

**MTM400A, IPM400A, QAM400A, and RFM300  
DTV Monitors**

**Declassification and Security Instructions**

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



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# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the MTM400A, IPM400A, QAM400A, and RFM300 DTV 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.

**Supported Products** MTM400A, IPM400A, QAM400A, and RFM300 DTV Monitors.

**Related Documents** The *MTM400A, IPM400A, QAM400A, and RFM300 DTV Monitors Technical Reference* (Tektronix part number 077-0175-XX), is available on the Tektronix Web site at [www.tektronix.com/manuals](http://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.** 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 |
|---------------------|------------------------------|------------------|-----------------------------|------------------------|--|-------------|
| RAM<br>256 MB       | Microprocessor system memory | No               | Written by processor system | Power PC board         | Remove the power source from the instrument for at least 20 seconds. | N/A         |
| 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         |
| S DRAM<br>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<br>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<br>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         |
| RAM<br>256 MB       | Microprocessor system memory | No               | Written by processor system | RF interface cards     | 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  |
|---------------------|--------------------------------------|------------------|---|------------------------|----------|--|
| NVRAM               | Stores instrument user configuration | Yes              | Loading configuration file or by using the user interface | Processor card         | N/A      | Remove power and press NV clear button for 10 seconds. |

**Table 2: Nonvolatile memory devices, (cont.)**

| Type and User input    | Function   | User modifiable? | Data input method                  | Location in instrument                                  | To clear | To sanitize                         |
|------------------------|--|------------------|------------------------------------|---|----------|-------------------------------------|
| Flash<br>6 M x 8 bits  | Holds instrument firmware, MAC, IP, Serial and License numbers | Yes              | Firmware operations and user input | Processor card  | N/A      | Return the instrument to Tektronix. |
| Flash<br>16 M x 8 bits | Holds card firmware and IGMP subscription details              | Yes              | User input                         | GigE interface card                                     | N/A      | Return the instrument to Tektronix. |
| Flash<br>8 M x 8 bits  | Holds FPGA image   | Yes              | User input                         | GigE interface card                                     | N/A      | Return the instrument to Tektronix. |
| Flash<br>16 MB         | Holds card firmware  | Yes              | Firmware operations                | RF Interface cards (DVB-S2, QAM BII, 8VSB, 8PSK, COFDM) | N/A      | Return the instrument to Tektronix. |

**Clear NVRAM**

Use the following procedure to clear the nonvolatile RAM:

1. Remove power.
2. Remove the top cover.
3. Push the NVRAM clear button on the monitor’s Processor card for 10 seconds.
4. Replace the cover.

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**NOTE.** Removing the top cover of the instrument and accessing the NVRAM clear button are described in the MTM400A, IPM400A, QAM400A, and RFM300 DTV Monitors Technical Reference (Tektronix part number: 077-0175-XX).

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**Data Export Devices**

The following table lists the data export devices in the standard instrument and 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               | Processor card         | N/A                |
| LAN Ethernet connector | Transfer data | N/A              | N/A               | GbE interface card     | N/A                |



**Table 3: Media storage/data export disable, (cont.)**

| Type and minimum size       | Function      | User modifiable? | Data input method | Location in instrument                                  | Process to disable |
|-----------------------------|---------------|------------------|-------------------|---|--------------------|
| ASI/SMPTE In/Out connectors | Transfer data | N/A              | N/A               | Processor card  | N/A                |
| ASI/SMPTE In/Out connectors | Transfer data | N/A              | N/A               | Interface cards (all)                                   | N/A                |
| RF input/output connectors  | Transfer data | N/A              | N/A               | RF Interface cards (DVB-S2, QAM BII, 8VSB, 8PSK, COFDM) | N/A                |

## 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:

#### Main Processor Card

Remove power and remove battery; this will clear any configuration information. The MAC and IP addresses are held in an EPROM. If this needs to be sanitized, the instrument must be returned to Tektronix.

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**NOTE.** Removing the instrument's top cover and access to the battery are described in the *MTM400A, IPM400A, QAM400A, and RFM300 DTV Monitors Technical Reference*, (Tektronix part number: 077-0175-XX).

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#### Gigabyte Ethernet Interface Card

This card uses data which is stored on the Main Processor card. Clearing the Main Processor card clears all data associated with the Gigabit Ethernet card.

#### RF Interface Cards

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

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

Follow the procedures in the *Quick Start User Manual* for your product: MTM400A (071-2492-XX), IPM400A (071-2698-XX), RFM300 (071-2700-XX), or QAM400A (071-2784-XX) to set the network, time, and license information, and then reconfigure tests to your application. These manuals are available on the Tektronix Web site: [www.tektronix.com/manuals](http://www.tektronix.com/manuals).