S E R V I C E N O T E

SUPERSEDES: NONE

E5515A Communications Test Set

Serial Numbers: US00000000/US99999999

Power Measurement Accuracy Degradation Requires Replacement of RF Interface

To Be Performed By: Agilent Technologies-Qualified Personnel

Parts Required: E5515-61804 RF Interface Repair Kit

Situation:

The Test Set's RF Interface may require replacement to resolve inaccurate power measurements. Typical degradation of 1 to 2 dB occurs over time (approx. 2 to 18 months). This is the result of ionic contamination of an RF amplifier in the RF power measurement path within the RF Interface.

This anomaly has only been noted on Test Set's with the original RF Interface, Agilent P/N E5515-61015. Use one of the following methods to determine which RF Interface is currently installed the Test Set:

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DATE: December 2000

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION RECOMMENDED**				
ACTION CATEGORY:	☐ IMMEDIATELY ■ ON SPECIFIED FAILURE ■ AGREEABLE TIME	STANDARDS: LABOR 1.5 Hours		
LOCATION CATEGORY:	☐ CUSTOMER INSTALLABLE ■ ON-SITE ■ SERVICE CENTER	SERVICE INVENTORY:	■ RETURN ☐ SCRAP ☐ SEE TEXT	USED PARTS: ■ RETURN ☐ SCRAP ☐ SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	AGILENT RESPONSIBLE UNTIL: December 2003		
AUTHOR: JR	ENTITY: PL13	ADDITIONAL INFORMATION:		

Agilent Technologies

1) Remove the external cover and physically identify the part number of the RF Interface (located underneath the display).

2) Send the following GPIB commands to the Test Set:

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OUTPUT 714; "PL13:LATCH:RFINT:EEPROM:PART_NUMBER?"
ENTER 714; PART_NUMBER$
DISP PART_NUMBER$
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Solution / Action:

Verify the performance of the RF Interface (refer to the procedure below) and replace it if it does not meet specifications (0.30 dB). Verify that the replacement RF Interface also meets this specification. Use proper anti-static protection to remove and replace this assembly. Upgrade of Test Application(s) may be required (refer to the E1980U Media Kit and instructions which are included with the repair kit).

RF Power Measurement Accuracy Drift (Manual Procedure):

Required Test Equipment:

Instrument	Critical Specifications	Recommended Models
Signal Generator	850 MHz frequency >+20 dBm maximum power	Agilent ESG Series
Power Meter	+/- 0.02 dB Instrument Accuracy	Agilent EPM Series Agilent 438A
Power Sensor	850 MHz frequency >+14 dBm mximum input +/- 4% linearity	Agilent E- Series Agilent 8482A
Power Splitter	850 MHz frequency +/- 0.05 dB tracking	Agilent 11667A

You will also need:

Male-to-Male Type-N adapter (qty 1) 2-3 foot Type-N RF coaxial cable (qty 1)

Procedure:

1) If necessary, enter the power sensor calibration factors into the power meter.

2) Zero and calibrate the power meter and power sensor.

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3) Connect the equipment as follows.

a) Connect the signal generator output to the common input of the power splitter with the coaxial cable.

b) Connect one arm of the power splitter to the Test Set RF IN/OUT connector directly through the Type-N adapter.

c) Connect the power sensor directly to the other arm of the power splitter.

4) Setup the Test Set to measure RF Power.

a) Perform a full preset (SHIFT, Preset). On Menu 1 under Call Parms, insure that Cell Power is set to -85.0 dBm or below.

b) Push the MEASUREMENT SELECTION button and select Transmit Power from the menu.

c) On Menu 3 under Call Parms, set the Test Set Receiver Control to Manual and set the Manual Freq to 850 MHz.

5) For both level settings in the table below, do the following:

a) On the signal generator set the frequency to 850 MHz. Adjust the output of the signal generator so that the power meter displays the level shown in the table below. This will compensate for splitter and cable losses (approximately 6.0 dB).

b) On the Test Set, set the Expected Power to the level in the table.

c) Set the power sensor calibration factor for 850 MHz.

d) Subtract the reading of the power meter from the reading of the Test Set and enter the calculated value in the table. The calculated value should not exceed 0.30 dB.

Results (Record calculated values):

Instrument Serial Number: _____

RF Interface Part Number: _____

Frequency	Level Setting	(dBm)	
	+ 4.0	-20.0	
850 MHz	_____	_____	(initial performance)
850 MHz	_____	_____	(after replacement, if necessary)

NOTE:

PLEASE INCLUDE A COPY OF THESE RESULTS WITH THE DEFECTIVE RF INTERFACE BEING RETURNED OR EMAIL TO: Spokane_Service@Agilent.com