

PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71



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

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4.

The PAPR was measured using the CCDF function of the spectrum analyzer.

Per FCC part 27.50(d)(5) and RSS-130 section 4.6.1, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports 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.

PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71



TstTx 2022.05.02.0 XMit 2022.02.07.0

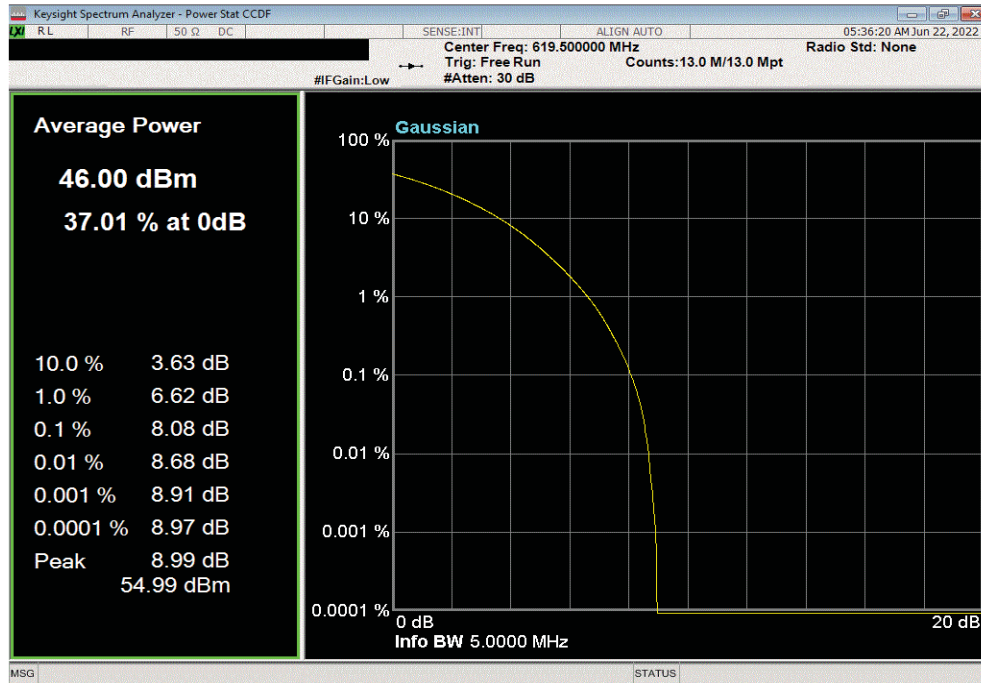
EUT: AHLOB (FCC/ISED)		Work Order: NOKI0042
Serial Number: YK220900026		Date: 21-Jun-22
Customer: Nokia Solutions and Networks		Temperature: 21 °C
Attendees: David Le, John Rattanavong		Humidity: 53.2% RH
Project: None		Barometric Pres.: 1022 mbar
Tested by: Brandon Hobbs	Power: 54 VDC	Job Site: TX07
TEST SPECIFICATIONS		
FCC 27:2022		Test Method
RSS-130 Issue 2:2019		ANSI C63.26:2015
COMMENTS		ANSI C63.26:2015
All losses in the measurement path were accounted for: attenuators, cables, DC block and filter when in use. The carriers were enabled at maximum power.		
DEVIATIONS FROM TEST STANDARD		
None		
Configuration #	2	Signature
		PAPR Value (dB)
		PAPR Limit (dB)
		Results
Port 1, 5G NR, Band 71, 617 MHz - 652 MHz		
5 MHz Bandwidth		
256-QAM Modulation		
Low Ch. 619.5 MHz		8.08
Mid Ch. 634.5 MHz		8.05
High Ch. 649.5 MHz		8.09
		13
		13
		13
10 MHz Bandwidth		
256-QAM Modulation		
Low Ch. 622 MHz		8.06
Mid Ch. 634.5 MHz		8.04
High Ch. 647 MHz		8.04
		13
		13
		13
15 MHz Bandwidth		
QPSK Modulation		
Mid Ch. 634.5 MHz		7.22
		13
		Pass
16-QAM Modulation		
Mid Ch. 634.5 MHz		7.29
		13
		Pass
64-QAM Modulation		
Mid Ch. 634.5 MHz		7.22
		13
		Pass
256-QAM Modulation		
Low Ch. 624.5 MHz		7.61
Mid Ch. 634.5 MHz		7.23
High Ch. 644.5 MHz		7.61
		13
		13
		13
20 MHz Bandwidth		
256-QAM Modulation		
Low Ch. 627 MHz		7.55
Mid Ch. 634.5 MHz		7.14
High Ch. 642 MHz		7.59
		13
		13
		13

PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71

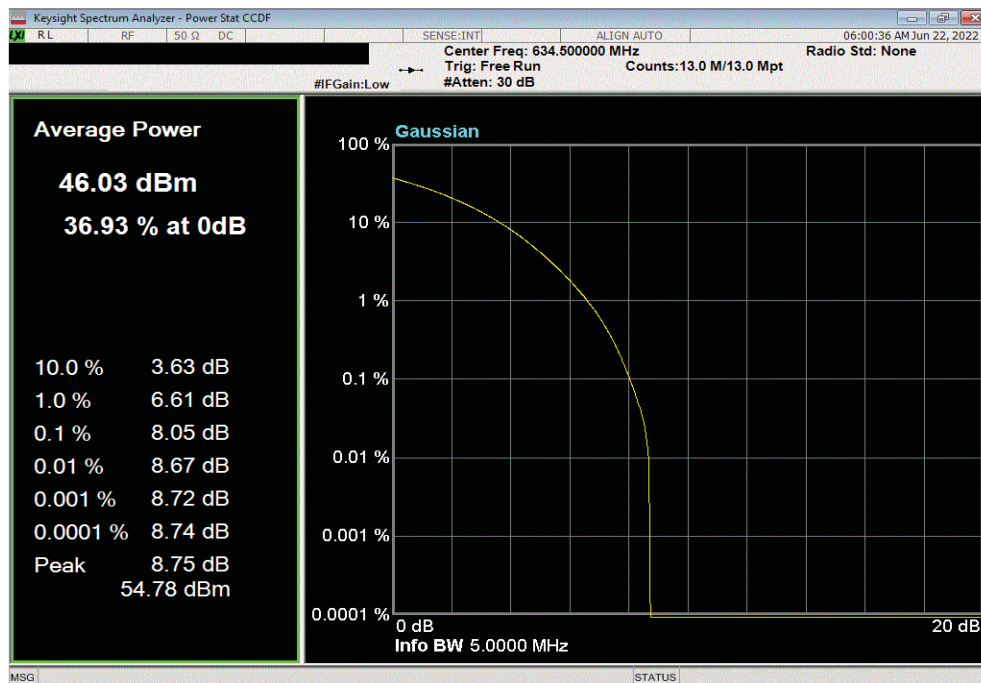


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 619.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.08	13	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.05	13	Pass			

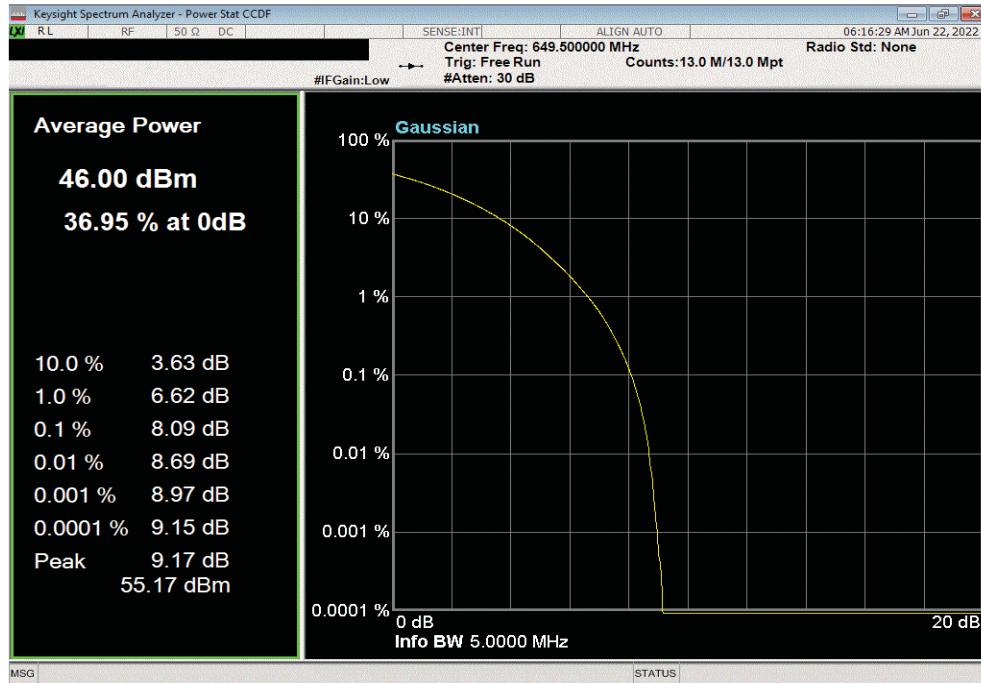


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71

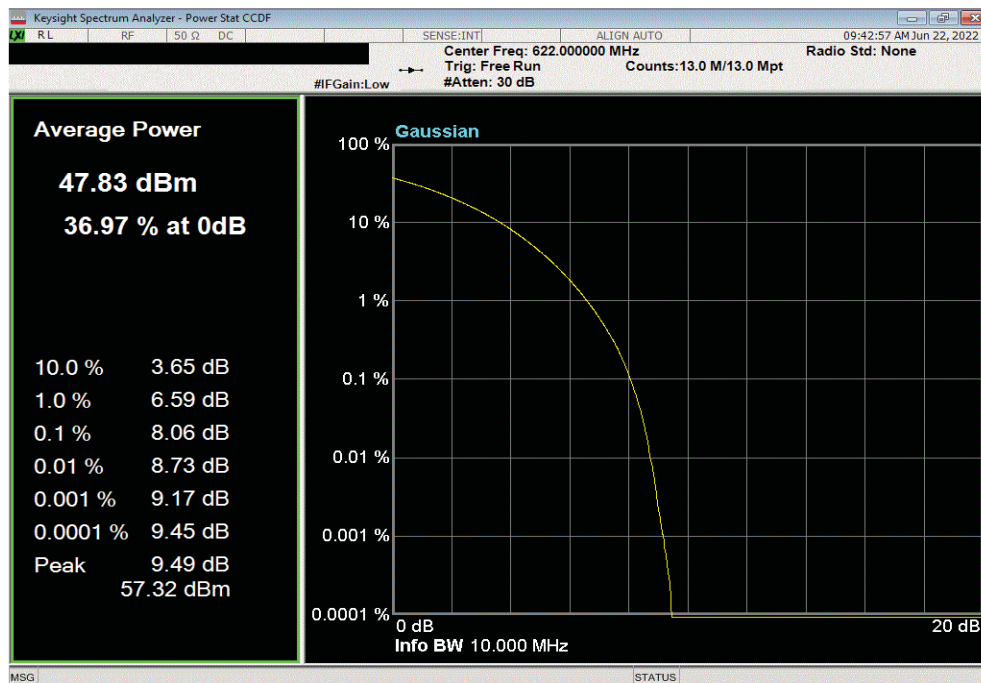


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 649.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.09	13	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 622 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.06	13	Pass			



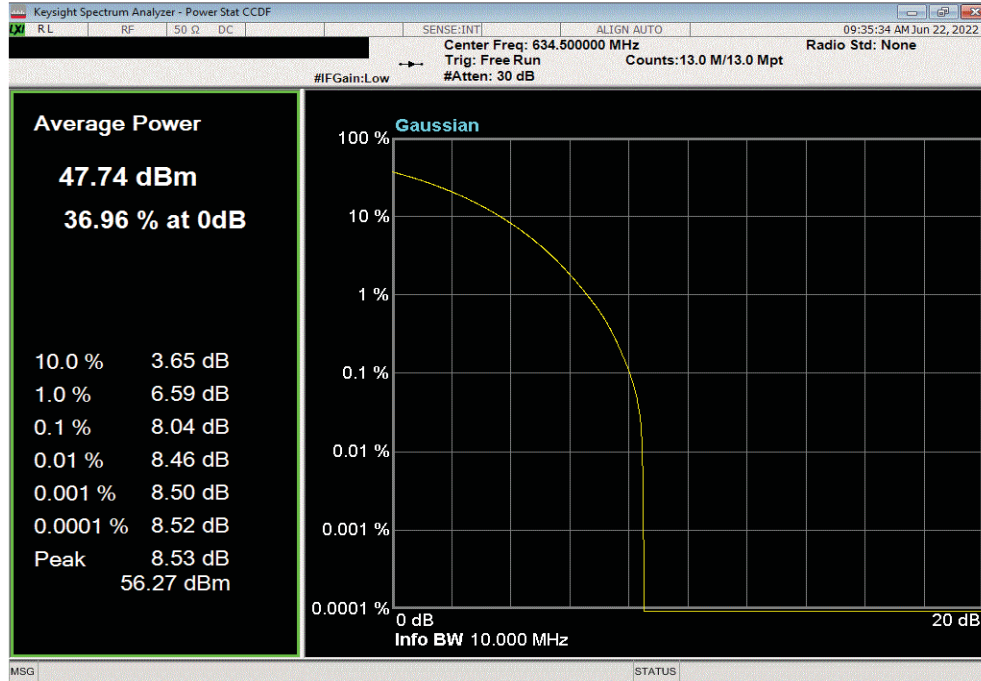
PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71



TbTtx 2022.05.02.0 XMit 2022.02.07.0

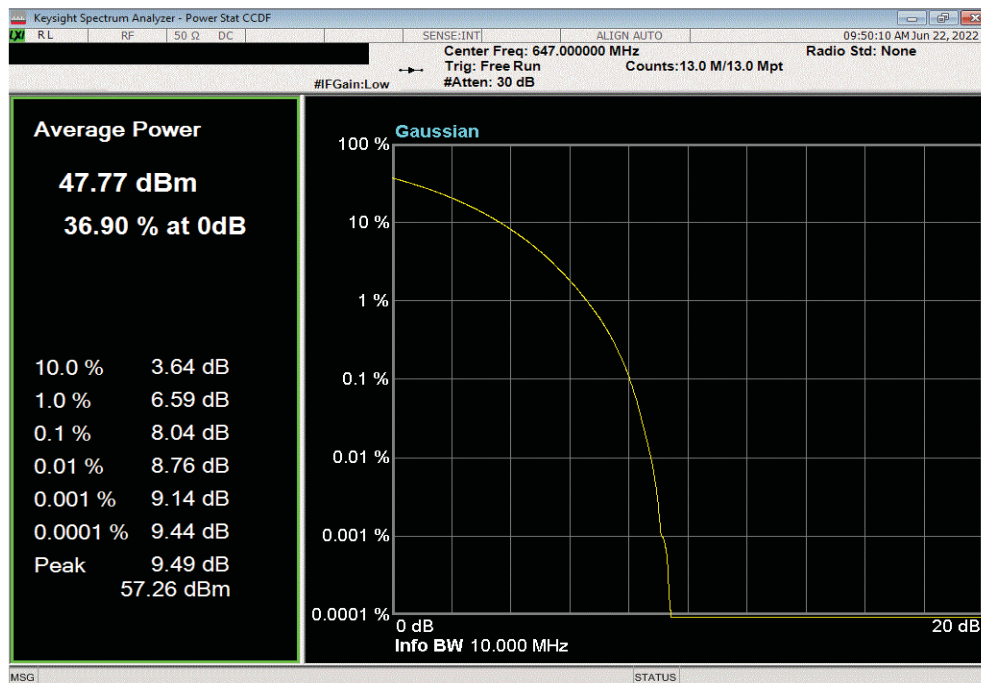
Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz

PAPR Value (dB)	PAPR Limit (dB)	Results
8.04	13	Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 647 MHz

PAPR Value (dB)	PAPR Limit (dB)	Results
8.04	13	Pass

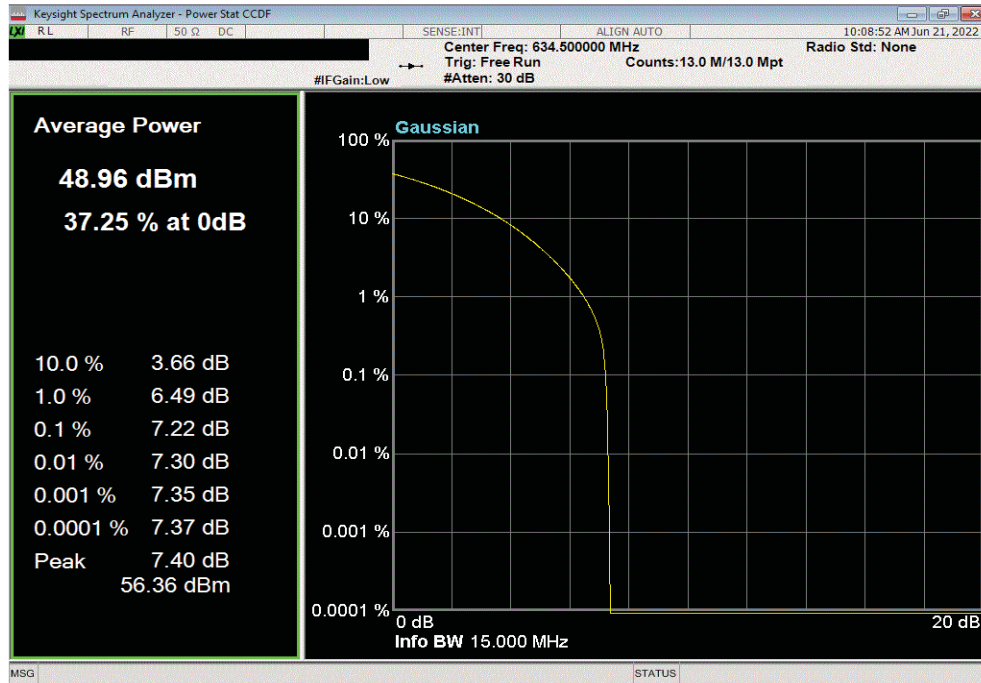


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71

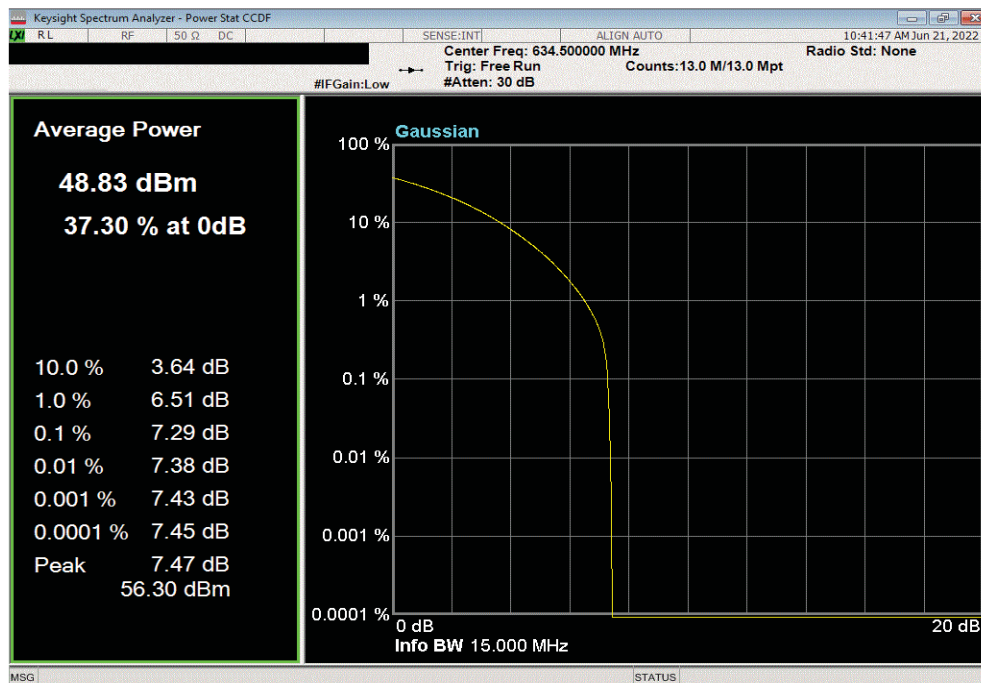


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, Mid Ch. 634.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.22	13	Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Mid Ch. 634.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.29	13	Pass

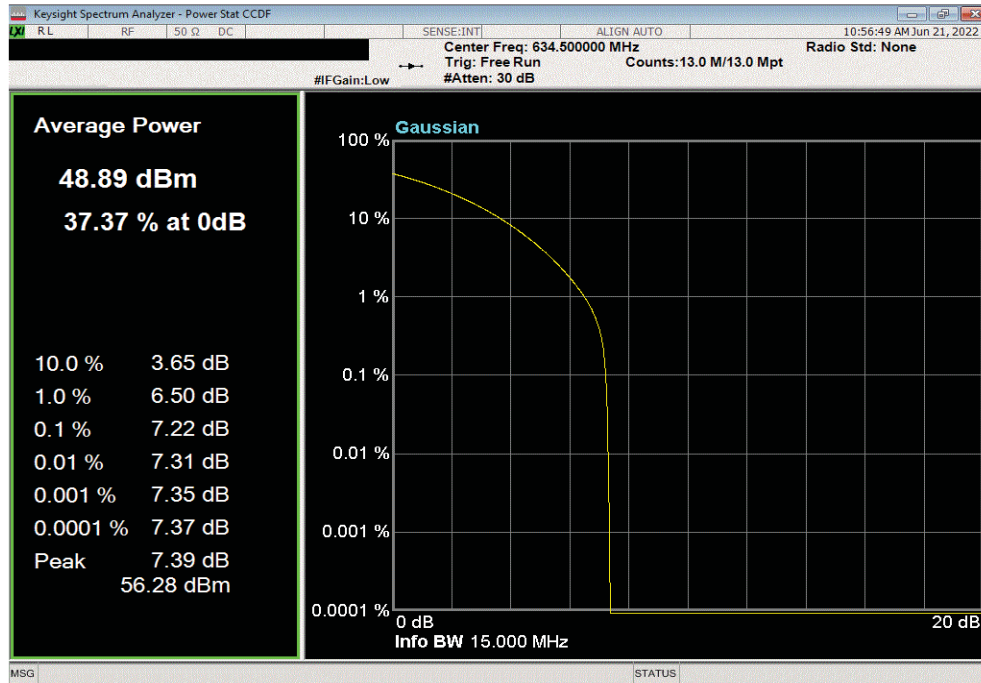


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71

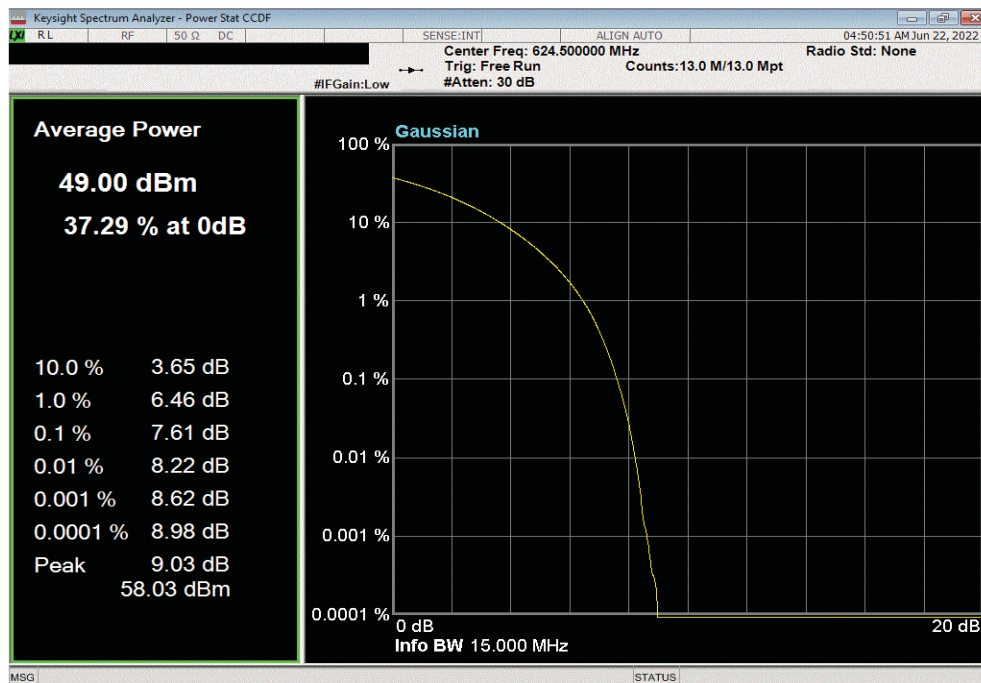


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Mid Ch. 634.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.22	13	Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 624.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.61	13	Pass

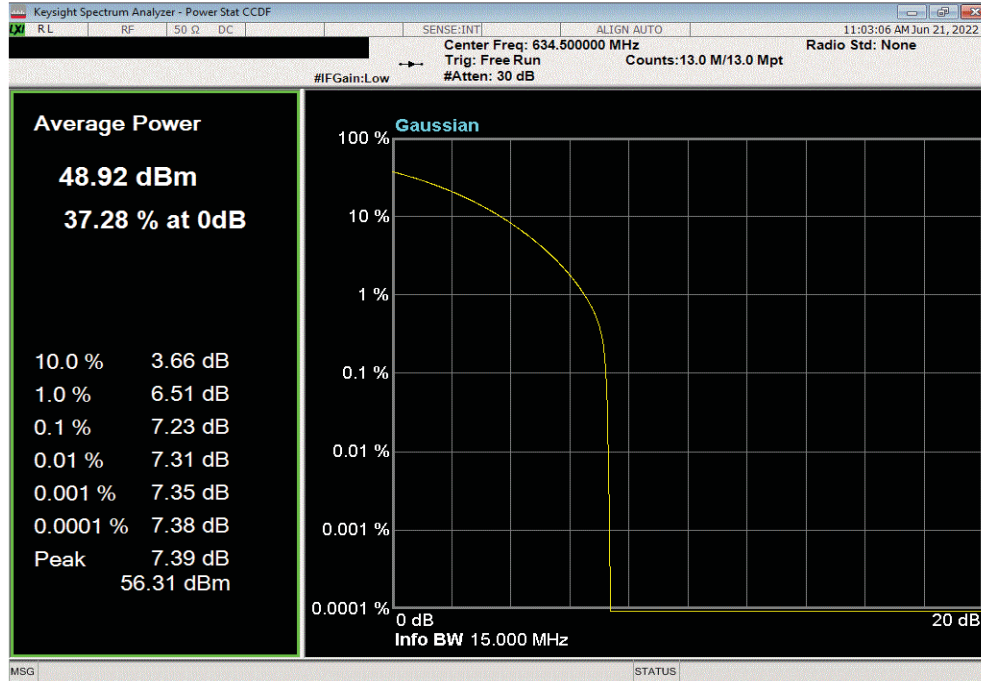


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71

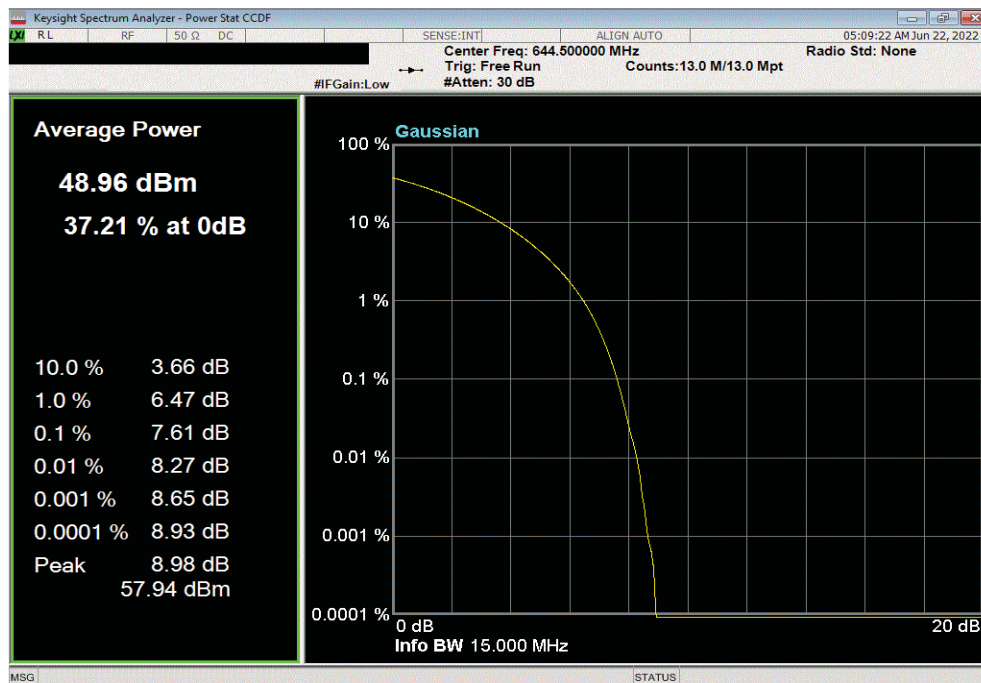


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.23	13	Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Ch. 644.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.61	13	Pass



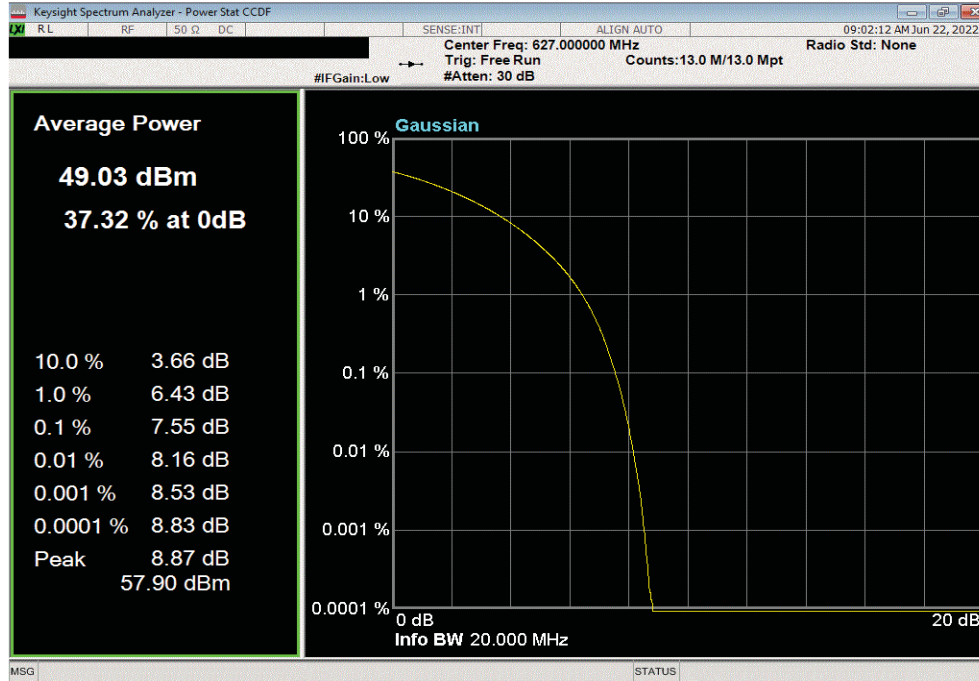
PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71



TbTtx 2022.05.02.0 XMit 2022.02.07.0

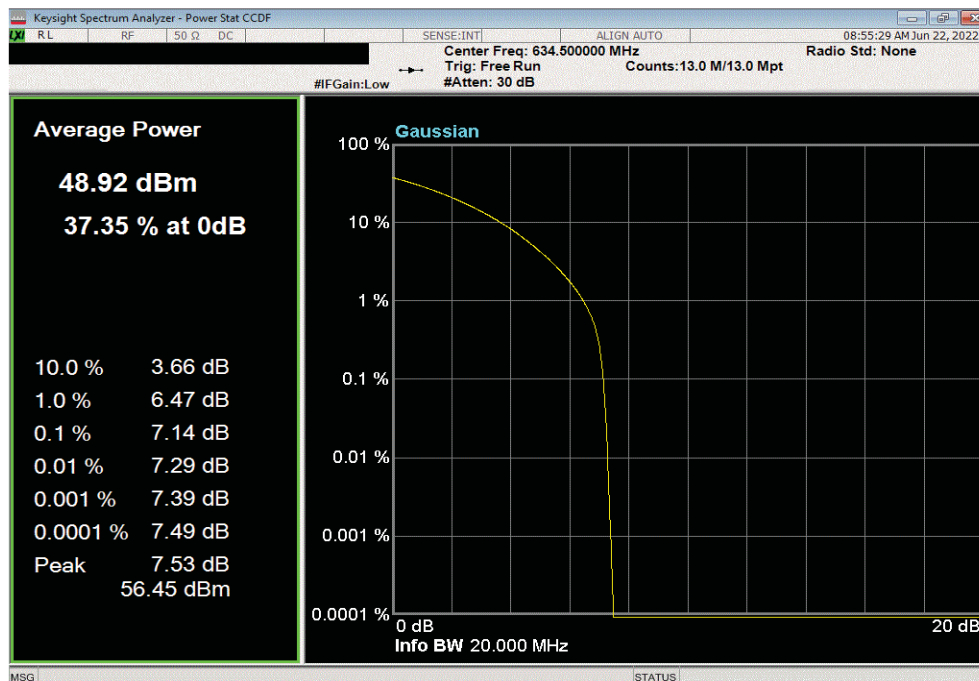
Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Low Ch. 627 MHz

PAPR Value (dB)	PAPR Limit (dB)	Results
7.55	13	Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz

PAPR Value (dB)	PAPR Limit (dB)	Results
7.14	13	Pass

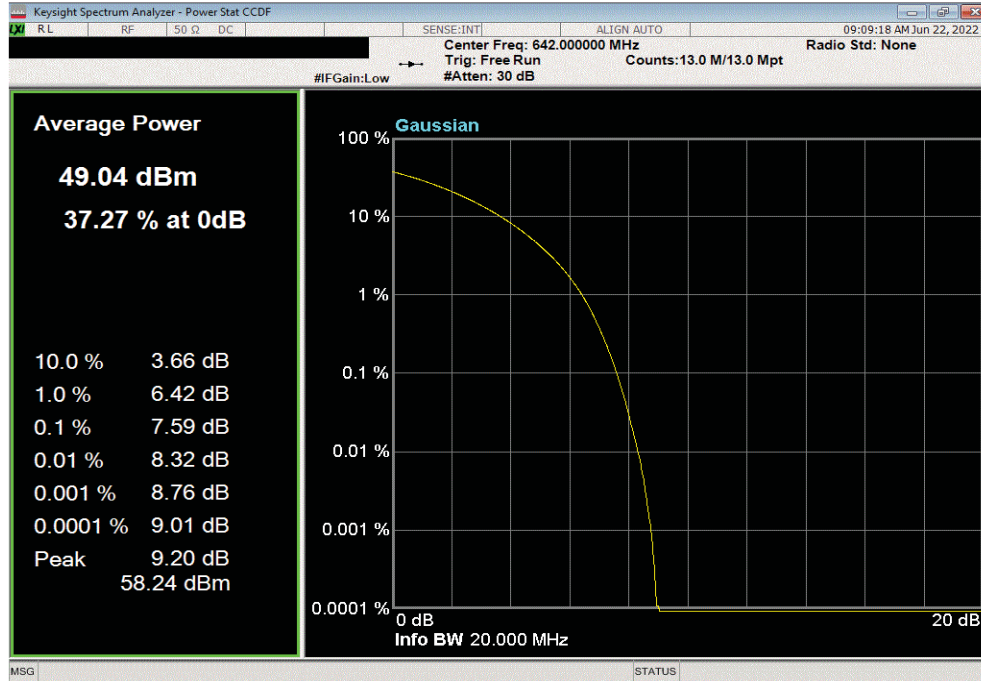


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n71



TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, High Ch. 642 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.59	13	Pass



PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85



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

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4.

The PAPR was measured using the CCDF function of the spectrum analyzer.

Per FCC part 27.50(d)(5) and RSS-130 section 4.6.1, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports 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.

PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85



TstTx 2022.05.02.0 XMit 2022.02.07.0

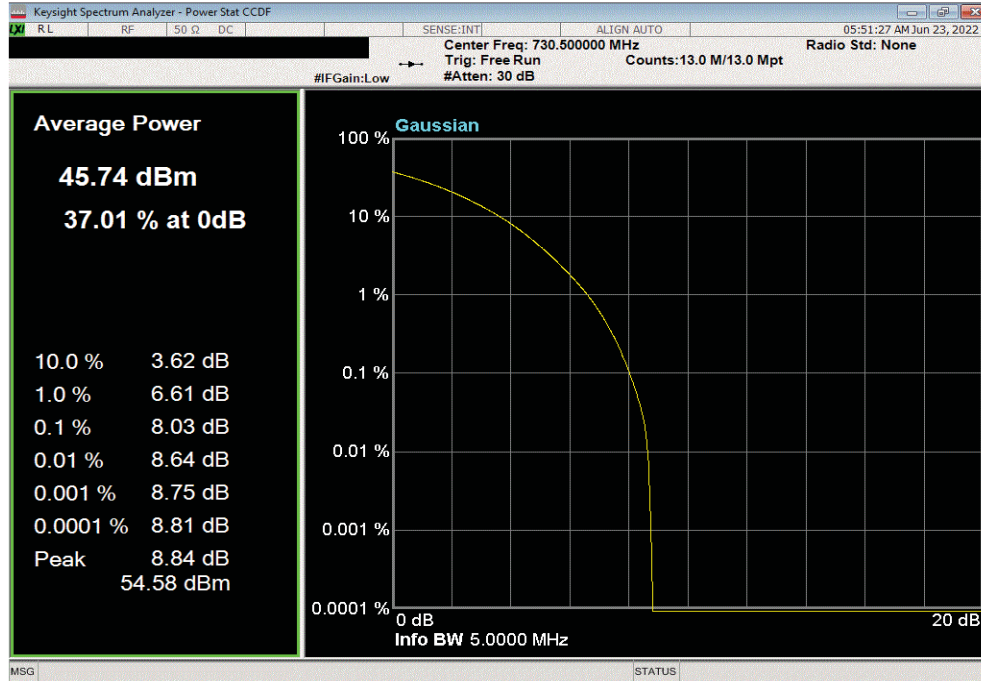
EUT: AHLOB (FCC/ISED)		Work Order: NOKI0042	
Serial Number: YK220900026		Date: 22-Jun-22	
Customer: Nokia Solutions and Networks		Temperature: 22 °C	
Attendees: David Le, John Rattanavong		Humidity: 51.6% RH	
Project: None		Barometric Pres.: 1021 mbar	
Tested by: Brandon Hobbs		Power: 54 VDC	
		Job Site: TX07	
TEST SPECIFICATIONS			
FCC 27:2022		Test Method	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
		ANSI C63.26:2015	
COMMENTS			
All losses in the measurement path were accounted for: attenuators, cables, DC block and filter when in use. The carriers were enabled at maximum power.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		PAPR Value (dB)	PAPR Limit (dB) Results
Port 1, 5G NR, Band n85, 728 MHz - 746 MHz			
5 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 730.5 MHz	8.03	13 Pass
	Mid Ch. 737 MHz	8.05	13 Pass
	High Ch. 743.5 MHz	8.05	13 Pass
10 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 733 MHz	8.03	13 Pass
	Mid Ch. 737 MHz	8.01	13 Pass
	High Ch. 741 MHz	8.01	13 Pass
15 MHz Bandwidth			
QPSK Modulation			
	Mid Ch. 737 MHz	7.23	13 Pass
16-QAM Modulation			
	Mid Ch. 737 MHz	7.29	13 Pass
64-QAM Modulation			
	Mid Ch. 737 MHz	7.23	13 Pass
256-QAM Modulation			
	Low Ch. 735.5 MHz	7.33	13 Pass
	Mid Ch. 737 MHz	7.23	13 Pass
	High Ch. 738.5 MHz	7.23	13 Pass

PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85

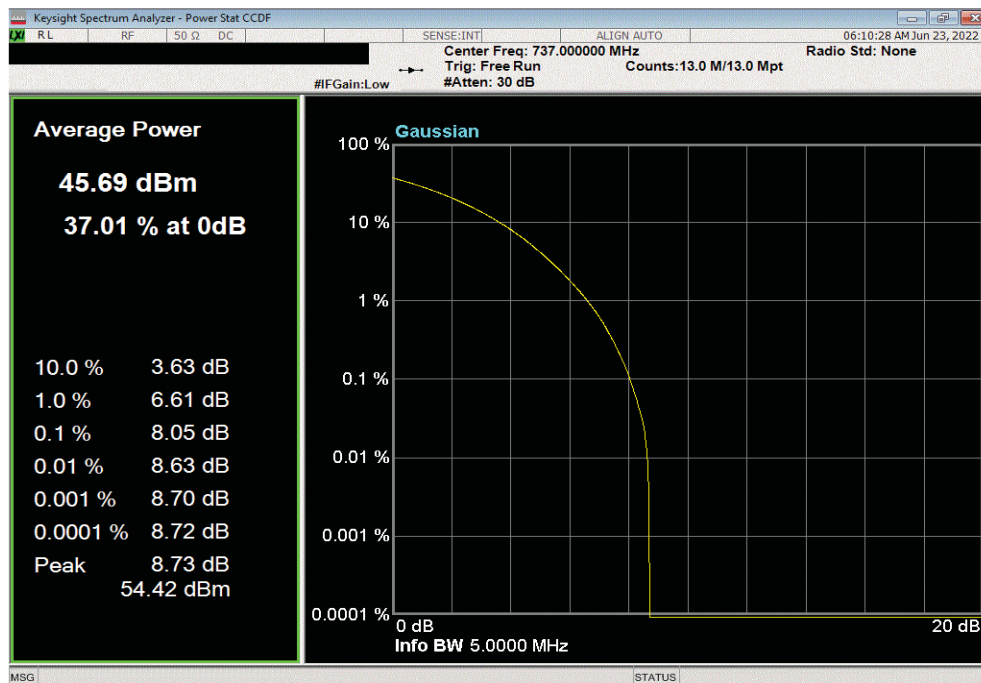


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 730.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.03	13	Pass			



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.05	13	Pass			

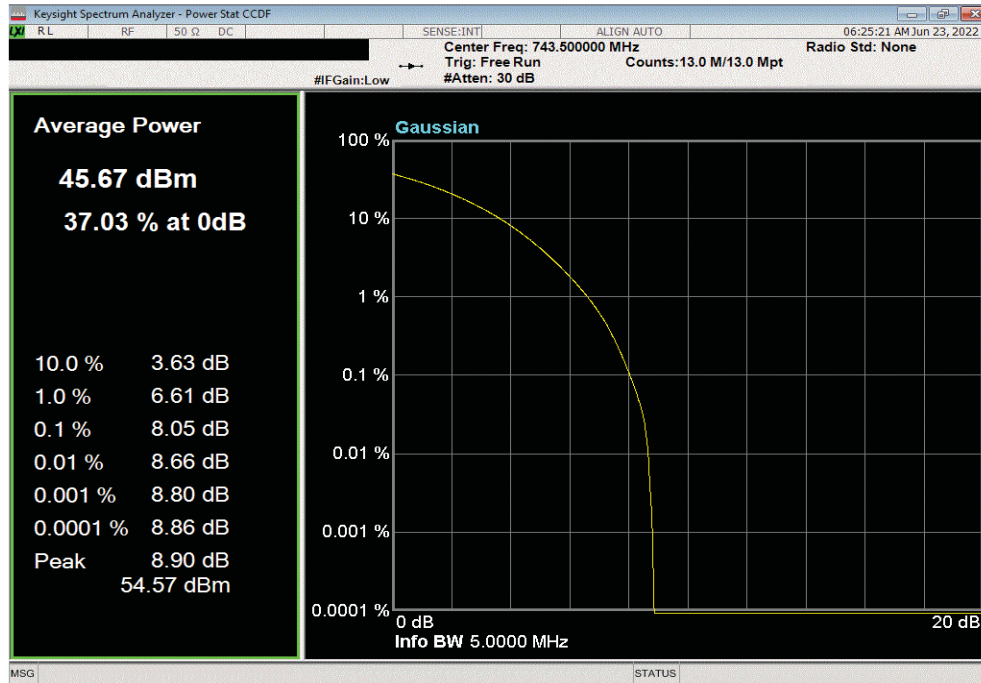


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85

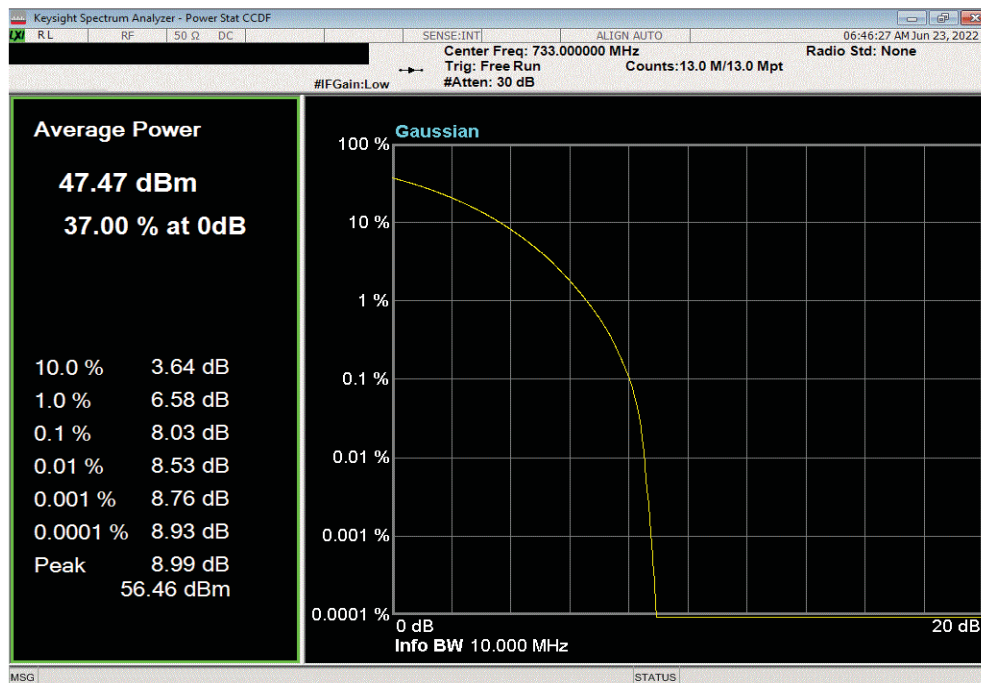


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 743.5 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.05	13	Pass			



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 733 MHz						
	PAPR Value (dB)	PAPR Limit (dB)	Results			
	8.03	13	Pass			

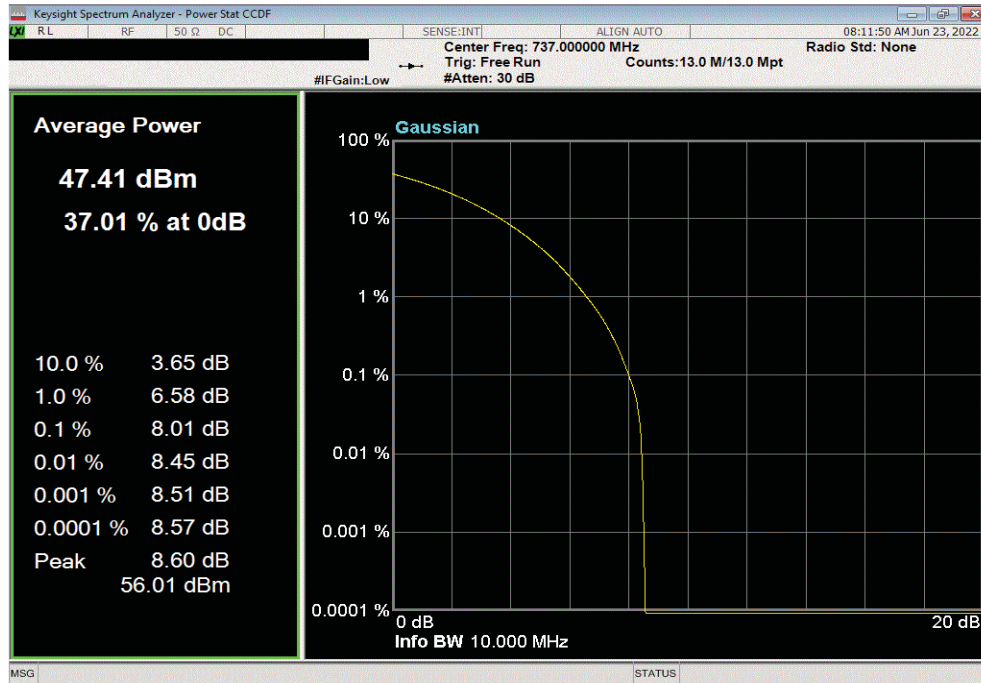


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85

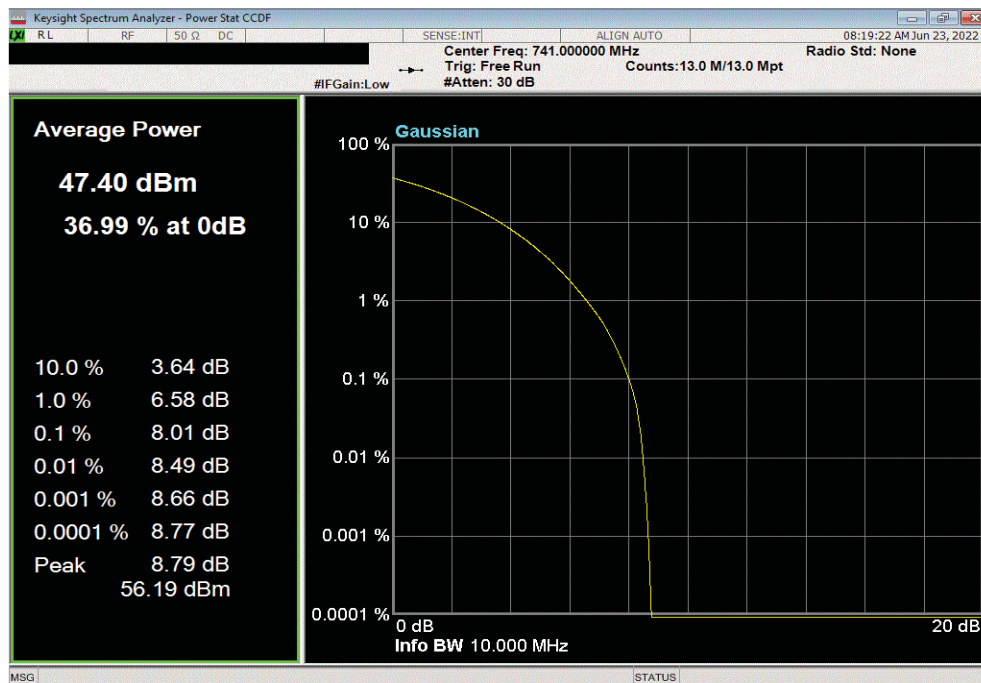


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.01	13	Pass



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 741 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				8.01	13	Pass

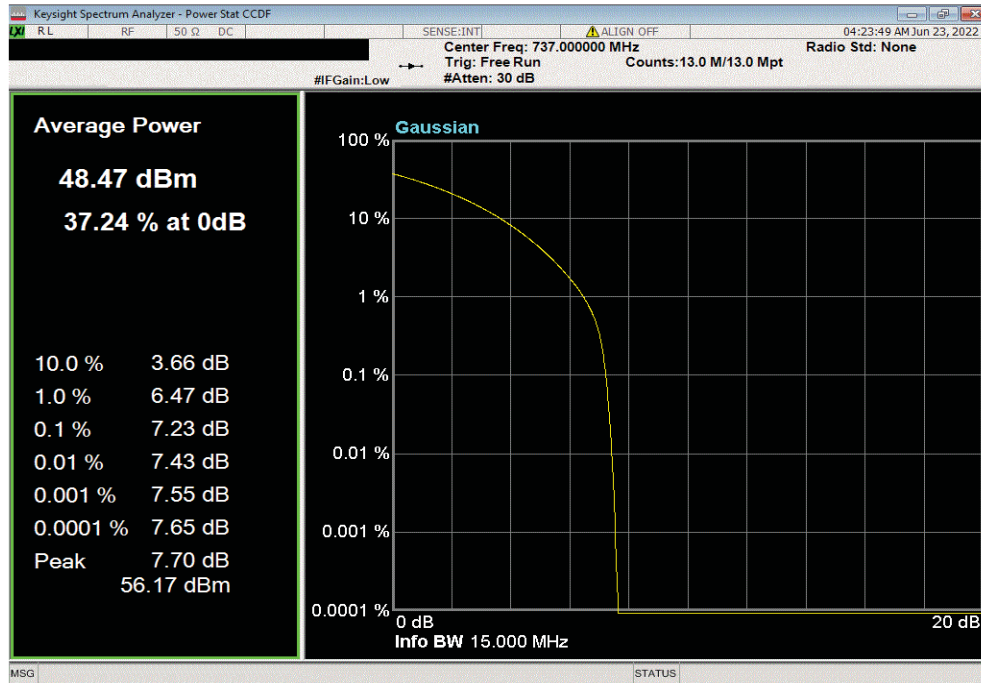


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85

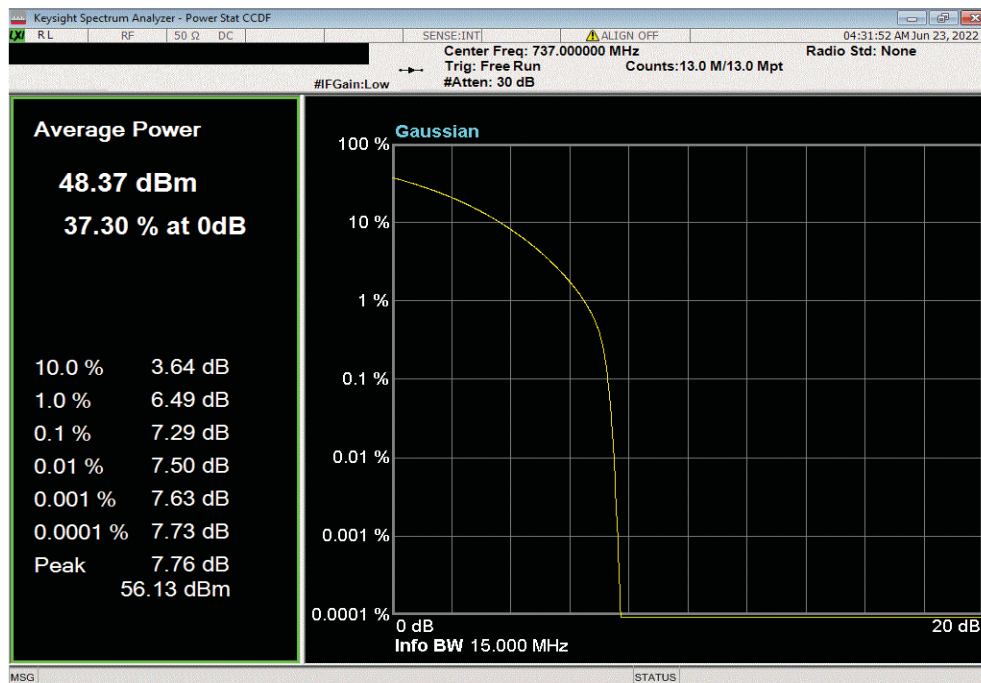


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, QPSK Modulation, Mid Ch. 737 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.23	13	Pass



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Mid Ch. 737 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.29	13	Pass

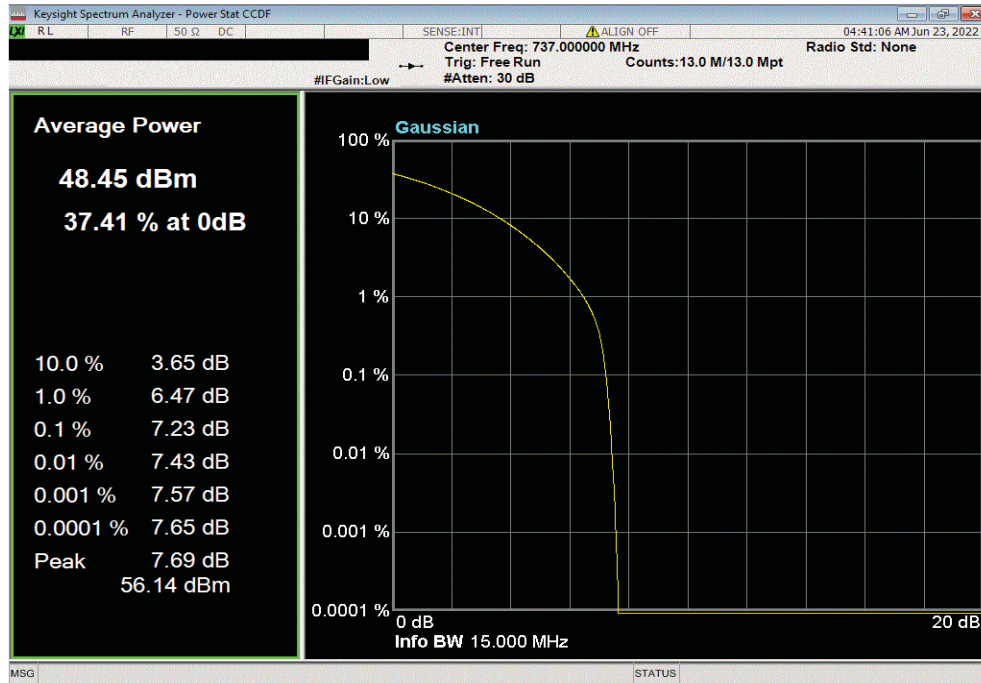


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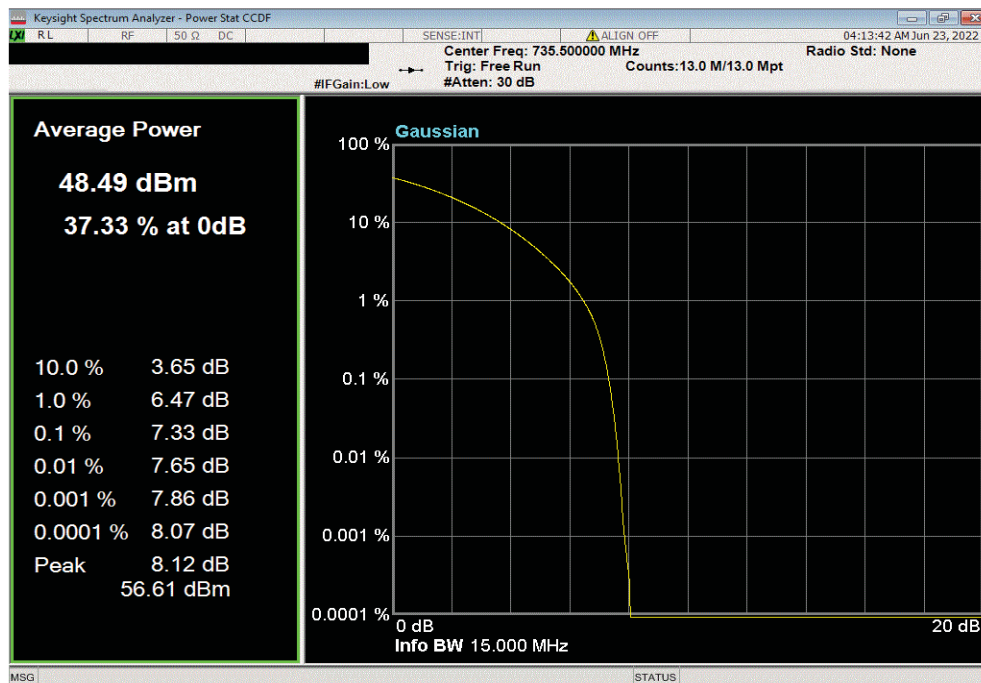


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Mid Ch. 737 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.23	13	Pass



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 735.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.33	13	Pass

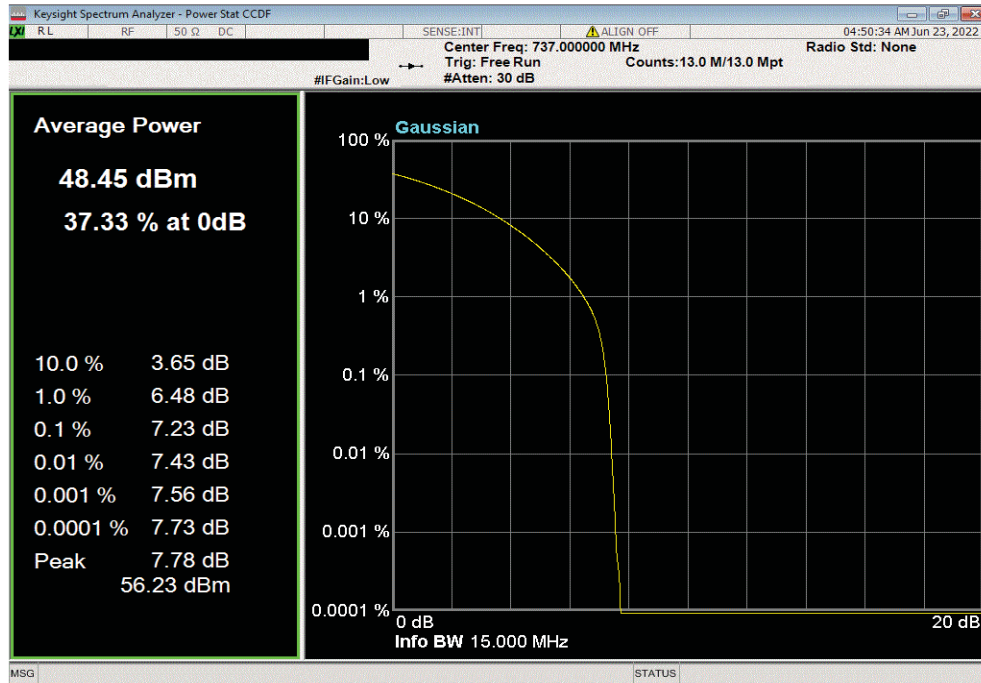


PEAK TO AVERAGE POWER (PAPR) CCDF - BAND n85

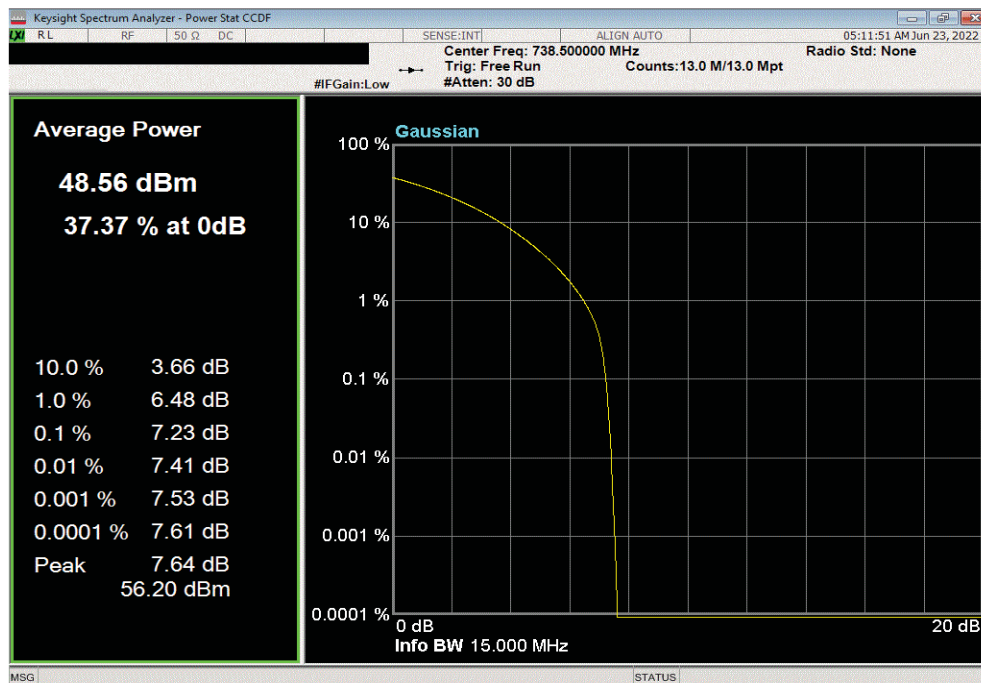


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.23	13	Pass



Port 1, 5G NR, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Ch. 738.5 MHz						
				PAPR Value (dB)	PAPR Limit (dB)	Results
				7.23	13	Pass



BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER



XMM 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
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of $[-10 \cdot \log(4)]$ dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Multicarrier test cases have been developed as shown below:

Notes: Max port power (80watts is shared between Bands n71/n85)

Multi-Carrier Test Case 1): 3GPP Band n71 Multicarrier In the Band n71 _Three NR5 carriers using two carriers (with minimum spacing between carrier frequencies) at the lower band edge (619.5 & 624.5MHz) and a third carrier with maximum spacing between the other two carrier frequencies (649.5MHz) 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 n71 carriers). 3GPP Band n85 carrier is not enable.

Multi-Carrier Test Case 2): 3GPP Band n71 Multicarrier: In the Band n71 _ One NR 20MHz carriers and one NR 15MHz carriers (with minimum spacing between carrier frequencies) at the lower band edge (627.0 & 644.5MHz). The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power for a total port power of 80 watts (~40W/Band n71 carriers). 3GPP Band n85 carrier is not enable.

Multi-Carrier Test Case 3): 3GPP Band n85 Multicarrier In the Band n85 _Two NR5 carriers using two carriers (with maximum spacing between carrier frequencies) at the lower band edge (730.5MHz) and a second carrier at maximum spacing at the upper band edge (743.5MHz). The NR5 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 (~40W/Band n85 carrier). 3GPP Band n71 carrier is not enable.

Multi-Carrier Test Case 4): 3GPP Band n71 and Band n85 Multicarrier Multiband: Three NR 5MHz carriers using two carriers (with minimum spacing between carrier frequencies) at the Band n71 lower band edge (619.5 & 624.5MHz) and a third carrier with maximum spacing between the other two carrier frequencies (743.5MHz) at the Band n85 upper band edge. The smallest channel bandwidth was selected to maximize carrier power spectral density. The carriers were operated at maximum power (~26.6/ Band n71 carrier and ~26.6W Band n85 carrier) for a total port power of 80 watts.

Per section 27.53(g) and RSS-130 4.7, 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.

Per FCC 27.53(g) and RSS 130 4.7 requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 27.53(g) and RSS 130 4.7 requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHLOB) as the original certification test. The AHLOB antenna ports 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 paragraph 5.7.2i.

BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER



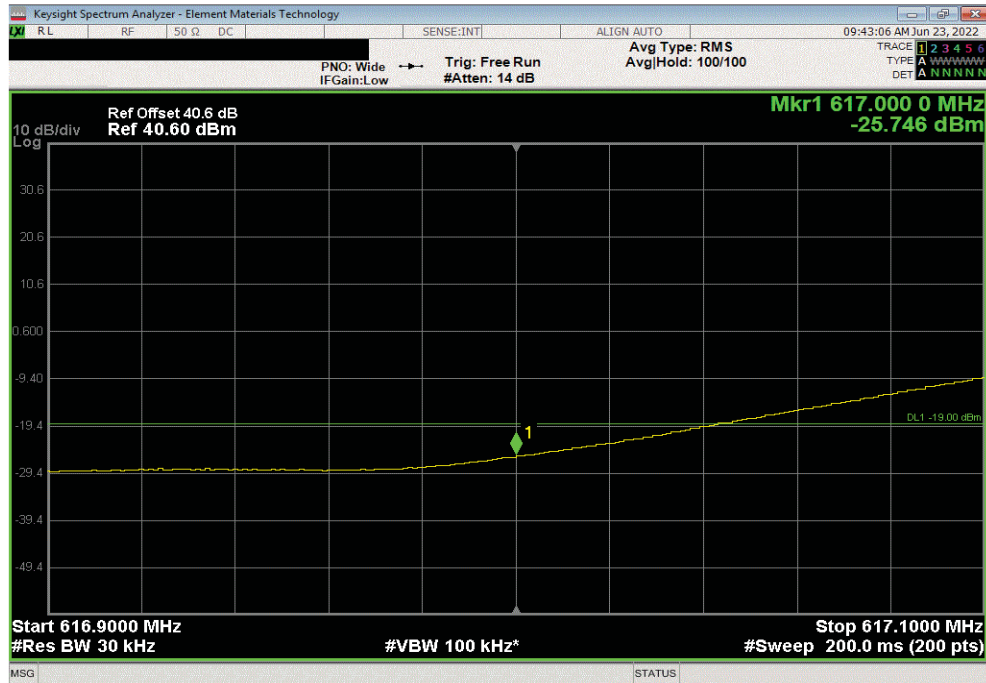
EUT: AHLOB (FCC/ISED)		Work Order: NOKI0042				
Serial Number: YK220900026		Date: 24-Jun-22				
Customer: Nokia Solutions and Networks		Temperature: 21.7 °C				
Attendees: David Le, John Rattanavong		Humidity: 51.6% RH				
Project: None		Barometric Pres.: 1017 mbar				
Tested by: Brandon Hobbs		Job Site: TX07				
Power: 54 VDC						
TEST SPECIFICATIONS		Test Method				
FCC 27:2022		ANSI C63.26:2015				
RSS-130 Issue 2:2019		ANSI C63.26:2015				
COMMENTS						
All losses in the measurement path were accounted for: attenuators, cables, DC block and filter when in use. 5G NR Band n71 / Band n85 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 #	2	Signature 				
		Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
5G NR, Multicarrier Multiband						
Port 1						
QPSK Modulation						
Test Case 1, NR5 Carrier 1, 619.5 MHz		1	617.0	-25.8	-19	Pass
Test Case 1, NR5 Carrier 1, 619.5 MHz		2	616.9	-23.3	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		1	652.0	-26.9	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		2	652.1	-26.9	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		1	617.0	-31.0	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		2	616.9	-26.5	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		1	652.0	-30.6	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		2	652.1	-26.3	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		1	728.0	-25.8	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		2	727.9	-27.8	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		1	746.0	-26.7	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		2	746.1	-28.4	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		1	746.0	-23.8	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		2	746.1	-21.0	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		1	617.0	-24.1	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		2	616.9	-21.1	-19	Pass
16-QAM Modulation						
Test Case 1, NR5 Carrier 1, 619.5 MHz		1	617.0	-26.6	-19	Pass
Test Case 1, NR5 Carrier 1, 619.5 MHz		2	616.9	-23.8	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		1	652.0	-27.9	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		2	652.1	-27.2	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		1	617.0	-31.4	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		2	616.9	-27.0	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		1	652.0	-30.3	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		2	652.1	-26.4	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		1	728.0	-27.1	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		2	727.9	-28.4	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		1	746.0	-27.7	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		2	746.1	-28.5	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		1	746.0	-24.8	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		2	746.1	-21.4	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		1	617.0	-24.7	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		2	616.8	-21.3	-19	Pass
64-QAM Modulation						
Test Case 1, NR5 Carrier 1, 619.5 MHz		1	617.0	-26.2	-19	Pass
Test Case 1, NR5 Carrier 1, 619.5 MHz		2	616.9	-23.7	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		1	652.0	-27.7	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		2	652.1	-26.7	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		1	617.0	-31.5	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		2	616.9	-26.9	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		1	652.0	-30.6	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		2	652.1	-26.4	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		1	728.0	-26.5	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		2	727.9	-28.3	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		1	746.0	-26.8	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		2	746.1	-27.8	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		1	746.0	-24.3	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		2	746.1	-20.9	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		1	617.0	-24.1	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		2	616.9	-21.2	-19	Pass
256-QAM Modulation						
Test Case 1, NR5 Carrier 1, 619.5 MHz		1	617.0	-26.2	-19	Pass
Test Case 1, NR5 Carrier 1, 619.5 MHz		2	616.9	-23.9	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		1	652.0	-27.8	-19	Pass
Test Case 1, NR5 Carrier 3, 649.5 MHz		2	652.1	-26.9	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		1	617.0	-31.7	-19	Pass
Test Case 2, NR20 Carrier 1, 627 MHz		2	616.9	-27.0	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		1	652.0	-30.5	-19	Pass
Test Case 2, NR15 Carrier 2, 644.5 MHz		2	652.1	-26.4	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		1	728.0	-26.1	-19	Pass
Test Case 3, NR5 Carrier 1, 730.5 MHz		2	727.9	-27.9	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		1	746.0	-27.0	-19	Pass
Test Case 3, NR5 Carrier 2, 743.5 MHz		2	746.1	-27.8	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		1	746.0	-24.2	-19	Pass
Test Case 4, NR5 n85 Carrier 1, 743.5 MHz		2	746.1	-20.9	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		1	617.0	-24.6	-19	Pass
Test Case 4, NR5 n71 Carrier 1, 619.5 MHz		2	616.9	-21.1	-19	Pass

BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

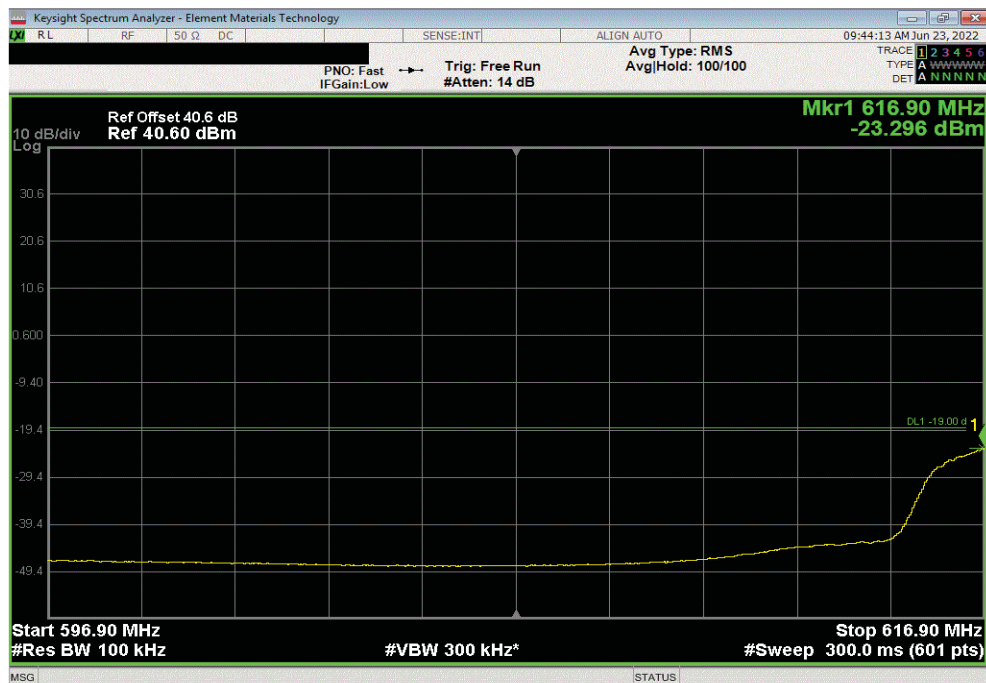


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-25.75	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-23.3	-19	Pass		

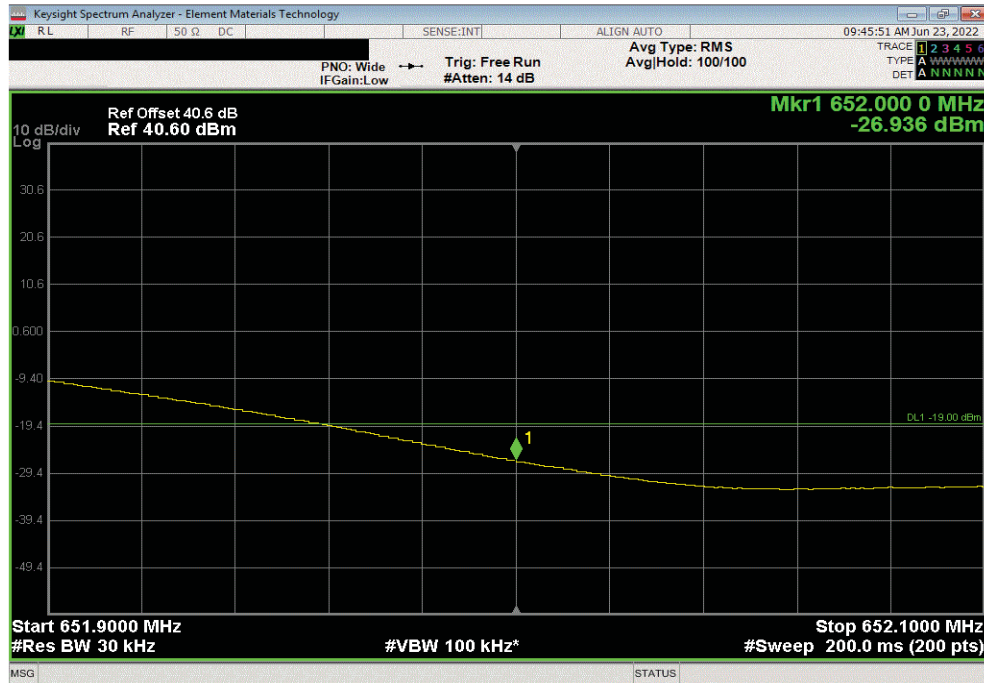


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

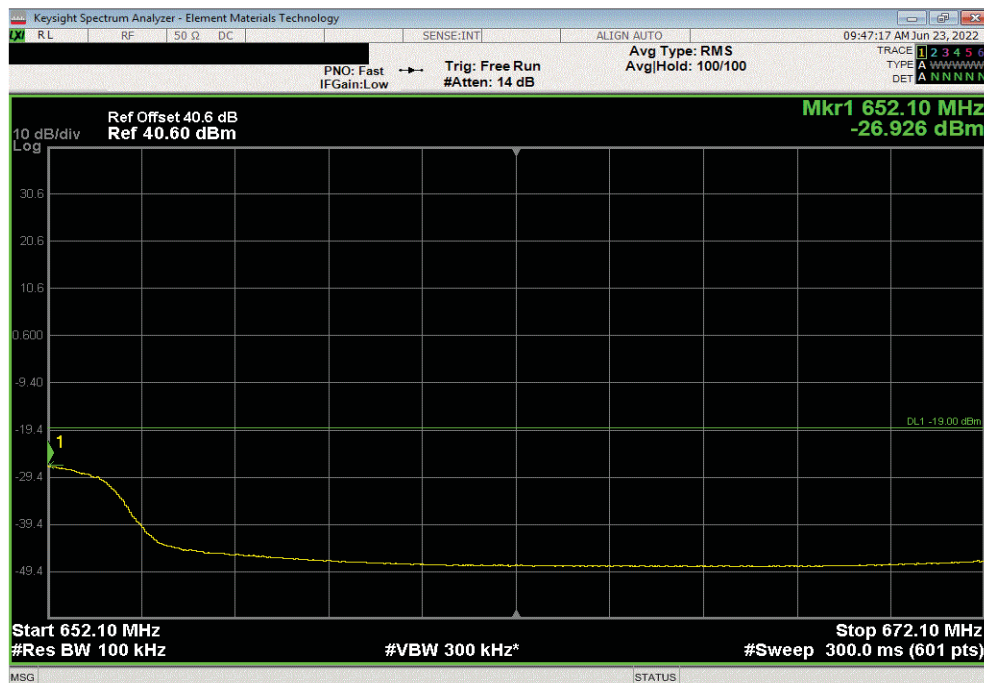


TbTx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-26.94	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.93	-19	Pass		

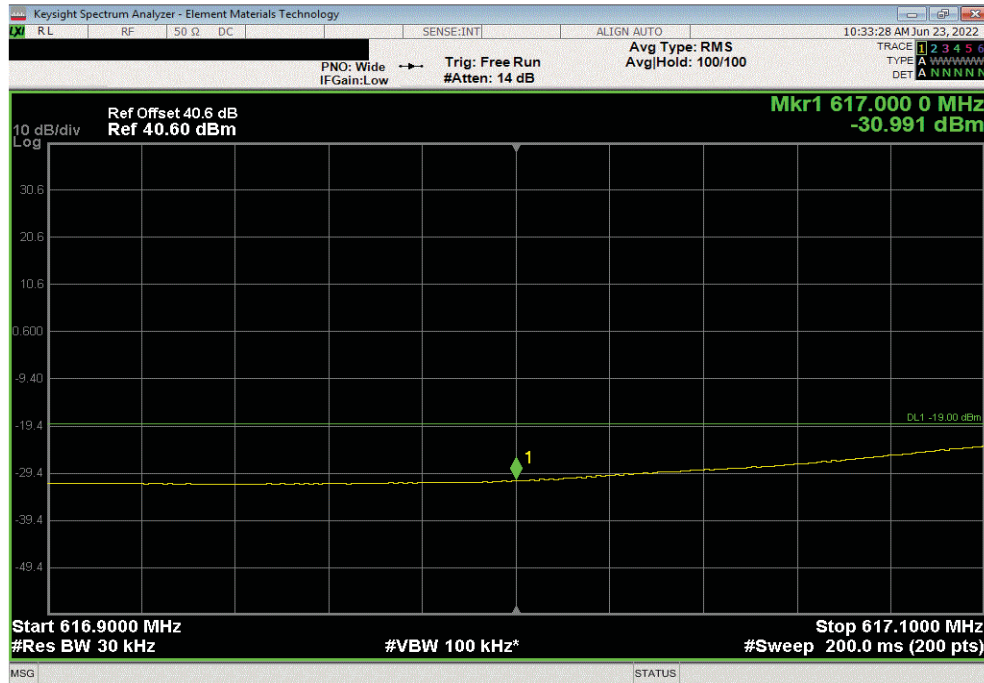


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

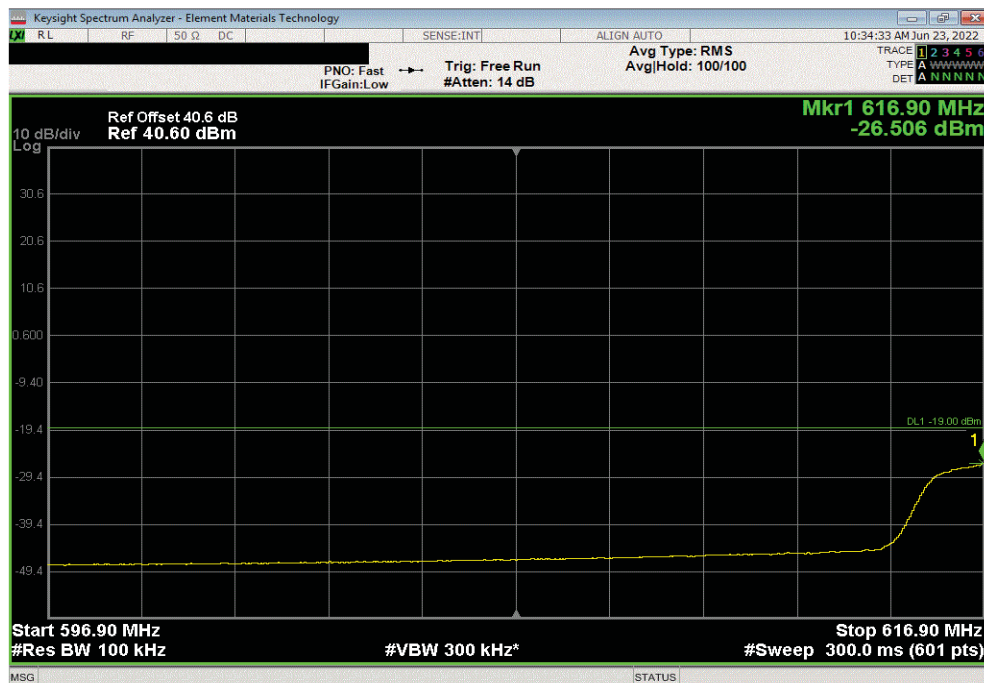


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-30.99	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-26.51	-19	Pass		

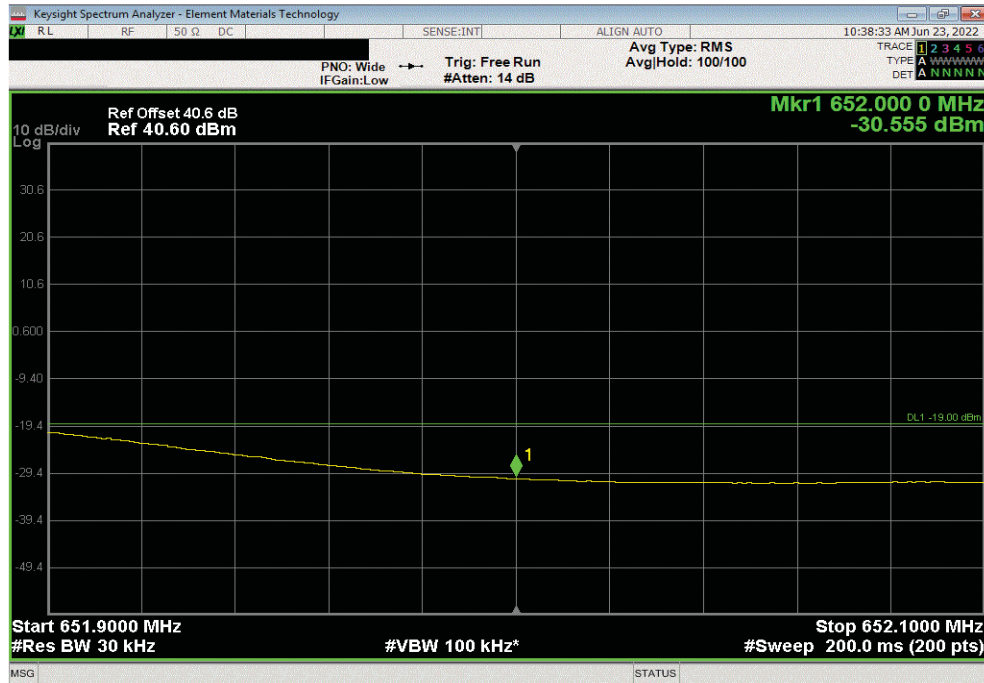


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

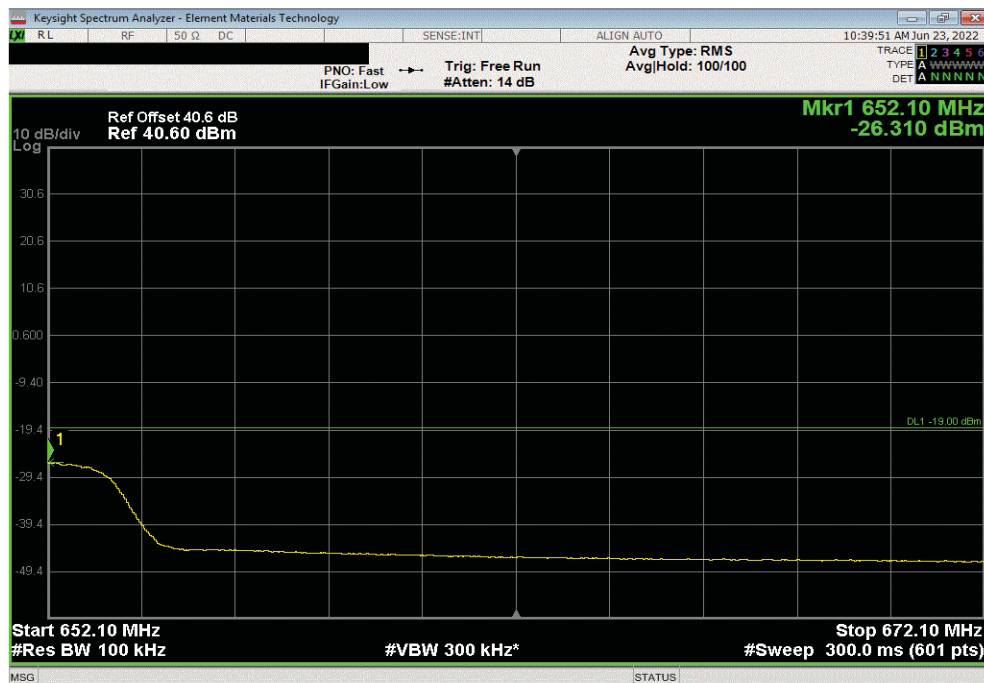


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-30.56	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.31	-19	Pass		

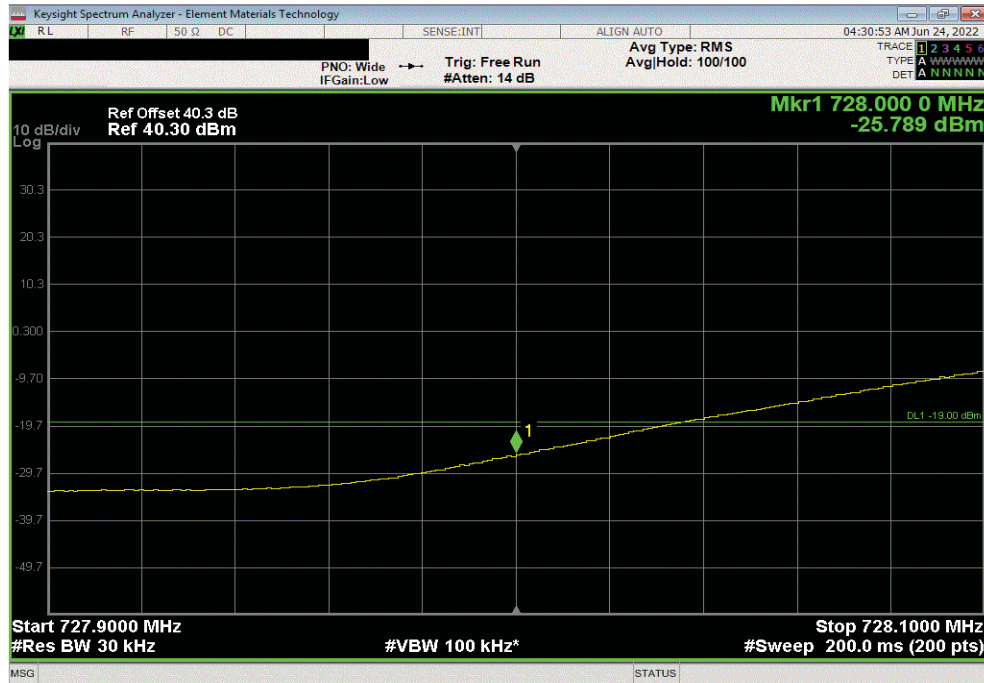


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

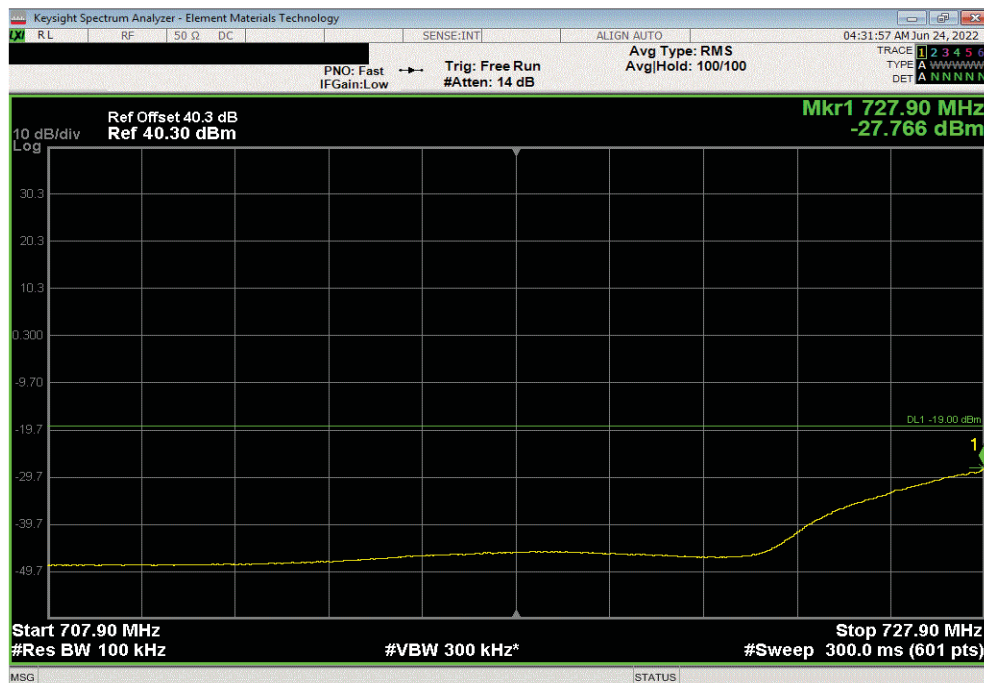


TbTtx 2022.05.02.0 XMIT 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	728	-25.79	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	727.9	-27.77	-19	Pass		

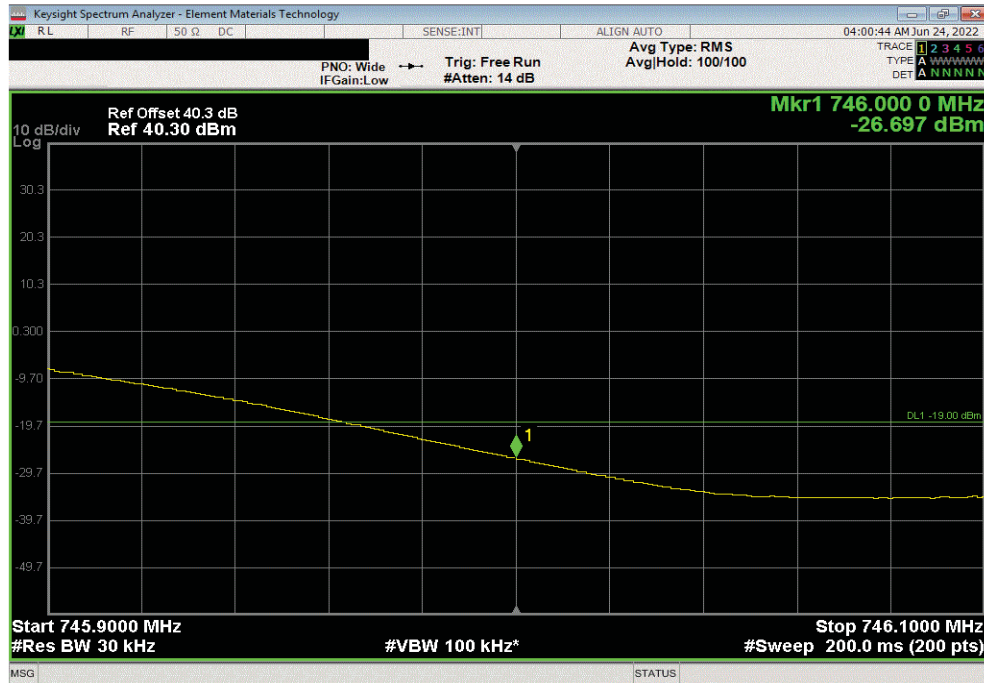


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

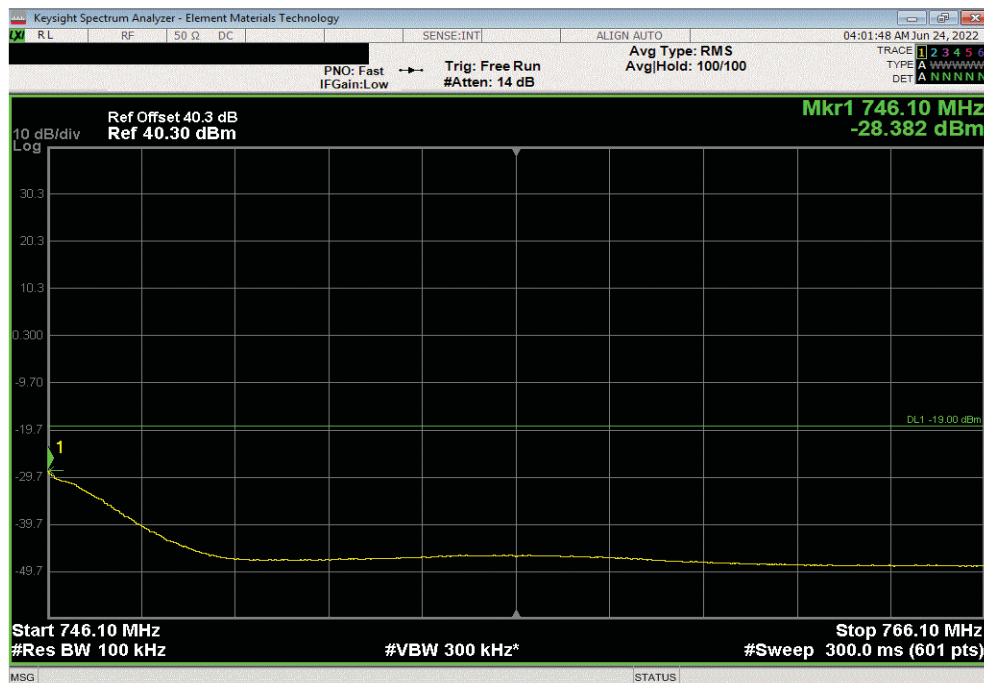


TbTx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-26.7	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-28.38	-19	Pass		

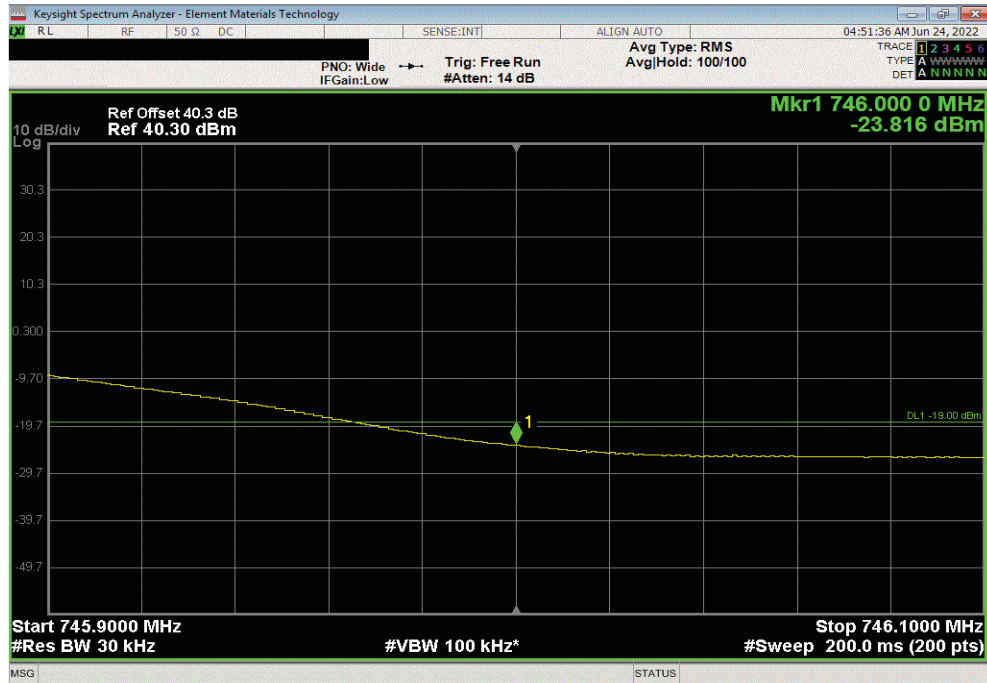


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

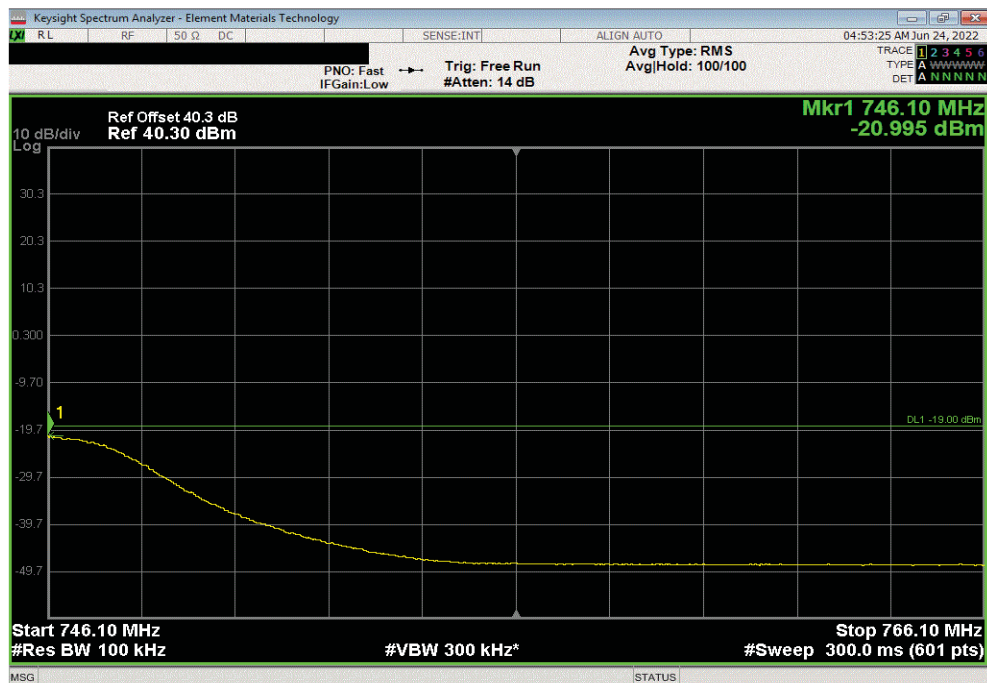


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-23.82	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-21	-19	Pass		

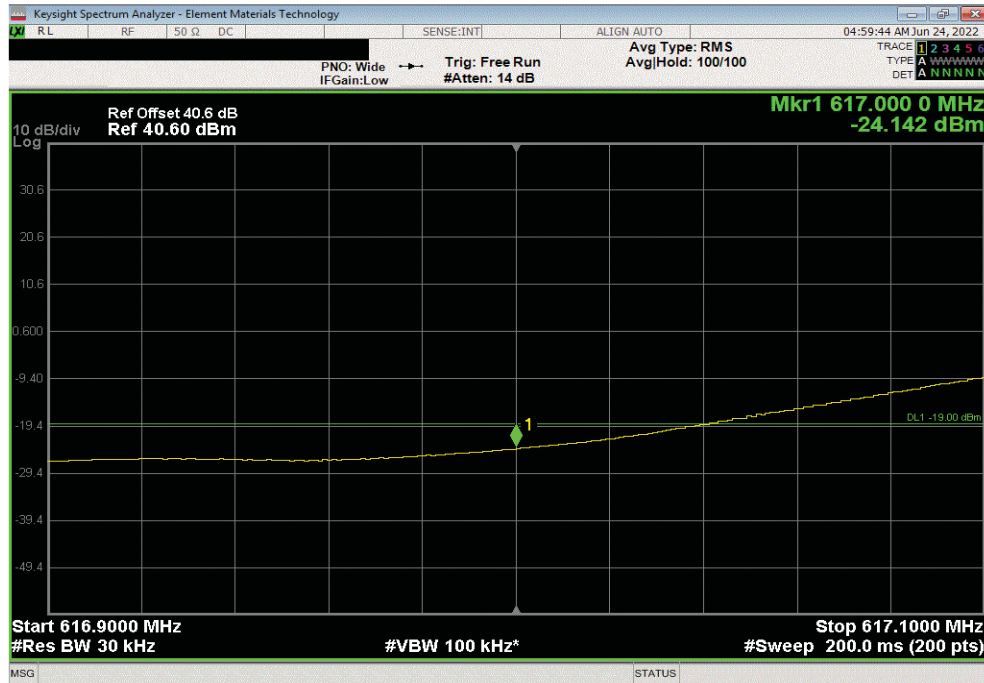


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

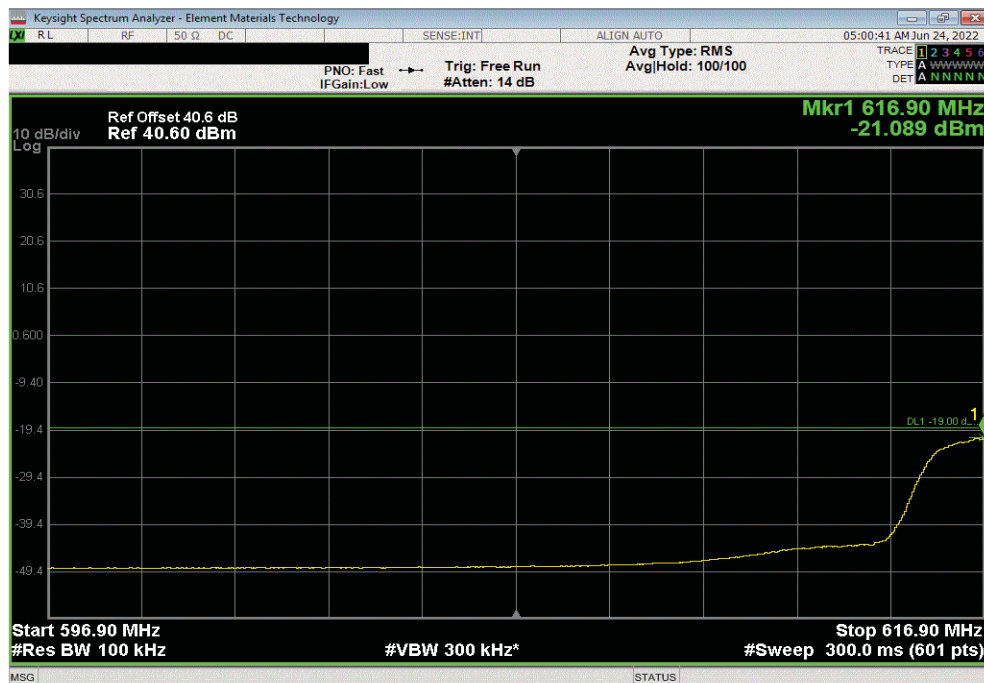


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-24.14	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, QPSK Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-21.09	-19	Pass		

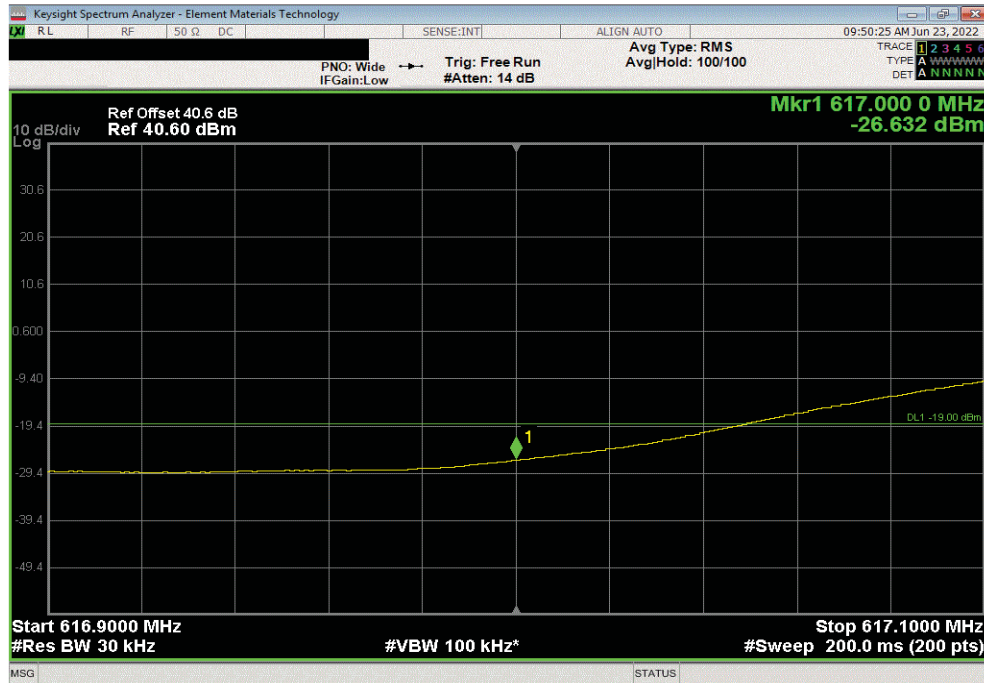


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

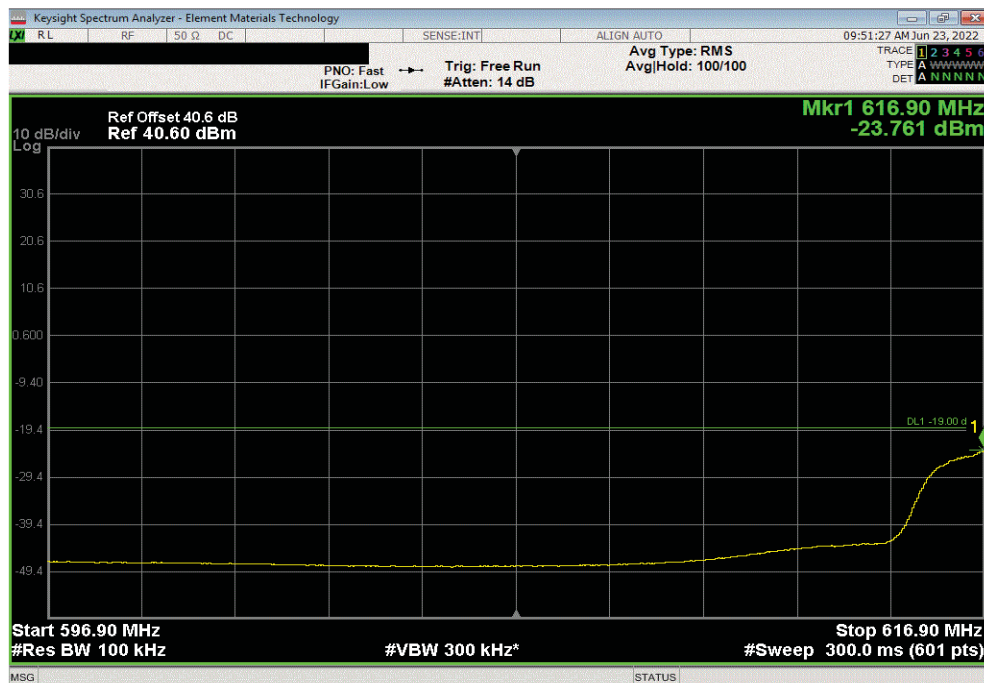


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-26.63	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-23.76	-19	Pass		

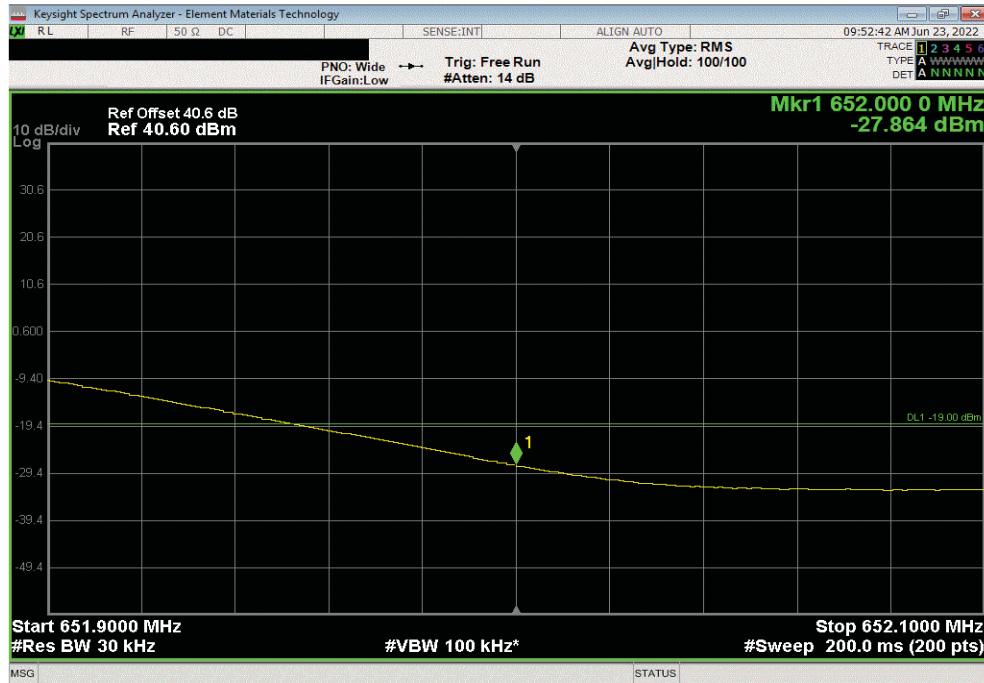


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

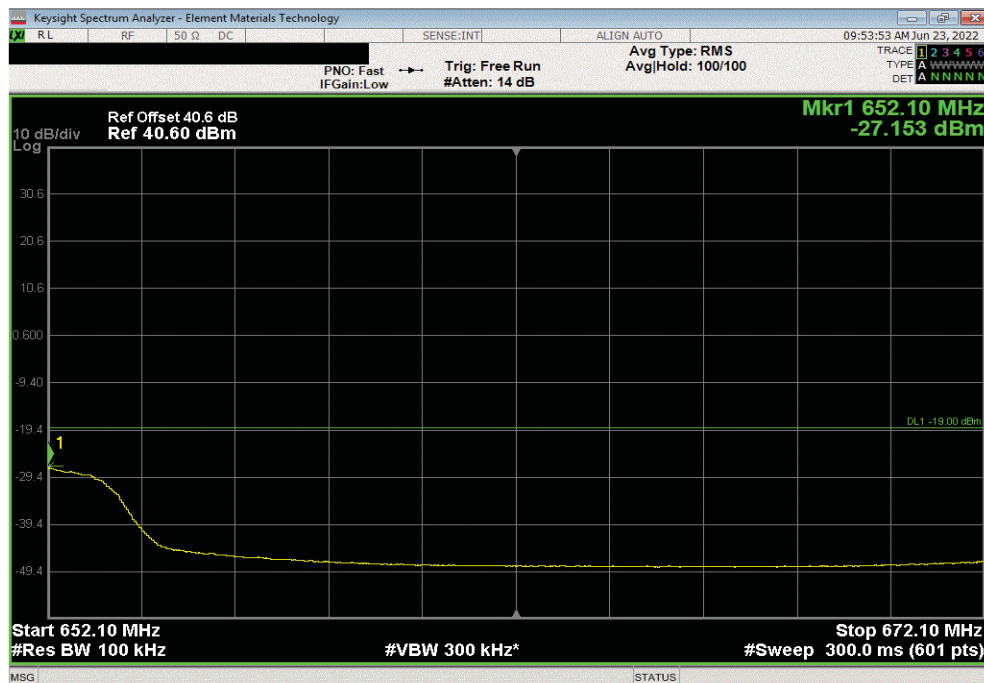


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-27.86	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-27.15	-19	Pass		

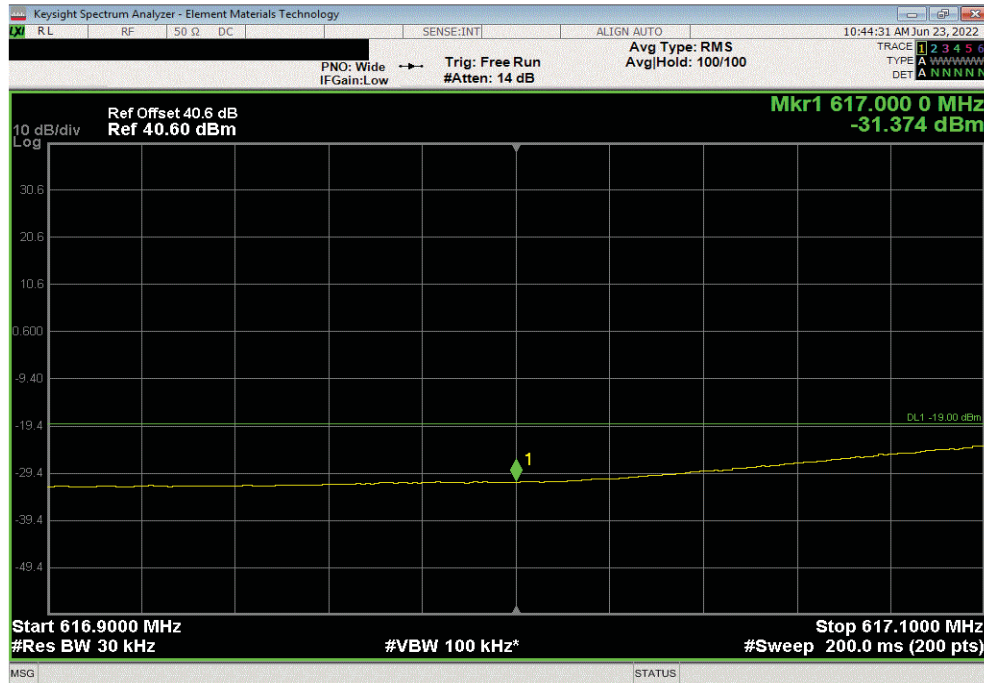


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

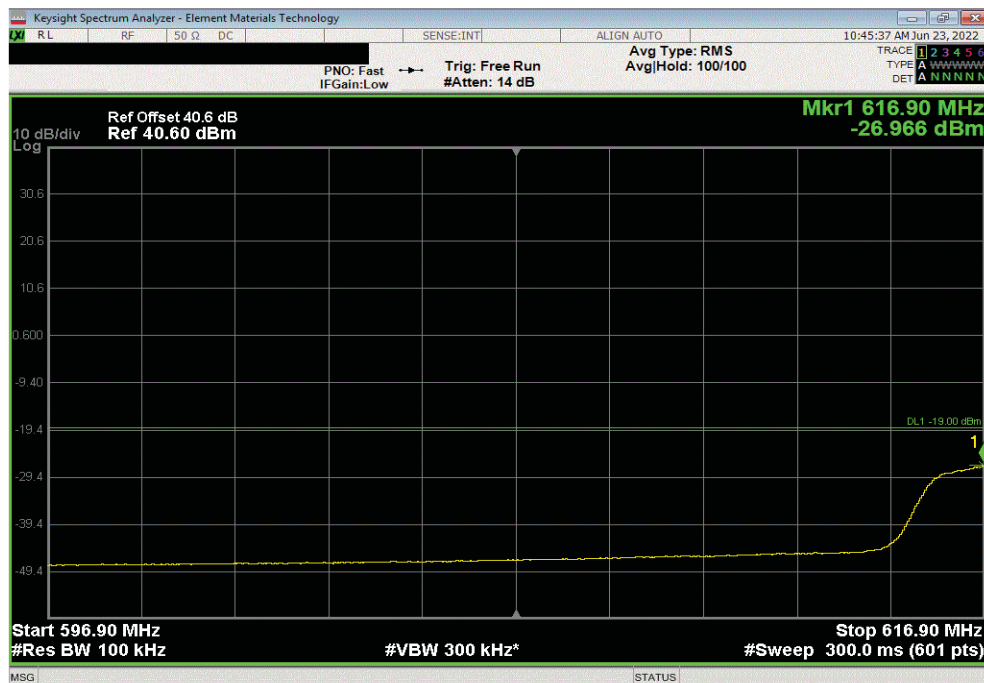


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-31.37	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-26.97	-19	Pass		

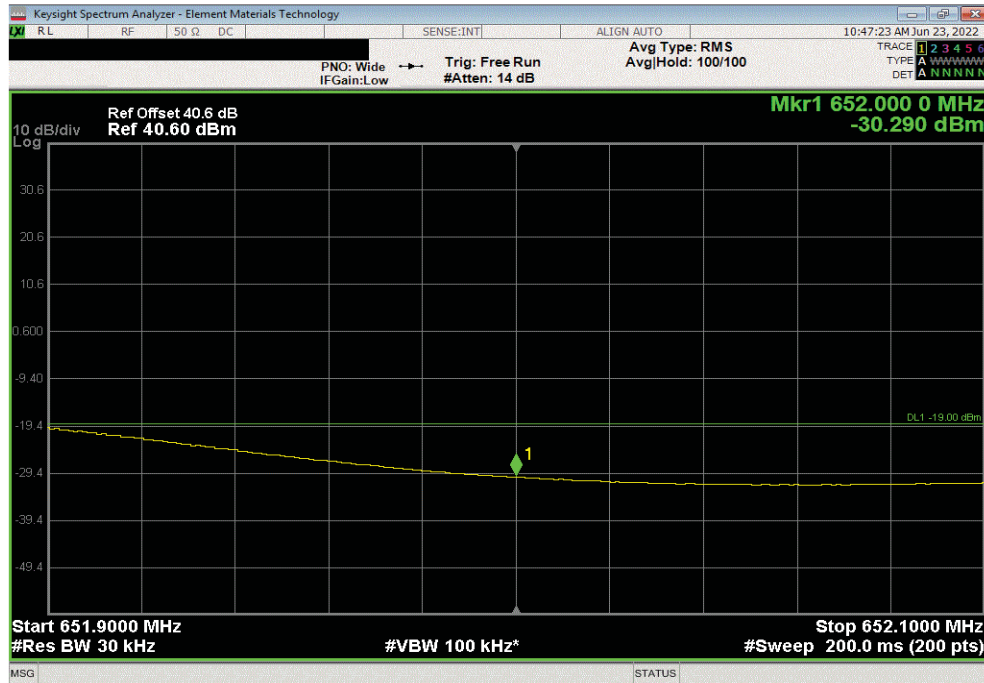


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

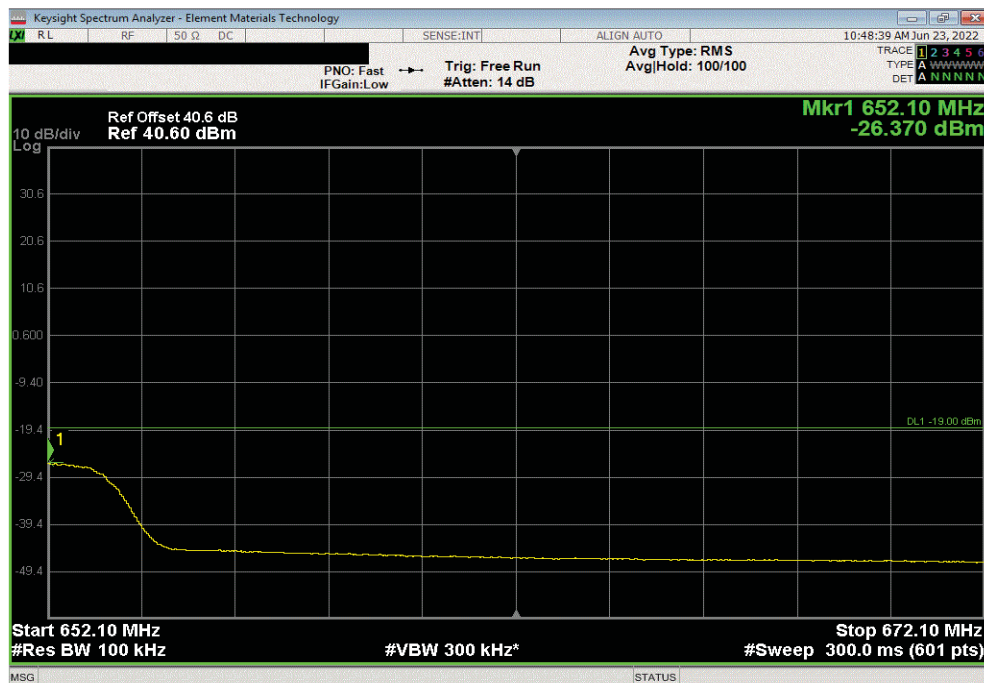


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-30.29	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.37	-19	Pass		

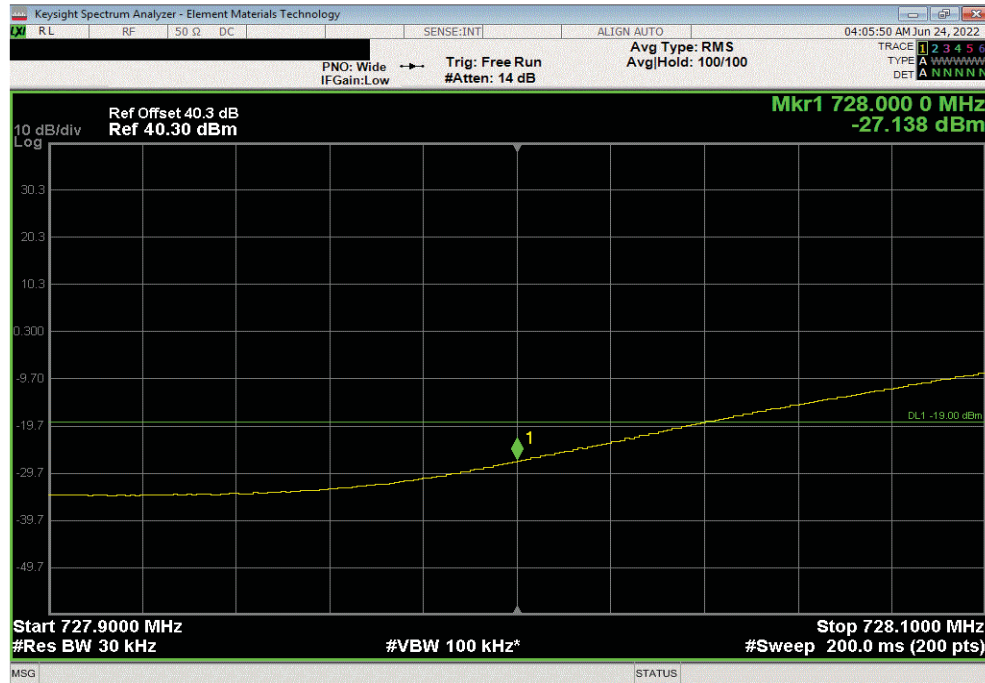


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

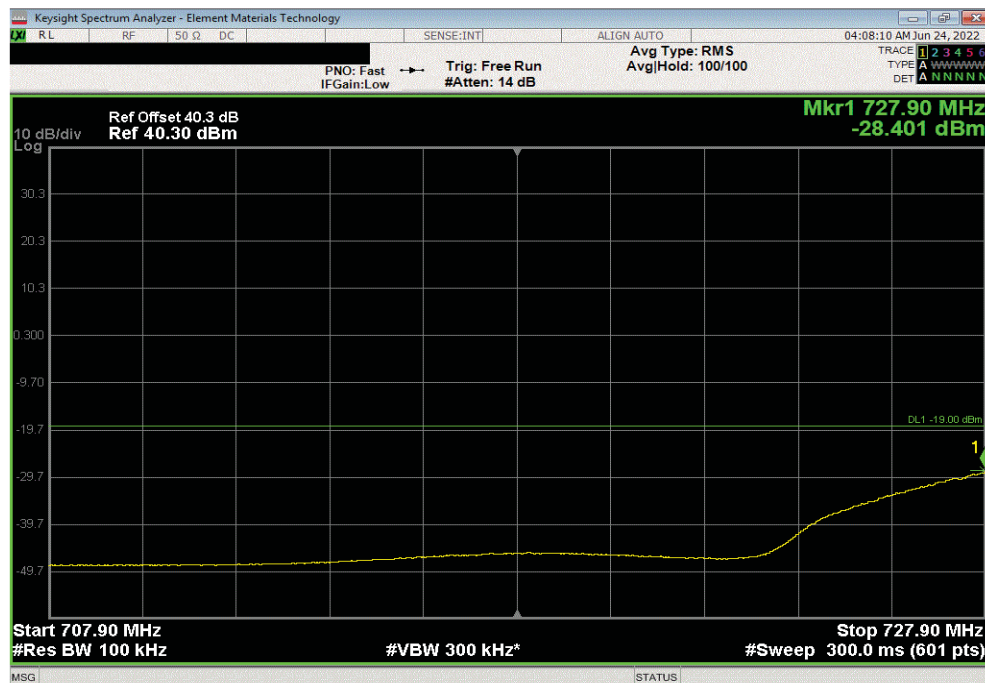


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	728	-27.14	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	727.9	-28.4	-19	Pass		

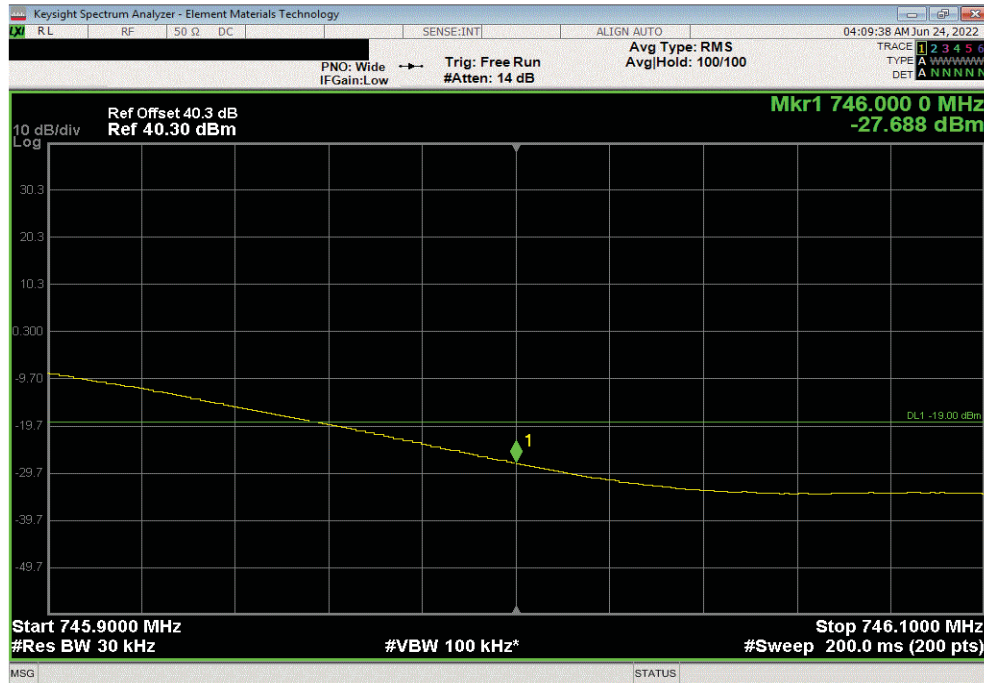


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

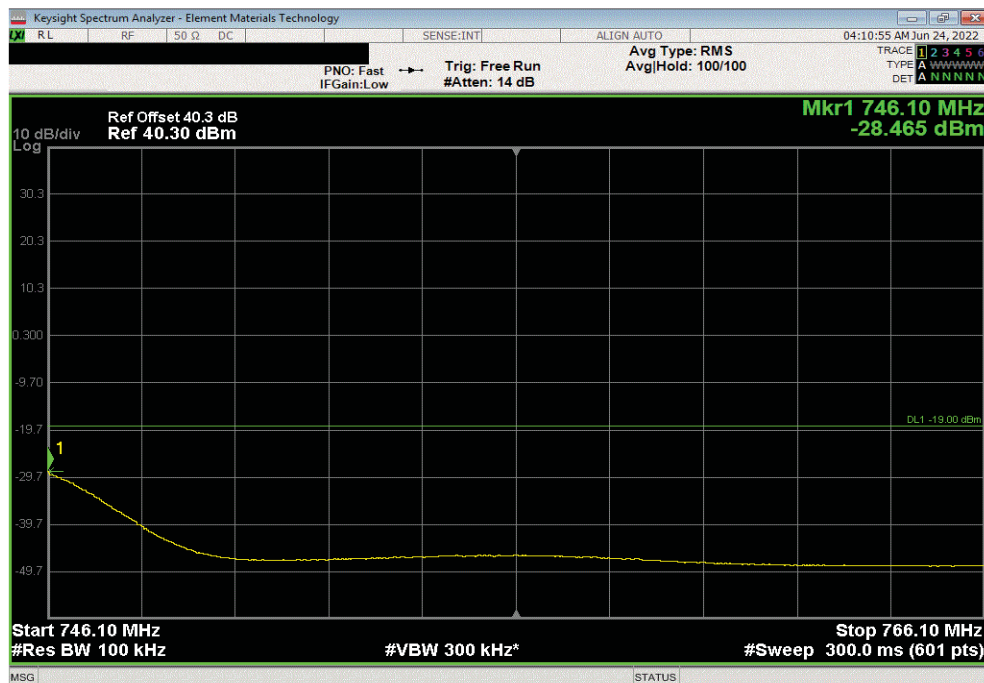


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-27.69	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-28.47	-19	Pass		

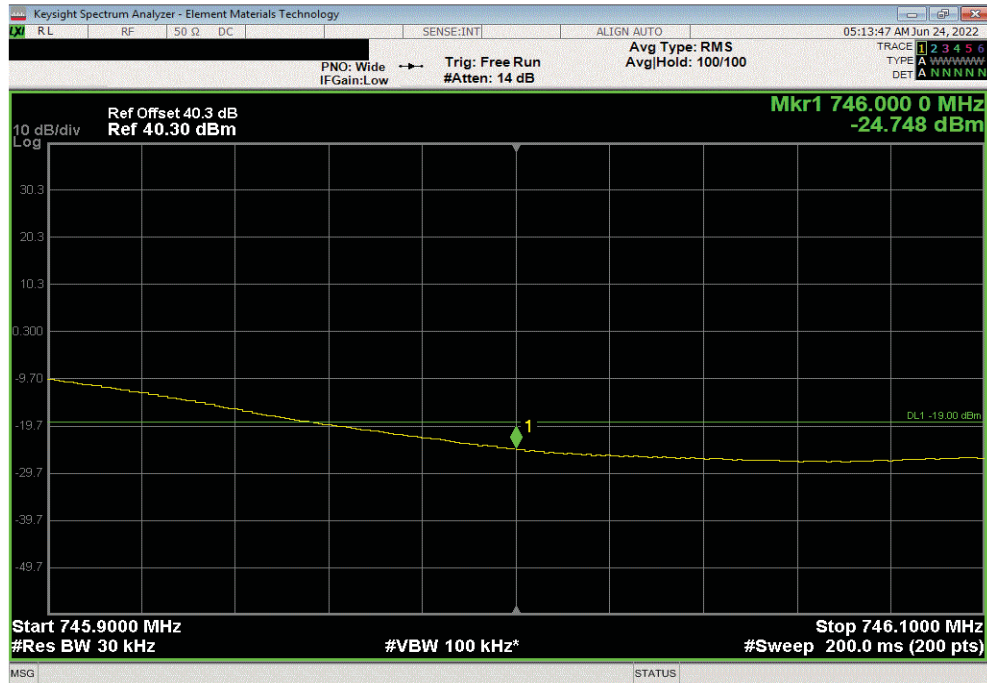


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

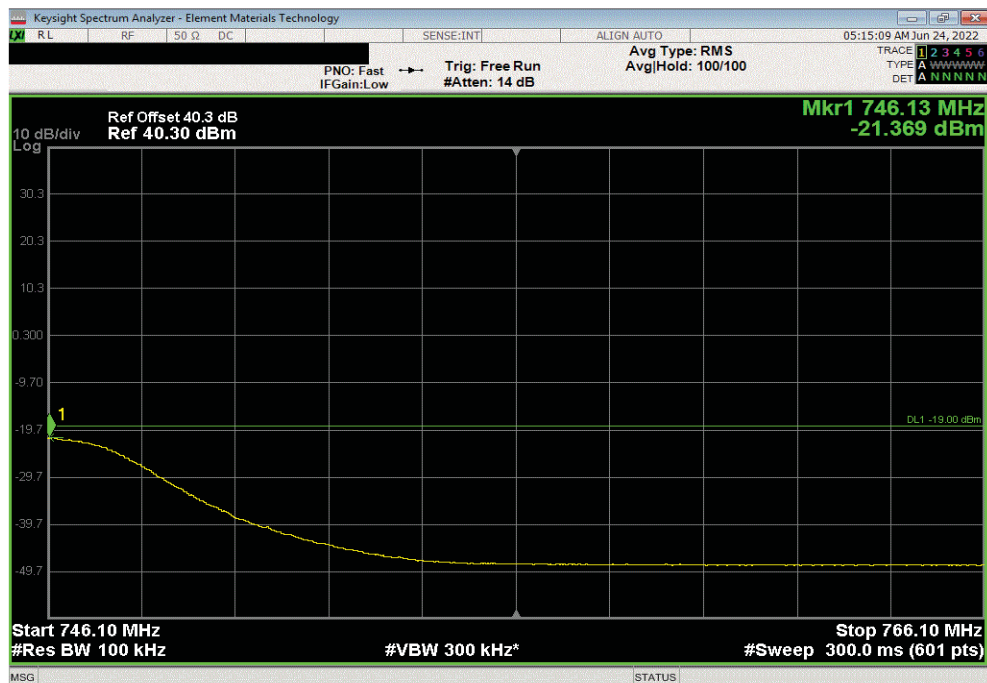


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-24.75	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.13	-21.37	-19	Pass		

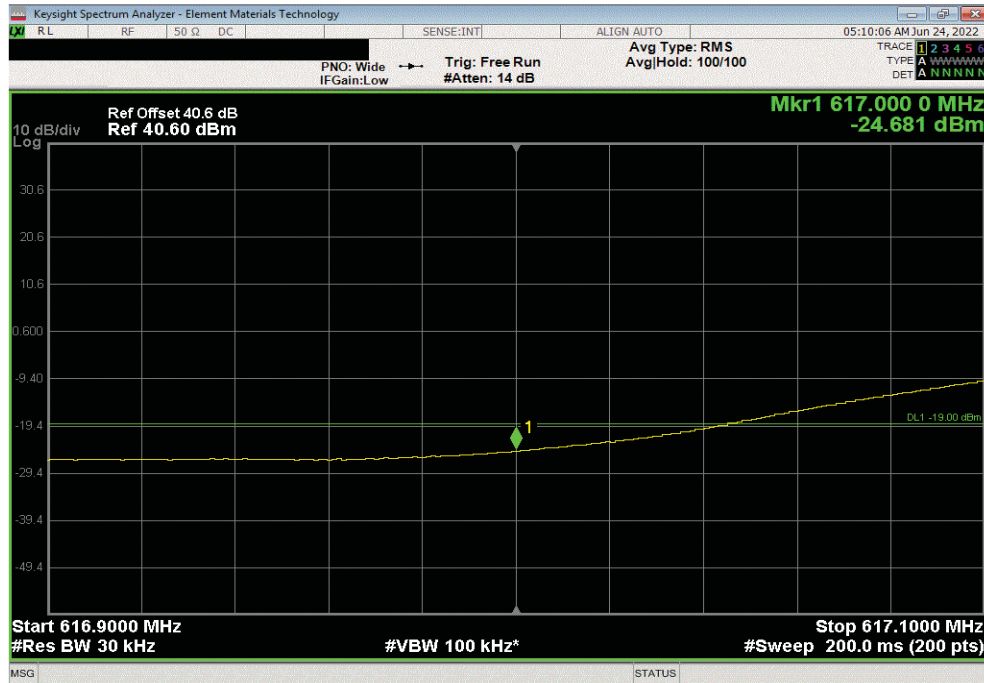


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

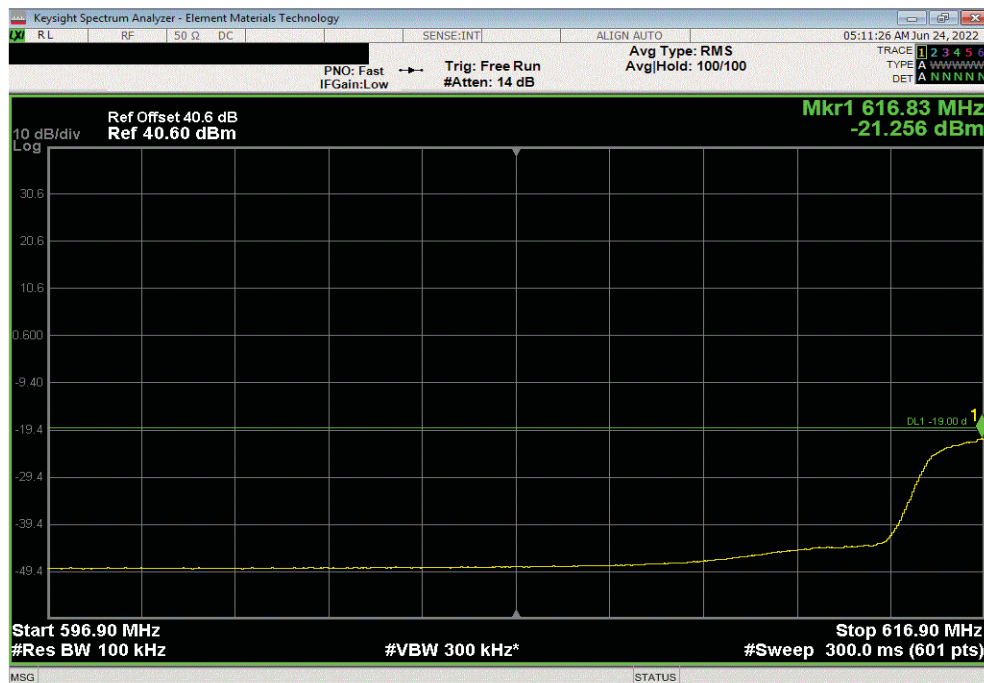


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-24.68	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 16-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.83	-21.26	-19	Pass		

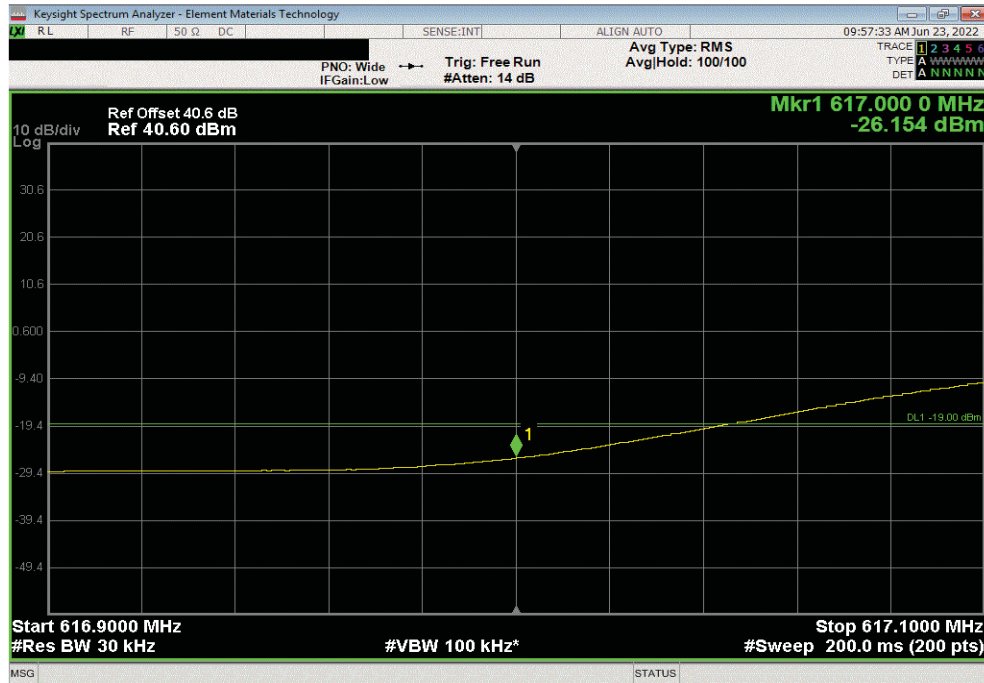


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

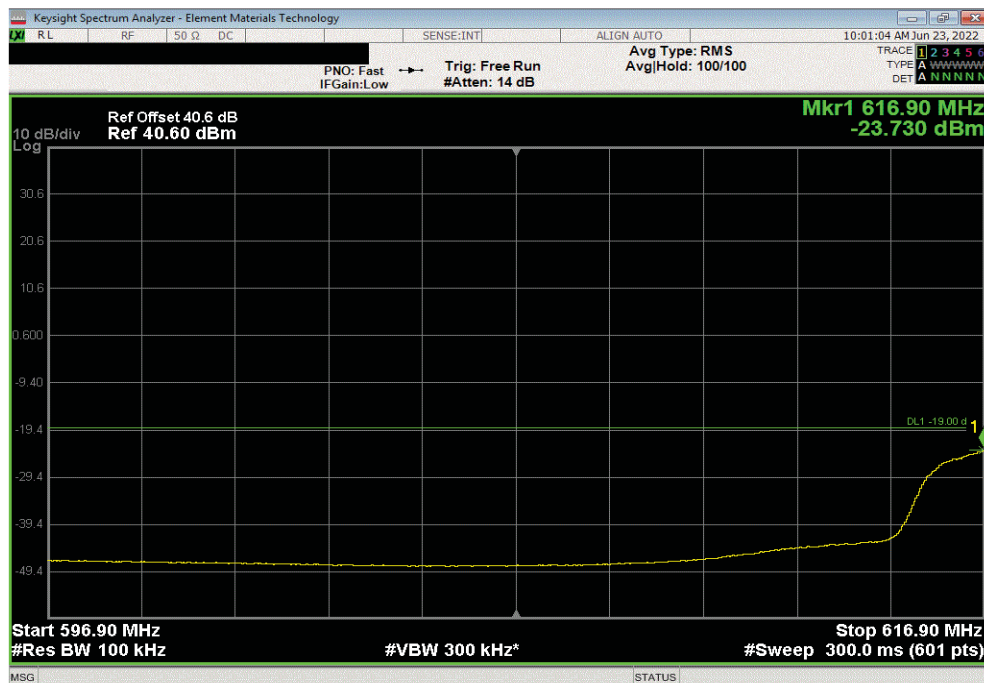


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-26.15	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-23.73	-19	Pass		

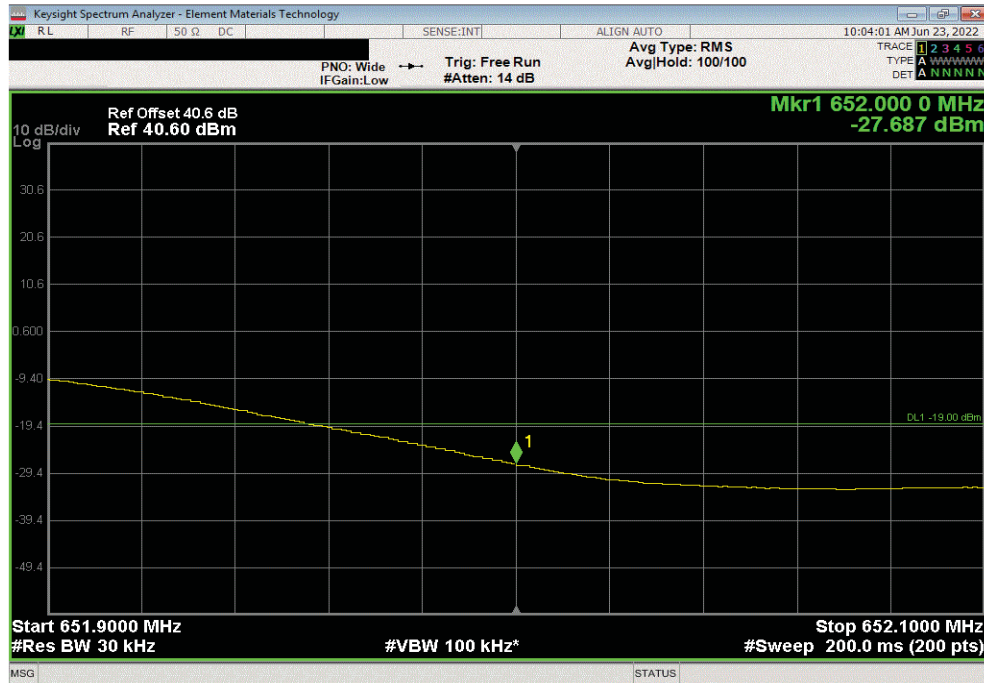


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

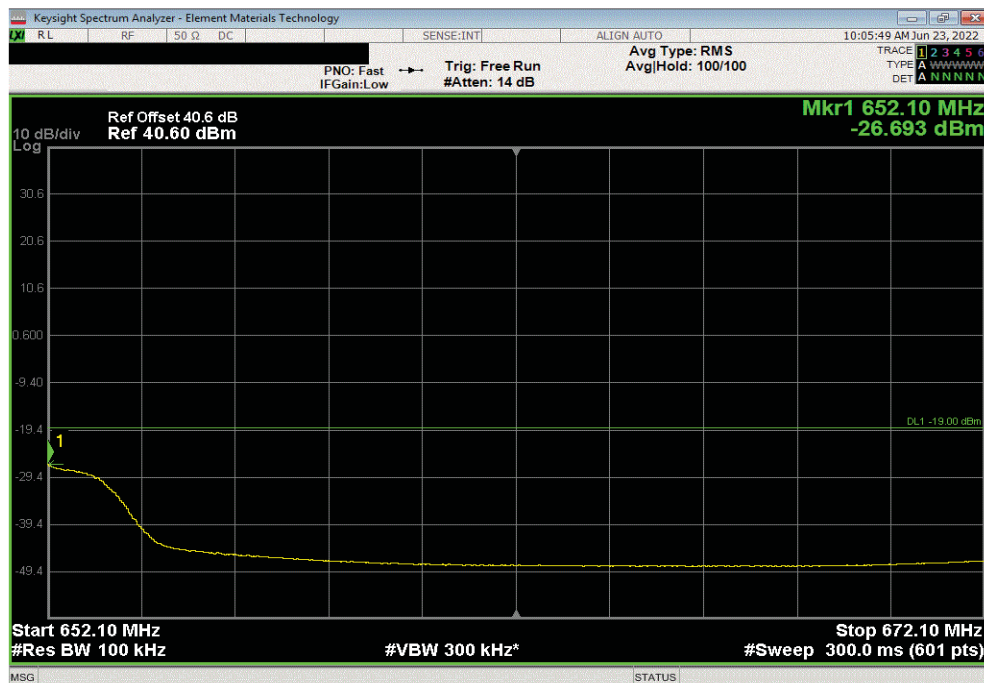


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-27.69	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.69	-19	Pass		

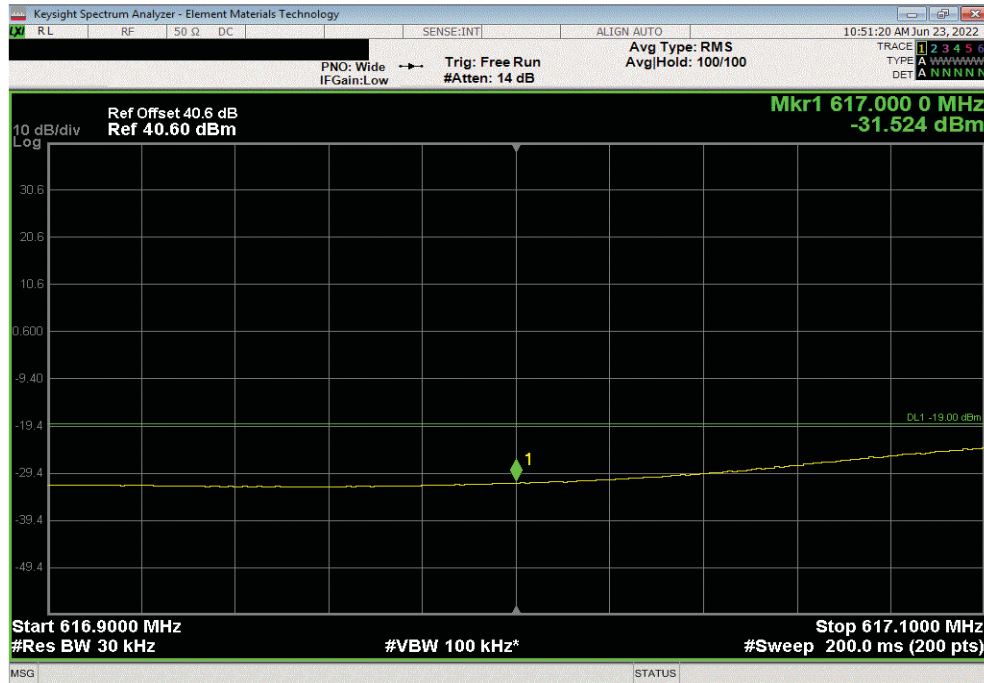


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

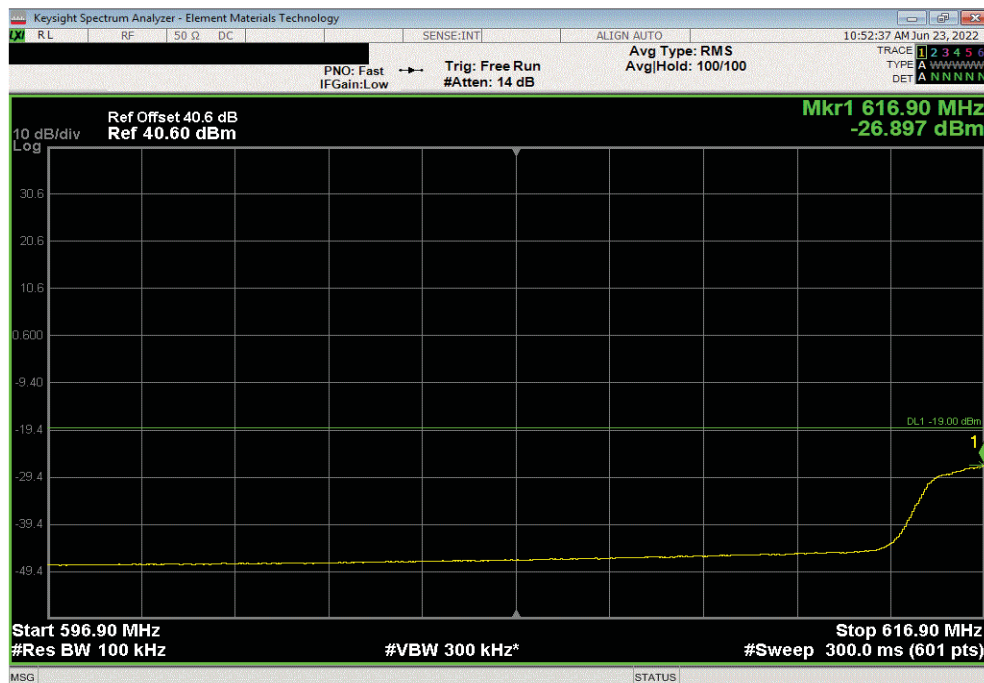


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-31.52	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-26.9	-19	Pass		

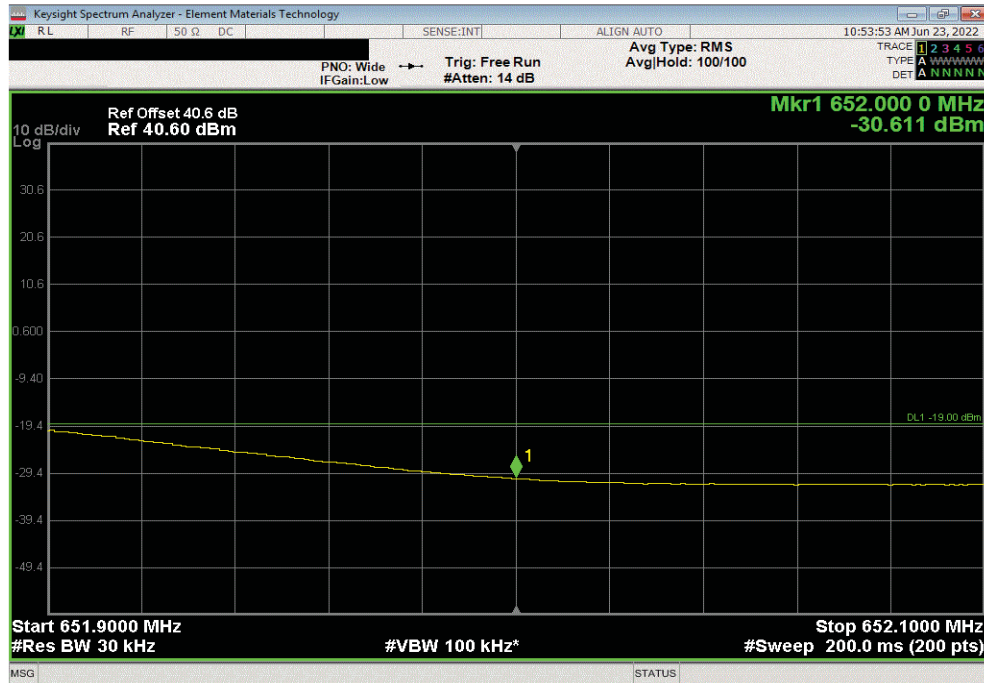


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

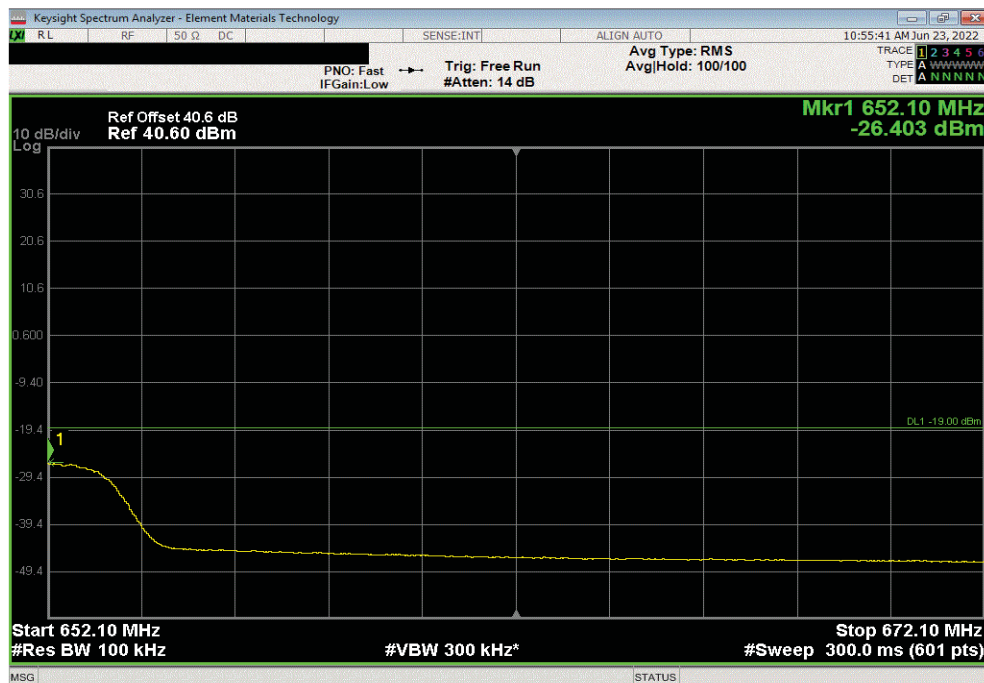


TbTx 2022.05.02.0 XbTx 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-30.61	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.4	-19	Pass		

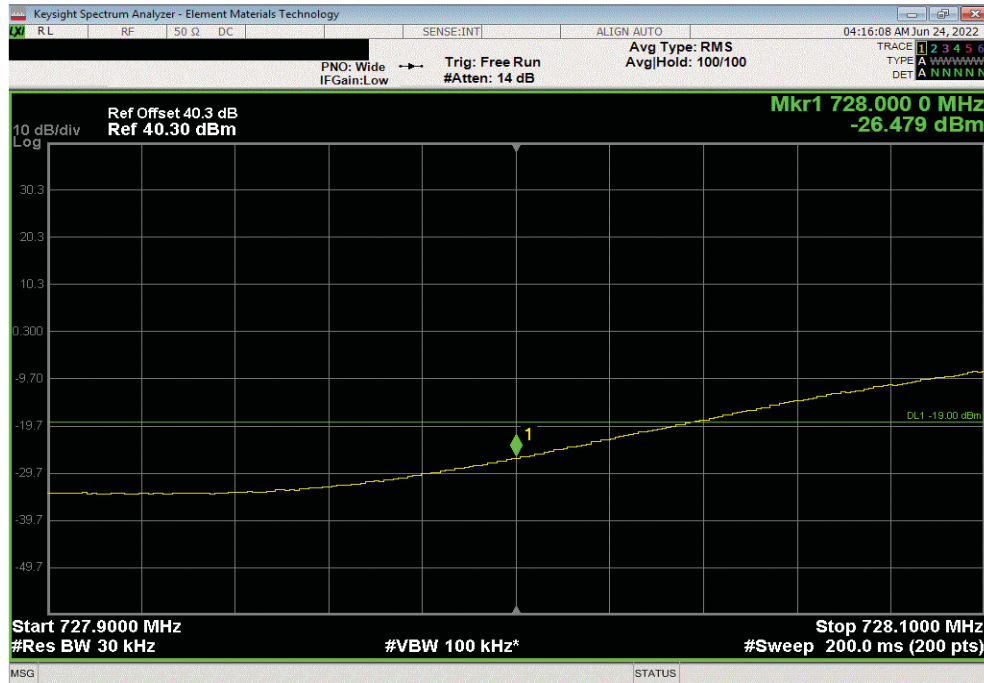


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

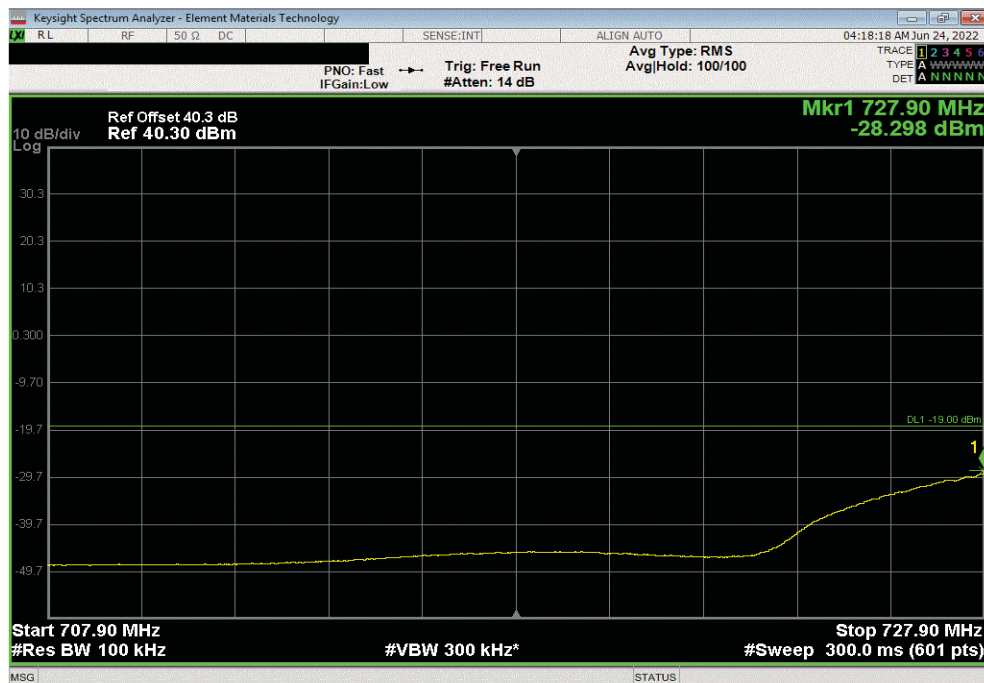


TbTtx 2022.05.02.0 XMill 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	728	-26.48	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	727.9	-28.3	-19	Pass		

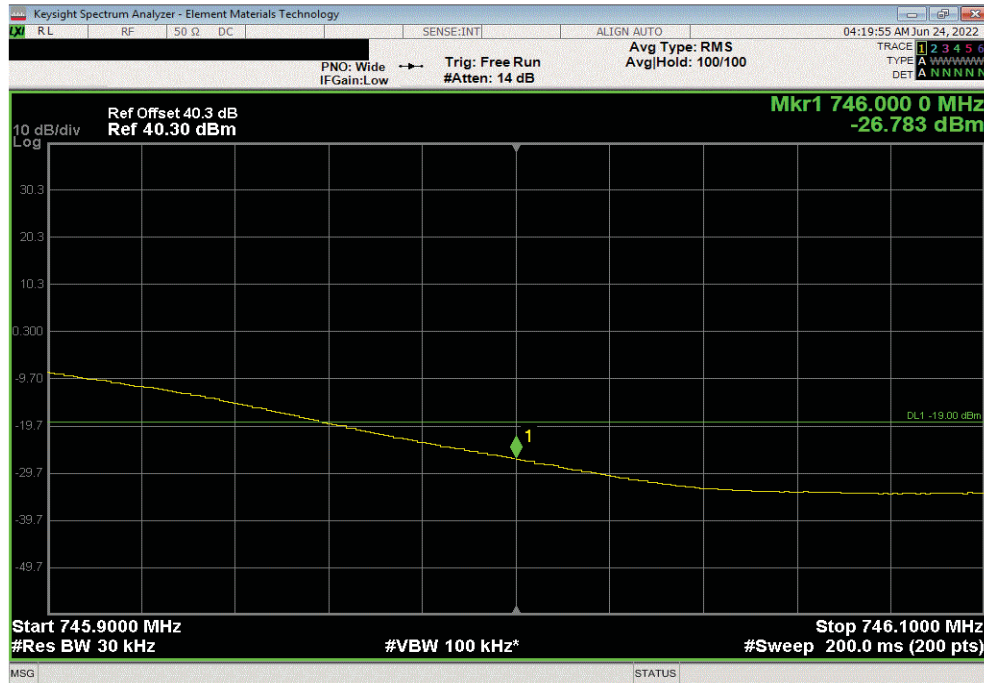


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

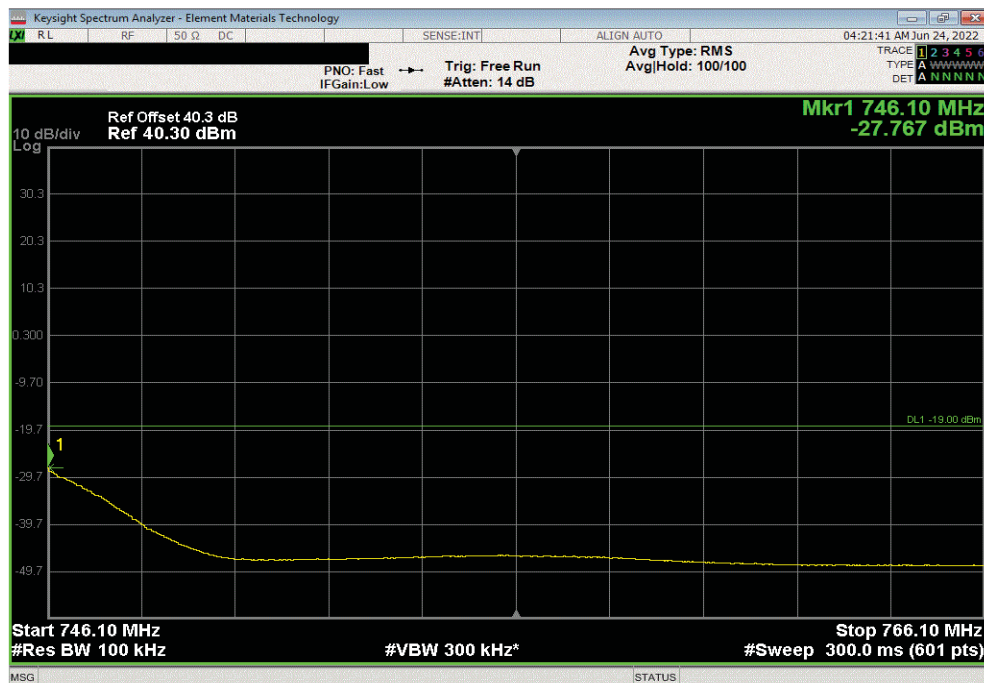


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-26.78	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-27.77	-19	Pass		

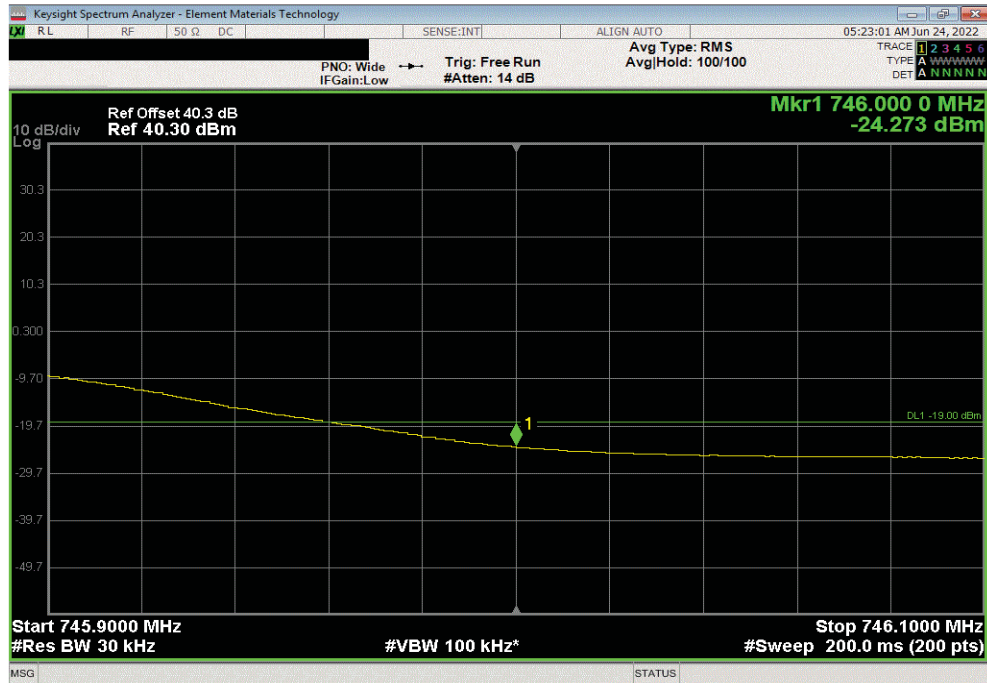


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

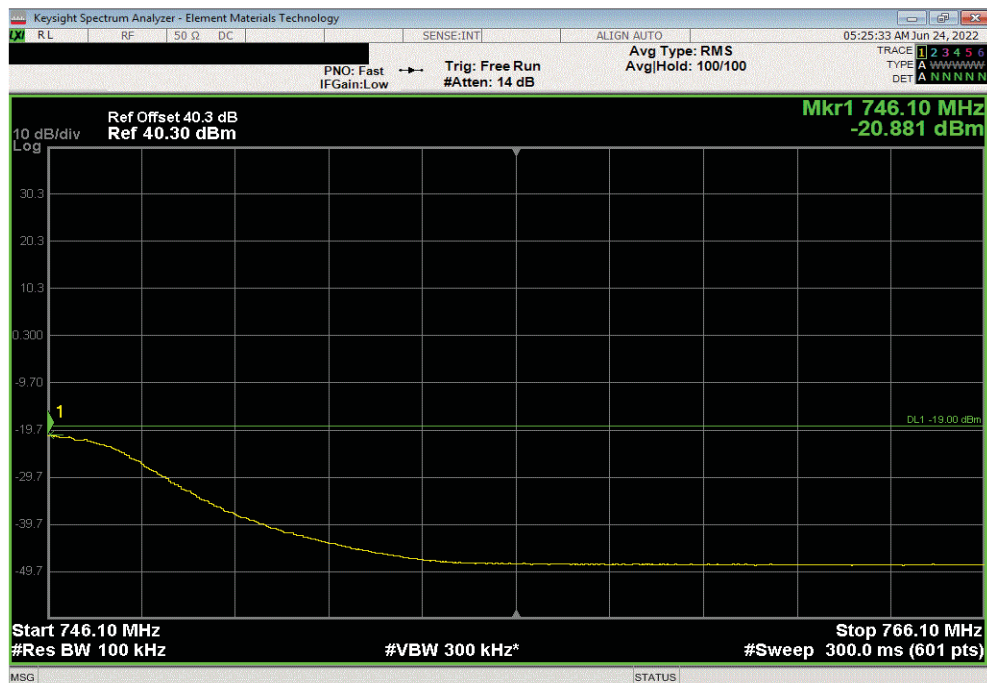


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-24.27	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-20.88	-19	Pass		

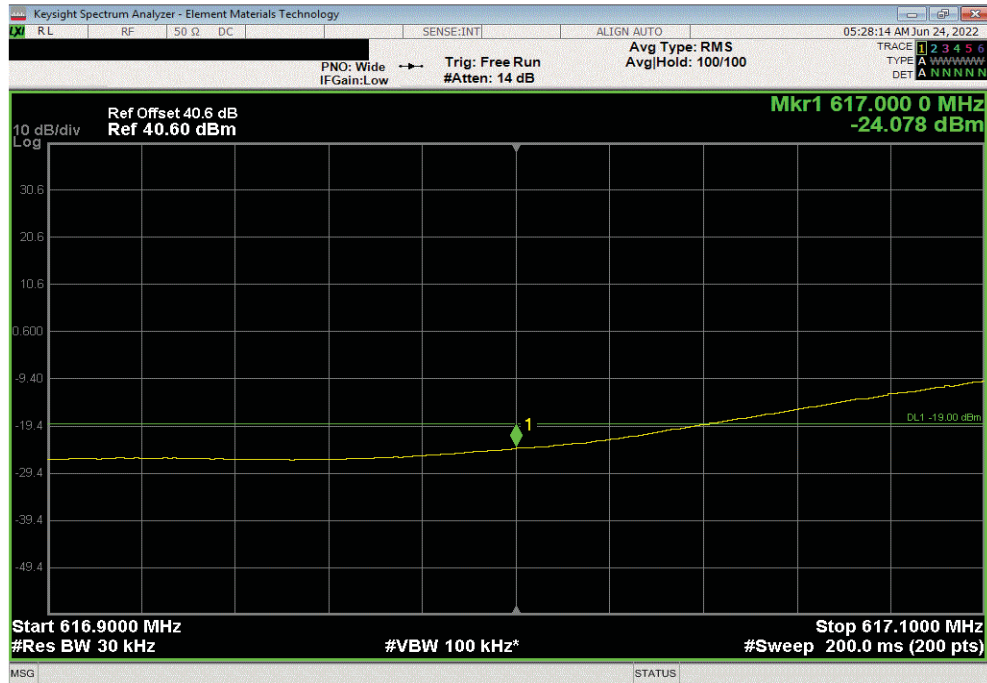


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

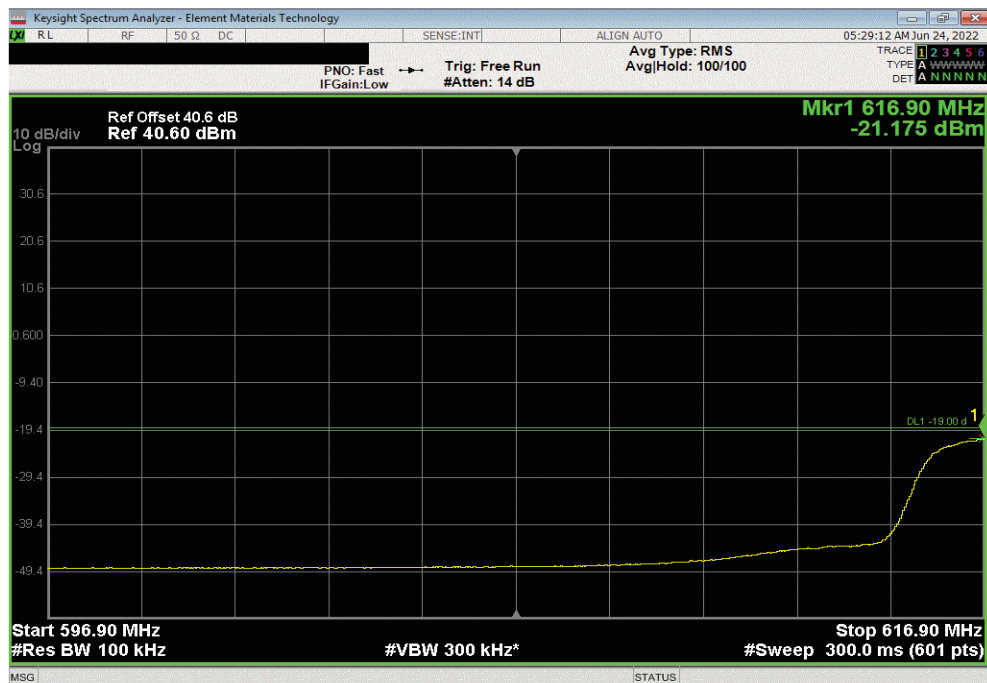


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-24.08	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 64-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-21.18	-19	Pass		

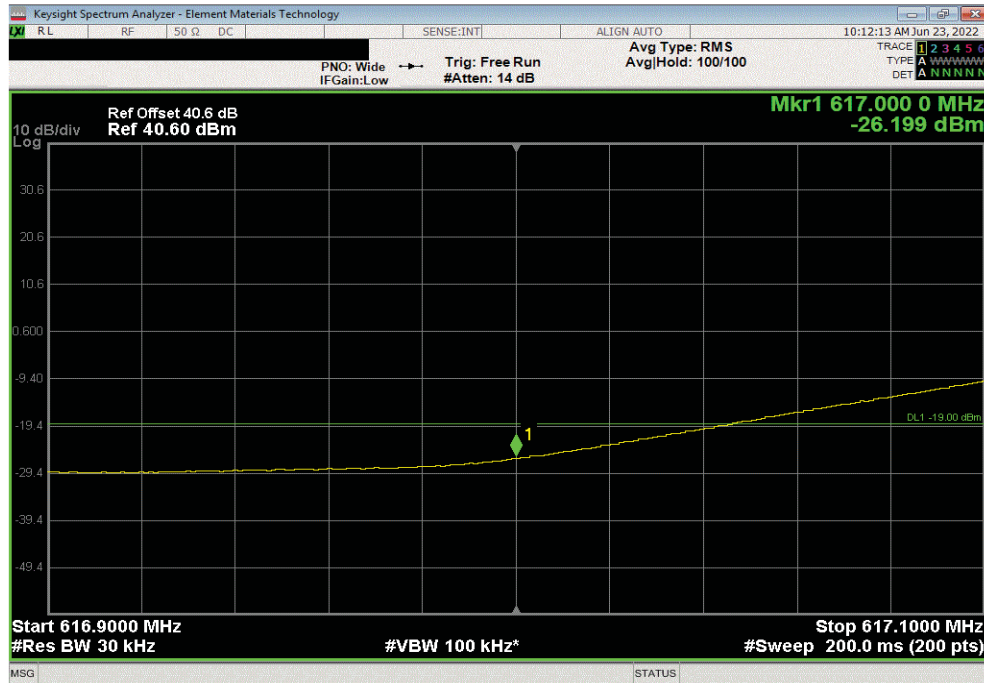


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

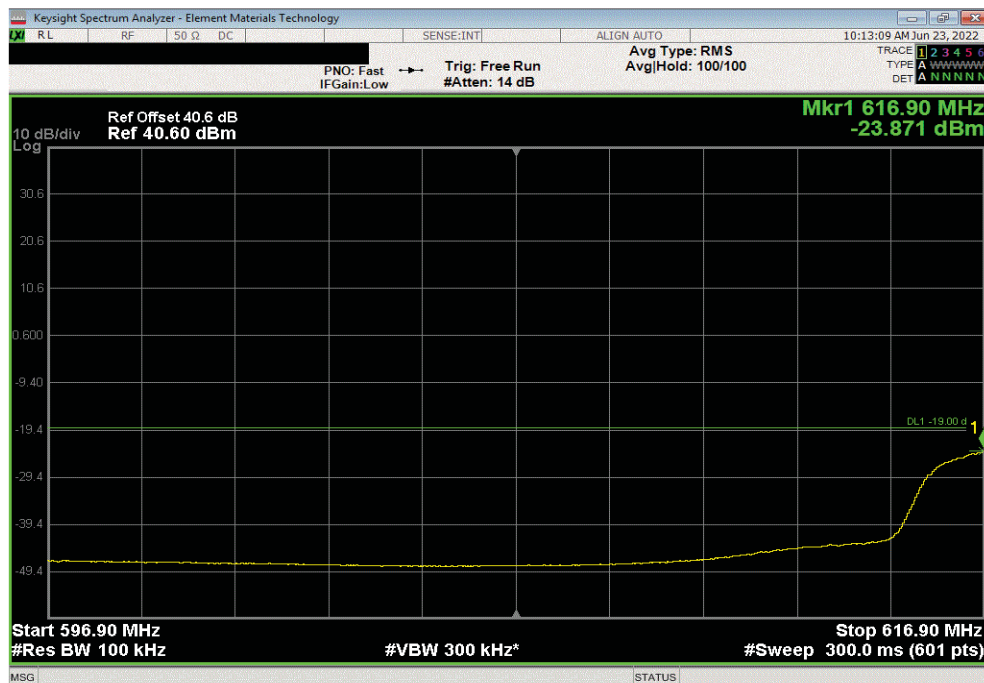


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-26.2	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 1, NR5 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-23.87	-19	Pass		

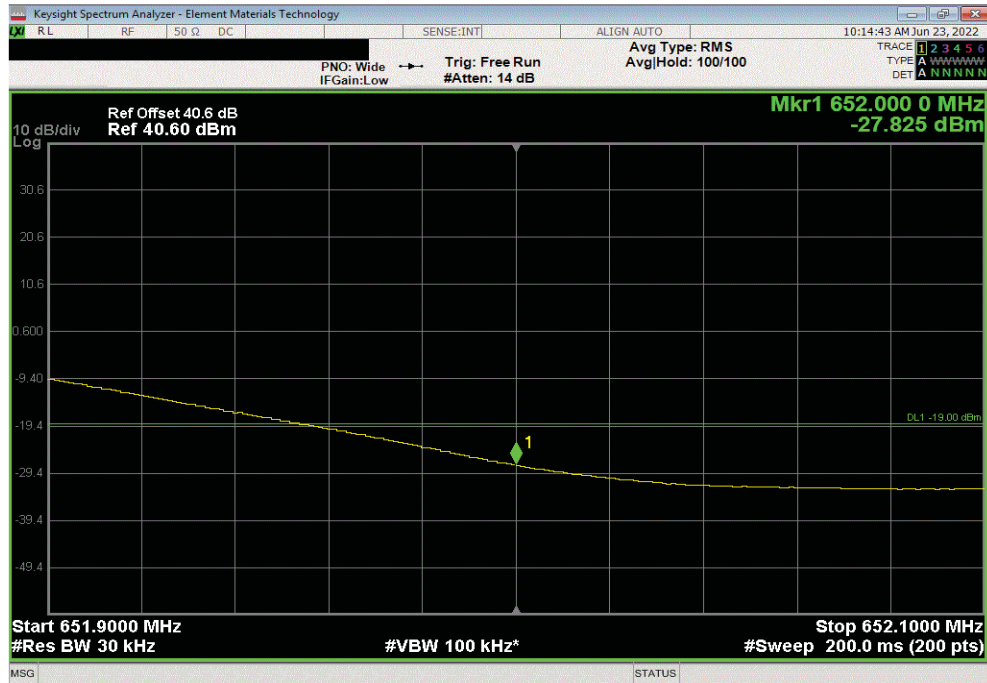


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

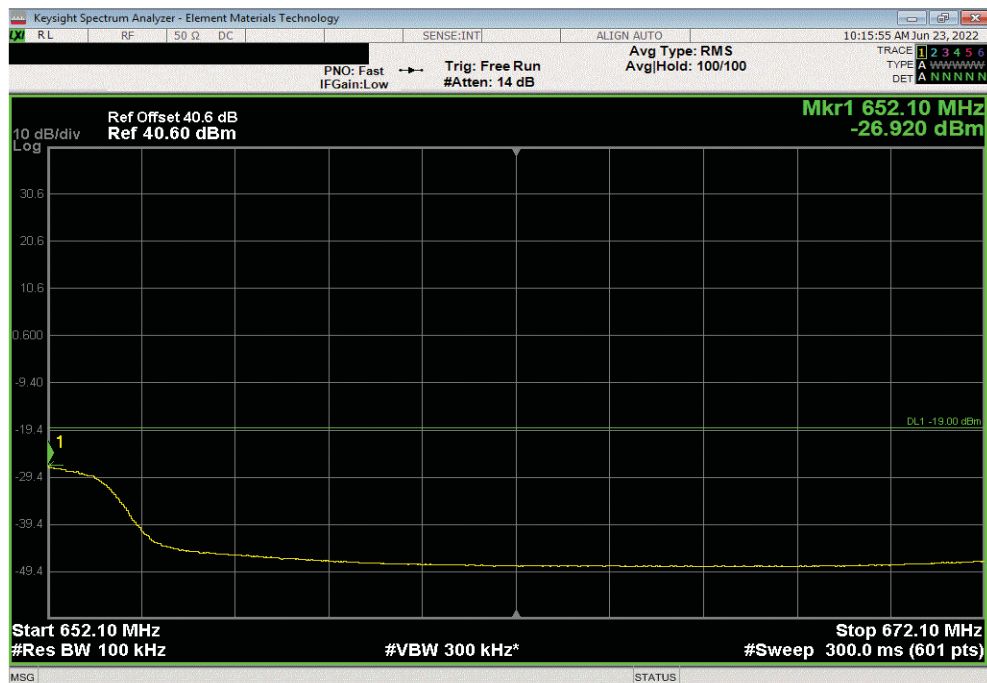


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-27.83	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 1, NR5 Carrier 3, 649.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.92	-19	Pass		

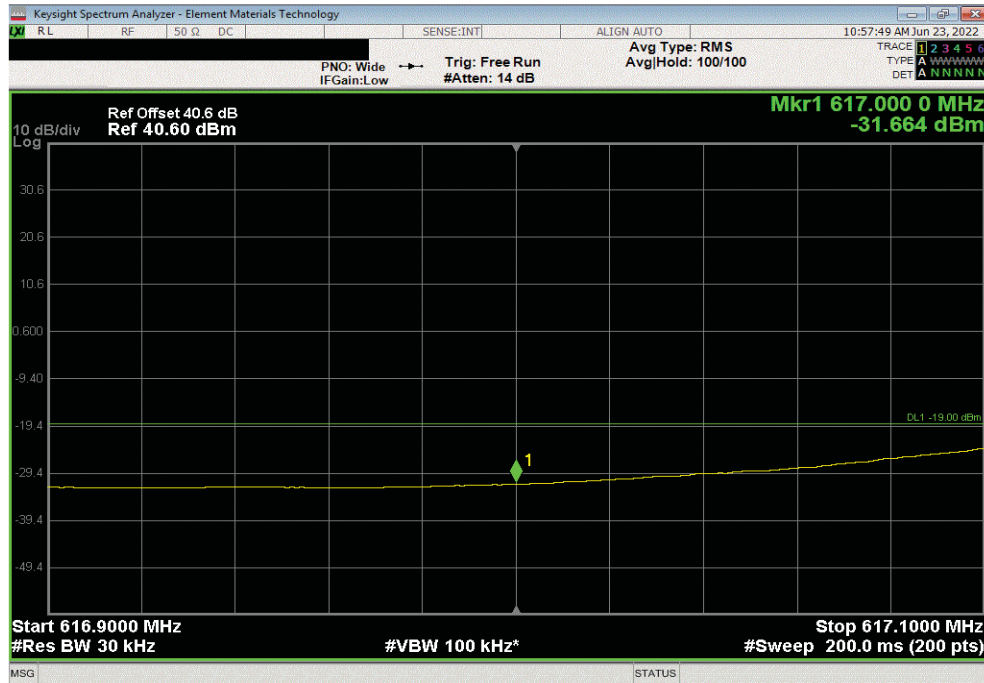


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

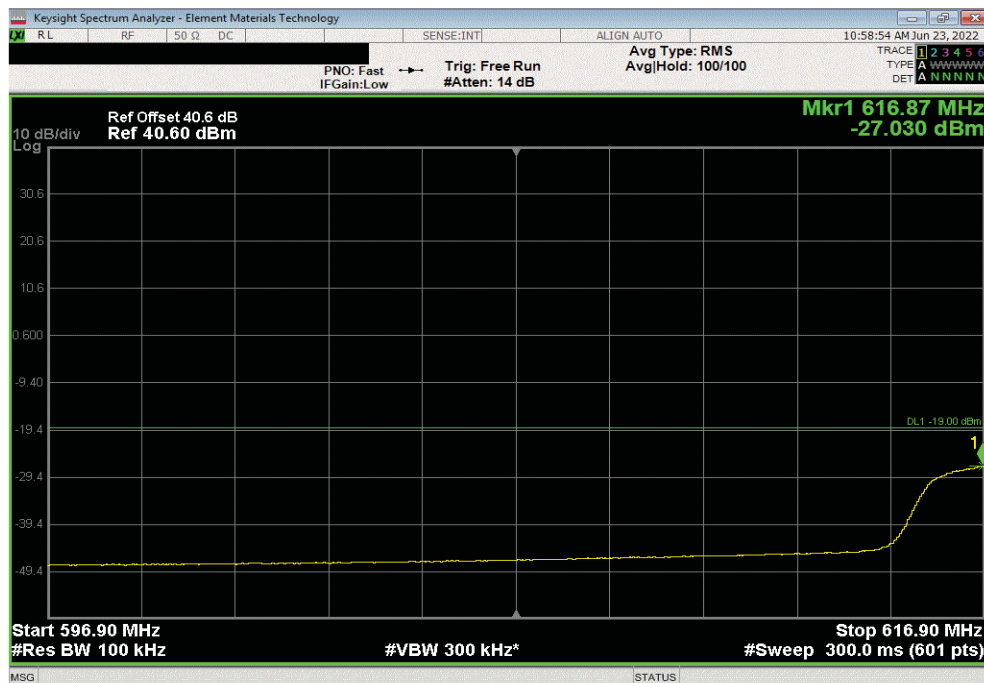


TbTtx 2022.05.02.0 XMIT 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-31.66	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 2, NR20 Carrier 1, 627 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.87	-27.03	-19	Pass		

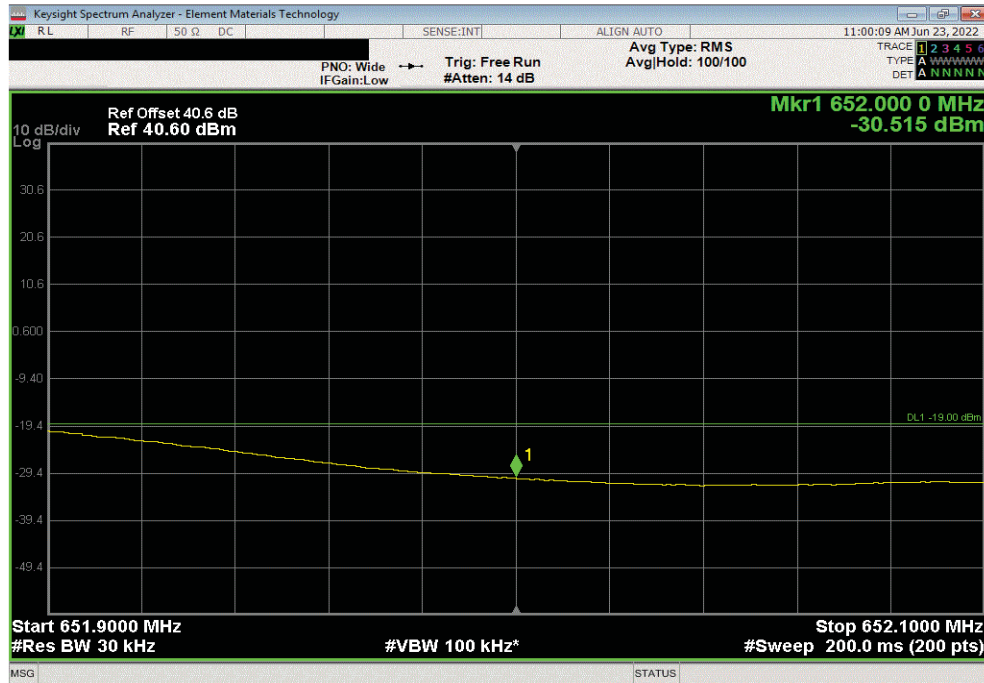


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

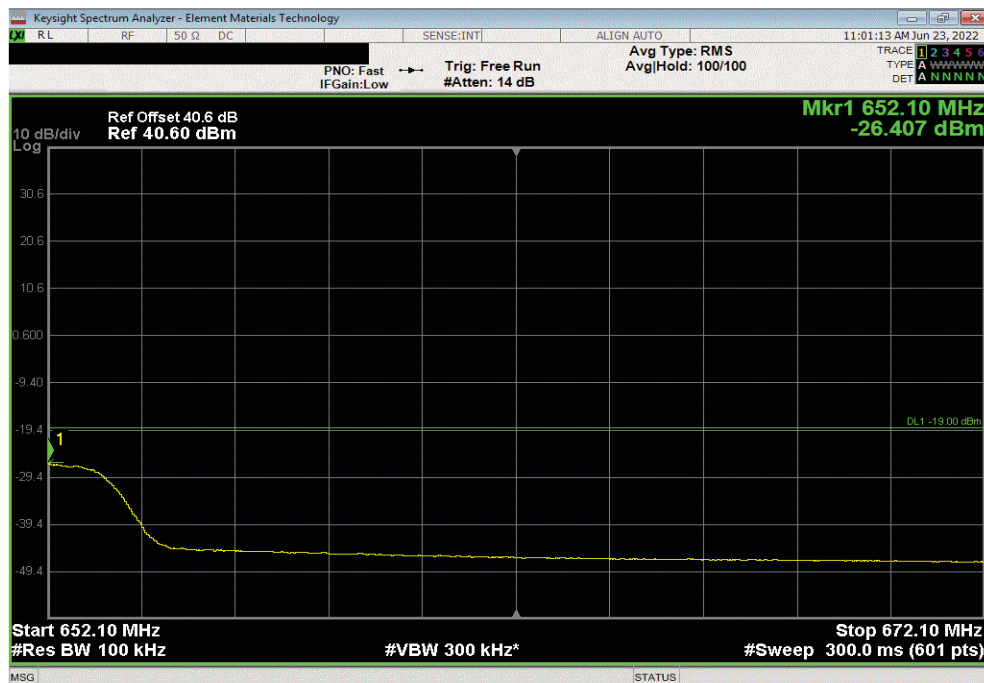


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	652	-30.52	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 2, NR15 Carrier 2, 644.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	652.1	-26.41	-19	Pass		

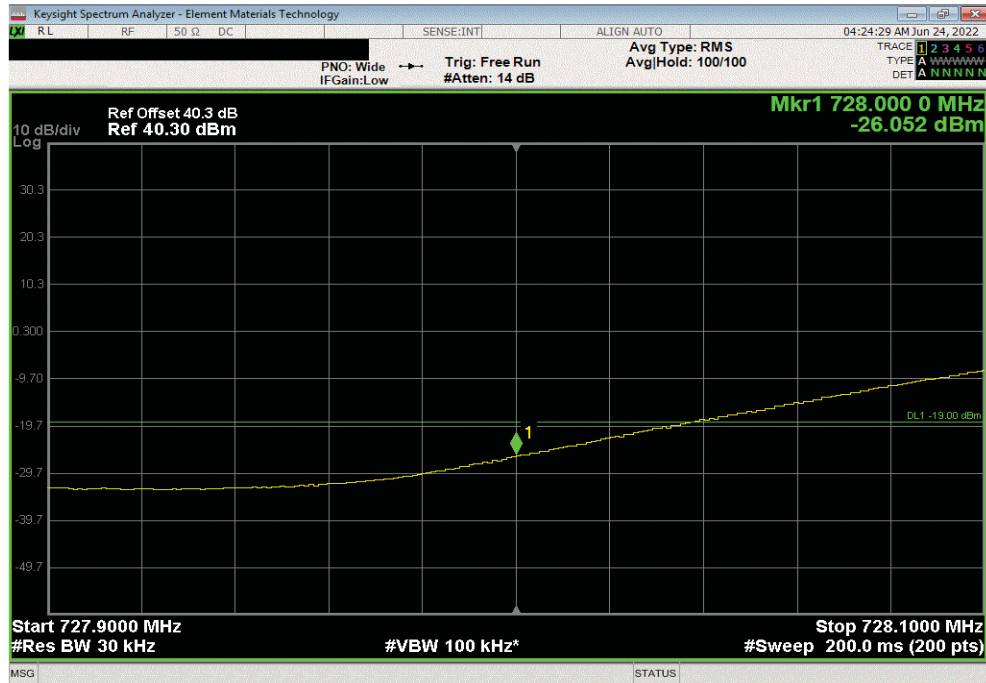


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

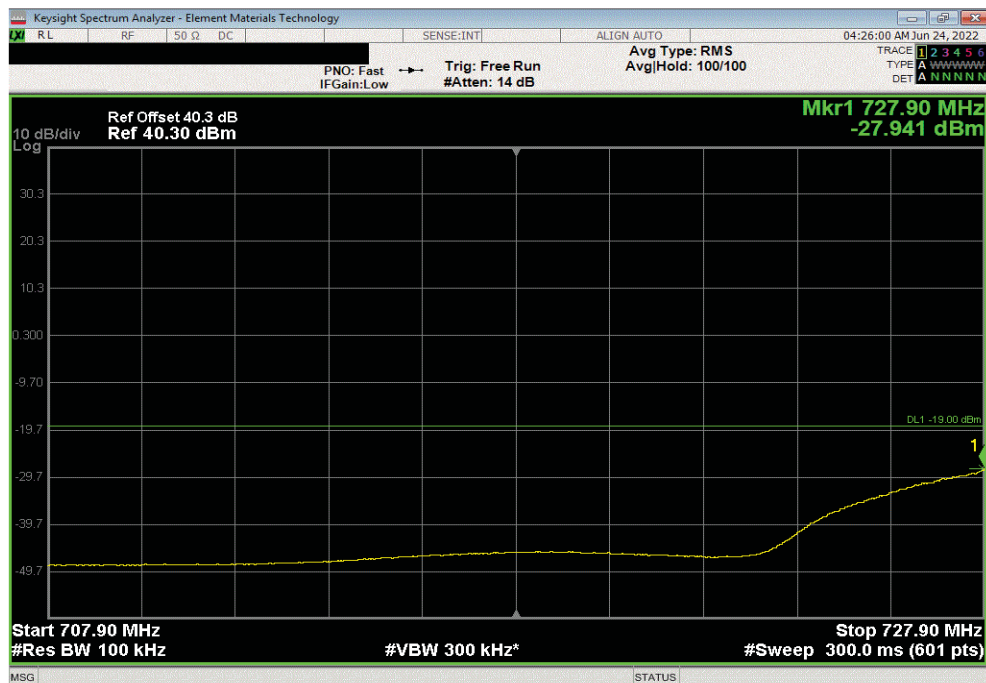


TbTtx 2022.05.02.0 XMit 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	728	-26.05	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 3, NR5 Carrier 1, 730.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	727.9	-27.94	-19	Pass		

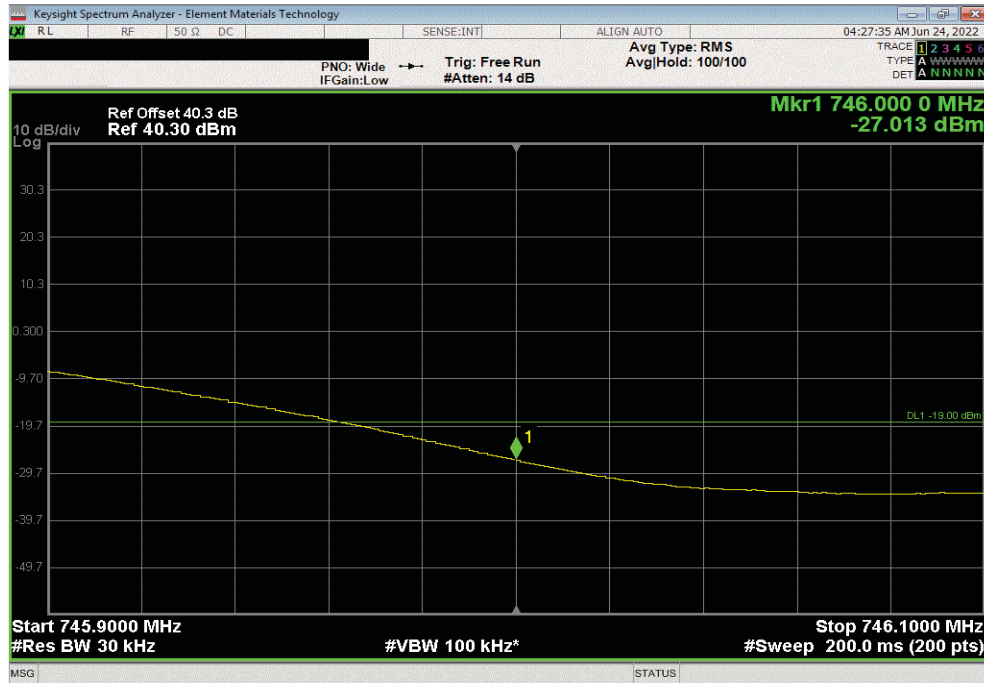


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

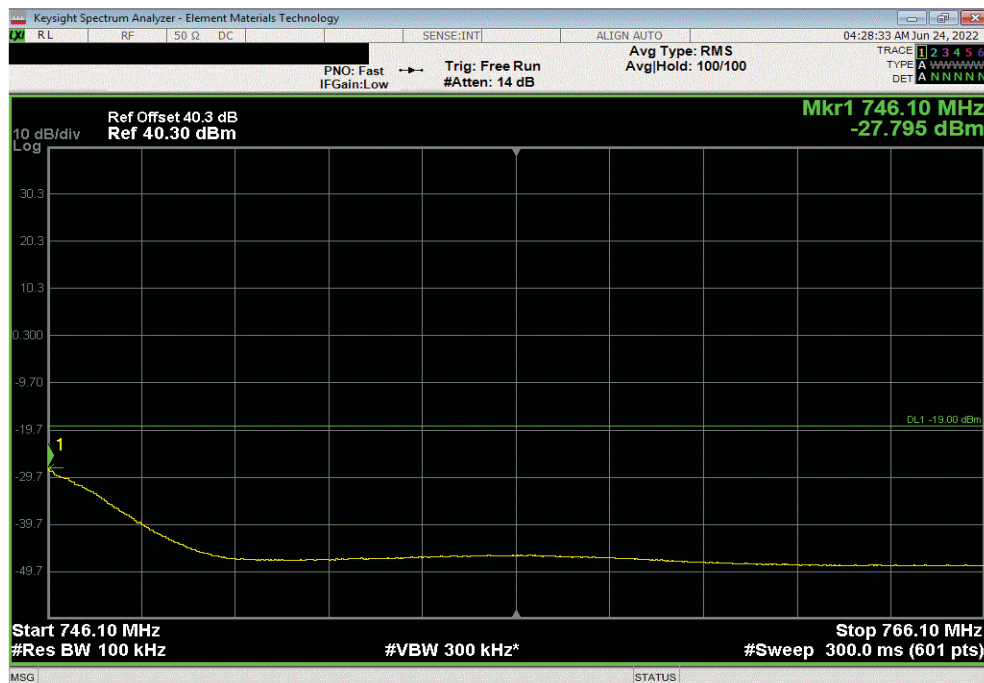


TbTx 2022.05.02.0 XbTx 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-27.01	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 3, NR5 Carrier 2, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.1	-27.8	-19	Pass		

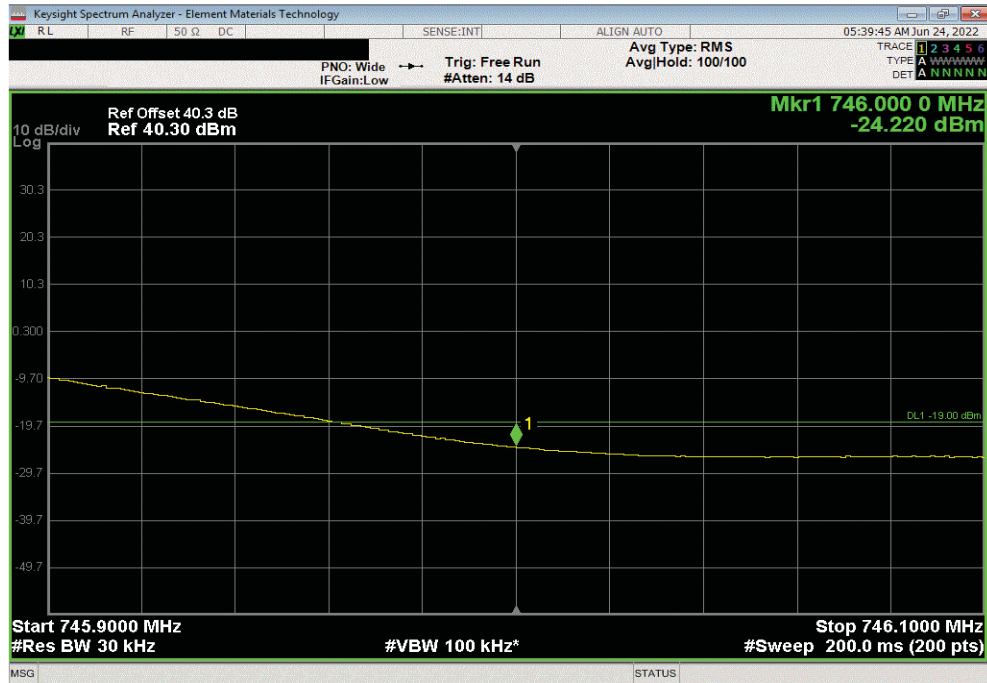


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

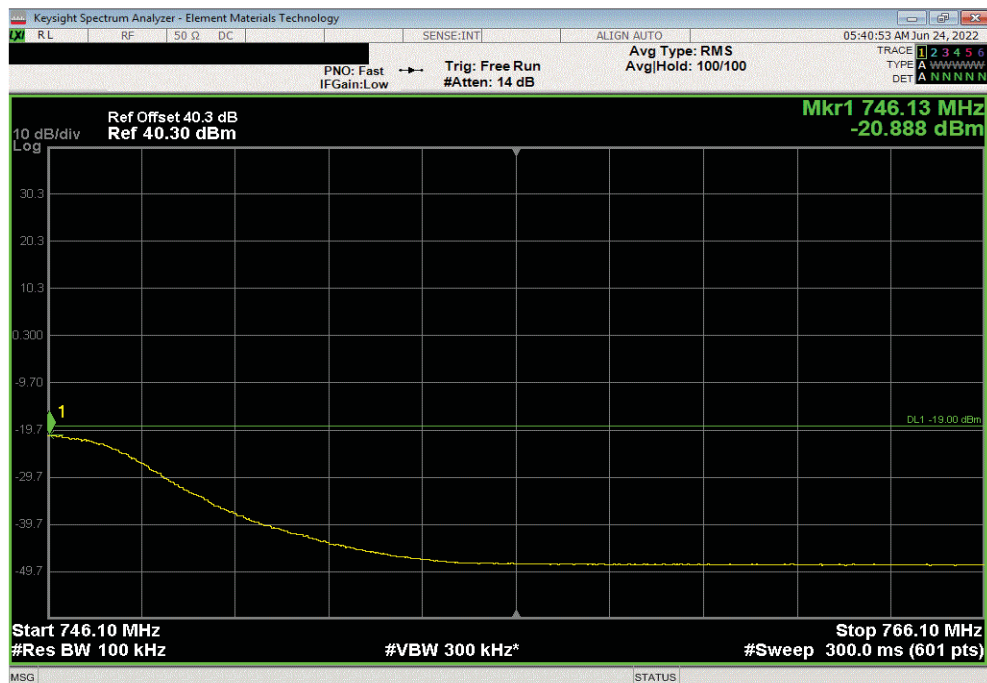


TbTx 2022.05.02.0 XbTx 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	746	-24.22	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 4, NR5 n85 Carrier 1, 743.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	746.13	-20.89	-19	Pass		

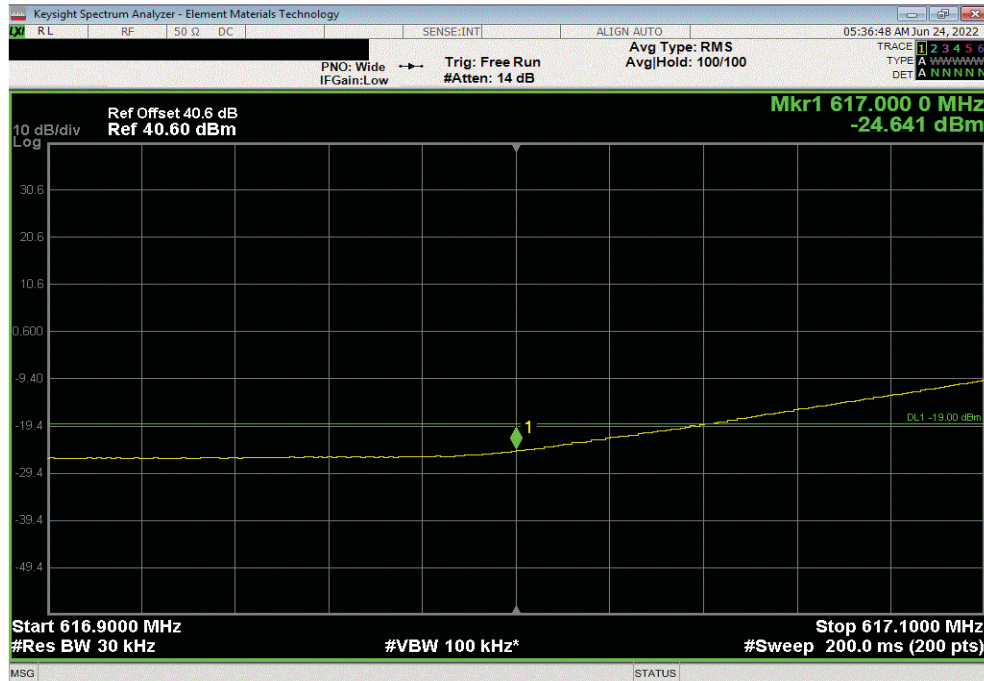


BAND EDGE COMPLIANCE - MULTIBAND MULTICARRIER

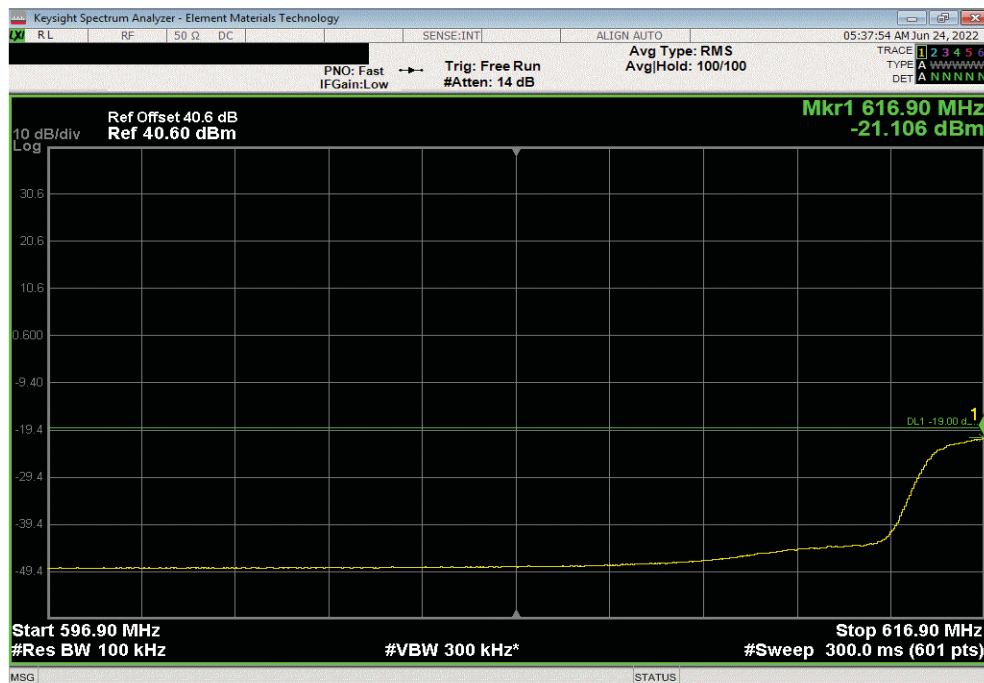


TbTtx 2022.05.02.0 XMIT 2022.02.07.0

5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
1	617	-24.64	-19	Pass		



5G NR, Multicarrier Multiband, Port 1, 256-QAM Modulation, Test Case 4, NR5 n71 Carrier 1, 619.5 MHz						
Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result		
2	616.9	-21.11	-19	Pass		



BAND EDGE COMPLIANCE - BAND n71



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 measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of $[-10 \cdot \log(4)]$ dB to account for the device operation as a 4 port MIMO transmitter, as per FCC KDB 622911.

Per section 27.53(g) and RSS 130 4.7, 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.

Per FCC 27.53(g) and RSS 130 4.7 requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 27.53(g) and RSS 130 4.7 requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports 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 paragraph 5.7.2i.

BAND EDGE COMPLIANCE - BAND n71



TstTx 2022.05.02.0 XMt 2022.02.07.0

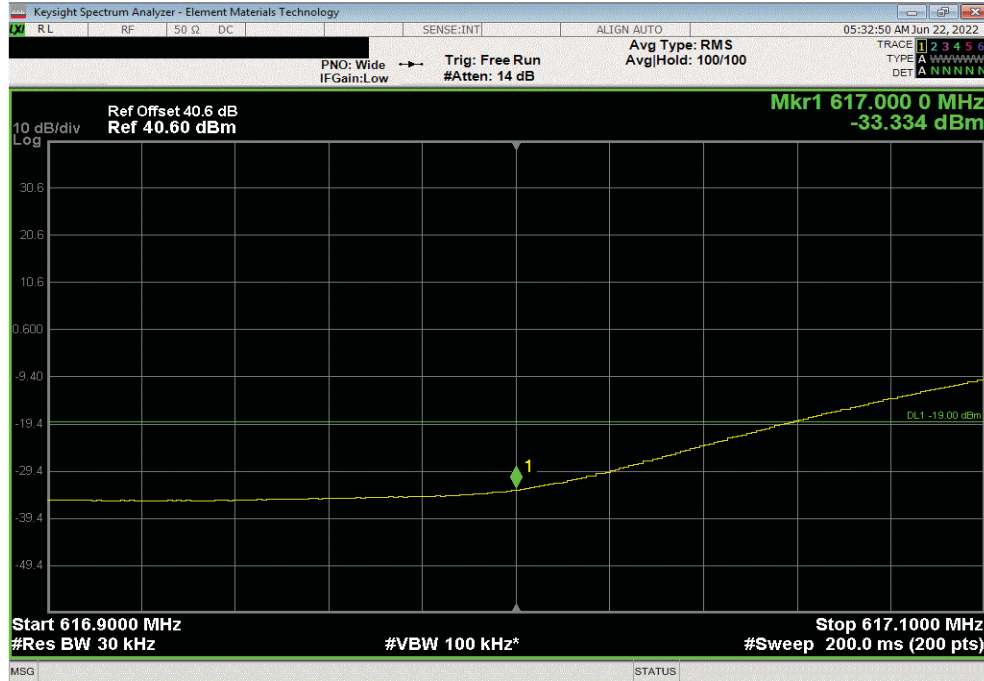
EUT: AHLOB (FCC/ISED)		Work Order: NOKI0042	
Serial Number: YK220900026		Date: 21-Jun-22	
Customer: Nokia Solutions and Networks		Temperature: 21.6 °C	
Attendees: David Le, John Rattanavong		Humidity: 52.9% RH	
Project: None		Barometric Pres.: 1022 mbar	
Tested by: Brandon Hobbs		Power: 54 VDC	
TEST SPECIFICATIONS		Job Site: TX07	
FCC 27:2022		Test Method	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
ANSI C63.26:2015			
COMMENTS			
All losses in the measurement path were accounted for: attenuators, cables, DC block and filter when in use. The carriers were enabled at maximum power.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature	
		Frequency Range	Max Value (dBm)
			Limit < (dBm)
			Result
Port 1, 5G NR, Band 71, 617 MHz - 652 MHz			
5 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 619.5 MHz	1	-33.3
	Low Ch. 619.5 MHz	2	-30.1
	High Ch. 649.5 MHz	1	-35.8
	High Ch. 649.5 MHz	2	-32.4
10 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 622 MHz	1	-30.8
	Low Ch. 622 MHz	2	-29.5
	High Ch. 647 MHz	1	-31.4
	High Ch. 647 MHz	2	-30.7
15 MHz Bandwidth			
QPSK Modulation			
	Low Ch. 624.5 MHz	1	-30.7
	Low Ch. 624.5 MHz	2	-28.0
	High Ch. 644.5 MHz	1	-31.3
	High Ch. 644.5 MHz	2	-28.9
16-QAM Modulation			
	Low Ch. 624.5 MHz	1	-30.7
	Low Ch. 624.5 MHz	2	-27.8
	High Ch. 644.5 MHz	1	-30.2
	High Ch. 644.5 MHz	2	-28.8
64-QAM Modulation			
	Low Ch. 624.5 MHz	1	-30.8
	Low Ch. 624.5 MHz	2	-27.7
	High Ch. 644.5 MHz	1	-31.1
	High Ch. 644.5 MHz	2	-28.7
256-QAM Modulation			
	Low Ch. 624.5 MHz	1	-30.6
	Low Ch. 624.5 MHz	2	-27.9
	High Ch. 644.5 MHz	1	-30.9
	High Ch. 644.5 MHz	2	-28.9
20 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 627 MHz	1	-31.1
	Low Ch. 627 MHz	2	-27.3
	High Ch. 642 MHz	1	-31.2
	High Ch. 642 MHz	2	-27.5

BAND EDGE COMPLIANCE - BAND n71

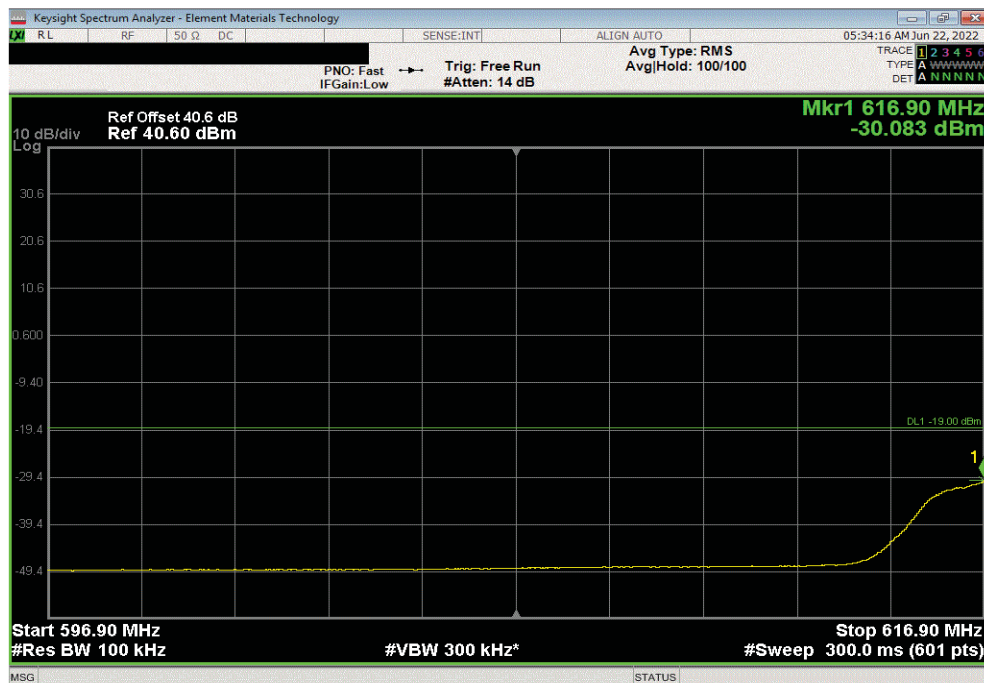


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 619.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-33.33	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 619.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-30.08	-19	Pass			

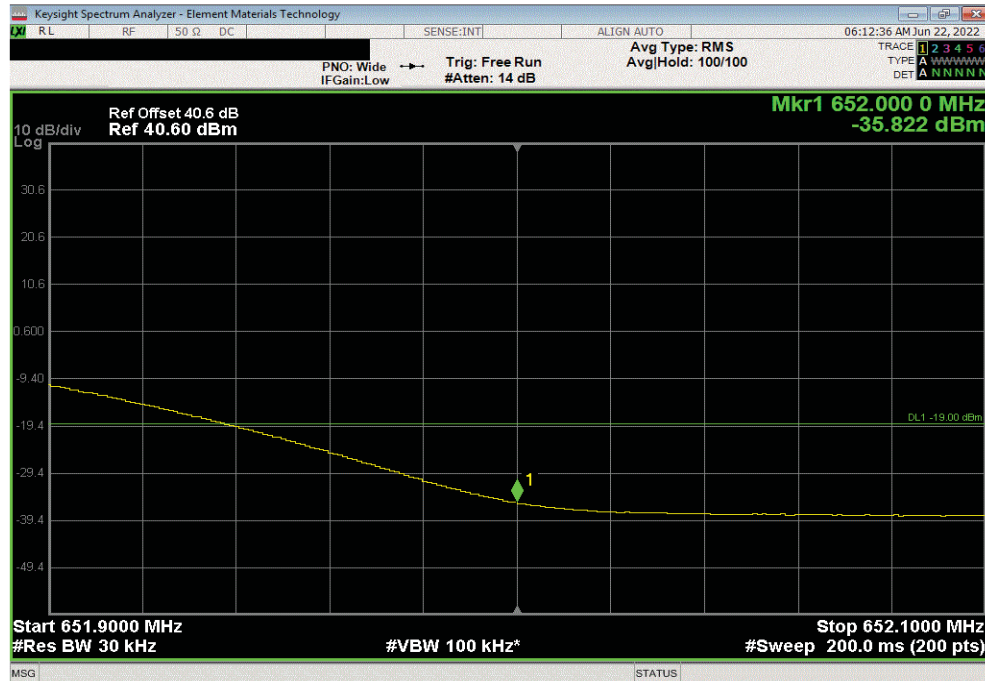


BAND EDGE COMPLIANCE - BAND n71

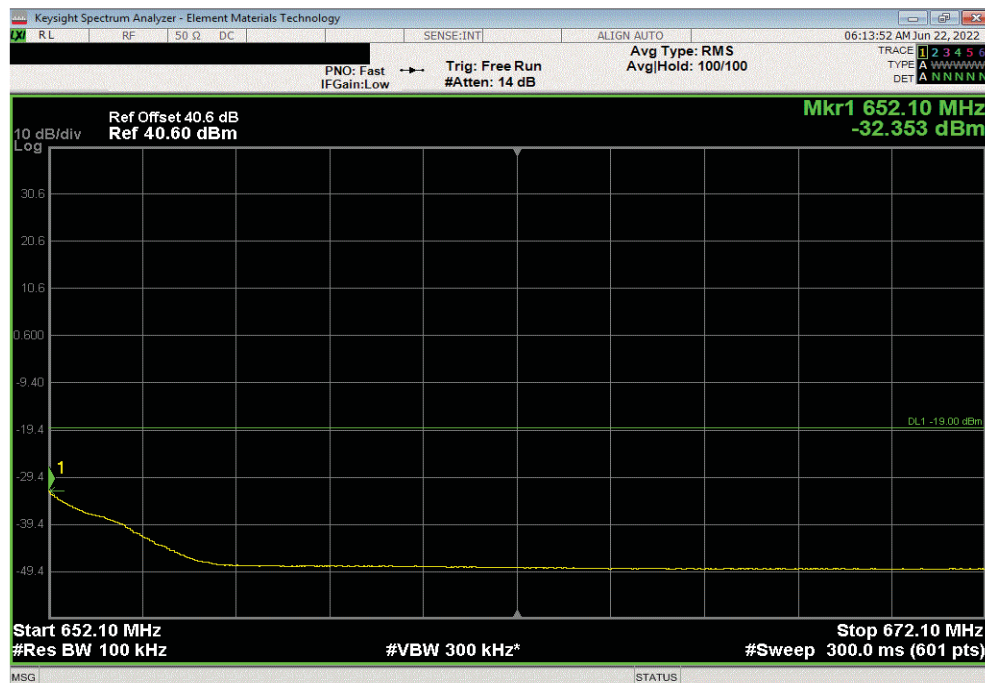


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 649.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-35.82	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 649.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-32.35	-19	Pass			

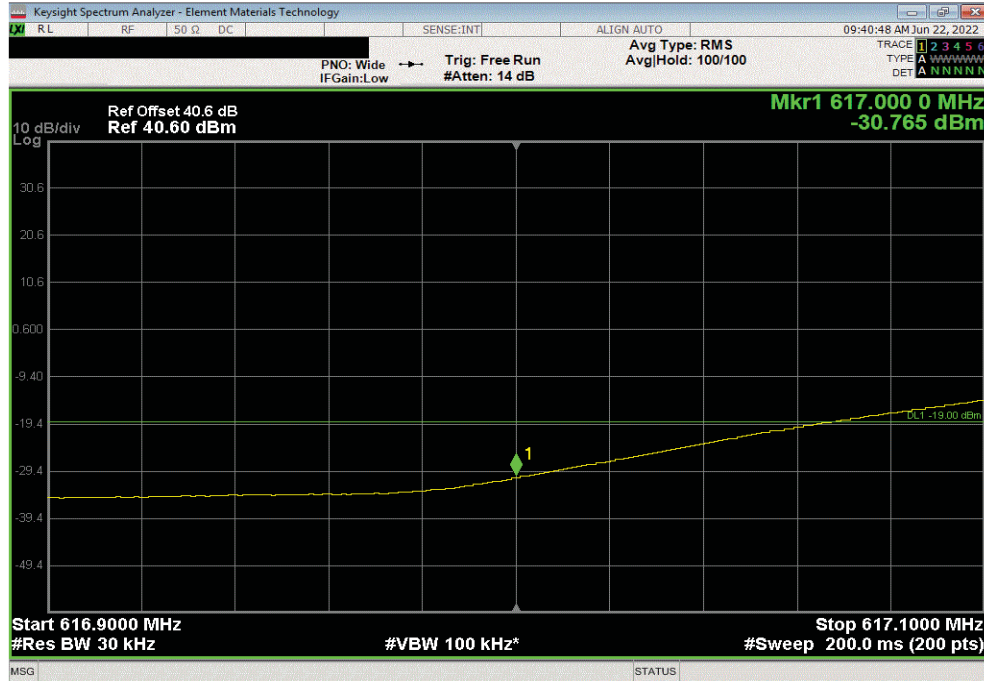


BAND EDGE COMPLIANCE - BAND n71

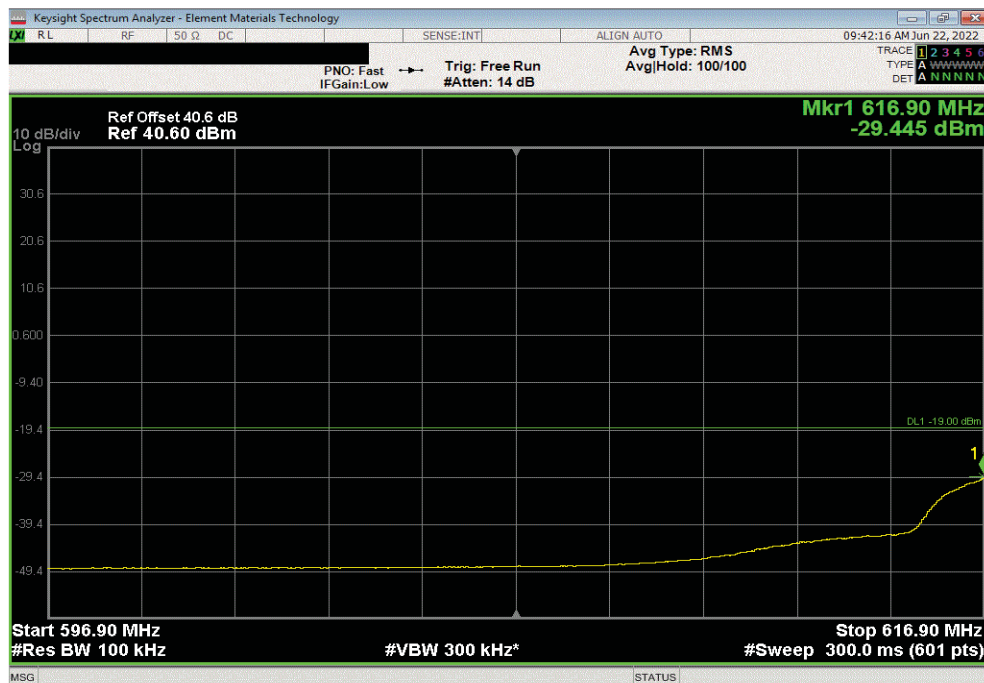


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 622 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-30.77	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 622 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-29.45	-19	Pass			

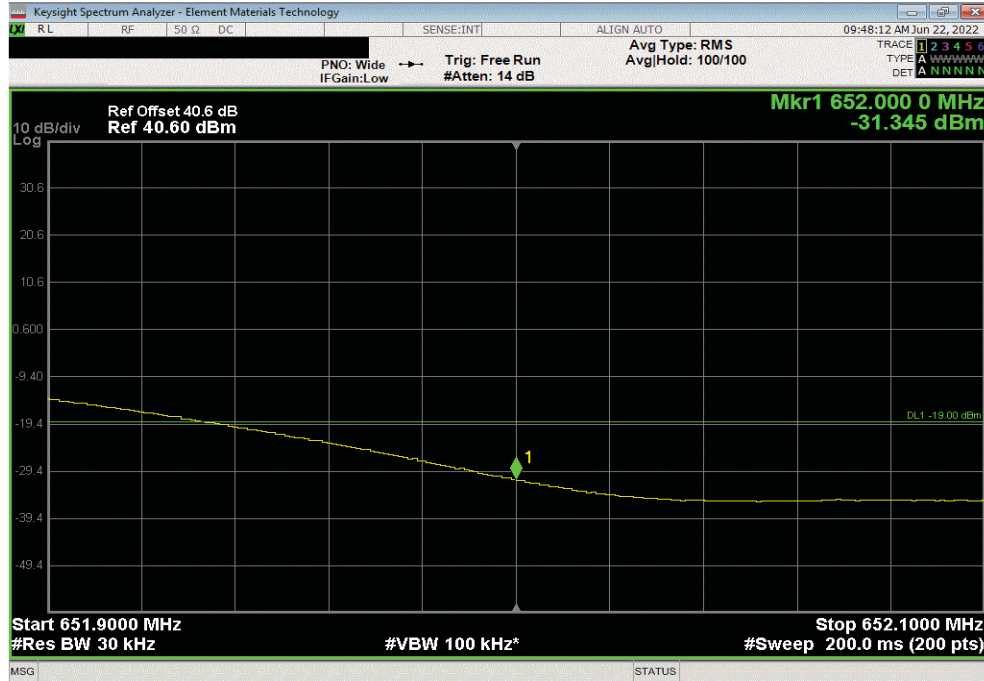


BAND EDGE COMPLIANCE - BAND n71

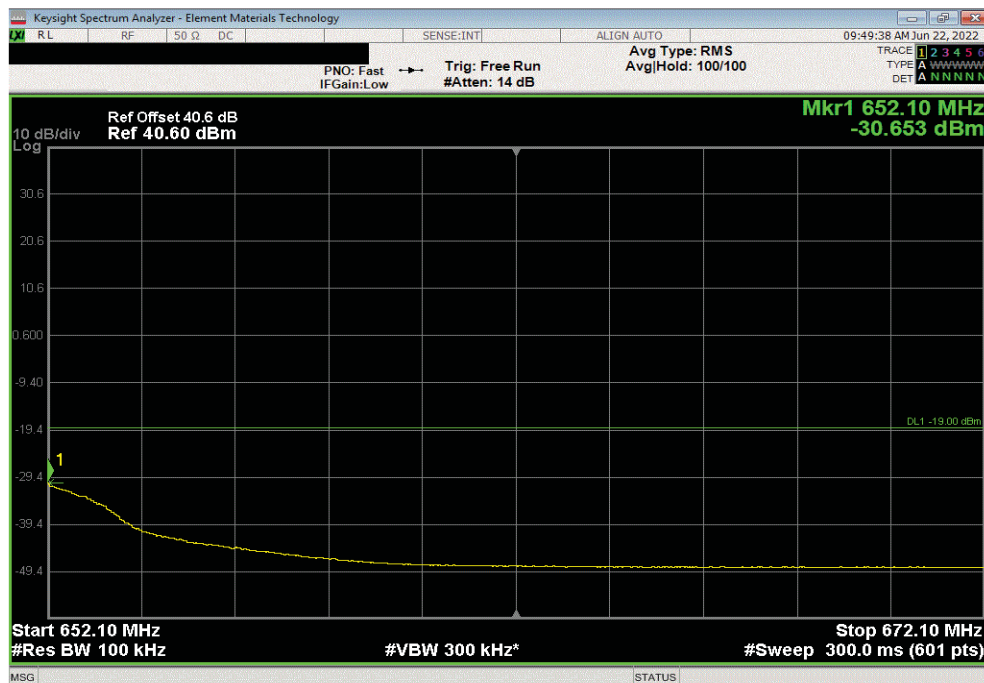


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 647 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-31.35	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 647 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-30.65	-19	Pass			

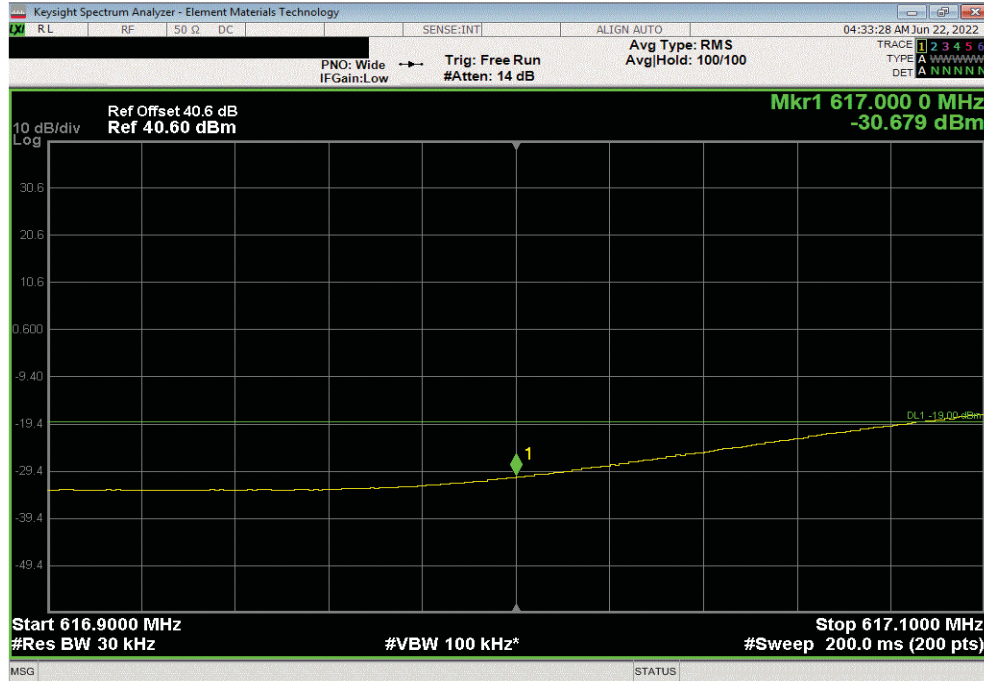


BAND EDGE COMPLIANCE - BAND n71

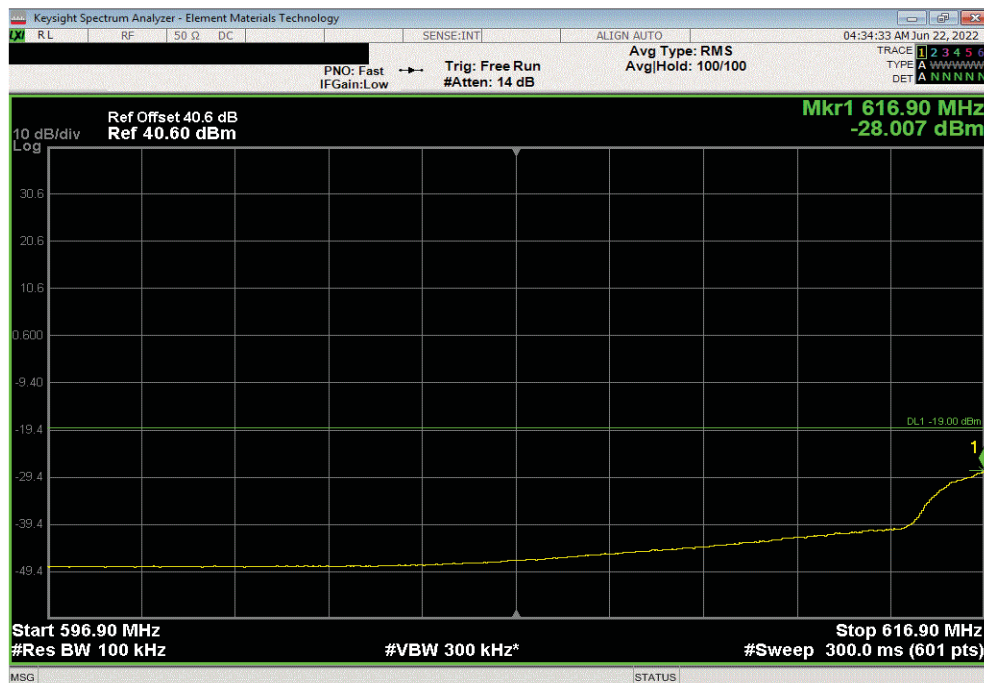


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-30.68	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-28.01	-19	Pass			

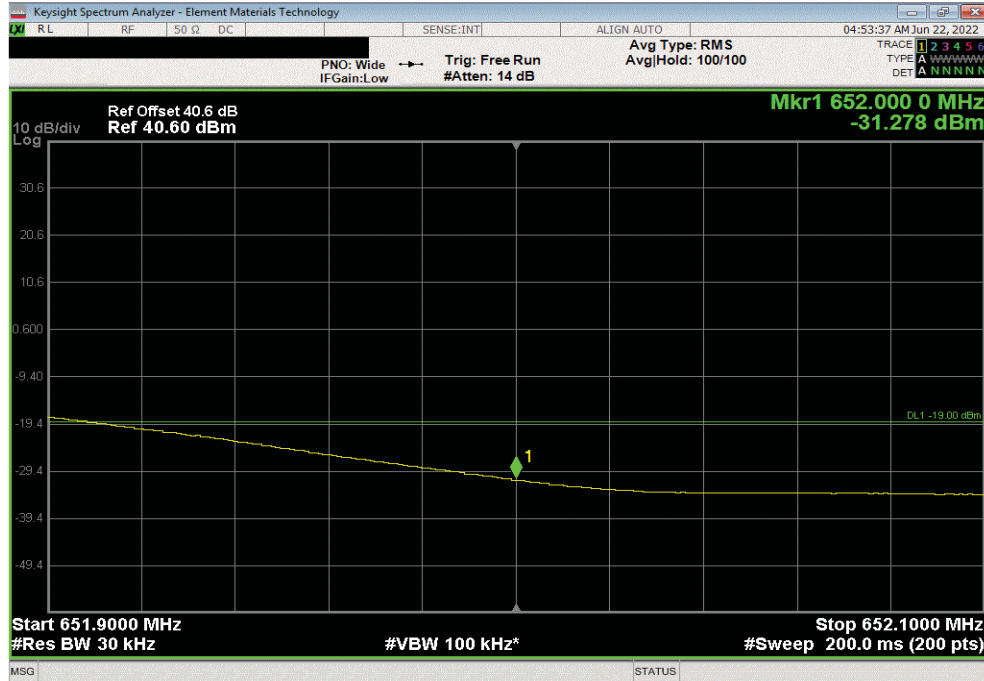


BAND EDGE COMPLIANCE - BAND n71

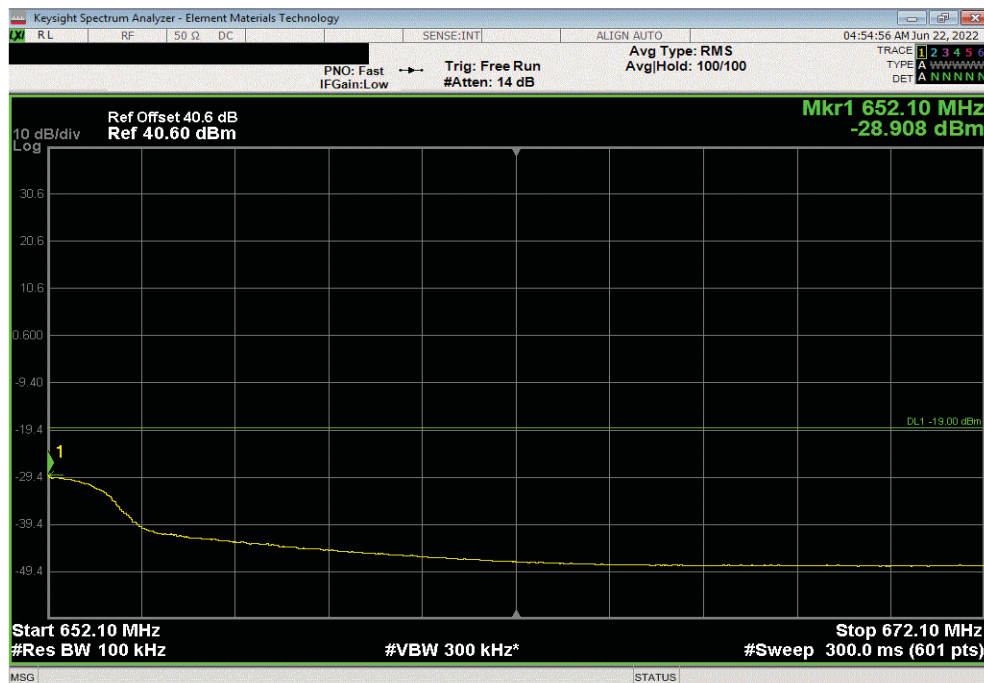


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)	Result	
1		-31.28		-19	Pass	



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)	Result	
2		-28.91		-19	Pass	

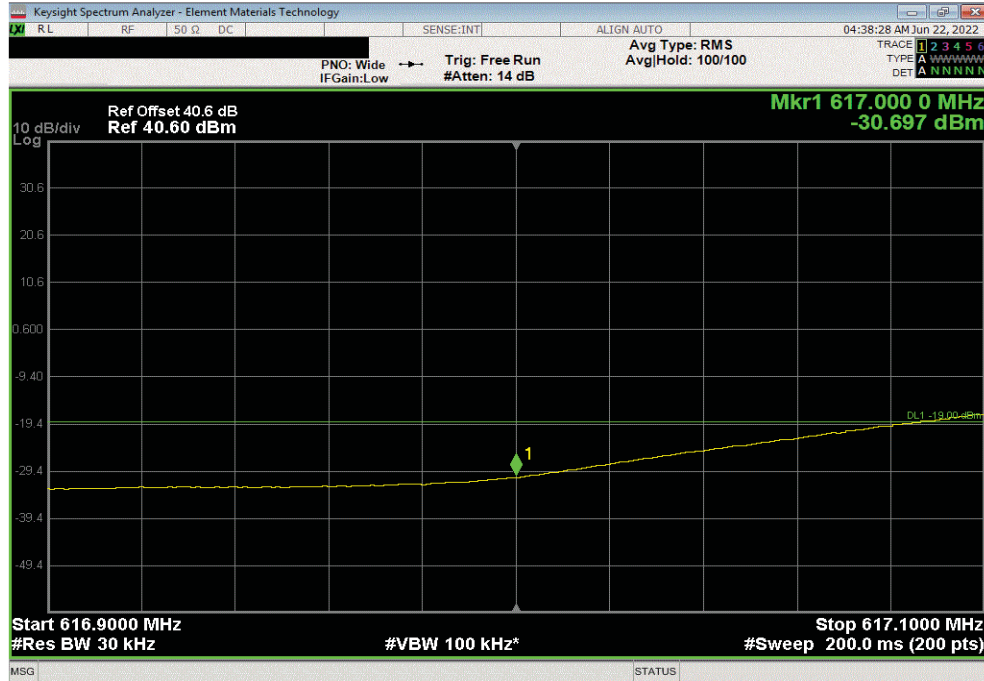


BAND EDGE COMPLIANCE - BAND n71

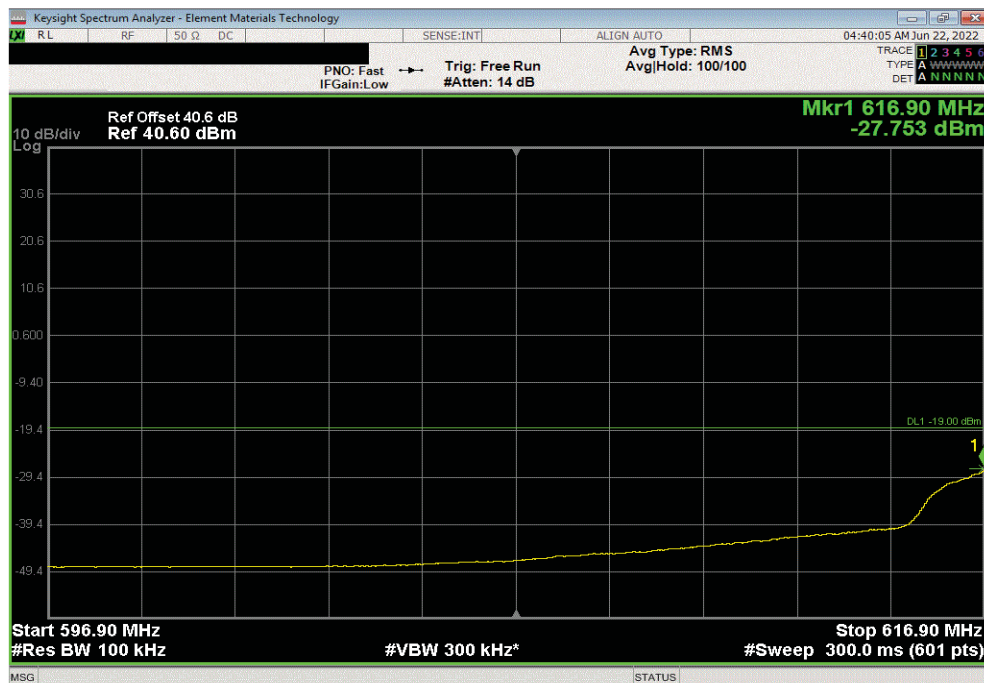


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-30.7	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-27.75	-19	Pass			

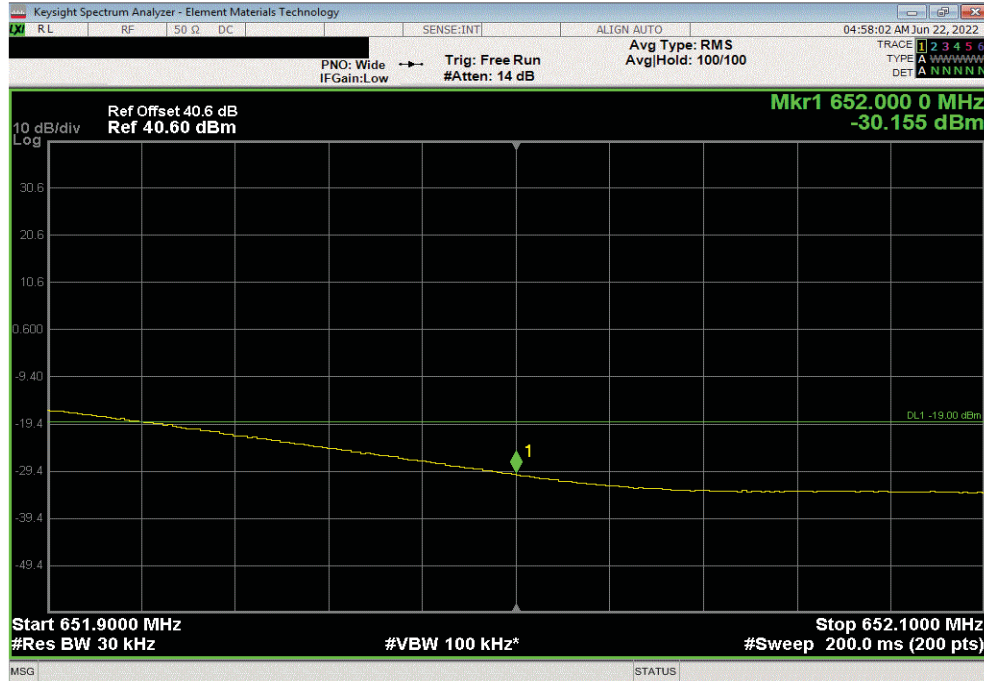


BAND EDGE COMPLIANCE - BAND n71

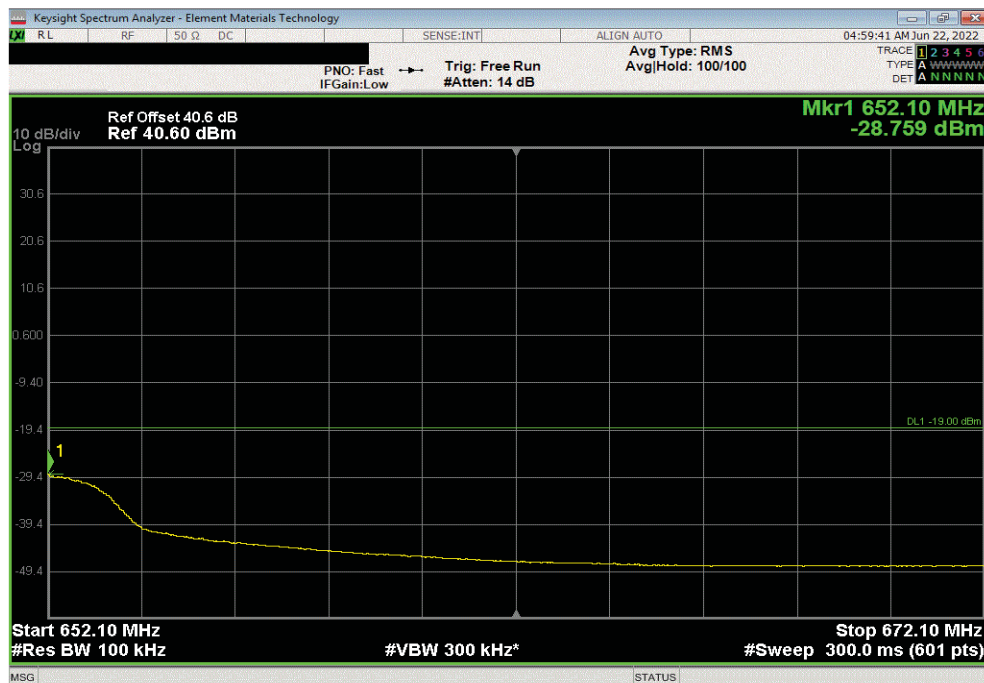


TbTx 2022.05.02.0 XMI 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)		Result
1		-30.16		-19		Pass



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)		Result
2		-28.76		-19		Pass



BAND EDGE COMPLIANCE - BAND n71

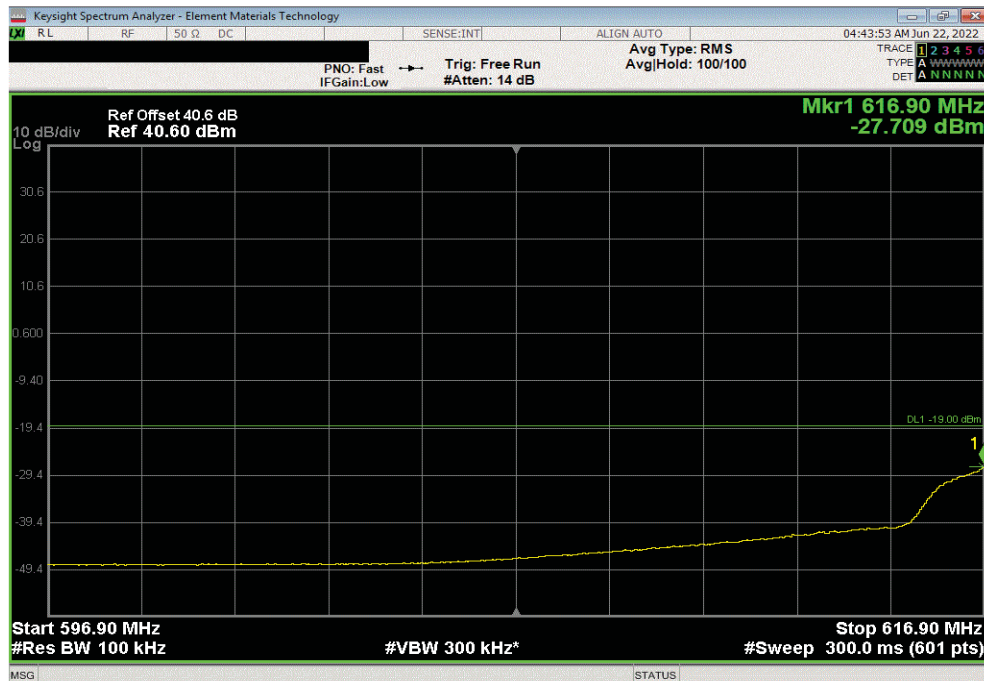


TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-30.81	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-27.71	-19	Pass			

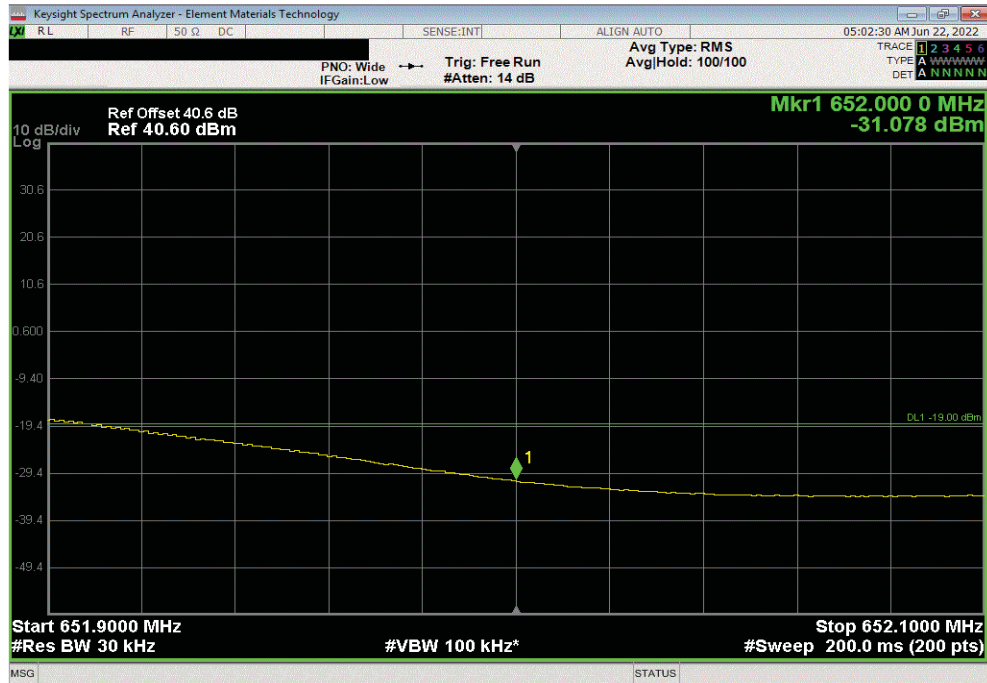


BAND EDGE COMPLIANCE - BAND n71

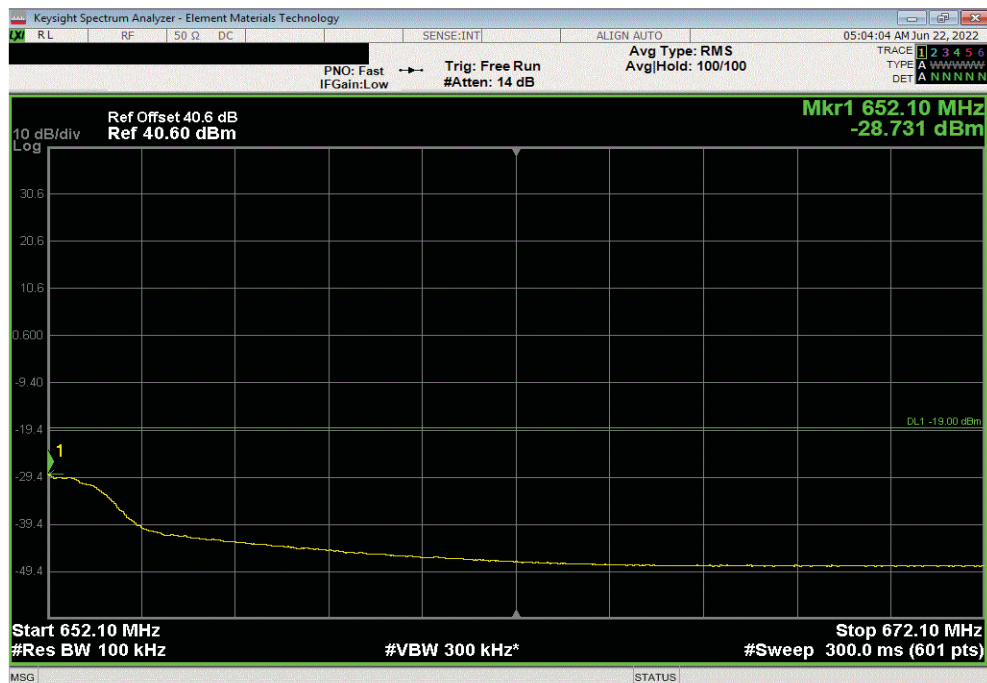


TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)	Result	
1		-31.08		-19	Pass	



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, High Ch. 644.5 MHz						
Frequency Range		Max Value (dBm)		Limit < (dBm)	Result	
2		-28.73		-19	Pass	

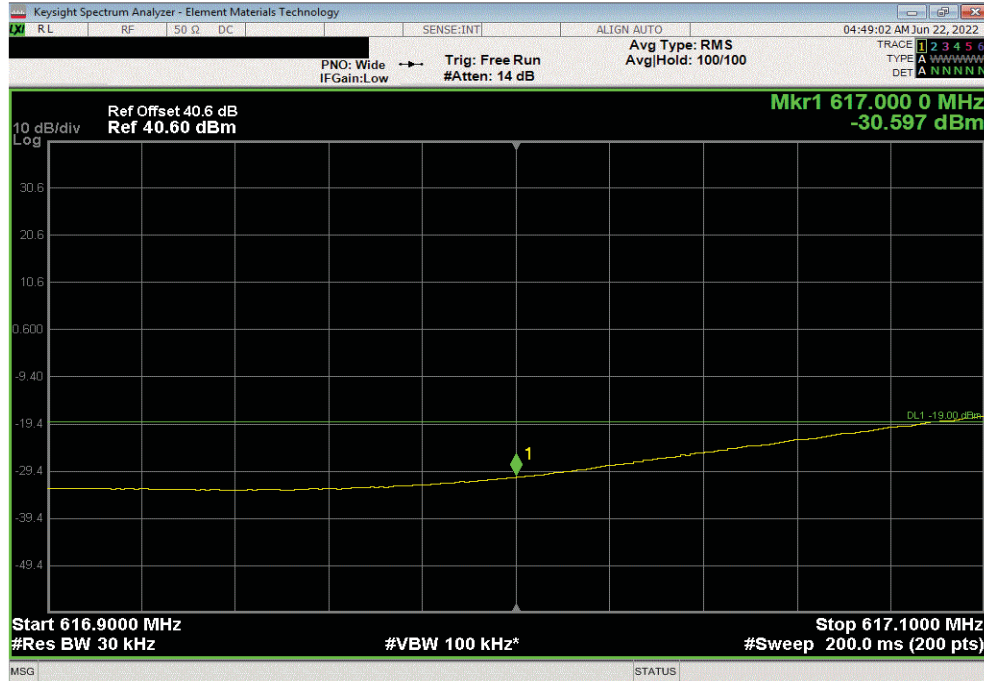


BAND EDGE COMPLIANCE - BAND n71



TbTtx 2022.05.02.0 XMit 2022.02.07.0

Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
1	-30.6	-19	Pass			



Port 1, 5G NR, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 624.5 MHz						
Frequency Range	Max Value (dBm)	Limit < (dBm)	Result			
2	-27.88	-19	Pass			

