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# **Instrument Security Procedures**

#### Model:

Fluke 1750

#### **Product Name:**

1750 Power Recorder

### **Instrument Description:**

Three-Phase Power Quality Recorder

### **Memory Description:**

The 1750 Power Recorder has numerous internal non-volatile memory devices for holding instrument firmware and data:

- Dedicated flash memories store CPU boot firmware and Bluetooth radio embedded processor firmware.
- An internal Compact Flash memory card stores CPU and DSP application firmware, FPGA configuration, flash memory and configuration backup files, application log files, application data-capture files, and user-inserted annotations.
- A small microcontroller has firmware in on-chip flash memory.
- A battery-backed real-time clock stores date and time.
- A small EEPROM stores calibration constants and other instrument-specific data such as serial number, recorder name, recorder password, recorder Ethernet network address, recorder Ethernet MAC address, and Bluetooth Device address.

An externally accessible Secure Digital card socket provides additional non-volatile data storage when a card is present.

The 1750 Power Recorder has an internal uninterruptible power supply (UPS) that keeps the 1750 operating and maintains the values of otherwise volatile registers, FPGA configuration, static RAM, and dynamic RAM memories during power interruptions of up to five minutes. These memories contain copies of application firmware, FPGA configuration, and working data.

### Memory Cleaning Instructions:

 Connect to the 1750 Power Recorder using either Fluke Power Analyze (FPA) running on a compatible PC connected via Ethernet or Fluke Power View (FPV) running on the supplied PDA connected wireless via Bluetooth. If the 1750 is password protected, the user must know and enter the password before proceeding.

Note

For more information, detailed step-by-step procedures start on page 3.

- 2. Use the "Erase 1750 memory" feature of either FPA or FPV to clean application data-capture files and user-inserted annotation files stored in the internal Compact Flash memory card.
- 3. Use the "1750 SD Memory" feature of FPV to clean files from the Secure Digital card if the SD card is present in the 1750 Power Recorder SD card socket.
- 4. Use the "1750 Setup" feature of either FPA or FPV to clean user-accessible recorder configuration data such as recorder date and time, recorder name, recorder password, and recorder Ethernet network address by setting data fields to 0 or blank as appropriate.

Note Cleaning the Ethernet network address will render the Ethernet interface unusable and cause the Ethernet connection to be lost. Be sure to complete the previous steps first.

5. Remove external AC power continuously for at least six minutes. The internal UPS will power down after five minutes at which time the application firmware, FPGA configuration, and working data will be lost from volatile memory.

# Memory Cleaning Limitations:

CPU boot firmware and Bluetooth radio embedded processor firmware in dedicated flash memories, CPU and DSP application firmware, FPGA configuration, and flash memory and configuration backups in the internal Compact Flash memory card are factory programmed or updated with Fluke field service authorized upgrades, contain no user data, are not unique to the instrument, and cannot be cleaned.

The internal Compact Flash memory card contains application log files that cannot be cleaned. They save a limited rolling history of status and diagnostic information for the instrument for use by service personnel.

The calibration constants, recorder serial number, Ethernet MAC address, and Bluetooth Device address that are stored in the small EEPROM cannot be modified by the user and cannot be cleaned.

The 1750 Power Recorder does not provide secure erasure of memories/files. Consequently, it may be possible to recover data from the 1750 even after these memory cleaning instructions have been followed. In addition, some files that cannot be cleaned by this procedure, such as application log files, may contain Ethernet network addresses and other information that could conceivably be used to identify specific instruments, when and where they recorded data, and other potentially sensitive information.

# Fluke Power Analyze

#### To clean user data from the Compact Flash card:

- 1. Using Fluke Power Analyze (FPA), connect to the Power Recorder to be cleaned. If the 1750 is password protected, you must enter the password at this time.
- 2. Select Tools > Erase 1750 Memory.

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For Help, press Fi	1	Connected to: Odin <218>//129.196.215.34 3 Phase W/ve	120V 60Hz

3. Click **OK** to the dialog "Erase all data from Recorder?"



4. Click OK to the dialog "Recorder data erased."



### To clean user-accessible configuration data in the EEPROM:

- 1. Using FPA, connect to the Power Recorder to be cleaned.
- 2. Click the **1750 Setup** button as shown.
- 3. Type some non-empty string in the "Recorder Name" field (e.g., change "1750 Power Recorder <218>" to "0").
- 4. Restore Swap Connections settings back to defaults: set both Volts and Amps to A-A, B-B, C-C, N-N, G-G (or L1-L1, L2-L2, L3-L3, N-N, G-G).
- 5. Restore the Voltage/Current Ratio defaults to 1:1.
- 6. Click Apply.

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7. Click **OK** to the "Settings saved" dialog.

Fluke Power Analyze 🔀				
⚠	Settings saved			
Ĺ	OK			

Note

The following steps will make the Power Recorder inaccessible via the Ethernet connection.

- 8. Select the Network Address / Use This Address radio button.
- 9. Set the fields in "Network Address" to zeros.
- 10. Click Apply.

Fluke Power Analyze - [memory cleaning.odn]		
File Edit View Tools Window Help		- 8 ×
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Obtain Address Automatically                • Use This Address                 • Use This Address                 IP Address                 IP Address                 Subnet Mask                 Default gateway	A: B: C: N: G:	Last changed: Apply Help
For Help, press E1	Not connected	<u>-</u>

11. Click **OK** to the "Settings saved" dialog.



# Fluke Power View

## To clean user data from the Compact Flash card:

- 1. Using FPV, connect to the Power Recorder to be cleaned. If the 1750 is password protected, you must enter the password at this time.
- 2. Select Data > Erase 1750 Memory as shown.

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3. Click Erase All.

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The screen briefly displays the message, "Downloading Data Please Wait..."

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4. Click Yes to the dialog Are you sure?

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1750 SOMV

After a few seconds, the dialog will disappear indicating that the memory has been erased.

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4 :00:00 PM 🌲	4 :00:00 PM   🚔
MB	Erase All
Data View Setup 🚺	ዄ 🎯 💡 📼 📥

## To clean user data from the Secure Digital card:

- 1. Using FPV, connect to the Power Recorder to be cleaned.
- 2. Select **Data > 1750 SD Memory** as shown.



3. Select the file to delete and press  $\mbox{Delete File}.$ 

🎥 Power View	<b>#</b> ‡ - (€ )	1:13 🐽
0		*
1750 SD MEMORY	CARD FILES	😣 🚳
Stored Files:		
File Name	Date	Size
test dnld.odn	2/6/2106	2.2
Parel Data Our	2/0/2100	0/
Free space:		
117.72 MB	Delete	File
		<b>■</b>

Selected file has been deleted.

🎢 Power View		1:14 🐽				
0		-				
1750 SD MEMORY CARD FILES 🛛 😵 🕸						
Stored Files:						
File Name	Date	Size				
test dnld.odn	2/6/2106	2.2				
117.81 MB Delete File						
		- E				

4. Repeat steps 3 and 4 until the list of "Stored Files" is empty. This indicates that all user-accessible files on the Secure Digital card have been removed as shown in the next screen.

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0			-
1750 SD MEMORY	CARD FILES	- 😣 (	•
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File Name	Date	Size	
Free space:	Delete	File	
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# To clean user-accessible configuration data in the EEPROM:

- 1. Using FPV, connect to the Power Recorder to be cleaned.
- 2. Select **Setup** > **1750 Setup** as shown.

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The "Setup" screen appears as shown next. For each of the next few steps you will select icons from this Setup screen, see the resulting screen and make changes to match the example in this document.

3. Click **OK** to return to the Setup screen.

🎢 Power View 🥂 🗱 📢 10:50 🛞
Odin <218>
1750 SETUP
Clock Probe Detect IP Address
Nominal Recorder Phase Power Name/Password Swap
Volts/Current Snapshot Ratio Period
Data Yiew Setup 🚺 ங 🎸 🤋 🔤 🔺
Note

The next step will make the Power Recorder inaccessible via the Ethernet connection.

4. From the Setup screen, select **IP Address**. If needed, enter settings to match the example and click **OK**.

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SET UP NETWORK	😣 🚯				
Obtain Address Automatically Use this Address					
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Subnet Mask 🛛 🖸	. 0 . 0 . 0				
Default Gateway 🛛 0	. 0 . 0 . 0				
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5. From the Setup screen, select **Phase Swap**. If needed, enter settings to match the example and click **OK**.

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SET UP PHASE SWAP	8	₫2
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6. From the Setup screen, select **Recorder Name/Password**. If needed, enter settings to match the example and click **OK**.

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SET UP PASSWORD		😣 🚳	
Enter Recorder Name	:		
0			
Enter Password:			
Re-Enter Password	1:		
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CAP a s d f g h	j	k   ; '	
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7. From the Setup screen, select **Volts/Current Ratio**. If needed, enter settings to match the example and click **OK**.

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SET UP V/A RATIOS 🛛 😣 🚭				
<b>_ Voltage:</b> -Current:				
AN 1 :1	A 1 :1			
BN 1 :1	B 1 :1			
CN 1 :1	⊂ <u>1</u> :1			
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