

**1741C**  
**Analog Dual-Standard Waveform Monitor**  
**Declassification and Security**  
**Instructions**

Copyright © Tektronix. All rights reserved. Licensed software products are owned by Tektronix or its subsidiaries or suppliers, and are protected by national copyright laws and international treaty provisions.

Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specifications and price change privileges reserved.

TEKTRONIX and TEK are registered trademarks of Tektronix, Inc.

## **Contacting Tektronix**

Tektronix, Inc.  
14200 SW Karl Braun Drive  
P.O. Box 500  
Beaverton, OR 97077  
USA

For product information, sales, service, and technical support:

- In North America, call 1-800-833-9200.
- Worldwide, visit [www.tektronix.com](http://www.tektronix.com) to find contacts in your area.

---

# Table of Contents

Preface .....	iii
Clear and Sanitize Procedures.....	1
Memory Devices.....	1
Data Export Devices.....	6
Troubleshooting.....	7
How to Clear or Sanitize a Nonfunctional Instrument.....	7
How to Recover from Clearing or Removing the Instrument’s Memory.....	7



---

# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the 1741C Analog Dual-Standard Waveform Monitors.

These products have data storage (memory) devices and data output devices (USB ports). These instructions tell how to clear or sanitize the memory devices and disable the data output devices. The instructions also tell how to declassify an instrument that is not functioning.

**Products** This document covers the Tektronix 1741C Analog Dual-Standard Waveform Monitor.

## Related Documents

<b>Document</b>	<b>Part number</b>	<b>Purpose</b>
1741C Analog Dual-Standard Waveform Monitor User Manual	071-0150-XX	Installation and instrument operation
1741C Analog Dual-Standard Waveform Monitor Specifications and PV Technical Reference	077-0152-XX	Specifications and procedures for checking instrument performance
1741C Analog Dual-Standard Waveform Monitor Service Manual	077-0155-XX	Optional manual supporting module-level servicing of the instrument

**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 will need to 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 will be moved (temporarily or permanently) from a secured area to a non-secured area.
- **Scrub.** This is equivalent to sanitize.
- **User-modifiable.** The user can write to the memory device during normal instrument operation, using the instrument interface or remote control.
- **Volatile memory.** Data is lost when the instrument is powered off.

# Clear and Sanitize Procedures

## Memory Devices

The following tables list the volatile and nonvolatile memory devices in the standard instrument and listed options. Detailed procedures to clear or sanitize these devices, if any, are shown following each table.

**Table 1: Volatile Memory Devices**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To clear	To sanitize <sup>2</sup>
FPGA 1.9 Mb	Mapper#1	No	Programmed by onboard flash memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
SRAM 512 K X 18	Mapper#1 RAM	No	Static memory for mapper FPGA	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
SDRAM 16 M X 16	Mapper#1 RAM FPGA	Yes	User can initiate capture to this memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
FPGA 1.9 Mb	Mapper#2	No	Programmed by onboard flash memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment

**Table 1: Volatile Memory Devices (cont.)**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To clear	To sanitize <sup>2</sup>
SRAM 512 K X 18	Mapper#2 RAM	No	Static memory for mapper FPGA	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
SDRAM 16 M X 16	SDRAM for Mapper#2 FPGA	Yes	User can initiate capture to this memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
FPGA 1.9 Mb	Rasterizer	No	Programmed by onboard flash memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
SDRAM 16 M X 16	Rasterizer SDRAM	Yes	User can initiate capture to this memory	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment

**Table 1: Volatile Memory Devices (cont.)**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To clear	To sanitize <sup>2</sup>
SDRAM 16 M X 16	CPU RAM	No	CPU access	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
SRAM 256 K X 16	PLD RAM	No	PLD access	Main board	Remove the power source from the instrument for at least 20 seconds	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment

<sup>1</sup> During normal instrument operation.

<sup>2</sup> Before you remove any module or board for the purpose of sanitizing the instrument, please contact your local Tektronix Customer Service Center to check on the availability and cost of replacement parts.

**Table 2: Nonvolatile Memory Devices**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To clear	To sanitize <sup>2</sup>
Serial EEPROMs 256 X 8	Stores Composite calibration coefficients	No	Programmed during calibration	Composite boards	Recalibrate Composite	Remove the Composite boards; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
Flash Memory 512 M X 16	Loads FPGAs on power up Contains instrument SW, network access parameters, and user-defined presets	Yes	Programmed by software during software upgrade	Main board	(See page 4, <i>Clear Presets Procedure</i> .) (See page 5, <i>Clear IP Address Fields Procedure</i> .)	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
PLD 8 Kb	Display controller	No	Programmed by flash memory during power up	Main board	None	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment

**Table 2: Nonvolatile Memory Devices (cont.)**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To clear	To sanitize <sup>2</sup>
Real Time Clock	Stores time set by user	Yes	UI	Main board	Set to GMT	Set to GMT
Serial EPROM	Diagnostic logs, Main board Pix Mon calibration, and factory only Looping diagnostic mode control	No	Programmed by software during calibration and diagnostics	Main board	(See page 5, <i>Clear Diagnostic Log Procedure</i> .) Recalibrate Pix mon to overwrite existing values.	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
Serial Flash	Future expansion	No	Tested on power up Not used	Main board	None	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment
Serial EEPROM	MAC address	No	Set at factory	Main board	None	Remove the Main board; see the product service manual for removal instructions. Store the removed board in a secure area or destroy it. Contact Tektronix for board replacement and adjustment

<sup>1</sup> During normal instrument operation.

<sup>2</sup> Before you remove any module or board for the purpose of sanitizing the instrument, please contact your local Tektronix Customer Service Center to check on the availability and cost of replacement parts.

**Clear Presets Procedure**

1. Press and hold the **PRESET** button to display the preset configuration menu. Then select **Recall Preset > Factory Preset > SEL**. This restores the presets to the factory state.
2. Press and hold the **PRESET** button. Then select **Save Preset > Select Group A**. For all presets that are not empty “<e>”, select **Save** and then press **SEL** to overwrite that preset with the factory settings.
3. Check each group and overwrite presets that are not empty as described in the previous step.
4. Navigate to the top level menu and select **Rename Preset**. Rename all named groups and presets with the label “Default”.

**Clear Diagnostic Log  
Procedure**

1. Press the **CONFIG** button. Then press **Utilities > View Diagnostic Log**. Press **SEL** to display the log.
2. Press **>** until the box by “Erase Log” is highlighted. Then press **SEL** to remove all entries in the diagnostic log.
3. Press **>** until the box by “Exit” is highlighted. Then press **SEL** to exit the log display.
4. Press the **CONFIG** button to exit the configuration menu.

**Clear IP Address Fields  
Procedure**

1. Press the **CONFIG** button. Then select **Network Settings**.
2. Set **IP Config Mode** to **Manual** to display the IP address.
3. Navigate to **IP Address**. Then press **>** to enter the edit mode. Enter “000.000.000.000” for the IP address.
4. Repeat Step 3 for the Subnet Mask and Gateway Address.
5. Press the **CONFIG** button to exit the configuration menu.

## Data Export Devices

The following table lists the data export devices. Detailed procedures to disable these devices, if any, are shown following the table.

**Table 3: Data Export Devices**

Type and minimum size	Function	User modifiable <sup>1</sup>	Data input method	Location	To disable
Ethernet	Communications	Yes	Standard Ethernet protocol	Rear of instrument	(See page 6, <i>Disable Ethernet Access Procedure.</i> )
USB	Data storage	Yes	Standard USB protocol	Front of instrument	None

<sup>1</sup> During normal instrument operation.

### Disable Ethernet Access Procedure

1. Press the **CONFIG** button. Then select **Network Settings**.
2. Navigate to the **Web Enable** and set it to **Off**.
3. Press the **CONFIG** button to exit the configuration menu.

### Enable Ethernet Access Procedure

To enable Ethernet access, use the same procedures you would use to disable these devices, but select **On** to enable each device.

---

# Troubleshooting

## How to Clear or Sanitize a Nonfunctional Instrument

To sanitize a nonfunctional instrument, remove the Main board and return the instrument to Tektronix for installation of a new Main board. This procedure does not clear calibration constants stored on the Audio, Eye, and Composite boards.

## How to Recover from Clearing or Removing the Instrument's Memory

Reload the system software according to the software loading instructions.