CONDUCTED OUTPUT POWER

XMit 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Block - DC	Fairview Microwave	SD3379	AMT	2021-09-14	2022-09-14
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding [10 log (1/D)], where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. All four AHFII antenna ports are essentially electrically identical and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1.

CONDUCTED OUTPUT POWER

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**28-Feb-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**22.6 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**23.7% RH**
Project:	**None**			**Barometric Pres.:**	**1026 mbar**
Tested by:	**Mark Baytan**	**Power:**	**54 VDC**	**Job Site:**	**TX09**

TEST SPECIFICATIONS	**Test Method**
FCC 24E:2022	ANSI C63.26:2015
RSS-133 Issue 6:2013+A1:2018	RSS-133 Issue 6:2013+A1:2018

COMMENTS

All measurement path loses accounted for in the reference level offest including any attenuators, filters, and DC blocks. Band 25 carriers enabled at maximum power is 80 watts/carrier. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 1. The total output power for multiport (2x2 MIMO, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)]. The total output power for four port operation is single port power + 6dB [i.e. 10log(4)].

DEVIATIONS FROM TEST STANDARD

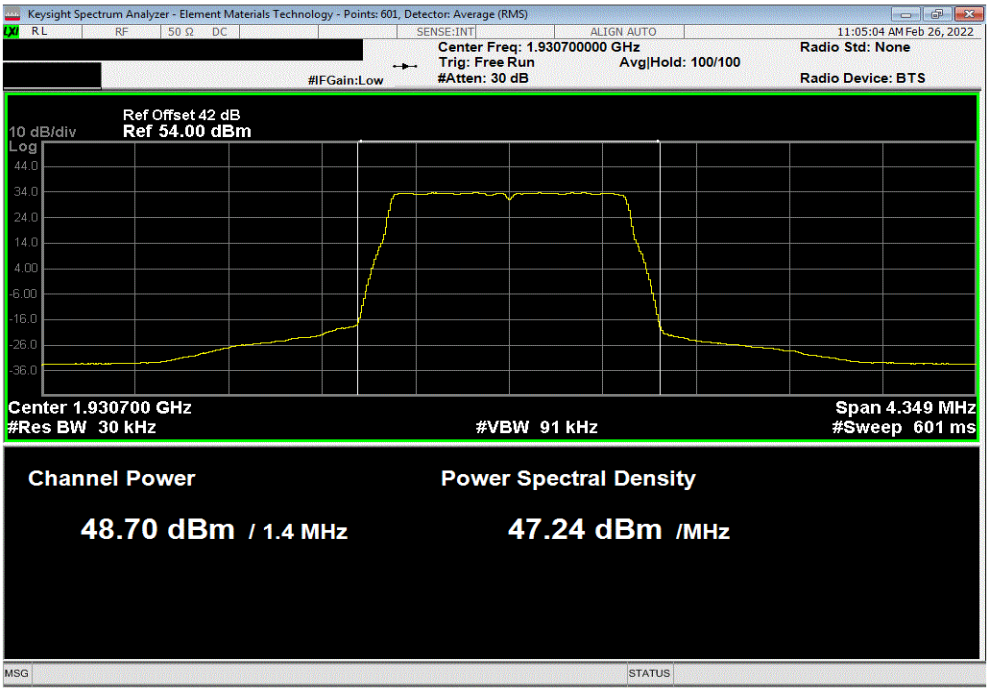
None

Configuration #	**2**	*Signature*

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier					
Port 1					
1.4 MHz Bandwdith					
256-QAM Modulation					
Low Channel, 1930.7 MHz	48.697	0	48.7	51.7	54.7
Mid Channel, 1962.5 MHz	48.808	0	48.8	51.8	54.8
High Channel, 1989.3 MHz	48.945	0	48.9	51.9	54.9
3 MHz Bandwdith					
256-QAM Modulation					
Mid Channel, 1962.5 MHz	48.83	0	48.8	51.8	54.8
Low Channel, 1931.5 MHz	48.81	0	48.8	51.8	54.8
High Channel, 1988.5 MHz	48.978	0	49.0	52.0	55.0
5 MHz Bandwdith					
QPSK Modulation					
Mid Channel, 1962.5 MHz	48.305	0	48.3	51.3	54.3
16-QAM Modulation					
Mid Channel, 1962.5 MHz	48.263	0	48.3	51.3	54.3
64-QAM Modulation					
Mid Channel, 1962.5 MHz	48.252	0	48.3	51.3	54.3
256-QAM Modulation					
Mid Channel, 1962.5 MHz	48.25	0	48.3	51.3	54.3
Low Channel, 1932.5 MHz	48.89	0	48.9	51.9	54.9
High Channel, 1992.5 MHz	49.069	0	49.1	52.1	55.1
10 MHz Bandwdith					
256-QAM Modulation					
Mid Channel, 1962.5 MHz	48.801	0	48.8	51.8	54.8
Low Channel, 1935 MHz	48.95	0	49	52	55
High Channel, 1990 MHz	49.046	0	49.0	52.0	55.0
15 MHz Bandwdith					
256-QAM Modulation					
Mid Channel, 1962.5 MHz	48.816	0	48.8	51.8	54.8
Low Channel, 1937.5 MHz	48.1	0	48.1	51.1	54.1
High Channel, 1987.5 MHz	49.078	0	49.1	52.1	55.1
20 MHz Bandwdith					
256-QAM Modulation					
Mid Channel, 1962.5 MHz	48.824	0	48.8	51.8	54.8
Low Channel, 1940 MHz	48.92	0	48.9	51.9	54.9
High Channel, 1985 MHz	49.043	0	49.0	52.0	55.0

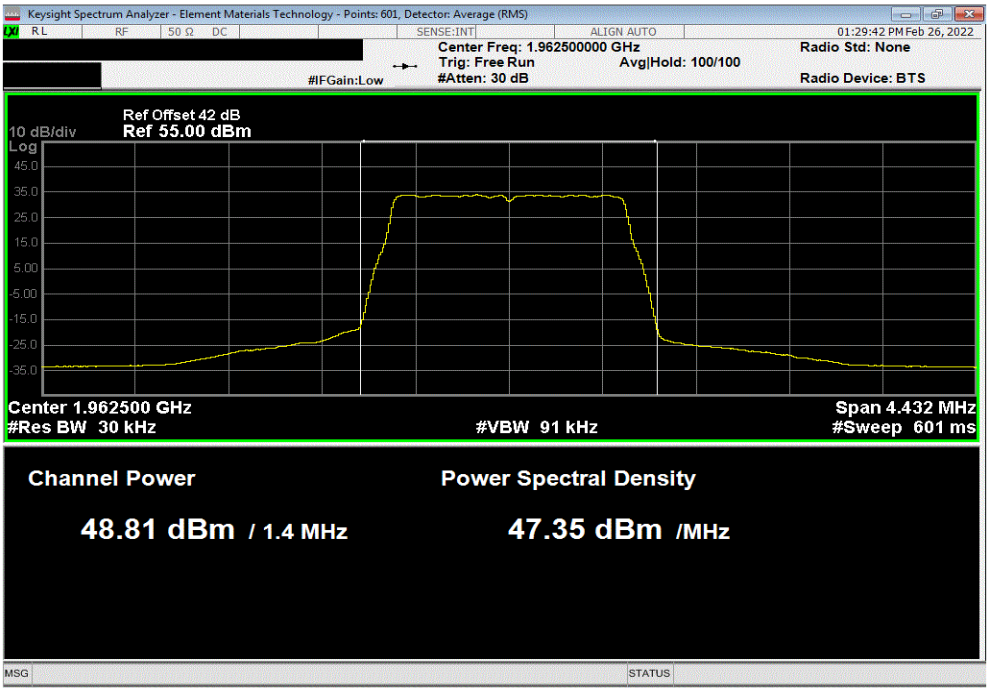
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1930.7 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.697	0	48.7	51.7	54.7	



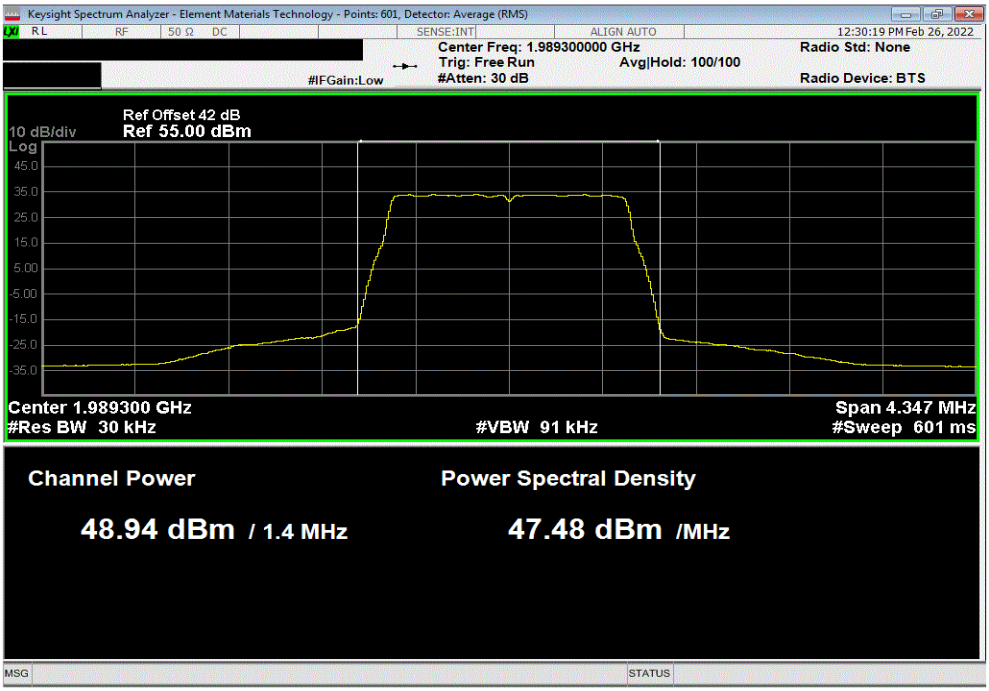
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.808	0	48.8	51.8	54.8	

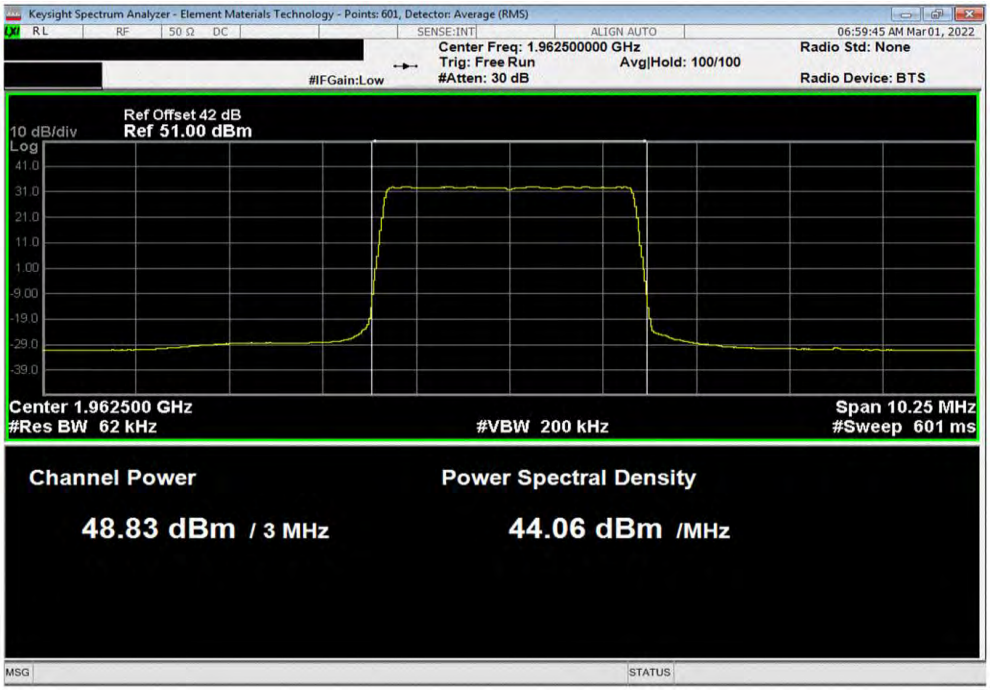


CONDUCTED OUTPUT POWER

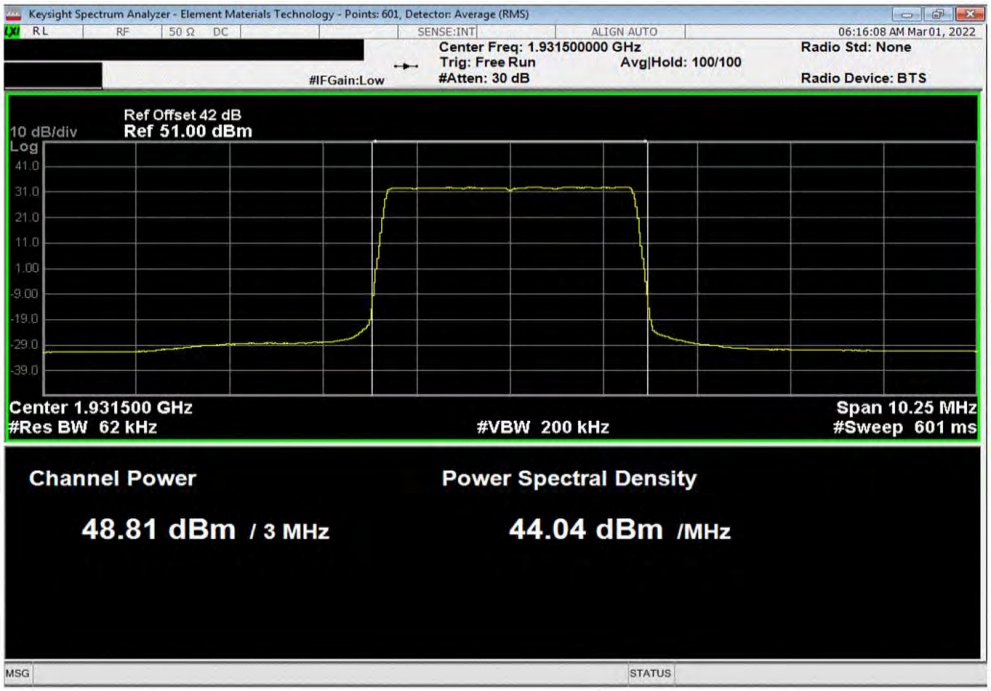
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, High Channel, 1989.3 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.945	0	48.9	51.9	54.9	



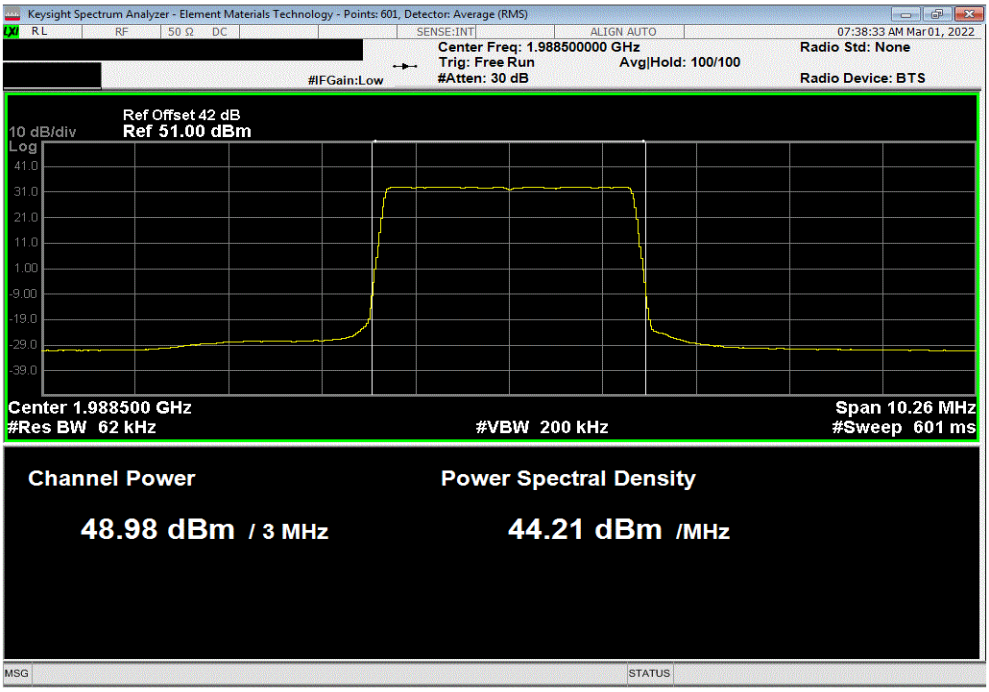
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.83	0	48.8	51.8	54.8	



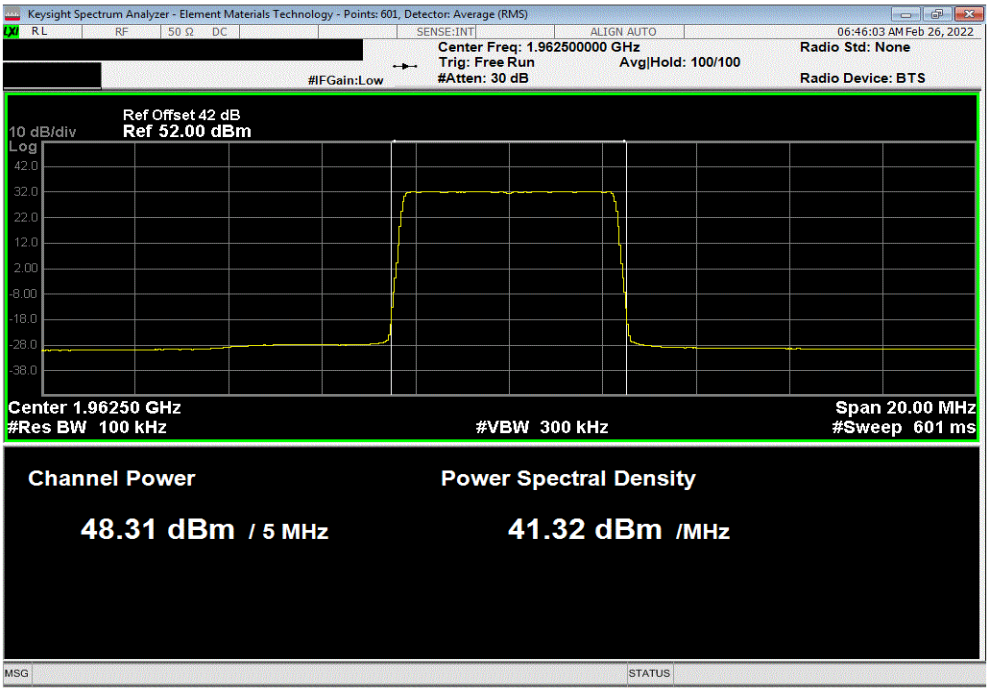
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1931.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.81	0	48.8	51.8	54.8	



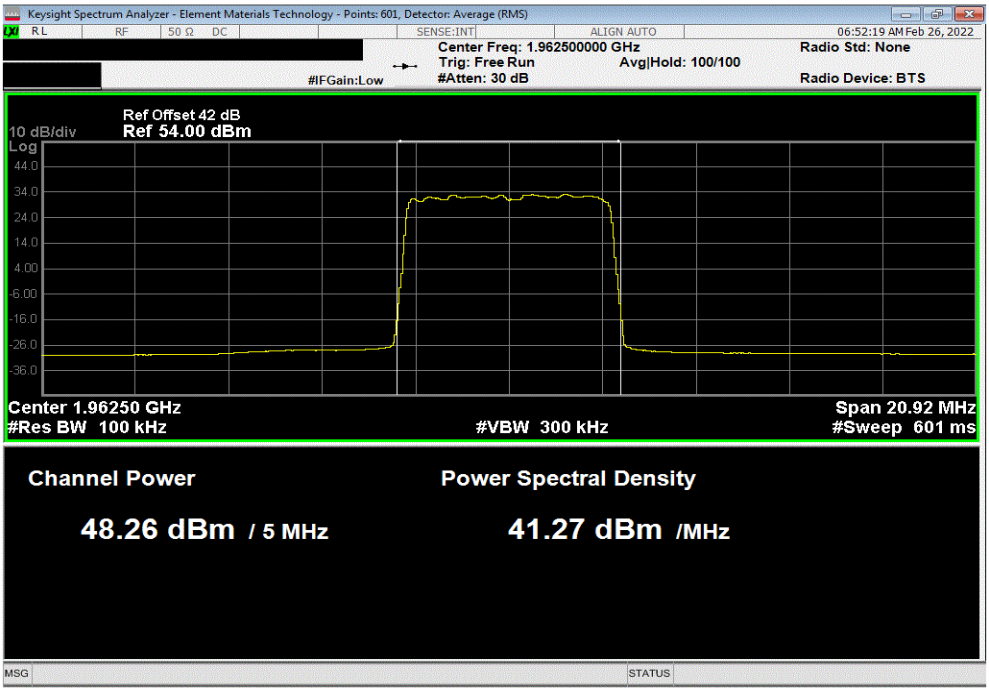
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, High Channel, 1988.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.978	0	49.0	52.0	55.0	



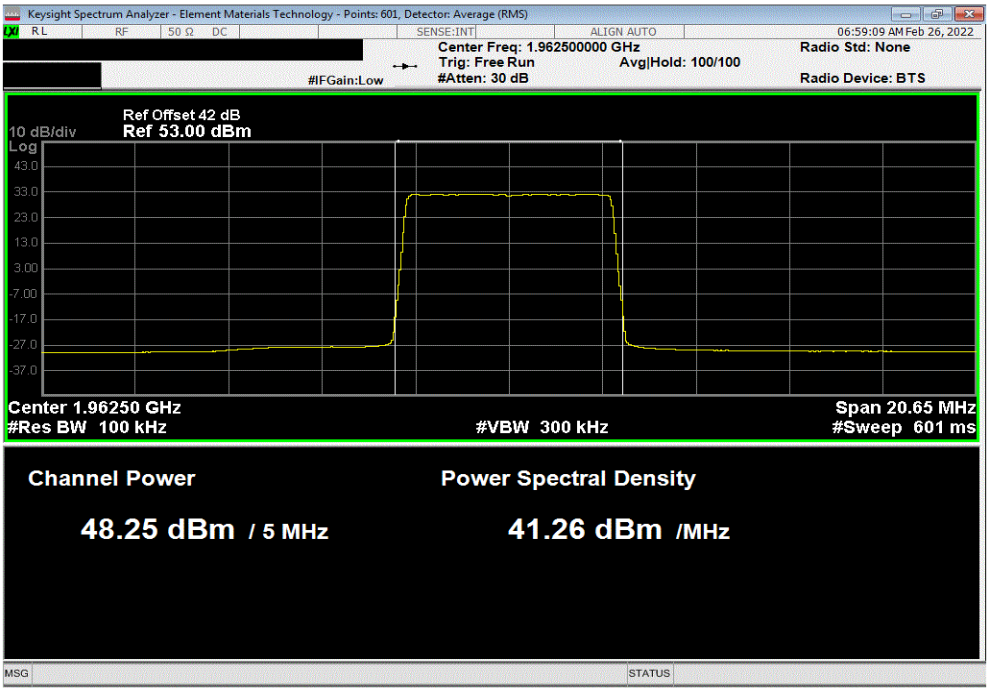
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.305	0	48.3	51.3	54.3	



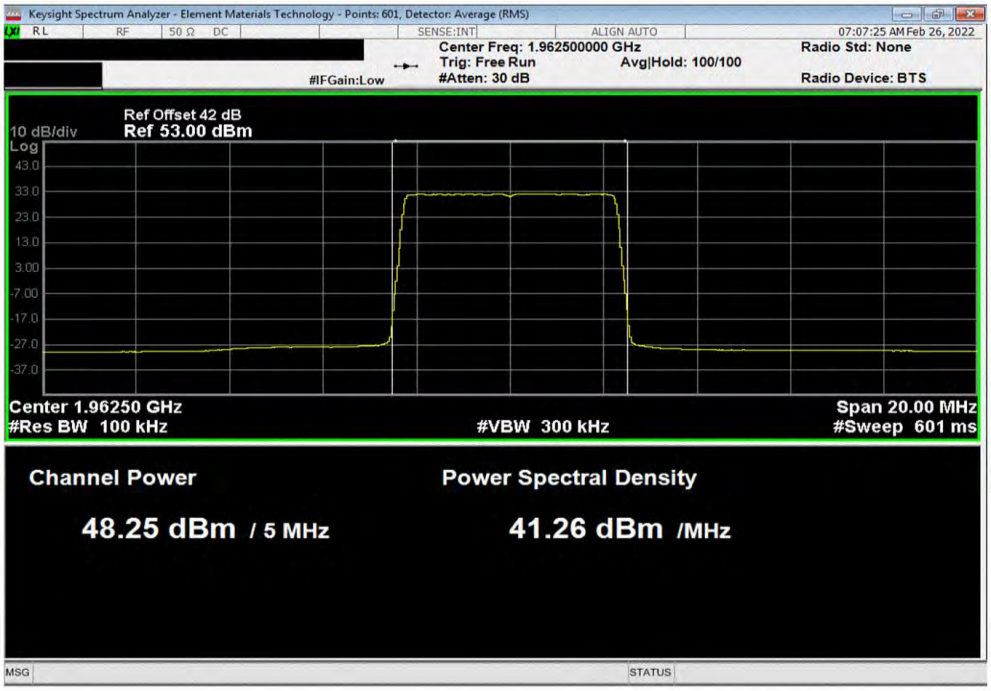
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.263	0	48.3	51.3	54.3	



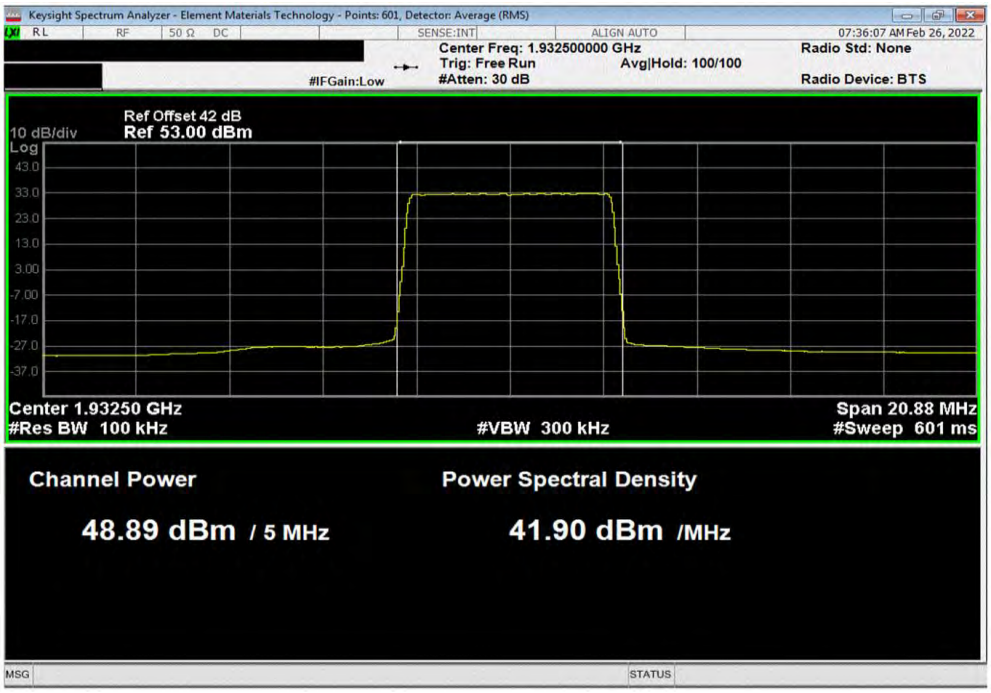
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.252	0	48.3	51.3	54.3	



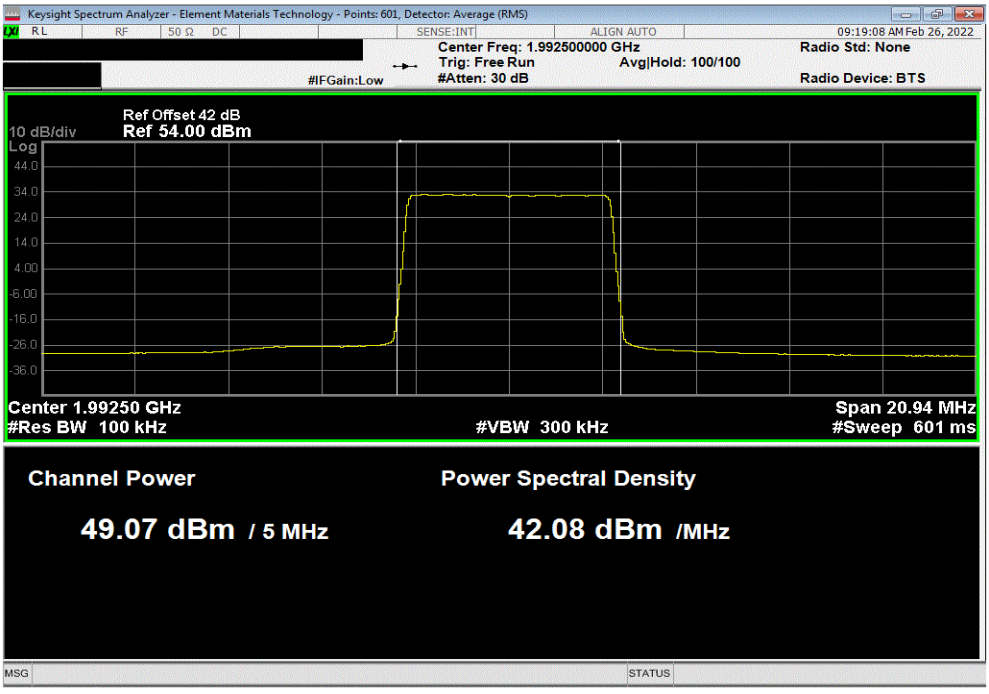
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.25	0	48.3	51.3	54.3	



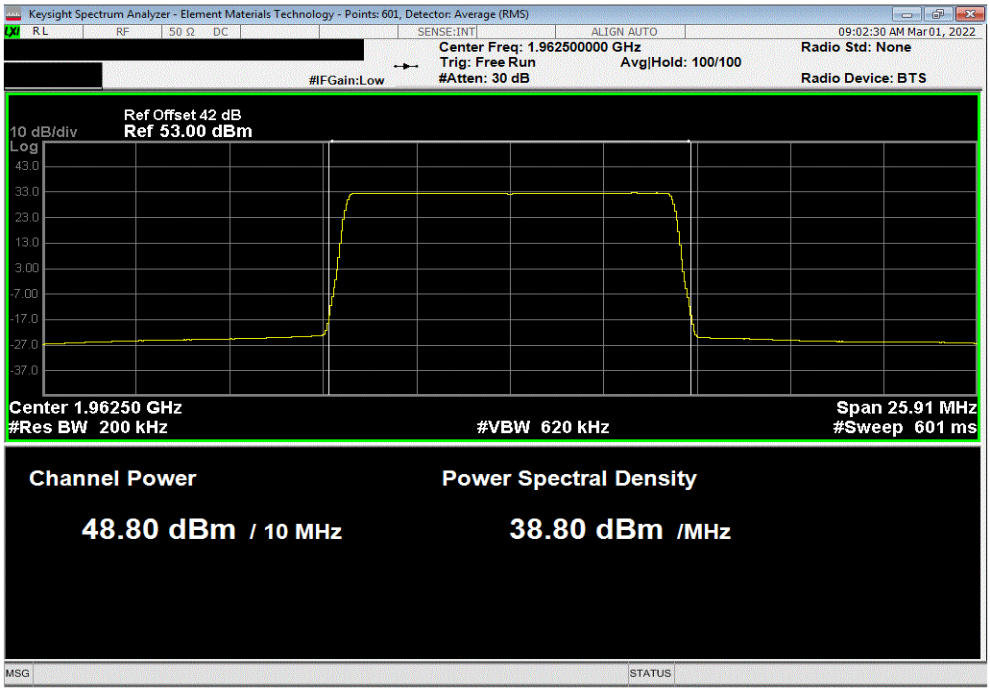
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1932.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.89	0	48.9	51.9	54.9	



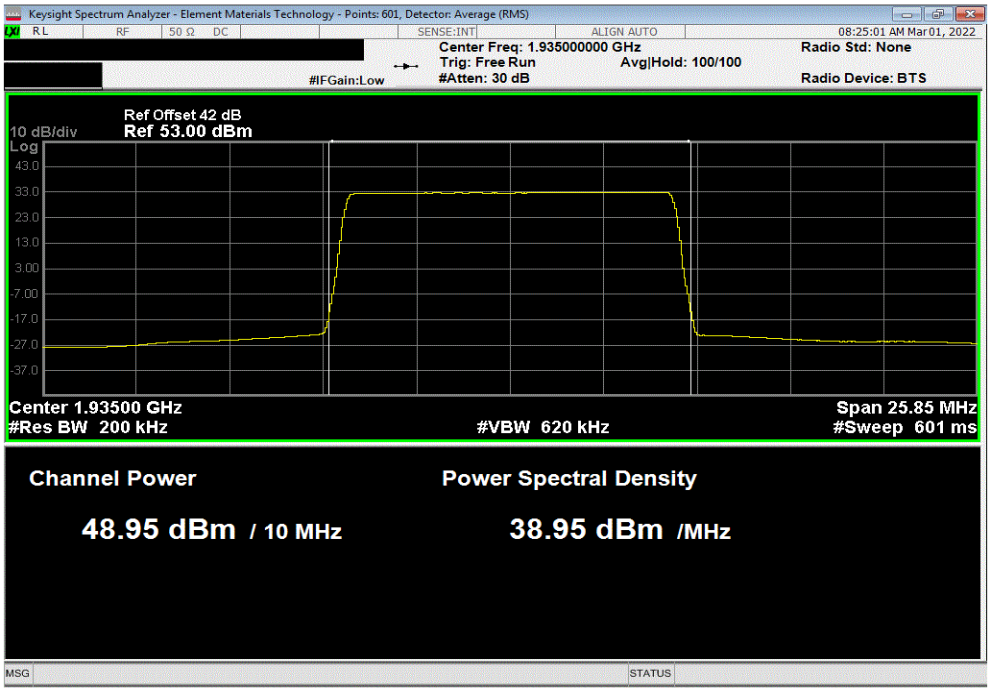
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, High Channel, 1992.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.069	0	49.1	52.1	55.1	



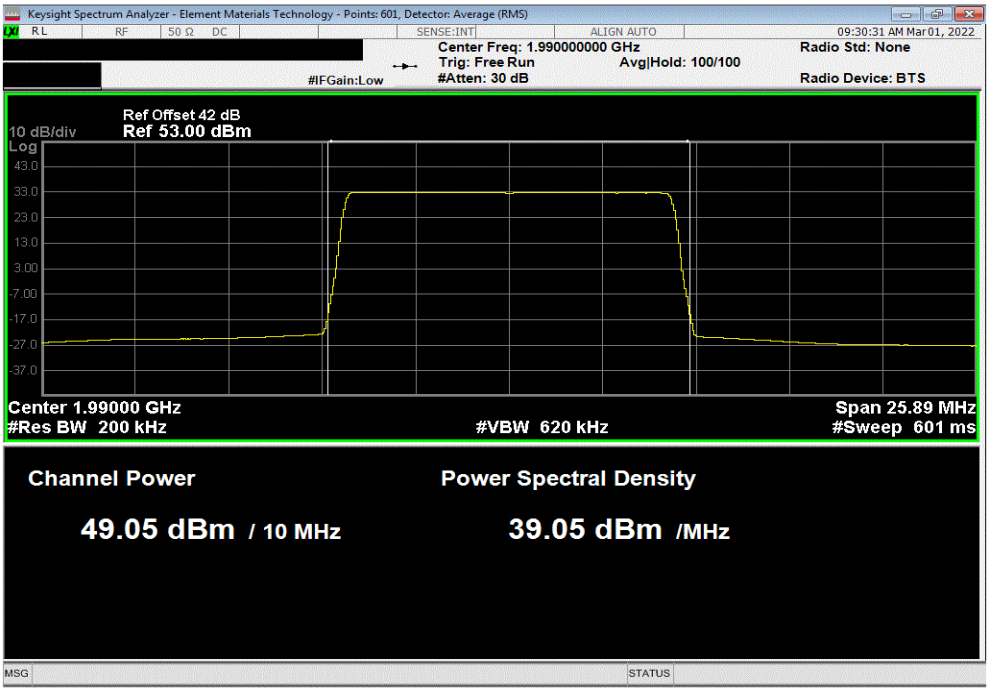
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.801	0	48.8	51.8	54.8	



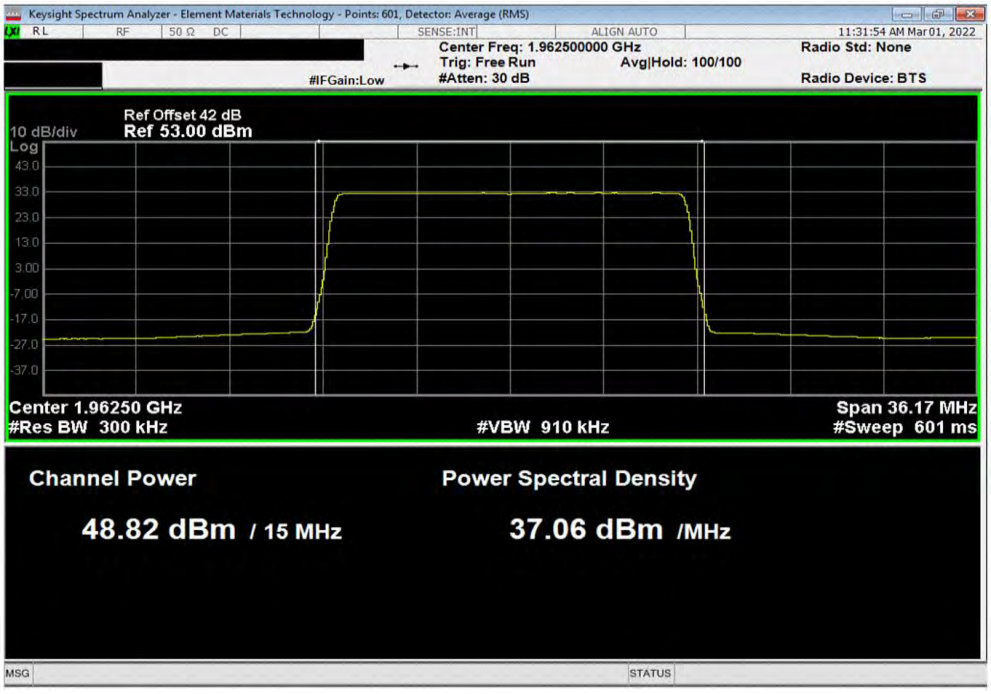
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1935 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.95	0	49	52	55	



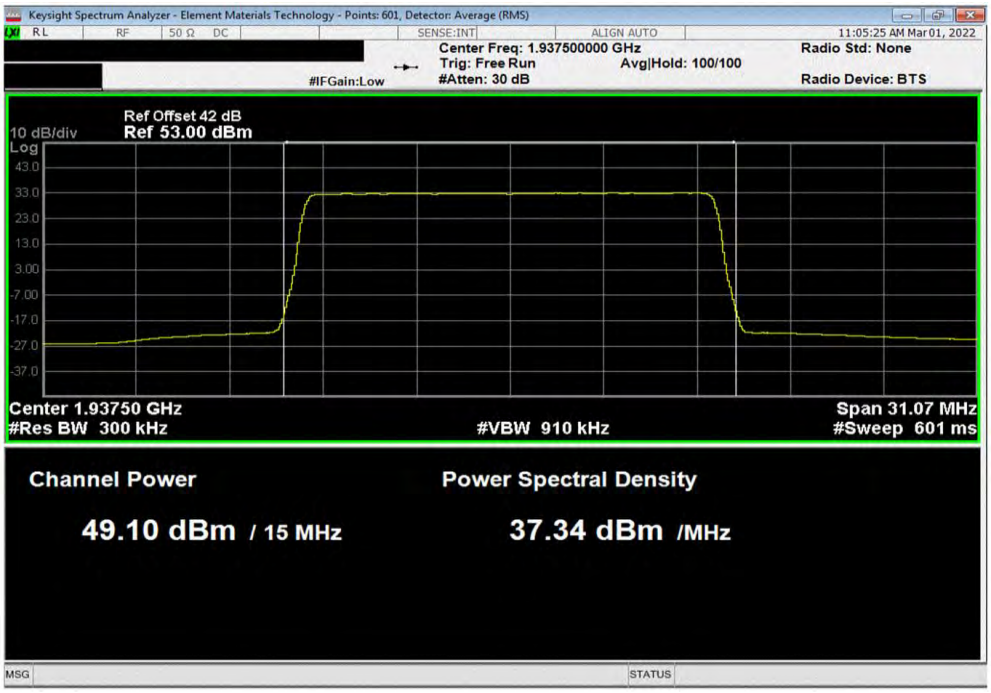
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, High Channel, 1990 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.046	0	49.0	52.0	55.0	



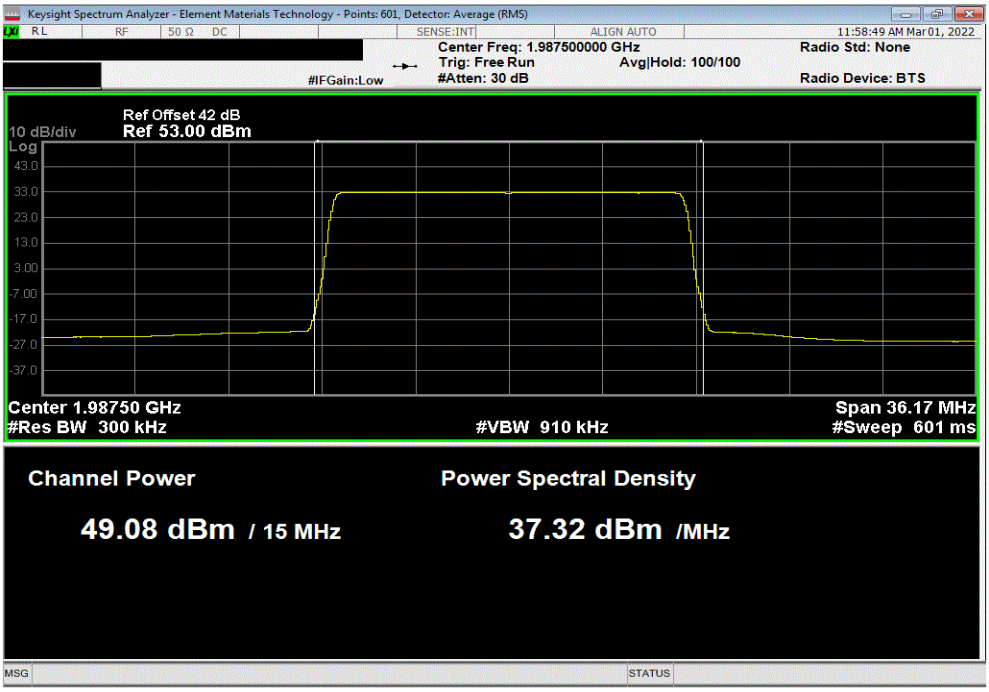
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.816	0	48.8	51.8	54.8	



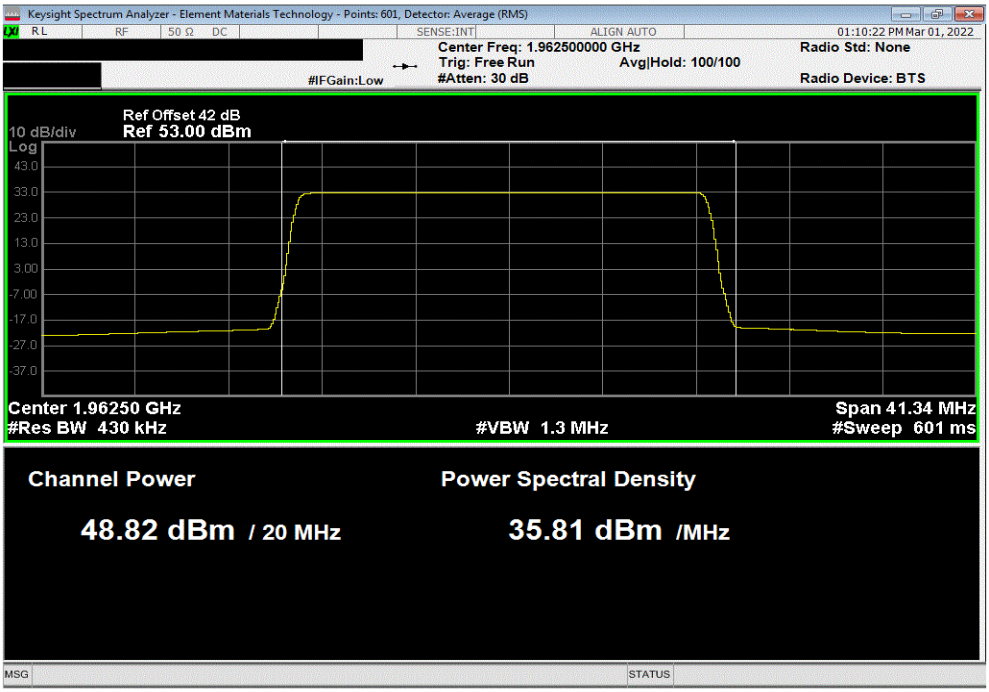
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1937.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.1	0	48.1	51.1	54.1	



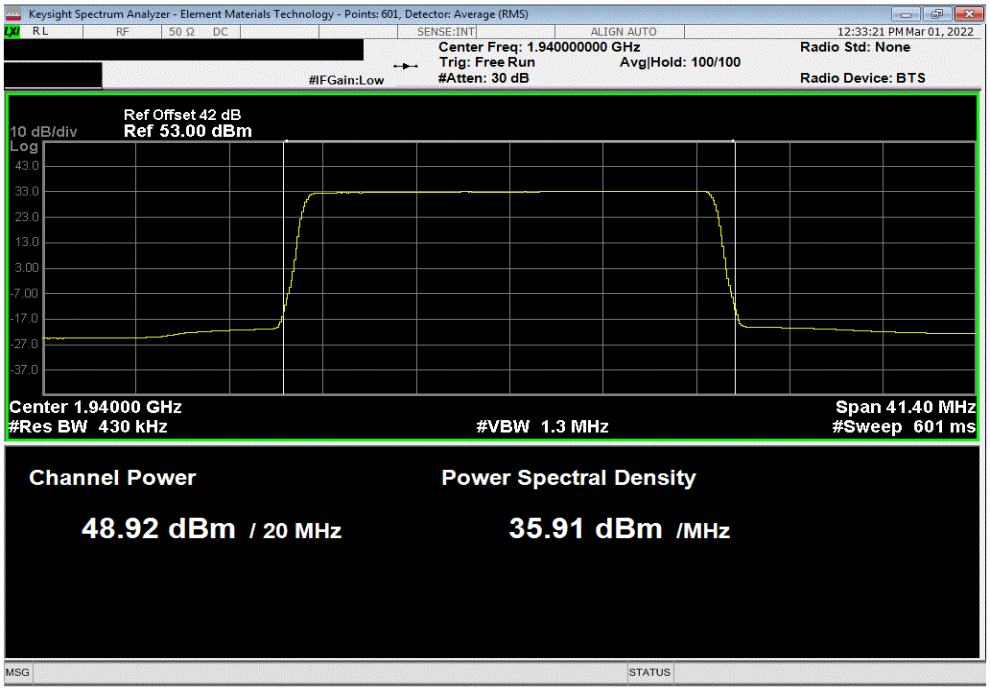
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, High Channel, 1987.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.078	0	49.1	52.1	55.1	



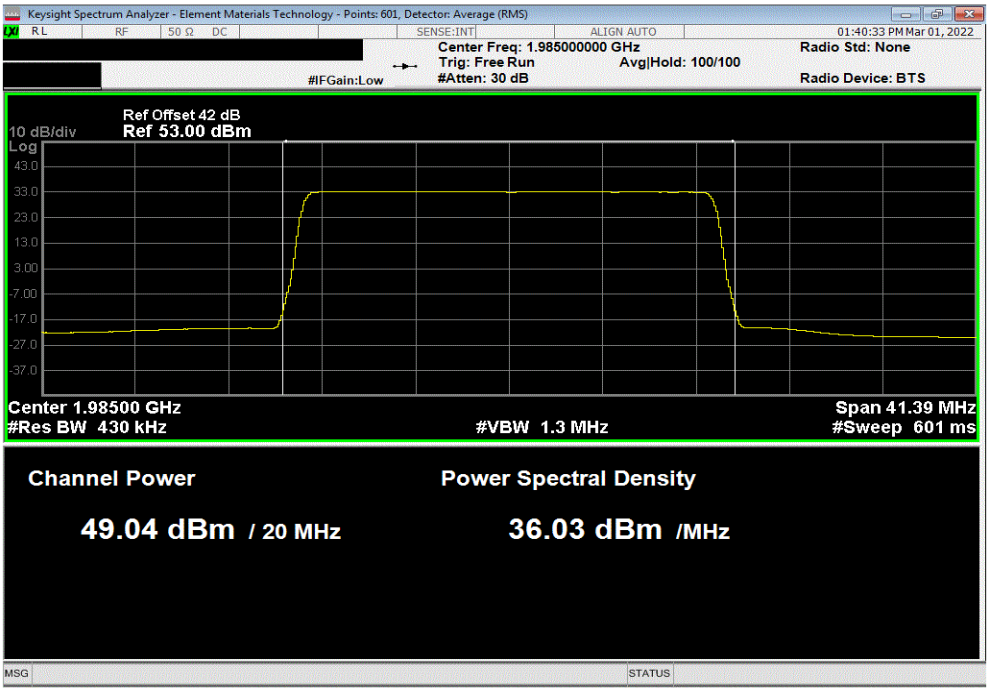
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.824	0	48.8	51.8	54.8	



Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Low Channel, 1940 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.92	0	48.9	51.9	54.9	



Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, High Channel, 1985 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.043	0	49.0	52.0	55.0	



CONDUCTED OUTPUT POWER

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**28-Feb-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**22.6 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**23.7% RH**
Project:	**None**			**Barometric Pres.:**	**1026 mbar**
Tested by:	**Mark Baytan**	**Power:**	**54 VDC**	**Job Site:**	**TX09**

TEST SPECIFICATIONS	**Test Method**
FCC 27:2022	ANSI C63.26:2015
RSS-139 Issue 3:2015	RSS-139 Issue 3:2015
RSS-170 Issue 3:2015	RSS-170 Issue 3:2015

COMMENTS

All measurement path loses accounted for in the reference level offest including any attenuators, filters, and DC blocks. Band 66 carriers enabled at maximum power is 80 watts/carrier. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 1. The total output power for multiport (2x2 MIMO, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)]. The total output power for four port operation is single port power + 6dB [i.e. 10log(4)].

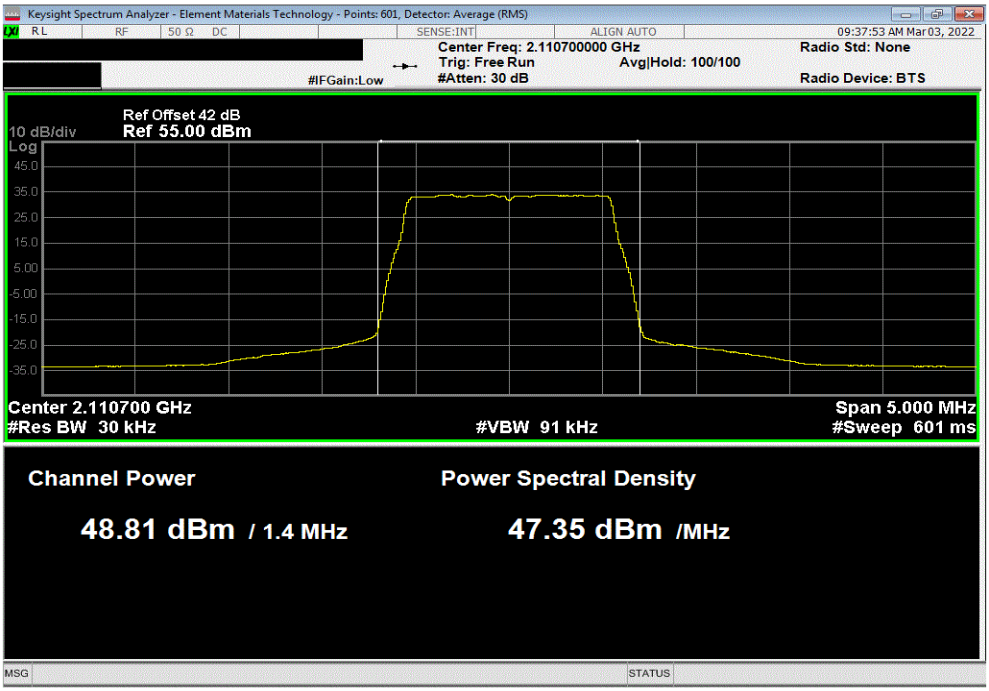
DEVIATIONS FROM TEST STANDARD

None

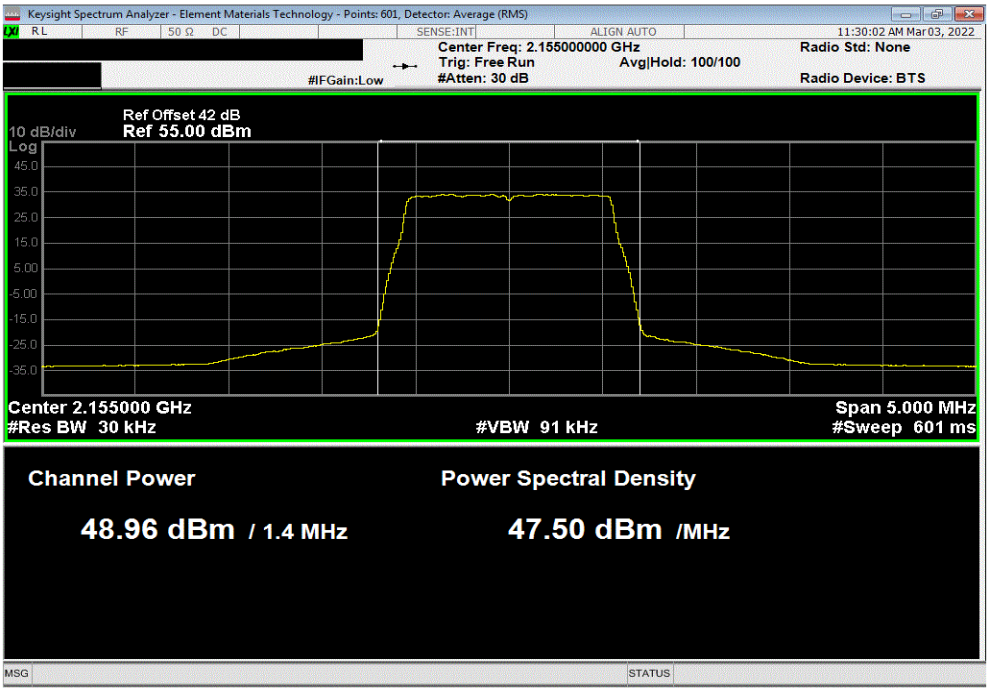
Configuration #	**2**	*Signature*

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier					
Port 1					
1.4 MHz Bandwidth					
256-QAM Modulation					
Low Channel, 2110.7 MHz	48.808	0	48.8	51.8	54.8
Mid Channel, 2155 MHz	48.964	0	49.0	52.0	55.0
High Channel, 2199.3 MHz	48.906	0	48.9	52.9	55.9
3 MHz Bandwidth					
256-QAM Modulation					
Low Channel, 2111.5 MHz	48.775	0	48.8	51.8	54.8
Mid Channel, 2155 MHz	48.995	0	49.0	52.0	55.0
High Channel, 2198.5 MHz	48.958	0	49.0	52.0	55.0
5 MHz Bandwidth					
QPSK Modulation					
Mid Channel, 2155 MHz..	48.845	0	48.8	51.8	54.8
16-QAM Modulation					
Mid Channel, 2155 MHz..	48.857	0	48.9	51.8	54.8
64-QAM Modulation					
Mid Channel, 2155 MHz..	48.871	0	48.9	51.9	54.9
256-QAM Modulation					
Low Channel, 2112.5 MHz	48.873	0	48.9	51.9	54.9
Mid Channel, 2155 MHz	48.885	0	48.9	51.9	54.9
High Channel, 2197.5 MHz	48.95	0	49.0	52.0	55.0
10 MHz Bandwidth					
256-QAM Modulation					
Low Channel, 2115 MHz	48.978	0	49.0	52.0	55.0
Mid Channel, 2155 MHz	48.963	0	49.0	52.0	55.0
High Channel, 2195 MHz	49.162	0	49.2	52.2	55.2
15 MHz Bandwidth					
256-QAM Modulation					
Low Channel, 2117.5 MHz	49.1	0	49.1	52.1	55.1
Mid Channel, 2155 MHz	48.998	0	49.0	52.0	55.0
High Channel, 2192.5 MHz	49.202	0	49.2	52.2	55.2
20 MHz Bandwidth					
256-QAM Modulation					
Low Channel, 2120 MHz	49.116	0	49.1	52.1	55.1
Mid Channel, 2155 MHz	48.941	0	48.9	51.9	54.9
High Channel, 2190 MHz	49.077	0	49.1	52.1	55.1

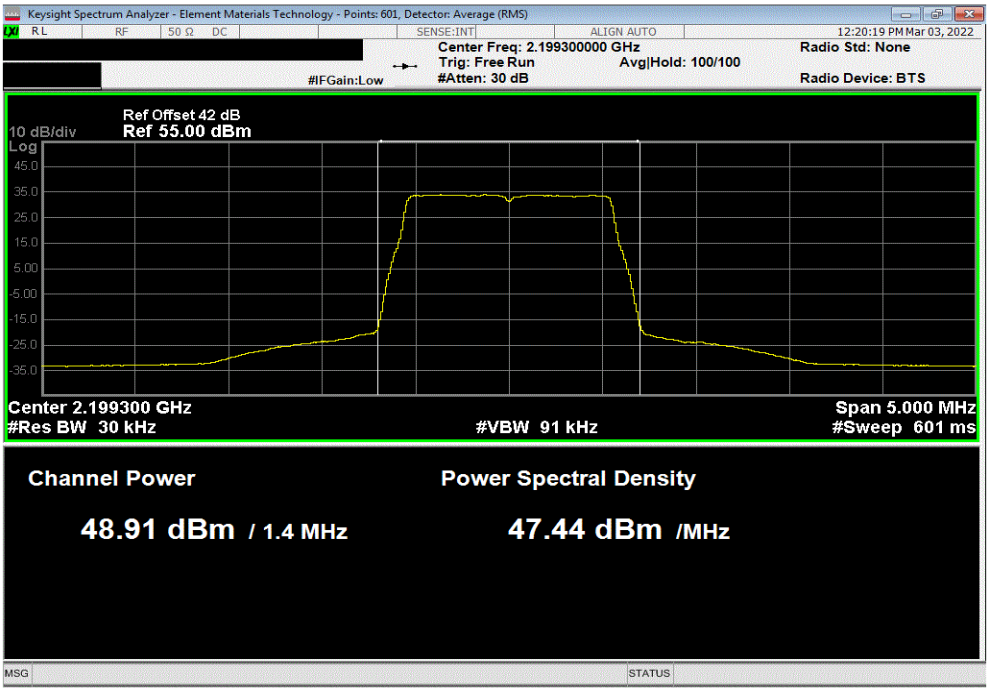
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2110.7 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.808	0	48.8	51.8	54.8	



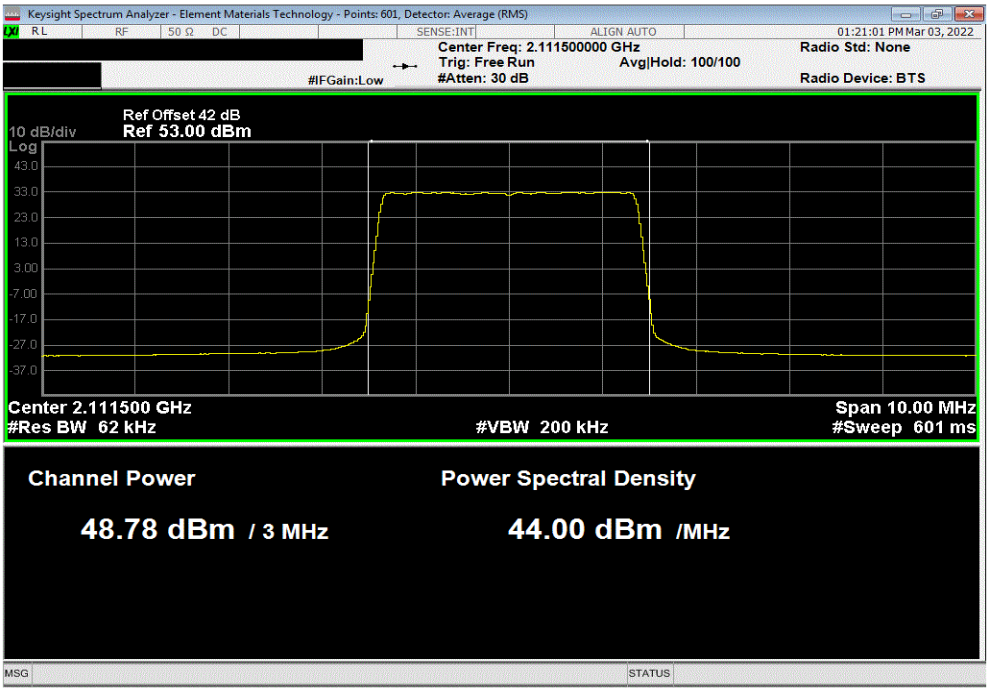
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.964	0	49.0	52.0	55.0	



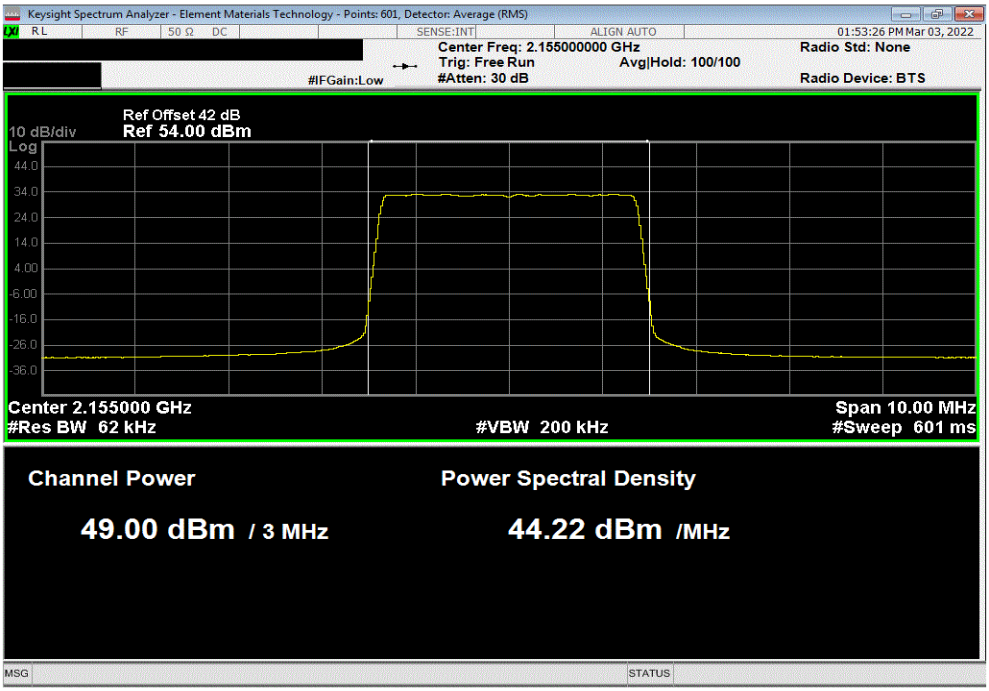
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 256-QAM Modulation, High Channel, 2199.3 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.906	0	48.9	52.9	55.9	



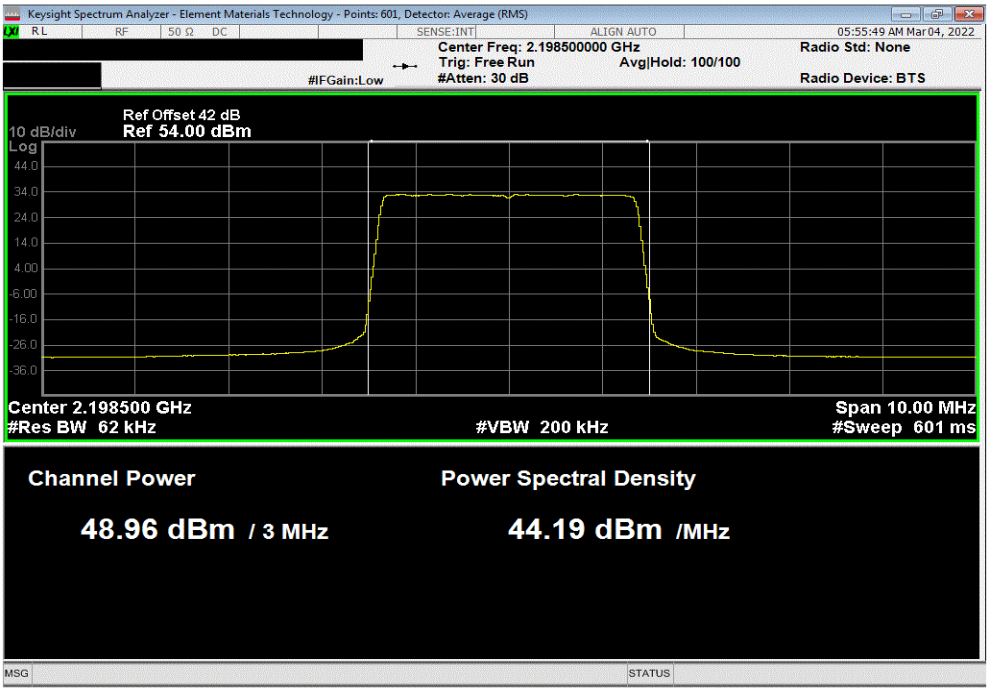
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2111.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.775	0	48.8	51.8	54.8	



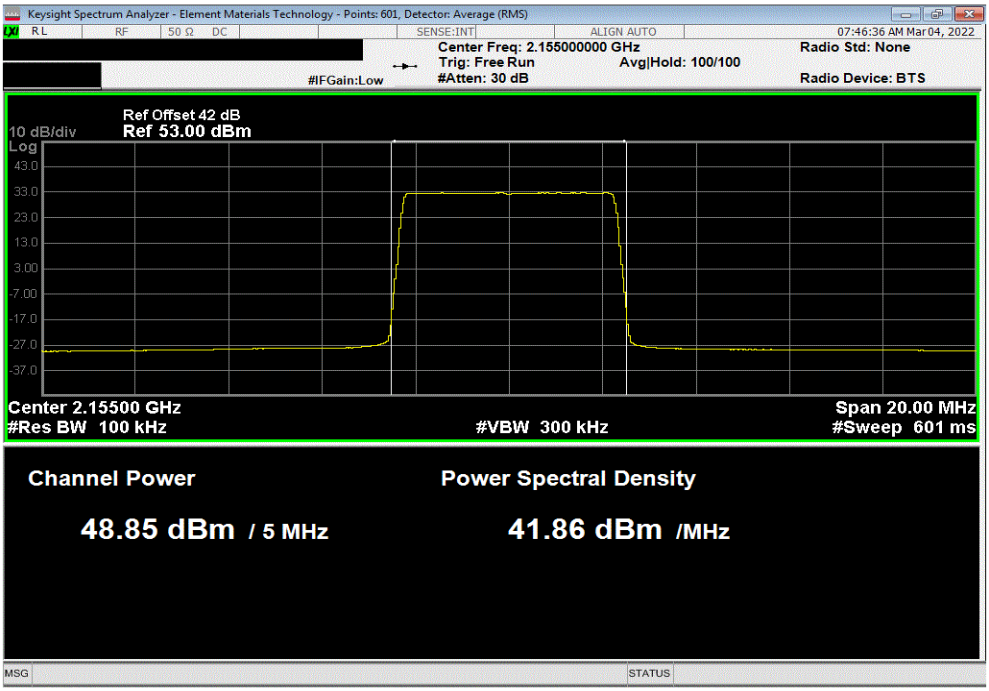
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz.						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.995	0	49.0	52.0	55.0	



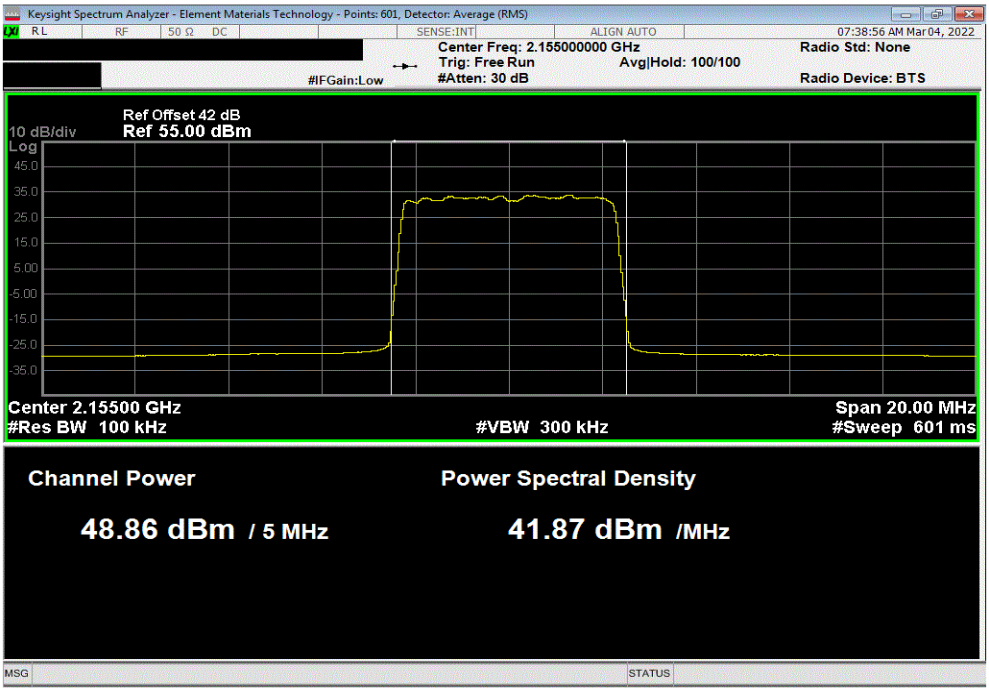
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwidth, 256-QAM Modulation, High Channel, 2198.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.958	0	49.0	52.0	55.0	



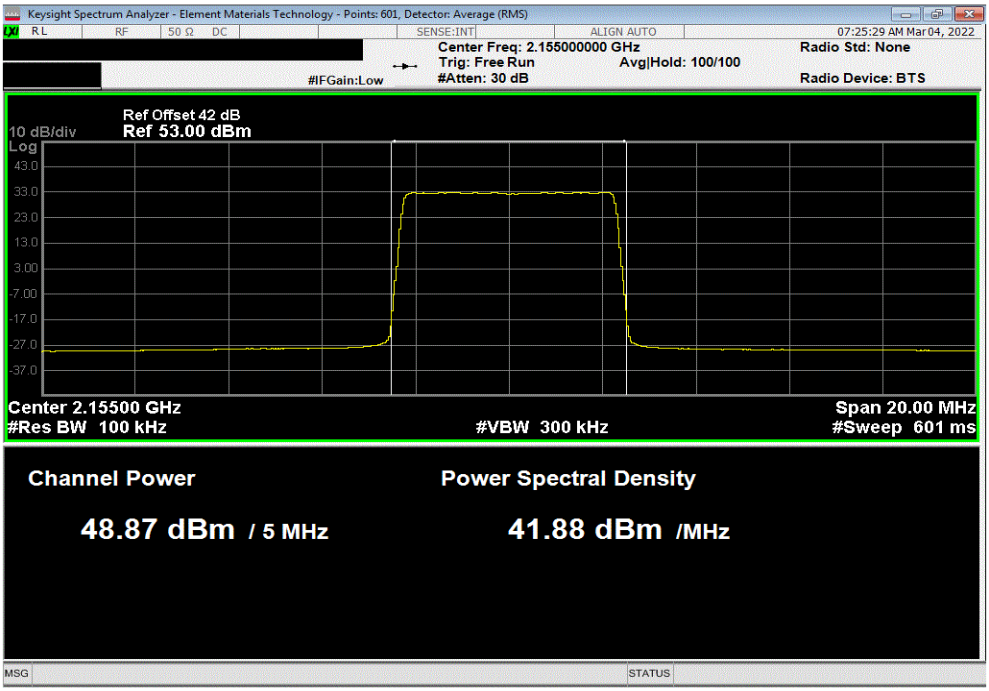
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz..						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.845	0	48.8	51.8	54.8	



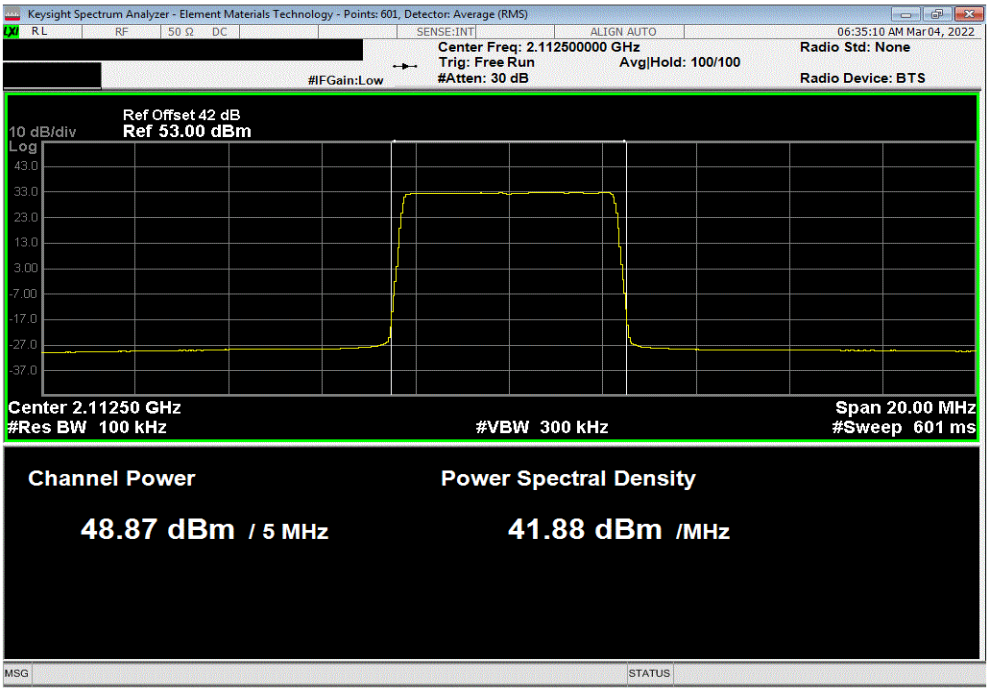
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz..						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.857	0	48.9	51.8	54.8	



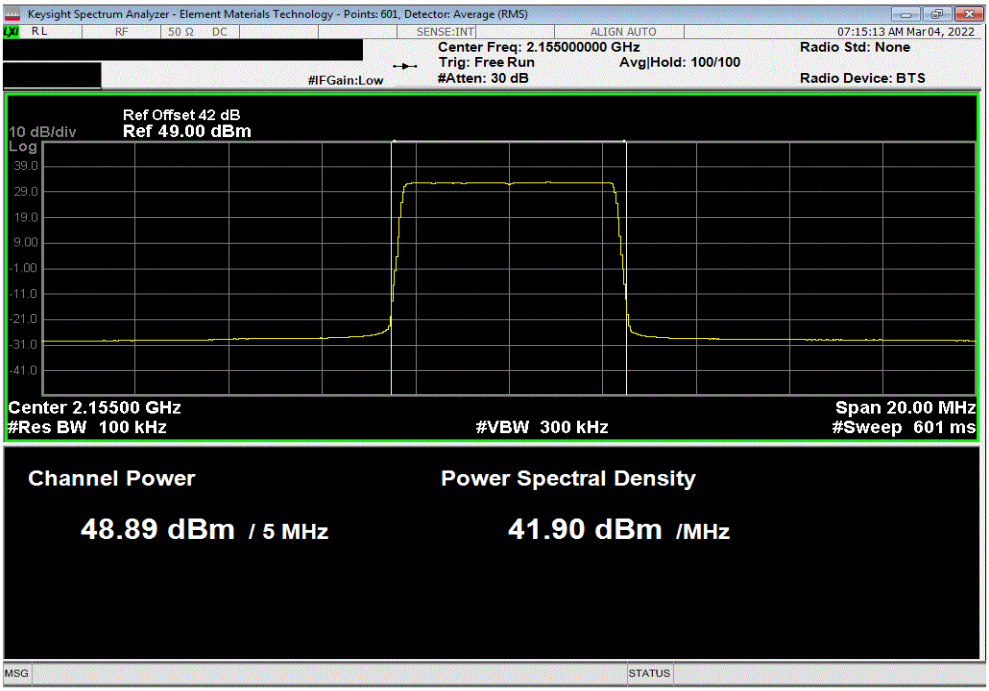
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz..						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.871	0	48.9	51.9	54.9	



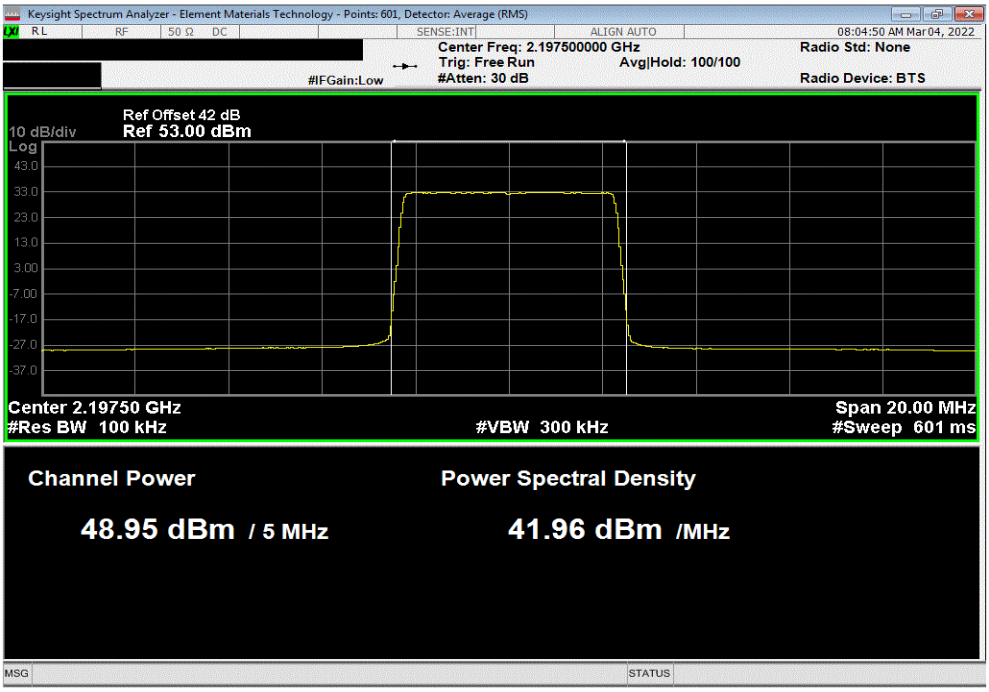
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2112.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.873	0	48.9	51.9	54.9	



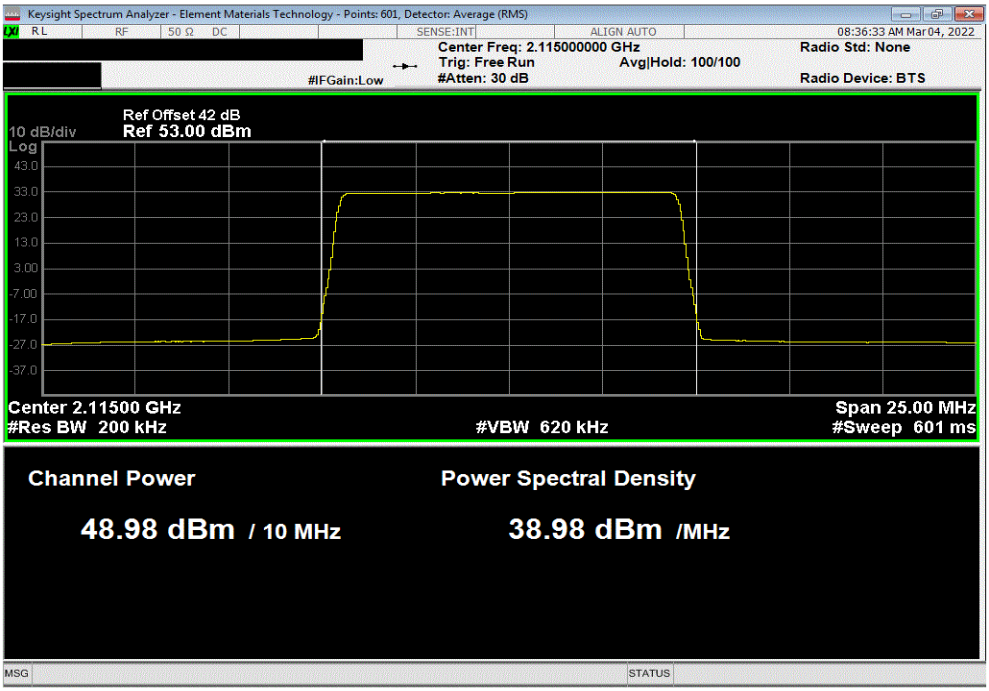
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz..						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.885	0	48.9	51.9	54.9	



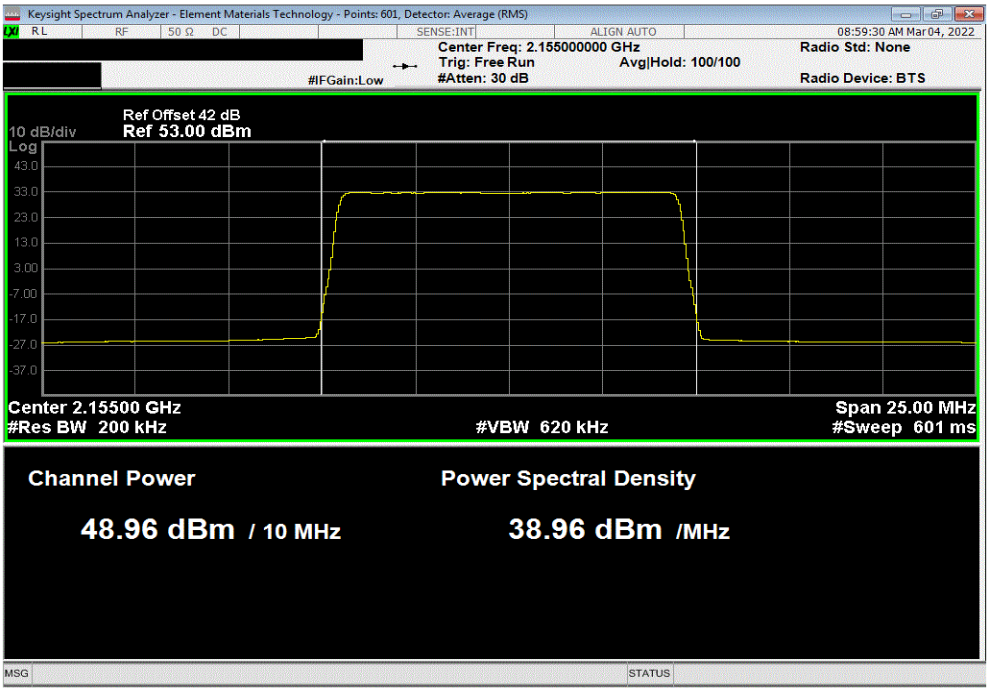
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, High Channel, 2197.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.95	0	49.0	52.0	55.0	



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2115 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.978	0	49.0	52.0	55.0	

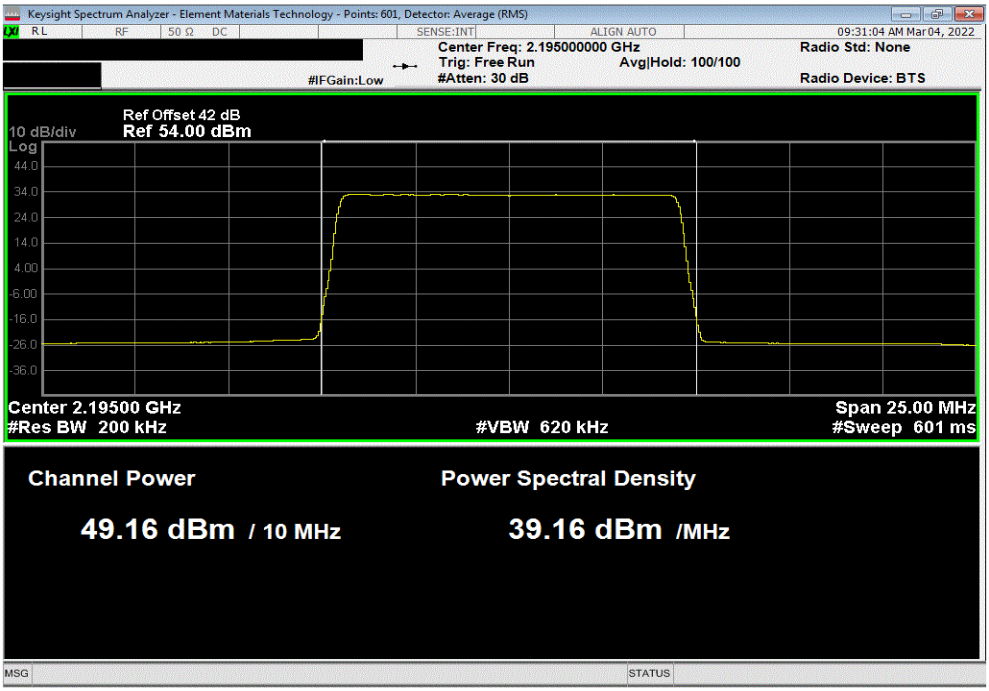


Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz...						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.963	0	49.0	52.0	55.0	



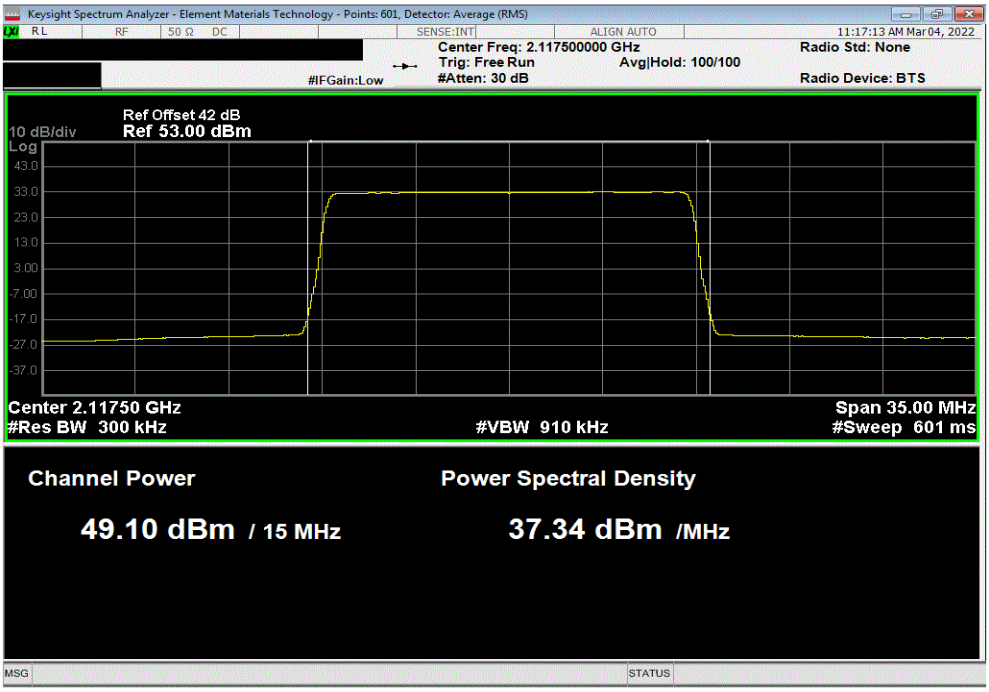
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, High Channel, 2195 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.162	0	49.2	52.2	55.2	

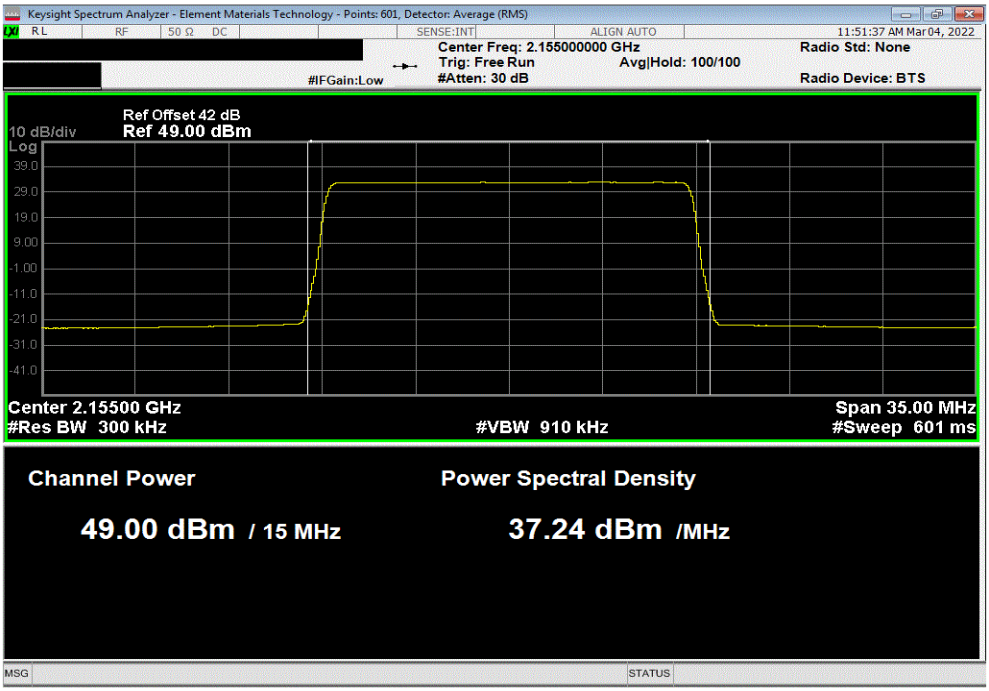


Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2117.5 MHz

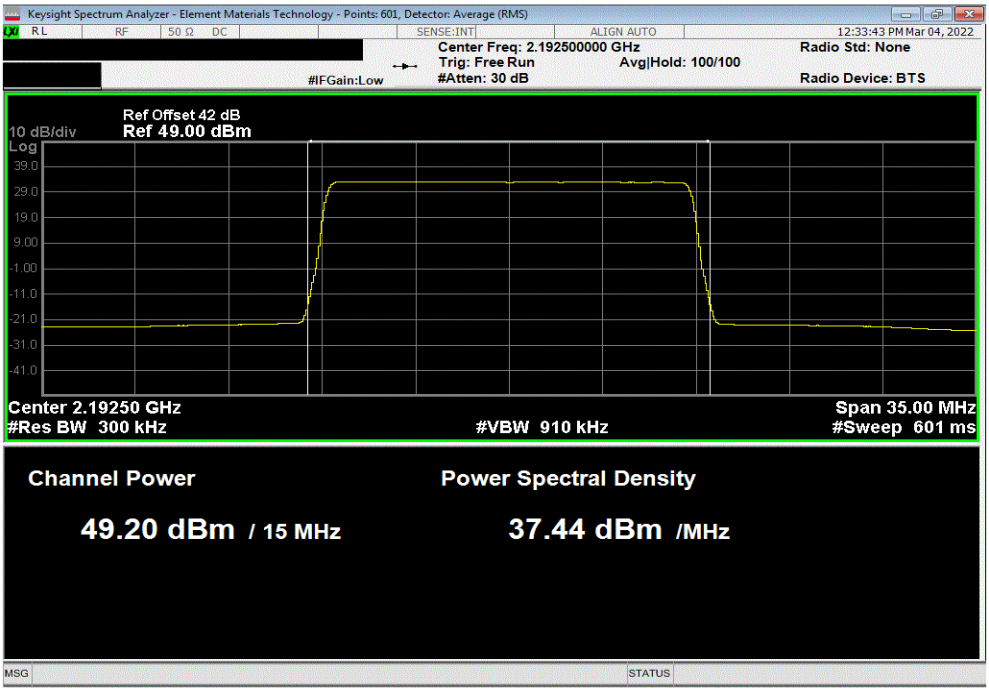
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.1	0	49.1	52.1	55.1	



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz....						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.998	0	49.0	52.0	55.0	

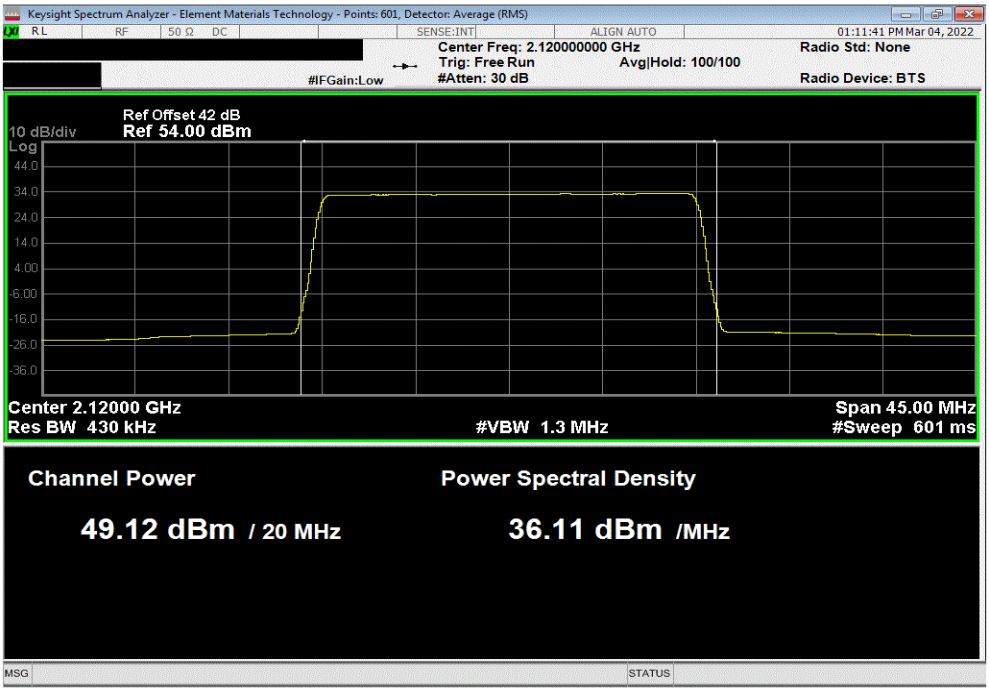


Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, High Channel, 2192.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.202	0	49.2	52.2	55.2	



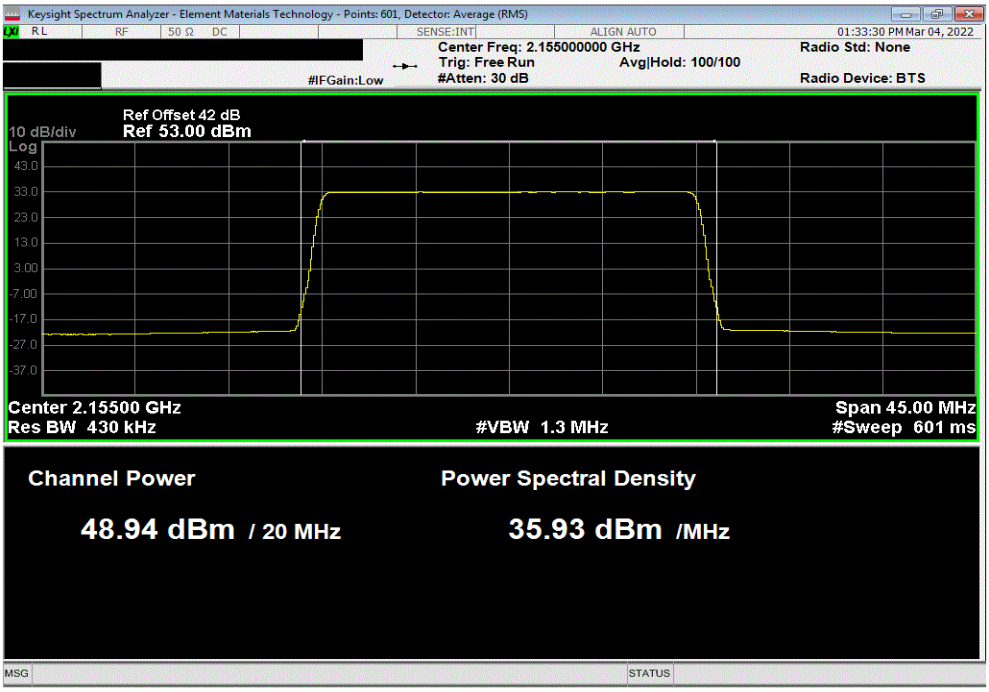
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Low Channel, 2120 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.116	0	49.1	52.1	55.1	



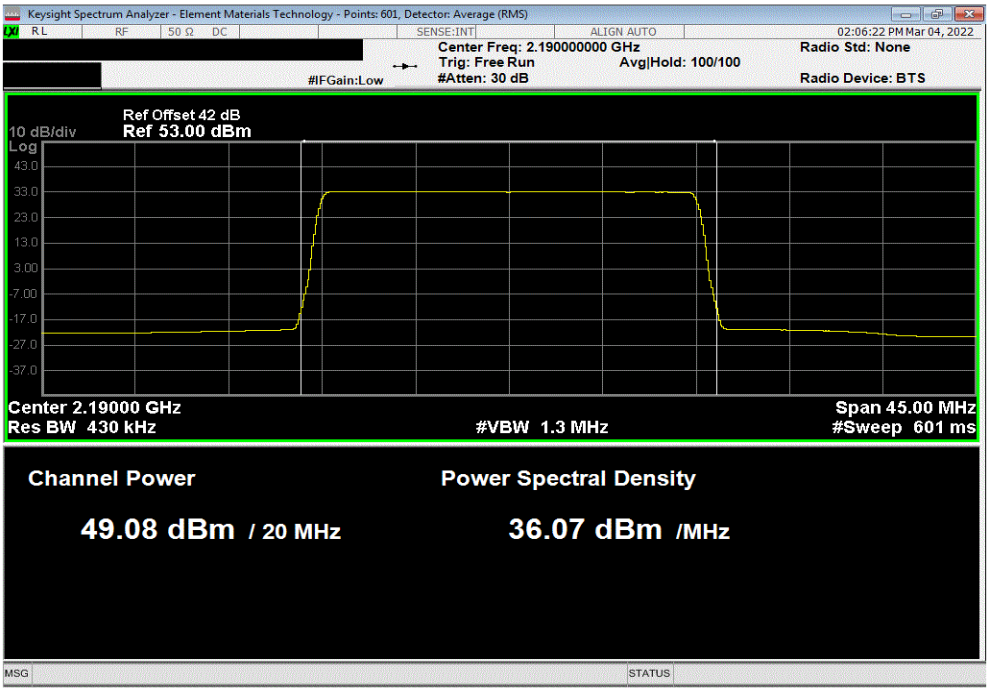
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz.....

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	48.941	0	48.9	51.9	54.9	



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, High Channel, 2190 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	49.077	0	49.1	52.1	55.1	



CONDUCTED OUTPUT POWER

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	AHFII Remote Radio Head			**Work Order:**	NOKI0037
Serial Number:	YK214000036			**Date:**	28-Feb-22
Customer:	Nokia Solutions and Networks			**Temperature:**	22.6 °C
Attendees:	David Le, John Rattanavong			**Humidity:**	23.7% RH
Project:	None			**Barometric Pres.:**	1026 mbar
Tested by:	Mark Baytan	**Power:**	54 VDC	**Job Site:**	TX09

TEST SPECIFICATIONS	Test Method
FCC 24E:2022	ANSI C63.26:2015
RSS-133 Issue 6:2013+A1:2018	RSS-133 Issue 6:2013+A1:2018

COMMENTS

All measurement path loses accounted for in the reference level offest including any attenuators, filters, and DC blocks. For Test Case 1: The carriers are operated at maximum power (~26W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (80W for PCS band carriers + 40W for AWS band carrier). For Test Case 2: The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (80W for PCS band carriers + 40W for AWS band carrier). For Test Case 3: The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (80W for PCS band carriers + 40W for AWS band carrier).

DEVIATIONS FROM TEST STANDARD

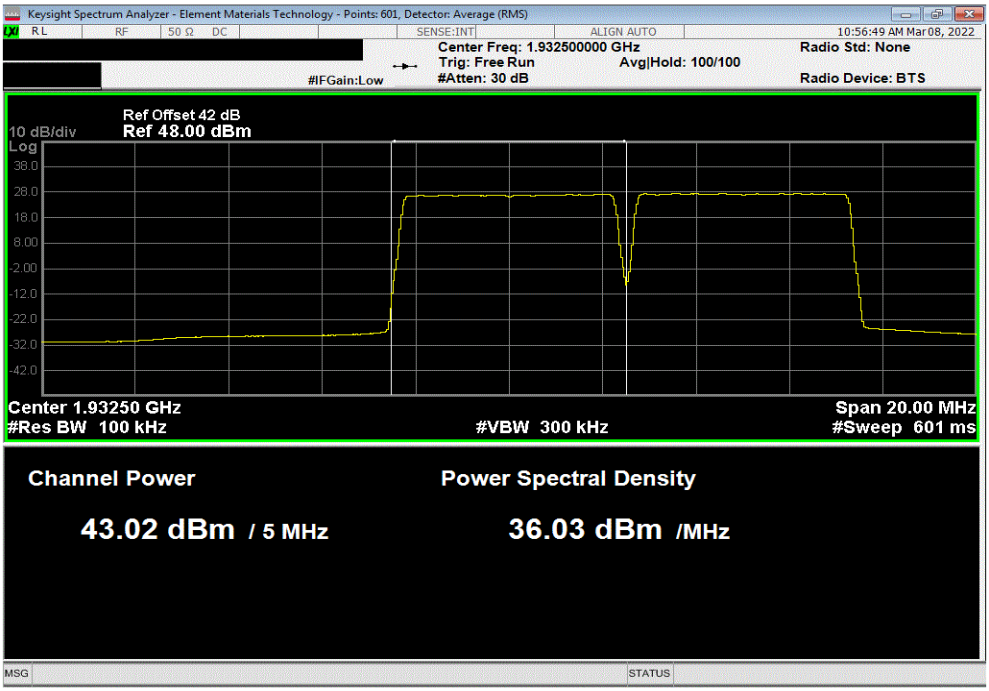
None

Configuration #	2	*Signature*

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW
PCS Multicarrier Multiband					
Port 1					
Test Case 1: PCS Band LTE5 (3 Carriers), AWS Band LTE1.4 (Single Carrier)					
256-QAM Modulation					
PCS Carrier 1, 1932.5 MHz	43.024	0	43.0	46.0	49.0
PCS Carrier 2, 1937.5 MHz	43.326	0	43.3	46.3	49.3
PCS Carrier 3, 1992.5 MHz	43.458	0	43.5	46.5	49.5
AWS Single Carrier, 2155 MHz	45.815	0	45.8	48.8	51.8
Test Case 2: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier)					
256-QAM Modulation					
PCS Carrier 1, 1940 MHz	45.599	0	45.6	48.6	51.6
PCS Carrier 2, 1960 MHz	45.735	0	45.8	48.7	51.7
AWS Single Carrier, 2155 MHz.	45.931	0	45.9	48.9	51.9
Test Case 3: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier)					
256-QAM Modulation					
PCS Carrier 1, 1965 MHz	45.806	0	45.8	48.8	51.8
PCS Carrier 2, 1985 MHz	45.364	0	45.4	48.4	51.4
AWS Single Carrier, 2155 MHz..	45.849	0	45.8	48.8	51.8

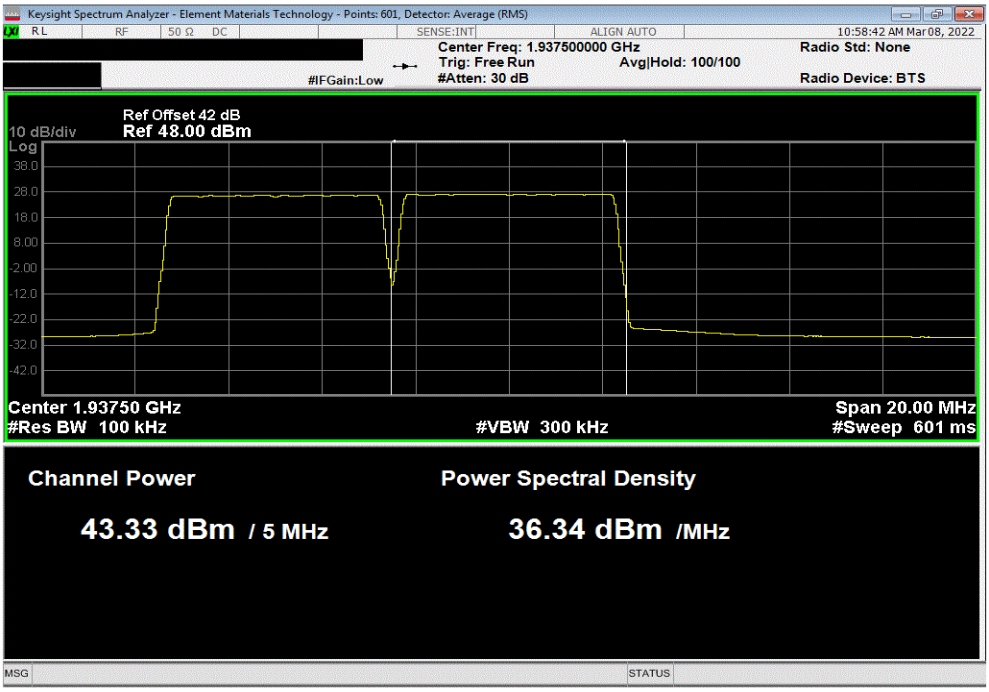
PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE5 (3 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Carrier 1, 1932.5 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	43.024	0	43.0	46.0	49.0	

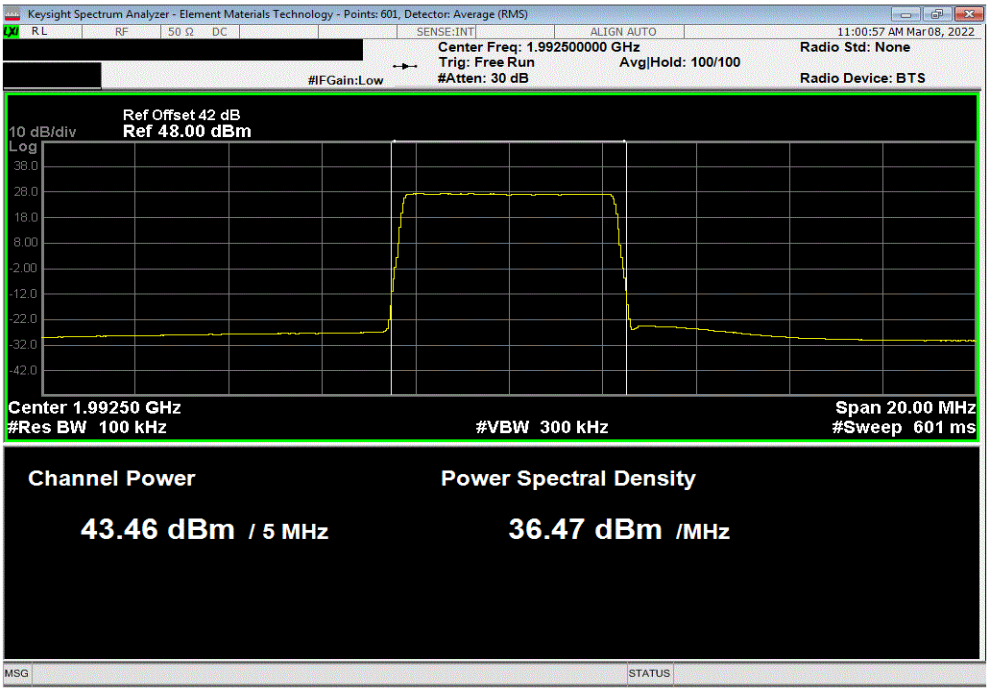


PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE5 (3 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Carrier 2, 1937.5 MHz

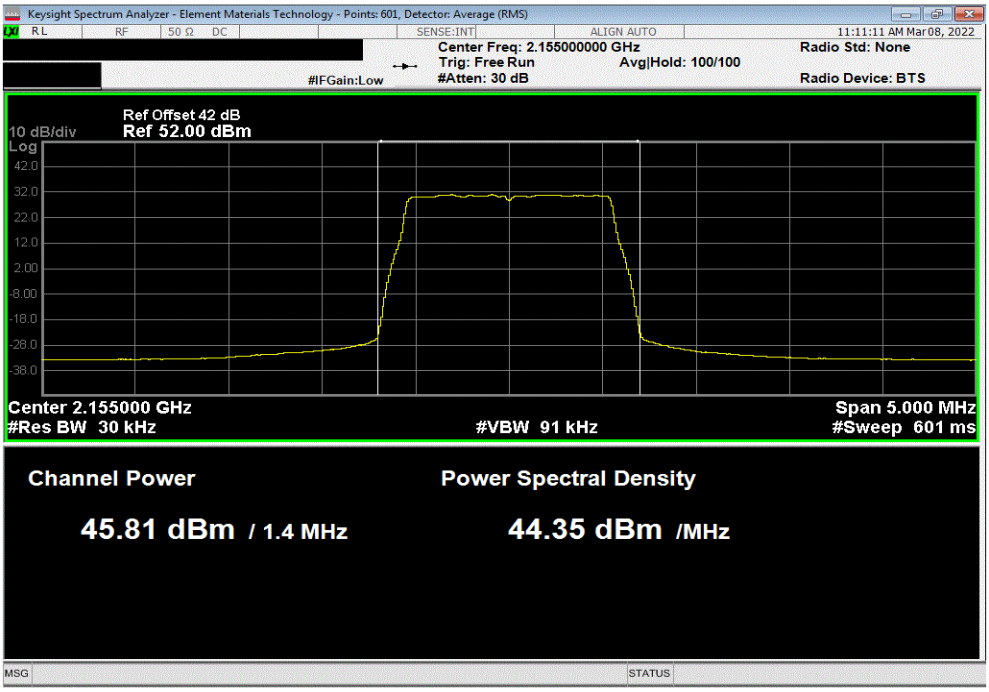
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	43.326	0	43.3	46.3	49.3	



PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE5 (3 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Carrier 3, 1992.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	43.458	0	43.5	46.5	49.5	

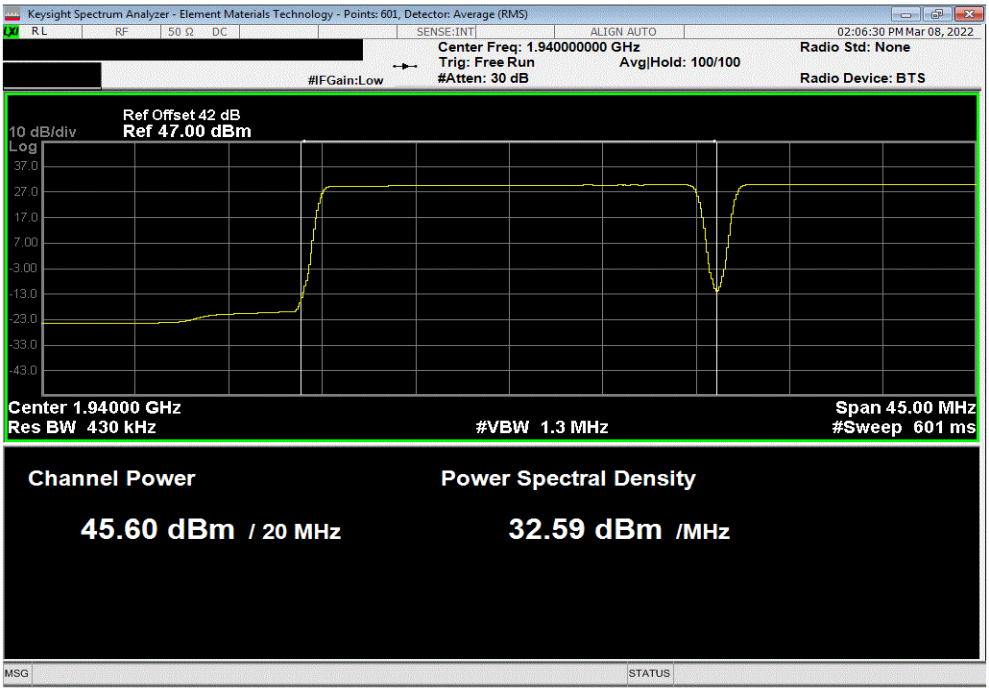


PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE5 (3 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, AWS Single Carrier, 2155 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.815	0	45.8	48.8	51.8	



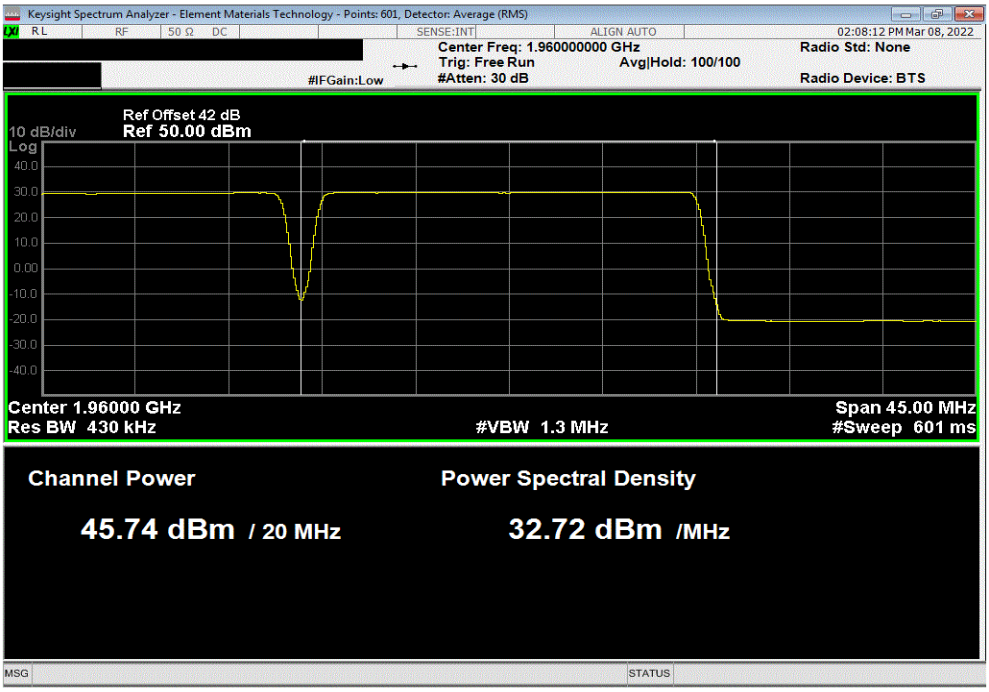
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Carrier 1, 1940 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.599	0	45.6	48.6	51.6	



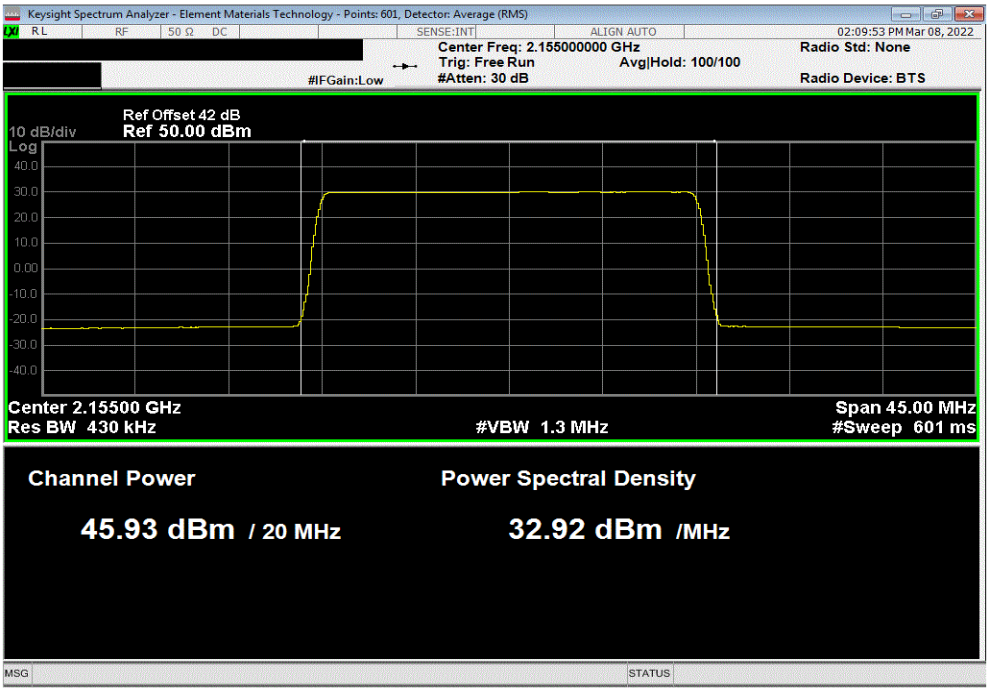
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Carrier 2, 1960 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.735	0	45.8	48.7	51.7	



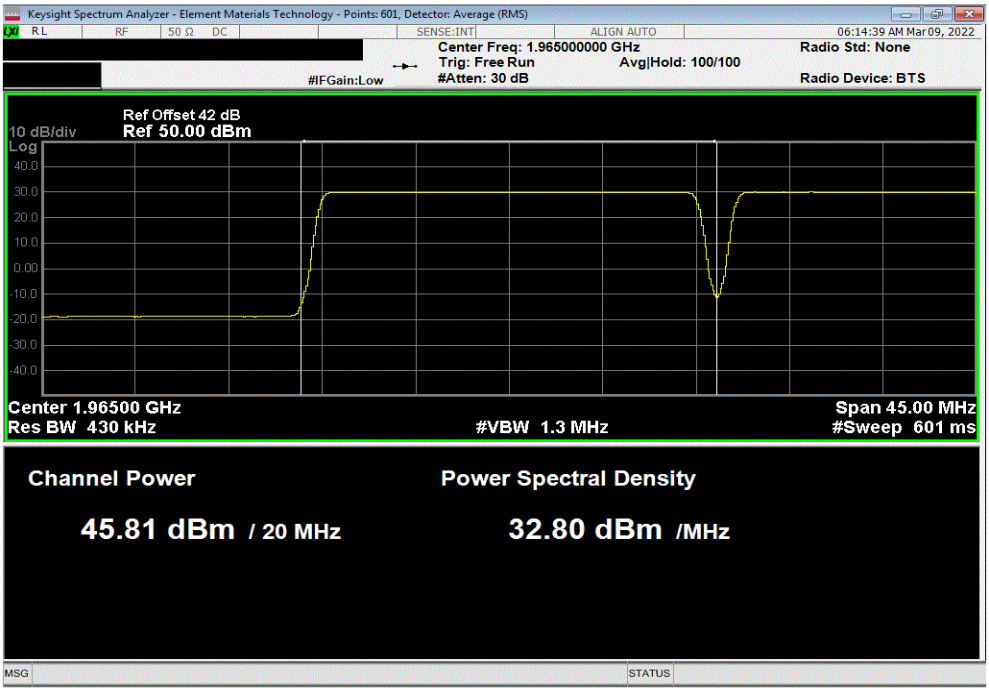
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Single Carrier, 2155 MHz.

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.931	0	45.9	48.9	51.9	

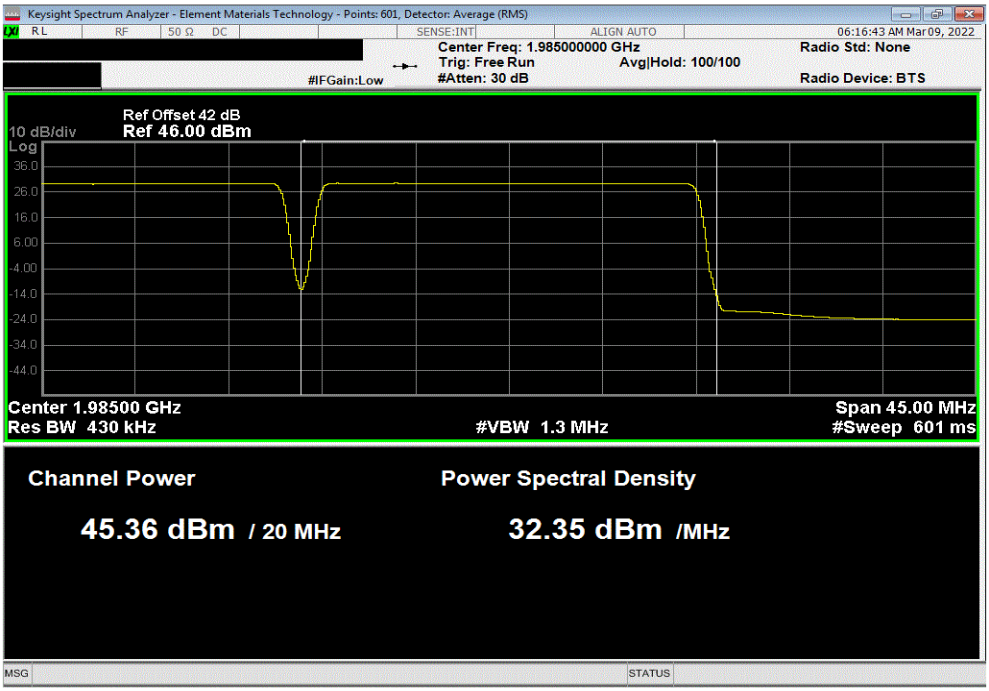


PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Carrier 1, 1965 MHz

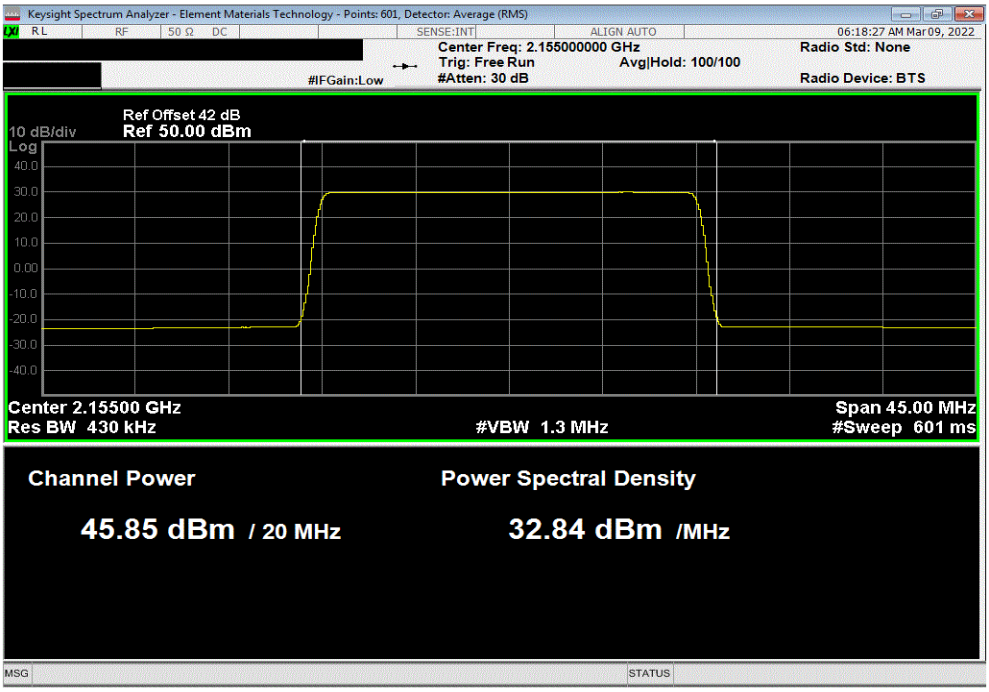
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.806	0	45.8	48.8	51.8	



PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Carrier 2, 1985 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.364	0	45.4	48.4	51.4	



PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band LTE20 (2 Carriers), AWS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Single Carrier, 2155 MHz..						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.849	0	45.8	48.8	51.8	



CONDUCTED OUTPUT POWER

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**28-Feb-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**22.6 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**23.7% RH**
Project:	**None**			**Barometric Pres.:**	**1026 mbar**
Tested by:	**Mark Baytan**	**Power:**	**54 VDC**	**Job Site:**	**TX09**

TEST SPECIFICATIONS	**Test Method**
FCC 27:2022	ANSI C63.26:2015
RSS-139 Issue 3:2015	RSS-139 Issue 3:2015
RSS-170 Issue 3:2015	RSS-170 Issue 3:2015

COMMENTS

All measurement path loses accounted for in the reference level offest including any attenuators, filters, and DC blocks. For Test Case 1: The carriers were operated at maximum power (~26W/AWS carrier and 40W/PCS carrier) with at total port power of 120 watts (80W for AWS band carriers + 40W for PCS band carrier). For Test Case 2: The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (40W for PCS band carrier + 80W for AWS band carriers). For Test Case 3: The carriers are operated at maximum power (~40W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (40W for PCS band carrier + 80W for AWS band carriers).

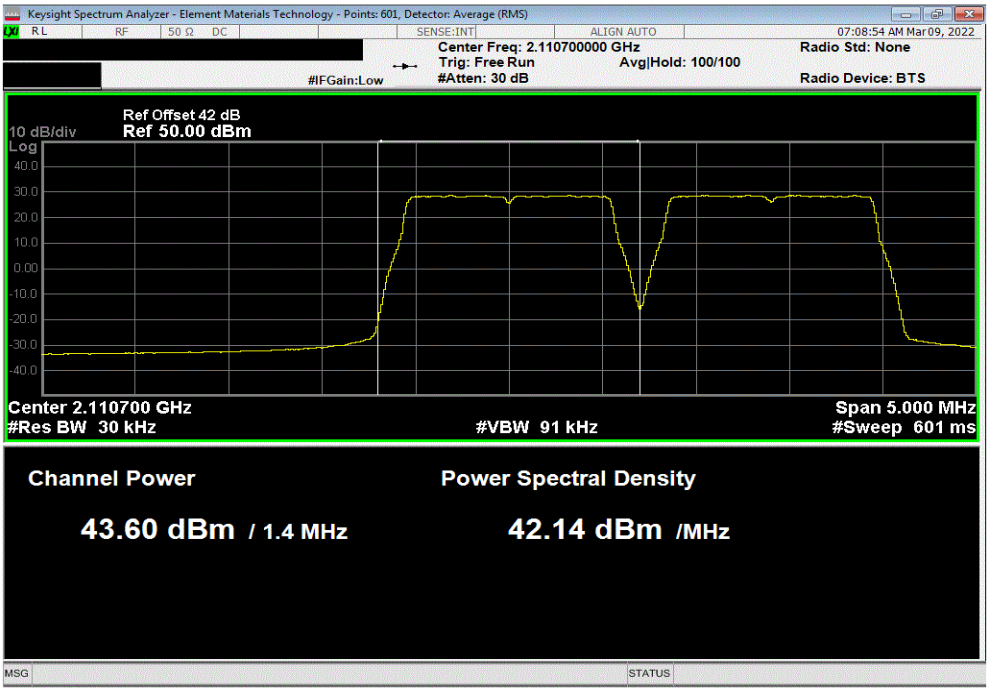
DEVIATIONS FROM TEST STANDARD

None

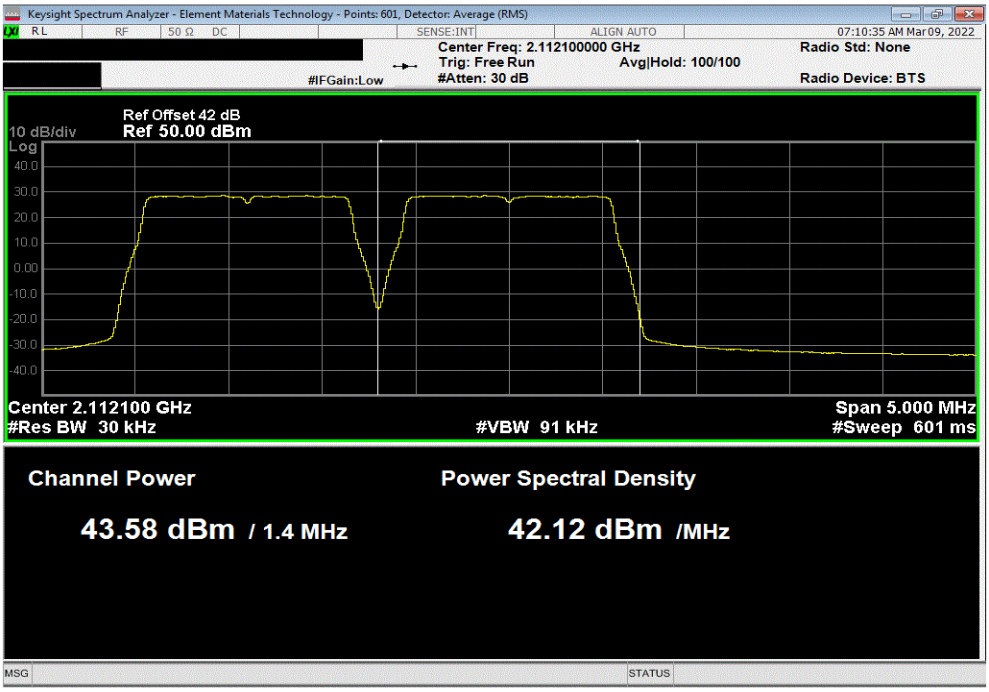
Configuration #	**2**	*Signature*

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW
AWS Multicarrier Multiband					
Port 1					
Test Case 1: AWS Band LTE1.4 (3 Carriers), PCS Band LTE1.4 (Single Carrier)					
256-QAM Modulation					
AWS Carrier 1, 2110.7 MHz	43.599	0	43.6	46.6	49.6
AWS Carrier 2, 2112.1 MHz	43.584	0	43.6	46.6	49.6
AWS Carrier 3, 2199.3 MHz	44.304	0	44.3	47.3	50.3
PCS Single Carrier, 1962.5 MHz	44.991	0	45.0	48.0	51.0
Test Case 2: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier)					
256-QAM Modulation					
AWS Carrier 1, 2120 MHz	45.306	0	45.3	48.3	51.3
AWS Carrier 2, 2140 MHz	45.717	0	45.7	48.7	51.7
PCS Single Carrier, 1962.5 MHz	45.29	0	45.3	48.3	51.8
Test Case 3: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier)					
256-QAM Modulation					
AWS Carrier 1, 2170 MHz	45.943	0	45.9	48.9	51.9
AWS Carrier 2, 2190 MHz	45.791	0	45.8	48.8	51.8
PCS Single Carrier, 1962.5 MHz	45.5	0	45.5	48.5	51.5

AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band LTE1.4 (3 Carriers), PCS Band LTE1.4 (Single Carrier), 256-QAM Modulation, AWS Carrier 1, 2110.7 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	43.599	0	43.6	46.6	49.6	

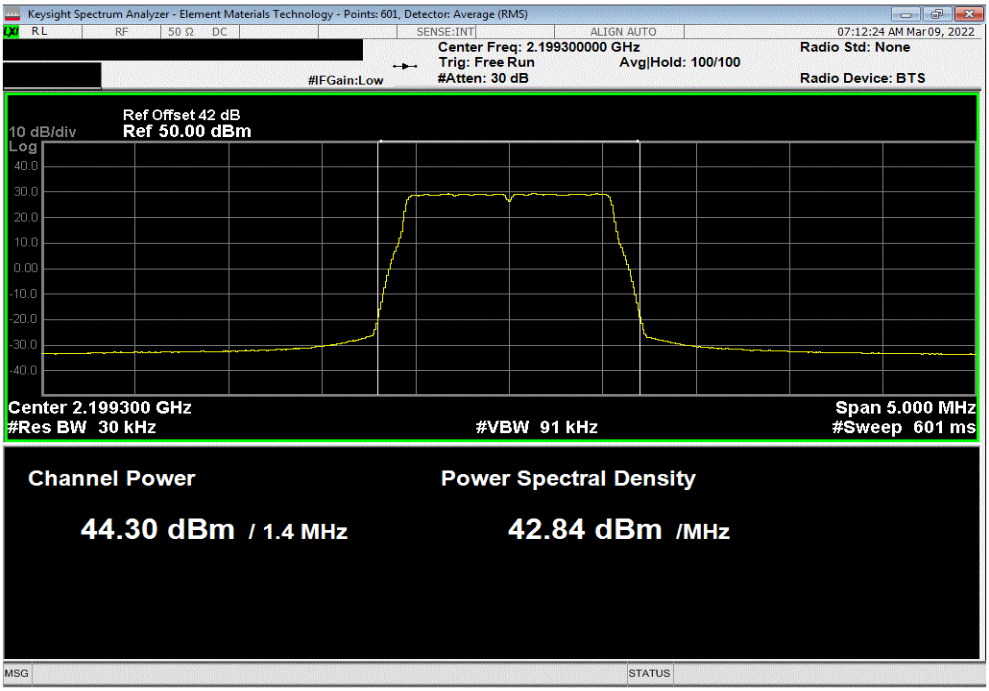


AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band LTE1.4 (3 Carriers), PCS Band LTE1.4 (Single Carrier), 256-QAM Modulation, AWS Carrier 2, 2112.1 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	43.584	0	43.6	46.6	49.6	



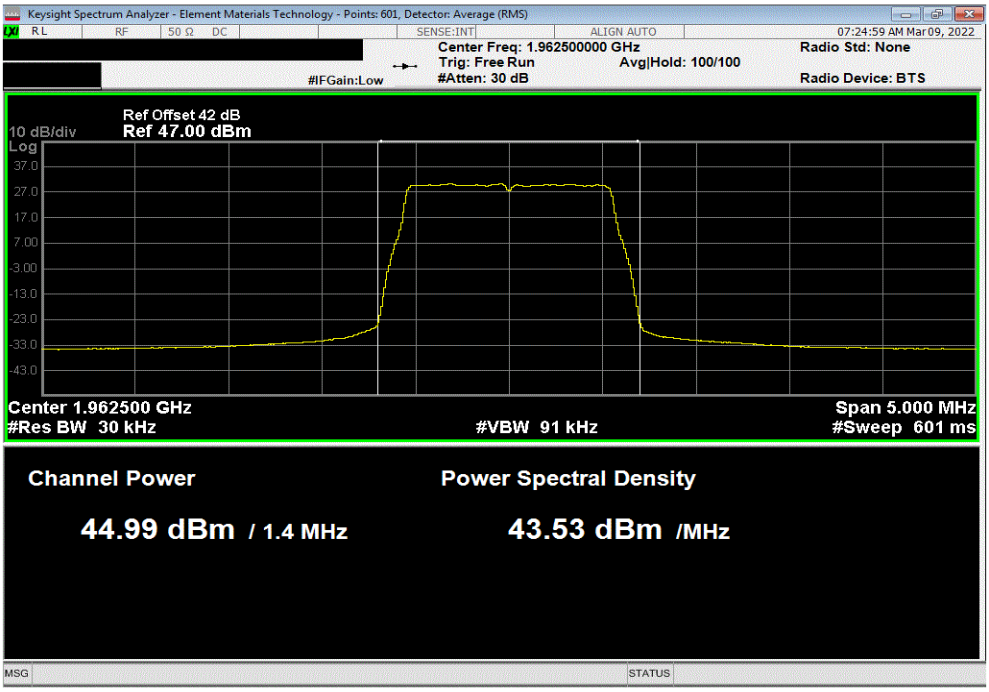
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band LTE1.4 (3 Carriers), PCS Band LTE1.4 (Single Carrier), 256-QAM Modulation, AWS Carrier 3, 2199.3 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	44.304	0	44.3	47.3	50.3	

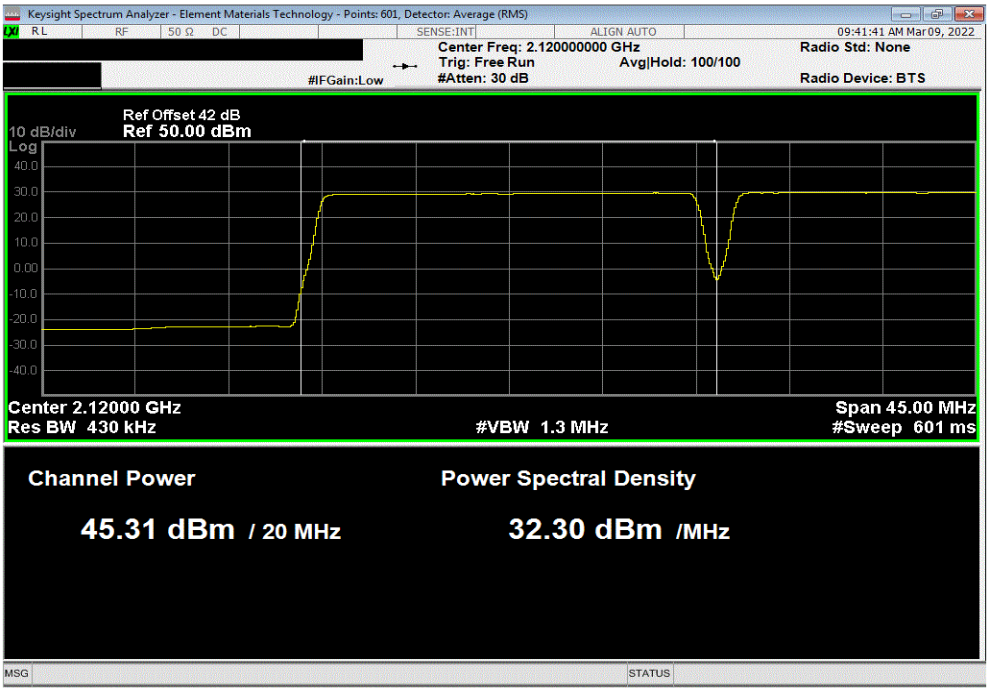


AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band LTE1.4 (3 Carriers), PCS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Single Carrier, 1962.5 MHz

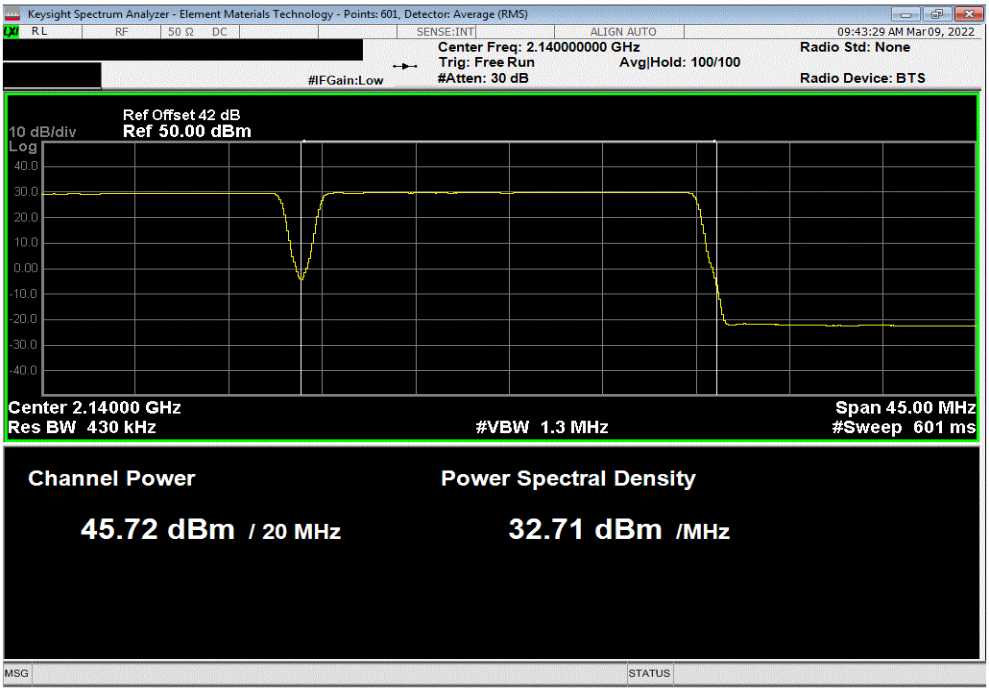
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	44.991	0	45.0	48.0	51.0	



AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Carrier 1, 2120 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.306	0	45.3	48.3	51.3	

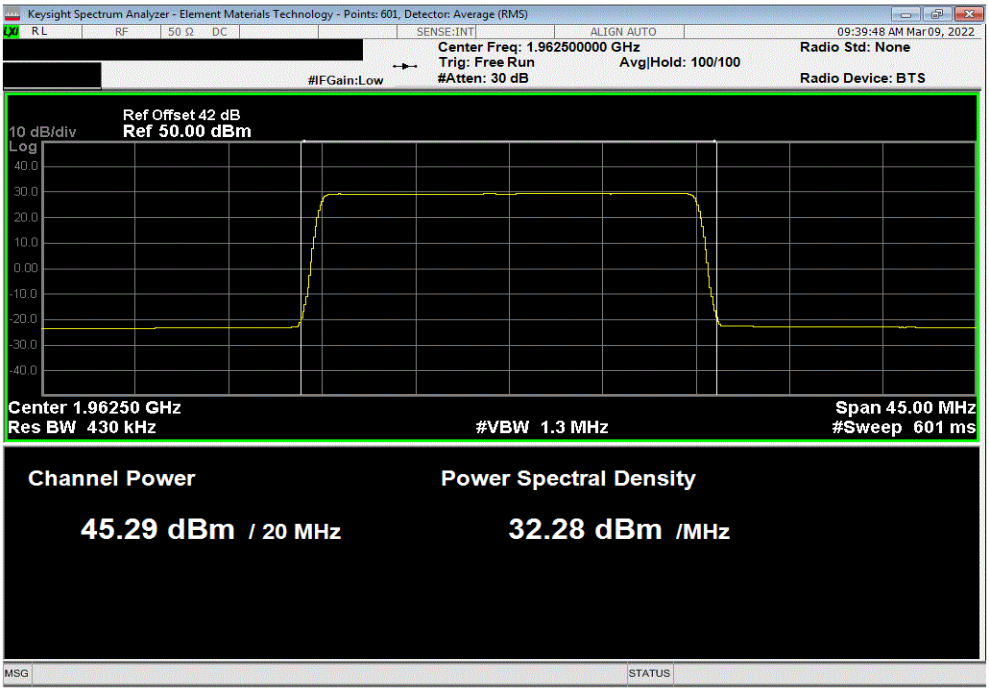


AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Carrier 2, 2140 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.717	0	45.7	48.7	51.7	



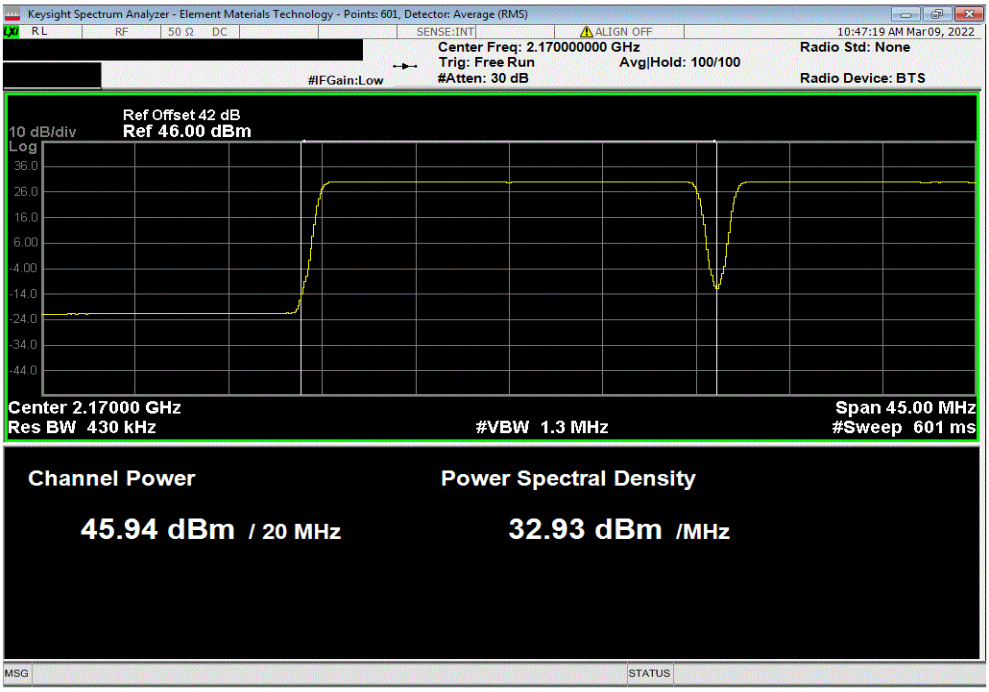
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Single Carrier, 1962.5 MHz

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.29	0	45.3	48.3	51.8	

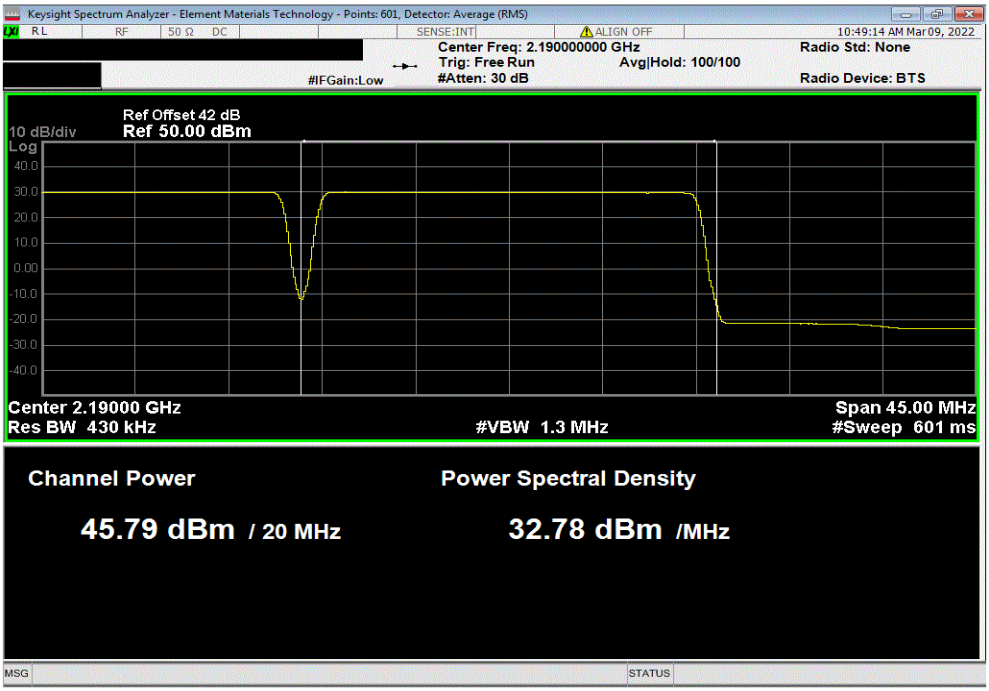


AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Carrier 1, 2170 MHz

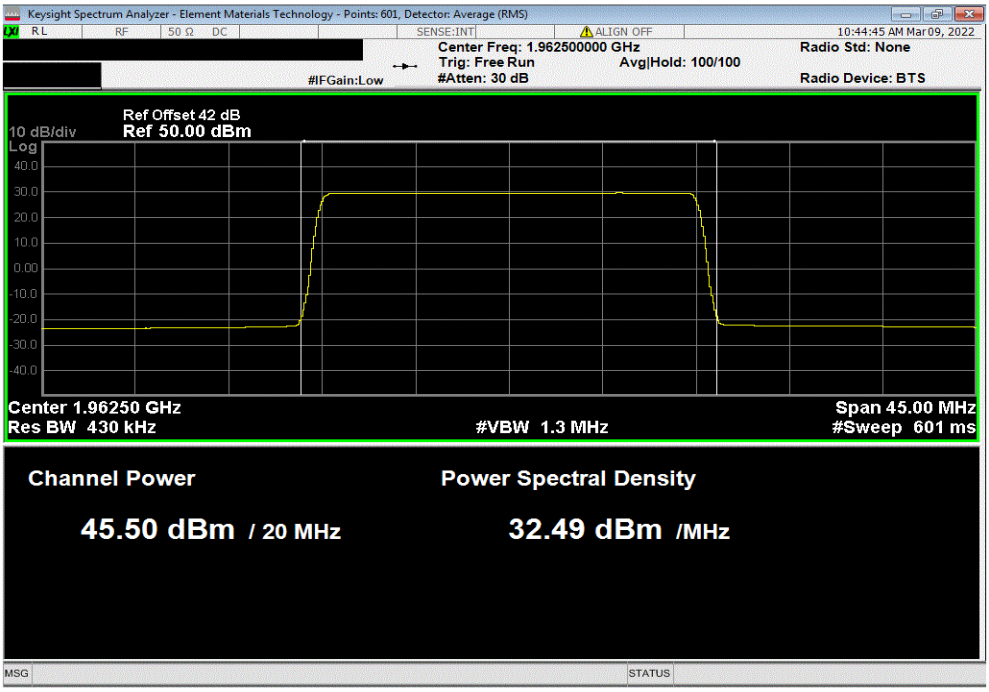
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.943	0	45.9	48.9	51.9	



AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, AWS Carrier 2, 2190 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.791	0	45.8	48.8	51.8	



AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band LTE20 (2 Carriers), PCS Band LTE20 (Single Carrier), 256-QAM Modulation, PCS Single Carrier, 1962.5 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.5	0	45.5	48.5	51.5	



CONDUCTED OUTPUT POWER

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**28-Feb-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**22.6 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**23.7% RH**
Project:	**None**			**Barometric Pres.:**	**1026 mbar**
Tested by:	**Mark Baytan**	**Power:**	**54 VDC**	**Job Site:**	**TX09**

TEST SPECIFICATIONS	**Test Method**
FCC 24E:2022	ANSI C63.26:2015
RSS-133 Issue 6:2013+A1:2018	RSS-133 Issue 6:2013+A1:2018

COMMENTS

All measurement path loses accounted for in the reference level offest including any attenuators, filters, and DC blocks. The carriers were operated at maximum power (40W/PCS carrier and 40W/AWS carrier) with at total port power of 120 watts (80W for PCS band carriers + 40W for AWS band carrier).

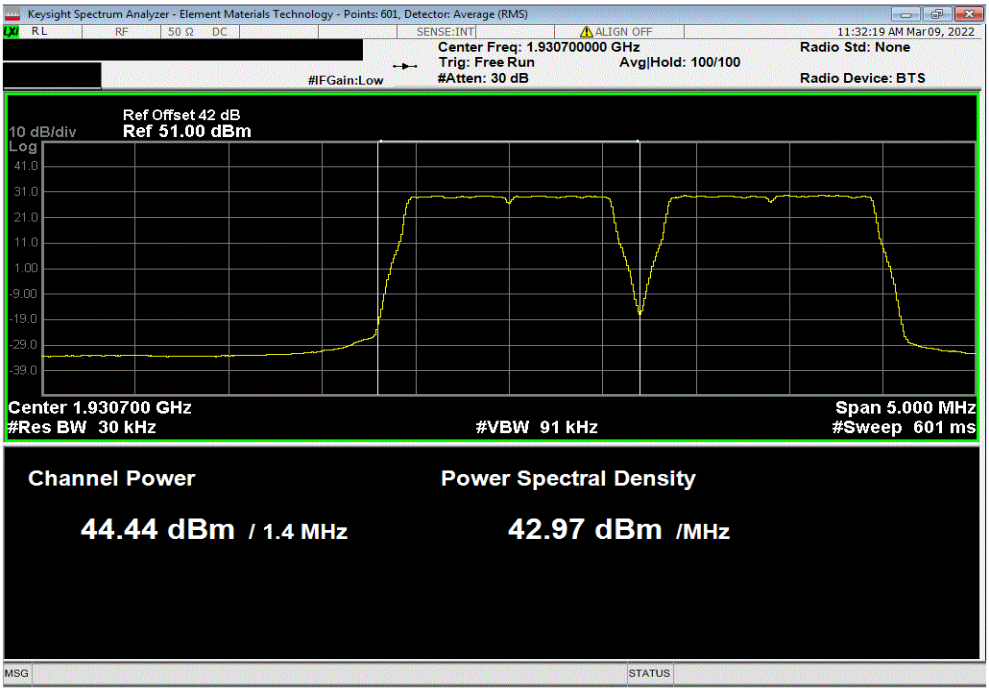
DEVIATIONS FROM TEST STANDARD

None

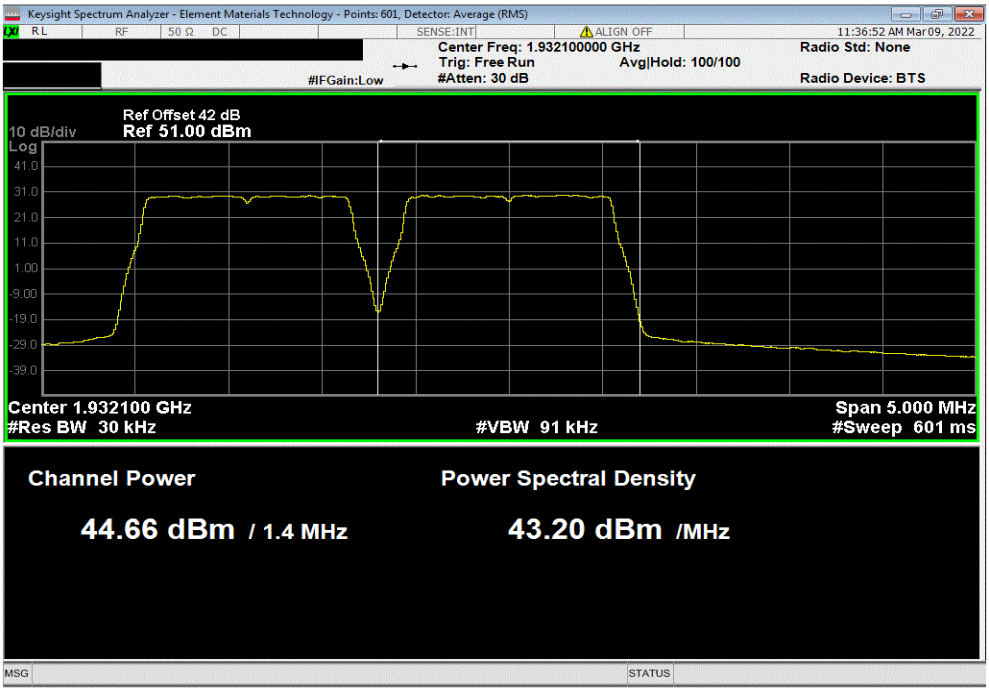
Configuration #	**2**	*Signature*

	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW
Multicarrier Multiband					
Port 1					
Test Case 1: PCS Band LTE1.4 (2 Carriers), AWS Band LTE1.4 (Single Carrier)					
256-QAM Modulation					
PCS Carrier 1, 1930.7 MHz	44.436	0	44.4	47.4	50.4
PCS Carrier 2, 1932.1 MHz	44.664	0	44.7	47.7	50.7
AWS Carrier 1, 2199.3 MHz	45.625	0	45.6	48.6	51.6

Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE1.4 (2 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Carrier 1, 1930.7 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	44.436	0	44.4	47.4	50.4	



Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE1.4 (2 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, PCS Carrier 2, 1932.1 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	44.664	0	44.7	47.7	50.7	



Multicarrier Multiband, Port 1, Test Case 1: PCS Band LTE1.4 (2 Carriers), AWS Band LTE1.4 (Single Carrier), 256-QAM Modulation, AWS Carrier 1, 2199.3 MHz						
	Intial Value dBm/Carrier BW	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port dBm/Carrier BW	Four Port dBm/Carrier BW	
	45.625	0	45.6	48.6	51.6