Instrument Security Procedures

Model:

2680A and 2686A

Product Name:

2680 Series Data Acquisition Systems

Instrument Description:

The 2680A Data Acquisition System and 2686A Data Logging System measures DC and AC RMS voltage, temperature, resistance, and frequency, as well as other types of measurements derived using computed channels. It communicates via Ethernet to provide data logging to and control from a host computer. Up to six slots are provided for A/D converter and/or DIO modules.

Memory Description:

The Fluke 2680 Series Data Acquisition System has the following memory on up to five different Printed Circuit Assemblies, and for the 2686A on an optional, removable PCMCIA card:

Controller (A4) PCA –

- − The Flash Memory is an electrically erasable and programmable 4M byte memory that stores instruction code for the microprocessor, and Instrument and Communications configurations. The instruction code is loaded at the factory or in Service and is not user accessible. The Communications and Instrument configurations are set by the user, and can be cleared with the procedures below.
- − The Synchronous DRAM (SDRAM) provides 32M bytes of data storage for the instrument using four 8M byte SDRAM devices. This includes operating memory for the microprocessor and temporary storage of measurement data. The SDRAM is volatile memory that clears when power is removed from the instrument.
- − The microprocessor also has an internal 8K bytes of RAM, with a 4K byte instruction cache and a 4K byte data cache. This volatile memory clears when power is removed.
- − The FPGA has 48K bits of embedded RAM. This volatile memory clears when power is removed

Display (A2) PCA –

- − The Display Controller is a single-chip microcomputer with 24K bytes of Flash memory for instruction code and < 1K byte of RAM used for operating memory. The instruction code is loaded only at the factory and is not user

accessible. The internal RAM is volatile memory that clears when power is removed from the instrument.

Early versions of the Display assembly had mask ROM or One-Time-Programmable EPROM instead of Flash memory for the instruction code; in either of these cases, this memory was programmed in the factory and not user accessible.

Module Power Supply (A31) PCA -

– The EEPROM on this PCA provides 2K bits of measurement calibration data storage. Measurement calibration data is stored during calibration at the factory or in a Service facility, and is not user accessible. One A31 PCA is used for each A/D converter PCA.

PAI or FAI A/D Converter (A3) PCA –

– The Flash ROM is 128K byte of memory that contains the internal A/D Inguard microcontroller instruction code. The instruction code is loaded at the factory or in Service and is not user accessible.

– The RAM is 128K byte operating memory for the Inguard microcontroller. The RAM is volatile memory that clears when power is removed from the instrument.

– The microcontroller has an internal 1152 bytes of RAM. This volatile memory clears when power is removed.

Digital Input/Output (A6) PCA –

– The DIO controller is a single chip microcontroller with 32K bytes of One Time Programmable (OTP) code memory. The instruction code is loaded at the factory or in Service and is not user accessible.

– The microcontroller has an internal 1024 bytes of RAM. This volatile memory clears when power is removed.

Memory Cleaning Instructions:

Use the following procedure to clear the 2680A or 2686A Communications configuration memory:

- Turn off the power switch on the instrument's rear panel.
- Hold down the 'COMM' key on the instrument front panel and turn on power to the instrument.
- Continue to hold the COMM key until the instrument beeps and momentarily displays "**rESEt**" (Reset)
- Release the COMM key.

The Communications configuration is now reset.

The Communications configuration Reset sets the instrument to factory default parameters: BCN = 1, Line Frequency = 60, Baud Rate = 9600, and Isolated Network mode; this also resets the instrument's TCP Socket Port and IP Address. (This information is taken from the 268XA Service Manual page 6-11.)

The Instrument configuration is Reset when Calibration mode is exited, or by executing the *RST or *TST? Commands over the RS-232 interface. (This is shown on pages 6-11 to 6-13 of the 268XA Service Manual.)

Media Memory (2686A Only):

The 2686A Data Logging System has a PCMCIA memory card slot that can use ATA memory cards for storing up to 2G bytes of instrument configuration and measurement data.

The PCMCIA card can be cleared in a PC with a compatible card slot, or the following procedure can be used to clear the PC card in a 2686A:

- Start up the Fluke DAQ software on a PC and connect to the 2686A.
- Click the PC Card FORMAT button on the DAQ software screen.
- Click YES on the dialog box that asks whether you are sure you want to format the PC card.

The memory card will be cleared and made ready for use. (This information is taken from page 3-34 of the 2680A/2686A Users Manual.)