

**WVR4000 and WVR5000 Waveform Rasterizers
Declassification and Security
Instructions**

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Preface

The instructions in this document describe how to clear or sanitize the data storage (memory) devices and disable the data output devices (USB ports) in the products listed below. The instructions also describe how to declassify an instrument that is not functioning. These procedures can be useful for customers with data security concerns.

Products The following Tektronix products are covered by this document:

- WVR4000
- WVR5000

Related Documents *WVR4000 and WVR5000 Waveform Rasterizers Service Manual*

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 the purpose of 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 ¹	Data input method	Location	To clear	To sanitize
SRAM 256 K X 16	PLD RAM	No	PLD access	Main board	None	Remove the power source from the instrument for at least 20 seconds
FPGA 1.9 Mb	Mapper#1	No	Programmed by onboard flash memory	Main board	None	Remove the power source from the instrument for at least 20 seconds
SRAM 512 K X 18	Mapper#1 RAM	No	Static memory for mapper FPGA	Main board	None	Remove the power source from the instrument for at least 20 seconds
SDRAM 16 M X 16	Mapper#1 RAM FPGA	Yes	User can initiate capture to this memory	Main board	None	Remove the power source from the instrument for at least 20 seconds
FPGA 1.9 Mb	Rasterizer	No	Programmed by onboard flash memory	Main board	None	Remove the power source from the instrument for at least 20 seconds
SDRAM 16 M X 16	Rasterizer SDRAM	Yes	User can initiate capture to this memory	Main board	None	Remove the power source from the instrument for at least 20 seconds
SDRAM 16 M X 16	CPU RAM	No	CPU access	Main board	None	Remove the power source from the instrument for at least 20 seconds

¹ During normal instrument operation.

Table 2: Nonvolatile Memory Devices

Type and minimum size	Function	User modifiable ¹	Data input method	Location	To clear	To sanitize
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 Clear Presets procedure and Clear IP and SNMP Address Fields Procedure	See Clear Presets procedure and Clear IP and SNMP Address Fields Procedure
Real Time Clock and NVRAM	Stores time set by user and instrument configuration settings	Yes	UI	Main board	Set to GMT	Set to GMT
EEPROM 128 X 8 Serial I2C	Stores board revision information	No	Programmed at the factory No user data	DVI board	None	None
PLD 8 Kb	Display controller	No	Programmed by flash memory during power up	Main board	None	None
EEPOT 256 X 1 Serial I2C	Backlight brightness	Yes	UI	Backplane board	Set backlight brightness to 100%	Set backlight brightness to 100%
EEPOT 256 X 1 Serial I2C	Battery volts low Battery voltage error	No	Factory/Service calibration procedure	Backplane board	None	None

¹ During normal instrument operation.

Clear Presets Procedure

1. Restore the instrument settings to the factory default as follows:
 - a. Press and hold the **PRESET** button to display the preset menu.
 - b. Select **Recall Preset > Recall Factory Preset**.
 - c. Press the **SEL** button.
2. Overwrite all saved presets with the factory default as follows:
 - a. Press and hold the **PRESET** button.
 - b. Select **Save Preset > Select Group A**.
 - c. Select a preset that is not empty "<e>".
 - d. Press the **SEL** button to overwrite that preset with the factory defaults.
 - e. Repeat for all presets in Group A that are not empty.
 - f. Repeat for all groups.
3. Rename all named groups and presets as follows:
 - a. Navigate to the top level menu.
 - b. Select **Rename Preset > Select Group A**.
 - c. Select a preset that is not empty "<e>".
 - d. Press the **SEL** button to overwrite that preset with the factory defaults.
 - e. Repeat for all presets in Group A that are not empty.
 - f. Repeat for all groups.
4. Press the **PRESET** button to exit the Preset menu.

Clear Diagnostic Log Procedure

1. Press the **CONFIG** button.
2. Select **Utilities > View Diagnostic Log**.
3. Press the **SEL** button to display the log.
4. Clear the log as follows:
 - a. Press the > button until the box by "Erase Log" is highlighted.
 - b. Press the **SEL** button to remove all entries in the diagnostic log.
 - c. Press the > button until the box by "Exit" is highlighted.
 - d. Press the **SEL** button to exit the log display.
5. Press the **CONFIG** button to exit the configuration menu.

**Clear IP and SNMP
Address Fields Procedure**

1. Press the **CONFIG** button.
2. Select **Network Settings**.
3. Select **IP Config Mode** and set it to **Manual** to display the IP address.
4. Clear the IP address as follows:
 - a. Navigate to **IP Address**.
 - b. Press > to enter the edit mode.
 - c. Enter “000.000.000.000” for the IP address.
 - d. Repeat for the Subnet Mask, Gateway Address, and SNMP Trap Address 1 through SNMP Trap Address 4.
5. Press the **CONFIG** button to exit the configuration menu.

Data Export Devices

The following table lists the data export devices in the standard instrument and listed options. 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 ¹	Data input method	Location	To disable
USB host port (supports removable USB flash drive)	Software updates and instrument setups	Yes	User writeable	USB host port on front of instrument Files can be deleted or over-written on the waveform rasterizer or a PC, or USB flash drive can be removed and destroyed	The USB host port cannot be disabled
LAN Ethernet connector	Software updates and screen captures using a Web page	N/A	N/A	Rear panel	The LAN connector cannot be disabled

¹ During normal instrument operation.

Disable Ethernet Access Procedure

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

Disable SNMP Access Procedure

1. Press the **CONFIG** button.
2. Select **Network Settings**.
3. Navigate to **Web Enable** and set it to **Off**.
4. Navigate to **SNMP Enable** and set it to **Off**.
5. Navigate to **SNMP Trap Enable** and set it to **Off**.
6. Press the **CONFIG** button to exit the configuration menu.

Enable Ethernet and SNMP Access Procedure

To enable Ethernet and SNMP 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 Non-Functional Instrument

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

How to Recover from Clearing or Removing Memory from the Instrument

Reload the system software according to the loading instructions.