTP Impairment Commands



### Impair Ptp #<flow> MaintainMessageOrder

Set	
<b>Description</b> 	Enables the Maintain Message Order feature when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Ptp #<flow> MaintainMessageOrder <enable>
<b>Parameters</b>	<flow> is the selected flow (see common flow section of the document). <enable> is a Boolean value to enable (TRUE) or disable (FALSE) the feature.
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument.
Get	
<b>Description</b> 	Queries the status of the Maintain Message Order feature when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Ptp #<flow> MaintainMessageOrder
<b>Parameters</b>	<flow> is the selected flow (see common flow section of the document).
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument.
<b>Result</b>	Return text will be a Boolean value. TRUE for when the impairment has been enabled, FALSE otherwise.

### Impair Ptp #<flow> ReplayMessage #<message>


This command has 2 modes of operation depending upon the profile type selected:

Profile Type	Valid Values	Quantity Selectable
User	SYNC DELAY_REQUEST PDELAY_REQ PDELAY_RESP FOLLOW_UP DELAY_RESP	If this profile type is active only 1 replay message type is active at any given time. Each time a message type is selected it replaces any previous selection
All other profiles	SYNC DELAY_REQUEST PDELAY_REQ PDELAY_RESP FOLLOW_UP DELAY_RESP PDELAY_RESP_FOLLOW_UP ANNOUNCE SIGNALLING MANAGEMENT	Multiple messages can be selected. Each selected message will be added to the set of active replay filters.

Set	
<b>Description</b> 	Specifies the PTP Message type to be used to replay against when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Ptp #<flow> ReplayMessage #<message> <enable>
<b>Parameters</b>	<flow> is the selected flow (see common flow section of the document). <message> is one of: SYNC DELAY_REQUEST PDELAY_REQ PDELAY_RESP FOLLOW_UP DELAY_RESP PDELAY_RESP_FOLLOW_UP ANNOUNCE SIGNALLING MANAGEMENT <enable> is a Boolean to enable or disable the impairment
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument
Get	
<b>Description</b> 	Returns whether replay is enabled for the specified flow and message type
<b>Command</b>	Impair Ptp #<flow> ReplayMessage #<message>
<b>Parameters</b>	<flow> is the selected flow (see common flow section of the document). <message> is one of the message types listed above
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument
<b>Result</b>	Return text will be a Boolean to indicate if the impairment is enabled.



---

### Impair Ptp ReplayMessage ClearAll



Set	
<b>Description</b> 	Clears the Ptp Replay Message type selections for all flows.
<b>Command</b>	Impair Ptp ReplayMessage ClearAll
<b>Prerequisites</b>	This command is only available in PTP Operating mode.

---



### Impair Ptp ReplayRateMatch Enable

Set	
<b>Description</b> 	Enables PTP Replay Rate Match feature to be used when replaying profiles within the Add Impairments and Delay function of the instrument
<b>Command</b>	Impair Ptp ReplayRateMatch Enable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument.
Get	
<b>Description</b> 	Queries the status of the PTP Replay Rate Match feature.
<b>Command</b>	Impair Ptp ReplayRateMatch Enable
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument.
<b>Result</b>	Return text will be a Boolean value. 1 for when the impairment has been enabled, 0 otherwise.

### Impair Ptp ReplayRateMatch #<flow> Rate

Set	
<b>Description</b> 	Determines the PTP Replay Rate Match Rate value for a specified <i>flow</i> when the Replay Rate Match feature is used for replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Ptp ReplayRateMatch #<flow> Rate <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> 1, 2, 4, 8, 16, 32, 64, 128 or 256
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument
Get	
<b>Description</b> 	Queries the PTP Replay Rate Match Rate value for a specified <i>flow</i> when the Replay Rate Match feature is used for replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair Ptp ReplayRateMatch #<flow> Rate
<b>Parameters</b>	<flow> As above
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument
<b>Result</b>	Returns the current PTP Replay Rate Match Rate. It will be one of the values listed above

### Impair Ptp ApplyDelayTo

Set	
<b>Description</b> 	Determines where the Ptp delay will be applied when replaying profiles against PTP traffic.
<b>Command</b>	Impair Ptp ApplyDelayTo <delaysrc>
<b>Parameters</b>	<delaysrc> PACKETSENDTIME, CORRECTIONFIELD, SENDTIMEANDCORRECTION
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument. CORRECTIONFIELD and SENDTIMEANDCORRECTION are only available when <b>Capture Ptp ClockMode</b> is set to 1_STEP
Get	
<b>Description</b> 	Queries where the Ptp delay will be applied against when replaying profiles against PTP traffic.
<b>Command</b>	Impair Ptp ApplyDelayTo
<b>Prerequisites</b>	This command is only available in 1588 mode of the instrument. CORRECTIONFIELD and SENDTIMEANDCORRECTION are only available when <b>Capture Ptp ClockMode</b> is set to 1_STEP
<b>Result</b>	The returned text will state where the PTP delay is set to be applied. It will be one of the values listed above




## ProfileReplay Commands

The commands in this section control the replay of a profile on a specified port.



---

### **importimpairmentdata <port>**

<b>Description</b> 	Loads the capture data for replay. It will load files specifically to replay delay profiles against defined message types on defined ports. The loaded file will be replayed against incoming traffic on the specified port. The <b>importimpairmentdata</b> command is equivalent to using the User Defined Import buttons in the Add Impairments and Delay / Delay / Port <x> -> Port <y> dialogue.
<b>Tcl</b>	importimpairmentdata <port> <filename>
<b>Python</b>	p.importimpairmentdata("<port>","<filename>")
<b>Parameters</b>	<port>                    1: (Port 1), 2: (Port 2) <filename>                Path to a capture file on the local PC's file system



---

### **Impair ProfileReplay ReplayMode**

<b>Set</b>	
<b>Description</b> 	Determines how the profile will be replayed.
<b>Command</b>	Impair ProfileReplay ReplayMode <mode>
<b>Parameters</b>	<mode>                    SINGLE, REPEAT
<b>Prerequisites</b>	<b>Impair Ptp ApplyDelayTo</b> is applicable to both Delay and Corruption profiles.
<b>Get</b>	
<b>Description</b> 	Queries how the profile will be replayed.
<b>Command</b>	Impair ProfileReplay ReplayMode
<b>Result</b>	The returned text will state how the profile will be replayed. It will be one of the values listed above


---

**Impair ProfileReplay #<port> ReplayOnFlow #<replayflow>**



Set	
<b>Description</b> 	Determines which filter flow will be used when replaying a profile. A filter flow will only be in context for replay for a specified Port direction if the flow in question has been set up using the "Filter..." remote control commands. If such a flow exists, then selection of that flow using this command will replace any previously selected flow used in SERVICES replay, i.e. only 1 filter flow can be selected per direction at a time when performing replays in SERVICES operating mode.
<b>Command</b>	Impair ProfileReplay #<port> ReplayOnFlow #<replayflow> <enable>
<b>Parameters</b>	<port>                   The port direction: 0 or 1 <replayflow>           The filter flow (see common flow: filter flow section of the document) and must be one of: 0,1,2,3,4,5,6,7 depending on instrument <enable>                Enable (TRUE) or disable (FALSE) the impairment
<b>Prerequisites</b>	This command is only available from within the Services Operating Mode.
Get	
<b>Description</b> 	Queries which filter flow will is configured for use when replaying a profile.
<b>Command</b>	Impair ProfileReplay #<port> ReplayOnFlow #<replayflow>
<b>Parameters</b>	<port>                   See above <replatFlow>           See above
<b>Prerequisites</b>	This command is only available from within the Services Operating Mode.
<b>Result</b>	The returned text will state whether the impairment is configured (TRUE) or disabled (FALSE).

---



**Impair ProfileReplay #<port> ReplayOnFlow ClearAll**

Set	
<b>Description</b> 	Clears the selected filter flow used when replaying profiles in a specified direction
<b>Command</b>	Impair ProfileReplay #<port> ReplayOnFlow ClearAll
<b>Parameters</b>	<port>                   The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1
<b>Prerequisites</b>	This command is only available from within the Services Operating Mode.



### Impair ProfileReplay #<port> Corruption Enable

Set	
<b>Description</b> 	Enables or Disables the packet corruption feature when replaying profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption Enable <enable>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <percentProb> TRUE, FALSE
<b>Prerequisites</b>	<b>Impair VariableDelay #&lt;flow&gt; Enable</b> must be enabled to activate corruptions
Get	
<b>Description</b> 	Queries the status of the packet corruption feature when replaying profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption Enable
<b>Parameters</b>	<port> See above
<b>Prerequisites</b>	<b>Impair VariableDelay #&lt;flow&gt; Enable</b> must be enabled to activate corruptions
<b>Result</b>	TRUE if impairment is enabled, FALSE otherwise.



### Impair ProfileReplay #<port> Corruption NumSamples

Set	
<b>Description</b> 	Sets the number of samples (packets) for generated corruption profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption NumSamples <samples>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <samples> An integer number of samples: 1 to 10000000
Get	
<b>Description</b> 	Queries the number of samples (packets) for generated corruption profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption NumSamples
<b>Parameters</b>	<port> See above
<b>Result</b>	The number of samples in the range listed above



### Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState DropProb

Set	
<b>Description</b> 	Sets the percentage probability for packet dropping whilst in the Low Loss State. This is applicable to generated G1050 Packet Loss (Gilbert-Elliott model) profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState DropProb <percentProb>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <percentProb> 0 to 100, resolution 0.0000001
Get	
<b>Description</b> 	Queries the percentage probability for packet dropping whilst in the Low Loss State.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState DropProb
<b>Parameters</b>	<port> See above
<b>Result</b>	The percent probability in the range listed above



### Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState TransProb

Set	
<b>Description</b> 	Sets the percentage probability for transition from the Low Loss State to the High Loss State. This is applicable to generated G1050 Packet Loss (Gilbert-Elliott model) profiles. This is the initial state set when generating a new profile.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState TransProb <percentProb>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <percentProb> 0 to 100, resolution 0.0000001
Get	
<b>Description</b> 	Queries the percentage probability for transition from the Low Loss State to the High Loss State.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState TransProb
<b>Parameters</b>	<port> See above
<b>Result</b>	The percent probability in the range listed above

### Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState DropProb


Set	
<b>Description</b> 	Sets the percentage probability for packet dropping whilst in the High Loss State. This is applicable to generated G1050 Packet Loss (Gilbert-Elliott model) profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState DropProb <percentProb>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <percentProb> 0 to 100, resolution 0.0000001
Get	
<b>Description</b> 	Queries the percentage probability for packet dropping whilst in the High Loss State.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState DropProb
<b>Parameters</b>	<port> See above
<b>Result</b>	The percent probability in the range listed above

### Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState TransProb

Set	
<b>Description</b> 	Sets the percentage probability for transition from the High Loss State to the Low Loss State. This is applicable to generated G1050 Packet Loss (Gilbert-Elliott model) profiles.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState TransProb <percentProb>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <percentProb> 0 to 100, resolution 0.0000001
Get	
<b>Description</b> 	Queries the percentage probability for transition from the High Loss State to the Low Loss State.
<b>Command</b>	Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState TransProb
<b>Parameters</b>	<port> See above
<b>Result</b>	The percent probability in the range listed above



---

### Impair ProfileReplay #<port> Corruption GenerateProfile

Set	
<b>Description</b> 	Generates a corruption profile using the configured properties.
<b>Command</b>	Impair ProfileReplay #<port> Corruption GenerateProfile
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1

---



### Impair ProfileReplay #<port> Corruption PktLossFromSequence

Set	
<b>Description</b> 	Enables the Dropped Packet feature to use gaps in traffic based on Sequence Errors detected in the profile.
<b>Command</b>	Impair ProfileReplay #<port> Corruption PktLossFromSequence <enable>
<b>Parameters</b>	<port> The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1 <enable> TRUE, FALSE
<b>Prerequisites</b>	<i>OperatingMode</i> must be CES
Get	
<b>Description</b> 	Queries the status of the Dropped Packet feature.
<b>Command</b>	Impair ProfileReplay #<port> Corruption PktLossFromSequence
<b>Parameters</b>	<port> See above
<b>Result</b>	Return text will be a Boolean. TRUE for when the impairment is enabled and FALSE otherwise.



## VariableDelay Commands

The commands in this section control the variable delay on a specified port or flow.



### Impair VariableDelay Mode

Set	
<b>Description</b> 	Determines the replay mode of the instrument as used in the Delay function.
<b>Command</b>	Impair VariableDelay Mode <mode>
<b>Parameters</b>	<mode> SINGLE, REPEAT
Get	
<b>Description</b> 	Queries the replay mode of the instrument as used in the Delay function.
<b>Command</b>	Impair VariableDelay Mode
<b>Result</b>	Returns the current mode



### Impair VariableDelay Type

Set	
<b>Description</b> 	Determines the replay type as used in the Delay function.
<b>Command</b>	Impair VariableDelay Type <type>
<b>Parameters</b>	<type> SINGLEFLOW: available only in CES Operating Mode RELATIVE: available only in the 1588 and Services Operating Modes MULTIFLOW: available only in the CES, 1588 and Services Operating Modes
Get	
<b>Description</b> 	Queries the replay type as used in the Delay function.
<b>Command</b>	Impair VariableDelay Type
<b>Result</b>	Return text will state what the type is. It will be one of the values listed above



### Impair VariableDelay ProfileType

Set	
<b>Description</b> 	Determines the replay type as used in the Delay function.
<b>Command</b>	Impair VariableDelay ProfileType <type>
<b>Parameters</b>	<type> Table, UserDefined, TestCase12 to TestCase17, NoBCsHighStability, NoBCsNormalStability, WithBCsHighStability, WithBCsNormalStability
Get	
<b>Description</b> 	Queries the replay type as used in the Delay function.
<b>Command</b>	Impair VariableDelay ProfileType
<b>Result</b>	Return text will state what the type is. It will be one of the values listed above



### Impair VariableDelay DelayFile

Set	
<b>Description</b> 	Specifies a delay file to be used when <i>ProfileType</i> is UserDefined.
<b>Command</b>	Impair VariableDelay DelayFile <direction> <filename>
<b>Parameters</b>	<direction> Forward, Reverse <filename> The delay file to be used. This must already exist in the instrument. The format of the path will be “/home/Calnex/Calnex100G/...”
Get	
<b>Description</b> 	Queries the delay file being used for the specified direction
<b>Command</b>	Impair VariableDelay DelayFile
<b>Result</b>	The name of the delay file

### Impair VariableDelay TrafficProfile



Set	
<b>Description</b> 	Specifies the traffic profile to be used when <i>ProfileType</i> is TestCase13 to 17.
<b>Command</b>	Impair VariableDelay TrafficProfile <trafficProfile>
<b>Parameters</b>	<trafficProfile> A, B, A_10, A_200, B_10, B_200, T50us, T75us, T150us, T1ks, T2ks, T4ks, T8ks, T16ks, T200s, T500s, T86400s
Get	
<b>Description</b> 	Queries the traffic profile
<b>Command</b>	Impair VariableDelay TrafficProfile
<b>Result</b>	The selected traffic profile

### Impair VariableDelay #<port> Enable

Set	
<b>Description</b> 	Enable the variable delay for the specified port.
<b>Command</b>	Impair VariableDelay #<port> Enable <enable>
<b>Parameters</b>	<port> The port direction and is one of: 0 or 1 <enable> Enable (TRUE) or disable (FALSE) the variable delay
Get	
<b>Description</b> 	Queries the variable delay for the specified port.
<b>Command</b>	Impair VariableDelay #<port> Enable
<b>Parameters</b>	<port> See above
<b>Result</b>	Return text will be a Boolean value. TRUE for when the impairment is enabled, FALSE otherwise.



---

**Impair VariableDelay #<port> MultiFlowRateServices**

Set	
<b>Description</b> 	Sets the Services packet rate to be used for Multi Flow replay.
<b>Command</b>	Impair VariableDelay #<port> MultiFlowRateServices <rate>
<b>Parameters</b>	<port>           The port direction and is one of: 0 or 1 <rate>           The lowest packet rate of all flows being replayed in the range: 1 to 1000
<b>Prerequisites</b>	Instrument must be in the Services Operating Mode.
Get	
<b>Description</b> 	Queries the Services packet rate to be used for Multi Flow replay.
<b>Command</b>	Impair VariableDelay #<port> MultiFlowRateServices
<b>Parameters</b>	<port>           See above
<b>Prerequisites</b>	Instrument must be in the Services Operating Mode.
<b>Result</b>	The lowest packet rate of all flows being replayed. Limits are in the range listed above

---



**Impair VariableDelay #<port> MultiFlowRate1588**

Set	
<b>Description</b> 	Sets the 1588 packet rate to be used for Multi Flow replay.
<b>Command</b>	Impair VariableDelay #<port> MultiFlowRate1588 <rate>
<b>Parameters</b>	<port>           The port direction and is one of: 0 or 1 <rate>           The lowest packet rate of all flows being replayed: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
Get	
<b>Description</b> 	Queries the 1588 packet rate to be used for Multi Flow replay.
<b>Command</b>	Impair VariableDelay #<port> MultiFlowRate1588
<b>Parameters</b>	<port>           The port direction and is one of: 0 or 1
<b>Prerequisites</b>	Instrument must be in the PTP Operating Mode.
<b>Result</b>	The lowest packet rate of all flows being replayed in the range listed above




---

**Impair VariableDelay #<port> ReplayOnFlow #<replayflow>**



Set	
<b>Description</b> 	Determines which filter flow will be used when replaying a delayed profile. A filter flow will only be in context for replay for a specified Port direction if the flow in question has been set up using the "Filter..." remote control commands. If such a flow exists, then selection of that flow using this command will replace any previously selected flow used in SERVICES replay, i.e. only 1 filter flow can be selected per direction at a time when performing replays in SERVICES operating mode.
<b>Command</b>	Impair VariableDelay #<port> ReplayOnFlow #<replayflow> <enable>
<b>Parameters</b>	<port>           The port direction and is one of: 0 or 1 <replayFlow>    The filter flow (see common flow: filter flow section of the document) and is one of: 0, 1, 2, 3 <enable>         Enables (TRUE) or disables (FALSE) the impairment
<b>Prerequisites</b>	Instrument must be in the Services Operating Mode.
Get	
<b>Description</b> 	Queries which filter flow will be used when replaying a delayed profile.
<b>Command</b>	Impair VariableDelay #<port> ReplayOnFlow #<replayflow>
<b>Parameters</b>	<port>           See above <replayFlow>    See above
<b>Prerequisites</b>	Instrument must be in the Services Operating Mode.
<b>Result</b>	Return text will be which filter flow is used when replaying a delayed profile in the range listed above

---

**Impair VariableDelay #<port> ReplayOnFlow ClearAll**

Set	
<b>Description</b> 	Clears the selected filter flow used when replaying profiles in a specified direction.
<b>Command</b>	Impair VariableDelay #<port> ReplayOnFlow ClearAll
<b>Parameters</b>	<port>           The selected flow (see common flow section of the document). In this context flow is a Port based Flow only. It must be one of: 0 or 1
<b>Prerequisites</b>	Instrument must be in the Services Operating Mode.



### Impair VariableDelay #<flow> FixedDelay

Set	
<b>Description</b> 	Determines the amount of fixed delay to apply at the start of the replay of a profile.
<b>Command</b>	Impair VariableDelay #<flow> FixedDelay <delayval>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <delayval> A numeric value based on the line rate and packet size. The value used must be taken from the table below
<b>Prerequisites</b>	This command also impacts the settings for the commands: Impair VariableDelay #<flow> MinDelay
Get	
<b>Description</b> 	Queries the amount of fixed delay applied at the start of the replay of a profile.
<b>Command</b>	Impair VariableDelay #<flow> FixedDelay
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be a value from the table below. The value is based on the Line Rate and Packet Size.



The <delayval> parameter is dependent on Line Rate and Packet Size context:

Context		Value (us)		
LineRate	DelayPacketSize	Minimum	Maximum	Step Size
100BASET	SMALL	30.0	2000030.0	0.1
	NORMAL	150.0	2000150.0	0.1
	JUMBO	1000.0	2001000.0	0.1
1GBE	SMALL	6.0	2000006.0	0.1
	NORMAL	20.0	2000020.0	0.1
	JUMBO	100.0	2000100.0	0.1
10GBE	SMALL	2.0	2000002.0	0.1
	NORMAL	4.0	2000004.0	0.1
	JUMBO	15.0	2000015.0	0.1



### Impair VariableDelay #<flow> ProfileAutoLevel

Set	
<b>Description</b> 	Enable the profile autolevelling feature when replaying profiles.
<b>Command</b>	Impair VariableDelay #<flow> ProfileAutoLevel <enable>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> Enable (TRUE) or disable (FALSE) autolevelling
Get	
<b>Description</b> 	Queries the status of the autolevelling feature.
<b>Command</b>	Impair VariableDelay #<flow> ProfileAutoLevel
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be a Boolean value. TRUE for when the autolevelling is enabled, FALSE otherwise.


### Impair VariableDelay #<flow> ProfileType

Set	
<b>Description</b> 	Determines the profile type for profile generation in Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair VariableDelay #<flow> ProfileType <type>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <type> SAWTOOTH, GAMMA, GAUSSIAN, LATENCY, STEP, CONSTANT, JITTER, USERPROFILE
Get	
<b>Description</b> 	Queries the profile type as used in profile generation.
<b>Command</b>	Impair VariableDelay #<flow> ProfileType
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be which profile type as used in profile generation. It will be one of the values listed above



### Impair VariableDelay #<flow> SawToothType

Set	
<b>Description</b> 	Determines which type of Sawtooth profile types will be used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> SawToothType <type>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <type> The selected sawtooth profile type: SYSTEMATIC (CES only) BEATING,F BEATING,S USER,F USER,S
<b>Prerequisites</b>	<i>OperatingMode</i> must be one of: CES, PTP
Get	
<b>Description</b> 	Queries which type of Sawtooth profile is used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> SawToothType
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be which Sawtooth profile is used in profile generation. It will be one of the values listed above


### Impair VariableDelay #<flow> GenerateProfile

Set	
<b>Description</b> 	Starts the profile generation for the configured profile type. The type is defined by the <b>Impair Variable Delay #&lt;flow&gt; ProfileType</b> command based on the settings of the appropriate profile parameters.
<b>Command</b>	Impair VariableDelay #<flow> GenerateProfile
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)



### Impair VariableDelay #<flow> Alpha

Set	
<b>Description</b> 	Determines the value of the Alpha parameter used in the generation of Gamma profiles only.
<b>Command</b>	Impair VariableDelay #<flow> Alpha <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> The alpha parameter in the range: 1 to 5, resolution 0.00001
Get	
<b>Description</b> 	Queries the value of the Alpha parameter used in the generation of Gamma profiles only.
<b>Command</b>	Impair VariableDelay #<flow> Alpha
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will a numerical value for the alpha parameter and will be in the range listed above

### Impair VariableDelay #<flow> Beta

Get	
<b>Description</b> 	Queries the value of the Beta parameter used in the generation of Gamma profiles only.
<b>Command</b>	Impair VariableDelay #<flow> Beta
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will a numerical value for the beta parameter

### Impair VariableDelay #<flow> Magnitude



Set	
<b>Description</b> 	Determines the value of the Magnitude parameter used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> Magnitude <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numeric value based on the Operating Mode and Profile. The value used must be taken from the table below
Get	
<b>Description</b> 	Queries the value of the Alpha parameter used in the generation of Gamma profiles only.
<b>Command</b>	Impair VariableDelay #<flow> Magnitude
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will a numerical value based on the Operating Mode and Profile. The value returned will be within the limits specified in the table at the end of this command.

Context		Minimum Value	Maximum Value	Step Size
Operating Mode	Profile			
CES	User,F	0.1	250.0	0.1
	User,S	0.1	250.0	0.1
	Step	0.1	1000000.0	0.1
	Latency	1	2000000.0	0.1

Context		Minimum Value	Maximum Value	Step Size
Operating Mode	Profile			
1588	User,F	0.1	250.0	0.1
	User,S	0.1	250.0	0.1
	Step	0.1	10000.0	0.1
	Latency	0.1	10000.0	0.1
	Constant	0.1	10000.0	0.1
Services	Jitter	10.0	500000.0	0.1
OAM	Step	0.1	20000000.0	0.1
	Latency	0.1	20000000.0	0.1


---

### Impair VariableDelay #<flow> MaxDelay



Set	
<b>Description</b> 	Determines the Maximum Delay parameter value used in the generation of Gaussian and Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> MaxDelay <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> The Maximum Delay parameter in the range: (MinDelay minimum Value + 10) to (MinDelay minimum Value + 1000000), resolution 0.1
Get	
<b>Description</b> 	Queries the Maximum Delay parameter value used in the generation of Gaussian and Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> MaxDelay
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	A numerical value for the Maximum Delay in the range listed above

---



### Impair VariableDelay #<flow> Mean

Get	
<b>Description</b> 	Queries the Mean value of the Gaussian profile that has been configured.
<b>Command</b>	Impair VariableDelay #<flow> Mean
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	A numerical value for the Mean value



### Impair VariableDelay #<flow> MinDelay

Set	
<b>Description</b> 	Determines the Minimum Delay parameter value used in the generation of Gaussian and Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> MinDelay <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> The Minimum Delay parameter. For the available range limits, refer to the <b>Impair VariableDelay #&lt;flow&gt; FixedDelay</b> command
Get	
<b>Description</b> 	Queries the Minimum Delay parameter value used in the generation of Gaussian and Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> MinDelay
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	A numerical value for the Min Delay. For the range limits, refer to the <b>Impair VariableDelay #&lt;flow&gt; FixedDelay</b> command.



### Impair VariableDelay #<flow> Offset

Set	
<b>Description</b> 	Determines the value of the Offset parameter used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> Offset <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numeric value in the range 0.01 to 100.00 with a step size of 0.01
Get	
<b>Description</b> 	Queries the value of the Offset parameter used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> Offset
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	The offset in the range given above

### Impair VariableDelay #<flow> NumPackets

Set	
<b>Description</b> 	Determines the number of packets parameter used in the generation of Gaussian or Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> NumPackets <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> The number of packets in the range: 1000 to 10000000
Get	
<b>Description</b> 	Queries the number of packets parameter used in the generation of Gaussian or Gamma profiles.
<b>Command</b>	Impair VariableDelay #<flow> NumPackets
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will a numerical value for the number of packets used in the generation of Gaussian or Gamma profiles. This will be in the range list above



### Impair VariableDelay #<flow> RampPeriod

Set	
<b>Description</b> 	Determines the Ramp period parameter value used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> RampPeriod <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numeric value based on the Operating Mode and Profile. The value used must be within the ranges specified in the table below.
Get	
<b>Description</b> 	Queries the Ramp period parameter value used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> RampPeriod
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	A numeric value within the ranges specified in the table below. The value is based on the Operating Mode and Profile.

Possible values dependent on Operating Mode and Profile:

Context		Minimum Value	Maximum Value	Step Size
Operating Mode	Profile			
CES	User,F	1.0	25000.0	0.1
	User,S	1.0	25000.0	0.1
	Latency	0.1	10000.0	0.1
1588	User,F	1	25000	1
	User,S	1	25000	1
	Latency	1	200000	1
OAM	Latency	1	200000	1

### Impair VariableDelay #<flow> RepeatPeriod



Set	
<b>Description</b> 	Determines the Repeat Period parameter value used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> RepeatPeriod <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numeric value based on the Operating Mode and Profile. The value used must be within the ranges listed in the table below
Get	
<b>Description</b> 	Queries the Repeat Period parameter value used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> RepeatPeriod
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	A numeric value within the ranges listed in the table below. The value is based on the Operating Mode and Profile.

Possible values dependent on Operating Mode and Profile:



Context		Minimum Value	Maximum Value	Step Size
Operating Mode	Profile			
CES	User,F	100.0	100000.0	0.1
	User,S	100.0	100000.0	0.1
	Step	0.1	10000.0	0.1

1588	User,F	100.0	100000	1
	User,S	100.0	100000	1
	Step	1	200000	1
OAM	Step	1	200000	1

### Impair VariableDelay #<flow> StdDeviation

Set	
<b>Description</b> 	Determines the value of the Std Deviation parameter used in the generation of Gaussian profiles.
<b>Command</b>	Impair VariableDelay #<flow> StdDeviation <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numerical value which depends on the settings of the other GAUSSIAN profile parameters – inspect the GUI for the range
Get	
<b>Description</b> 	Queries the Std Deviation parameter used in the generation of Gaussian profiles.
<b>Command</b>	Impair VariableDelay #<flow> StdDeviation
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will a numerical value for the Std Deviation.

### Impair VariableDelay #<flow> StepPeriod



Set	
<b>Description</b> 	Determines the value of the Step Period parameter used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> StepPeriod <value>
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document) <value> A numeric value based on the Operating Mode and Profile. The value used must be taken from the table below
Get	
<b>Description</b> 	Queries the value of the Step Period parameter used in the generation of profiles.
<b>Command</b>	Impair VariableDelay #<flow> StepPeriod
<b>Parameters</b>	<flow> The selected flow (see common flow section of the document)
<b>Result</b>	Return text will be a value from the table at the end of this command. The value is based on the Operating Mode and Profile.

Possible values dependent on Operating Mode and Profile context:

Context		Minimum Value	Maximum Value	Step Size
Operating Mode	Profile			
CES	Step	0.1	10000.0	0.1
1588	Step	1	200000	1
OAM	Step	1	200000	1



### Impair VariableDelay #<flow> TimeslotValue

Set	
<b>Description</b> 	Determines the Timeslot value parameter used in the generation of SawTooth – Systematic profiles.
<b>Command</b>	Impair VariableDelay #<flow> TimeslotValue <value>
<b>Parameters</b>	<flow>           The selected flow (see common flow section of the document) <value>           The Timeslot parameter in the range 100 to 1000, resolution 0.1
<b>Prerequisites</b>	<i>OperatingMode</i> must be CES. <i>ProfileType</i> must be SAWTOOTH. <i>SawtoothType</i> must be SYSTEMATIC.
Get	
<b>Description</b> 	Queries the Timeslot value parameter used in the generation of SawTooth – Systematic profiles.
<b>Command</b>	Impair VariableDelay #<flow> TimeslotValue
<b>Parameters</b>	<flow>           The selected flow (see common flow section of the document)
<b>Result</b>	A numeric value for the Timeslot parameter in the range listed above

## Packet Generation Commands

### Packet Generation Commands Concepts

The commands in this section control the packet generation feature. To access Packet Generation functionality, the instrument must first be placed in Tx/Rx mode. This can be achieved by issuing the following command:

```
TxRxMode TRUE
```

**<port>** parameter:

The Packet Generation feature operates on a per Ethernet port basis. The *<port>* parameter is an integer representing the port on which the traffic is to be generated. Its values are as follows:

Value	Description
0	Generated traffic on PORT 1
1	Generated traffic on PORT 2



**<stream>** parameter:

The Packet Generation feature has the ability to generate multiple packet streams per Ethernet port. The *<stream>* parameter is an integer representing a generated packet stream on a particular port. Its values are as follows:



Value	Description
0	Generated packet stream 1
1	Generated packet stream 2
2	Generated packet stream 3
3	Generated packet stream 4

---



### PacketGeneration EthSrcMacAddr

Set	
<b>Description</b> 	Sets the Ethernet Source MAC Address that is transmitted in each of the generated packet streams.
<b>Command</b>	PacketGeneration EthSrcMacAddr <i>&lt;macAddress&gt;</i>
<b>Parameters</b>	<i>&lt;macAddress&gt;</i> The source MAC address. It takes the form of six groups of two hexadecimal digits, separated by colons (:) or whitespace, in transmission order. A Tcl example of this is setting the Ethernet Source MAC address to 0x01000000002b: paragonset PacketGeneration EthSrcMacAddr "010000 00 002b"
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
Get	
<b>Description</b> 	Queries the Ethernet Source MAC Address that is transmitted in each of the generated packet streams.
<b>Command</b>	PacketGeneration EthSrcMacAddr
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
<b>Result</b>	The Ethernet Source MAC address.



### PacketGeneration #<port> Enable

Set	
<b>Description</b> 	Start / stop Packet Generation on the specified port.
<b>Command</b>	PacketGeneration #<port> Enable <enable>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <enable> Enable (TRUE) or disable (FALSE) packet generation
<b>Prerequisites</b>	TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries whether packet generation is enabled
<b>Command</b>	PacketGeneration #<port> Enable
<b>Parameters</b>	<port> As above
<b>Prerequisites</b>	TxRxMode must be TRUE.
<b>Result</b>	TRUE if packet generation is enabled, FALSE otherwise.



### PacketGeneration #<port> Ipg

Set	
<b>Description</b> 	Sets the inter-packet gap between generated packets.
<b>Command</b>	PacketGeneration #<port> Ipg <ipg>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <ipg> Integer value for the inter-packet gap. This must be in the range: 1 to 171798
<b>Prerequisites</b>	TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries the value for the inter-packet gap between generated packets.
<b>Command</b>	PacketGeneration #<port> Ipg
<b>Parameters</b>	<port> As above
<b>Prerequisites</b>	TxRxMode must be TRUE.
<b>Result</b>	The inter-packet gap in the range listed above



### PacketGeneration #<port> Esmc Vlan

Set	
<b>Description</b> 	Specifies, on an Ethernet port basis, whether VLAN encapsulation is enabled for the generated packet.
<b>Command</b>	PacketGeneration #<port> Esmc Vlan <enable>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <enable> Enable (TRUE) or disable (FALSE) the VLAN tags
<b>Prerequisites</b>	TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries whether the generated packet streams have VLAN encapsulation enabled for the specified port.
<b>Command</b>	PacketGeneration #<port> Esmc Vlan
<b>Parameters</b>	<port> As above
<b>Prerequisites</b>	TxRxMode must be TRUE.
<b>Result</b>	TRUE if VLAN encapsulation is enabled; FALSE otherwise



### PacketGeneration #<port> Esmc NumberOfStreams

Set	
<b>Description</b> 	Specifies the number of packet streams that are to be generated on a specified port
<b>Command</b>	PacketGeneration #<port> Esmc NumberOfStreams <value>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <value> The number of streams to be generated. An integer in the range: 1 to 4
<b>Prerequisites</b>	TxRxMode must be TRUE.
Get	
<b>Description</b> 	Returns the number of packet streams to be generated on the specified port
<b>Command</b>	PacketGeneration #<port> Esmc NumberOfStreams
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2)
<b>Prerequisites</b>	TxRxMode must be TRUE.
<b>Result</b>	The number of packet streams to be generated in the range listed above



### PacketGeneration #<port> Esmc #<stream> TPID

Set	
<b>Description</b> 	Sets the TPID within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> TPID <value>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section) <value> The Tag Protocol Identifier (TPID): 0x0000 to 0xFFFF
<b>Prerequisites</b>	TxRxMode must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
Get	
<b>Description</b> 	Returns the TPID in the VLAN tag for the specified packet stream on the specified port.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> TPID
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	TxRxMode must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
<b>Result</b>	Return text will be a binary formatted string for the TPID.



### PacketGeneration #<port> Esmc #<stream> PCP

Set	
<b>Description</b> 	Sets the PCP within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> PCP <value>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section) <value> The Protocol Code Point (PCP): 0 to 7
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
Get	
<b>Description</b> 	Queries the PCP within the VLAN tag for the specified packet stream
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> PCP
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on)..
<b>Result</b>	The PCP value.



### PacketGeneration #<port> Esmc #<stream> CFI

Set	
<b>Description</b> 	Sets the CFI within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> CFI <value>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section) <value> The Canonical Format Indicator (CFI): 0 or 1
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
Get	
<b>Description</b> 	Queries the CFI within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> CFI
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
<b>Result</b>	The PCP value which will be either 0 or 1.

### PacketGeneration #<port> Esmc #<stream> VID



Set	
<b>Description</b> 	Sets the VID within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> VID <value>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section) <value> The VLAN Identifier (VID): 0 to 4095
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
Get	
<b>Description</b> 	Queries the VID within the VLAN tag for the specified packet stream.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> VID
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. VLAN must be enabled (VLAN encapsulation turned on).
<b>Result</b>	The VID value which will be in the range listed above

### PacketGeneration #<port> Esmc #<stream> SsmType

Set	
<b>Description</b> 	Sets the ESMC SSM type (Quality level) PDU field.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> SsmType <ssmCode>
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section) <ssmCode> QL-STU/UKN, QL-PRS, QL-PRC, QL-INV3, QL-SSU-A/TNC QL-INV5, QL-INV6, QL-ST2, QL-SSU-B, QL-INV9, QL-EEC2/ST3 QL-EEC1/SEC, QL-SMC, QL-ST3E, QL-PROV, QL-DNU/DUS
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
Get	
<b>Description</b> 	Queries the ESMC SSM type (Quality level) PDU field.
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> SsmType
<b>Parameters</b>	<port> 0 (port 1) or 1 (port 2) <stream> Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
<b>Result</b>	The SSM Code and will be one of the values listed above


---

**PacketGeneration #<port> Esmc #<stream> EventFlag**

Set	
<b>Description</b> 	Defines whether the first new ESMC packet after a <b>PacketGeneration #&lt;port&gt; Esmc Apply</b> command has been issued has its Event Flag field set or not (subsequent ESMC packets transmit a No Event)
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> EventFlag <flag>
<b>Parameters</b>	<port>        0 (port 1) or 1 (port 2) <stream>     Packet Stream (See description at the start of this section) <flag>        The ESMC Event Flag. TRUE will set the flag; FALSE will not set it.
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
Get	
<b>Description</b> 	Queries whether the first new ESMC packet after a <b>PacketGeneration #&lt;port&gt; Esmc Apply</b> command has been issued has its Event Flag field set or not (subsequent ESMC packets transmit a No Event).
<b>Command</b>	PacketGeneration #<port> Esmc #<stream> EventFlag
<b>Parameters</b>	<port>        0 (port 1) or 1 (port 2) <stream>     Packet Stream (See description at the start of this section)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE.
<b>Result</b>	Returned text will TRUE if the event flag is set, FALSE if it is not set.

---



**PacketGeneration #<port> Esmc Apply**

Set	
<b>Description</b> 	This command causes the SSM code to be updated with the value defined by the <b>PacketGeneration #&lt;port&gt; Esmc SsmType</b> command. The first ESMC packet generated after this command has been issued will also have its Event flag set as specified by the <b>PacketGeneration #&lt;port&gt; Esmc EventFlag</b> command.
<b>Command</b>	PacketGeneration #<port> Esmc Apply
<b>Parameters</b>	<port>        0 (port 1) or 1 (port 2)
<b>Prerequisites</b>	<i>TxRxMode</i> must be TRUE. This command is only available when packet generation is active (enabled).



## Wander Generation Commands

The commands in this section control the wander generation operations available. The Wander Generation feature allows the user to change the behaviour of the outgoing waveforms for conformance testing.



### WanderGeneration FrequencyOffset Value

Set	
<b>Description</b> 	Sets the amount of frequency offset (ppm) to be applied.
<b>Command</b>	WanderGeneration FrequencyOffset Value <offset>
<b>Parameters</b>	<offset> <b>Paragon-X:</b> In the range -1000 to 1000, resolution 0.0001 <b>Paragon-100G, Paragon-neo:</b> -100 to 100, resolution 0.0001
<b>Prerequisites</b>	None
Get	
<b>Description</b> 	Queries the amount of frequency offset (ppm) to be applied.
<b>Command</b>	WanderGeneration FrequencyOffset Value
<b>Result</b>	The text returned will be a numerical value in the range listed above

### WanderGeneration FrequencyOffset Enable



Set	
<b>Description</b> 	Start / Stop the application of frequency offset.
<b>Command</b>	WanderGeneration FrequencyOffset Enable <enable>
<b>Parameters</b>	<enable>     TRUE, FALSE
Get	
<b>Description</b> 	Queries the current status of frequency offset.
<b>Command</b>	WanderGeneration FrequencyOffset Enable
<b>Result</b>	The text returned will be a Boolean to say if the frequency offset is being applied (TRUE) or it is disabled (FALSE).

### WanderGeneration Tolerance Single Frequency


Set	
<b>Description</b> 	Sets the frequency for single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single Frequency <value>
<b>Parameters</b>	<value>     The frequency (Hz) in the range: 0.0001 to 100, resolution 0.00001
Get	
<b>Description</b> 	Queries the frequency for single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single Frequency
<b>Result</b>	The text returned will be a numerical value in the range (Hz) listed above




### WanderGeneration Tolerance Single Amplitude

Set	
<b>Description</b> 	Sets the amplitude for single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single Amplitude <value>
<b>Parameters</b>	<value> The amplitude ( $\mu$ s) in the range: 0.01 to 10, resolution 0.01
Get	
<b>Description</b> 	Queries the amplitude for single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single Amplitude
<b>Result</b>	The text returned will be a numerical value in the range ( $\mu$ s) listed above


### WanderGeneration Tolerance Single RestoreDefaults

Set	
<b>Description</b> 	Set the frequency, amplitude, and elapsed time back to factory default
<b>Command</b>	WanderGeneration Tolerance Single RestoreDefaults


### WanderGeneration Tolerance Single Enable

Set	
<b>Description</b> 	Start / Stop single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single Enable <enable>
<b>Parameters</b>	<enable> START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### WanderGeneration Tolerance Single State

Get	
<b>Description</b> 	Queries the current run status of single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Single State
<b>Result</b>	The status will be one of: IDLE, STOPPING, RUNNING



### WanderGeneration Tolerance Single TotalElapsedTime

Get	
<b>Description</b> 	Queries the how long single sinusoidal wander generation has been running.
<b>Command</b>	WanderGeneration Tolerance Single TotalElapsedTime
<b>Result</b>	A numerical value in seconds that indicates how long wander generation has been running.



### WanderGeneration Tolerance Single EstimatedTimeRemaining

Get	
<b>Description</b> 	Queries number of seconds remaining until single sinusoidal wander generation terminates at the next zero-crossing point.
<b>Command</b>	WanderGeneration Tolerance Single EstimatedTimeRemaining
<b>Prerequisites</b>	This command is only valid when wander generation has been configured to stop at the next zero-crossing point.
<b>Result</b>	A numerical value in seconds that indicates how much time is remaining until single sinusoidal wander generation terminates at the next zero-crossing point.

### WanderGeneration Tolerance Table Row #<row> Frequency



Set	
<b>Description</b> 	Sets the wander generation frequency for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Frequency <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> The frequency in Hz in the range: 0.0001 to 100, resolution 0.00001
Get	
<b>Description</b> 	Queries the wander generation frequency for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Frequency
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value that specifies the frequency in Hz in the range listed above

### WanderGeneration Tolerance Table Row #<row> Amplitude

Set	
<b>Description</b> 	Sets the wander generation amplitude for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Amplitude <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> The amplitude in $\mu$ s in the range: 0.01 to 10, resolution 0.01
Get	
<b>Description</b> 	Queries the wander generation amplitude for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Amplitude
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value that specifies the amplitude in $\mu$ s in the range listed above.



---

### WanderGeneration Tolerance Table Row #<row> Cycles

Set	
<b>Description</b> 	Sets the number of cycles for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Cycles <value>
<b>Parameters</b>	<row>        0 (Row 1) to 9 (Row 10) <value>       An integer number of cycles in the range: 1 to 500
Get	
<b>Description</b> 	Queries the number of cycles for the specified table row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Cycles
<b>Parameters</b>	<row>        0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value in the range listed above


---

### WanderGeneration Tolerance Table Row #<row> Enable

Set	
<b>Description</b> 	Sets whether or not the specified row is to be performed during wander generation.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Enable <enable>
<b>Parameters</b>	<row>        0 (Row 1) to 9 (Row 10) <enable>       TRUE, FALSE
Get	
<b>Description</b> 	Queries whether or not the specified row is to be performed during wander generation.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Enable
<b>Parameters</b>	<row>        0 (Row 1) to 9 (Row 10)
<b>Result</b>	TRUE if the row will be performed; FALSE otherwise.


---

### WanderGeneration Tolerance Table Row #<row> Status


Get	
<b>Description</b> 	Queries the percentage completion for the specified row.
<b>Command</b>	WanderGeneration Tolerance Table Row #<row> Status
<b>Parameters</b>	<row>        0 (Row 1) to 9 (Row 10)
<b>Result</b>	A numerical value between 0 and 100.

---


### WanderGeneration Tolerance Table RestoreDefaults

Set	
<b>Description</b> 	Reset the frequency, amplitude, and number of cycles back to factory default. Also sets the percentage completion and elapsed time back to zero.
<b>Command</b>	WanderGeneration Tolerance Table RestoreDefaults


### WanderGeneration Tolerance Table Enable

Set	
<b>Description</b> 	Start / Stop table sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Table Enable <enable>
<b>Parameters</b>	<enable>     START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### WanderGeneration Tolerance Table State

Get	
<b>Description</b> 	Retrieve the current run status of table sinusoidal wander generation.
<b>Command</b>	WanderGeneration Tolerance Table State
<b>Result</b>	The status will be one of: IDLE, STOPPING, RUNNING


### WanderGeneration Tolerance Table CurrentRow

Get	
<b>Description</b> 	Retrieve the current run row of the sinusoidal wander generation table.
<b>Command</b>	WanderGeneration Tolerance Table CurrentRow
<b>Result</b>	The text returned will be a numerical value that specifies the table row. It will be in the range: 0 (Row 1) to 9 (Row 10)



### WanderGeneration Tolerance Table RowEstimatedTimeRemaining

Get	
<b>Description</b> 	Retrieve the estimated time remaining for the current row to execute the specified number of cycles. If the wander generation is in the stopping state where it will stop at the next zero-crossing point then the command will return the estimated time remaining for the current row to stop at the next zero-crossing point.
<b>Command</b>	WanderGeneration Tolerance Table RowEstimatedTimeRemaining
<b>Prerequisites</b>	This command is only relevant when wander generation is in the running state.
<b>Result</b>	The text returned will be the estimated time remaining (in s) for the current row to execute the specified number of cycles.


### WanderGeneration Tolerance Table TotalElapsedTime

Get	
<b>Description</b> 	Retrieve the number of seconds that the table sinusoidal wander generation has been running for.
<b>Command</b>	WanderGeneration Tolerance Table TotalElapsedTime
<b>Result</b>	The text returned will be a numerical value representing the time (in s) the table sinusoidal wander generation has been running for.


### WanderGeneration Tolerance MtieTdev Mask

Set	
<b>Description</b> 	Sets the wander mask that is to be generated.
<b>Command</b>	WanderGeneration Tolerance MtieTdev Mask <mask>
<b>Parameters</b>	<mask> <b>Paragon-X:</b> G.8262_OPTION_1_MTIE, G.8262_OPTION_1_TDEV G.8262_OPTION_2_TDEV, G.8273_SYNCE_TRANSIENT <b>Paragon-100G, Paragon-neo:</b> G.8262_OPTION_1_MTIE, G.8262_OPTION_1_TDEV, G.8262_OPTION_2_TDEV
Get	
<b>Description</b> 	Queries the wander mask that is generated.
<b>Command</b>	WanderGeneration Tolerance MtieTdev Mask
<b>Result</b>	The text returned will be the mask that is used for generation. It will be one of the values listed above.


### WanderGeneration Tolerance MtieTdev Enable

Set	
<b>Description</b> 	Start / Stop MTIE/TDEV wander generation
<b>Command</b>	WanderGeneration Tolerance MtieTdev Enable <enable>
<b>Parameters</b>	<enable>      START, STOP


### WanderGeneration Tolerance MtieTdev State

Get	
<b>Description</b> 	Queries the current run status of MTIE/TDEV wander generation.
<b>Command</b>	WanderGeneration Tolerance MtieTdev State
<b>Result</b>	IDLE, RUNNING


### WanderGeneration Tolerance MtieTdev TotalElapsedTime

Get	
<b>Description</b> 	Queries the number of seconds that MTIE/TDEV wander generation has been running for.
<b>Command</b>	WanderGeneration Tolerance MtieTdev TotalElapsedTime
<b>Result</b>	The text returned will be the duration in s.


### WanderGeneration SyncETransient Enable

Set	
<b>Description</b> 	Start / Stop SyncE transient generation.
<b>Command</b>	WanderGeneration SyncETransient Enable <enable>
<b>Parameters</b>	<enable> START, STOP
<b>Prerequisites</b>	<p>To start SyncE transient generation, a number of conditions must be met:</p> <ul style="list-style-type: none"> <li>• No other wander/jitter generation function is active.</li> <li>• <b>PacketGeneration #0 Enable</b> is TRUE.</li> <li>• Capture is stopped.</li> </ul> <p>When started, a timing capture will also be started before the transient generation is started. If PTP Master/Slave Emulation mode is enabled, a <b>MasterSlave StartMeasurement</b> will be performed to start the capture.</p>







### WanderGeneration SyncETransient State

Get	
<b>Description</b> 	Queries the current run state of SyncE Transient generation.
<b>Command</b>	WanderGeneration SyncETransient State
<b>Result</b>	The state of the SyncE transient generation: IDLE, RUNNING



### WanderGeneration SyncETransient TotalElapsedTime

Get	
<b>Description</b> 	Queries the number of seconds that SyncE Transient generation has been running for.
<b>Command</b>	WanderGeneration SyncETransient TotalElapsedTime
<b>Result</b>	The text returned will be the duration in s.


### WanderGeneration Transfer Single Frequency

Set	
<b>Description</b>   	Set the wander generation frequency.
<b>Command</b>	WanderGeneration Transfer Single Frequency <value>
<b>Parameters</b>	<value> Generation frequency in Hz: 0.0001 to 100, resolution 0.00001
Get	
<b>Description</b>   	Queries the wander generation frequency.
<b>Command</b>	WanderGeneration Transfer Single Frequency
<b>Result</b>	The text returned will be the generation frequency (Hz) in the range listed above


### WanderGeneration Transfer Single Amplitude

Set	
<b>Description</b> 	Set the wander generation amplitude.
<b>Command</b>	WanderGeneration Transfer Single Amplitude <value>
<b>Parameters</b>	<value>      Generation amplitude in $\mu$ s: 0.01 to 10, resolution 0.01
Get	
<b>Description</b> 	Queries the wander generation amplitude.
<b>Command</b>	WanderGeneration Transfer Single Amplitude
<b>Result</b>	The text returned will be the amplitude ( $\mu$ s) in the range listed above


### WanderGeneration Transfer Single Gain

Get	
<b>Description</b> 	Queries the gain result in dB
<b>Command</b>	WanderGeneration Transfer Single Gain
<b>Result</b>	The gain in dB


### WanderGeneration Transfer Single RestoreDefaults

Set	
<b>Description</b> 	Reset the frequency, amplitude, gain, and estimated time remaining back to factory default.
<b>Command</b>	WanderGeneration Transfer Single RestoreDefaults


### WanderGeneration Transfer Single CalibrateEnable

Set	
<b>Description</b> 	Start / Stop single sinusoidal wander generation calibration run.
<b>Command</b>	WanderGeneration Transfer Single CalibrateEnable <enable>
<b>Parameters</b>	<enable>      START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### WanderGeneration Transfer Single GenerateEnable

Set	
<b>Description</b> 	Start / Stop single sinusoidal wander generation measurement run.
<b>Command</b>	WanderGeneration Transfer Single GenerateEnable <enable>
<b>Parameters</b>	<enable>      START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately



### WanderGeneration Transfer Single State

Get	
<b>Description</b> 	Queries the current run status of single sinusoidal wander generation.
<b>Command</b>	WanderGeneration Transfer Single State
<b>Result</b>	IDLE, STOPPING, RUNNING



### WanderGeneration Transfer Single EstimatedTimeRemaining

Get	
<b>Description</b> 	Retrieve the estimated time remaining to complete the appropriate number of cycles. If the wander generation is in the stopping state where it will stop at the next zero-crossing point then the command will return the estimated time remaining until the next zero-crossing point.
<b>Command</b>	WanderGeneration Transfer Single EstimatedTimeRemaining
<b>Prerequisites</b>	This command is only relevant when wander generation is in the running state.
<b>Result</b>	The text returned will be the estimated time remaining (in s) for the current row to execute the specified number of cycles.

### WanderGeneration Transfer Table UseDefaultCalibration



Set	
<b>Description</b> 	Allows table sine wander transfer to be performed using per-existing calibration data. If there is no existing data, then default values will be used.
<b>Command</b>	WanderGeneration Transfer Table UseDefaultCalibration <boolean>
<b>Parameters</b>	<boolean> TRUE to allow use of default calibration data; FALSE otherwise
Get	
<b>Description</b> 	Queries the whether default calibration data will be used for the wander transfer test.
<b>Command</b>	WanderGeneration Transfer Table UseDefaultCalibration
<b>Result</b>	TRUE if default calibration data will be used; FALSE otherwise

### WanderGeneration Transfer Table Row #<row> Frequency



Set	
<b>Description</b> 	Sets the wander generation frequency for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Frequency <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> The frequency in Hz: 0.0001 to 100, resolution 0.00001
Get	
<b>Description</b> 	Queries the wander generation frequency for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Frequency
<b>Parameters</b>	<row> See above
<b>Result</b>	The text returned will be a numerical value that specifies the frequency in Hz. It will be in the range listed above





### WanderGeneration Transfer Table Row #<row> Amplitude

Set	
<b>Description</b> 	Sets the wander generation amplitude for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Amplitude <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> The amplitude in $\mu$ s: 0.01 to 10, resolution 0.01
Get	
<b>Description</b> 	Queries the wander generation amplitude for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Amplitude
<b>Parameters</b>	<row> See above
<b>Result</b>	The amplitude in $\mu$ s in the range listed above

### WanderGeneration Transfer Table Row #<row> Cycles


Set	
<b>Description</b> 	Sets the number of cycles for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Cycles <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> An integer number of cycles. The minimum value is frequency dependent; the maximum value is 511.
Get	
<b>Description</b> 	Queries the number of cycles for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Cycles
<b>Parameters</b>	<row> See above
<b>Result</b>	The text returned will be a numerical value in the range listed above

### WanderGeneration Transfer Table Row #<row> Enable

Set	
<b>Description</b> 	Defines whether or not the specified row is to be performed during wander generation.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Enable <enable>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries whether or not the specified row is to be performed during wander generation.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Enable
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a Boolean that states the row should be processed (TRUE) or skipped (FALSE).


---

### WanderGeneration Transfer Table Row #<row> Status

Get	
<b>Description</b> 	Queries the percentage completion for the specified row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Status
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	A numerical value between 0 and 100


---

### WanderGeneration Transfer Table Row #<row> Gain

Get	
<b>Description</b> 	Queries the gain result (in dB) for the specified table row.
<b>Command</b>	WanderGeneration Transfer Table Row #<row> Gain
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The gain in dB for the specified row


---

### WanderGeneration Transfer Table RestoreDefaults

Set	
<b>Description</b> 	Reset the frequency, amplitude, number of cycles, percentage completion, gain, and elapsed time back to factory default.
<b>Command</b>	WanderGeneration Transfer Table RestoreDefaults


---

### WanderGeneration Transfer Table EnhancedDefaults


Set	
<b>Description</b> 	Reset the frequency, amplitude, number of cycles, percentage completion, gain, and elapsed time back to the enhanced default.
<b>Command</b>	WanderGeneration Transfer Table EnhancedDefaults

---


### WanderGeneration Transfer Table CalibrateEnable

Set	
<b>Description</b> 	Start / Stop table sinusoidal wander generation calibration run.
<b>Command</b>	WanderGeneration Transfer Table CalibrateEnable <enable>
<b>Parameters</b>	<enable> START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### WanderGeneration Transfer Table GenerateEnable

Set	
<b>Description</b> 	Start / Stop table sinusoidal wander generation measurement run.
<b>Command</b>	WanderGeneration Transfer Table GenerateEnable <enable>
<b>Parameters</b>	<enable>      START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### WanderGeneration Transfer Table State

Get	
<b>Description</b> 	Queries the current run status of table sinusoidal wander generation.
<b>Command</b>	WanderGeneration Transfer Table State
<b>Result</b>	IDLE, RUNNING, STOPPING


### WanderGeneration Transfer Table CurrentRow

Get	
<b>Description</b> 	Retrieve the current table row that is being executed.
<b>Command</b>	WanderGeneration Transfer Table CurrentRow
<b>Result</b>	The current table row: 0 (Row 1) to 9 (Row 10)

### WanderGeneration Transfer Table RowEstimatedTimeRemaining



Get	
<b>Description</b> 	Retrieve the estimated time remaining for the current row to execute the specified number of cycles (when in the running state). If the wander generation is in the stopping state where it will stop at the next zero-crossing point then the command will return the estimated time remaining for the current row to stop at the next zero-crossing point.
<b>Command</b>	WanderGeneration Transfer Table RowEstimatedTimeRemaining
<b>Result</b>	The estimated time remaining (in s) for the current row to execute the specified number of cycles.

### WanderGeneration Transfer Table EstimatedTimeRemaining

Get	
<b>Description</b> 	Queries the estimated time remaining to complete the enabled table rows (when in the running state). If the wander generation is in the stopping state where it will stop at the next zero-crossing point then the command will return the estimated time remaining until the next zero-crossing point.
<b>Command</b>	WanderGeneration Transfer Table EstimatedTimeRemaining
<b>Result</b>	The estimated time remaining (in s) for the current row to execute the specified number of cycles.



---

### WanderGeneration Transfer UpperLimitEnable

Set	
<b>Description</b> 	Enables or disables the upper limit checking for wander transfer (both single sine and table sine).
<b>Command</b>	WanderGeneration Transfer UpperLimitEnable <enable>
<b>Parameters</b>	<enable> A Boolean. TRUE to enable the limit; FALSE to disable it
Get	
<b>Description</b> 	Queries the upper limit enable setting
<b>Command</b>	WanderGeneration Transfer UpperLimitEnable
<b>Result</b>	TRUE if the limit is enabled; FALSE if it is disabled.


---

### WanderGeneration Transfer LowerLimitEnable

Set	
<b>Description</b> 	Enables or disables the lower limit checking for wander transfer (both single sine and table sine).
<b>Command</b>	WanderGeneration Transfer LowerLimitEnable <enable>
<b>Parameters</b>	<enable> A Boolean. TRUE to enable the limit; FALSE to disable it
Get	
<b>Description</b> 	Queries the lower limit enable setting
<b>Command</b>	WanderGeneration Transfer LowerLimitEnable
<b>Result</b>	TRUE if the limit is enabled; FALSE if it is disabled.


---

### WanderGeneration Transfer TDEV Enable

Set	
<b>Description</b> 	Start / Stop TDEV wander generation.
<b>Command</b>	WanderGeneration Transfer TDEV Enable <enable>
<b>Parameters</b>	<enable> START, STOP


---

### WanderGeneration Transfer TDEV State

Get	
<b>Description</b> 	Queries the current run status of TDEV wander generation.
<b>Command</b>	WanderGeneration Transfer TDEV State
<b>Result</b>	IDLE, RUNNING

---



### WanderGeneration Transfer TDEV EstimatedTimeRemaining

Get	
<b>Description</b> 	Queries the estimated time remaining to complete the TDEV wander generation.
<b>Command</b>	WanderGeneration Transfer TDEV EstimatedTimeRemaining
<b>Result</b>	The estimated time remaining (in s) to complete the TDEV wander generation.



## Jitter Commands

The commands in this section control the generation of jitter from the Paragon instrument. This capability is only available if your instrument has the necessary hardware and associated licences. This feature allows you to change the behaviour of the generated jitter for tolerance conformance testing.


### Jitter Tolerance Single Frequency

Set	
<b>Description</b> 	Specify the frequency for single sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Single Frequency <value>
<b>Parameters</b>	<value> is the frequency (in Hz) based on the medium and line rate. This must be in the range: <u>1GbE Electrical Line Rate</u> : 10 to 5000, resolution 0.01 <u>1GbE Optical Line Rate</u> : 10 to 50000, resolution 0.01 <u>10GbE Line Rate</u> : 10 to 40000, resolution 0.01
Get	
<b>Description</b> 	Queries the frequency used for single sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Single Frequency
<b>Result</b>	The frequency (in Hz) based on the medium and line rate. This will be in the ranges listed above.


### Jitter Tolerance Single Amplitude

Set	
<b>Description</b> 	Specify the amplitude for single sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Single Amplitude <value>
<b>Parameters</b>	<value> is the amplitude (in UI) based on the medium and line rate. This must be in the range: <u>1GbE Electrical Line Rate</u> : 0.1 to 200% of the G.8262 Mask Value, resolution 0.01 <u>1GbE Optical Line Rate</u> : 0.5 to 200% of the G.8262 Mask Value, resolution 0.01 <u>10GbE Line Rate</u> : 1.4 to 200% of the G.8262 Mask Value, resolution 0.01
Get	
<b>Description</b> 	Queries the amplitude used for single sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Single Amplitude
<b>Result</b>	The amplitude (in UI) based on the medium and line rate. This will be in the range listed above


### Jitter Tolerance Single Errors

Get	
<b>Description</b> 	Queries the number of test packet errors detected at the end of the test.
<b>Command</b>	Jitter Tolerance Single Errors
<b>Result</b>	If the error count is less than or equal to 1000 then the returned string will contain an actual count value, otherwise the string will return "> 1000".


### Jitter Tolerance Single Result

Get	
<b>Description</b> 	Returns a pass or fail indication for the Tolerance Single Result.
<b>Command</b>	Jitter Tolerance Single Result
<b>Result</b>	If zero test packet errors have been detected at the end of the test then the query will return 1 which indicates a pass, otherwise the query will return 0 which indicates a fail.


### Jitter Tolerance Single RestoreDefaults

Set	
<b>Description</b> 	Set the frequency, amplitude, and elapsed time back to factory default.
<b>Command</b>	Jitter Tolerance Single RestoreDefaults


### Jitter Tolerance Single Enable

Set	
<b>Description</b> 	Start / Stop single sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Single Enable <enable>
<b>Parameters</b>	<enable>     START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately



### Jitter Tolerance Single State

Get	
<b>Description</b> 	Queries the current run status of single sinusoidal jitter generation.
<b>Command</b>	Jitter Tolerance Single State
<b>Result</b>	The status will be one of: IDLE, STOPPING, RUNNING.



### Jitter Tolerance Single TotalElapsedTime

Get	
<b>Description</b> 	Queries the number of seconds that single sinusoidal jitter has been running for.
<b>Command</b>	Jitter Tolerance Single TotalElapsedTime
<b>Result</b>	The text returned will be a numerical value in s which represents the number of seconds that single sinusoidal Jitter has been running for.



### Jitter Tolerance Table Row #<row> Frequency

Set	
<b>Description</b> 	Sets the jitter frequency for the specified table row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Frequency <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> A numerical value that specifies the frequency in Hz. It is based on Line Rate and must be in the range: <u>1GbE Electrical Line Rate</u> : 10 to 5000, resolution 0.01 <u>1GbE Optical Line Rate</u> : 10 to 50000, resolution 0.01 <u>10GbE Line Rate</u> : 10 to 40000, resolution 0.01
Get	
<b>Description</b> 	Queries the jitter frequency for the specified table row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Frequency
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value for the frequency in Hz. It is based on Line Rate and will be in the range listed above



### Jitter Tolerance Table Row #<row> Amplitude

Set	
<b>Description</b> 	Sets jitter amplitude for the specified table row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Amplitude <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> A numerical value that specifies the amplitude (UI). It is based on Line Rate and medium and must be in the range: <u>1GbE Electrical Line Rate</u> : 0.1 to 200% of the G.8262 Mask Value, resolution 0.01 <u>1GbE Optical Line Rate</u> : 0.5 to 200% of the G.8262 Mask Value, resolution 0.01 <u>10GbE Line Rate</u> : 1.4 to 200% of the G.8262 Mask Value, resolution 0.01
Get	
<b>Description</b> 	Queries the jitter amplitude for the specified table row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Amplitude
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be numerical value that specifies the amplitude (UI). It is based on Line Rate and medium and will be in the range listed above


### Jitter Tolerance Table Row #<row> Duration

Set	
<b>Description</b> 	Sets the duration (dwell time) for the specified row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Duration <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> An integer value for dwell time (s) in the range: 1 to 60
Get	
<b>Description</b> 	Queries the duration (dwell time) for the specified row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Duration
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value for dwell time (s) in the range listed above


### Jitter Tolerance Table Row #<row> Enable

Set	
<b>Description</b> 	Defines whether or not the specified row is to be performed during jitter generation.
<b>Command</b>	Jitter Tolerance Table Row #<row> Enable <enable>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <enable> A Boolean which states the row should be processed (TRUE) or not (FALSE).
Get	
<b>Description</b> 	Queries whether or not the specified row is to be performed during jitter generation.
<b>Command</b>	Jitter Tolerance Table Row #<row> Enable
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	A Boolean that indicates whether the row will be processed (1) or not (0).

### Jitter Tolerance Table Row #<row> Status

Get	
<b>Description</b> 	Queries the percentage completion for the specified row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Status
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	A numerical value between 0 and 100


### Jitter Tolerance Table Row #<row> Errors

Get	
<b>Description</b> 	Queries the number of test packet errors detected at the end of the test for the specified row.
<b>Command</b>	Jitter Tolerance Table Row #<row> Errors
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Prerequisites</b>	The jitter tolerance test must be complete
<b>Result</b>	If the error count is less than or equal to 1000 then the returned string will contain an actual count value, otherwise the string will return "> 1000".




---

### Jitter Tolerance Table Row #<row> Result

Get	
<b>Description</b> 	Returns a pass or fail indication for the specified row
<b>Command</b>	Jitter Tolerance Table Row #<row> Result
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Prerequisites</b>	The jitter tolerance test must be complete
<b>Result</b>	If zero test packet errors have been detected at the end of the test then the query will return 1 which indicates a pass, otherwise the query will return 0 which indicates a fail.


---

### Jitter Tolerance Table RestoreDefaults

Set	
<b>Description</b> 	Reset the frequency, amplitude, and dwell time back to factory default. Also sets the percentage completion and elapsed time back to zero
<b>Command</b>	Jitter Tolerance Table RestoreDefaults


---

### Jitter Tolerance Table Enable

Set	
<b>Description</b> 	Start / Stop table sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Table Enable <enable>
<b>Parameters</b>	<enable> START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


---

### Jitter Tolerance Table State


Get	
<b>Description</b> 	Queries the current run status of table sinusoidal jitter.
<b>Command</b>	Jitter Tolerance Table State
<b>Result</b>	IDLE, STOPPING, RUNNING

---


### Jitter Tolerance Table CurrentRow

Get	
<b>Description</b> 	Retrieve the current table row that is being executed.
<b>Command</b>	Jitter Tolerance Table CurrentRow
<b>Result</b>	The current table row: 0 (Row 1) to 9 (Row 10)



### Jitter Tolerance Table RowEstimatedTimeRemaining

Get	
<b>Description</b> 	Retrieve the estimated time remaining for the current row to execute.
<b>Command</b>	Jitter Tolerance Table RowEstimatedTimeRemaining
<b>Result</b>	The text returned will be the estimated time remaining (in s) for the current row to execute the specified number of cycles.


### Jitter Tolerance Table TotalElapsedTime

Get	
<b>Description</b> 	Queries the number of seconds that table sinusoidal jitter has been running for.
<b>Command</b>	Jitter Tolerance Table TotalElapsedTime
<b>Result</b>	The text returned will be a numerical value in s which represents the number of seconds that single sinusoidal Jitter has been running for.



### Jitter MaxTolerable Table Row #<row> Frequency

Set	
<b>Description</b> 	Sets the jitter frequency for the specified table row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Frequency <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> A numerical value that specifies the frequency in Hz. It is based on Line Rate and must be in the range: <u>1GbE Electrical Line Rate</u> : 10 to 5000, resolution 0.01 <u>1GbE Optical Line Rate</u> : 10 to 50000, resolution 0.01 <u>10GbE Line Rate</u> : 10 to 40000, resolution 0.01
Get	
<b>Description</b> 	Queries the jitter frequency for the specified table row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Frequency
<b>Parameters</b>	<row> See above
<b>Result</b>	The text returned is a numerical value that specifies the frequency (Hz). It is based on Line Rate and medium and will be in the range listed above


### Jitter MaxTolerable Table Row #<row> MaskAmplitude

Get	
<b>Description</b> 	Queries the jitter mask amplitude for the specified table row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> MaskAmplitude
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be the jitter mask amplitude for the specified table row



### Jitter MaxTolerable Table Row #<row> AmplitudeIncDec

Set	
<b>Description</b> 	Sets the percentage above or below the mask to set the amplitude that is to be generated for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> AmplitudeIncDec <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> An integer value that specifies the percentage above or below the mask to set the amplitude. It is based on Line Rate and must be in the range: <u>1GbE Line Rate</u> : -50 to 50 <u>10GbE Line Rate</u> : A minimum value of -93 to 50 depending on frequency; a maximum value of 50.
Get	
<b>Description</b> 	Queries the percentage above or below the mask to set the amplitude that is to be generated for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> AmplitudeIncDec
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value that specifies the amplitude. It is based on Line Rate and will be in the range listed above



### Jitter MaxTolerable Table Row #<row> GenerateAmplitude

Get	
<b>Description</b> 	Queries the jitter amplitude for the specified table row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> GenerateAmplitude
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be the jitter mask amplitude for the specified table row


### Jitter MaxTolerable Table Row #<row> DwellTime

Set	
<b>Description</b> 	Sets the dwell time for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> DwellTime <value>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> An integer value that specifies the dwell time (s) in the range: 1 to 60
Get	
<b>Description</b> 	Queries the dwell time for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> DwellTime
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value that specifies the dwell time (s). It will be in the range listed above


### Jitter MaxTolerable Table Row #<row> Enable

Set	
<b>Description</b> 	Sets whether or not the specified row is to be performed during the maximum tolerable jitter test.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Enable <enable>
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10) <value> A Boolean which determines whether the row should be processed (TRUE) or skipped (FALSE)
Get	
<b>Description</b> 	Queries whether or not the specified row is to be performed during the maximum tolerable jitter test.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Enable
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a Boolean that states the row should be processed (1) or skipped (0).


### Jitter MaxTolerable Table Row #<row> Status

Get	
<b>Description</b> 	Queries the percentage completion for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Status
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value between 0 and 100% to indicate progress.


### Jitter MaxTolerable Table Row #<row> Errors

Get	
<b>Description</b> 	Returns the number of test packet errors detected at the end of the test for the specified row.
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Errors
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	The text returned will be a numerical value for the errors. If the error count is less than or equal to 1000 then the returned string will contain an actual count value, otherwise the string will return "> 1000".


### Jitter MaxTolerable Table Row #<row> Result

Get	
<b>Description</b> 	Returns a pass or fail indication for the specified row
<b>Command</b>	Jitter MaxTolerable Table Row #<row> Result
<b>Parameters</b>	<row> 0 (Row 1) to 9 (Row 10)
<b>Result</b>	If zero test packet errors have been detected at the end of the test then the query will return 1 which indicates a pass, otherwise the query will return 0 which indicates a fail.


### Jitter MaxTolerable Table RestoreDefaults

Set	
<b>Description</b> 	Reset the frequency, amplitude increase/decrease, and dwell time back to factory default. It also clears the percentage completion, elapsed time, errors and results.
<b>Command</b>	Jitter MaxTolerable Table RestoreDefaults


### Jitter MaxTolerable Table Enable

Set	
<b>Description</b> 	Start / Stop maximum tolerable jitter.
<b>Command</b>	Jitter MaxTolerable Table Enable <enable>
<b>Parameters</b>	<enable>    START STOP: stop at the next 360 degree zero-crossing point FORCESTOP: stop immediately


### Jitter MaxTolerable Table State

Get	
<b>Description</b> 	Queries the current run status of maximum tolerable jitter.
<b>Command</b>	Jitter MaxTolerable Table State
<b>Result</b>	IDLE, RUNNING, STOPPING


### Jitter MaxTolerable Table CurrentRow

Get	
<b>Description</b> 	Retrieve the current table row that is being executed.
<b>Command</b>	Jitter MaxTolerable Table CurrentRow
<b>Result</b>	The current table row: 0 (Row 1) to 9 (Row 10)

### Jitter MaxTolerable Table RowEstimatedTimeRemaining

Get	
<b>Description</b> 	Retrieve the estimated time remaining for the current row to execute.
<b>Command</b>	Jitter MaxTolerable Table RowEstimatedTimeRemaining
<b>Result</b>	The text returned will be the estimated time remaining (in s) for the current row to execute the specified number of cycles.

### Jitter MaxTolerable Table TotalElapsedTime

Get	
<b>Description</b> 	the number of seconds that maximum tolerable jitter has been running for
<b>Command</b>	Jitter MaxTolerable Table TotalElapsedTime
<b>Result</b>	The text returned will be a numerical value in s which represents the number of seconds that maximum tolerable jitter has been running for.


## Test Packet Generation Commands

The commands in this section control the Ethernet test packet generation operations on a Paragon-X. Test packets are used to test devices external to the Paragon-X for compliance.

Note: Test packet generation is not available in Master / Slave Emulation mode.



---

### TestPacketGeneration Ethernet EthernetFrameSize

Set	
<b>Description</b> 	Sets the Ethernet frame size to generate.
<b>Command</b>	TestPacketGeneration Ethernet EthernetFrameSize <value>
<b>Parameters</b>	<value> 1518_BYTES, 576_BYTES, 64_BYTES
<b>Prerequisites</b>	MasterSlave Enabled must be FALSE
Get	
<b>Description</b>	Queries the Ethernet frame size generated.
<b>Command</b>	TestPacketGeneration Ethernet EthernetFrameSize
<b>Result</b>	The text returned will be the Ethernet frame size. It will be one of the values listed above


---

### TestPacketGeneration Ethernet PercentOfLineRate



Set	
<b>Description</b> 	Sets the bandwidth utilisation of the test packet generated traffic as a percentage of the line rate.
<b>Command</b>	TestPacketGeneration Ethernet PercentOfLineRate <value>
<b>Parameters</b>	<value> Percentage value in the range: 0.1 to 100, resolution 0.1
<b>Prerequisites</b>	MasterSlave Enabled must be FALSE
Get	
<b>Description</b> 	Queries the bandwidth utilisation of the test packet generated traffic.
<b>Command</b>	TestPacketGeneration Ethernet PercentOfLineRate
<b>Result</b>	The text returned will be the bandwidth utilisation in relation to the line rate. It will be in the range listed above

---



### TestPacketGeneration Ethernet CalnexSignature

Get	
<b>Description</b> 	Queries the Calnex Signature, a unique identifier based on the serial number of the instrument that is used to identify test packets. This parameter cannot be set.
<b>Command</b>	TestPacketGeneration Ethernet CalnexSignature
<b>Result</b>	The text returned will be the Calnex Signature e.g. CALNEX01_XXXXX where XXXXX is a unique Id (the instrument serial number)



### TestPacketGeneration Ethernet PayloadSelection

Set	
<b>Description</b> 	Sets the payload generated in all test packets. The payload can be populated with an incrementing pattern or with a random (PRBS) pattern
<b>Command</b>	TestPacketGeneration Ethernet PayloadSelection <value>
<b>Parameters</b>	<value> PRBS, INCREMENTING
<b>Prerequisites</b>	<i>MasterSlave Enabled</i> must be FALSE
Get	
<b>Description</b> 	Queries the payload generated in all test packets.
<b>Command</b>	TestPacketGeneration Ethernet PayloadSelection
<b>Result</b>	The text returned will be the payload used for test packets. It will be one of the values listed above

### TestPacketGeneration Ethernet TestPacket #<path> Value


Set	
<b>Description</b> 	Defines the test packet content for specified packet fields.
<b>Command</b>	TestPacketGeneration Ethernet TestPacket #<path> Value <value>
<b>Parameters</b>	<path> Specifies the protocol field. This is a dot separated string which represents the hierarchical path to the field e.g. "Ethernet II.Destination". The GUI display should be used to as a guide to constructing path strings. <value> The packet contents For example: <pre>paragonset TestPacketGeneration Ethernet TestPacket "#Ethernet II.Destination" Value "f1 f2 f3 f4 f5 f6"</pre>
<b>Prerequisites</b>	<i>MasterSlave Enabled</i> must be FALSE
Get	
<b>Description</b> 	Queries the constructed test packets.
<b>Command</b>	TestPacketGeneration Ethernet TestPacket #<path> Value
<b>Result</b>	The text returned will be the contents of the test packets.

### TestPacketGeneration Ethernet State

Set	
<b>Description</b> 	Controls the state of test packet generation.
<b>Command</b>	TestPacketGeneration Ethernet State <value>
<b>Parameters</b>	<value> The state to move to. This must be one of the following: OFF, STOPGEN, STOPMON, START
<b>Prerequisites</b>	<i>MasterSlave Enabled</i> must be FALSE
Get	
<b>Description</b> 	Queries the state of test packet generation.
<b>Command</b>	TestPacketGeneration Ethernet State
<b>Result</b>	The text returned will be the test packet generation state. It will be one of the values listed above



---

### TestPacketGeneration Ethernet Reset

Set	
<b>Description</b> 	Resets the test packet settings to their default values.
<b>Command</b>	TestPacketGeneration Ethernet Reset
<b>Result</b>	No result is expected


---

### TestPacketGeneration Ethernet LatencyCalState

Set	
<b>Description</b> 	Control the state of the latency calibration.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalState <value>
<b>Parameters</b>	<value> The state to move to. This must be one of the following: STARTCAL, STOPCAL
<b>Prerequisites</b>	<i>MasterSlave Enabled</i> must be FALSE
Get	
<b>Description</b> 	Queries the state of the latency calibration.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalState
<b>Result</b>	The text returned will be the latency calibration. It will be one of the values listed above



---

### TestPacketGeneration Ethernet LatencyCalValueValid

Get	
<b>Description</b> 	Queries whether the latency calibration value is valid to read. If the instrument has not been calibrated then the Latency Calibration value will be invalid.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalValueValid
<b>Result</b>	The command returns TRUE if the latency calibration value is valid, otherwise it returns FALSE.

---


### TestPacketGeneration Ethernet LatencyCalValue

Set	
<b>Description</b> 	Specify the calibration value to be used for the packet latency calculation.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalValue <value>
<b>Parameters</b>	<value> The calibration value (in ns) in the range: 0 to 500000000
<b>Prerequisites</b>	<i>MasterSlave Enabled</i> must be FALSE. When querying this value, the validity command should first be used to determine whether or not the Latency Calibration value is valid to read.
Get	
<b>Description</b> 	Queries the calibration value to be used for the packet latency calculation.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalValue
<b>Result</b>	The latency calibration value (in ns). It will be in the range listed above



---

**TestPacketGeneration Ethernet LatencyCalTimeRemaining**

Get	
<b>Description</b> 	Returns the time remaining, in seconds, until the end of the calibration run.
<b>Command</b>	TestPacketGeneration Ethernet LatencyCalTimeRemaining
<b>Result</b>	The text returned will be the remaining time in s.

## Master/Slave Emulation Commands

### Master/Slave Emulation Commands Concepts

These commands control the Master-Slave Emulation (MSE) feature, if licenced on the connected instrument. MSE enables Paragon to emulate both a master and a slave PTP device, allowing standalone testing of user devices and environments.

### Master/Slave Emulation Indices

A number of the commands below take an index (#<masterIdx>) specifying the Master on which the operation is to be performed. For example:



```
MasterSlave Master #<masterIdx> Enabled <enable>
```

For Paragon-X, **masterIdx** is either 0 (Master 0 on port 1) or 1 (Master 1 on port 2).

For Paragon-100G and Paragon-neo, **masterIdx** must be 0 (since these instruments support only one master on port 1).



---

### MasterSlave Enabled



Set	
<b>Description</b> 	Enables or disables master/slave emulation (MSE) mode.
<b>Command</b>	MasterSlave Enabled <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have the MSE option fitted. <i>TxRxMode</i> must be TRUE.
Get	
<b>Description</b> 	Queries the enabled status of master/slave emulation (MSE).
<b>Command</b>	MasterSlave Enabled
<b>Prerequisites</b>	Instrument must have the MSE option fitted.
<b>Result</b>	TRUE if MSE is enabled, FALSE otherwise.

---



### MasterSlave DeviceConfiguration

Set	
<b>Description</b> 	Determines which device configuration master/slave will emulate.
<b>Command</b>	MasterSlave DeviceConfiguration <configuration>
<b>Parameters</b>	<configuration> <b>Paragon-X, Paragon-neo:</b> MASTERANDSLAVE, TWOMASTERS <b>Paragon-100G:</b> MASTERANDSLAVE
<b>Prerequisites</b>	Instrument must have the MSE option fitted.
Get	
<b>Description</b> 	Queries the configuration status of master/slave emulation (MSE).
<b>Command</b>	MasterSlave DeviceConfiguration
<b>Prerequisites</b>	Instrument must have the MSE option fitted.
<b>Result</b>	Return text will be which configuration is currently configured. It will be one of the values listed above



## MasterSlave TestConfiguration

Set	
<b>Description</b> 	Specifies which type of device test will be performed.
<b>Command</b>	MasterSlave TestConfiguration <configuration>
<b>Parameters</b>	<configuration> <b>Paragon-X:</b> SLAVE_TEST, GENERAL_PURPOSE, TRANSPARENT_CLOCK, BOUNDARY_CLOCK, MASTER_TEST, TIME_AWARE_BRIDGE, TIME_AWARE_END_STATION <b>Paragon-100G, Paragon-neo:</b> TRANSPARENT_CLOCK, BOUNDARY_CLOCK, MASTER_TEST
<b>Prerequisites</b>	Instrument must have the MSE option fitted. TRANSPARENT_CLOCK, BOUNDARY_CLOCK, MASTER_TEST and TIME_AWARE_BRIDGE are only available when <b>MasterSlave DeviceConfiguration</b> is set to MASTERANDSLAVE
Get	
<b>Description</b> 	Specifies which type of device test will be performed.
<b>Command</b>	MasterSlave TestConfiguration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Return text will be which configuration is currently configured. It will be one of the values listed above



## MasterSlave StandardsProfile

Set	
<b>Description</b> 	Automatically configures Master Slave Emulation settings to match a selected standards profile.
<b>Command</b>	MasterSlave StandardsProfile <profileName>
<b>Parameters</b>	<profileName> <b>Paragon-X:</b> 1588-2008_PROFILE, 1588-2008_(ANNEX_J)_PROFILE, G.8265.1_FREQUENCY_PROFILE, G.8275.1_PHASE_PROFILE, G.8275.2_PTS, CCSA_PROFILE, C37.238-2011_POWER_PROFILE, C37.238-2017_POWER_PROFILE, 802.1AS_(GTP), 802.1AS-2020_(GTP), AES67_PROFILE, ST_2059-2:2015_SMPTE_PROFILE, AES67+SMPTE_PROFILE, 61850-9-3_UTILITY_PROFILE ENTERPRISE_PROFILE  Note: 802.1AS-REV_(GTP) has been deprecated. From software versions later than X.10.41.07, this is replaced by 802.1AS-2020_(GTP)  <b>Paragon-100G, Paragon-neo:</b> 1588-2008_PROFILE, G.8265.1_FREQUENCY_PROFILE, G.8275.1_PHASE_PROFILE, G.8275.2_PTS CCSA_PROFILE
<b>Prerequisites</b>	Instrument must have MSE option fitted. MSE must not be running. C37.238-2011_POWER_PROFILE, C37.238-2017_POWER_PROFILE, 802.1AS_(GTP) and 802.1AS-REV_(GTP) are only available when the Master/Slave Emulation (Peer to Peer) option is fitted.
Get	
<b>Description</b> 	Queries the name of the currently selected standards profile.
<b>Command</b>	MasterSlave StandardsProfile
<b>Prerequisites</b>	Instrument must have appropriate MSE options fitted.
<b>Result</b>	The profile which is currently selected. It will be one of the values listed above



## MasterSlave Capture

Set	
<b>Description</b> 	Determines whether the Paragon will capture traffic on Port 1 (Master1 or Master), Port 2 (Master2 or Slave) or Rx on both.
<b>Command</b>	MasterSlave Capture <configuration>
<b>Parameters</b>	<configuration>      PORT1, PORT2, RXBOTH
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the Paragon will capture traffic on Port 1 (Master1 or Master), Port 2 (Master2 or Slave) or Rx on both.
<b>Command</b>	MasterSlave Capture
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The configuration which is currently selected. It will be one of the values listed above







### MasterSlave CoupleM2SeedTime

Set	
<b>Description</b> 	Enables or disables the coupling of Master 2 seedtime to Master 1 seedtime. When the seed times are coupled, both masters will start at the same time.
<b>Command</b>	MasterSlave CoupleM2SeedTime <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries whether Master 2 seedtime to Master 1 seedtime is coupled.
<b>Command</b>	MasterSlave CoupleM2SeedTime
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.



### MasterSlave CoupleM2DelayMechanism

Set	
<b>Description</b> 	Enables or disables the coupling of Master 2 DelayMechanism to Master 1 DelayMechanism.
<b>Command</b>	MasterSlave CoupleM2DelayMechanism <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Master 2 DelayMechanism to Master 1 DelayMechanism is coupled.
<b>Command</b>	MasterSlave CoupleM2DelayMechanism
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.



### MasterSlave CoupleSlaveDelayMechanism

Set	
<b>Description</b>   	Enables or disables the coupling of Slave DelayMechanism to Master DelayMechanism.
<b>Command</b>	MasterSlave CoupleSlaveDelayMechanism <enable>
<b>Parameters</b>	<enable> <b>Paragon-X:</b> TRUE, FALSE <b>Paragon-100G, Paragon-neo:</b> TRUE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b>   	Queries whether Slave DelayMechanism to Master DelayMechanism is coupled.
<b>Command</b>	MasterSlave CoupleSlaveDelayMechanism
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.



### MasterSlave CoupleMasterDomain

Set	
<b>Description</b> 	Enables or disables coupling of the domain number for both Masters when in two Master mode
<b>Command</b>	MasterSlave CoupleMasterDomain <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the domain numbers of the two Master are coupled
<b>Command</b>	MasterSlave CoupleMasterDomain
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.


### MasterSlave CoupleMasterEncapsulation

Set	
<b>Description</b> 	Enables or disables coupling of the encapsulation for both Masters when in two Master mode
<b>Command</b>	MasterSlave CoupleMasterEncapsulation <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the encapsulation of the two Master are coupled
<b>Command</b>	MasterSlave CoupleMasterDomain
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.



### MasterSlave CoupleMasterStartStop

Set	
<b>Description</b> 	When enabled, both Masters will being generating PTP at the same time.
<b>Command</b>	MasterSlave CoupleMasterStartStop <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether starting and stopping of the two Master is coupled
<b>Command</b>	MasterSlave CoupleMasterStartStop
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if coupled, FALSE otherwise.



## MasterSlave ApplyChanges

Set	
<b>Description</b> 	Applies configuration changes to an active master or slave.
<b>Command</b>	MasterSlave ApplyChanges
<b>Prerequisites</b>	Instrument must have MSE option fitted.


## MasterSlave TransparentClockManualCalibrationMode

Set	
<b>Description</b> 	Sets the Transparent Clock measurement calibration mode to manual or measured. For manual calibration use the TransparentClockManualCalibration command. For measured calibration use the TransparentClockCalibration command.
<b>Command</b>	MasterSlave TransparentClockManualCalibrationMode <enable>
<b>Parameters</b>	<enable> <b>Paragon-X:</b> TRUE: Enables manual calibration; FALSE: Disables manual calibration <b>Paragon-100G, Paragon-neo:</b> TRUE: Enables manual calibration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Transparent Clock measurement calibration mode is manual or measured.
<b>Command</b>	MasterSlave TransparentClockManualCalibrationMode
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if calibration mode is manual, FALSE if measured.


## MasterSlave TransparentClockManualCalibration

Set	
<b>Description</b> 	Specifies the total Ethernet cable delays between both ports of the DUT and the Paragon. Values of 5.1ns per metre for electrical cable and 4.9ns per metre for optical cable are recommended.
<b>Command</b>	MasterSlave TransparentClockManualCalibration <delay>
<b>Parameters</b>	<delay>     The cable delay (in ns) to use. This is an integer in the range: 0 to 1000.
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the manually entered value for the Transparent Clock Calibration.
<b>Command</b>	MasterSlave TransparentClockManualCalibration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Return text will the cable delay (in ns). This will be in the range listd above



## MasterSlave TransparentClockCalibration

Set	
<b>Description</b> 	Runs the Transparent Clock measured calibration. This will only take effect when the master or slave is stopped or when ApplyChanges is actioned. The calibration will clear current flow filters and capture data. The calibration must be run again if the total length of cable, Line Rate, Interface, GbE Electrical Phy Settings or Intrinsic Delay is changed.
<b>Command</b>	MasterSlave TransparentClockCalibration
<b>Prerequisites</b>	Instrument must have MSE option fitted. Requires Port 1 to Port 2 connection using the same total length of cable as will be used for the measurement.

## MasterSlave TransparentClockCalibrationStatus



Get	
<b>Description</b> 	Queries the status of the measured Transparent Clock calibration.
<b>Command</b>	MasterSlave TransparentClockCalibrationStatus
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if calibrated, FALSE if the calibration has not been run or has been invalidated by other configuration changes.

## MasterSlave BoundaryClockCalibration




Set	
<b>Description</b> 	Specifies the Ethernet cable delay between the DUT and the Paragon measurement port. A value of 5.1ns per metre for electrical cable and 4.9ns per metre for optical cable are recommended.
<b>Command</b>	MasterSlave BoundaryClockCalibration <delay>
<b>Parameters</b>	<delay> The cable delay (in ns) to use. This is an integer in the range: 0 to 5000.
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the Ethernet cable delay between the DUT and the Paragon measurement port.
<b>Command</b>	MasterSlave BoundaryClockCalibration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Return text will the cable delay (in ns). This will be in the range listed above





## MasterSlave AutoSetCaptureFlowFilter

Set	
<b>Description</b> 	Enables or disables automatically setting the capture flow filter when the MasterSlave StartMeasurement command is used.
<b>Command</b>	MasterSlave AutoSetCaptureFlowFilter <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have the MSE option fitted. TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries whether the capture flow filter is set automatically.
<b>Command</b>	MasterSlave AutoSetCaptureFlowFilter
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the capture flow filter is automatically enabled, FALSE otherwise.



## MasterSlave StartMeasurement

Set	
<b>Description</b>   	Starts a measurement. For MasterSlave test configurations where Time Error measurements can be made then this command will: <ul style="list-style-type: none"> <li>• If not already started, start the Calnex Master&amp;Slave (Slave only for Master Test).</li> <li>• Ensure the <b>MasterSlave Capture</b> setting is correct.</li> <li>• Automatically set the capture flow filter if <b>MasterSlave AutoSetCaptureFlowFilter</b> is enabled.</li> <li>• Start the Capture.</li> </ul>
<b>Command</b>	MasterSlave StartMeasurement
<b>Prerequisites</b>	Instrument must have MSE option fitted.



## MasterSlave UseMeasuredLinkDelay

Set	
<b>Description</b> 	For devices which timestamp internally, enabling this setting causes the CAT to calculate the link delay using peer delay messaging and so removes the requirement to know the delay between the Paragon and the DUT internal timestamp point.
<b>Command</b>	MasterSlave UseMeasuredLinkDelay <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have the MSE option fitted. TxRxMode must be TRUE.
Get	
<b>Description</b> 	Queries whether the CAT will use the measured link delay in time error calculations
<b>Command</b>	MasterSlave UseMeasuredLinkDelay
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE or FALSE



## MasterSlave Master #<masterIdx> Enabled

Set	
<b>Description</b> 	Starts or stops the specified master. <b>Paragon-X:</b> When the <b>DeviceConfiguration</b> is TWOMASTERS and <b>CoupleM2SeedTime</b> is TRUE, starting Master #0 will start both masters. When the <b>DeviceConfiguration</b> is MASTERANDSLAVE and <b>CoupleMasterSlaveStart</b> is TRUE, starting Master #0 will also start the Calnex Slave. <b>Paragon-100G, Paragon-neo:</b> Starts or stops Master #0
<b>Command</b>	MasterSlave Master #<masterIdx> Enabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> Set to TRUE to start the specified master or FALSE to stop it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is currently running.
<b>Command</b>	MasterSlave Master #<masterIdx> Enabled
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is running, FALSE otherwise.



## MasterSlave Master #<masterIdx> Mode

Set	
<b>Description</b> 	Determines the mode in which the specified master is operating. If set to AUTO mode, the master will await signalling messages from slaves. If set to FORCED, the master will start transmitting Announce & Sync messages to all of the enabled manually configured slaves.
<b>Command</b>	MasterSlave Master #<masterIdx> Mode <mode>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <mode> The mode in which the master is to operate: AUTO or FORCED
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the mode in which the specified master is operating.
<b>Command</b>	MasterSlave Master #<masterIdx> Mode
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The mode the master is operating in. It will be one of the values listed above



## MasterSlave Master #<masterIdx> Encapsulation

Set	
<b>Description</b> 	Determines which type of encapsulation for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Encapsulation <mode>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <mode> <b>Paragon-X, Paragon-neo:</b> IPV4, IPV6 or ETHERNET <b>Paragon-100G:</b> IPV4, ETHERNET
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the encapsulation setting for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Encapsulation
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returns the encapsulation as used by the master. It will be one of the values listed above



## MasterSlave Master #<masterIdx> DelayMechanism

Set	
<b>Description</b> 	Sets the Master's PTP delay mechanism.
<b>Command</b>	MasterSlave Master #<masterIdx> DelayMechanism <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> <b>Paragon-X:</b> ENDTOEND or PEERTOPEER <b>Paragon-100G, Paragon-neo:</b> END2END
<b>Prerequisites</b>	Instrument must have MSE end to end option to set ENDTOEND Instrument must have MSE peer to peer option to set PEERTOPEER
Get	
<b>Description</b> 	Queries whether starting of the master is to be synchronised to an external 1pps input.
<b>Command</b>	MasterSlave Master #<masterIdx> DelayMechanism
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returns the delay mechanism as used by the master. It will be one of the values listed above



### MasterSlave Master #<masterIdx> UseCurrentTimeForSeedTime

Set	
<b>Description</b> 	Enables or disables the use of the current PC time as the seed time when starting the master.
<b>Command</b>	MasterSlave Master #<masterIdx> UseCurrentTimeForSeedTime <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> <b>Paragon-X:</b> TRUE, FALSE <b>Paragon-100G, Paragon-neo:</b> TRUE
<b>Prerequisites</b>	Instrument must have MSE option enable. If <masterIdx> is 1 and TWOMASTERS mode is not selected, an error will be generated.
Get	
<b>Description</b> 	Queries the state of whether the controlling PC is being used as the seed when starting the master.
<b>Command</b>	MasterSlave Master #<masterIdx> UseCurrentTimeForSeedTime
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. If <masterIdx> is 1 and TWOMASTERS mode is not selected, an error will be generated.
<b>Result</b>	TRUE if the controlling PC is being used as the seed timer, FALSE otherwise.



### MasterSlave Master #<masterIdx> SyncToExternal1pps

Set	
<b>Description</b> 	Enables or disables starting the master synchronised to an external 1pps input.
<b>Command</b>	MasterSlave Master #<masterIdx> SyncToExternal1pps <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> <b>Paragon-X:</b> Enable (TRUE) or disable (FALSE) the synchronisation <b>Paragon-100G, Paragon-neo:</b> Enable (TRUE)
<b>Prerequisites</b>	Instrument must have MSE option fitted. Only Master #0 can be synchronised to 1pps
Get	
<b>Dvescription</b> 	Queries whether starting of the master is to be synchronised to an external 1pps input.
<b>Command</b>	MasterSlave Master #<masterIdx> SyncToExternal1pps
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if enabled, FALSE otherwise.



### MasterSlave Master #<masterIdx> NumVlanTags

Set	
<b>Description</b> 	Sets the number of VLAN tags to insert into the frame header.
<b>Command</b>	MasterSlave Master #<masterIdx> NumVlanTags <numtags>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <numtags> Number of VLAN tags to insert, an integer in range 0 to 3
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the number of VLAN tags inserted into the frame header.
<b>Command</b>	MasterSlave Master #<masterIdx> NumVlanTags
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The number of VLAN tags inserted into the frame header.



### MasterSlave Master #<masterIdx> VlanTagTpid #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'tag protocol identifier' (TPID) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagTpid #<tagIdx> <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload <value> TPID field value, a 16-bit integer in range 0x601 to 0xFFFF
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'tag protocol identifier' (TPID) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagTpid #<tagIdx>
<b>Parameters</b>	<masterIdx> See above <tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
<b>Result</b>	Tag protocol identifier field value, a 16-bit integer in range 0x601 to 0xFFFF.



### MasterSlave Master #<masterIdx> VlanTagPcp #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'priority code point' (PCP) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagPcp #<tagIdx> <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload <value> Priority code point, a 3-bit integer in range 0 to 7
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'priority code point' (PCP) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagPcp #<tagIdx> <value>
<b>Parameters</b>	<masterIdx> See above <tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
<b>Result</b>	Priority code point, a 3-bit integer in range 0 to 7.


### MasterSlave Master #<masterIdx> VlanTagDei #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'drop eligible indicator' (DEI) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagDei #<tagIdx> <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload <value> 0 or 1
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'drop eligible indicator' (DEI) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagDei #<tagIdx>
<b>Parameters</b>	<masterIdx> See above <tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
<b>Result</b>	The current DEI setting: 0 or 1



### MasterSlave Master #<masterIdx> VlanTagVid #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'VLAN identifier' (VID) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagVid #<tagIdx> <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload <value> VLAN identifier field value, a 12-bit integer in range 0 to 4096
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'VLAN identifier' (VID) field value.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagVid #<tagIdx>
<b>Parameters</b>	<masterIdx> See above <tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
<b>Result</b>	VLAN identifier field value, a 12-bit integer in the range listed above

### MasterSlave Master #<masterIdx> VlanTagsReset



Set	
<b>Description</b> 	Resets the master VLAN tag settings to default values.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanTagsReset
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have MSE option fitted.

### MasterSlave Master #<masterIdx> VlanCoupleMasterSlave

Set	
<b>Description</b> 	Enables or disables the coupling of Master and Slave VLAN tagging settings. When coupled, Master VLAN tagging settings are also applied to slave.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanCoupleMasterSlave <enabled>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> Boolean
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE.
Get	
<b>Description</b> 	Queries the coupled status of Master and Slave VLAN tagging settings. When coupled, Master VLAN tagging settings are also applied to slave.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanCoupleMasterSlave
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE.
<b>Result</b>	Boolean corresponding to coupled status.



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**MasterSlave Master #<masterIdx> VlanCoupleMasters**



Set	
<b>Description</b> 	Enables or disables the coupling of Master 1 and Master 2 VLAN tagging settings. When coupled, Master 1 VLAN tagging settings are also applied to Master 2.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanCoupleMasters <enabled>
<b>Parameters</b>	<masterIdx>     The Master to be configured: 0 ( <i>Master 1</i> ) <enable>         Boolean
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be TWOMASTERS.
Get	
<b>Description</b> 	Queries the coupled status of Master 1 and Master 2 VLAN tagging settings. When coupled, Master 1 VLAN tagging settings are also applied to Master 2.
<b>Command</b>	MasterSlave Master #<masterIdx> VlanCoupleMasters
<b>Parameters</b>	<masterIdx>     See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be TWOMASTERS.
<b>Result</b>	Boolean indicating whether Masters are coupled





### MasterSlave Master #<masterIdx> UnicastEnabled

Set	
<b>Description</b> 	Enables or disables Unicast operation for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> Boolean, set to TRUE to specify Unicast, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is configured for Unicast messages.
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastEnabled
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is processing unicast messages, FALSE otherwise.



### MasterSlave Master #<masterIdx> MulticastEnabled

Set	
<b>Description</b> 	Enables or disables Multicast operation for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> Boolean, set to TRUE to specify for Multicast, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is configured for Multicast messages.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastEnabled
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is processing Multicast messages, FALSE otherwise.



### MasterSlave Master #<masterIdx> EnableMcastAnnMsgs

Set	
<b>Description</b> 	Enables or disables the transmission of multicast announce message by the specified master. It should be noted that if multicast announce messages are enabled, the master will only be able to communicate to a maximum of 7 unicast slaves instead of the usual 8.
<b>Command</b>	MasterSlave Master #<masterIdx> EnableMcastAnnMsgs <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE for multicast announce messages, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is transmitting multicast announce messages.
<b>Command</b>	MasterSlave Master #<masterIdx> EnableMcastAnnMsgs
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is transmitting multicast announce messages, FALSE otherwise.



### MasterSlave Master #<masterIdx> MulticastAnnRate

Set	
<b>Description</b> 	Sets the rate at which multicast announce messages will be sent.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastAnnRate <rate>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <rate> A fixed packet rate for transmission. It must be one of: 1/64 (1 message every 64 seconds) 1/32 (1 message every 32 seconds) 1/16 (1 message every 16 seconds) 1/8 (1 message every 8 seconds) 1/4 (1 message every 4 seconds) 1/2 (1 message every 2 seconds) 1 (1 message each second) 2 (2 messages per second) 4 (4 messages per second) 8 (8 messages per second) 16 (16 messages per second) 32 (32 messages per second) 64 (64 messages per second) 128 (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. Only applicable if <b>EnableMcastAnnMsgs</b> is set to TRUE for the port in question.
Get	
<b>Description</b> 	Queries the rate at which the specified master is transmitting multicast announce messages.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastAnnRate
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. Only applicable if <b>EnableMcastAnnMsgs</b> is set to TRUE for the port in question
<b>Result</b>	The multicast announce message rate. It will be one of the values listed above



### MasterSlave Master #<masterIdx> MulticastSyncEnabled

Set	
<b>Description</b> 	Enables or disables the transmission of multicast sync messages by the specified master. It should be noted that if multicast sync messages are enabled, the master will only be able to communicate to a maximum of 7 unicast slaves instead of the usual 8.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSyncEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE for multicast sync messages, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is transmitting multicast sync messages.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSyncEnabled
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if multicast sync messages are enabled; FALSE otherwise.



## MasterSlave Master #<masterIdx> MulticastSyncRate

Set																													
<b>Description</b> 	Sets the rate at which multicast sync messages will be sent.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSyncRate <rate>																												
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;rate&gt; A fixed packet rate for transmission. It must be one of:</p> <table style="margin-left: 40px;"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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32	(32 messages per second)																												
64	(64 messages per second)																												
128	(128 messages per second)																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
Get																													
<b>Description</b> 	Queries the rate at which the specified master is transmitting multicast sync messages.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSyncRate																												
<b>Parameters</b>	<masterIdx> See above																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
<b>Result</b>	The multicast sync message rate. It will be one of the rates listed above.																												

### MasterSlave Master #<masterIdx> MulticastMaxDelayReqRate



Set	
<b>Description</b> 	The Master will request that the Slave sends Delay-Req messages at less than or equal to this rate.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastMaxDelayReqRate <rate>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <rate> A fixed packet rate for transmission. It must be one of: 1/64 (1 message every 64 seconds) 1/32 (1 message every 32 seconds) 1/16 (1 message every 16 seconds) 1/8 (1 message every 8 seconds) 1/4 (1 message every 4 seconds) 1/2 (1 message every 2 seconds) 1 (1 message each second) 2 (2 messages per second) 4 (4 messages per second) 8 (8 messages per second) 16 (16 messages per second) 32 (32 messages per second) 64 (64 messages per second) 128 (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. Multicast messaging must be enabled. Master/Slave generation must be stopped.
Get	
<b>Description</b> 	Queries the maximum Delay-Req rate that will be requested by the Master
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastMaxDelayReqRate
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The message rate. It will be one of the rates listed above.

### MasterSlave Master #<masterIdx> MulticastDelRespEnabled

Set	
<b>Description</b> 	Enables or disables responding to multicast Delay Request messages received by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastDelRespEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> Boolean, set to TRUE to allow responses to Delay Request messages, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the specified master is responding to multicast Delay Request messages received by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastDelRespEnabled
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is responding to multicast Delay Request messages, FALSE otherwise.



---

### MasterSlave Master #<masterIdx> MulticastIpAddress



Set	
<b>Description</b> 	Specifies the multicast destination IPv4 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv4 address with '.' delimiters e.g. 224.0.1.129
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the multicast destination IPv4 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current IPv4 multicast IP address.

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### MasterSlave Master #<masterIdx> MulticastIpv6Address

Set	
<b>Description</b> 	Specifies the multicast destination IPv6 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpv6Address <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the multicast destination IP address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpv6Address
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current multicast IPv6 address.



### MasterSlave Master #<masterIdx> MulticastIpMACAddress

Set	
<b>Description</b> 	Specifies the multicast destination MAC address to be used by the specified master when the encapsulation is IPv4.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the multicast destination MAC address to be used by the specified master when the encapsulation is IPv4.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation Message</b> must be set to IPV4.
<b>Result</b>	The currently configured MAC address for the specified port with fields delimited by spaces e.g. 11 22 33 44 55 66


### MasterSlave Master #<masterIdx> MulticastIpv6MACAddress

Set	
<b>Description</b> 	Specifies the multicast destination MAC address to be used by the specified master when the encapsulation is IPv6.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpv6MACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the multicast destination MAC address to be used by the specified master when the encapsulation is IPv6.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastIpv6MACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation Message</b> must be set to IPV6.
<b>Result</b>	The currently configured MAC address for the specified port with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Master #<masterIdx> MulticastEthMACAddress

Set	
<b>Description</b> 	Specifies the multicast destination MAC address to be used by the specified master when the encapsulation is ETHERNET.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastEthMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to ETHERNET.
Get	
<b>Description</b> 	Queries the multicast destination MAC address to be used by the specified master when the encapsulation is ETHERNET.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastEthMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation Message</b> must be set to ETHERNET.
<b>Result</b>	The currently configured MAC address for the specified port with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Master #<masterIdx> ResetMulticastUnicast

Set	
<b>Description</b> 	Resets the Multicast/Unicast settings to default values.
<b>Command</b>	MasterSlave Master #<masterIdx> ResetMulticastUnicast
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.



### MasterSlave Master #<masterIdx> TransportSpecific

Set	
<b>Description</b> 	Specifies the transportSpecific PTP field that will be used in the messages sent by the master.
<b>Command</b>	MasterSlave Master #<masterIdx> TransportSpecific <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer for the transportSpecific nibble used by the master. This is either 0 or 1.
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the transportSpecific PTP field value that will be used in the messages sent by the master.
<b>Command</b>	MasterSlave Master #<masterIdx> TransportSpecific
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The transportSpecific PTP field used by the master. This will be 0 or 1.

### MasterSlave Master #<masterIdx> DomainNumber



Set	
<b>Description</b> 	Specifies the domain number to which the specified master belongs.
<b>Command</b>	MasterSlave Master #<masterIdx> DomainNumber <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> The domain number: 0 to 127
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the domain number to which the specified master belongs.
<b>Command</b>	MasterSlave Master #<masterIdx> DomainNumber
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The domain number of the specified master. This will be in the range listed above

### MasterSlave Master #<masterIdx> MinorVersionPTP



Set	
<b>Description</b> 	Specifies the minor PTP version (for G.802.1AS-rev) or the first reserved field in the common header.
<b>Command</b>	MasterSlave Master #<masterIdx> MinorVersionPTP <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> The minor PTP version or reserved field: 0 or 1.
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the minor PTP version / first reserved field in the common header
<b>Command</b>	MasterSlave Master #<masterIdx> MinorVersionPTP
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The minor PTP version / first reserved field in the common header for the specified master. This will be in the range listed above





### MasterSlave Master #<masterIdx> ClockID

Set	
<b>Description</b> 	Specifies the clock Identity of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockID <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> The clock Id to be used. This should be a string containing 8 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 00 FF"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the clock identity of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockID
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The clock identity for the specified master. This will be a string in the format defined above



### MasterSlave Master #<masterIdx> PortNumber

Set	
<b>Description</b> 	Specifies the port number being used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PortNumber <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> A 2 byte hex value for the port number. This can either be specified as 4 hex nibbles (e.g. 0000 to FFFF) or as a space-separated string of 2 hex bytes (e.g. "00 00" to "FF FF")
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the port number being used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PortNumber
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current port number. This will be returned as a string containing 2 space separated hex bytes.



### MasterSlave Master #<masterIdx> CorrectionField

Set	
<b>Description</b> 	Specifies the correction field value to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> CorrectionField <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer value for the correction field. It must be in the range: -140737488355328 to 140737488355327
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the correction field value to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> CorrectionField
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The correction field value. This will be in the range listed above


### MasterSlave Master #<masterIdx> AlternateMaster

Set	
<b>Description</b> 	Enables or disables the alternate master flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> AlternateMaster <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the alternate flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the alternate master flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> AlternateMaster
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the alternate master flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> TwoStep

Set	
<b>Description</b> 	Enables or disables the two step flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> TwoStep <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the two-step flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the two step flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> TwoStep
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the two step flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> Unicast

Get	
<b>Description</b> 	Queries the value of the unicast flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> Unicast
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The text returned will be the value of the unicast flag



### MasterSlave Master #<masterIdx> Leap59

Set	
<b>Description</b> 	Enables or disables the leap 59 flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> Leap59 <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the leap59 flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the leap 59 flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> Leap59
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the leap 59 flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> Leap61

Set	
<b>Description</b> 	Enables or disables the leap 61 flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> Leap61 <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the leap61 flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have an MSE option fitted
Get	
<b>Description</b> 	Queries the state of the leap 61 flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> Leap61
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the leap 61 flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> PTPProfile1

Set	
<b>Description</b> 	Enables or disables the ptpProfile1 flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPProfile1 <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the ptpProfile1 flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the ptpProfile1 flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPProfile1
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the ptpProfile1 flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> PTPProfile2

Set	
<b>Description</b> 	Enables or disables the ptpProfile2 flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPProfile2 <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the ptpProfile2 flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the ptpProfile2 flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPProfile2
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the ptpProfile2 flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> PTPTimescale

Set	
<b>Description</b> 	Enables or disables the ptpTimescale flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPTimescale <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the ptpTimescale flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the PTP Timescale flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> PTPTimescale
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the PTP Timescale flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> CurrentUTCOffsetValid

Set	
<b>Description</b> 	Enables or disables the currentUTCOffsetValid flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> CurrentUTCOffsetValid <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the currentUTCOffsetValid flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the CurrentUTCOffsetValid flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> CurrentUTCOffsetValid
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the currentUTCOffsetValid flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> TimeTraceable

Set	
<b>Description</b> 	Enables or disables the timeTraceable flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> TimeTraceable <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the timeTraceable flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the TimeTraceable flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> TimeTraceable
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the timeTraceable flag is enabled in the message header, FALSE otherwise.







### MasterSlave Master #<masterIdx> FreqTraceable

Set	
<b>Description</b> 	Enables or disables the frequencyTraceable flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> FreqTraceable <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the frequencyTraceable flag in the master, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the FreqTraceable flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> FreqTraceable
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the frequencyTraceable flag is enabled in the message header, FALSE otherwise.



### MasterSlave Master #<masterIdx> SynchronizationUncertain

Set	
<b>Description</b> 	Enables or disables the SynchronizationUncertain flag in the message header.
<b>Command</b>	MasterSlave Master #<masterIdx> SynchronizationUncertain <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE sets the SynchronizationUncertain flag, FALSE clears it
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the state of the SynchronizationUncertain flag for the specified master to use.
<b>Command</b>	MasterSlave Master #<masterIdx> SynchronizationUncertain
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the SynchronizationUncertain flag is enabled; FALSE otherwise.



### MasterSlave Master #<masterIdx> ClockClass

Set	
<b>Description</b>   	Specifies the clock class of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockClass <class>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <class> An integer value for the clock class in the range: 6 to 255
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b>   	Queries the clock class of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockClass
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The clock class value. This will be in the range listed above



### MasterSlave Master #<masterIdx> ClockAccuracy

Set	
<b>Description</b> 	Specifies the clock accuracy of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockAccuracy <accuracy>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <accuracy> 25_NS, 100_NS, 250_NS 1_US, 2.5_US, 10_US, 25_US, 100_US, 250_US 1_MS, 2.5_MS, 10_MS, 25_MS, 100_MS, 250_MS 1_S, 10_S, >_10_S
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the clock accuracy of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ClockAccuracy
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The clock accuracy value. This will be one of the values listed above plus UNKNOWN



### MasterSlave Master #<masterIdx> TimeSource

Set	
<b>Description</b> 	Specifies the time source for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> TimeSource <source>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <source> ATOMIC_CLOCK, GPS, TERRESTRIAL_RADIO, PTP, NTP, HAND_SET, OTHER, INTERNAL
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the time source for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> TimeSource
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The time source. This will be one of the values listed above.

### MasterSlave Master #<masterIdx> IpAddress



Set	
<b>Description</b> 	Specifies the IPv4 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> IpAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv4 address with '.' delimiters e.g. 192.168.254.101
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv4 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> IpAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The specified master's IPv4 address.

### MasterSlave Master #<masterIdx> Ipv6Address



Set	
<b>Description</b> 	Specifies the IPv6 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Ipv6Address <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv6 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> IpAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The specified master's IPv6 address.





### MasterSlave Master #<masterIdx> MACAddress

Set	
<b>Description</b> 	Specifies the MAC address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the MAC address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The currently configured MAC address for the specified master with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Master #<masterIdx> DiffServices

Set	
<b>Description</b> 	Specifies the IPv4 Differentiated Services byte for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> DiffServices <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer value for the Differentiated Services bytes. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries the IPv4 Differentiated Services byte for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> DiffServices
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The IPv4 Differentiated Services byte value. This will be in the range listed above


### MasterSlave Master #<masterIdx> Priority1

Set	
<b>Description</b> 	Specifies the Priority1 value of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Priority1 <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer value for Priority1. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the Priority1 value of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Priority1
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Priority1 value. This will be in the range listed above



### MasterSlave Master #<masterIdx> Priority2

Set	
<b>Description</b> 	Specifies the Priority2 value of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Priority2 <class>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer value for Priority2. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the Priority2 value of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> Priority2
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Priority2 value. This will be in the range listed above



### MasterSlave Master #<masterIdx> ResetCommonHeader

Set	
<b>Description</b> 	Resets common header settings to default values.
<b>Command</b>	MasterSlave Master #<masterIdx> ResetCommonHeader
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have MSE option fitted.



### MasterSlave Master #<masterIdx> CurrentUTCOffset

Set	
<b>Description</b> 	Specifies the current UTC offset value of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> CurrentUTCOffset <offset>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <offset> A signed integer value for currentUTCOffset. It must be in the range: -32768 to 32768
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the current UTC offset of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> CurrentUTCOffset
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The CurrentUTCOffset value. This will be in the range listed above







### MasterSlave Master #<masterIdx> LinkUtcOffsetToCcsaLeapSeconds

Set	
<b>Description</b> 	Enables or disables linking the <b>CurrentUTCOffset</b> with the <b>GPSEmulation CcsaLeapSeconds</b> value. When enabled: If the <b>CurrentUTCOffset</b> value is changed, the <b>GPSEmulation CcsaLeapSeconds</b> value will be set to <b>CurrentUTCOffset minus 19</b> , if this value is within the permitted <b>CcsaLeapSeconds</b> range. If the <b>GPSEmulation CcsaLeapSeconds</b> value is changed, the <b>CurrentUTCOffset</b> value will be set to <b>GPSEmulation CcsaLeapSeconds plus 19</b> .
<b>Command</b>	MasterSlave Master #<masterIdx> LinkUtcOffsetToCcsaLeapSeconds <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <enable> TRUE links the <b>CurrentUTCOffset</b> and <b>GPSEmulation CcsaLeapSeconds</b> values, FALSE unlinks them
<b>Prerequisites</b>	Instrument must have MSE option fitted. Instrument must have Advanced Time of Day & GPS Emulation option enabled.
Get	
<b>Description</b> 	Queries whether the <b>CurrentUTCOffset</b> with the <b>GPSEmulation CcsaLeapSeconds</b> values are linked.
<b>Command</b>	MasterSlave Master #<masterIdx> LinkUtcOffsetToCcsaLeapSeconds
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted. Instrument must have Advanced Time of Day & GPS Emulation option enabled.
<b>Result</b>	TRUE if the <b>CurrentUTCOffset</b> and <b>GPSEmulation CcsaLeapSeconds</b> values are linked, FALSE otherwise.



### MasterSlave Master #<masterIdx> SeedTime

Set	
<b>Description</b> 	Sets the master seed time to the specified value. The time used in this setting is a timestamp value and may need converted to/from a human readable format. This can be done via the website: <a href="http://www.epochconverter.com/">http://www.epochconverter.com/</a> . This setting is not used when the <b>UseCurrentTimeForSeedTime</b> setting is enabled.
<b>Command</b>	MasterSlave Master #<masterIdx> SeedTime <time>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <time> An integer value for the seed time (in s). It must be in the range: 0 to 253373443199
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>UseCurrentTimeForSeedTime</b> setting must be disabled for this command to be effective.
Get	
<b>Description</b> 	Queries the current value for the master seed time.
<b>Command</b>	MasterSlave Master #<masterIdx> SeedTime
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value for the seed time (in s). It will be in the range listed above


### MasterSlave Master #<masterIdx> StepsRemoved

Set	
<b>Description</b>   	Determines the number of steps between the specified master and the device.
<b>Command</b>	MasterSlave Master #<masterIdx> StepsRemoved <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> An integer value for stepsRemoved. It must be in the range: 0 to 1000
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b>   	Queries the number of steps between the master and the device.
<b>Command</b>	MasterSlave Master #<masterIdx> StepsRemoved
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value for the current value of stepsRemoved. It will be in the range listed above



### MasterSlave Master #<masterIdx> OffsetScaledLogVar

Set	
<b>Description</b> 	Determines the Offset Scaled Log Variance value for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> OffsetScaledLogVar <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> A 2 byte hex value. This can either be specified as 4 hex nibbles (e.g. 0000 to FFFF) or as a space-separated string of 2 hex bytes (e.g. "00 00" to "FF FF")
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the current value for the Offset Log Var value for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> OffsetScaledLogVar
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current Offset Scaled Log Variance value. This will be returned as a string containing 2 space separated hex bytes.



### MasterSlave Master #<masterIdx> ResetAnnMsg

Set	
<b>Description</b> 	Resets any the slave announce message settings to their default values for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> ResetAnnMsg
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have MSE option fitted.



### MasterSlave Master #<masterIdx> AllowedSlaveConfiguration

Set	
<b>Description</b> 	Determines how the master will know which slaves with which to communicate. When set to auto discover then the master will accept and grant unicast requests from the first 8 slaves (7 if multicast announce is turned on). If the master can grant the request it will start transmitting the requested messages. When set to manual the IP and/or MAC addresses of the slaves that are allowed to communicate with the master must be specified. In this case any slaves not in this list will be ignored.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlaveConfiguration <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> <b>Paragon-X:</b> AUTO, MANUAL <b>Paragon-100G, Paragon-neo:</b> AUTO
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the current discovery setting for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlaveConfiguration
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The type of discovery used. It will be one of the values listed above



### MasterSlave Master #<masterIdx> AllowedSlaveConnectionType

Set	
<b>Description</b> 	Determines how the slaves are physically connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlaveConnectionType <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> <b>Paragon-X</b> : DIRECT/SWITCH, ROUTER <b>Paragon-100G, Paragon-neo</b> : DIRECT/SWITCH
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be IPV4 or IPV6 to set the connection type to ROUTER.
Get	
<b>Description</b> 	Queries how the slaves are physically connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlaveConnectionType
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The configured physical connection. It will be one of the values listed above



### MasterSlave Master #<masterIdx> RouterMACAddress

Set	
<b>Description</b> 	Specifies the MAC address of the router connected to the paragon master port.
<b>Command</b>	MasterSlave Master #<masterIdx> RouterMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Master #&lt;masterIdx&gt; AllowedSlaveConnectionType</b> must be set to ROUTER
Get	
<b>Description</b> 	Queries the known MAC address of the router connected to the paragon master port.
<b>Command</b>	MasterSlave Master #<masterIdx> RouterMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The currently configured MAC address for the specified port with fields delimited by spaces e.g. 11 22 33 44 55 66

**MasterSlave Master #<masterIdx> MaxAnnounceRate**



Set																													
<b>Description</b> 	Determines the maximum announce rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxAnnounceRate <rate>																												
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;rate&gt; A fixed packet rate for transmission. It must be one of:</p> <table border="0"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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64	(64 messages per second)																												
128	(128 messages per second)																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
Get																													
<b>Description</b> 	Queries the maximum announce rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxAnnounceRate																												
<b>Parameters</b>	<masterIdx> See above																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
<b>Result</b>	The maximum announce rate. It will be one of the values listed above																												

## MasterSlave Master #<masterIdx> MaxSyncRate



Set																													
<b>Description</b> 	Determines the maximum sync rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxSyncRate <rate>																												
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;rate&gt; A fixed packet rate for transmission. It must be one of:</p> <table border="0"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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128	(128 messages per second)																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
Get																													
<b>Description</b> 	Queries the maximum sync rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxSyncRate																												
<b>Parameters</b>	<masterIdx> See above																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
<b>Result</b>	The maximum sync rate. It will be one of the rates listed above																												





## MasterSlave Master #<masterIdx> MaxDelayResponseRate

Set																													
<b>Description</b> 	Determines the maximum delay-response rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxDelayResponseRate <rate>																												
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;rate&gt; A fixed packet rate for transmission. It must be one of:</p> <table border="0"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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128	(128 messages per second)																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
Get																													
<b>Description</b> 	Queries the maximum delay-response rate that will be allowed when the specified master is set to auto slave configuration.																												
<b>Command</b>	MasterSlave Master #<masterIdx> MaxDelayResponseRate																												
<b>Parameters</b>	<masterIdx> See above																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
<b>Result</b>	The maximum delay-response rate. It will be one of the rates listed above																												



**MasterSlave Master #<masterIdx> <messageType> TlvTypeGroup #<tlvIdx>**

Set	
<b>Description</b> 	Sets the TLV Type for the selected TLV slot.
<b>Command</b>	MasterSlave Master #<masterIdx> <messageType> TlvTypeGroup #<tlvIdx> <tlvType>
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;messageType&gt; The message to carry the TLV  <b>Paragon-X:</b> AnnounceTLV, FollowUpTLV, SyncTLV  <b>Paragon-neo:</b> AnnounceTLV</p> <p>&lt;tlvIdx&gt; An integer value which represents the index of the TLV to be modified. Announce messages support up to 3 TLVs, while Follow Up and Sync messages support 1. Parameter must be one of: 0, 1, 2 (where 1 and 2 are applicable only for Announce messages)</p> <p>&lt;tlvType&gt; An enumerated value representing the type of the TLV. It must be one of:  <b>Paragon-X</b>            ORGANIZATION_EXTENSION (Announce only)            ALTERNATE_TIME_OFFSET_INDICATOR (Announce only)            ORGANIZATION_EXTENSION_IEEE_C37_238 (Announce only)            ORGANIZATION_EXTENSION_IEEE_C37_238_2017 (Announce only)            FOLLOW_UP_INFORMATION (FollowUp and Sync only)            PATH_TRACE (Announce only)            NOT_SELECTED  <b>Paragon-neo</b>            CMCC_5G            NOT_SELECTED</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the type of TLV for the selected TLV slot.
<b>Command</b>	MasterSlave Master #<masterIdx> <messageType> TlvTypeGroup #<tlvIdx>
<b>Parameters</b>	<p>&lt;masterIdx&gt; See above</p> <p>&lt;messageType&gt; See above</p> <p>&lt;tlvIdx&gt; See above</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The type of the TLV for the selected index. The result will be one of the values listed above



**MasterSlave Master #<masterIdx> <messageType> Tlv #<tlvIdx> #<tlvFieldPath> Mask**

Set											
<b>Description</b> 	Sets the specified TLV field.										
<b>Command</b>	MasterSlave Master #<masterIdx> <messageType> Tlv #<tlvIdx> #<tlvFieldPath> Mask <mask>										
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; vertical-align: top;"><b>&lt;masterIdx&gt;</b></td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;messageType&gt;</b></td> <td>The message to carry the TLV. <b>Paragon-X:</b> AnnounceTLV, FollowUpTLV, SyncTLV <b>Paragon-neo:</b> AnnounceTLV</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;tlvIdx&gt;</b></td> <td>An integer value which represents the index of the TLV to be modified. Announce messages support up to 3 TLVs, while Follow Up and Sync messages support 1. Parameter must be one of: 0, 1, 2 (where 1 and 2 are applicable only for Announce messages)</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;tlvFieldPath&gt;</b></td> <td>Specifies the TLV field. This is a dot separated string which represents the hierarchical path to the field e.g. "#INFORMATION_TLV.cumulativeScaledRateOffset". The GUI display should be used to as a guide to constructing path strings.</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;mask&gt;</b></td> <td>Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length. When &lt;mask&gt; = bbbbbbbb [bbbbbbb ...] (<i>binary mask</i>) Each character in the mask specifies the modification type to be applied to the bit or nibble: 0 = Clear the bit or all bits in the nibble (to 0). 1 = Set the bit or all bits in the nibble (to 1). 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.</td> </tr> </table>	<b>&lt;masterIdx&gt;</b>	The Master to be configured (see Master/Slave Emulation Indices)	<b>&lt;messageType&gt;</b>	The message to carry the TLV. <b>Paragon-X:</b> AnnounceTLV, FollowUpTLV, SyncTLV <b>Paragon-neo:</b> AnnounceTLV	<b>&lt;tlvIdx&gt;</b>	An integer value which represents the index of the TLV to be modified. Announce messages support up to 3 TLVs, while Follow Up and Sync messages support 1. Parameter must be one of: 0, 1, 2 (where 1 and 2 are applicable only for Announce messages)	<b>&lt;tlvFieldPath&gt;</b>	Specifies the TLV field. This is a dot separated string which represents the hierarchical path to the field e.g. "#INFORMATION_TLV.cumulativeScaledRateOffset". The GUI display should be used to as a guide to constructing path strings.	<b>&lt;mask&gt;</b>	Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length. When <mask> = bbbbbbbb [bbbbbbb ...] ( <i>binary mask</i> ) Each character in the mask specifies the modification type to be applied to the bit or nibble: 0 = Clear the bit or all bits in the nibble (to 0). 1 = Set the bit or all bits in the nibble (to 1). 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.
<b>&lt;masterIdx&gt;</b>	The Master to be configured (see Master/Slave Emulation Indices)										
<b>&lt;messageType&gt;</b>	The message to carry the TLV. <b>Paragon-X:</b> AnnounceTLV, FollowUpTLV, SyncTLV <b>Paragon-neo:</b> AnnounceTLV										
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<b>&lt;mask&gt;</b>	Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length. When <mask> = bbbbbbbb [bbbbbbb ...] ( <i>binary mask</i> ) Each character in the mask specifies the modification type to be applied to the bit or nibble: 0 = Clear the bit or all bits in the nibble (to 0). 1 = Set the bit or all bits in the nibble (to 1). 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.										
<b>Prerequisites</b>	Instrument must have MSE option fitted.										
Get											
<b>Description</b> 	Queries the specified TLV field mask										
<b>Command</b>	MasterSlave Master #<masterIdx> <messageType> Tlv #<tlvIdx> #<tlvFieldPath> Mask										
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; vertical-align: top;"><b>&lt;masterIdx&gt;</b></td> <td>See above</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;messageType&gt;</b></td> <td>See above</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;tlvIdx&gt;</b></td> <td>See above</td> </tr> <tr> <td style="vertical-align: top;"><b>&lt;tlvFieldPath&gt;</b></td> <td>See above</td> </tr> </table>	<b>&lt;masterIdx&gt;</b>	See above	<b>&lt;messageType&gt;</b>	See above	<b>&lt;tlvIdx&gt;</b>	See above	<b>&lt;tlvFieldPath&gt;</b>	See above		
<b>&lt;masterIdx&gt;</b>	See above										
<b>&lt;messageType&gt;</b>	See above										
<b>&lt;tlvIdx&gt;</b>	See above										
<b>&lt;tlvFieldPath&gt;</b>	See above										
<b>Prerequisites</b>	Instrument must have MSE option fitted.										
<b>Result</b>	The mask applied to the specified TLV field.										



### MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> Enabled

Set	
<b>Description</b> 	Enables or disables communication between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> Enabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx> The index of the slave: 0 (slave 1), 1 (slave 2), 2 (slave 3), 3 (slave 4) 4 (slave 5), 5 (slave 6), 6 (slave 7), 7 (slave 8) <enable> Set to TRUE to allow communication, FALSE to disable
<b>Prerequisites</b>	Instrument must have MSE option fitted. For Paragon-X, <b>AllowedSlaveConfiguration</b> must be set to MANUAL.
Get	
<b>Description</b> 	Queries whether communication between the specified slave and master is active.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> Enabled
<b>Parameters</b>	<masterIdx> See above <slaveIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if communication between the specified master and slave is enabled, FALSE otherwise.



### MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> IpAddress

Set	
<b>Description</b> 	Specifies the IPv4 Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> IpAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx> The index of the slave: 0 (slave 1) to 7 (slave 8) <value> IP address with '.' delimiters e.g. 192.168.254.101
<b>Prerequisites</b>	Instrument must have MSE option fitted. For Paragon-X, <b>AllowedSlaveConfiguration</b> must be set to MANUAL.
Get	
<b>Description</b> 	Queries the IPv4 Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> IpAddress
<b>Parameters</b>	<masterIdx> See above <slaveIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The specified slave's IPv4 address.



### MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> Ipv6Address

Set	
<b>Description</b> 	Specifies the IPv6 Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> Ipv6Address <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slavelIdx> The index of the slave: 0 (slave 1) to 7 (slave 8) <value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted. For Paragon-X, <b>AllowedSlaveConfiguration</b> must be set to MANUAL.
Get	
<b>Description</b> 	Queries the IPv6 Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> Ipv6Address
<b>Parameters</b>	<masterIdx> See above <slavelIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The specified slave's IPv6 address.



### MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> MACAddress

Set	
<b>Description</b> 	Specifies the MAC Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> MACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slavelIdx> The index of the slave: 0 (slave 1) to 7 (slave 8) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. For Paragon-X, <b>AllowedSlaveConfiguration</b> must be set to MANUAL.
Get	
<b>Description</b> 	Queries the MAC Address of the specified slave connected to the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> MACAddress
<b>Parameters</b>	<masterIdx> See above <slavelIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The specified slave's MAC address with fields delimited by spaces e.g. "11 22 33 44 55 66"



**MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> AnnounceRate**

Set	
<b>Description</b> 	Specifies the announce rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> AnnounceRate <value>
<b>Parameters</b>	<masterIdx>    The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx>     The index of the slave: 0 (slave 1) to 7 (slave 8) <value>         Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to FORCED
Get	
<b>Description</b> 	Queries the announce rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> AnnounceRate
<b>Parameters</b>	<masterIdx>    See above <slaveIdx>     See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The announce rate between the slave and master. It will be one of the values listed above

**MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> SyncRate**



Set	
<b>Description</b> 	Specifies the sync rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> SyncRate <value>
<b>Parameters</b>	<masterIdx>    The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx>     The index of the slave: 0 (slave 1) to 7 (slave 8) <value>         Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to FORCED
Get	
<b>Description</b> 	Queries the sync rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> SyncRate
<b>Parameters</b>	<masterIdx>    See above <slaveIdx>     See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The sync rate between the slave and master. It will be one of the values listed above

**MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxAnnounceRate**



Set	
<b>Description</b> 	Specifies the maximum announce message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxAnnounceRate <value>
<b>Parameters</b>	<masterIdx>    The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx>     The index of the slave: 0 (slave 1) to 7 (slave 8) <value>         Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to AUTO The <b>AllowedSlaveConfiguration</b> must be set to AUTO
Get	
<b>Description</b> 	Queries the maximum announce message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxAnnounceRate
<b>Parameters</b>	<masterIdx>    See above <slaveIdx>     See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The maximum announce rate between the slave and master. It will be one of the values listed above



**MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxSyncRate**



Set	
<b>Description</b> 	Specifies the maximum sync message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxSyncRate <value>
<b>Parameters</b>	<masterIdx>    The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx>     The index of the slave: 0 (slave 1) to 7 (slave 8) <value>         Text value to define the rate. It must be one of: 1/64     (1 message every 64 seconds) 1/32     (1 message every 32 seconds) 1/16     (1 message every 16 seconds) 1/8      (1 message every 8 seconds) 1/4      (1 message every 4 seconds) 1/2      (1 message every 2 seconds) 1         (1 message each second) 2         (2 messages per second) 4         (4 messages per second) 8         (8 messages per second) 16        (16 messages per second) 32        (32 messages per second) 64        (64 messages per second) 128      (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to AUTO The <b>AllowedSlaveConfiguration</b> must be set to AUTO
Get	
<b>Description</b> 	Queries the maximum sync message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxSyncRate
<b>Parameters</b>	<masterIdx>    See above <slaveIdx>     See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The maximum announce rate between the slave and master. It will be one of the values listed above

**MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxDelayResponseRate**

Set	
<b>Description</b> 	Specifies the maximum delay-response message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxDelayResponseRate <value>
<b>Parameters</b>	<masterIdx>    The Master to be configured (see Master/Slave Emulation Indices) <slaveIdx>    The index of the slave: 0 (slave 1) to 7 (slave 8) <value>        Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1      (1 message each second) 2      (2 messages per second) 4      (4 messages per second) 8      (8 messages per second) 16     (16 messages per second) 32     (32 messages per second) 64     (64 messages per second) 128    (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to AUTO The <b>AllowedSlaveConfiguration</b> must be set to AUTO
Get	
<b>Description</b> 	Queries the maximum delay-response message rate between the specified slave and master.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slaveIdx> MaxDelayResponseRate
<b>Parameters</b>	<masterIdx>    See above <slaveIdx>    See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The maximum announce rate between the slave and master. It will be one of the values listed above



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**MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx>  
ForcedUnicastAnnounceEnabled**

Set	
<b>Description</b> 	Enables or disables the transmission of Unicast announce messages between the specified master and the specified slave.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> ForcedUnicastAnnounceEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slavelIdx> The index of the slave: 0 (slave 1) to 7 (slave 8) <enable> Set to TRUE to transmit Unicast announce messages, FALSE to disable transmission
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to FORCED The <b>UnicastEnabled</b> message must be set to TRUE
Get	
<b>Description</b> 	Queries whether or not the transmission of Unicast announce messages between the specified master and the specified slave is enabled or disabled.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> ForcedUnicastAnnounceEnabled
<b>Parameters</b>	<masterIdx> See above <slavelIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Unicast announce message transmission is enabled, FALSE otherwise.



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**MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> ForcedUnicastSyncEnabled**

Set	
<b>Description</b> 	Enables or disables the transmission of Unicast sync messages between the specified master and the specified slave.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> ForcedUnicastSyncEnabled <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <slavelIdx> The index of the slave: 0 (slave 1) to 7 (slave 8) <enable> Set to TRUE to transmit Unicast sync messages, FALSE to disable transmission
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Master Mode</b> must be set to FORCED The <b>UnicastEnabled</b> message must be set to TRUE
Get	
<b>Description</b> 	Queries whether the transmission of Unicast sync messages between the specified master and the specified slave is enabled or disabled.
<b>Command</b>	MasterSlave Master #<masterIdx> AllowedSlave #<slavelIdx> ForcedUnicastSyncEnabled
<b>Parameters</b>	<masterIdx> See above <slavelIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Unicast sync message transmission is enabled, FALSE otherwise.



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**MasterSlave Master #<masterIdx> PtpHeaderOffset**



Set	
<b>Description</b> 	Determines the location of the PTP Header in captured/impaired packets
<b>Command</b>	MasterSlave Master #<masterIdx> PtpHeaderOffset <offset>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <offset> The PTP header offset (integer). The first byte in the packet is at offset position 0. Numeric value must be in range: 0 to 255
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the location of the PTP Header in captured/impaired packets.
<b>Command</b>	MasterSlave Master #<masterIdx> PtpHeaderOffset
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The location of the PTP header in the packet. It will be in the range listed above

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**MasterSlave Master #<masterIdx> PeerDelayMode**

Set	
<b>Description</b> 	Determines the mode of Peer Delay messages used by the master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerDelayMode <mode>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <mode> UNICAST, MULTICAST
<b>Prerequisites</b>	Instrument must have MSE peer to peer option enabled.
Get	
<b>Description</b> 	Queries the mode of Peer Delay messages used by the master
<b>Command</b>	MasterSlave Master #<masterIdx> PeerDelayMode
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE peer to peer option enabled.
<b>Result</b>	The mode of Peer Delay messages used by the master. It will be one of the values listed above

### MasterSlave Master #<masterIdx> PdelReqEnable



Set	
<b>Description</b> 	Enables or disables the generation of Pdelay_Req messages from the master.
<b>Command</b>	MasterSlave Master #<masterIdx> PdelReqEnable <enable>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <mode> TRUE enables the generation of Pdelay_Req messages from the master, FALSE disables it
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the setting of Pdelay_Req message generation from the master.
<b>Command</b>	MasterSlave Master #<masterIdx> PdelReqEnable
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the generation of Pdelay_Req messages from the master is enabled, FALSE otherwise.

### MasterSlave Master #<masterIdx> PdelReqMsgRate

Set																													
<b>Description</b> 	Specifies the rate of Pdelay_Req messages generated by the specified master																												
<b>Command</b>	MasterSlave Master #<masterIdx> PdelReqMsgRate <value>																												
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> Text value to define the rate. It must be one of: <table border="0" style="margin-left: 40px;"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.																												
Get																													
<b>Description</b> 	Queries the rate of Pdelay_Req messages generated by the specified master.																												
<b>Command</b>	MasterSlave Master #<masterIdx> PdelReqMsgRate																												
<b>Parameters</b>	<masterIdx> See above																												
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.																												
<b>Result</b>	The rate of Pdelay_Req messages generated by the master. It will be one of the values listed above																												



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**MasterSlave Master #<masterIdx> MulticastPdelayIpv4Address**



Set	
<b>Description</b> 	Specifies the multicast peer delay IPv4 address to be used by the specified master
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv4Address <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv4 address with '.' delimiters e.g. 224.0.0.107
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the multicast peer delay IPv4 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv4Address
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The specified master's multicast peer delay IPv4 address.

---



**MasterSlave Master #<masterIdx> MulticastPdelayIpv6Address**

Set	
<b>Description</b> 	Specifies the multicast peer delay IPv6 address to be used by the specified master
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv6Address <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the multicast peer delay IPv6 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv6Address
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The specified master's multicast peer delay IPv6 address.



### MasterSlave Master #<masterIdx> MulticastPdelayIpMACAddress

Set	
<b>Description</b> 	Specifies the destination MAC Address of IPv4 multicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the destination MAC Address of IPv4 multicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of IPv4 multicast peer delay messages from the specified master with fields delimited by spaces e.g. "11 22 33 44 55 66"



### MasterSlave Master #<masterIdx> MulticastPdelayIpv6MACAddress

Set	
<b>Description</b> 	Specifies the destination MAC Address of IPv6 multicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv6MACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the destination MAC Address of IPv6 multicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayIpv6MACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of IPv6 multicast peer delay messages from the specified master with fields delimited by spaces e.g. 11 22 33 44 55 66

### MasterSlave Master #<masterIdx> MulticastPdelayEthMACAddress

Set	
<b>Description</b> 	Specifies the Ethernet multicast peer delay destination MAC Address of the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayEthMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to ETHERNET
Get	
<b>Description</b> 	Queries the Ethernet multicast peer delay destination MAC Address for the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastPdelayEthMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The Ethernet multicast peer delay destination MAC Address for the specified master with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Master #<masterIdx> PeerIpAddress

Set	
<b>Description</b> 	Specifies the unicast peer delay IPv4 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerIpAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the unicast peer delay IPv4 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerIpAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The specified master's unicast peer delay IPv4 address.





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**MasterSlave Master #<masterIdx> PeerIpv6Address**

Set	
<b>Description</b> 	Specifies the unicast peer delay IPv6 address to be used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerIpvAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Master #&lt;masterIdx&gt; Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the unicast peer delay IPv6 address as used by the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerIpv6Address
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The specified master's unicast peer delay IPv6 address.



---

**MasterSlave Master #<masterIdx> PeerMACAddress**

Set	
<b>Description</b> 	Specifies the destination MAC Address of unicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerMACAddress <value>
<b>Parameters</b>	<masterIdx> The Master to be configured (see Master/Slave Emulation Indices) <value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the destination MAC Address of unicast peer delay messages from the specified master.
<b>Command</b>	MasterSlave Master #<masterIdx> PeerMACAddress
<b>Parameters</b>	<masterIdx> See above
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of unicast peer delay messages from the specified master with fields delimited by spaces e.g. 11 22 33 44 55 66



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**MasterSlave Master #<masterIdx> Management #<msgIdx> TlvType**



Set							
<b>Description</b> 	Sets the Management message TLV Type for the selected TLV slot.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> TlvType <tlvType>						
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"><i>&lt;masterIdx&gt;</i></td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td><i>&lt;msgIdx&gt;</i></td> <td>An integer value which represents the index of the Management message to be modified. Parameter must be 0</td> </tr> <tr> <td><i>&lt;tlvType&gt;</i></td> <td>An enumerated value representing the type of the TLV. It must be ORG_EXT_SYNCHRONIZATION_METADATA</td> </tr> </table>	<i>&lt;masterIdx&gt;</i>	The Master to be configured (see Master/Slave Emulation Indices)	<i>&lt;msgIdx&gt;</i>	An integer value which represents the index of the Management message to be modified. Parameter must be 0	<i>&lt;tlvType&gt;</i>	An enumerated value representing the type of the TLV. It must be ORG_EXT_SYNCHRONIZATION_METADATA
<i>&lt;masterIdx&gt;</i>	The Master to be configured (see Master/Slave Emulation Indices)						
<i>&lt;msgIdx&gt;</i>	An integer value which represents the index of the Management message to be modified. Parameter must be 0						
<i>&lt;tlvType&gt;</i>	An enumerated value representing the type of the TLV. It must be ORG_EXT_SYNCHRONIZATION_METADATA						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
Get							
<b>Description</b> 	Queries the type of TLV for the selected Management TLV slot.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> TlvType						
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"><i>&lt;masterIdx&gt;</i></td> <td>See above</td> </tr> <tr> <td><i>&lt;tlvIdx&gt;</i></td> <td>See above</td> </tr> </table>	<i>&lt;masterIdx&gt;</i>	See above	<i>&lt;tlvIdx&gt;</i>	See above		
<i>&lt;masterIdx&gt;</i>	See above						
<i>&lt;tlvIdx&gt;</i>	See above						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
<b>Result</b>	The type of the TLV for the selected index. The result will be the value listed above						

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**MasterSlave Master #<masterIdx> Management #<msgIdx> Action**



Set							
<b>Description</b> 	Sets the Management message action for the specified Management message.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Action <action>						
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"><i>&lt;masterIdx&gt;</i></td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td><i>&lt;msgIdx&gt;</i></td> <td>An integer value which represents the index of the Management message to be modified. Parameter must be 0</td> </tr> <tr> <td><i>&lt;action&gt;</i></td> <td>An enumerated value representing the Management action. It must be COMMAND</td> </tr> </table>	<i>&lt;masterIdx&gt;</i>	The Master to be configured (see Master/Slave Emulation Indices)	<i>&lt;msgIdx&gt;</i>	An integer value which represents the index of the Management message to be modified. Parameter must be 0	<i>&lt;action&gt;</i>	An enumerated value representing the Management action. It must be COMMAND
<i>&lt;masterIdx&gt;</i>	The Master to be configured (see Master/Slave Emulation Indices)						
<i>&lt;msgIdx&gt;</i>	An integer value which represents the index of the Management message to be modified. Parameter must be 0						
<i>&lt;action&gt;</i>	An enumerated value representing the Management action. It must be COMMAND						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
Get							
<b>Description</b> 	Queries the Management message action for the specified Management message.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Action						
<b>Parameters</b>	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;"><i>&lt;masterIdx&gt;</i></td> <td>See above</td> </tr> <tr> <td><i>&lt;msgIdx&gt;</i></td> <td>See above</td> </tr> </table>	<i>&lt;masterIdx&gt;</i>	See above	<i>&lt;msgIdx&gt;</i>	See above		
<i>&lt;masterIdx&gt;</i>	See above						
<i>&lt;msgIdx&gt;</i>	See above						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
<b>Result</b>	The action of the Management message for the selected index. The result will be the value listed above.						

## MasterSlave Master #<masterIdx> Management #<msgIdx> Mode



Set							
<b>Description</b> 	Sets the PTP messaging mode for the specified Management message.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Mode <mode>						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td style="padding-right: 20px;">&lt;msgIdx&gt;</td> <td>An integer value which represents the index of the Management message to be modified. Parameter must be 0</td> </tr> <tr> <td style="padding-right: 20px;">&lt;mode&gt;</td> <td>An enumerated value representing the PTP messaging mode. It must be one of: UNICAST MULTICAST MULTICAST_AND_UNICAST</td> </tr> </table>	<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)	<msgIdx>	An integer value which represents the index of the Management message to be modified. Parameter must be 0	<mode>	An enumerated value representing the PTP messaging mode. It must be one of: UNICAST MULTICAST MULTICAST_AND_UNICAST
<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)						
<msgIdx>	An integer value which represents the index of the Management message to be modified. Parameter must be 0						
<mode>	An enumerated value representing the PTP messaging mode. It must be one of: UNICAST MULTICAST MULTICAST_AND_UNICAST						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
Get							
<b>Description</b> 	Queries the PTP messaging mode for the specified Management message.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Mode						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>See above</td> </tr> <tr> <td style="padding-right: 20px;">&lt;msgIdx&gt;</td> <td>See above</td> </tr> </table>	<masterIdx>	See above	<msgIdx>	See above		
<masterIdx>	See above						
<msgIdx>	See above						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
<b>Result</b>	Returned is the PTP messaging mode of the Management message with the selected index. The result will be one of the values listed above						

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**MasterSlave Master #<masterIdx> Management #<msgIdx> SendAtRate**

Set							
<b>Description</b> 	Sets the Management message to be sent at a configured rate						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> SendAtRate <enable>						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td style="padding-right: 20px;">&lt;msgIdx&gt;</td> <td>An integer value which represents the index of the Management message to be modified. Parameter must be 0</td> </tr> <tr> <td style="padding-right: 20px;">&lt;enable&gt;</td> <td>Boolean, set to TRUE to specify sending the Management message at a configured rate, FALSE otherwise</td> </tr> </table>	<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)	<msgIdx>	An integer value which represents the index of the Management message to be modified. Parameter must be 0	<enable>	Boolean, set to TRUE to specify sending the Management message at a configured rate, FALSE otherwise
<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)						
<msgIdx>	An integer value which represents the index of the Management message to be modified. Parameter must be 0						
<enable>	Boolean, set to TRUE to specify sending the Management message at a configured rate, FALSE otherwise						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
Get							
<b>Description</b> 	Queries whether sending the specified Management message at a configured rate is enabled.						
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> SendAtRate						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>See above</td> </tr> <tr> <td style="padding-right: 20px;">&lt;msgIdx&gt;</td> <td>See above</td> </tr> </table>	<masterIdx>	See above	<msgIdx>	See above		
<masterIdx>	See above						
<msgIdx>	See above						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
<b>Result</b>	TRUE if sending at a configured rate is enabled, otherwise FALSE.						



## MasterSlave Master #<masterIdx> Management #<msgIdx> Rate

Set															
<b>Description</b> 	Configures the rate at which the Management message is to be sent.														
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Rate <rate>														
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;msgIdx&gt; An integer value which represents the index of the Management message to be modified. Parameter must be 0</p> <p>&lt;rate&gt; Text value to define the rate. It must be one of:</p> <table style="margin-left: 40px;"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)
1/64	(1 message every 64 seconds)														
1/32	(1 message every 32 seconds)														
1/16	(1 message every 16 seconds)														
1/8	(1 message every 8 seconds)														
1/4	(1 message every 4 seconds)														
1/2	(1 message every 2 seconds)														
1	(1 message each second)														
<b>Prerequisites</b>	Instrument must have MSE option fitted.														
Get															
<b>Description</b> 	Queries the rate at which the Management message is to be sent.														
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> Rate														
<b>Parameters</b>	<p>&lt;masterIdx&gt; See above</p> <p>&lt;msgIdx&gt; See above</p>														
<b>Prerequisites</b>	Instrument must have MSE option fitted.														
<b>Result</b>	The configured management message rate. It will be one of the values listed above														

**MasterSlave Master #<masterIdx> Management #<msgIdx> TlvData #<tlvFieldPath> Mask**

Set	
<b>Description</b> 	Sets the specified Management TLV field.
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> TlvData #<tlvFieldPath> Mask <mask>
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;msgIdx&gt; An integer value which represents the index of the Management message to be modified. Parameter must be 0</p> <p>&lt;tlvFieldPath&gt; Specifies the TLV field. This is a dot separated string which represents the hierarchical path to the field:</p> <p style="margin-left: 40px;">"#ORG_EXT_SYNCH_METADATA.defaultSystemFrameRate" "#ORG_EXT_SYNCH_METADATA.masterLockingStatus" "#ORG_EXT_SYNCH_METADATA.timeAddressFlags" "#ORG_EXT_SYNCH_METADATA.currentLocalOffset" "#ORG_EXT_SYNCH_METADATA.jumpSeconds" "#ORG_EXT_SYNCH_METADATA.timeOfNextJump" "#ORG_EXT_SYNCH_METADATA.timeOfNextJam" "#ORG_EXT_SYNCH_METADATA.timeOfPreviousJam" "#ORG_EXT_SYNCH_METADATA.previousJamLocalOffset" "#ORG_EXT_SYNCH_METADATA.daylightSaving"</p> <p>&lt;mask&gt; Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length. When &lt;mask&gt; = bbbbbbbb [bbbbbbb ...] (<i>binary mask</i>) Each character in the mask specifies the modification type to be applied to the bit or nibble: 0 = Clear the bit or all bits in the nibble (to 0). 1 = Set the bit or all bits in the nibble (to 1). 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the specified Management TLV field mask
<b>Command</b>	MasterSlave Master #<masterIdx> Management #<msgIdx> TlvData #<tlvFieldPath> Mask
<b>Parameters</b>	<p>&lt;masterIdx&gt; See above</p> <p>&lt;msgIdx&gt; See above</p> <p>&lt;tlvFieldPath&gt; See above</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The mask applied to the TLV field.



**MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvType**

Set	
<b>Description</b> 	Sets the Signaling message TLV Type for the selected SignalingTLV slot.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvType <tlvType>
<b>Parameters</b>	<masterIdx>      The Master to be configured (see Master/Slave Emulation Indices) <msgIdx>         An integer value which represents the index of the Signaling message to be modified. Parameter must be 0,1 or 2 <tlvType>         An enumerated value representing the type of the TLV. It must be one of: ORG_EXT_GTPP_CAPABLE ORG_EXT_MESSAGE_INTERVAL_REQ ORG_EXT_GTPP_CAPABLE_MESSAGE_INTERVAL_REQ
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the type of TLV for the selected Signaling TLV slot.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvType
<b>Parameters</b>	<masterIdx>      See above <tlvIdx>          See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The type of the TLV for the selected index. The result will be the value listed above





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**MasterSlave Master #<masterIdx> Signaling #<msgIdx> SendAtRate**

Set							
<b>Description</b> 	Sets the Signaling message to be sent at a configured rate						
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> SendAtRate <enable>						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>The Master to be configured (see Master/Slave Emulation Indices)</td> </tr> <tr> <td>&lt;msgIdx&gt;</td> <td>An integer value which represents the index of the Signaling message to be modified. Parameter must be 0, 1 or 2</td> </tr> <tr> <td>&lt;enable&gt;</td> <td>Boolean, set to TRUE to specify sending the Signaling message at a configured rate, FALSE otherwise</td> </tr> </table>	<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)	<msgIdx>	An integer value which represents the index of the Signaling message to be modified. Parameter must be 0, 1 or 2	<enable>	Boolean, set to TRUE to specify sending the Signaling message at a configured rate, FALSE otherwise
<masterIdx>	The Master to be configured (see Master/Slave Emulation Indices)						
<msgIdx>	An integer value which represents the index of the Signaling message to be modified. Parameter must be 0, 1 or 2						
<enable>	Boolean, set to TRUE to specify sending the Signaling message at a configured rate, FALSE otherwise						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
Get							
<b>Description</b> 	Queries whether sending the specified Signaling message at a configured rate is enabled.						
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> SendAtRate						
<b>Parameters</b>	<table border="0"> <tr> <td style="padding-right: 20px;">&lt;masterIdx&gt;</td> <td>See above</td> </tr> <tr> <td>&lt;msgIdx&gt;</td> <td>See above</td> </tr> </table>	<masterIdx>	See above	<msgIdx>	See above		
<masterIdx>	See above						
<msgIdx>	See above						
<b>Prerequisites</b>	Instrument must have MSE option fitted.						
<b>Result</b>	TRUE if sending at a configured rate is enabled, otherwise FALSE.						

## MasterSlave Master #<masterIdx> Signaling #<msgIdx> Rate


Set	
<b>Description</b> 	Configures the rate at which the Signaling message is to be sent.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> Rate <rate>
<b>Parameters</b>	<p>&lt;masterIdx&gt;      The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;msgIdx&gt;        An integer value which represents the index of the Signaling message to be modified. Parameter must be 0, 1 or 2</p> <p>&lt;rate&gt;            Text value to define the rate. It must be one of:</p> <p style="padding-left: 40px;">1/64      (1 message every 64 seconds)</p> <p style="padding-left: 40px;">1/32      (1 message every 32 seconds)</p> <p style="padding-left: 40px;">1/16      (1 message every 16 seconds)</p> <p style="padding-left: 40px;">1/8        (1 message every 8 seconds)</p> <p style="padding-left: 40px;">1/4        (1 message every 4 seconds)</p> <p style="padding-left: 40px;">1/2        (1 message every 2 seconds)</p> <p style="padding-left: 40px;">1          (1 message each second)</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the rate at which the Signaling message is to be sent.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> Rate
<b>Parameters</b>	<p>&lt;masterIdx&gt;      See above</p> <p>&lt;msgIdx&gt;        See above</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The configured message rate. It will be one of the values listed above

**MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask**

Set	
<b>Description</b> 	Sets the specified Signaling TLV field.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask <mask>
<b>Parameters</b>	<p>&lt;masterIdx&gt; The Master to be configured (see Master/Slave Emulation Indices)</p> <p>&lt;msgIdx&gt; An integer value which represents the index of the Signaling message to be modified. Parameter must be 0, 1 or 2</p> <p>&lt;tlvFieldPath&gt; Specifies the TLV field. This is a dot separated string which represents the hierarchical path to the field:</p> <p style="margin-left: 40px;">                     "#GTP_CAPABLE.logGtpCapableMessageInterval"                      "#GTP_CAPABLE.Flags"                      "#GTP_CAPABLE.Reserved"                      "#MSG_INTERVAL_REQ.logLinkDelayInterval"                      "#MSG_INTERVAL_REQ.logTimeSyncInterval"                      "#MSG_INTERVAL_REQ.logAnnoucneInterval"                      "#MSG_INTERVAL_REQ.Flags"                      "#MSG_INTERVAL_REQ.Reserved"                      "#GTP_MSG_INTERVAL_REQ.logGtpCapableMessageInterval"                      "#GTP_MSG_INTERVAL_REQ.Reserved"                 </p> <p>&lt;mask&gt; Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length.                      When &lt;mask&gt; = bbbbbbbb [bbbbbbb ...] (<i>binary mask</i>)                      Each character in the mask specifies the modification type to be applied to the bit or nibble:                      0 = Clear the bit or all bits in the nibble (to 0).                      1 = Set the bit or all bits in the nibble (to 1).                      2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the specified Signaling TLV field mask
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask
<b>Parameters</b>	<p>&lt;masterIdx&gt; See above</p> <p>&lt;msgIdx&gt; See above</p> <p>&lt;tlvFieldPath&gt; See above</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The mask applied to the TLV field.


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus Count**

Get	
<b>Description</b> 	Queries the count of unicast slaves that are connected to the specified master (or were connected and for which status information is still available)
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus Count
<b>Parameters</b>	<masterIdx> The Master to be queried (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The number of unicast slaves (between 0 and 8).


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> Status**

Get	
<b>Description</b> 	Queries the connection status of the specified unicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> Status
<b>Parameters</b>	<masterIdx> The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx> The index of the slave: 0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An integer: 0 (Not connected), 1 (Connected)


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> Address**

Get	
<b>Description</b> 	Queries the address of the connected, or previously connected, unicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> Address
<b>Parameters</b>	<masterIdx> The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx> 0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An IPv4/IPv6 address or MAC address, depending on the master's encapsulation setting, if <slaveIdx> is valid


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> SyncRate**

Get	
<b>Description</b> 	Queries the Sync message rate of a connected, or previously connected, unicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> SyncRate
<b>Parameters</b>	<masterIdx>      The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx>        0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The Sync message rate to the specified slave, one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8      (1 message every 8 seconds) 1/4      (1 message every 4 seconds) 1/2      (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> AnnounceRate**

Get	
<b>Description</b> 	Queries the Announce message rate of a connected, or previously connected, unicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> AnnounceRate
<b>Parameters</b>	<masterIdx>      The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx>        0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The Announce message rate to the specified slave, one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8      (1 message every 8 seconds) 1/4      (1 message every 4 seconds) 1/2      (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)


---

**MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> DelRespRate**

Get	
<b>Description</b> 	Queries the Delay-Response message rate of a connected, or previously connected, unicast slave.
<b>Command</b>	MasterSlave Master #<masterIdx> UnicastSlaveStatus #<slaveIdx> DelRespRate
<b>Parameters</b>	<masterIdx>           The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx>            0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The Delay-Response message rate to the specified slave, one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8      (1 message every 8 seconds) 1/4      (1 message every 4 seconds) 1/2      (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128      (128 messages per second)


---

**MasterSlave Master #<masterIdx> MulticastSlaveStatus Count**

Get	
<b>Description</b> 	Queries the count of multicast slaves that are connected or have been connected to the specified master for which status information is available
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSlaveStatus Count
<b>Parameters</b>	<masterIdx>           The Master to be queried (see Master/Slave Emulation Indices)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The number of multicast slaves (between 0 and 128).


---

**MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveIdx> Status**

Get	
<b>Description</b> 	Queries the connection status of the specified multicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveIdx> Status
<b>Parameters</b>	<masterIdx>           The Master to be queried (see Master/Slave Emulation Indices) <slaveIdx>            0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An integer: 0 (Not connected), 1 (Connected)


---

**MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveldx> Address**

Get	
<b>Description</b> 	Queries the address of the connected, or previously connected, multicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveldx> Address
<b>Parameters</b>	<masterIdx>      The Master to be queried (see Master/Slave Emulation Indices) <slaveldx>        0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An IPv4/IPv6 address or MAC address, depending on the master's encapsulation setting, if <slaveldx> is valid



---

**MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveldx> PortId**



Get	
<b>Description</b> 	Queries the Port Identity of the connected, or previously connected, multicast slave
<b>Command</b>	MasterSlave Master #<masterIdx> MulticastSlaveStatus #<slaveldx> PortId
<b>Parameters</b>	<masterIdx>      The Master to be queried (see Master/Slave Emulation Indices) <slaveldx>        0 (slave 1) to 7 (slave 8)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The Port Identity string (in hex characters), if <slaveldx> is valid

---



**MasterSlave Slave Mode**

Set	
<b>Description</b> 	Determines the Unicast mode in which the Paragon's slave is operating. If set to AUTO mode, the slave will send signalling messages to the specified allowed master. If set to FORCED, the slave will start transmitting Delay-Request messages to the specified allowed master.
<b>Command</b>	MasterSlave Slave Mode <mode>
<b>Parameters</b>	<mode>            AUTO, FORCED
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the Unicast mode in which the Paragon's slave is operating.
<b>Command</b>	MasterSlave Slave Mode
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The mode in which the slave is operating. It will be one of the values listed above



## MasterSlave Slave Encapsulation

Set	
<b>Description</b> 	Sets the encapsulation for the Paragon slave.
<b>Command</b>	MasterSlave Slave Encapsulation <mode>
<b>Parameters</b>	<mode> <b>Paragon-X, Paragon-neo:</b> IPV4, IPV6, ETHERNET <b>Paragon-100G:</b> IPV4, ETHERNET
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the encapsulation setting for the Paragon slave.
<b>Command</b>	MasterSlave Slave Encapsulation
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The encapsulation used by the Paragon slave. It will be one of the values listed above

## MasterSlave Slave IpAddress



Set	
<b>Description</b> 	Specifies the IPv4 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave IpAddress <value>
<b>Parameters</b>	<value>      IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv4 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave IpAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave IPv4 address.

## MasterSlave Slave Ipv6Address



Set	
<b>Description</b> 	Specifies the IPv6 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave Ipv6Address <value>
<b>Parameters</b>	<value>      IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv6 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave Ipv6Address
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave IPv6 address.





## MasterSlave Slave MACAddress

Set	
<b>Description</b> 	Specifies the MAC address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MACAddress <value>
<b>Parameters</b>	<value>      6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the MAC address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The MAC address for the Paragon's slave with fields delimited by spaces e.g. 11 22 33 44 55 66



## MasterSlave Slave DiffServices

Set	
<b>Description</b> 	Specifies the IPv4 Differentiated Services byte for the Paragon slave.
<b>Command</b>	MasterSlave Slave DiffServices <value>
<b>Parameters</b>	<value>      An integer value for the Differentiated Services byte. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled. <b>MasterSlave Slave Encapsulation</b> must be IPV4
Get	
<b>Description</b> 	Queries the IPv4 Differentiated Services byte for the Paragon's slave.
<b>Command</b>	MasterSlave Slave DiffServices
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The IPv4 Differentiated Services byte value. This will be in the range listed above



## MasterSlave Slave UseCurrentTimeForSeedTime

Set	
<b>Description</b> 	Enables or disables the use of the current PC time as the seed time when starting the slave.
<b>Command</b>	MasterSlave Slave UseCurrentTimeForSeedTime <enable>
<b>Parameters</b>	<enable>      TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave TestConfiguration</b> must be MASTER_TEST.
Get	
<b>Description</b> 	Queries the state of whether the controlling PC is being used as the seed when starting the slave.
<b>Command</b>	MasterSlave Slave UseCurrentTimeForSeedTime
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the controlling PC is being used as the seed timer, FALSE otherwise.



## MasterSlave Slave SeedTime

Set	
<b>Description</b> 	Sets the slave seed time to the specified value. The time used in this setting is a timestamp value and may need converted to/from a human readable format. This can be done via the website: <a href="http://www.epochconverter.com/">http://www.epochconverter.com/</a> . This setting is not used when the <b>UseCurrentTimeForSeedTime</b> setting is enabled.
<b>Command</b>	MasterSlave Slave SeedTime <time>
<b>Parameters</b>	<time> An integer value for the seed time (in s). It must be in the range: 0 to 253373443199
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave UseCurrentTimeForSeedTime</b> must be FALSE. <b>MasterSlave TestConfiguration</b> must be MASTER_TEST.
Get	
<b>Description</b> 	Queries the current value for the slave seed time.
<b>Command</b>	MasterSlave Slave SeedTime
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value for the seed time (in s). It will be in the range listed above



## MasterSlave CoupleMasterSlaveStart

Set	
<b>Description</b> 	Enables or disables the coupling of Master and Slave start. When coupled, master and slave are started together. When <b>TestConfiguration</b> is TRANSPARENT_CLOCK then this is fixed to TRUE.
<b>Command</b>	MasterSlave CoupleMasterSlaveStart <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE. <b>MasterSlave TestConfiguration</b> must be GENERAL_PURPOSE or BOUNDARY_CLOCK.
Get	
<b>Description</b> 	Queries whether the Master and Slave start are coupled.
<b>Command</b>	MasterSlave CoupleMasterSlaveStart
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master and slave start are coupled, FALSE otherwise.



## MasterSlave Slave DelayMechanism

Set	
<b>Description</b> 	Sets the Slave's PTP delay mechanism.
<b>Command</b>	MasterSlave Slave DelayMechanism <value>
<b>Parameters</b>	<value> <b>Paragon-X:</b> ENDTOEND, PEERTOPEER <b>Paragon-100G, Paragon-neo:</b> ENDTOEND
<b>Prerequisites</b>	<b>MasterSlave CoupleSlaveDelayMechanism</b> must be FALSE Instrument must have MSE End to end option to set ENDTOEND Instrument must have MSE Peer to peer option to set PEERTOPEER
Get	
<b>Description</b> 	Queries the Slave's PTP delay mechanism.
<b>Command</b>	MasterSlave Slave DelayMechanism
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returns the delay mechanism as used by the master. It will be one of the values listed above



## MasterSlave Slave NumVlanTags

Set	
<b>Description</b> 	Sets the number of VLAN tags to insert into the frame header.
<b>Command</b>	MasterSlave Slave NumVlanTags <numtags>
<b>Parameters</b>	<numtags>     Number of VLAN tags to insert, an integer in range 0 to 3
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE.
Get	
<b>Description</b> 	Queries the number of VLAN tags inserted into the frame header.
<b>Command</b>	MasterSlave Slave NumVlanTags
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE.
<b>Result</b>	The number of VLAN tags inserted into the frame header.



### MasterSlave Slave VlanTagTpid #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'tag protocol identifier' (TPID) field value.
<b>Command</b>	MasterSlave Slave VlanTagTpid #<tagIdx> <value>
<b>Parameters</b>	<tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload. <value> Tag protocol identifier field value, a 16-bit integer in range 1537 to 65535
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE. <b>MasterSlave Slave NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'tag protocol identifier' (TPID) field value.
<b>Command</b>	MasterSlave Slave VlanTagTpid #<tagIdx>
<b>Parameters</b>	<tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Tag protocol identifier field value, a 16-bit integer in the range listed above.



### MasterSlave Slave VlanTagPcp #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'priority code point' (PCP) field value.
<b>Command</b>	MasterSlave Slave VlanTagPcp #<tagIdx> <value>
<b>Parameters</b>	<tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload. <value> Priority code point, a 3-bit integer in range 0 to 7
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE. <b>MasterSlave Slave NumVlanTags</b> must be greater than or equal to: (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'priority code point' (PCP) field value.
<b>Command</b>	MasterSlave Slave VlanTagPcp #<tagIdx>
<b>Parameters</b>	<tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Priority code point, a 3-bit integer in the range listed above


### MasterSlave Slave VlanTagDei #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'drop eligible indicator' (DEI) field value.
<b>Command</b>	MasterSlave Slave VlanTagDei #<tagIdx> <value>
<b>Parameters</b>	<tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload.  <value> 0 or 1
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE. <b>MasterSlave Slave NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'drop eligible indicator' (DEI) field value.
<b>Command</b>	MasterSlave Slave VlanTagDei #<tagIdx>
<b>Parameters</b>	<tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current DEI setting: 0 or 1



### MasterSlave Slave VlanTagVid #<tagIdx>

Set	
<b>Description</b> 	Sets the VLAN tag 'VLAN identifier' (VID) field value.
<b>Command</b>	MasterSlave Slave VlanTagVid #<tagIdx> <value>
<b>Parameters</b>	<tagIdx> Tag index, an integer between 0 and 2. The maximum value is limited by the number of tags currently being inserted. Lower-numbered tags are closest to the Ethernet frame payload.  <value> VLAN identifier field value, a 12-bit integer in range 0 to 4095
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE. <b>MasterSlave Slave NumVlanTags</b> must be greater than or equal to (#<tagIdx> + 1)
Get	
<b>Description</b> 	Queries the VLAN tag 'VLAN identifier' (VID) field value.
<b>Command</b>	MasterSlave Slave VlanTagVid #<tagIdx>
<b>Parameters</b>	<tagIdx> See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	VLAN identifier field value, a 12-bit integer in the range listed above



### MasterSlave Slave VlanTagsReset

Set	
<b>Description</b> 	Resets the slave VLAN tag settings to default values.
<b>Command</b>	MasterSlave Slave VlanTagsReset
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave DeviceConfiguration</b> must be MASTERANDSLAVE.



## MasterSlave Slave UnicastAnnounce

Set	
<b>Description</b> 	Enables or disables requesting of Unicast Announce messages from the Allowed Master.
<b>Command</b>	MasterSlave Slave UnicastAnnounce <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the Unicast Announce messages from the Allowed Master are enabled.
<b>Command</b>	MasterSlave Slave UnicastAnnounce
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Unicast Announce messages from the Allowed Master are enabled, FALSE otherwise.



## MasterSlave Slave UnicastSync

Set	
<b>Description</b> 	Enables or disables requesting of Unicast Sync messages from the Allowed Master.
<b>Command</b>	MasterSlave Slave UnicastSync <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the Unicast Sync messages from the Allowed Master are enabled.
<b>Command</b>	MasterSlave Slave UnicastSync
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Unicast Sync messages from the Allowed Master are enabled, FALSE otherwise.



## MasterSlave Slave UnicastDelResp

Set	
<b>Description</b> 	Enables or disables requesting of Unicast Delay-Response messages from the Allowed Master or sends multicast Delay-Request messages to the configured multicast address.
<b>Command</b>	MasterSlave Slave UnicastDelResp <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the Delay-Response messages are unicast or multicast.
<b>Command</b>	MasterSlave Slave UnicastDelResp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Unicast Delay-Response messages are being used, FALSE indicates Multicast Delay-Response messaging.



### MasterSlave Slave MulticastIpAddress

Set	
<b>Description</b> 	Specifies the multicast IPv4 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpAddress <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the multicast IPv4 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave multicast IPv4 address.



### MasterSlave Slave MulticastIpv6Address

Set	
<b>Description</b> 	Specifies the multicast IPv6 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpv6Address <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the multicast IPv6 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpv6Address
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave multicast IPv6 address.



### MasterSlave Slave MulticastIpMACAddress

Set	
<b>Description</b> 	Specifies the destination MAC address of the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the destination MAC Address for the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave MAC address with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Slave MulticastIpv6MACAddress

Set	
<b>Description</b> 	Specifies the destination MAC address of the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpv6MACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the destination MAC Address for the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastIpMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave MAC address with fields delimited by spaces e.g. 11 22 33 44 55 66

### MasterSlave Slave MulticastEthMACAddress



Set	
<b>Description</b> 	Specifies the multicast destination MAC Address of the Paragon slave.
<b>Command</b>	MasterSlave Slave MulticastEthMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Encapsulation</b> must be set to ETHERNET.
Get	
<b>Description</b> 	Queries the multicast destination MAC Address for the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastEthMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon slave MAC address with fields delimited by spaces e.g. "11 22 33 44 55 66"

### MasterSlave Slave MulticastMasterIpAddress



Set	
<b>Description</b> 	Specifies the IPv4 address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterIpAddress <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Capture Flow Filter</b> must be set to MULTICAST.
Get	
<b>Description</b> 	Queries the IPv4 address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterIpAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The IP address of the multicast master that the slave will use.





### MasterSlave Slave MulticastMasterIpv6Address

Set	
<b>Description</b> 	Specifies the IPv6 address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterIpv6Address <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Capture Flow Filter</b> must be set to MULTICAST.
Get	
<b>Description</b> 	Queries the IPv6 address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterIpv6Address
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The IP address of the multicast master that the slave will use.



### MasterSlave Slave MulticastMasterMACAddress

Set	
<b>Description</b> 	Specifies the MAC address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Capture Flow Filter</b> must be set to MULTICAST.
Get	
<b>Description</b> 	Queries the MAC address of the multicast master to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastMasterMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The MAC address of the multicast master that the slave will use with fields delimited by spaces e.g. "11 22 33 44 55 66"



### MasterSlave Slave AutoDiscoverMulticastMaster

Set	
<b>Description</b> 	Sets the slave to auto-discover the address of the multicast master.
<b>Command</b>	MasterSlave Slave AutoDiscoverMulticastMaster
<b>Parameters</b>	<enable> TRUE to enable auto discover, FALSE to enable manual selection
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the auto-discover setting of the multicast master of the Paragon slave.
<b>Command</b>	MasterSlave Slave AutoDiscoverMulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if auto-discover is enabled; FALSE otherwise



### MasterSlave Slave AutoDiscoverIpv4MulticastMaster

Set	
<b>Description</b> 	Sets the slave to auto-discover the IPv4 address of the multicast master.
<b>Command</b>	MasterSlave Slave AutoDiscoverIpv4MulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the auto-discover setting of the Paragon slave.
<b>Command</b>	MasterSlave Slave AutoDiscoverIpv4MulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
<b>Result</b>	TRUE if auto-discover is enabled; FALSE otherwise

### MasterSlave Slave AutoDiscoverIpv6MulticastMaster


Set	
<b>Description</b> 	Sets the slave to auto-discover the IPv6 address of the multicast master.
<b>Command</b>	MasterSlave Slave AutoDiscoverIpv6MulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the auto-discover setting of the Paragon slave.
<b>Command</b>	MasterSlave Slave AutoDiscoverIpv6MulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV6.
<b>Result</b>	TRUE if auto-discover is enabled; FALSE otherwise

### MasterSlave Slave AutoDiscoverMACMulticastMaster

Set	
<b>Description</b> 	Sets the slave to auto-discover the MAC address of the multicast master.
<b>Command</b>	MasterSlave Slave AutoDiscoverMACMulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to ETHERNET.
Get	
<b>Description</b> 	Queries the auto-discover setting of the Paragon slave.
<b>Command</b>	MasterSlave Slave AutoDiscoverMACMulticastMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted. The <b>MasterSlave Slave Encapsulation</b> must be set to ETHERNET.
<b>Result</b>	TRUE if auto-discover is enabled; FALSE otherwise



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### MasterSlave Slave ResetMulticastUnicast

Set	
<b>Description</b> 	Resets the slave Multicast/Unicast settings to default values
<b>Command</b>	MasterSlave Slave ResetMulticastUnicast
<b>Prerequisites</b>	Instrument must have MSE option fitted.



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### MasterSlave Slave AllowedMasterConnectionType



Set	
<b>Description</b> 	Determines how the allowed master is physically connected to the slave.
<b>Command</b>	MasterSlave Slave AllowedMasterConnectionType <value>
<b>Parameters</b>	<value> The type of connection: DIRECT/SWITCH, ROUTER
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the configuration for the slave connection to the master.
<b>Command</b>	MasterSlave Slave AllowedMasterConnectionType
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The configured physical connection. It will be one of the values listed above

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### MasterSlave Slave RouterMACAddress

Set	
<b>Description</b> 	Specifies the MAC address of the router connected to the paragon slave port.
<b>Command</b>	MasterSlave Slave RouterMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the configured MAC address for a router connected to the paragon slave port.
<b>Command</b>	MasterSlave Slave RouterMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current value for a router's MAC address with fields delimited by spaces e.g. "11 22 33 44 55 66"



### MasterSlave Slave UseMasterAddress

Set	
<b>Description</b> 	Enable or disable using the Calnex master address as the allowed master address. This will be fixed to TRUE when <b>TestConfiguration</b> is TRANSPARENT_CLOCK.
<b>Command</b>	MasterSlave Slave UseMasterAddress <enable>
<b>Parameters</b>	<enable> TRUE to enable the Calnex master address as the allowed master address, otherwise FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the enabled state for using the Calnex master address as the allowed master address.
<b>Command</b>	MasterSlave Slave UseMasterAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Calnex master address is being used for the allowed master address, FALSE otherwise.



### MasterSlave Slave MasterIpAddress

Set	
<b>Description</b> 	Sets the IPv4 address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterIpAddress <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv4 address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterIpAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave master IPv4 address.



### MasterSlave Slave MasterIpv6Address

Set	
<b>Description</b> 	Sets the IPv4 address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterIpv6Address <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the IPv6 address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterIpAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Paragon's slave master IPv6 address.



### MasterSlave Slave MasterMACAddress

Set	
<b>Description</b> 	Specifies the MAC address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterMACAddress <value>
<b>Parameters</b>	<value>      6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the MAC address of the allowed master.
<b>Command</b>	MasterSlave Slave MasterMACAddress
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The MAC address of the allowed master with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Slave UnicastRequestPeriod

Set	
<b>Description</b> 	Sets the grant request period used by the slave when sending unicast requests to the allowed master.
<b>Command</b>	MasterSlave Slave UnicastRequestPeriod <time>
<b>Parameters</b>	<time>      An integer value (in s) for the request period. It must be in the range: 5 to 3600
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the current grant request period used by the slave.
<b>Command</b>	MasterSlave Slave UnicastRequestPeriod
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current grant request period (in s) in the range listed above



### MasterSlave Slave UnicastRenew

Set	
<b>Description</b> 	Enables or disables whether the slave should request the renewal of its unicast grant before it expires
<b>Command</b>	MasterSlave Slave UnicastRenew <enable>
<b>Parameters</b>	<enable>      TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries whether the slave is configured to request renewal of unicast grants before they expire.
<b>Command</b>	MasterSlave Slave UnicastRenew
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the slave is set to request unicast grants renewal prior to expiry; FALSE otherwise.



## MasterSlave Slave AnnounceMsgRate

Set	
<b>Description</b> 	Sets the Announce message rate that the slave will request from the allowed master.
<b>Command</b>	MasterSlave Slave AnnounceMsgRate <value>
<b>Parameters</b>	<value>      Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1      (1 message each second) 2      (2 messages per second) 4      (4 messages per second) 8      (8 messages per second) 16     (16 messages per second) 32     (32 messages per second) 64     (64 messages per second) 128    (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the Announce message rate that the slave will request from the allowed master.
<b>Command</b>	MasterSlave Slave AnnounceMsgRate
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The announce rate the slave will request from the master. It will be one of the rates listed above



## MasterSlave Slave AnnounceDuration

Set	
<b>Description</b> 	Specifies the grant duration that will be requested for unicast Announce messages.
<b>Command</b>	MasterSlave Slave AnnounceDuration <time>
<b>Parameters</b>	<time>      An integer value (in s) for the duration to use. It must be in the range: 5 to 4294967295
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the duration of the grant request period for Announce messages.
<b>Command</b>	MasterSlave Slave AnnounceDuration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value (in s) for the current duration. It will be in the range listed above



### MasterSlave Slave AnnounceRenew

Set	
<b>Description</b> 	Specifies the minimum duration after a grant is accepted before any subsequent request will be made.
<b>Command</b>	MasterSlave Slave AnnounceRenew <time>
<b>Parameters</b>	<time> An integer value (in s) for the duration to use. It must be in the range: 4 to (AnnounceDuration – 1)
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the renewal duration for Announce messages
<b>Command</b>	MasterSlave Slave AnnounceRenew
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The renewal duration (in s) in the range above



### MasterSlave Slave SyncMsgRate

Set																													
<b>Description</b> 	Sets the Sync message rate that the slave will request from the allowed master.																												
<b>Command</b>	MasterSlave Slave SyncMsgRate <value>																												
<b>Parameters</b>	<value> Text value to define the rate. It must be one of: <table border="0" style="margin-left: 40px;"> <tr><td>1/64</td><td>(1 message every 64 seconds)</td></tr> <tr><td>1/32</td><td>(1 message every 32 seconds)</td></tr> <tr><td>1/16</td><td>(1 message every 16 seconds)</td></tr> <tr><td>1/8</td><td>(1 message every 8 seconds)</td></tr> <tr><td>1/4</td><td>(1 message every 4 seconds)</td></tr> <tr><td>1/2</td><td>(1 message every 2 seconds)</td></tr> <tr><td>1</td><td>(1 message each second)</td></tr> <tr><td>2</td><td>(2 messages per second)</td></tr> <tr><td>4</td><td>(4 messages per second)</td></tr> <tr><td>8</td><td>(8 messages per second)</td></tr> <tr><td>16</td><td>(16 messages per second)</td></tr> <tr><td>32</td><td>(32 messages per second)</td></tr> <tr><td>64</td><td>(64 messages per second)</td></tr> <tr><td>128</td><td>(128 messages per second)</td></tr> </table>	1/64	(1 message every 64 seconds)	1/32	(1 message every 32 seconds)	1/16	(1 message every 16 seconds)	1/8	(1 message every 8 seconds)	1/4	(1 message every 4 seconds)	1/2	(1 message every 2 seconds)	1	(1 message each second)	2	(2 messages per second)	4	(4 messages per second)	8	(8 messages per second)	16	(16 messages per second)	32	(32 messages per second)	64	(64 messages per second)	128	(128 messages per second)
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1/2	(1 message every 2 seconds)																												
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16	(16 messages per second)																												
32	(32 messages per second)																												
64	(64 messages per second)																												
128	(128 messages per second)																												
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.																												
Get																													
<b>Description</b> 	Queries the Sync message rate that the slave will request from the allowed master.																												
<b>Command</b>	MasterSlave Slave SyncMsgRate																												
<b>Prerequisites</b>	Instrument must have MSE option fitted.																												
<b>Result</b>	The Sync rate the slave will request from the master. It will be one of the rates listed above																												

### MasterSlave Slave SyncDuration



Set	
<b>Description</b> 	Specifies the grant period that will be requested for unicast Sync messages.
<b>Command</b>	MasterSlave Slave SyncDuration <time>
<b>Parameters</b>	<time> An integer value (in s) for the duration to use. It must be in the range: 5 to 4294967295
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the duration of the grant request period for Sync messages.
<b>Command</b>	MasterSlave Slave SyncDuration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value (in s) for the current duration. It will be in the range listed above

### MasterSlave Slave SyncRenew



Set	
<b>Description</b> 	Specifies the minimum duration after a grant is accepted before any subsequent request will be made.
<b>Command</b>	MasterSlave Slave SyncRenew <time>
<b>Parameters</b>	<time> An integer value (in s) for the duration to use. It must be in the range: 4 to (SyncDuration – 1)
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the renewal duration for Sync messages
<b>Command</b>	MasterSlave Slave SyncRenew
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The renewal duration (in s) in the range above





## MasterSlave Slave DelRespMsgRate

Set	
<b>Description</b> 	When Slave Mode is AUTO - sets the Delay Response message rate that the slave will request from the allowed master. When Slave Mode is FORCED – sets the Delay Response message rate the slave will use.
<b>Command</b>	MasterSlave Slave DelRespMsgRate <value>
<b>Parameters</b>	<value>      Text value to define the rate. It must be one of: <div style="margin-left: 40px;"> 1/64    (1 message every 64 seconds)  1/32    (1 message every 32 seconds)  1/16    (1 message every 16 seconds)  1/8     (1 message every 8 seconds)  1/4     (1 message every 4 seconds)  1/2     (1 message every 2 seconds)  1        (1 message each second)  2        (2 messages per second)  4        (4 messages per second)  8        (8 messages per second)  16       (16 messages per second)  32       (32 messages per second)  64       (64 messages per second)  128     (128 messages per second) </div>
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the Delay-Response message rate that the slave is using.
<b>Command</b>	MasterSlave Slave DelRespMsgRate
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The Delay-Response rate the slave is using. It will be one of the rates listed above



## MasterSlave Slave DelRespDuration

Set	
<b>Description</b> 	Specifies the grant duration that will be requested for unicast Delay Response messages.
<b>Command</b>	MasterSlave Slave DelRespDuration <time>
<b>Parameters</b>	<time>      An integer value (in s) for the duration to use. It must be in the range: 5 to 4294967295
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the duration of the grant request period for Delay Request messages.
<b>Command</b>	MasterSlave Slave DelRespDuration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value (in s) for the duration. It will be in the range listed above



### MasterSlave Slave DelRespRenew

Set	
<b>Description</b> 	Specifies the minimum duration after a grant is accepted before any subsequent request will be made.
<b>Command</b>	MasterSlave Slave DelRespRenew <time>
<b>Parameters</b>	<time> An integer value (in s) for the duration to use. It must be in the range: 4 to (DelRespDuration-1)
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Slave Mode</b> must be set to AUTO.
Get	
<b>Description</b> 	Queries the renewal duration for Delay Response messages
<b>Command</b>	MasterSlave Slave DelRespRenew
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The renewal duration (in s) in the range above



### MasterSlave Slave TransportSpecific

Set	
<b>Description</b> 	Specifies the transportSpecific PTP field that will be used in messages sent by the slave.
<b>Command</b>	MasterSlave Slave TransportSpecific <value>
<b>Parameters</b>	<value> An integer value for the transportSpecific nibble used by the slave. This is either 0 or 1
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the transportSpecific PTP field value that will be used in the messages sent by the slave.
<b>Command</b>	MasterSlave Slave TransportSpecific
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The transportSpecific value used by the slave. This will be 0 or 1



### MasterSlave Slave MinorVersionPTP

Set	
<b>Description</b> 	Specifies the minor PTP version (for G.802.1AS-rev) or the first reserved field in the common header.
<b>Command</b>	MasterSlave Slave MinorVersionPTP <value>
<b>Parameters</b>	<value> The minor PTP version or reserved field: 0 or 1.
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the minor PTP version / first reserved field in the common header
<b>Command</b>	MasterSlave Slave MinorVersionPTP
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The minor PTP version / first reserved field in the common header for the slave. This will be in the range listed above



### MasterSlave Slave DomainNumber

Set	
<b>Description</b> 	Specifies the domain number to which the slave belongs.
<b>Command</b>	MasterSlave Slave DomainNumber <value>
<b>Parameters</b>	<value> The domain number: 0 to 127
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the domain number to which the slave belongs.
<b>Command</b>	MasterSlave Slave DomainNumber
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The slave's domain number. It will be in the range listed above.



### MasterSlave Slave ClockID

Set	
<b>Description</b> 	Specifies the clock identity of the slave.
<b>Command</b>	MasterSlave Slave ClockID <value>
<b>Parameters</b>	<value> The clock Id to be used. This should be a string containing 8 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 00 FF"
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the clock identity of the slave.
<b>Command</b>	MasterSlave Slave ClockID
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The clock identity for the slave. This will be a string in the format defined above



### MasterSlave Slave PortNumber

Set	
<b>Description</b> 	Specifies the port number being used by the slave.
<b>Command</b>	MasterSlave Slave PortNumber <value>
<b>Parameters</b>	<value> A 2 byte hex value for the port number. This can either be specified as 4 hex nibbles (e.g. 0000 to FFFF) or as a space-separated string of 2 hex bytes (e.g. "00 00" to "FF FF")
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the port number being used by the slave.
<b>Command</b>	MasterSlave Slave PortNumber
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The current port number. This will be returned as a string containing 2 space separated hex bytes.



### MasterSlave Slave CorrectionField

Set	
<b>Description</b> 	Specifies the correction field value to be used by the slave.
<b>Command</b>	MasterSlave Slave CorrectionField <value>
<b>Parameters</b>	<value> An integer value for the correction value to use. It must be in the range: -140737488355328 to 140737488355327
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the correction field value to be used by the slave.
<b>Command</b>	MasterSlave Slave CorrectionField
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	An integer value for the correction field. It will be in the range listed above



### MasterSlave Slave PtpHeaderOffset

Set	
<b>Description</b> 	Determines the location of the PTP Header in captured packets.
<b>Command</b>	MasterSlave Slave PtpHeaderOffset <offset>
<b>Parameters</b>	<offset> The PTP header offset (integer). The first byte in the packet is at offset position 0. Numeric value must be in range: 0 to 255
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the location of the PTP Header in captured packets.
<b>Command</b>	MasterSlave Slave PtpHeaderOffset
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The location of the PTP header in the packet. It will be in the range listed above



### MasterSlave Slave PeerDelayMode

Set	
<b>Description</b> 	Determines the mode of Peer delay messages used by the slave.
<b>Command</b>	MasterSlave Slave PeerDelayMode <mode>
<b>Parameters</b>	<mode> UNICAST, MULTICAST
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the mode of Peer delay messages used by the slave
<b>Command</b>	MasterSlave Slave PeerDelayMode
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The mode of Peer delay messages used by the slave. It will be in the range listed above



## MasterSlave Slave PdelReqMsgRate

Set	
<b>Description</b> 	Specifies the rate of Pdelay_Req messages generated by the slave.
<b>Command</b>	MasterSlave Slave PdelReqMsgRate <value>
<b>Parameters</b>	<value>            Text value to define the rate. It must be one of: 1/64    (1 message every 64 seconds) 1/32    (1 message every 32 seconds) 1/16    (1 message every 16 seconds) 1/8     (1 message every 8 seconds) 1/4     (1 message every 4 seconds) 1/2     (1 message every 2 seconds) 1        (1 message each second) 2        (2 messages per second) 4        (4 messages per second) 8        (8 messages per second) 16       (16 messages per second) 32       (32 messages per second) 64       (64 messages per second) 128     (128 messages per second)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the rate of Pdelay_Req messages generated by the slave.
<b>Command</b>	MasterSlave Slave PdelReqMsgRate
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The the rate of Pdelay_Req messages generated by the slave. It will be one of the rates listed above



## MasterSlave Slave MulticastPdelayIpAddress

Set	
<b>Description</b> 	Specifies the multicast peer delay IPv4 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpAddress <value>
<b>Parameters</b>	<value>            IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the multicast peer delay IPv4 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The slave's multicast peer delay IPv4 address.



### MasterSlave Slave MulticastPdelayIpv6Address

Set	
<b>Description</b> 	Specifies the multicast peer delay IPv6 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpv6Address <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the multicast peer delay IPv6 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The slave's multicast peer delay IPv6 address.



### MasterSlave Slave MulticastPdelayIpMACAddress

Set	
<b>Description</b> 	Specifies the destination MAC Address of IP multicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the destination MAC Address of IP multicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpMACAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of IP multicast peer delay messages from the Paragon's slave with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Slave MulticastPdelayIpv6MACAddress

Set	
<b>Description</b> 	Specifies the destination MAC Address of IP multicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the destination MAC Address of IP multicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayIpMACAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of IP multicast peer delay messages from the Paragon's slave with fields delimited by spaces e.g. 11 22 33 44 55 66



### MasterSlave Slave MulticastPdelayEthMACAddress

Set	
<b>Description</b> 	Specifies the Ethernet multicast peer delay destination MAC Address of the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayEthMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. <b>MasterSlave Slave Encapsulation</b> must be set to ETHERNET.
Get	
<b>Description</b> 	Queries the Ethernet multicast peer delay destination MAC Address for the Paragon's slave.
<b>Command</b>	MasterSlave Slave MulticastPdelayEthMACAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The Ethernet multicast peer delay destination MAC Address for the Paragon's slave.

### MasterSlave Slave PeerIpAddress



Set	
<b>Description</b> 	Specifies the unicast peer delay IPv4 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerIpAddress <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV4.
Get	
<b>Description</b> 	Queries the unicast peer delay IPv4 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerIpAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The slave's unicast peer delay IPv4 address.

### MasterSlave Slave PeerIpv6Address

Set	
<b>Description</b> 	Specifies the unicast peer delay IPv6 address to be used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerIpv6Address <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled. The <b>MasterSlave Slave Encapsulation</b> must be set to IPV6.
Get	
<b>Description</b> 	Queries the unicast peer delay IPv6 address as used by the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerIpv6Address
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The slave's unicast peer delay IPv6 address.




---

### MasterSlave Slave PeerMACAddress

Set	
<b>Description</b> 	Specifies the destination MAC Address of unicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerMACAddress <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries the destination MAC Address of unicast peer delay messages from the Paragon's slave.
<b>Command</b>	MasterSlave Slave PeerMACAddress
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	The destination MAC Address of unicast peer delay messages from the Paragon's slave with fields delimited by spaces e.g. 11 22 33 44 55 66




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### MasterSlave Slave ConnectedMasterStatus

Get	
<b>Description</b>   	Queries the slave's connected master status
<b>Command</b>	MasterSlave Slave ConnectedMasterStatus
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An integer: 0 (Not connected), 1 (Connected)



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### MasterSlave Slave ConnectedMasterAddress

Get	
<b>Description</b>   	Queries the slave's connected master address
<b>Command</b>	MasterSlave Slave ConnectedMasterAddress
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	An IPv4/IPv6 address or MAC address, depending on the slave's encapsulation setting.





### MasterSlave Slave Signaling #<msgIdx> TlvType



Set	
<b>Description</b> 	Sets the Signaling message TLV Type for the selected Signaling TLV slot.
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> TlvType <tlvType>
<b>Parameters</b>	<msgIdx>            The index of the Signaling message to be modified: 0,1 or 2 <tlvType>            An enumerated value representing the type of the TLV. One of: ORG_EXT_GTP_CAPABLE ORG_EXT_MESSAGE_INTERVAL_REQ ORG_EXT_GTP_CAPABLE_MESSAGE_INTERVAL_REQ
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the type of TLV for the selected Signaling TLV slot.
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> TlvType
<b>Parameters</b>	<tlvIdx>            See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The type of the TLV for the selected index. The result will be the value listed above

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**MasterSlave Slave Signaling #<msgIdx> SendAtRate**

Set	
<b>Description</b> 	Sets the Signaling message to be sent at a configured rate
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> SendAtRate <enable>
<b>Parameters</b>	<msgIdx>            The index of the Signaling message to be modified: 0, 1 or 2 <enable>            TRUE to enable the sending of the Signaling message, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether sending the specified Signaling message at a configured rate is enabled.
<b>Command</b>	MasterSlave Master #<masterIdx> Signaling #<msgIdx> SendAtRate
<b>Parameters</b>	<msgIdx>            See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if sending at a configured rate is enabled, otherwise FALSE.



## MasterSlave Slave Signaling #<msgIdx> Rate

Set	
<b>Description</b> 	Configures the rate at which the Signaling message is to be sent.
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> Rate <rate>
<b>Parameters</b>	<p>&lt;msgIdx&gt;            The index of the Signaling message to be modified: 0, 1 or 2</p> <p>&lt;rate&gt;                Text value to define the rate. It must be one of:</p> <p style="padding-left: 40px;">1/64    (1 message every 64 seconds)</p> <p style="padding-left: 40px;">1/32    (1 message every 32 seconds)</p> <p style="padding-left: 40px;">1/16    (1 message every 16 seconds)</p> <p style="padding-left: 40px;">1/8     (1 message every 8 seconds)</p> <p style="padding-left: 40px;">1/4     (1 message every 4 seconds)</p> <p style="padding-left: 40px;">1/2     (1 message every 2 seconds)</p> <p style="padding-left: 40px;">1        (1 message each second)</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the rate at which the Signaling message is to be sent.
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> Rate
<b>Parameters</b>	<msgIdx>            See above
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The configured message rate. It will be one of the values listed above

## MasterSlave Slave Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask

Set	
<b>Description</b> 	Sets the specified Signaling TLV field.
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask <mask>
<b>Parameters</b>	<p>&lt;msgIdx&gt;                   The index of the Signaling message to be modified: 0, 1 or 2</p> <p>&lt;tlvFieldPath&gt;           Specifies the TLV field. This is a dot separated string which represents the hierarchical path to the field:</p> <p style="margin-left: 40px;"> "#GTP_CAPABLE.logGtpCapableMessageInterval"  "#GTP_CAPABLE.Flags"  "#GTP_CAPABLE.Reserved"  "#MSG_INTERVAL_REQ.logLinkDelayInterval"  "#MSG_INTERVAL_REQ.logTimeSyncInterval"  "#MSG_INTERVAL_REQ.logAnnoucneInterval"  "#MSG_INTERVAL_REQ.Flags"  "#MSG_INTERVAL_REQ.Reserved"  "#GTP_MSG_INTERVAL_REQ.logGtpCapableMessageInterval"  "#GTP_MSG_INTERVAL_REQ.Reserved" </p> <p>&lt;mask&gt;                   Specifies the byte modification mask to be applied to the TLV field. The mask is specified as string of binary or hex (whole) bytes; the GUI display should be consulted to determine length.</p> <p style="margin-left: 40px;">When &lt;mask&gt; = bbbbbbbb [bbbbbbb ...] (<i>binary mask</i>)</p> <p style="margin-left: 40px;">Each character in the mask specifies the modification type to be applied to the bit or nibble:</p> <p style="margin-left: 40px;">0 = Clear the bit or all bits in the nibble (to 0).</p> <p style="margin-left: 40px;">1 = Set the bit or all bits in the nibble (to 1).</p> <p style="margin-left: 40px;">2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F = Set all bits in the nibble to the hex value.</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the specified Signaling TLV field mask
<b>Command</b>	MasterSlave Slave Signaling #<msgIdx> TlvData #<tlvFieldPath> Mask
<b>Parameters</b>	<p>&lt;msgIdx&gt;                   See above</p> <p>&lt;tlvFieldPath&gt;           See above</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The mask applied to the TLV field.

## MasterSlave ReverseSyncMeas

Set	
<b>Description</b> 	Enables the MSE Reverse Sync measurement
<b>Command</b>	MasterSlave ReverseSyncMeas <enable>
<b>Parameters</b>	<enable> TRUE to enable the Reverse Sync measurement, otherwise FALSE
<b>Prerequisites</b>	Instrument must have MSE and Reverse Sync Measurement options fitted. MasterSlave TestConfiguration must be TIME_AWARE_END_STATION
Get	
<b>Description</b> 	Queries the MSE Reverse Sync measurement enable status
<b>Command</b>	MasterSlave ReverseSyncMeas
<b>Parameters</b>	
<b>Prerequisites</b>	Instrument must have MSE and Reverse Sync Measurement options fitted. MasterSlave TestConfiguration must be TIME_AWARE_END_STATION
<b>Result</b>	TRUE if enabled, FALSE if not enabled



## Master/Slave Master Impairment Commands

These commands control impairments that can be applied to the Paragon master when running in Master-Slave Emulation (MSE) mode. These have been designed to allow testing of standards compliance and to enable the creation of test scenarios for specific PTP issue diagnostics.

Note that impairments are applied only on port 1.



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### MasterSlave Impairments Master Enable

Set	
<b>Description</b> 	Enables or disables master impairments.
<b>Command</b>	MasterSlave Impairments Master Enable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether the master is configured to impair.
<b>Command</b>	MasterSlave Impairments Master Enable
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if impairments are enabled on the master, FALSE otherwise.



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### MasterSlave Impairments Master OffsetTime

Set	
<b>Description</b> 	Sets the amount of time the master will be adjusted by.
<b>Command</b>	MasterSlave Impairments Master OffsetTime <value>
<b>Parameters</b>	<value> The time adjustment: -24H, -12H, -60MIN, -60S, -30S, -20S, -10S, -5S, -1S, 0S, +1S, +5S, +10S, +20S, +30S, +60S, +60MIN, +12H, +24H, CUSTOM
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the amount of time the master will be adjusted by.
<b>Command</b>	MasterSlave Impairments Master OffsetTime
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The time the master is being adjusted by. It will be one of the values listed above



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**MasterSlave Impairments Master CustomOffsetTime**



Set	
<b>Description</b> 	Sets the number of seconds the master will be adjusted by.
<b>Command</b>	MasterSlave Impairments Master CustomOffsetTime <value>
<b>Parameters</b>	<value> An integer between -86400 and 86400
<b>Prerequisites</b>	Instrument must have MSE option fitted. <i>MasterSlave Impairments Master OffsetTime</i> must be set to CUSTOM
Get	
<b>Description</b> 	Queries the number of seconds the master will be adjusted by.
<b>Command</b>	MasterSlave Impairments Master CustomOffsetTime
<b>Prerequisites</b>	Instrument must have MSE option fitted. <i>MasterSlave Impairments Master OffsetTime</i> must be set to CUSTOM
<b>Result</b>	The time the master is being adjusted by. This will be in the range listed above.

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**MasterSlave Impairments Master GrantUnicastDuration**

Set	
<b>Description</b> 	Sets a percentage by which the unicast renewal time will be adjusted.
<b>Command</b>	MasterSlave Impairments Master GrantUnicastDuration <value>
<b>Parameters</b>	<value> An integer between 10 and 1000 which represents a percentage of the originally granted unicast renewal duration. 100 means that no modification will be applied
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries a percentage by which the unicast renewal time will be adjusted.
<b>Command</b>	MasterSlave Impairments Master GrantUnicastDuration
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The percentage impairment being applied to unicast grant durations. This will be in the range listed above.

### MasterSlave Impairments Master GrantUnicastRates

Set	
<b>Description</b> 	Sets the unicast message rate granted to the slaves by the master.
<b>Command</b>	MasterSlave Impairments Master GrantUnicastRates <value>
<b>Parameters</b>	<value> 1/16TH_OF_REQUESTED_RATES, 1/8TH_OF_REQUESTED_RATES 1/4TH_OF_REQUESTED_RATES, 1/2_OF_REQUESTED_RATES UNALTERED 2_TIMES_REQUESTED_RATES, 4_TIMES_REQUESTED_RATES 8_TIMES_REQUESTED_RATES, 16_TIMES_REQUESTED_RATES INVERSE_OF_REQUESTED_RATES 1/64, 1/32, 1/16, 1/8, 1/4, 1/2, 1, 2, 4, 8, 16, 32, 64, 128
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the unicast message rate granted to the slaves by the master.
<b>Command</b>	MasterSlave Impairments Master GrantUnicastRates
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returned value representing the message rate modification. This will be one of the values listed above



### MasterSlave Impairments Master ApplySignalingToSync

Set	
<b>Description</b> 	Enables or disables signalling impairments for Sync messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToSync <enabled>
<b>Parameters</b>	<enable> TRUE if the signalling impairments should be applied to Sync messages, FALSE otherwise
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether signalling impairments are enabled or disabled for Sync messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToSync
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returned value is a Boolean value. TRUE if the signalling impairments should be applied to Sync messages, FALSE otherwise.





---

### MasterSlave Impairments Master ApplySignalingToDelResp

Set	
<b>Description</b> 	Enables or disables signalling impairments for Delay-Response messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToDelResp <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether signalling impairments are enabled or disabled for Delay-Response messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToDelResp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returned value is a Boolean value. TRUE if the signalling impairments should be applied to Delay-Response messages, FALSE otherwise.



---

### MasterSlave Impairments Master ApplySignalingToAnnounce

Set	
<b>Description</b> 	Enables or disables signalling impairments for Announce messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToAnnounce <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether signalling impairments are enabled or disabled for Announce messages.
<b>Command</b>	MasterSlave Impairments Master ApplySignalingToAnnounce
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	Returned value is a Boolean value. TRUE if the signalling impairments should be applied to Announce messages, FALSE otherwise.

---

### MasterSlave Impairments Master Stop<messageType>Msgs

Set	
<b>Description</b> 	Enables or disables the impairment which stops the specified message being sent for a certain period of time.
<b>Command</b>	MasterSlave Impairments Master Stop<message>Msgs <enable>
<b>Parameters</b>	<p>&lt;messageType&gt; The message type to which the impairment will be applied. This is one of: Announce, Sync, DelResp, PDelReq, PDelResp Example: MasterSlave Impairments StopAnnounceMsgs TRUE Note: Specifying Sync or PDelResp will also stop transmission of the associated Follow-Up message.</p> <p>&lt;enable&gt; TRUE, FALSE</p>
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasteSlave impairments Master Enable</b> must be TRUE.
Get	
<b>Description</b> 	Queries whether the specified message type will not be sent for a certain period of time.
<b>Command</b>	MasterSlave Impairments Master Stop<message>Msgs
<b>Parameters</b>	<messageType> The message type to which the query applies. This is one of: Announce, Sync, DelResp, PDelReq, PDelResp
<b>Prerequisites</b>	Instrument must have an MSE option fitted
<b>Result</b>	TRUE if messages of the specified type will not be sent for a period of time; FALSE otherwise

---

### MasterSlave Impairments Master StopAnnounceMsgs

See **MasterSlave Impairments Master Stop<messageType>Msgs**

---

### MasterSlave Impairments Master StopSyncMsgs

See **MasterSlave Impairments Master Stop<messageType>Msgs**

---

### MasterSlave Impairments Master StopDelRespMsgs

See **MasterSlave Impairments Master Stop<messageType>Msgs**

---

### MasterSlave Impairments Master StopPDelReqMsgs

See **MasterSlave Impairments Master Stop<messageType>Msgs**



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### MasterSlave Impairments Master StopPDelRespMsgs

See **MasterSlave Impairments Master Stop<messageType>Msgs**

---

### MasterSlave Impairments Master Stop<messageType>MsgsDuration

Set	
<b>Description</b> 	Specifies how long messages of the specified type should be stopped being sent by the Master.
<b>Command</b>	MasterSlave Impairments Master Stop<messageType>MsgsDuration <duration>
<b>Parameters</b>	<p>&lt;messageType&gt; The message type to which the impairment will be applied. This is one of: Announce, Sync, DelResp, PDelReq, PDelResp Example: MasterSlave Impairments StopAnnounceMsgsDuration 200 Note: Specifying Sync or PDelResp will also stop transmission of the associated Follow-Up message for the specified duration.</p> <p>&lt;duration&gt; An integer value in seconds in the range: 1 to 3600</p>
<b>Prerequisites</b>	Instrument must have an MSE option fitted. <b>MasteSlave impairments Master Enable</b> must be TRUE.
Get	
<b>Description</b> 	Queries for how long messages of the specified types should be stopped from being sent by the Master.
<b>Command</b>	MasterSlave Impairments Master Stop<messageType>MsgsDuration
<b>Parameters</b>	<messageType> The message type to which the query applies. This is one of: Announce, Sync, DelResp, PDelReq, PDelResp
<b>Prerequisites</b>	Instrument must have an MSE option fitted.
<b>Result</b>	The duration in seconds for which messages of the specified type will be not be transmitted.

---

### MasterSlave Impairments Master StopAnnounceMsgsDuration

See **MasterSlave Impairments Master Stop<messageType>MsgsDuration**

---

### MasterSlave Impairments Master StopSyncMsgsDuration

See **MasterSlave Impairments Master Stop<messageType>MsgsDuration**

---

### MasterSlave Impairments Master StopDelRespMsgsDuration

See **MasterSlave Impairments Master Stop<messageType>MsgsDuration**

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### MasterSlave Impairments Master StopPDelReqMsgsDuration

See **MasterSlave Impairments Master Stop<messageType>MsgsDuration**



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### MasterSlave Impairments Master StopPDelRespMsgsDuration

See **MasterSlave Impairments Master Stop<messageType>MsgsDuration**



---

### MasterSlave Impairments Master Invert2Step

Set	
<b>Description</b> 	Enable or disable the master inverting the value of the 2Step flag before transmitting messages.
<b>Command</b>	MasterSlave Impairments Master Invert2Step <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have an MSE option fitted. <b>MasteSlave impairments Master Enable</b> must be TRUE.
Get	
<b>Description</b> 	Queries whether the master is configured to invert the value of the 2Step flag before transmitting messages.
<b>Command</b>	MasterSlave Impairments Master Invert2Step
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is inverting the value of the 2Step flag, FALSE otherwise.

---

### MasterSlave Impairments Master InvertUnicast

Set	
<b>Description</b> 	Enable or disable the master inverting the value of the Unicast flag before transmitting messages.
<b>Command</b>	MasterSlave Impairments Master InvertUnicast <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have an MSE option fitted. <b>MasteSlave impairments Master Enable</b> must be TRUE.
Get	
<b>Description</b> 	Queries whether the master is configured to invert the value of the Unicast flag before transmitting messages.
<b>Command</b>	MasterSlave Impairments Master InvertUnicast
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the specified master is inverting the value of the Unicast flag, FALSE otherwise.

## **Master/Slave Overwrite, Corruption, Replay and Delay Commands**

These commands control impairments that can be applied to the Paragon master when running in Master-Slave Emulation (MSE) mode. These have been designed to allow testing of standards compliance and to enable the creation of test scenarios for specific PTP issue diagnostics.

Note that impairments are applied only on port 1.

The commands in this section are the Master-Slave Emulation mode equivalents of previously described through-mode impairments. Please follow the links provided for the relevant details for each command.

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### **MasterSlave Impairments Overwrite MasterTx ViewAs LinkEncap**

### **MasterSlave Impairments Overwrite MasterRx ViewAs LinkEncap**

See: [Impair Overwrite #<flow> ViewAs LinkEncap](#)

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### **MasterSlave Impairments Overwrite MasterTx ViewAs Service**

### **MasterSlave Impairments Overwrite MasterRx ViewAs Service**

See: [Impair Overwrite #<flow> ViewAs Service](#)

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### **MasterSlave Impairments Overwrite MasterTx #<protocolFieldPath> Mask**

### **MasterSlave Impairments Overwrite MasterRx #<protocolFieldPath> Mask**

See: [Impair Overwrite #<flow> #<protocolFieldPath> Mask](#)

---

### **MasterSlave Impairments Overwrite MasterTx Enable**

### **MasterSlave Impairments Overwrite MasterRx Enable**

See: [Impair Overwrite #<flow> Enable](#)

---

### **MasterSlave Impairments Overwrite MasterTx Reset**

### **MasterSlave Impairments Overwrite MasterRx Reset**

See:

[Impair Overwrite #<flow> Reset](#)

---

### **MasterSlave Impairments Corruption Physical MasterTx Enable**

### **MasterSlave Impairments Corruption Physical MasterRx Enable**

See: [Impair Corruption Physical #<port> Enable](#)

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### **MasterSlave Impairments Corruption Physical MasterTx Type**

### **MasterSlave Impairments Corruption Physical MasterRx Type**

See: [Impair Corruption Physical #<port> Type](#)

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### **MasterSlave Impairments Corruption Physical MasterTx Distribution ...**

### **MasterSlave Impairments Corruption Physical MasterRx Distribution ...**

See: [Impair Corruption Physical #<port> Distribution](#)

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### **MasterSlave Impairments Corruption MasterTx ErrorEnable**

### **MasterSlave Impairments Corruption MasterRx ErrorEnable**

See: [Impair Corruption #<flow> ErrorEnable](#)

---

**MasterSlave Impairments Corruption MasterTx ErrorType****MasterSlave Impairments Corruption MasterRx ErrorType**

See: Impair Corruption #<flow> ErrorType

---

**MasterSlave Impairments Corruption MasterTx MisorderDepth****MasterSlave Impairments Corruption MasterRx MisorderDepth**

See: Impair Corruption #<flow> MisorderDepth

---

**MasterSlave Impairments ProfileReplay ReplayMode**

For operation of this command please see: Impair ProfileReplay ReplayMode

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**MasterSlave Impairments ProfileReplay MasterTx Corruption Enable****MasterSlave Impairments ProfileReplay MasterRx Corruption Enable**

See: Impair ProfileReplay #<port> Corruption Enable

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**MasterSlave Impairments ProfileReplay MasterTx Corruption NumSamples****MasterSlave Impairments ProfileReplay MasterRx Corruption NumSamples**

See: Impair ProfileReplay #<port> Corruption NumSamples

---

**MasterSlave Impairments ProfileReplay MasterTx Corruption GenerateProfile****MasterSlave Impairments ProfileReplay MasterRx Corruption GenerateProfile**

See: Impair ProfileReplay #<port> Corruption GenerateProfile

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**MasterSlave Impairments ProfileReplay MasterTx Corruption G1050PktLoss LoLossState DropProb****MasterSlave Impairments ProfileReplay MasterRx Corruption G1050PktLoss LoLossState DropProb**

See: Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState DropProb

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**MasterSlave Impairments ProfileReplay MasterTx Corruption G1050PktLoss LoLossState TransProb****MasterSlave Impairments ProfileReplay MasterRx Corruption G1050PktLoss LoLossState TransProb**

See: Impair ProfileReplay #<port> Corruption G1050PktLoss LoLossState TransProb

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**MasterSlave Impairments ProfileReplay MasterRx Corruption G1050PktLoss HiLossState DropProb****MasterSlave Impairments ProfileReplay MasterTx Corruption G1050PktLoss HiLossState DropProb**

See: Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState DropProb

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**MasterSlave Impairments ProfileReplay MasterTx Corruption G1050PktLoss HiLossState TransProb****MasterSlave Impairments ProfileReplay MasterRx Corruption G1050PktLoss HiLossState TransProb**

See: Impair ProfileReplay #<port> Corruption G1050PktLoss HiLossState TransProb

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**MasterSlave Impairments VariableDelay Mode**

See: Impair VariableDelay Mode

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**MasterSlave Impairments VariableDelay Type**

See: Impair VariableDelay Type

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**MasterSlave Impairments VariableDelay ApplyDelayTo**

See: Impair Ptp ApplyDelayTo

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**MasterSlave Impairments VariableDelay MasterTx Enable <enable>****MasterSlave Impairments VariableDelay MasterRx Enable <enable>**

See: Impair VariableDelay #<port> Enable

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**MasterSlave Impairments VariableDelay MasterTx MultiFlowRate1588****MasterSlave Impairments VariableDelay MasterRx MultiFlowRate1588**

See: Impair VariableDelay #<port> MultiFlowRate1588

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**MasterSlave Impairments VariableDelay MasterTx FixedDelay****MasterSlave Impairments VariableDelay MasterRx FixedDelay**

See: Impair VariableDelay #<flow> FixedDelay

---

**MasterSlave Impairments VariableDelay MasterTx ProfileAutoLevel****MasterSlave Impairments VariableDelay MasterRx ProfileAutoLevel**

See: Impair VariableDelay #<flow> ProfileAutoLevel

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**MasterSlave Impairments VariableDelay MasterTx ProfileType****MasterSlave Impairments VariableDelay MasterRx ProfileType**

See: Impair VariableDelay #<flow> ProfileType

---

**MasterSlave Impairments VariableDelay MasterTx SawToothType****MasterSlave Impairments VariableDelay MasterRx SawToothType**

See: Impair VariableDelay #<flow> SawToothType

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**MasterSlave Impairments VariableDelay MasterTx GenerateProfile****MasterSlave Impairments VariableDelay MasterRx GenerateProfile**

See: Impair VariableDelay #<flow> GenerateProfile

---

**MasterSlave Impairments VariableDelay MasterTx Alpha****MasterSlave Impairments VariableDelay MasterRx Alpha**

See: Impair VariableDelay #<flow> Alpha

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**MasterSlave Impairments VariableDelay MasterTx Beta****MasterSlave Impairments VariableDelay MasterRx Beta**

See: Impair VariableDelay #<flow> Beta

---

**MasterSlave Impairments VariableDelay MasterTx Magnitude****MasterSlave Impairments VariableDelay MasterRx Magnitude**

See: Impair VariableDelay #<flow> Magnitude

---

**MasterSlave Impairments VariableDelay MasterTx MaxDelay****MasterSlave Impairments VariableDelay MasterRx MaxDelay**

See: Impair VariableDelay #<flow> MaxDelay

---

**MasterSlave Impairments VariableDelay MasterTx Mean****MasterSlave Impairments VariableDelay MasterRx Mean**

See: Impair VariableDelay #<flow> Mean

---

**MasterSlave Impairments VariableDelay MasterTx MinDelay****MasterSlave Impairments VariableDelay MasterRx MinDelay**

See: Impair VariableDelay #<flow> MinDelay

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**MasterSlave Impairments VariableDelay MasterTx Offset****MasterSlave Impairments VariableDelay MasterRx Offset**

See: Impair VariableDelay #<flow> Offset

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**MasterSlave Impairments VariableDelay MasterTx NumPackets****MasterSlave Impairments VariableDelay MasterRx NumPackets**

See: Impair VariableDelay #<flow> NumPackets

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**MasterSlave Impairments VariableDelay MasterTx RampPeriod****MasterSlave Impairments VariableDelay MasterRx RampPeriod**

See: Impair VariableDelay #<flow> RampPeriod

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**MasterSlave Impairments VariableDelay MasterTx RepeatPeriod****MasterSlave Impairments VariableDelay MasterRx RepeatPeriod**

See: Impair VariableDelay #<flow> RepeatPeriod

---

**MasterSlave Impairments VariableDelay MasterTx StdDeviation****MasterSlave Impairments VariableDelay MasterRx StdDeviation**

See: Impair VariableDelay #<flow> StdDeviation

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**MasterSlave Impairments VariableDelay MasterTx StepPeriod****MasterSlave Impairments VariableDelay MasterRx StepPeriod**

See: Impair VariableDelay #<flow> StepPeriod

---

**MasterSlave Impairments VariableDelay MasterTx TimeslotValue****MasterSlave Impairments VariableDelay MasterRx TimeslotValue**


See: Impair VariableDelay #<flow> TimeslotValue

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**MasterSlave Impairments VariableDelay MasterRx FileName**

Get	
<b>Description</b> 	Queries the file path and name of the imported replay profile for the MasterRx port.
<b>Command</b>	MasterSlave Impairments VariableDelay MasterRx FileName
<b>Prerequisites</b>	<b>MasterSlave Enabled</b> must be TRUE.
<b>Result</b>	The current file path and name of the imported replay profile for the MasterRx port. If no file has been loaded, then returns "No File Imported."

---

**MasterSlave Impairments VariableDelay MasterTx FileName**

Get	
<b>Description</b> 	Queries the file path and name of the imported replay profile for the MasterTx port.
<b>Command</b>	MasterSlave Impairments VariableDelay MasterTx FileName
<b>Prerequisites</b>	<b>MasterSlave Enabled</b> must be TRUE.
<b>Result</b>	The current file path and name of the imported replay profile for the MasterTx port. If no file has been loaded, then returns "No File Imported."

## Master/Slave Flow Filter Configuration Commands

The commands in this section control the flow filter configuration as used in MSE.



The flow filters can be used to select and/or exclude particular traffic, allowing the impairment and/or capture of only the desired data streams.

The flow filter settings that are required for capture should be configured and then **MasterSlave FlowFilter CaptureSet** called to apply these settings.

Likewise, for impairments, the impairment settings should be configured and then applied using **MasterSlave FlowFilter ImpairSet**.



---

### MasterSlave FlowFilter CaptureSlaveIP



Set	
<b>Description</b> 	Specifies the slave IPv4 address of messages to be captured.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveIP <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters e.g. 192.168.4.102
<b>Prerequisites</b>	Instrument must have MSE option fitted. The relevant Master or Slave <b>Encapsulation</b> must be IPV4.
Get	
<b>Description</b> 	Queries the slave IPv4 address.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveIP
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The slave's IPv4 address.

---



### MasterSlave FlowFilter CaptureSlaveIPv6

Set	
<b>Description</b> 	Specifies the slave IPv6 address of the messages to be captured.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveIPv6 <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters e.g. ff02:0000:0000:0000:0000:0000:0000:0181
<b>Prerequisites</b>	Instrument must have MSE option fitted. The relevant Master or Slave <b>Encapsulation</b> must be IPV6.
Get	
<b>Description</b> 	Queries the slave IPv6 address.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveIP
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The slave's IPv6 address.



## MasterSlave FlowFilter CaptureSlaveMAC

Set	
<b>Description</b> 	Specifies the slave MAC address of the messages to be captured.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveMAC <value>
<b>Parameters</b>	<value> 6 byte hex value for the MAC address with ':' delimiters or as a string with space delimiters e.g. 11:22:33:44:55:66 or "11 22 33 44 55 66"
<b>Prerequisites</b>	Instrument must have MSE option fitted. The relevant Master or Slave <b>Encapsulation</b> must be ETHERNET.
Get	
<b>Description</b> 	Queries the slave's MAC address.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveMAC
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The slave's MAC address with fields delimited by spaces e.g. "11 22 33 44 55 66"



## MasterSlave FlowFilter CaptureSlaveMessagingMode

Set	
<b>Description</b> 	Sets the flow filter appropriately for the slave messaging mode.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveMessagingMode <mode>
<b>Parameters</b>	<mode> Multicast: Capture multicast Announce, Delay and Sync Unicast: Do not capture multicast messages Hybrid: Capture multicast Announce and Sync but do not capture multicast delay messages
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries the slave's MAC address.
<b>Command</b>	MasterSlave FlowFilter CaptureSlaveMAC
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The slave's MAC address with fields delimited by spaces e.g. "11 22 33 44 55 66"



### MasterSlave FlowFilter CaptureAnnounce

Set	
<b>Description</b> 	Determines whether Announce messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureAnnounce <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Announce messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureAnnounce
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Announce messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureSync

Set	
<b>Description</b> 	Determines whether Sync messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSync <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Sync messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureSync
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Sync messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureFollowUp

Set	
<b>Description</b> 	Determines whether Follow-Up messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureFollowUp <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Follow-Up messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureFollowUp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Follow-Up messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureDelReq

Set	
<b>Description</b> 	Determines whether Delay-Request messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureDelReq <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Delay-Request messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureDelReq
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Delay-Request messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureDelResp

Set	
<b>Description</b> 	Determines whether Delay-Response messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureDelResp <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Delay-Response messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureDelResp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the Delay-Response messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureSignalingMaster

Set	
<b>Description</b> 	Determines whether Signalling messages sent by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSignalingMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Signalling messages sent by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureSignalingMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the master's Signalling messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureSignalingSlave

Set	
<b>Description</b> 	Determines whether Signalling messages sent by the PTP slave should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureSignalingSlave <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Signalling messages sent by the PTP slave should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureSignalingSlave
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the slave's Signalling messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureManagementMaster

Set	
<b>Description</b> 	Determines whether Management messages sent by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureManagementMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Management messages sent by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureManagementMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the master's Management messages should be included; FALSE otherwise.



### MasterSlave FlowFilter CaptureManagementSlave

Set	
<b>Description</b> 	Determines whether Management messages sent by the PTP slave should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureManagementSlave <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Management messages sent by the PTP slave should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureManagementSlave
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the slave's Management messages should be included; FALSE otherwise.

### MasterSlave FlowFilter CaptureReverseSync



Set	
<b>Description</b> 	Determines whether Reverse Sync messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureReverseSync <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Reverse Sync messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureReverseSync
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Reverse Sync messages should be included; FALSE otherwise.

### MasterSlave FlowFilter CaptureReverseFollowUp

Set	
<b>Description</b> 	Determines whether Reverse Follow-Up messages should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureReverseFollowUp <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Reverse Follow-Up messages should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CaptureReverseFollowUp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Reverse Follow-Up messages should be included; FALSE otherwise.



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### MasterSlave FlowFilter CapturePdelReqFromSlaveOrToMaster

Set	
<b>Description</b> 	Determines whether Pdelay_Req messages sent by the PTP slave or received by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelReqFromSlaveOrToMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Req messages sent by the PTP slave or received by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelReqFromSlaveOrToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Req messages from the slave or to the master should be included; FALSE otherwise.

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### MasterSlave FlowFilter CapturePdelRespToSlaveOrFromMaster

Set	
<b>Description</b> 	Determines whether Pdelay_Resp messages received by the PTP slave or sent by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespToSlaveOrFromMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp messages received by the PTP slave or sent by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespToSlaveOrFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp messages to the slave or from the master should be included; FALSE otherwise.





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### MasterSlave FlowFilter CapturePdelRespFollowUpToSlaveOrFromMaster

Set	
<b>Description</b> 	Determines whether Pdelay_Resp_Follow_Up messages received by the PTP slave or sent by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFollowUpToSlaveOrFromMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp_Follow_Up messages received by the PTP slave or sent by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFollowUpToSlaveOrFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp_Follow_Up messages to the slave or from the master should be included; FALSE otherwise.



---

### MasterSlave FlowFilter CapturePdelReqToSlaveOrFromMaster

Set	
<b>Description</b> 	Determines whether Pdelay_Req messages received by the PTP slave or sent by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelReqToSlaveOrFromMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Req messages received by the PTP slave or sent by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelReqToSlaveOrFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Req messages to the slave or from the master should be included; FALSE otherwise.



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### MasterSlave FlowFilter CapturePdelRespFromSlaveOrToMaster



Set	
<b>Description</b> 	Determines whether Pdelay_Resp messages sent by the PTP slave or received by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFromSlaveOrToMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp messages sent by the PTP slave or received by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFromSlaveOrToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp messages from the slave or to the master should be included; FALSE otherwise.

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### MasterSlave FlowFilter CapturePdelRespFollowUpFromSlaveOrToMaster

Set	
<b>Description</b> 	Determines whether Pdelay_Resp_Follow_Up messages sent by the PTP slave or received by the PTP master should be included in the capture. <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFollowUpFromSlaveOrToMaster <enable>
<b>Parameters</b>	<enable> TRUE (include), FALSE (exclude)
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp_Follow_Up messages sent by the PTP slave or received by the PTP master should be included in the capture.
<b>Command</b>	MasterSlave FlowFilter CapturePdelRespFollowUpFromSlaveOrToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp_Follow_Up messages from the slave or to the master should be included; FALSE otherwise.



## MasterSlave FlowFilter CaptureMulticastAnnounce

Set	
<b>Description</b> 	Determines whether the Announce message should be configured as multicast in the capture flow filter.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastAnnounce <multicast>
<b>Parameters</b>	<enable> TRUE (mutlicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the Announce message will be configured as multicast or unicast in the capture flow filter.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastAnnounce
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Announce messages are configured as multicast in the capture flow filter; FALSE if they are configured as unicast.



## MasterSlave FlowFilter CaptureMulticastSync

Set	
<b>Description</b> 	Determines whether the Sync message should be configured as multicast in the capture flow filter.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastSync <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the Sync message will be configured as multicast or unicast in the capture flow filter.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastSync
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Sync messages are configured as multicast in the capture flow filter, FALSE if they are configured as unicast.



### MasterSlave FlowFilter CaptureMulticastDelay

Set	
<b>Description</b> 	Determines whether the Delay-Request and Delay-Response messages should be configured as multicast in the capture flow filter.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastDelay <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether Delay-Request and Delay-Response messages will be configured as multicast or unicast in the capture flow filter.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastDelay
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Delay-Request and Delay-Response messages will be configured as multicast in the capture flow filter, FALSE if they will be configured as unicast.



### MasterSlave FlowFilter CaptureMulticastPdelay

Set	
<b>Description</b> 	Determines whether the Peer delay messages should be configured as multicast in the capture flow filter.  <b>MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastPdelay <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether Peer delay messages will be configured as multicast or unicast in the capture flow filter.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastPdelay
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Peer delay messages will be configured as multicast in the capture flow filter, FALSE if they will be configured as unicast.


### MasterSlave FlowFilter CaptureMulticastAllSlaves

Set	
<b>Description</b> 	Specifies whether the slave address should be used when the capture flow filter is set.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastAllSlaves <enabled>
<b>Parameters</b>	<enable> When TRUE, the slave address will not be used for multicast messages in the capture flow filter, when FALSE the slave address will be used.
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the slave address should be used when the capture flow filter is set
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastAllSlaves
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if the slave address will not be used for multicast messages in the capture flow filter, when set to FALSE the slave address will be used.


### MasterSlave FlowFilter CaptureMulticastSlavePortId

Set	
<b>Description</b> 	Specifies the slave's port identity to be used for multicast Delay-Response messages in the capture flow filter.  <b>Paragon-X: MasterSlave FlowFilter Capture</b> settings must be applied (using <b>MasterSlave FlowFilter CaptureSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastSlavePortId <portId>
<b>Parameters</b>	<portId> 10 byte hex string representing the port identity of a slave. This should be a string containing 10 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 02 00 01"
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the slave's port identity is to be used for multicast Delay-Response messages in the capture flow filter.
<b>Command</b>	MasterSlave FlowFilter CaptureMulticastSlavePortId
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The port identity of a slave as a 10 byte hex string formatted as above.



### MasterSlave FlowFilter CaptureSet

Set	
<b>Description</b> 	Sets the capture flow filter based on current settings.
<b>Command</b>	MasterSlave FlowFilter CaptureSet
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave Capture</b> settings are used to determine the master address and encapsulation. <b>MasterSlave FlowFilter Capture</b> settings are used to determine the slave address and the messages to capture.



### MasterSlave FlowFilter CaptureClear

Set	
<b>Description</b> 	Clears the current capture flow filter
<b>Command</b>	MasterSlave FlowFilter CaptureClear
<b>Prerequisites</b>	Instrument must have MSE option fitted.



### MasterSlave FlowFilter ImpairSlaveIP

Set	
<b>Description</b> 	Specifies the masked slave IPv4 address to be impaired. For example, to match all slaves with an IPv4 address beginning with 192.168.0, specify the value 192.168.0.X. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveIP <value>
<b>Parameters</b>	<value> IPv4 address with '.' delimiters and an X for masked fields e.g. 192.168.0.X. More than one field may be masked.
<b>Prerequisites</b>	Instrument must have MSE option fitted. Port 1 <b>Master Encapsulation</b> must be IPV4.
Get	
<b>Description</b> 	Queries the masked slave IP address being used.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveIP
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The masked IPv4 address being used.



### MasterSlave FlowFilter ImpairSlaveIPv6

Set	
<b>Description</b> 	Specifies the masked slave IPv6 address of the messages to be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveIP <value>
<b>Parameters</b>	<value> IPv6 address with ':' delimiters and an X for masked nibbles e.g. ff02:0000:0000:0000:0000:0000:01XX. More than one nibble may be masked.
<b>Prerequisites</b>	Instrument must have MSE option fitted. Port 1 <b>Master Encapsulation</b> must be IPV6.
Get	
<b>Description</b> 	Queries the masked slave IPv6 address being used.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveIPv6
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The masked IPv6 address being used.



## MasterSlave FlowFilter ImpairSlaveMAC

Set	
<b>Description</b> 	Specifies the masked slave MAC address of the messages to be impaired. For example, to match all slaves with a MAC address beginning with CC:AA:22, specify the value CC:AA:22:XX:XX:XX <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveMAC <value>
<b>Parameters</b>	<value>      6 byte hex value for the MAC address with ':' or space delimiters and an X for masked nibbles e.g. 11:22:33:44:55:6X or "11 22 33 44 55 6X". More than one nibble can be masked
<b>Prerequisites</b>	Instrument must have MSE option fitted. Port 1 <b>Master Encapsulation</b> must be ETHERNET.
Get	
<b>Description</b> 	Queries the masked slave MAC address in use.
<b>Command</b>	MasterSlave FlowFilter ImpairSlaveMAC
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	The masked MAC address being used.



## MasterSlave FlowFilter ImpairSync

Set	
<b>Description</b> 	Determines whether Sync messages should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSync <enable>
<b>Parameters</b>	<enable>      TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Sync messages are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairSync
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Sync messages are to be impaired, FALSE otherwise.



## MasterSlave FlowFilter ImpairFollowUp

Set	
<b>Description</b> 	Determines whether Follow-Up messages should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairFollowUp <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Follow-Up messages are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairFollowUp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Follow-up messages are to be impaired; FALSE otherwise.

## MasterSlave FlowFilter ImpairDelReq



Set	
<b>Description</b> 	Specifies whether Delay-Request messages should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairDelReq <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>ImpairSet</b> command must be SET.
Get	
<b>Description</b> 	Queries whether Delay-Request messages are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairDelReq
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Delay-Request messages are to be impaired; FALSE otherwise.

## MasterSlave FlowFilter ImpairDelResp



Set	
<b>Description</b> 	Specifies whether Delay-Response messages should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairDelResp <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Delay-Response messages are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairDelResp
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Delay-Response messages are to be impaired; FALSE otherwise.





### MasterSlave FlowFilter ImpairAnnounce

Set	
<b>Description</b> 	Specifies whether Announce messages should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairAnnounce <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether Announce messages are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairAnnounce
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if Announce messages are to be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairSignalingMaster

Set	
<b>Description</b> 	Specifies whether signalling messages sent by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSignalingMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether signalling messages sent by the PTP master are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairSignalingMaster
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the signalling messages sent by the PTP master should be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairSignalingSlave

Set	
<b>Description</b> 	Specifies whether signalling messages sent by the PTP slave should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairSignalingSlave <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE option fitted.
Get	
<b>Description</b> 	Queries whether signalling messages sent by the PTP slave are to be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairSignalingSlave
<b>Prerequisites</b>	Instrument must have MSE option fitted.
<b>Result</b>	TRUE if the signalling messages sent by the PTP slave should be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairPdelReqToMaster

Set	
<b>Description</b> 	Specifies whether Pdelay_Req messages received by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelReqToMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Req messages received by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelReqToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Req messages to the master should be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairPdelRespFromMaster

Set	
<b>Description</b> 	Specifies whether Pdelay_Resp messages sent by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFromMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp messages sent by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp messages from the master should be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairPdelRespFollowUpFromMaster

Set	
<b>Description</b> 	Specifies whether Pdelay_Resp_Follow_Up messages sent by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFollowUpFromMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp_Follow_Up messages sent by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFollowUpFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp_Follow_Up messages from the master should be impaired; FALSE otherwise.



### MasterSlave FlowFilter ImpairPdelReqFromMaster

Set	
<b>Description</b> 	Specifies whether Pdelay_Req messages sent by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelReqFromMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Req messages sent by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelReqFromMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Req messages from the master should be impaired; FALSE otherwise.

### MasterSlave FlowFilter ImpairPdelRespToMaster



Set	
<b>Description</b> 	Specifies whether Pdelay_Resp messages received by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespToMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp messages received by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp messages to the master should be impaired; FALSE otherwise.

### MasterSlave FlowFilter ImpairPdelRespFollowUpToMaster

Set	
<b>Description</b> 	Specifies whether Pdelay_Resp_Follow_Up messages received by the PTP master should be impaired. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFollowUpToMaster <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
Get	
<b>Description</b> 	Queries whether Pdelay_Resp_Follow_Up messages received by the PTP master should be impaired.
<b>Command</b>	MasterSlave FlowFilter ImpairPdelRespFollowUpToMaster
<b>Prerequisites</b>	Instrument must have MSE Peer to peer option enabled.
<b>Result</b>	TRUE if the Pdelay_Resp_Follow_Up messages to the master should be impaired; FALSE otherwise.



---

### MasterSlave FlowFilter ImpairMulticastAnnounce



Set	
<b>Description</b> 	Specifies whether the Announce message should be configured as multicast or unicast in the impairment flow filter <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastAnnounce <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the Announce message will be configured as multicast or unicast in the impairment flow filter.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastAnnounce
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Announce messages are configured as multicast in the impairment flow filter; FALSE if they are configured as unicast.

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### MasterSlave FlowFilter ImpairMulticastSync

Set	
<b>Description</b> 	Specifies whether the Sync message should be configured as multicast or unicast in the impairment flow filter. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastSync <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the Sync message will be configured as multicast or unicast in the impairment flow filter
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastSync
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Sync messages are configured as multicast in the impairment flow filter, FALSE if they are configured as unicast.



### MasterSlave FlowFilter ImpairMulticastDelay

Set	
<b>Description</b> 	Specifies whether Delay-Request and Delay-Response messages should be configured as multicast or unicast in the impairment flow filter. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastDelay <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether Delay-Request and Delay-Response messages are configured as multicast or unicast in the impairment flow filter.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastDelay
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Delay-Request and Delay-Response messages are configured as multicast in the impairment flow filter, FALSE if they are configured as unicast.



### MasterSlave FlowFilter ImpairMulticastPdelay

Set	
<b>Description</b> 	Specifies whether Peer Delay messages should be configured as multicast or unicast in the impairment flow filter. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastPdelay <multicast>
<b>Parameters</b>	<enable> TRUE (multicast), FALSE (unicast)
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether Peer delay messages will be configured as multicast or unicast in the impairment flow filter.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastPdelay
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if Peer delay messages will be configured as multicast in the impairment flow filter, FALSE if they will be configured as unicast.


### MasterSlave FlowFilter ImpairMulticastAllSlaves

Set	
<b>Description</b> 	Specifies whether the slave address should be used when the impairment flow filter is set. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastAllSlaves <enabled>
<b>Parameters</b>	<enable> When set to TRUE, the slave address will not be used for multicast messages in the impairment flow filter, when set to FALSE the slave address will be used
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the slave address should be used when the impairment flow filter is set.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastAllSlaves
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	TRUE if the slave address will not be used for multicast messages in the impairment flow filter, when set to FALSE the slave address will be used.

### MasterSlave FlowFilter ImpairMulticastSlavePortId


Set	
<b>Description</b> 	Specifies the slave's port identity to be used in multicast Delay-Response messages in the impairment flow filter. <b>MasterSlave FlowFilter Impair</b> settings must be applied (using <b>MasterSlave FlowFilter ImpairSet</b> ) before they can be used.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastSlavePortId <portId>
<b>Parameters</b>	<portId> 10 byte hex string representing the port identity of a slave. This should be a string containing 10 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 02 00 01"
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
Get	
<b>Description</b> 	Queries whether the slave's port identity is to be used for multicast Delay-Response messages in the impairment flow filter.
<b>Command</b>	MasterSlave FlowFilter ImpairMulticastSlavePortId
<b>Prerequisites</b>	Instrument must have one of the MSE options enabled.
<b>Result</b>	The port identity of a slave as a 10 byte hex string formatted as above

### MasterSlave FlowFilter ImpairSet

Set	
<b>Description</b> 	Sets the impairment flow filter based on current settings.
<b>Command</b>	MasterSlave FlowFilter ImpairSet
<b>Prerequisites</b>	Instrument must have MSE option fitted. <b>MasterSlave FlowFilter Impair</b> settings are used to determine the slave address and the messages to impair.

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### MasterSlave FlowFilter ImpairClear

Set	
<b>Description</b> 	Clears the current impairment flow filter.
<b>Command</b>	MasterSlave FlowFilter ImpairClear
<b>Prerequisites</b>	Instrument must have MSE option fitted.



## GPS Emulation Commands

The commands in this section control the settings for Advanced Time of Day & GPS Emulation.

### **GPSEmulation ToDGeneration**

<b>Set</b>	
<b>Description</b> 	Enables Time of Day generation functionality.
<b>Command</b>	GPSEmulation ToDGeneration <enable>
<b>Parameters</b>	<enable> TRUE enables Time of Day generation, FALSE otherwise.
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Get</b>	
<b>Description</b> 	Queries the Time of Day generation setting.
<b>Command</b>	GPSEmulation ToDGeneration
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if Time of Day generation is enabled, FALSE otherwise.



### **GPSEmulation ToDMessageType**

<b>Set</b>	
<b>Description</b> 	Sets the Time of Day generation message type
<b>Command</b>	GPSEmulation ToDMessageType <value>
<b>Parameters</b>	<value> The Time of Day message type. It must be one of: CCSA, NMEA, G8271.
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. Master / Slave must not be running. <b>GPSEmulation ToDGeneration</b> must be enabled.
<b>Get</b>	
<b>Description</b> 	Queries the Time of Day generation message type
<b>Command</b>	GPSEmulation ToDMessageType
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The Time of Day message type. It will be one of the values listed above





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### GPSEmulation ToDGenerate



Set	
<b>Description</b> 	Starts/stops Time of Day generation.
<b>Command</b>	GPSEmulation ToDGenerate <enable>
<b>Parameters</b>	<enable> TRUE starts Time of Day generation, FALSE stops it.
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. Master / Slave must not be running. <b>GPS Emulation ToDGeneration</b> must be enabled.
Get	
<b>Description</b> 	Queries whether Time of Day generation has been started.
<b>Command</b>	GPSEmulation ToDGenerate
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if Time of Day generation has been started, FALSE otherwise.

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### GPSEmulation ToDUseCurrentTime

Set	
<b>Description</b> 	Enables or disables the use of the current PC time as the seed time when starting Time of Day generation.
<b>Command</b>	GPSEmulation ToDUseCurrentTime <enable>
<b>Parameters</b>	<enable> TRUE enables the use of the controlling PC time as the seed time when starting Time of Day generation, FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. Master / Slave must not be running. <b>GPS Emulation ToDGeneration</b> must be enabled.
Get	
<b>Description</b> 	Queries the state of whether the controlling PC time is being used as the seed time when starting Time of Day generation.
<b>Command</b>	GPSEmulation ToDUseCurrentTime
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the controlling PC time is being used as the seed time, FALSE otherwise.



## GPSEmulation ToDSeedTime

Set	
<b>Description</b> 	Sets the Time of Day generation seed time to the specified value. The time used in this setting is a timestamp value and may need converted to/from a human readable format. This can be done via the website: <a href="http://www.epochconverter.com/">http://www.epochconverter.com/</a> .
<b>Command</b>	GPSEmulation ToDSeedTime <time>
<b>Parameters</b>	<time> An integer value for the seed time (in s). It must be in the range: 0 to 253373443199
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. Master / Slave must not be running. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDUseCurrentTime</b> must not be enabled.
Get	
<b>Description</b> 	Queries the current value for the Time of Day generation seed time.
<b>Command</b>	GPSEmulation ToDSeedTime
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	An integer value for the seed time (in s). It will be in the range listed above



## GPSEmulation NmeaSubMessage

Set	
<b>Description</b> 	Sets the NMEA sub-message type
<b>Command</b>	GPSEmulation NmeaSubMessage <value>
<b>Parameters</b>	<value> GPRMC, GPZDA
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to NMEA.
Get	
<b>Description</b> 	Queries the NMEA sub-message type
<b>Command</b>	GPSEmulation NmeaSubMessage
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The NMEA sub-message type. It will be one of the values listed above



## GPSEmulation NmeaLockStatus

Set	
<b>Description</b> 	Sets the NMEA lock status
<b>Command</b>	GPSEmulation NmeaLockStatus <enable>
<b>Parameters</b>	<enable> TRUE enables NMEA lock status, FALSE otherwise
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to NMEA.
Get	
<b>Description</b> 	Queries the NMEA lock status
<b>Command</b>	GPSEmulation NmeaLockStatus
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if NMEA lock status is enabled, FALSE otherwise.



## GPSEmulation CcsaEventEnable

Set	
<b>Description</b> 	Enables or disables transmission of the CCSA Event message
<b>Command</b>	GPSEmulation CcsaEventEnable <enable>
<b>Parameters</b>	<enable> TRUE enables CCSA Event message, FALSE disables CCSA Event message
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the enable/disable state of the CCSA Event message
<b>Command</b>	GPSEmulation CcsaEventEnable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the CCSA Event message is enabled, FALSE otherwise.



## GPSEmulation CcsaTimeSourceType

Set	
<b>Description</b> 	Sets the CCSA type of Time Source
<b>Command</b>	GPSEmulation CcsaTimeSourceType <value>
<b>Parameters</b>	<value> A text value or integer that defines the CCSA type of Time Source. If specifying a text value it must be one of: BD, GPS, 1588_PTP, OTHERS An integer value must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSA type of Time Source
<b>Command</b>	GPSEmulation CcsaTimeSourceType
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	Returns the CCSA type of Time Source. It will be one of the values listed above.



## GPSEmulation CcsaTimeSourceStatus

Set	
<b>Description</b> 	Sets the CCSA status of Time Source
<b>Command</b>	GPSEmulation CcsaTimeSourceStatus <value>
<b>Parameters</b>	<value> A text value or integer that defines the CCSA status of Time Source. If specifying a text value it must be one of: NO_FIX, DEAD_RECKONING_ONLY, 2D_FIX, 3D_FIX, GPS+_DEAD_RECKONING, TIME_FIX_ONLY An integer value must be in the range: 0 to 65535
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSA status of Time Source
<b>Command</b>	GPSEmulation CcsaTimeSourceStatus
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	Returns the CCSA status of Time Source. It will be one of the values listed above.



## GPSEmulation CcsaAntennaOpen

Set	
<b>Description</b> 	Enables or disables the CCSAMonitor Alarm bit 1 (Antenna open)
<b>Command</b>	GPSEmulation CcsaAntennaOpen <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 1 (Antenna open)
<b>Command</b>	GPSEmulation CcsaAntennaOpen
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the CCSA Antenna open alarm is enabled, FALSE otherwise.



## GPSEmulation CcsaAntennaShorted

Set	
<b>Description</b> 	Enables or disables the CCSAMonitor Alarm bit 2 (Antenna shorted)
<b>Command</b>	GPSEmulation CcsaAntennaShorted <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 2 (Antenna shorted)
<b>Command</b>	GPSEmulation CcsaAntennaShorted
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the CCSA Antenna shorted alarm is enabled, FALSE otherwise.



## GPSEmulation CcsaNotTrackingSatellites

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 3 (Not tracking satellites)
<b>Command</b>	GPSEmulation CcsaNotTrackingSatellites <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 3 (Not tracking satellites)
<b>Command</b>	GPSEmulation CcsaNotTrackingSatellites
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



## GPSEmulation CcsaSurveyInProgress

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 5 (Survey in progress)
<b>Command</b>	GPSEmulation CcsaSurveyInProgress <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 5 (Survey in progress)
<b>Command</b>	GPSEmulation CcsaSurveyInProgress
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation CcsaNoStoredPosition

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 6 (No stored position)
<b>Command</b>	GPSEmulation CcsaNoStoredPosition <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 6 (No stored position)
<b>Command</b>	GPSEmulation CcsaNoStoredPosition
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation CcsaLeapSecondPending

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 7 (Leap second pending)
<b>Command</b>	GPSEmulation CcsaLeapSecondPending <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 7 (Leap second pending)
<b>Command</b>	GPSEmulation CcsaLeapSecondPending
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

### GPSEmulation CcsalnTestMode



Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 8 (In test mode)
<b>Command</b>	GPSEmulation CcsalnTestMode <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 8 (In test mode)
<b>Command</b>	GPSEmulation CcsalnTestMode
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

### GPSEmulation CcsaPositionIsQuestionable



Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 9 (Position is questionable)
<b>Command</b>	GPSEmulation CcsaPositionIsQuestionable <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 9 (Position is questionable)
<b>Command</b>	GPSEmulation CcsaPositionIsQuestionable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.





### GPSEmulation CcsaAlmanacNotComplete

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 11 (Almanac not complete)
<b>Command</b>	GPSEmulation CcsaAlmanacNotComplete <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 11 (Almanac not complete)
<b>Command</b>	GPSEmulation CcsaAlmanacNotComplete
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation CcsaPpsWasGenerated

Set	
<b>Description</b> 	Sets the CCSAMonitor Alarm bit 12 (PPS was generated)
<b>Command</b>	GPSEmulation CcsaPpsWasGenerated <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSAMonitor Alarm bit 12 (PPS was generated)
<b>Command</b>	GPSEmulation CcsaPpsWasGenerated
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



## GPSEmulation CcsaLeapSeconds

Set	
<b>Description</b> 	Sets the CCSA Leap Seconds (Offset between GPS and UTC)
<b>Command</b>	GPSEmulation CcsaLeapSeconds <value>
<b>Parameters</b>	<value> CCSA Leap Seconds as an unsigned integer in the range: -128 to 127
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSA Leap Seconds (Offset between GPS and UTC)
<b>Command</b>	GPSEmulation CcsaLeapSeconds
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The the CCSA Leap Seconds. The range is listed above



## GPSEmulation CcsaPpsStatus

Set	
<b>Description</b> 	Sets the CCSA PPS status
<b>Command</b>	GPSEmulation CcsaPpsStatus <value>
<b>Parameters</b>	<value> A text value or integer that defines the CCSA PPS status. If specifying a text value it must be one of: NORMAL, STRATUM_1_HOLDOVER, NOT_AVAILABLE, STRATUM_3_HOLDOVER, TRANSPORT_NODE_HOLDOVER, STRATUM_2_HOLDOVER An integer value must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSA PPS status
<b>Command</b>	GPSEmulation CcsaPpsStatus
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The CCSA PPS status. It will be one of the values listed above



## GPSEmulation CcsaTAcc

Set	
<b>Description</b> 	Sets the CCSA TAcc (PPS output jitter)
<b>Command</b>	GPSEmulation CcsaTAcc <value>
<b>Parameters</b>	<value> An integer that defines the CCSA TAcc in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to CCSA.
Get	
<b>Description</b> 	Queries the CCSA TAcc (PPS output jitter)
<b>Command</b>	GPSEmulation CcsaTAcc
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The the CCSA TAcc. The range is listed above



## GPSEmulation G8271UseMSConfig

Set	
<b>Description</b> 	Enables or disables the coupling of settings between Master / Slave Emulation PTP Announce messages and G.8271 ToD Event and Announce messages
<b>Command</b>	GPSEmulation G8271UseMSConfig <enable>
<b>Parameters</b>	<enable> TRUE uses the settings from the PTP Announce Message; FALSE allows independent settings to be used.
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries whether the settings are coupled
<b>Command</b>	GPSEmulation G8271UseMSConfig
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the settings are couopled, FALSE otherwise.

### GPSEmulation G8271EventCurrentUTCOffset



Set	
<b>Description</b> 	Specifies the current UTC offset value for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271CurrentUTCOffset <offset>
<b>Parameters</b>	<offset> A signed integer value for currentUTCOffset for the G.8271 Event message. It must be in the range: -32768 to 32767
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the current UTC offset for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventCurrentUTCOffset
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The CurrentUTCOffset value. This will be in the range listed above

### GPSEmulation G8271EventUTCOffsetValid

Set	
<b>Description</b> 	Enables or disables the UTCOffsetValid flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventUTCOffsetValid <enable>
<b>Parameters</b>	<enable> TRUE sets the UTCOffsetValid flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the UTCOffsetValid flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventUTCOffsetValid
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the UTCOffsetValid flag is enabled; FALSE otherwise.



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### GPSEmulation G8271EventTimeTraceable



Set	
<b>Description</b> 	Enables or disables the timeTraceable flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventTimeTraceable <enable>
<b>Parameters</b>	<enable> TRUE sets the timeTraceable flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the TimeTraceable flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventTimeTraceable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the timeTraceable flag is enabled; FALSE otherwise.

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### GPSEmulation G8271EventFreqTraceable

Set	
<b>Description</b> 	Enables or disables the frequencyTraceable flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventFreqTraceable <enable>
<b>Parameters</b>	<enable> TRUE sets the frequencyTraceable flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the FreqTraceable flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventFreqTraceable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the frequencyTraceable flag is enabled; FALSE otherwise.



### GPSEmulation G8271EventLeap59

Set	
<b>Description</b> 	Enables or disables the leap 59 flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventLeap59 <enable>
<b>Parameters</b>	<enable> TRUE sets the leap59 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the leap 59 flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventLeap59
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the leap59 flag is enabled; FALSE otherwise.



### GPSEmulation G8271EventLeap61

Set	
<b>Description</b> 	Enables or disables the leap 61 flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventLeap61 <enable>
<b>Parameters</b>	<enable> TRUE sets the leap61 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the leap 61 flag for the G.8271 Event message.
<b>Command</b>	GPSEmulation G8271EventLeap61
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the leap61 flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnounceDomainNumber

Set	
<b>Description</b> 	Specifies the domain number for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceDomainNumber <value>
<b>Parameters</b>	<value>      The domain number: 0 to 127
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the domain number for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceDomainNumber
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The domain number of the master. This will be in the range listed above



### GPSEmulation G8271AnnouncePriority1

Set	
<b>Description</b> 	Specifies the Priority1 value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePriority1 <value>
<b>Parameters</b>	<value>      An integer value for Priority1. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the Priority1 value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePriority1
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The Priority1 value. This will be in the range listed above

## GPSEmulation G8271AnnouncePriority2



Set	
<b>Description</b> 	Specifies the Priority2 value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePriority2 <class>
<b>Parameters</b>	<value> An integer value for Priority2. It must be in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the Priority2 value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePriority2
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The Priority2 value. This will be in the range listed above

## GPSEmulation G8271AnnounceOffsetScaledLogVar



Set	
<b>Description</b> 	Determines the Offset Scaled Log Variance value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceOffsetScaledLogVar <value>
<b>Parameters</b>	<value> A 2 byte hex value. This can either be specified as 4 hex nibbles (e.g. 0000 to FFFF) or as a space-separated string of 2 hex bytes (e.g. "00 00" to "FF FF")
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the current value for the Offset Log Var value for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceOffsetScaledLogVar
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The current Offset Scaled Log Variance value. This will be returned as a string containing 2 space separated hex bytes.





### GPSEmulation G8271AnnounceClockClass

Set	
<b>Description</b> 	Specifies the clock class for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockClass <class>
<b>Parameters</b>	<class>      An integer value for the clock class in the range: 6 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the clock class for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockClass
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The clock class value. This will be in the range listed above



### GPSEmulation G8271AnnounceClockAccuracy

Set	
<b>Description</b> 	Specifies the clock accuracy for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockAccuracy <accuracy>
<b>Parameters</b>	<accuracy>      25_NS, 100_NS, 250_NS 1_US, 2.5_US, 10_US, 25_US, 100_US, 250_US 1_MS, 2.5_MS, 10_MS, 25_MS, 100_MS, 250_MS 1_S, 10_S, >_10_S
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the clock accuracy for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockAccuracy
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The clock accuracy value. This will be one of the values listed above plus UNKNOWN



### GPSEmulation G8271AnnounceClockID

Set	
<b>Description</b> 	Specifies the clock Identity for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockID <value>
<b>Parameters</b>	<value>      The clock Id to be used. This should be a string containing 8 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 00 FF"
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the clock identity for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceClockID
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The clock identity. This will be a string in the format defined above



### GPSEmulation G8271AnnounceGMClockID

Set	
<b>Description</b> 	Specifies the grandmaster clock Identity for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceGMClockID <value>
<b>Parameters</b>	<value>      The GM clock Id to be used. This should be a string containing 8 hex bytes with spaces separating each byte e.g. "00 00 00 00 00 00 00 FF"
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the grandmaster clock identity for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceGMClockID
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The GM clock identity. This will be a string in the format defined above



### GPSEmulation G8271AnnouncePortNumber

Set	
<b>Description</b> 	Specifies the port number for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePortNumber <value>
<b>Parameters</b>	<value> A 2 byte hex value for the port number. This can either be specified as 4 hex nibbles (e.g. 0000 to FFFF), as colon-separated hex bytes (e.g. AA:BB) or as a space-separated string of 2 hex bytes (e.g. "00 00" to "FF FF")
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the port number for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePortNumber
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The current port number. This will be returned as a string containing 2 space separated hex bytes.



### GPSEmulation G8271AnnounceStepsRemoved

Set	
<b>Description</b> 	Specifies the stepsRemoved field for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceStepsRemoved <value>
<b>Parameters</b>	<value> An integer value for stepsRemoved. It must be in the range: 0 to 1000
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the stepsRemoved field for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceStepsRemoved
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	An integer value for the current value of stepsRemoved. It will be in the range listed above



### GPSEmulation G8271AnnounceTimeSource

Set	
<b>Description</b> 	Specifies the time source for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceTimeSource <source>
<b>Parameters</b>	<source>      ATOMIC_CLOCK, GPS, TERRESTRIAL_RADIO, PTP, NTP, HAND_SET, OTHER, INTERNAL
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the time source for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceTimeSource
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	The time source. This will be one of the values listed above.



### GPSEmulation G8271AnnouncePTPLeap59

Set	
<b>Description</b> 	Enables or disables the leap59 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPLeap59 <enable>
<b>Parameters</b>	<enable>      TRUE sets the leap59 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the leap59 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPLeap59
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the leap59 flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnouncePTPLeap61

Set	
<b>Description</b> 	Enables or disables the leap61 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPLeap61 <enable>
<b>Parameters</b>	<enable> TRUE sets the leap61 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the leap61 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPLeap61
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the leap61 flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnounceAlternateMaster

Set	
<b>Description</b> 	Enables or disables the alternate master flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceAlternateMaster <enable>
<b>Parameters</b>	<enable> TRUE sets the alternate flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the alternate master flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceAlternateMaster
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alternate master flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnouncePTPProfile1

Set	
<b>Description</b> 	Enables or disables the ptpProfile1 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPProfile1 <enable>
<b>Parameters</b>	<enable> TRUE sets the ptpProfile1 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the ptpProfile1 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPProfile1
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the ptpProfile1 flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnouncePTPProfile2

Set	
<b>Description</b> 	Enables or disables the ptpProfile2 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPProfile2 <enable>
<b>Parameters</b>	<enable> TRUE sets the ptpProfile2 flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the ptpProfile2 flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPProfile2
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the ptpProfile2 flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnouncePTPTimescale

Set	
<b>Description</b> 	Enables or disables the ptpTimescale flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPTimescale <enable>
<b>Parameters</b>	<enable> TRUE sets the ptpTimescale flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the PTP Timescale flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnouncePTPTimescale
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the PTP Timescale flag is enabled; FALSE otherwise.



### GPSEmulation G8271AnnounceCurrentUTCOffsetValid

Set	
<b>Description</b> 	Enables or disables the currentUTCOffsetValid flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceCurrentUTCOffsetValid <enable>
<b>Parameters</b>	<enable> TRUE sets the currentUTCOffsetValid flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the currentUTCOffsetValid flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceCurrentUTCOffsetValid
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the currentUTCOffsetValid flag is enabled; FALSE otherwise.

### GPSEmulation G8271AnnounceTimeTraceable



Set	
<b>Description</b> 	Enables or disables the timeTraceable flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceTimeTraceable <enable>
<b>Parameters</b>	<enable> TRUE sets the timeTraceable flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the TimeTraceable flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceTimeTraceable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the timeTraceable flag is enabled; FALSE otherwise.

### GPSEmulation G8271AnnounceFreqTraceable



Set	
<b>Description</b> 	Enables or disables the frequencyTraceable flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceFreqTraceable <enable>
<b>Parameters</b>	<enable> TRUE sets the frequencyTraceable flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the state of the FreqTraceable flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceFreqTraceable
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the frequencyTraceable flag is enabled; FALSE otherwise.





## GPSEmulation G8271AnnounceUnicast

Set	
<b>Description</b> 	Enables or disables the unicast flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceUnicast <enable>
<b>Parameters</b>	<enable> TRUE sets the unicast flag; FALSE clears it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the value of the unicast flag for the G.8271 Announce message.
<b>Command</b>	GPSEmulation G8271AnnounceUnicast
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the unicast flag is enabled; FALSE otherwise.



## GPSEmulation G8271GNSSTimeSourceType

Set	
<b>Description</b> 	Sets the G.8271 time source type for the G.8271 GNSS message.
<b>Command</b>	GPSEmulation G8271GNSSTimeSourceType <value>
<b>Parameters</b>	<value> A text value or integer that defines the G.8271 time source type. If specifying a text value it must be one of: BEIDOU, GPS, GALILEO, PTP, GLONASS, QZSS, IRNSS, GNSS, UNKNOWN Alternatively, the time source type can be specified by an integer in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G8271 time source type for the G.8271 GNSS message.
<b>Command</b>	GPSEmulation G8271GNSSTimeSourceType
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	Returns the G8271 time source type. It will be one of the values listed above.



### GPSEmulation G8271GNSSTimeSourceStatus

Set	
<b>Description</b> 	Sets the G8271 time source status for the G.8271 GNSS message.
<b>Command</b>	GPSEmulation G8271GNSSTimeSourceStatus <value>
<b>Parameters</b>	<value> A text value or integer that defines the G8271 time source status. If specifying a text value it must be one of: NO_FIX, DEAD_RECKONING_ONLY, 2D_FIX, 3D_FIX, GPS+_DEAD_RECKONING, TIME_FIX_ONLY, A-GNNS, GNNS-SBAS, GNNS-GBAS Alternatively, the time source type can be specified by an integer in the range: 0 to 255
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G8271 time source status for the G.8271 GNSS message.
<b>Command</b>	GPSEmulation G8271GNSSTimeSourceStatus
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	Returns the G8172 time source status. It will be one of the values listed above.



### GPSEmulation G8271GNSSAntennaOpen

Set	
<b>Description</b> 	Enables or disables the G.8271 Alarm Status Monitor bit 1 (Antenna open)
<b>Command</b>	GPSEmulation G8271GNSSAntennaOpen <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 1 (Antenna open)
<b>Command</b>	GPSEmulation G8271GNSSAntennaOpen
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation G8271GNSSAntennaShorted

Set	
<b>Description</b> 	Enables or disables the G.8271 Alarm Status Monitor bit 2 (Antenna shorted)
<b>Command</b>	GPSEmulation G8271GNSSAntennaShorted <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 2 (Antenna shorted)
<b>Command</b>	GPSEmulation G8271GNSSAntennaShorted
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation G8271GNSSNotTrackingSatellites

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 3 (Not tracking satellites)
<b>Command</b>	GPSEmulation G8271GNSSNotTrackingSatellites <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 3 (Not tracking satellites)
<b>Command</b>	GPSEmulation G8271GNSSNotTrackingSatellites
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation G8271GNSSSurveyInProgress

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 5 (Survey in progress)
<b>Command</b>	GPSEmulation G8271GNSSSurveyInProgress <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 5 (Survey in progress)
<b>Command</b>	GPSEmulation G8271GNSSSurveyInProgress
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



### GPSEmulation G8271GNSSNoStoredPosition

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 6 (No stored position)
<b>Command</b>	GPSEmulation G8271GNSSNoStoredPosition <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 6 (No stored position)
<b>Command</b>	GPSEmulation G8271GNSSNoStoredPosition
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

### GPSEmulation G8271GNSSLeapSecondPending



Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 7 (Leap second pending)
<b>Command</b>	GPSEmulation G8271GNSSLeapSecondPending <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 7 (Leap second pending)
<b>Command</b>	GPSEmulation G8271GNSSLeapSecondPending
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

### GPSEmulation G8271GNSSInTestMode

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 8 (In test mode)
<b>Command</b>	GPSEmulation G8271GNSSInTestMode <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 8 (In test mode)
<b>Command</b>	GPSEmulation G8271GNSSInTestMode
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.



---

### GPSEmulation G8271GNSSGnssSolutionIsUncertain



Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 9 (GNSS solution is uncertain)
<b>Command</b>	GPSEmulation G8271GNSSGnssSolutionIsUncertain <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 9 (GNSS solution is uncertain)
<b>Command</b>	GPSEmulation G8271GNSSGnssSolutionIsUncertain
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

---

### GPSEmulation G8271GNSSAlmanacNotComplete

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 11 (Almanac not complete)
<b>Command</b>	GPSEmulation G8271GNSSAlmanacNotComplete <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 11 (Almanac not complete)
<b>Command</b>	GPSEmulation G8271GNSSAlmanacNotComplete
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

## GPSEmulation G8271GNSSPpsWasGenerated

Set	
<b>Description</b> 	Sets the G.8271 Alarm Status Monitor bit 12 (PPS was generated)
<b>Command</b>	GPSEmulation G8271GNSSPpsWasGenerated <enable>
<b>Parameters</b>	<enable> TRUE enables the alarm, FALSE disables it
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted. <b>GPS Emulation ToDGeneration</b> must be enabled. <b>ToDMessageType</b> must be set to G8271.
Get	
<b>Description</b> 	Queries the G.8271 Alarm Status Monitor bit 12 (PPS was generated)
<b>Command</b>	GPSEmulation G8271GNSSPpsWasGenerated
<b>Prerequisites</b>	Instrument must have a Master / Slave option fitted. Instrument must have the Advanced Time of Day option fitted.
<b>Result</b>	TRUE if the alarm is enabled, FALSE otherwise.

## **Appendix A - Example scripts**

### **Parameter set and get**

The following scripts (one for each interface) query the instrument serial number, and set the ESMC Monitoring enable parameter.

#### **Tcl Script**

```
# Load the Calnex supplied interface file
source "c:/Program\ Files/Calnex\ Paragon/paragon.tcl"

# Make the GUI connect to the instrument with IP address 192.168.3.100
connect 192.168.3.100

# Print the instrument identification string
puts [ paragonget Idn ]

# Set a parameter
paragonset OperatingMode SYNCE
paragonset Capture Esmc #1 EnableMonitoring TRUE

# Close connection
disconnect
```

#### **Python Script**

```
# Ensure that the python environment is set up prior to running script:
# import sys
# sys.path.append(r'C:\Users\\Documents\Calnex\RemoteControl\Python')

import paragon as p

# Make the GUI connect to the instrument with IP address 192.168.3.100
p.connect("192.168.3.100")

# Print the instrument identification string
print("Instrument serial number: " + p.paragonget("Idn"))

# Set a parameter
p.paragonset("OperatingMode","SYNCE")
p.paragonset("Capture Esmc #1 EnableMonitoring","TRUE")

# Close connection
p.disconnect()
```

### **Timing capture**

This shows a very simple script which will connect to the instrument and perform a timing capture.

```
## Paragon-example.tcl
source "c:/Program\ Files/Calnex\ Paragon/paragon.tcl"

# Connect to the local GUI, and instrument 192.168.3.100
connect 192.168.3.100

# Perform a test
# CES mode
paragonset OperatingMode ces

# capture for 1 second
paragonset Capture Control Mode Fixed
paragonset Capture Control FixedPeriod 1SEC

starttimingcapture

# And disconnect
```



disconnect

## Timing replay

This shows a script which connects to an instrument and then performs 3 individual impairment actions:

1. An impairment replay using an imported profile
2. A bi-directional replay using generated profiles
3. A Misordered packet corruption on a FilterFlow in **SERVICES** operating mode

```
## paragon-example.tcl
source "c:/Program Files/Calnex\ Paragon/paragon.tcl"

# Connect to the local GUI, and instrument 192.168.3.100
connect 192.168.3.100

#enable overwrite (thru-mode)
paragonset Impair EnableOverwrite TRUE

#enable delay impairment on port 1
paragonset Impair VariableDelay #0 Enable TRUE

#load impairment file to replay on Port1 incoming traffic
importimpairmentdata "1" "c:/replay_traffic.cpd"

# Perform a test
startimpairment

#Stop impairment
stopimpairment

# Perform another test replaying profiles in Port 1 and Port 2 directions
paragonset Impair VariableDelay #0 Enable TRUE
paragonset Impair VariableDelay #1 Enable TRUE

# Sawtooth Profile Beating,F on Port 1, offset 2.0 ppm
paragonset Impair VariableDelay #0 ProfileType SAWTOOTH
paragonset Impair VariableDelay #0 SawToothType BEATING,F
paragonset Impair VariableDelay #0 Offset 2.0
paragonset Impair VariableDelay #0 GenerateProfile

# Sawtooth Profile Latency on Port 2, Magnitude 10uS, Ramp Period 0.4S
paragonset Impair VariableDelay #1 ProfileType LATENCY
paragonset Impair VariableDelay #1 Magnitude 10.0
paragonset Impair VariableDelay #1 RampPeriod 0.4
paragonset Impair VariableDelay #1 GenerateProfile

# Perform the test
startimpairment

# Stop impairment
Stopimpairment

# Switch to Services Mode, apply corruption on FilterFlow 3
paragonset OperatingMode services

# set a flow filter to apply filter item 1 matching byte offset 9
# and byte mask xx0xx0xx to the incoming traffic

paragonset Filter #2 #1 Offset 9
paragonset Filter #2 #1 ByteMask 00x00x00

paragonset Filter #2 Direction P1P2
paragonset Filter ApplyAll
```

```
# Perform test applying misordered packet for 10 seconds
paragonset Impair Corruption #2 ErrorEnable TRUE
paragonset Impair Corruption #2 ErrorType MISORDERED
paragonset Impair Corruption #2 Distribution Type BURST
paragonset Impair Corruption #2 Distribution BurstSize 10
```

```
# Perform the test
startimpairment
```

```
#Stop impairment
stopimpairment
```

## Appendix B - Deprecated Commands

The following commands have been deprecated. These commands may or may not be supported in any given software release.

### Capture OnePps AccuracyMeasurementCalibration

This command has been deprecated.  
 The reference and measurement inputs should now be calibrated individually using these commands:-  
**Capture OnePps AccuracyRefCalibration**  
**Capture OnePps AccuracyMeasCalibration**

#### Description:

Sets the 1pps accuracy measurement calibration.

The 1pps accuracy measurement is the time of the rising edge (50% point) of the instrument 1pps measuring input minus the time of the rising edge (50% point) of the 1pps reference input. Therefore, a positive value means that the 1pps measuring pulse occurs after the 1pps reference pulse. The measurement calibration entered here is added to the reference pulse rising edge time, so if the signal path length to the reference input is longer than the path length to the measuring input, enter a positive value to compensate. If the reference path length is shorter, use a negative value.

For path differences due only to cable length difference, use 0.004  $\mu$ s per metre of cable difference. Equivalent path length for active devices in the reference or measuring paths must be determined by other means.

SET paragonset Capture OnePps AccuracyMeasurementCalibration <value>

QUERY paragonget Capture OnePps AccuracyMeasurementCalibration

Where:

<value>: The 1pps measurement calibration in nanoseconds.



Minimum Value	Maximum Value	Step Size
-2000	1000	1

### Capture Ptp HeaderOffset

This command has been deprecated: Use **Filter Ptp HeaderOffset**

### Impair CorruptFromCaptData Enable



This command has been deprecated: Use **Impair ProfileReplay #<port> Corruption Enable**

Set	
<b>Description</b> 	Enables or Disables the Dropped Packet feature when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData Enable <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the status of the Dropped Packet feature when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData Enable
<b>Result</b>	TRUE if impairment is enabled, FALSE otherwise.

---

### Impair CorruptFromCaptData UseSequenceNumber



This command has been deprecated: Use **Impair ProfileReplay #<port> Corruption PktLossFromSequence**

Set	
<b>Description</b> 	Enables or Disables the Dropped Packet feature using gaps in traffic based on Sequence Errors detected in the profile when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData UseSequenceNumber <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the status of the Dropped Packet feature when using gaps in traffic based on Sequence Errors detected in the profile when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData UseSequenceNumber
<b>Result</b>	TRUE if impairment is enabled, FALSE otherwise.

---

### Impair CorruptFromCaptData DropFromFile

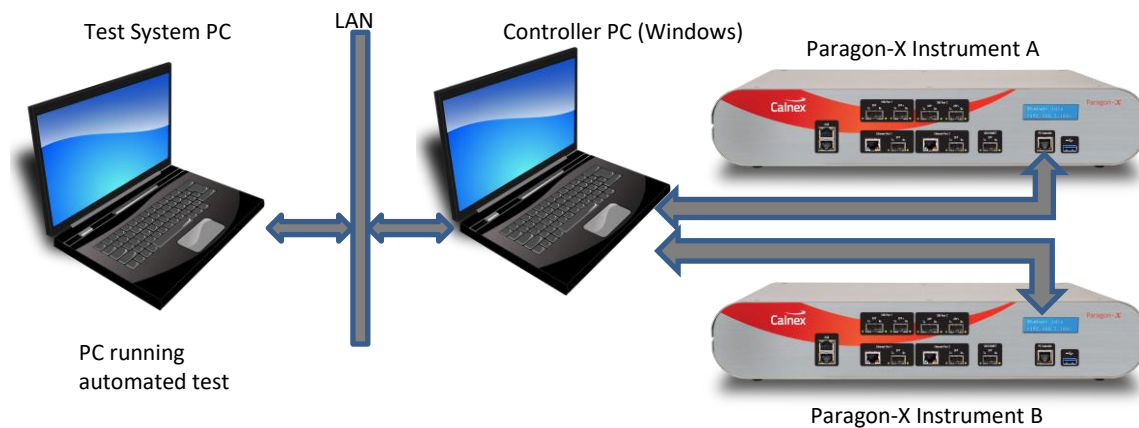
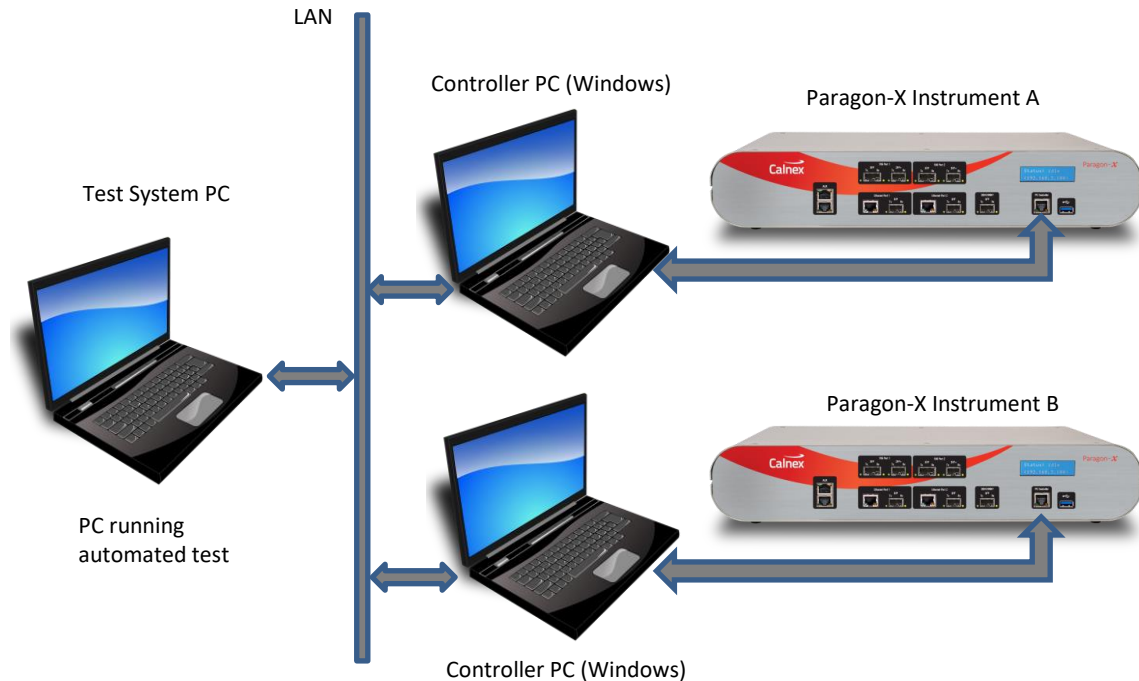
This command has been deprecated.

Set	
<b>Description</b> 	Enables the Dropped Packet feature using user select dropped packets when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData DropFromFile <enable>
<b>Parameters</b>	<enable> TRUE, FALSE
Get	
<b>Description</b> 	Queries the status of the Dropped Packet feature using user select dropped packets when replaying profiles within the Add Impairments and Delay function of the instrument.
<b>Command</b>	Impair CorruptFromCaptData DropFromFile
<b>Result</b>	TRUE if impairment is enabled, FALSE otherwise.

## Appendix C – Connecting to Multiple Instruments

### Paragon-X: Connecting to Multiple Instruments (Tcl only)

It is possible to control multiple instruments from within the same Tcl script. Two possible configurations are shown below:



#### Notes:

- Each instrument must have a separate GUI and only one connection to a GUI can exist at any one time. If a second client attempts to connect to a GUI that is already connected to a client, then an error will be generated by the call to `connect`.

To control several instruments from one Tcl shell there are a few steps that must be performed.

1. Application shortcuts need to be created for launching the individual instances of the Calnex Paragon client. The application shortcuts need to be edited to include 2 additional parameters. The first parameter is used to specify the TCP port used for remote control by each application instance. The port number must be different for each instance of the application that is running.

For example:

```
C:\Program Files (x86)\Calnex\Paragon-X\ParagonRemoteClient.exe /rmtport:9000 /forfmt
C:\Program Files (x86)\Calnex\Paragon-X\ParagonRemoteClient.exe /rmtport:9001 /forfmt
```

2. In the test system script, namespaces must be configured and used. One namespace is required for each instance of the application. (Note – the default is not to use namespaces, which means that all existing code is backward compatible.)

```
namespace eval P1 {source C:/Program Files/Calnex/Paragon-X/paragon.tcl}
namespace eval P2 {source C:/Program Files/Calnex/Paragon-X/paragon.tcl}

P1::connect 172.19.226.90 localhost 9990 9000
P2::connect 172.19.226.91 localhost 9990 9001
```

The syntax of the **connect** command is:

```
connect <instrIpAddress> [<guiHostname> [<instrPort> [<rmtPort>]]].
```

If the Tcl shell is running on the same PC as the GUI (the controlling PC) then *<guiHostname>* can be set to `localhost` as shown above and *<instrIpAddress>* set to the address of the Paragon.

If the script is not running on the controlling PC then *<guiHostname>* should be the IP address of the PC controlling Paragon (the PC running the GUI).

As can be seen in the above examples, each command is prefixed with a specific namespace to allow independent control of each Paragon.




---

Note: On windows 64 bit operating systems the path to the Paragon Tcl file should be:  
 C:/Program Files (x86)/Calnex/Paragon-X/paragon.tcl

---

## Paragon-100G and Paragon-neo: Connecting to Multiple Instruments

The test system PC simply needs to have a network connection to each Paragon-100G / Paragon-neo instrument.

In the test system script, namespaces must be configured and used. One namespace is required for each instrument. (Note – the default is not to use namespaces, which means that all existing code is backward compatible.)

```
namespace eval P1 {source //<IpAddr1>/Calnex100G/RemoteControl/paragon.tcl}
namespace eval P2 {source //<IpAddr2>/Calnex100G/RemoteControl/paragon.tcl}

P1::connect localhost 172.19.226.90 9990 9000
P2::connect localhost 172.19.226.91 9990 9001
```

As can be seen in the above examples, each command is prefixed with a specific namespace to allow independent control of each Paragon.

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