

MODIFICATION RECOMMENDED –  
CORRECTS MANUFACTURING OR DESIGN DEFECTS

**E4419B-07A**

**S E R V I C E N O T E**

Supersedes:  
E4419B-07

**Agilent E4419B EPM Power Meter**

**Serial Numbers: GB39290605 / GB40202072  
US39250690 / US39400871**

**Premature RAM Backup Battery Failure**

**To Be Performed By: Agilent-Qualified Personnel**

**Parts Required:**

<b>P/N</b>	<b>Description</b>	<b>Qty.</b>
1420-0338	Lithium Battery	1
E4418-80025	Label "E4418-60028"	2

**ADMINISTRATIVE INFORMATION**

SERVICE NOTE CLASSIFICATION:			
<b>MODIFICATION RECOMMENDED</b>			
ACTION CATEGORY:	<input type="checkbox"/> IMMEDIATELY <input checked="" type="checkbox"/> ON SPECIFIED FAILURE <input type="checkbox"/> AGREEABLE TIME	STANDARDS: LABOR: 1.0 Hours	
LOCATION CATEGORY:	<input type="checkbox"/> CUSTOMER INSTALLABLE <input type="checkbox"/> ON-SITE <input checked="" type="checkbox"/> SERVICE CENTER	SERVICE INVENTORY: <input type="checkbox"/> RETURN <input type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT	USED PARTS: <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> SCRAP <input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	AGILENT RESPONSIBLE UNTIL: November 2005	
AUTHOR: FC	PRODUCT LINE: PN		
ADDITIONAL INFORMATION:			

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**Situation:**

Most of the units with the serial numbers above are likely to have a design change implemented on their Processor assembly circuit.

Two pull-up resistors were added as part of this design change. It has since been discovered that these pull-up resistors reduce the lifetime of the RAM lithium backup battery. The backup battery is needed to retain data in the memory when the unit is disconnected from the mains power supply. This will not affect measurement integrity of the unit, however the unit will lose all user data that was stored in it before the battery failure occurred. When the battery has failed it will display the following Power On Self Test error: RAM Battery Failed.

At the time the design change was introduced, the modification was not deemed to have any effect on form/fit/function, and the decision was made by the manufacturing engineering team not to change the board number, nor to create a serial prefix break for the unit.

Thus the range of serial numbers shown above will cover all defective units, but there may be some that are not affected by this particular problem. This should not be an issue, as any unit that has a backup battery failure will require investigation and repair, even if the root cause is not related to this particular service note.

This service note will provide a means of identifying units that fail as a direct cause of the design change made to the Processor circuit.

**Solution/Action:**

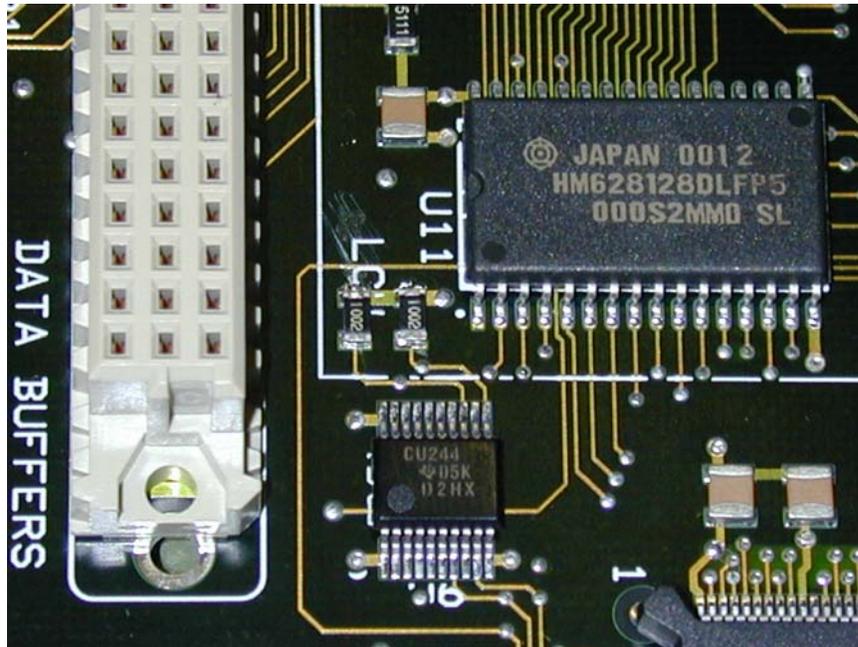
If any of the units listed above are received at the service center and are exhibiting this fault then perform the following procedure:

1. Remove the Processor Assembly (E4418-60001) from the unit.
2. Locate the board revision data marked on the LABEL on the component side (top side) of the assembly. If the revision is identified as 'E4418-60001-S' then proceed to step 4. If the revision is NOT 'E4418-60001-S' then proceed to step 3.



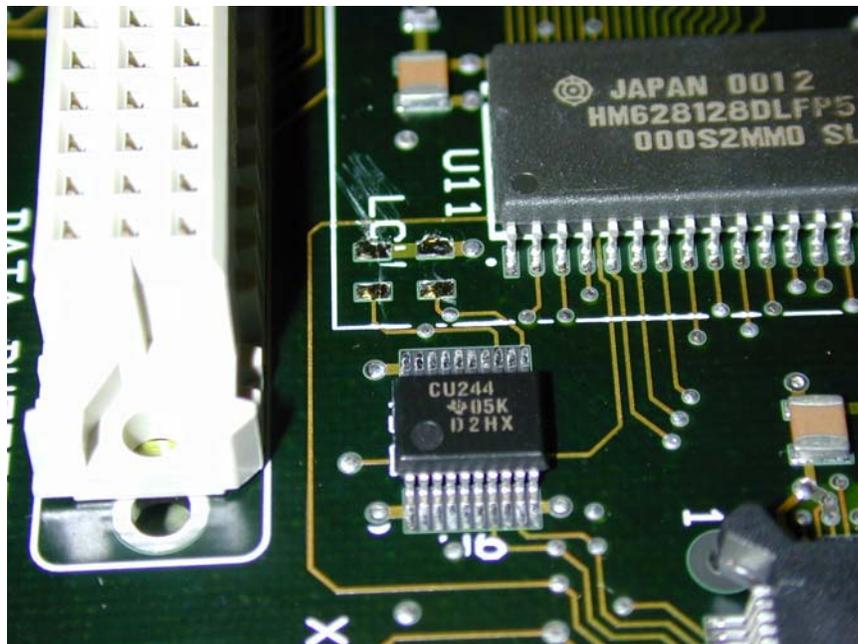
Figure 1. Label Example

3. Processor Assembly revisions prior to 'S' are not covered by this service note. RAM backup battery failures on these boards may be detailed in a previous service note, or they may simply be caused by natural aging of the unit. Check other service notes for this unit to verify this failure mode is not likely to be caused by any other documented problems. Do not carry out steps 4 to 14.
4. Locate the two surface mount pull-up resistors (see Figure 2).



**Figure 2. Location of Surface Mount Resistors**

5. Remove the two surface mount pull-up resistors (see Figure 3).



**Figure 3. Surface Mount Resistors Removed from Board**

6. Locate the LABEL on the component side (top side) of the assembly that identifies it as part number E4418-60001. Apply a label to the board near here to indicate that the assembly number has been changed to E4418-60028 (label p/n: E4418-80025).



**Figure 4. Application of New Label E4418-80025 to Component Side**

7. Locate the ETCHED label on the non-component side (bottom side) of the assembly that identifies it as part number E4418-60001. Apply a label to the board near here to indicate that the assembly number has been changed to E4418-60028 (label part number E4418-80025).



**Figure 5. Application of New Label E4418-80025 to Etched Side**

8. Remove and replace the lithium battery (battery p/n: 1420-0338).
9. Re-assemble the unit.
10. Download and install the latest firmware via the support page for the unit on the Internet.
11. Use the following commands to load the Processor Assembly with the unit serial number, option information, processor version, and system version:

```
SERV:SNUM xxxxxxxxxx  
SERV:OPT "xxx"  
SERV:VERS:PROC "C"  
SERV:VERS:SYST "2"
```

12. Power cycle the unit and verify that all the Power On Self Tests pass.
13. Perform the Zero Test and Instrument Accuracy Tests for the measurement channel of the meter. Details of these tests are provided in the Service Guide for this unit.
14. The repair and verification process is now complete.