SPURIOUS CONDUCTED EMISSIONS

element

TbiTx 2022.03.14.0 XMit 2022.02.07.0

EUT:	AHFII Remote Radio Head			**Work Order:**	NOKI0038
Serial Number:	YK214000035			**Date:**	23-Mar-22
Customer:	Nokia of America Corporation			**Temperature:**	20.6 °C
Attendees:	Mitchell Hill			**Humidity:**	46.5% RH
Project:	None			**Barometric Pres.:**	1018 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-170 Issue 3:2015	RSS-139 Issue 3:2015, RSS-170 Issue 3:2015
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 losses were accounted for in the reference level offest including any attenuators, filters and DC blocks. The Band n66 carrier was enabled at maximum power (80 watts/carrier). The Band n25 carrier was enabled on the middle channel (1962.5MHz) at 40 watts with the same channel bandwidth and modulation type as the Band n66 carrier. The port power was set at the maximum level of 120 Watts [Band 25 carrier (40W) and Band 66 carrier (80W)].

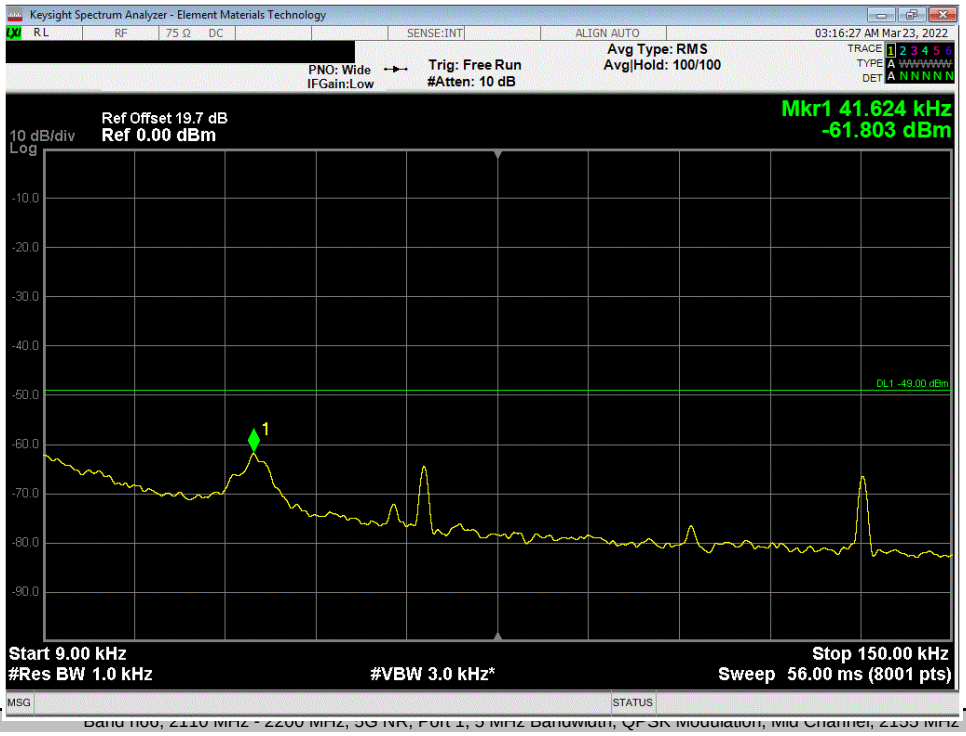
DEVIATIONS FROM TEST STANDARD

None

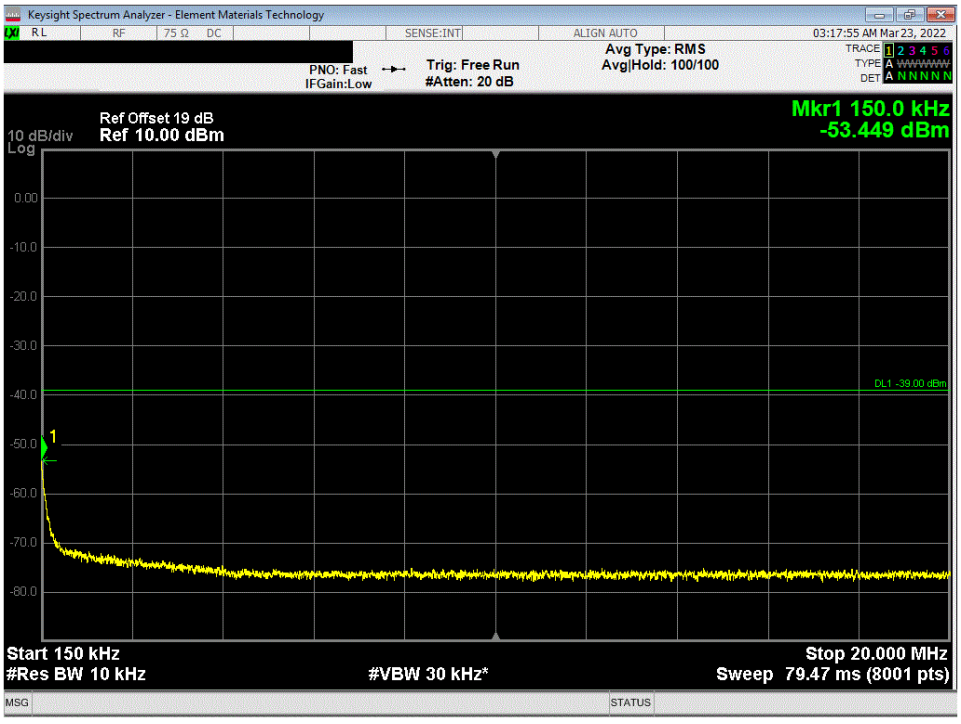
Configuration #	**1,2,3,4**	*Signature*

	Frequency Range	Value (dBm)	Limit (dBm)	Result
Band n66, 2110 MHz - 2200 MHz, 5G NR				
Port 1				
5 MHz Bandwidth				
QPSK Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.8	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.5	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-24.7	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.1	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.1	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
16-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.5	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-54.3	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-25.8	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-24.9	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
64-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.8	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.4	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-23.7	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.4	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.0	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
256-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.4	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.8	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-23.7	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.1	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-37.9	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
10 MHz Bandwidth				
256-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-62.2	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.2	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-25.2	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-24.7	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.0	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
15 MHz Bandwidth				
256-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-62.2	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.2	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-25.2	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-24.3	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.6	-19	Pass
20 MHz Bandwidth				
256-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.5	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.2	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-25.3	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-23.6	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.0	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
30 MHz Bandwidth				
256-QAM Modulation				
Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.6	-49	Pass
Mid Channel, 2155 MHz	150 kHz - 20 MHz	-54.3	-39	Pass
Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-25.4	-19	Pass
Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-22.5	-19	Pass
Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.0	-19	Pass
Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.9	-19	Pass

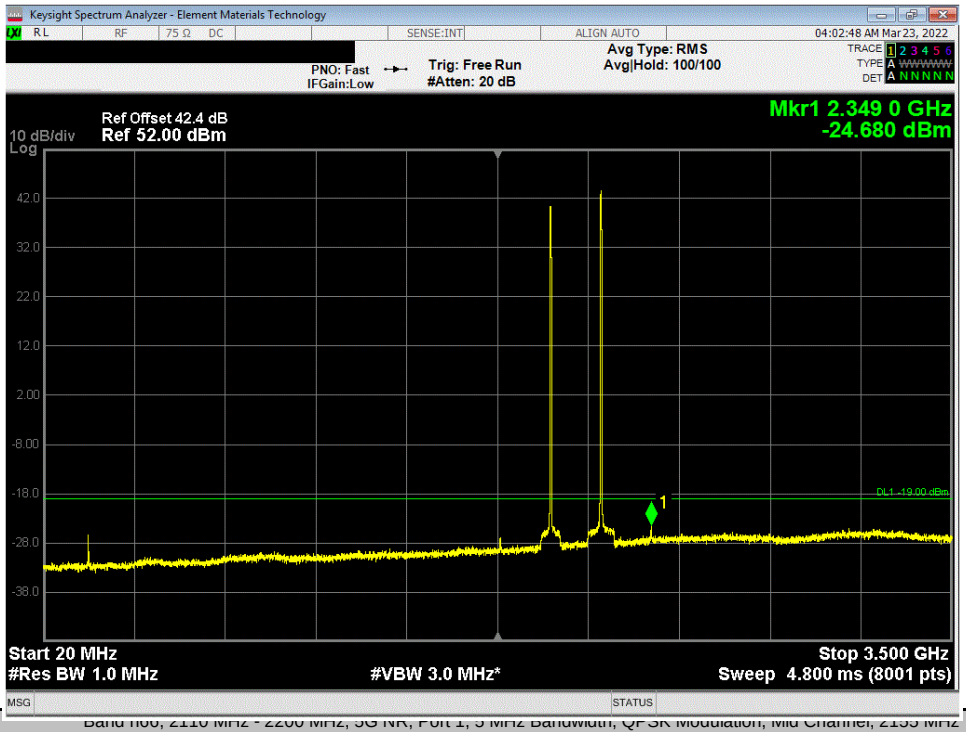
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz						
	Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz			-61.8	-49	Pass



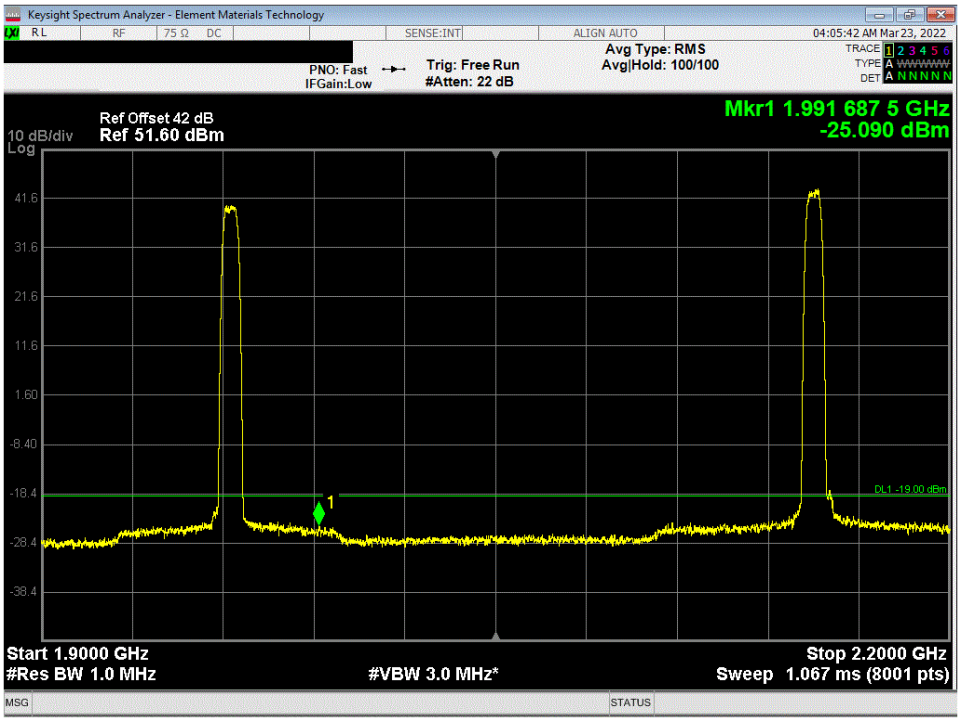
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz					
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.45	-39	Pass



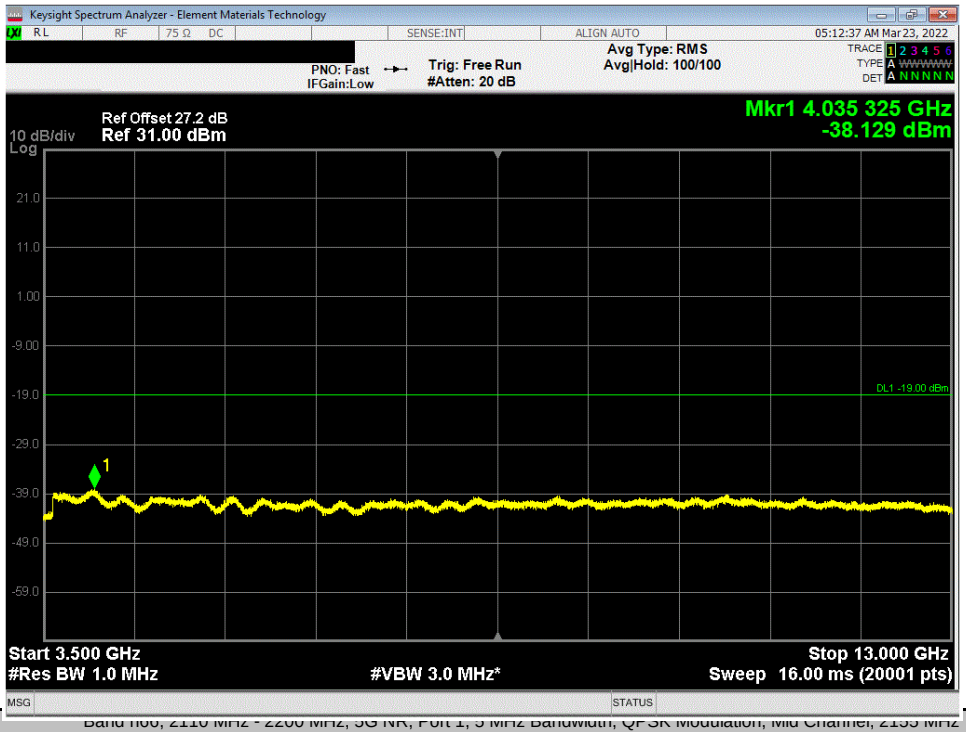
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-24.68	-19	Pass



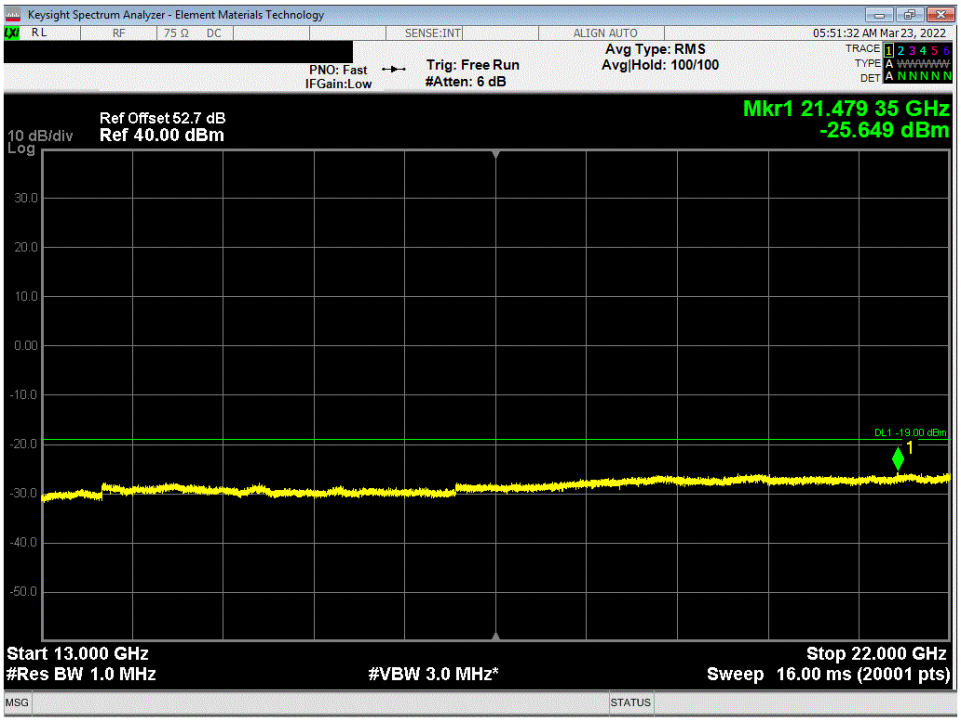
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-25.09	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.13	-19	Pass

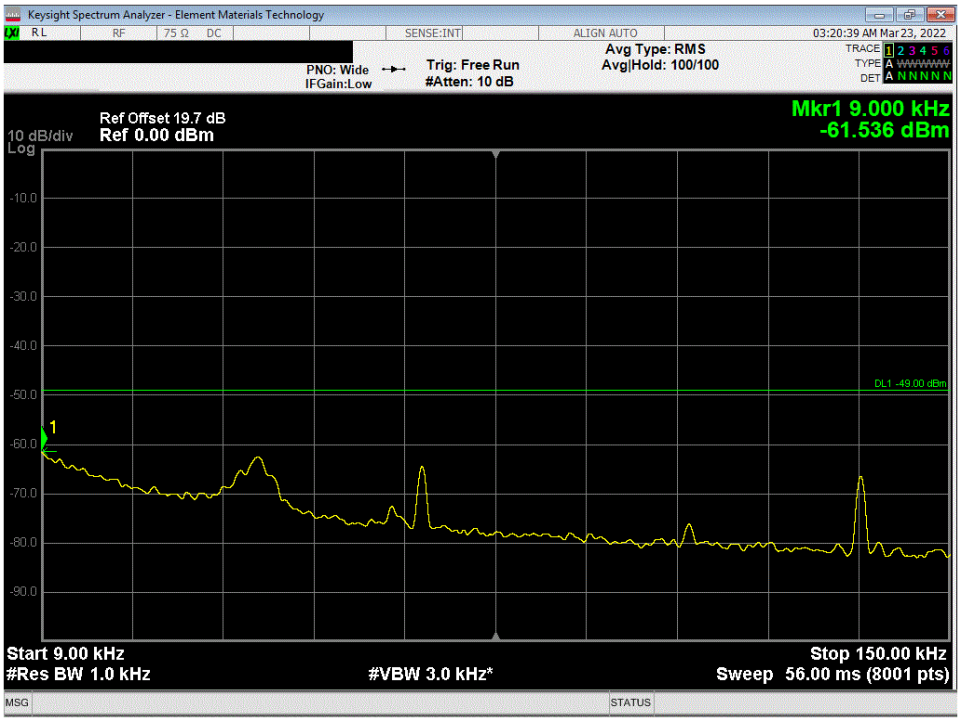


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.65	-19	Pass



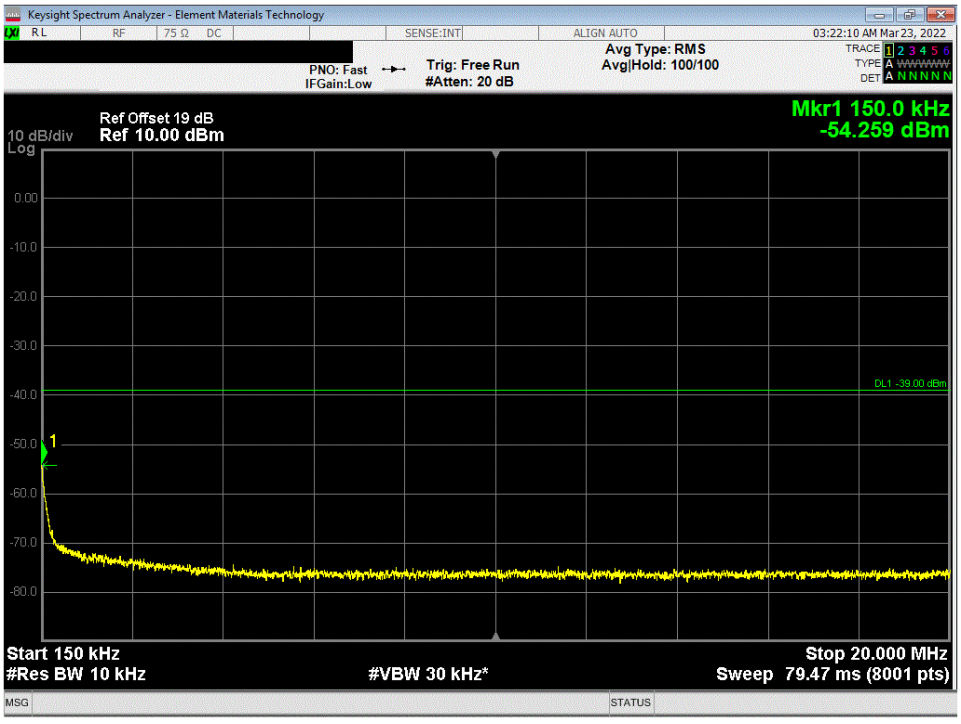
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-61.54	-49	Pass

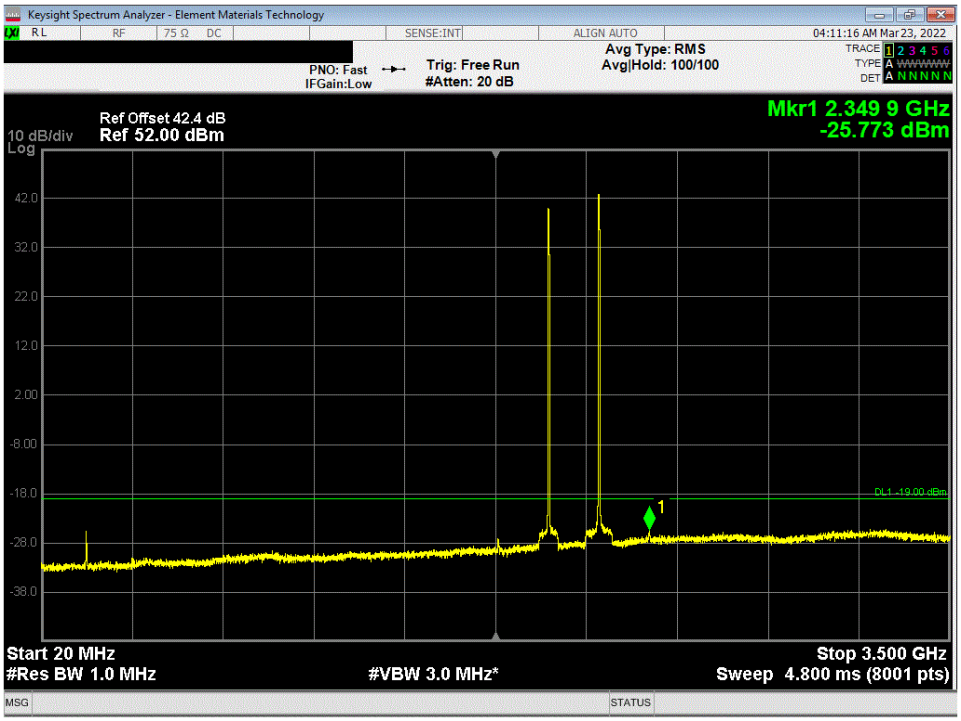


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz

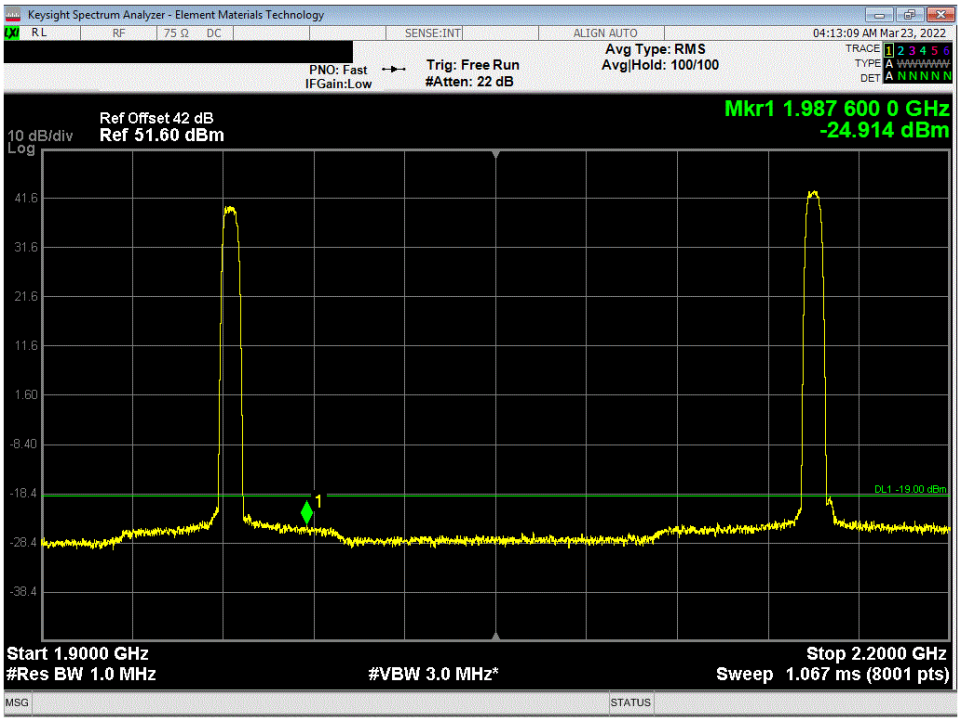
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-54.26	-39	Pass



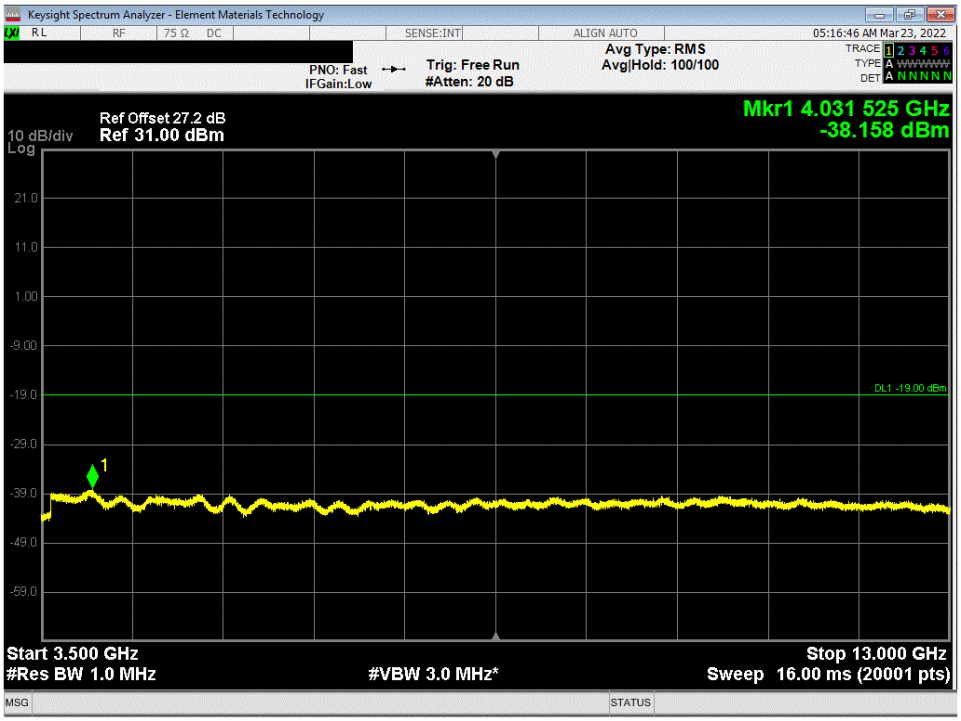
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.77	-19	Pass



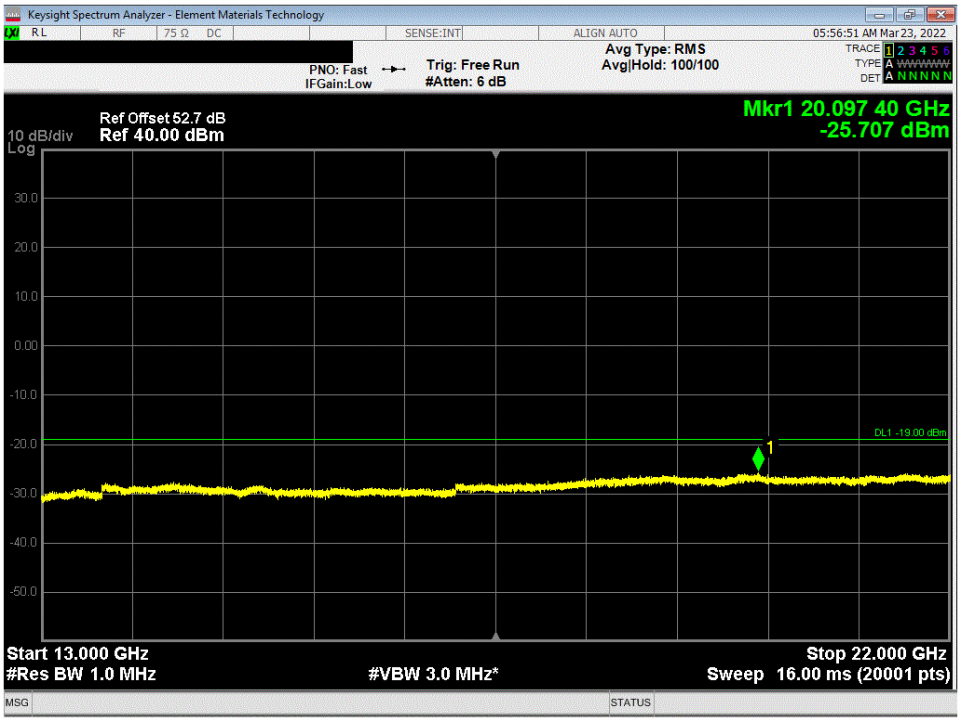
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-24.91	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.16	-19	Pass

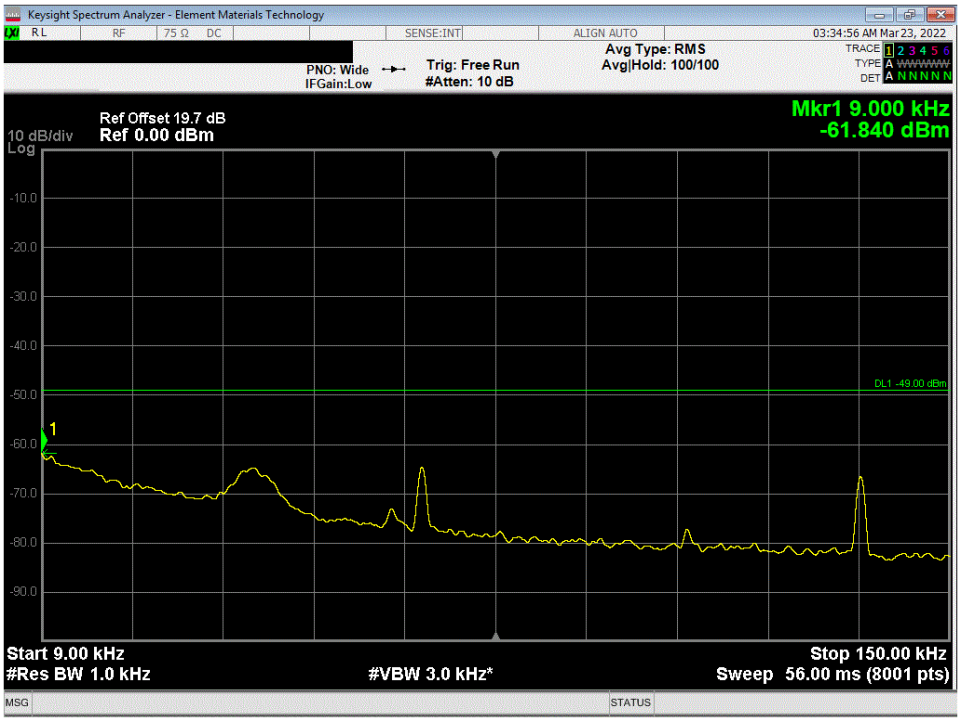


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.71	-19	Pass



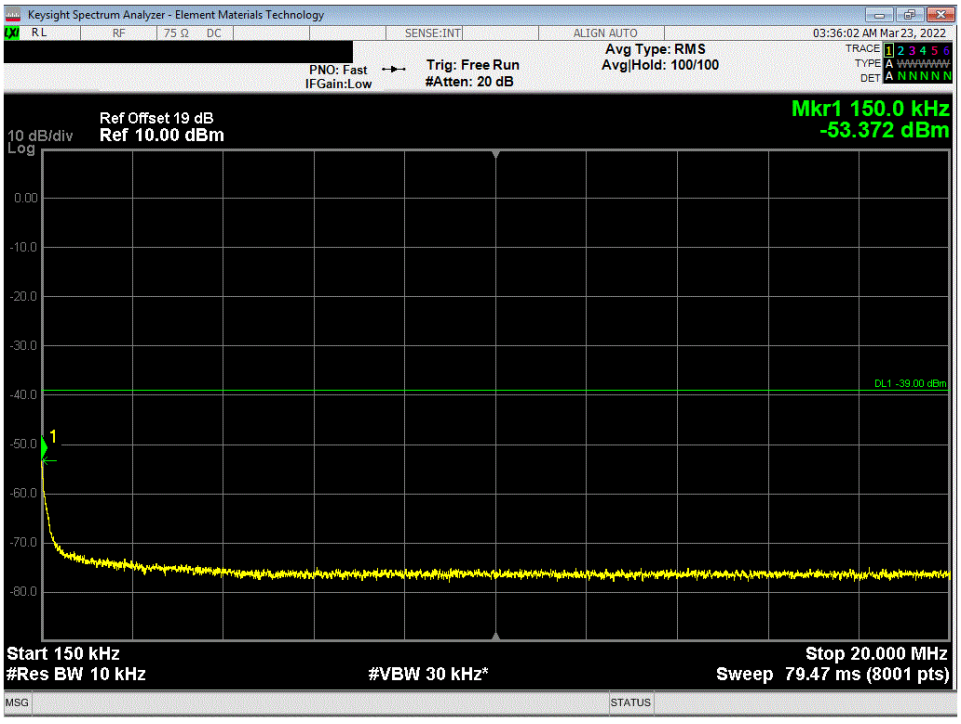
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-61.84	-49	Pass

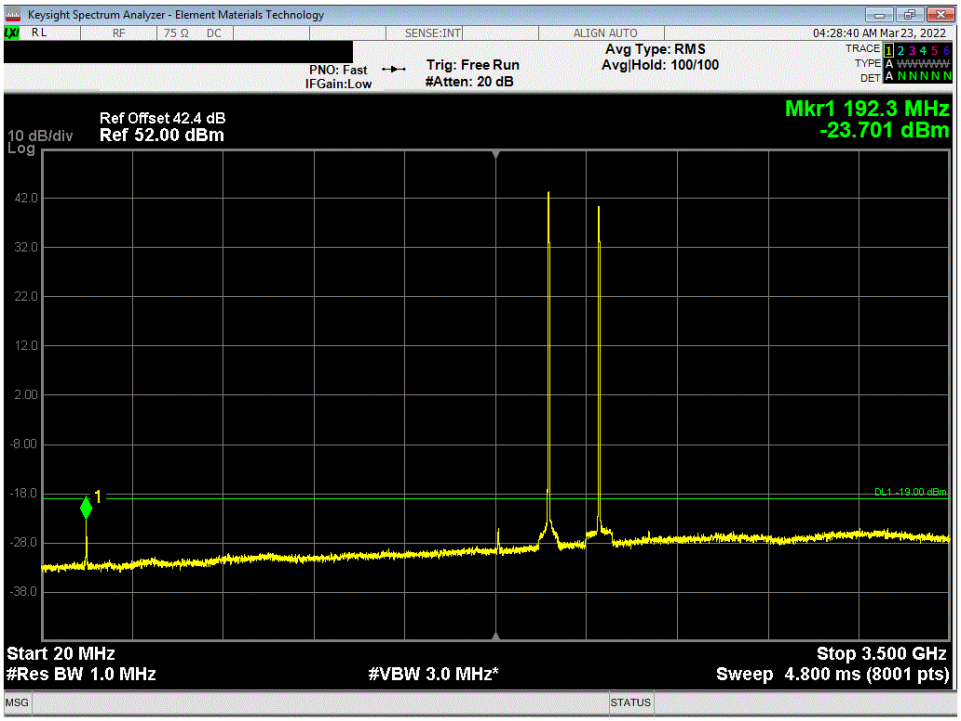


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz

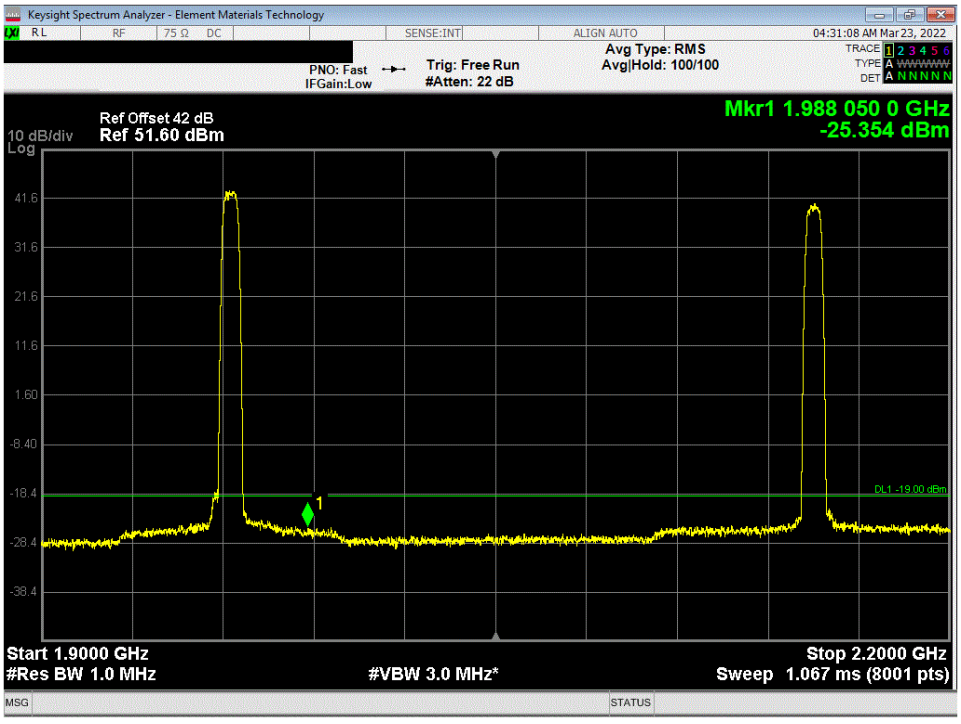
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.37	-39	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
20 MHz - 3.5 GHz		-23.7	-19	Pass

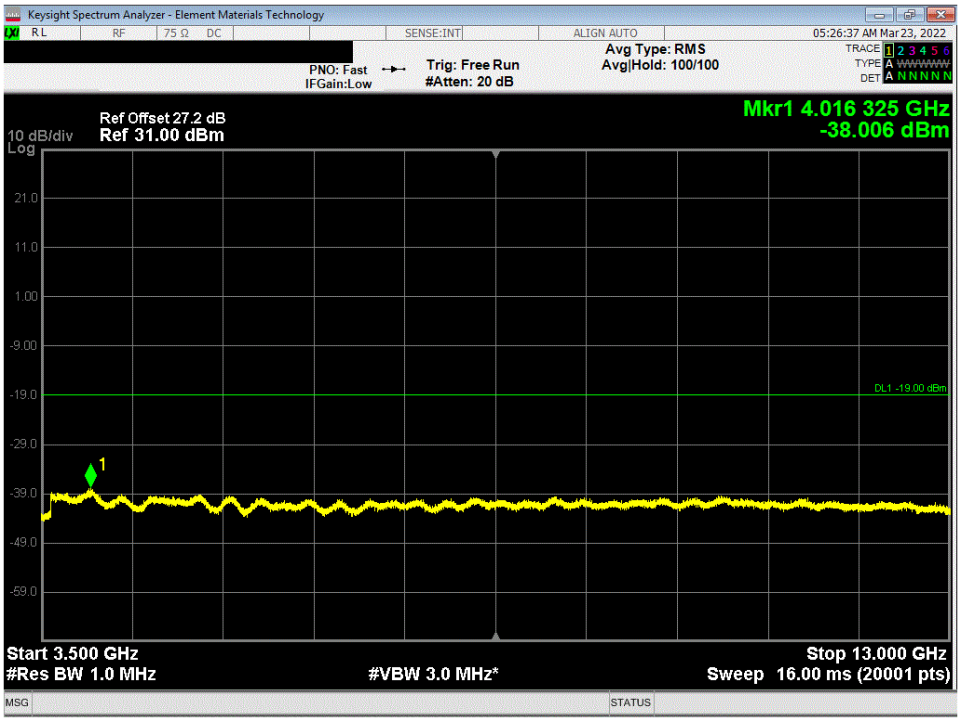


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-25.35	-19	Pass



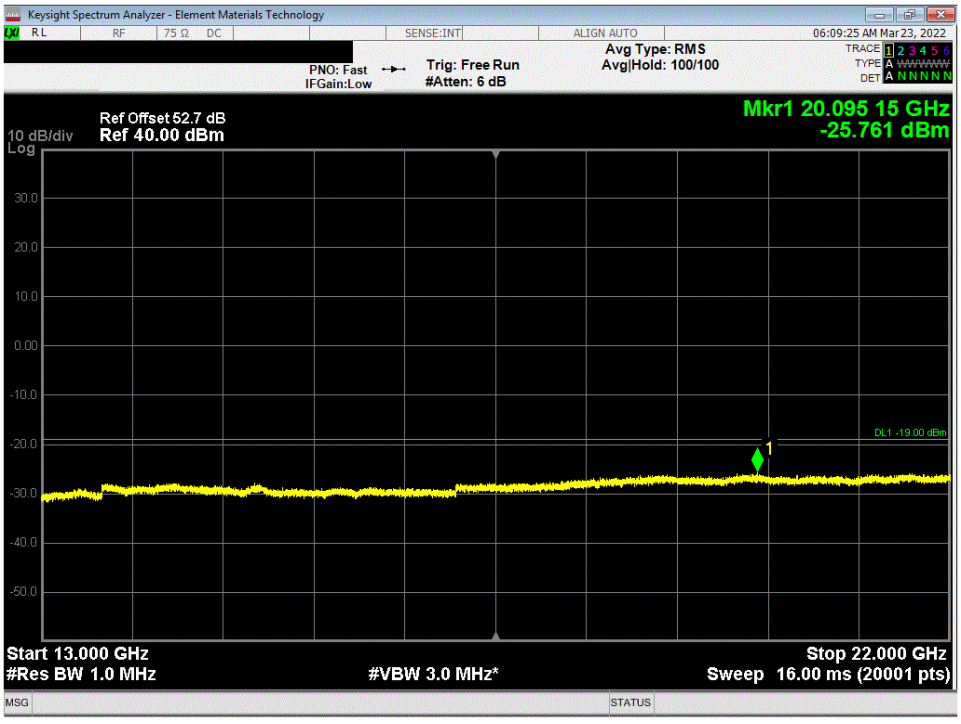
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.01	-19	Pass



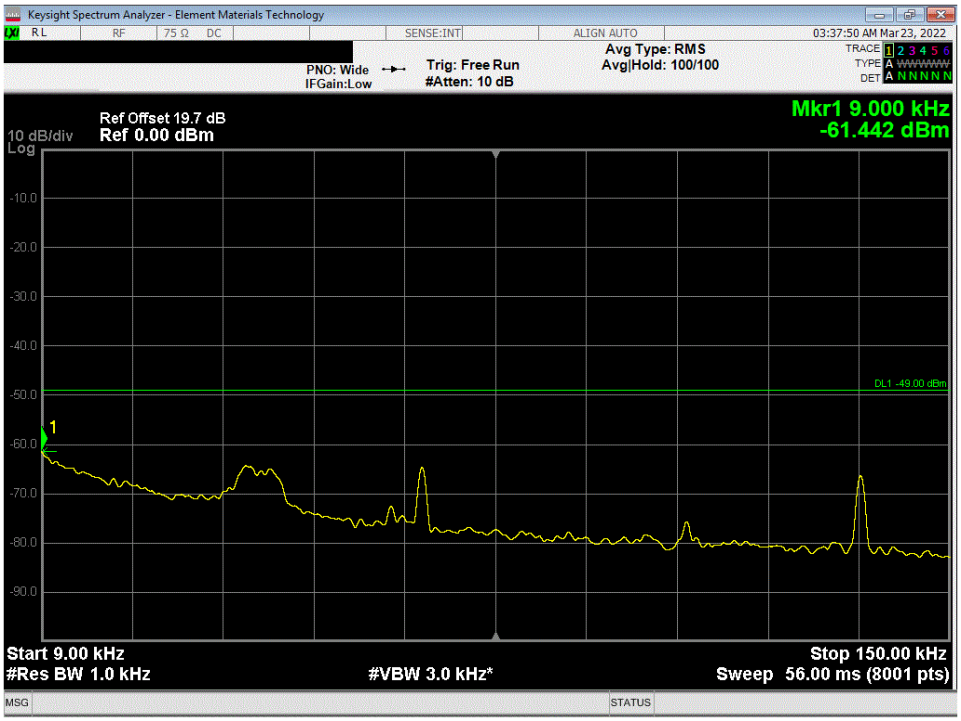
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.76	-19	Pass



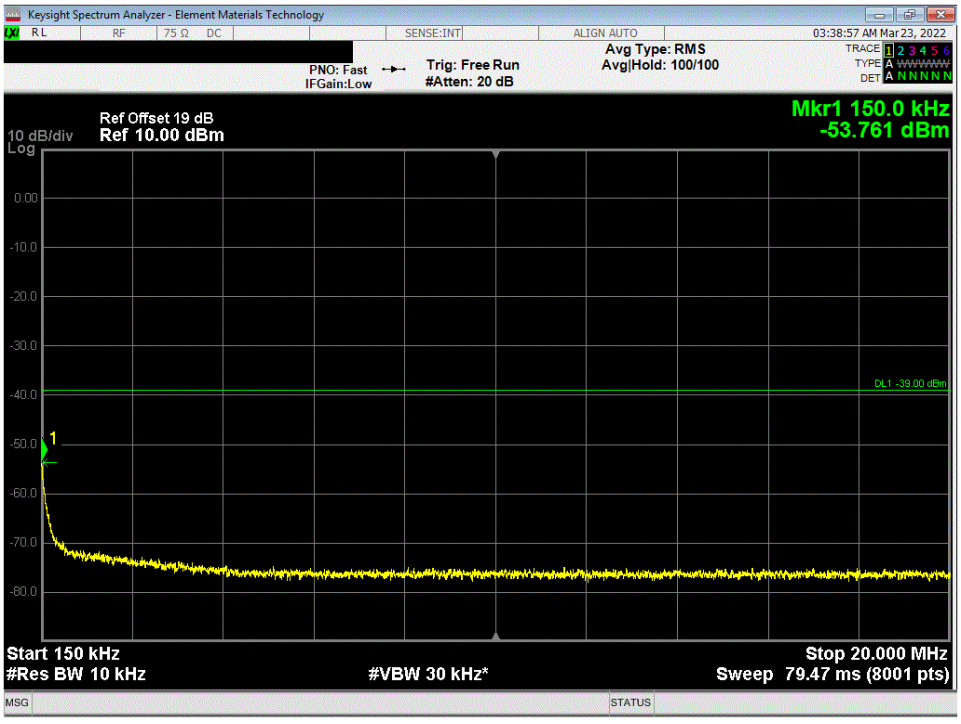
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-61.44	-49	Pass

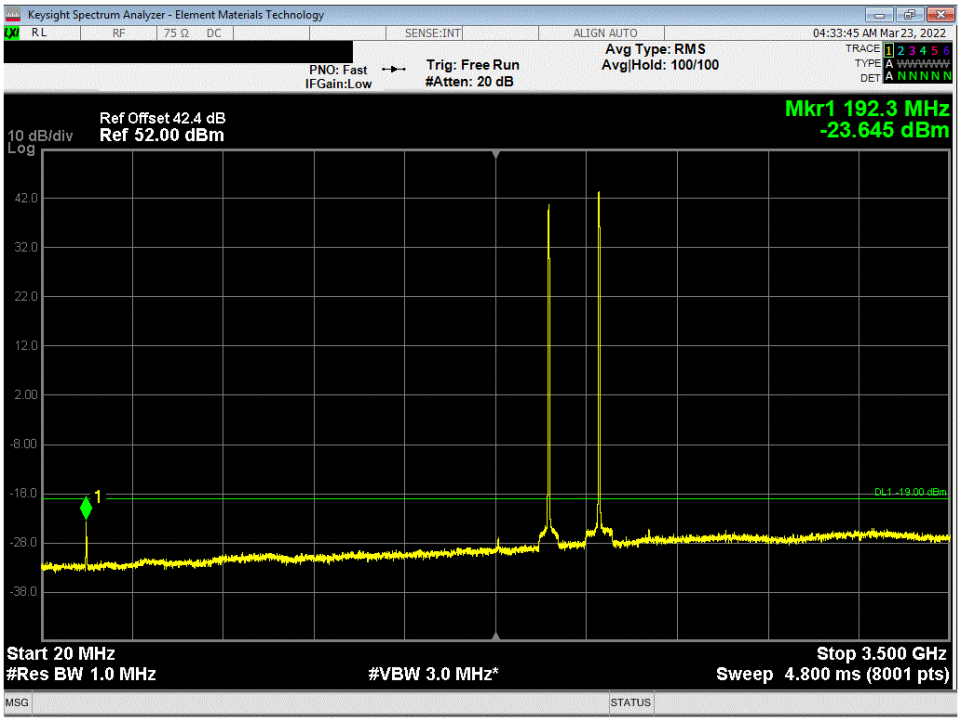


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

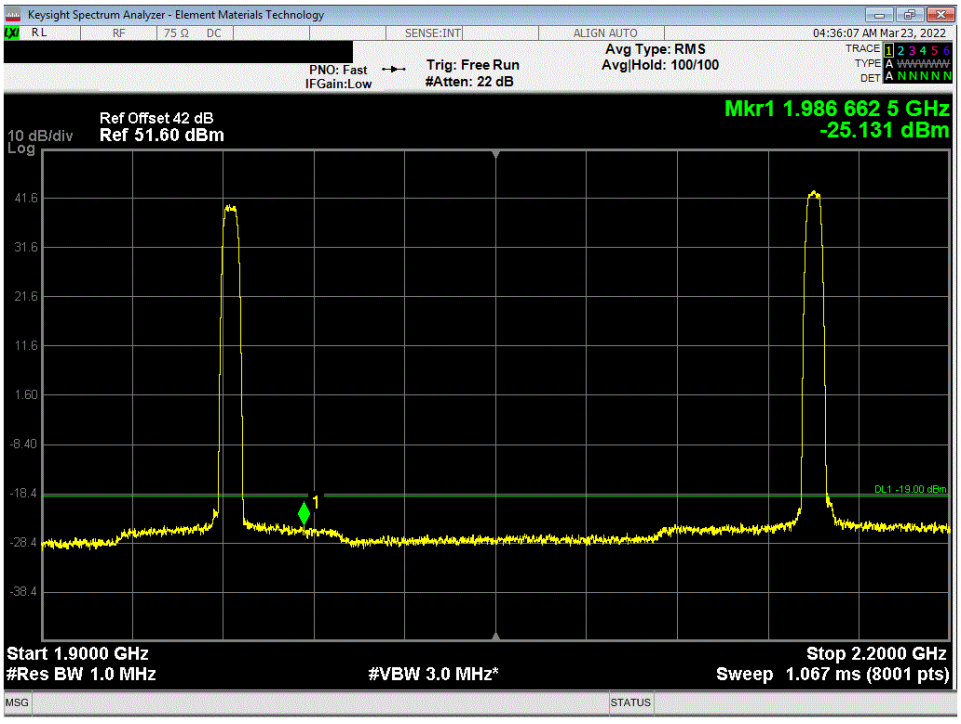
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.76	-39	Pass



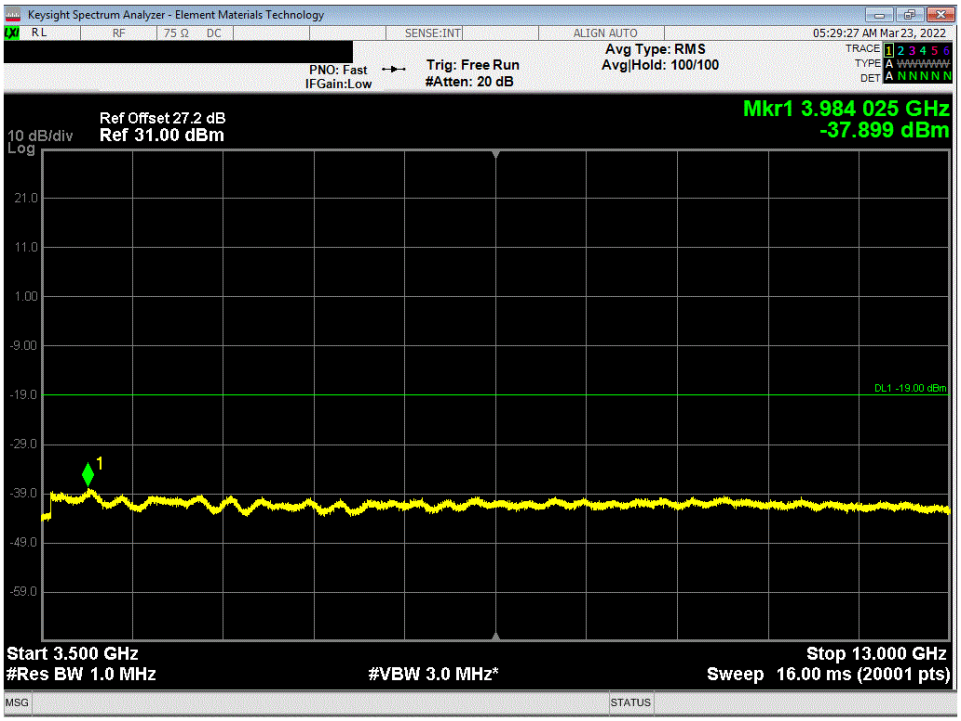
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
20 MHz - 3.5 GHz		-23.65	-19	Pass



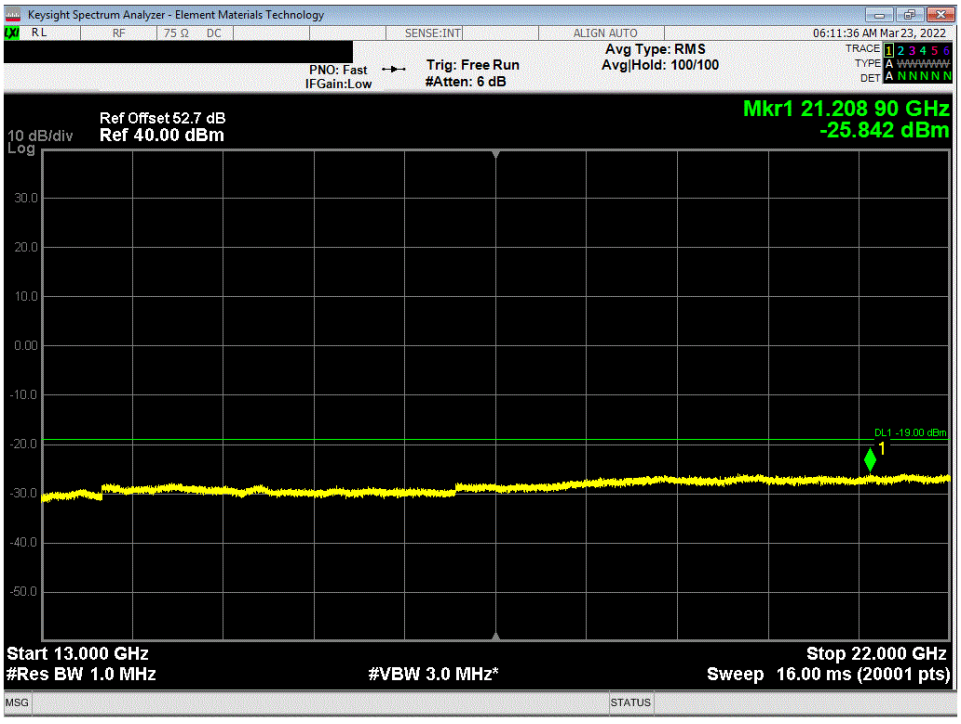
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-25.13	-19	Pass



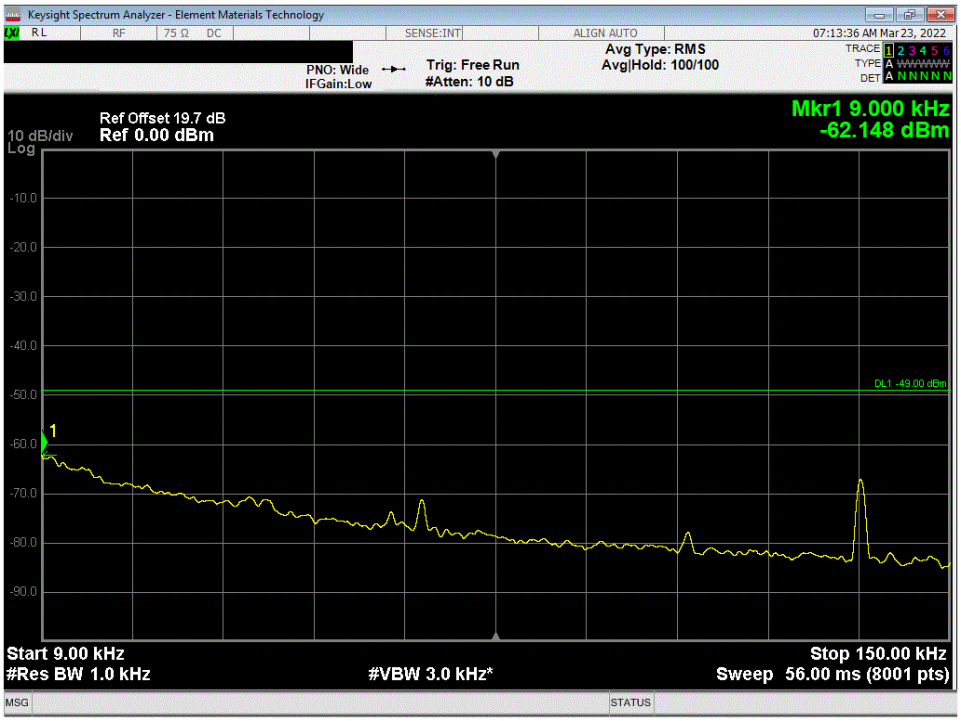
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-37.9	-19	Pass



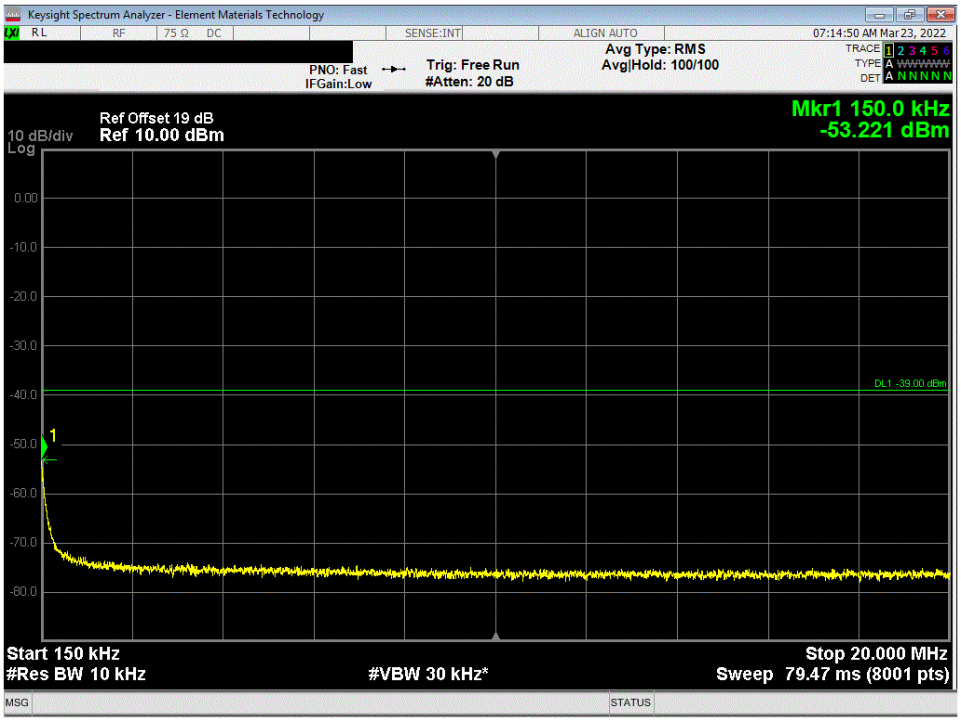
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 5 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.84	-19	Pass



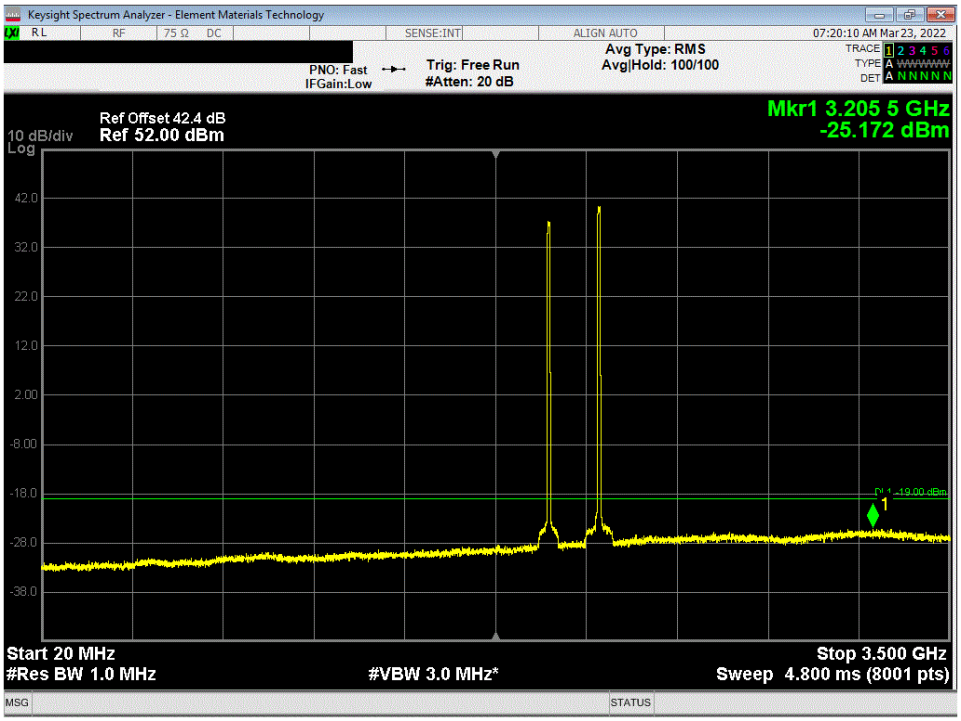
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz						
	Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz			-62.15	-49	Pass



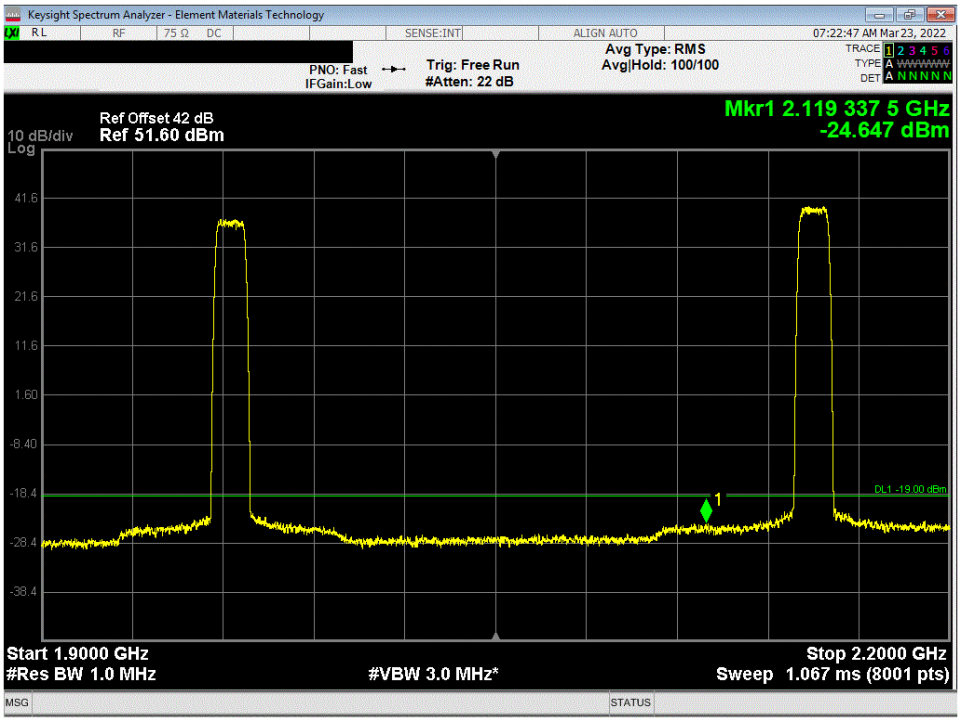
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz					
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.22	-39	Pass



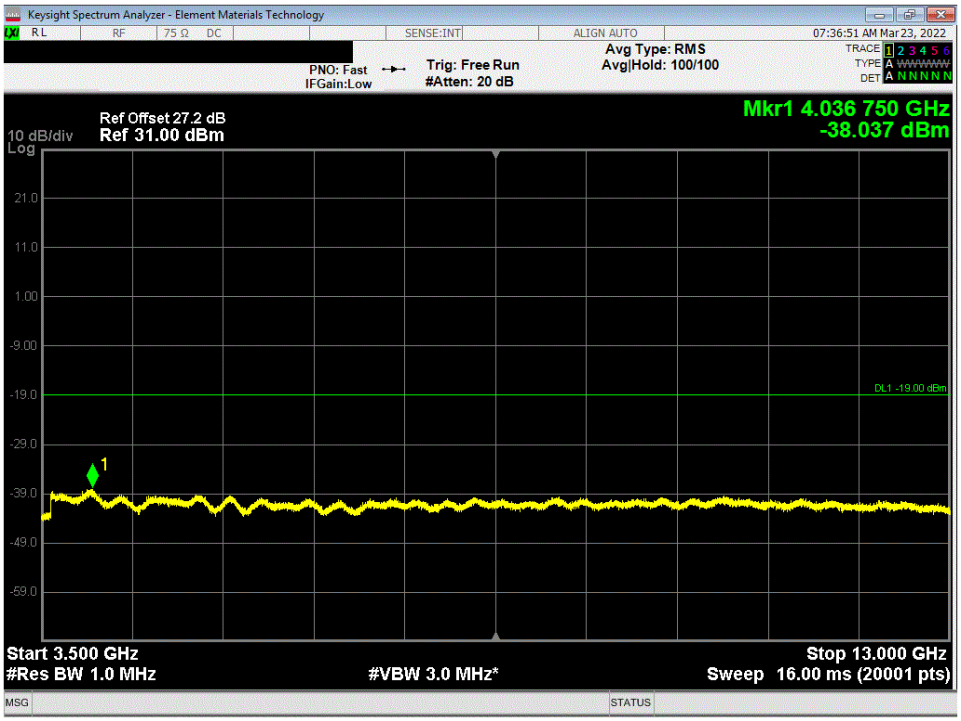
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-25.17	-19	Pass



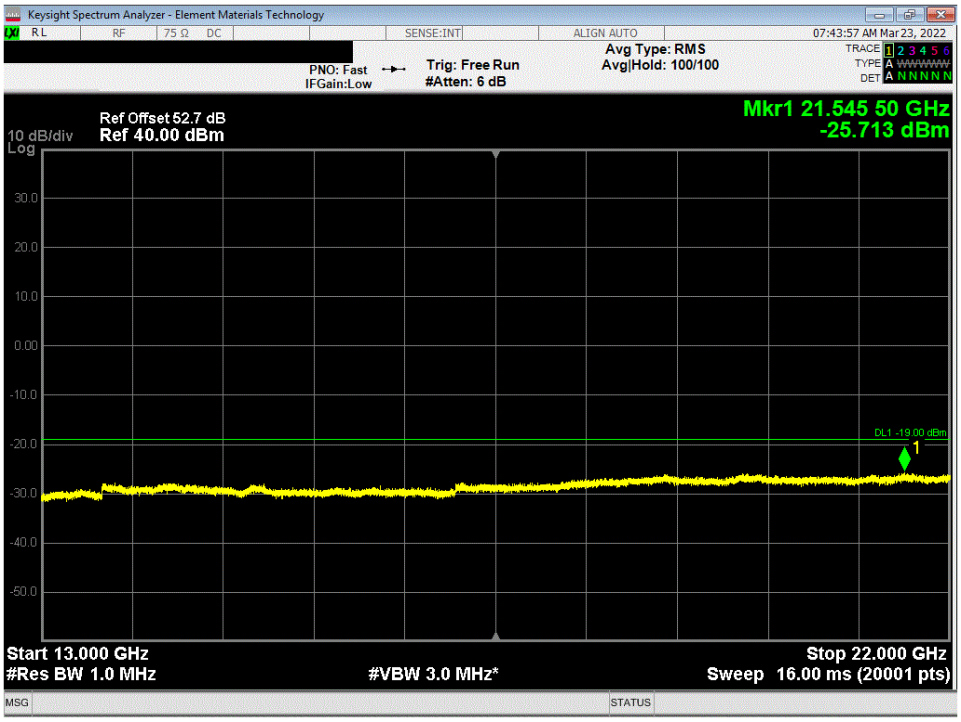
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-24.65	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.04	-19	Pass

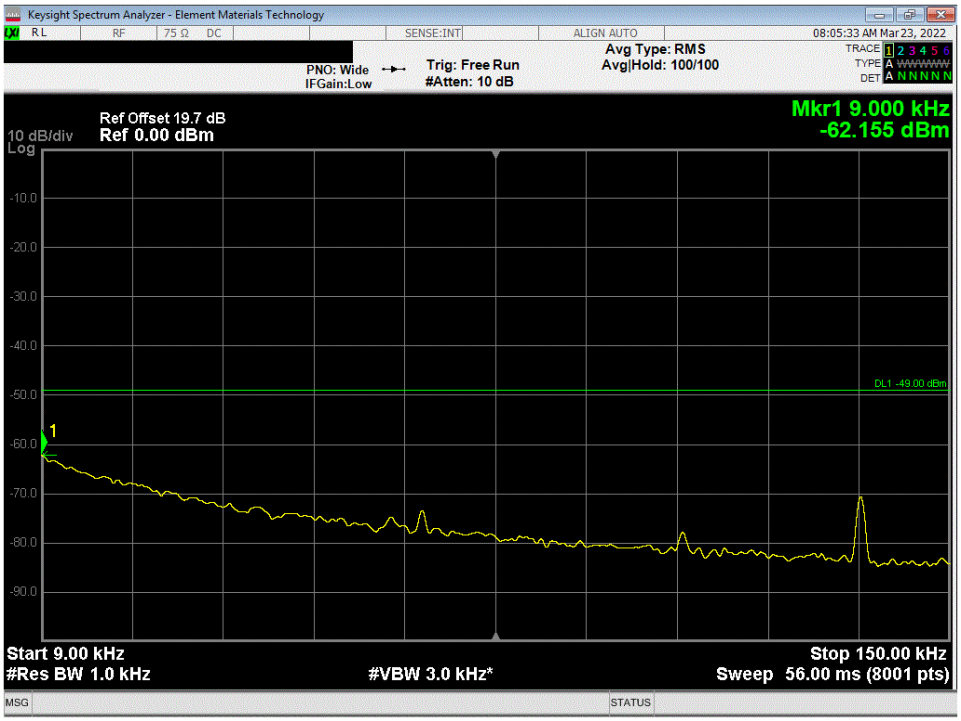


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.71	-19	Pass



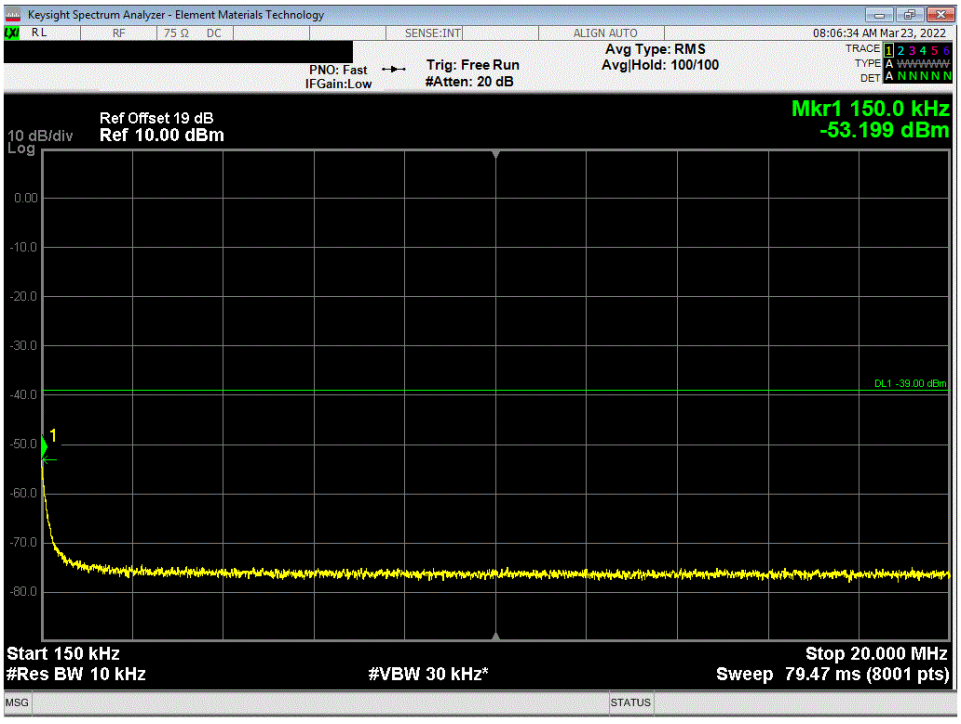
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-62.16	-49	Pass

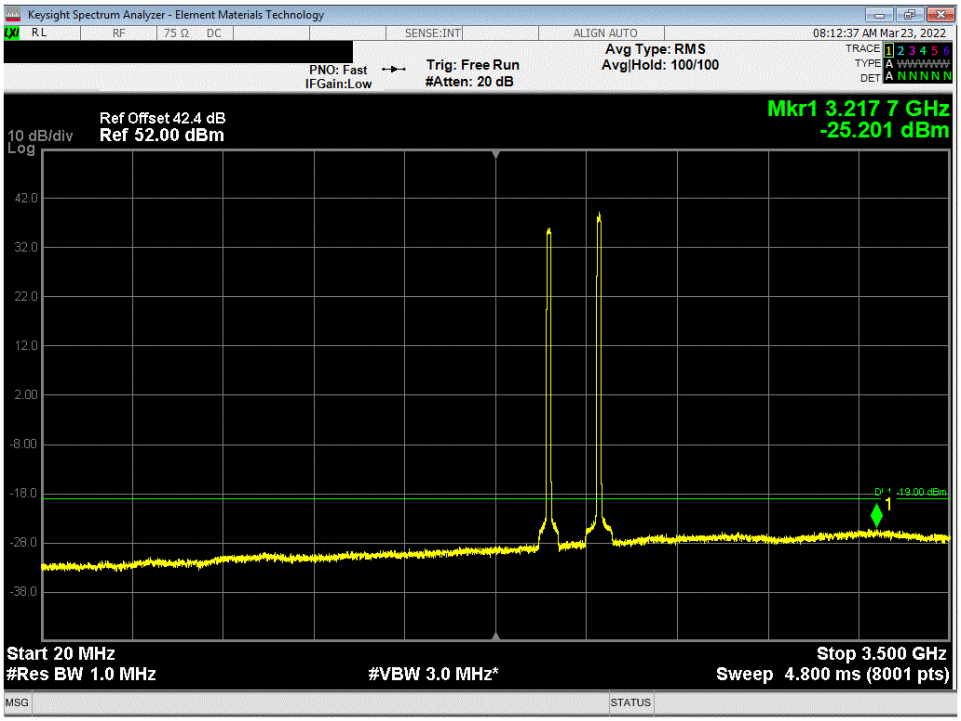


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

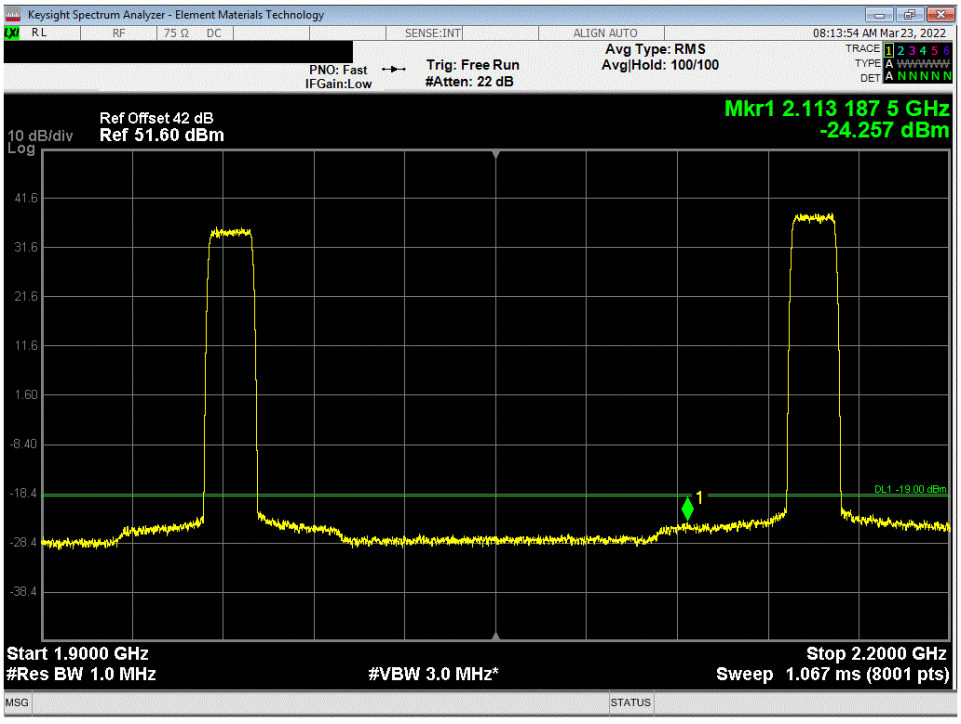
Frequency Range		Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz		-53.2	-39	Pass



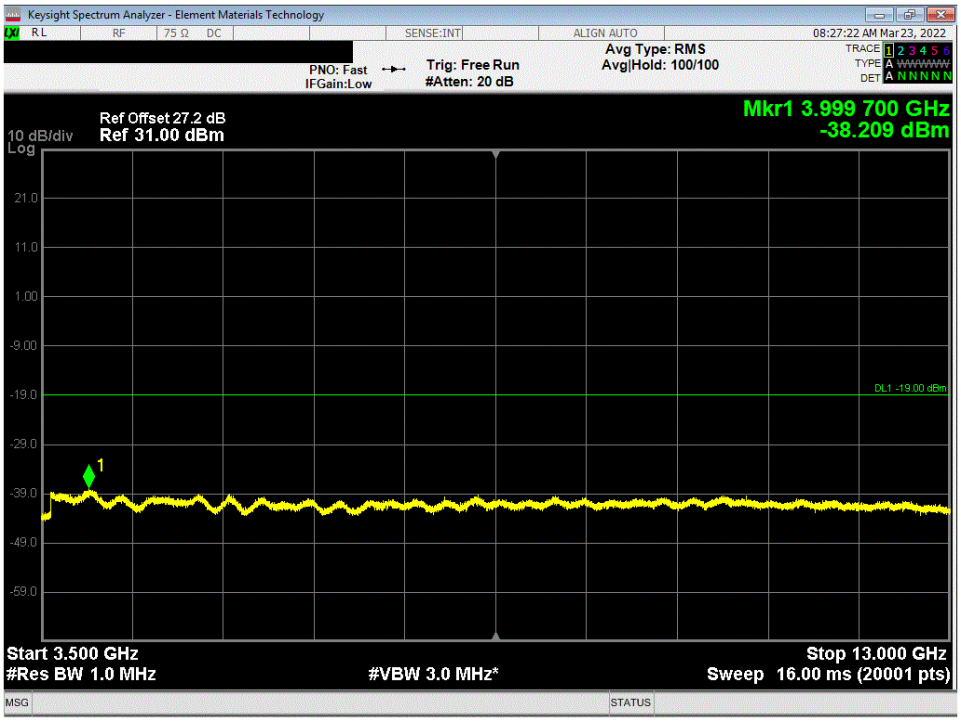
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-25.2	-19	Pass



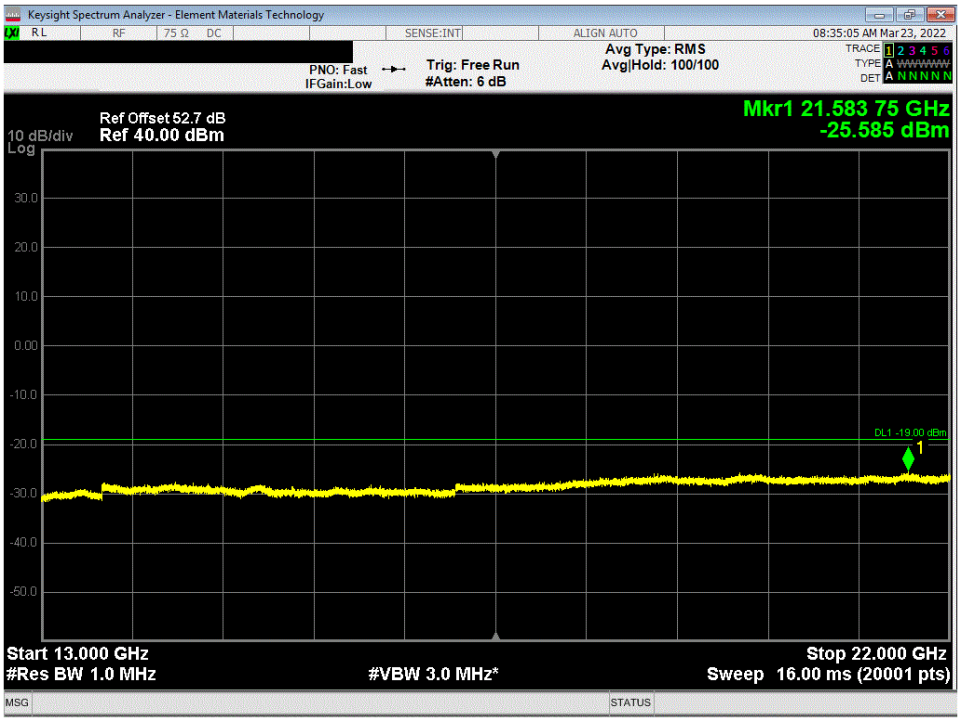
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-24.26	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.21	-19	Pass

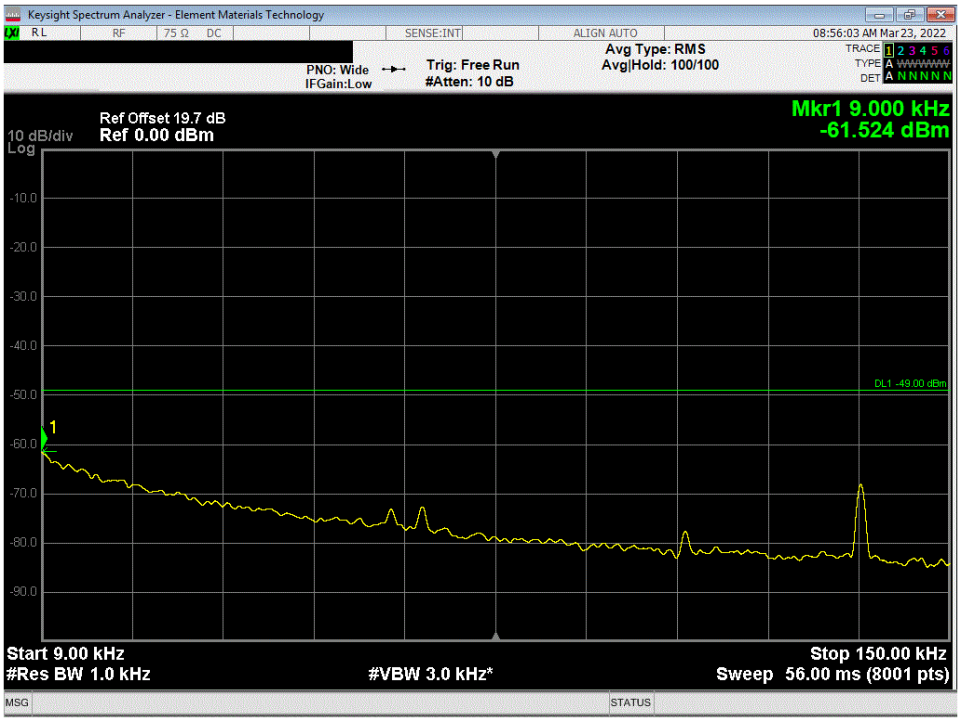


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.59	-19	Pass



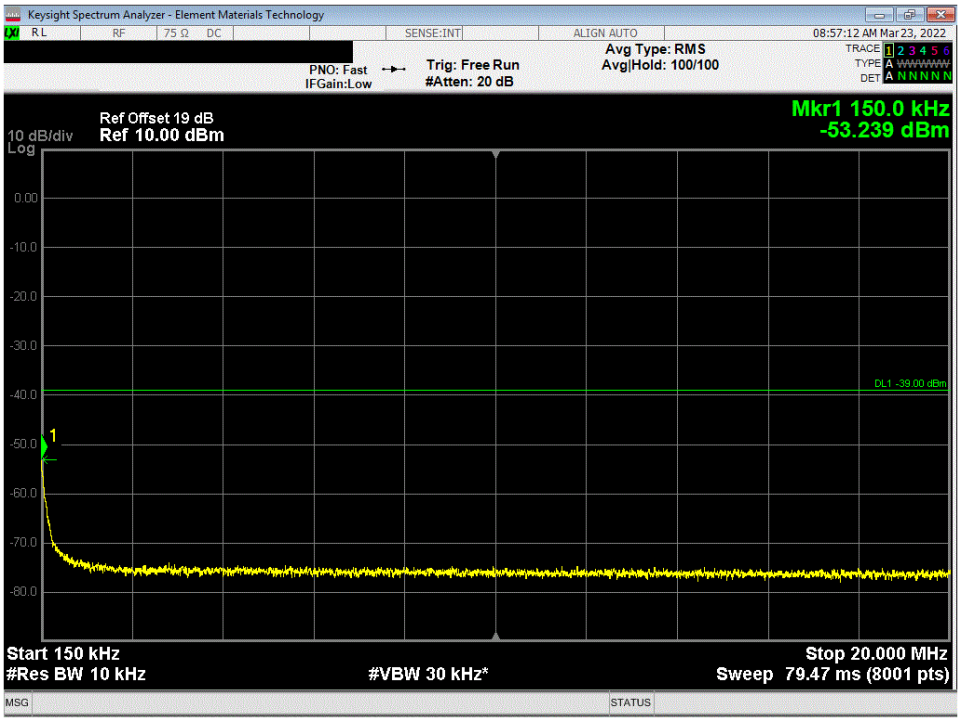
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-61.52	-49	Pass



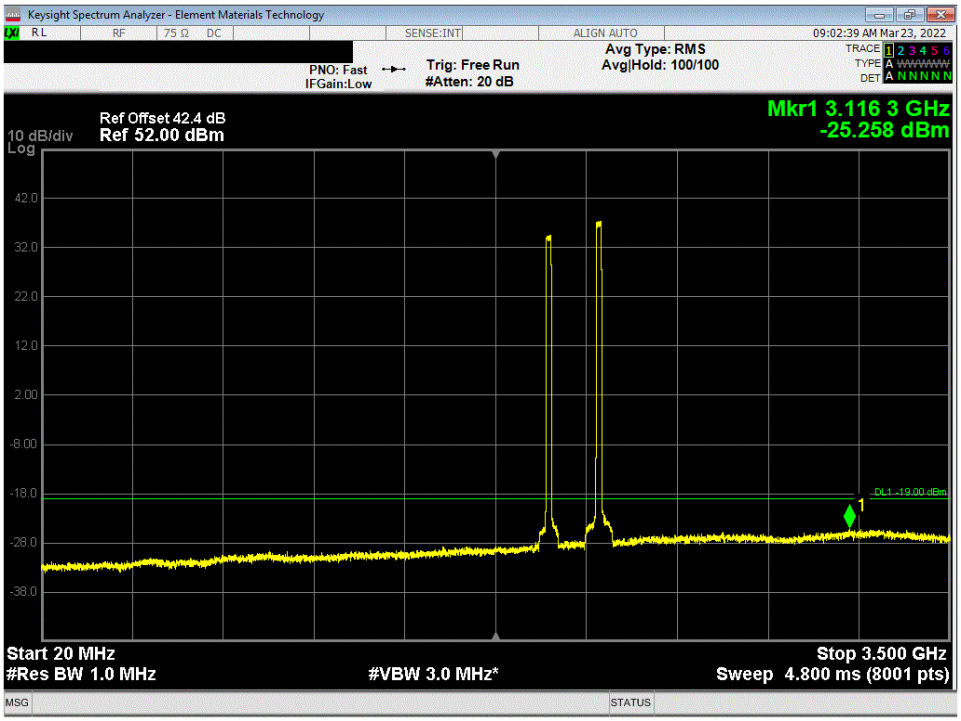
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.24	-39	Pass



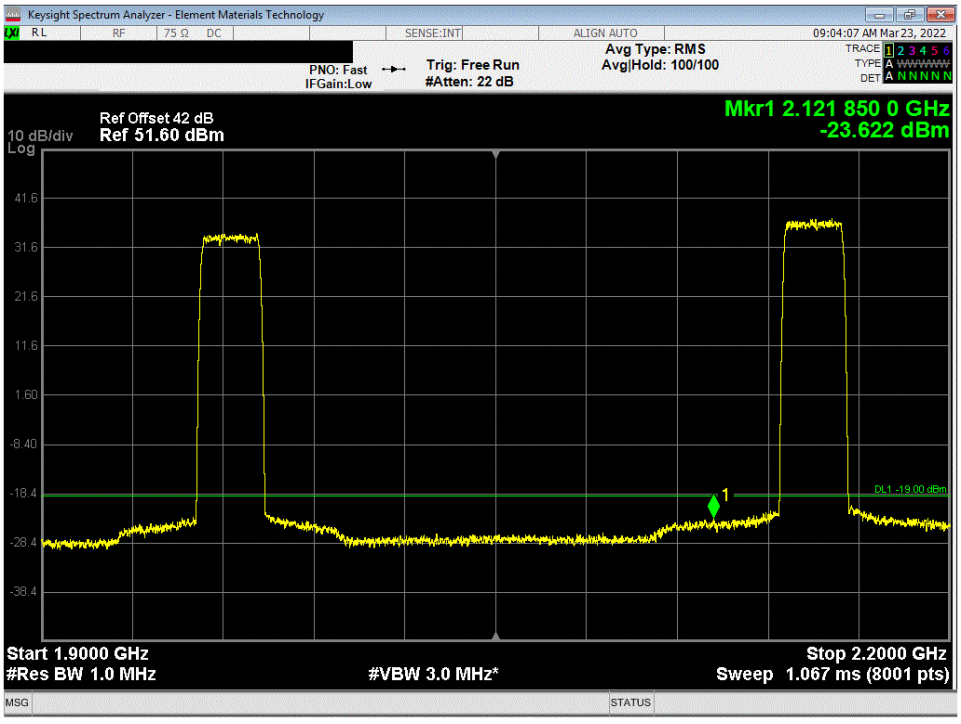
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-25.26	-19	Pass

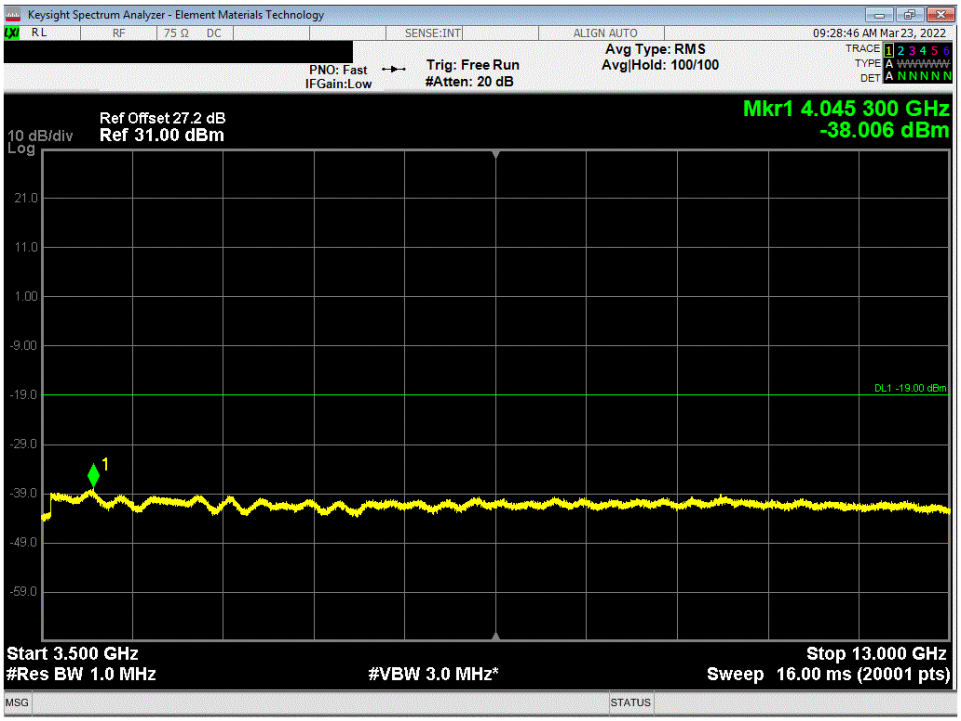


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

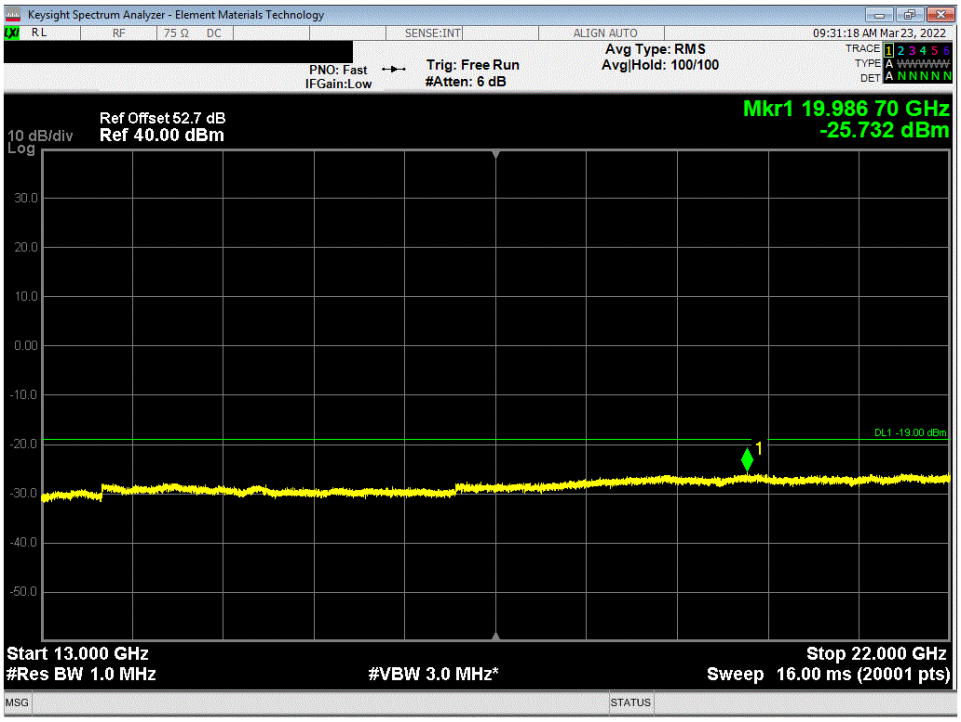
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-23.62	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.01	-19	Pass

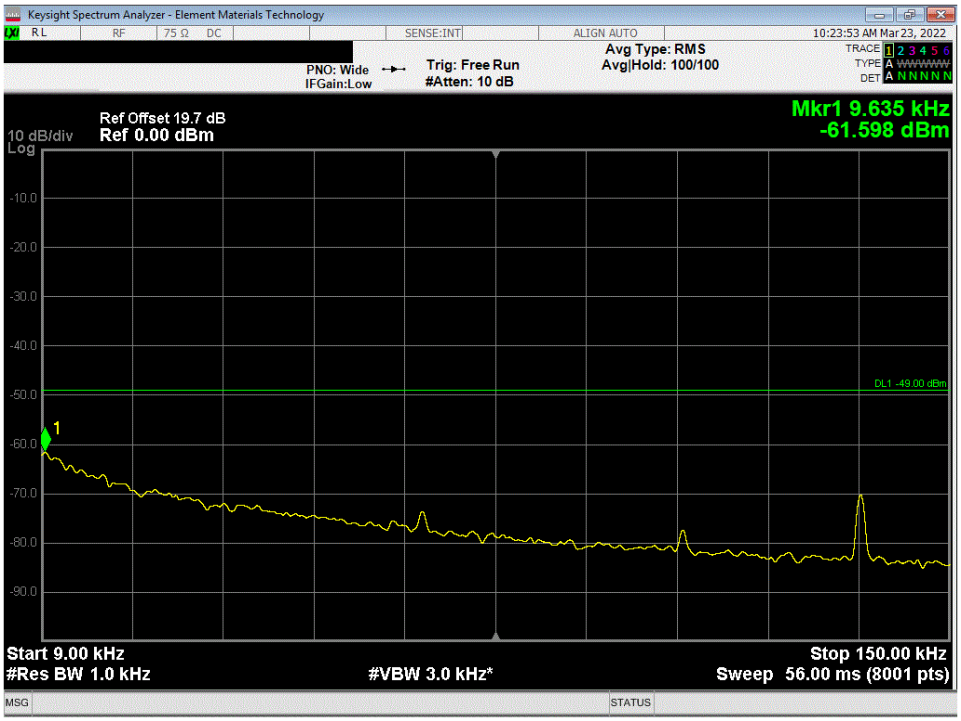


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 20 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.73	-19	Pass



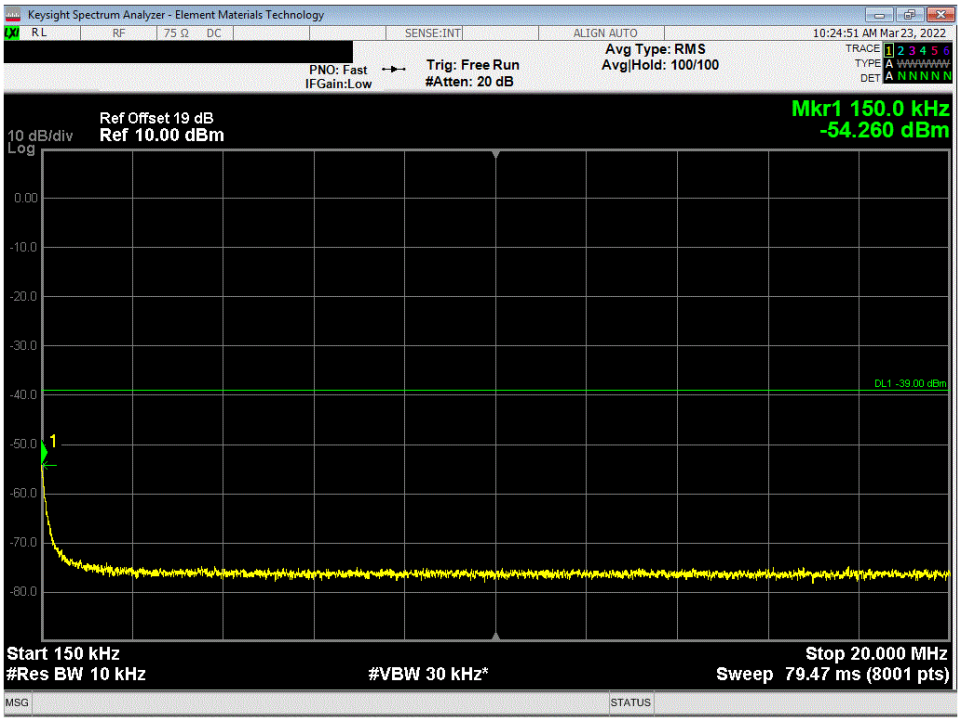
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz		-61.6	-49	Pass

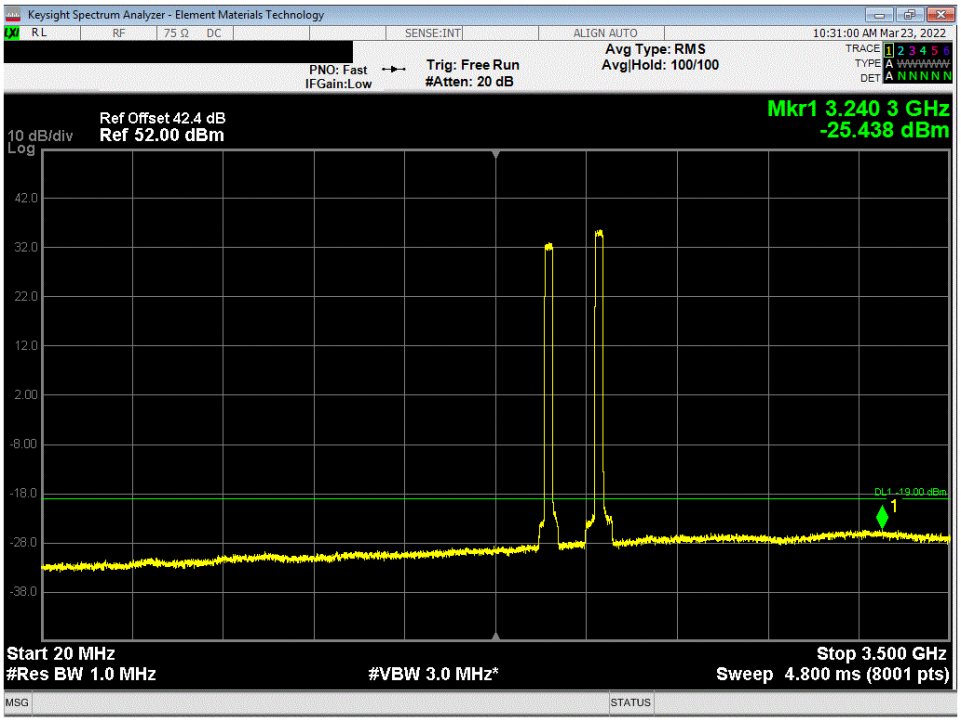


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

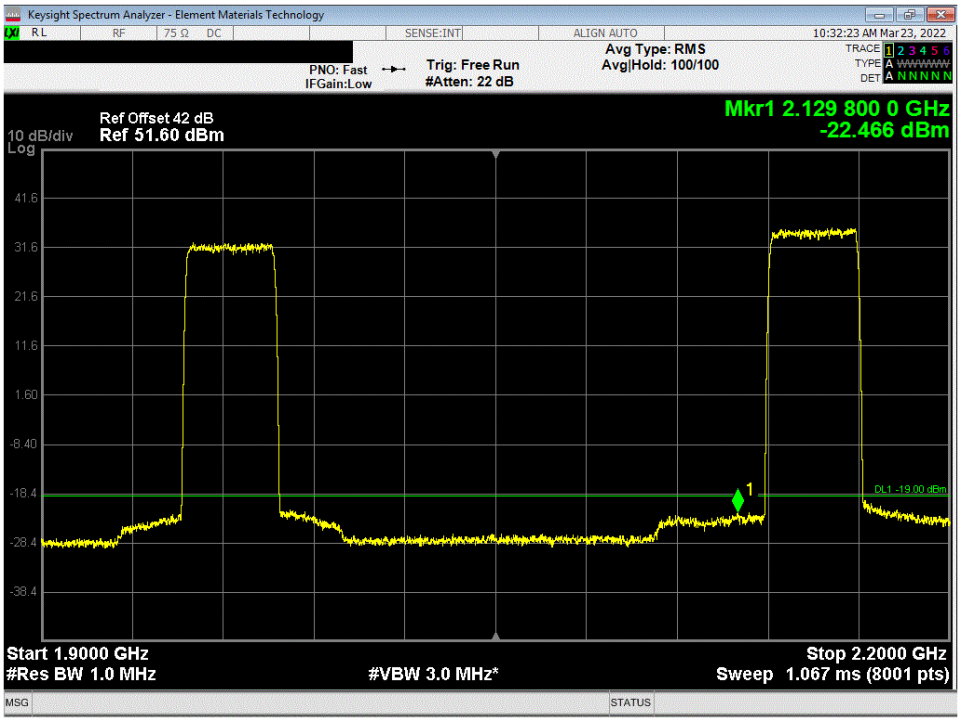
Frequency Range		Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz		-54.26	-39	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-25.44	-19	Pass

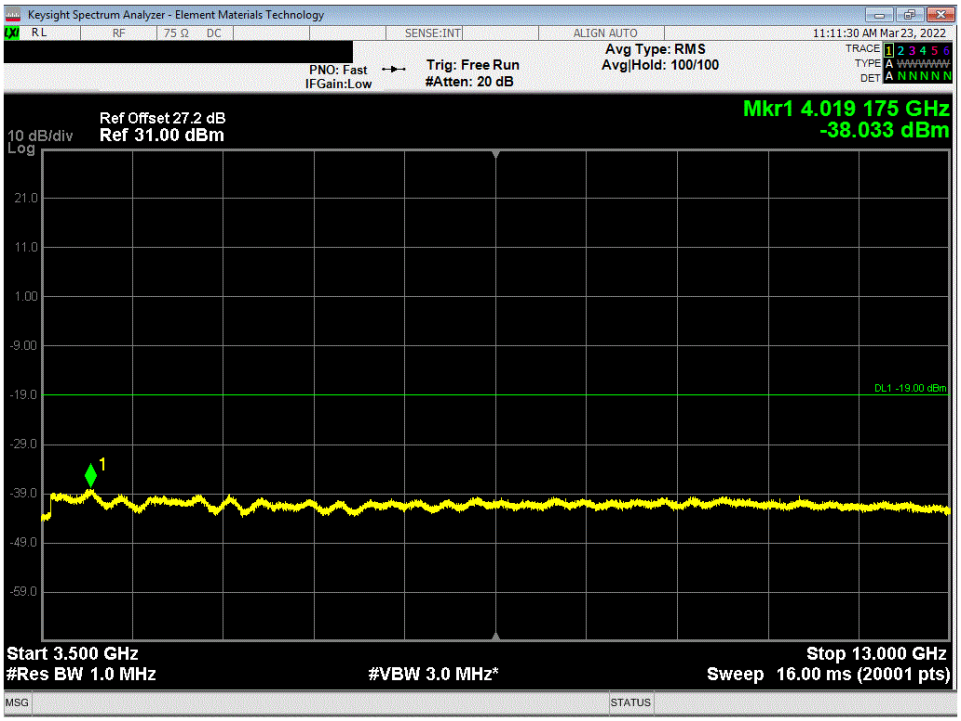


Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-22.47	-19	Pass



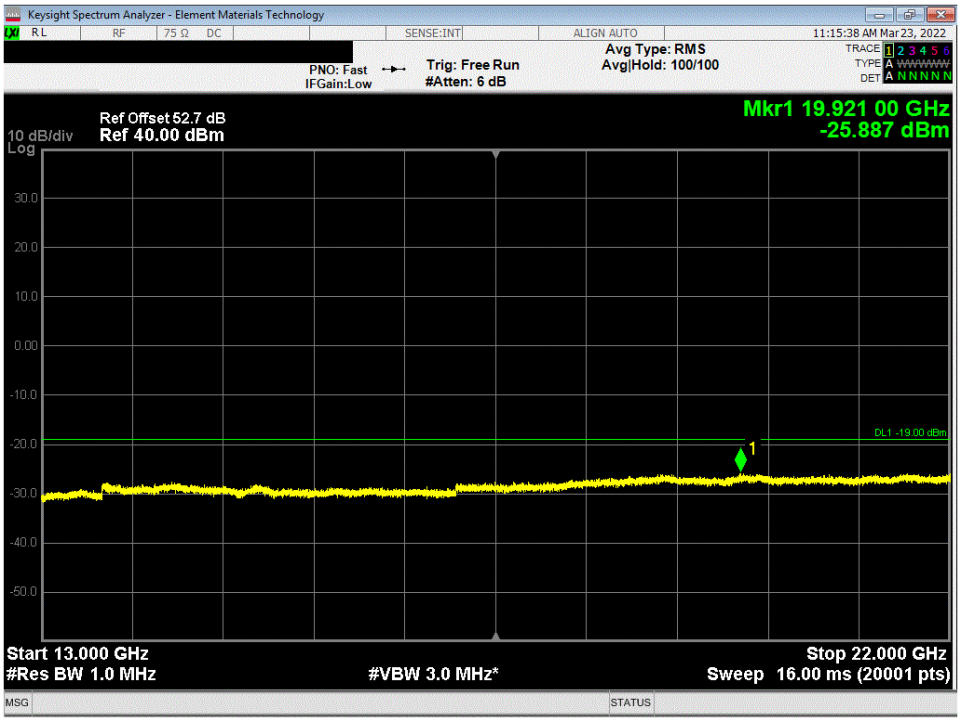
Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.03	-19	Pass



Band n66, 2110 MHz - 2200 MHz, 5G NR, Port 1, 30 MHz Bandwidth, 256-QAM Modulation, Mid Channel, 2155 MHz

Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.89	-19	Pass



SPURIOUS CONDUCTED EMISSIONS

element

TbiTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	AHFII Remote Radio Head			**Work Order:**	NOKI0038
Serial Number:	YK214000035			**Date:**	7-Apr-22
Customer:	Nokia of America Corporation			**Temperature:**	22.6 °C
Attendees:	Mitchell Hill			**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
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 losses were 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 (~26.6W or ~44.2dBm/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 and 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). Reference "Output Power" report section for all carrier frequencies. This testing is being performed per KDB 971168 D03v01 guidance for Test Case 1.

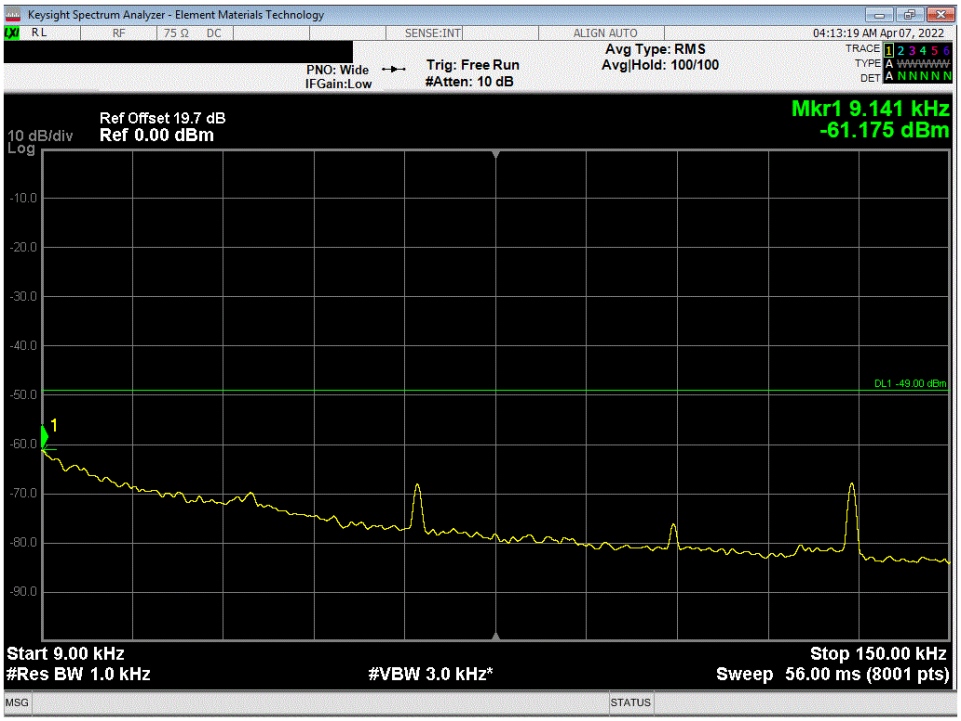
DEVIATIONS FROM TEST STANDARD

None

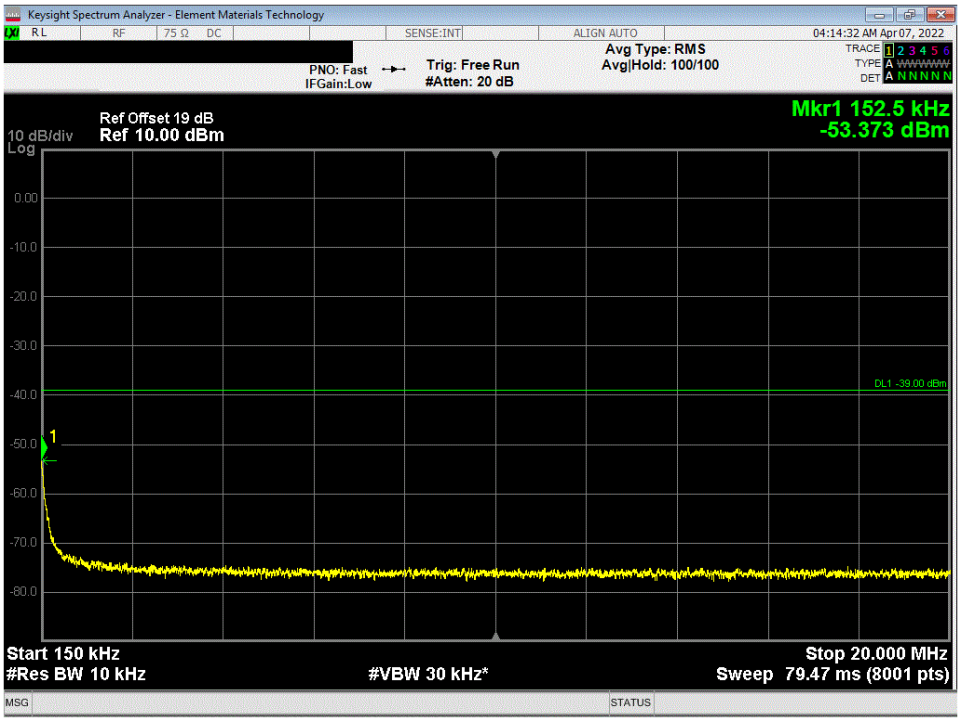
Configuration #	1,2,3,4	Signature

		Frequency Range	Value (dBm)	Limit (dBm)	Result
PCS Multicarrier Multiband					
	Port 1				
		Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-61.2	-49	Pass
		150 kHz - 20 MHz	-53.4	-39	Pass
		20 MHz - 3.5 GHz	-25.3	-19	Pass
		1.9 GHz - 2.2 GHz	-24.8	-19	Pass
		3.5 GHz - 13 GHz	-38.0	-19	Pass
		13 GHz - 22 GHz	-25.6	-19	Pass
		Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-61.8	-49	Pass
		150 kHz - 20 MHz	-54.1	-39	Pass
		20 MHz - 3 GHz	-25.6	-19	Pass
		1.9 GHz - 2.2 GHz	-27.1	-19	Pass
		3.5 GHz - 13 GHz	-37.9	-19	Pass
		18 GHz - 22 GHz	-25.6	-19	Pass
		Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-61.8	-49	Pass
		150 kHz - 20 MHz	-53.4	-39	Pass
		20 MHz - 3.5 GHz	-25.1	-19	Pass
		1.9 GHz - 2.2 GHz	-26.4	-19	Pass
		3.5 GHz - 13 GHz	-37.9	-19	Pass
		13 GHz - 22 GHz	-25.4	-19	Pass

PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,						
	Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz			-61.18	-49	Pass

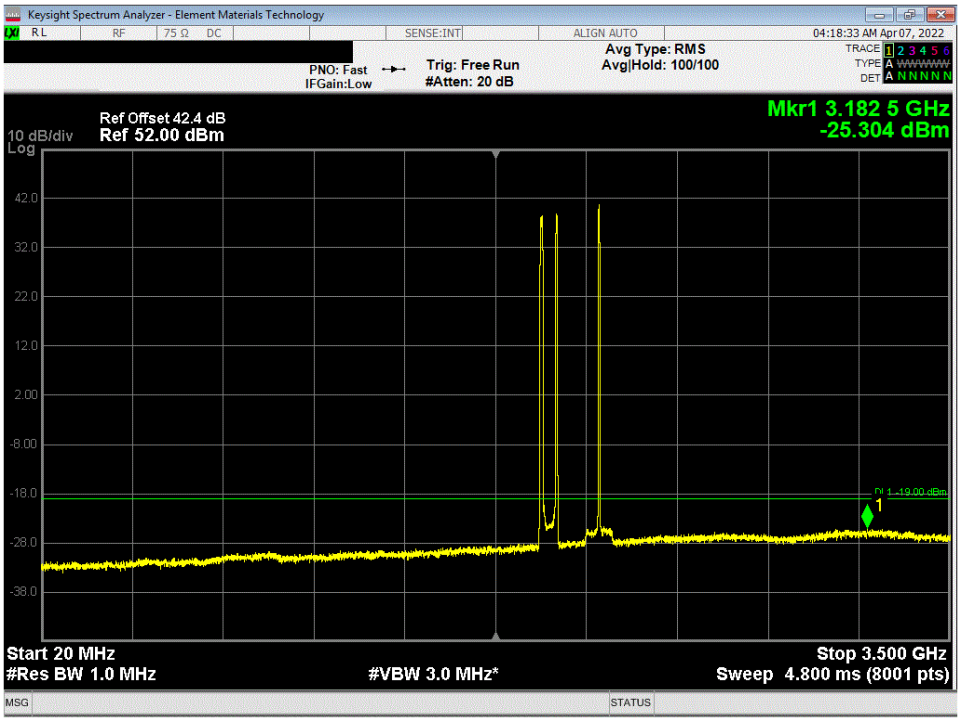


PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,					
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.37	-39	Pass



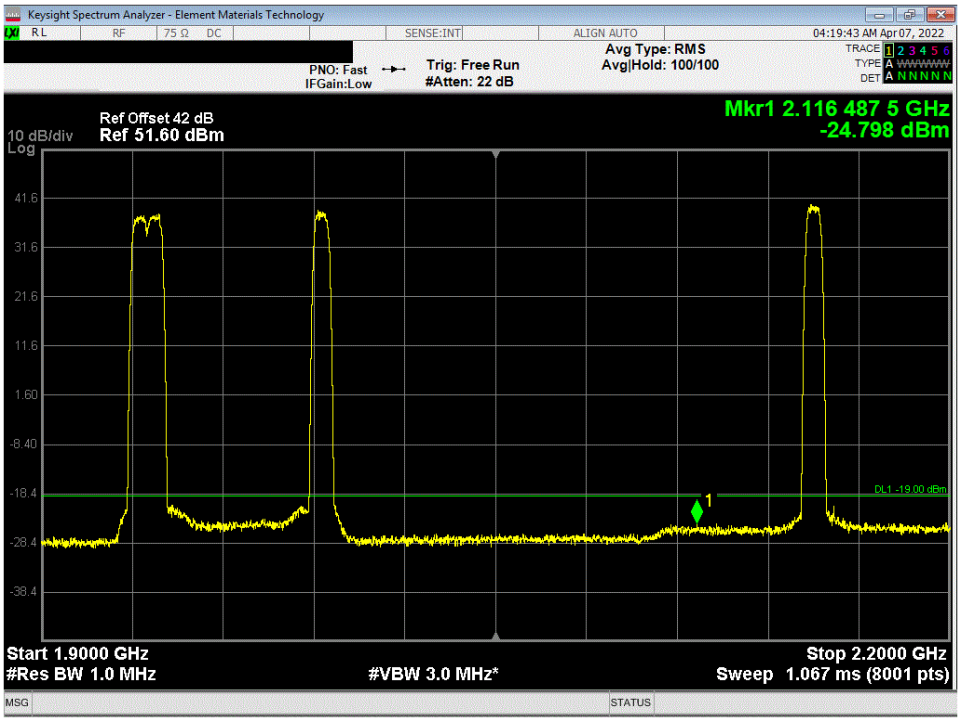
PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,

Frequency Range		Value (dBm)	Limit (dBm)	Result
20 MHz - 3.5 GHz		-25.3	-19	Pass

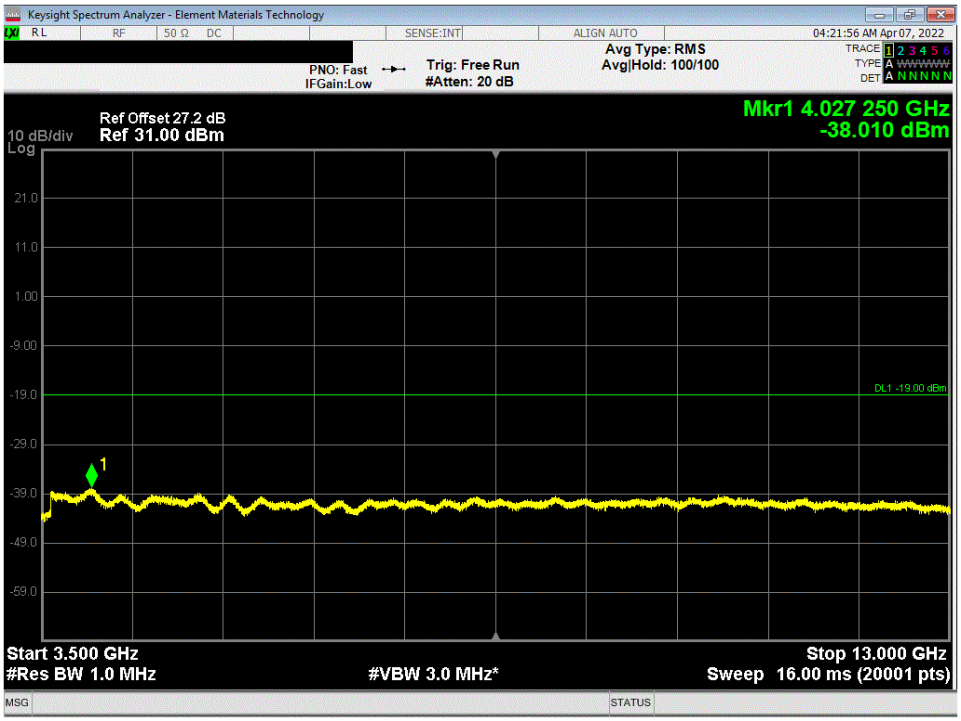


PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,

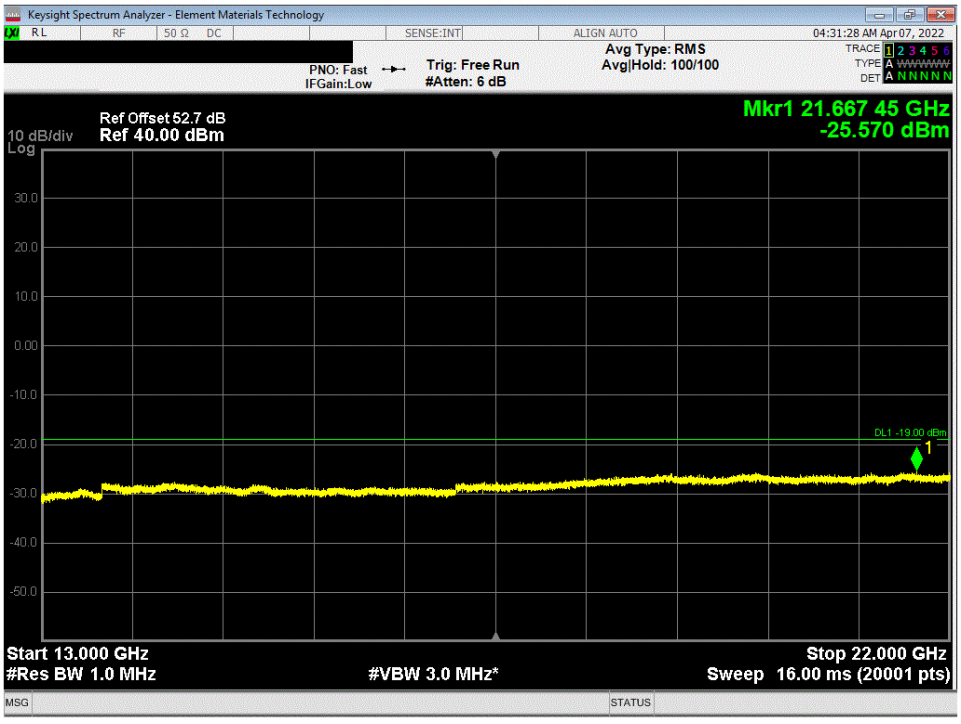
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-24.8	-19	Pass



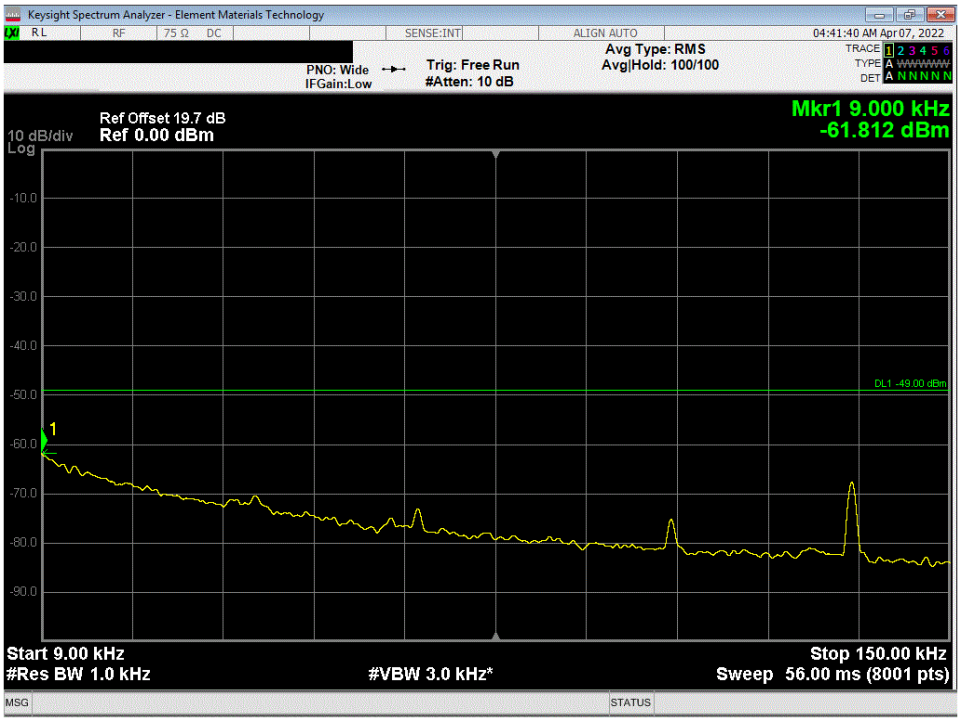
PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-38.01	-19	Pass



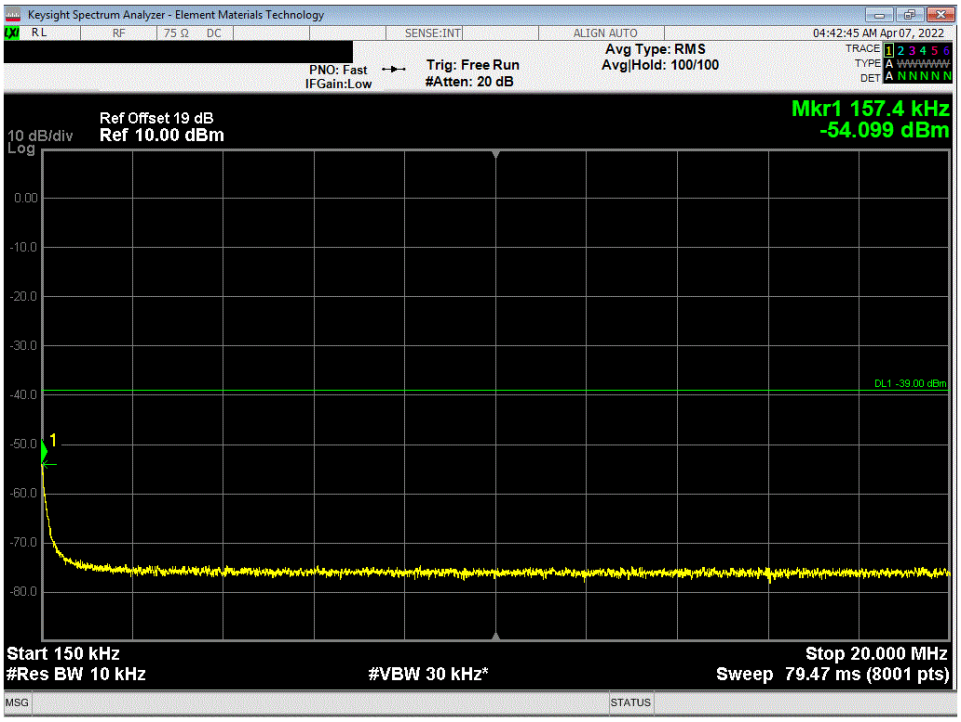
PCS Multicarrier Multiband, Port 1, Test Case 1: PCS Band NR5 (3 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.57	-19	Pass



PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,						
	Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz			-61.81	-49	Pass

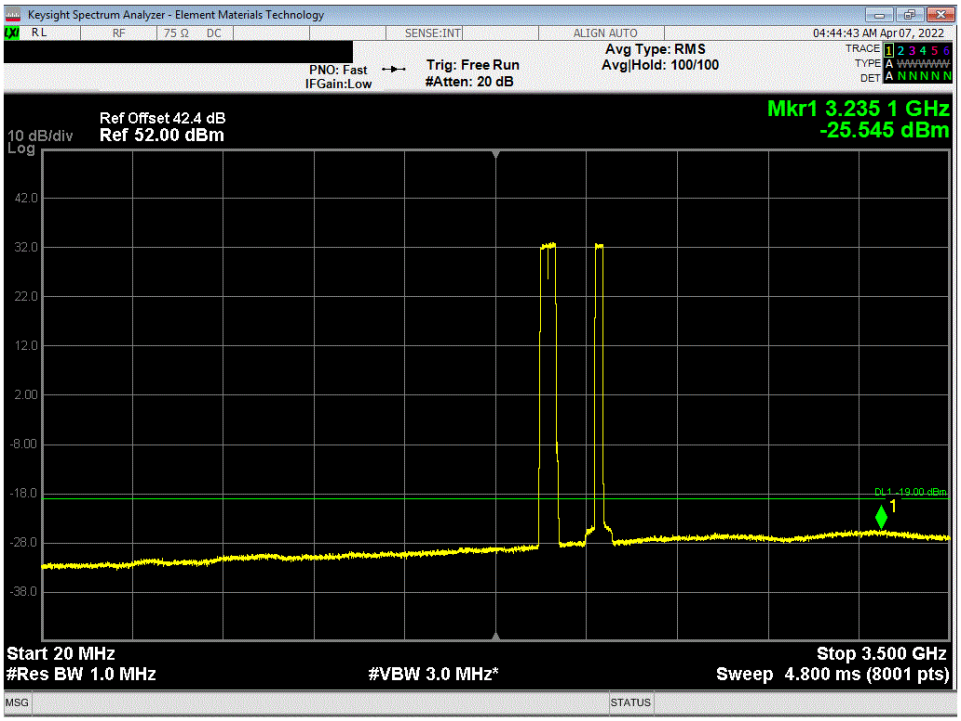


PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,					
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-54.1	-39	Pass



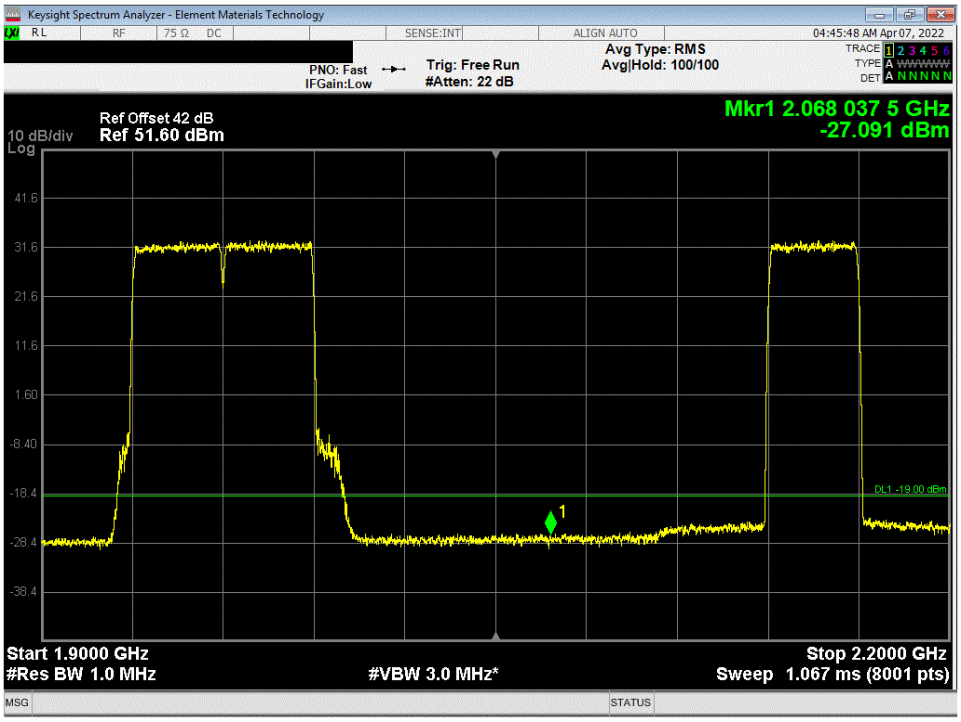
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,

Frequency Range			Value (dBm)	Limit (dBm)	Result
	20 MHz - 3 GHz		-25.55	-19	Pass

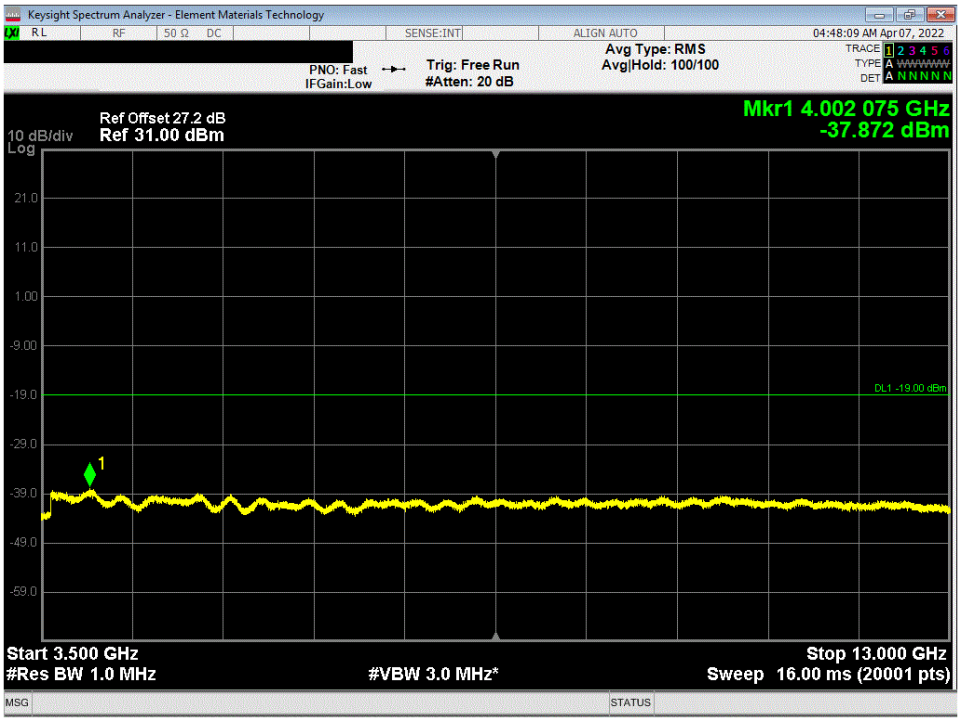


PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,

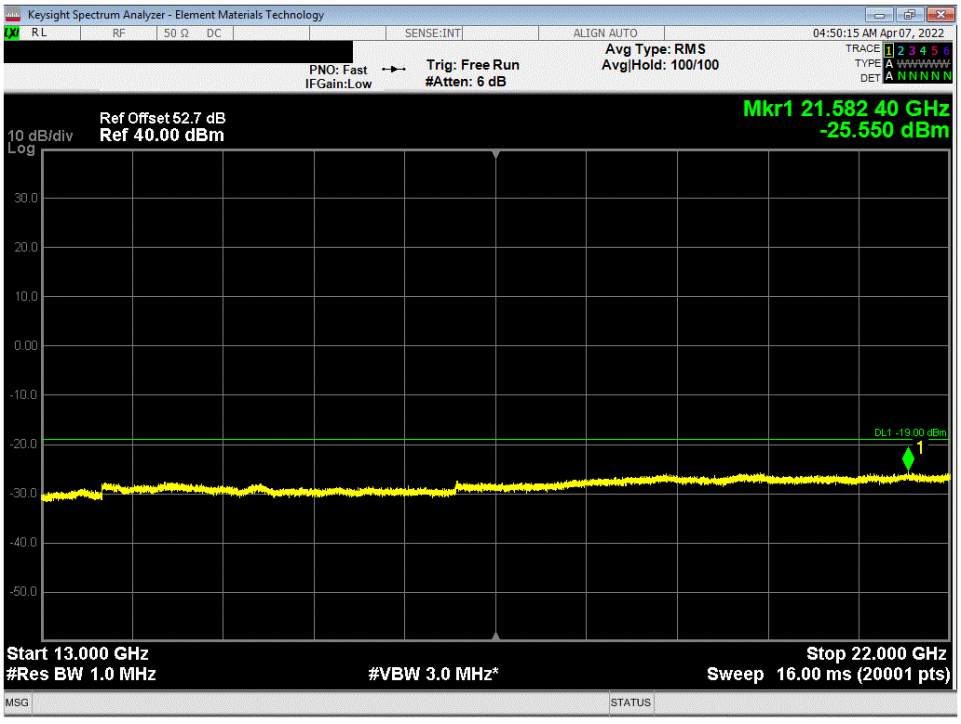
Frequency Range		Value (dBm)	Limit (dBm)	Result
1.9 GHz - 2.2 GHz		-27.09	-19	Pass



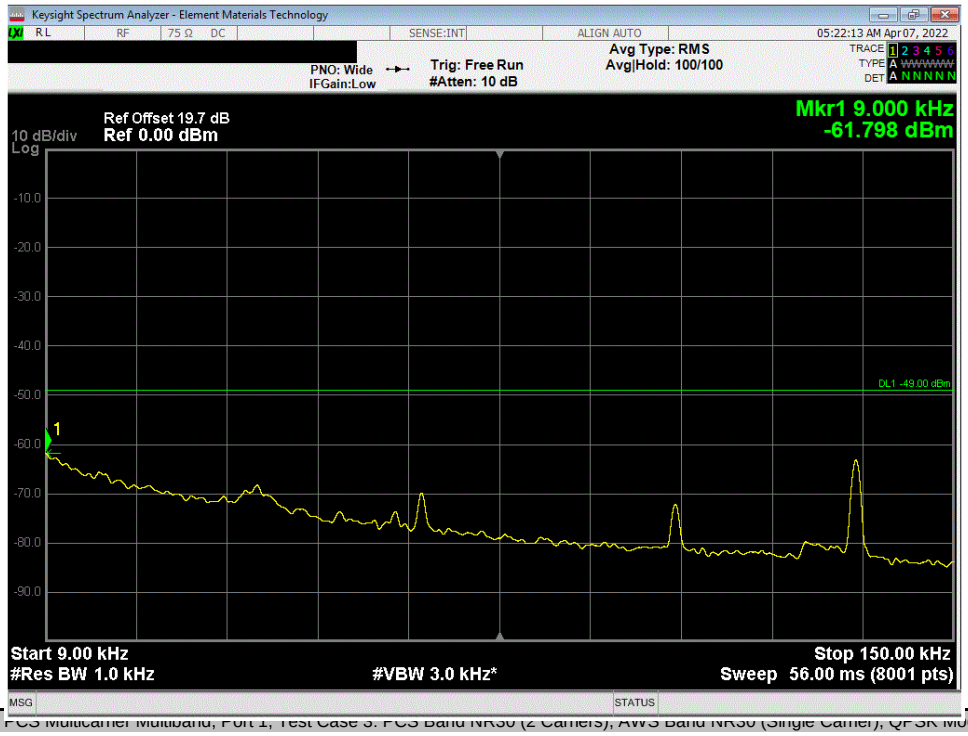
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-37.87	-19	Pass



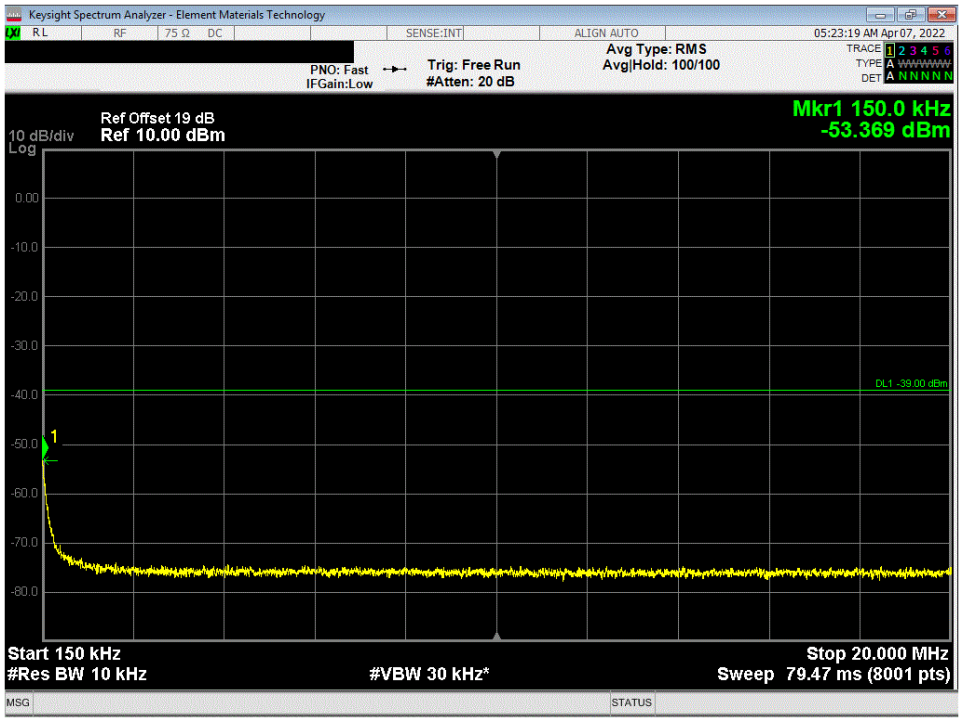
PCS Multicarrier Multiband, Port 1, Test Case 2: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		Value (dBm)	Limit (dBm)	Result
18 GHz - 22 GHz		-25.55	-19	Pass



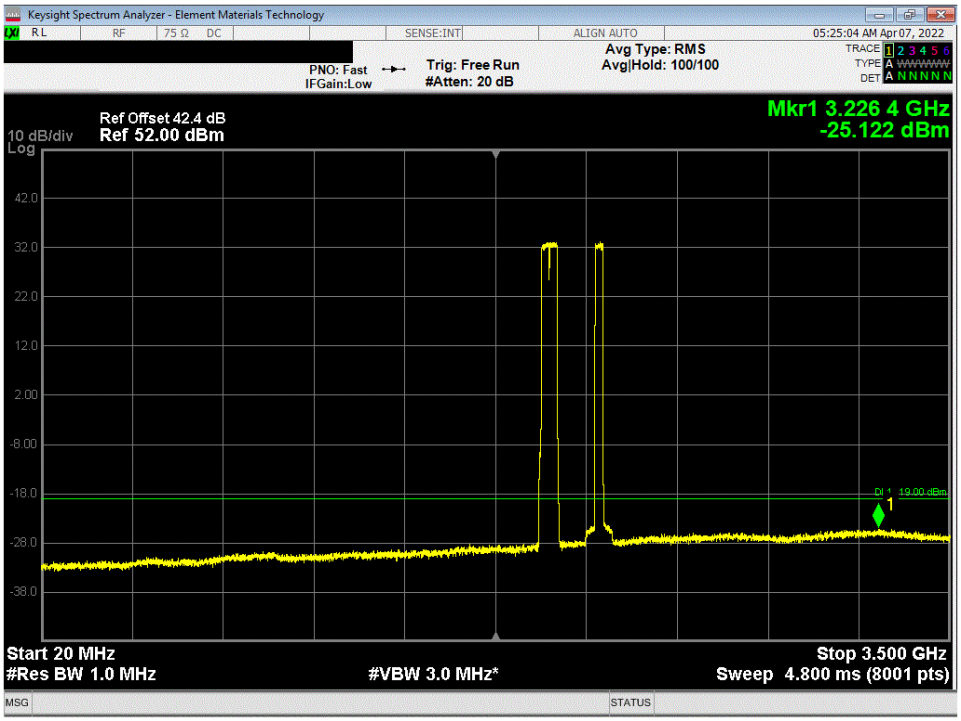
PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,						
	Frequency Range			Value (dBm)	Limit (dBm)	Result
	9 kHz - 150 kHz			-61.8	-49	Pass



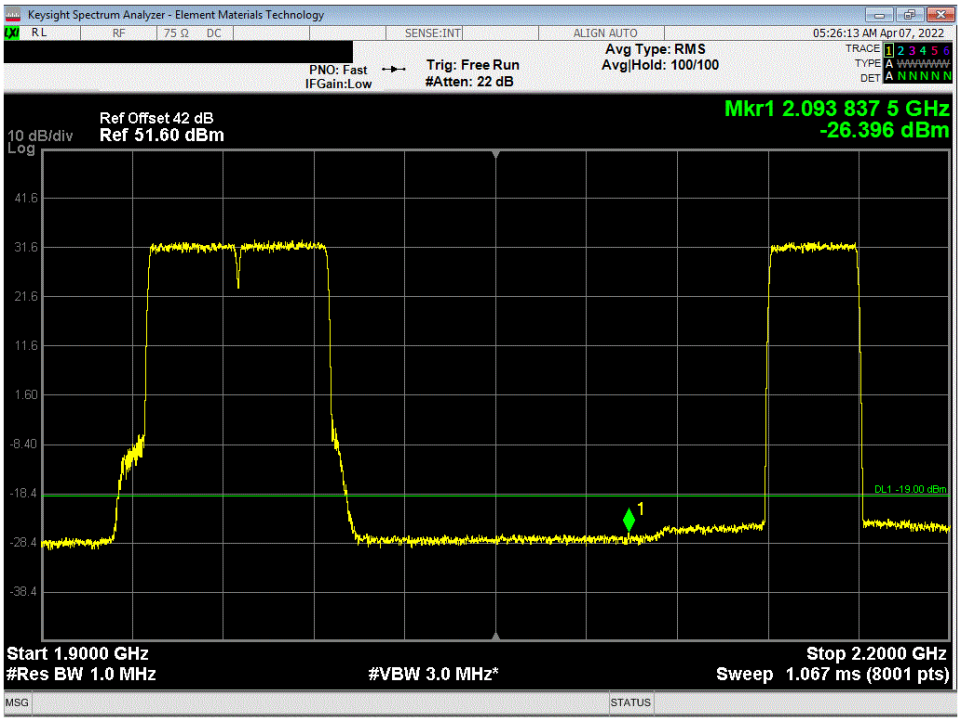
PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,					
Frequency Range			Value (dBm)	Limit (dBm)	Result
150 kHz - 20 MHz			-53.37	-39	Pass



PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.12	-19	Pass

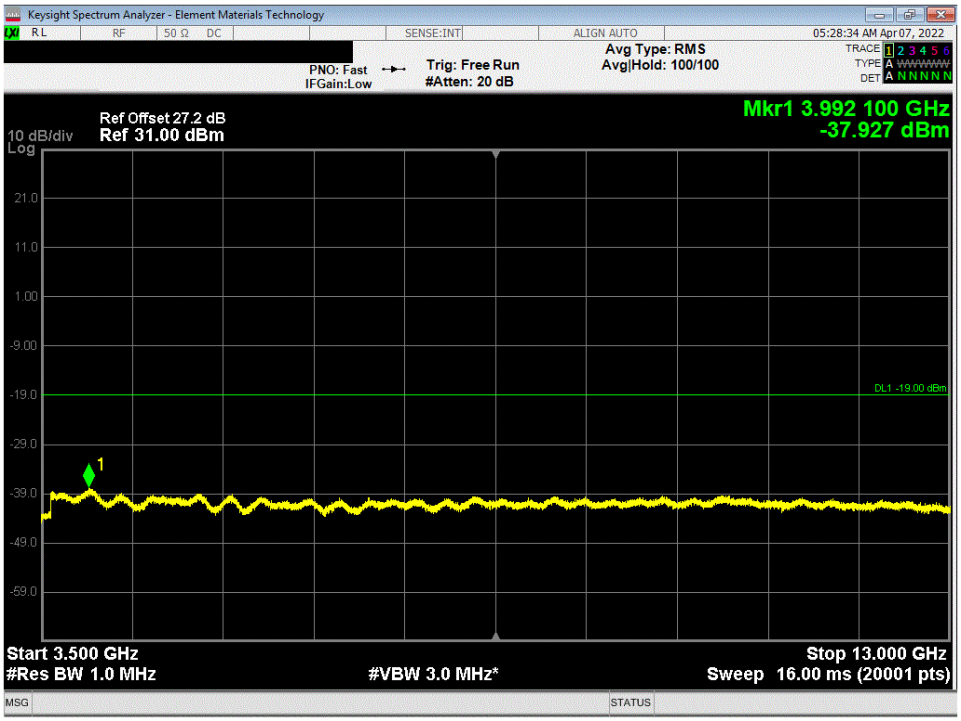


PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Value (dBm)**	**Limit (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-26.4	-19	Pass



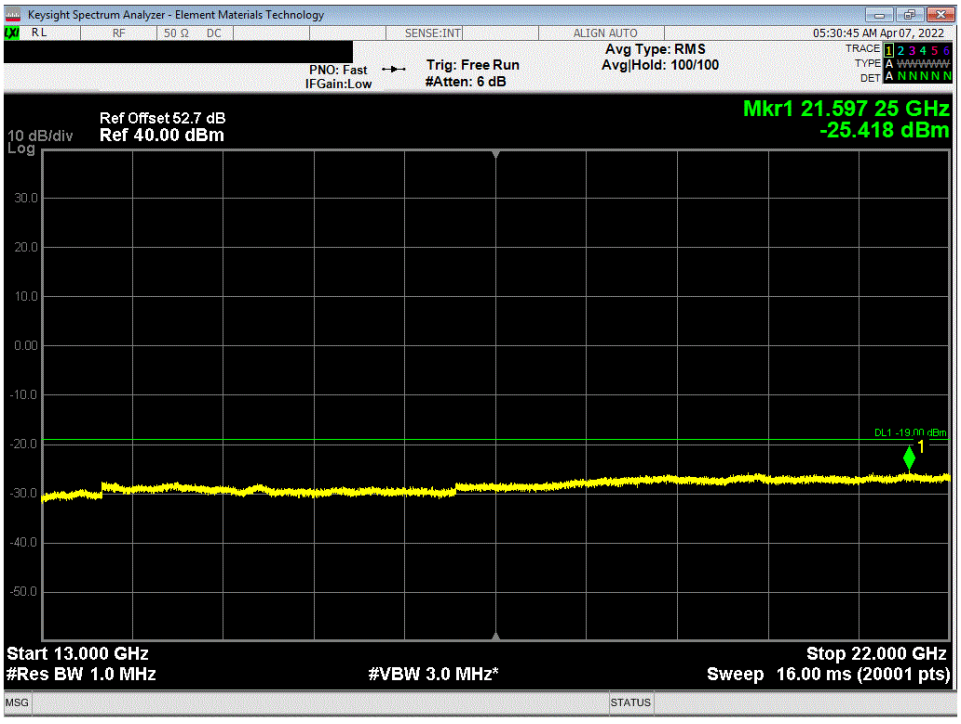
PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,

Frequency Range		Value (dBm)	Limit (dBm)	Result
3.5 GHz - 13 GHz		-37.93	-19	Pass



PCS Multicarrier Multiband, Port 1, Test Case 3: PCS Band NR30 (2 Carriers), AWS Band NR30 (Single Carrier), QPSK Modulation,

Frequency Range		Value (dBm)	Limit (dBm)	Result
13 GHz - 22 GHz		-25.42	-19	Pass



SPURIOUS CONDUCTED EMISSIONS

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0038**
Serial Number:	**YK214000035**			**Date:**	**7-Apr-22**
Customer:	**Nokia of America Corporation**			**Temperature:**	**22.6 °C**
Attendees:	**Mitchell Hill**			**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
FCC 24E:2022	ANSI C63.26:2015
RSS-133 Issue 6:2013+A1:2018	RSS-133 Issue 6:2013+A1:2018
RSS-170 Issue 3:2015	RSS-170 Issue 3:2015

COMMENTS

All measurement path losses were 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 (~26.6W or ~44.2dBm/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 and 3: the carriers are operated at maximum power (~40W/AWS carrier and 40W/PCS carrier) with at total port power of 120 watts (80W for AWS band carriers + 40W for PCS band carrier). Reference "Output Power" report section for all carrier frequencies. This testing is being performed per KDB 971168 D03v01 guidance for Test Case 1.

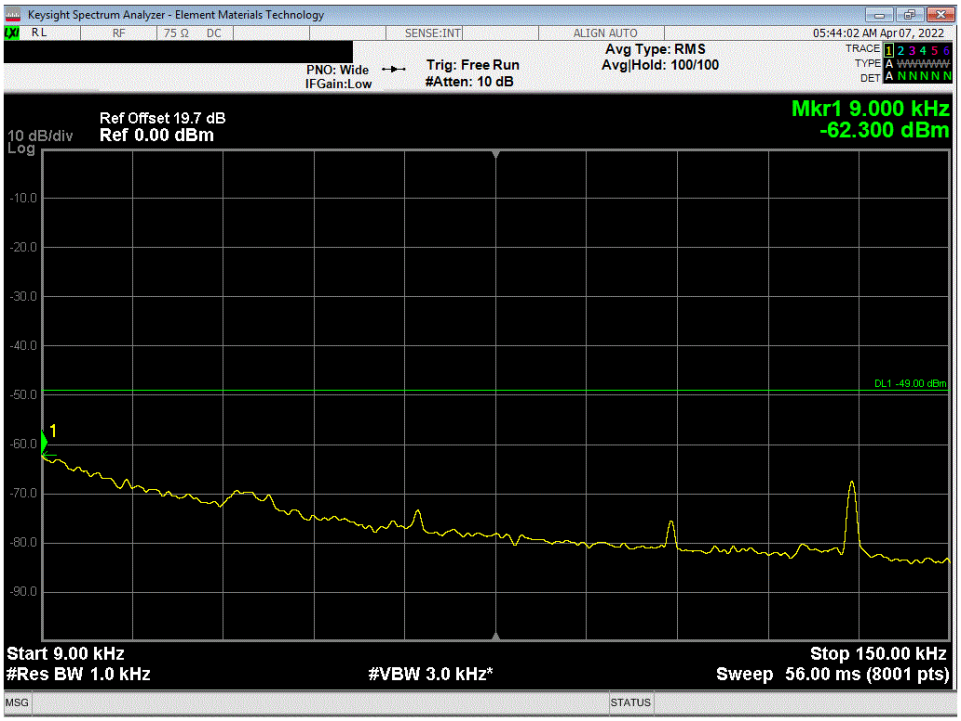
DEVIATIONS FROM TEST STANDARD

None

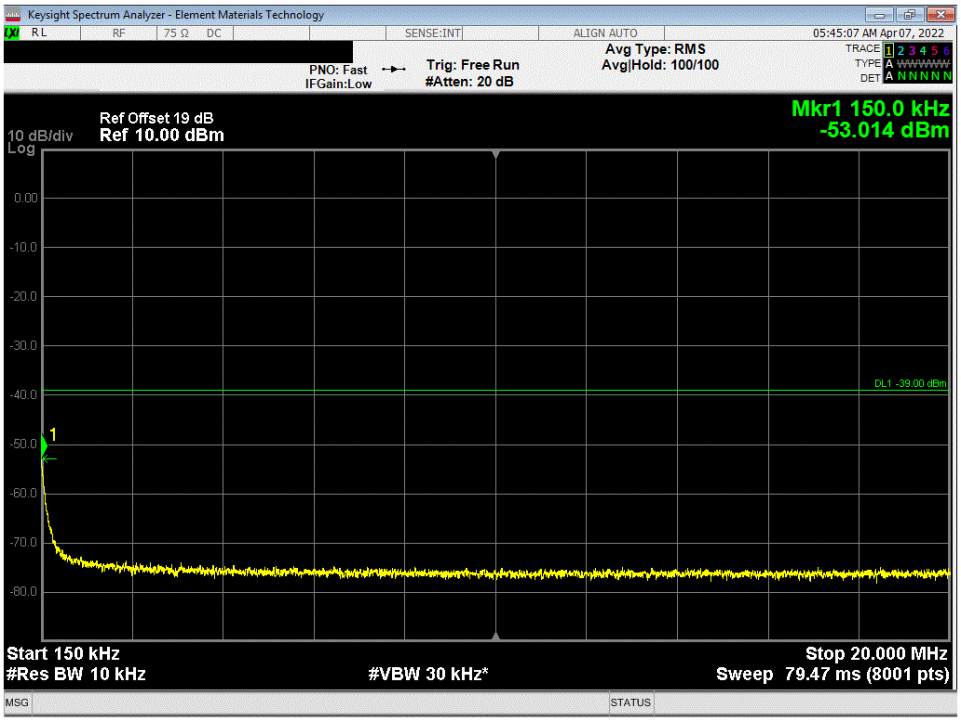
Configuration #	**1,2,3,4**	*Signature*

		Frequency Range	Max Value (dBm)	Limit < (dBm)	Result
AWS Multicarrier Multiband					
	Port 1				
		Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-62.3	-49	Pass
		150 kHz - 20 MHz	-53.0	-39	Pass
		20 MHz - 3.5 GHz	-25.1	-19	Pass
		1.9 GHz - 2.2 GHz	-27.8	-19	Pass
		3.5 GHz - 13 GHz	-37.9	-19	Pass
		13 GHz - 22 GHz	-25.8	-19	Pass
		Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-62.0	-49	Pass
		150 kHz - 20 MHz	-53.1	-39	Pass
		20 MHz - 3.5 GHz	-25.2	-19	Pass
		1.9 GHz - 2.2 GHz	-26.8	-19	Pass
		3.5 GHz - 13 GHz	-37.7	-19	Pass
		13 GHz - 22 GHz	-25.6	-19	Pass
		Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier)			
		QPSK Modulation			
		9 kHz - 150 kHz	-62.3	-49	Pass
		150 kHz - 20 MHz	-53.7	-39	Pass
		20 MHz - 3.5 GHz	-25.2	-19	Pass
		1.9 GHz - 2.2 GHz	-26.8	-19	Pass
		3.5 GHz - 13 GHz	-37.9	-19	Pass
		13 GHz - 22 GHz	-25.7	-19	Pass

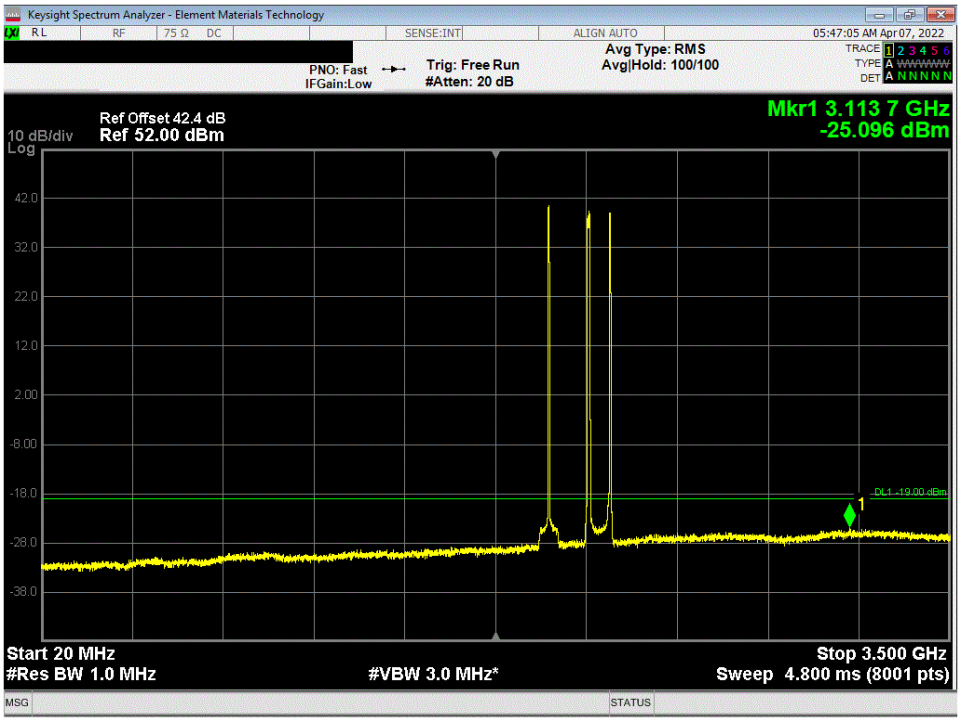
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,						
	Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz			-62.3	-49	Pass



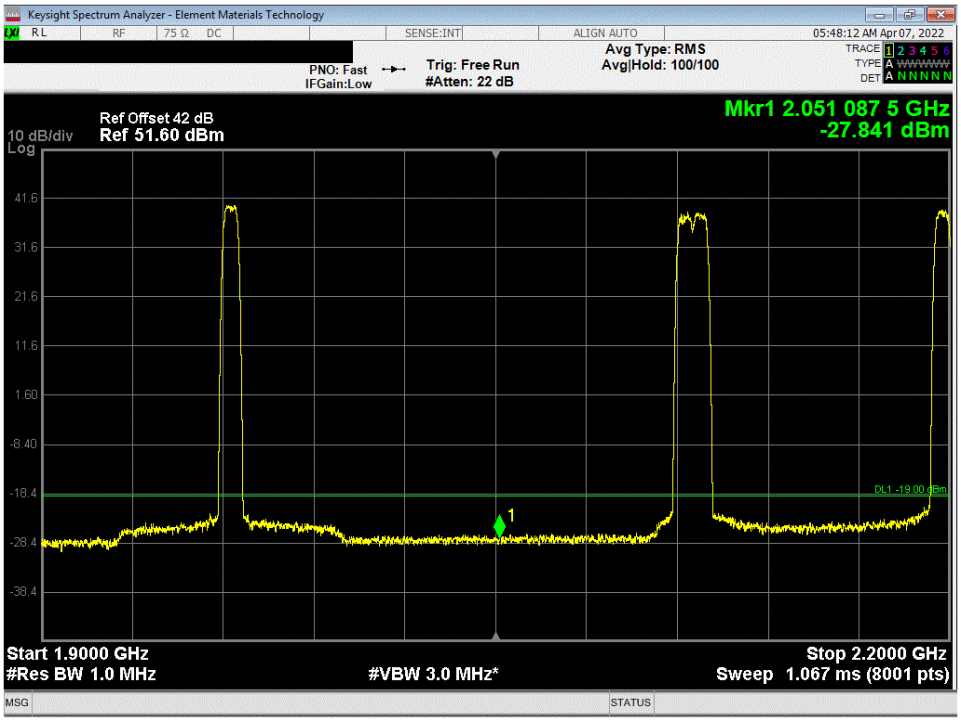
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz			-53.01	-39	Pass



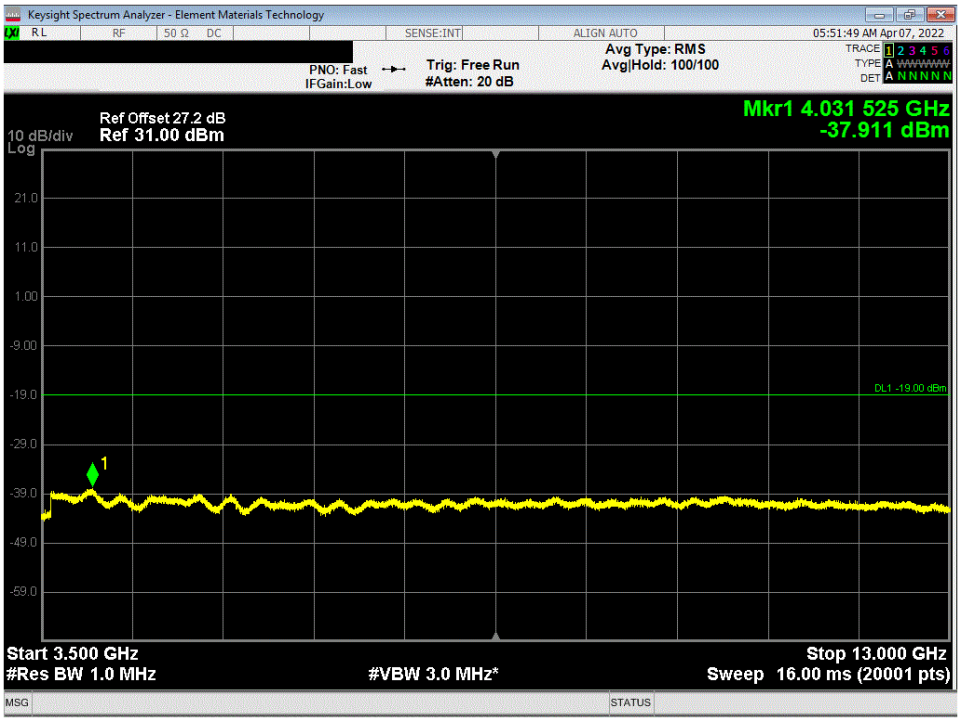
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.1	-19	Pass



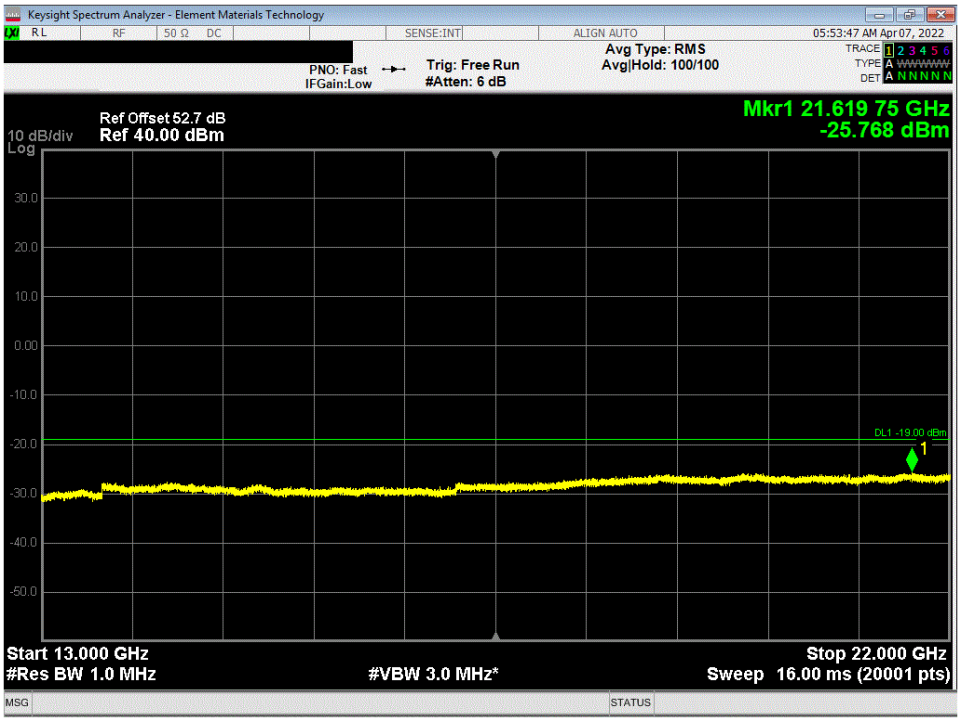
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-27.84	-19	Pass



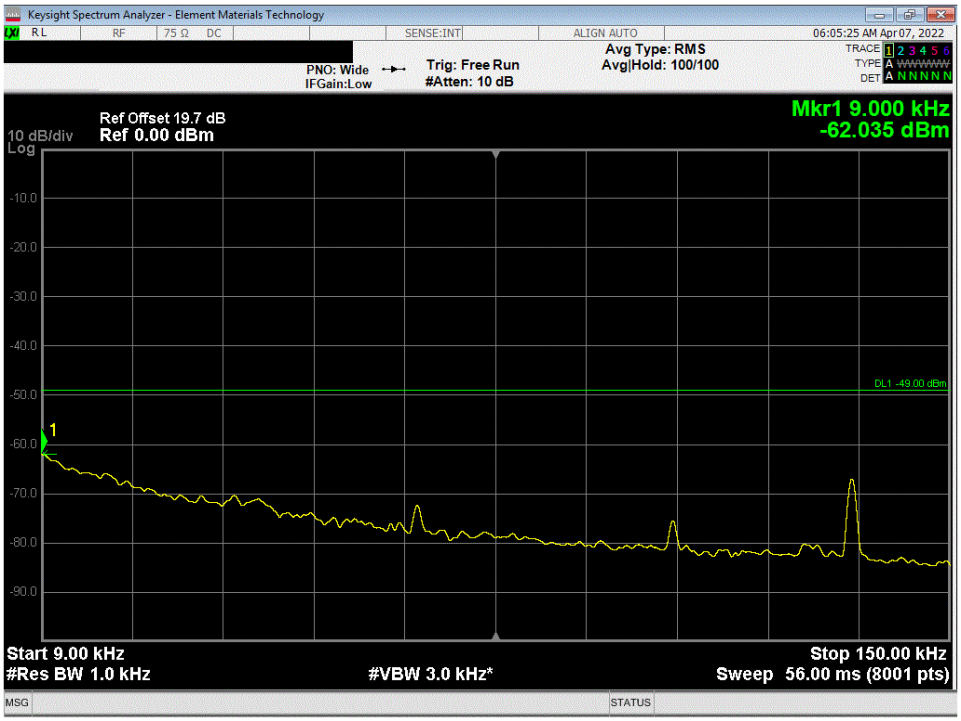
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-37.91	-19	Pass



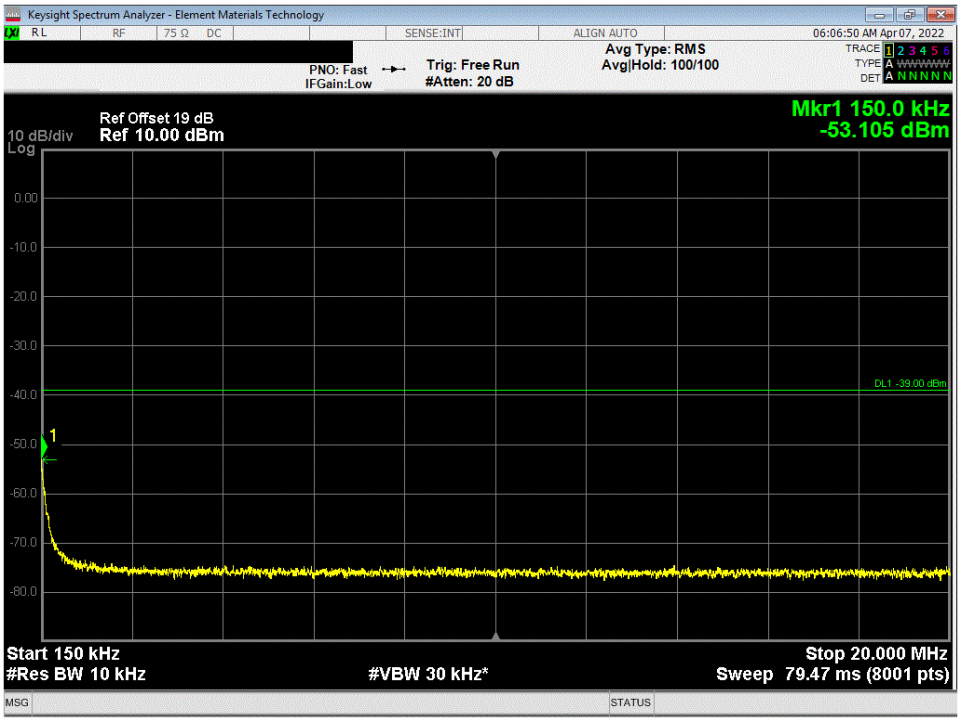
AWS Multicarrier Multiband, Port 1, Test Case 1: AWS Band NR5 (3 Carriers), PCS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.77	-19	Pass



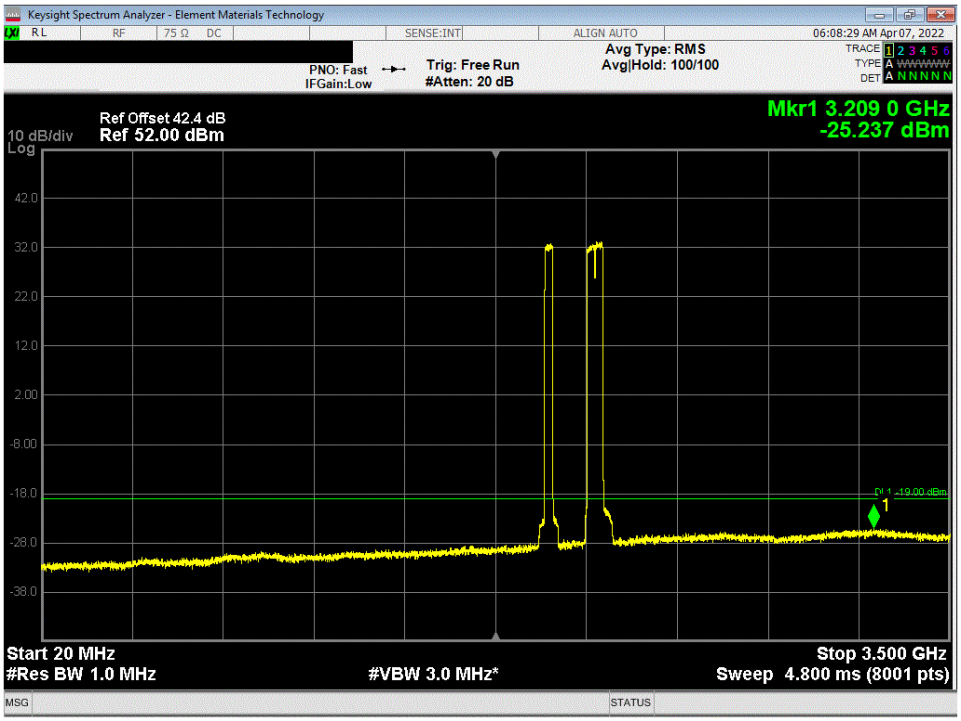
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,						
	Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz			-62.04	-49	Pass



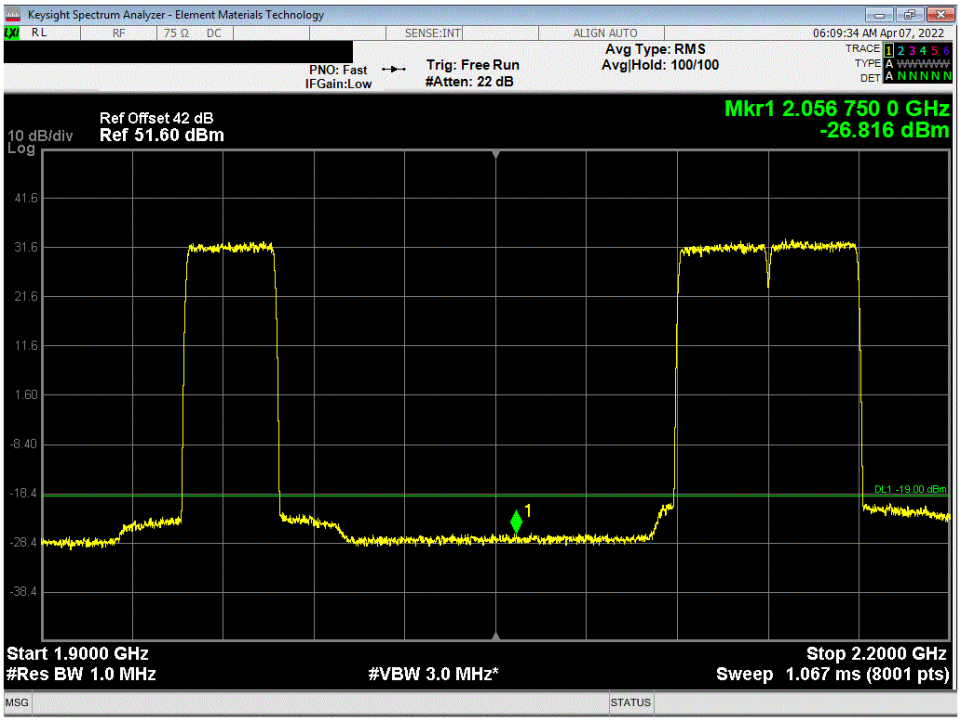
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz			-53.11	-39	Pass



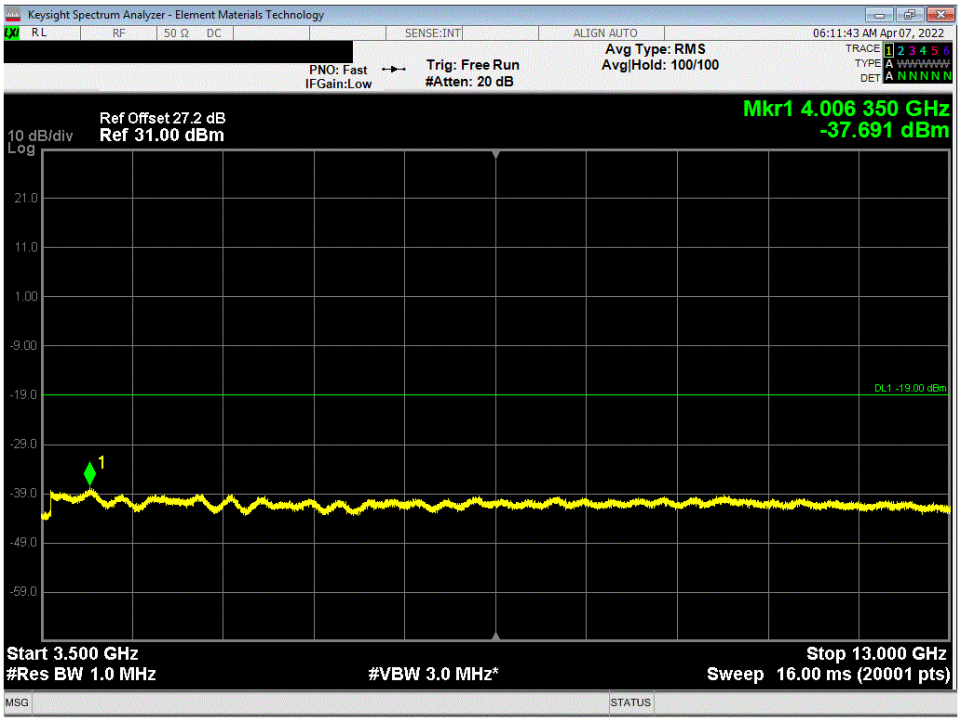
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.24	-19	Pass



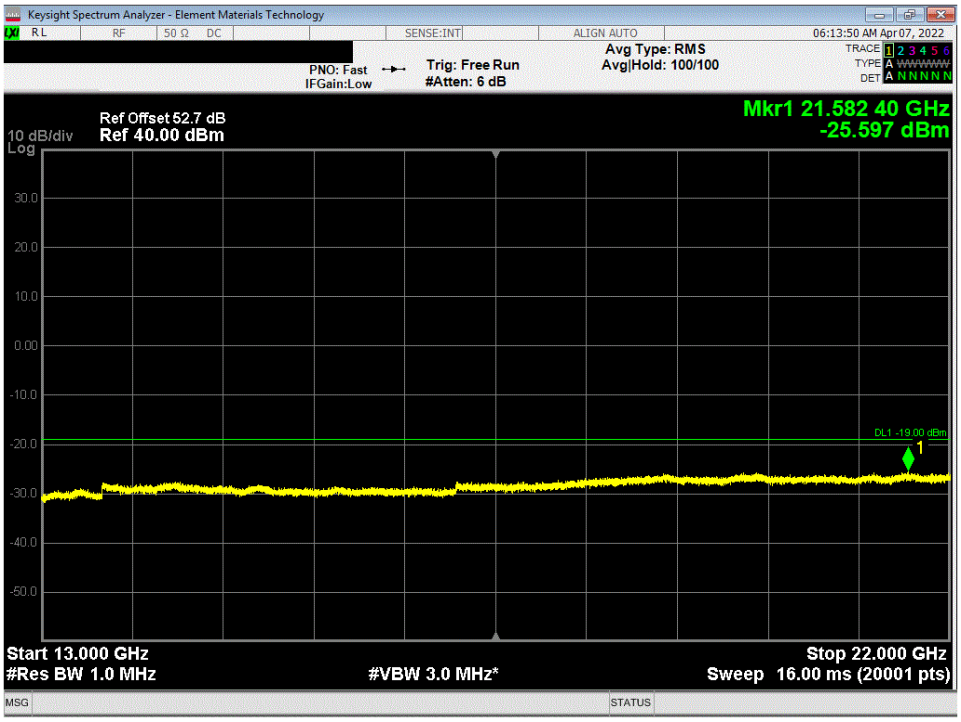
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-26.82	-19	Pass



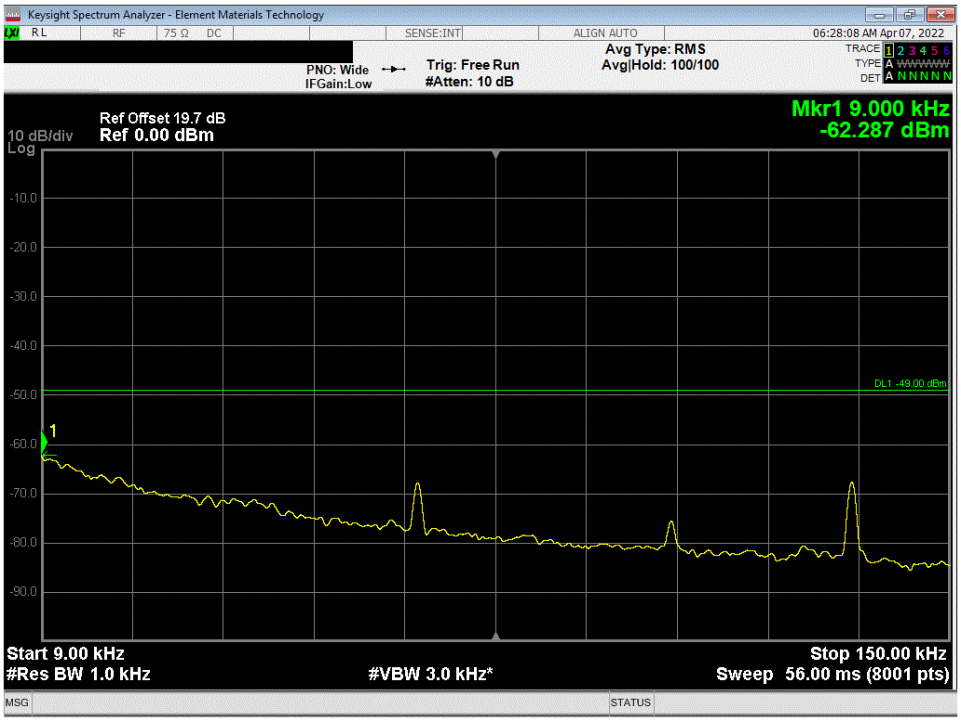
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-37.69	-19	Pass



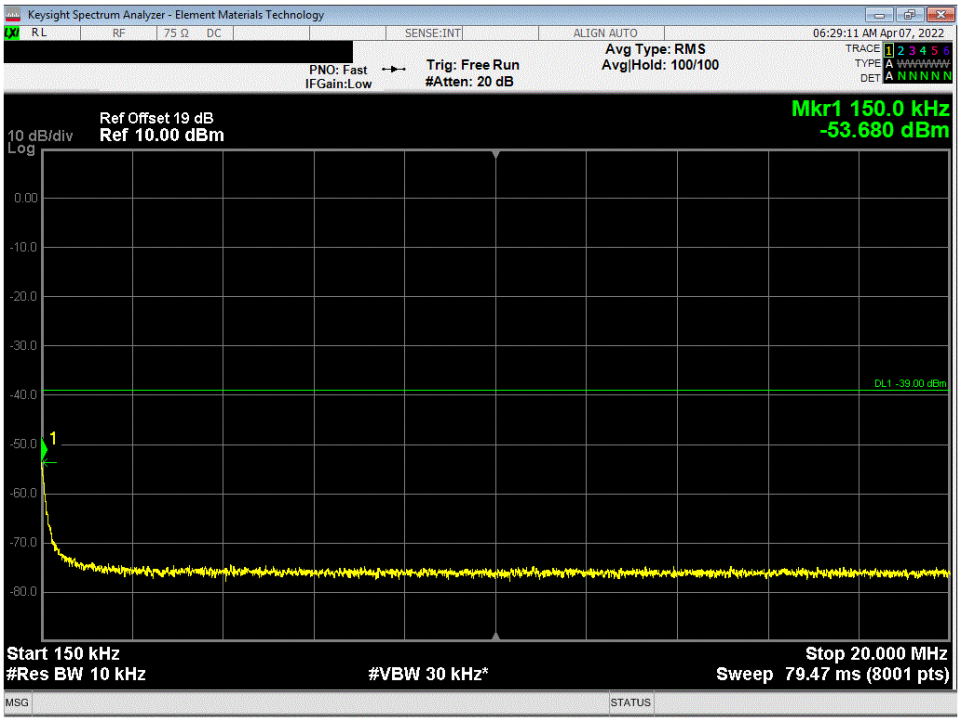
AWS Multicarrier Multiband, Port 1, Test Case 2: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.6	-19	Pass



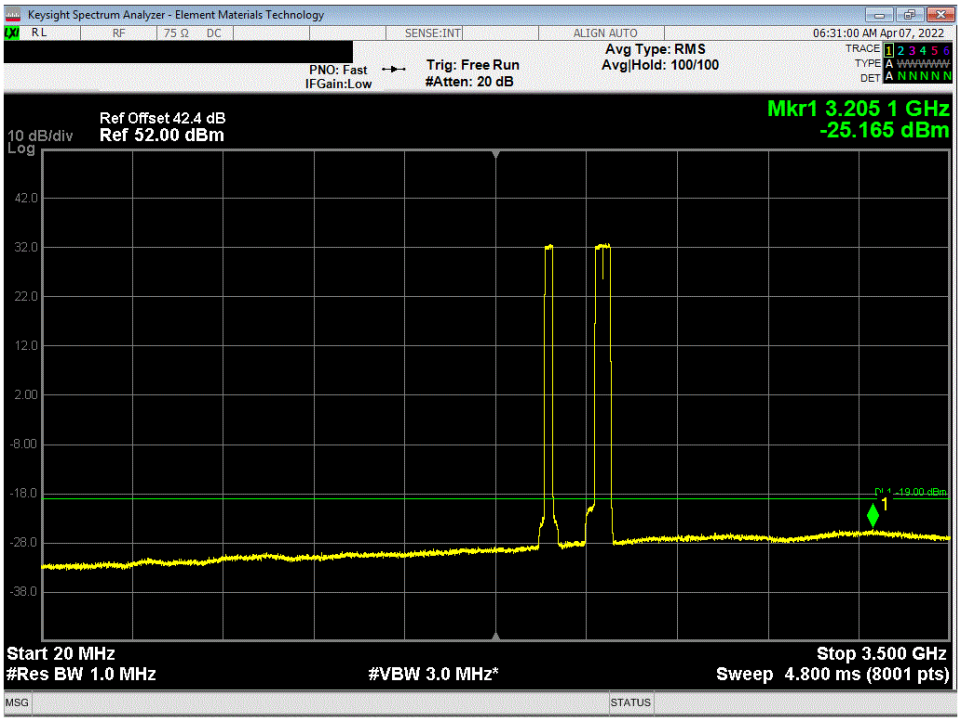
AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,						
	Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz			-62.29	-49	Pass



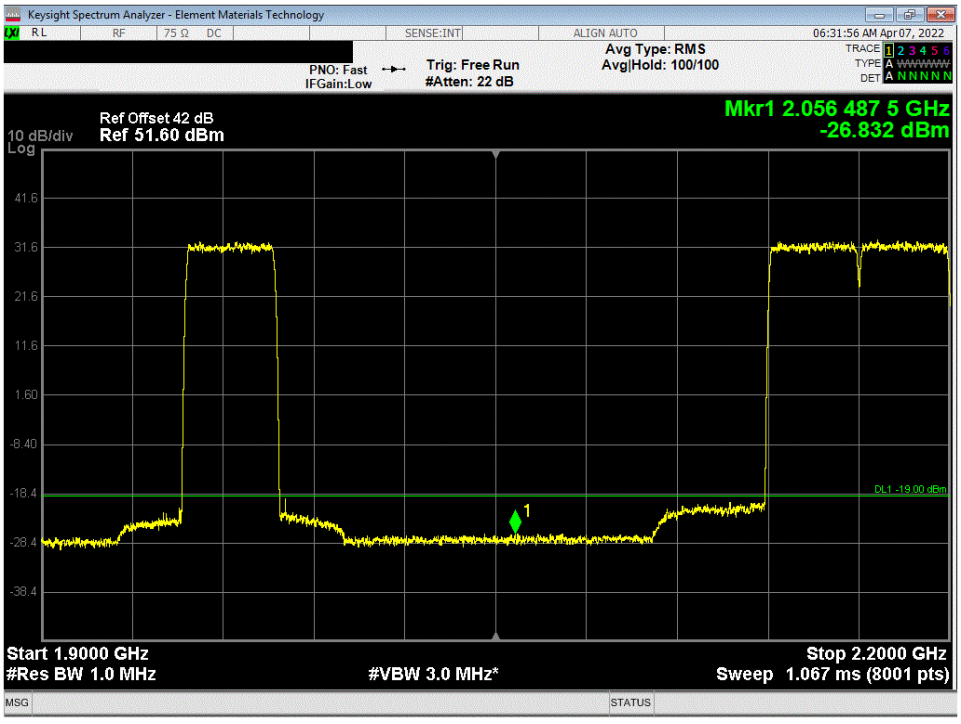
AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz			-53.68	-39	Pass



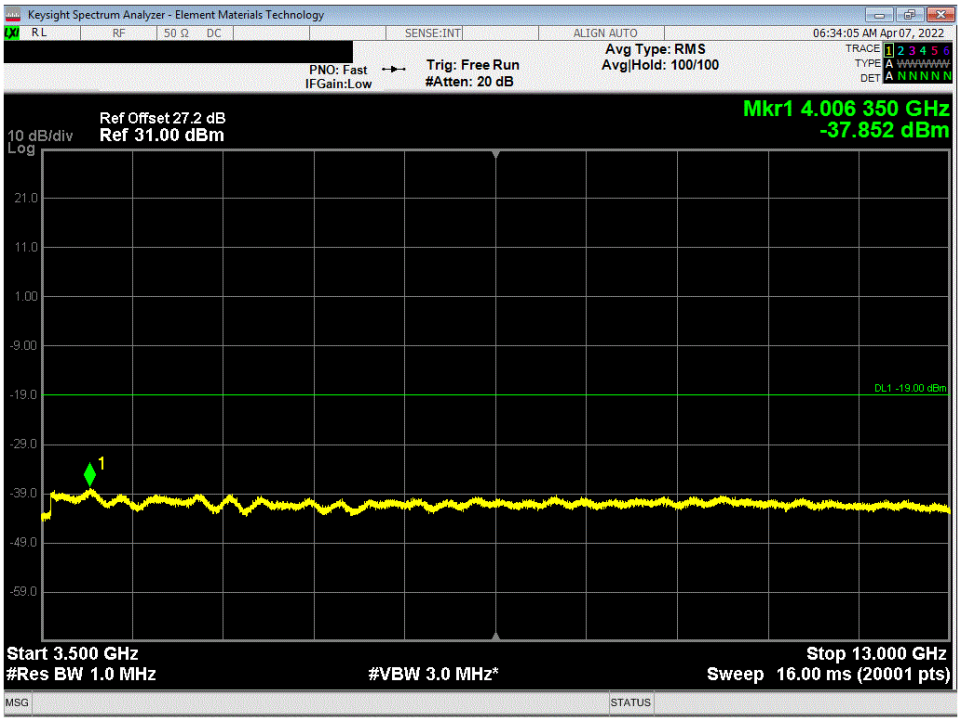
AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.17	-19	Pass



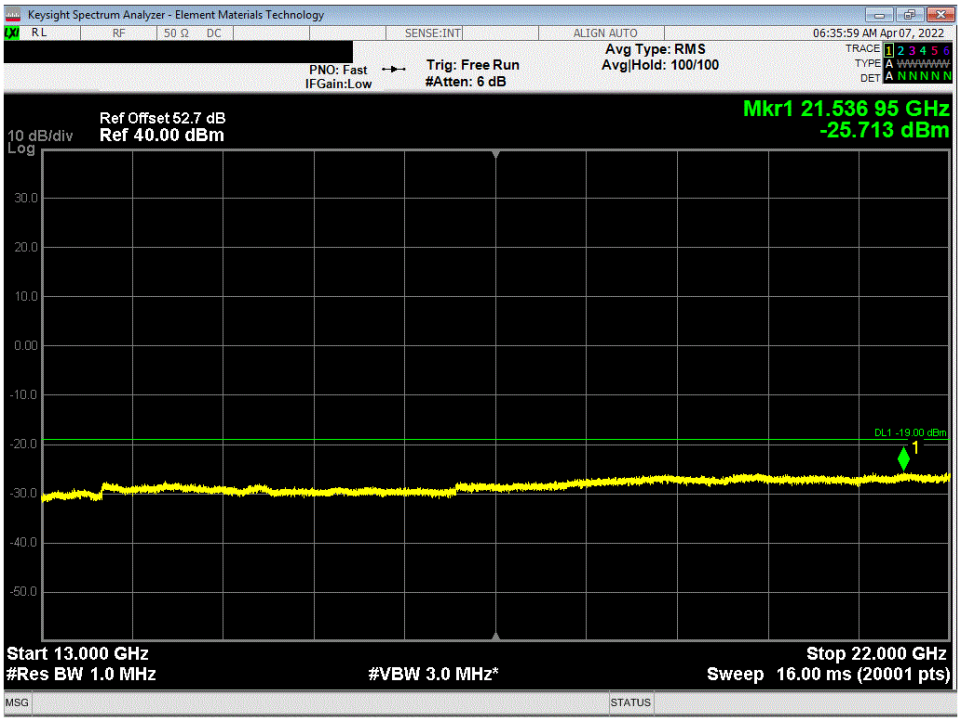
AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-26.83	-19	Pass



AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-37.85	-19	Pass



AWS Multicarrier Multiband, Port 1, Test Case 3: AWS Band NR30 (2 Carriers), PCS Band NR30 (Single Carrier), QPSK Modulation,				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-25.71	-19	Pass



SPURIOUS CONDUCTED EMISSIONS

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0038**
Serial Number:	**YK214000035**			**Date:**	**7-Apr-22**
Customer:	**Nokia of America Corporation**			**Temperature:**	**22.6 °C**
Attendees:	**Mitchell Hill**			**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
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 losses were 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). Reference "Output Power" report section for all carrier frequencies. This testing is being performed per KDB 971168 D03v01 guidance.

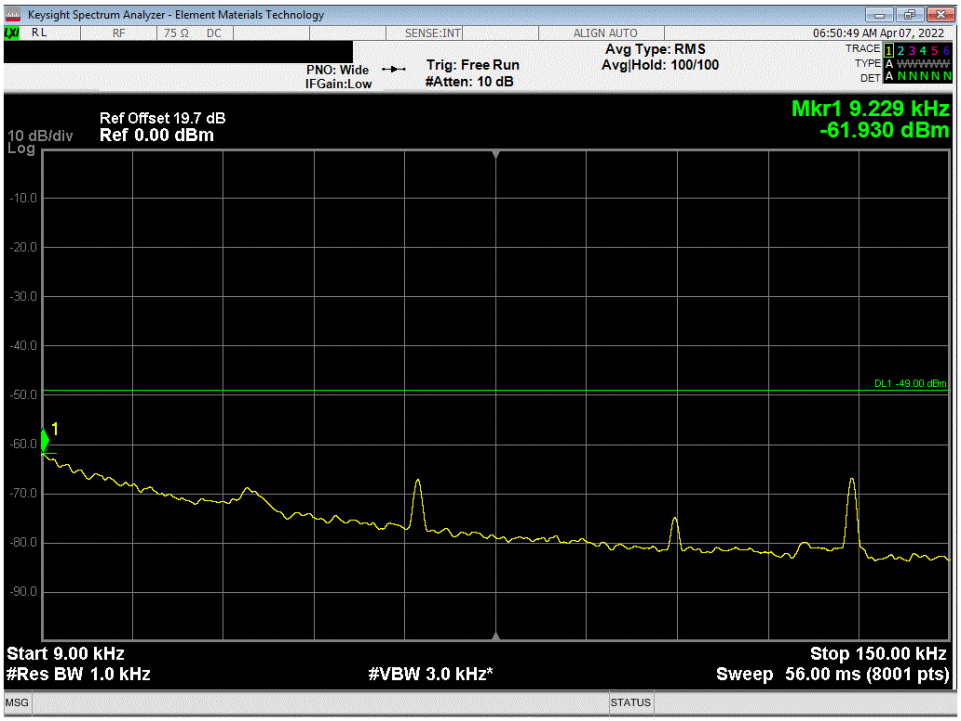
DEVIATIONS FROM TEST STANDARD

None

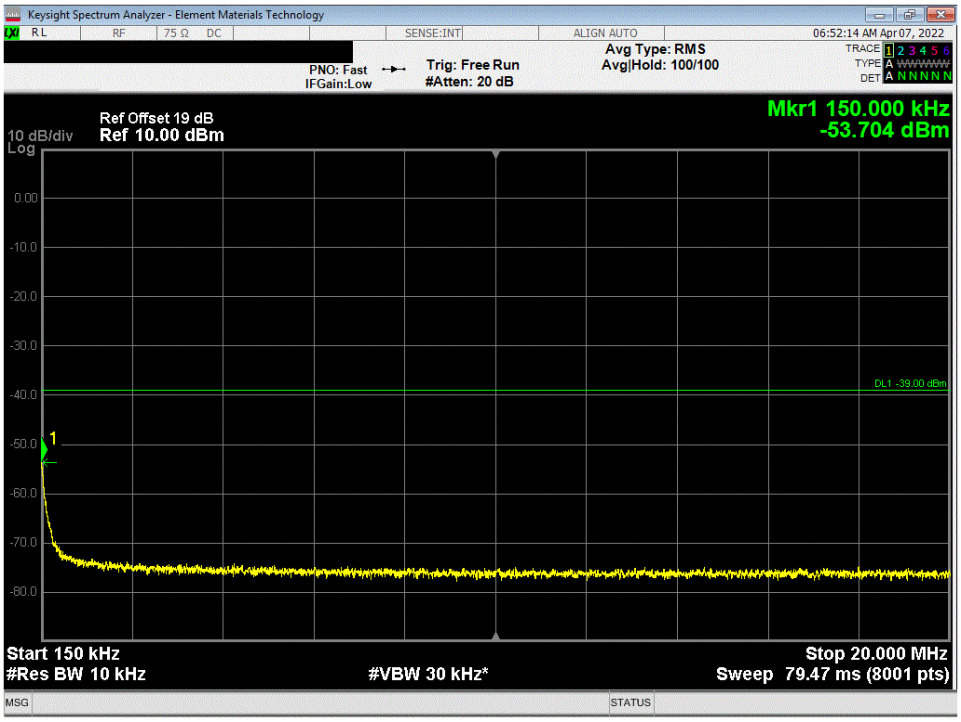
Configuration #	**1,2,3,4**	*Signature*

		Frequency Range	**Max Value (dBm)**	**Limit < (dBm)**	**Result**
Multicarrier Multiband					
	Port 1				
	Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier)				
	QPSK Modulation				
		9 kHz - 150 kHz	-61.93	-49	Pass
		150 kHz - 20 MHz	-53.7	-39	Pass
		20 MHz - 3.5 GHz	-25.49	-19	Pass
		1.9 GHz - 2.2 GHz	-27.2	-30	Pass
		3.5 GHz - 13 GHz	-37.92	-19	Pass
		13 GHz - 22 GHz	-25.61	-19	Pass

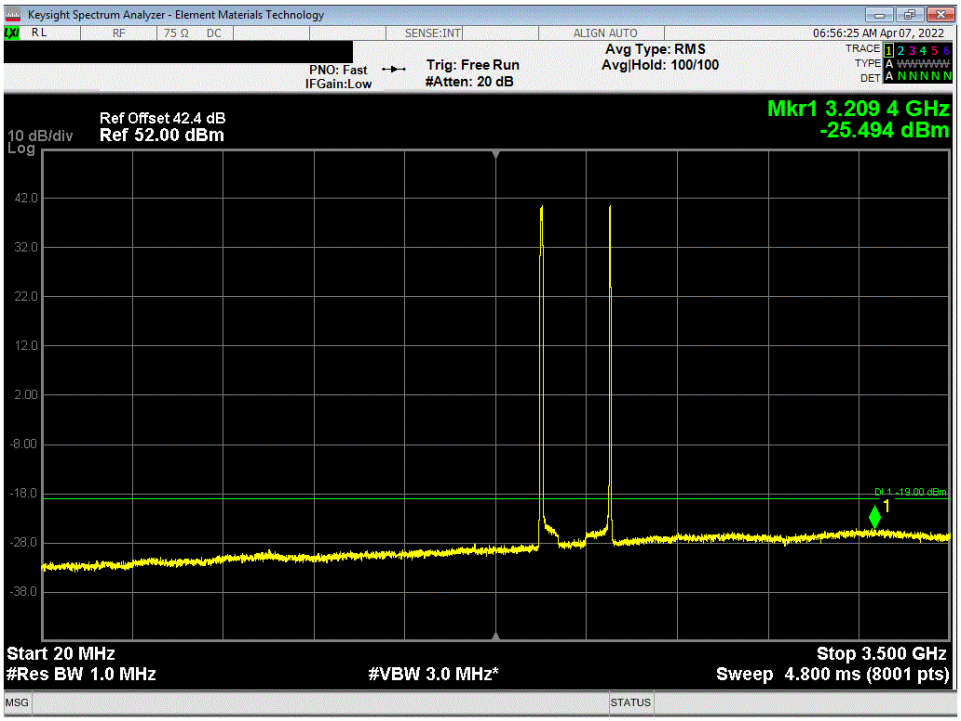
Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,						
	Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz			-61.93	-49	Pass



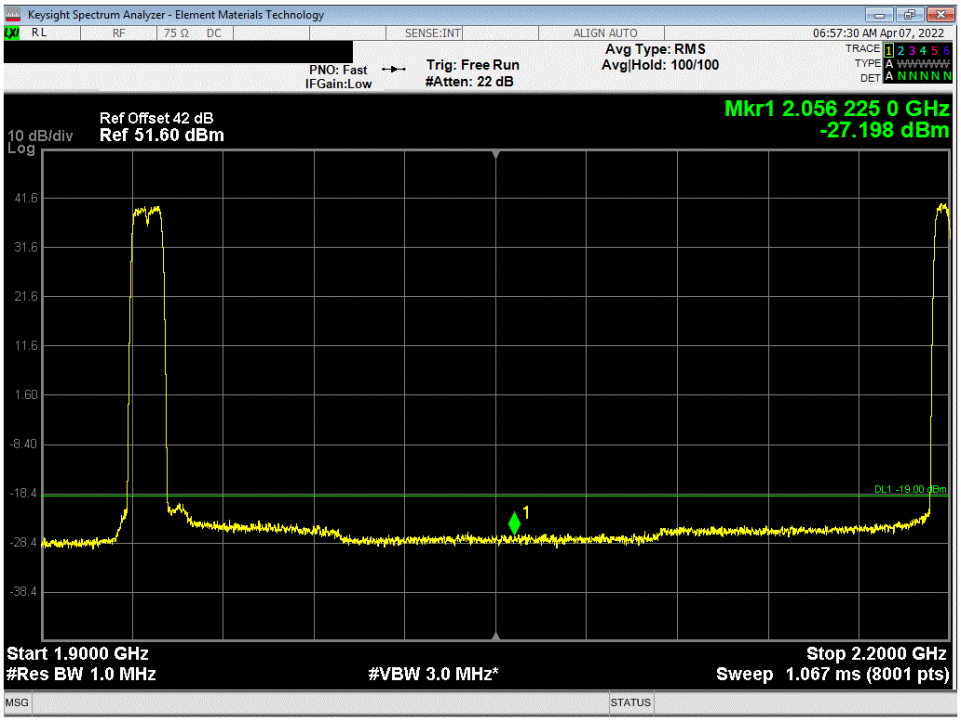
Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz			-53.7	-39	Pass



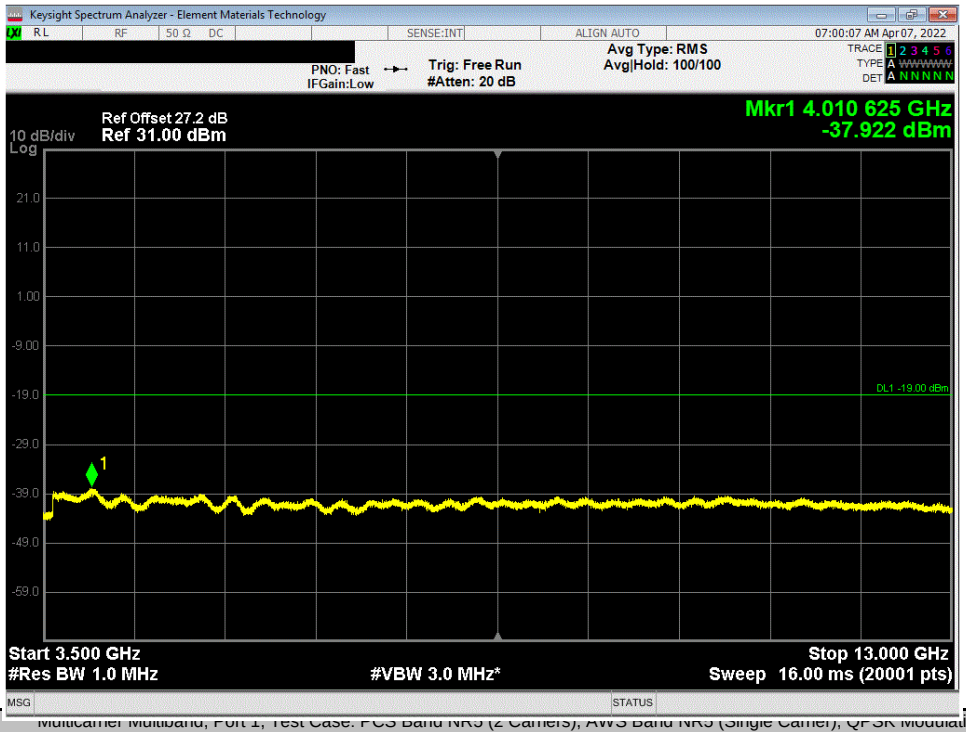
Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.49	-19	Pass



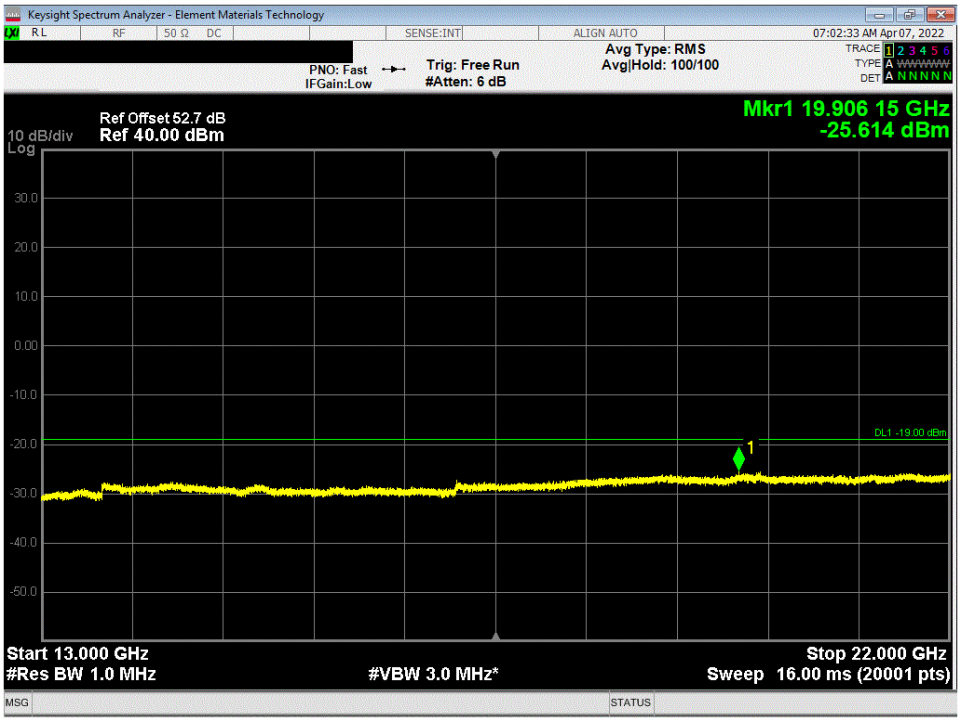
Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-27.2	-30	Pass



Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-37.92	-19	Pass



Multicarrier Multiband, Port 1, Test Case: PCS Band NR5 (2 Carriers), AWS Band NR5 (Single Carrier), QPSK Modulation,				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.61	-19	Pass



End of Test Report