

N5166B-03

# Information Only Service Note

Supersedes:  
None

## N5166B X-Series CXG Vector 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

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

PRODUCT LINE: 15
AUTHOR: PY

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ADDITIONAL INFORMATION:

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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						

11/30/2022 11:30

Figure 1b – Multiple Error 619

<b>FREQUENCY</b>	<b>RF OFF</b>
6.000 000 000 000 GHz	-144.00 dBm
<b>HEATER</b>	<b>ERR</b>
<b>Error Queue</b>	
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	

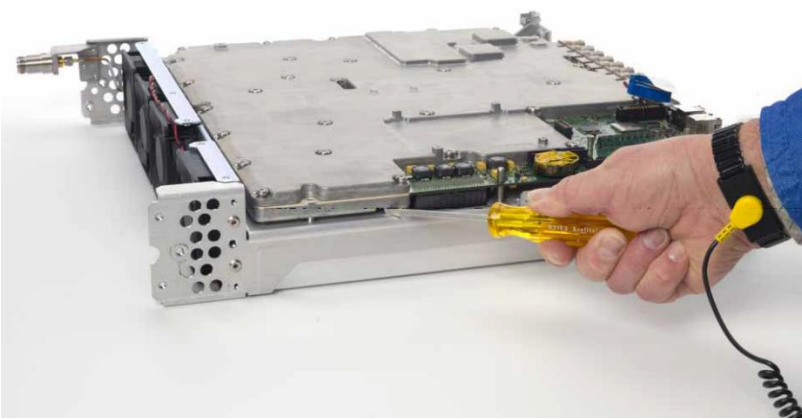
<b>FREQUENCY</b>	<b>RF OFF</b>
6.000 000 000 000 GHz	-144.00 dBm
<b>HEATER</b>	<b>ERR</b>
<b>Error Queue</b>	
619, FPGA revision is invalid; FPGA: SYNTH (found 0, expected 12d).	(neu) 5/10
617, Configuration Error; The backup memory contains license keys for serial number CN83000142. Use the service 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.

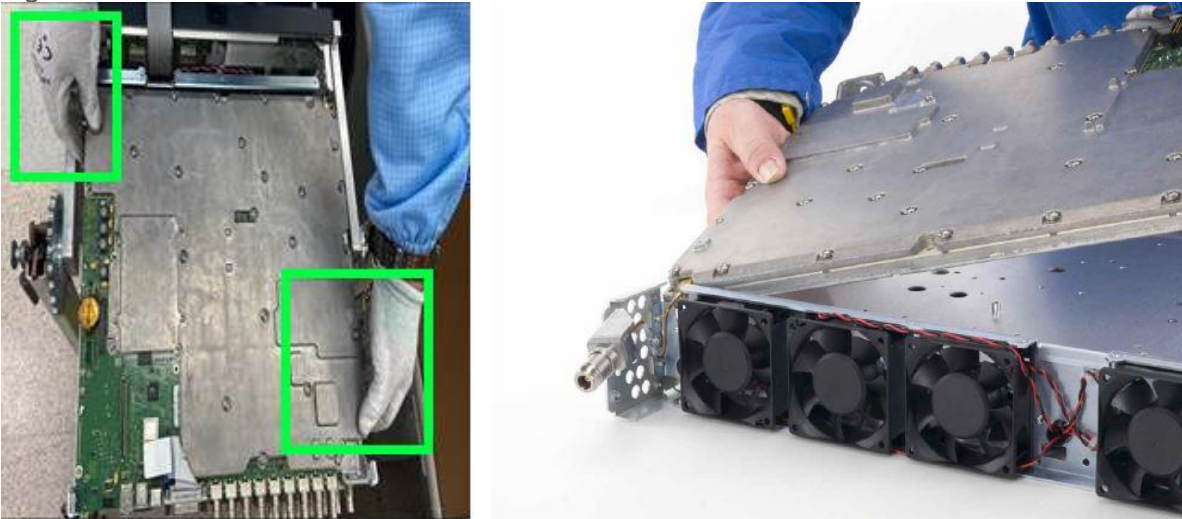
For removal, pry slots are provided on both sides of the A3 RF assembly to aid in removing of the board. Use a flat head (a wedge-shaped flat tip) screwdriver to loosen the board from the chassis as shown in Figure 2.

Figure 2



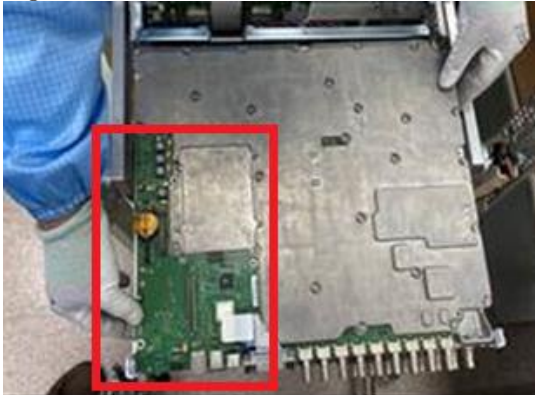
Always hold the board at the area highlighted in green as shown in Figure 3.

Figure 3



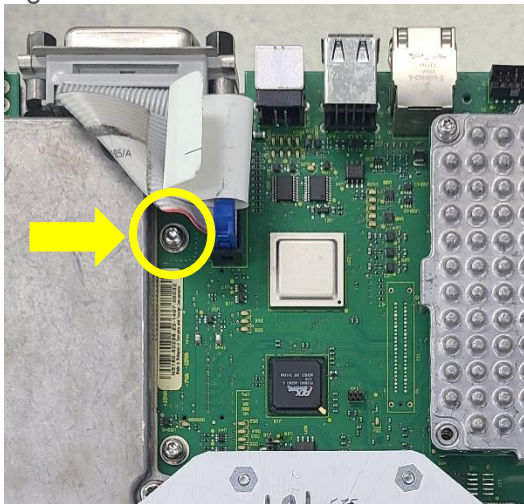
**Avoid** holding the board at the PCB area as shown in Figure 4.

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

