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## Clearing Data in Non-Volatile Memory in the Keithley Model 6517B product

The Keithley Model 6517B contains memory devices to hold firmware code that is executed by internal microprocessors to operate the product and memory to save setup information and data. The following sections describe how the data stored in the memory devices may be cleared or destroyed.

**Warning: Some of the procedures in this document may expose hazardous voltage and the risk of electric shock or death. Only trained, qualified, technical persons experienced with the risks and precautions of servicing electrical instruments should perform these procedures.**

### Description of memory devices and their use:

Microprocessors - contains some RAM for internal use and all information is lost when the unit is powered down.

Flash - A 32-megabit flash device responsible for storing the firmware image and saved user setups.

SDRAM - A 64-megabit memory that holds data and instructions for firmware execution.

SRAM – a 16-megabit memory that holds user buffered readings and is battery backed up.

FRAM - A 256-kilobit memory used to store calibration constants for the instrument as well as manufacturing strings.

### Procedure for clearing memory content:

Note: If the Model 6517B starts and operates properly when powered on, it is very unlikely that the Flash memory was compromised.

#### Microprocessor

Power down the instrument for ten minutes.

#### Flash

To clear the USER set ups, send the following command over the GPIB interface:  
:syst:mem:init

To clear the operating software:

To allow field upgrade to the operating software, this memory device may be reprogrammed using a program, called the Flash Wizard, provided by Keithley Instruments Inc. If data (other than the operating system) was loaded into this memory device, the unit would be non-functional. To overwrite any suspect content in these memory devices, follow the instructions with the Keithley Flash Wizard and reload the operating firmware, using the original revision that came with the product when new, or a compatible upgrade version. The Flash Wizard first clears all content in

these memory devices then overwrites them with the new the firmware. Note: the firmware that is used for the upload must be known to be valid and kept secure to prevent tampering.

We do not currently offer a program to just erase this code. Complete destruction of firmware requires physical removal of the integrated circuits and destruction of the integrated circuits. Note: this action renders the unit unusable.

**SDRAM**

Turn off the instrument for 10 minutes

**SRAM**

The :syst:mem:init command also clear the data buffer.

or remove battery and power down for 10 minutes.

**FRAM**

Delete all calibration constants by sending the following commands:

```
:cal:prot:code'KI006517'  
:diag:keit:cal:default  
:cal:prot:date yyyy.mm.dd  
:cal:prot:ndue yyyy.mm.dd  
:cal:prot:save
```

Re-calibrate the instrument.

Note: this procedure does not clear the unit serial number or the manufacturing data.

The only way to completely sanitize this instrument is to disassemble completely and physically destroy all memory devices.

If you have any further questions or comments, please feel free to contact my office at anytime.

Regards,



William Pelster  
Director of Quality