MODIFICATION RECOMMENDED –
CORRECTS MANUFACTURING OR DESIGN DEFECTS

E1529B-02

S E R V I C E N O T E

Supersedes:
NONE

E1529A and E1529B 32 Ch remote strain cond. & volt unit

Serial Numbers: US00000000/US99999999

Upgrade required to improve fault tolerance

To Be Performed By: Agilent-Qualified Personnel or Customer

Parts Required:
0699-2490 **1K Ohm resistors** **Qty. Required= 8**

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION RECOMMENDED**			
ACTION CATEGORY:	[ ] IMMEDIATELY [ ] ON SPECIFIED FAILURE X AGREEABLE TIME	STANDARDS: LABOR: 1.0 Hours	
LOCATION CATEGORY:	[ ] CUSTOMER INSTALLABLE [ ] ON-SITE [X] SERVICE CENTER	SERVICE INVENTORY: [ ] RETURN [ ] SCRAP [ ] SEE TEXT	USED PARTS: [ ] RETURN [ ] SCRAP [ ] SEE TEXT
AVAILABILITY:	**DECEMBER 1, 2003**	AGILENT RESPONSIBLE UNTIL:	**DECEMBER 1, 2003**
AUTHOR: JH	PRODUCT LINE: AR		
ADDITIONAL INFORMATION:			

© AGILENT TECHNOLOGIES, INC. 2003
PRINTED IN U.S.A.

Agilent Technologies

June 25, 2003

Situation:

The current E1529B design allows user gage faults on one channel to adversely affect the measurement accuracy of the other seven common channels in the measurement bank. This channel interaction is primarily due to changes in the bias current of the channel's instrumentation amplifier. This change in current induces offset voltage across the common Wagner Resistors (reference) for the other channels in the bank. Lowering the value of the 10K Ohm Wagner Resistors to 1K Ohm minimizes this channel interaction.

Solution/Action:

This document describes the update procedure of the E1529-66511.

Tools

ESD safe workbench
#2 Phillips or PoziDriv screwdriver
SMT repair equipment

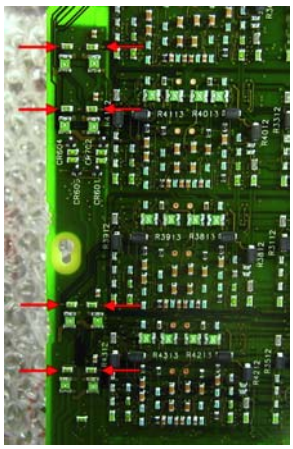
Material (per module)

Eight (8) 0699-2490 1K Ohms 0.1% 1/8W 1206 resistors
One (1) ERC label 4318

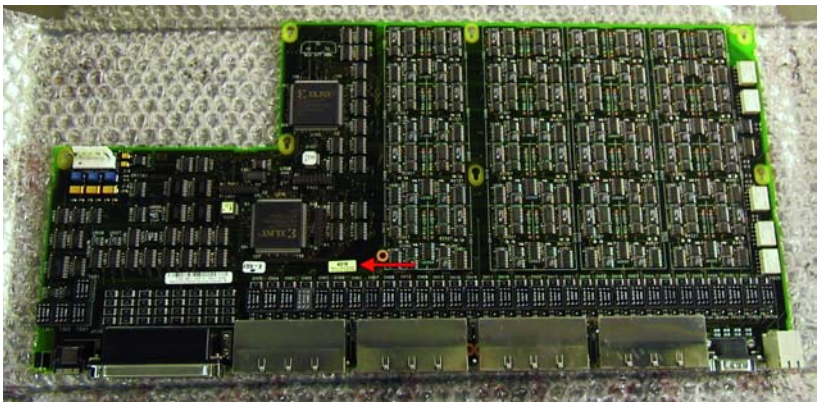
Update Procedure

Note: All repairs should be done on an ESD safe workbench using recommended SMT repair equipment and procedures. Make sure the E1529B module is unplugged prior to servicing. Dangerous exposed supply line voltages are present on the inside of the product when powered. Remove all connections from the front panel connectors prior to beginning this procedure.

1. Board Removal – Removal of the E1529-66511 PCA from the E1529B module is very simple. Using the #2 Phillips screwdriver, remove the large screw from the top cover. Remove the cover from the lower enclosure housing, exposing the PCA. Unplug the power supply cable from the PCA. Tilt the top of module's front panel back off the connectors using a gentle back-and-forth rocking motion. Lift the front panel from the front lip of the lower enclosure housing. Slide the PCA back and then up off the standoffs in the keyhole slots.
2. Resistor Replacement – Turn the PCA over. Locate the eight (8) Wagner Resistors located along the left edge of the backside of the PCA. (see picture below) The reference designators for these resistors are: R601, R602, R604, R605, R607, R608, R610, and R611. Replace the eight (8) 10K Ohms resistors with 1K Ohms resistors. The Agilent part number for the new resistor is 0699-2490, a 1K Ohms 0.1% 1/8W 1206 resistor. The simple verification procedure should be performed at this time. (see below)



3. ERC Change – Turn the PCA over and locate the ERC label. (see picture below) Replace the existing 4239 label with a new ERC label of 4318 to reflect this modification.



4. Board Installation – Return the PCA back into the module housing by reversing the removal steps. Remember to plug the DC power cable to the PCA prior to installing the top cover.

Verification

The E1529B is not an externally calibrated instrument. As such, no post-update calibration is required. However, some measurements should be made to insure the quality and accuracy of the update.

As a minimum simple verification procedure, each of the 8 resistors installed should be measured in-circuit with a handheld ohmmeter directly across the resistor terminals. Each resistor should measure 500 +/- 2 Ohms using either ohmmeter lead polarity. In this bench configuration, each resistor is effectively in parallel with the other resistor of the Wagner pair resulting in each measuring nominally 500 Ohms.

If available, additional verification testing is recommended after the update to more thoroughly verify the product. The testing is detailed in Appendix C of the User's and SCPI Programming Manual of the Agilent E1422A Remote Channel Multi-function DAC Module with E1529A/B 32ch Remote Strain Conditioning Unit and E1539A Remote Channel Signal Conditioning Plug-on, Agilent manual number E1422-90004. The Self-Test and Bridge Resistors tests are recommended.