

How to Sanitize User Data in a 34401A Digital Multimeter for Security Reasons

Purpose

To document the internal memory used in the 34401A instrument and how data can be sanitized/cleared/erased for security reasons.

Volatile Memory

Type: CMOS SRAM

Size: 256KB

User Modifiable (Y/N): Yes

Function: Store readings.

Process to Sanitize: Volatile memory is cleared each time power is cycled.

Non-Volatile Memory

Type: EPROM (A1 U502)

Size: 4KB

User Modifiable (Y/N): Yes

Function: Store calibration constants.

Process to Sanitize: Overwritten via bus

Removable Media

Type: None

Additional Information

Battery: None

U502 -- 34401-88806, IC OTP rev 11: contains operating code for the product.

- If you clear this, the instrument is dead.

U503 -- 1818-4777, IC 256K-BIT SRAM 70-NS CMOS: this volatile storage for readings and other volatile storage needs (cleared by cycling power to the product).

- Reading Storage (up to 512 reading may be stored in volatile memory; they can be cleared with a power cycle or by over-writing with other readings).
- Error message storage (cleared by power cycle or by sending the *CLS command).

U505 -- 1818-5236, IC 4K-BIT EEPROM 500-NS CMOS: this non-volatile memory is used to store calibration constants (written to memory during the calibration/adjustment process) plus all other non-volatile storage.

- Calibration Message (non-volatile 40 character message that can be over-written).
- Calibration Count (this is a number that is stored by the instrument and tracks the number of single point adjustments that have been done since the product was manufactured -- the maximum value for this number is 32,767 after which it wraps-around to 0).

U600 -- 1820-8985, IC-MCU W/FIP DRIVER, 2K X 8 ROM, 128 X 4: use to store firmware codes for the front panel display.

- If you clear this, the display is dead.

U700 -- 34401-88842, MASKED ROM 83C51FA R8922: This non-volatile memory is used to store outguard details (i.e. GPIB address and RS232 settings).

- Selection of the GPIB (instrument) address -- can be changed only from the front panel (stored in non-volatile memory).

The 34401A doesn't have the feature to store current state of the instrument.



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