

N5173B-10

Information Only Service Note

Supersedes:
None

N5173B X-Series EXG Microwave Signal Generator

Serial Numbers: ALL

The Problem – A3 RF assembly boards showing Heater and Unlock errors

Parts Required:

P/N	Description	Qty.
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NONE

ADMINISTRATIVE INFORMATION

<input type="checkbox"/>	Calibration Required
X	Calibration NOT Required

PRODUCT LINE: 15
AUTHOR: PY

ADDITIONAL INFORMATION:

Situation:

Recently we noticed several A3 RF Assemblies return to factory with the following Heater and Unlock errors at the Annunciators area. It can also include errors 619, FPGA revision is invalid. Do refer to Figure 1a and 1b for the details.

Figure 1a – Heater and Unlock Errors with Invalid FPGA Rev #

FREQUENCY 6.000 000 000 000 GHz RF OFF -144.00 dBm

HEATER UNLOCK ERR

Name	Part#/Rev#	Serial#	HUID	OFR	PIC	Opts	Extr
RF	N5180-69238	23144700080	0000	000	000	0000	0000
Analog FPGA		0,0000,0000:0000					
PCI FPGA		7,0130,0000:feb9					
Ref FPGA		0,0000,0000:0000					
Synth FPGA		0,0000,0000:0000					
Invalid FPGA Rev#							
BB	N5180-60145	23140900119	0000	000	000	0000	0000
IF FPGA		2,0c11,0138:f2a7					
BBG FPGA		40c8,0762,1000:e88e					
Memory		2GB + 2GB					

ERROR: 530, ALC Detector Heater Failed

Or

FREQUENCY 6.000 000 000 000 GHz RF OFF -144.00 dBm

HEATER ERR

Name	Part#/Rev#	Serial#	HUID	OFR	PIC	Opts	Extr
RF	N5180-69238	231441900058	0000	000	000	0000	0000
Analog FPGA		ffff,ffff,ffff:ffff					
PCI FPGA		7,0130,0000:feb9					
Ref FPGA		ffff,ffff,131a:0000					
Synth FPGA		0,0000,0000:0000					
Invalid FPGA Rev#							
BB	N5180-60145	23122000012	0000	000	000	0000	0000
IF FPGA		2,1462,112e:da60					
BBG FPGA		40d6,1794,0338:e524					
Memory		2GB + 2GB					

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Figure 1b – Multiple Error 619

FREQUENCY		RF OFF
6.000 000 000 000 GHz		-144.00 dBm
HEATER		ERR
Error Queue		
619, FPGA revision is invalid; FPGA: ANALOG (found 0, expected 7).	(neu)	1/10
619, FPGA revision is invalid; FPGA: ANALOG (found 0, expected 1db01501).	(neu)	2/10
619, FPGA revision is invalid; FPGA: REFERENCE (found 0, expected 2).	(neu)	3/10
619, FPGA revision is invalid; FPGA: REFERENCE (found 0, expected 12ba131a).	(neu)	4/10
11/30/2022 11:27		

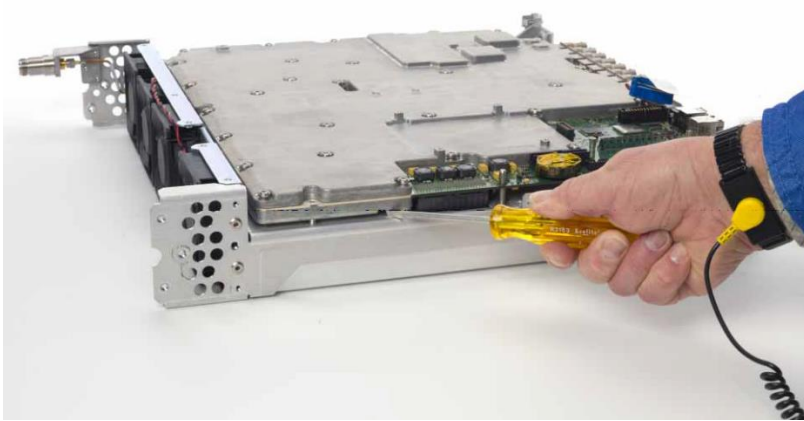
FREQUENCY		RF OFF
6.000 000 000 000 GHz		-144.00 dBm
HEATER		ERR
Error Queue		
619, FPGA revision is invalid; FPGA: SYNTH (found 0, expected 12d).	(neu)	5/10
617, Configuration Error; The backup memory contains license keys for serial number CN83000142. Use the service procedure to overwrite the backup memory.	(neu)	6/10
533, RF Analog FPGA DCM unlocked	(neu)	7/10
508, Synthesizer Unlocked; FracN Loop.	(neu)	8/10
11/30/2022 11:28		

Solution/Action:

This Service Note is to emphasize on the proper handling of the A3 RF Assembly board during removal and replacement procedure in use together with the X-Series Signal Generator Service Guide (N5180-90059), Assembly Replacement Section for A3 RF assembly.

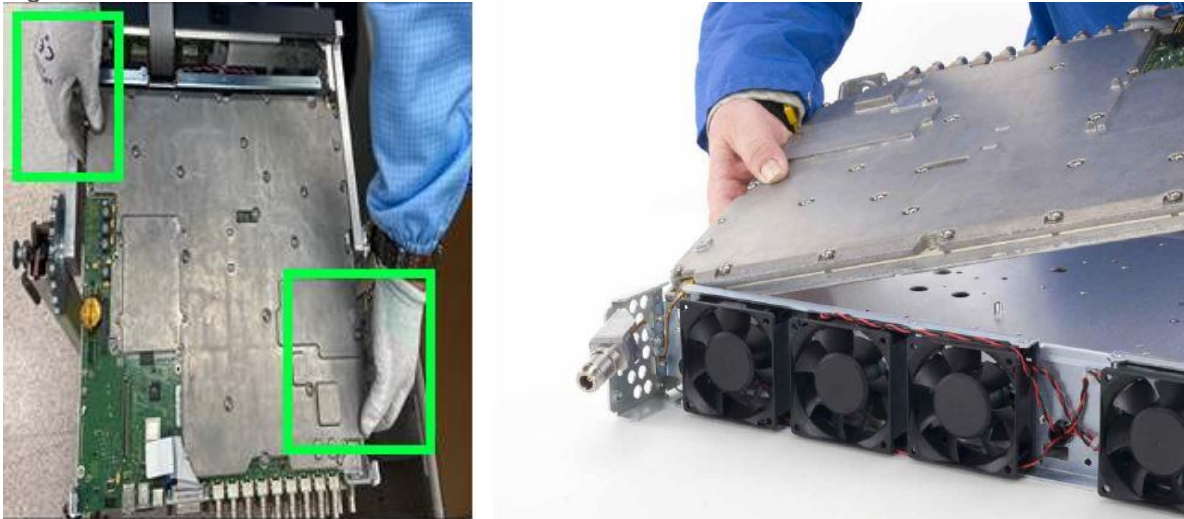
For removal, pry slots are provided on both sides of the A3 RF assembly to aid in removing of the board. Use a flat head (a wedge-shaped flat tip) screwdriver to loosen the board from the chassis as shown in Figure 2.

Figure 2



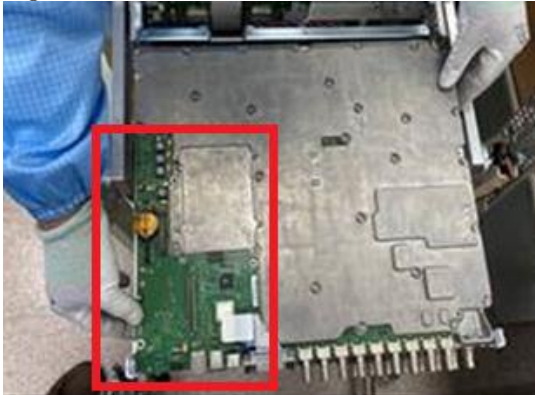
Always hold the board at the area highlighted in green as shown in Figure 3.

Figure 3



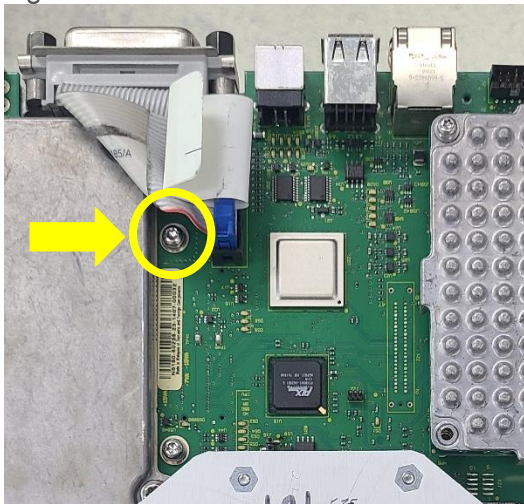
Avoid holding the board at the PCB area as shown in Figure 4.

Figure 4



Another precaution is when removing and reinstalling back the screw (refer to Figure 5), it is not necessary to remove the ribbon cable to avoid re-attaching the ribbon cable back.

Figure 5



Revision History:

Date	Service Note Revision	Author	Reason for Change
13 Dec 2022	01	Petrina Yong	As Published

