**Memory Information and Procedures**

Product: 34410A and 34411A 6 ½ digit DMMs
Date: October 31, 2006

| | |
|---|---|
| **Memory Type**: EEPROM | **Memory Size**: 2Kx8 |
| **Memory Function**: Some non-volatile instrument settings & I/O settings | |
| **User Modifiable** (Y/N): partially Yes | **Volatile** (Y/N): N |
| **Memory Erase Processes:**<br><br>EA/EE PROM – use the following SCPI command - SYSTem:SECurity:IMMediate | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U1104 | **Agilent P/N**:1818-6493 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br>Reset settings to default values | |
| **Process to verify memory erase**:<br>Verify the following SCPI command values are set to factory defaults as described in manual:<br>*PSC?<br>*ESE?<br>*SRE?<br>FORMat:BORDer?<br>STATus:OPERation:EVENt:ENABle?<br>STATus:OPERation:NTRansition?<br>STATus:OPERation:PTRansition?<br>STATus:QUEStionable:EVENt:ENABle?<br>STATus:QUEStionable:NTRansition?<br>STATus:QUEStionable:PTRansition?<br>SYSTtem:BEEPer:STATe?<br>SYSTem:LANGuage?<br>SYSTem:COMMunicate:ENABle? GPIB<br>SYSTem:COMMunicate:ENABle? USB<br>SYSTem:COMMunicate:ENABle? LAN<br>SYSTem:COMMunicate:ENABle? SOCKets<br>SYSTem:COMMunicate:ENABle? TELNet<br>SYSTem:COMMunicate:ENABle? VXI11<br>SYSTem:COMMunicate:ENABle? WEB<br>SYSTem:COMMunicate:GPIB[:SELF]:ADDRess?<br>SYSTem:COMMunicate:LAN:AUTOip[:STATe]?<br>SYSTem:COMMunicate:LAN:BSTatus?<br>SYSTem:COMMunicate:LAN:CONTrol?<br>SYSTem:COMMunicate:LAN:DDNS? | |

SYSTem:COMMunicate:LAN:DHCP?
SYSTem:COMMunicate:LAN:DNS?
SYSTem:COMMunicate:LAN:DOMain?
SYSTem:COMMunicate:LAN:GATEway?
SYSTem:COMMunicate:LAN:HOSTname?
SYSTem:COMMunicate:LAN:IPADdress?
SYSTem:COMMunicate:LAN:KEEPalive?
SYSTem:COMMunicate:LAN:LIPaddress?
SYSTem:COMMunicate:LAN:MAC?
SYSTem:COMMunicate:LAN:MEDiasense?
SYSTem:COMMunicate:LAN:NETBios?
SYSTem:COMMunicate:LAN:SMASk?
SYSTem:COMMunicate:LAN:TELNet:PROMpt?
SYSTem:COMMunicate:LAN:TELNet:WMESsage?

Verify the following front panel values are set to factory defaults:
Radix character
Thousands character

**Does this process:** ☐Sanitize memory ☐Clear memory ☑Erases memory (best effort)
Memory Clearing and Sanitization Matrix is found on the next page

**Process to physically remove memory**: unsolder part

**Other notes**:

---

| | |
|---|---|
| **Memory Type**: SDRAM | **Memory Size**: 8Mx16x4 |
| **Memory Function**: Volatile data and code execution | |
| **User Modifiable** (Y/N): Y | **Volatile** (Y/N): Y |
| **Memory Erase Processes:**<br><br>Power off the 34410A/34411A (no battery backup**).** | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U1003 and U1004 | **Agilent P/N**: 1818-8481 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br>Power off the 34410A/34411A | |
| **Process to verify memory erase**:<br><br>none | |
| **Does this process:** ☑Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page | |
| **Process to physically remove memory**: unsolder part | |

| |
|---|
| **Other notes**: |

| | |
|---|---|
| **Memory Type**: Flash ROM | **Memory Size**: 4Mx16 |
| **Memory Function**: Code storage, state storage, calibration constant storage, reading storage | |
| **User Modifiable** (Y/N): partially Yes | **Volatile** (Y/N): N |
| **Memory Erase Processes:**<br><br>Only affects state storage and reading storage:<br>use the following SCPI command - SYSTem:SECurity:IMMediate<br><br>Only affects calibration constant storage:<br>use the following SCPI command sequence; verify no errors occur:<br>CALibration:SECurity:STATe OFF,<password><br><optional> recalibrate the unit<br>CALibration:STORe (repeat this command 32 times)<br>CALibration:SECurity:STATe ON<br><br>No process exists for erasing code storage. | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U1001 | **Agilent P/N**: 34410-88802 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>Block erase of state storage and reading storage area, according to manufacturer's data sheet.<br>SYSTem:SECurity:IMMediate<br><br>Block erase of calibration constant storage area, according to the manufacturer's data sheet followed by overwrite with new data. | |
| **Process to verify memory erase**:<br>Verify that no states are stored. Each of the following SCPI queries should return "0".<br>MEMory:STATe:VALid? 0<br>MEMory:STATe:VALid? 1<br>MEMory:STATe:VALid? 2<br>MEMory:STATe:VALid? 3<br>MEMory:STATe:VALid? 4<br>Note: State 0 is erased by the SYSTem:SECurity:IMMediate command, but is always written with the currently programmed state at power-down. Therefore, the MEMory:STATe:VALid? 0 query may return "1" if the unit has been power-cycled after the SYSTem:SECurity:IMMediate command was sent.<br><br>Verify that no readings are stored. The following SCPI query should return "0".<br>DATA:POINts?<br><br>No method exists to verify that calibration constant storage has been erased. | |

| |
|---|
| **Does this process:** ☐Sanitize memory ☑Clear memory ☐Erases memory (best effort)<br><Note: code storage is not affected><br>Memory Clearing and Sanitization Matrix is found on the next page |
| **Process to physically remove memory**: unsolder part |
| **Other notes**: |

| | |
|---|---|
| **Memory Type**: Microprocessor Internal Memory | **Memory Size**: 4Kx32 |
| **Memory Function**: Volatile power up storage | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): Y |
| **Memory Erase Processes:**<br><br>Power off 34410A/34411A (no battery backup) | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U1000 | **Agilent P/N**: 1822-0615 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>Power off 34410A/34411A (no battery backup) | |
| **Process to verify memory erase**: none | |
| **Does this process:** ☑Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page | |
| **Process to physically remove memory**: unsolder part | |
| **Other notes**: | |

| | |
|---|---|
| **Memory Type**: FPGA internal programming SRAM | **Memory Size**: 212392 bytes |
| **Memory Function**: FPGA Program | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): Y |
| **Memory Erase Processes:**<br><br>Power off 34410A/34411A (no battery backup) | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U700 | **Agilent P/N**: 1822-1412 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>Power off 34410A/34411A (no battery backup) | |
| **Process to verify memory erase**:<br><br>none | |

| |
|---|
| **Does this process:** ☑Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page |
| **Process to physically remove memory**: unsolder part |
| **Other notes**: |

| | |
|---|---|
| **Memory Type**: Front Panel micro-processor flash memory | **Memory Size**: 8 kByte |
| **Memory Function**: Code storage | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): N |
| **Memory Erase Processes:**<br><br>No method, not user accessible. | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U106 (Front Panel PCA) | **Agilent P/N**: 1822-1868 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>N/A | |
| **Process to verify memory erase**:<br><br>none | |
| **Does this process:** ☐Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page | |
| **Process to physically remove memory**: unsolder part | |
| **Other notes**: | |

| | |
|---|---|
| **Memory Type**: Front Panel micro-processor EEPROM | **Memory Size**: 512 Bytes |
| **Memory Function**: Temporary execution data | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): N |
| **Memory Erase Processes:**<br><br>No method, not user accessible. | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U106(Front Panel PCA) | **Agilent P/N**: 1822-1868 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>N/A | |

| |
|---|
| **Process to verify memory erase**:<br><br>none |
| **Does this process:** ☐Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page |
| **Process to physically remove memory**: unsolder part |
| **Other notes**: |

| | |
|---|---|
| **Memory Type**: Front Panel micro-processor RAM memory | **Memory Size**: 768 Bytes |
| **Memory Function**: Temporary execution data | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): Y |
| **Memory Erase Processes:**<br><br>Power off 34410A/34411A (no battery backup). | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U106 (Front Panel PCA) | **Agilent P/N**: 1822-1868 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.):<br><br>Power off 34410A/34411A (no battery backup). | |
| **Process to verify memory erase**:<br><br>none | |
| **Does this process:** ☑Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page | |
| **Process to physically remove memory**: unsolder part | |
| **Other notes**: | |

| | |
|---|---|
| **Memory Type**: USB processor FIFO (RAM) memory | **Memory Size**: 16K |
| **Memory Function**: FIFO for USB data | |
| **User Modifiable** (Y/N): N | **Volatile** (Y/N): Y |
| **Memory Erase Processes:**<br><br>Power off 34410A/34411A (no battery backup). | |

| **Internal Only Information** | |
|---|---|
| **Circuit Designator** (including assembly designator): U1006 | **Agilent P/N**: 1822-0376 |
| **How is memory erased** (overwrite with default information, all bits go to 1, etc.): | |

| |
|---|
| Power off 34410A/34411A (no battery backup). |
| **Process to verify memory erase**:<br><br>none |
| **Does this process:** ☑Sanitize memory ☐Clear memory ☐Erases memory (best effort)<br>Memory Clearing and Sanitization Matrix is found on the next page |
| **Process to physically remove memory**: unsolder part |
| **Other notes**: |

Select one of the following:

- ☐ Sanitization process is documented above
- ☐ Sanitization process could be available with engineering resources
- ☐ Sanitization process is not possible (i.e. sanitize the product by destruction

# Clearing and Sanitization Matrix

| Media | Clear | | | | | Sanitize | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Magnetic Tape** | | | | | | | | | | | | | | | | | | | | | |
| Type I | a | | | | | | b | | | | | | | | | m | | | | | |
| Type II | a | | | | | | b | | | | | | | | | m | | | | | |
| Type III | a | | | | | | b | | | | | | | | | m | | | | | |
| **Magnetic Disk** | | | | | | | | | | | | | | | | | | | | | |
| Bernoullis | a | c | | | | | b | | | | | | | | | m | | | | | |
| Floppy | a | c | | | | | b | | | | | | | | | m | | | | | |
| Non-Removable Rigid Disk | | c | | | | a | | | d | | | | | | | m | | | | | |
| Removable Rigid Disk | a | c | | | | a | | | d | | | | | | | m | | | | | |
| **Optical Disk** | | | | | | | | | | | | | | | | | | | | | |
| Read Many, Write Many | | c | | | | | | | | | | | | | | m | | | | | |
| Read Only | | | | | | | | | | | | | | | | m | n | | | | |
| Write Once, Read Many (Worm) | | | | | | | | | | | | | | | | m | n | | | | |
| **Memory** | | | | | | | | | | | | | | | | | | | | | |
| Dynamic Random Access Memory (DRAM) | | c | h | | | | | c | | | | | h | | | | m | | | | | |
| Electronically Alterable PROM (EAPROM) | | | | i | | | | | | | | | | | j | | m | | | | | |
| Electronically Erasable PROM (EEPROM) | | | | i | | | | | | | | g | | | | | m | | | | | |
| Erasable Programmable ROM (EPROM) | | | | | k | | | c | | | | | | | | l | m | | | | | l then c |
| Flash EPROM (FEPROM) | | | | i | | | | c | | | | | | i | | | m | | | | | c then i |
| Programmable ROM (PROM) | | c | | | | | | | | | | | | | | | m | | | | | |
| Magnetic Bubble Memory | | c | | | | a | | c | | | | | | | | | m | | | | | |
| Magnetic Core Memory | | c | | | | a | | | | e | | | | | | | m | | | | | |
| Magnetic Plated Wire | | c | | | | | | c | | | f | | | | | | m | | | | | c and f |
| Magnetic Resistive Memory | | c | | | | | | | | | | | | | | | m | | | | | |
| NonVolatile RAM (NOVRAM) | | c | h | | | | | c | | | | | h | | | | m | | | | | |
| Read Only Memory (ROM) | | | | | | | | | | | | | | | | | m | | | | | |
| Synchronous DRAM (SDRAM) | | c | h | | | | | c | | | | | h | | | | m | | | | | |
| Static Random Access Memory (SRAM) | | c | h | | | | | c | | | f | | h | | | | m | | | | | c and f |
| **Equipment** | | | | | | | | | | | | | | | | | | | | | |
| Monitor | | | h | | | | | | | | | | | | | | | | | q | |
| Impact Printer | | | h | | | | | | | | | | h | | | | | | p | | p then h |
| Laser Printer | | | h | | | | | | | | | | h | | | | | o | | | o then h |

a. Degauss with Type I, II, or III degausser.
b. Degauss with same Type (I, II, or III) degausser.
c. Overwrite all addressable locations with a single character.
d. ***THIS METHOD NOT APPROVED FOR SANITIZING MEDIA THAT CONTAINS TOP SECRET INFORMATION.***

1. Before any sanitization product is acquired, careful analysis to the overall costs associated with overwrite/sanitization should be made. Depending on the contractor's environment, the size of the drive and the differences in the individual products time to perform the sanitization, destruction of the media might be the preferred (i.e., economical) sanitization method.

2. Overwrite all addressable locations with a character, then its complement. Verify "complement" character was written successfully to all addressable locations, then overwrite all addressable locations with random characters; or verify third overwrite of random characters. Overwrite utility must write/read to "growth" defect list/sectors or disk must be mapped before initial classified use and remapped before sanitization. Difference in the comparison lists must be discussed with the DSS Industrial Security Representative (IS Rep) and/or Information System Security Professional (ISSP) before declassification. *Note: Overwrite utilities must be authorized by DSS before use.*

e. Overwrite all addressable locations with a character, its complement, then a random character.
f. Each overwrite must resident in memory for a period longer than the classified data resided.
g. Overwrite all locations with a random pattern, then with binary zeros, and finally with binary ones.
h. Remove all power to include battery power.
i. Perform a full chip erase as per manufacturer's data sheets.
j. Perform i above, then c above, a total of three times.
k. Perform an ultraviolet erase according to manufacturer's recommendation.
l. Perform k above, but increase time by a factor of three.
m. Destruction see 1.) and 2.) below.
n. Destruction required only if classified information is contained.
o. Run 1 page (font test acceptable) when print cycle not completed (e.g. paper jam or power failure). Dispose of output as unclassified if visual examination does not reveal any classified information.
p. Ribbons must be destroyed. Platens must be cleaned.
q. Inspect and/or test screen surface for evidence of burn-in information. If present, screen must be destroyed.

**1.) All methods of destruction must be authorized by DSS before use. Types of destruction are Disintegrate, incinerate, pulverize, or melt.** ***NOTE: As of 22 April, 2002 shredding of IA products is not authorized.***