Boonton Model 4500C Security Procedures

Product Name: Boonton Electronics 4500C RF Peak Power Analyzer

Volatile Memory:
Motherboard: 8 GB Main Memory (DDR4), 4 MB CPU Cache
Power Dist Board: None
Acquisition board: 64 MB Main Memory (DDR3), 1024 KB (CPU RAM), 5 MB (FPGA BRAM)
GPIB option board: None
Calibrator: 256K bytes CPU memory (on-chip SRAM)
Keyboard: 1K bytes CPU memory (on-chip SRAM)
Display: None
Peak Power Sensors: None

Nonvolatile Memory:
Motherboard: 2+ KB "CMOS Setup" memory (battery backed up SRAM), 16 MB (FLASH)
Power Dist Board: 16 KB Factory Configuration Memory (EEPROM)
Acquisition board: 64 MB Firmware/FPGA configuration Memory (QSPI FLASH)
GPIB option board: None
Calibrator: 2 KB Cal Data Memory (EEPROM), 256 KB Program Memory (on-chip FLASH)
Keyboard: 32 KB Program Memory (on-chip FLASH)
Solid State Disk: 60+ GB OS, Data and Program Memory (FLASH)
Peak Power Sensors: 2KB or 16KB Factory Calibration Memory (EEPROM)

Security Summary:
The Boonton Model 4500C may save operating parameters and measurement information in various volatile memory locations, and one non-volatile location. All volatile memory is lost within one minute of removing instrument AC power. The only non-volatile location that is able to save user data is the hard disk drive. All other non-volatile locations are programmed at the factory or during instrument calibration, and do not save any user information. The following types of user information my be present on the hard disk drive: most recent operating configuration ("instrument setup"), user saved operating configurations, user saved waveforms, saved "memory channels", user saved screen images, user saved measurement arrays. The hard disk drive also may contain the following calibration data from field calibration processes performed by the user: "autocal" sensor linearity data, sensor zero, trigger channel calibration data, timebase skew calibration data.

Security Procedures:
To declassify the Boonton Model 4500C, instrument power should be removed for a minimum of one minute, and the solid state disk drive (SSD) removed and replaced with a separate, programmed SSD. This will result in the loss of any user "autocal" data for sensors and trigger channels, and timebase "skew" adjustments, but no factory calibration data will be lost.

A new SSD service kit may be ordered from the Boonton Service Department as part number 4500C-ISSD. See document 84605800A "4500C Solid State Disk Replacement Procedure" for instructions (included with kit). The old SSD may be destroyed, securely wiped, or left intact and re-used later if the instrument is returned to the classified area. If the SSD is wiped, it will be necessary to return it to the factory to replace the operating system and 4500C application files. However, since the SSD and motherboard mounting slot are not meant for repeated mating cycles, it is recommended that the drive be replaced no more than ten times.

4500C Option 015 (Removable Solid State Drive):

If the 4500C is equipped with Option 015 (Removable Solid State Drive), the instrument's internal SSD is replaced by a removable, tray-mounted SSD. The SSD carrier tray is installed in a user-accessible slot on the instrument's rear panel. In this case, the sanitization procedures above still apply, but the SSD may be easily removed or swapped without disassembling the instrument. A spare removable SSD with pre-installed instrument operating software may be ordered from the Boonton Service Department as part number 4500C-RSSD.

Option 015 is also available as a retrofit for existing instruments currently equipped with the standard, internal SSD. The retrofit kit is Boonton part number 4500C-215, and must be installed by an authorized Boonton service center.

To remove the Removable SSD, turn off instrument power and eject the card by pressing the small button next to the drive carrier slot on the instrument's rear panel.

To install a Removable SSD, make sure instrument power is off, then insert the drive carrier fully into the carrier slot on the instrument's rear panel. When properly inserted, the eject button should extend slightly.