Tektronix®

SPG700
Multiformat Reference Sync Generator

Release Notes

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Release notes

This document describes new features, improvements, and limitations of firmware version 2.5 for the SPG700 Multiformat Reference Sync Generator.

New features

Timecode source selection   The Black, LTC, and SDI outputs each have controls for selecting the timecode source. New source selections have been added and the default settings changed as follows:

Black outputs.   The available selections are Disable, Local (DST), Local (No DST), UTC, and Program Time. The default value is Disable.

LTC outputs.   The available selections are Disable, Local (DST), Local (No DST), UTC, and Program Time. The default value is Local (DST).

NOTE. For the Black and LTC outputs, setting the timecode source to Local (DST), Local (No DST), or UTC will cause the ST309 output DST and time zone data to be set to match the selection.

SDI outputs.   The available selections are Local (DST), Local (No DST), UTC, and Program Time. The default value is Local (DST).

10 MHz signal output phase   The output phase of the 10 MHz signal to the 1 pps output and other sync outputs is now consistent.

Fixed firmware limitations

The following limitations are fixed in this firmware version:

Restoring presets from earlier firmware versions (Option SDI only)

Instruments with firmware version 2.4 and Option SDI installed are not be able to restore the SDI settings when using presets created in older firmware versions. The SDI settings include all those which apply to the SDI outputs (including embedded audio). Instruments with firmware version 2.5 can restore presets from any older version of firmware without any issues.

Drop Frame timecode initialization

When Drop Frame timecode outputs are turned on, they will now have the drop-frame sequence deterministically set relative to the programmed jam time. Previously, they had to run through a daily jam to achieve the correct sequence cadence.

Time code outputs

Time code outputs will be set to match the RTC on power up. Previously, in some cases the time code would not be correct.

BITC on SDI formats

BITC (Burnt In Time Code) is now correct on all SDI formats. Previously, some formats had a time offset or had a garbled date on the second line.

General limitations

This firmware release has the following general limitations. Please check the Tektronix Web site (www.tek.com/downloads) for any firmware updates to the SPG700 generator.

Firmware upgrades

■ When the SPG700 firmware is upgraded (using a USB drive or a network connection), all files created or installed by the user are deleted. The deleted files include presets, signal files, frame picture files, logo files, sequence files, and for Option SDI, can also include text and font files. The standard set of factory installed signal files, logo files, and Option SDI font files are restored when the firmware is upgraded.

To prevent the loss of your user created files, use the "Backup All User Data to USB" function from the SYSTEM menu to save your user files before you upgrade the firmware. After the upgrade, use the "Restore All User Data From USB" function from the SYSTEM menu to restore your user created files.

■ If you have loaded the SPG700 memory with a large number of test signals or frame picture files, you may not be able to upgrade the instrument firmware because the memory is too full. If you receive a memory error while attempting to upgrade the firmware, you need to delete some of the test signal or frame picture files and then perform the upgrade.

Network configuration using Manual mode

A network connectivity problem may occur when using Manual mode to configure the instrument IP address or subnet mask settings and the instrument is communicating across network boundaries. The problem does not occur when using DHCP mode to configure the network settings.

If your instrument is configured for Manual mode, use the following steps to work around this problem:

1. Configure the instrument IP address or subnet mask settings using Manual mode.

2. After configuring the IP address or subnet mask, perform one of the following:

   – Change the network gateway address to a valid value.

   – If the network gateway address is already correct, toggle the gateway address. For example, change the gateway address to some other (incorrect) address, apply the change, and then change the gateway address back to the correct value.

Alert messages

If there is an active alert condition (e.g. reference input missing) while the STATUS : ALERT menu is displayed, the alert message(s) will not automatically change if the alert condition is cleared. To view any changes to the alert messages, you must change to another menu and then return to the STATUS : ALERT menu.

Resetting an output signal

When the instrument rereads or resets signal data, such as format changing, preset recall, or signal-button assignment, a signal output interruption or synchronization shock may occur.

Incorrect CW reference signal

If an NTSC or PAL signal is connected to the REF input when the reference source is set to "CW", the video timing of all SPG700 outputs will rattle every 1–2 seconds. To resolve this problem, use the REFERENCE : SOURCE menu to select the signal type that matches the reference input signal.

Remote control

Some performance issues have been observed when the SPG700 Web Interface is used with Internet Explorer 8. The use of newer browsers is recommended.

Time of day changes for timecode outputs

When the time-of-day changes, such as when scheduled daylight savings adjustments are made or when the internal time is set from the front panel, there can be a delay before that change is reflected on timecode outputs.

This delay may be a small number of frames (fraction of a second) when all timecode output formats are based on the same clock rate (for example, NTSC black burst and 1080i 59.94 HD tri-level on black outputs in addition to 30 fps drop-frame on LTC outputs), or up to several seconds when timecode formats based on different clock rates are used (for example, 29.97 fps and 24 fps on different outputs).

Daylight Savings Time (DST) scheduler system

The DST scheduler system applies the DST offset even if the Time-Of-Day (TOD) source is set to "VITC Input" or "LTC Input" and the SMPTE309 mode is set to "Ignore" or "Use As Input." In these cases, the offset is applied whether or not a valid VITC or LTC input signal is available. For proper DST scheduling, you need to ensure that the instrument has valid time information and manually enter the correct time of day if the system is not synchronized to an accurate time of day source.

The manual time-of-day setting is not automatically reapplied when the instrument power is cycled. If the instrument powers up in with the Time of Day source set to "Internal" mode, the time of day will be acquired from the internal real-time clock in the instrument. Check the system time of day and adjust as needed to ensure that it is correct before the next transition of the DST scheduler when the Time of Day source is set to Internal mode.

Option SDI   **SDI equalizer test signal.** Per SMPTE RP198 for HD-SDI, a polarity change word is used to ensure equal probabilities of the DC bias for the equalizer test pattern. However, some SDI formats still exhibit an unequal bias. Enabling a dynamic bit stream in the output signal, such as embedded audio or timecode data, will result in both DC levels appearing in the output signal.

Test signal files. The Option SDI signals use file-based test signal definitions. If you modify a signal file from the factory version, unpredictable results may occur. To recover from this situation, reload the factory version of the signal file from the Tektronix Web site (www.tek.com/downloads).

Multi-language support. Languages that require combined glyphs in order to be represented may not be correctly rendered in the Text ID display on SDI signals.

Multiburst signal motion. Do not set a Multiburst signal in motion on SDI signals. Otherwise, a corrupted signal will be generated.

Overlay and zone plate circles not round. For SD 525 and 625 signal formats, the overlay and zone plate circles are not perfectly round.

Bitmap files for logo overlays. When you create bitmap files for logo overlays, filter the sharp edges within the logo image before you download the bitmap file to the instrument. The SPG700 applies a filter to the left and right edges of the bitmap image to reduce high-frequency ringing on the signal waveform. However, this filter is not applied within the span of the image.