MODIFICATION RECOMMENDED –
CORRECTS MANUFACTURING OR DESIGN DEFECTS

8563E-10D

S E R V I C E N O T E

Supersedes:
8563E-10C

8563E Portable Spectrum Analyzers

Serial Numbers: 0000A00000 / 3943A11214

Possible Frequency Response Drift

To Be Performed By: Agilent-Qualified Personnel or Customer

Parts Required:

P/N	Description	Qty.
5086-6884	RYTHM Microcircuit	1

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION: **MODIFICATION RECOMMENDED**			
ACTION CATEGORY:	[ ] IMMEDIATELY X ON SPECIFIED FAILURE [ ] AGREEABLE TIME	STANDARDS: LABOR: 1.5 Hours	
LOCATION CATEGORY:	[ ] CUSTOMER INSTALLABLE [ ] ON-SITE X SERVICE CENTER	SERVICE INVENTORY: [ ] RETURN [ ] SCRAP [ ] SEE TEXT	USED PARTS: X RETURN [ ] SCRAP [ ] SEE TEXT
AVAILABILITY:		AGILENT RESPONSIBLE UNTIL: **June 2003**	
AUTHOR: MM	PRODUCT LINE: 12		
ADDITIONAL INFORMATION:			

Agilent Technologies

November 11, 2003

Situation:

Earlier versions of the A10 RYTHM (Routing YIG Tuned Harmonic Mixer) can exhibit a drift mechanism in the preselector. This, in turn, can cause the frequency response to drift out of tolerance in the 6.5 to 26.5 GHz range. Faulty RYTHMs can prevent proper readjustment of the flatness in this range.

IMPORTANT NOTE: THE RYTHM SHOULD ONLY BE REPLACED IF IT IS NOT POSSIBLE TO CORRECT THE FLATNESS BY PERFORMING THE FREQUENCY RESPONSE ADJUSTMENT AND THE RYTHM FAILS THE 4 dB RIPPLE TEST.

Solution/Action:

If the Frequency Response from 6.5 to 26.5GHz is found to be out-of-tolerance , perform the following steps.

STEP 1A. If the instrument is not within the serial number range listed at the top of the service note. This service note does not apply. Do not continue with any additional steps.

STEP 1B. Perform the FREQUENCY RESPONSE ADJUSTMENT. In many cases this will correct the frequency drift out of tolerance problem in the 6.5 to 26.5 GHz range. If this corrects the problem, **DO NOT** proceed to STEP 2. The Frequency Response problem has been corrected. **There is no need to replace the RYTHM**.

STEP 2. 4 dB Ripple Test: This step should only be performed after the FREQUENCY RESPONSE ADJUSTMENT was unsuccessful in correcting the frequency response failure.

The A10 RYTHM should first be tested after running the Frequency Response adjustment to verify that the A10 performance has shifted.

To evaluate the RYTHM, a source capable of 25 GHz is needed. Press [PRESET] on the spectrum analyzer. Set the analyzer to the following settings:

Center Frequency	**25 GHz**
Span	**0 Hz**
Resolution Bandwidth	**1 MHz**
Log dB/Div	**2 dB**

Connect the output of the source to the RF Input of the analyzer. Set the source to a CW frequency of 25 GHz at -10dBm. On the analyzer press [AUX CTRL], INTERNAL MIXER, PRESEL MAN ADJ. Adjust the preselector using the RPG knob to find the highest peak. (There may be two peaks). Readjust the source output level to place the signal near the second division from the top of the analyzer display. Press [MKR], MARKER DELTA. Again press [AUX CTRL], INTERNAL MIXER, PRESEL MAN ADJ and adjust the preselector with the RPG knob while looking for a possible second peak. If the difference between the amplitude of any of the peaks and the amplitude of the dip between the peaks is more than 4 dB, **AND THE INSTRUMENT FAILS THE FREQUENCY RESPONSE TEST** the A10 should be replaced.

Please note that the warranty terms of this service note only apply if the ABOVE TEST FAILS AND THE FLATNESS IS UNABLE TO BE ADJUSTED. The Frequency Response adjustment will need to be run after A10 is replaced. If the A10 passes the test, but the instrument still fails Frequency Response, either the EEROM data has changed or there is another hardware failure.

IMPORTANT: RYTHM assemblies replaced under warranty for Ripple Test and Frequency Response failures will have a failure analysis performed at the factory, if they are replaced with the exchange version of the RHYTHM.