GPS7 GPS Synchronization and Timecode Module
HD3G7 HD 3 Gb/s SDI Video Generator
SDI7 Dual Channel SD/HD/3G SDI Video Generator
Declassification and Security

Instructions

Tektronix

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GPS7, HD3G7, and SDI7 Declassification and Security Instructions

Preface

This document describes how to clear or sanitize the data storage (memory) devices in the products listed below. The instructions also describe how to declassify an instrument that is not functioning. These procedures are useful for customers with data security concerns.

Products
This document applies to the following modules, which are installed in the TG700 TV Signal Generator mainframe:

- GPS7 GPS Synchronization Timecode Module

- HD3G7 HD 3 Gb/s SDI Video Generator

- SDI7 Dual Channel SD/HD/3G SDI Video Generator

Related Documents
TG700 TV Signal Generator Platform Service Manual, Tektronix part number 077-0230-XX, is available on the Tektronix Web site at www.tektronix.com/manuals.

Terms
The following terms may be used in this document:

- **Clear.** This removes data on media/memory before reusing it in a secured area. All reusable memory is cleared to deny access to previously stored information by standard means of access.

- **Erase.** This is equivalent to clear.

- **Media storage/data export device.** Any of several devices that can be used to store or export data from the instrument, such as a USB port.

- **Nonvolatile memory.** Data is retained when the instrument is powered off.

- **Power off.** Some instruments have a "Standby" mode, in which power is still supplied to the instrument. For clearing data, putting the instrument in Standby mode does not qualify as powering off. For these products, you must either press a rear-panel OFF switch or remove the power source from the instrument.

- **Remove.** This is a physical means to clear the data by removing the memory device from the instrument. Instructions are available in the product Service Manual.

- **Sanitize.** This eradicates the data from media/memory so that the data cannot be recovered by other means or technology. This is typically used when the device is moved (temporarily or permanently) from a secured area to a nonsecured area.

- **User-modifiable.** The user can write to the memory device during normal instrument operation, using the instrument interface or remote control.

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Clear and Sanitize Procedures

Memory Devices

The following table lists the nonvolatile memory devices in the modules. Detailed procedures to clear or sanitize these devices are shown following the tables.

Table 1: Nonvolatile memory devices for the GPS7 module

Type and minimum size	Function	May contain user data [1]	Data input method	Location	To clear	To sanitize
Flash memory 4 M X 8	Configuration of FPGA	No	Written by processor system from TG700 Main board	U0331	None	N/A No customer information can be stored in this flash memory
Flash memory 4 M X 8	Calibration for the module Stores leap second information	Yes. The values are a function of how the user calibrates the module and when it was last receiving the GPS signal	Stored during calibration Stores leap second information obtained by satellite	U0332	Manually calibrate the module back to the factory default values Allow the module to receive satellite information for 30 minutes to update the leap second field	Remove and destroy the memory device or destroy the entire board
Flash memory 4 M X 8	unused	No	None	U0741	None	None
GPS receiver assembly	Calculates timing and position information	Yes if operated in fixed mode	Location is stored when operated in fixed mode	Mounts above the main module board and connects to J12 with a ribbon cable, and to the antenna connector on the rear panel	Save a position from a location different from the one that was last saved. This will erase the previous position and save the new one	Remove and destroy the module or destroy the entire board

[1]   During normal instrument operation.

Table 2: Nonvolatile memory devices for the HD3G7 module

Type and minimum size	Function	May contain user data [1]	Data input method	Location	To clear	To sanitize
Flash 32 M x 16	FPGA configuration	No	Written by processor system on TG700 Main board using PLD U226	389-4093-00 board, U321	None. A software upgrade will erase and reprogram this part	Remove part from board and destroy
PLD with internal 512 x16 byte User Flash Memory	PLD addresses decoding, memory not used	No	Programmed at factory	389-4093-00 board, U226	None	Remove part from board and destroy
DDR2 32 M x 16	Unused	No, currently unused	None	389-4093-00 board, U618, U711	Remove power	Remove part from board and destroy
SRAM 256 K x 16	Unused	No, currently unused	None	389-4093-00 board U521, U0521, U621, U0621, U622, U0622	Remove power	Remove part from board and destroy
100 step Electronic Potentiometer with EEPROM	Holds Calibration data	Yes, Indirectly	Calibrate Output levels	389-4096-00 output board U0113, U0114	Set output level to minimum	Set output to max and min three times then leave at min.
FPGA with 60 K Logic elements and 2.5Mbits of RAM	Generates signals from logic and memory	Yes, indirectly by signal selection	Programed from flash at bootup, changes state as instrument operates	389-4093-00 board, U811	Remove power	Set instrument to power up on factory default and cycle power three times
128 K x 8 EEPROM	Unused	No	None	389-4093-00 board, U224	None	Remove part and destroy

[1] During normal instrument operation.

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Table 3: Nonvolatile memory devices for the SDI7 module

Type and minimum size	Function	May contain user data [1]	Data input method	Location	To clear	To sanitize
Flash 32 M x 16	FPGA configuration, unique module ID, option key	Yes	Written by processor system on TG700 Main board using PLD U226. User can enter option key string from UI. String must be correct to enable 3G option.	389-4093-00 board, U321	The option string can be overwritten with dummy characters.	Remove part from board and destroy
PLD with internal 512 x16 byte User Flash Memory	PLD addresses decoding, memory not used	No	Programmed at factory	389-4093-00 board, U226	None	Remove part from board and destroy
DDR2 32 M x 16	Used for frame picture and logo overlay functions	Yes	Load frame picture and or logo BMP into mainframe, then select frame picture or logo overlay function	389-4093-00 board, U618, U711	Remove power	Remove part from board and destroy
SRAM 256 K x 16	Used for text and circle overlay functions	Yes	Load text file to mainframe or enter text string from keyboard	389-4093-00 board U521, U0521, U621, U0621, U622, U0622	If text is saved in power on preset, then should restore factory preset, save as power on preset, then cycle power three times	Remove part from board and destroy
Dual 2048 step digital potentiometer with EEPROM with the two parts in parallel, limited in software to 100 steps of range	Holds Calibration data	Yes, Indirectly	Calibrate Output levels	389-4485-00 output board U1 and U5	Store calibration level at mid-scale of 50	Store calibration level at min and max three times then store at mid scale of 50
FPGA with 90 K Logic elements and 4.5 Mb of RAM	Generates signals from logic and memory	Yes, indirectly by signal selection	Programed from flash at bootup, changes state as instrument operates	389-4093-00 board, U811	Remove power	Set instrument to power up on factory default and cycle power three times
128 K x 8 EEPROM	Unused	No	None	389-4093-00 board, U224	None	Remove part and destroy

[1] During normal instrument operation.

Restore Factory Defaults Procedure

Restore the module settings to the factory default as follows:

1. Press the **MODULE** button until **TG700 Preset** appears.

2. Press the **ENTER** button. You will see the words **RECALL** appear.

3. Press the right or left arrow button until **Factory Default** appears.

4. Press the **ENTER** button.

5. Press the **CANCEL** button or the **MODULE** button to exit the Recall preset menu.

Set the Factory Default Settings as the Power on State

1. Follow the previous procedure to restore the factory preset/default state.

2. Press the **MODULE** button until TG700 Preset appears.

3. Press the **ENTER** button. You will see the word **RECALL** appear.

4. Press the down arrow.
   The display should show **TG700 : PRESET SAVE Power On Default**.

5. Press the **ENTER** button. The display will flash as it saves the preset.

6. Press the **CANCEL** button to exit the preset menu.

Troubleshooting

How to Clear or Sanitize a Non-Functional Instrument

To sanitize a non-functional instrument, remove the Main board and receiver module and return the instrument to Tektronix for installation of a new Main board and receiver module.

How to Recover from Clearing or Removing Memory from the Instrument

Perform the following procedure to recover a module:

1. Power on the module.

2. Calibrate the module as instructed in the *TG700 TV Signal Generator Platform Service Manual* (Tektronix part number 077-0230-XX).

3. Reconfigure the module for your specific application. You can find configuration information in the *TG700 TV Signal Generator Platform User Manual* (Tektronix part number 071-1970-XX, English; 071-1971-XX, Japanese).

4. For the GPS7 module only:

   a. Connect a GPS signal to the module and let it run for 30 minutes. This allows the leap second and position information to be reacquired.

   b. You are finished with the GPS7 module recovery; the GPS7 module will reload the system software on start up.

5. For the HD3G7 module only:

   a. Press the **MODULE** button until you see the HD3G7 module main menu.

   b. Press and hold the **ENTER** button until "Upgrade HD3G7 FPGA" appears.

   c. Press the **ENTER** button to upgrade the module.

   d. The upgrade will take approximately three minutes. After it is complete, remove power from the TG700 and then reapply power to reboot the system.

6. For the SDI7 module only, verify that Option 3G is enabled:

> *NOTE. You need to perform the following steps only if the SDI7 module had Option 3G enabled prior to the module being sanitized.*

    a. Press the **MODULE** button until **TG700 : PRESET** is displayed.

    b. Press the up (▲) or down (▼) arrow button to select **TG700 : UTILITY**, and then press the **ENTER** button.

    c. Press the up (▲) or down (▼) arrow button until **TG700 : UTILITY : OPTIONS ENABLED** is displayed.

    d. The second line of the display indicates the option status:

        – **SDI7[slot number] None** indicates that Option 3G is not enabled

        – **SDI7[slot number] 3G** indicates that Option 3G is enabled

> *NOTE. If more than one SDI7 module is installed in the mainframe, use the left (◄) or right (►) arrow button to display the option status of the desired SDI7 module.*

    e. If Option 3G is not enabled, you must reenter the option key for the SDI7 module as described in the TG700 TV Signal Generator Platform User Manual.