SPURIOUS CONDUCTED EMISSIONS

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	SD3239	ANC	2022-03-02	2023-03-02
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 antenna port spurious emissions were measured at the RF output terminal of the EUT through 4 different attenuation configurations which continues through to the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 22 GHz. The peak conducted power of spurious emissions, up to the 10th harmonic of the transmit frequency, were investigated to ensure they were less than the limits also called out by the client's test plan shown below.

The measurement methods are detailed in KDB971168 D01v03 section 6 and ANSI C63.26-2015.

Per FCC 2.1057(a)(1) and RSS Gen 6.13, the upper level of measurement is the 10th harmonic of the highest fundamental frequency.

These measurements are for frequency band after the first 1.0 MHz bands immediately outside and adjacent to the frequency block.

Per section FCC 24.238(a), RSS-133 6.5 (ii), the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter. RF conducted emissions testing was performed on one port. All four AFHII antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification report) and 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.

Per section FCC 27.53(h)(1), RSS-139 6.6 and RSS-170 5.4 & 5.4.1.2, the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm for a 1 MHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

The limit for the 9kHz to 150kHz frequency range was adjusted to –49dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 1MHz [i.e.: -49dBm = -19dBm -10log(1MHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to –39dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 1MHz [i.e.: -39dBm = -19dBm -10log(1MHz/10kHz)]. The required limit of -19dBm with a RBW of > 1MHz was used for all other frequency ranges.

SPURIOUS CONDUCTED EMISSIONS

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**17-Mar-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**22.3 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**42.5% RH**
Project:	**None**			**Barometric Pres.:**	**1008 mbar**
Tested by:	**Brandon Hobbs**	**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 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 Band 66 carrier was enabled on the middle channel (2155MHz) at 40 watts with the same channel bandwidth and modulation type as the Band 25 carrier. The port power was set at the maximum level of 120 Watts [Band 25 carrier (80W) and Band 66 carrier (40W)].

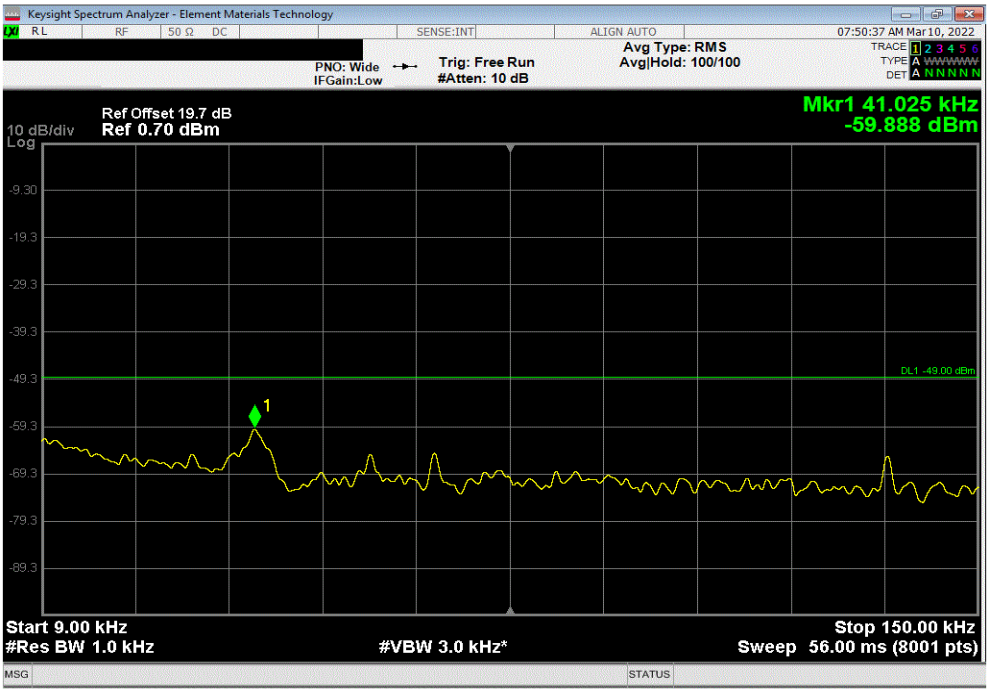
DEVIATIONS FROM TEST STANDARD

None

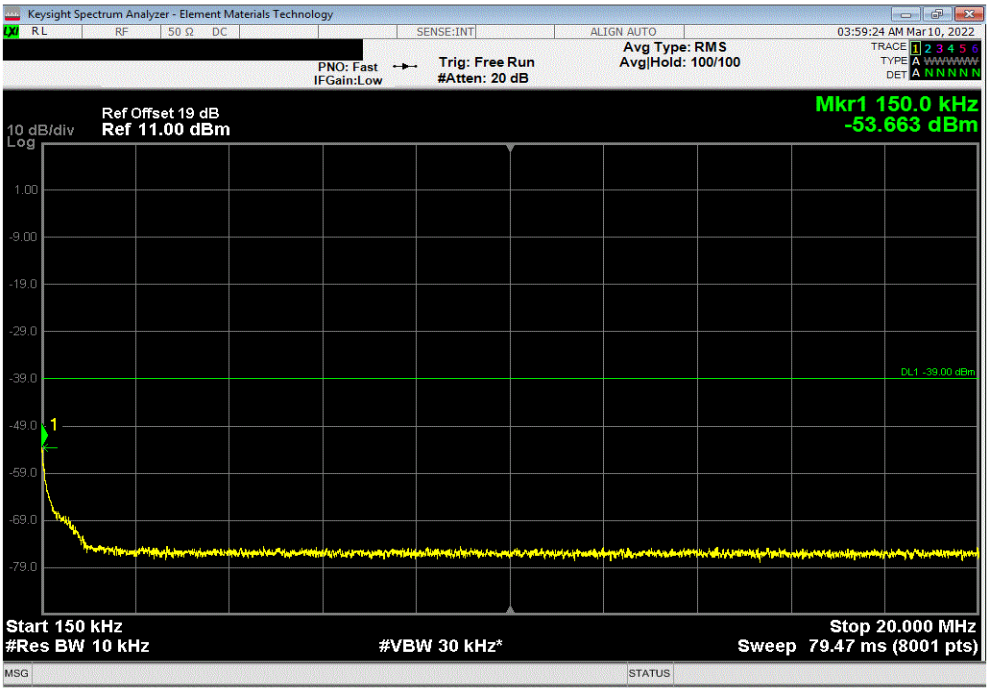
Configuration #	**1,2,3,4**	*Signature*

	Frequency Range	Max Value (dBm)	Limit < (dBm)	Result
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier				
Port 1				
1.4 MHz Bandwdith				
QPSK Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-61.2	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.7	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-23.7	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.9	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
16-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-59.9	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.6	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.0	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.3	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.9	-19	Pass
64-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-62.1	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-54.2	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.0	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.4	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-37.8	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-26.0	-19	Pass
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-61.6	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.5	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-24.9	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.3	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.9	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
3 MHz Bandwdith				
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-54.2	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.4	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.8	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.7	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
5 MHz Bandwdith				
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-61.2	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.4	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.3	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-25.3	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.0	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
10 MHz Bandwdith				
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-62.0	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-54.8	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.5	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-24.7	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-26.0	-19	Pass
15 MHz Bandwdith				
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-62.1	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-54.0	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.9	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-24.4	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-37.9	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.7	-19	Pass
20 MHz Bandwdith				
256-QAM Modulation				
Mid Channel, 1962.5 MHz	9 kHz - 150 kHz	-62.0	-49	Pass
Mid Channel, 1962.5 MHz	150 kHz - 20 MHz	-53.3	-39	Pass
Mid Channel, 1962.5 MHz	20 MHz - 3.5 GHz	-25.4	-19	Pass
Mid Channel, 1962.5 MHz	1.9 GHz - 2.2 GHz	-21.7	-19	Pass
Mid Channel, 1962.5 MHz	3.5 GHz - 13 GHz	-38.1	-19	Pass
Mid Channel, 1962.5 MHz	13 GHz - 22 GHz	-25.9	-19	Pass

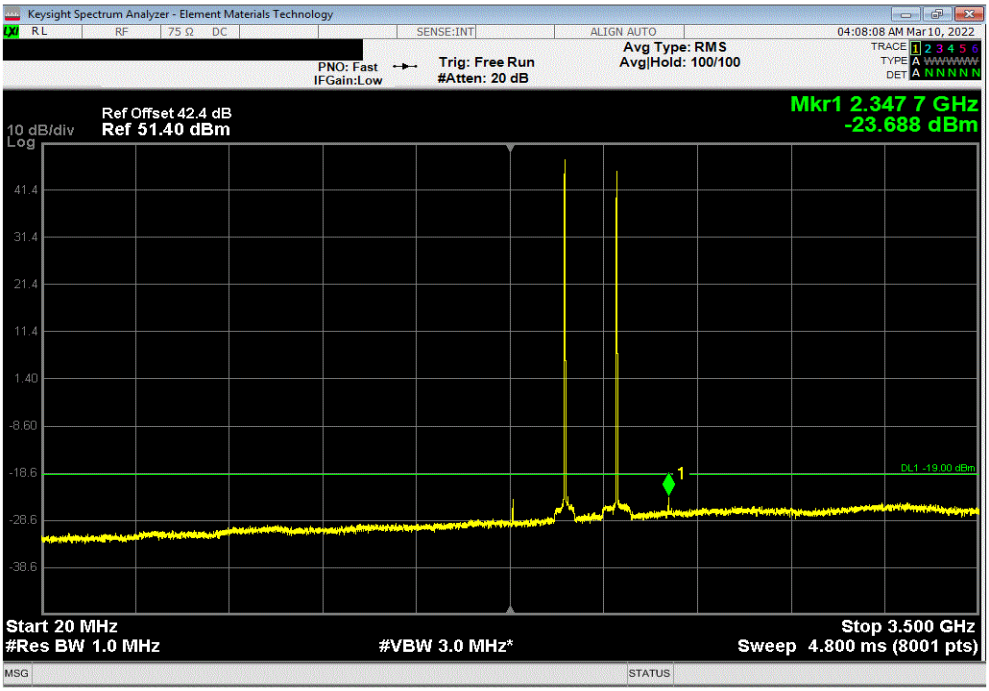
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-61.2	-49	Pass



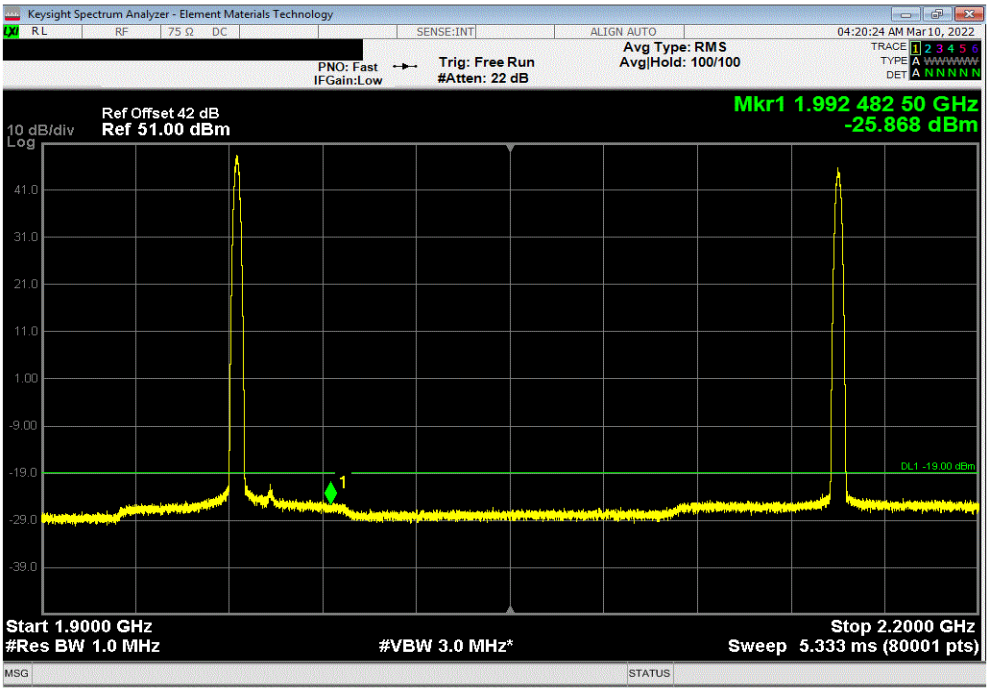
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.7	-39	Pass



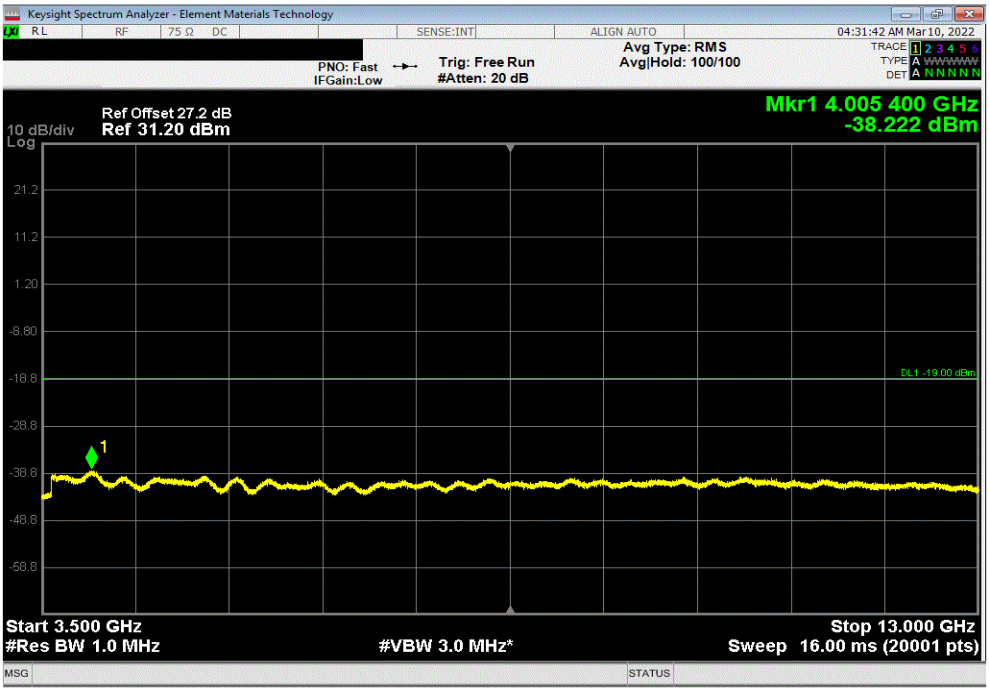
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-23.7	-19	Pass



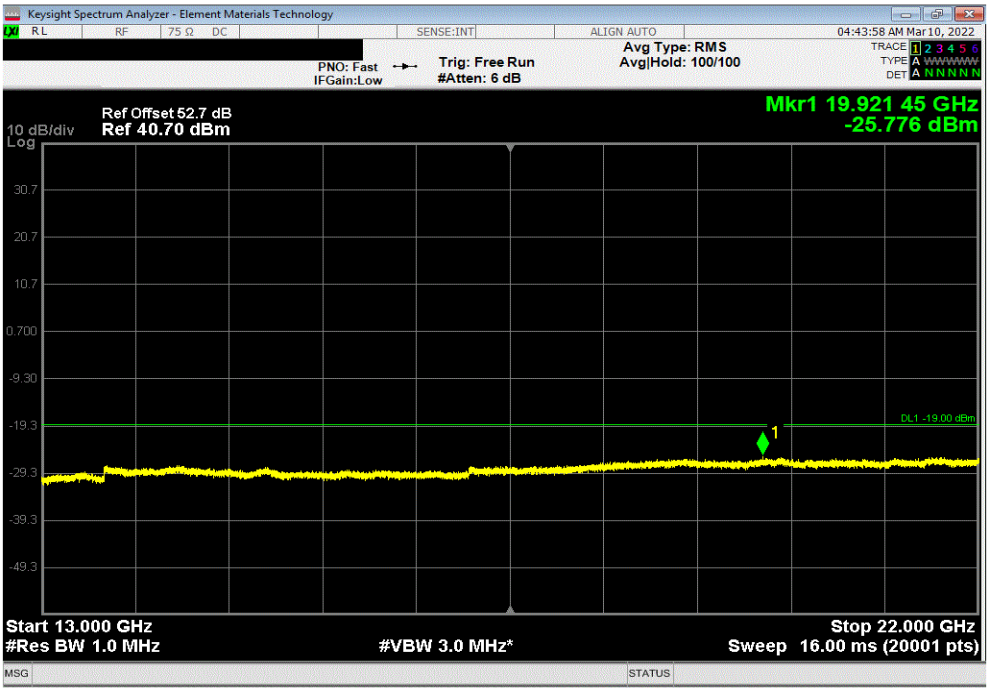
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-25.9	-19	Pass



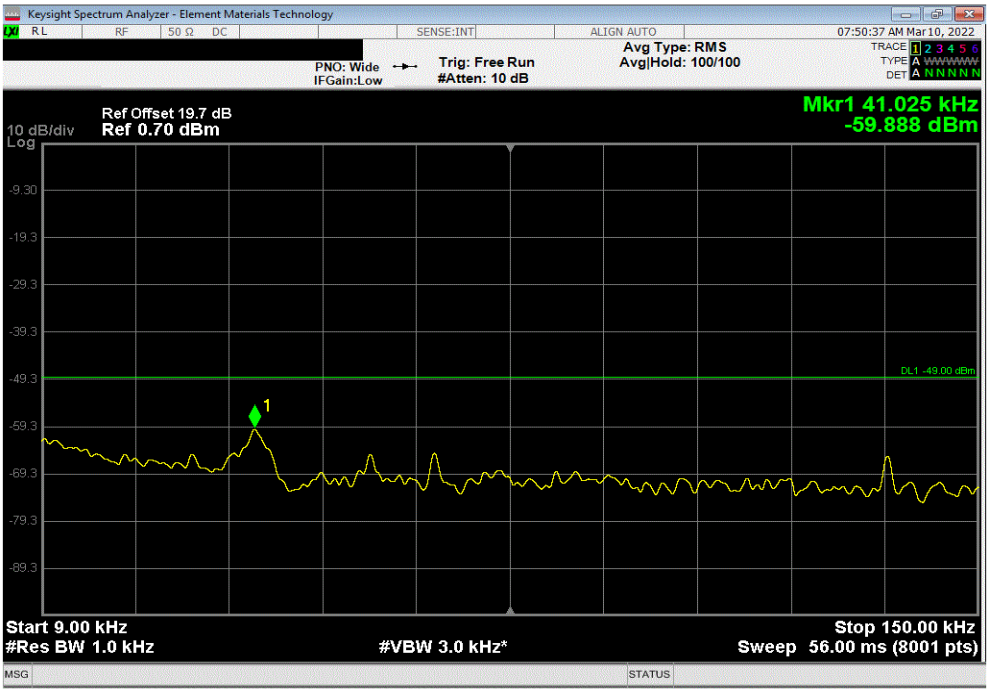
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-38.2	-19	Pass



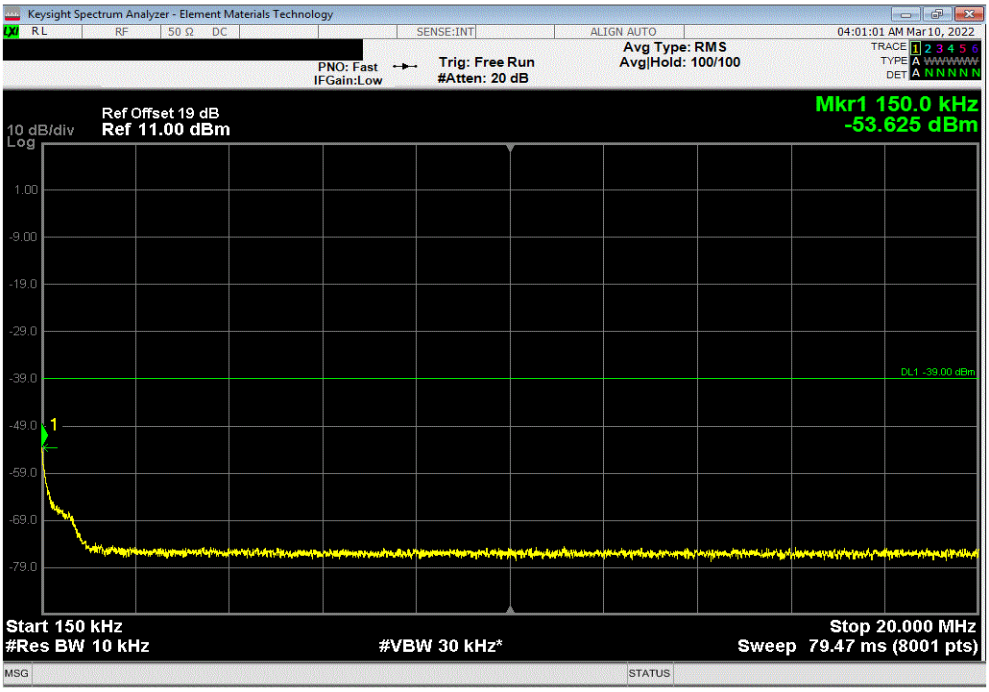
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, QPSK Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-25.8	-19	Pass



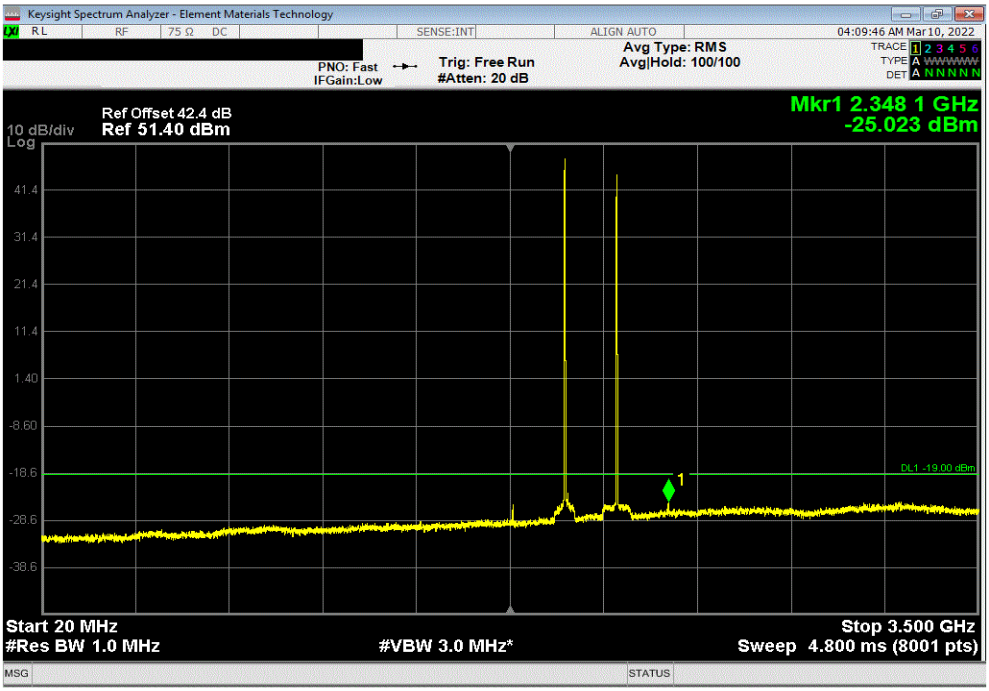
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-59.9	-49	Pass



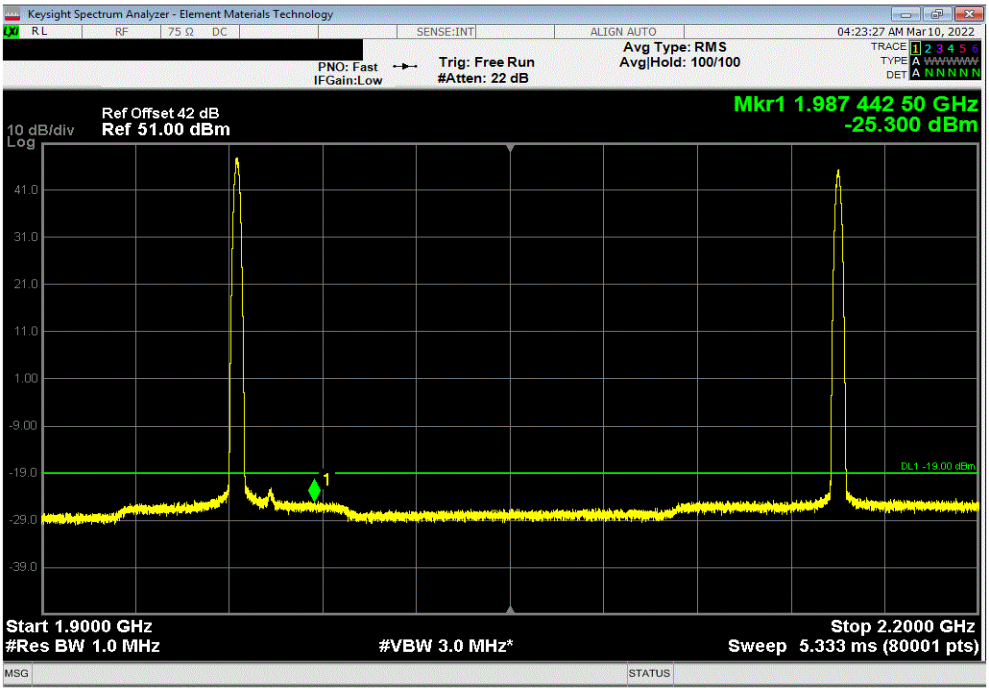
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.6	-39	Pass



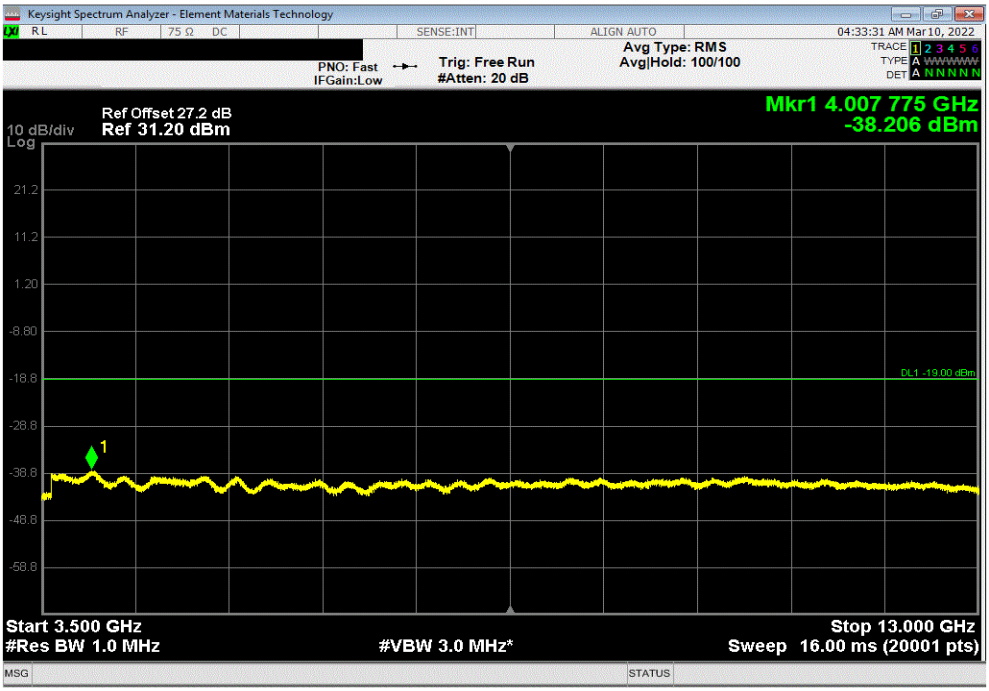
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-25.0	-19	Pass



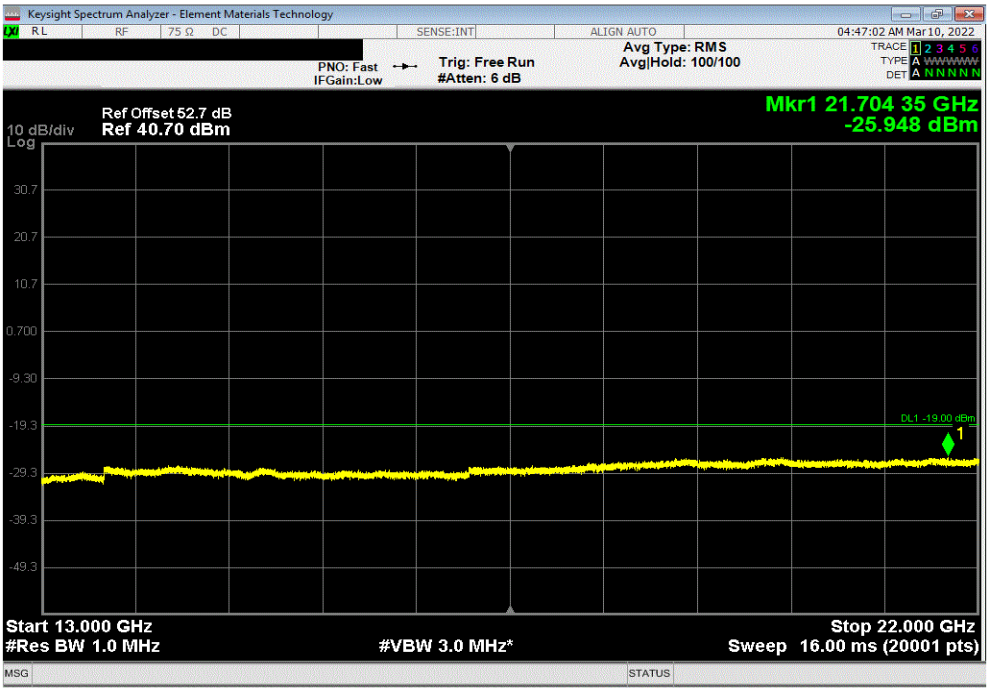
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-25.3	-19	Pass



Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-38.2	-19	Pass

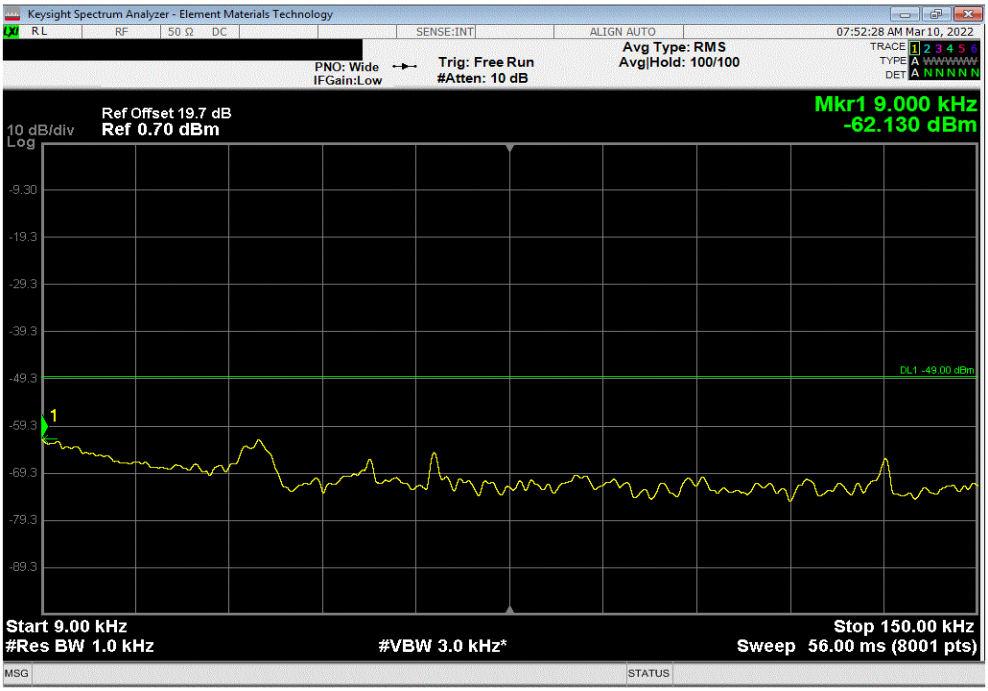


Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 16-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-25.9	-19	Pass



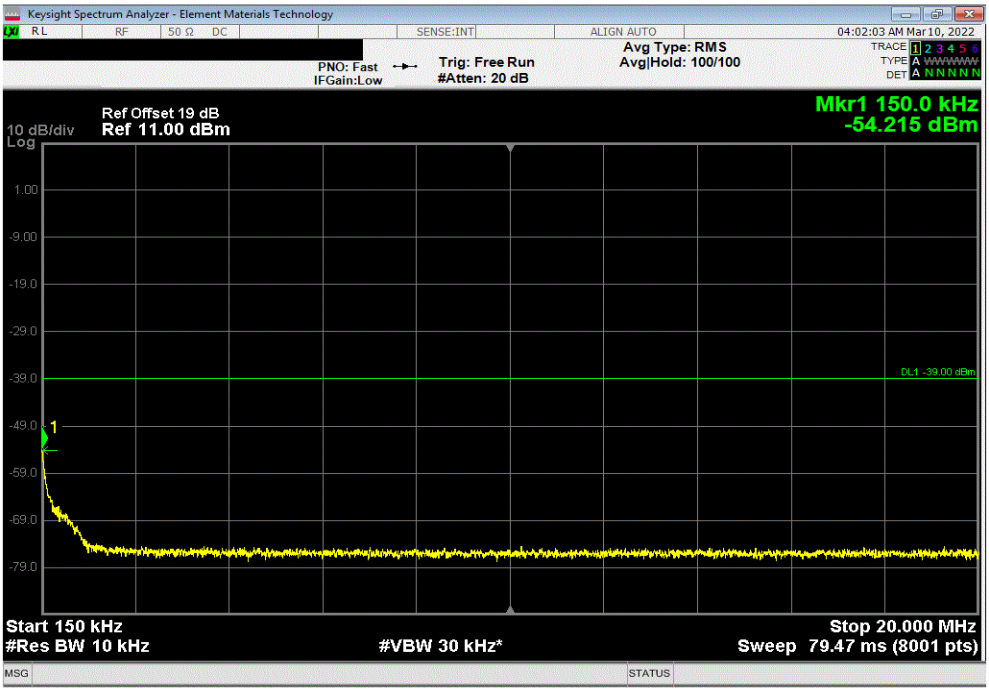
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz

Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz		-62.1	-49	Pass

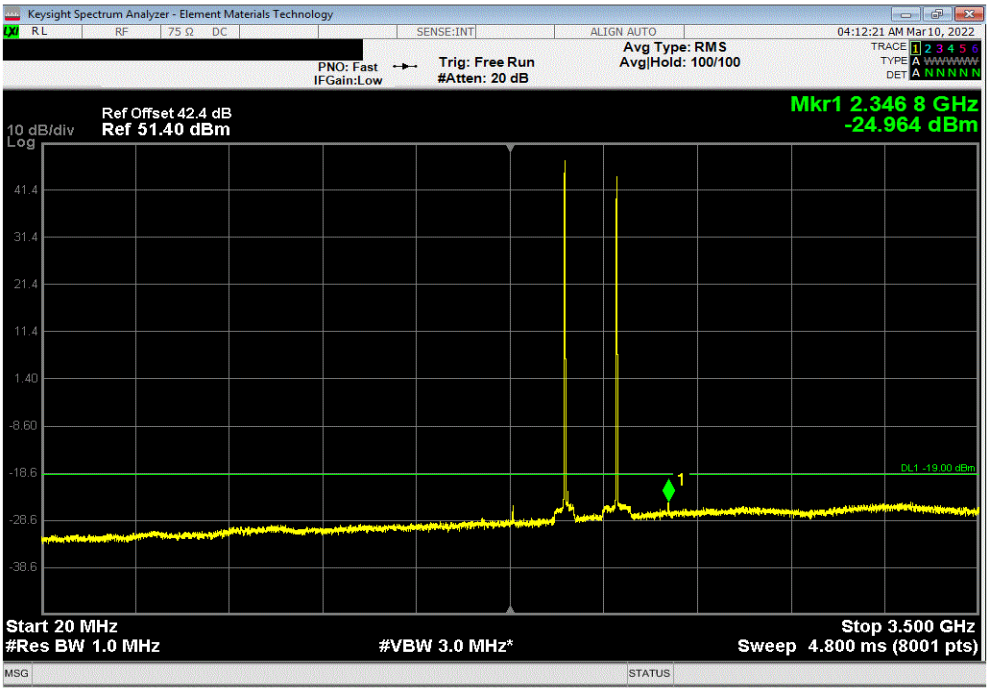


Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz

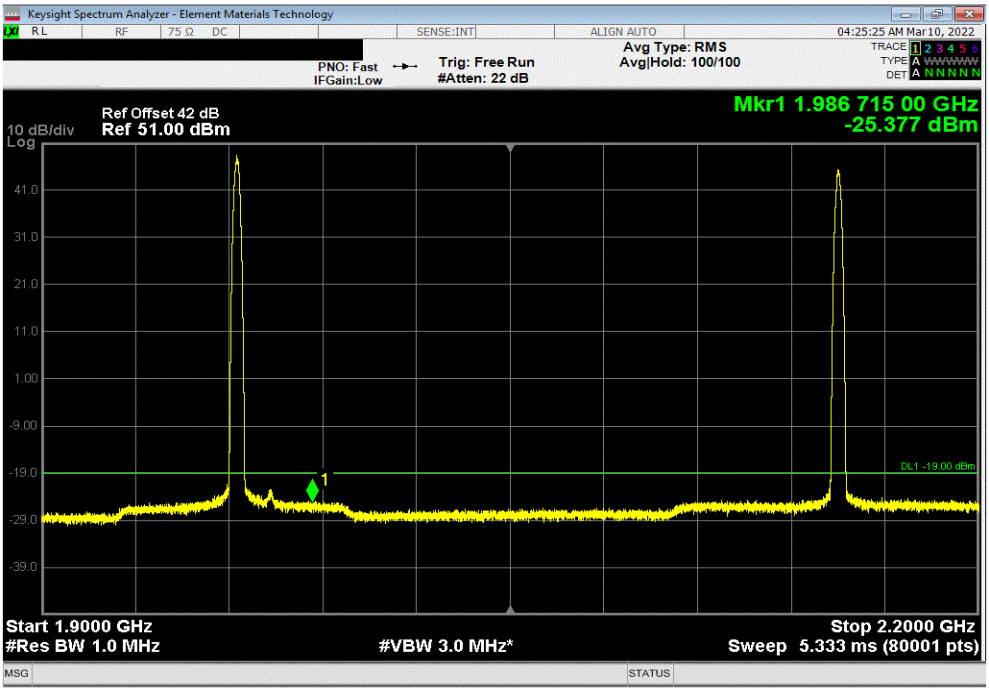
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-54.2	-39	Pass



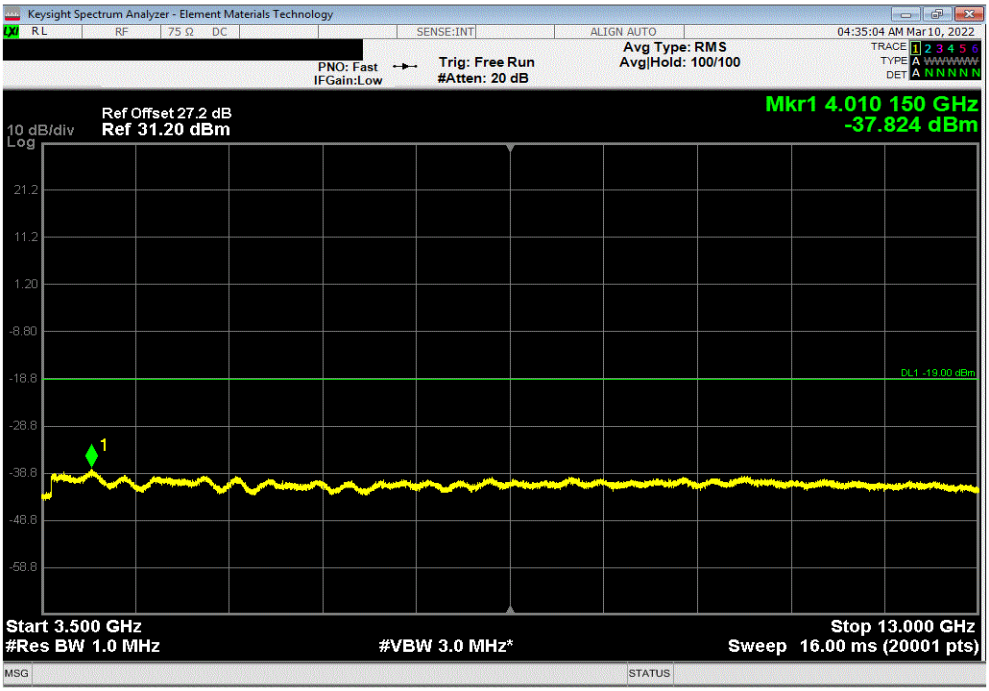
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-25.0	-19	Pass



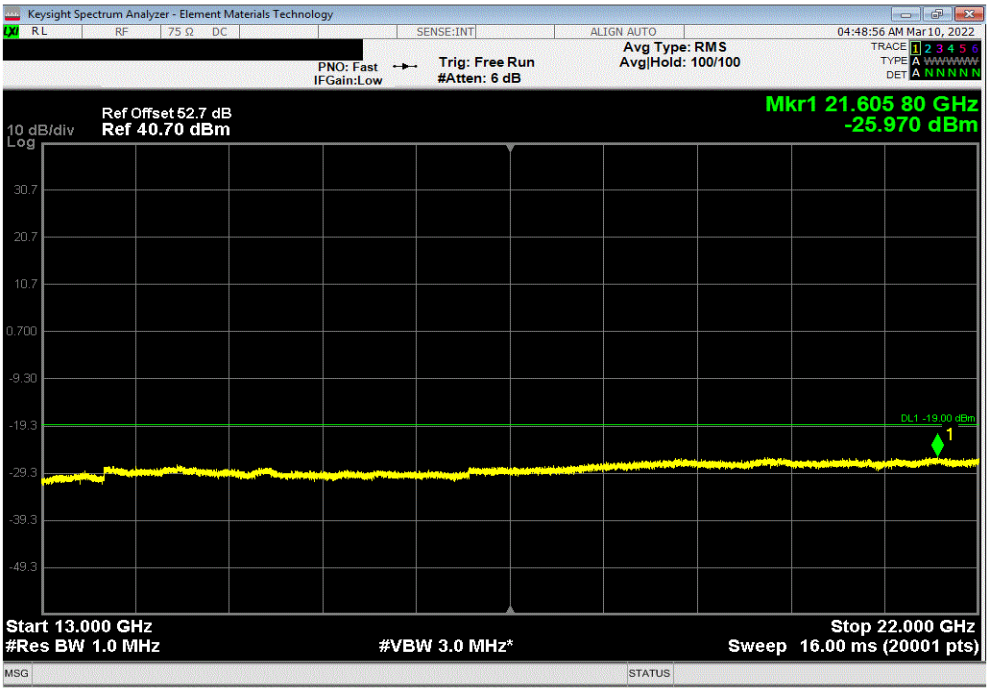
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-25.4	-19	Pass



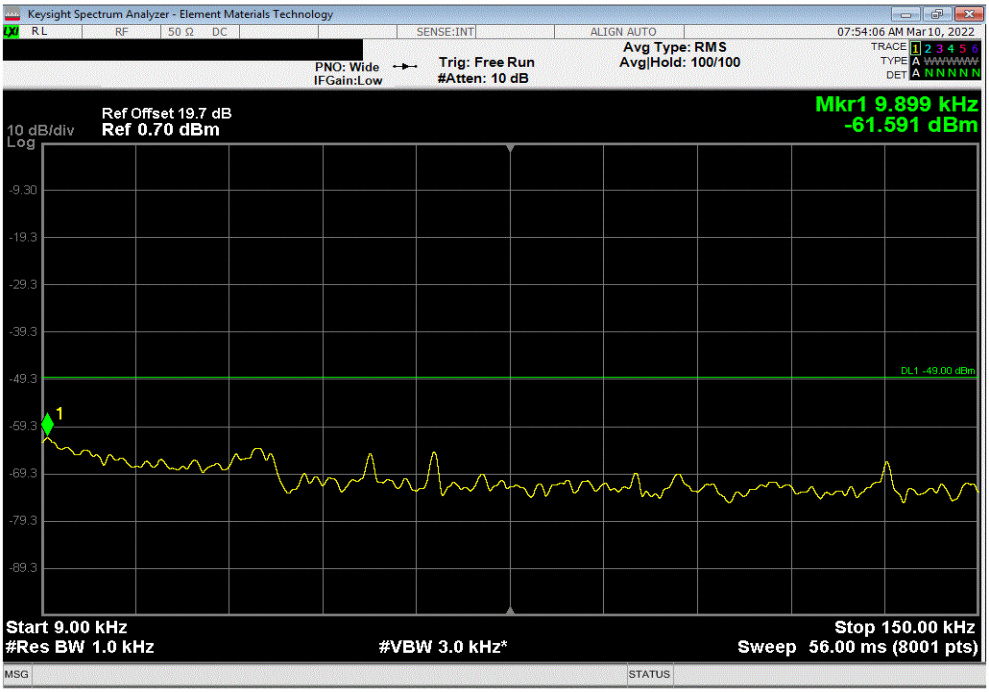
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-37.8	-19	Pass



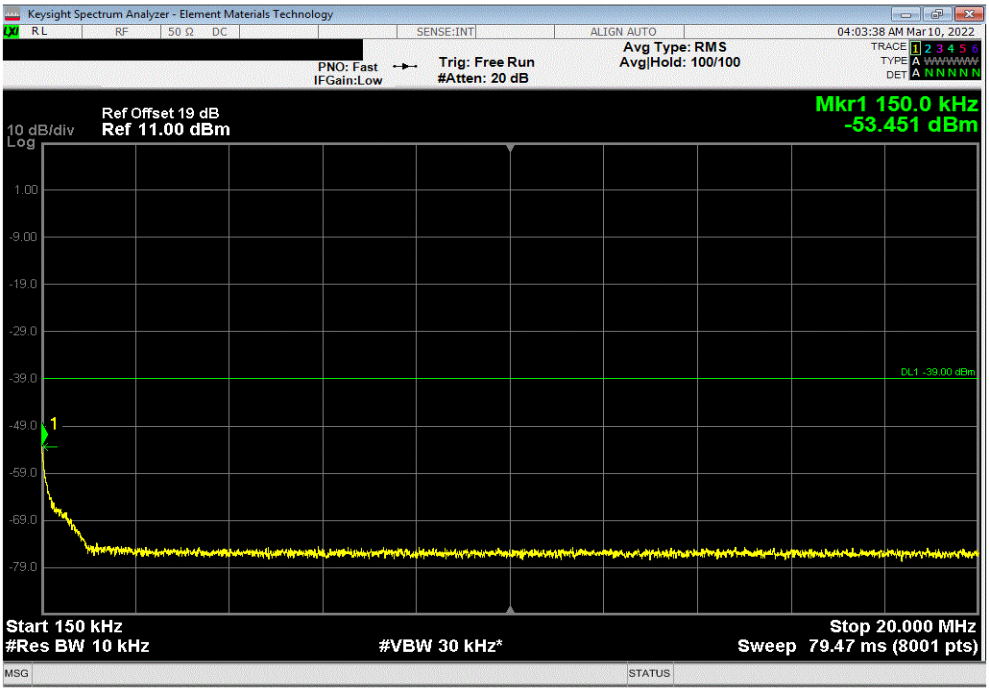
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 64-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-26.0	-19	Pass



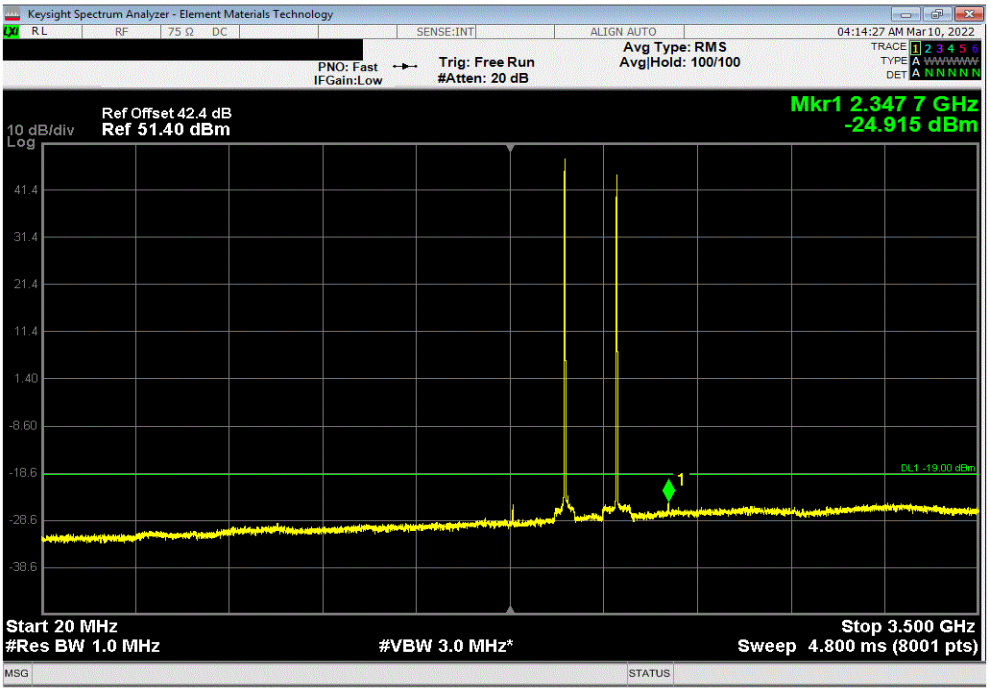
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-61.6	-49	Pass



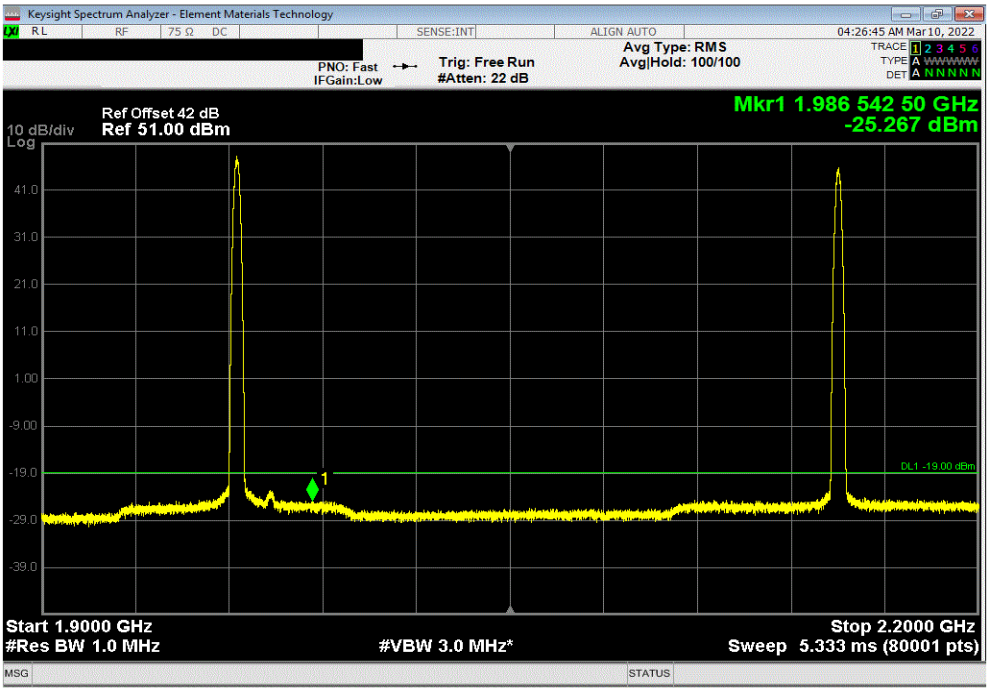
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.5	-39	Pass



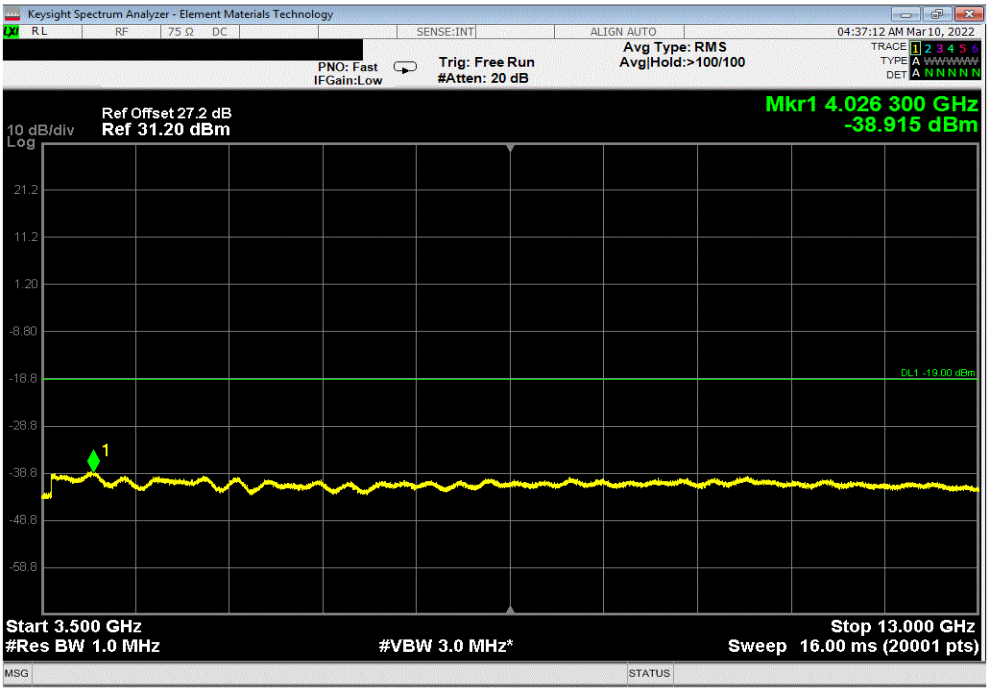
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-24.9	-19	Pass



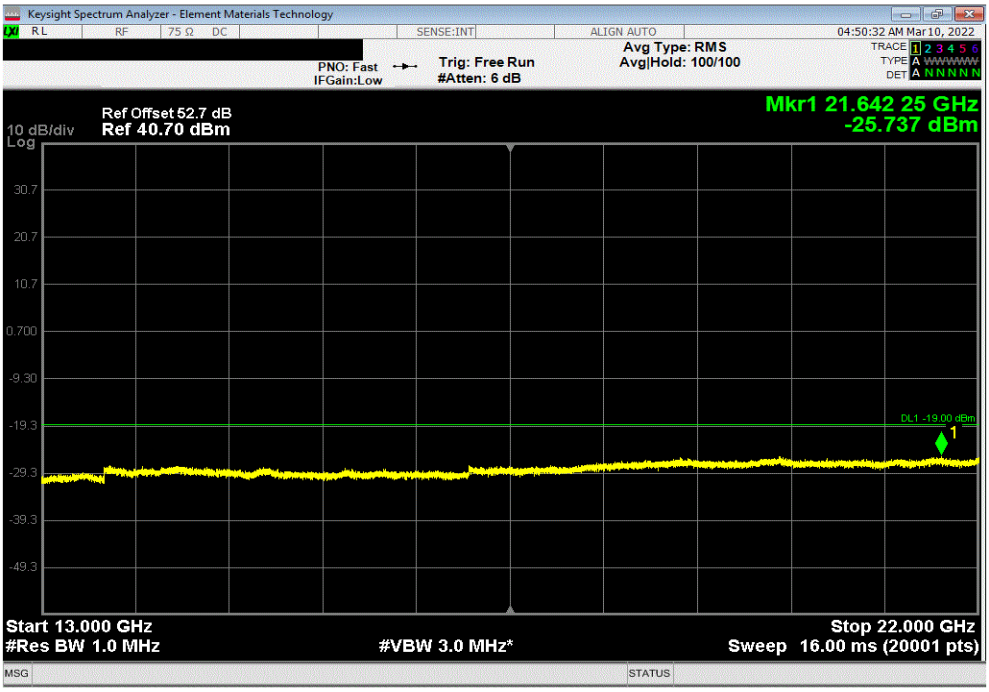
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-25.3	-19	Pass



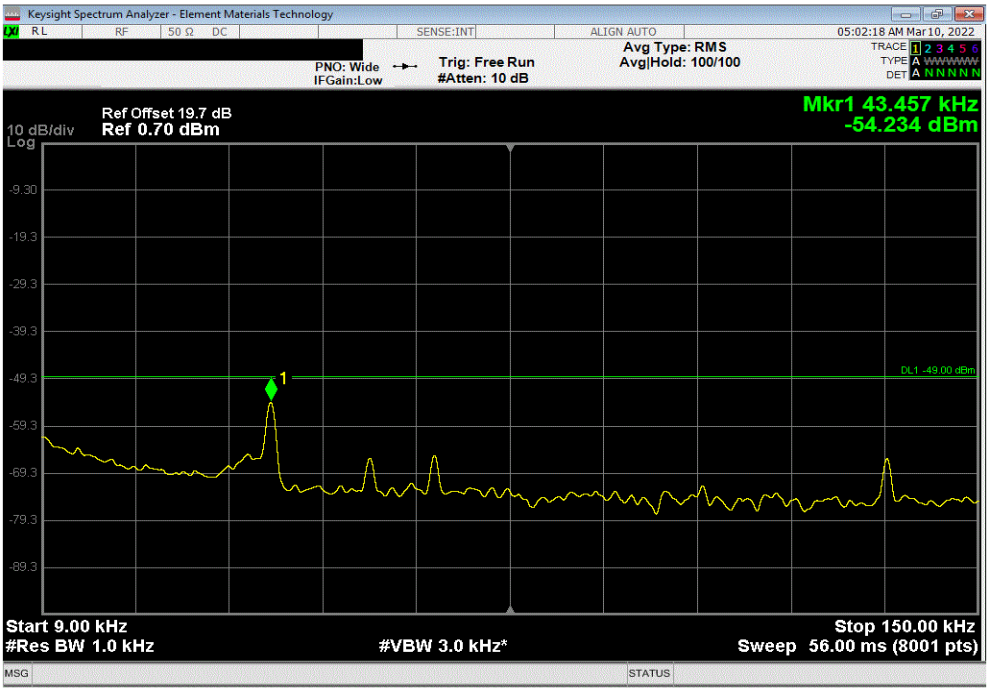
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-38.9	-19	Pass



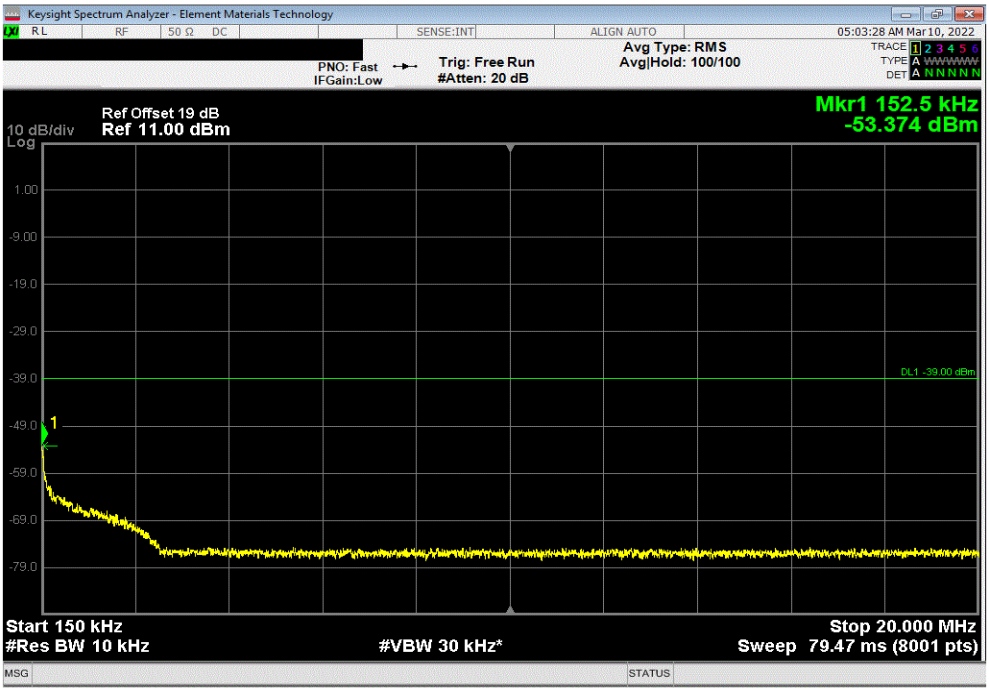
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-25.7	-19	Pass



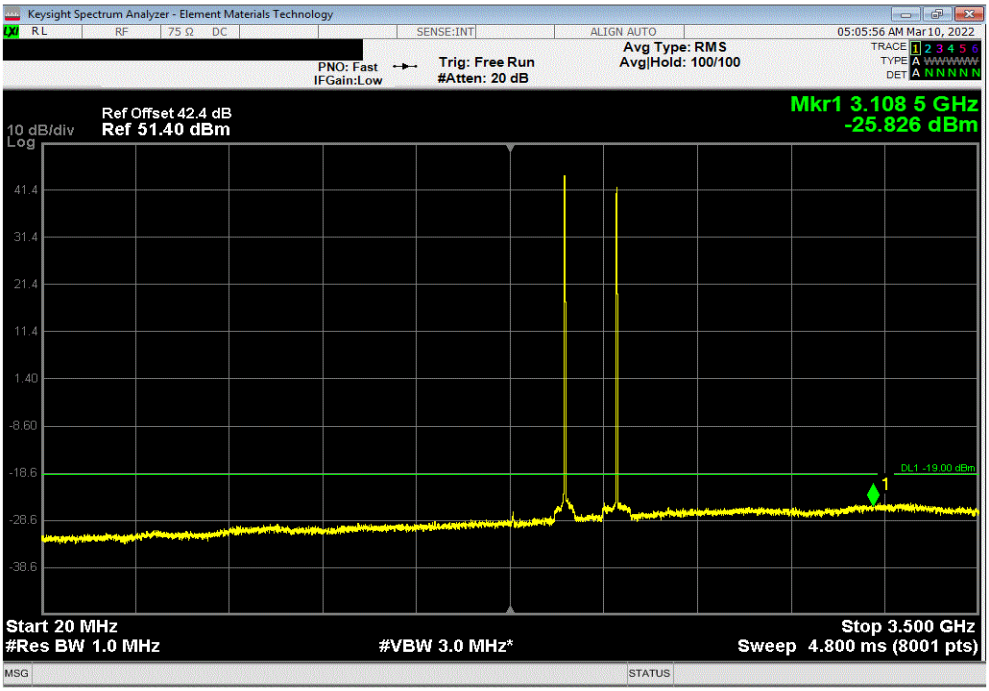
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz		-54.2	-49	Pass



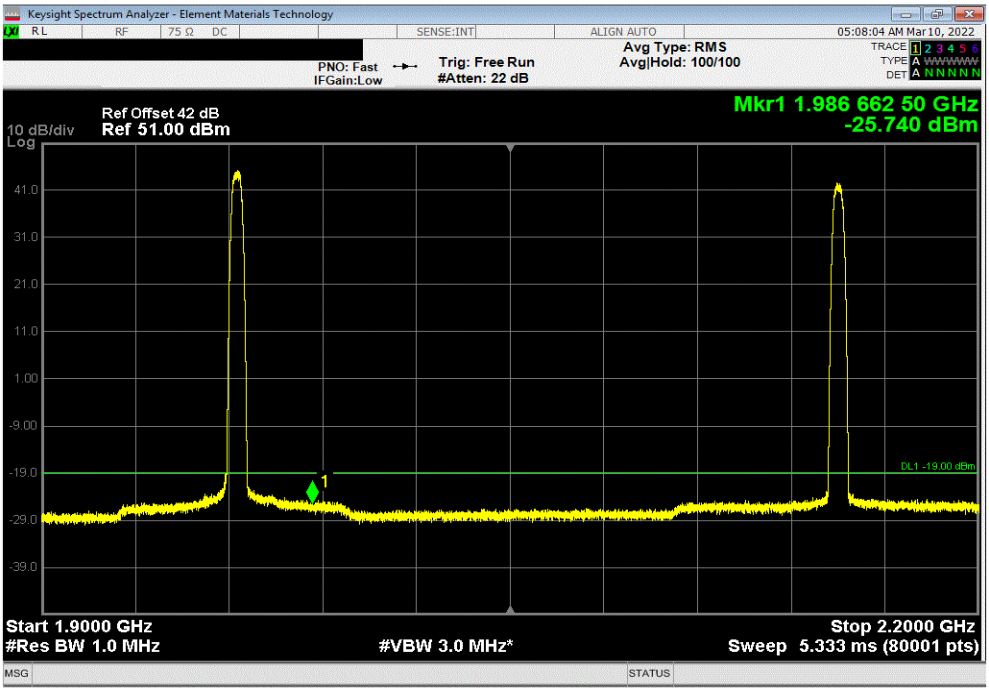
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.4	-39	Pass



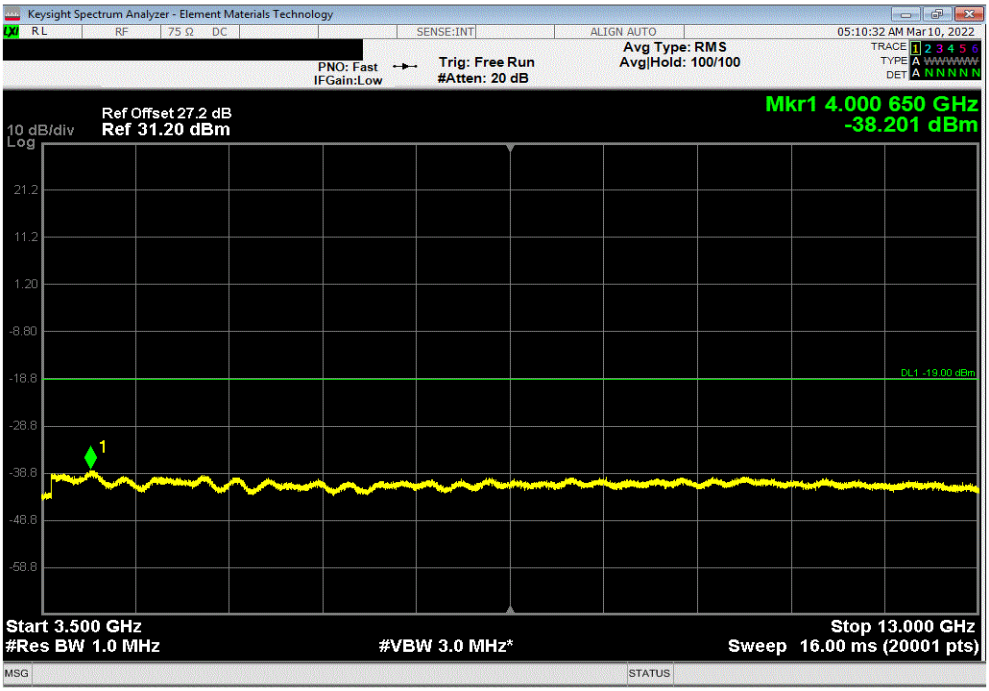
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.8	-19	Pass



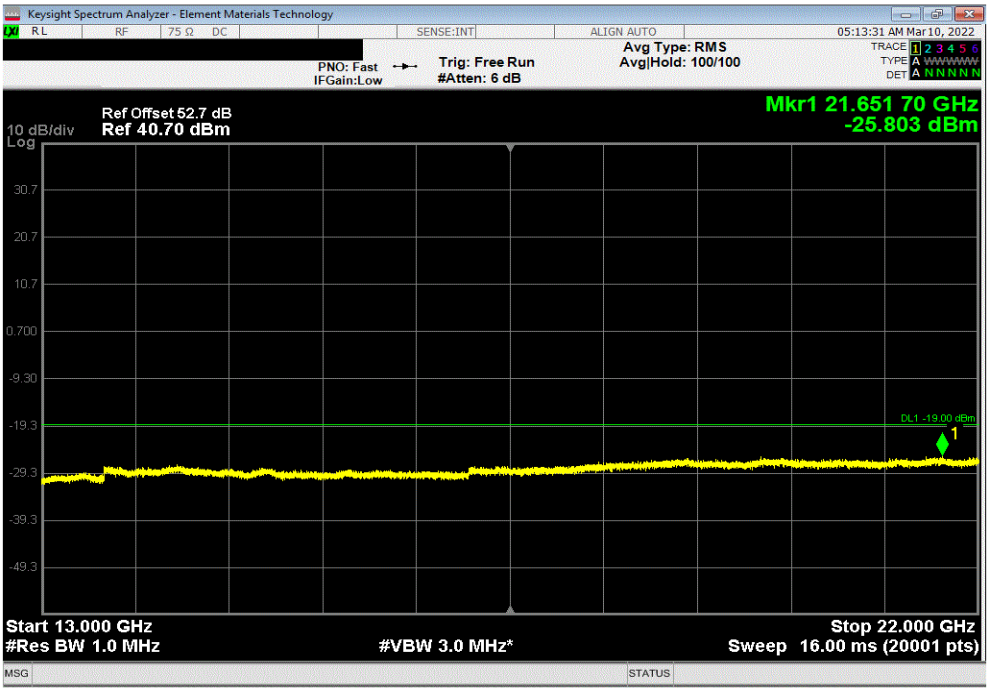
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-25.7	-19	Pass



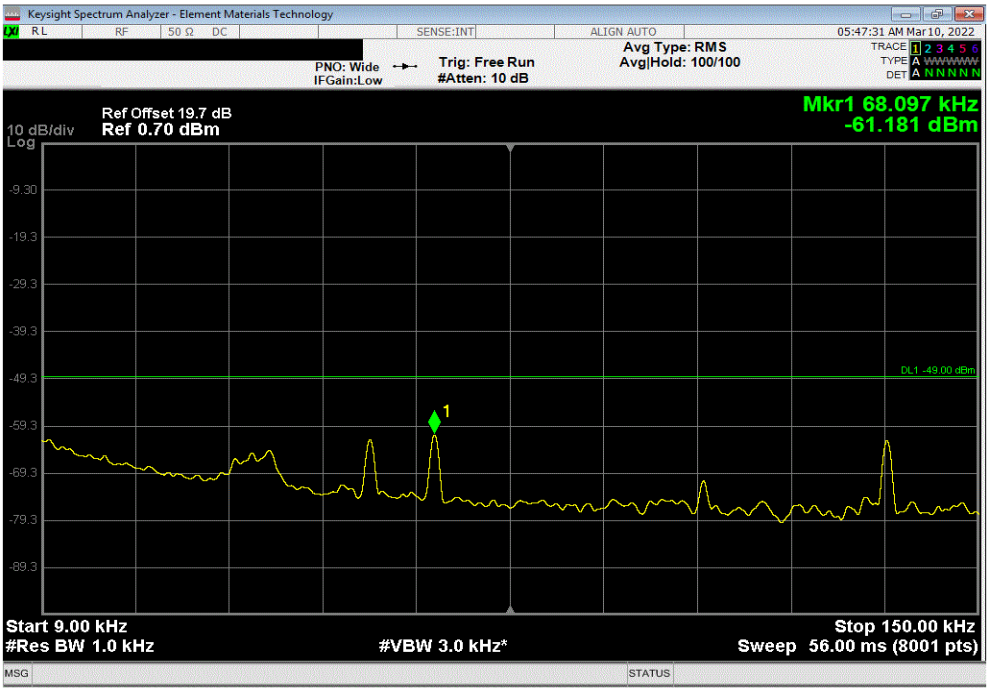
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.2	-19	Pass



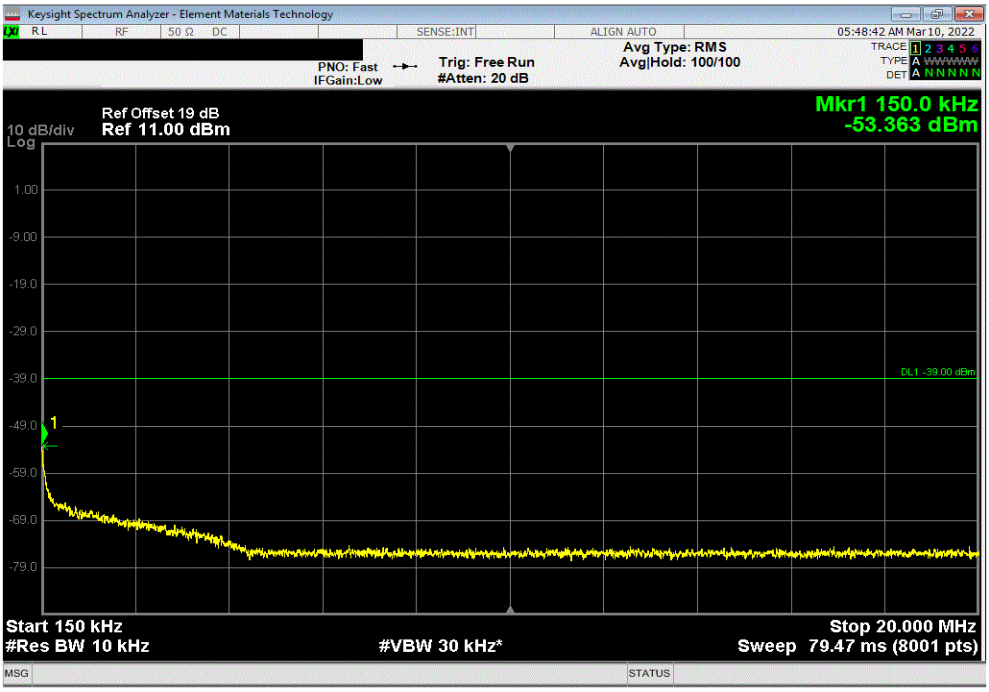
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 3 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.8	-19	Pass



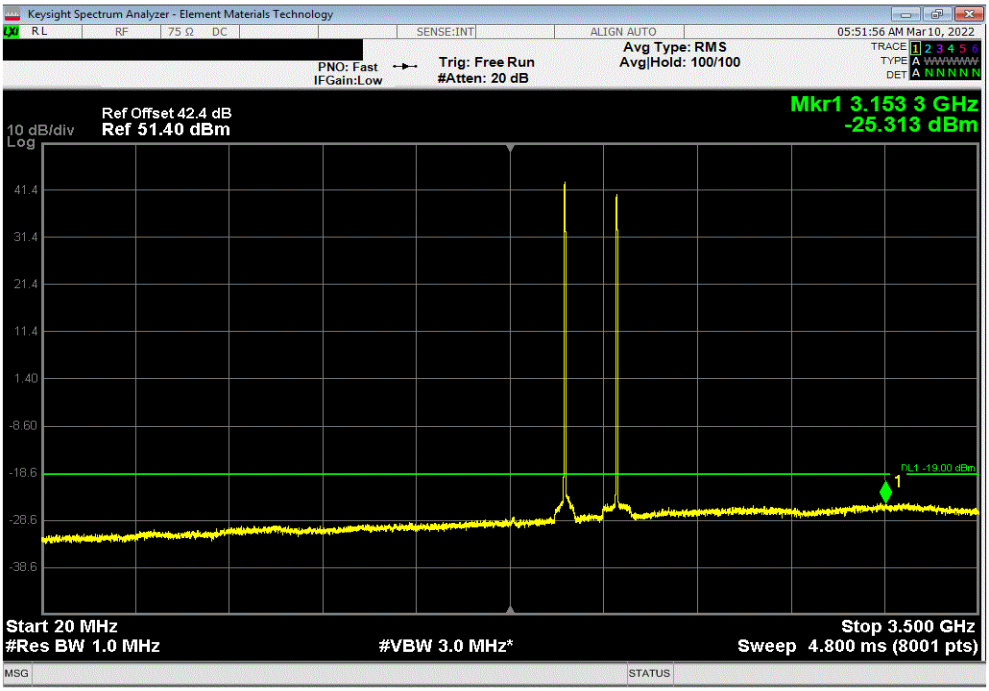
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz		-61.2	-49	Pass



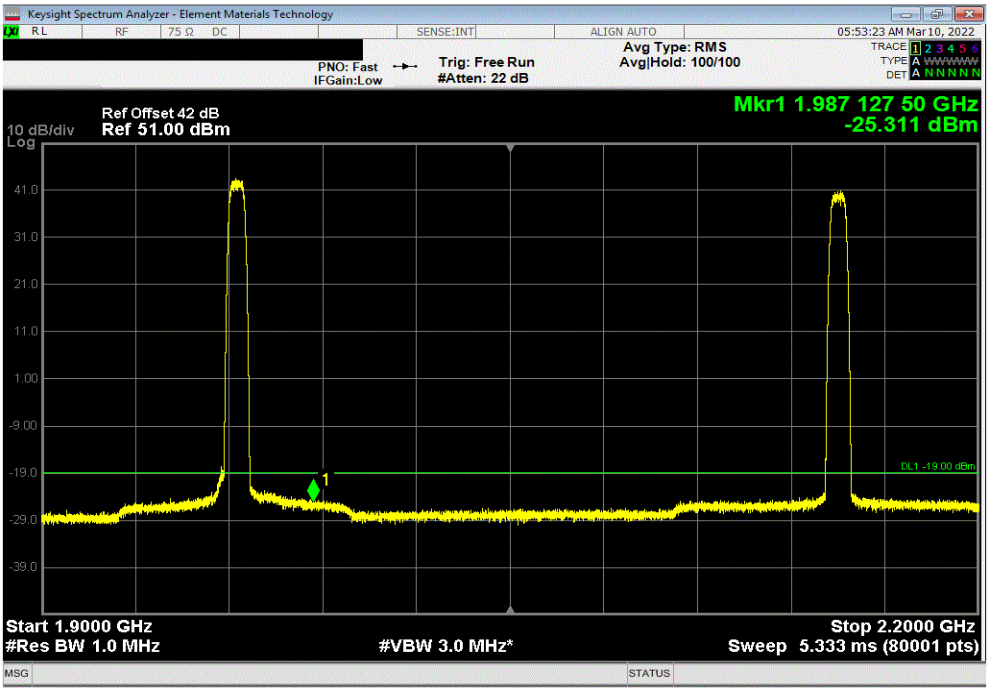
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.4	-39	Pass



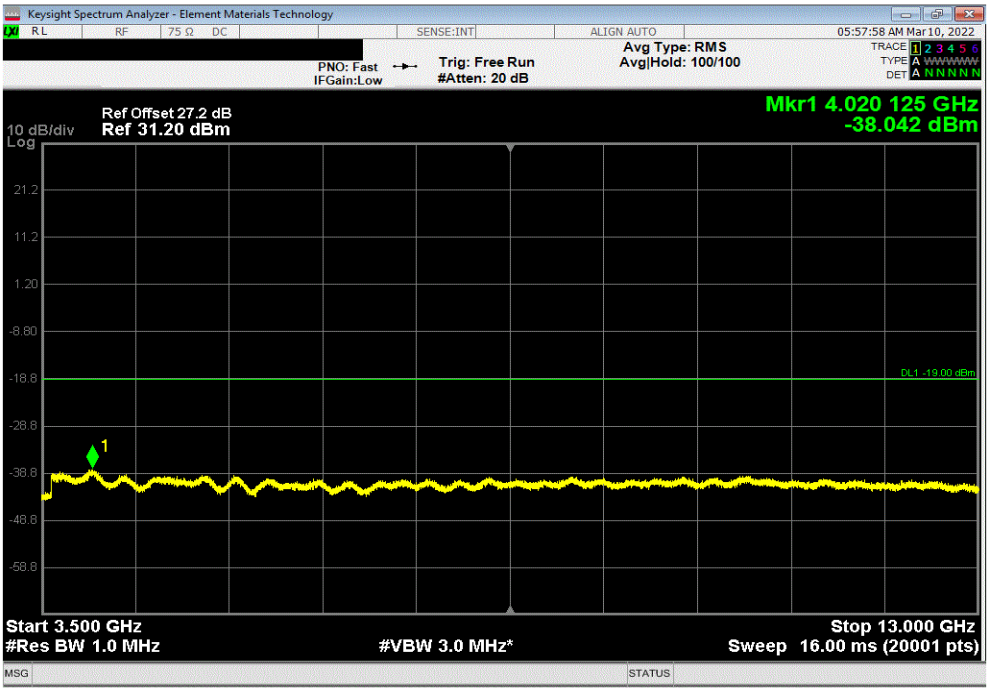
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-25.3	-19	Pass



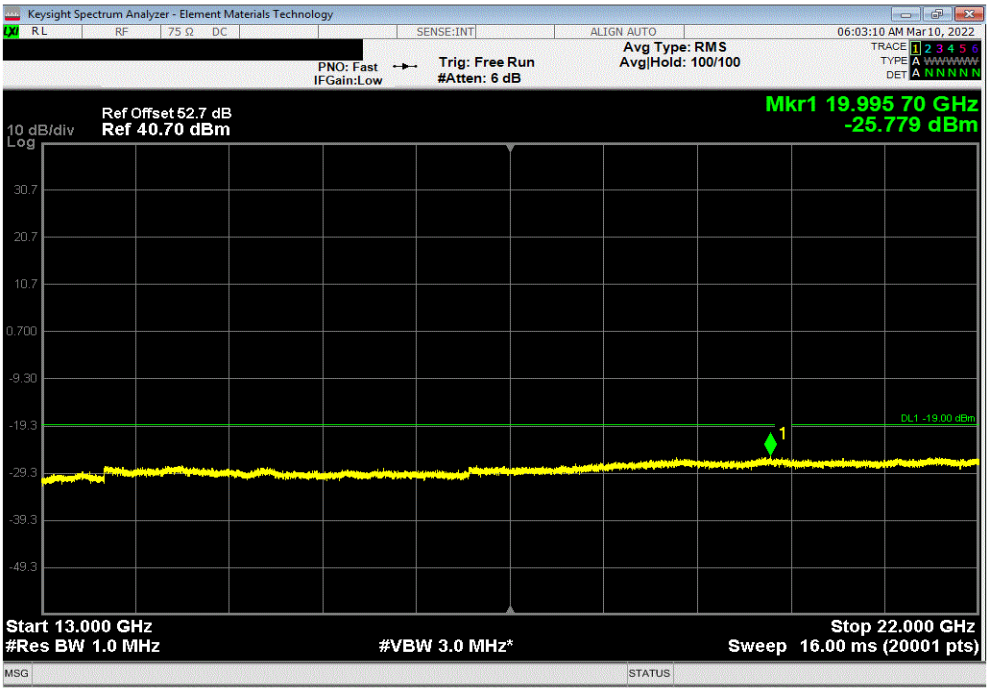
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-25.3	-19	Pass



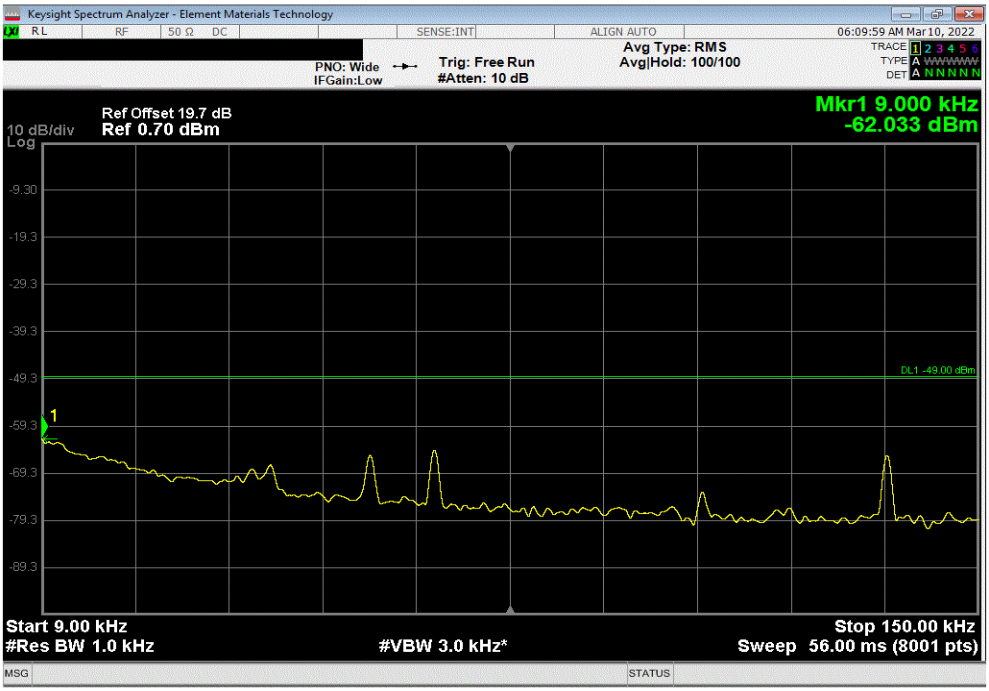
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.0	-19	Pass



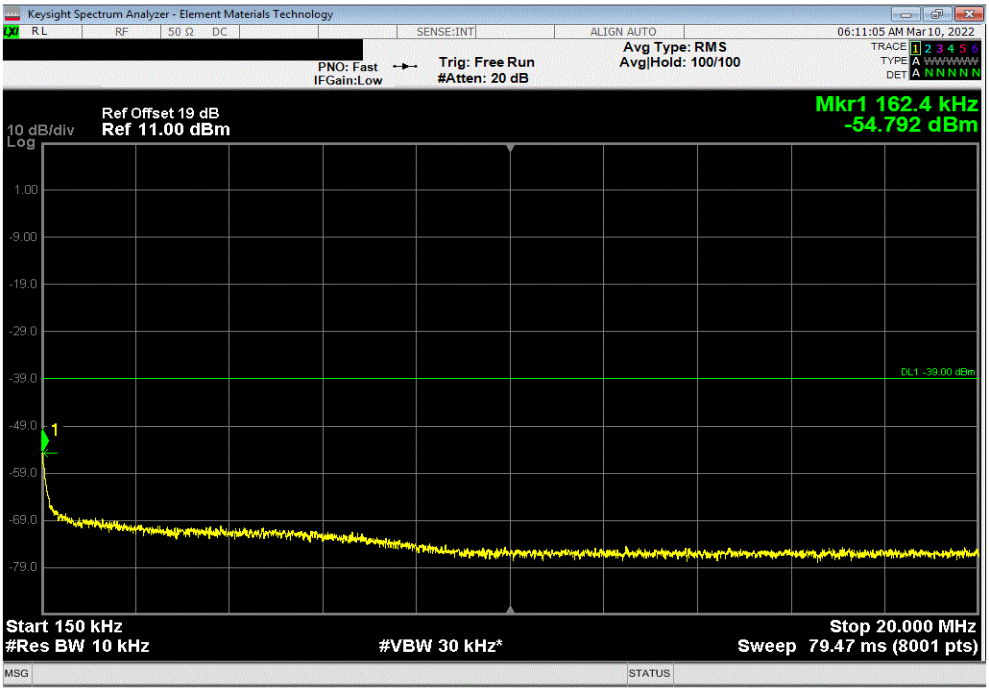
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 5 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.8	-19	Pass



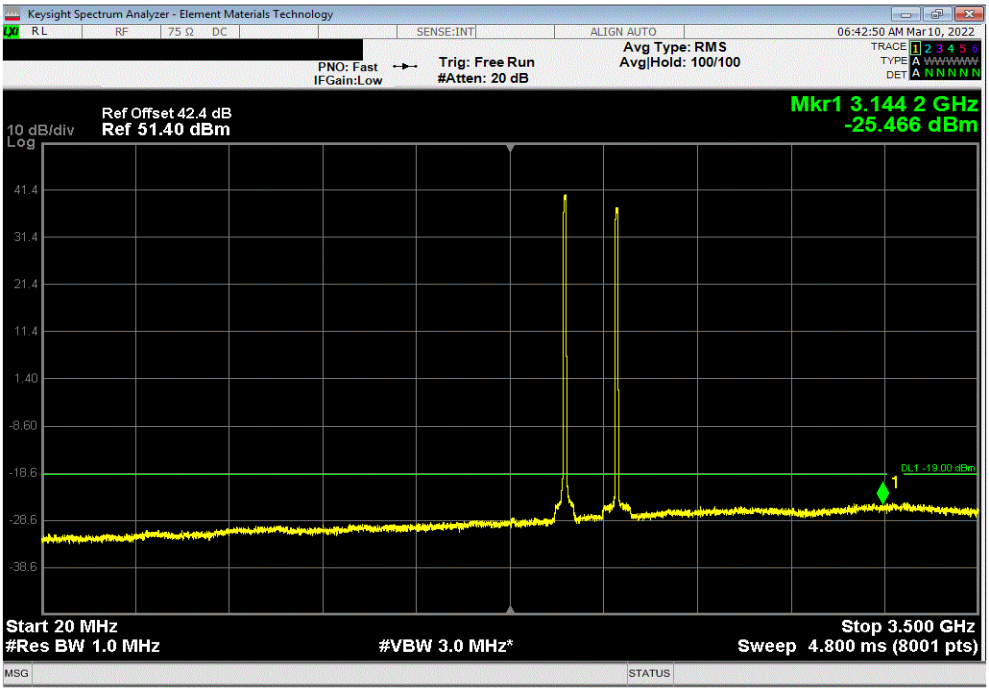
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-62.0	-49	Pass



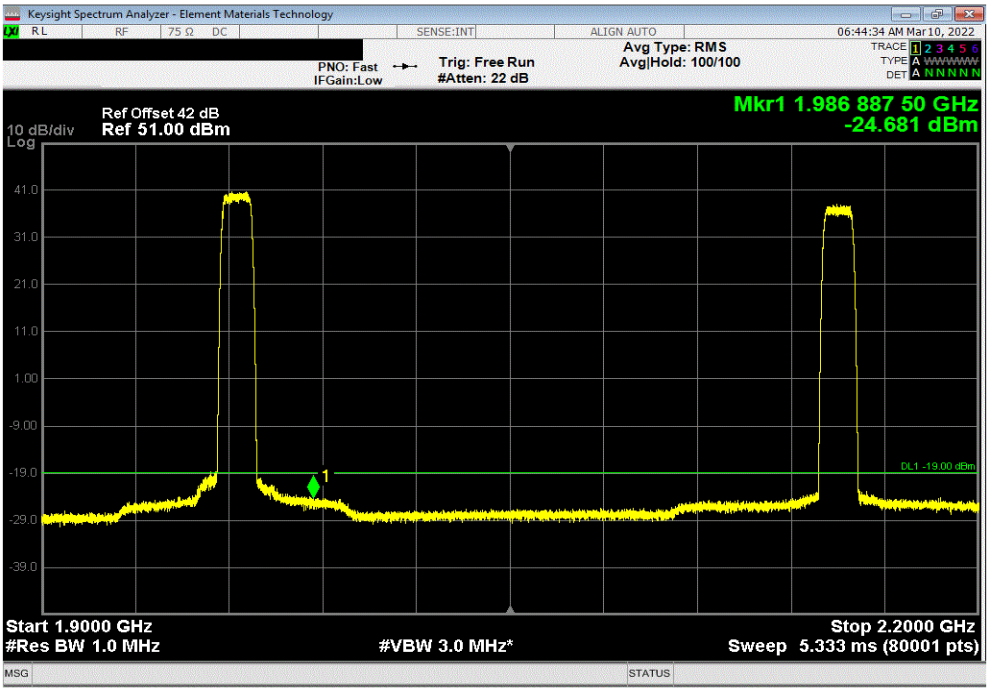
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-54.8	-39	Pass



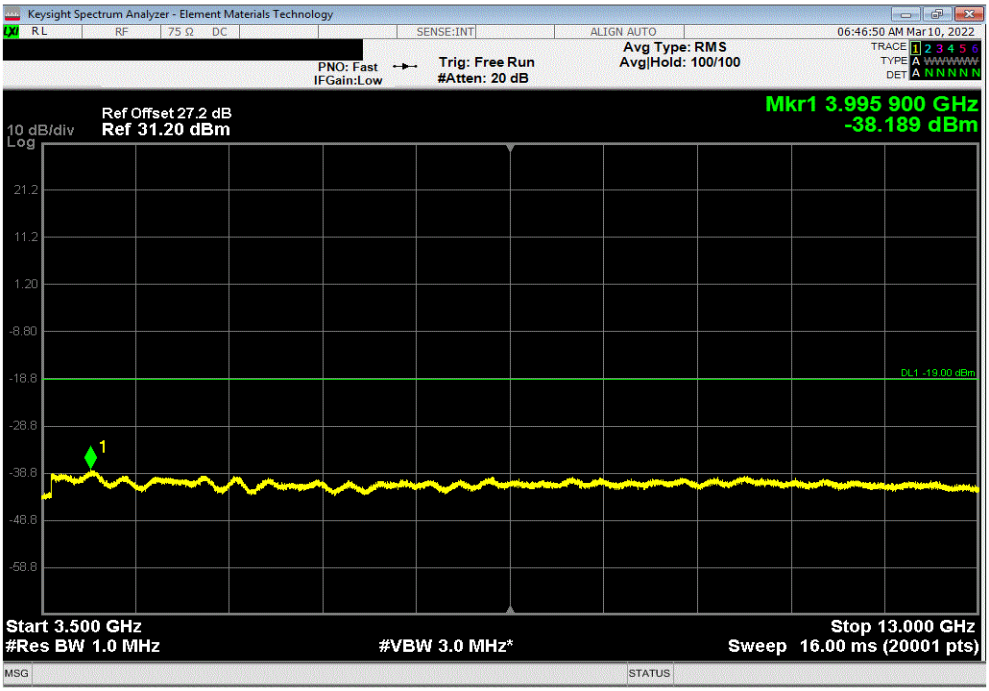
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-25.5	-19	Pass



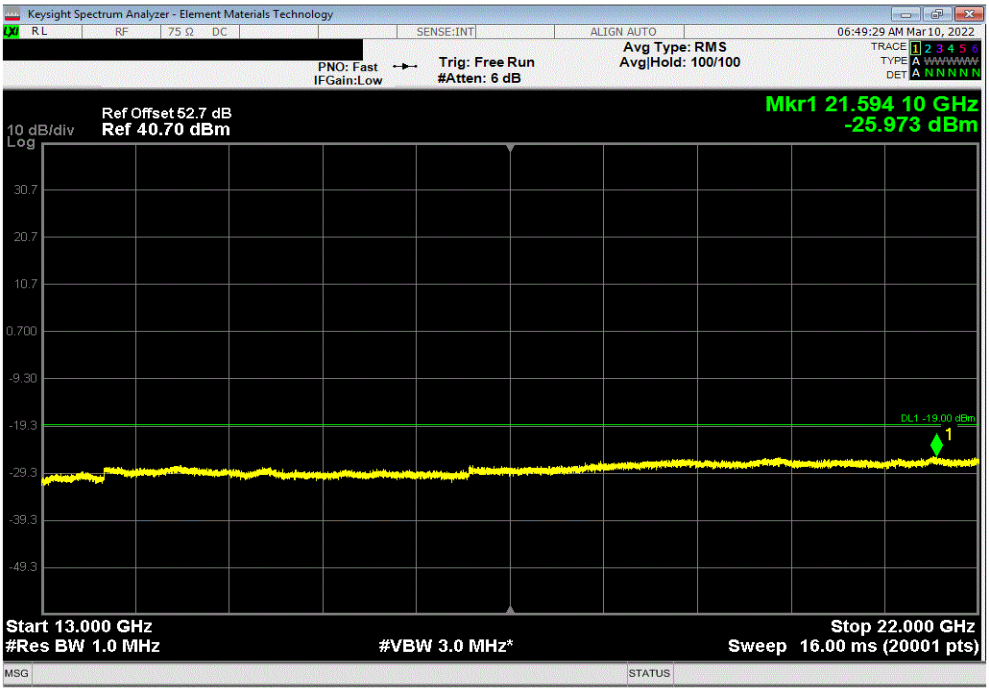
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-24.7	-19	Pass



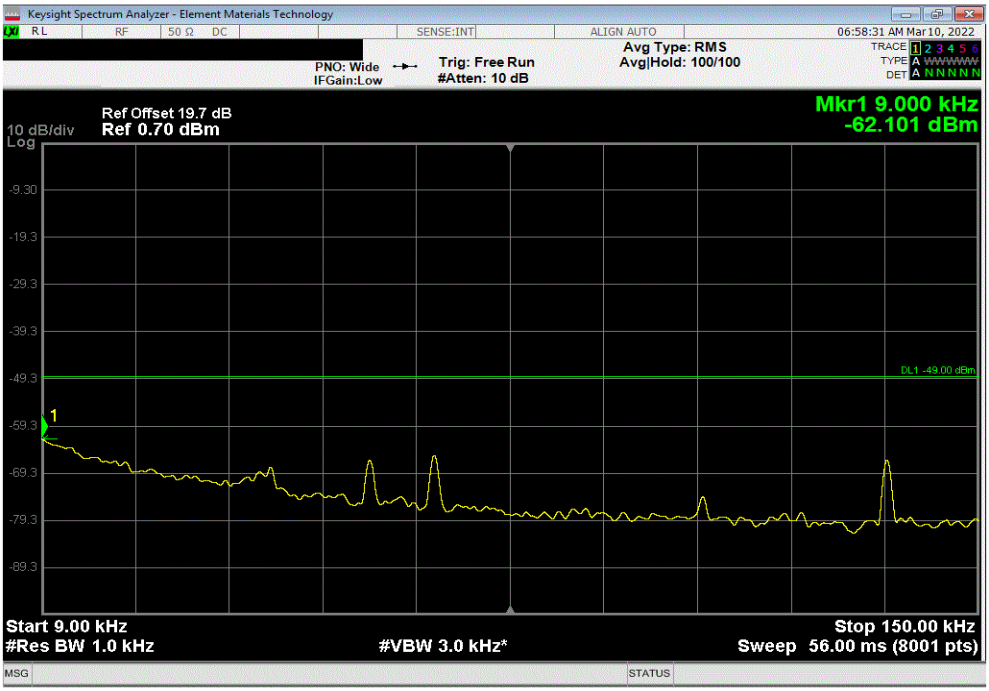
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-38.2	-19	Pass



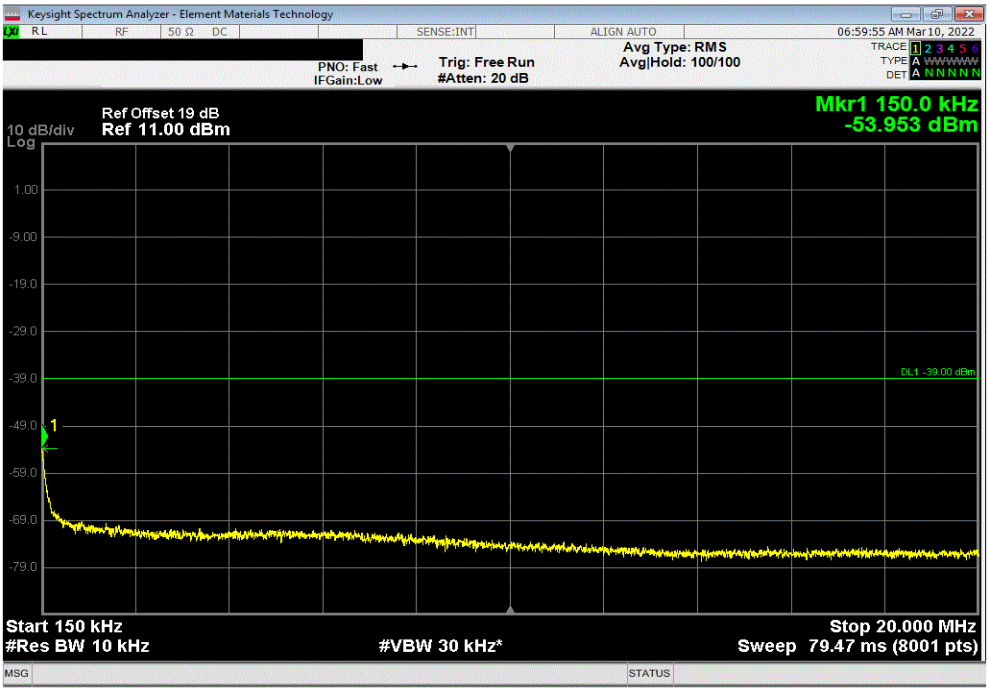
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 10 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-26.0	-19	Pass



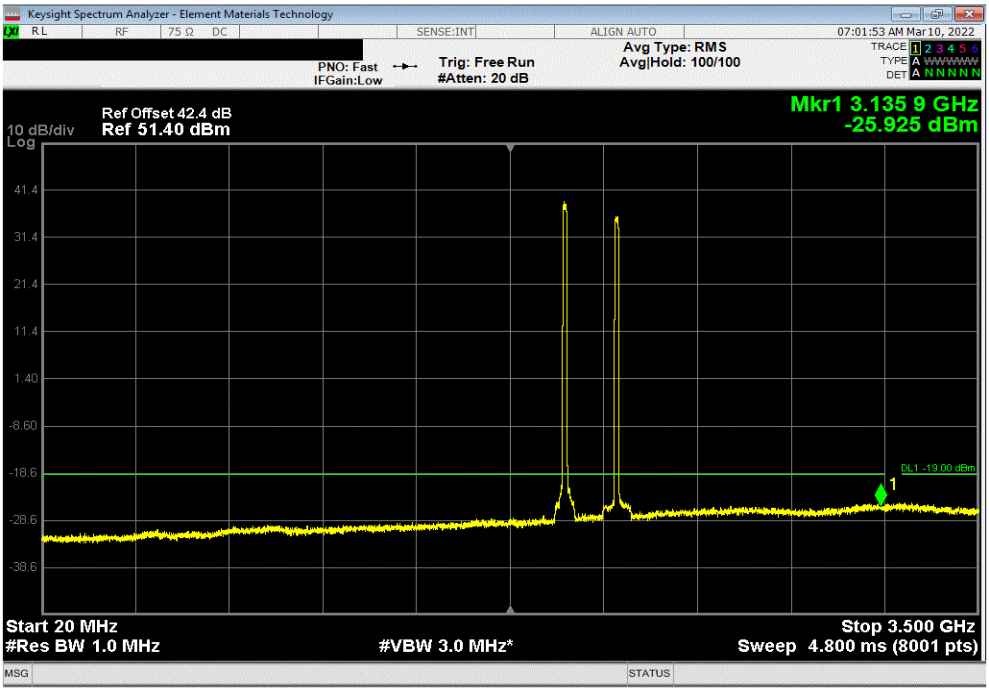
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-62.1	-49	Pass



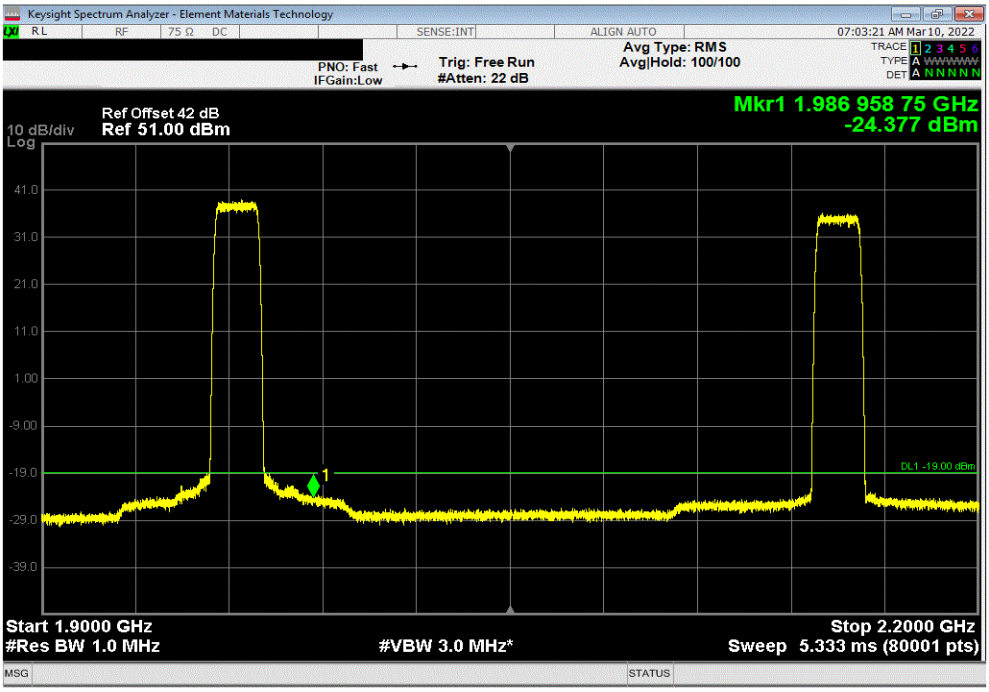
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-54.0	-39	Pass



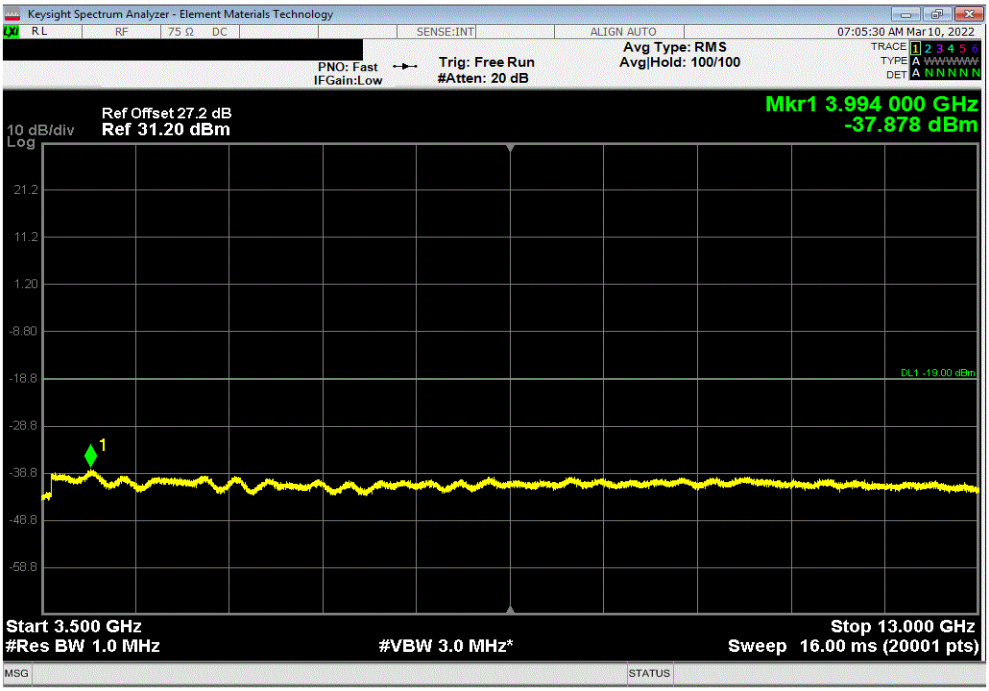
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.9	-19	Pass



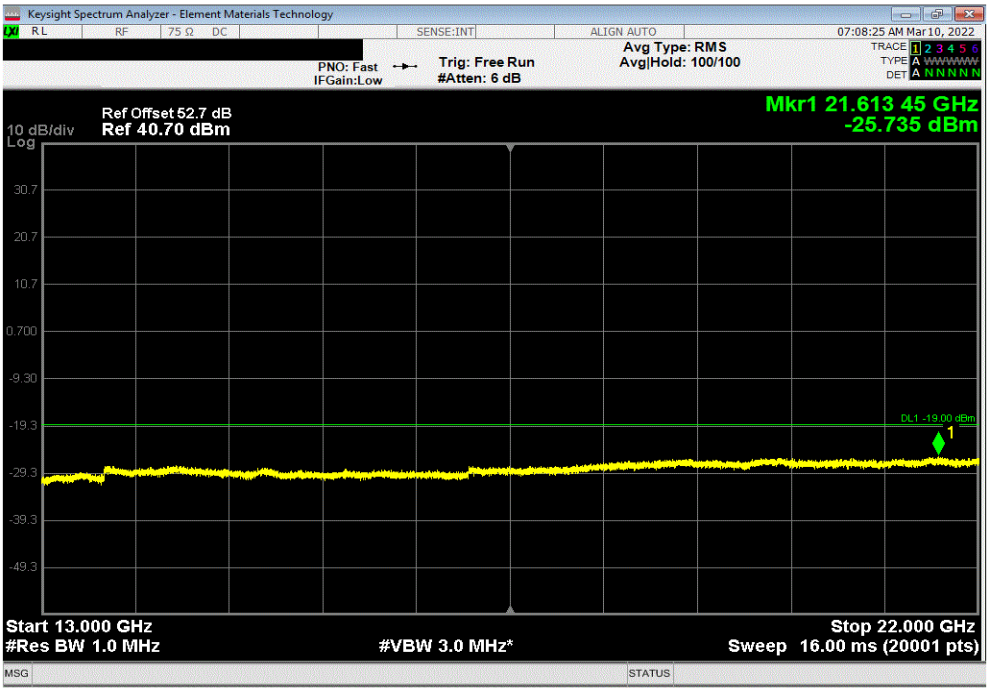
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-24.4	-19	Pass



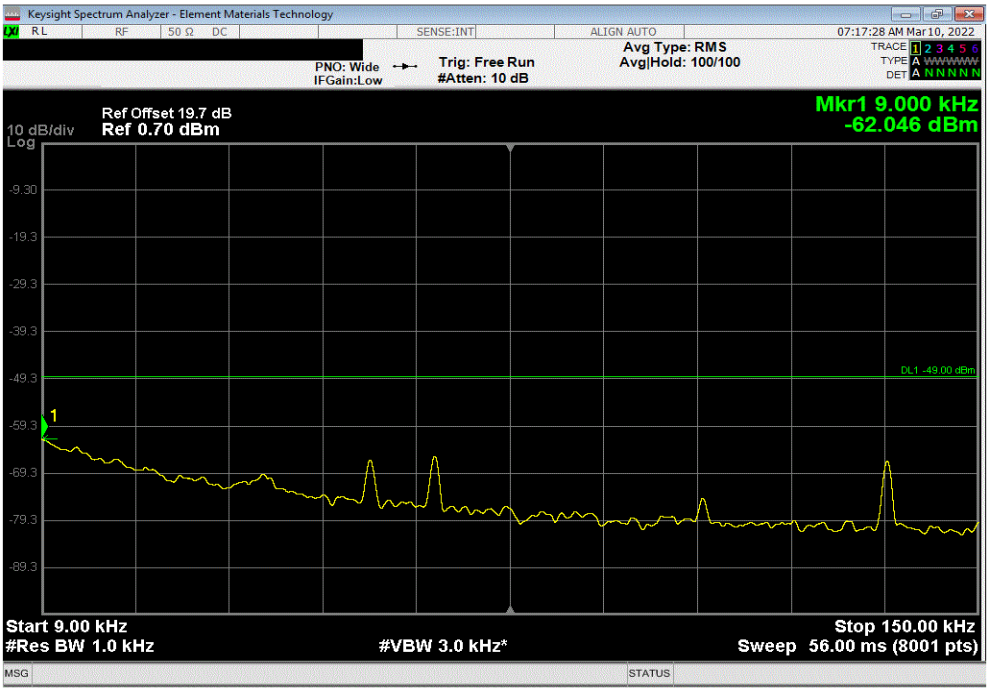
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
3.5 GHz - 13 GHz		-37.9	-19	Pass



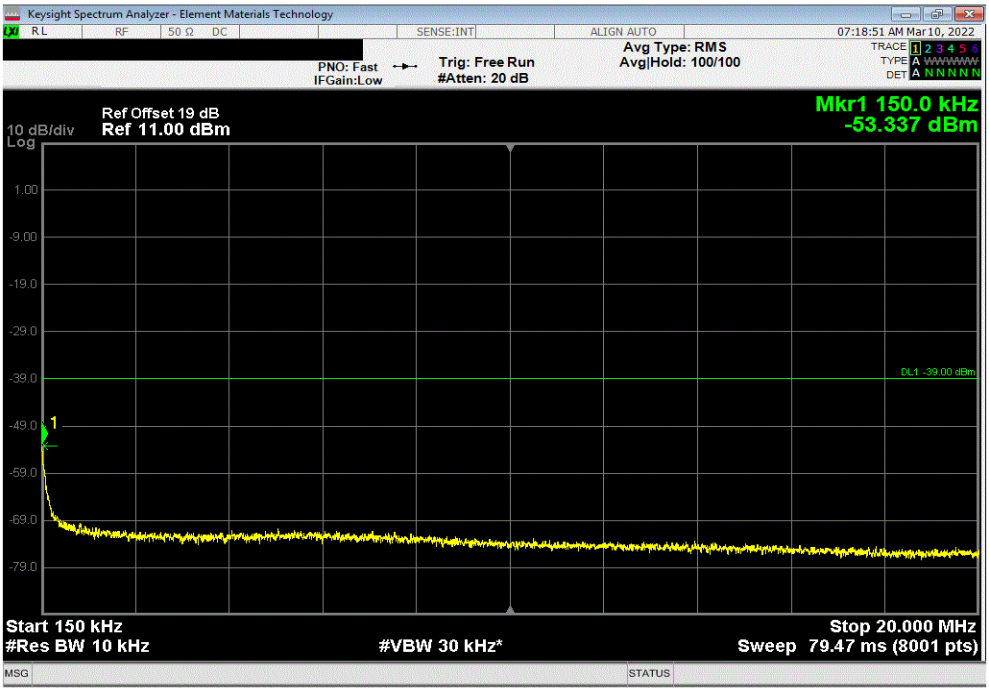
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 15 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
13 GHz - 22 GHz		-25.7	-19	Pass



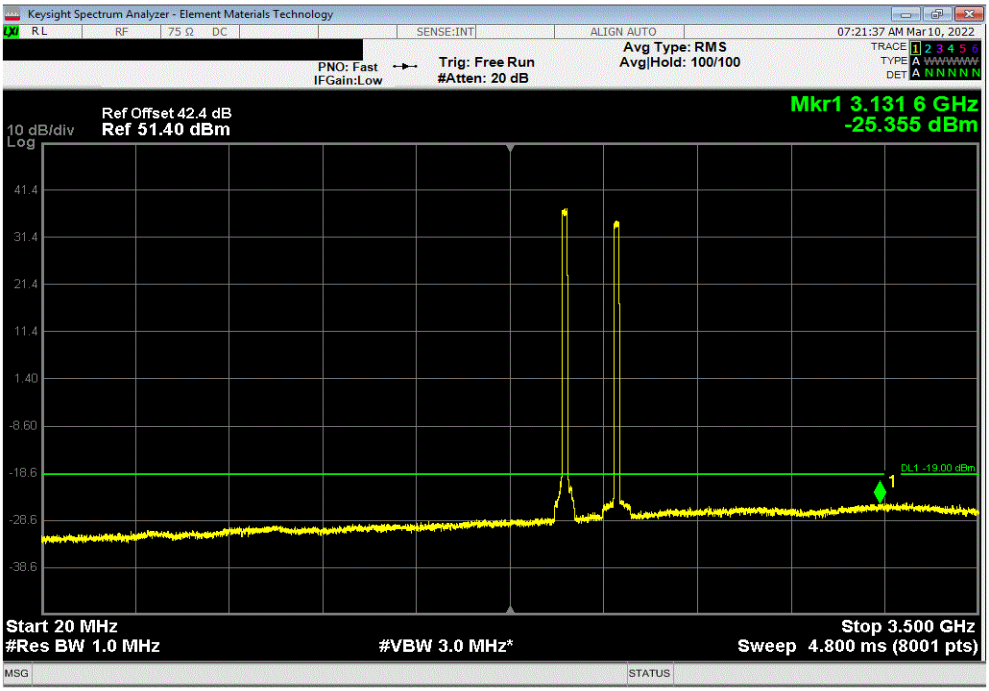
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz						
	Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
	9 kHz - 150 kHz			-62.0	-49	Pass



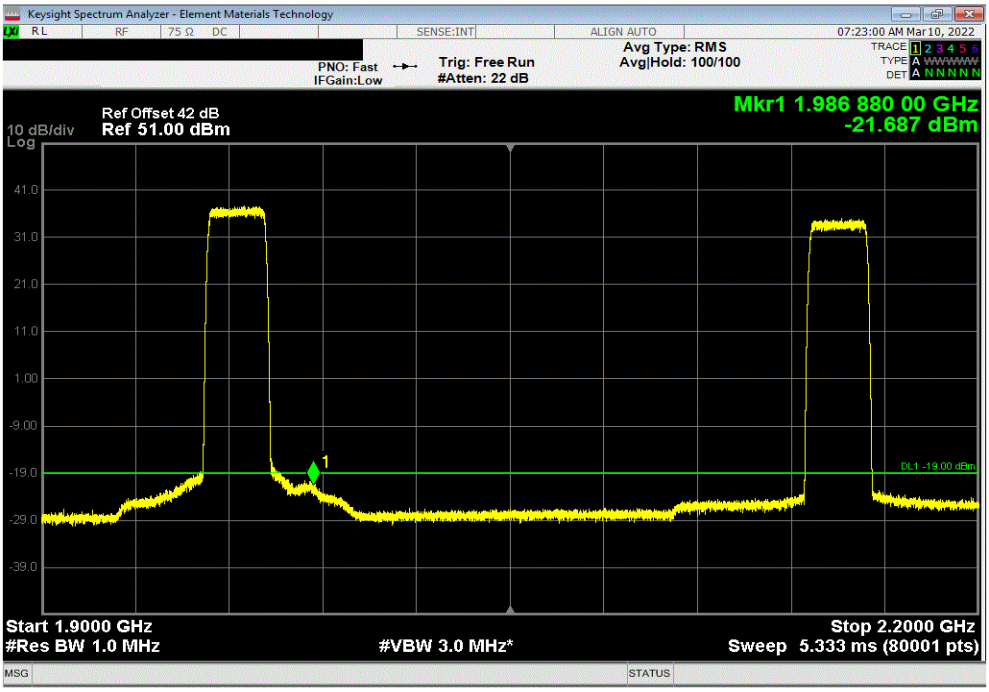
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz					
	Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
	150 kHz - 20 MHz		-53.3	-39	Pass



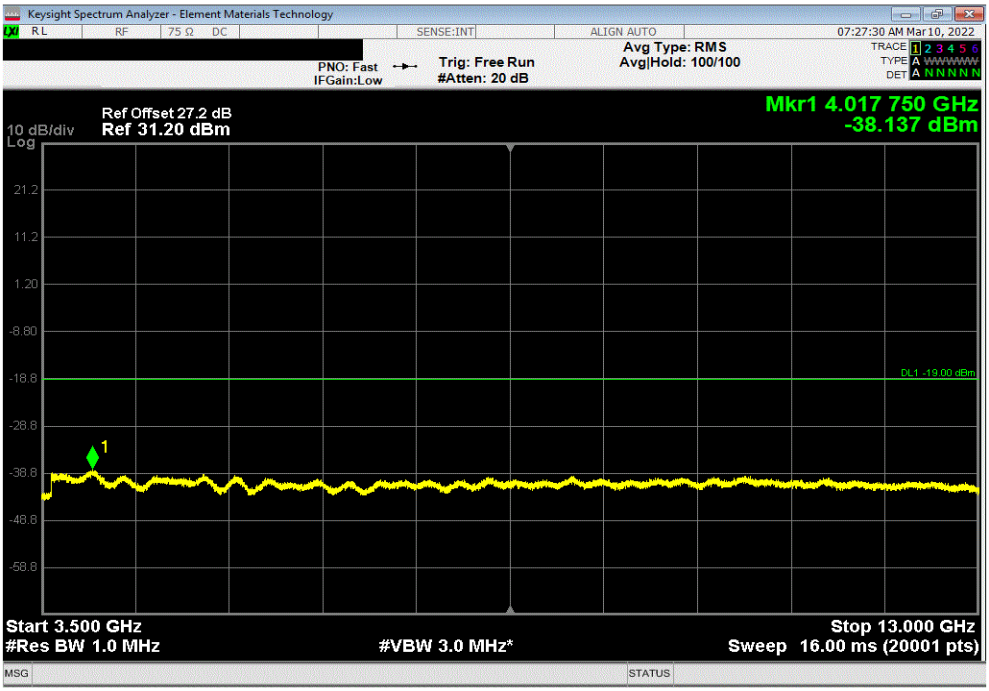
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 3.5 GHz		-25.4	-19	Pass



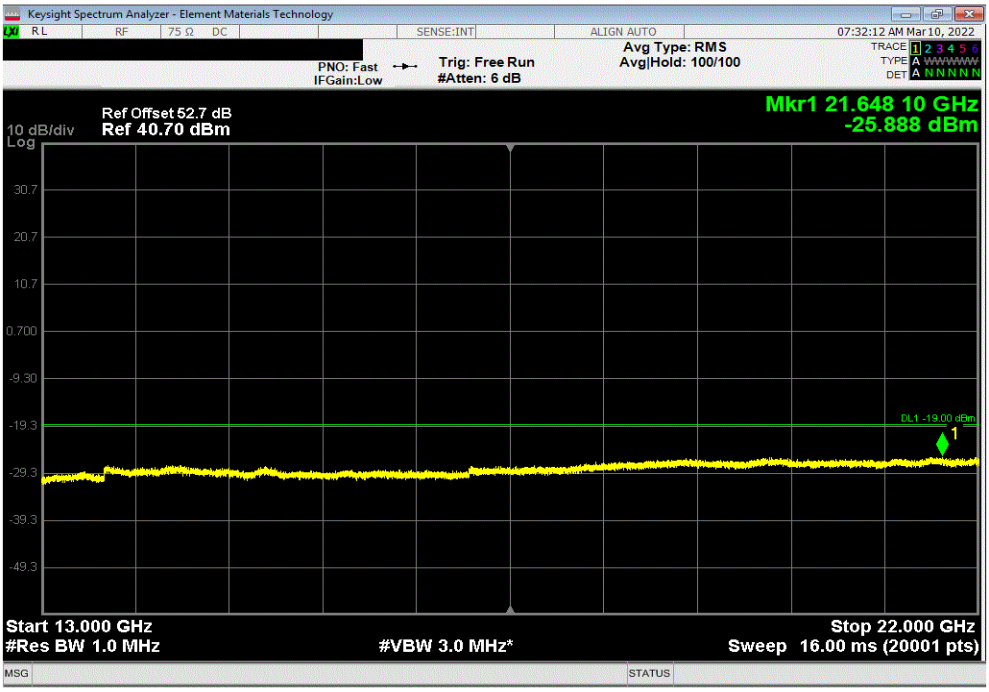
Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
1.9 GHz - 2.2 GHz		-21.7	-19	Pass



Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.1	-19	Pass



Band 25, 1930 MHz - 1995 MHz, LTE Single Carrier, Port 1, 20 MHz Bandwdith, 256-QAM Modulation, Mid Channel, 1962.5 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.9	-19	Pass



SPURIOUS CONDUCTED EMISSIONS

element

TbtTx 2021.12.14.1 XMit 2022.02.07.0

EUT:	**AHFII Remote Radio Head**			**Work Order:**	**NOKI0037**
Serial Number:	**YK214000036**			**Date:**	**18-Mar-22**
Customer:	**Nokia Solutions and Networks**			**Temperature:**	**25.4 °C**
Attendees:	**David Le, John Rattanavong**			**Humidity:**	**33.9% RH**
Project:	**None**			**Barometric Pres.:**	**1019 mbar**
Tested by:	**Brandon Hobbs**	**Power:**	**54 VDC**	**Job Site:**	**TX01**

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 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 Band 25 carrier was enabled on the middle channel (1962.5MHz) at 40 watts with the same channel bandwidth and modulation type as the Band 66 carrier. The port power was set at the maximum level of 120 Watts [Band 25 carrier (40W) and Band 66 carrier (80W)].

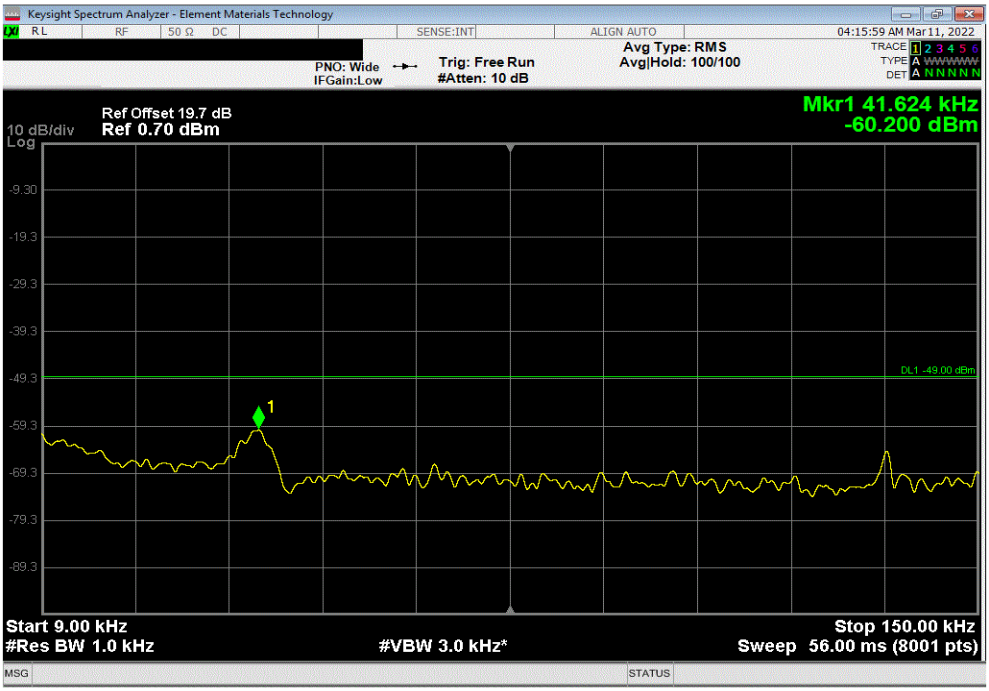
DEVIATIONS FROM TEST STANDARD

None

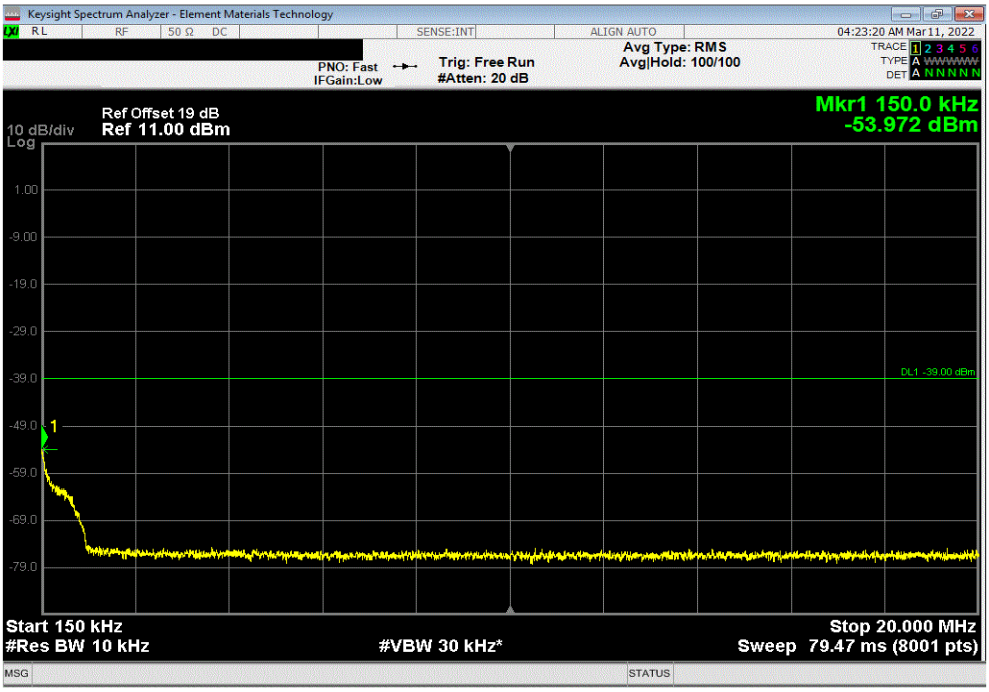
Configuration #	**1,2,3,4**	*Signature*

		Frequency Range	Max Value (dBm)	Limit < (dBm)	Result
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier					
Port 1					
1.4 MHz Bandwidth					
QPSK Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-60.2	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-54.0	-39	Pass
	Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-26.2	-19	Pass
	Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.2	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.3	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.9	-19	Pass
16-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-59.6	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-52.8	-39	Pass
	Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-26.1	-19	Pass
	Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.2	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.2	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-26.0	-19	Pass
64-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.6	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.1	-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	-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
256-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.8	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.0	-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	-25.3	-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
3 MHz Bandwidth					
256-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-61.9	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.0	-39	Pass
	Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-26.1	-19	Pass
	Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.0	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.1	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.8	-19	Pass
5 MHz Bandwidth					
256-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-62.3	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-54.2	-39	Pass
	Mid Channel, 2155 MHz	20 MHz - 3.5 GHz	-26.2	-19	Pass
	Mid Channel, 2155 MHz	1.9 GHz - 2.2 GHz	-25.3	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.3	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-26.0	-19	Pass
10 MHz Bandwidth					
256-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-62.0	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-53.0	-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	-24.2	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.5	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-25.9	-19	Pass
15 MHz Bandwidth					
256-QAM Modulation					
	Mid Channel, 2155 MHz	9 kHz - 150 kHz	-62.5	-49	Pass
	Mid Channel, 2155 MHz	150 kHz - 20 MHz	-54.8	-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	-24.5	-19	Pass
	Mid Channel, 2155 MHz	3.5 GHz - 13 GHz	-38.3	-19	Pass
	Mid Channel, 2155 MHz	13 GHz - 22 GHz	-26.0	-19	Pass
20 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	-54.8	-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	-23.7	-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

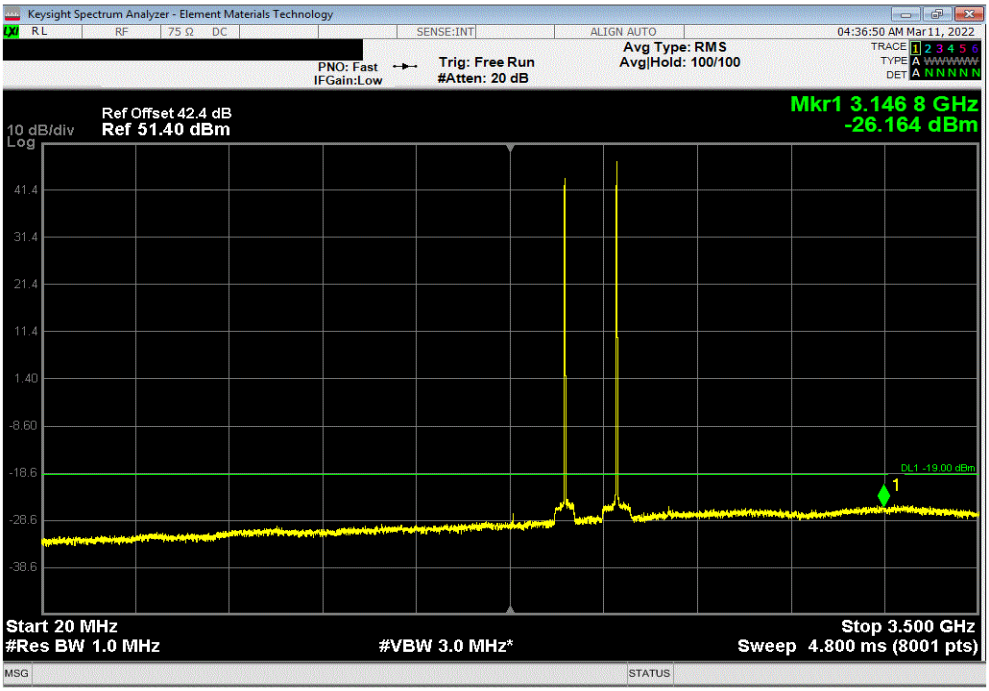
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-60.2	-49	Pass



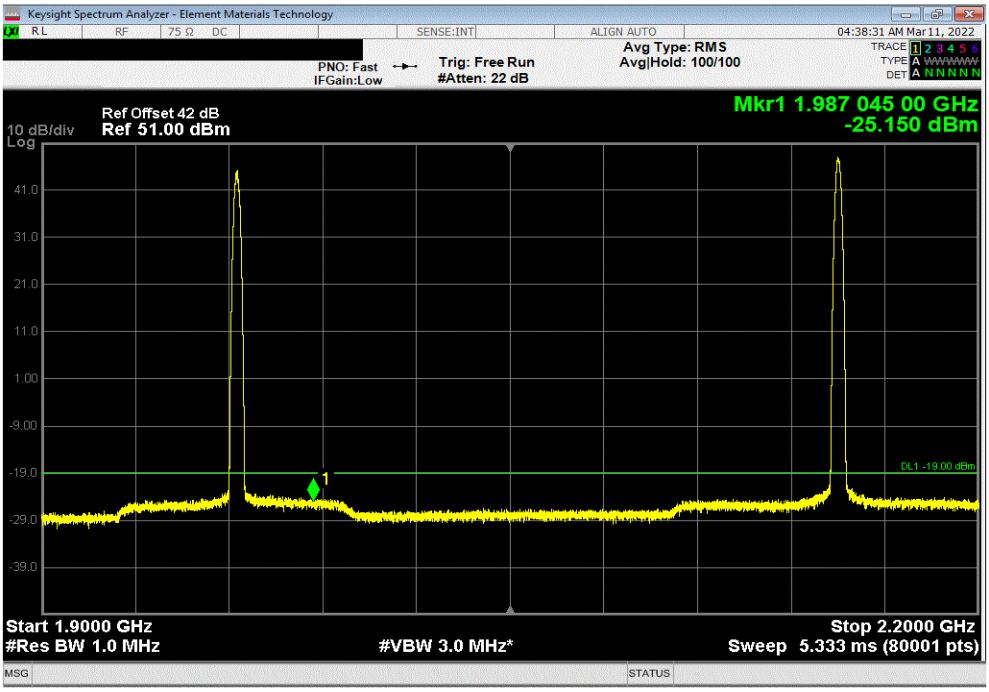
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-54.0	-39	Pass



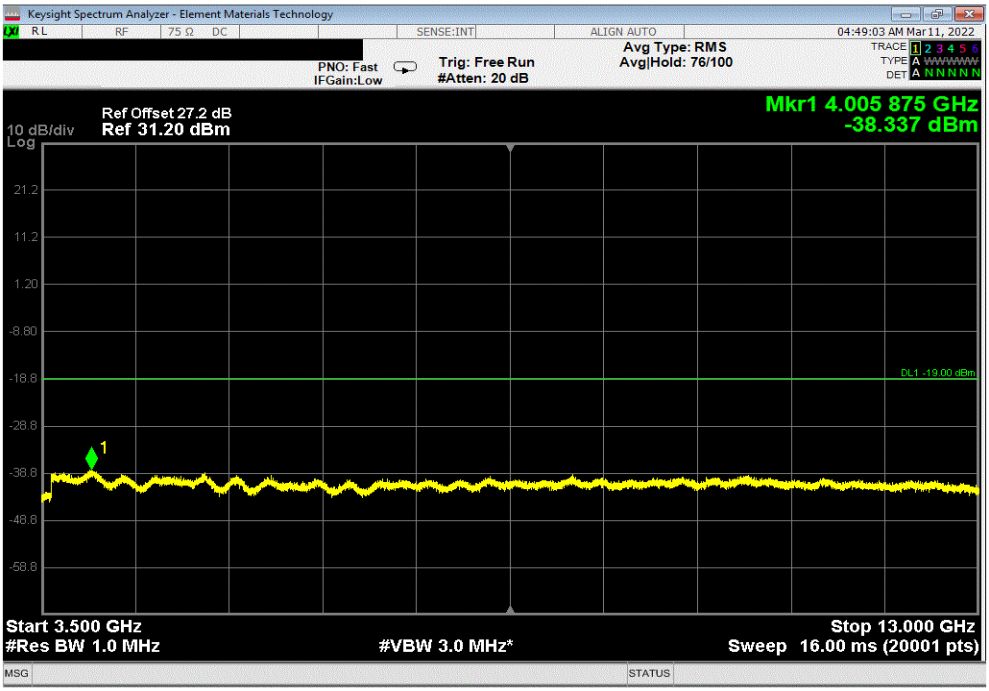
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-26.2	-19	Pass



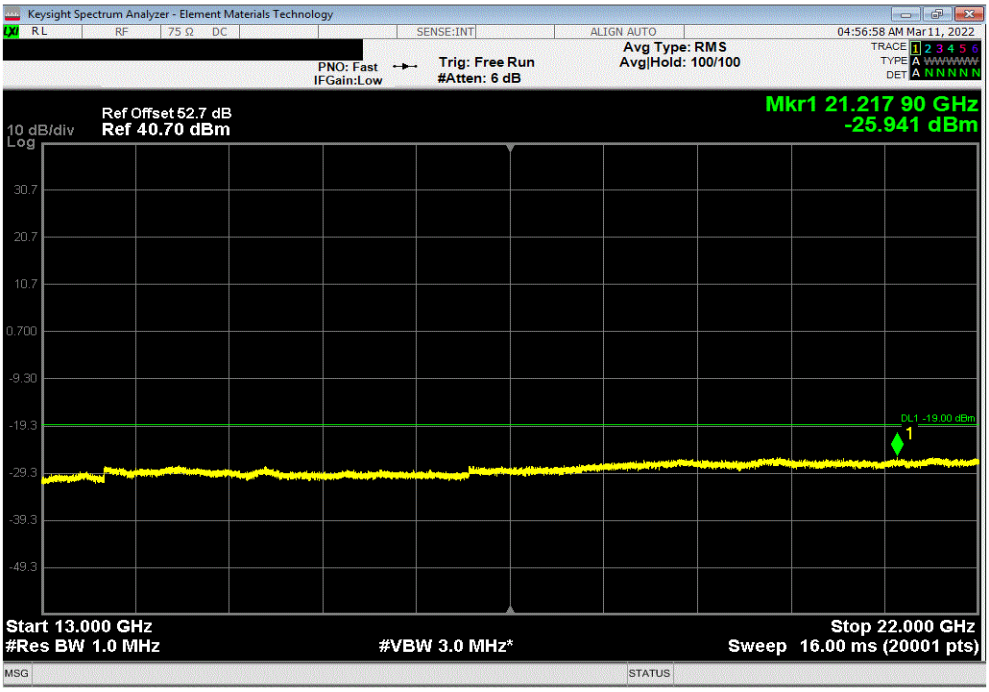
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-25.2	-19	Pass



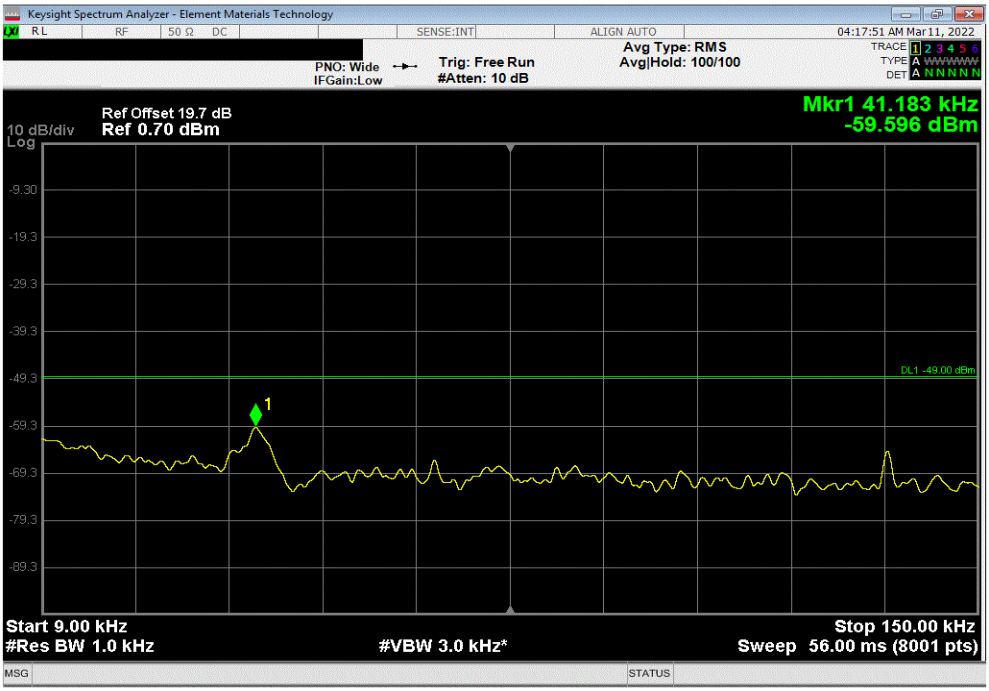
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.3	-19	Pass



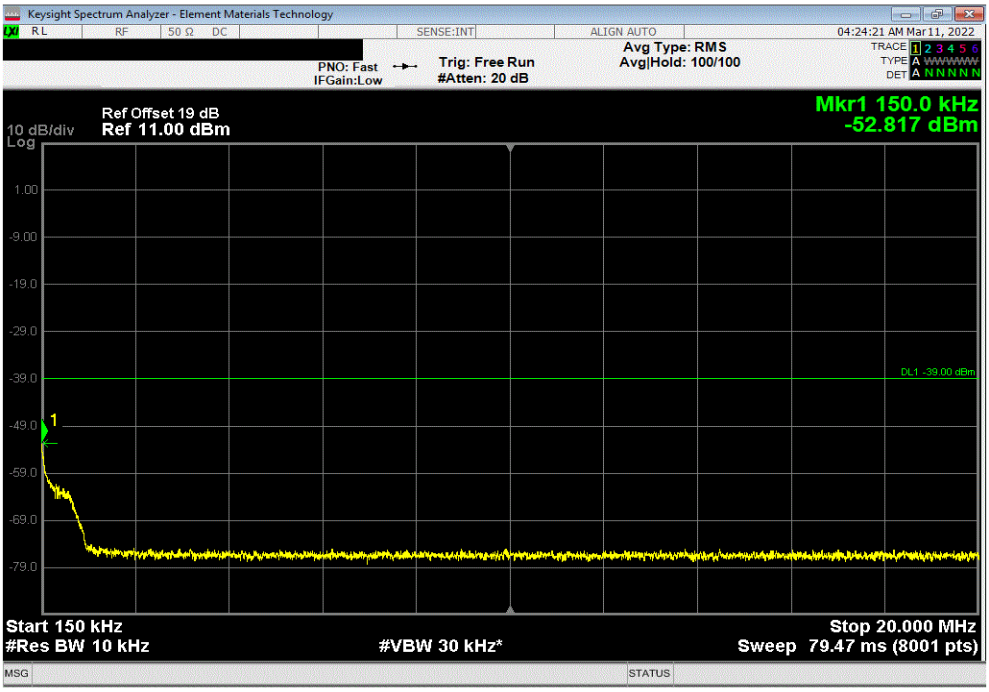
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, QPSK Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.9	-19	Pass



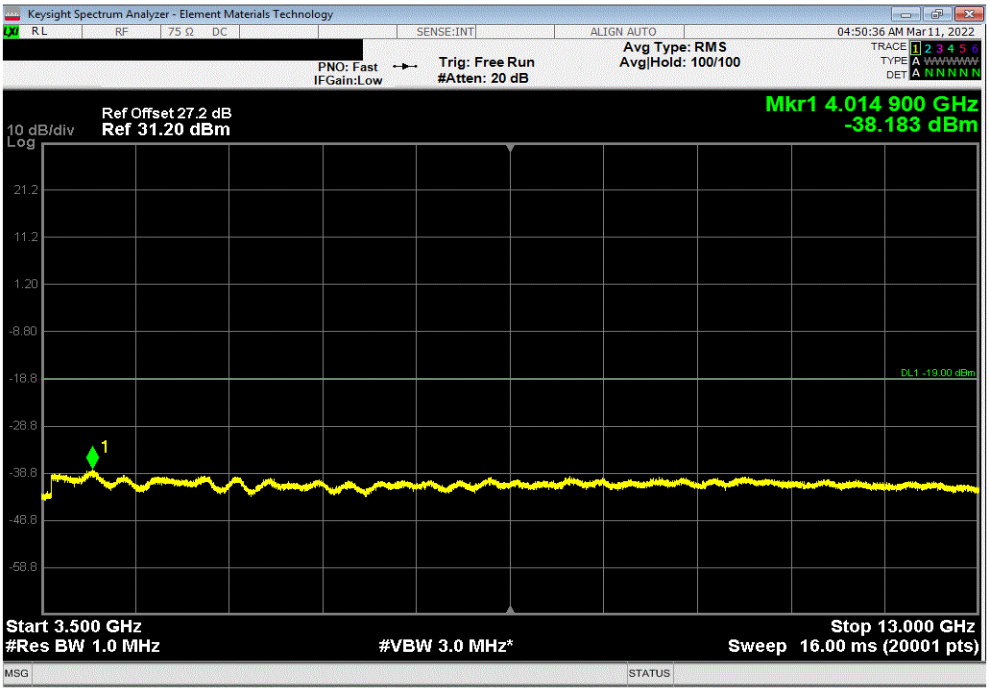
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-59.6	-49	Pass



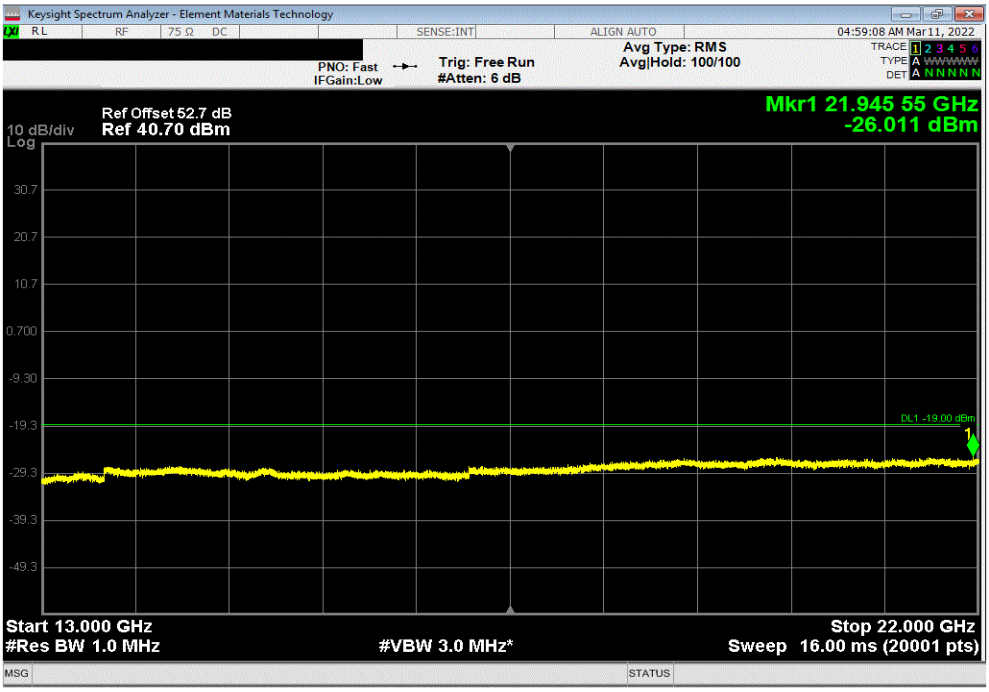
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-52.8	-39	Pass



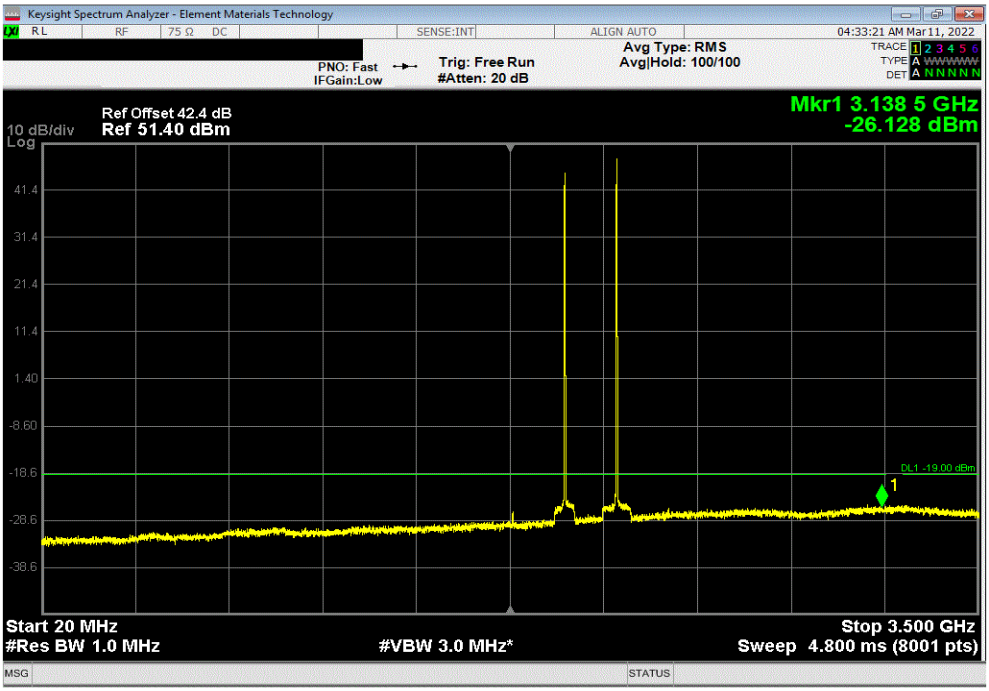
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.2	-19	Pass



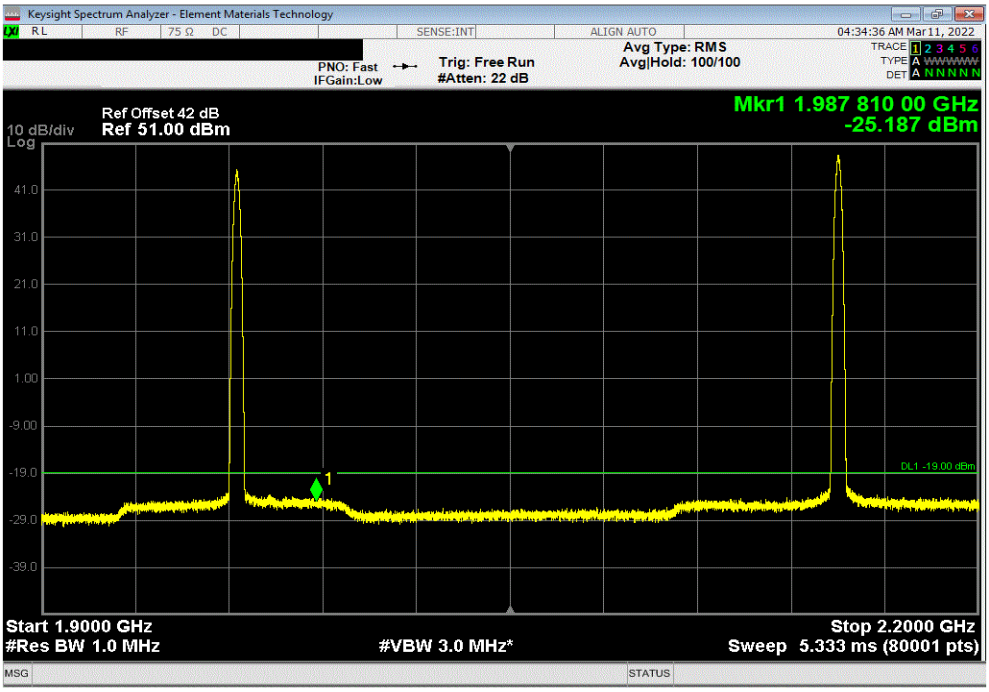
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-26.0	-19	Pass



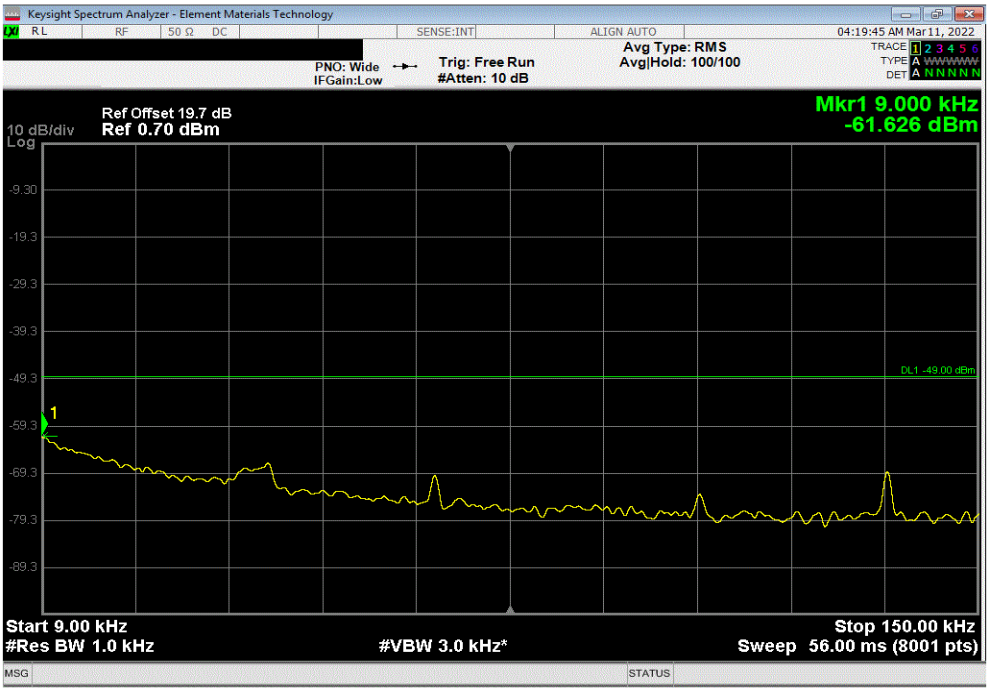
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-26.1	-19	Pass



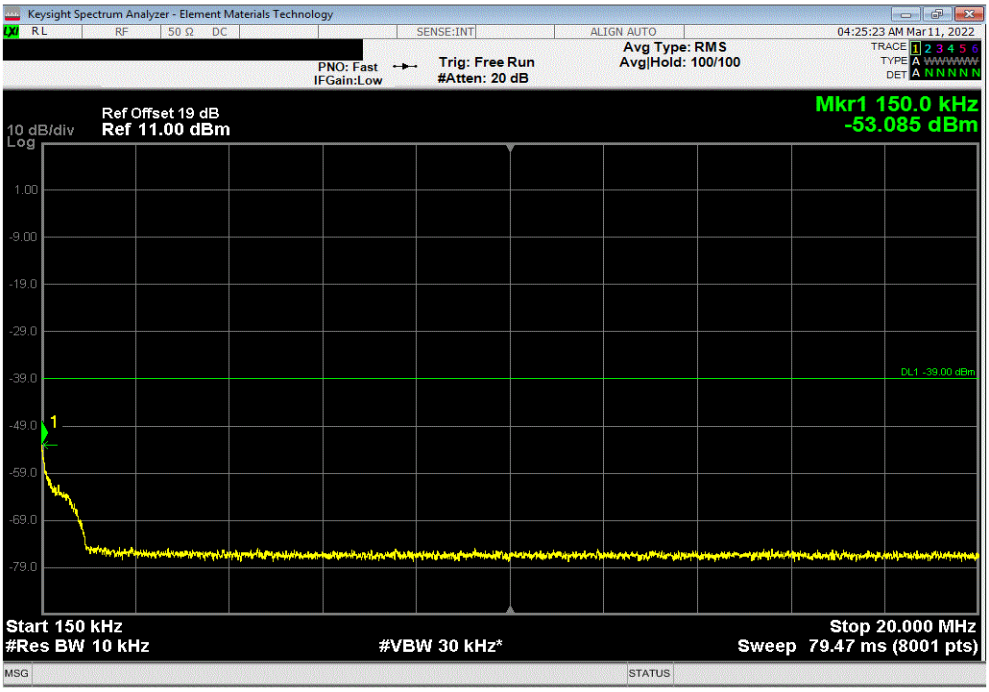
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 16-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-25.2	-19	Pass



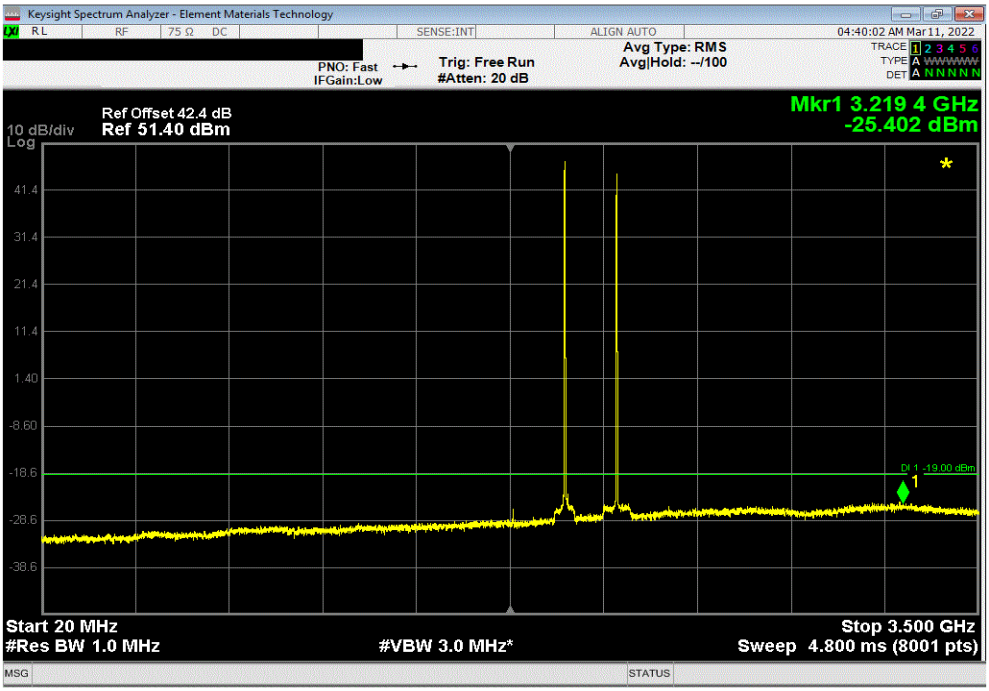
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz					
Frequency Range			Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz			-61.6	-49	Pass



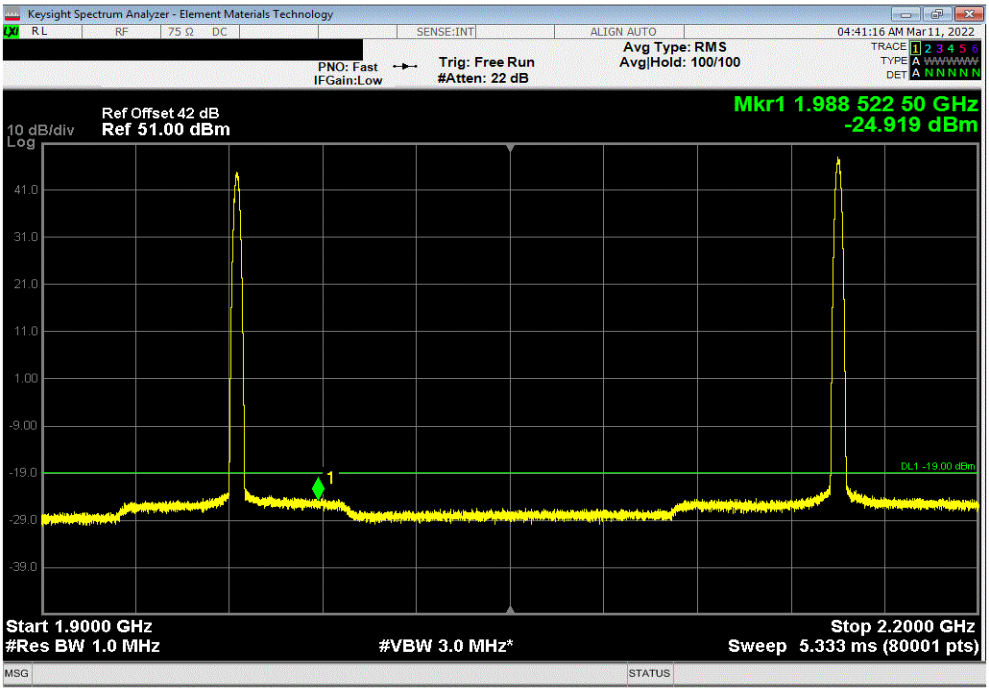
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz		-53.1	-39	Pass



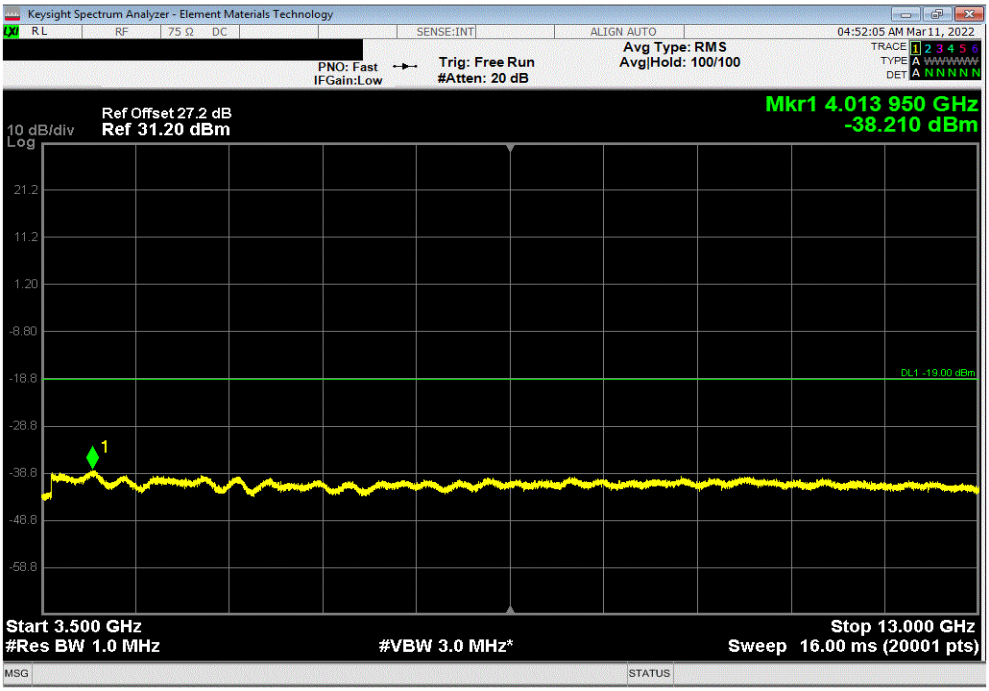
Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
20 MHz - 3.5 GHz		-25.4	-19	Pass



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
1.9 GHz - 2.2 GHz		-24.9	-19	Pass



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
3.5 GHz - 13 GHz		-38.2	-19	Pass



Band 66, 2110 MHz - 2200 MHz, LTE Single Carrier, Port 1, 1.4 MHz Bandwidth, 64-QAM Modulation, Mid Channel, 2155 MHz				
Frequency Range		**Max Value (dBm)**	**Limit < (dBm)**	**Result**
13 GHz - 22 GHz		-25.7	-19	Pass