

SPURIOUS CONDUCTED EMISSIONS - BAND n14



XMH 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
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
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 3 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 8 GHz. The 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 KDB 971168 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 the frequency band after the first 100 kHz bands immediately outside and adjacent to the frequency block.

AHLBBA antenna ports 1&4 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

AHLBBA antenna ports 2&3 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 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 90.543(e)(3) and RSS 140 4.4 the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm $[-13 \text{ dBm} - 10 \log(4)]$ per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter for Band n14. FCC 90.543(e)(5) and RSS 140 4.4b requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range.

Per section 90.543(f) and RSS 140 4.4, for the frequency range 1559-1610 MHz the EIRP limit is -70dBW/MHz for wideband signals and -80dBW for discrete emissions of bandwidths less than 700Hz. This equates to an EIRP of -40dBm/MHz for wideband emissions and -50dBm/MHz for discrete emissions. The limit is adjusted to -46 dBm $[-40 \text{ dBm} - 10 \log(4)]$ for wideband signals and -56dBm $[-50 \text{ dBm} - 10 \log(4)]$ for discrete emissions 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 -39dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 100kHz [i.e.: $-39\text{dBm} = -19\text{dBm} - 10\log(100\text{kHz}/1\text{kHz})$]. The limit for the 150kHz to 20MHz frequency range was adjusted to -29dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 100kHz [i.e.: $-29\text{dBm} = -19\text{dBm} - 10\log(100\text{kHz}/10\text{kHz})$]. The required limit of -19dBm with a RBW of > 100kHz was used for all other frequency ranges. (See ANSI C63.26-2015 paragraph 5.7.2a for details on the Limit/RBW scaling method)

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EUT: AHLBBA (C2PC/C3PC FCC/ISED)			Work Order: NOKI0047			
Serial Number: K9193514835			Date: 4-Aug-22			
Customer: Nokia Solutions and Networks			Temperature: 22.2 °C			
Attendees: Mitchell Hill			Humidity: 53% RH			
Project: None			Barometric Pres.: 1020 mbar			
Tested by: Marty Martin		Power: 54VDC	Job Site: TX07			
TEST SPECIFICATIONS			Test Method			
FCC 27:2022			ANSI C63.26:2015			
RSS 140 Issue 1: 2018			QCVN 65:2013/BTTTT			
FCC 90R:2022			ANSI C63.26:2015			
COMMENTS						
All measurement path losses were accounted for in the reference level offset including attenuators, cables, DC block and filter when in use. Band n12 and Band n14 carriers were operating at maximum power in each applicable test case to achieve a total port power of 80 watts.						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	1, 2, 3	Signature 				
		Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
Port 1						
Band n14, 758 - 768 Mhz						
5 MHz Bandwidth						
QPSK Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.8	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-49.2	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-38.4	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4013.16	-36.4	-19	Pass
16QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-52.0	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.3	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-38.6	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4015.2	-36.4	-19	Pass
64QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.6	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.8	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-38.6	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4014.52	-36.5	-19	Pass
256QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-52.4	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.6	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-38.3	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4014.52	-36.4	-19	Pass
10 MHz Bandwidth						
256QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.9	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.7	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-37.1	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4026.76	-36.4	-19	Pass
Port 2						
Band n14, 758 - 768 Mhz						
5 MHz Bandwidth						
QPSK Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.5	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.7	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-39.3	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4032.2	-36.5	-19	Pass
16QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.9	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-49.2	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-39.7	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4037.64	-36.5	-19	Pass
64QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.8	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.7	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-39.7	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4019.96	-36.5	-19	Pass
256QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-52.1	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-48.7	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-39.6	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4021.32	-36.5	-19	Pass
10 MHz Bandwidth						
256QAM Modulation						
Mid Channel, 763 MHz		9 kHz - 150 kHz	0.01	-51.7	-39	Pass
Mid Channel, 763 MHz		150 kHz - 20 MHz	0.15	-49.2	-29	Pass
Mid Channel, 763 MHz		20 MHz - 1.2 GHz	737	-38.5	-19	Pass
Mid Channel, 763 MHz		1.2 GHz - 8 GHz	4011.8	-36.4	-19	Pass
Port 1						
Band n14, 758 - 768 Mhz						
5 MHz Bandwidth						
QPSK Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1600.11	-62.7	-46	Pass
16QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1609.72	-62.6	-46	Pass
64QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1604.83	-62.7	-46	Pass
256QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1603	-62.6	-46	Pass
10 MHz Bandwidth						
256QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1608.03	-62.6	-46	Pass
Port 2						
Band n14, 758 - 768 Mhz						
5 MHz Bandwidth						
QPSK Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1606.36	-62.6	-46	Pass
16QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1609.55	-62.7	-46	Pass
64QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1602.61	-62.6	-46	Pass
256QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1609.65	-62.6	-46	Pass
10 MHz Bandwidth						
256QAM Modulation						
Mid Channel, 763 MHz		1.559 GHz - 1.61 GHz	1605.34	-62.6	-46	Pass

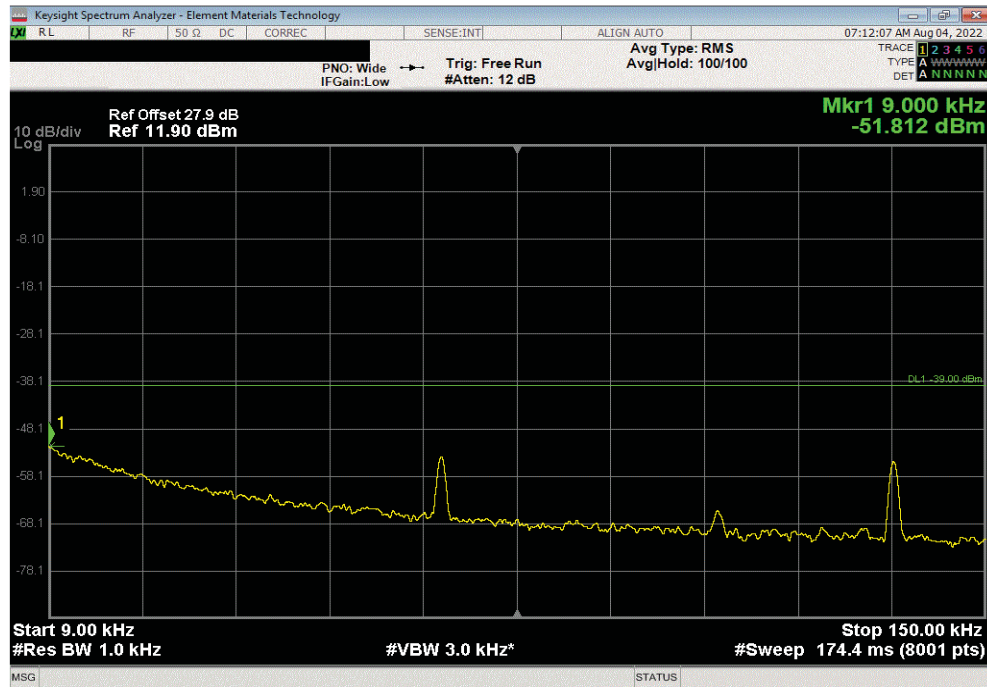
SPURIOUS CONDUCTED EMISSIONS - BAND n14



TbTtx 2022.05.02.0 XMt 2022.02.07.0

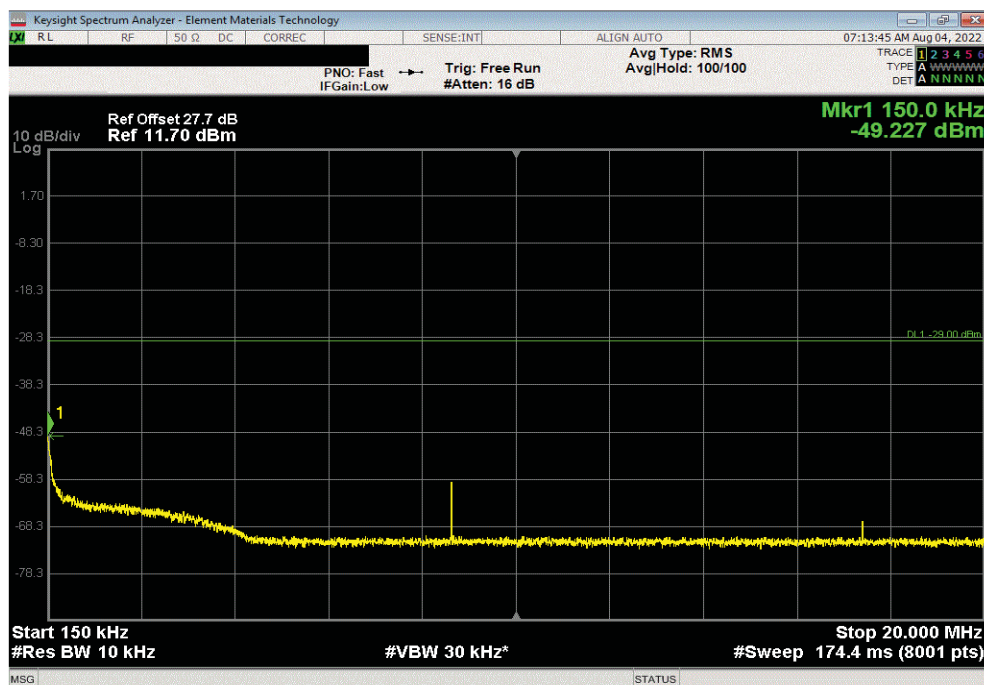
Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz	0.01	-51.81	-39	Pass



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz	0.15	-49.23	-29	Pass

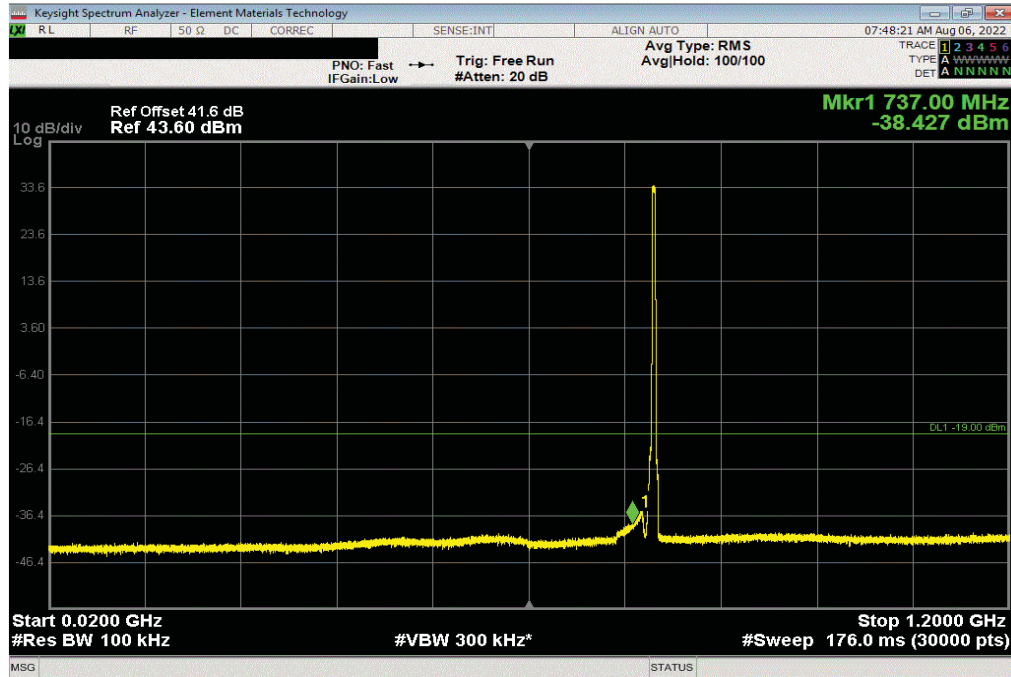


SPURIOUS CONDUCTED EMISSIONS - BAND n14

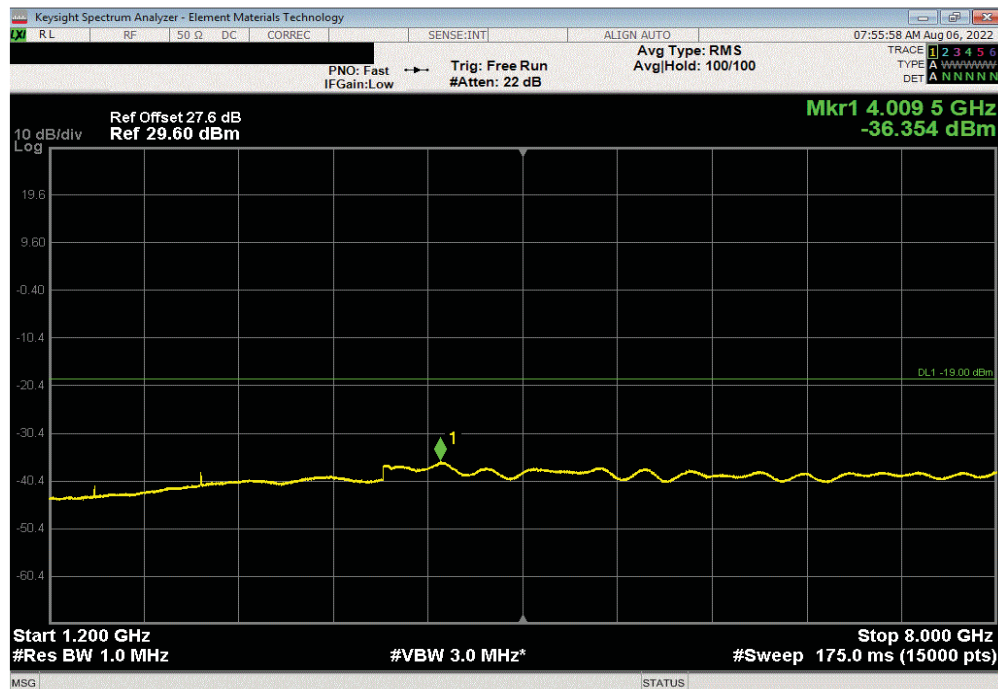


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-38.427	-19	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4013.16	-36.35	-19	Pass	

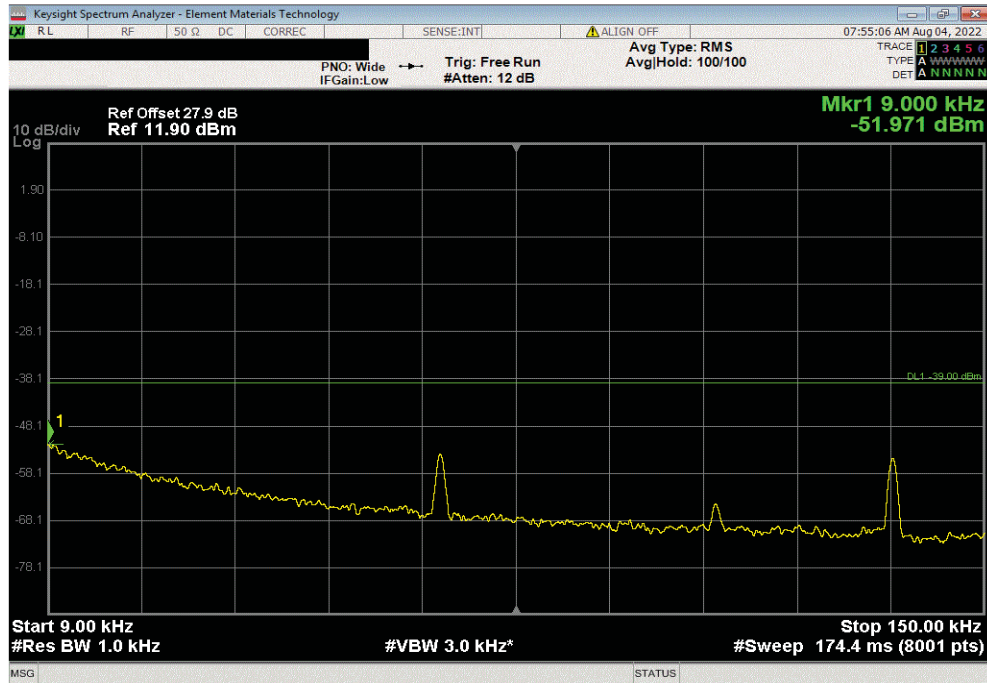


SPURIOUS CONDUCTED EMISSIONS - BAND n14

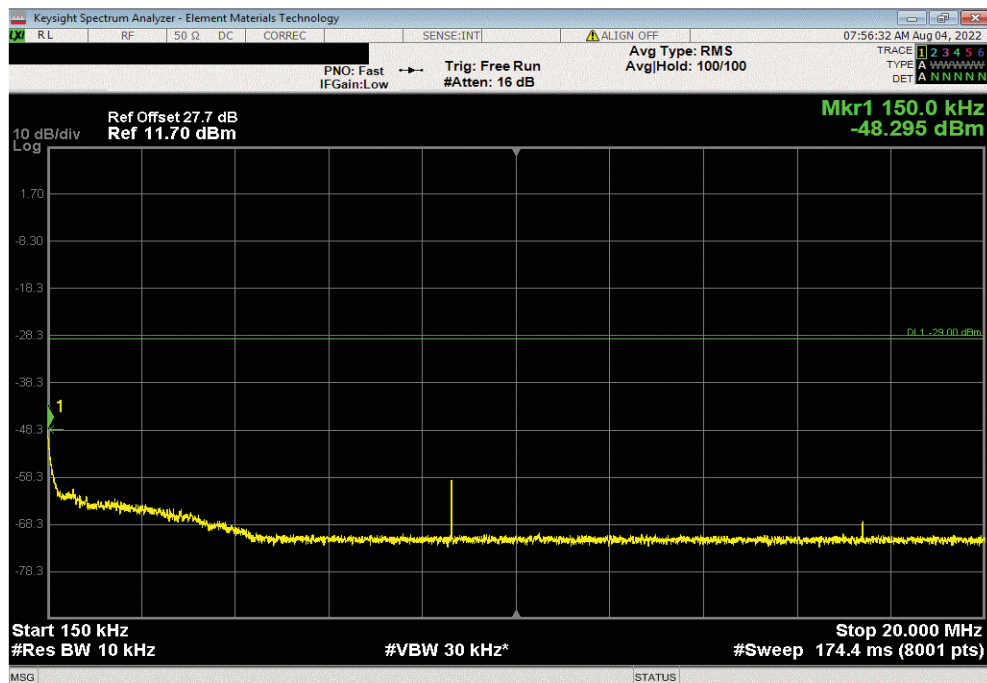


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.97	-39	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.3	-29	Pass	

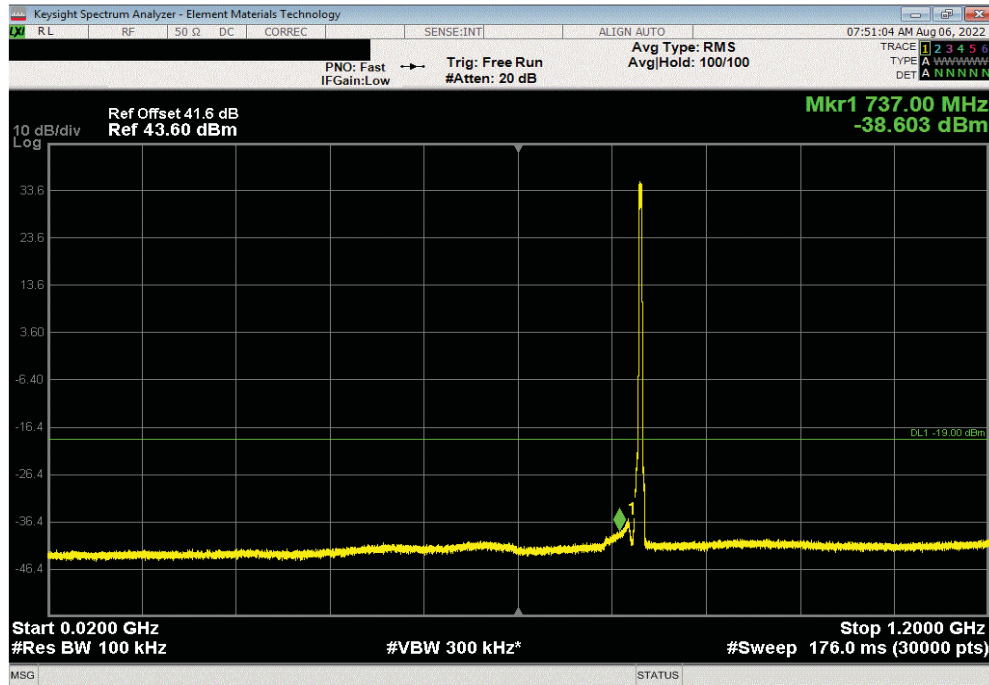


SPURIOUS CONDUCTED EMISSIONS - BAND n14

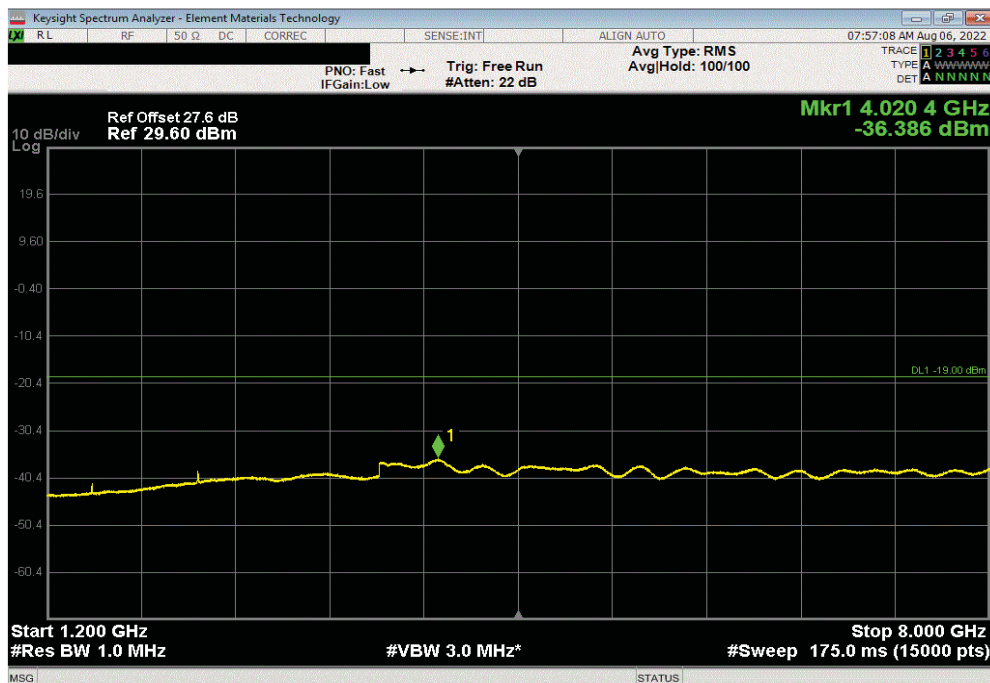


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-38.6	-19	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4015.2	-36.39	-19	Pass	

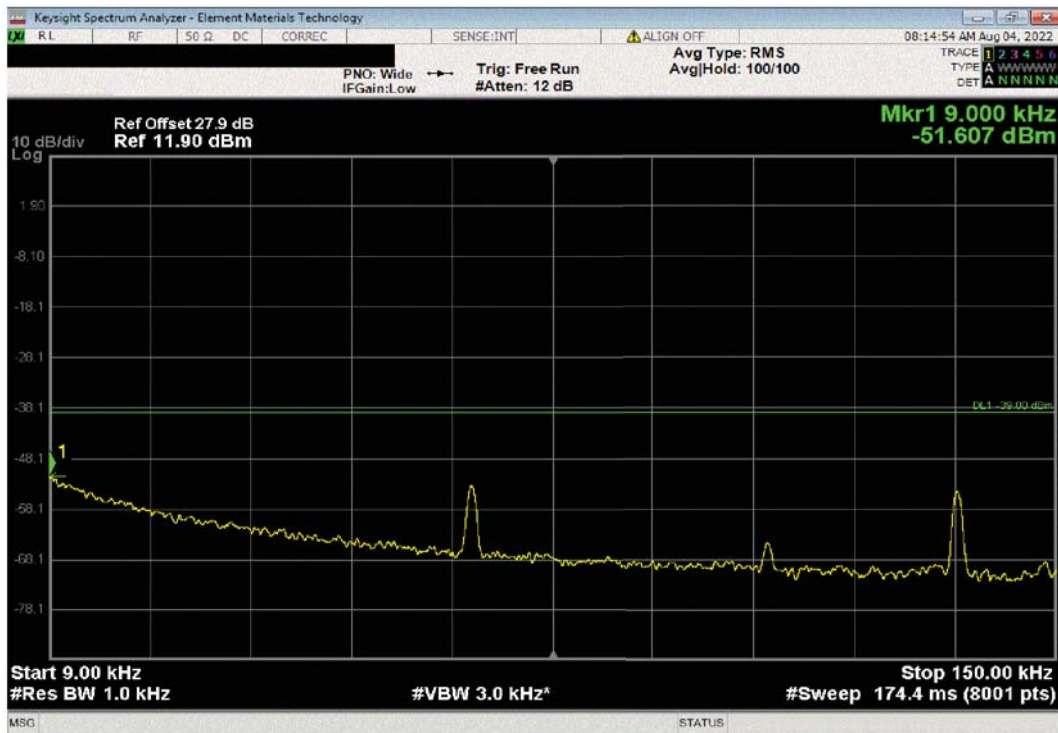


SPURIOUS CONDUCTED EMISSIONS - BAND n14



TbTx 2022.05.02.0 XMt 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.61	-39	Pass	

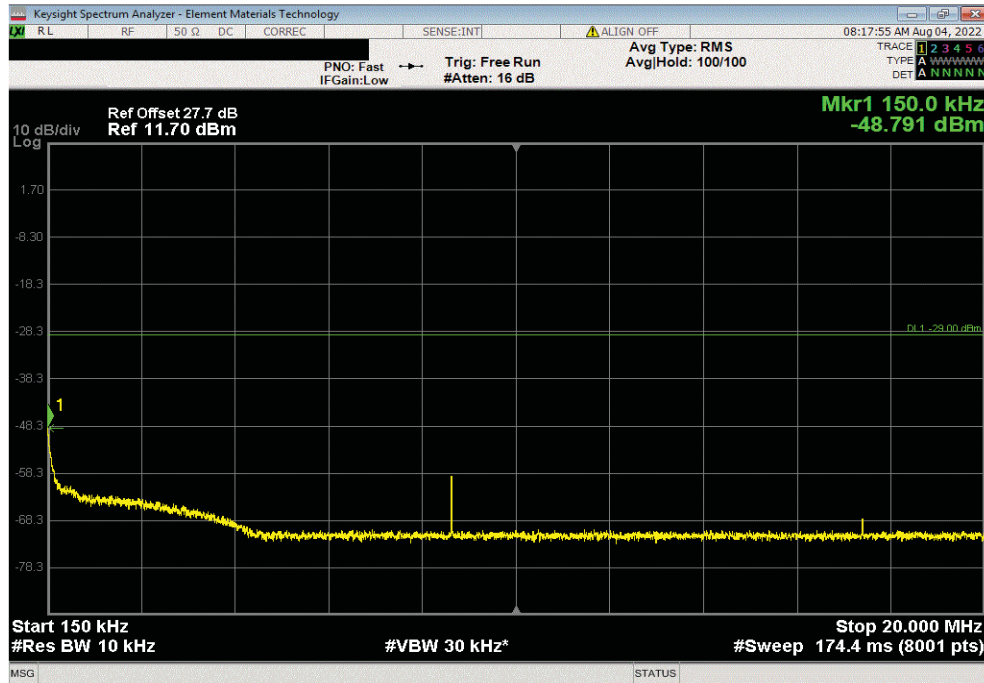


SPURIOUS CONDUCTED EMISSIONS - BAND n14

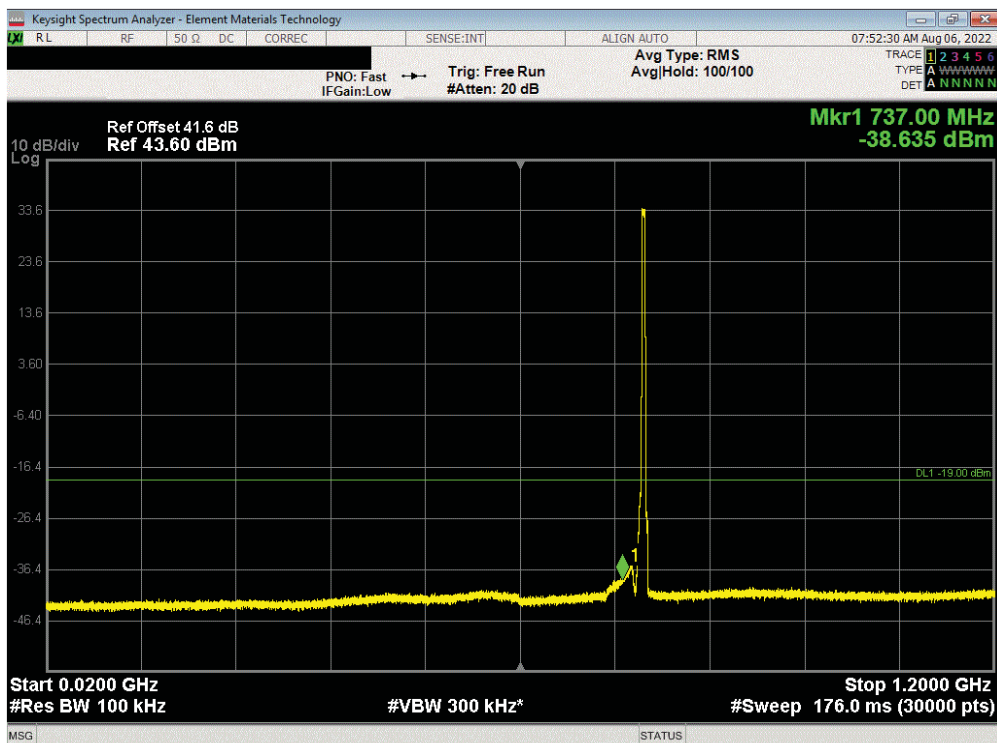


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.79	-29	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-38.64	-19	Pass	

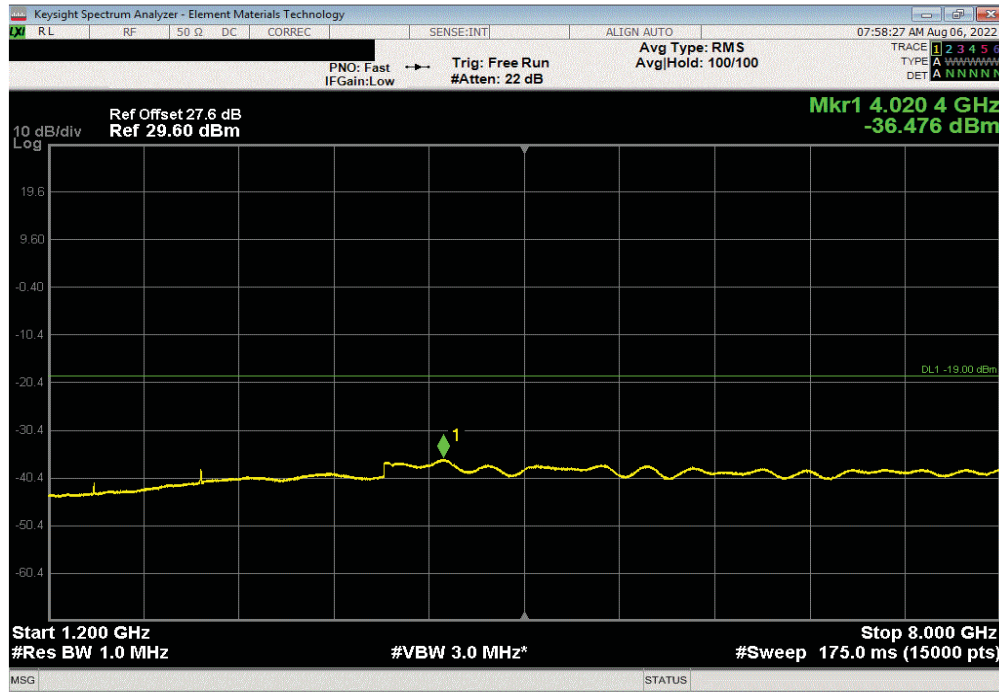


SPURIOUS CONDUCTED EMISSIONS - BAND n14

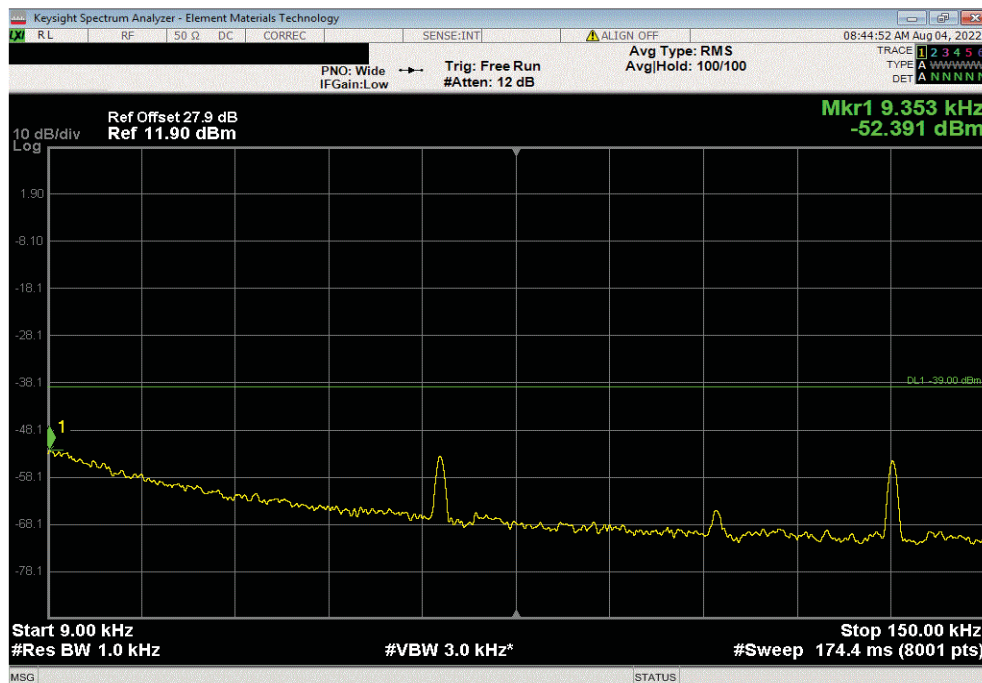


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4014.52	-36.48	-19	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-52.39	-39	Pass	

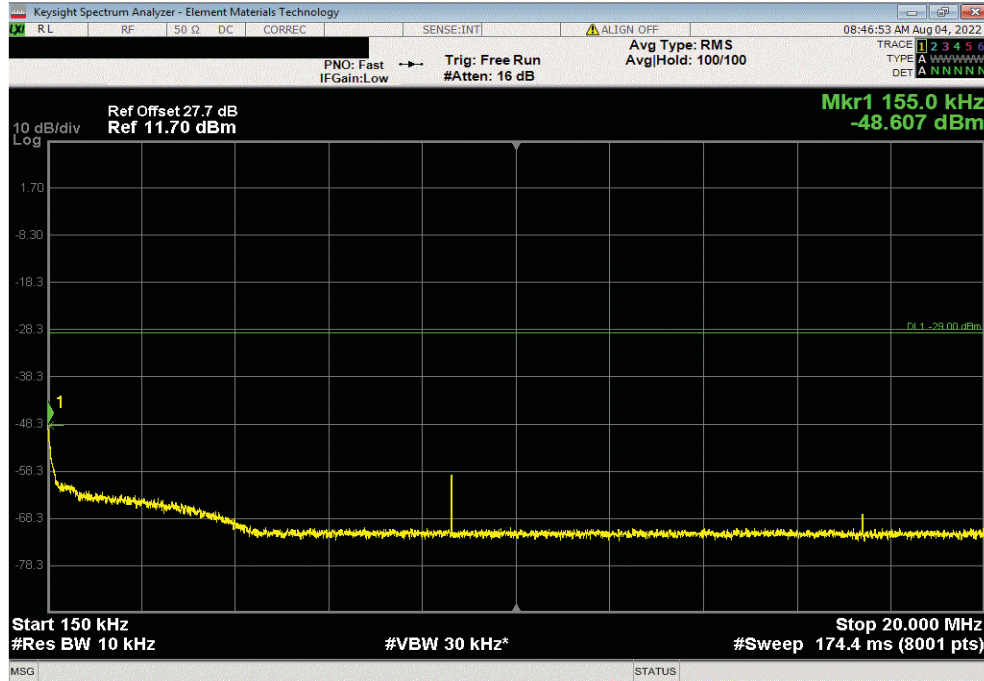


SPURIOUS CONDUCTED EMISSIONS - BAND n14

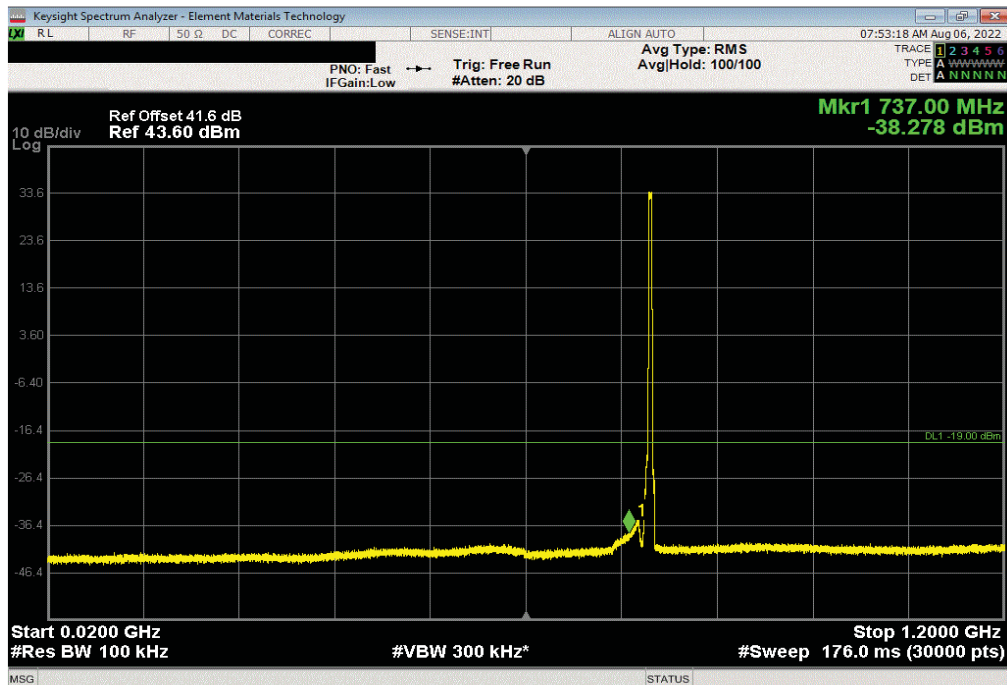


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.61	-29	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-38.28	-19	Pass	

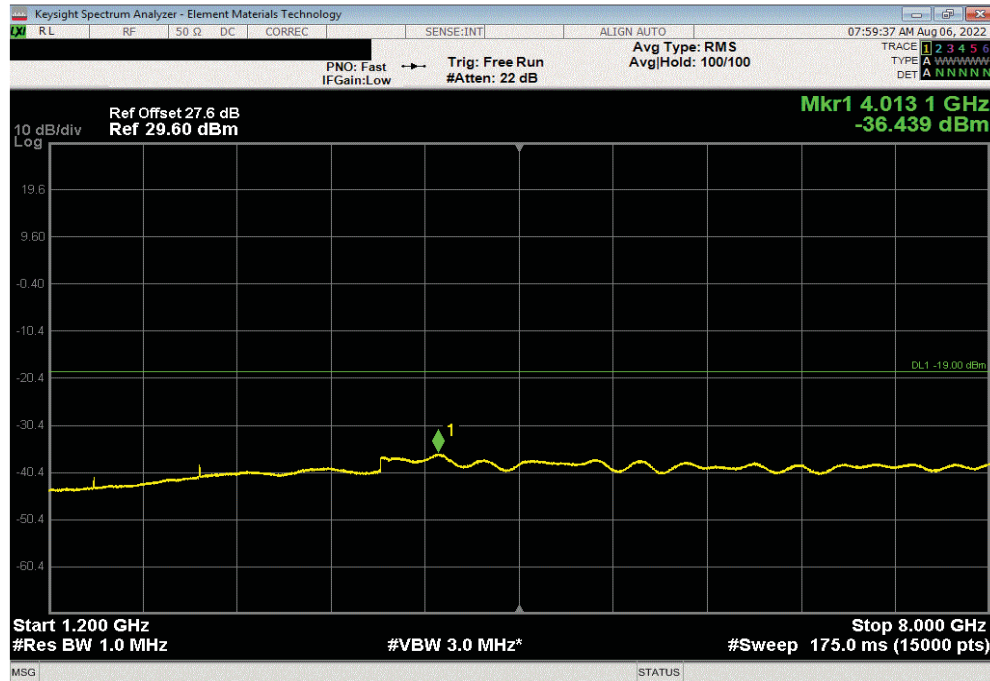


SPURIOUS CONDUCTED EMISSIONS - BAND n14

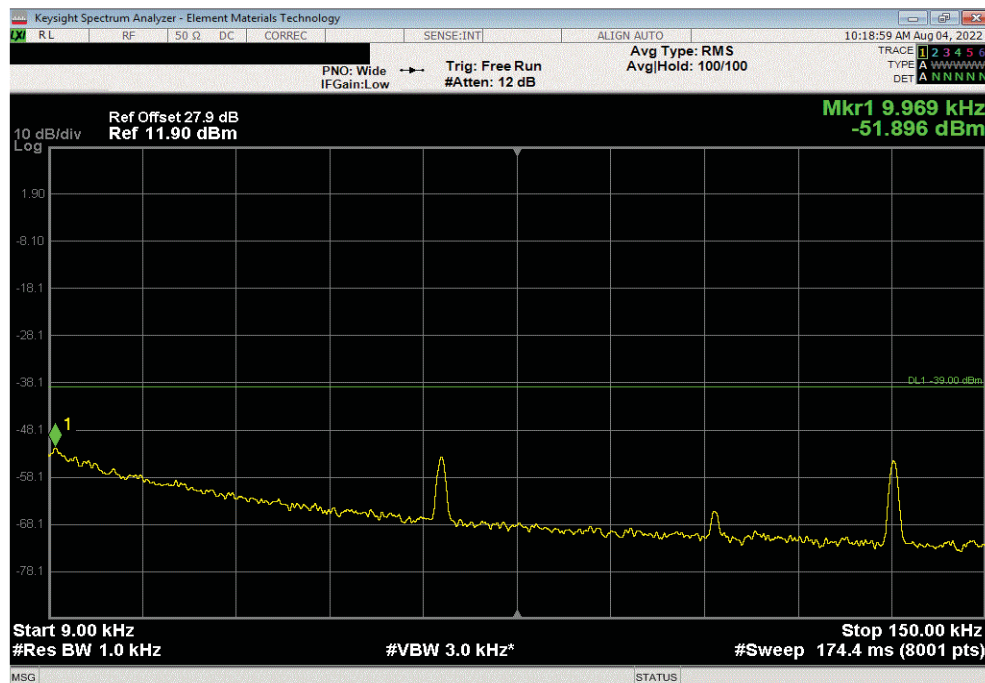


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4014.52	-36.44	-19	Pass	



Port 1, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.9	-39	Pass	

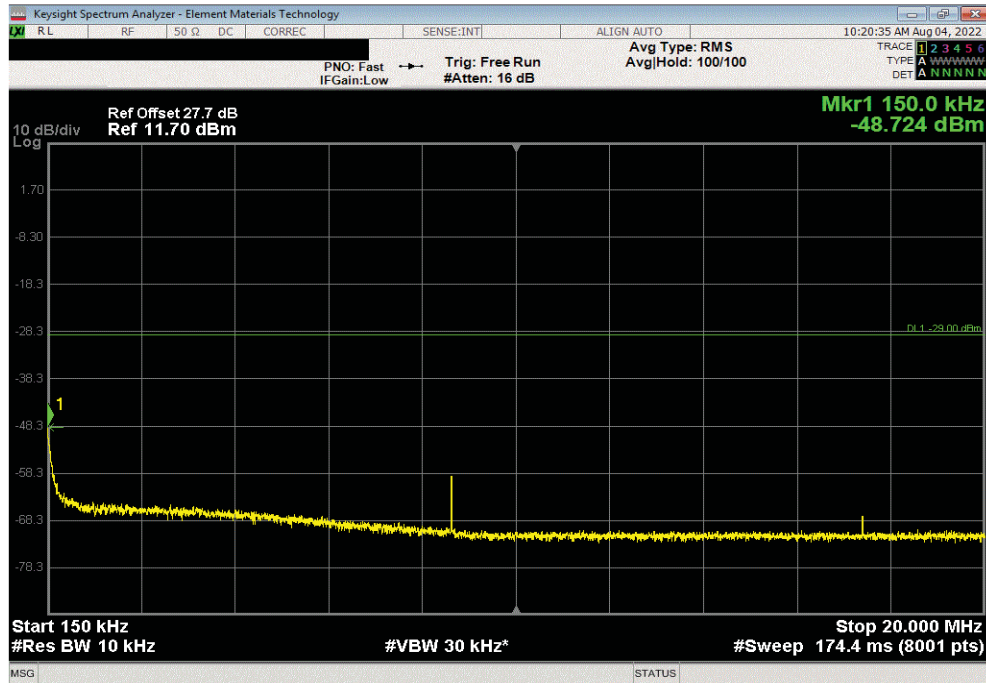


SPURIOUS CONDUCTED EMISSIONS - BAND n14

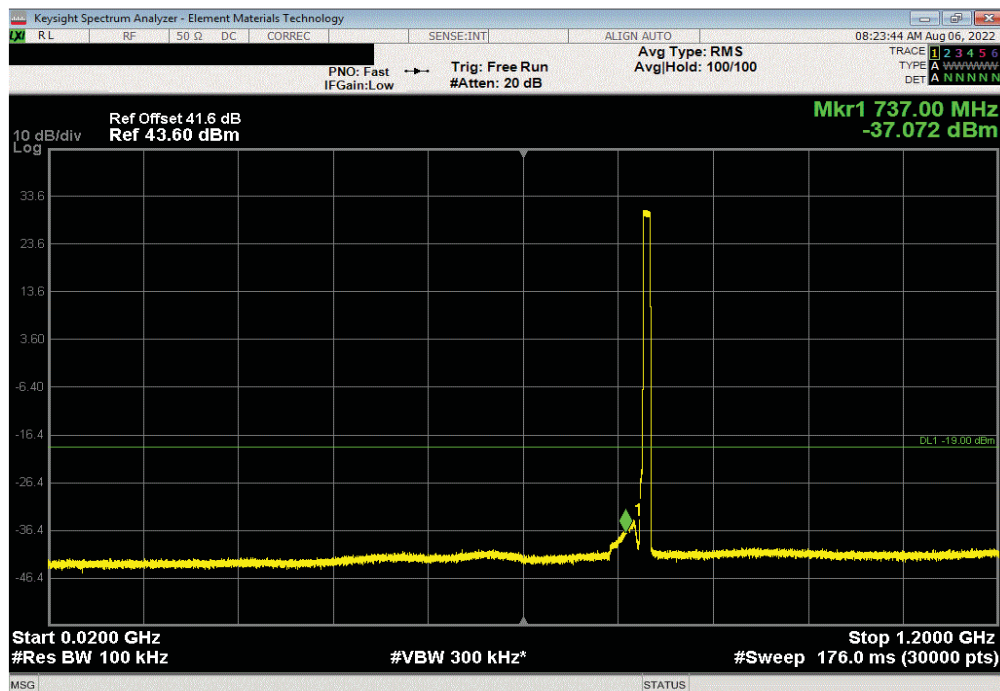


TbTx 2022.05.02.0 XMt 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.72	-29	Pass	



Port 1, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-37.07	-19	Pass	

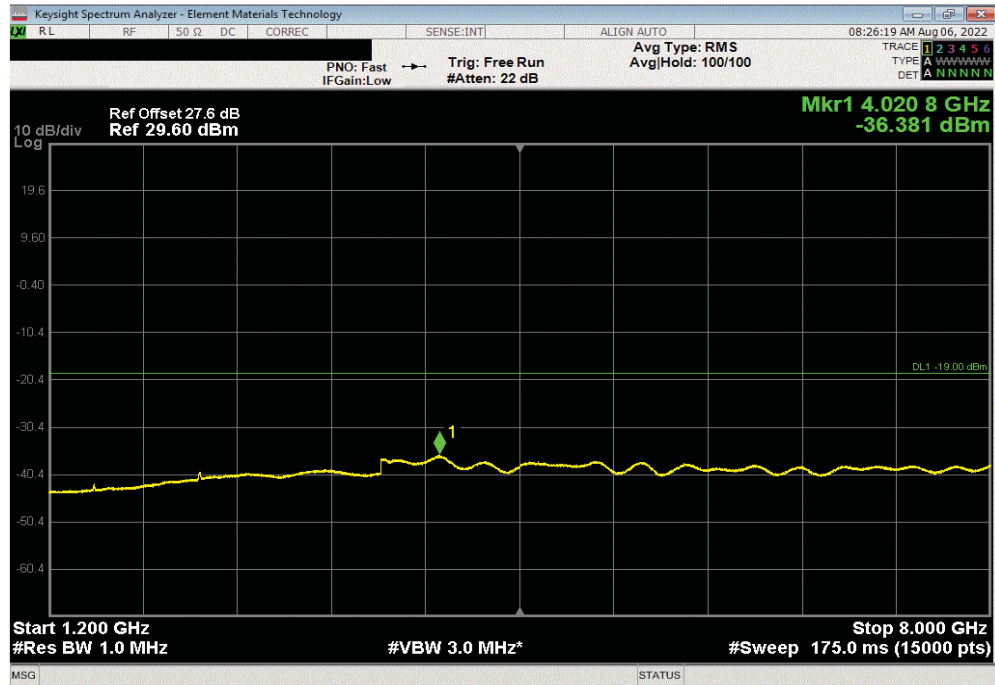


SPURIOUS CONDUCTED EMISSIONS - BAND n14



TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4026.76	-36.38	-19	Pass	

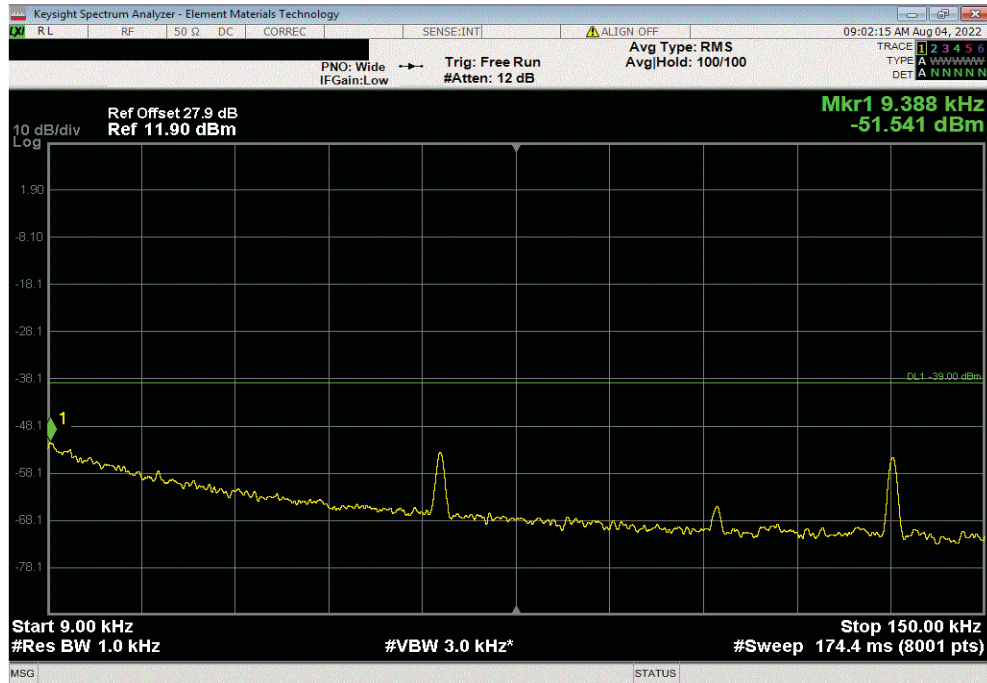


SPURIOUS CONDUCTED EMISSIONS - BAND n14

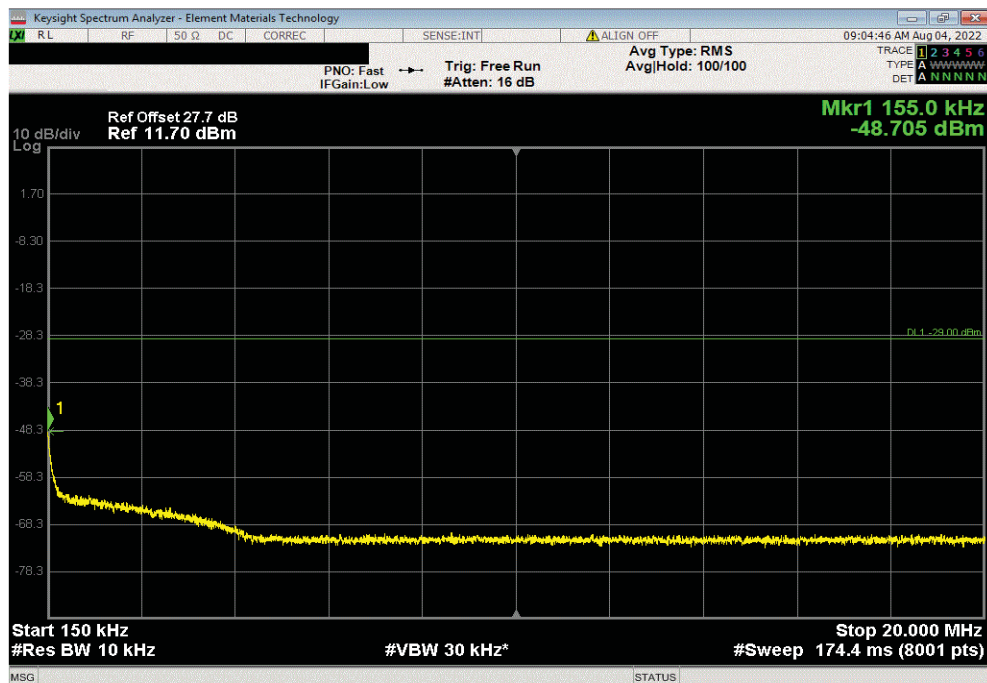


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 Mhz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.54	-39	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 Mhz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.71	-29	Pass	

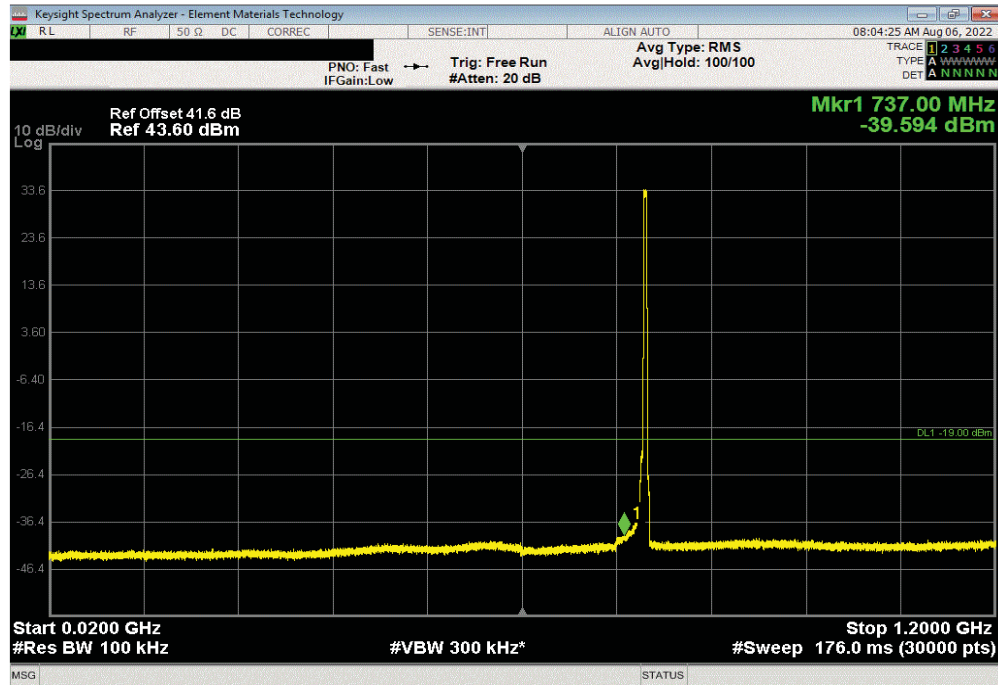


SPURIOUS CONDUCTED EMISSIONS - BAND n14

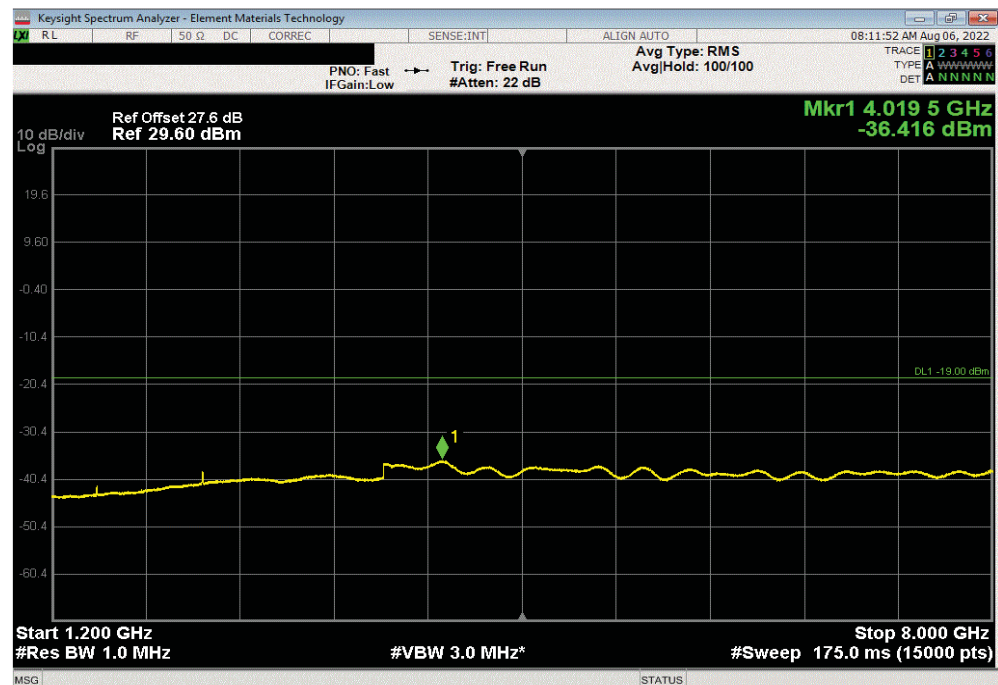


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-39.6	-19	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4032.2	-36.42	-19	Pass	

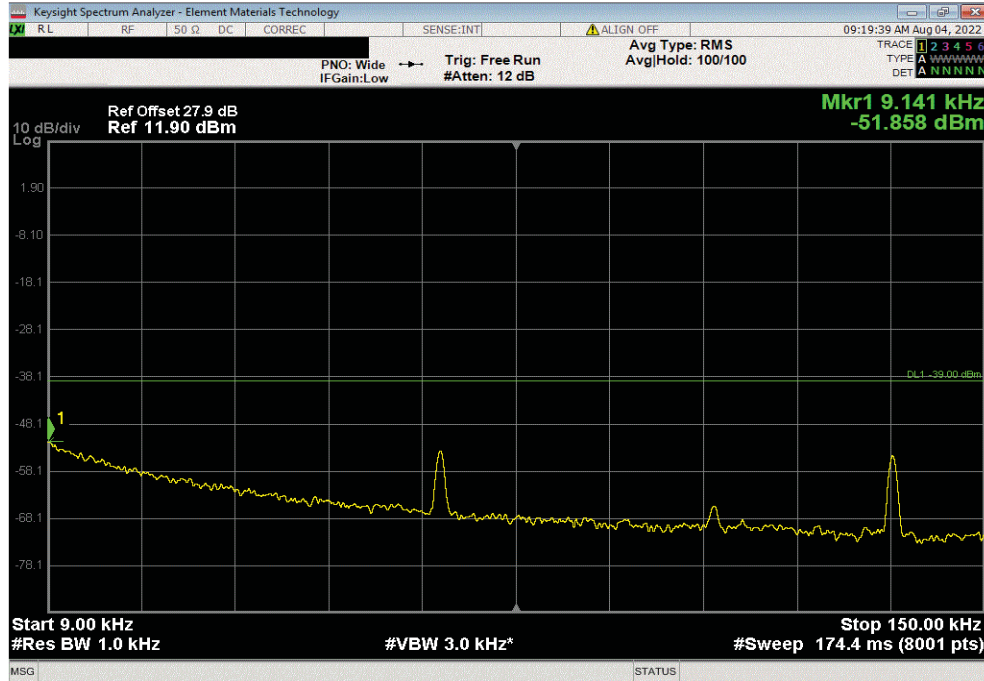


SPURIOUS CONDUCTED EMISSIONS - BAND n14

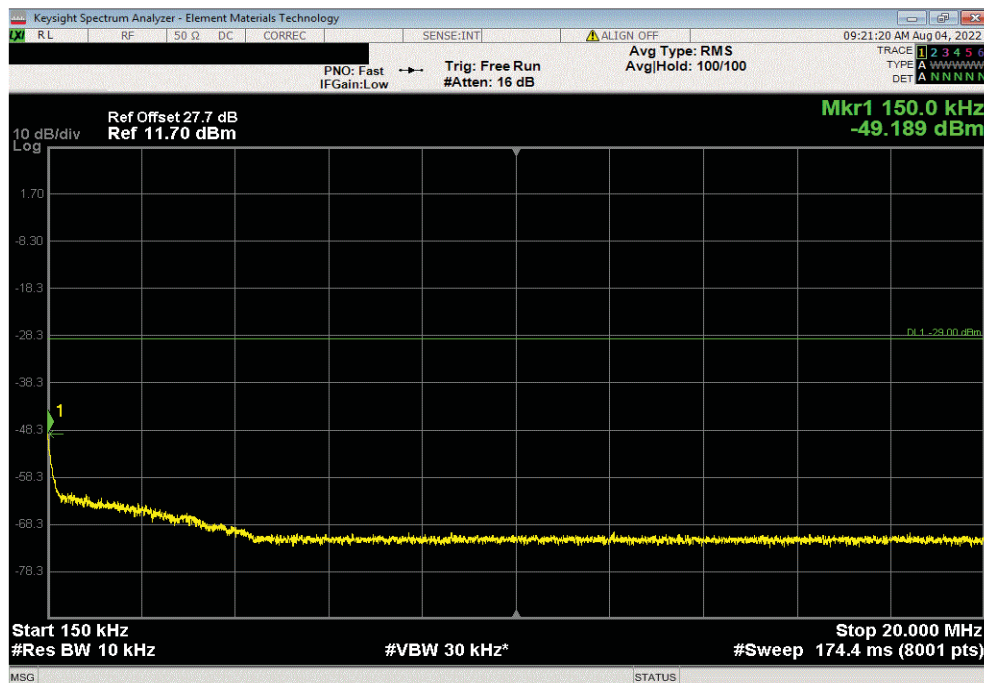


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.86	-39	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-49.19	-29	Pass	

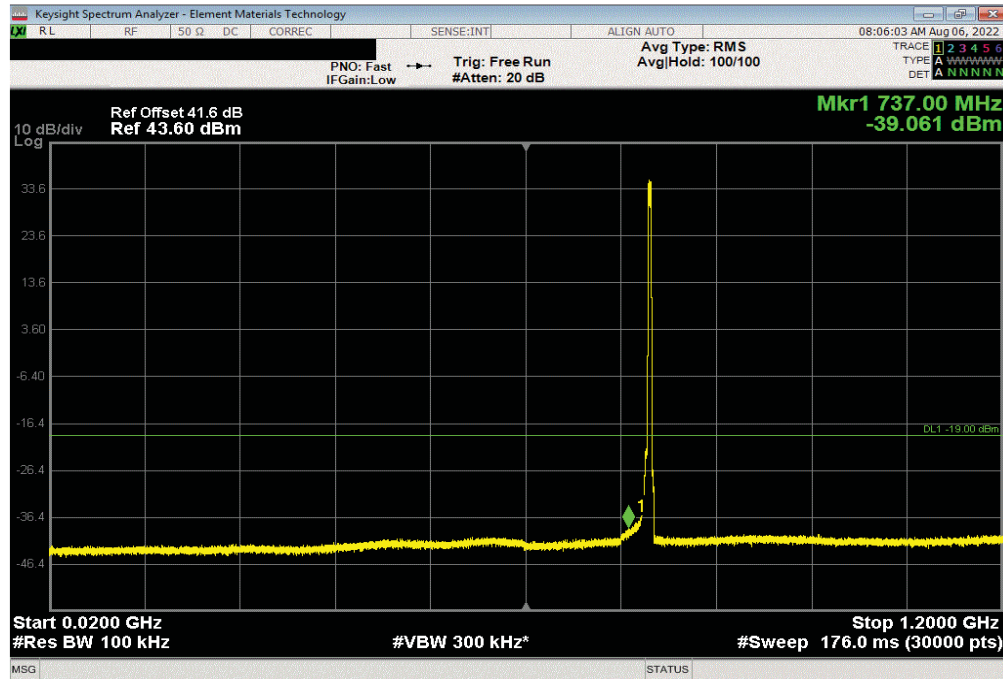


SPURIOUS CONDUCTED EMISSIONS - BAND n14

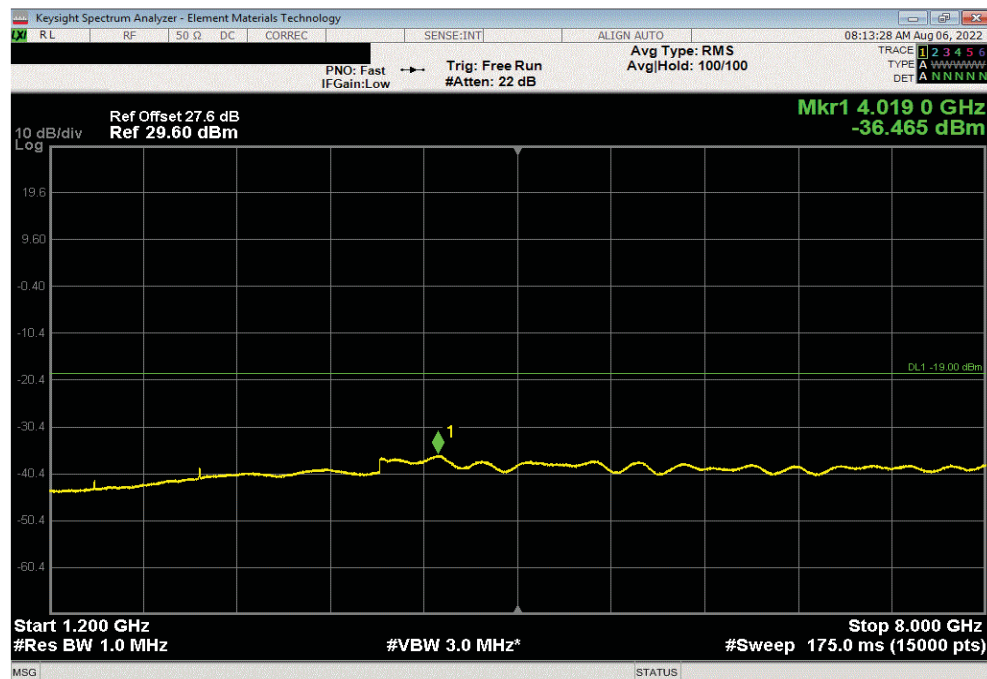


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-39.06	-19	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4037.64	-36.47	-19	Pass	

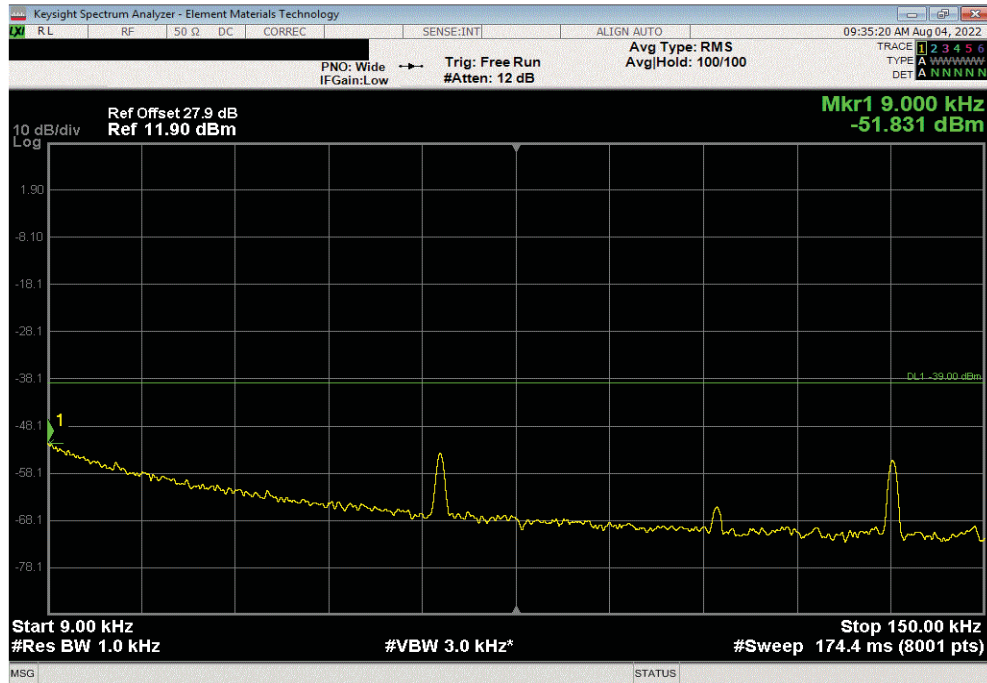


SPURIOUS CONDUCTED EMISSIONS - BAND n14

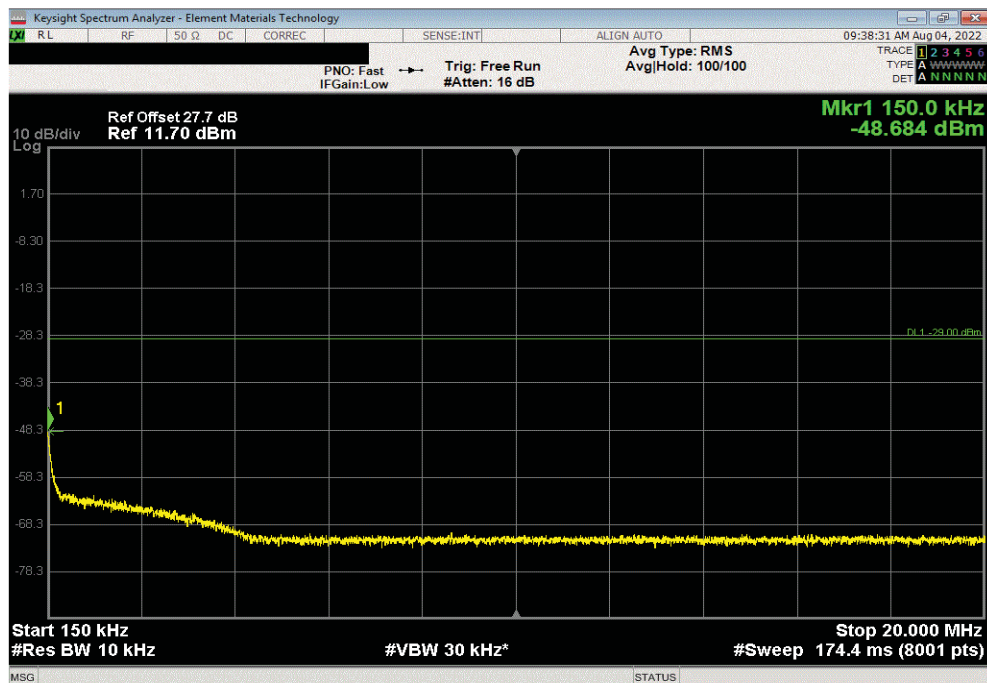


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.83	-39	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.68	-29	Pass	

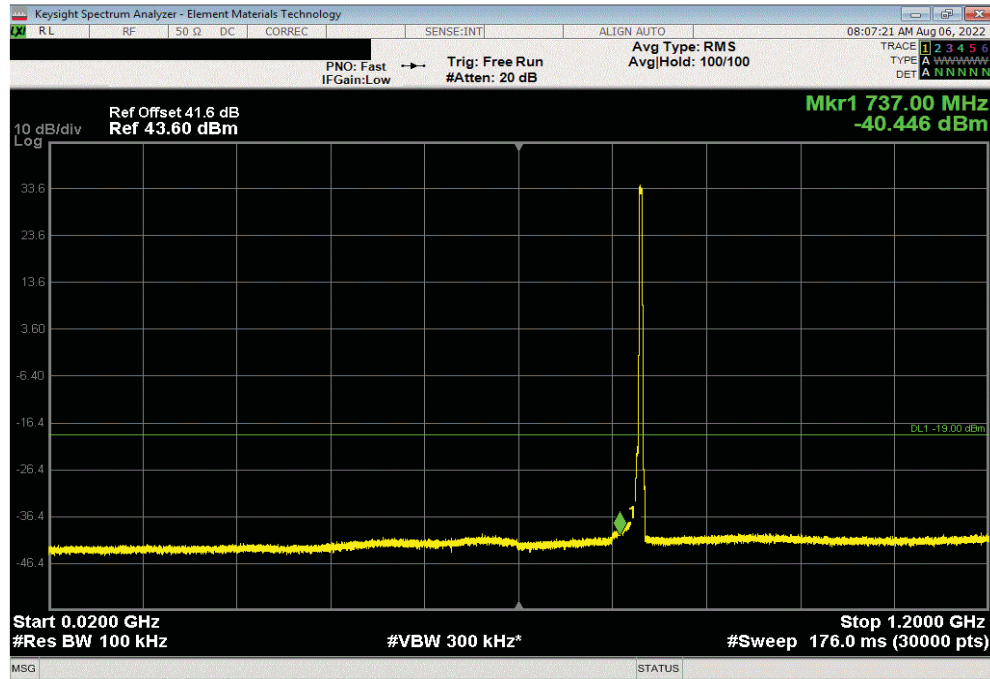


SPURIOUS CONDUCTED EMISSIONS - BAND n14

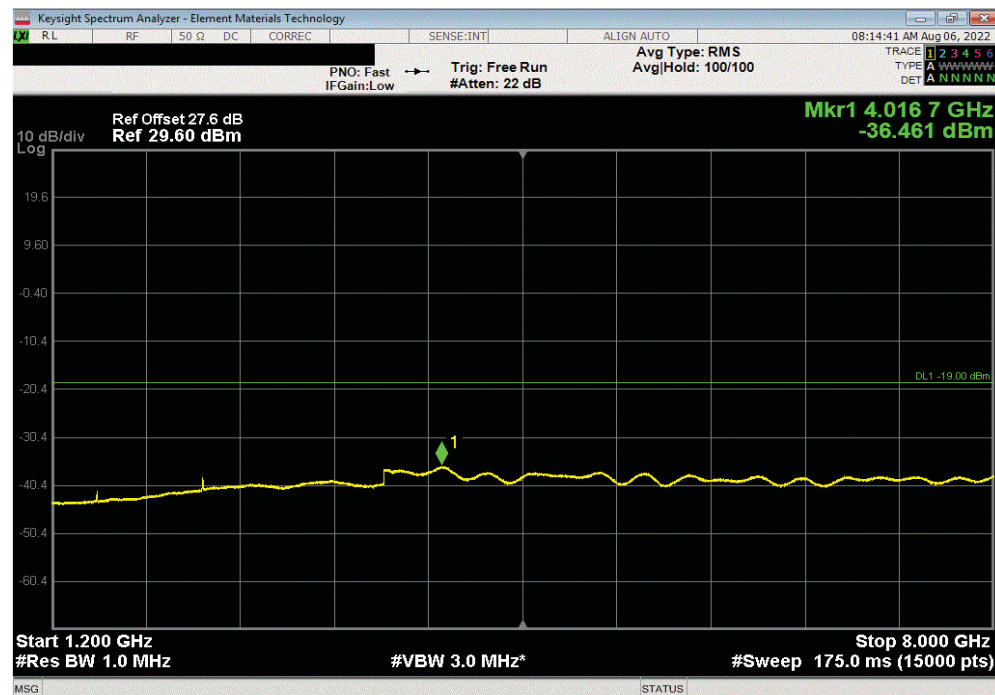


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-40.45	-19	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4019.96	-36.46	-19	Pass	

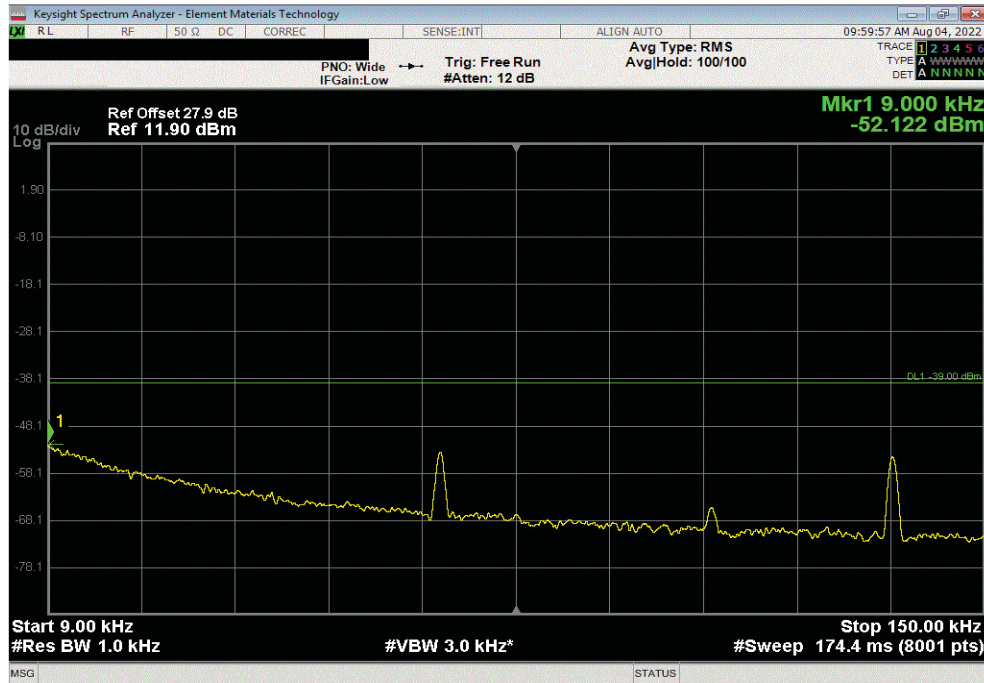


SPURIOUS CONDUCTED EMISSIONS - BAND n14

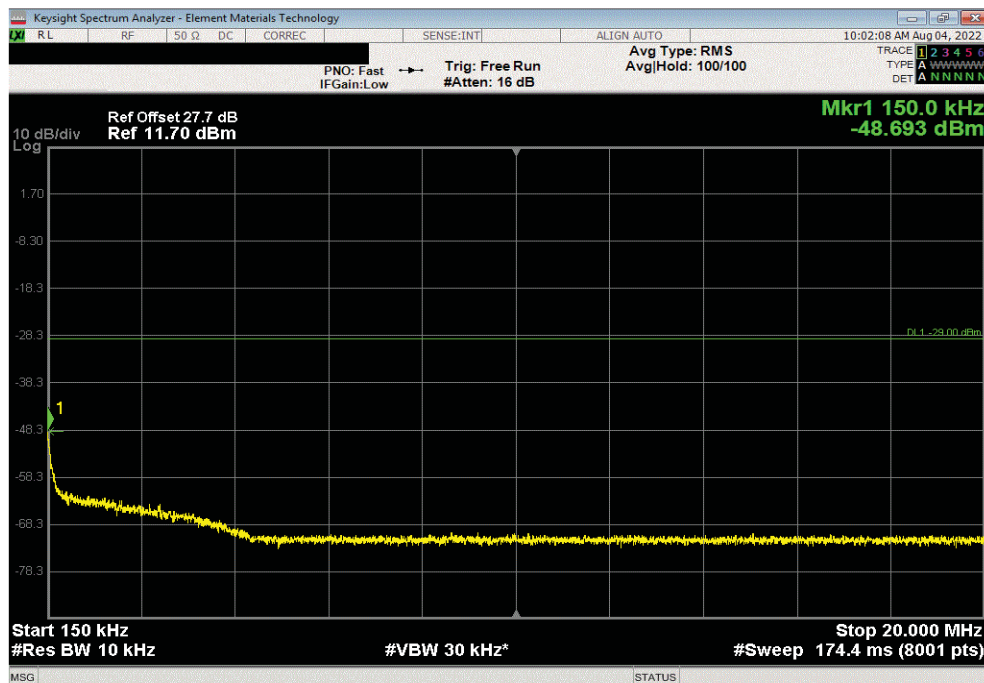


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-52.12	-39	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-48.69	-29	Pass	

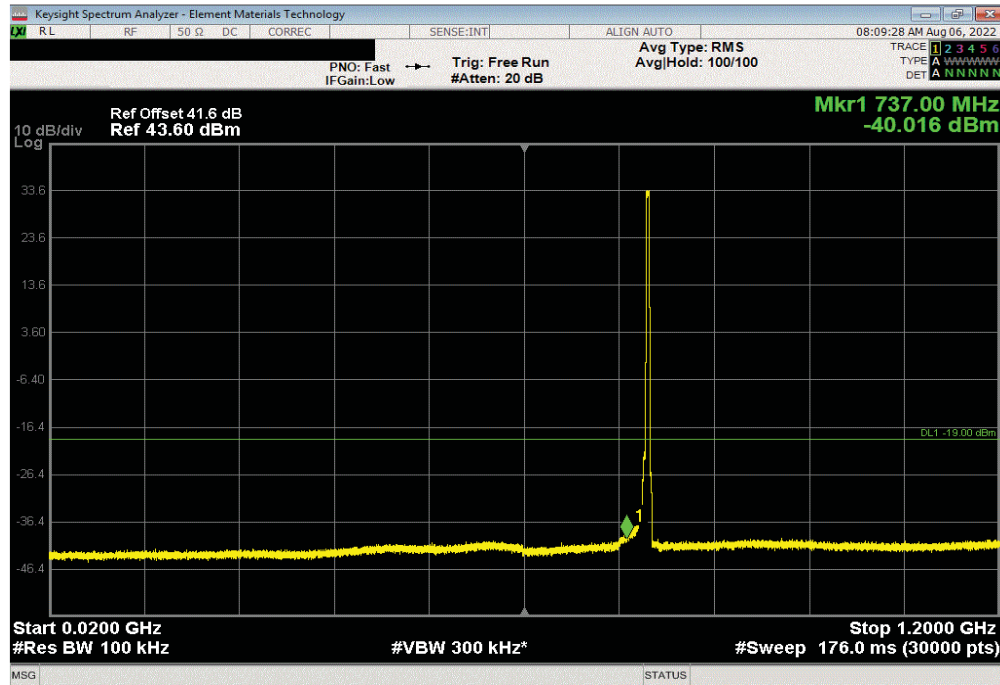


SPURIOUS CONDUCTED EMISSIONS - BAND n14

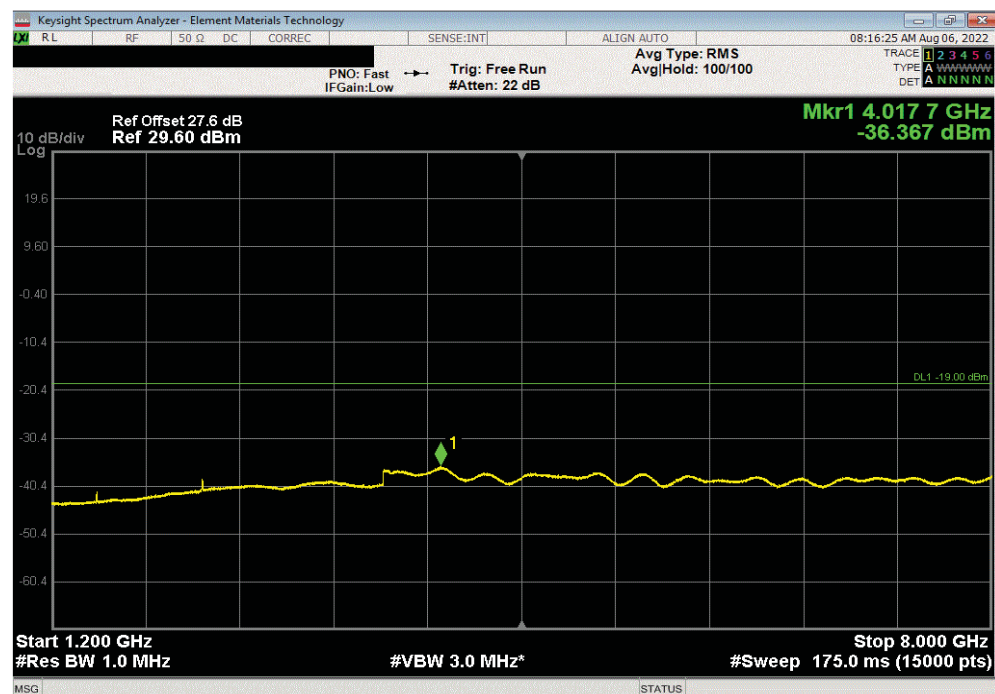


TbTtx 2022.05.02.0 XMI 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-40.02	-19	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4021.32	-36.37	-19	Pass	

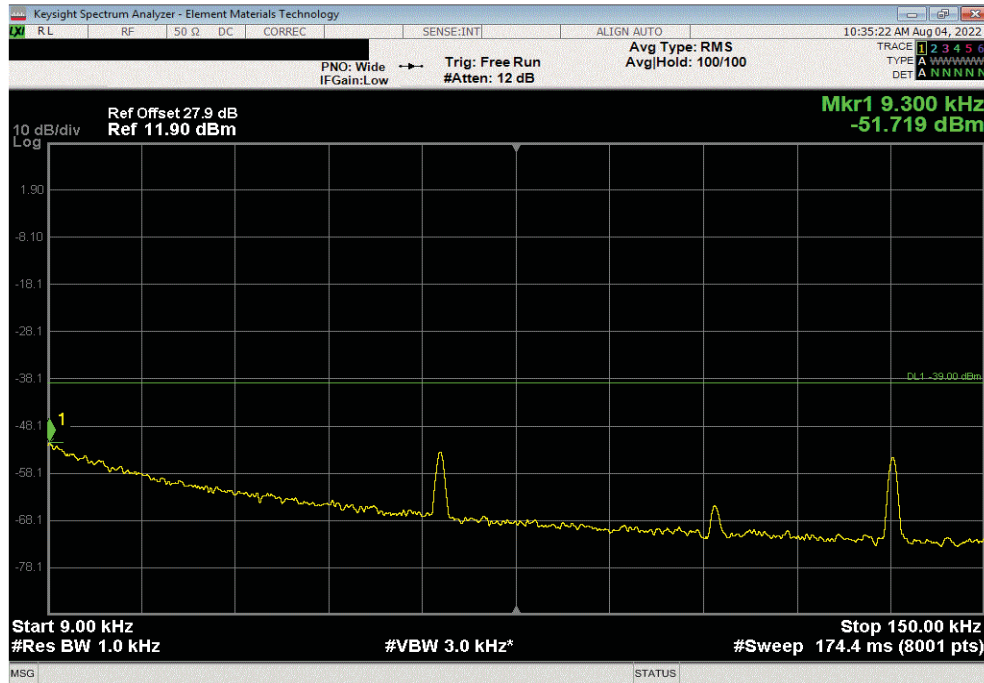


SPURIOUS CONDUCTED EMISSIONS - BAND n14

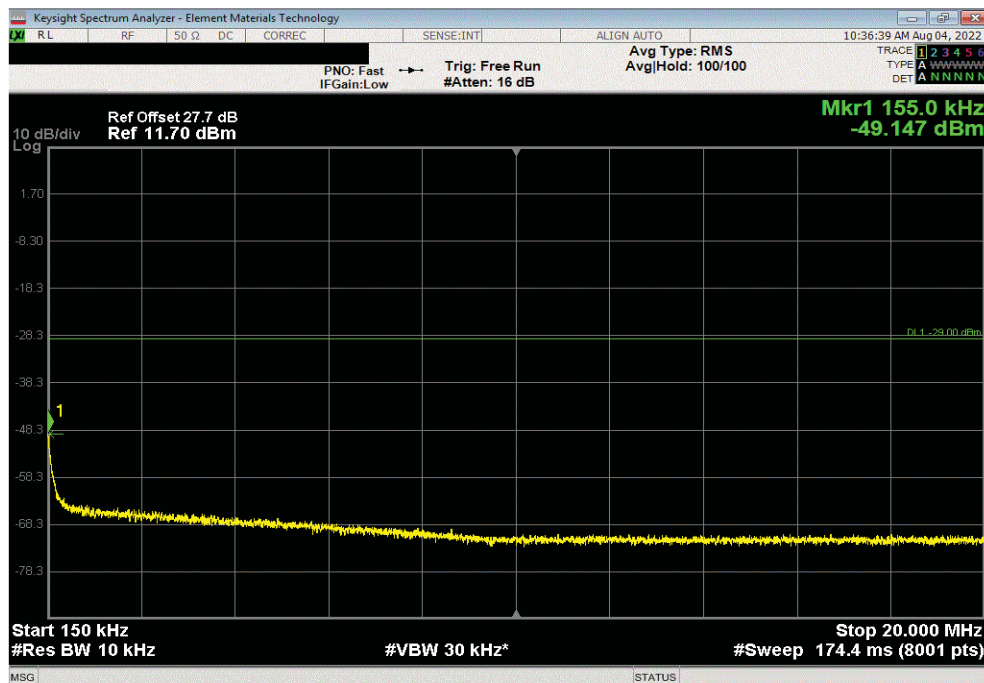


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.72	-39	Pass	



Port 2, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-49.15	-29	Pass	

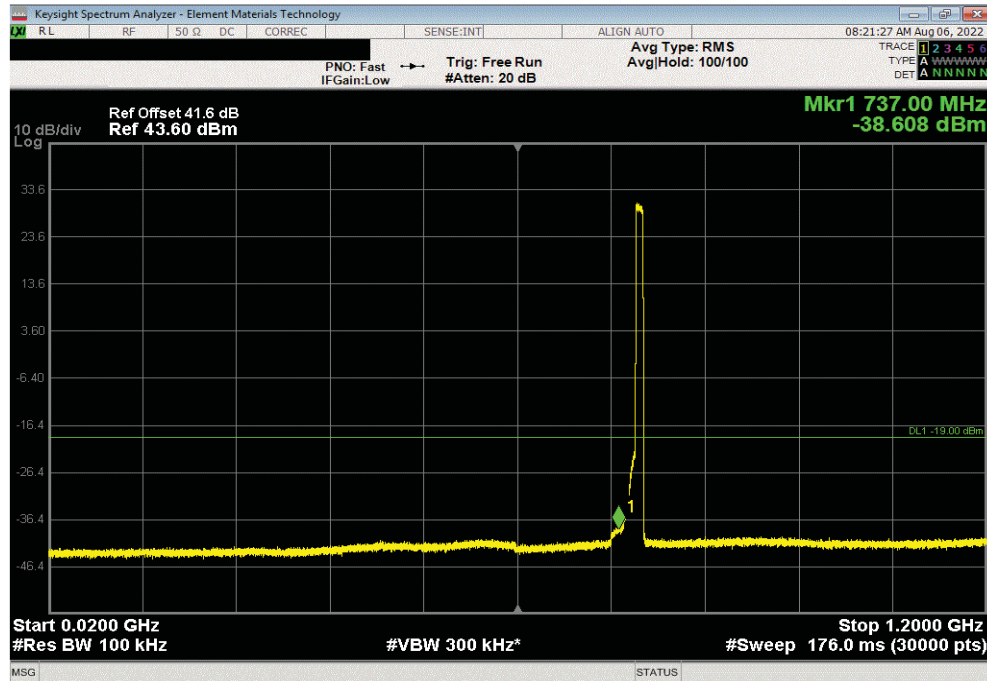


SPURIOUS CONDUCTED EMISSIONS - BAND n14

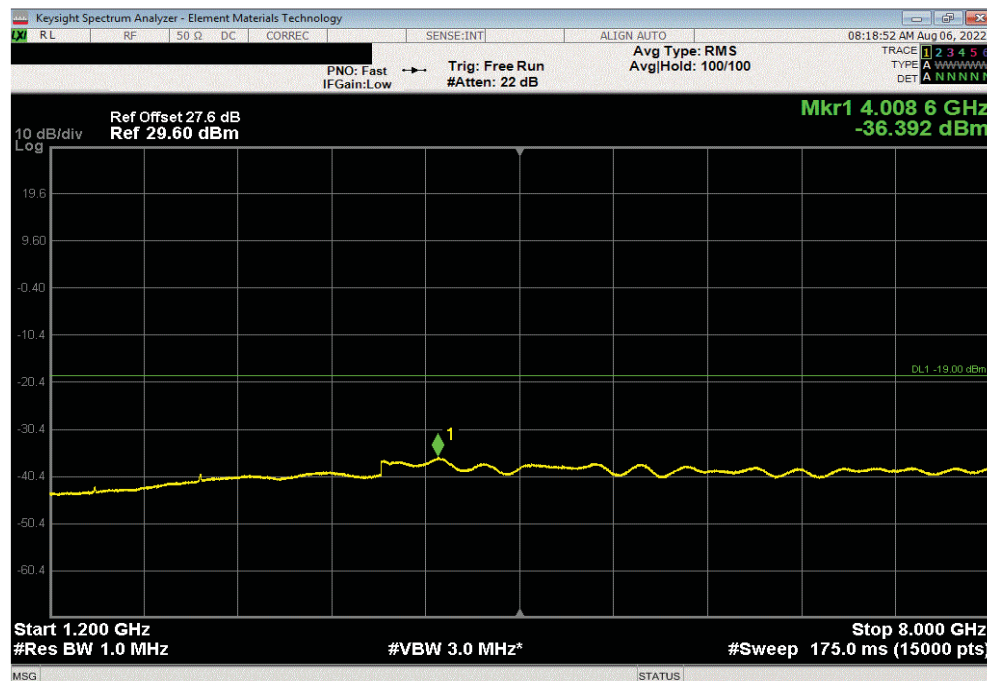


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	737	-38.61	-19	Pass	



Port 2, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4011.8	-36.4	-19	Pass	

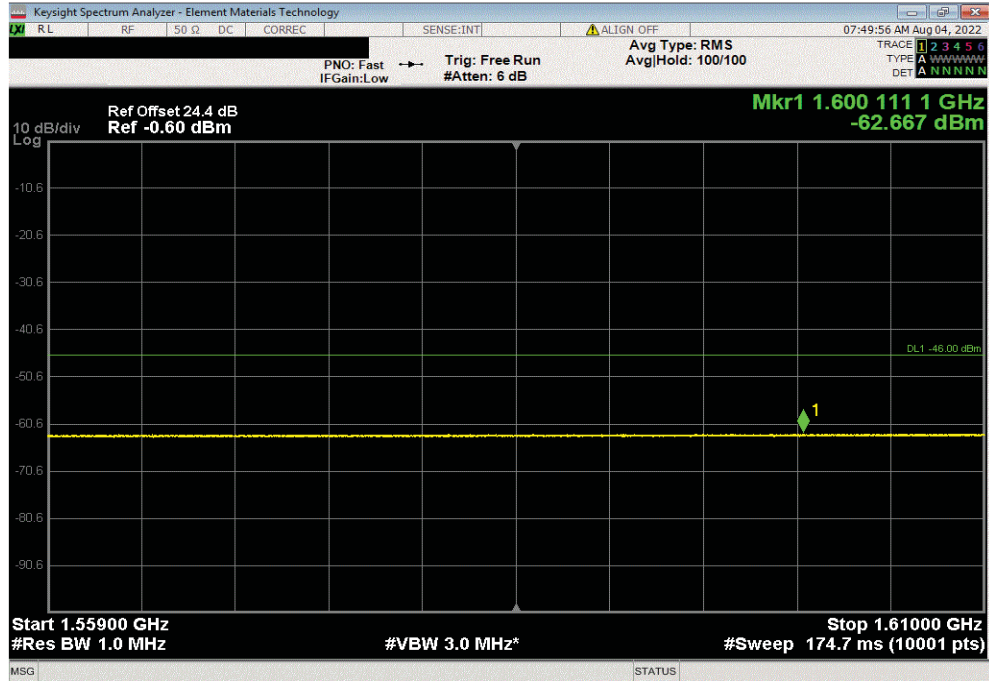


SPURIOUS CONDUCTED EMISSIONS - BAND n14

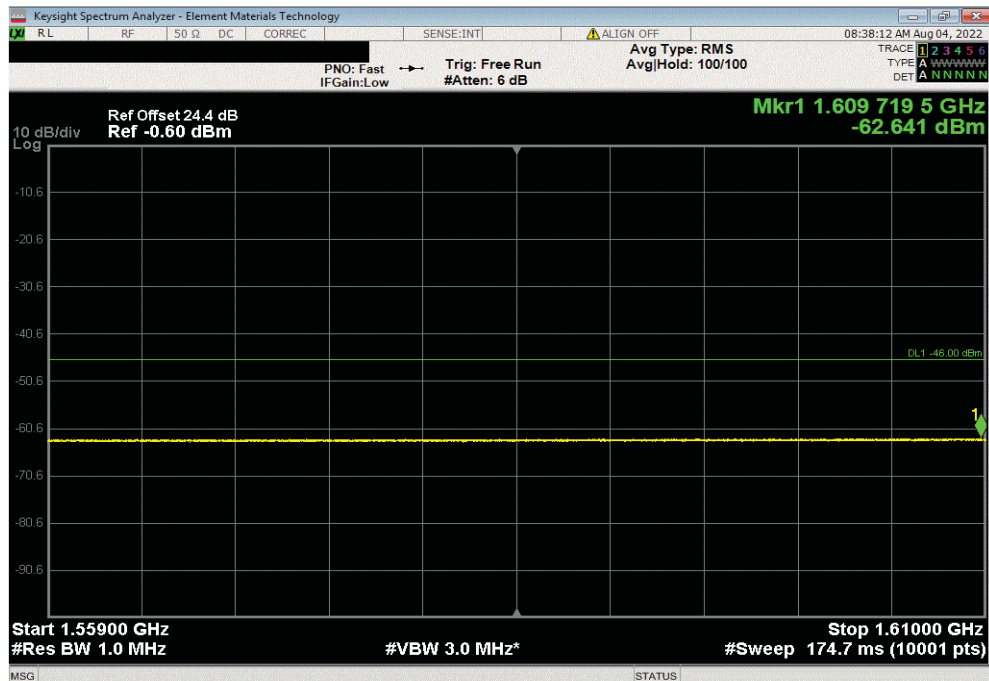


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1600.11	-62.67	-46	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1609.72	-62.64	-46	Pass	

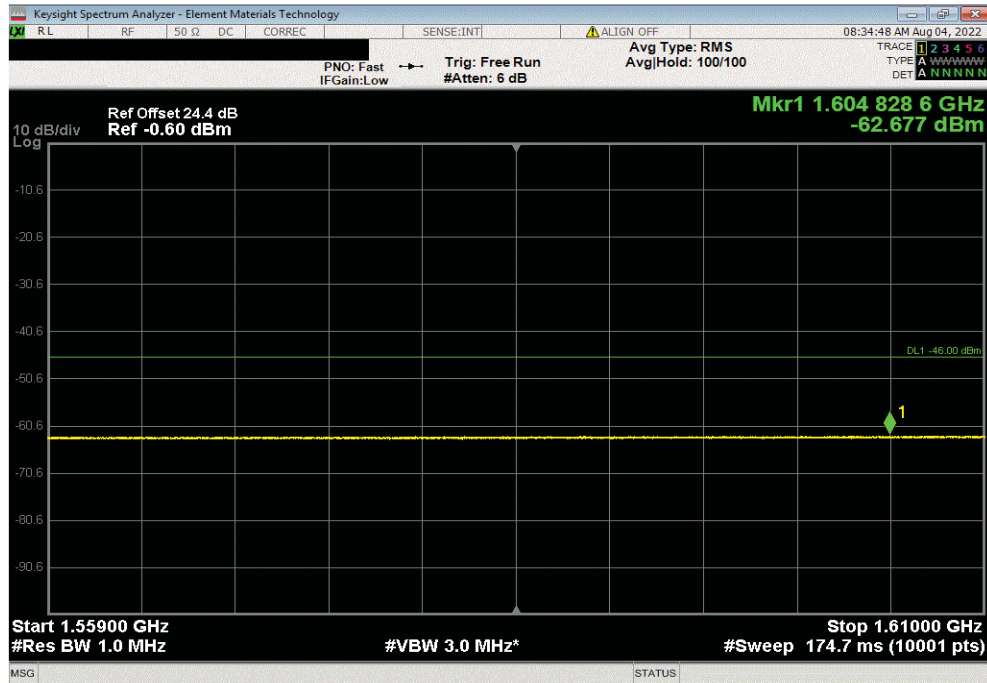


SPURIOUS CONDUCTED EMISSIONS - BAND n14

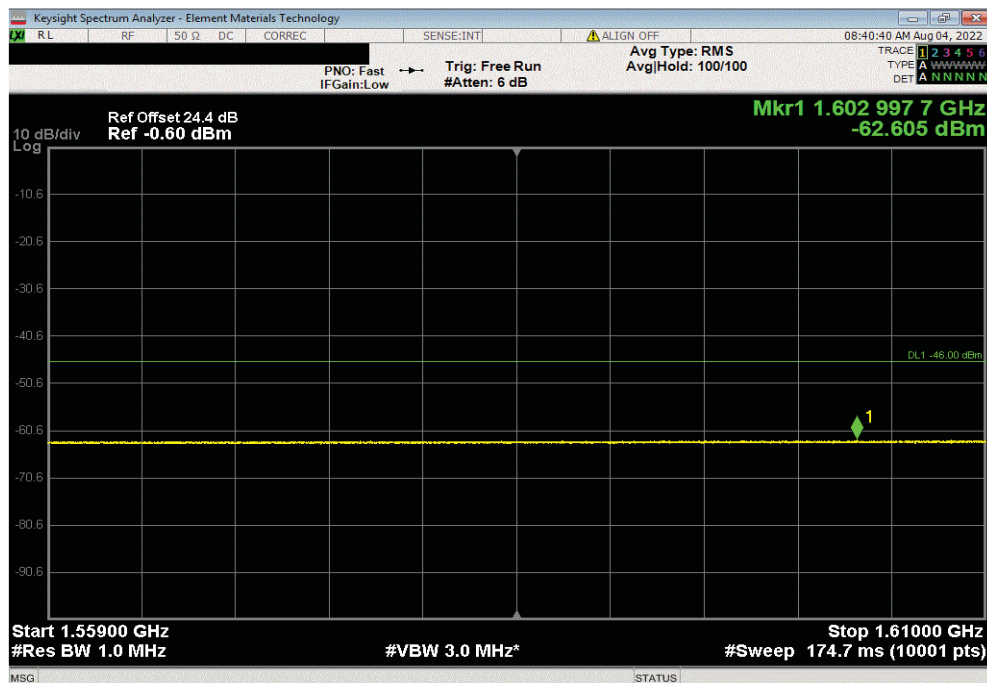


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1604.83	-62.68	-46	Pass	



Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1603	-62.61	-46	Pass	

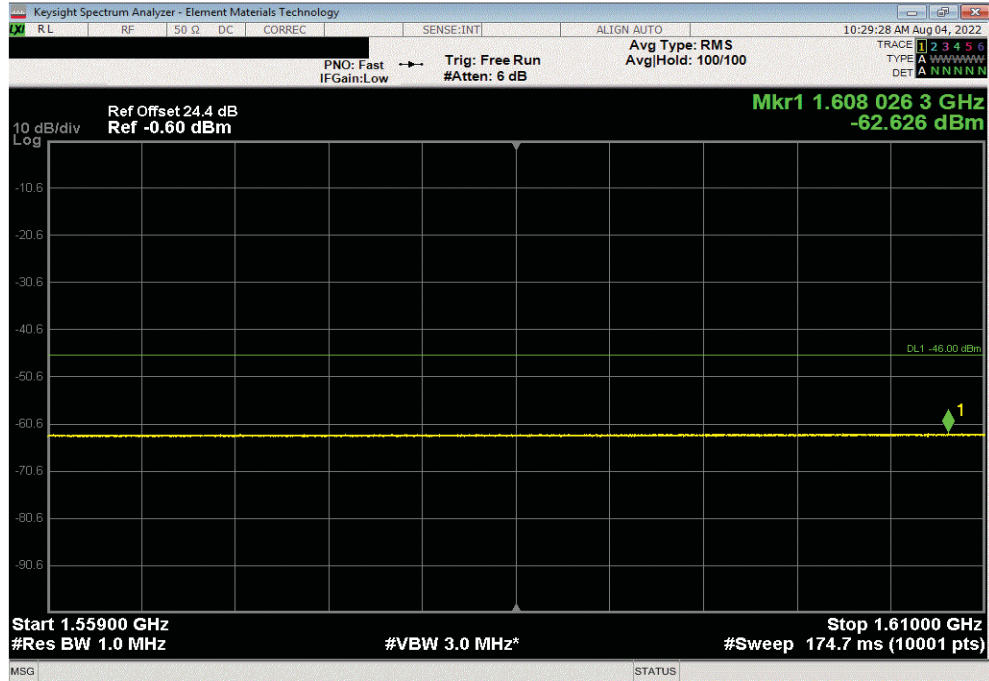


SPURIOUS CONDUCTED EMISSIONS - BAND n14



TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1608.03	-62.63	-46	Pass	

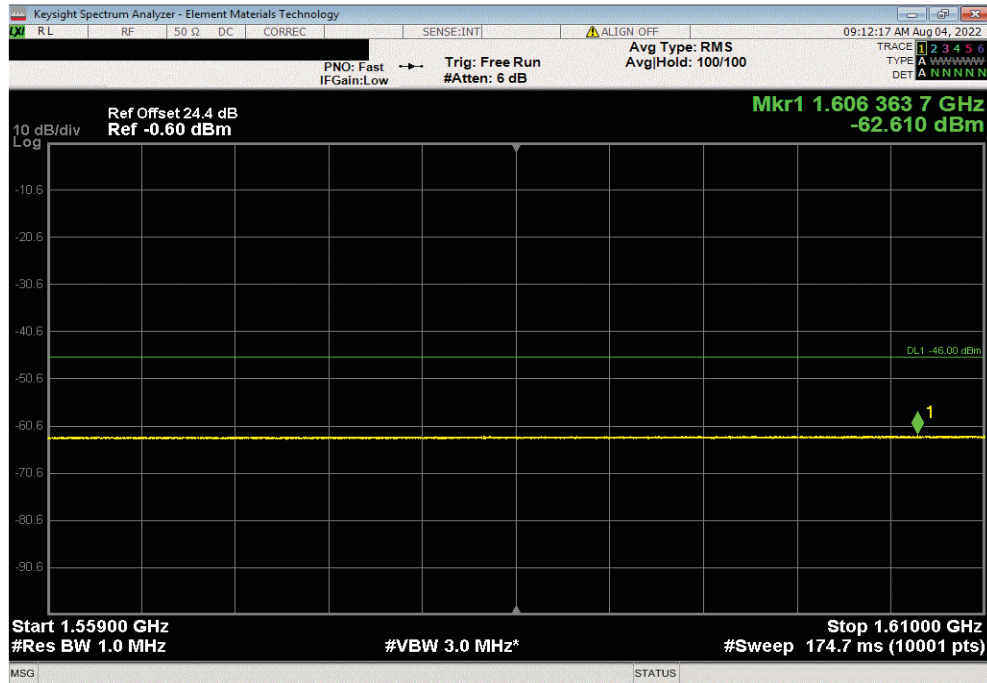


SPURIOUS CONDUCTED EMISSIONS - BAND n14

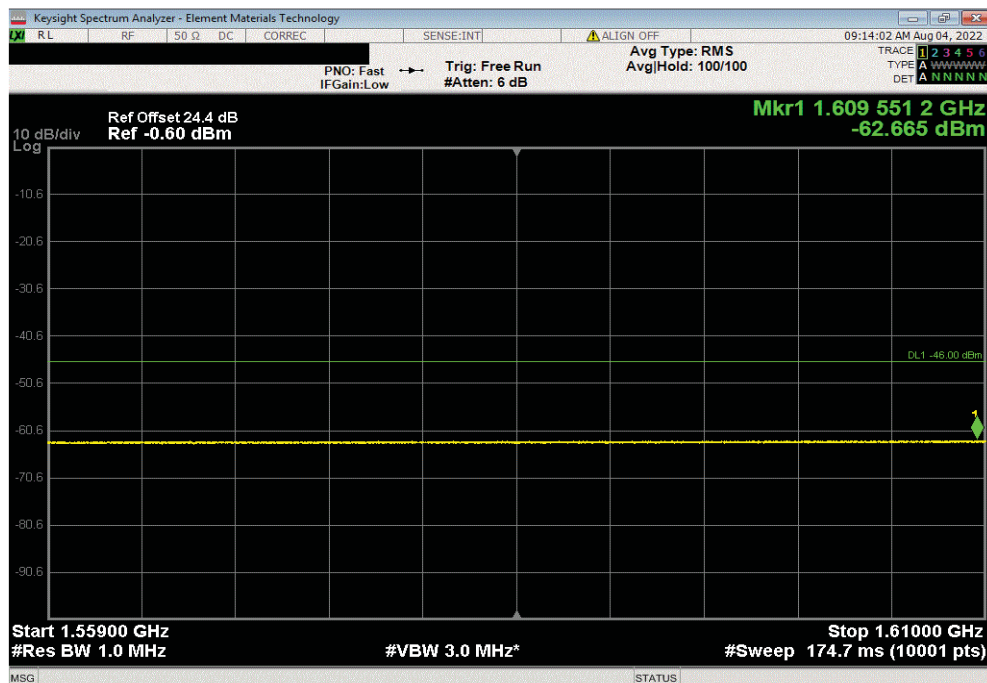


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, QPSK Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1606.36	-62.61	-46	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1609.55	-62.67	-46	Pass	

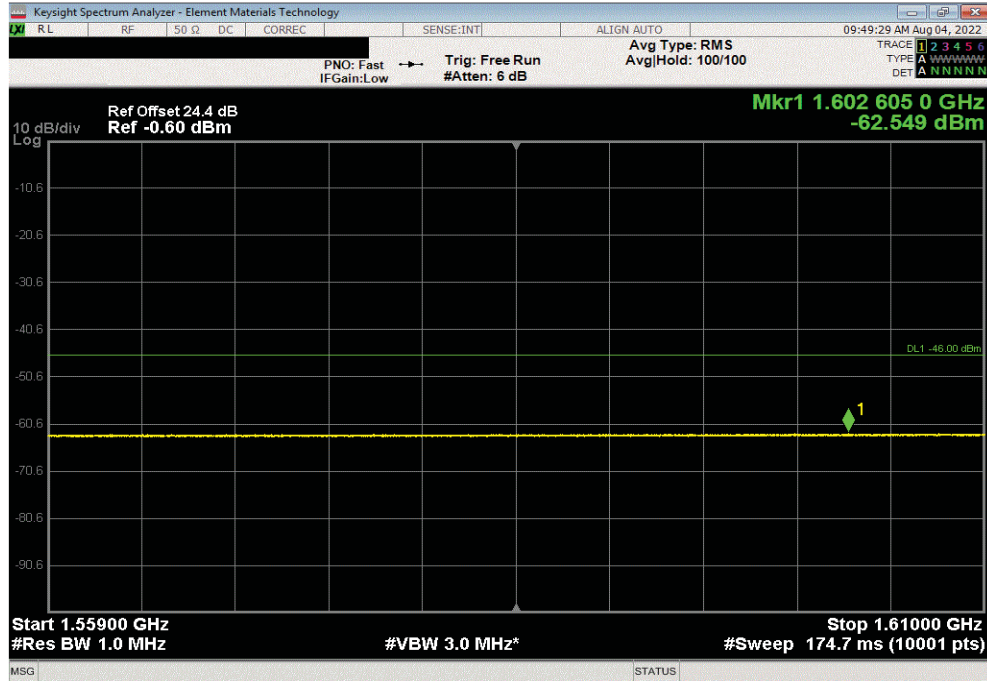


SPURIOUS CONDUCTED EMISSIONS - BAND n14

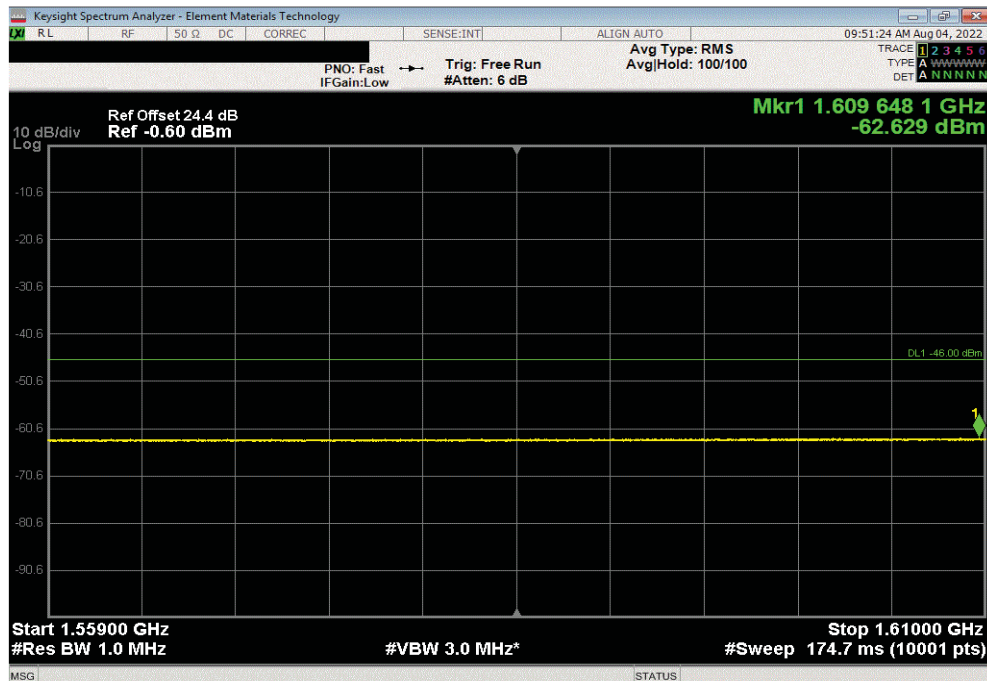


TbTtX 2022.05.02.0 XMit 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1602.61	-62.55	-46	Pass	



Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1609.65	-62.63	-46	Pass	

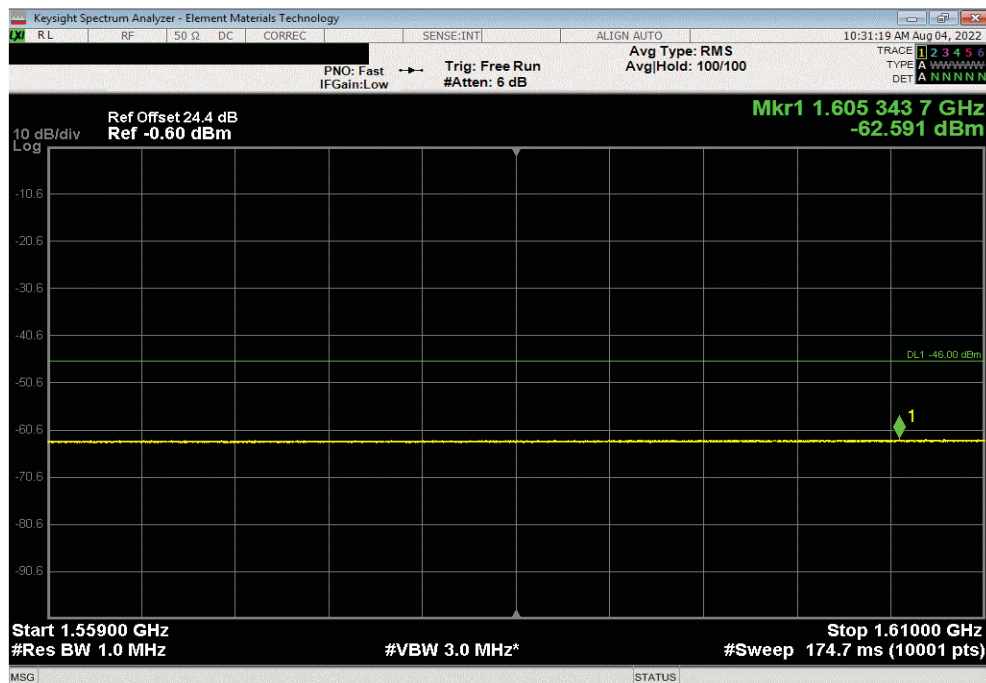


SPURIOUS CONDUCTED EMISSIONS - BAND n14



TbTx 2022.05.02.0 XbTx 2022.02.07.0

Port 2, Band n14, 758 - 768 Mhz, 10 MHz Bandwidth, 256QAM Modulation, Mid Channel, 763 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1605.34	-62.59	-46	Pass	



SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



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
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
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 3 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 8 GHz. The 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 KDB 971168 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 the frequency band after the first 100 kHz bands immediately outside and adjacent to the frequency block.

AHLBBA antenna ports 1&4 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4. AHLBBA antenna ports 2&3 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 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 FCC section 27.53(g), RSS 130 4.7, FCC section 90.543(e)(3) and RSS 140 4.4 the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. 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. FCC 27.53(g), RSS 130 4.7.1, FCC 90.543(e)(5) and RSS 140 4.4b requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. Per section 90.543(f) and RSS 140 4.4, for the frequency range 1559 - 1610 MHz the EIRP limit is -70dBW/MHz for wideband signals and -80dBW for discrete emissions of bandwidths less than 700Hz. This equates to an EIRP of -40dBm/MHz for wideband emissions and -50dBm/MHz for discrete emissions. The limit is adjusted to -46 dBm [-40 dBm -10 log (4)] for wideband signals and -56dBm [-50 dBm -10 log (4)] for discrete emissions 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 -39dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 100kHz [i.e.: -39dBm = -19dBm -10log(100kHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -29dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 100kHz [i.e.: -29dBm = -19dBm -10log(100kHz/10kHz)]. The required limit of -19dBm with a RBW of > 100kHz was used for all other frequency ranges. (See ANSI C63.26-2015 paragraph 5.7.2a for details on the Limit/RBW scaling method)

Multi-carrier Test Cases:

Test Case 1 (3GPP Band n12 Multicarrier): Three NR 5MHz carriers using two carriers (with minimum spacing between carrier frequencies) at the lower band (731.5MHz & 736.5MHz) and a third carrier with maximum spacing between the other two carrier frequencies (742.5MHz) at the upper band edge. The NR 5MHz channel bandwidth was selected to maximize carrier power spectral density. The carriers are operated at maximum power for a total port power of 80 watts (~26.6W/Band n12 carriers).

Test Case 2 (3GPP Band n12 and Band n14 Multicarrier/Multiband): In the Band n12 _ Two NR 5MHz carriers at the lower band edge (731.5 & 736.5MHz). In Band n14_ one NR 5MHz carrier at the upper band edge 765.5MHz. The carriers are operated at maximum power for a total port power of 80 watts (~26.6W/Band n12/n14 carriers).

SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



EUT: AHLBBA (C2PC/C3PC FCC/ISED)

Serial Number: K9193514835

Customer: Nokia Solutions and Networks

Attendees: Mitchell Hill

Project: None

Tested by: Marty Martin

Work Order: NOKI0047

Date: 5-Aug-22

Temperature: 20.2 °C

Humidity: 61.3% RH

Barometric Pres.: 1021 mbar

Job Site: TX07

TEST SPECIFICATIONS

FCC 27:2022

RSS-130 Issue 2: 2019 and RSS 140 Issue 1: 2018

FCC 90R:2022

Test Method

ANSI C63.26:2015

ANSI C63.26:2015

ANSI C63.26:2015

COMMENTS

All measurement path losses were accounted for in the reference level offset including attenuators, cables, DC block and filter when in use. Band n12 and Band n14 carriers were operating at maximum power in each applicable test case to achieve a total port power of 80 watts.

DEVIATIONS FROM TEST STANDARD

None

Configuration #

1, 2, 3

Signature



Frequency Range

Measured Freq (MHz)

Max Value (dBm)

Limit < (dBm)

Result

Port 1, 5G NR, Multi-Carrier Test Case 1

Band n12, 729 - 745 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 742.5 MHz)

9 kHz - 150 kHz

0.01

-52.0

-39

Pass

(731.5, 736.5 and 742.5 MHz)

150 kHz - 20 MHz

0.16

-48.9

-29

Pass

(731.5, 736.5 and 742.5 MHz)

20 MHz - 1.2 GHz

765

-37.9

-19

Pass

(731.5, 736.5 and 742.5 MHz)

1.2 GHz - 8 GHz

4011.12

-36.4

-19

Pass

Port 2, 5G NR, Multi-Carrier Test Case 1

Band n12, 729 - 745 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 742.5 MHz)

9 kHz - 150 kHz

0.01

-52.1

-39

Pass

(731.5, 736.5 and 742.5 MHz)

150 kHz - 20 MHz

0.15

-48.6

-29

Pass

(731.5, 736.5 and 742.5 MHz)

20 MHz - 1.2 GHz

765

-30.4

-19

Pass

(731.5, 736.5 and 742.5 MHz)

1.2 GHz - 8 GHz

4012.48

-36.4

-19

Pass

Port 1, 5G NR, Multi-Carrier Test Case 1

Band n12, 1559 - 1610 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 742.5 MHz)

1.559 GHz - 1.61 GHz

1608.52

-62.7

-46

Pass

Port 2, 5G NR, Multi-Carrier Test Case 1

Band n12, 1559 - 1610 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 742.5 MHz)

1.559 GHz - 1.61 GHz

1604.86

-62.6

-46

Pass

Port 1, 5G NR, Multi-Carrier Test Case 2

Band n12, 729 - 745 Mhz, Band n14 758 - 768 MHz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 765.5 MHz)

9 kHz - 150 kHz

0.01

-51.9

-39

Pass

(731.5, 736.5 and 765.5 MHz)

150 kHz - 20 MHz

0.15

-49.6

-29

Pass

(731.5, 736.5 and 765.5 MHz)

20 MHz - 1.2 GHz

806

-41.1

-19

Pass

(731.5, 736.5 and 765.5 MHz)

1.2 GHz - 8 GHz

4033.52

-36.4

-19

Pass

Port 2, 5G NR, Multi-Carrier Test Case 2

Band n12, 729 - 745 Mhz, Band n14 758 - 768 MHz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 765.5 MHz)

9 kHz - 150 kHz

0.01

-52.2

-39

Pass

(731.5, 736.5 and 765.5 MHz)

150 kHz - 20 MHz

0.15

-49.1

-29

Pass

(731.5, 736.5 and 765.5 MHz)

20 MHz - 1.2 GHz

806

-41.1

-19

Pass

(731.5, 736.5 and 765.5 MHz)

1.2 GHz - 8 GHz

4014.93

-36.4

-19

Pass

Port 1, 5G NR, Multi-Carrier Test Case 2

Band n12, 1559 - 1610 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 765.5 MHz)

1.559 GHz - 1.61 GHz

1608.67

-62.7

-46

Pass

Port 2, 5G NR, Multi-Carrier Test Case 2

Band n12, 1559 - 1610 Mhz

5 MHz Bandwidth

QPSK Modulation

(731.5, 736.5 and 765.5 MHz)

1.559 GHz - 1.61 GHz

1607.83

-62.6

-46

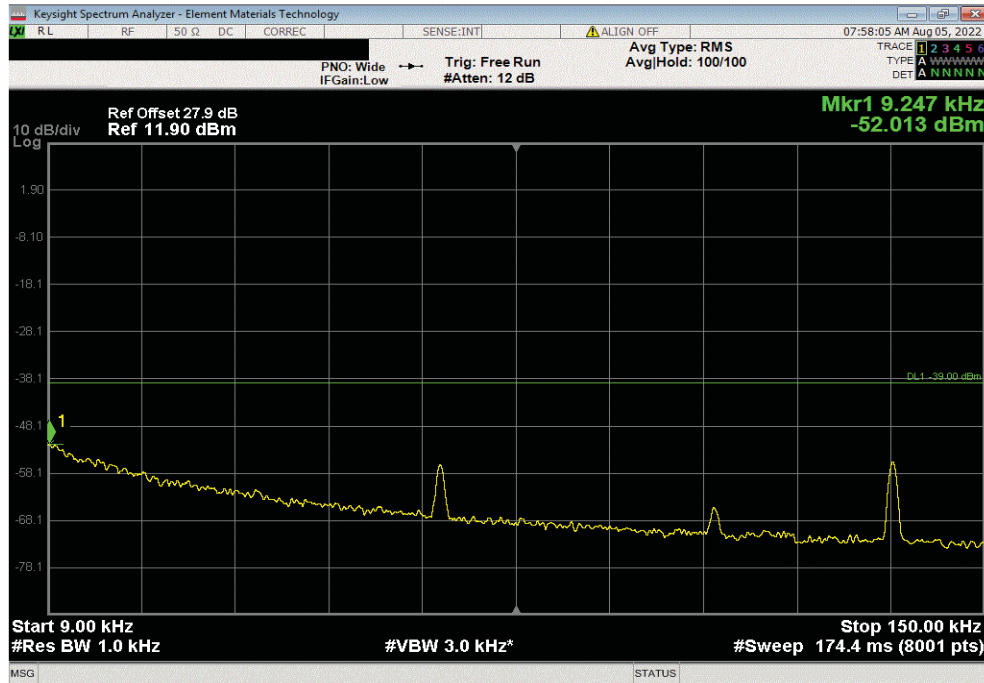
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SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

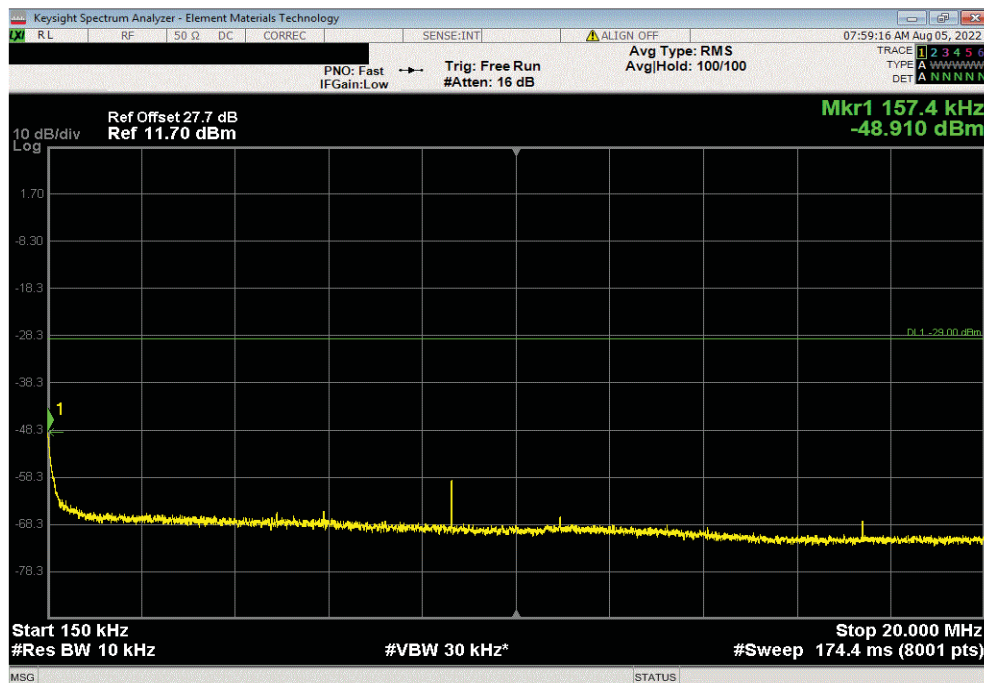


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-52.01	-39	Pass	



Port 1, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.16	-48.91	-29	Pass	



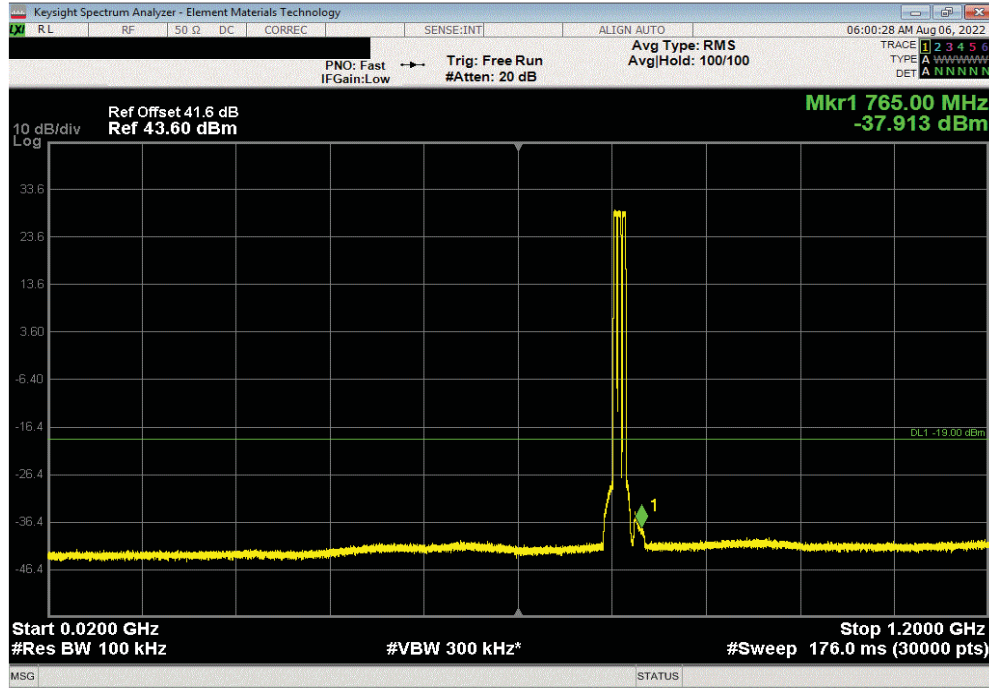
SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTtx 2022.05.02.0 XMit 2022.02.07.0

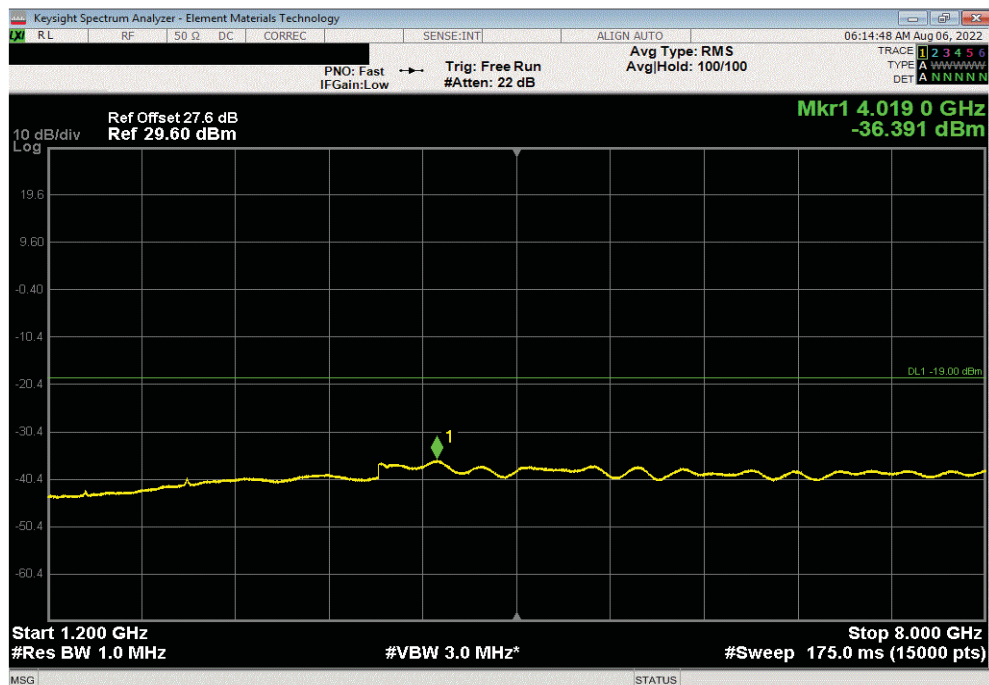
Port 1, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
20 MHz - 1.2 GHz	765	-37.91	-19	Pass



Port 1, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
1.2 GHz - 8 GHz	4011.12	-36.4	-19	Pass



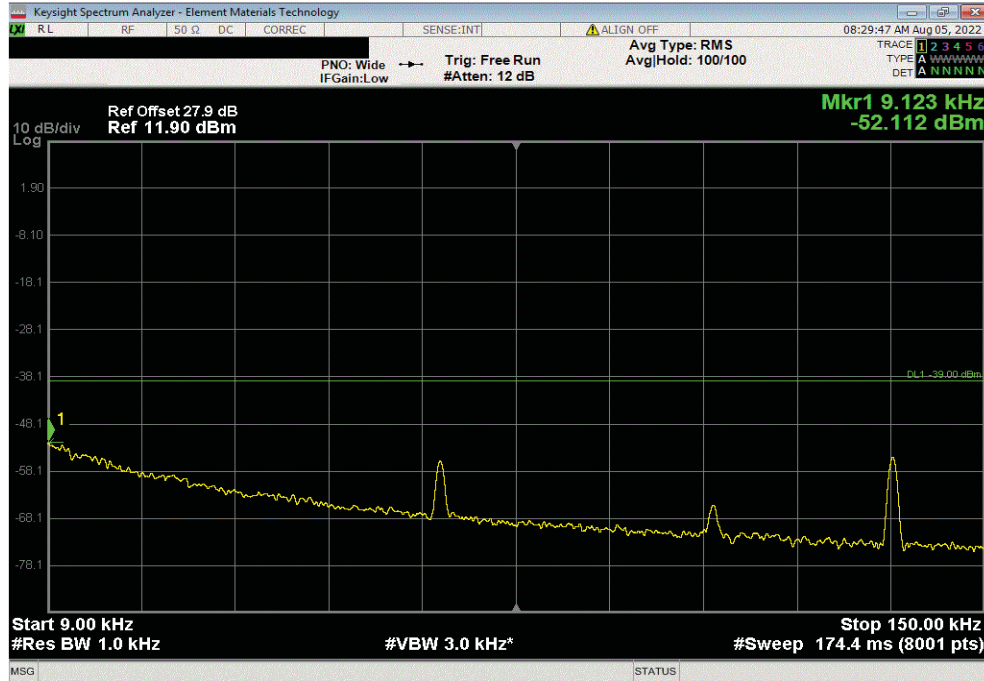
SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTtx 2022.05.02.0 XMit 2022.02.07.0

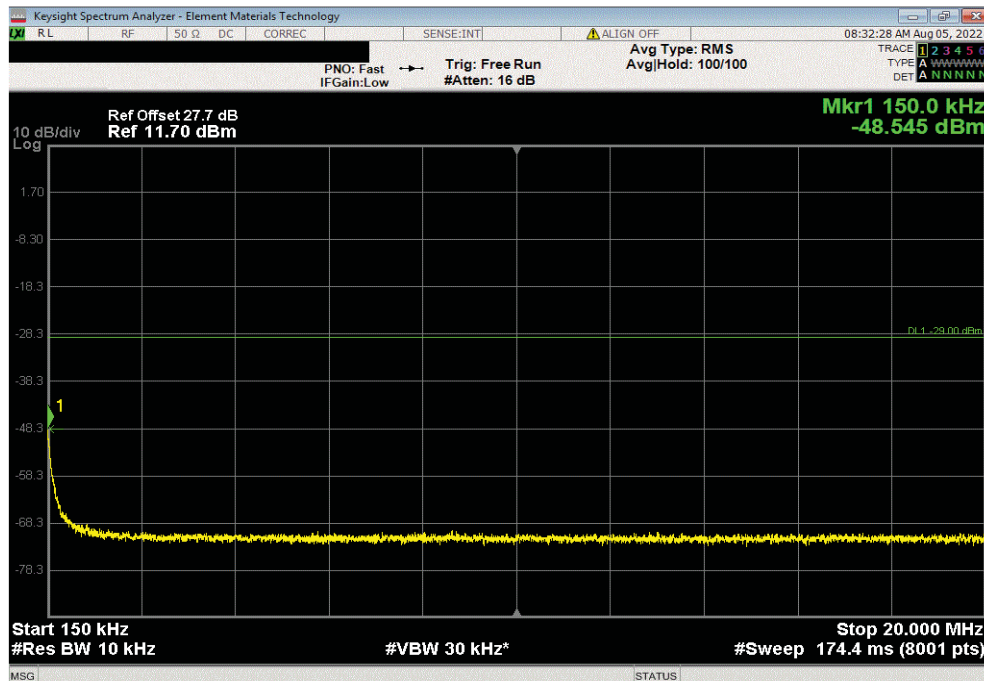
Port 2, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
9 kHz - 150 kHz	0.01	-52.11	-39	Pass



Port 2, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
150 kHz - 20 MHz	0.15	-48.55	-29	Pass

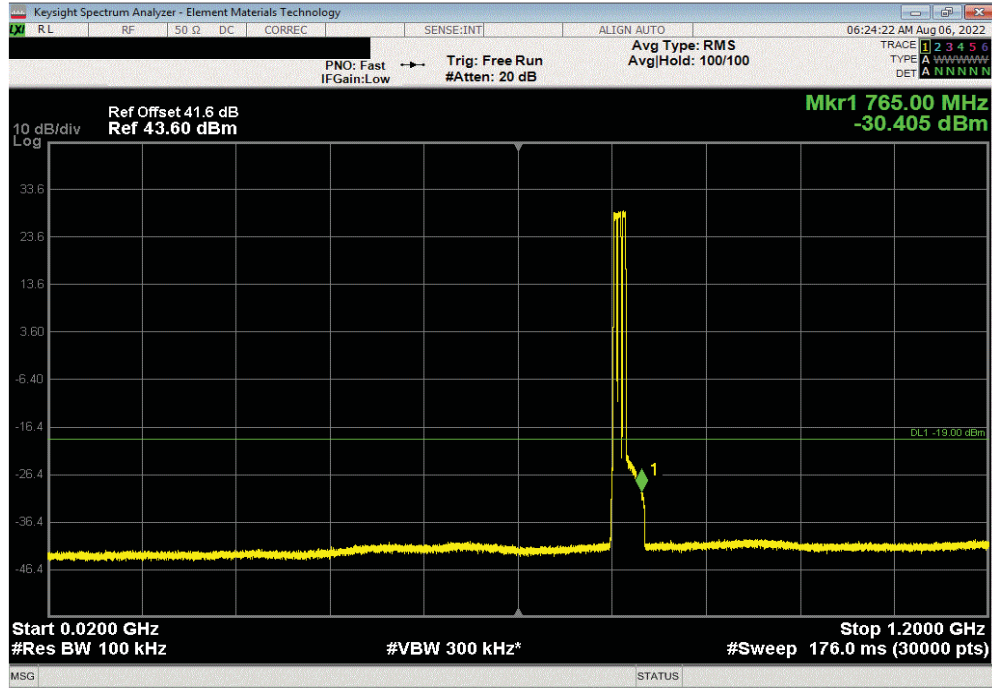


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

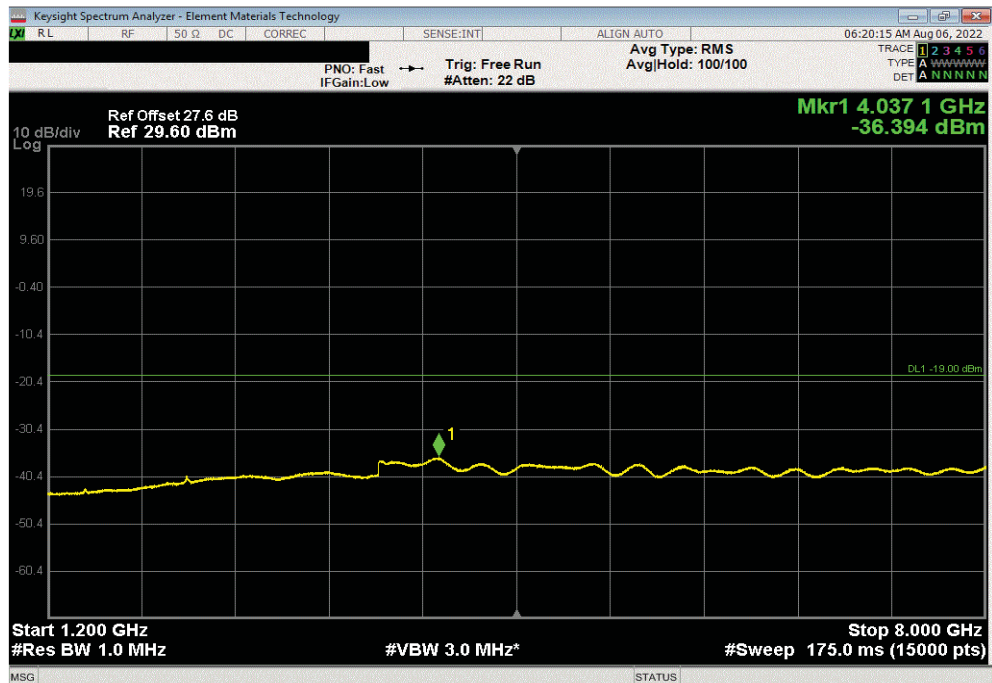


TbTtX 2022.05.02.0 XMit 2022.02.07.0

Port 2, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	765	-30.41	-19	Pass	



Port 2, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4012.48	-36.4	-19	Pass	



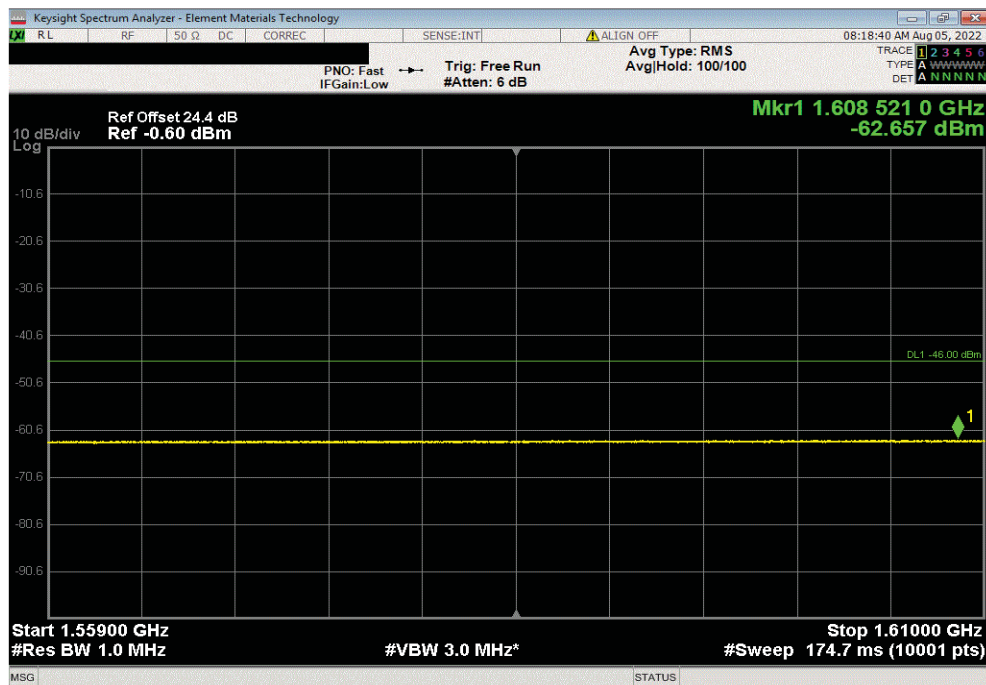
SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTx 2022.05.02.0 XbTx 2022.02.07.0

Port 1, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation, 1559 - 1610 MHz.

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
1.559 GHz - 1.61 GHz	1608.52	-62.66	-46	Pass



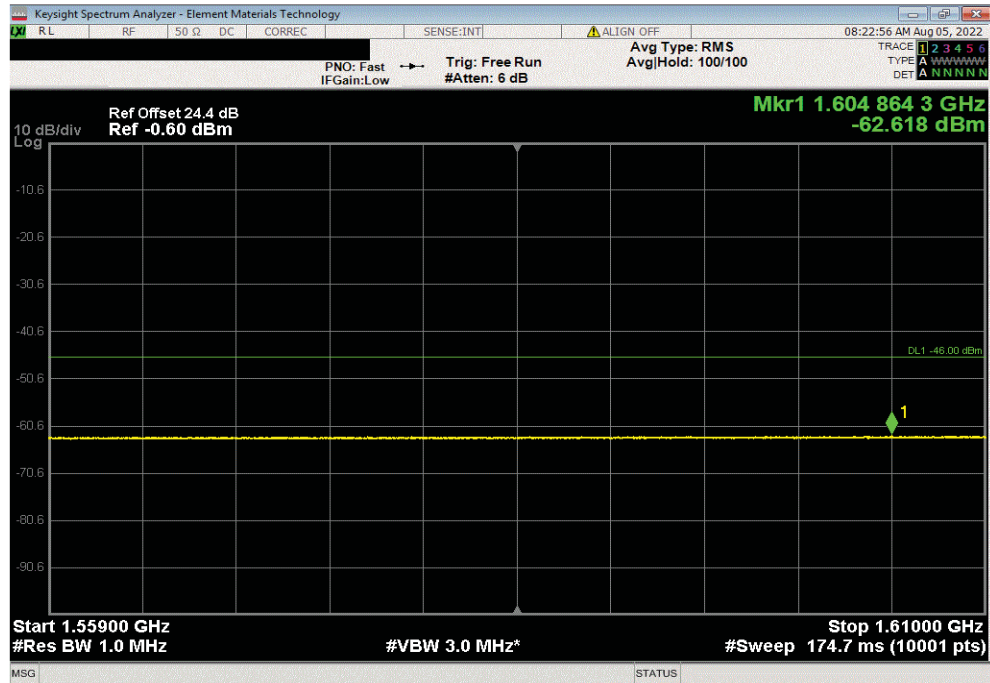
SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTx 2022.05.02.0 XMt 2022.02.07.0

Port 2, 5G NR, Multi-Carrier Test Case 1, Band n12, (731.5, 736.5 and 742.5 MHz), 5 MHz Bandwidth, QPSK Modulation, 1559 - 1610 MHz.

Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
1.559 GHz - 1.61 GHz	1604.86	-62.62	-46	Pass

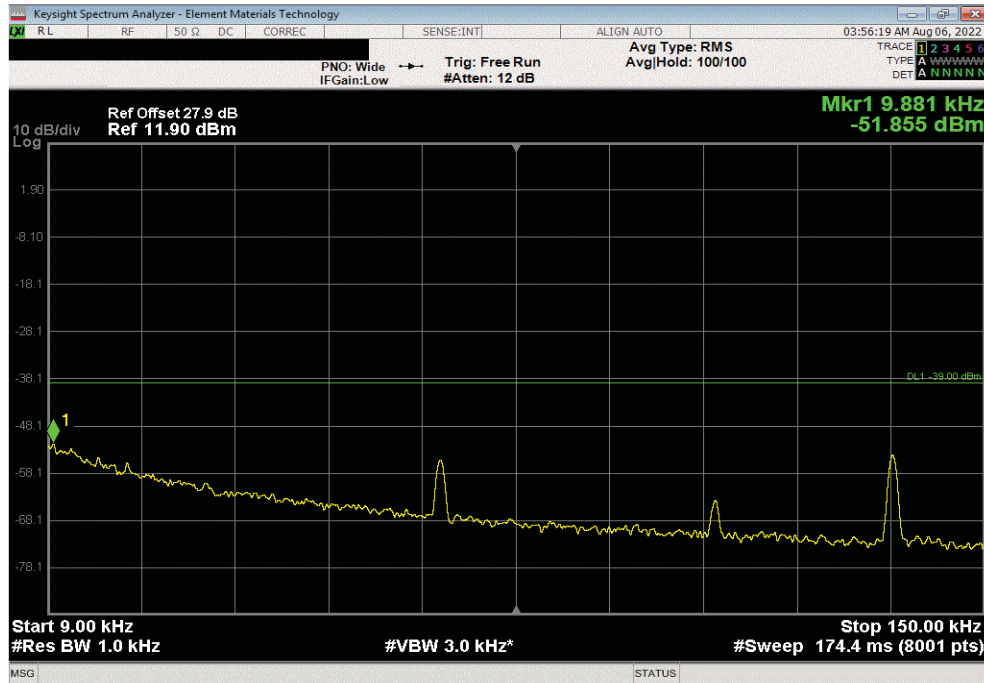


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

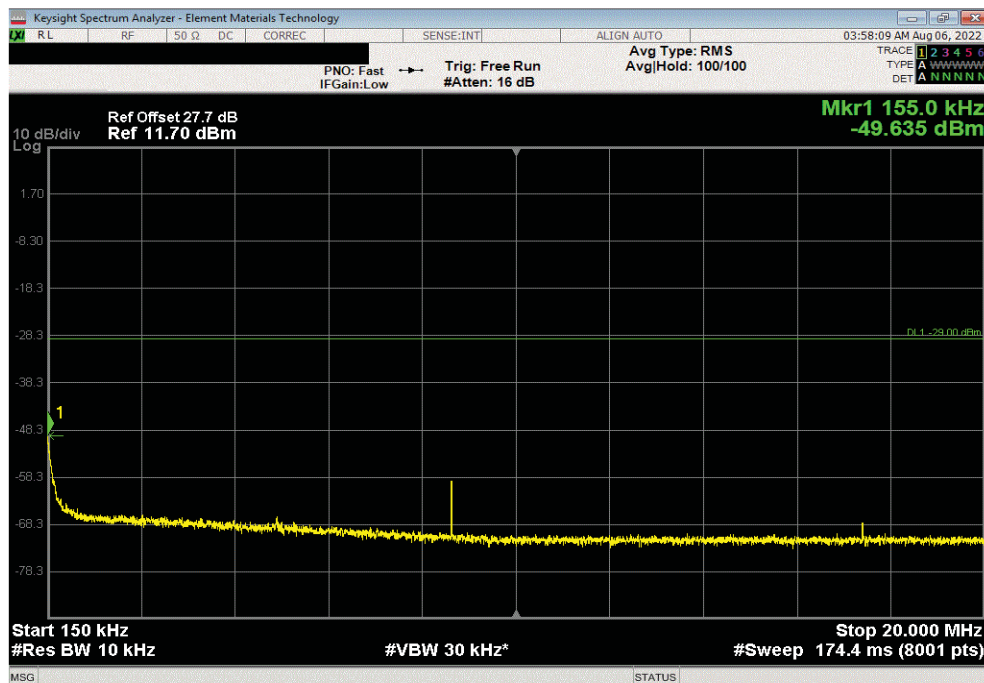


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-51.86	-39	Pass	



Port 1, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-49.64	-29	Pass	

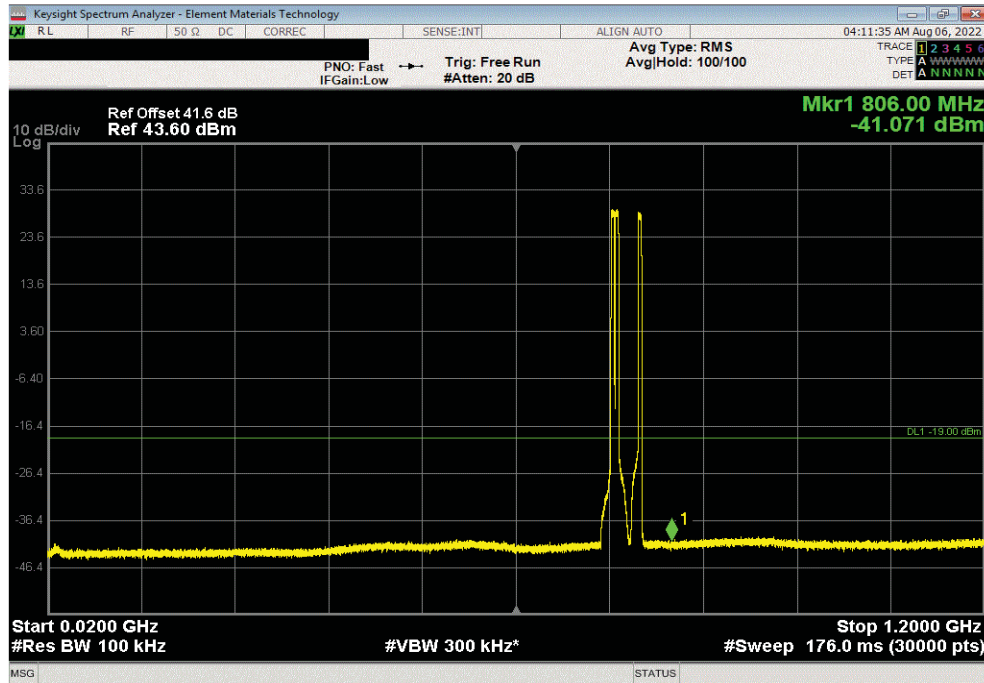


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

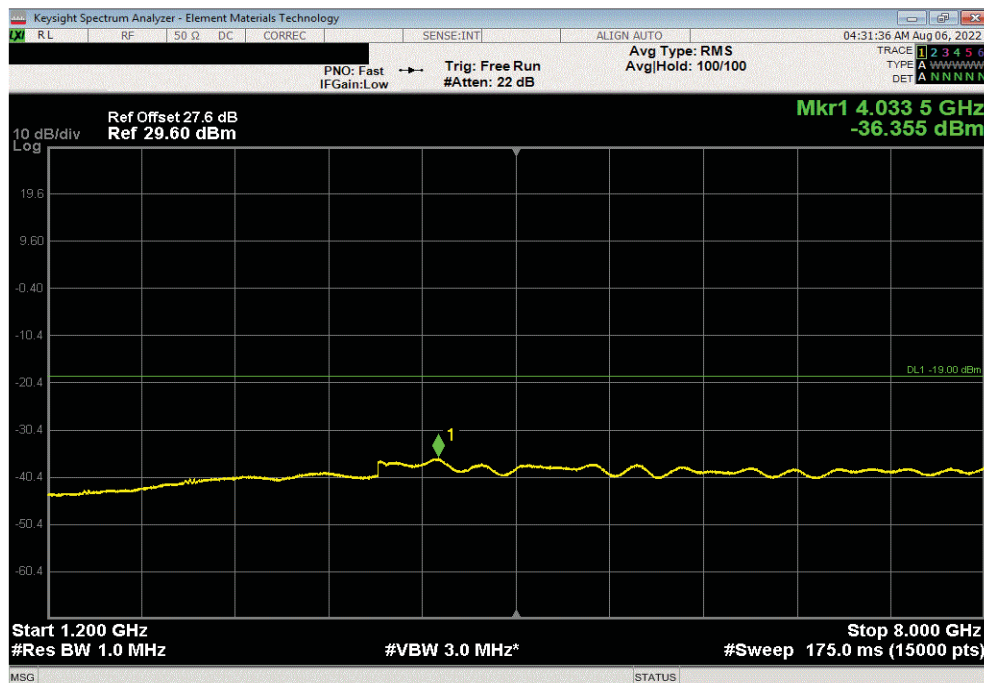


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	806	-41.07	-19	Pass	



Port 1, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4033.52	-36.36	-19	Pass	

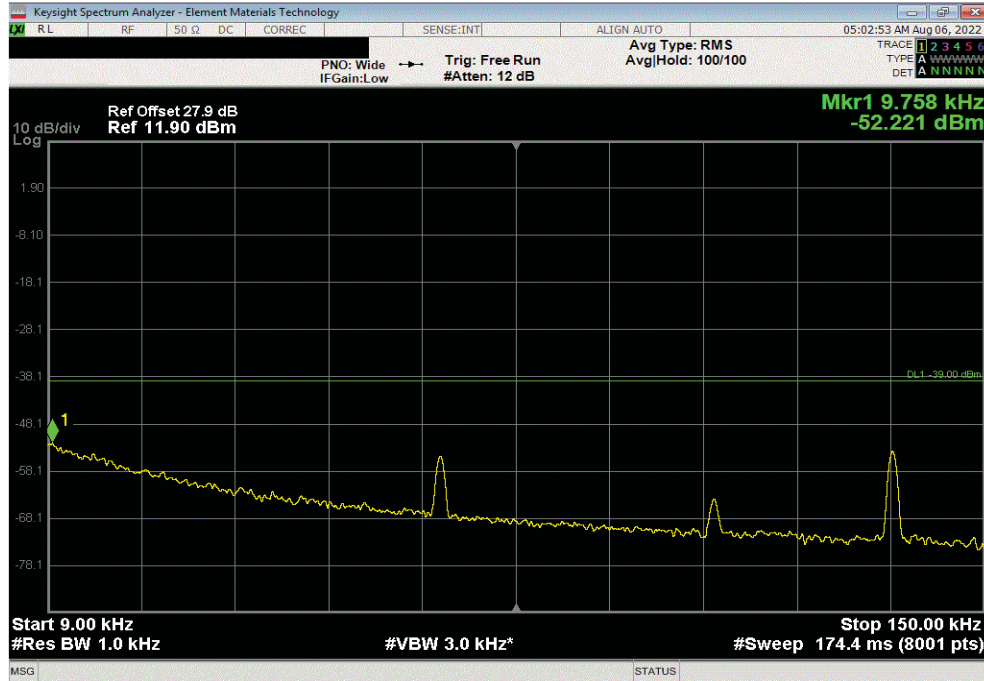


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

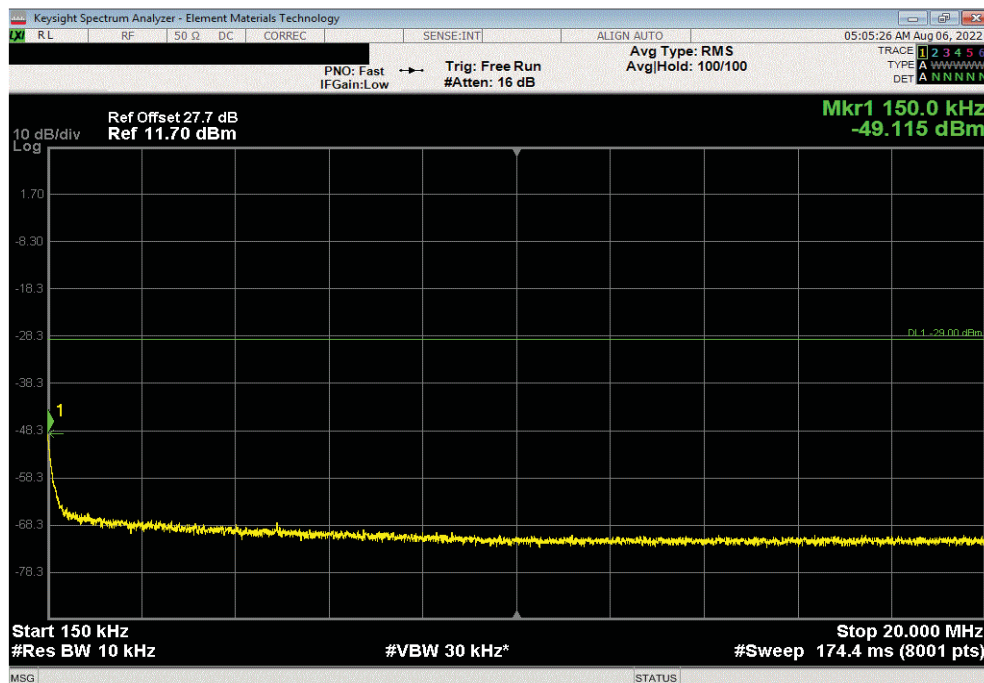


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
9 kHz - 150 kHz	0.01	-52.22	-39	Pass	



Port 2, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
150 kHz - 20 MHz	0.15	-49.12	-29	Pass	

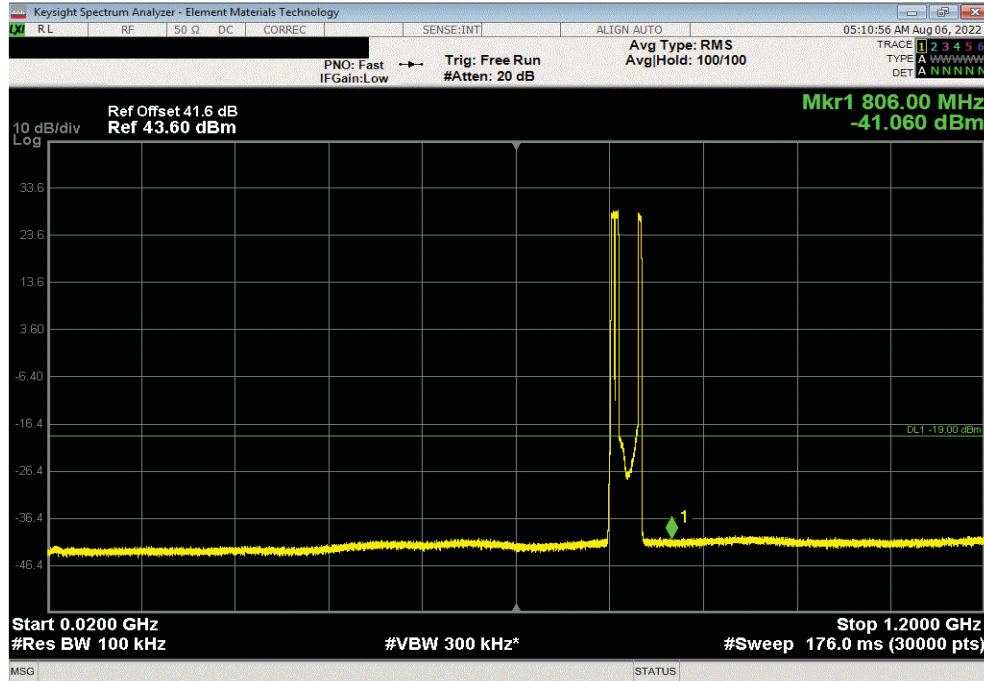


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER

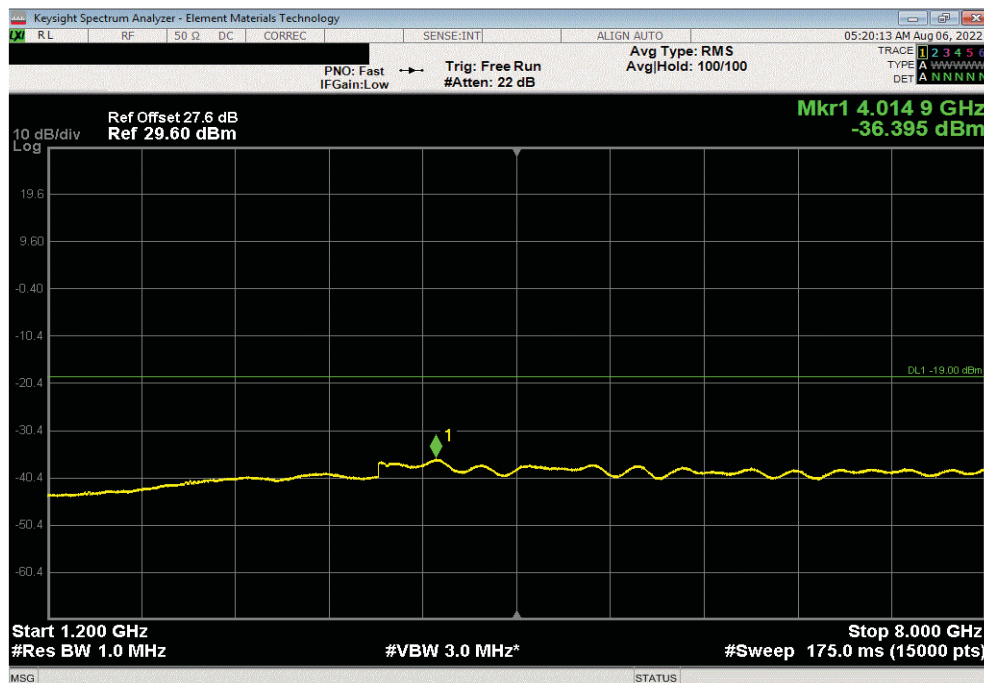


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 2, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
20 MHz - 1.2 GHz	806	-41.06	-19	Pass	



Port 2, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.2 GHz - 8 GHz	4014.93	-36.4	-19	Pass	

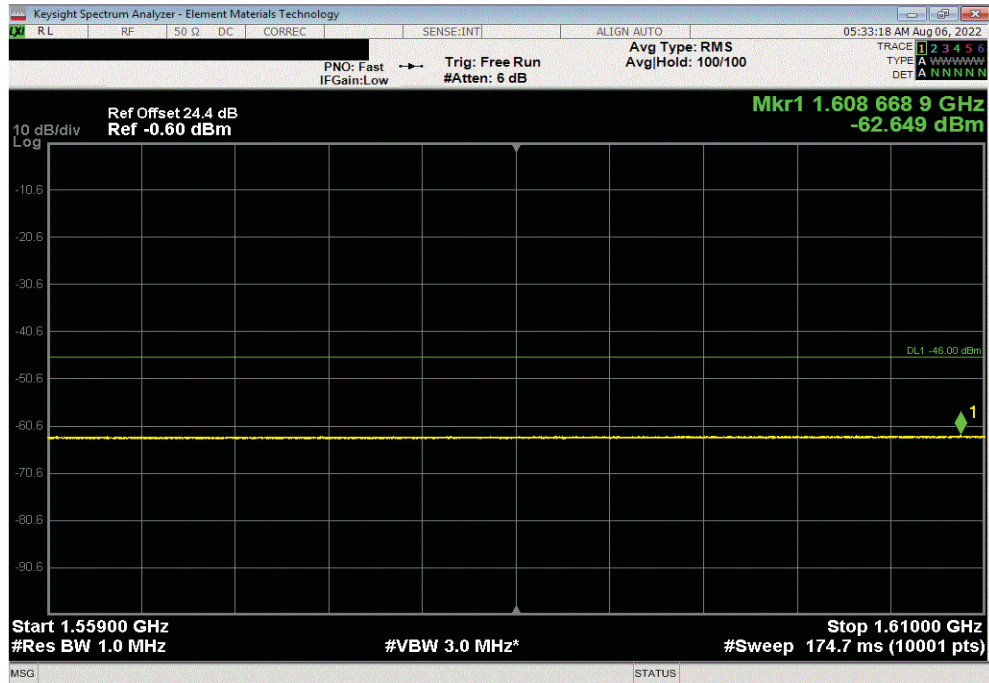


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTx 2022.05.02.0 XbTx 2022.02.07.0

Port 1, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation, 1559 - 1610 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1608.67	-62.65	-46	Pass	

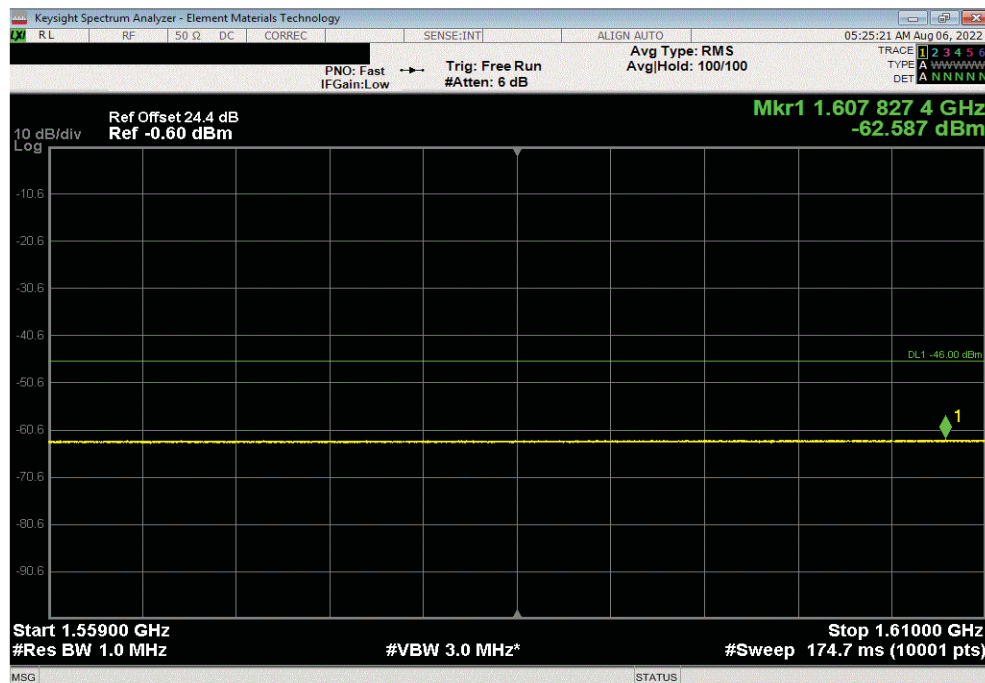


SPURIOUS CONDUCTED EMISSIONS - MULTIBAND MULTICARRIER



TbTx 2022.05.02.0 XbTx 2022.02.07.0

Port 2, 5G NR, Multi-Carrier Test Case 2, Band n12 and Band n14 (731.5, 736.5 and 765.5 MHz), 5 MHz Bandwidth, QPSK Modulation, 1559 - 1610 MHz					
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result	
1.559 GHz - 1.61 GHz	1607.83	-62.59	-46	Pass	



End of Test Report