



Sentinel R11 Release Notes

Release Date: October 2019



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Release Overview

Sentinel R11 Release

This release offers a software and hardware feature enhancement on Sentinel. New options are associated with this enhancement, adding 10G functionality to the Sentinel platform. This is a return to factory upgrade for existing customers.

Please contact your local Calnex sales representative for more information

NOTE: this revision of firmware also provides support for Over the Air (OTA) measurements on Sentinel with OTA module option installed. Adding OTA functionality is also a return to factory upgrade.

NOTE: this revision of firmware and the 10G hardware option can only be installed on Sentinels with a serial number greater than 300000.

R11 Features Description

10GbE functionality

Previously Sentinel only supported 100M/1G line rates. This release adds support for 10G.

The new hardware adds ports on the left side of the Sentinel unit as shown below.

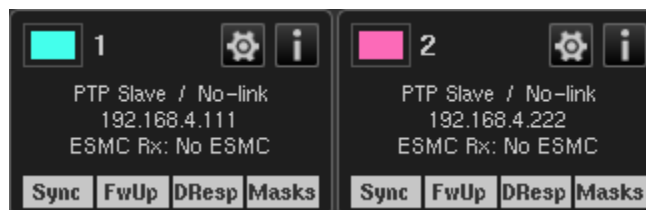


The SFP/SFP+ ports support 100M/1G/10G. If dual rate optics are used, Sentinel automatically defaults to 10G. If using 1G this must be manually selected in the GUI.

The RJ45 ports support 100M/1G electrical.

The SFP/SFP+ ports support 100M, 1G & 10G optical.

These new channels are called Channel 1 & Channel 2 in the GUI.



Functionality supported is the same as previously supported for 100M/1G, as combined with Option 620:

- Includes PTP and SyncE measurement capability up to 10GbE line rate (10G is optical only, 100M/1G is electrical and optical)
- G.8265.1 PTP network: Includes PDV, packet selection PDV, Floor packet metrics and Packet Delay Distribution.
- G.8275.1 PTP network: Includes 2WayTE, cTE, dTE and MaxTE.
- G.8275.2 PTP network: Includes pktSelected2WayTE in CAT.

Sentinel supports a maximum of 2 PTP ports, 2 clock measurement ports and 1 OTA port.

Using the CAT to review results

The Calnex Analysis Tool (CAT), versions 24 and later must be used to examine the results from the new module, channels 1 and 2.

Copy the measurement files of interest from the Sentinel to a PC which has CAT installed. On opening these files within CAT, you will be able to select the TIE and PDV metrics and view the results.

Known Potential Issues

The following items are being investigated by Calnex and product updates will be provided as and when resolved:

1. Saving measurement data to USB memory may encounter issues with some memory stick types. If this issue is seen, we recommend using a different brand of memory stick or use the internal memory.
2. The Measurement Duration setting can incorporate processing times of ± 1 second for TIE and ± 10 s for PDV measurements
3. Loss of Signal: Short link down events may not be reported in the log if they happen between status requests to the PTP board
4. When using IP Multicast mode, no Del Req messages are sent if the gateway address is not on the same subnet.
5. In Pseudo-slave mode, setting 128 packets/second Sync and Delay Request rates on both ports of Sentinel may result in lower Delay Request packet rates. Measurements on 1 channel only are unaffected.
6. No SFP/SFP+ information is displayed in the information page.
7. The new packet module (100M/1G/10G) does not support copper SFPs, they are detected but a link is not established. Please use the RJ45 ports for 100M & 1G copper interfaces. 10G is optical only (SFP+)
8. The OTA TE calculation is the inverse polarity of the 1PPS and 2Way TE calculations. The magnitude of the TE is correct, however a negative time error indicates that the recovered OTA phase leads the reference. For 1PPS and 2Way TE calculations a negative time error indicates that the clock / recovered PTP phase lags the reference.
9. When a measurement is completed but no data is recorded, the Test Report Summary will still report minimum and maximum values.
10. Packet capture does not identify the VLAN ID for packets encapsulated in a VLAN.
11. Monitor mode PTP statistics for Delay Response may not be updated in unicast modes.
12. NTP is not supported in this release.
13. Wander generation is not supported in this release.

Installing New Firmware

This setup guide shows you how to upgrade the Sentinel firmware:

Note:

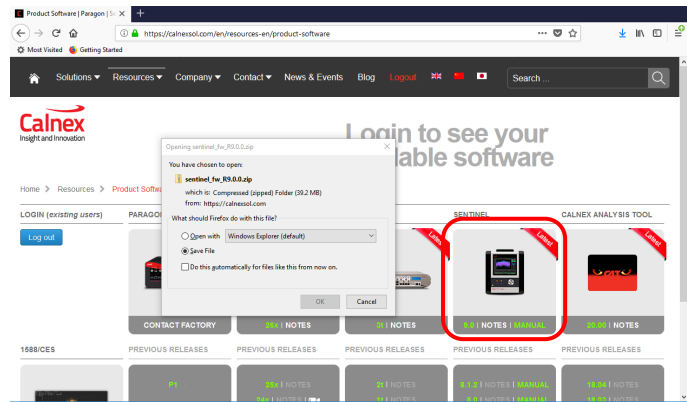
- Sentinel firmware upgrades are only available to registered product users.
- Registration can be completed by selecting the **Resources > Product Software** dropdown at <https://www.calnexsol.com>



STEP 1

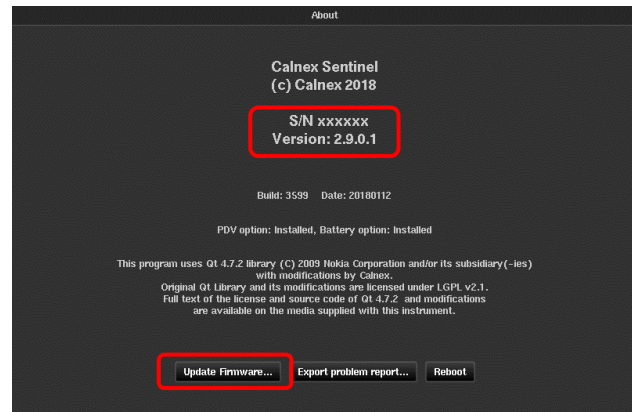
- In the **Resources > Product Software** page at <https://www.calnexsol.com> select the latest Sentinel firmware release.
- Save the file to a local disk.
- Unzip the **sentinel_fw_Rx.y.z.zip** file.
- Copy the **sentinel_fw_Rx.y.z.tar** file from the unzipped **sentinel_fw_Rx.y.z** folder to a blank USB drive.

NOTE: Do not untar the **sentinel_fw_Rx.y.z.tar** file as Sentinel will do this as part of the firmware upgrade.



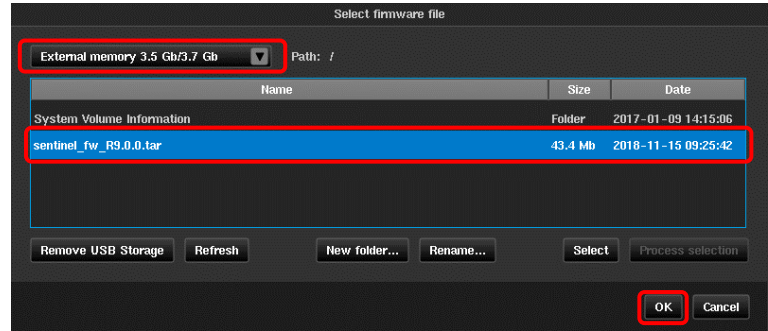
STEP 2

- Power on the Sentinel then plug the USB drive into the USB data port.
- Press the **Systems** tab then select the **About** button. This will show the Sentinel serial number and the current firmware revision.
- Press the **Update Firmware...** button.



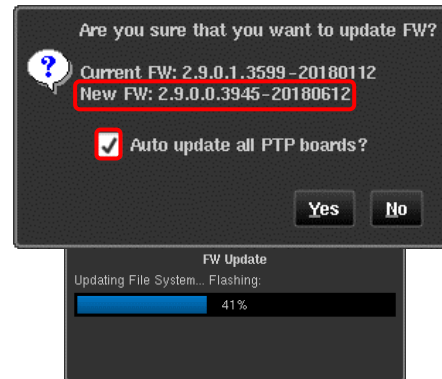
STEP 3

- Select **External memory** as the source.
- Select the **sentinel_fw_Rx.y.z.tar** file.
- Press **OK**.
- Sentinel will begin to extract the firmware.



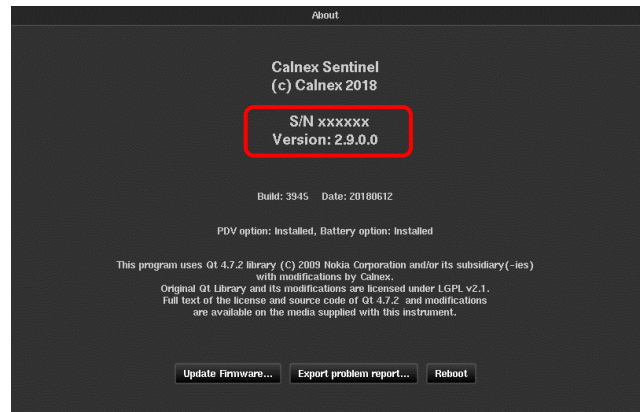
STEP 4

- Verify that the new firmware revision is correct.
 - Ensure that the **Auto update all PTP boards?** check box is selected.
 - Press **Yes**.
- Sentinel will now run through the firmware update, displaying progress on screen. When the upgrade has completed, Sentinel will re-boot automatically.
 - The PTP card(s) firmware version will be checked during re-boot and will be updated if required.



STEP 5

- Verify that the new firmware revision has been installed by checking the information on the **Settings > About** tab.



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