

Modification Recommended Service Note

Supersedes:
NONE

E5055A SSA-X Signal Source Analyzer, 1 MHz to 8 GHz

Serial Numbers: MY62100108 to MY62100177
Manufacturing ID Number: N/A

DDS modification to improve performance

Parts Required:

P/N	Description	Qty.	
E5054-63061	Module DDS, for SSA-X, E505xA	2	or
E5054-69061	Refurbished Module DDS, Exch	2	

ADMINISTRATIVE INFORMATION

ACTION	X ON SPECIFIED FAILURE	STANDARDS		
CATEGORY:	<input type="checkbox"/> AGREEABLE TIME	LABOR:	9.5 Hours	
LOCATION	X SERVICE CENTER	SERVICE:	<input type="checkbox"/> RETURN	USED X RETURN
CATEGORY:	<input type="checkbox"/> ON-SITE (active On-site contract required)	INVENTORY:	<input type="checkbox"/> SCRAP	PARTS: <input type="checkbox"/> SCRAP
	<input type="checkbox"/> CHANNEL PARTNERS		<input type="checkbox"/> SEE TEXT	<input type="checkbox"/> SEE TEXT
AVAILABILITY:	PRODUCT'S SUPPORT LIFE	NO CHARGE AVAILABLE UNTIL:	5/18/2024	
	X Calibration Required	PRODUCT LINE:	WN	
	<input type="checkbox"/> Calibration NOT Required	AUTHOR:	YK	

ADDITIONAL INFORMATION:

Situation:

Customer may observe a bump of the measurement data at carrier frequency 100MHz with 10kHz offset although the performance is still within the product specifications. This bump can be observed when using a high-end 100MHz crystal as a DUT in the figure below. Keysight's standard test equipment at the service center such as a PSG will not be able to identify this issue. So, a screenshot is needed to verify the issue.



Fig 1. Measurement of DUT before replacing DDS modules

Solution/Action:

- 1) To verify the noise bump at around 10 dB/Hz, follow the steps below.
 - a. Connect DUT (high end 100MHz oscillator) to RF port.
 - b. Preset to measure phase noise. You can see carrier frequency as about 100MHz in the screen.
 - c. Set start offset to 1Hz.
 - d. Set correlation to 100 as the minimum. A user can't see this issue without correlation.
 - e. The user will see the bump at about 10kHz offset frequency.
- 2) If the noise bump is visible, send to the unit to the nearest service center (or factory) and Keysight will replace the DDS modules and do a re-calibration.
- 3) The modified modules should resolve the issue on any units. So, the verification of disappearing the bump is not needed. If the unit passes the standard Performance Verification test after the DDS modules are replaced, the unit can be returned to the customer.

Note: The DDS' part number is the same as the original part number because only the components

on the PCB changed. All inventoried modules have been reworked. After replacing the DDS modules, the measurement result would be as below.



Fig 2. Measurement of DUT after replacing DDS modules

Revision History:

Date	Service Note Revision	Author	Reason for Change
3 Mar 2023	01	YK	As Published