Paragon-neo Release 9

NEW FUNCTIONALITY AND ENHANCEMENTS

(Release 09.00.XX)
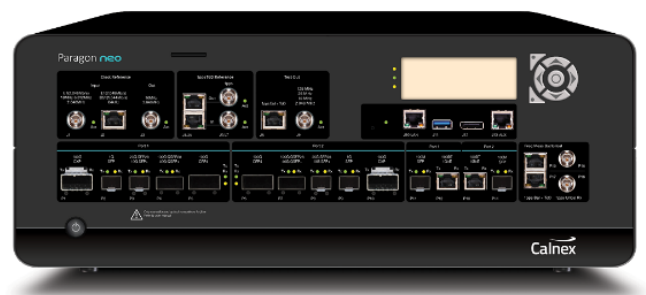
Contents

1 Software Release Overview

Release 9 (09.00.XX) adds the following features to Paragon-neo.

Software Update with valid CSS
(Customer Support Service) contract

New Options	Enhancements to existing Options	Base product enhancements
Option NEO-BGND-TRAFFIC **Option NEO-SMPTE**	**Option NEO-RTE**	Defect Fixes

✋ To check the current software version installed, select **Help > About** on the Paragon-neo GUI.

2 Features and Benefits

| Paragon-neo	Benefit
Option NEO-RTE	The option now allows a third port (1Gb only) to provide a PTP M-Clock to the DUT as well as the two S-Clocks used for relative measurements.
Option NEO-BGND-TRAFFIC	Generation of background traffic on M-Clock and S-Clock ports at up to 80% of line rate. Selectable predefined traffic patterns. Supports all NRZ data rates. Required NRZ rates must be ordered separately.
Option NEO-SMPTE	SMPTE Profile PTP testing. Allows SMPTE ST 2059-2 PTP profile to be generated, in combination with the functionality of any installed PTP M-Clock/S-Clock emulation option. Must be ordered together with a PTP option

3   New Options

3.1   Option: NEO-BGND-TRAFFIC

The ITU is in the process of amending G.8273 to include performance testing in the presence of interfering traffic on the same link as the PTP packets.

The test, specific to noise generation testing of T-BCs and T-TCs includes:

- Generation of PTP signals

- Precision measurement

- PTP impairment function

- Background traffic load

The Background Traffic feature on Paragon-neo will generate interfering traffic internally and merge with the PTP messages prior to ingress and egress on the measuring ports, thereby accurately measuring the performance of the DUT.
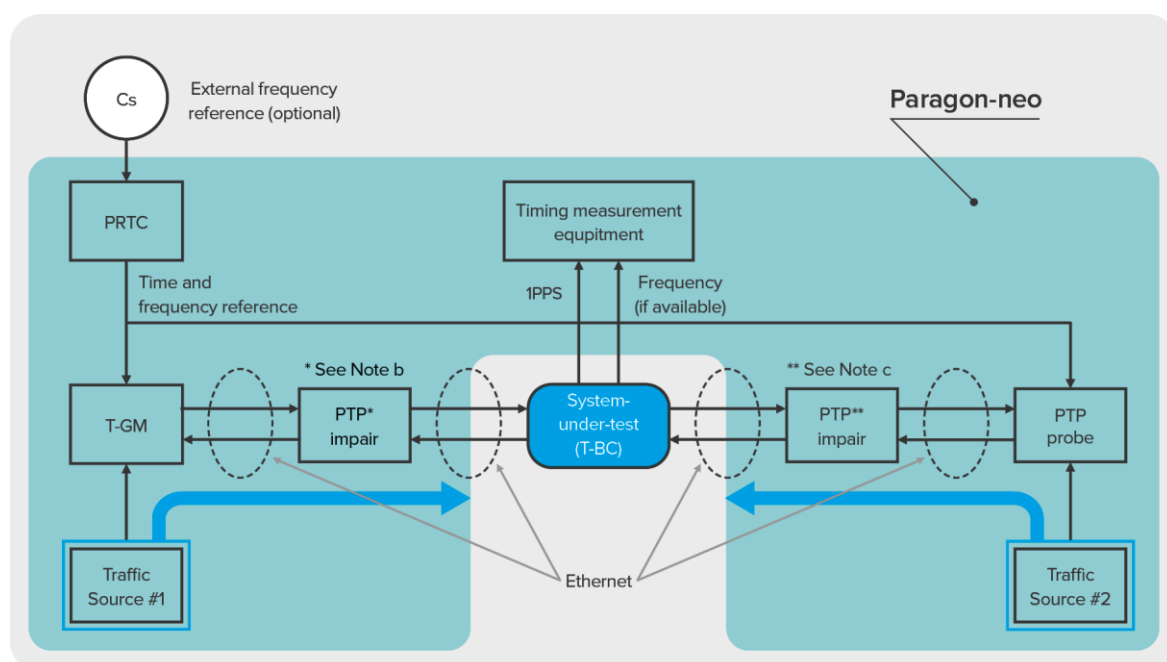

The background traffic can be generated and applied to any two ports, one on Port 1 and one on Port 2. The rate of traffic generation is configurable.

The test patterns will be pre-set and fixed. The three patterns available are:

- A default IMIX

- G.8261 Network Traffic Model 2

- G.8261 Network Traffic Model 2 with jumbo packet burst

Select the required Test Mode and PTP Profile. Then configure the Background Traffic for each port individually. Configure the General, VLAN and Pattern setting as shown.
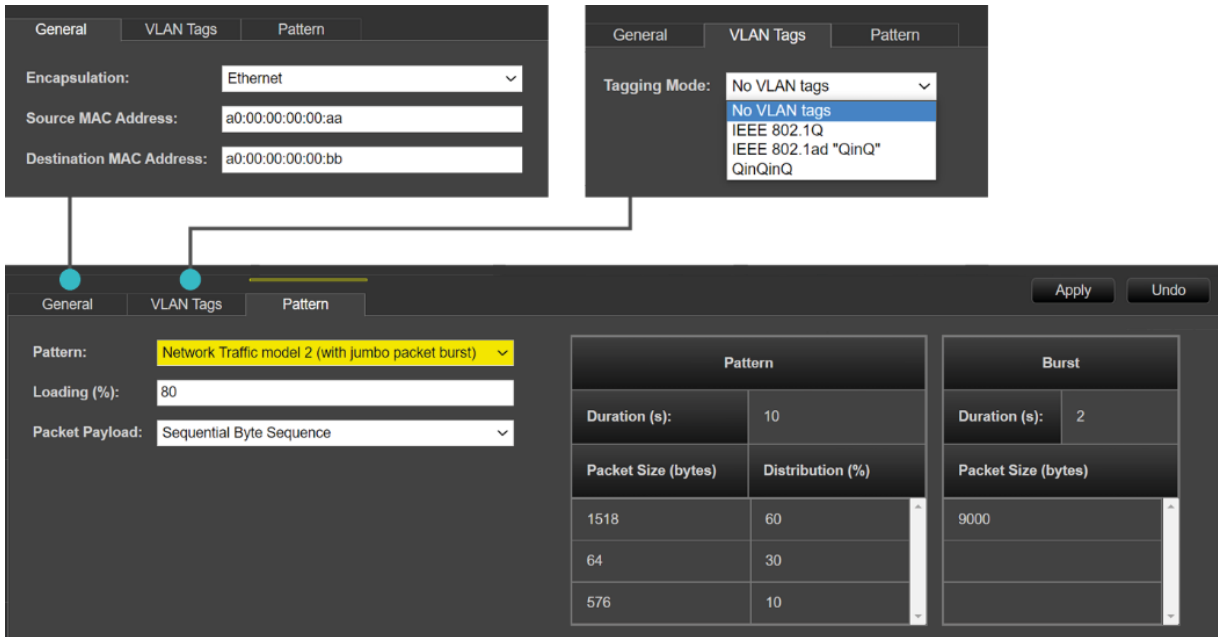
3.2 Option: NEO-SMPTE

The Society of Motion Picture and Television Engineers (SMPTE) has defined the 2059-2 PTP profile to meet the needs of Professional Broadcast. Hence this is commonly referred to as the *PTP Broadcast Profile*.

Along with the requirement to configure equipment and networks appropriately to deliver synchronization accurate to 1 microsecond across a network, the Broadcast profile provisions for a **Synchronization Metadata (SM) TLV** – carried in PTP management messages – to carry timing-related information (such as default frame rates) through the Ethernet network.

With the addition of this profile option (SMPTE) to any installed PTP M-Clock/S-Clock emulation option (?), the ability to configure SMPTE ST-2059-2 PTP quickly using the drop-down profile tool, plus the generation of management messages with editable SM-TLV is added to the pre-existing PTP functionality.
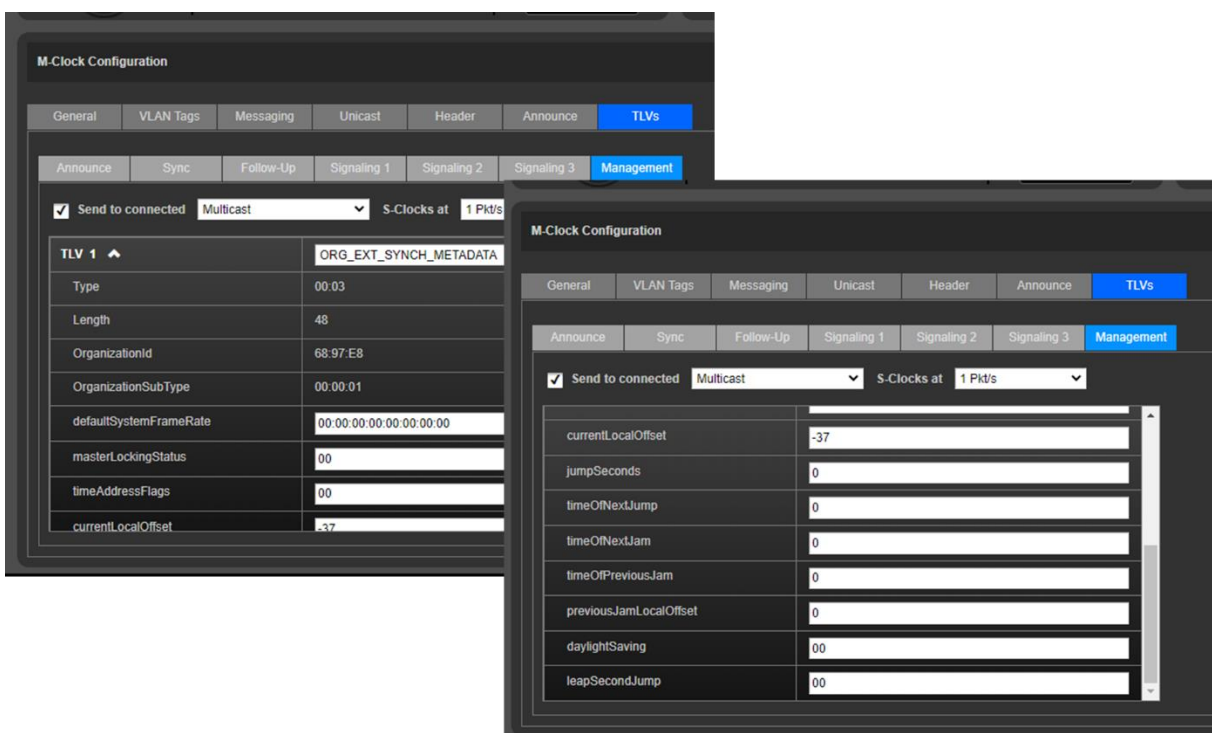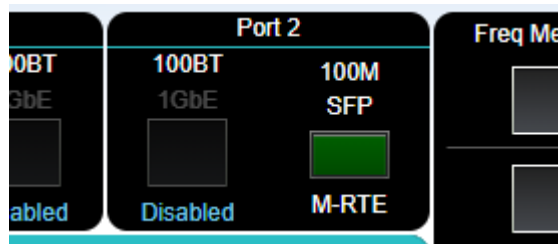
4 Enhancements to Existing Options

4.1 Option: NEO-RTE

This release provides an update to the TE$_R$ test mode that captures two PTP M-Clocks simultaneously. The option now allows a third port (1Gb only) to provide a PTP M-Clock to the DUT.
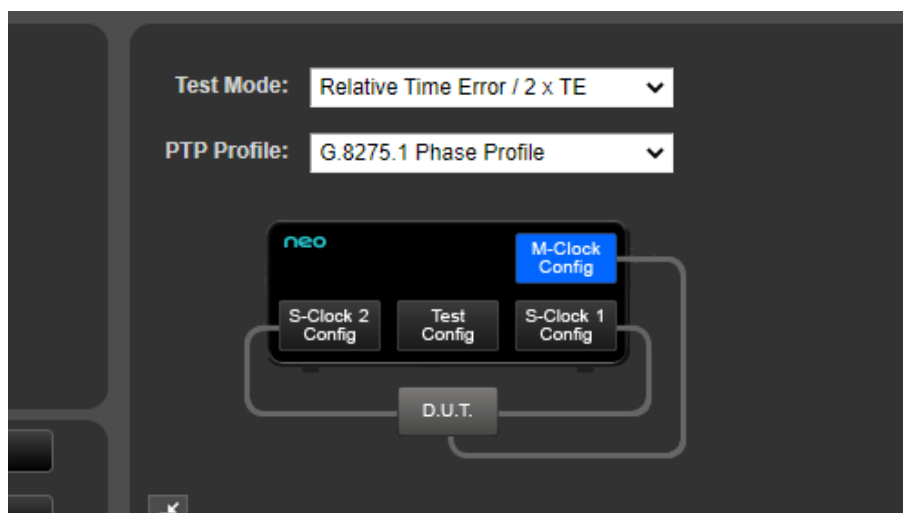
Port 2 (labeled 100M SFP, however, it is configured as 1Gb SFP) is automatically selected for this purpose.
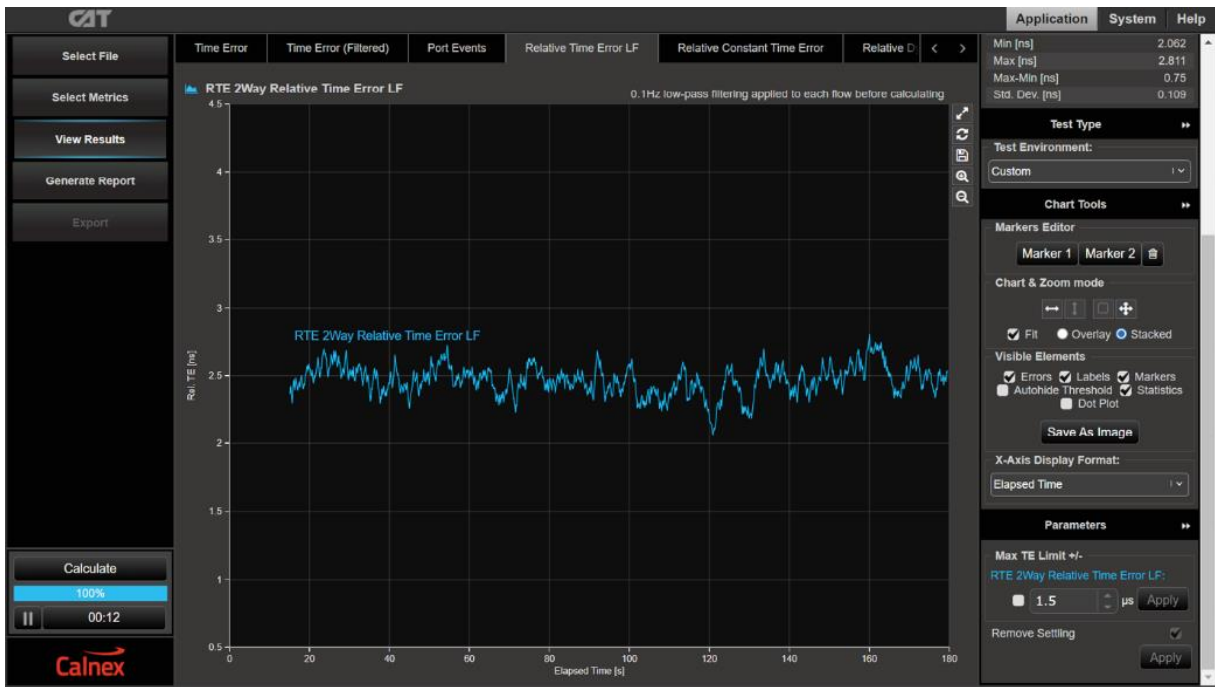

The port is automatically configured to 1Gb.
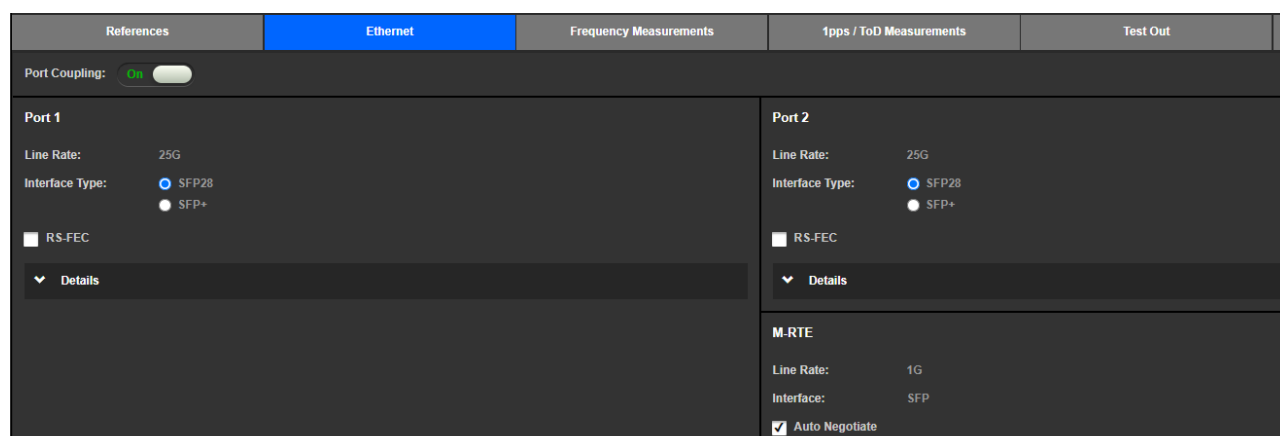
Select **Relative Time Error / 2 x TE** as before. Then configure the **M-Clock** as well as both **S-Clocks** by clicking on the appropriate icon.

The same measurement process for making relative time error measurements can then be followed.

Appendix A: Software Advisory Notes

For more information on features and fixes in this Release, along with other user information on Calnex products, please visit the Knowledge Base at:
https://calnexsolutions.atlassian.net/wiki/spaces/KB/overview

- There is a known issue in this release that removal and re-connection of 1PPS / TOD measurement cable during a test will result in TOD offset. To ensure expected performance, toggle the 1PPS between internal and external after pulling the cable to re-synchronise the sequence numbers.

- When using the additional M-Clock function while configured for relative time error measurements, it is not recommended to transfer jumbo packets to the M-Clock. In this particular scenario, the RTE master TE measurement performance is not guaranteed.

- Note that generating SyncE wander on the 100M elec/opt and the 1G elec may add pkt-pkt noise in the T1 and 2Way measurements. This noise does not affect the mean TE, in addition it is likely to be filtered out. This is for information only.

To Install:

The Paragon-neo software is delivered as a tar file (*.tar)

To install using the tar file:

- Download the tar file and save it to a location on your PC.

- Before upgrading the instrument, you must first stop all generation and capture.

- Follow the steps below to upgrade:

  1. Click **System** in the menus on the top right of the UI.

  2. Click **Setup** in the left-hand menu bar. The UI should look something like below:
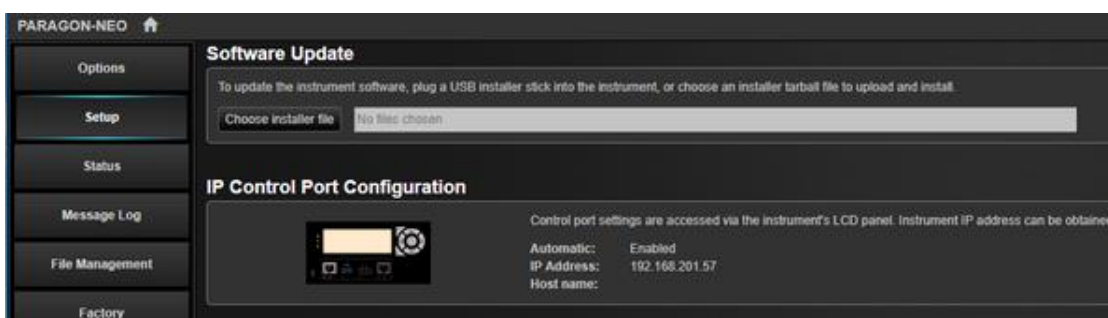
  3. Click **Choose installer file** to select the tar file that you saved earlier.

     The instrument will now begin the upgrade process. Note that this will take a while (maybe as much as an hour). **Do not power off while the upgrade is in progress**.

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