

SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi



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
Cable	UtiFlex Micro-Coax	UFD1150A-1-0720-200200	TXK	2021-09-13	2022-09-13
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2022-01-19	2023-01-19
Block - DC	Fairview Microwave	SD3235-2148	ANF	2022-05-27	2023-05-27

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

The antenna port spurious emissions were measured at the RF output terminal of the EUT with a 1526 MHz to 1536 MHz notch filter on the RF input of the spectrum analyzer. Analyzer plots utilizing a 1MHz resolution bandwidth and a 3MHz video bandwidth were made for each modulation type across the restricted bands as called out in part 25.253(d)(9) and FCC 20-48A1 paragraph 141 and 142. The RMS average conducted power for the spurious emissions seen through each restricted band were investigated to ensure they were less than or equal to the limits called by each restricted band.

The restricted band limits were adjusted to $Y \text{ dBm} [x \text{ dBm} - 10 \log(2)]$ per FCC KDB 662911D01 v02r01, ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators).

The reference level offset for screen capture(s) uses an internal transducer factor on the analyzer to correct the displayed trace based on the cable loss over frequency. The reference level offset for the additional screen capture(s) is then based on the expected attenuator value and any other losses.

Screen capture(s) Offset = "Internal" cable loss factor not shown on screen capture + Ref Lvl Offset showing expected attenuator value and any other losses

RF conducted emissions testing was performed only on one port. The Remote Radio Head (RRH) antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown during output power testing) and antenna port 3 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.

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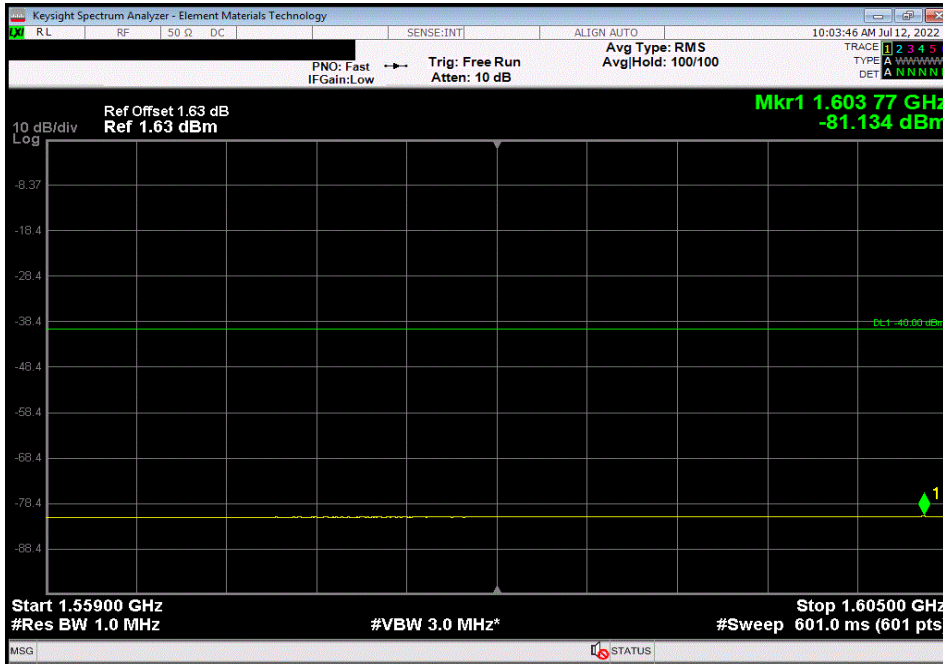
EUT: TR44KA Base Station				Work Order: MASY0006				
Serial Number: SV2146TR44KA000001				Date: 29-Jul-22				
Customer: Mavenir Systems, Inc				Temperature: 21.5 °C				
Attendees: None				Humidity: 53.7% RH				
Project: None				Barometric Pres.: 1019 mbar				
Tested by: Brandon Hobbs			Power: 48 VDC		Job Site: TX09			
TEST SPECIFICATIONS				Test Method				
FCC 25:2022				ANSI C63.26:2015				
COMMENTS								
All conducted path losses were accounted for: cables, adapters, DC block and notch filter. The PA gain was adjusted for a 3dBi antenna (Final software value of 42). FCC 20-48A1 waiver requirements were also considered within the data provided. The limit is adjusted to Y dBm [x dBm -10 log (2)] per FCC KDB 662911D01 v02r01, ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators). Finding the rising limit Amplitude: = Starting Amplitude(Y1) - (ΔY) / (LOG10(Upper freq(X2)/Lower Freq(X1))) * (LOG10(Freq of interest(X)/Lower Freq(X1))). The single worst case Resource Block / Offset configuration was used for each bandwidth.								
DEVIATIONS FROM TEST STANDARD								
None								
Configuration #	2	Signature 						
		Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
5G NR, Band n24, SCS 15kHz								
5 MHz Bandwidth								
QPSK Modulation								
Low Channel 1528.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1603.77	-81.1	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.07	-81.2	-40	3	-43.3	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1544.03	-80.7	-55	3	-58.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1608.56	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1645.80	-81.4	-55	3	-58.0	Pass
High Channel 1533.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1605.00	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.05	-81.2	-40	3	-43.3	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.73	-80.7	-30	3	-33.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.83	-81.2	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1645.33	-81.0	-55	3	-58.0	Pass
16-QAM Modulation								
Low Channel 1528.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1602.24	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.04	-81.2	-40	3	-43.2	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.82	-80.7	-55	3	-58.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.66	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1649.73	-81.4	-55	3	-58.0	Pass
High Channel 1533.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1604.23	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.08	-81.2	-40	3	-43.4	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.70	-80.7	40	3	37.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.07	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1645.67	-81.0	-55	3	-58.0	Pass
64-QAM Modulation								
Low Channel 1528.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1604.16	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.03	-81.2	-40	3	-43.2	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.70	-80.7	-55	3	-58.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.75	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1648.20	-81.4	-55	3	-58.0	Pass
High Channel 1533.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1605.00	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.02	-81.2	-40	3	-43.1	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.73	-80.7	40	3	37.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1608.73	-81.2	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1642.80	-81.0	-55	3	-58.0	Pass
256-QAM Modulation								
Low Channel 1528.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1604.85	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.03	-81.2	-40	3	-43.2	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.61	-80.7	-55	3	-58.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.15	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1649.93	-81.4	-55	3	-58.0	Pass
High Channel 1533.5 MHz								
	25 RB/O Offset	1559 MHz - 1605 MHz	1604.54	-81.2	-40	3	-43.0	Pass
	25 RB/O Offset	1605 MHz - 1610 MHz	1605.04	-81.2	-40	3	-43.2	Pass
	25 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.76	-80.7	40	3	37.0	Pass
	25 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.32	-81.1	-70	3	-73.0	Pass
	25 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1647.47	-81.4	-55	3	-58.0	Pass
10 MHz Bandwidth								
QPSK Modulation								
Mid Channel 1531 MHz								
	52 RB/O Offset	1559 MHz - 1605 MHz	1604.77	-81.2	-40	3	-43.0	Pass
	52 RB/O Offset	1605 MHz - 1610 MHz	1605.02	-81.2	-40	3	-43.1	Pass
	52 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1543.70	-80.4	-55	3	-58.0	Pass
	52 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.24	-81.1	-70	3	-73.0	Pass
	52 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1647.67	-81.4	-55	3	-58.0	Pass
16-QAM Modulation								
Mid Channel 1531 MHz								
	52 RB/O Offset	1559 MHz - 1605 MHz	1602.55	-81.2	-40	3	-43.0	Pass
	52 RB/O Offset	1605 MHz - 1610 MHz	1605.02	-81.2	-40	3	-43.1	Pass
	52 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1541.00	-80.1	40	3	37.0	Pass
	52 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1609.58	-81.1	-70	3	-73.0	Pass
	52 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1645.40	-81.4	-55	3	-58.0	Pass
64-QAM Modulation								
Mid Channel 1531 MHz								
	52 RB/O Offset	1559 MHz - 1605 MHz	1604.92	-81.2	-40	3	-43.0	Pass
	52 RB/O Offset	1605 MHz - 1610 MHz	1605.02	-81.2	-40	3	-43.1	Pass
	52 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1541.00	-80.0	-55	3	-58.0	Pass
	52 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1607.11	-81.1	-70	3	-73.0	Pass
	52 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1644.40	-81.4	-55	3	-58.0	Pass
256-QAM Modulation								
Mid Channel 1531 MHz								
	52 RB/O Offset	1559 MHz - 1605 MHz	1604.85	-81.2	-40	3	-43.0	Pass
	52 RB/O Offset	1605 MHz - 1610 MHz	1605.02	-81.2	-40	3	-43.1	Pass
	52 RB/O Offset for Waiver	1541 MHz - 1559 MHz	1541.00	-79.7	40	3	37.0	Pass
	52 RB/O Offset for Waiver	1559 MHz - 1610 MHz	1608.22	-81.1	-70	3	-73.0	Pass
	52 RB/O Offset for Waiver	1610 MHz - 1650 MHz	1646.73	-81.4	-55	3	-58.0	Pass

SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

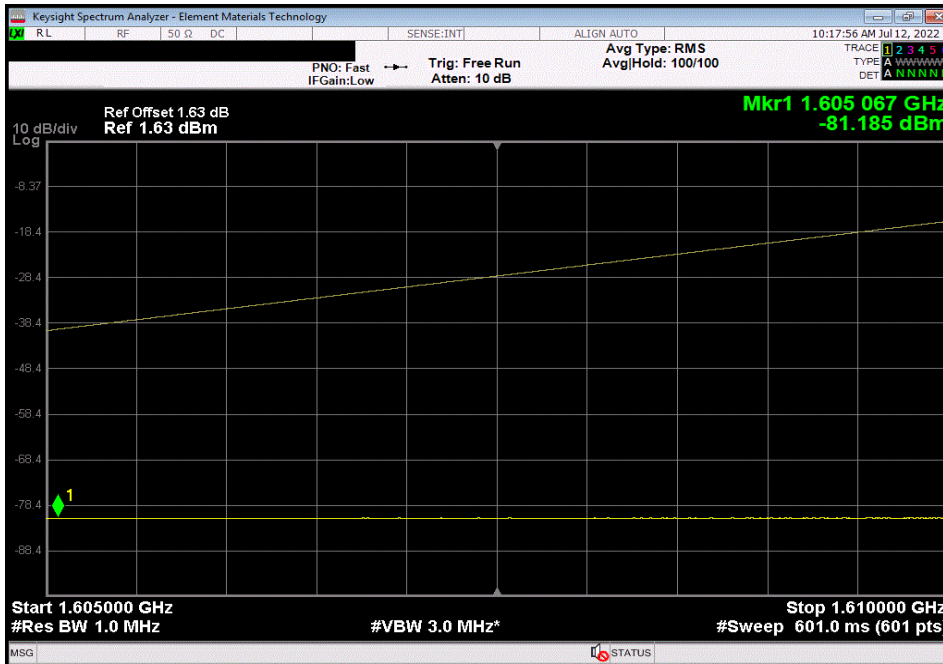


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1603.77	-81.13	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.07	-81.19	-40	3.0	-43.3	Pass

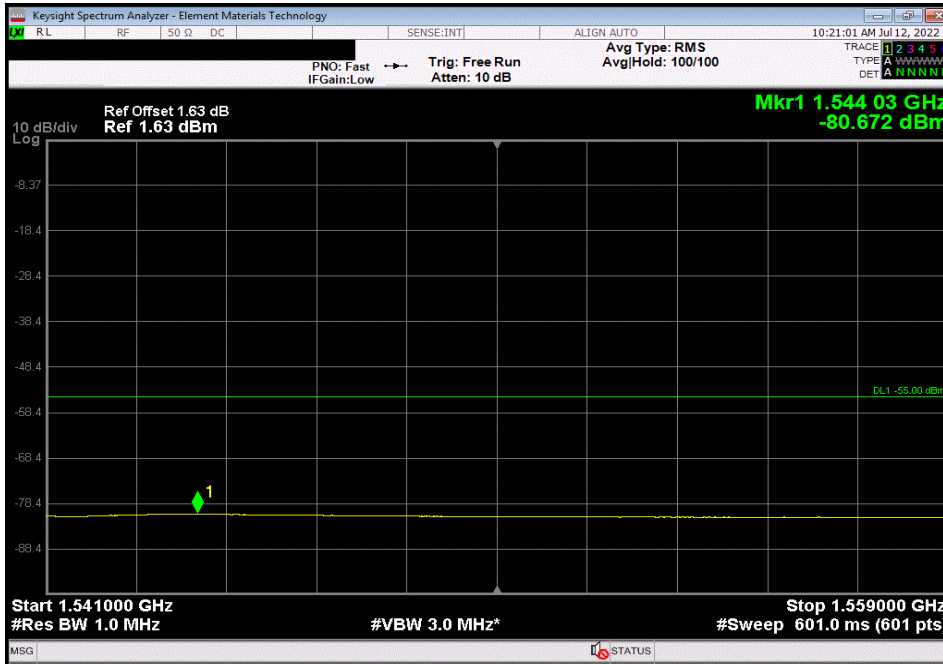


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

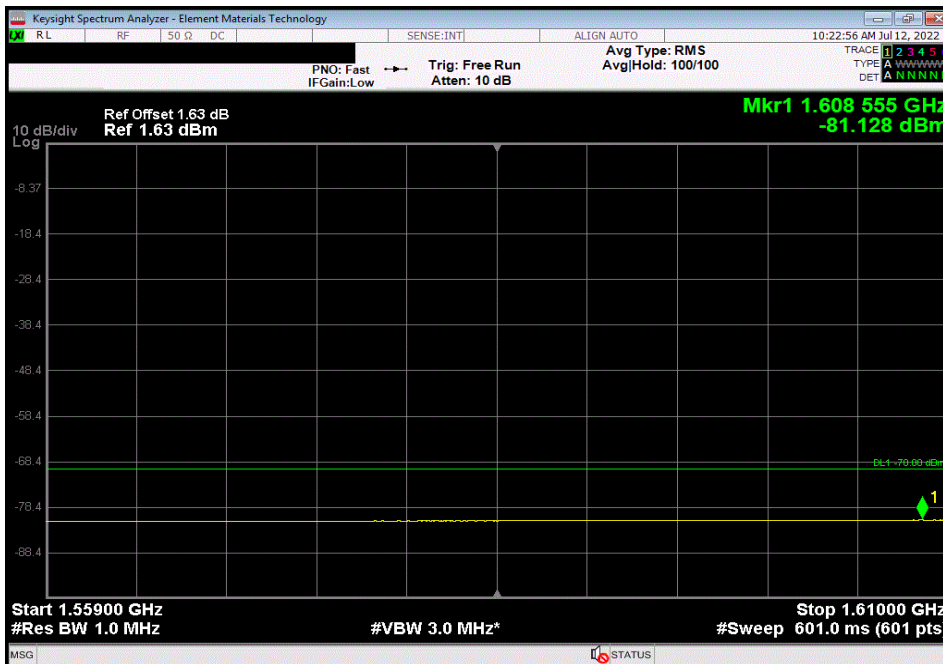


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver							
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result	
1541 MHz - 1559 MHz	1544.03	-80.67	-55	3.0	-58.0	Pass	



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver							
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result	
1559 MHz - 1610 MHz	1608.56	-81.13	-70	3.0	-73.0	Pass	

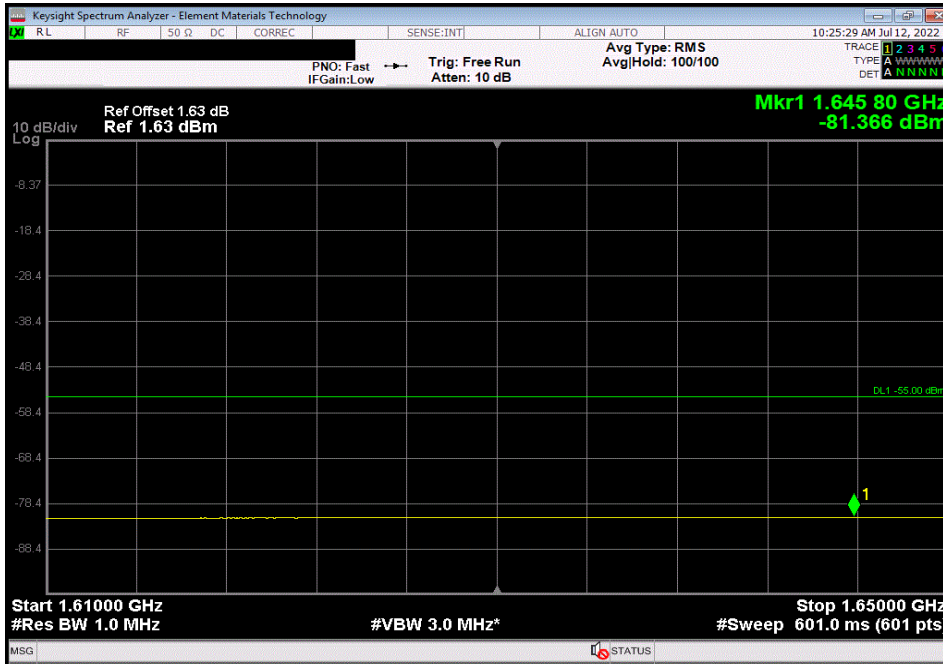


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

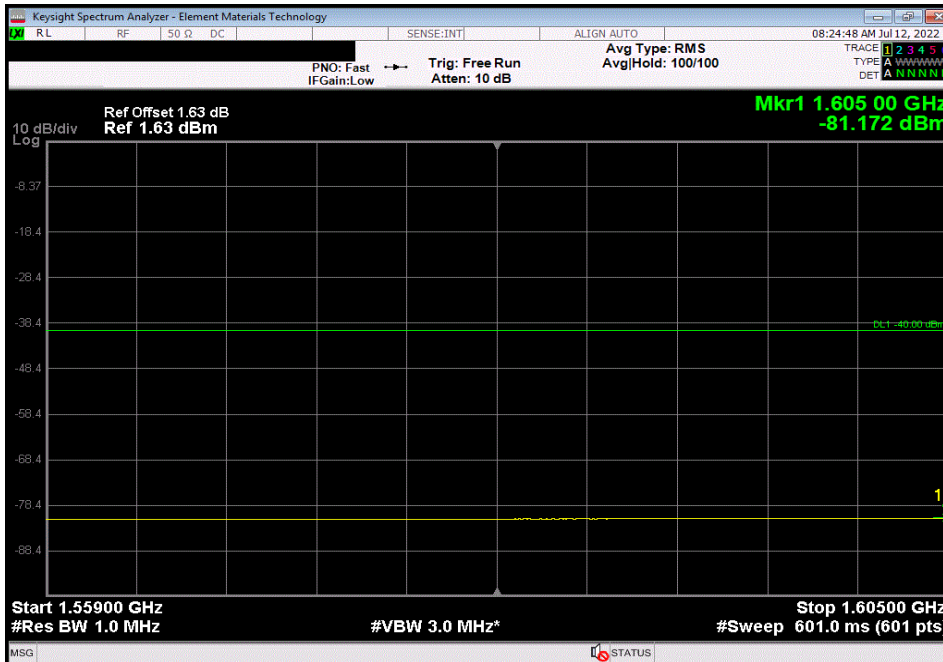


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1645.8	-81.37	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1605	-81.17	-40	3.0	-43.0	Pass

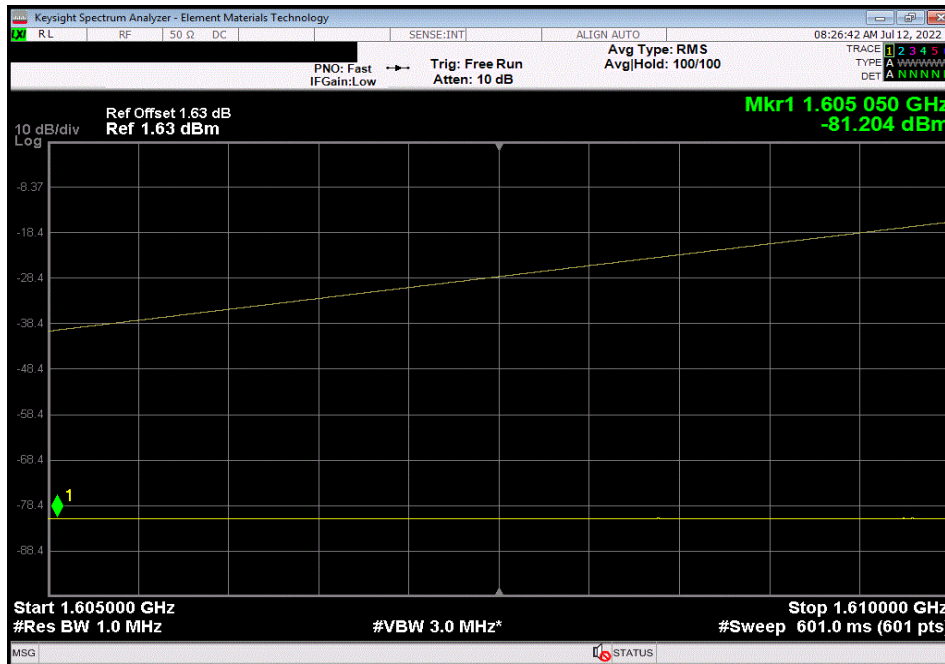


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

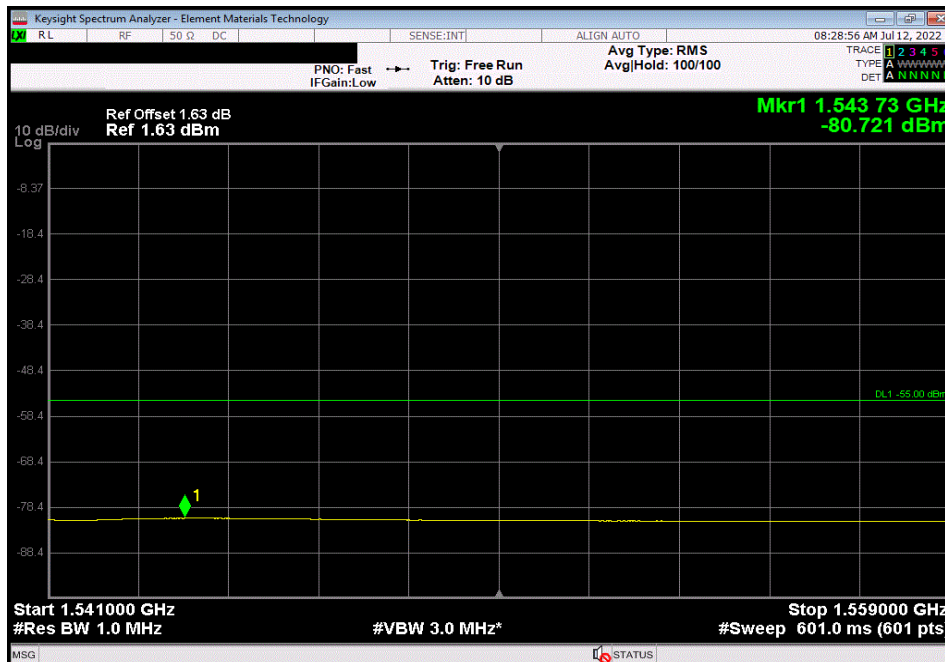


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.05	-81.2	-40	3.0	-43.3	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.73	-80.72	-30	3.0	-33.0	Pass

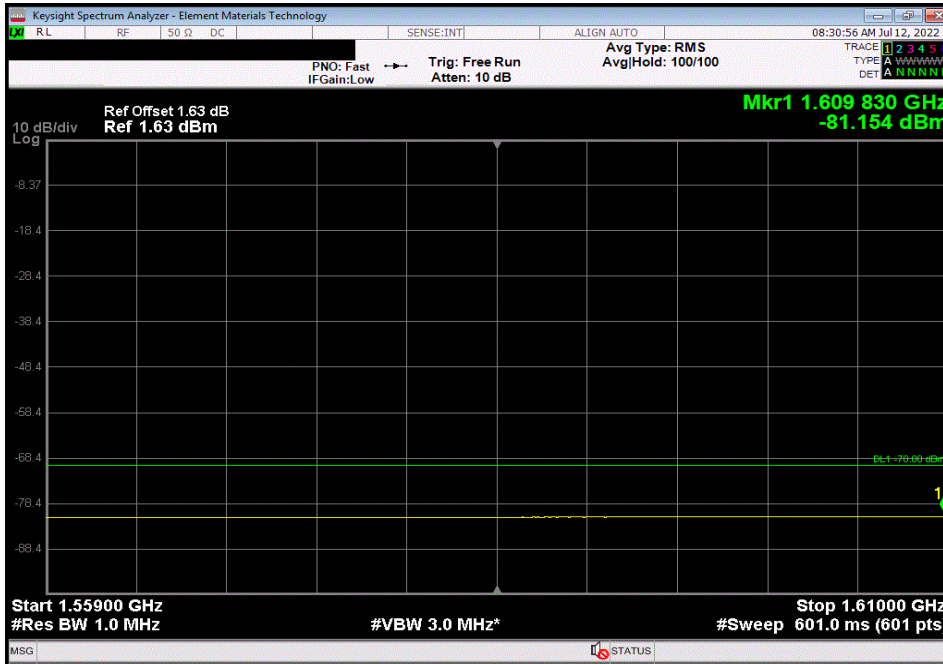


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

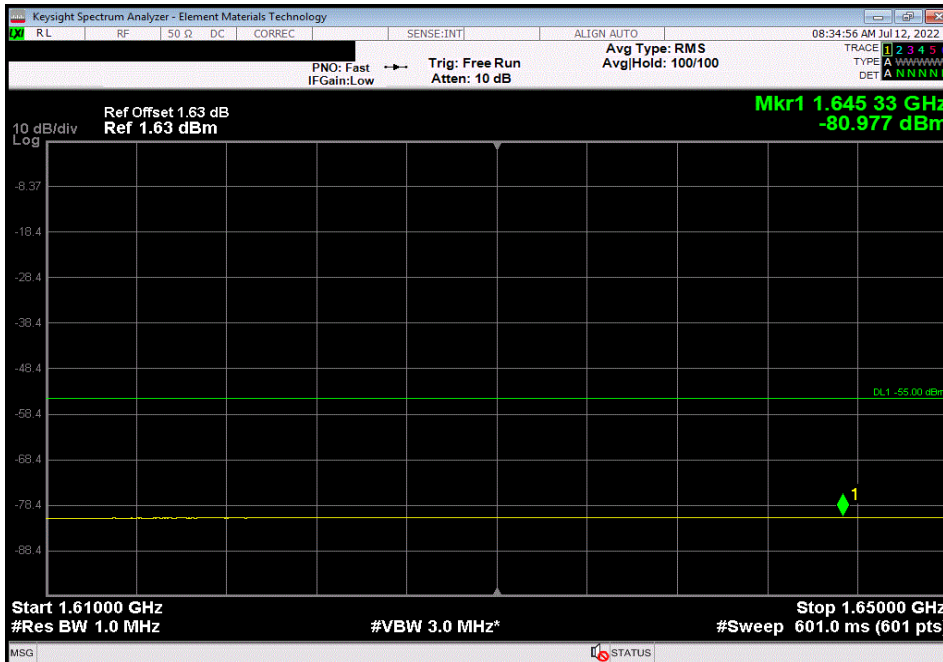


TMTx 2022.05.02.0 XMM 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.83	-81.15	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, QPSK Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1645.33	-80.98	-55	3.0	-58.0	Pass

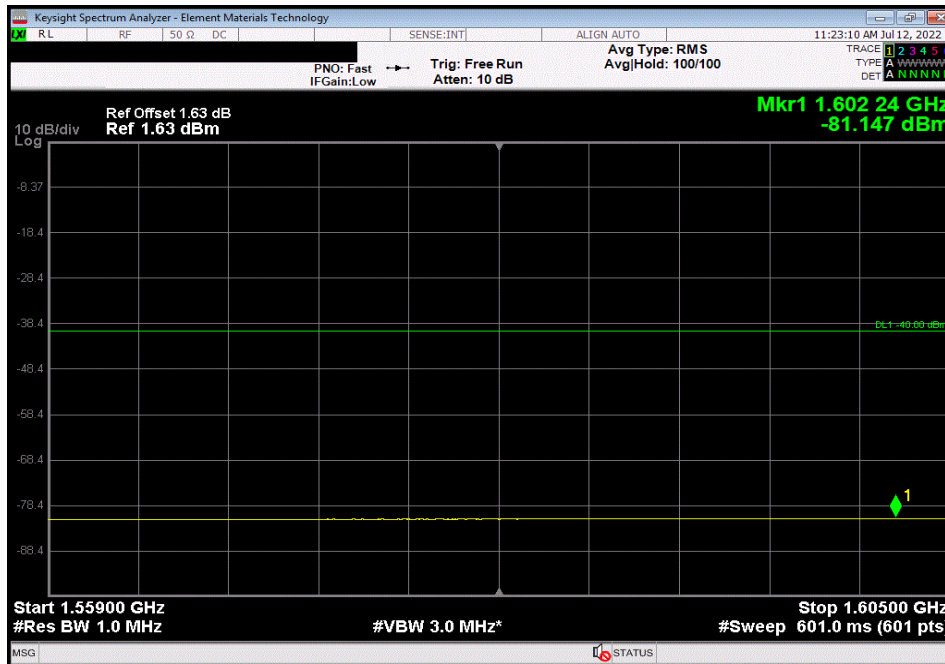


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

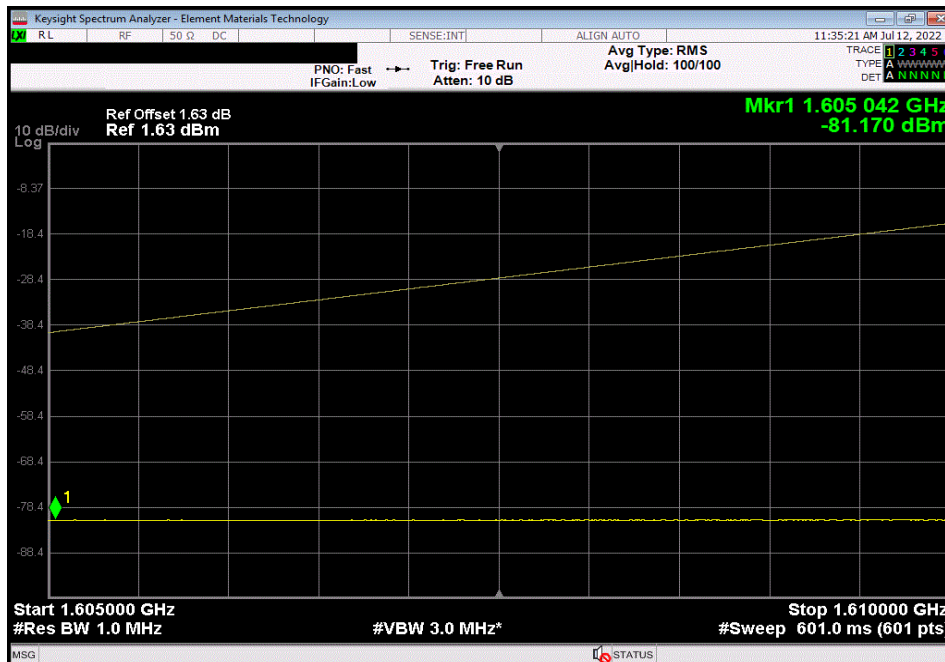


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1602.24	-81.15	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.04	-81.17	-40	3.0	-43.2	Pass

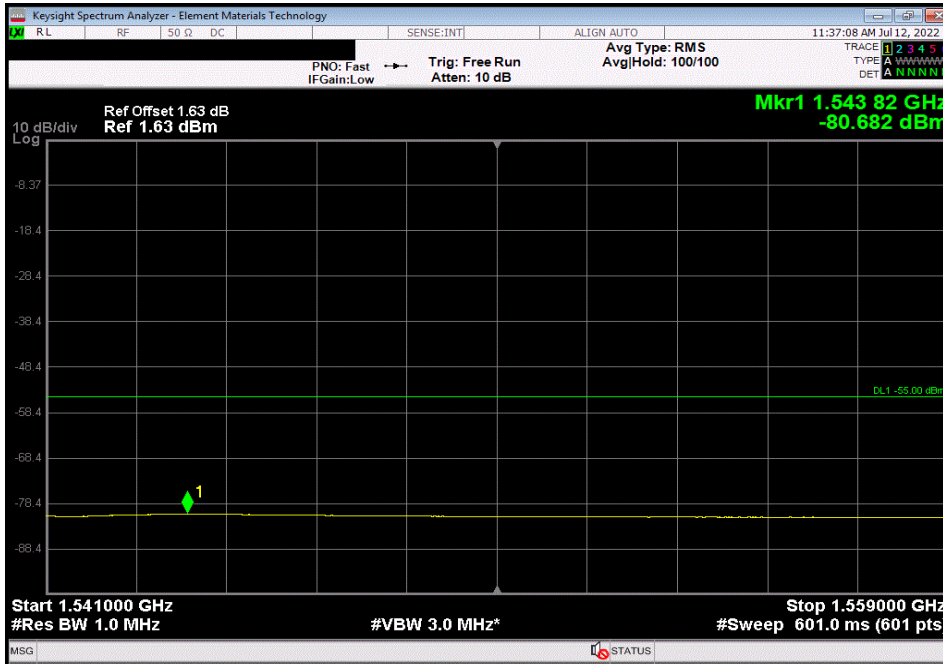


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

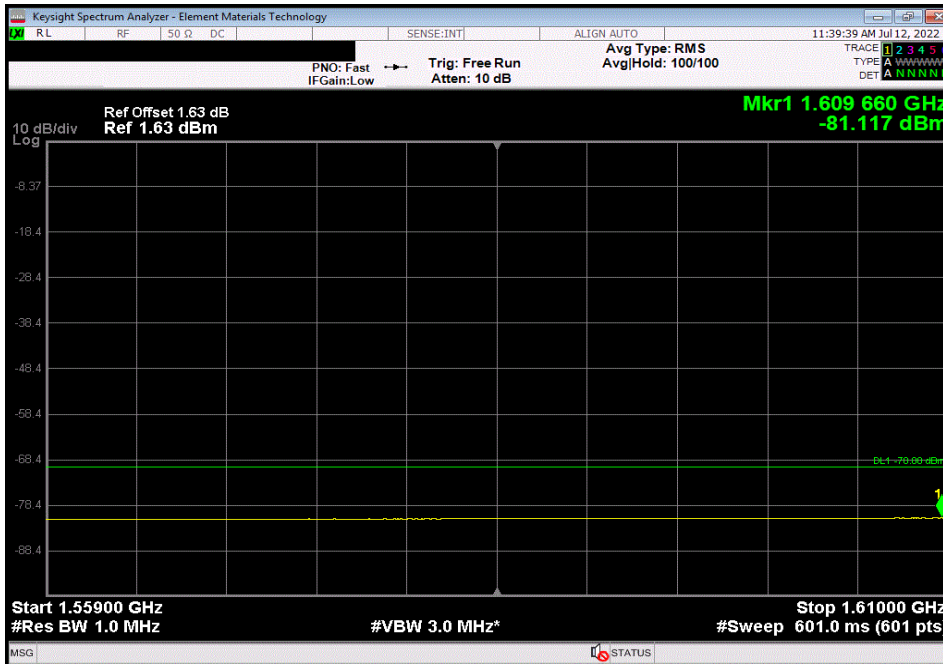


TWTx 2022.05.02.0 XMM 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.82	-80.68	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.66	-81.12	-70.0	3.0	-73.0	Pass

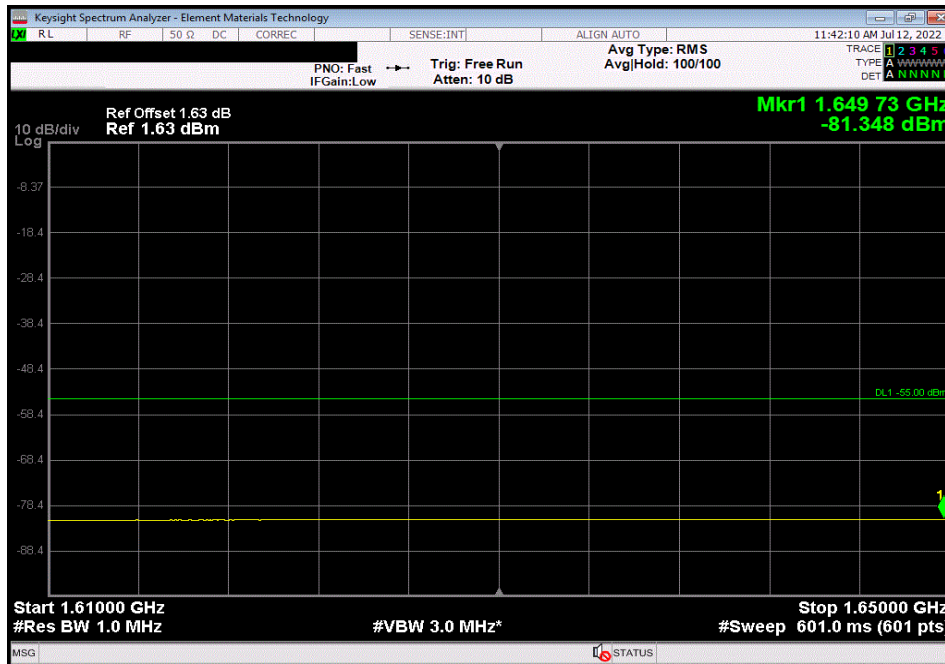


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

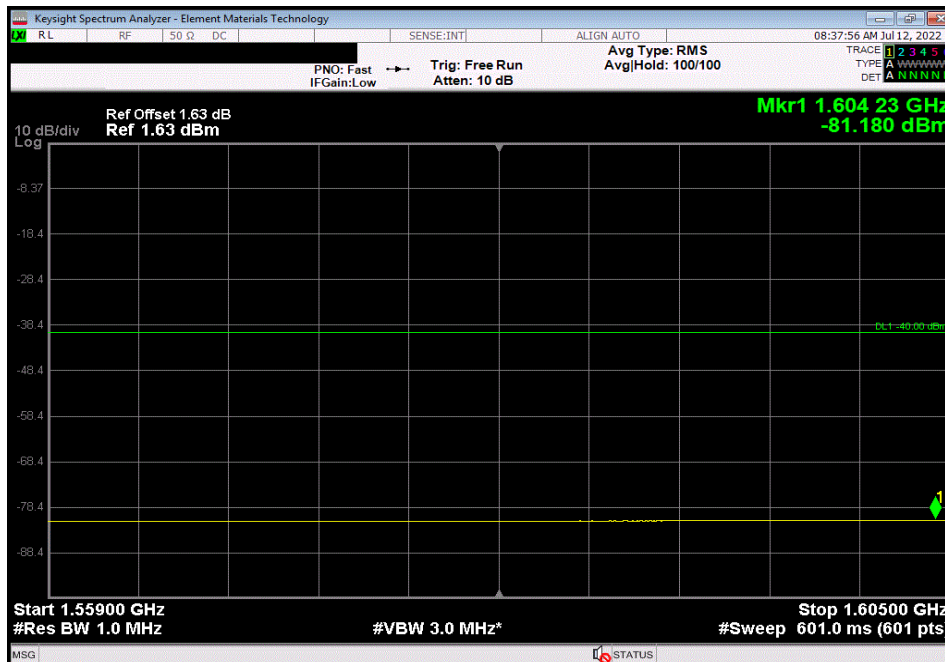


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1649.73	-81.35	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.23	-81.18	-40.0	3.0	-43.0	Pass

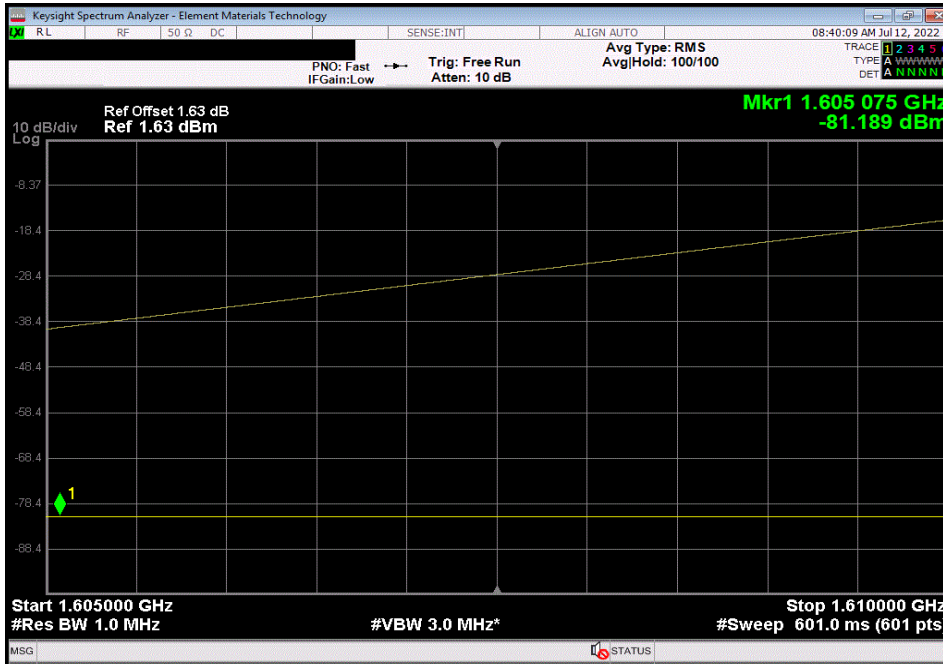


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

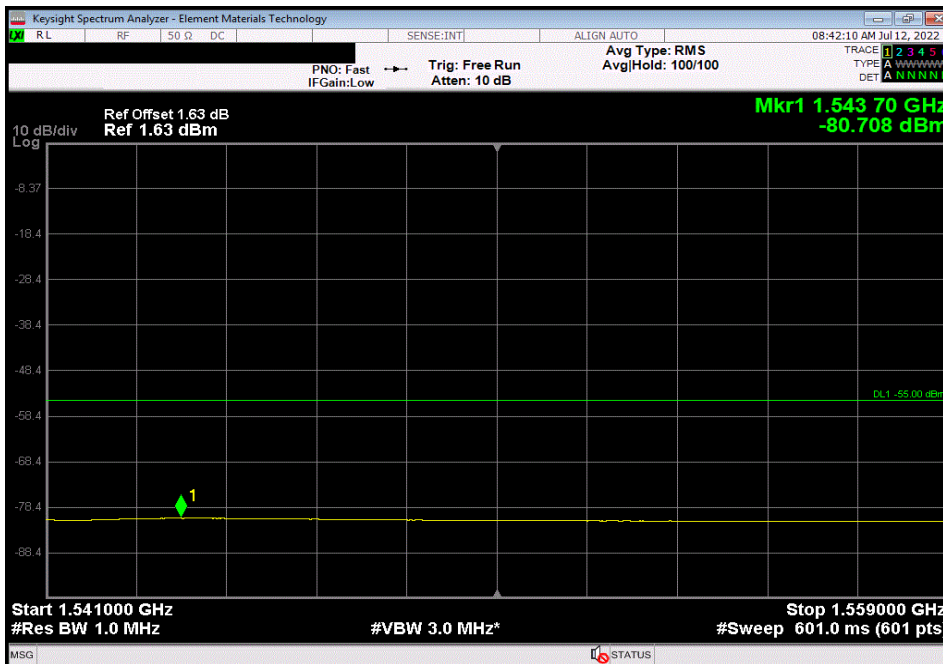


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.08	-81.19	-40	3.0	-43.4	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.7	-80.71	40.0	3.0	37.0	Pass

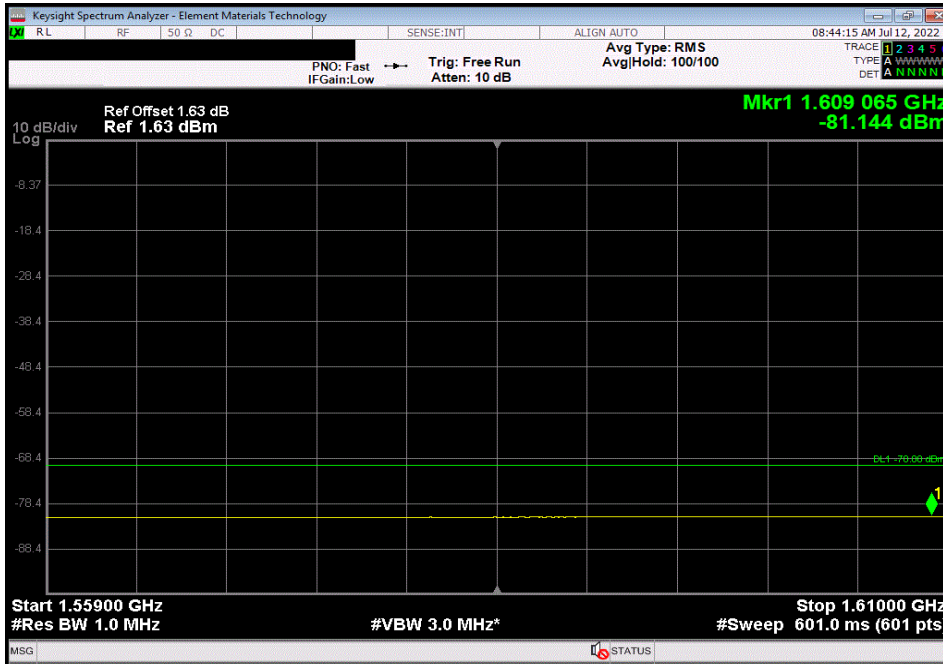


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

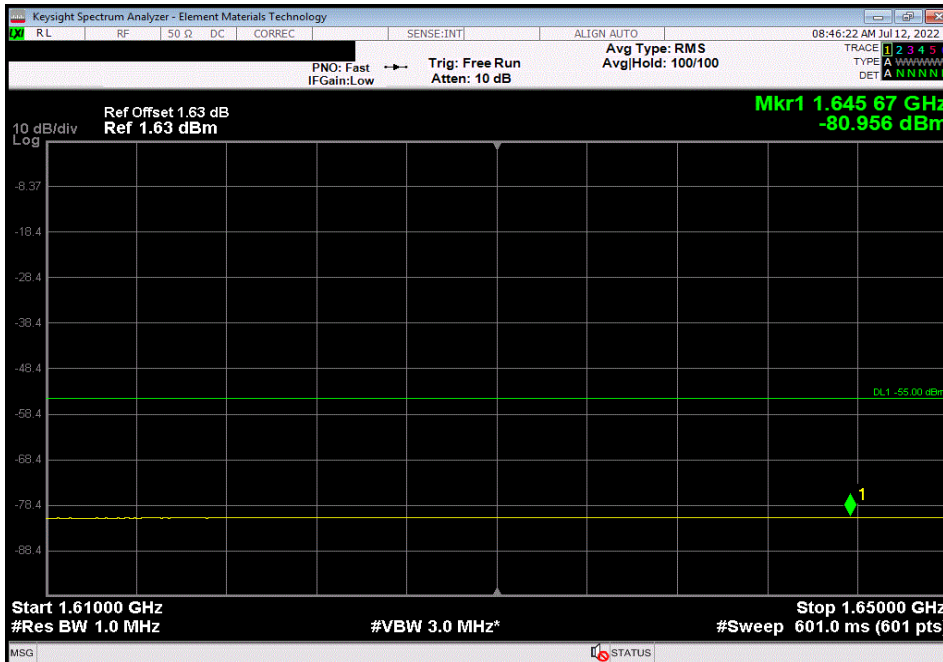


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.07	-81.14	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1645.67	-80.96	-55.0	3.0	-58.0	Pass

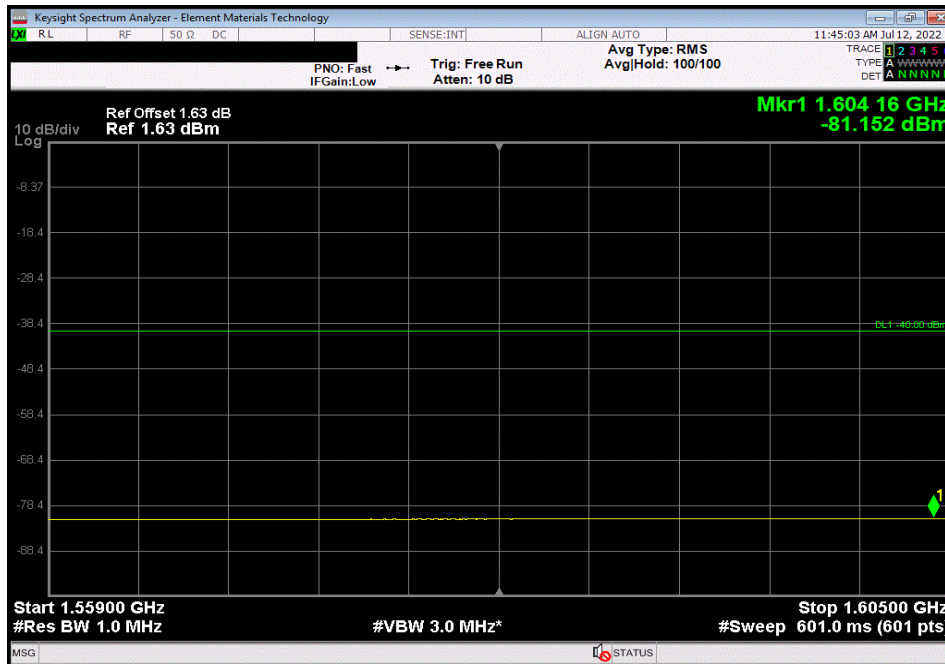


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

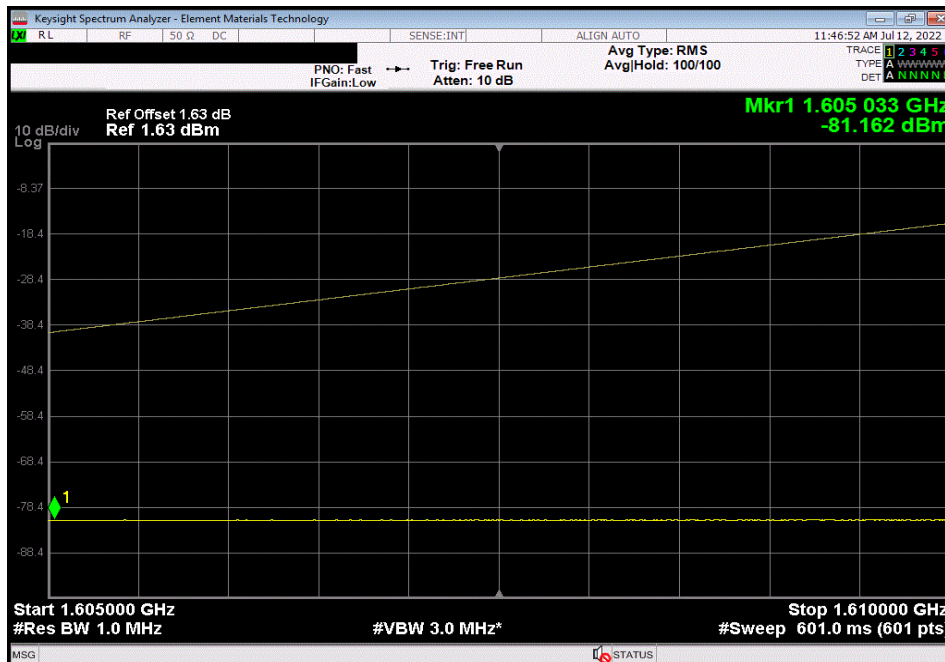


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.16	-81.15	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.03	-81.16	-40	3.0	-43.2	Pass

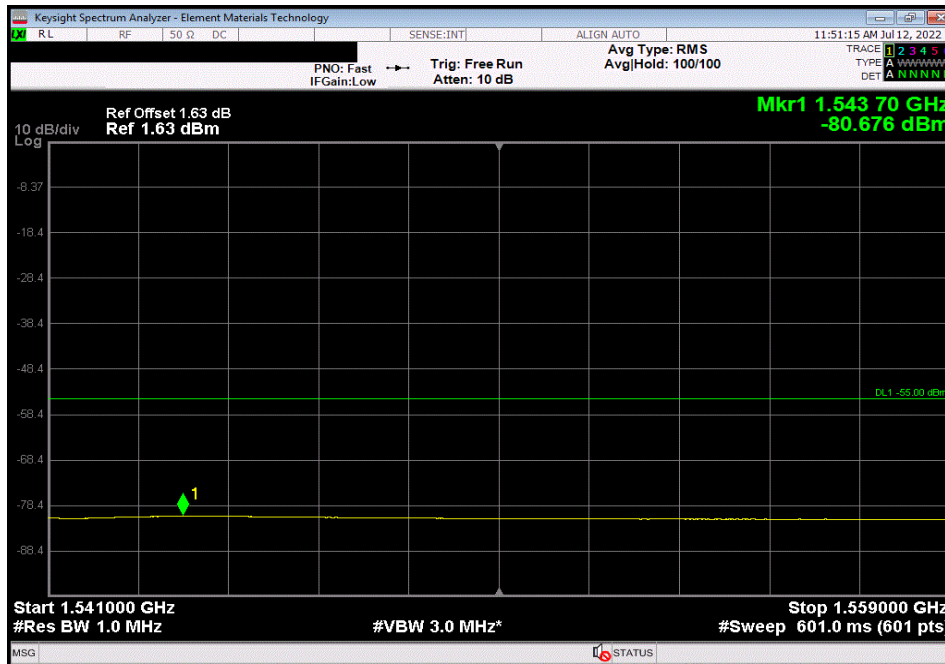


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

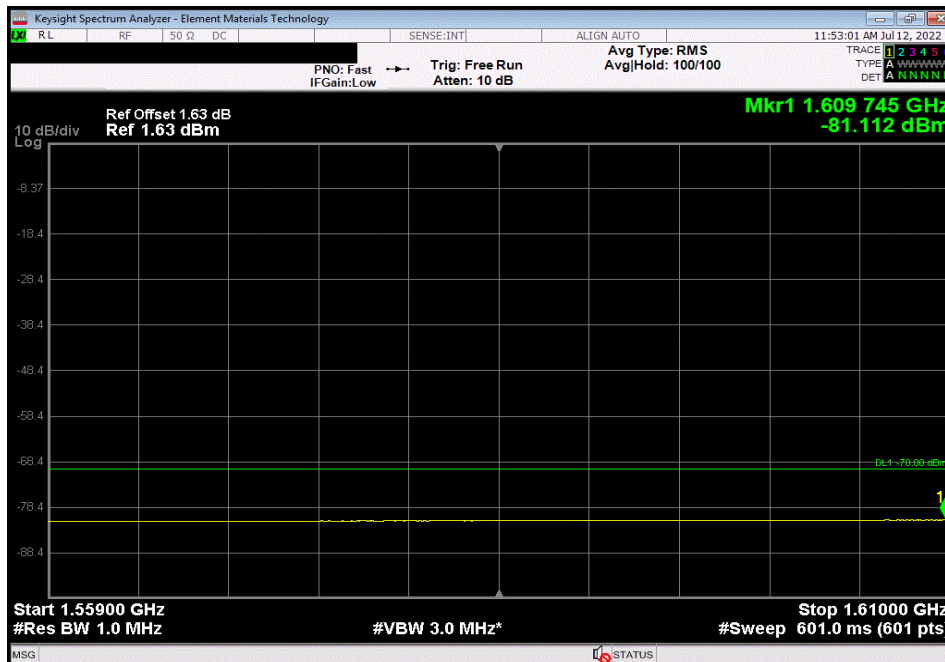


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.7	-80.68	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.75	-81.11	-70.0	3.0	-73.0	Pass

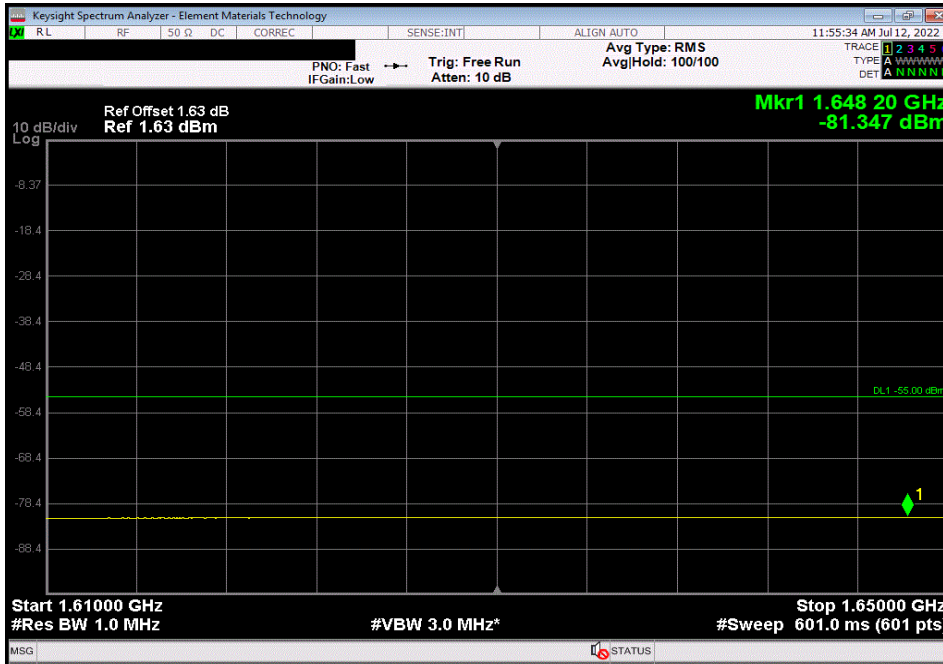


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

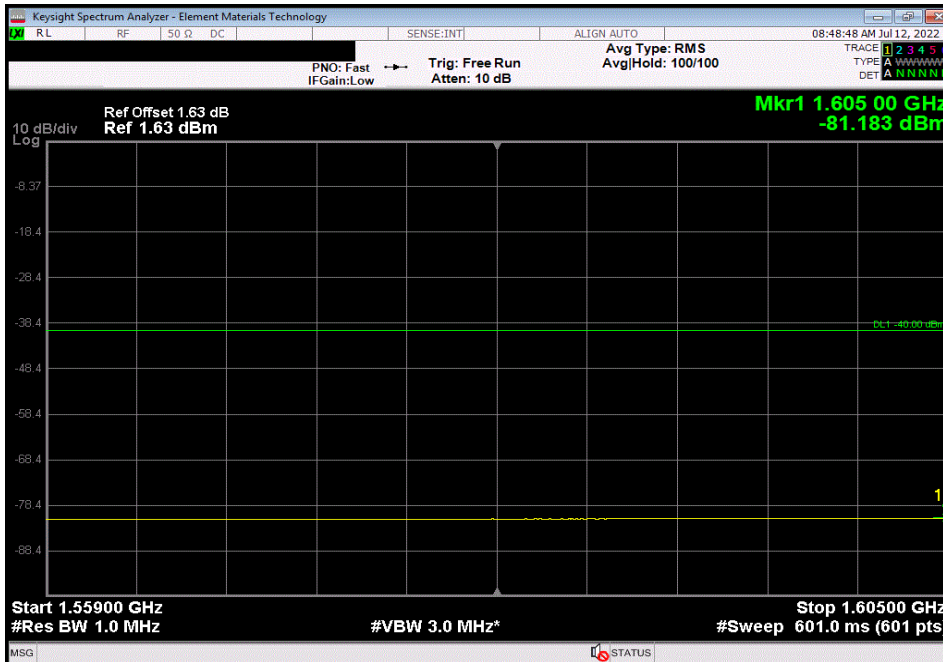


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1648.2	-81.35	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1605	-81.18	-40.0	3.0	-43.0	Pass

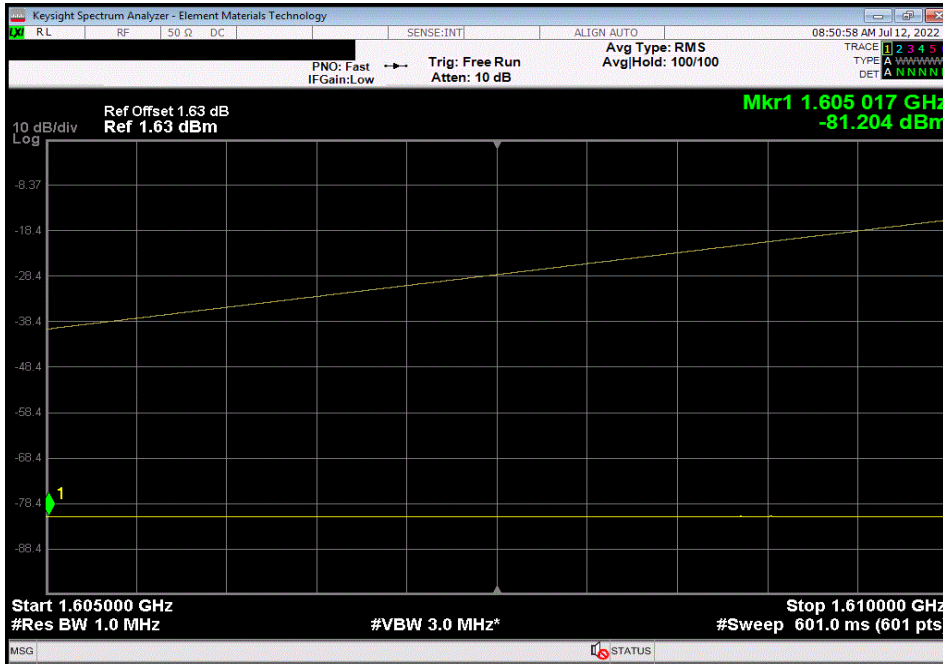


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

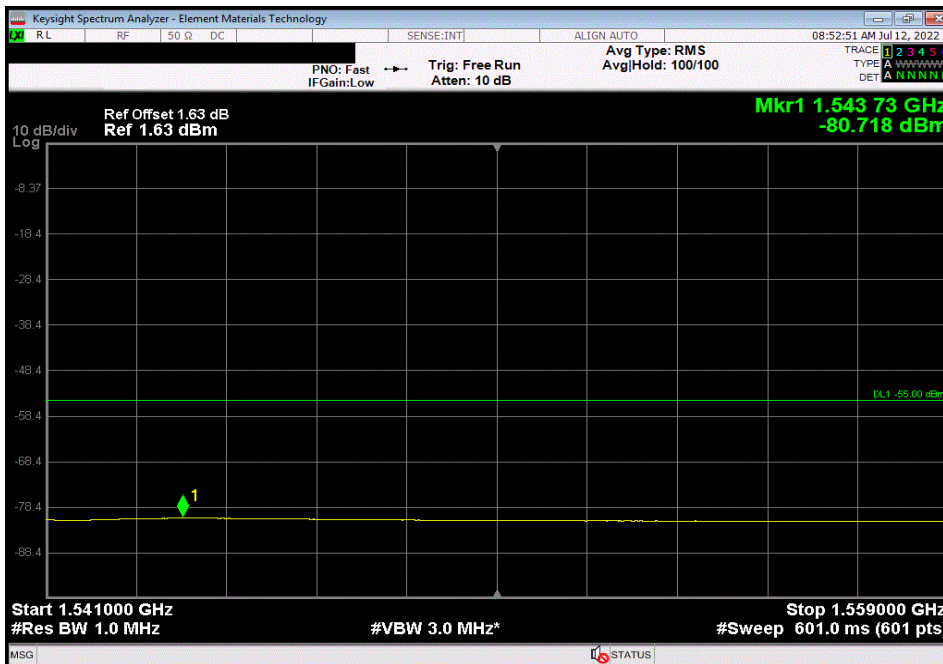


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.02	-81.2	-40	3.0	-43.1	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.73	-80.72	40.0	3.0	37.0	Pass

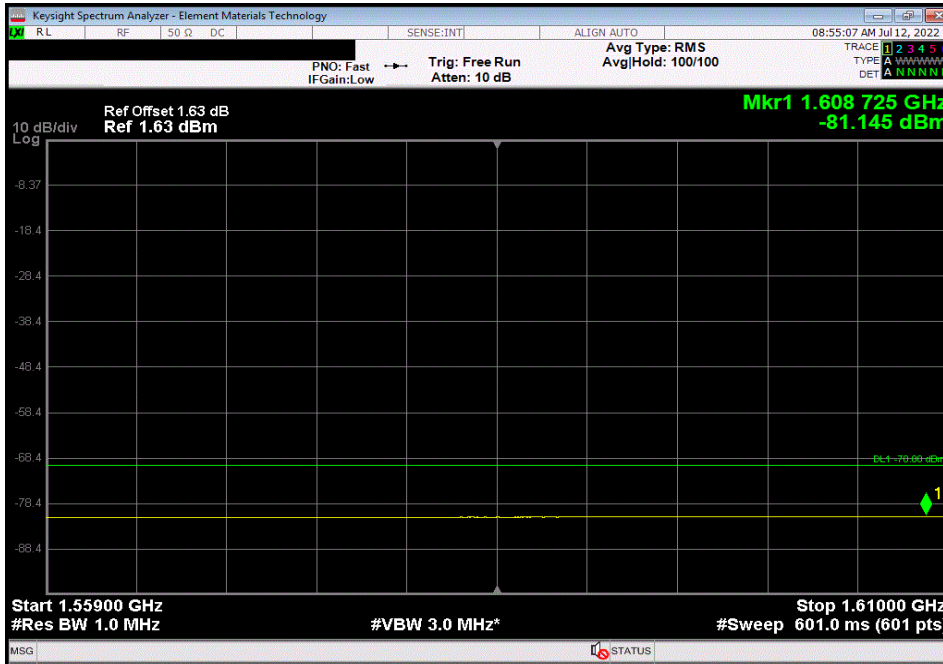


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

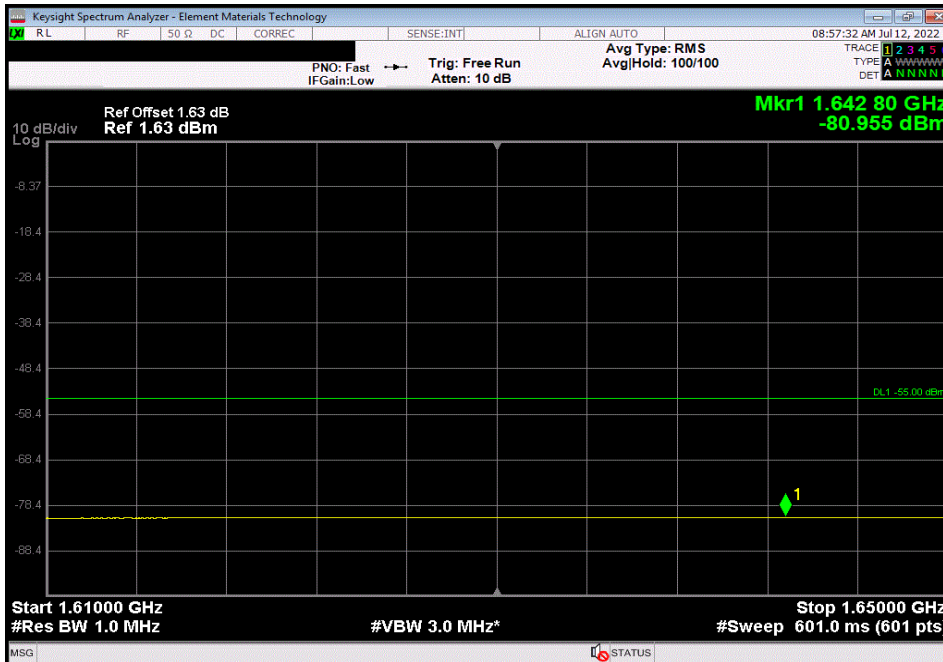


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1608.73	-81.15	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 64-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1642.8	-80.96	-55.0	3.0	-58.0	Pass

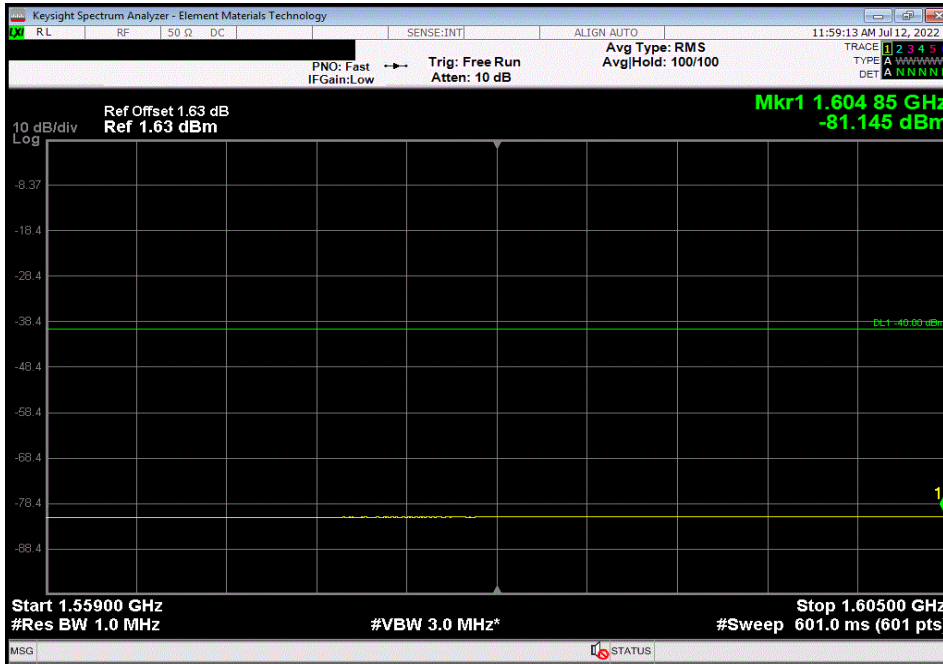


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

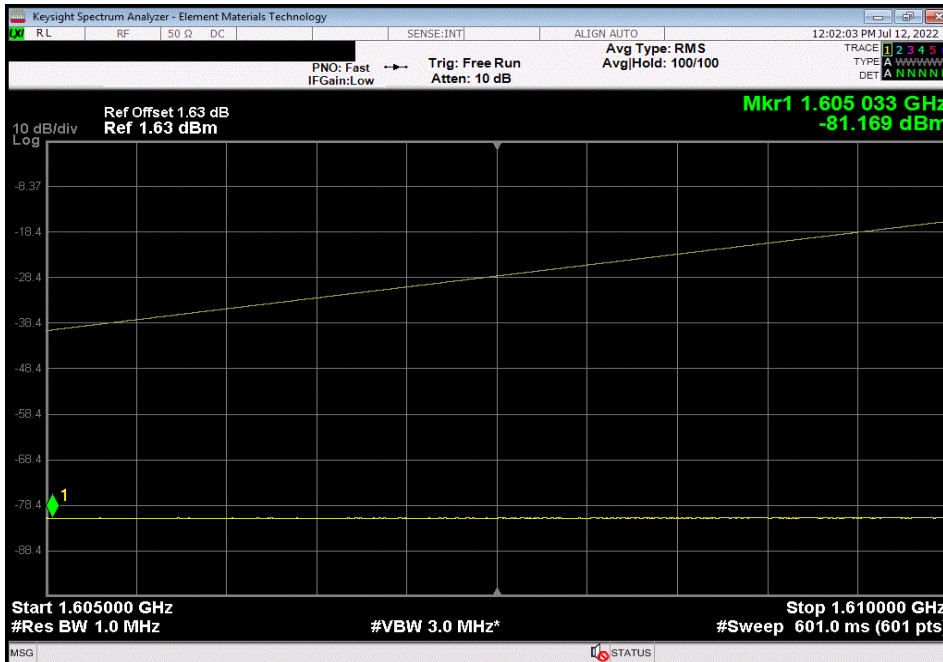


TWTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.85	-81.15	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.03	-81.17	-40	3.0	-43.2	Pass

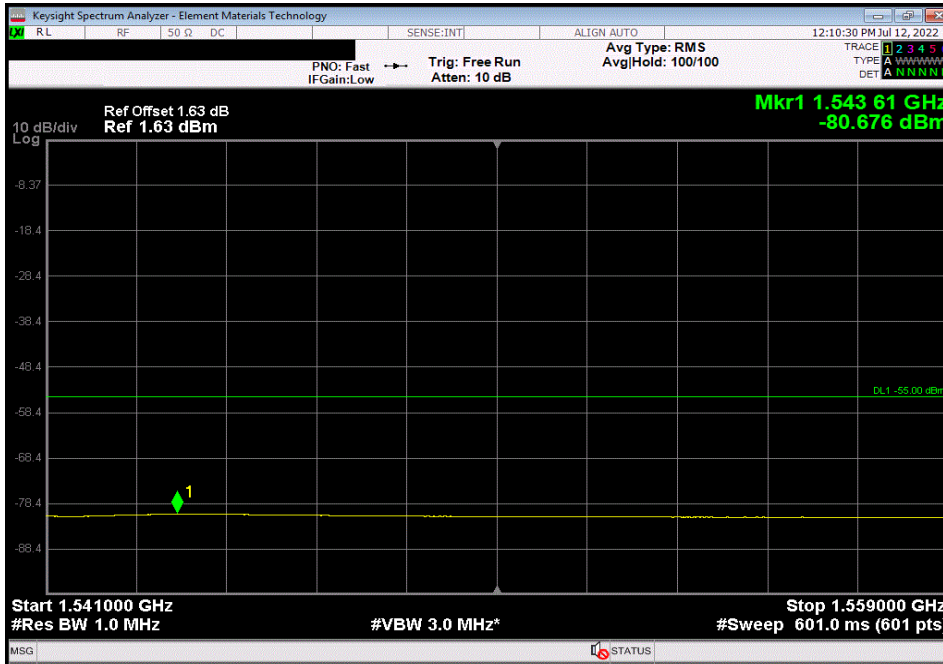


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

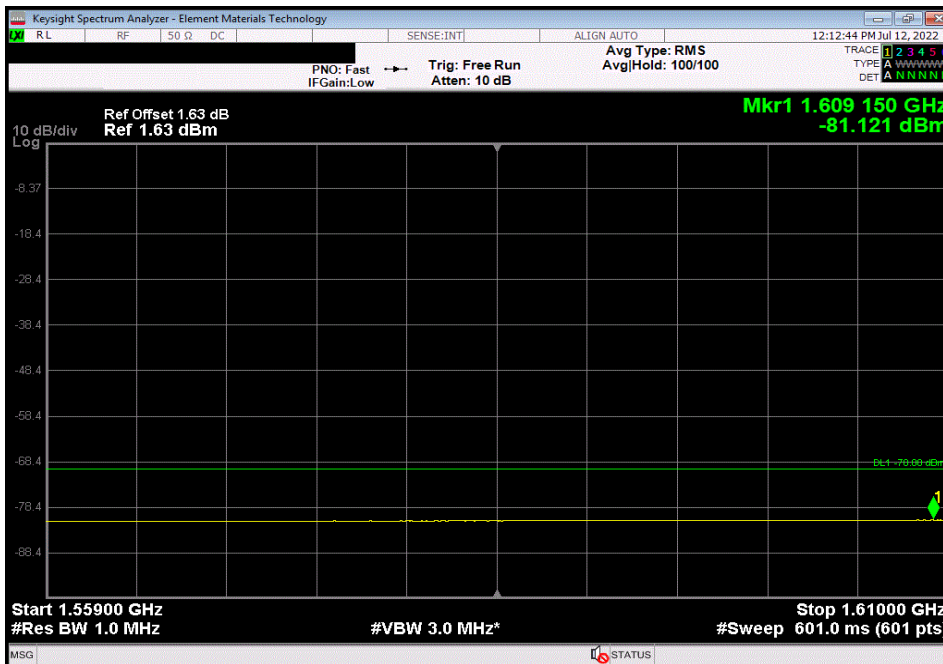


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.61	-80.68	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.15	-81.12	-70.0	3.0	-73.0	Pass

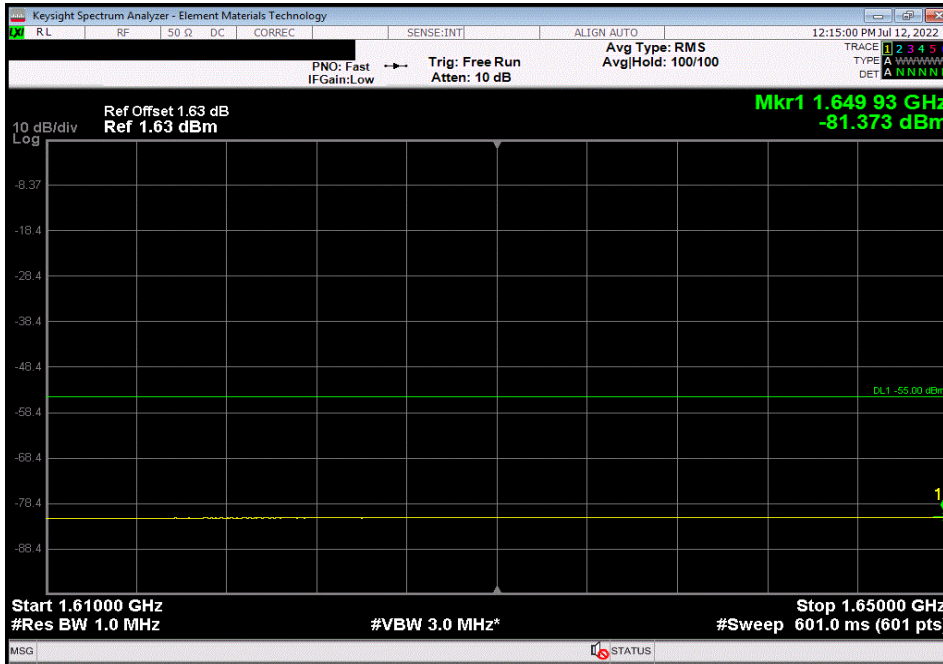


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

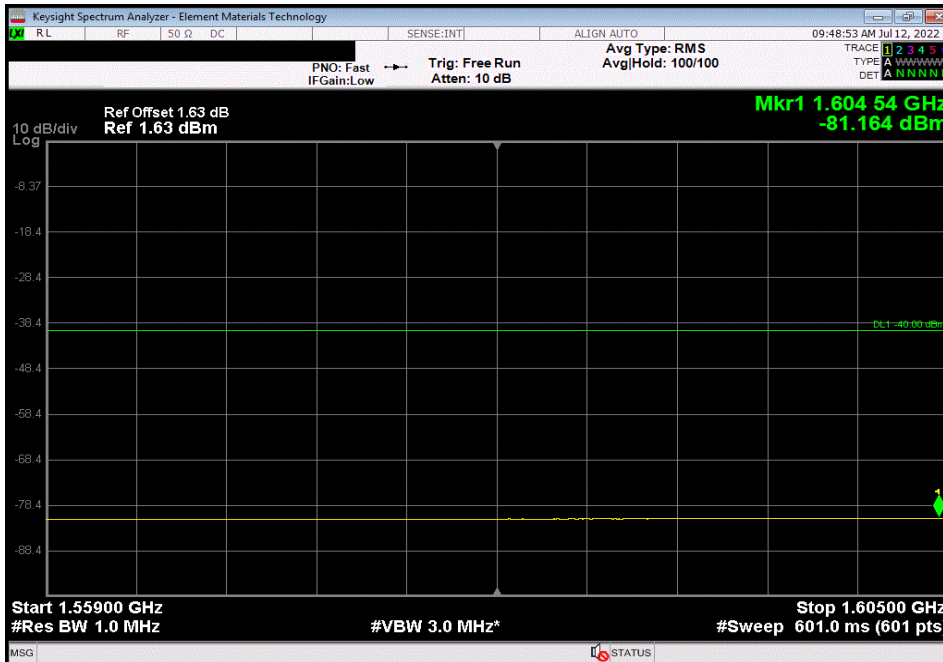


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Channel 1528.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1649.93	-81.37	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.54	-81.16	-40.0	3.0	-43.0	Pass

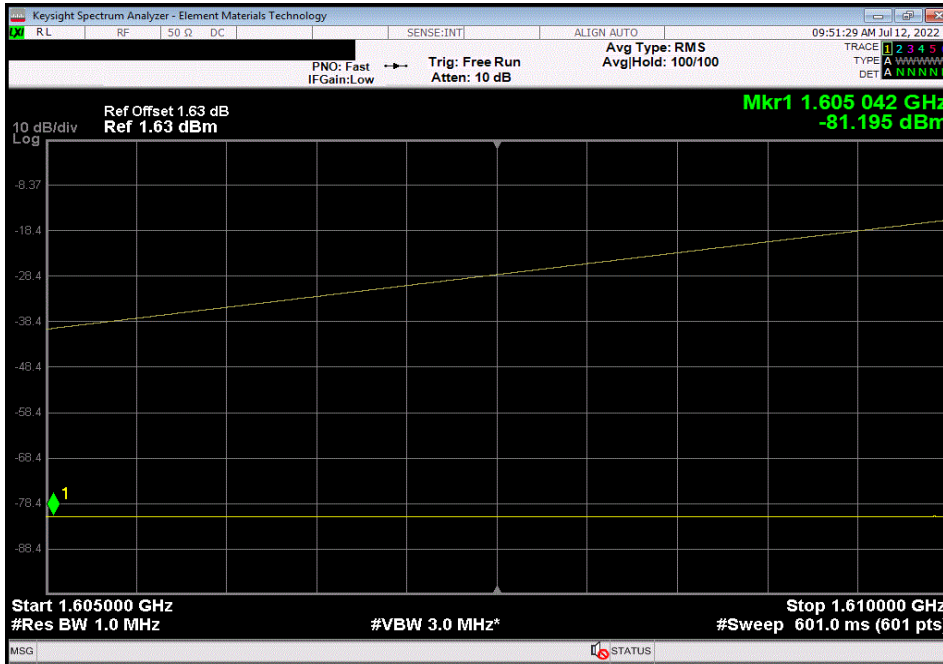


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

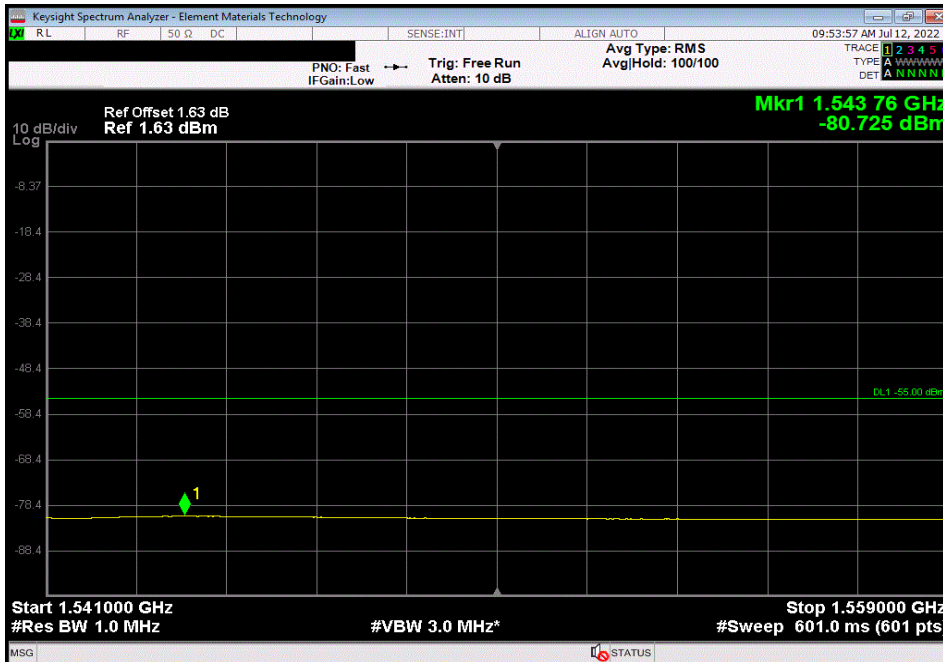


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.04	-81.2	-40	3.0	-43.2	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.76	-80.73	40.0	3.0	37.0	Pass

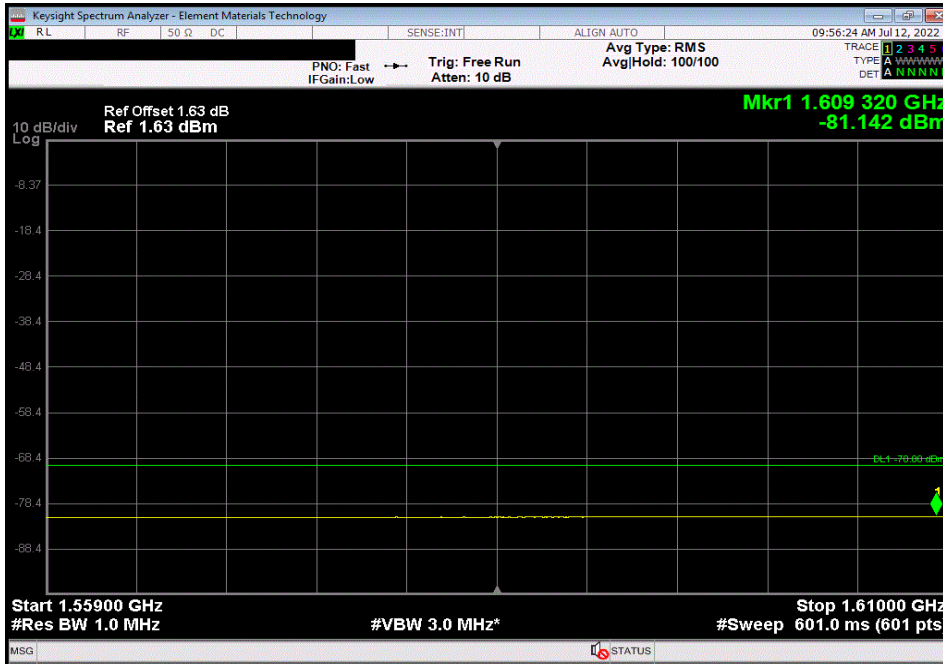


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

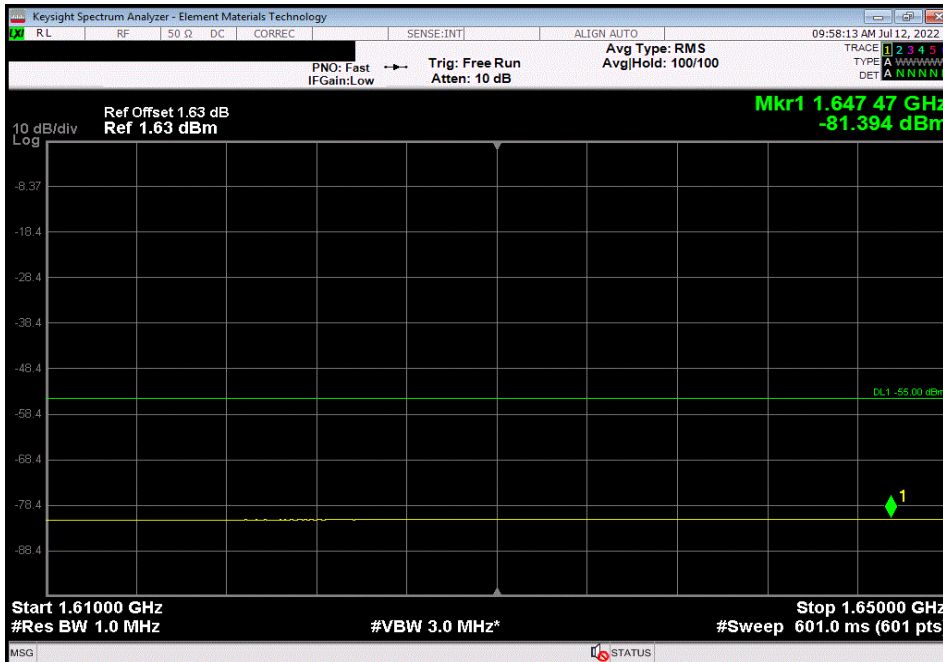


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.32	-81.14	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1647.47	-81.39	-55.0	3.0	-58.0	Pass

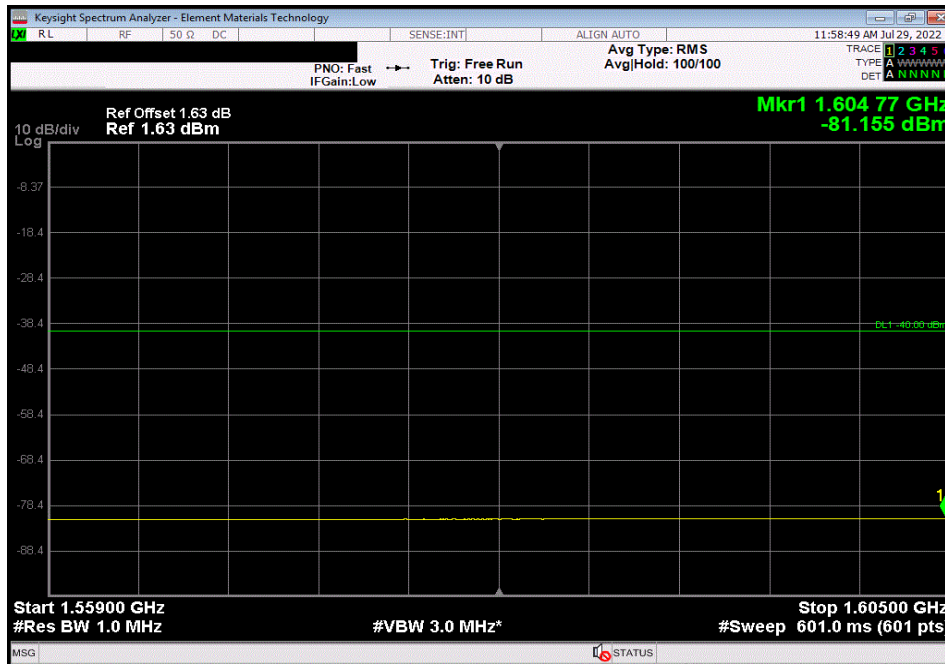


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

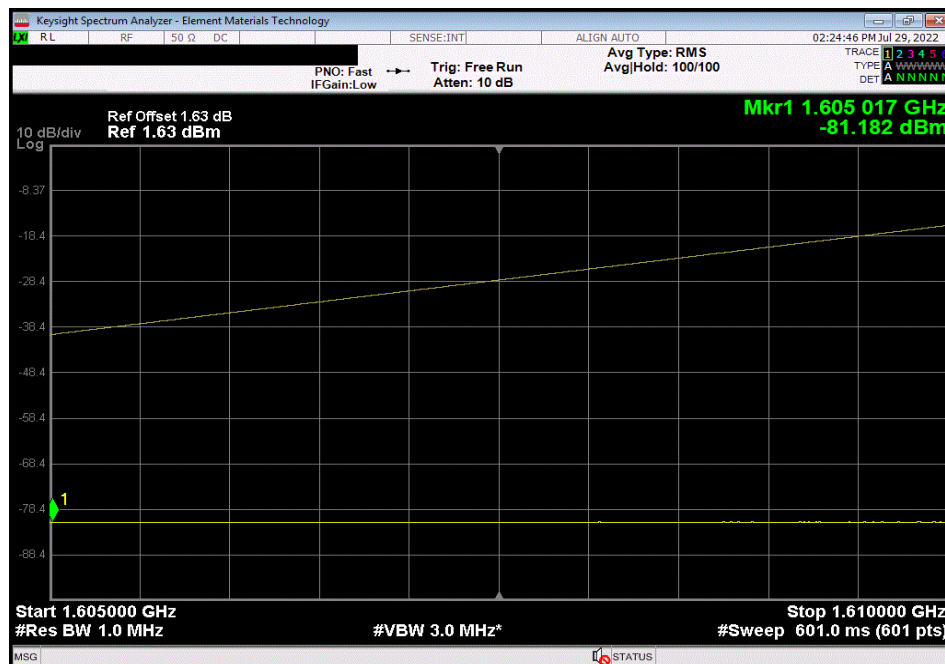


TWTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 52 RB/O Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.77	-81.16	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 52 RB/O Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.017	-81.182	-40	3.0	-43.1	Pass

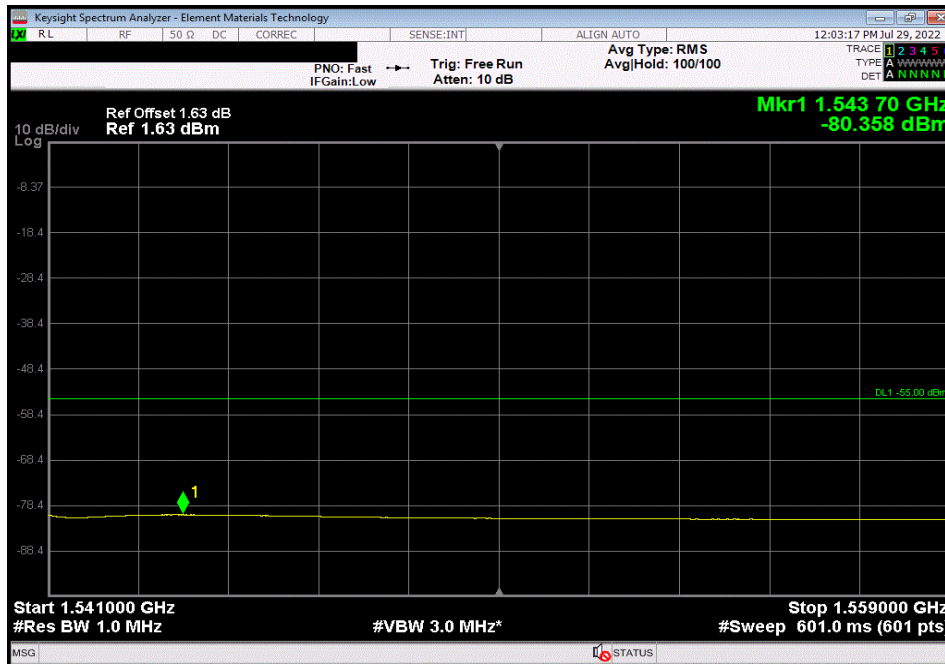


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

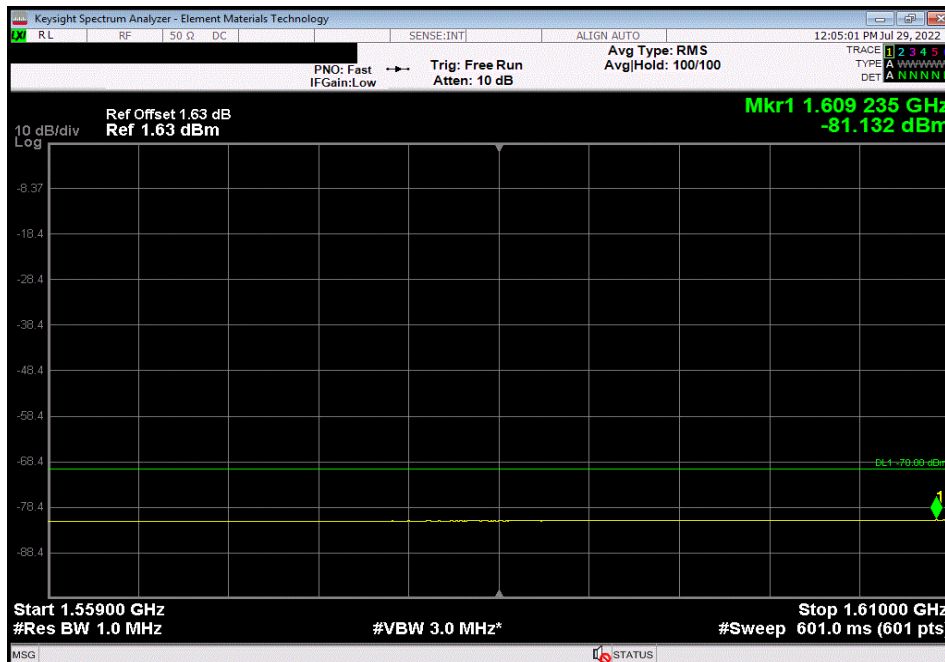


TMTx 2022.05.02.0 XMM 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1543.7	-80.36	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.24	-81.13	-70.0	3.0	-73.0	Pass

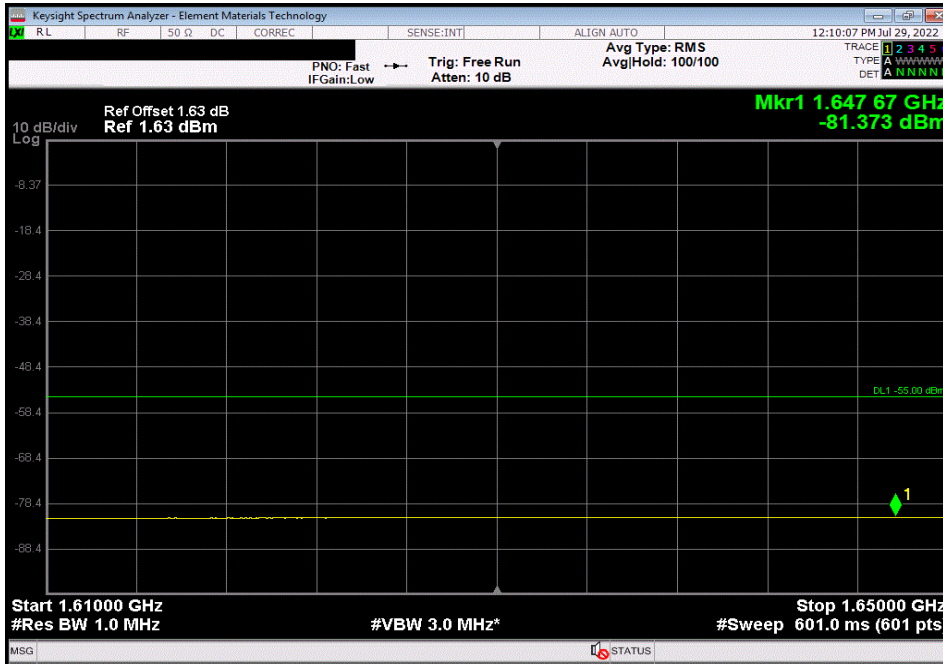


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

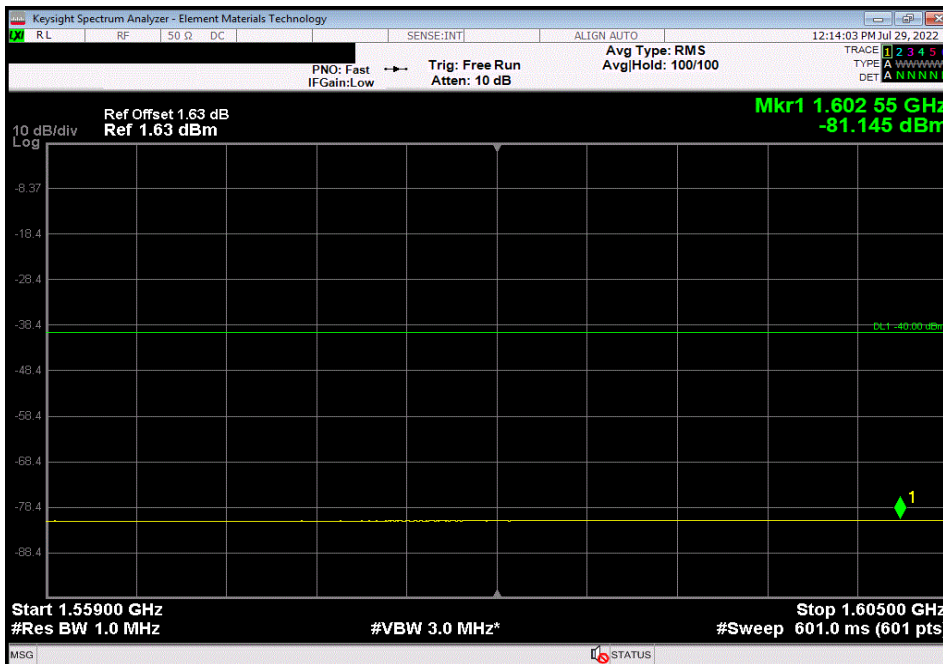


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1647.67	-81.37	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1602.55	-81.15	-40.0	3.0	-43.0	Pass

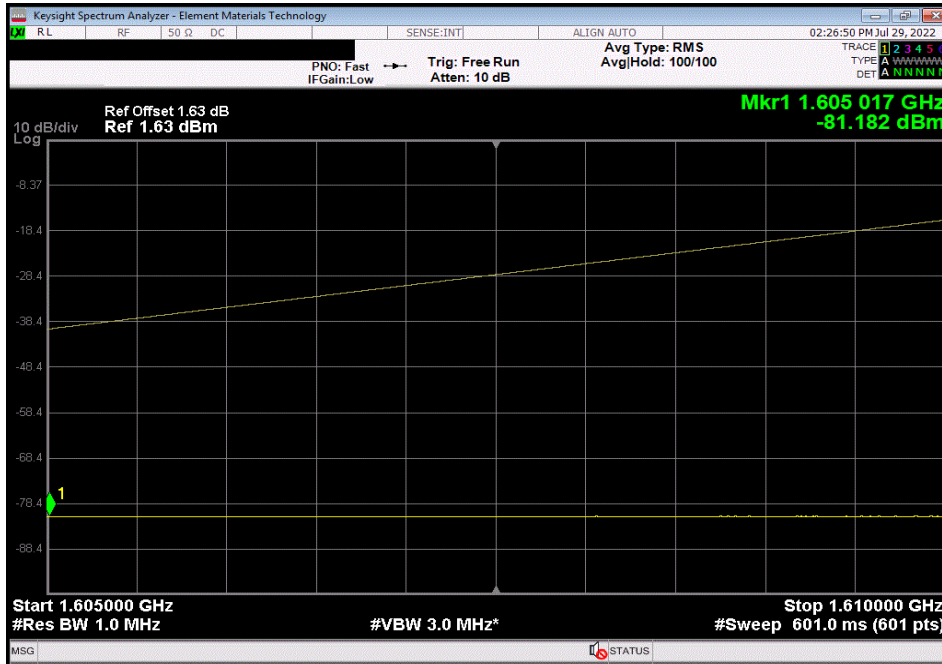


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

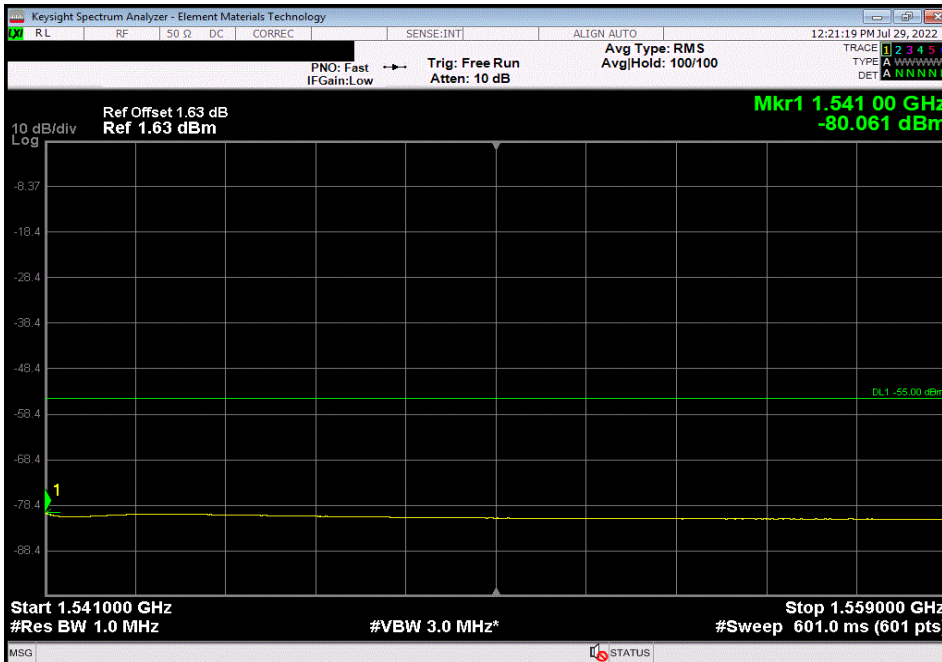


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.017	-81.182	-40	3.0	-43.1	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1541	-80.06	40.0	3.0	37.0	Pass

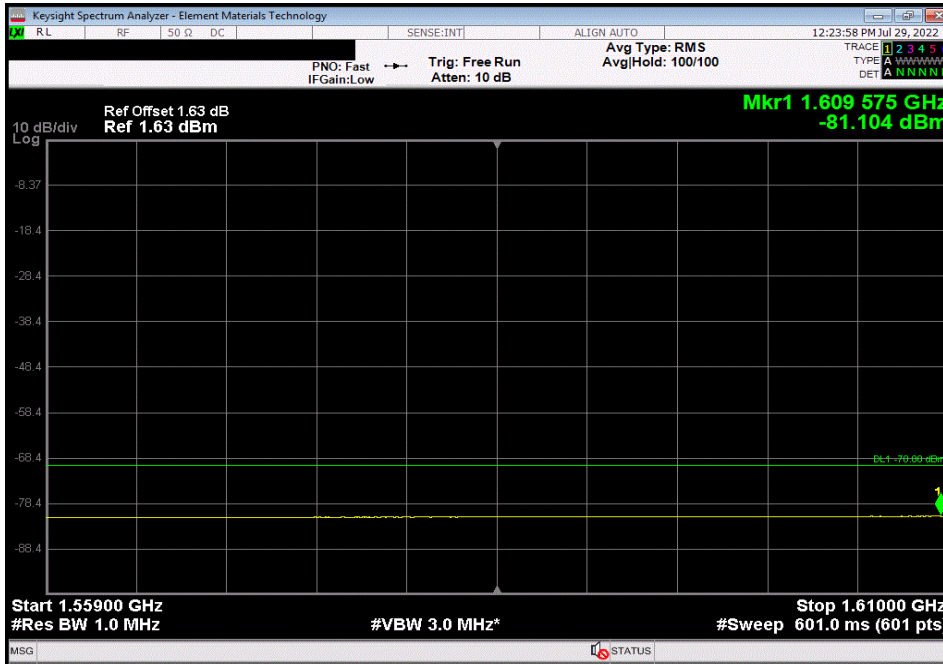


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

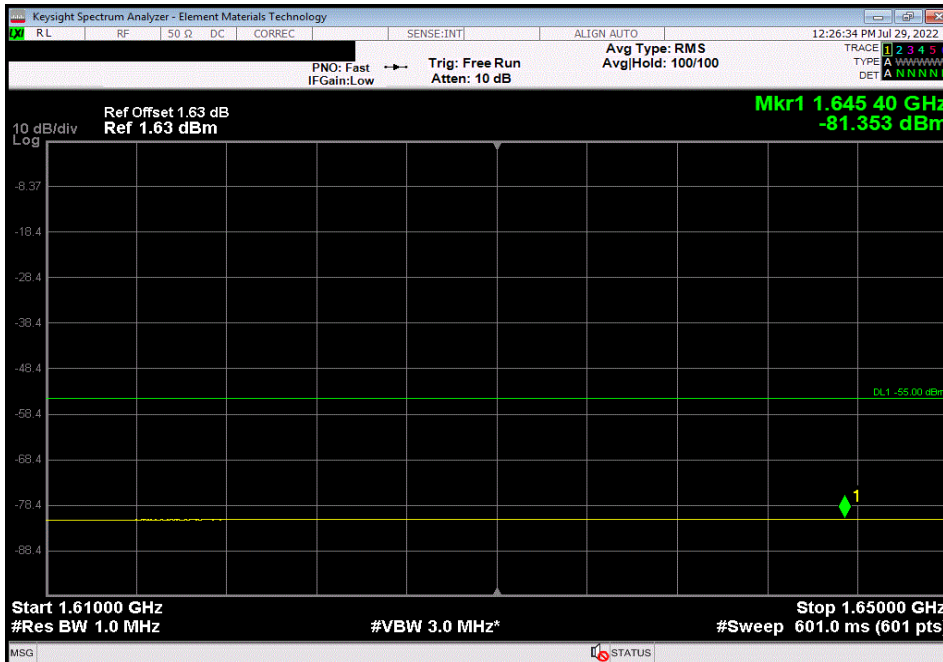


TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1609.58	-81.1	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1645.4	-81.35	-55.0	3.0	-58.0	Pass

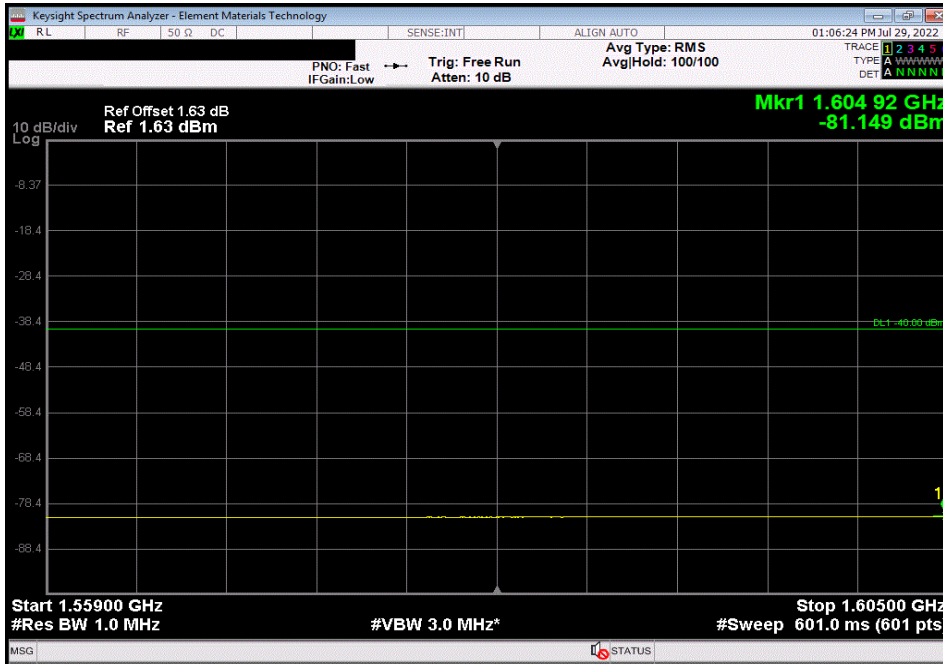


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

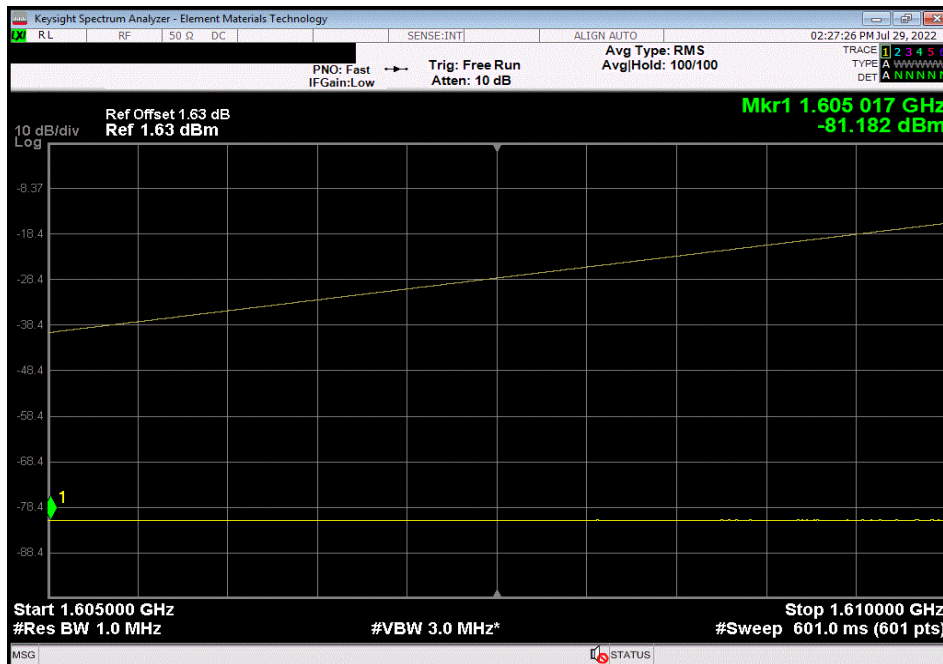


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.92	-81.15	-40	3.0	-43.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.017	-81.182	-40	3.0	-43.1	Pass

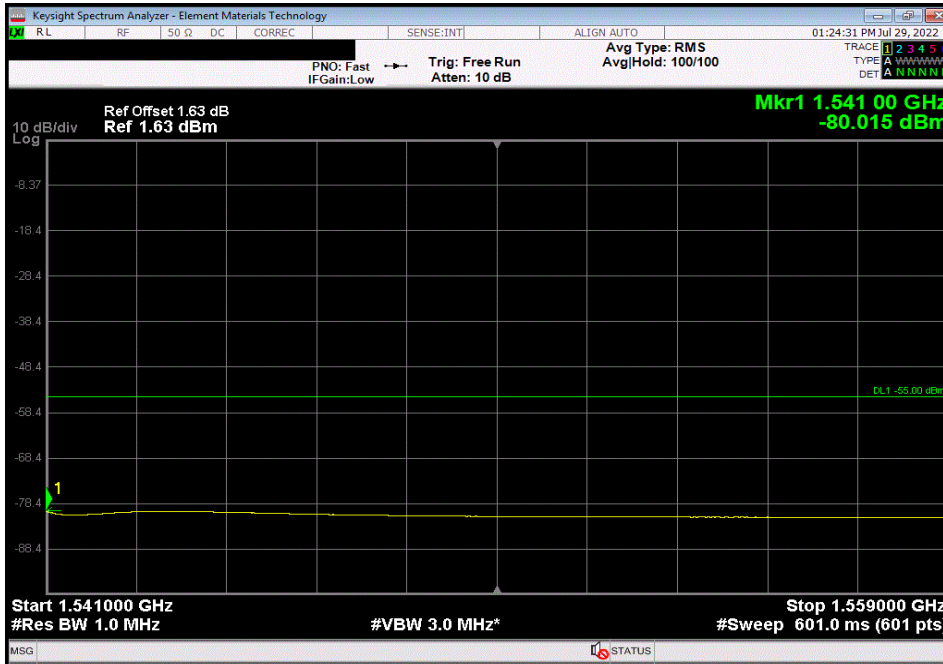


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi



TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1541	-80.02	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1607.11	-81.13	-70.0	3.0	-73.0	Pass

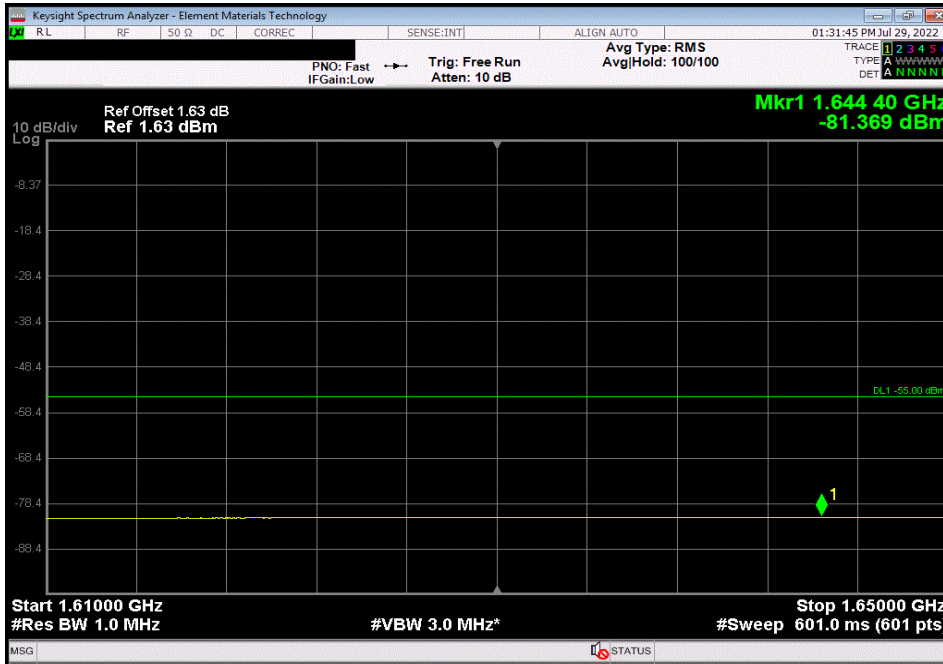


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

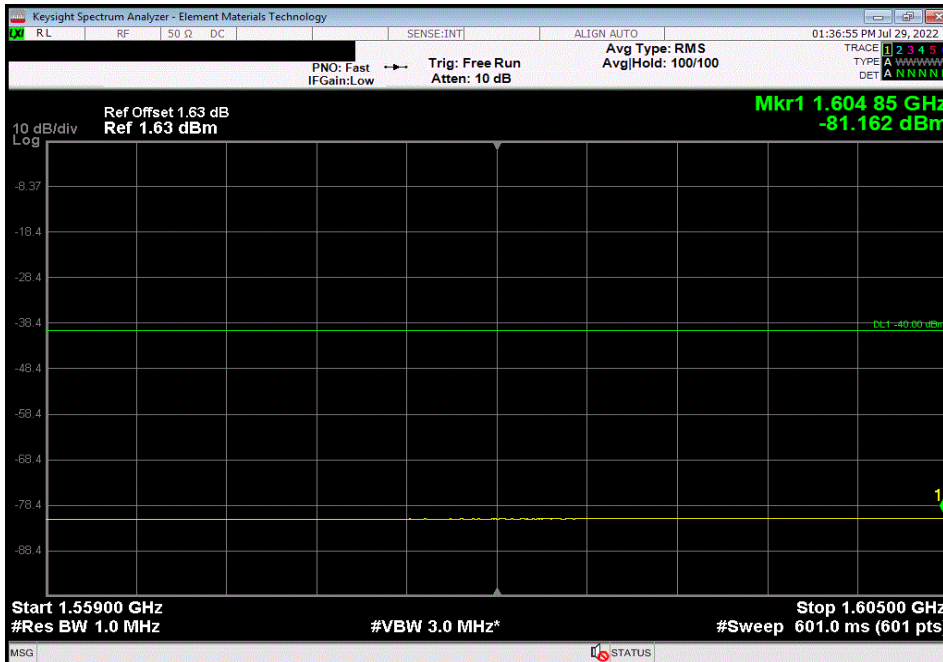


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 64-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1644.4	-81.37	-55	3.0	-58.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1605 MHz	1604.85	-81.16	-40.0	3.0	-43.0	Pass

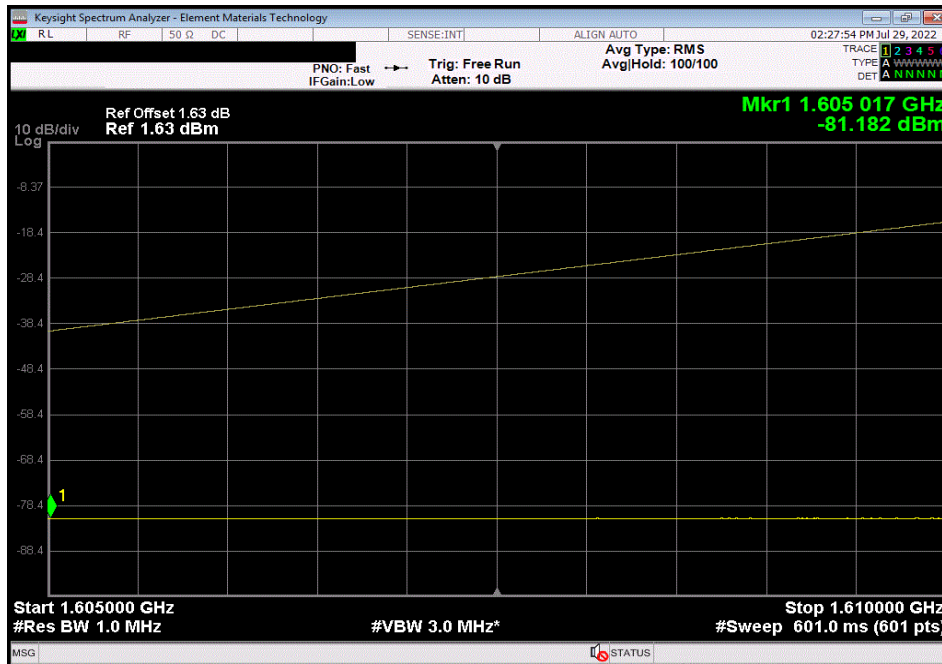


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi

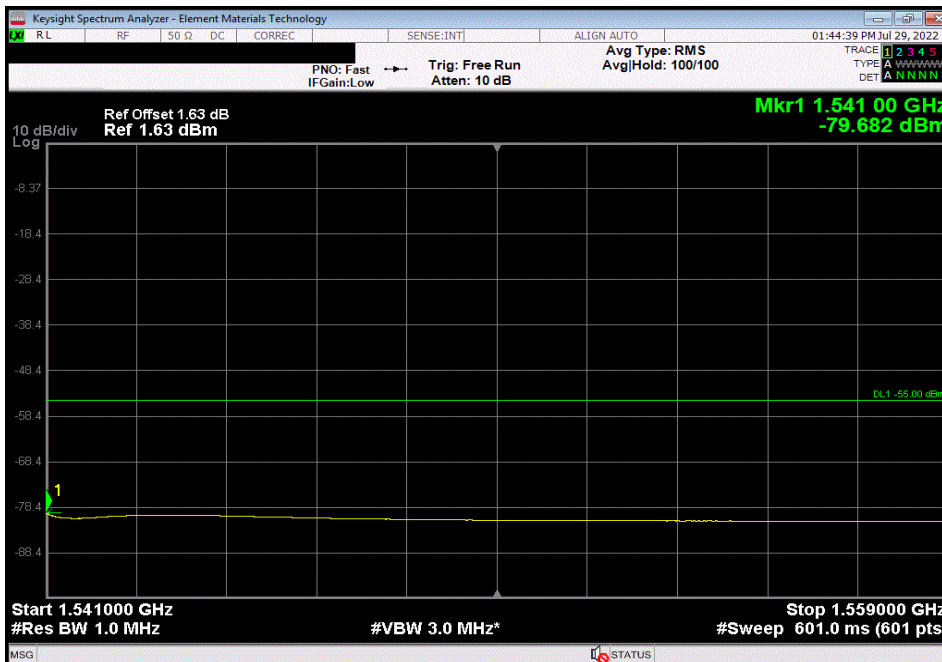


TMTv 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1605 MHz - 1610 MHz	1605.017	-81.182	-40	3.0	-43.1	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1541 MHz - 1559 MHz	1541	-79.68	40.0	3.0	37.0	Pass

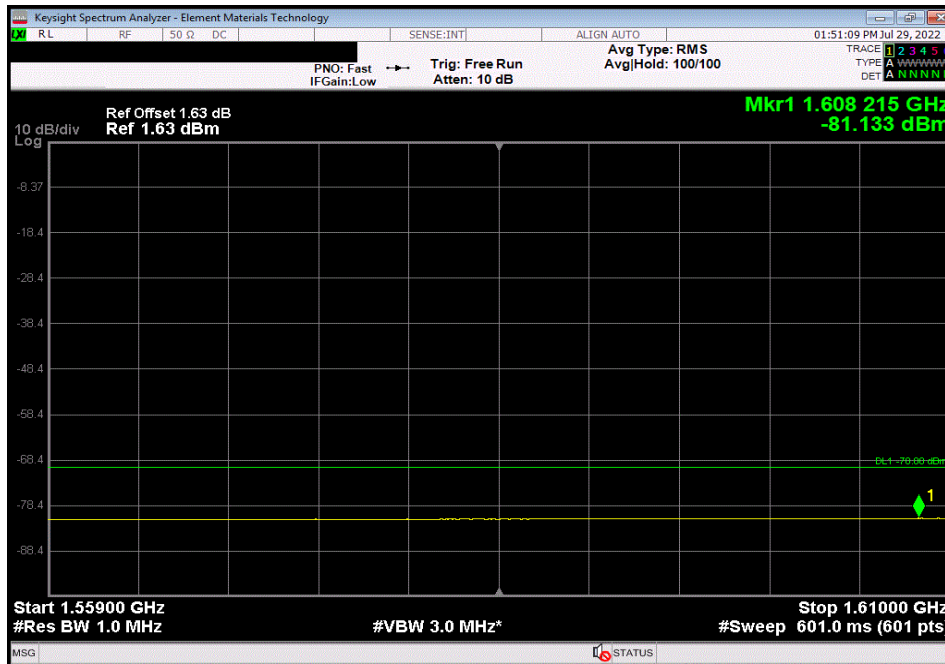


SPURIOUS EMISSIONS AT THE ANTENNA TERMINALS - RESTRICTED BANDS - 3dBi



TMTx 2022.05.02.0 XMI 2022.02.07.0

5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1559 MHz - 1610 MHz	1608.22	-81.13	-70	3.0	-73.0	Pass



5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset for Waiver						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Shown Initial Limit (dBm)	MIMO Ant Limit Adjustment Factor (dB)	Final Limit (dBm/MHz)	Result
1610 MHz - 1650 MHz	1646.73	-81.38	-55.0	3.0	-58.0	Pass

