



SPG9000

Timing and Reference System

Release Notes

This document supports firmware versions 5.2 and 5.2.1

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Release Notes

This document describes new features, fixes, and improvements of firmware versions 5.2 and 5.2.1 for the SPG9000 Timing and Reference System.

Product Updates

Upgrades All SPG9000 units are eligible for upgrading to version 5.2.1 using the standard upgrade process. If the SPG9000 is currently using version 4.1 or later, the remote upgrade process added in that release may be used to upgrade to version 5.2.1.

All systems with version 5.0 or earlier are very strongly recommended to upgrade to version 5.2.1 as soon as possible to take advantage of important bug fixes and stability improvements. Specifically, there is an issue with the operating system kernel present in all releases prior to version 5.1, in which the main CPU will hang after 287 days of operation. This was fixed in version 5.1.

Systems with version 5.1 must upgrade to version 5.2.1 if they use HTTPS for the web interface and API. Systems using plain HTTP do not need to upgrade from 5.1 to 5.2.1 if it is inconvenient to do so.

Downgrades There are currently no downgrades possible from version 5.2.1 to any earlier version.

Resolved Issues and Improvements

This firmware release has resolved the following issues and makes the following improvements to the previous 5.1 release.

Version 5.2.1 The web interface will correctly start up when upgrading from an older firmware version and an SSL Private Key Passphrase file is present from before the upgrade. This fix is the only change between versions 5.2 and 5.2.1.

System SSL certificate files can once again be loaded from the Management Settings of the web interface, to enable HTTPS operation. In version 5.1 (only), the install process would fail, despite a message claiming successful installation, and the web server could be left in an inoperable state.

New SNMP Trap message types have been added for two events: PTP grandmaster change from active to inactive, and reference source changes between primary and secondary sources.

Renaming files in the web interface File Manager will not cause a user logout. There is no longer a pop-up dialog to rename the file, which could cause the logout if the new filename was not entered quickly.

NMOS NMOS will now work correctly when HTTPS is enabled for the web server. It may be necessary to install a Root CA certificate on the SPG9000, so a new option in the Management Settings section of the web interface has been added to upload this file.

Resolved Issues and Improvements

The /self object of the IS-04 Node API now includes “attached_network_device” information in the “interfaces” object, using chassis_id and port_id values retrieved from LLDP messages on the IP 1 and IP 2 media ports.

PTP The Dynamic Priority Delay option for System Startup will no longer cause leader PTP instances to restart.

The IP address of the grandmaster is now displayed next to its Clock Identity in the PTP details section on the Status tab of the web interface.

IP The audio “pop” of the Audio/Video Synchronization test pattern and of the full-frame A/V Timing Mode will now work correctly for all audio stream and video source combinations.

Test Signals The border for Text ID and Burnt-In Time Code Overlays is now a simple rectangle for multiple-line text. Previously, each line had its own border rectangle, resulting in an irregular shape on its right side.

General Limitations

This firmware release has the following general limitations.

Genlock When the reference source is changed to Genlock Input, it may take several seconds for the internal frame resets to fully adjust.

Reference When the primary reference source is GNSS and the secondary reference source is CW (10 MHz), and the system is powered up when there is no GNSS signal, there will be two phase jams when the GNSS signal is restored.

GNSS GNSS does not lock while the system is in mobile mode and moving.

GNSS status messages for possible spoofing or multipath detection are disabled for receiver firmware versions 1.03 or earlier.

PTP If the time-of-day reference is VITC from a PAL signal on the genlock input and the genlock timing offset of the source signal is adjusted, the system time of the SPG9000 does not adjust correctly.

When using Dual Follower modes for a PTP reference source, the system will switch to the better or preferred PTP instance when it reaches the Stabilizing state instead of waiting for the Tracking state. The system will go into holdover until the system achieves the Tracking state so there is no degradation of the timing, but ideally the system should continue to use the other PTP reference until the preferred one is in the Tracking state.

General Limitations

- Test Signals** If TIFF image files (especially UHD or 4K size) are set for the test pattern output on one or more video sources in the Power-On Default preset, the system boot time will be noticeably longer. A standard test pattern is recommended for the Power-On Default preset and then load the image file after the system is running.
- SDI** SDI Timing Adjustment is scaled wrong for some formats, so the amount requested is not equal to the actual offset of the signal.
- NMOS** The SPG9000 may briefly stop sending IS-04 “health” messages to the registry after several weeks of continuous operation. If this happens, the NMOS process will restart and the SPG9000 will re-register its node, device and sender resources.
- System** USB memory devices may erroneously report being damaged after removal from the SPG9000 and mounting on another computer.

Front panel display updates may briefly show an intermediate setting before displaying the correct setting.

The system may not function properly immediately after a firmware upgrade when a new PLD is loaded. Always cycle power to the system after performing a firmware upgrade.

If the system time is incorrect (perhaps because the Internal time source is intentionally set to another time), files uploaded with the File Manager will show that incorrect date and time instead of the creation time of the source file.

If the internal system time is intentionally set to a date far in the past or future, the web interface may be unavailable.