S E R V I C E N O T E

SUPERSEDES: None

E4418B EPM-P Power Meter

Serial Numbers: GB00000000 / GB99999999
US00000000 / US99999999

WARNING

Possible Shock Hazard

Possible serious injury could occur but 2 conditions must be met:

1. That the internal protective ground is not connected. We have confidence that this will be connected correctly according to our manufacturing procedures, but we have issued this note following some recent failures - these failures were detected by our existing manufacturing procedures.

2. That there is a hazardous voltage present on an accessible conductive part of the instrument.

Duplicate Service Notes: E4416A-02-S E4418A-07-S
E4417A-02-S E4419A-08-S
E4419B-10-S

To Be Performed By: Agilent-Qualified Personnel

Continued

DATE: July 2001

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **SAFETY**					
ACTION CATEGORY:	☐ ON SPECIFIED FAILURE ■ AGREEABLE TIME	STANDARDS: 0.5 LABOR			
LOCATION CATEGORY:	☐ CUSTOMER INSTALLABLE ☐ ON-SITE ■ SERVICE CENTER	SERVICE INVENTORY:	☐ RETURN ☐ SCRAP ■ SEE TEXT	USED PARTS:	☐ RETURN ☐ SCRAP ■ SEE TEXT
AVAILABILITY:	ALWAYS	AGILENT RESPONSIBLE UNTIL : ALWAYS			
AUTHOR: FC	ENTITY: PL - PN	ADDITIONAL INFORMATION:			

Agilent Technologies

Situation:

There has recently been an issue in EPSG-Q with the HI-POT procedure used on the E4418B Manufacturing line. This procedure is carried out atthe beginning (post assembly) and the end (Electrical Inspection Test)of the final test process. The procedure involves both an Earth Leakageand Earth Continuity test on each unit. It was discovered in June 2001 that some units were failing the Earth Continuity test, and that the problem was caused by a poor connection within the line module. This line module has been in use since the product was first introduced, but we have a high level of confidence that the connection to ground will not degrade over time in previously shipped units. A risk assessment meeting was held with our product regulations expert where we looked at the assembly & test process of the E4418B PSU. Given all the information at our disposal it was decided that the risk to customers was extremely low and probably zero.

Solution / Action:

1. Internal design of the line module has been revised to improve the earth connection. Units shipped from this date onwards will use new design.

2. All units within the range of serial numbers shown above should have following checks performed on them in addition to any other procedures normally followed.

Electrical Safety

Warning: The Hi-Pot Test involves the application of a hazardous voltage to the unit under test. The following operating procedure should be adhered to in addition to any generic safety procedures in place.

- Supervisors must ensure that only competent persons are authorized to conduct this test.
- Operators should be aware that a hazardous voltage is present during test and that due care and attention is required.
- Operators must remove any ESD earthing wriststrap.
- Operators must ensure that other persons in the vicinity of the test are not allowed to participate or touch equipment during execution.
- Operators must remain well clear of the unit under test and the Hi-Pot output cord during execution.

Earth Continuity

Earth continuity is checked continuously between the mains protective earth and the metal chassis. A fail-safe operation exists whereby this connectivity must be maintained before the following test is permitted.

Dielectric Voltage withstand or strength test (this test is also known as a "flash test").

The insulation (dielectric) is tested between live and neutral (connected together) and the unit under tests protective earth.

The current that flows during the dielectric voltage withstand test is monitored; if the current exceeds a set point, an alarm is sounded and the test is automatically terminated.

Continued

Equipment

Hi-Pot Testers: Associated Research 5500DT (preferred) or equivalent

Specifications/Settings:

Rise Time (10% to 90%): less than 2 seconds Voltage: 1500V +/- 100V ac rms Duration: at least 2 seconds Current trip range: 0 to 25mA

Procedure:

1. Clear the work area. Ensure Hi-Pot Tester is turned OFF and unit under test is turned ON.

2. Ensure the Hi-Pot Tester trip current is correctly set. The trip current is directly related to, but is not the same as, the earth leakage current that flows to earth during normal operation.

   E4418B Trip Current = 7.5mA.

3. Ensure that the other programmable parameters for the test are correct on the Hi-Pot tester.
4. Connect the unit to the hi pot tester, attaching the integral power cord to the instrument power socket and the earth wire to the chassis.

5. Turn ON the Hi-Pot Tester.

6. The Tester READY lamp should light; if it does not, the unit has failed the EARTH CONTINUITY TEST and remedial action is required before continuing.

7. Press the Tester START button.

8. Check that no ALARM sounds during the full duration of the test. This constitutes a PASS for the unit under test.

9. Should the test FAIL and the audible ALARM sound, the unit may be defective and the following re-test procedure should be followed:

The test should be repeated up to a maximum of two times. Two consecutive passes without the alarm sounding should be considered a PASS. If the ALARM sounds on the first or second re-test the unit considered defective and remedial action is required. In this case please return to EPSG-Q using the Factory Return Form at Web address:

http://www.sqf.hp.com/QMD_Mktg/prodsup/Forms/returns.htm

ADDITIONAL INFO: This check should be carried out on all E4418B units returned for calibration or repair.