telestream

SPG9000

Timing and Reference System

Release Notes

This document supports firmware versions 2.0 – 2.0.2

Contact Telestream
Telestream LLC
848 Gold Flat Road
Nevada City, CA 95959
USA

For product information, sales, service, and technical support:
Worldwide, visit www.telestream.net/telestream-support/video/support.htm to find contacts in your area.

Release notes

This document describes new features, fixes, and improvements of firmware versions 2.0 through 2.0.2 for the SPG9000 Timing and Reference System.

Product Updates

Upgrades All SPG9000 products are eligible for upgrading to 2.0.2 using the standard upgrade process. All customers with 1.0 or 1.0.1 are strongly encouraged to upgrade as soon as possible to take advantage of the bug fixes and stability improvements. Customers who have upgraded to 2.0 or 2.0.1 can upgrade if desired (perhaps during a scheduled maintenance time) but are not required to upgrade.

Downgrades There are currently no downgrades possible from version 2.0.x to 1.0.x.

It is also not possible to downgrade from version 2.0.2 to an earlier view of 2.0.x

New Features

Versions 2.0 through 2.0.2 add significant new features over 1.0.x. See the user manual for details these functions and their operation:

- Four independent SDI outputs which support a wide variety of formats from 270 Mbps to 12G-SDI and provide a wide variety of test signals.   The SPG9000-SDI license is required for these features to be available.

- NTP server and limited client capability.

- SNMP support for basic status monitoring.

- General Purpose Interface (GPI) input and output capability.

- SMPTE 318M 10-field reference on black outputs 4-6.

- Improved GNSS logging.

- Link status indication for SFP ports.

- Ability to upload and download preset files from the web interface.

- Front panel menus for creating, updating, and recalling named preset files.

- Added DNS support so that a fully qualified domain name can be used instead of a numeric IP address for some settings.

Resolved Issues and Improvements

This firmware release has resolved the following issues and makes the following improvements to the previous 1.0.1 release.

Version 2.0.2   The Black 3 output can no longer generate an unstable signal.

Timecode now works for all SDI generator formats.

Version 2.0.1   Resolved an issue in manufacturing with the calibration of SDI outputs.

Fan speed errors are reported via a beeping noise to alert to the potential for hardware damage.

Black Outputs   Black output timing was unstable on rare occasions. That has been fixed.

Genlock Input   Genlock input format is now maintained when the reference source switches to GNSS, PTP, or Internal and back to Genlock Input again.

Genlock CW frame reset menu has been removed. The SPG9000 only supports the 10 MHz CW frequency, so frame reset 2 (6.25 Hz) will always be used. There is no longer a need for user configuration.

LTC timing is now available when using compatible tri-level reference formats.

LTC 1 output levels have been corrected

VITC line number for NTSC or PAL genlock input is now reported on the status screen.

VITC time is now reported correctly

PTP   A disabled PTP port will no longer be enabled when changing the address, mask, and gateway IP settings.

A PTP leader will no longer incorrectly claim an inappropriate clock class when the GNSS reference is selected and GNSS is not locked.

Setting the IP address values for a PTP port while the link is down will no longer display empty values.

High amounts of network traffic (e.g., ST 2110 video and audio) sent to the PTP ports will no longer affect the operation of the instrument.

The calibration of the timing offset for the PTP interfaces has been improved.

The internal oscillator can now be calibrated when the reference is PTP, not just GNSS.

Leader-Follower and Follower-Leader delay measurements are available for all profiles, not just SMPTE ST 2059.

The PTP follower will operate correctly after changing profiles several times.

Announce and Sync message intervals are set correctly after switching profiles and mode.

PTP will continue to operate correctly after frequent changes to the profile and communication model.

Resolved Issues and Improvements

PTP follower can be configured from the front panel without opening the web interface.

There was no clear indication if the PTP system was not running. Added a power-on self-test (POST) to detect that and display a message.

PTP reference does not erroneously show Locked status when in holdover mode for more than 9 hours.

PTP does not skip some Delay_Req messages due to management message processing.

Link lights for the PTP ports will not light if the port is not fully operational.

System The web interface and API will not function incorrectly if they are used before the SPG9000 has fully booted.

Front panel changes on the TIME menu will also update the web interface.

License information will not be lost if the activation process is started but not completed.

Front panel timeout settings are saved after a power cycle.

False fan voltage errors will not be reported.

All web interface settings are read-only when logged in as operator.

Power supply load test results will be logged to the correct supply.

Temperature diagnostics names have been improved.

TSG FPGA temperature warning threshold has been corrected.

Presets Front panel will display a message when saving a preset.

GNSS cable delay settings are now saved in the preset file.

General Limitations

This firmware release has the following general limitations.

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

The web interface reports that GNSS is locked 10-15 seconds too soon when in Jam Phase holdover recovery mode.

If the GNSS signal quality is low, especially if multipath is present, then the UTC offset may shift and not recover for 12.5 minutes. This was more prevalent in the 1.0.1 release and can be detected by monitoring the syslog output. Software changes in the 2.0 release reduce the probability of this happening. To avoid this, first ensure the GNSS signal is strong. Secondly, configure the SPG9000 to defer leap second changes to a local time at least one hour after UTC midnight.

SDI SDI timing adjustment is scaled wrong for some formats, so the amount requested is not equal to the actual offset of the signal.

SDI 3G Level B 47.95 and 48Hz signals are not fully correct.

6G-SDI outputs with 1080-line image size, frame rates of 47.95, 48, 50, 59.94 or 60 fps, and sample structures other than 4:2:2 10-bit are not fully tested due to equipment limitations. These are provided on a best effort basis only. Pathological signals are not correct.

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 change to an intermediate setting before displaying the correct setting.

System may not function properly immediately after a software upgrade when a new PLD is loaded. Always reboot the system after performing a software upgrade.

1000BASE-T SFP modules from some vendors may report a speed of 2 Gbps, which will appear as an error in the Network Settings on the web interface. The error indication is strictly cosmetic, and the SFP will correctly operate at 1 Gbps.