

**MTS4000**  
**MPEG Test Systems**  
**Declassification and Security Instructions**

[www.tektronix.com](http://www.tektronix.com)



077-0628-02

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# Table of Contents

Preface .....	1
Clear and sanitize procedures .....	3
Data export devices .....	5
Troubleshooting .....	6
How to clear or sanitize a Non-Functional instrument .....	6
How to recover from clearing or removing the instrument memory .....	6



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# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the MTS4000 MPEG Test Systems.

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.

## Supported products

The following Tektronix products are covered by this document:

MTS4000	Base MPEG Test System
MTS4KUP ASI	Multiport ASI interface (four ports)
MTS4KUP S2	DVB-S/S2 interface supporting QPSK, 8PSK, 16APSK and 32APSK demodulation
MTS4KUP DS2	Dual input DVB-S/S2 interface supporting dual-port QPSK/8PSK or single-port 16APSK/32APSK demodulation
MTSK4UP VS	8VSB interface upgrade
MTSK4UP QB2	QAM (Annex B) interface upgrade
MTS4UP IPTVD	IP Video Gigabit Ethernet Interface with 10/100/1000 Base-T RJ45 electrical port. SFP required for optical interface (options SX, LX, or ZX)
MTSK4UP 10GS	10GBASE-SR DUAL OPTICAL PORT 10Gb/s NIC. INCLUDES SHORT REACH SFP+ MODULES (850 NM)
MTS4KUP LX	1000BASE-LX wavelength optical port with LC connector upgrade
MTS4KUP SX	1000BASE-SX short wavelength optical port with LC connector upgrade
MTS4KUP ZX	1000BASE-ZX long wavelength optical port with LC connector upgrade

**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.** This refers to 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 User input	Function	User modifiable?	Data input method	Location in instrument	To clear	To sanitize
DDR RAM 256 MB	Transport traffic queue	No	Written by FPGA	GigE card	Remove the power source from the instrument for at least 20 seconds.	N/A
SDRAM 128 MB	Microprocessor system memory	No	Written by processor system.	GigE card	Remove the power source from the instrument for at least 20 seconds.	N/A
SRAM 1152 KB	Microprocessor system memory	No	Written by processor system.	GigE card	Remove the power source from the instrument for at least 20 seconds.	N/A
CAM 288 KB	IP Traffic buffer	No	Written by FPGA.	GigE card	Remove the power source from the instrument for at least 20 seconds.	N/A
SDRAM 16 MB		No	Written by processor system.	RF interface cards – QAMB, 8VSB, and DVB-S/S2 (Option S2 only)	Remove the power source from the instrument for at least 20 seconds.	N/A
DDRAM 4 GB	Microprocessor system memory	No	Written by processor system.	Motherboard	Remove the power source from the instrument for at least 20 seconds.	N/A
SRAM	L2 cache	No	Written by processor system.	Motherboard	Remove the power source from the instrument for at least 20 seconds.	N/A

**Table 2: Nonvolatile memory devices**

Type and User input	Function	User modifiable?	Data input method	Location in instrument	To clear	To sanitize
Flash 16 M x 8 bits	Holds card firmware and IGMP subscription details.	Yes	User input.	GigE card	N/A	Return the instrument to Tektronix.
Flash 8 M x 8 bits	Holds FPGA image.	Yes	User input.	GigE card	N/A	Return the instrument to Tektronix.
Flash 16 MB	Holds card firmware.	Yes	Firmware operations.	RF interface cards – QAM B, 8VSB, and DVB-S/S2 (Option S2 only)	N/A	Return the instrument to Tektronix.
Flash	BIOS	No	Factory configuration.	Motherboard	N/A	Return the instrument to Tektronix.
Fixed SATA Hard Drives (2)	Holds operating system and application software. Holds user storable data such as test streams, and measurement results.	Yes	Firmware operations, user input.	Mounted on chassis.	Erase the hard drives with commercial erasure software. Reinstall Microsoft Windows and the instrument software using the supplied recovery discs.	Remove the hard drives. Store the removed hard drives in a secure area or destroy them.



## Data export devices

The following table lists the data export devices in the standard instrument and listed options:

**Table 3: Media storage / data export disable**

Type and minimum size	Function	User modifiable?	Data input method	Location in instrument	Process to disable
LAN Ethernet connector	Transfer data.	N/A	N/A	Motherboard	N/A
LAN Ethernet connector	Transfer data.	N/A	N/A	GigE card	N/A
10G LAN Ethernet connector	Transfer data.	N/A	N/A	GigE card	Remove the card. Store the card in a secure area or destroy the card.
RF input	Transfer data.	N/A	N/A	RF Interface cards	N/A
ASI input	Transfer data.	N/A	N/A	ASI Interface card	Remove the card. Store the card in a secure area or destroy the card.
DVB-S/S2 input	Transfer data.	N/A	N/A	Dual input DVB-S/S2 interface card (Option DS2 only)	Remove the card. Store the card in a secure area or destroy the card.
DVD $\pm$ RW	Store and transport data.	Yes	User writeable.	Instrument side	Remove all DVDs. Rewriteable DVDs can be formatted, stored in a secure area, or destroyed. Non-rewriteable DVDs can either be stored or destroyed. The DVD drive cannot be disabled.
USB devices	Store user-storable data such as transport streams, measurement results, and instrument settings.	Yes	User writeable.	Instrument front and side	Remove all USB memory devices. USB devices can be formatted, stored in a secure area, or destroyed. The USB ports cannot be disabled.

# Troubleshooting

## How to clear or sanitize a Non-Functional instrument

If your instrument is not functioning and you need to clear or sanitize it, proceed as follows:

**RF interface cards – QAM (Annex B), 8VSB, and DVB-S/S2 (Option S2 only)**

The RF interface cards store immediate values in memory, for example, current frequency. These values are lost when power is removed.

**Hard drives (SATA)**

Remove the hard drives. Store the removed hard drives in a secure area or destroy them.

## How to recover from clearing or removing the instrument memory

Follow the procedures in the *MTS4000 MPEG Test System Quick Start User Manual* to reinstall the operating system and the MTS4000 applications.