Tektronix®

# TTR500 Series Vector Network Analyzers and TCAL500 Calibration Kit Declassification and Security Instructions

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# Preface

This document helps customers with data security concerns to sanitize or remove memory devices from the Tektronix TTR503A and TTR506A vector network analyzers (VNAs) and the TCAL500 electrical calibration kits.

The VNAs have a data storage (memory) device. The instructions in this manual describe how to clear or sanitize the memory device.

The VNA and the TCAL500 do not contain any media or export devices that require declassification instructions.

## Reference

The procedure in this document is written to meet the requirements specified in:

- NISPOM, DoD 5220.22–M, Chapter 8
- ISFO Process Manual for Certification & Accreditation of Classified Systems under NISPOM

## Products

The security instructions apply to these Tektronix products:

- TTR503A
- TTR506A
- TCAL500-35F, TCAL500-35MF, TCAL500-35M
- TCAL500-NF, TCAL500-NMF, TCAL500-NM

## Required documents

No external documents are required to perform the procedures in this document.

## Terms 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.
- **Instrument Declassification.** A term that refers to procedures that must be undertaken before an instrument can be removed from a secure environment. Declassification procedures include memory sanitization and memory removal, and sometimes both.
- **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 Accessible.** User is able to directly retrieve the memory device contents.
- **User-modifiable.** The user can write to the memory device during normal instrument operation, using the instrument interface or remote control.
- **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.

### Device terms

- **User data.** Describes the type of information stored in the device. Refers to waveforms or other measurement data representing signals connected to the instrument by users.
- **User settings.** Describes the type of information stored in the device. Refers to instrument settings that can be changed by the user.
- **Both.** Describes the type of information stored in the device. It means that both user data and user settings are stored in the device.
- **None.** Describes the type of information stored in the device. It means that neither user data nor user settings are stored in the device.
- **Directly.** Describes how data is modified. It means that the user can modify the data.
- **Indirectly.** Describes how data is modified. It means that the instrument system resources modify the data and that the user cannot modify the data.

# Memory devices

## Volatile memory devices

### Table 1: TTR500 volatile memory devices

| Type and min. size | Function | Type of user info stored | Backed up by battery | Method of modification | Data Input method | Location | User accessible | To clear | To sanitize |
|---|---|---|---|---|---|---|---|---|---|
| SRAM 1MB | Holds active acquisition data | User data | No | Indirectly | Written by RFIC | RFIC | No | Disconnect power for at least 20 seconds. | Disconnect power for at least 20 seconds. |
| SRAM 128KB | Holds RFIC firmware | User settings | No | Indirectly | Written by VectorVu-PC application | RFIC | No | Disconnect power for at least 20 seconds. | Disconnect power for at least 20 seconds. |
| SRAM 32KB | Not applicable | Not applicable | No | Not applicable | Not applicable | RFIC | No | Disconnect power for at least 20 seconds. | Disconnect power for at least 20 seconds. |
| SRAM 128KB | Not applicable | Not applicable | No | Not applicable | Not applicable | RFIC | No | Disconnect power for at least 20 seconds. | Disconnect power for at least 20 seconds. |
| SRAM 512 KB | Micro-controller memory | User data, user settings | No | Indirectly | Firmware operation | Micro-controller | Yes | Disconnect power for at least 20 seconds. | Disconnect power for at least 20 seconds. |

### Table 2: TCAL500 volatile memory device

| Type and min. size | Function | Type of user info stored | Backed up by battery | Method of modification | Data Input method | Location | User accessible | To clear | To sanitize |
|---|---|---|---|---|---|---|---|---|---|
| SRAM 512 KB | Controller program memory, registers | Device switch command, transfer of calibration memory | No | VectorVu-PC application commands to TCAL500 | VectorVu-PC application commands | U16 on internal PCB | No | Remove USB cable | Remove USB cable |

## Non-volatile memory devices

### Table 3: TTR500 non-volatile memory devices

| Type and min. size | Function | Type of user info stored | Method of modification | Data Input method | Location | User accessible | To clear | To sanitize |
|---|---|---|---|---|---|---|---|---|
| I2C-32KB | Bootloader | None | Programming in factory | Factory dedicated software | Micro-controller system | No | Not applicable. Does not contain user data or settings. Clearing can disable instrument functionality. | Not applicable. Does not contain user data or settings. Clearing can disable instrument functionality. |
| SPI-16MB | Firmware | None | Programming in factory | Factory dedicated SW | Micro-controller system | No | Not applicable. Does not contain user data or settings. Clearing can disable instrument functionality. | Not applicable. Does not contain user data or settings. Clearing candisable instrument functionality. |
| Embedded USB drive — 2 GB | Software installer, documentation. | None, unless written by user. | Host OS contains option to write files to disk. | Standard Windows file copy. | Embedded USB memory module | Yes | Disable USB storage in VectorVu-PC application.<br>Use standard Windows applications in your organization to declassify the disk drive. | Disable USB storage in VectorVu-PC application.<br>Use standard Windows applications in your organization to declassify the disk drive. |

### Table 4: TCAL500 non-volatile memory devices

| Type and min. size | Function | Type of user info stored | Method of modification | Data Input method | Location | User accessible | To clear | To sanitize |
|---|---|---|---|---|---|---|---|---|
| Flash memory 128MB | Factory calibration data | No user data. Only Factory calibration table. | Factory calibration, not user modifiable | Calibration at Factory | U21 on internal PCB | Read only | Factory software command | Factory software command |

## Data export devices

There are no media or export devices that require declassification or security procedures with this product.

# Clear or sanitize a non-functioning instrument

If your instrument is not functioning, return the instrument to Tektronix for repair. A Tektronix service professional can reprogram the USB device embedded in the VNA. No user data is stored on the instrument when it is disconnected from a power supply.

To clear or sanitize the instrument:

1. Enable USB storage in activation manager in VectorVu-PC.
2. Use a secure erase tool to erase the USB drive.

## Charges

Replacement of any missing hardware will be charged according to the rate at the time of replacement.