



Accred. no. 10363  
Testing  
ISO/IEC 17025



# Report On

FCC Testing of the Ericsson AIR 3283 B25 B66, KRD 901 892/2, LTE and NR (2100 MHz) Base Station in accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 27

COMMERCIAL-IN-CONFIDENCE

FCC: TA8AKRD901892

PREPARED BY

A handwritten signature in blue ink, appearing to read 'Maggie Whiting'.

Maggie Whiting  
Key Account Manager

APPROVED BY

A handwritten signature in blue ink, appearing to read 'Steve Scarfe'.

Steve Scarfe  
Authorised Signatory

DATED

14 August 2024

Document 75961458 Report 02 Issue 2

August 2024



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## **SECTION 1**

### **REPORT INFORMATION**



## 1.1 REPORT DETAILS

Manufacturer	Ericsson
Address	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden
Product Name & Product Number	AIR 3283 B25 B66 - KRD 901 892/2
Serial Number(s)	Module 1 -E23F527361 Module 2 – E23F529480
Software Version	CXP2021151/1 R21A984
Hardware Version	R1C
Non-Tested Variant (See Section 1.11 Additional Information)	KRD 901 892/1 KRD 901 892/11 KRD 901 892/21
Test Specification/Issue/Date	FCC CFR 47 Part 2: 2023 FCC CFR 47 Part 27: 2023
Test Plan	General RA FCC Test Plan for AIR 3283 B25B66_H-2
Start of Test	04-July-2024
Finish of Test	01-August-2024
Name of Engineer(s)	Shashi Kiran Gangaraju Vinodhini Chandrasekaran
Related Document(s)	KDB 971168 D01 v02r02 KDB 662911 D01 v02r01 ANSI C63.26-2015

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### ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate compliance with and FCC CFR 47 Part 2: 2023 and FCC CFR 47 Part 27: 2023. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s).

Shashi Kiran Gangaraju, Vinodhini Chandrasekaran

**This report has been amended to Issue 2 and should be read in place of Issue 1. This report has been amended to correct the Product Name from AIR 3238 to AIR 3283 on the Title Page and Section 1.1.**



## 1.2 BRIEF SUMMARY OF RESULTS

The tests that have been selected are detailed in the customer Test Plan as defined in section 1.1 of this report. The Test Plan is based on the TÜV SÜD FCC Test Plan Rationale, available on request.

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 2 and FCC CFR 47 Part 27 is shown below.

Section	Specification Clause		Test Description	Result
	FCC CFR 47 Part 2	FCC CFR 47 Part 27		
2.1	2.1046	27.50	Maximum Peak Output Power and Peak to Average Ratio - Conducted	Pass
2.2	2.1049	27.53	Occupied Bandwidth	Pass
2.3	2.1051	27.53	Band Edge	Pass
2.4	2.1051	27.53	Transmitter Spurious Emissions	Pass
2.5	2.1055	27.54	Frequency Stability	Pass
-	2.1053	27.53	Radiated Spurious Emissions*	Pass

Testing in this Report covers only B66 (2110 MHz -2200 MHz).

For additional configurations and test cases not contained within this test report, refer to the following report:  
TÜV SÜD Document 75961458 Report 01 – FCC Part 24 – B25 (1930 MHz -1995 MHz) and B2 (1930 MHz -1990 MHz).

\* - Testing for Radiated Spurious Emissions are recorded in the following report:  
FCC Part 24/27 – Intertek Test Report reference 2310419STO-101 AIR3283 FCC2427



### 1.3 TEST RATIONALE

The tests that have been selected are detailed in the customer Test Plan as defined in section 1.1 of this report. The Test Plan is based on the TÜV SÜD FCC Test Plan Rationale, available on request.



## 1.4 CONFIGURATION DESCRIPTION

Config No	No Of carriers	RAT Band	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)				
				Channel position B (MHz)	Channel position M (MHz)	Channel position T (MHz)	Power (W) per carrier	Power (dBm) per RDNB connector
1 Sections 2.1, 2.2, 2.4, 2.5	1	LTE 66	5	2112.5	2155.0	2197.5	60	32.74
			10	2115.0	2155.0	2195.0	120	35.74
			15	2117.5	2155.0	2192.5	180	37.50
			20	2120.0	2155.0	2190.0	240	38.75
1 Section 2.3			5	2112.5	N/A	2197.5	60	32.74
			10	2115.0	N/A	2195.0	120	35.74
			15	2117.5	N/A	2192.5	180	37.50
			20	2120.0	N/A	2190.0	240	38.75
2 Section 2.2	2	LTE 66	5	2112.5 + 2117.5	2152.5 + 2157.5	2197.5 + 2192.5	2X40W	2x30.96
			10	2115.0 + 2125.0	2150.0 + 2160.0	2195.0 + 2185.0	2x 80W	2x33.97
			15	2117.5 + 2132.5	2147.5 + 2162.5	2192.5 + 2177.5	2x 120W	2x35.74
			20	2120.0 + 2140.0	2145.0 + 2165.0	2190.0 + 2170.0	2x120W	2x35.74
2 Section 2.3			5	2112.5 + 2117.5	N/A	2197.5 + 2192.5	2x40	2x30.96
			10	2115.0 + 2125.0	N/A	2195.0 + 2185.0	2x80	2x33.97
			15	2117.5 + 2132.5	N/A	2192.5 + 2177.5	2x120	2x35.74
			20	2120.0 + 2140.0	N/A	2190.0 + 2170.0	2x120	2x35.74
2 Section 2.4			5	2112.5 + 2150.0	2135.0 + 2175.0	2160.0 + 2197.5	2x40	2x30.96
			10	2115.0 + 2145.0	2135.0 + 2175.0	2165.0 + 2195.0	2x80	2x33.97
			15	2117.5 + 2140.0	2135.0 + 2175.0	2170.0 + 2192.5	2x120	2x35.74
			20	2120.0 + 2140.0	2135.0 + 2175.0	2170.0 + 2190.0	2x120	2x35.74
3 Section 2.1, 2.2, 2.4, 2.5	1	NR 66	5 – 15 kHz SCS	2112.5	2155.0	2197.5	60	32.74
			10 – 15 kHz SCS	2115.0	2155.0	2195.0	120	35.74
			15 – 15 kHz SCS	2117.5	2155.0	2192.5	180	37.50
			20 – 15 kHz SCS	2120.0	2155.0	2190.0	240	38.75
3 Section 2.3			5 – 15 kHz SCS	2112.5	N/A	2197.5	60	32.74
			10 – 15 kHz SCS	2115.0	N/A	2195.0	120	35.74
			15 – 15 kHz SCS	2117.5	N/A	2192.5	180	37.50
			20 – 15 kHz SCS	2120.0	N/A	2190.0	240	38.75



Config No	No Of carriers	RAT Band	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)					
				Channel position B (MHz)	Channel position M (MHz)	Channel position T (MHz)	Power (W) per carrier	Power (dBm) per RDNB connector	
4 Section 2.2	2	NR 66	5 – 15 kHz SCS	2112.5 + 2117.5	2152.5 + 2157.5	2197.5 + 2192.5	2X40W	2x30.96	
			10 – 15 kHz SCS	2115.0 + 2125.0	2150.0 + 2160.0	2195.0 + 2185.0	2x 80W	2x33.97	
			15 – 15 kHz SCS	2117.5 + 2132.5	2147.5 + 2162.5	2192.5 + 2177.5	2x 120W	2x35.74	
			20 – 15 kHz SCS	2120.0 + 2140.0	2145.0 + 2165.0	2190.0 + 2170.0	2x120W	2x35.74	
4 Section 2.3			N/A	5 – 15 kHz SCS	2112.5 + 2117.5	N/A	2197.5 + 2192.5	2x40	2x30.96
				10 – 15 kHz SCS	2115.0 + 2125.0	N/A	2195.0 + 2185.0	2x80	2x33.97
				15 – 15 kHz SCS	2117.5 + 2132.5	N/A	2192.5 + 2177.5	2x120	2x35.74
				20 – 15 kHz SCS	2120.0 + 2140.0	N/A	2190.0 + 2170.0	2x120	2x35.74
4 Section 2.4			2135.0 + 2175.0	5 – 15 kHz SCS	2112.5 + 2150.0	2135.0 + 2175.0	2160.0 + 2197.5	2x40	2x30.96
				10 – 15 kHz SCS	2115.0 + 2145.0	2135.0 + 2175.0	2165.0 + 2195.0	2x80	2x33.97
				15 – 15 kHz SCS	2117.5 + 2140.0	2135.0 + 2175.0	2170.0 + 2192.5	2x120	2x35.74
				20 – 15 kHz SCS	2120.0 + 2140.0	2135.0 + 2175.0	2170.0 + 2190.0	2x120	2x35.74
5 Section 2.3	2	LTE + NR 66	LTE 20MHz (QPSK)+ NR 20MHz(QPSK)	2120.0(LTE) + 2140.0(NR)	N/A	2190.0 (LTE)+ 2170.0(NR)	2x120	2x35.74	
5 Section 2.4			LTE 20MHz (QPSK)+ NR 20MHz(QPSK)	2120.0(LTE) + 2140.0(NR)	2135.0(LTE) + 2175.0(NR)	2170.0(LTE) + 2190.0(NR)	2x120	2x35.74	
6 Section 2.4	2	LTE 25 NR 66	LTE-5M 64QAM Band 25 + NR-20M QPSK Band 66	1932.5 + 2120.0	1962.5 + 2155.0	1992.5 + 2190.0	60(LTE) + 240(NR)	32.74(LTE)+ 38.75(NR)	
7 Section 2.1, 2.4	4	LTE 25 NR 25 LTE 66 NR66	LTE-5M 64QAM Band 25 + NR-20M QPSK Band 25 + LTE 20 MHz QPSK B66 + NR 20 MHz QPSK B66	1932.5+1940.0+2140.0+2120.0	1945.0+1980.0+2135.0+2175.0	1992.5+1985.0+2170.0+2190.0	30(LTE) + 120(NR) + 80(LTE)+ 80(NR)	29.72(LTE)+ 35.74(NR)+ 33.97(LTE)+ 33.97(NR)	
8 Section 2.4	2	LTE 2 NR 66	LTE-5M 64QAM Band 2 + NR-20M QPSK Band 66	N/A	N/A	1987.5 + 2190.0	60(LTE) + 240(NR)	32.74(LTE)+ 38.75(NR)	





9 Sections 2.1, 2.4	4	LTE 25 NR 25 LTE 66 NR66	LTE-5M 64QAM Band 2 + NR-20M QPSK Band 2 + LTE 20 MHz QPSK B66 + NR 20 MHz QPSK B66	N/A	N/A	1987.5+1980.0+2170.0+2 190.0	30(LTE) + 120(NR) + 80(LTE)+ 80(NR)	29.72(LTE)+ 35.74(NR)+ 33.97(LTE)+ 33.97(NR)
10 Sections 2.1	1	LTE 66	5	2112.5	2155.0	2197.5	28.75	29.53
			10	2115.0	2155.0	2195.0	57.5	32.54
			15	2117.5	2155.0	2192.5	86.25	34.30
			20	2120.0	2155.0	2190.0	115	35.55
11 Section 2.1	2	LTE 66	5	2112.5 + 2150.0	2135.0 + 2175.0	2160.0 + 2197.5	2x28,75	2x29.53
			10	2115.0 + 2145.0	2135.0 + 2175.0	2165.0 + 2195.0	2x57,5	2x32.54
			15	2117.5 + 2140.0	2135.0 + 2175.0	2170.0 + 2192.5	2x86,25	2x34.30
			20	2120.0 + 2140.0	2135.0 + 2175.0	2170.0 + 2190.0	2x115	2x35.55
12 Section 2.1	1	NR 66	5 – 15 kHz SCS	2112.5	2155.0	2197.5	28.75	29.53
			10 – 15 kHz SCS	2115.0	2155.0	2195.0	57.5	32.54
			15 – 15 kHz SCS	2117.5	2155.0	2192.5	86.25	34.30
			20 – 15 kHz SCS	2120.0	2155.0	2190.0	115	35.55
13 Section 2.1	2	NR 66	5 – 15 kHz SCS	2112.5 + 2150.0	2135.0 + 2175.0	2160.0 + 2197.5	2x28,75	2x29.53
			10 – 15 kHz SCS	2115.0 + 2145.0	2135.0 + 2175.0	2165.0 + 2195.0	2x57,5	2x32.54
			15 – 15 kHz SCS	2117.5 + 2140.0	2135.0 + 2175.0	2170.0 + 2192.5	2x86,25	2x34.30
			20 – 15 kHz SCS	2120.0 + 2140.0	2135.0 + 2175.0	2170.0 + 2190.0	2x115	2x35.55
14 Section 2.1	2	LTE+NR 66	LTE 20MHz (QPSK)+ NR 20MHz(QPSK)	2120.0(LTE) + 2140.0(NR)	2135.0(LTE) + 2175.0(NR)	2170.0(LTE) + 2190.0(NR)	2x115	2x35.55
15 Section 2.1	2	LTE 25 + NR 66	LTE 5 (64QAM) + NR 20 (QPSK)	1932.5(LTE) + 2120.0(NR)	1962.5(LTE) + 2155.0(NR)	1992.5 (LTE)+ 2190.0(NR)	30(LTE) +115(NR)	29.72(LTE)+ 35.55(NR)
16 Section 2.1	2	LTE 2 +NR 66	LTE 5 (64QAM) + NR 20 (QPSK)	N/A	N/A	1987.5 (LTE)+ 2190.0(NR)	30(LTE) +115(NR)	29.72(LTE)+ 35.55(NR)



## 1.5 DECLARATION OF BUILD STATUS

Equipment Description		
Technical Description:	Multi standard AIR 3283 B25 B66 32Tx/32Rx	
Manufacturer:	Ericsson AB	
Model:	AIR 3283 B25 B66	
Part Number:	KRD 901 892/1 With Antenna, Security Unlocked. KRD 901 892/11** With Antenna, Security Locked KRD 901 892/2* CAB-unit, Security Unlocked KRD 901 892/21 CAB unit, Security Locked	
	Note*: Tested unit	
	Note**: This will be the marketed, sold unit	
Hardware Version:	R1C	
Software Version:	CXP 202 1151/1 R21A984	
FCC ID of the product under test	TA8AKRD901892	
Intentional Radiators		
RAT	LTE	NR SCS 15kHz
Frequency Range (MHz to MHz) B25/n25	1930MHz -1995MHz	1930MHz -1995MHz
Frequency Range (MHz to MHz) B2/n2	1930MHz -1990MHz	1930MHz -1990MHz
Frequency Range (MHz to MHz) B66/n66	2110MHz -2200MHz	2110MHz -2200MHz
Conducted Declared Output Power (dBm)	40dBm (10W)Max output power per carrier	40dBm (10W)Max output power per carrier
	53,8dBm(240W)Max output power per band	53,8dBm(240W)Max output power per band
	55dBm (320W )Max output power multi band per Radio	55dBm (320W )Max output power multi band per Radio
Antenna Gain (dBi)	B2/n2, B25/n25 is 23.7 dBi and B66/n66 is 23.7 dBi	
Antenna Impedance(Ω)	50	
Total RF bandwidth (BW) B25/n25	65MHz	65MHz
Total RF bandwidth (BW) B66/n66	90MHz	90MHz
Total RF bandwidth (BW) B2/n2	60MHz	60MHz
Total RF bandwidth (BW) multiband(B2/n2, B25/n25 + B66/n66)	270 MHz(Both SRO and MRO)	270 MHz(Both SRO and MRO)
Maximum Operational bandwidth (BW) multiband(B25/B2, B66)	100 MHz(Both SRO and MRO)	100 MHz(Both SRO and MRO)
Supported Bandwidth(s) (MHz) B2/n2, B25/n25, B66/n66	LTE: 5,10, 15,20MHz	NR: 5,10,15, 20MHz
Modulation Scheme(s) B2/n2, B25/n25, B66/n66	LTE:QPSK, 16QAM, 64QAM, 256QAM	NR: QPSK, 16QAM, 64QAM, 256QAM
ITU Emission Designator B2/n2, B25/n25	5MHz BW: 4M50W7D	5MHz BW: 4M48W7D
	10MHz BW: 8M96W7D	10MHz BW: 9M28W7D
	15MHz BW: 13M5W7D	15MHz BW: 14M2W7D
	20MHz BW: 17M9W7D	20MHz BW: 19M0W7D
	carrier aggregation:37M7W7D(20MHz+20MHz)	carrier aggregation: BW: 38M7W7D(20MHz+20MHz)
ITU Emission Designator B66/n66	5MHz BW: 4M48W7D	5MHz BW: 4M48W7D
	10MHz BW: 8M96W7D	10MHz BW: 9M28W7D
	15MHz BW: 13M5W7D	15MHz BW: 14M2W7D
	20MHz BW: 17M9W7D	20MHz BW: 18M9W7D
	carrier aggregation: 37M7W7D(20MHz+20MHz)	carrier aggregation: BW: 38M7W7D(20MHz+20MHz)
Duplex mode:	FDD	FDD



Supported transmission modes:	32 x 32 MIMO	32 x 32 MIMO	
Maximum number of carriers per band B25/n25 /Port	2 (Both SRO and MRO)	2 (Both SRO and MRO)	
Maximum number of carriers per band B2/n2 /Port	2 (Both SRO and MRO)	2(Both SRO and MRO)	
Maximum number of carriers per band B66/n66 /Port	2 (Both SRO and MRO)	2 (Both SRO and MRO)	
Maximum number of carriers per multi band (B2/n2, B25/n25 + B66/n66)/Port	4(Both SRO and MRO)	4(Both SRO and MRO)	
<b>Antenna Characteristics</b>			
Temporary antenna connector	State impedance	50 Ohm	
Integral antenna	Type:	AAS (Advanced Antenna System)	
EIRP Limit to be used	Non-rural :B66/n66 PSD <5.75W/MHz and B25/n25, B2/n2 PSD <6W/MHz		
<b>Unintentional Radiators</b>			
Highest frequency generated or used in the device or on which the device operates or tunes	Up to 25.8 Gbit/s		
Lowest frequency generated or used in the device or on which the device operates or tunes if <30MHz	.-		
Class A Digital Device (Use in commercial, industrial or business environment)	.-		
Class B Digital Device (Use in residential environment)	Class B		
<b>DC Power Supply (Delete if Not Applicable)</b>			
Nominal voltage:	-48V		
Extreme upper voltage:	-36V		
Extreme lower voltage:	-58.5V		
Max current:	50A		
<b>Temperature</b>			
Minimum temperature:	-40°C		
Maximum temperature:	55°C		
<b>Ancillaries</b>			
Equipment Description	Model:	Part Number:	Manufacturer:
Baseband simulator CT-DU25	LPC 102 500/1	T01G52253 4	Ericsson
Power Supply Unit CT-DU25/LP2x700W	BML 901 468/1	LP00318	
I hereby declare that I am entitled to sign on behalf of the manufacturer and that the information supplied is correct and complete.			
Name:	Afrah Ali sadiq		
Position held:	Regulatory Approval Engineer		
Email address:	<a href="mailto:Afrah.ali.sadiq@ericsson.com">Afrah.ali.sadiq@ericsson.com</a>		
Telephone number:	.+46724650796		
Date:	22/07/2024		

No responsibility will be accepted by TÜV SÜD as to the accuracy of the information declared in this document by the manufacturer.

## 1.6 PRODUCT INFORMATION

### 1.6.1 Technical Description

The Equipment Under Test (EUT) AIR 3283 B25 B66 - KRD 901 892/2 is an Ericsson AB Radio Unit working in the public mobile service Band 2, 25, 66 band which provides communication connections to Band 2, 25, 66 network.

The EUT is declared as operating from a nominal -48V DC supply.

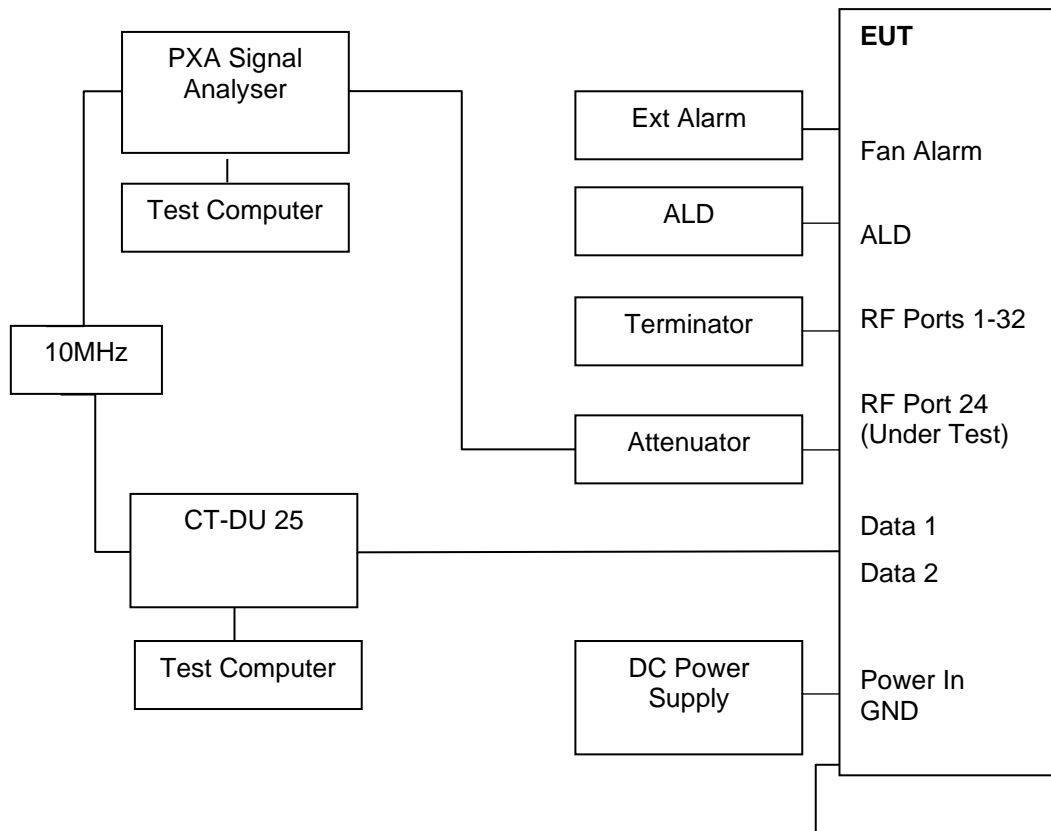
The Equipment Under Test (EUT) is shown in the photograph below. A full technical description can be found in the Manufacturer's documentation.



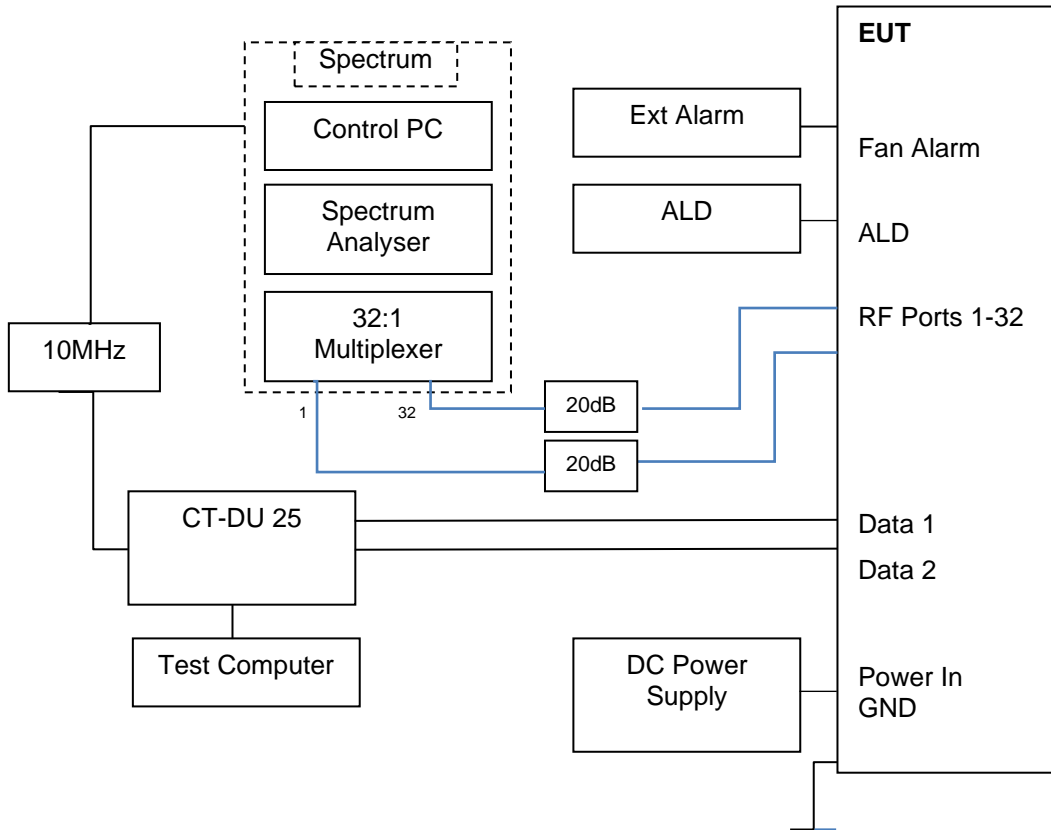
Equipment Under Test

## 1.7 TEST SETUP

Conducted Test Set Up – Carrier Power, PAR, PSD, Band Edge, OBW, Conducted Emissions

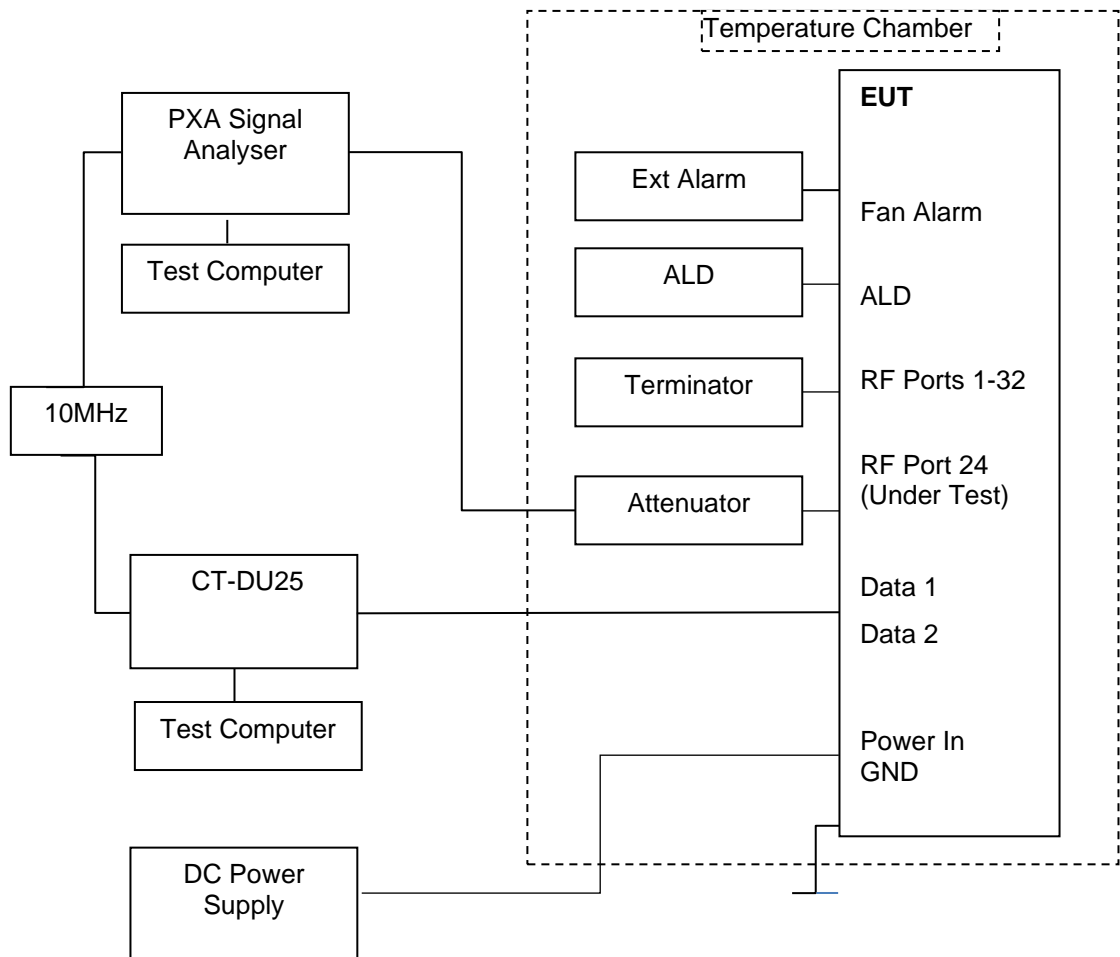


Conducted Test Set Up, Power, PSD, PAR, Occupied Bandwidth



Conducted Test Set Up – Frequency Stability

Dashed line indicates equipment inside the Temperature Chamber for testing





## 1.8 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated as described in the Test Method for each Test.

The EUT was powered from a -53.22 V DC supply unless otherwise stated.

FCC Measurement Facility Registration Number  
563983 Ericsson Test Laboratory, Kista  
Postal Address: Ericsson AB, Isafjordsgatan 10, Stockholm, SE-16 440, Sweden

Under our group Swedac Accreditation, TÜV SÜD Sverige conducted the following tests  
Ericsson Test Lab, Kista.

Test Name	Name of Engineer(s)	Module Number
Maximum Peak Output Power and Peak to Average Ratio - Conducted	Shashi Kiran Gangaraju	1
Occupied Bandwidth	Shashi Kiran Gangaraju	1
Band Edge	Shashi Kiran Gangaraju	1
Transmitter Spurious Emissions	Shashi Kiran Gangaraju	1
Frequency Stability	Vinodhini Chandrasekaran	2

## 1.9 DEVIATION FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

## 1.10 MODIFICATION RECORD

No modifications were made to the EUT during testing.

## 1.11 ADDITIONAL INFORMATION

The Test Plan is based on the TUV SUD Document FCC and ISED Test Plan Rationale for Base Station Equipment.  
Pre-testing was performed in accordance with the Test Plan to establish the worst-case Port, modulation schemes and bandwidths using Module 1, as defined below and in the Module Annex.

### Band 25/2

The port with the highest power, worst case port was port 28.  
Worst case modulation was 64QAM for LTE.  
Worst case modulation was QPSK for NR.  
Worst case bandwidth was 5 MHz for LTE.  
Worst case bandwidth was 20 MHz for NR.

### Band 66

The port with the highest power, worst case port was port 24  
Worst case modulation was QPSK for LTE.  
Worst case modulation was QPSK for NR.





Worst case bandwidth was 20 MHz for LTE.  
Worst case bandwidth was 20 MHz for NR.

These worst-case results are presented in this report to demonstrate compliance.  
TÜV SÜD retains all results, plots and printouts for the tests performed and also calibration details of the test equipment used.

This EUT uses the same port for Tx and Rx and therefore RX Spurious Emissions has not been performed. Rx Spurious Emissions have been covered by testing to FCC Part 15B, which are covered by a separate test report.

Ericsson have provided the following details about the variants of the AIR 3283 B25 B66  
KRD 901 892/1 With Antenna, Security Unlocked.  
KRD 901 892/11\*\* With Antenna, Security Locked  
KRD 901 892/2\* CAB-unit, Security Unlocked  
KRD 901 892/21 CAB unit, Security Locked

Note\*: Tested unit

Note\*\*: This will be the marketed, sold unit

The KRD 901 892/11 is equivalent to KRD 901 892/2 in conducted radio performance terms, as such no extra testing is required to prove conformity.

To expedite testing two AIR 3283 B25 B66 radios were used, the Hardware and Software Versions were identical. The table in Section 1.8 indicates which units were used for which tests and refers to them throughout as Module 1 and Module 2.

In Section 1.5 Ericsson's Declaration of Build Status shows the EIRP Limit to be used under the Antenna Characteristics section.

Throughout this report the power unit dBm is used. dBm is a unit of level used to indicate that a power level is expressed in decibels (dB) with reference to one milliwatt (mW). It is used as a convenient measure of absolute power because of its capability to express both very large and very small values in a short form.

Testing shows Regulatory Compliance for the AIR 3283 B2 B25 B66, KRD 901 892/2.



## **SECTION 2**

### **TEST DETAILS**



## **2.1 MAXIMUM PEAK OUTPUT POWER AND PEAK TO AVERAGE RATIO - CONDUCTED**

### **2.1.1 Specification Reference**

FCC CFR 47 Part 27, Clause 27.50  
FCC CFR 47 Part 2, Clause 2.1046

### **2.1.2 Date of Test and Modification State**

04, 05, 09, 10 and 19-July-2024 - Modification State 0

### **2.1.3 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.1.4 Environmental Conditions**

Ambient Temperature	21.1 - 23.9°C
Relative Humidity	40.3 - 50.2%

### **2.1.5 Test Method**

All measurements were made in accordance with FCC KDB 971168 D01, clause 5.2.1 and summed in accordance with FCC KDB 662911 D01.  
Measurements and calculations for In Band Power Spectral Density (PSD) have been made either in accordance with FCC KDB 662911 D01 V02r01 E 2) a) and ANSI C63.26.6.4.3.2.2 for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectra across the outputs or in accordance with FCC KDB 662911 D01 V02r01 E 2) c) and ANSI C63.26.6.4.3.2.4 Measure and add [10 log (Nout)] dB using the following calculation

Calculations:

Total power = Measured Output Power (port x, worst case) + 10log (NANT) + Declared Antenna Gain

Where NANT refers to the number of Ports.

The worst case modulation and bandwidth plots are presented here, all other applicable plots are retained by TÜV SÜD and available for presentation if required



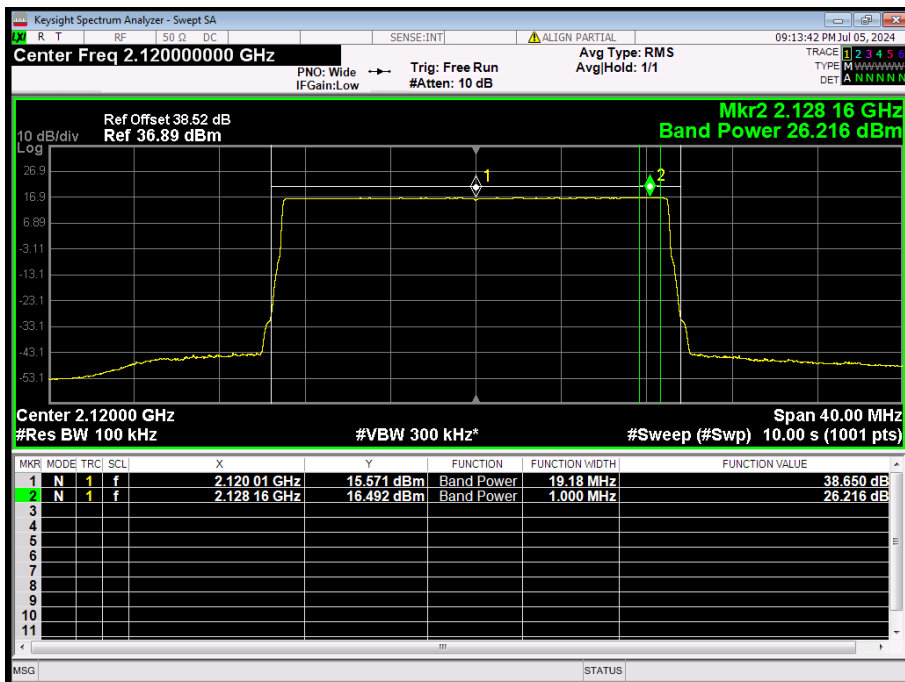
## 2.1.6 Test Results

### Configuration 1

Maximum Output Power 38.75 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit 65.15
			dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB	
24	QPSK	5.0 MHz	8.50	32.53	26.09	41.14	23.70	64.84	0.31
24	QPSK	10.0 MHz	8.49	35.63	26.17	41.25	23.70	64.95	0.20
24	QPSK	15.0 MHz	8.51	37.40	26.16	41.21	23.70	64.91	0.24
24	QPSK	20.0 MHz	8.56	38.65	26.22	41.27	23.70	64.97	0.18

### Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B



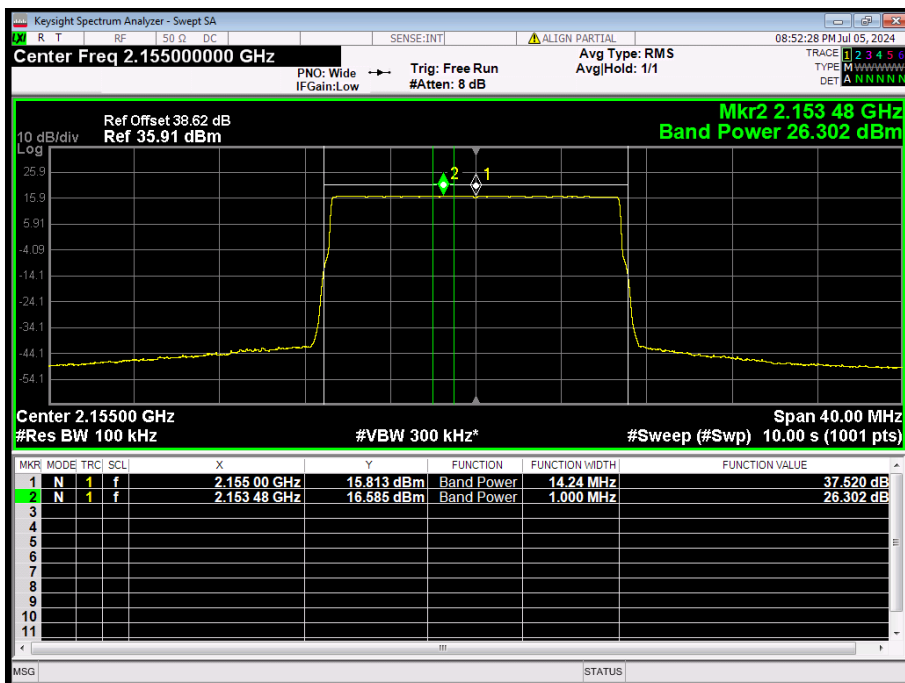


Configuration 1

Maximum Output Power 38.75 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	8.44	32.70	26.20	41.25	23.70	64.95	0.20
24	QPSK	10.0 MHz	8.44	35.73	26.24	41.29	23.70	64.99	0.16
24	QPSK	15.0 MHz	8.45	37.52	26.30	41.35	23.70	65.05	0.10
24	QPSK	20.0 MHz	8.45	38.70	26.28	41.33	23.70	65.03	0.12

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 15.0 MHz - Channel Position M



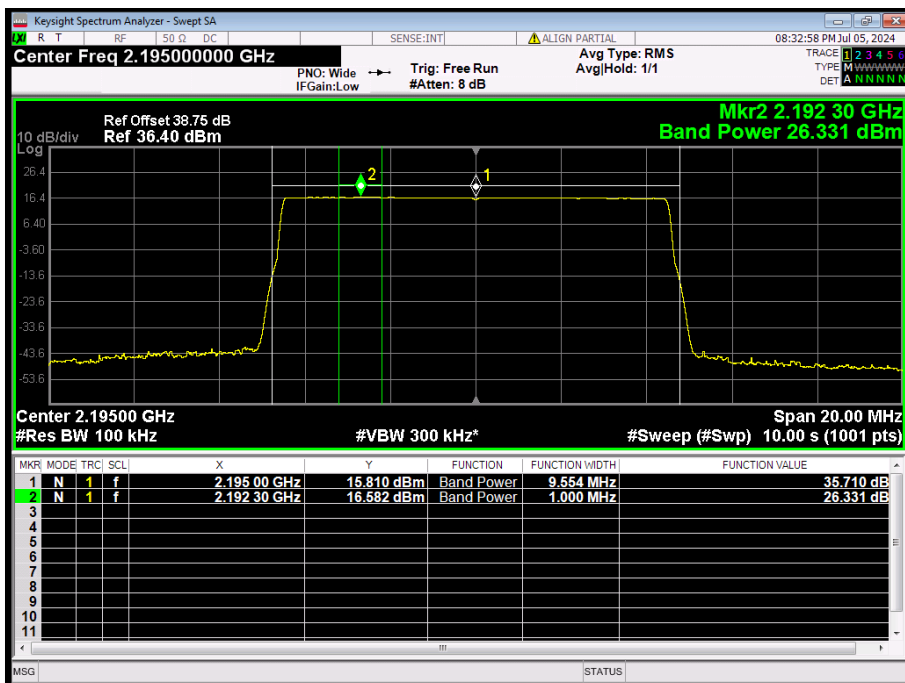


Configuration 1

Maximum Output Power 38.75 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
			dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB	
24	QPSK	5.0 MHz	8.48	32.61	26.20	41.25	23.70	64.95	0.20
24	QPSK	10.0 MHz	8.50	35.71	26.33	41.38	23.70	65.08	0.07
24	QPSK	15.0 MHz	8.54	37.51	26.32	41.37	23.70	65.07	0.08
24	QPSK	20.0 MHz	8.58	38.73	26.29	41.27	23.70	64.97	0.18

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 10.0 MHz - Channel Position T



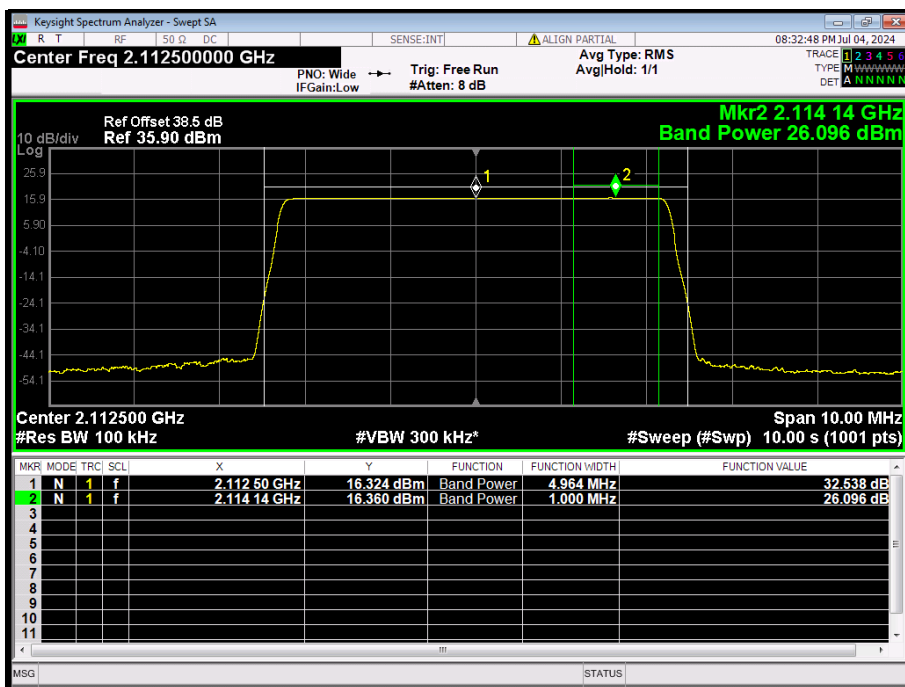


Configuration 3

Maximum Output Power 38.75 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.49	32.54	26.10	41.15	23.70	64.85	0.30
24	QPSK	10.0 MHz 15 kHz SCS	8.47	35.61	25.98	41.03	23.70	64.73	0.42
24	QPSK	15.0 MHz 15 kHz SCS	8.55	37.37	25.90	40.95	23.70	64.65	0.50
24	QPSK	20.0 MHz 15 kHz SCS	8.55	38.62	25.96	41.01	23.70	64.71	0.44

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position B



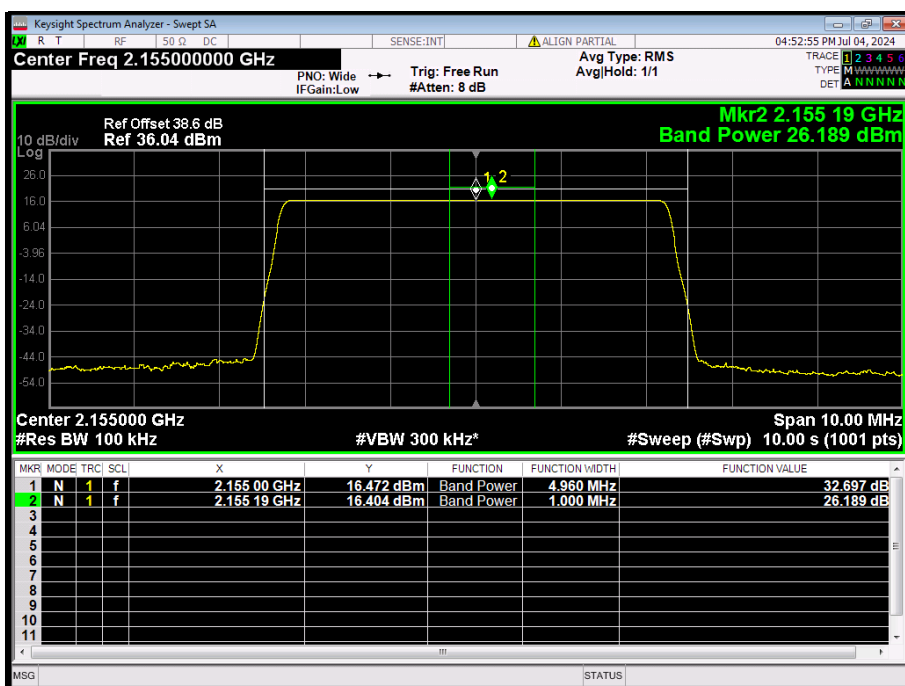


Configuration 3

Maximum Output Power 38.75 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.45	32.70	26.19	41.24	23.70	64.94	0.21
24	QPSK	10.0 MHz 15 kHz SCS	8.41	35.75	26.10	41.15	23.70	64.85	0.30
24	QPSK	15.0 MHz 15 kHz SCS	8.45	37.50	26.07	41.12	23.70	64.82	0.33
24	QPSK	20.0 MHz 15 kHz SCS	8.45	38.71	26.02	41.07	23.70	64.77	0.38

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position M





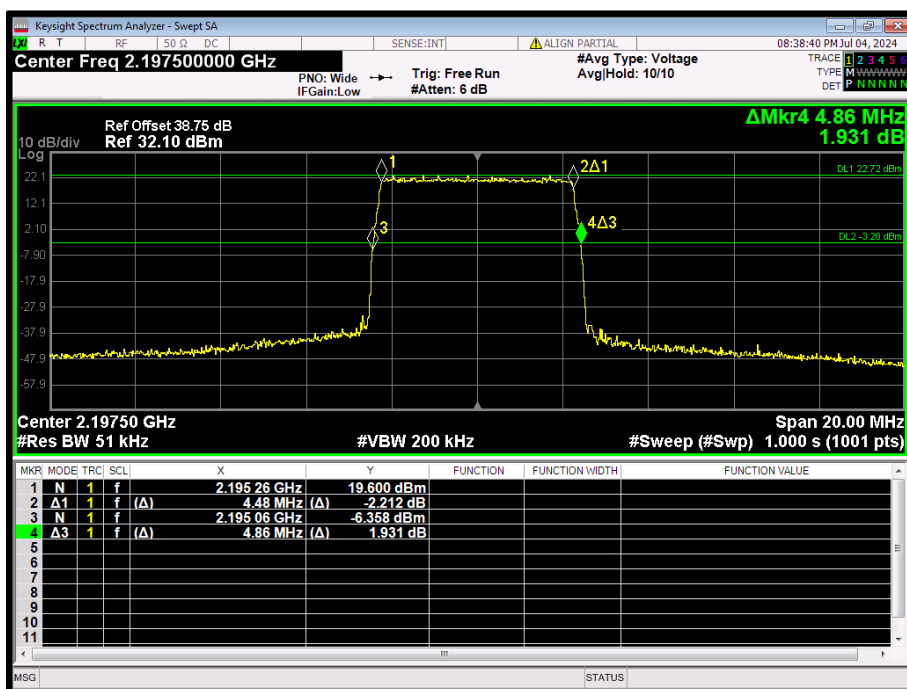


Configuration 3

Maximum Output Power 38.75 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.48	32.59	26.19	41.24	23.70	64.94	0.21
24	QPSK	10.0 MHz 15 kHz SCS	8.47	35.72	26.18	41.23	23.70	64.93	0.22
24	QPSK	15.0 MHz 15 kHz SCS	8.56	37.46	26.05	41.10	23.70	64.80	0.35
24	QPSK	20.0 MHz 15 kHz SCS	8.60	38.66	26.00	41.05	23.70	64.75	0.40

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position T



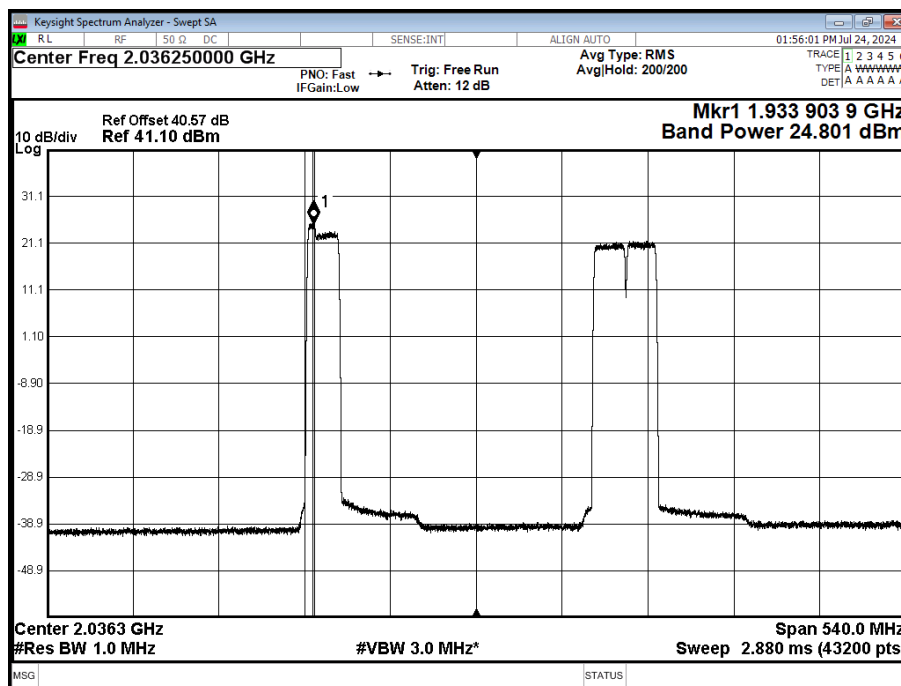


Configuration 7

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit 65.15
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
28	64QAM QPSK QPSK QPSK	5 MHz 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS	-	39.00	24.08	39.13	23.70	62.83	2.32

Antenna 28 - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, - Channel Position B



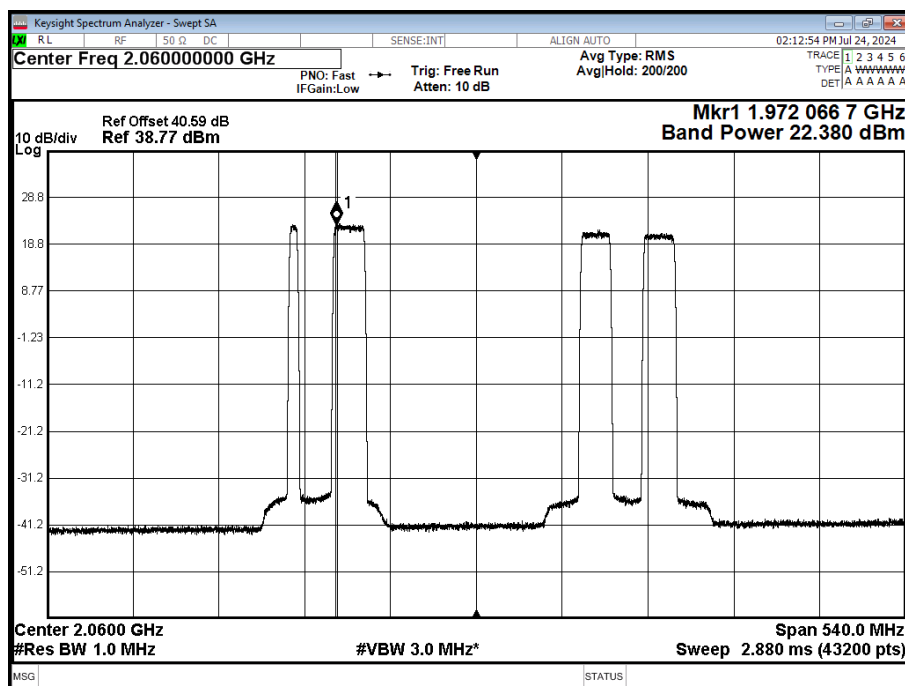


Configuration 7

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit 65.15
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
28	64QAM QPSK QPSK QPSK	5 MHz 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS	-	38.90	22.38	37.43	23.70	61.13	4.02

Antenna 28 - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, - Channel Position M



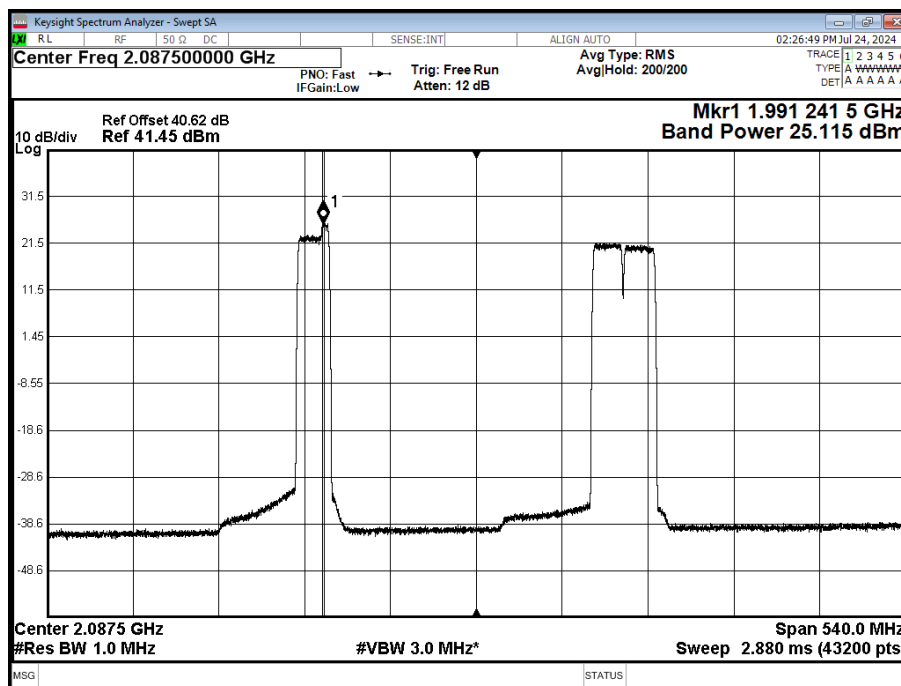


Configuration 7

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position TrFBW						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit 65.15
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz				
28	64QAM QPSK QPSK QPSK	5 MHz 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS	-	38.90	25.12	40.17	23.70	63.87	1.28

Antenna 28 - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz. NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, - Channel Position T



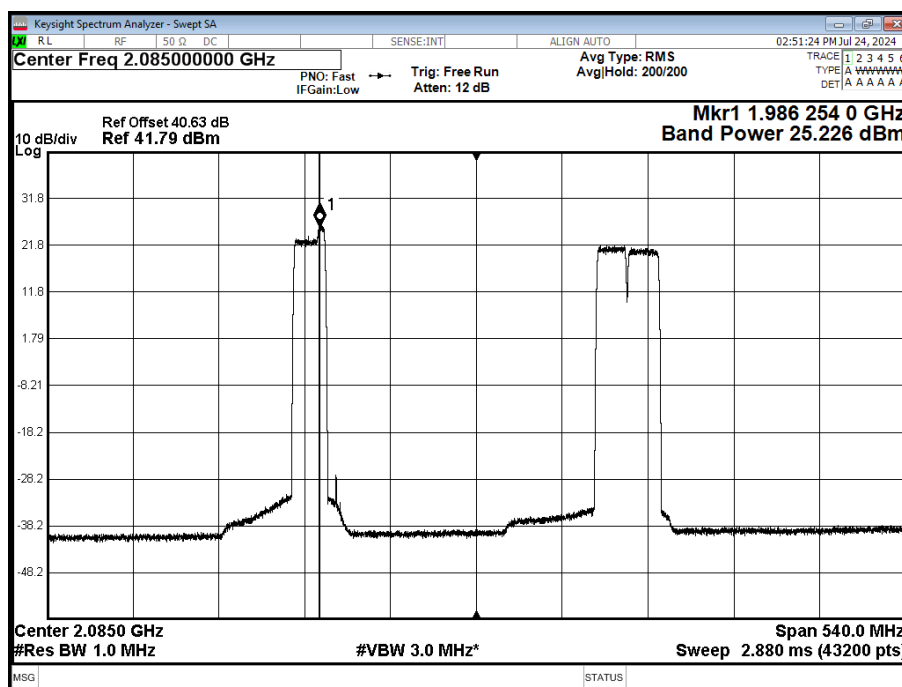


Configuration 9

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit 65.15
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
28	64QAM QPSK QPSK QPSK	5 MHz 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS 20.0 MHz 15 kHz SCS	-	38.99	25.23	40.28	23.70	63.98	1.17

Antenna 28 - LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, - Channel Position T



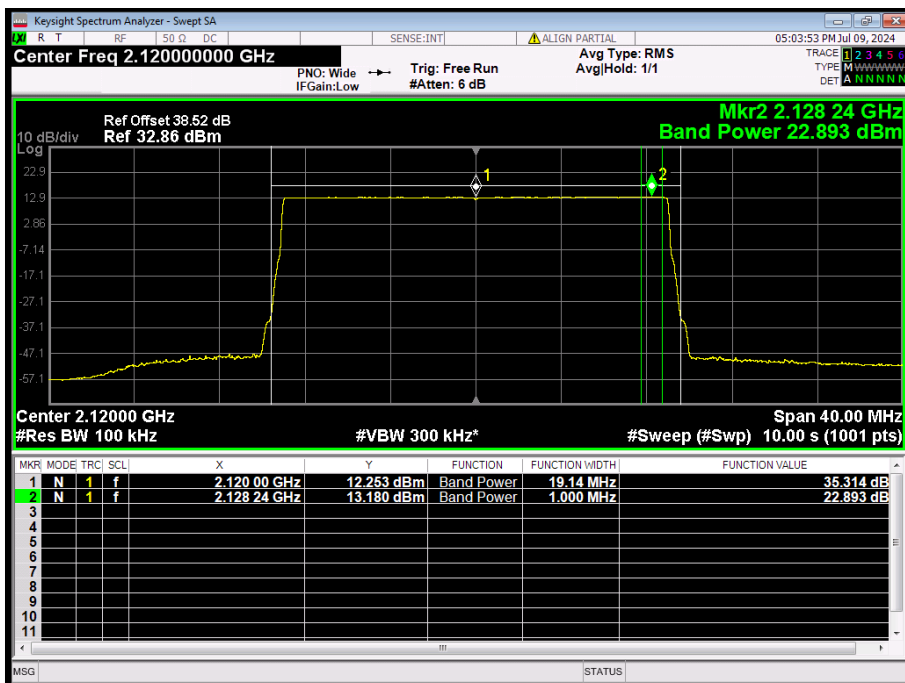


Configuration 10

Maximum Output Power 35.55 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	8.49	29.28	22.84	37.89	23.70	61.59	0.56
24	QPSK	10.0 MHz	8.50	32.29	22.81	37.86	23.70	61.56	0.59
24	QPSK	15.0 MHz	8.52	34.10	22.85	37.90	23.70	61.60	0.55
24	QPSK	20.0 MHz	8.54	35.31	22.89	37.94	23.70	61.64	0.51

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B



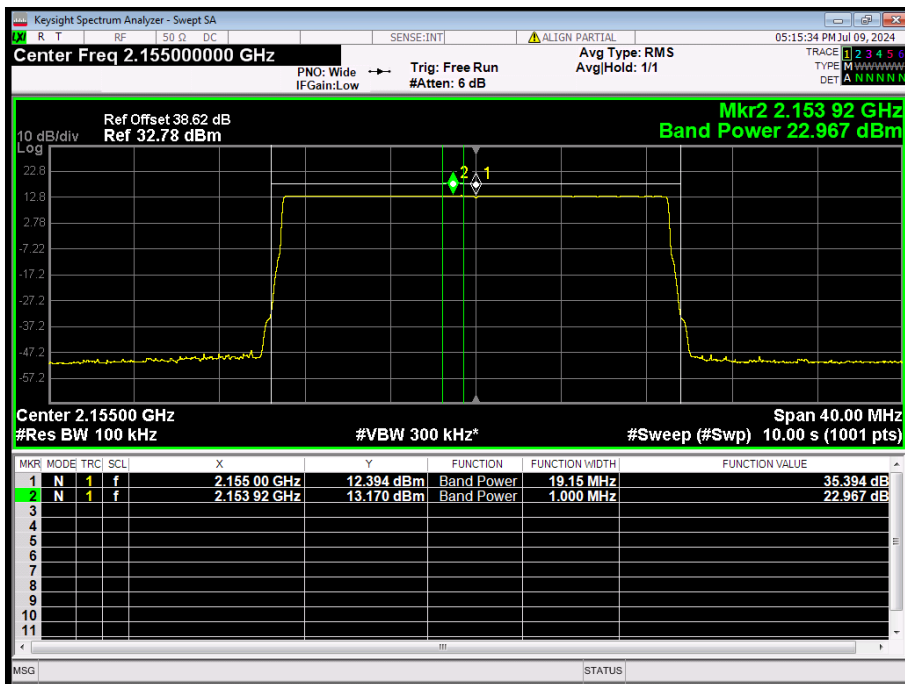


Configuration 10

Maximum Output Power 35.55 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	8.44	29.35	22.86	37.91	23.70	61.61	0.54
24	QPSK	10.0 MHz	8.45	32.38	22.90	37.95	23.70	61.65	0.50
24	QPSK	15.0 MHz	8.45	34.19	22.96	38.01	23.70	61.71	0.44
24	QPSK	20.0 MHz	8.45	35.39	22.97	38.02	23.70	61.72	0.43

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M



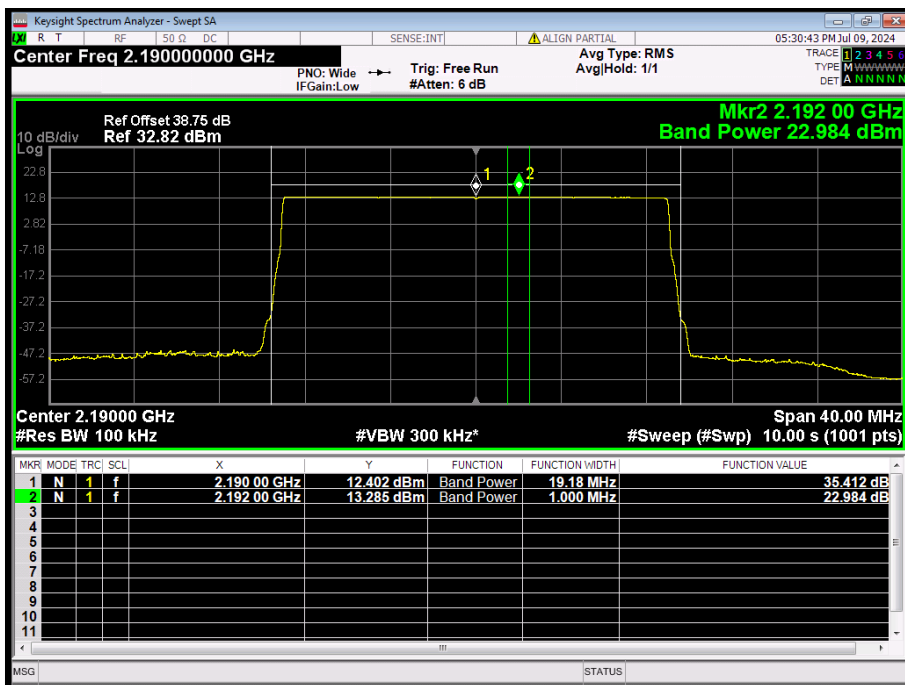


Configuration 10

Maximum Output Power 35.55 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	8.46	29.29	22.85	37.90	23.70	61.60	0.55
24	QPSK	10.0 MHz	8.51	32.41	23.02	38.07	23.70	61.77	0.38
24	QPSK	15.0 MHz	8.55	34.13	22.94	37.99	23.70	61.69	0.46
24	QPSK	20.0 MHz	8.59	35.41	22.98	38.03	23.70	61.73	0.42

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T





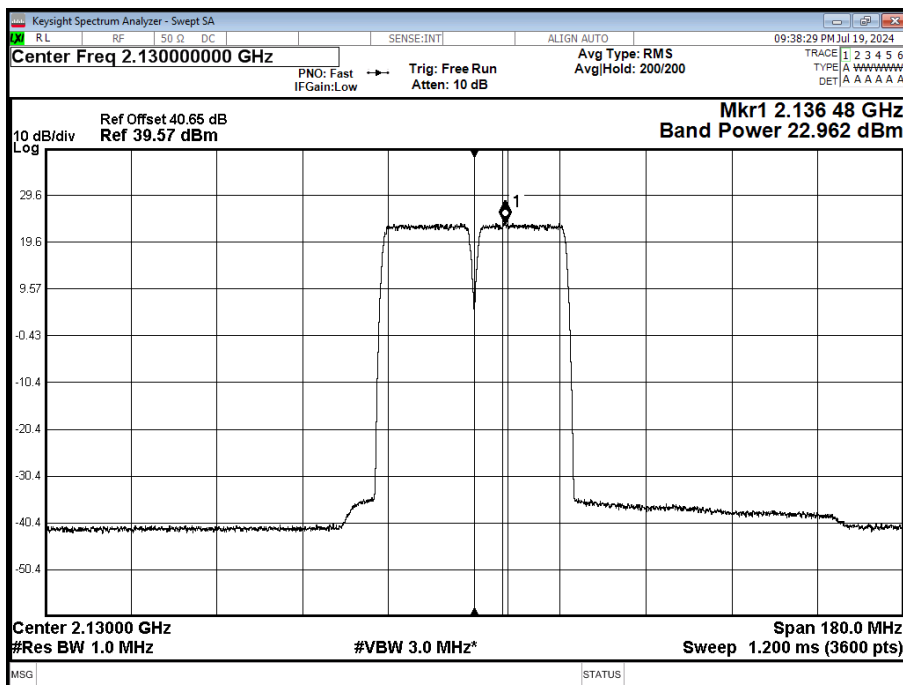


### Configuration 11

Maximum Output Power 2 x 35.74 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
			dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB	
24	QPSK	5.0 MHz	-	32.08	22.70	37.75	23.70	61.45	0.70
24	QPSK	10.0 MHz	-	35.09	22.68	37.73	23.70	61.43	0.72
24	QPSK	15.0 MHz	-	36.96	22.96	38.01	23.70	61.71	0.44
24	QPSK	20.0 MHz	-	38.27	22.96	38.01	23.70	61.71	0.44

### Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B



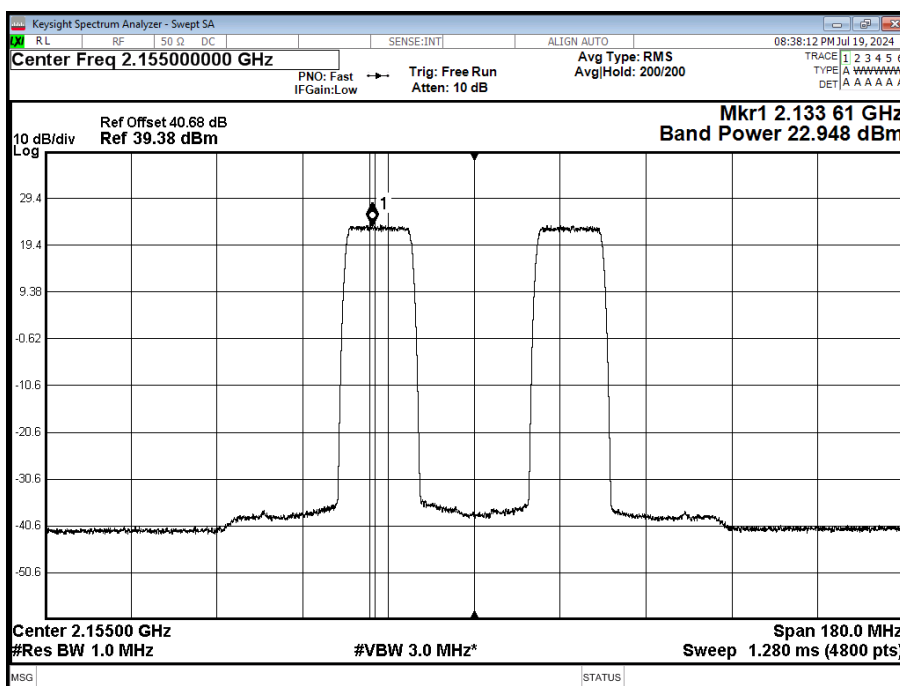


Configuration 11

Maximum Output Power 2 x 35.74 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	-	32.20	22.78	37.83	23.70	61.53	0.62
24	QPSK	10.0 MHz	-	35.20	22.85	37.90	23.70	61.60	0.55
24	QPSK	15.0 MHz	-	37.02	22.95	38.00	23.70	61.70	0.45
24	QPSK	20.0 MHz	-	38.27	22.94	37.99	23.70	61.69	0.46

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 15.0 MHz - Channel Position M



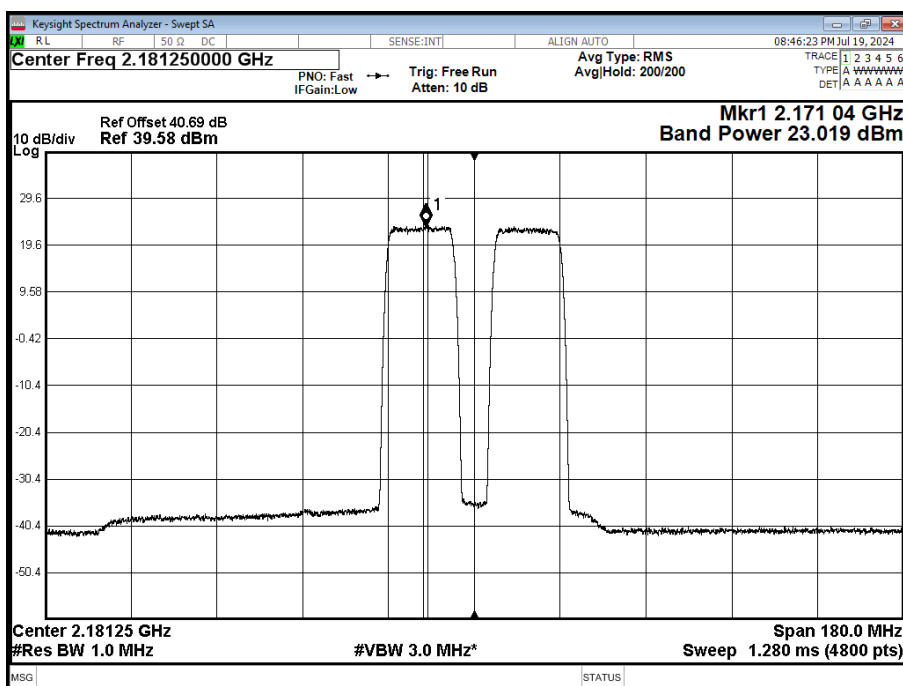


Configuration 11

Maximum Output Power 2 x 35.74 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz	-	32.06	22.73	37.78	23.70	61.48	0.67
24	QPSK	10.0 MHz	-	35.04	22.85	37.90	23.70	61.60	0.55
24	QPSK	15.0 MHz	-	36.88	23.02	38.07	23.70	61.77	0.38
24	QPSK	20.0 MHz	-	38.15	22.91	37.96	23.70	61.66	0.49

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 15.0 MHz - Channel Position T



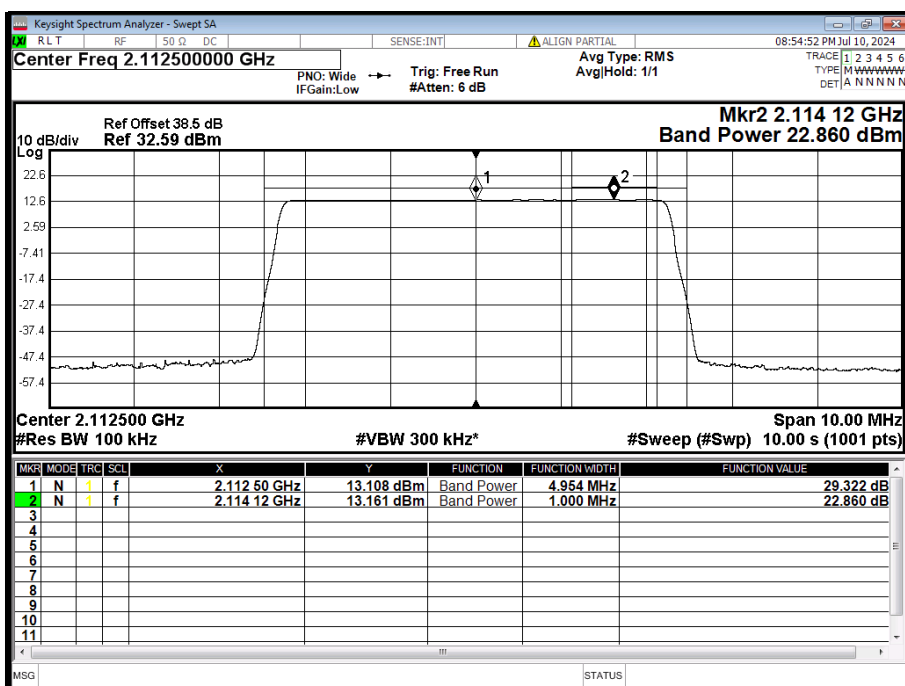


Configuration 12

Maximum Output Power 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.50	29.32	22.86	37.91	23.70	61.61	0.54
24	QPSK	10.0 MHz 15 kHz SCS	8.47	32.36	22.71	37.76	23.70	61.46	0.69
24	QPSK	15.0 MHz 15 kHz SCS	8.55	34.14	22.67	37.72	23.70	61.42	0.73
24	QPSK	20.0 MHz 15 kHz SCS	8.54	35.41	22.74	37.79	23.70	61.49	0.66

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position B



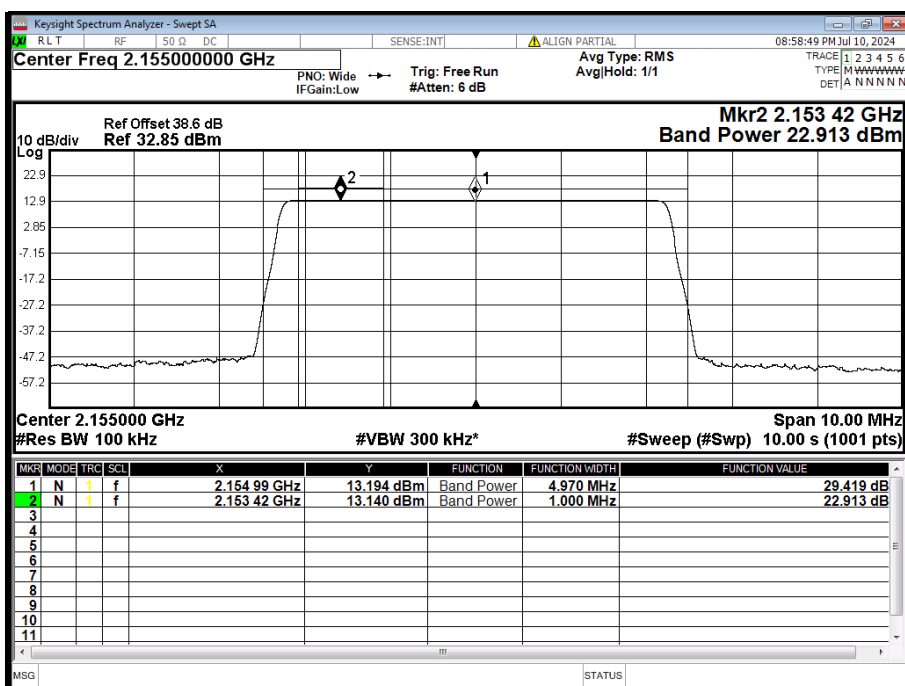


Configuration 12

Maximum Output Power 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.46	29.42	22.91	37.96	23.70	61.66	0.49
24	QPSK	10.0 MHz 15 kHz SCS	8.41	32.46	22.82	37.87	23.70	61.57	0.58
24	QPSK	15.0 MHz 15 kHz SCS	8.45	34.25	22.80	37.85	23.70	61.55	0.60
24	QPSK	20.0 MHz 15 kHz SCS	8.45	35.43	22.73	37.78	23.70	61.48	0.67

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position M



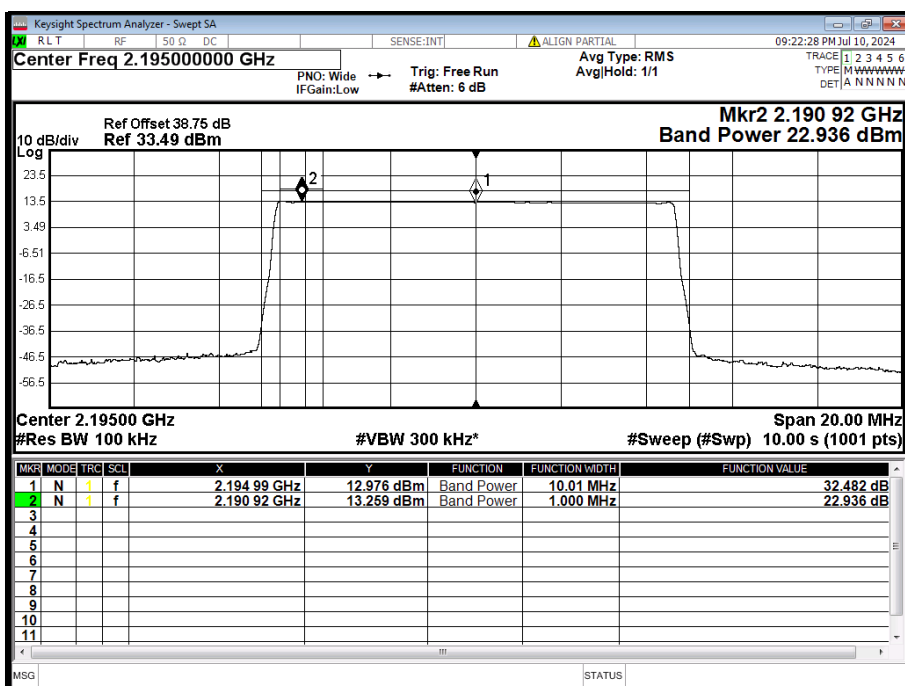


Configuration 12

Maximum Output Power 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	8.49	29.31	22.90	37.95	23.70	61.65	0.50
24	QPSK	10.0 MHz 15 kHz SCS	8.49	32.48	22.94	37.99	23.70	61.69	0.46
24	QPSK	15.0 MHz 15 kHz SCS	8.56	34.19	22.77	37.82	23.70	61.52	0.63
24	QPSK	20.0 MHz 15 kHz SCS	8.56	35.43	22.78	37.83	23.70	61.53	0.62

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 10.0 MHz 15 kHz SCS - Channel Position T



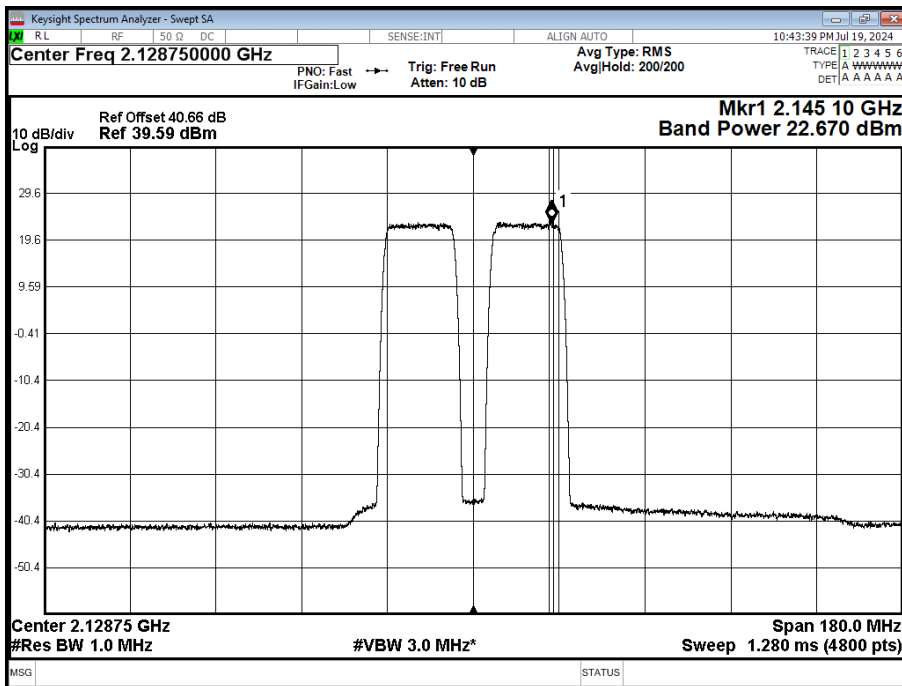


Configuration 13

Maximum Output Power 2 x 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	-	32.02	22.64	37.69	23.70	61.39	0.76
24	QPSK	10.0 MHz 15 kHz SCS	-	35.10	22.58	37.63	23.70	61.33	0.82
24	QPSK	15.0 MHz 15 kHz SCS	-	36.94	22.67	37.72	23.70	61.42	0.73
24	QPSK	20.0 MHz 15 kHz SCS	-	38.20	22.60	37.65	23.70	61.35	0.80

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 15.0 MHz 15 kHz SCS - Channel Position B



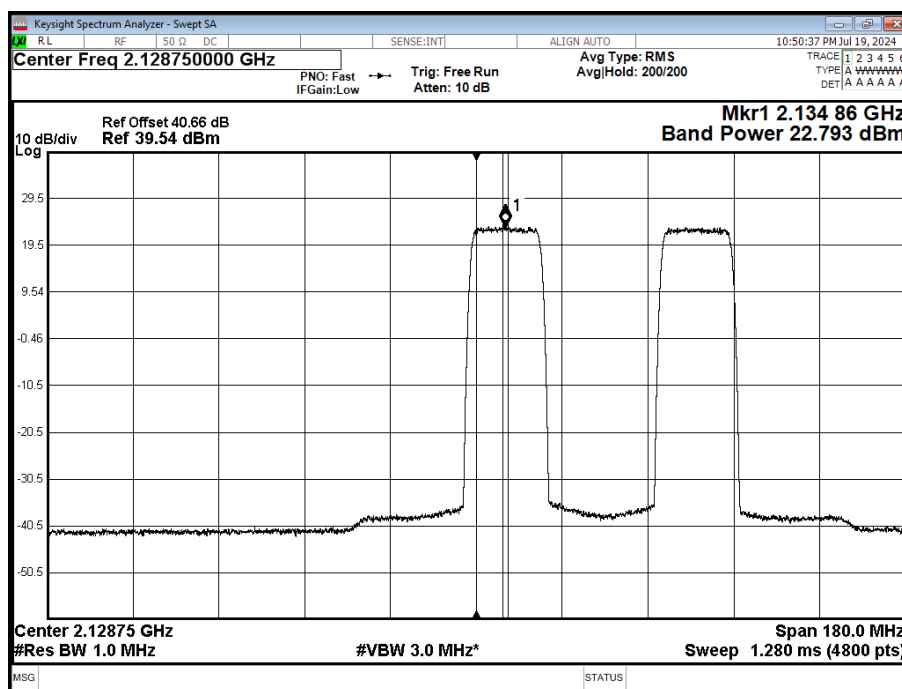


Configuration 13

Maximum Output Power 2 x 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	-	32.17	22.75	37.80	23.70	61.50	0.65
24	QPSK	10.0 MHz 15 kHz SCS	-	35.26	22.75	37.80	23.70	61.50	0.65
24	QPSK	15.0 MHz 15 kHz SCS	-	36.96	22.79	37.84	23.70	61.54	0.61
24	QPSK	20.0 MHz 15 kHz SCS	-	38.22	22.67	37.72	23.70	61.42	0.73

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 15.0 MHz 15 kHz SCS - Channel Position M





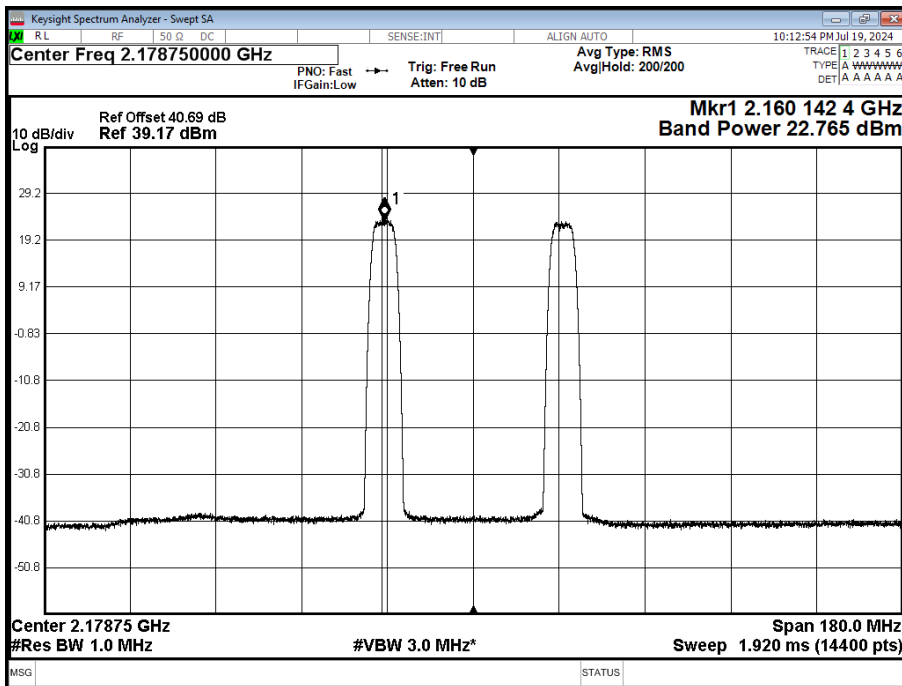


Configuration 13

Maximum Output Power 2 x 35.55 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK	5.0 MHz 15 kHz SCS	-	31.98	22.77	37.82	23.70	61.52	0.63
24	QPSK	10.0 MHz 15 kHz SCS	-	35.07	22.57	37.62	23.70	61.32	0.83
24	QPSK	15.0 MHz 15 kHz SCS	-	36.92	22.73	37.78	23.70	61.48	0.67
24	QPSK	20.0 MHz 15 kHz SCS	-	38.12	22.63	37.68	23.70	61.38	0.77

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 5.0 MHz 15 kHz SCS - Channel Position T



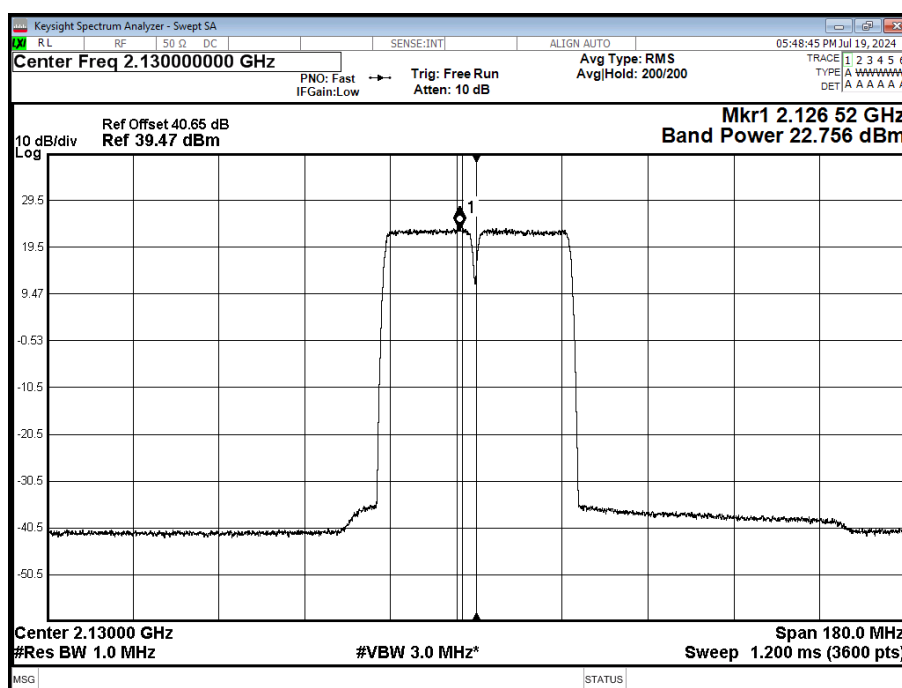


Configuration 14

Maximum Output Power 2 x 35.55 dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
			dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB	
24	QPSK QPSK	20 MHz 20 MHz 15 kHz SCS	-	38.14	22.76	37.81	23.70	61.51	0.64

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz , NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, - Channel Position B

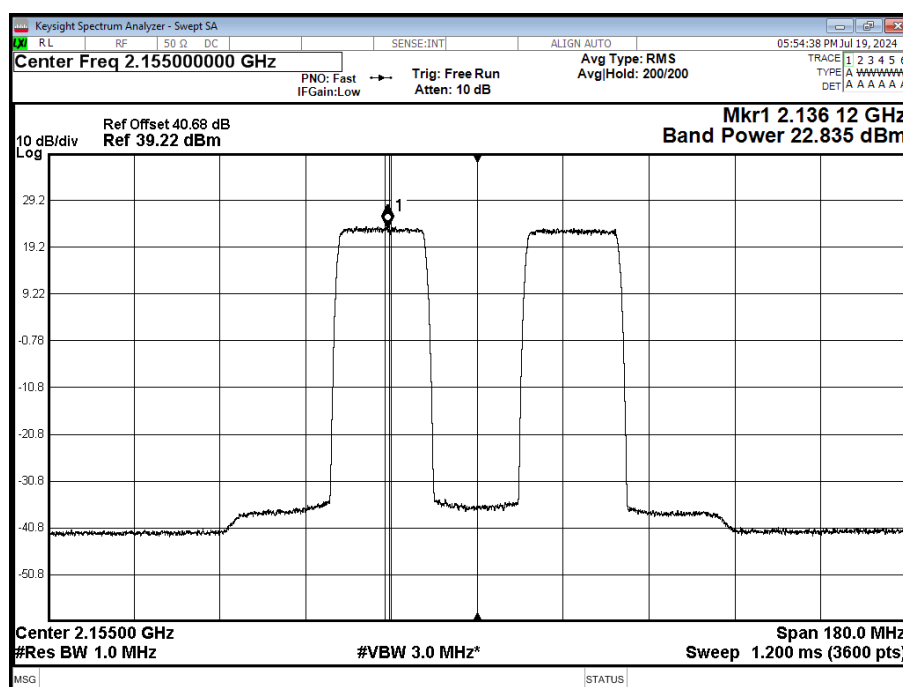




Configuration 14  
 55aximum Output Power 2 x 35.74 dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK QPSK	20 MHz 20 MHz 15 kHz SCS	-	38.18	22.84	37.89	23.70	61.59	0.56

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz , NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz - Channel Position M



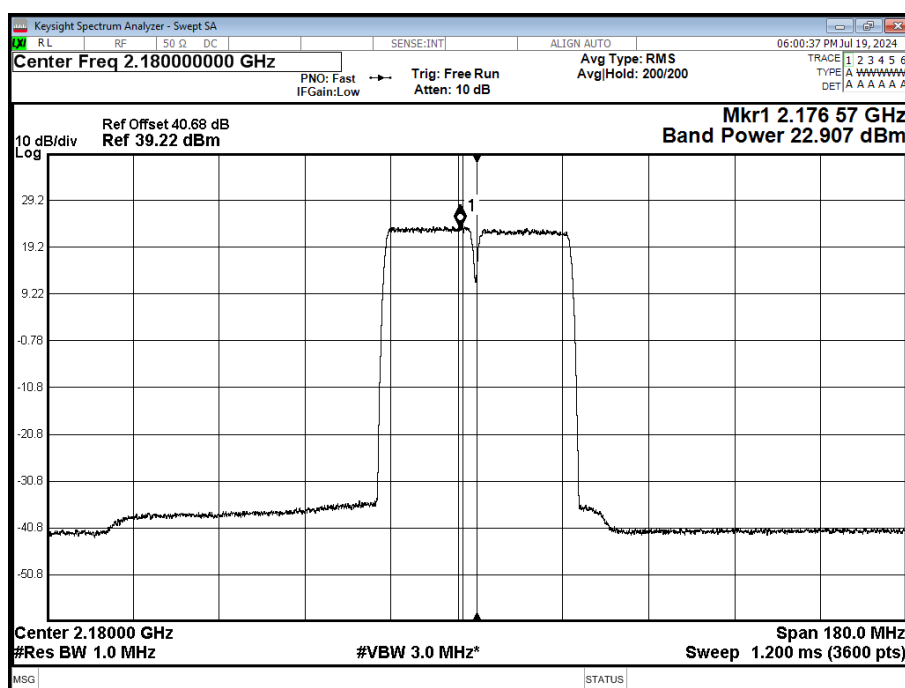


Configuration 14

Maximum Output Power 2 x 35.55 dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position T <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
24	QPSK QPSK	20 MHz 20 MHz 15 kHz SCS	-	38.14	22.91	37.96	23.70	61.66	0.49

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz , NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz - Channel Position T



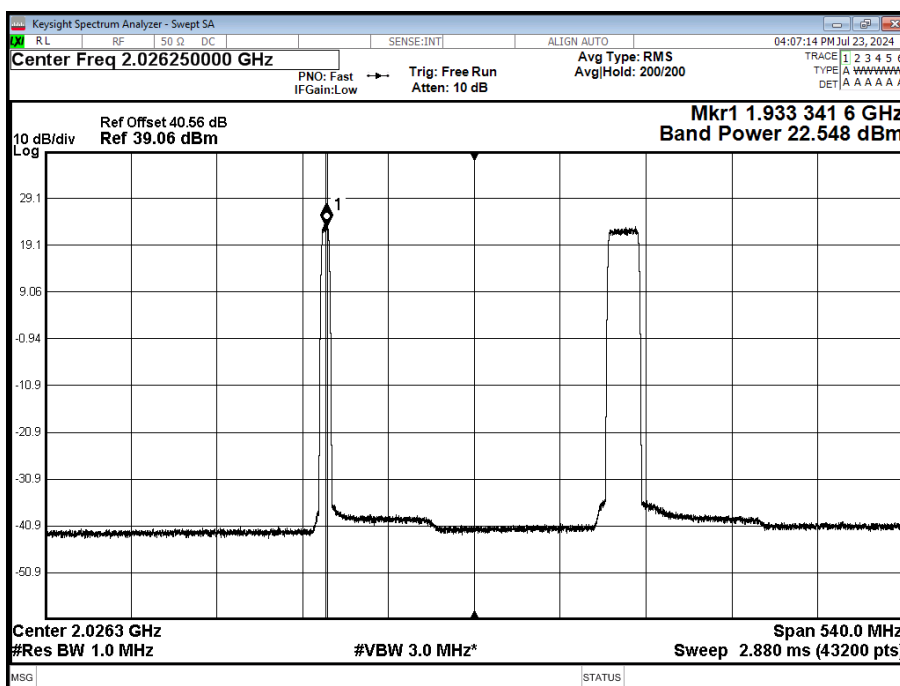


Configuration 15

Maximum Output Power 29.72(LTE)+35.55(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position B <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
28	64QAM / QPSK	5 MHz / 20.0 MHz 15 kHz SCS	-	35.64	22.55	37.60	23.70	61.30	0.85

Antenna 28 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position B



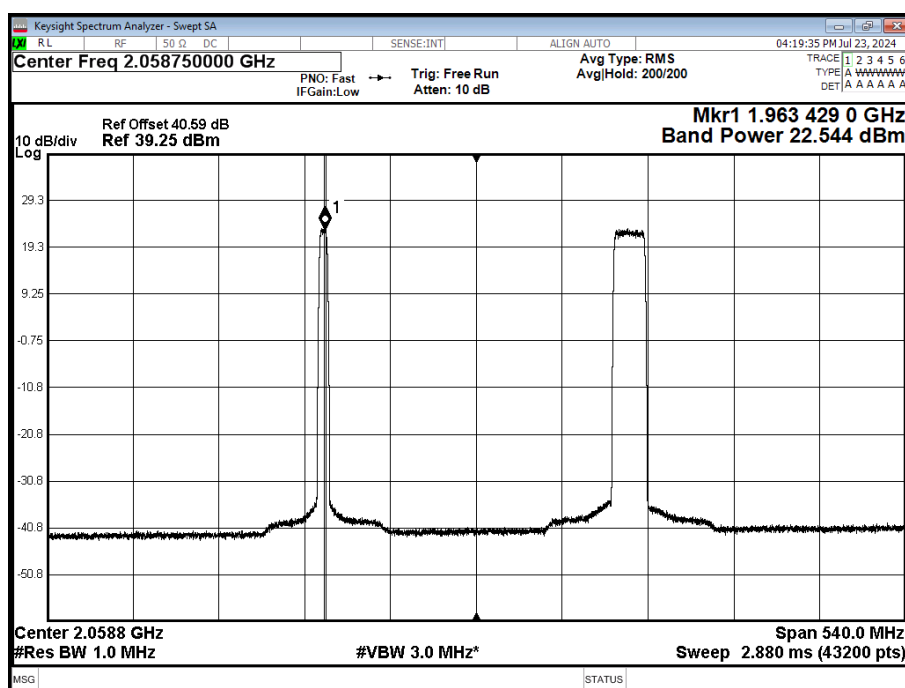


Configuration 15

Maximum Output Power 29.72(LTE)+35.55(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			Channel Position M <sub>RFBW</sub>						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
	dBm	dBm/MHz	dBm/MHz	dBi	dBm/MHz	dB			
28	64QAM / QPSK	5 MHz / 20.0 MHz 15 kHz SCS	-	35.77	22.54	37.59	23.70	61.29	0.86

Antenna 28 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position M



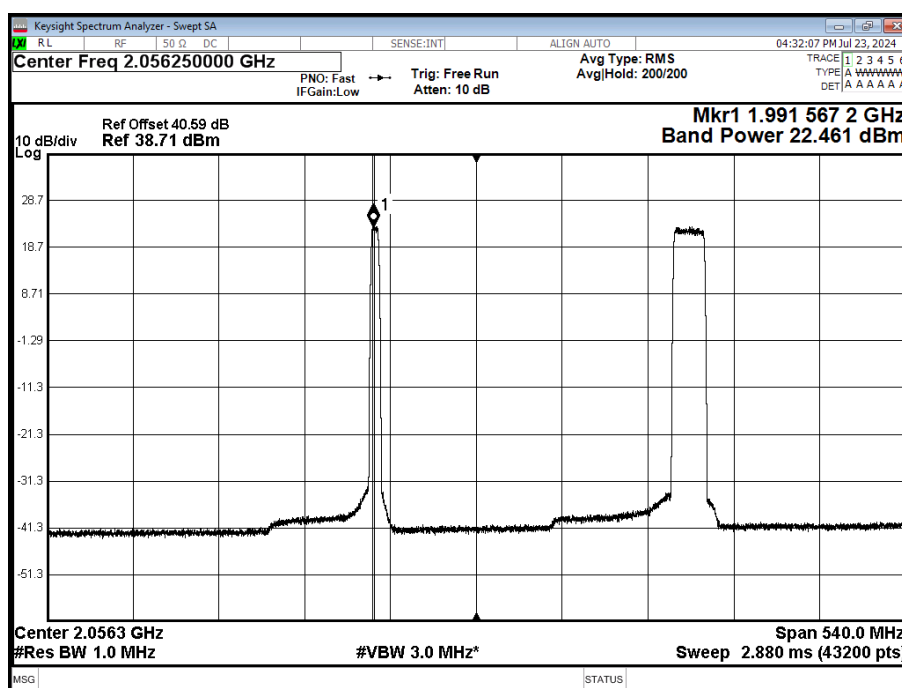


Configuration 15

Maximum Output Power 29.72(LTE)+35.55(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
				dBm	dBm/MHz				
28	64QAM / QPSK	5 MHz / 20.0 MHz 15 kHz SCS	-	35.69	22.46	37.51	23.70	61.21	0.94

Antenna 28 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T



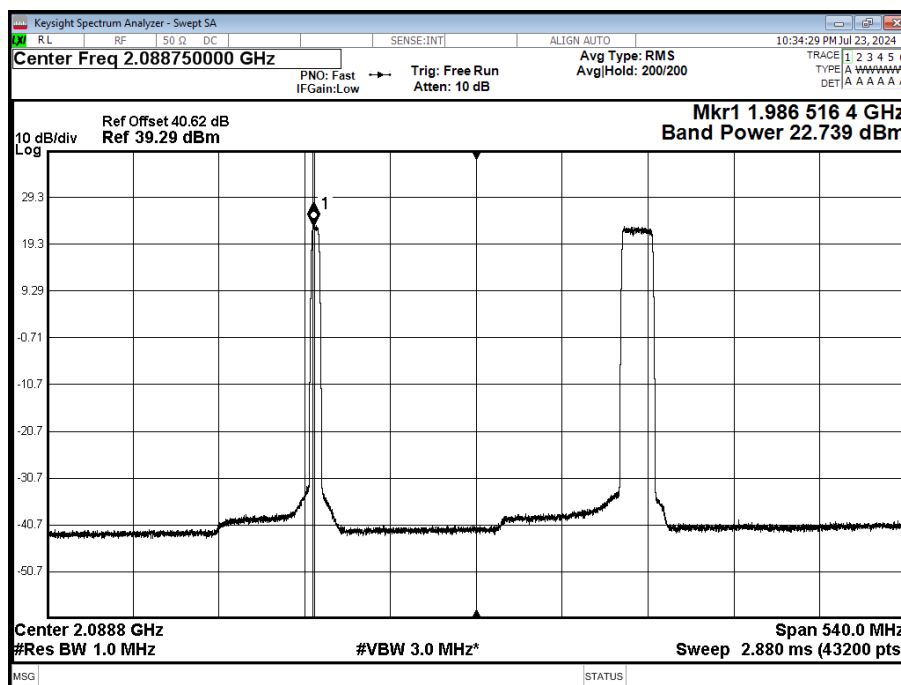


Configuration 16

Maximum Output Power 29.72(LTE)+35.55(NR) dBm

Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD						
			PAR (dB)	Average Power/PSD		Total Power Ports 1-32	Declared Antenna Gain	Total EIRP	Total EIRP Limit
				Channel Position T <sub>RFBW</sub>	dBm				
28	64QAM QPSK	5 MHz 20.0 MHz 15 kHz SCS	-	35.82	22.74	37.79	23.70	61.49	62.15

Antenna 28 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz, LTE Modulation 64QAM - LTE Carrier Bandwidth 5.0 MHz - Channel Position T



Limit	
Maximum rated output power (Non-Rural)	≤ 1640 W/MHz or ≤+62.15 dBm/MHz
Maximum rated output power (Rural)	≤ 3280 W/MHz or ≤+65.15 dBm/MHz
Peak to Average Ratio	13 dB





## 2.2 OCCUPIED BANDWIDTH

### 2.2.1 Specification Reference

FCC CFR 47 Part 27, Clause 27.53  
FCC CFR 47 Part 2, Clause 2.1049

### 2.2.2 Date of Test and Modification State

04, 05, 18 and 19-July-2024 - Modification State 0

### 2.2.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.2.4 Environmental Conditions

Ambient Temperature	21.1 - 23.9°C
Relative Humidity	40.3 - 50.2%

### 2.2.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 4.2 and 4.3. The Spectrum Analyser RBW was configured to be at least 1% of the channel bandwidth of the carrier to be measured.

For 26 dB Bandwidth, in accordance with KDB 971168 D01, a peak detector and a trace setting of Max Hold were used. The trace was allowed to stabilise. Using the Spectrum Analyser function, the 26dB measurement result was obtained.

#### 4.2 Occupied bandwidth – relative measurement procedure

The reference value is the highest level of the spectral envelope of the modulated signal, unless otherwise specified in an applicable rule section.

Subclause 5.4.3 of ANSI C63.26-2015 is applicable.

#### 4.3 Occupied bandwidth – power bandwidth (99 %) measurement procedure

Subclause 5.4.4 of ANSI C63.26-2015 is applicable (wherein the recommendation is to use the 99 % power bandwidth function of a spectrum analyzer).

The worst case modulation and bandwidth plots are presented here, all other applicable plots are retained by TÜV SÜD and available for presentation if required.



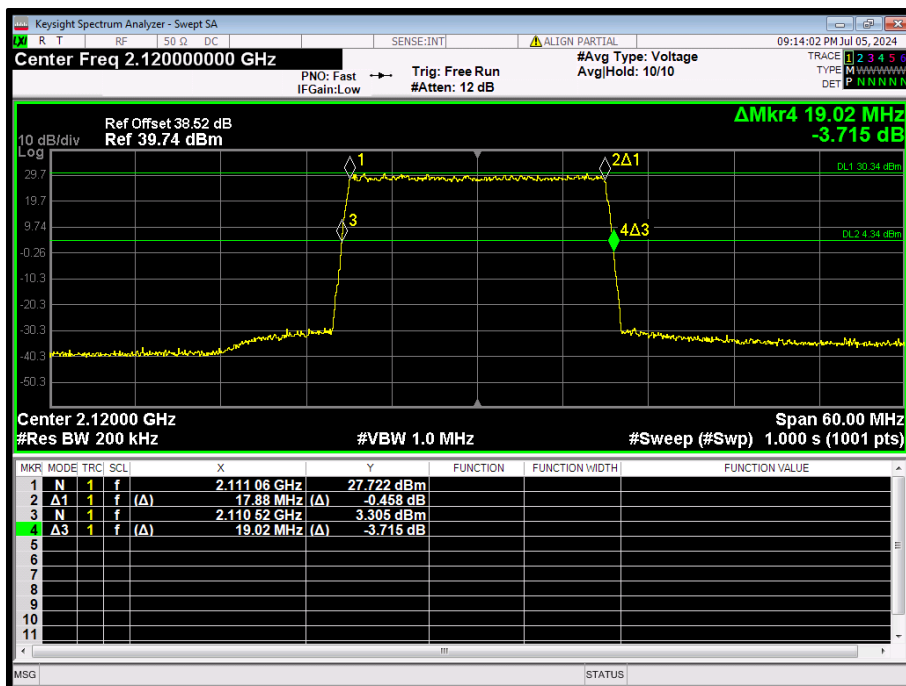
## 2.2.6 Test Results

### Configuration 1

Maximum Output Power 38.75 dBm

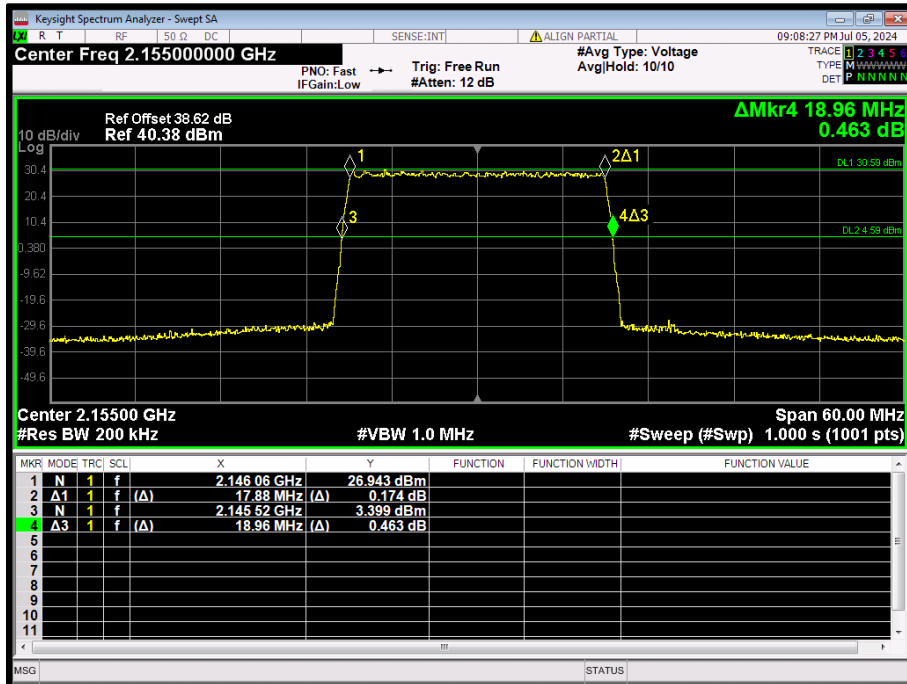
Antenna	LTE Modulation	LTE Carrier Bandwidth	Result (MHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
24	QPSK	5.0 MHz	4.480	4.840	4.480	4.820	4.480	4.840
24	QPSK	10.0 MHz	8.960	9.680	8.960	9.640	8.960	9.680
24	QPSK	15.0 MHz	13.440	14.520	13.440	14.560	13.480	14.520
24	QPSK	20.0 MHz	17.880	19.020	17.880	18.960	17.880	19.020

### Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B

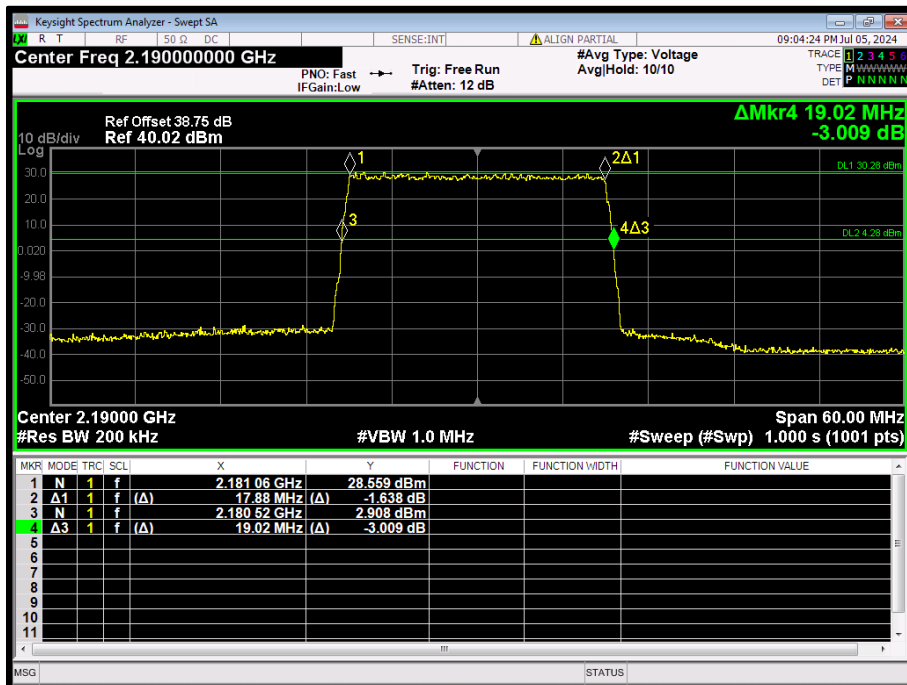




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T



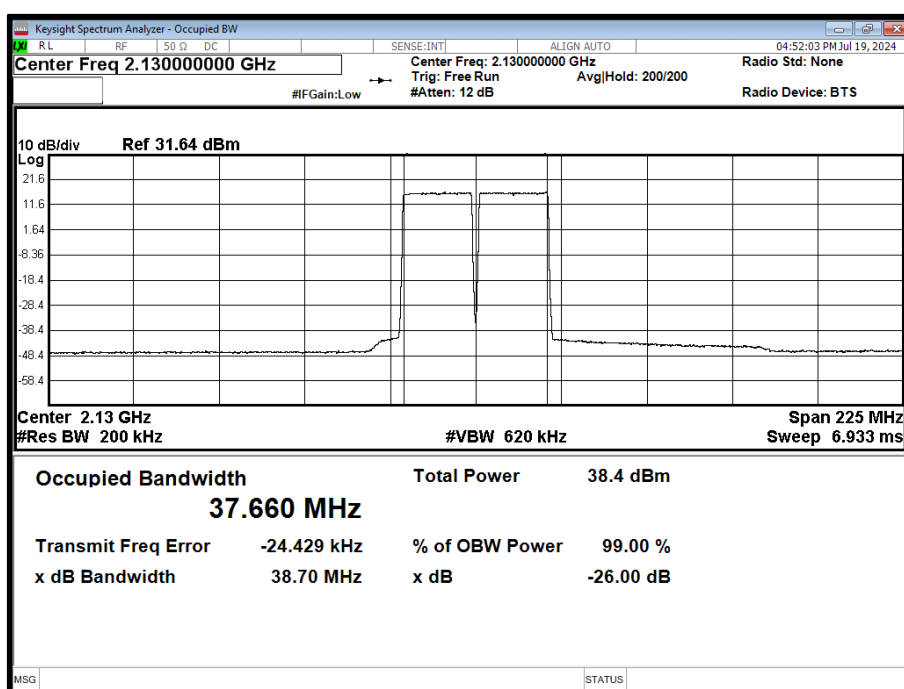


Configuration 2

Maximum Output Power 2 x 35.74 dBm

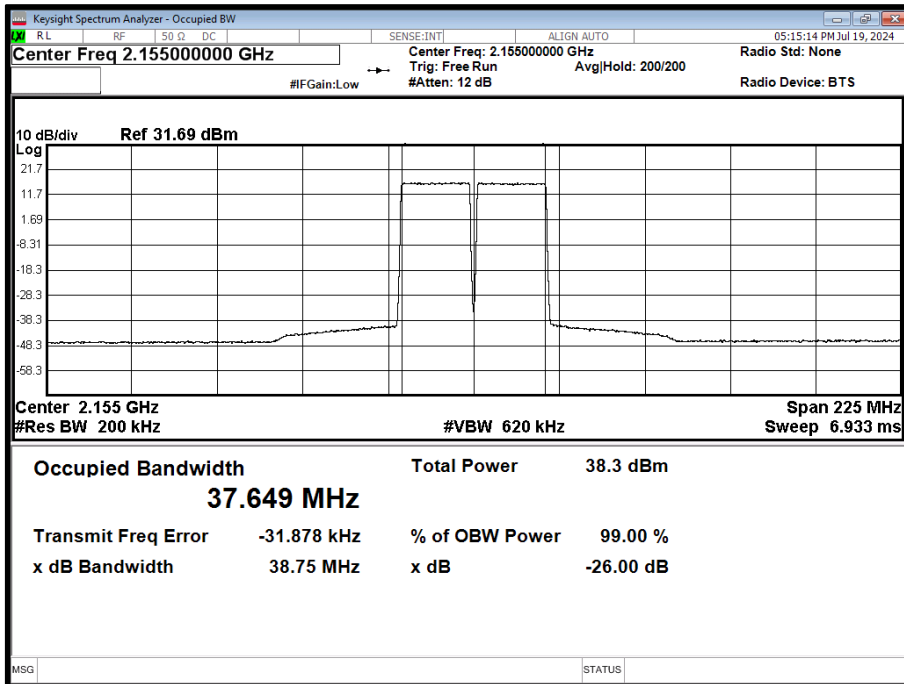
Antenna	LTE Modulation	LTE Carrier Bandwidth	Result (kHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
24	QPSK	5.0 MHz	9538.32	9898.76	9539.18	9898.86	9531.76	9898.74
24	QPSK	10.0 MHz	18880.46	19701.08	18885.19	19703.34	18887.65	19696.64
24	QPSK	15.0 MHz	28285.29	29239.72	28283.99	29237.44	28249.95	29236.46
24	QPSK	20.0 MHz	37659.77	38695.73	37649.32	38751.46	37647.76	38695.37

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B

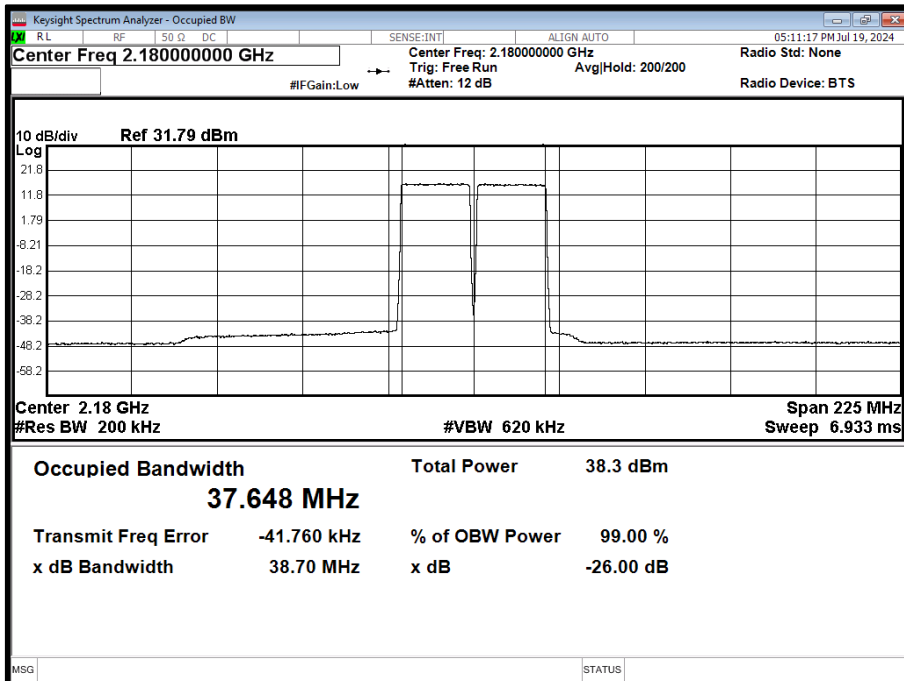




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T



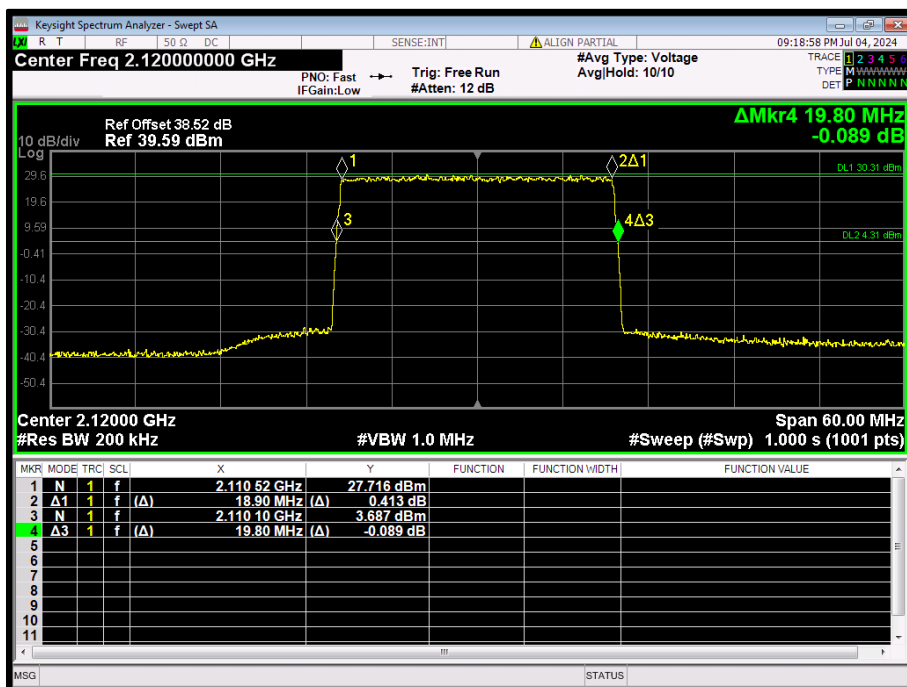


Configuration 3

Maximum Output Power 38.75 dBm

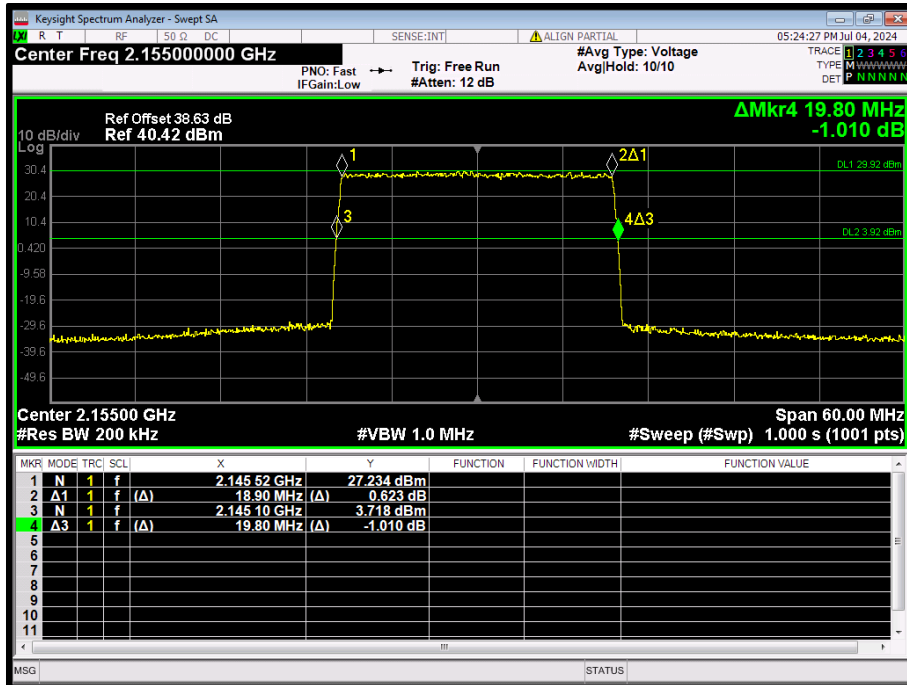
Antenna	NR Modulation	NR Carrier Bandwidth	Result (MHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
24	QPSK	5.0 MHz 15 kHz SCS	4.460	4.840	4.480	4.860	4.480	4.860
24	QPSK	10.0 MHz 15 kHz SCS	9.280	9.880	9.280	9.800	9.280	9.880
24	QPSK	15.0 MHz 15 kHz SCS	14.120	14.920	14.120	14.920	14.080	14.920
24	QPSK	20.0 MHz 15 kHz SCS	18.900	19.800	18.900	19.800	18.900	19.800

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B

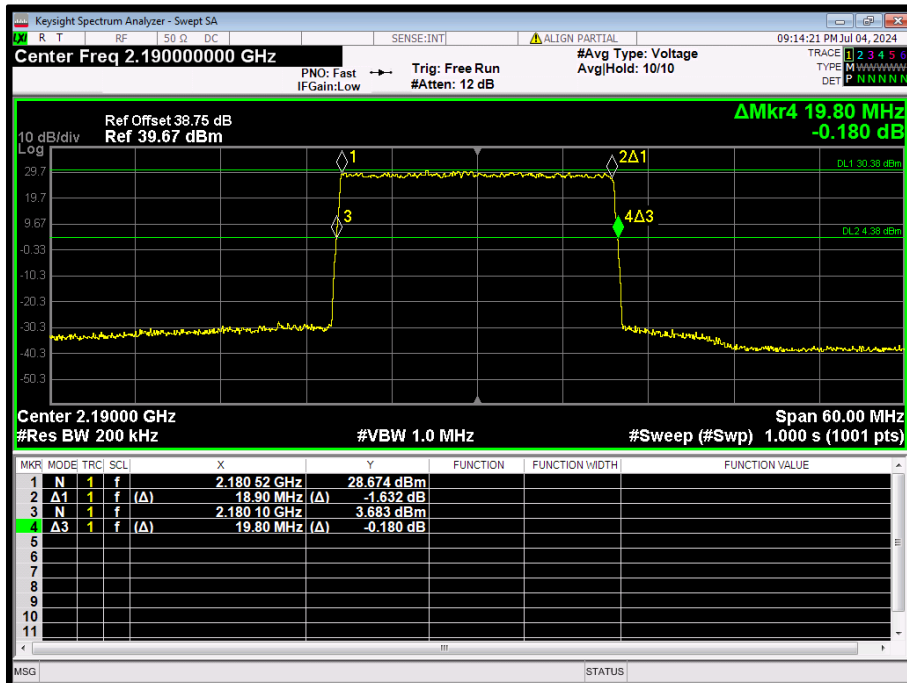




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M



Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T



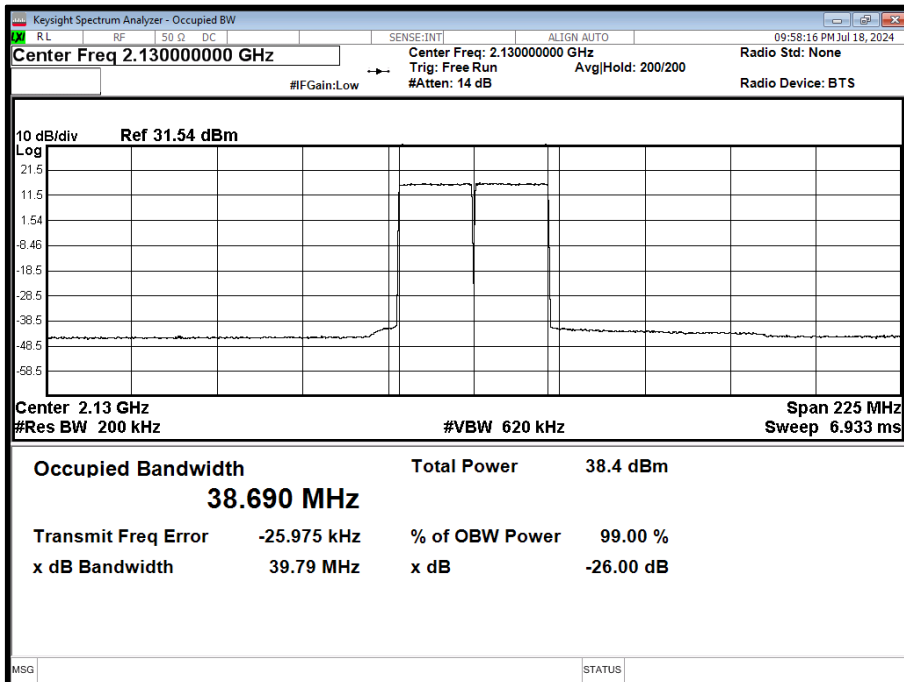


Configuration 4

Maximum Output Power 2 x 35.74 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Result (kHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
24	QPSK	5.0 MHz 15 kHz SCS	9527.66	9898.72	9523.67	9898.74	9525.67	9898.63
24	QPSK	10.0 MHz 15 kHz SCS	19194.37	19798.60	19179.36	19798.37	19186.76	19798.38
24	QPSK	15.0 MHz 15 kHz SCS	28924.57	29814.82	28944.50	29832.93	28936.70	29795.51
24	QPSK	20.0 MHz 15 kHz SCS	38689.76	39789.63	38695.91	39788.72	38680.06	39782.79

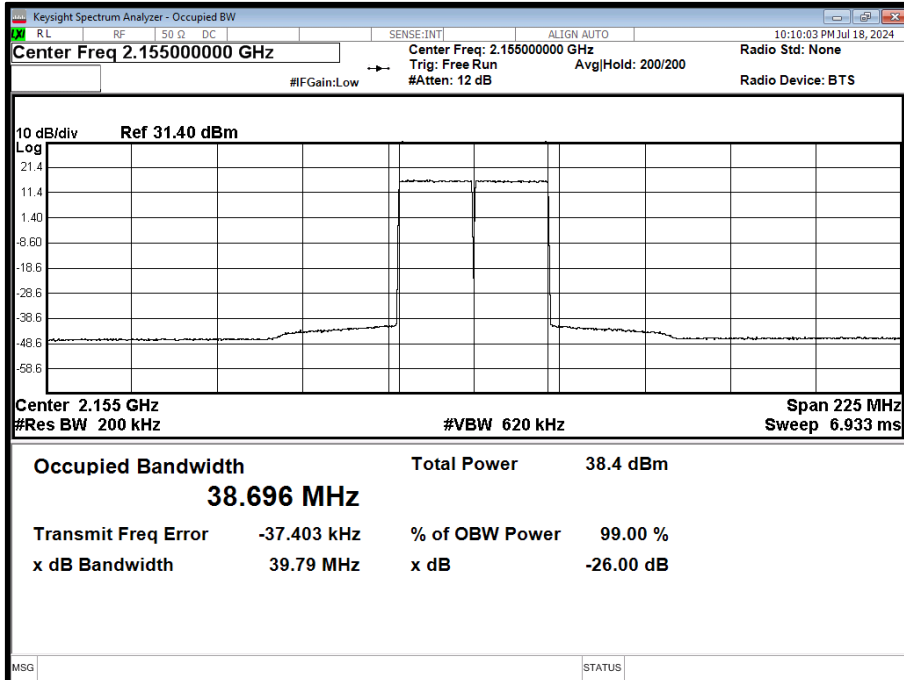
Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B



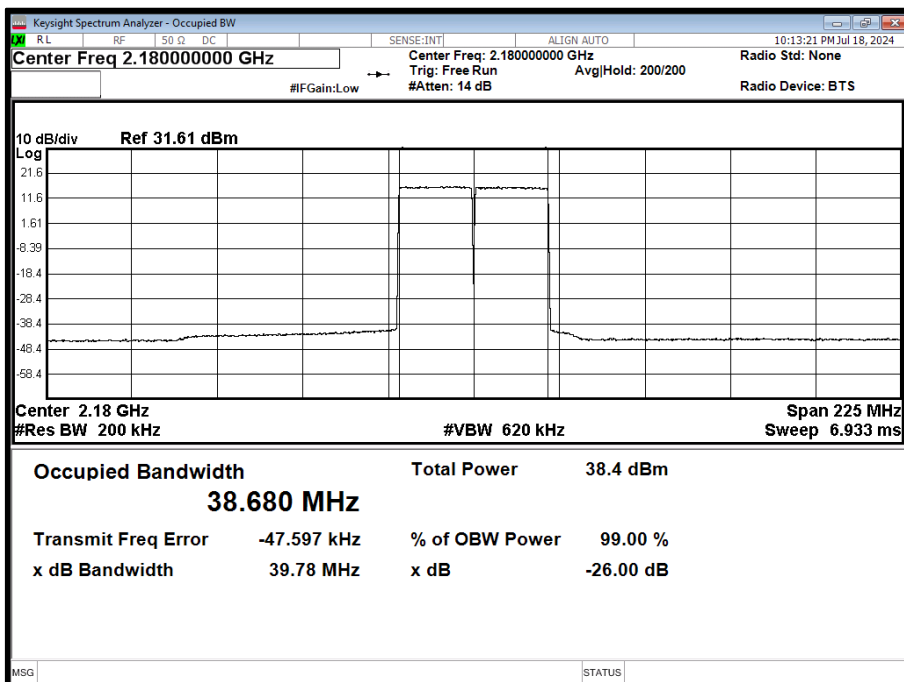




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M



Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T





**2.3 BAND EDGE**

**2.3.1 Specification Reference**

FCC CFR 47 Part 27, Clause 27.53  
 FCC CFR 47 Part 2, Clause 2.1051

**2.3.2 Date of Test and Modification State**

18, 19 and 22-July-2024 - Modification State 0

**2.3.3 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.3.4 Environmental Conditions**

Ambient Temperature 21.1°C  
 Relative Humidity 43.3 - 50.2%

**2.3.5 Test Method**

All measurements were made in accordance with FCC KDB 971168 D01, Clause 6.0.

Band Edge measurements were used an Integration Bandwidth of at least 1% of the measured 26dB Bandwidth.

Each antenna port has been declared as being equivalent, therefore measurements were made on one antenna port only. To account for this, the limit was tightened by  $10 * \text{Log}(N)$ , where N is equal to the number of MIMO antenna ports.

For the number of antenna ports, the limit was calculated as being:  
 $-13 \text{ dBm} - 10 * \text{Log}(32) = -28.05 \text{ dBm}$ .

The worst case modulation and bandwidth plots are presented here, all other applicable plots are retained by TUV SUD and available for presentation if required.

**2.3.6 Test Results**

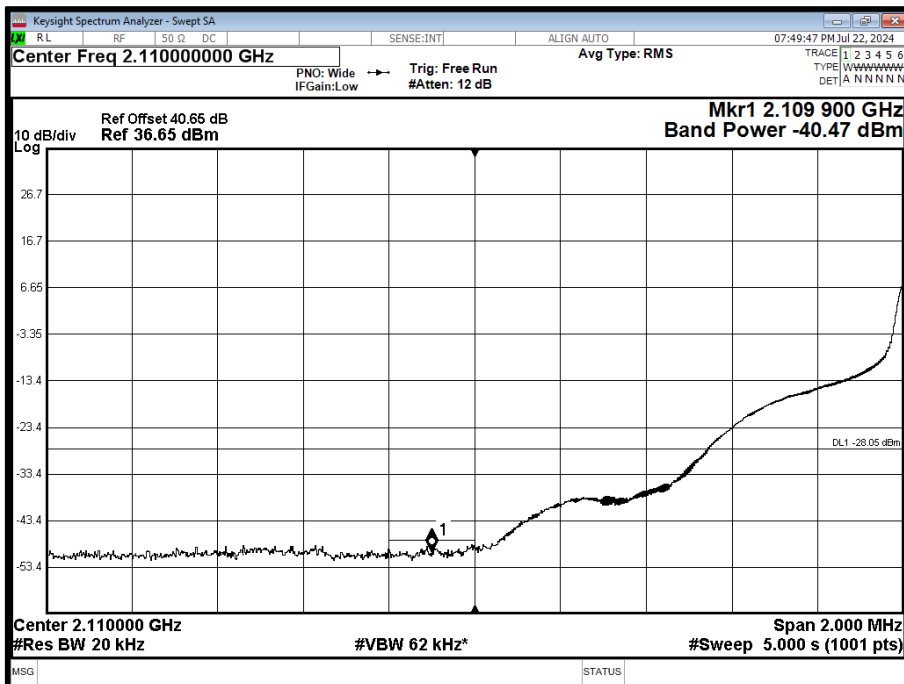
Configuration 1

Maximum Output Power 38.75 dBm

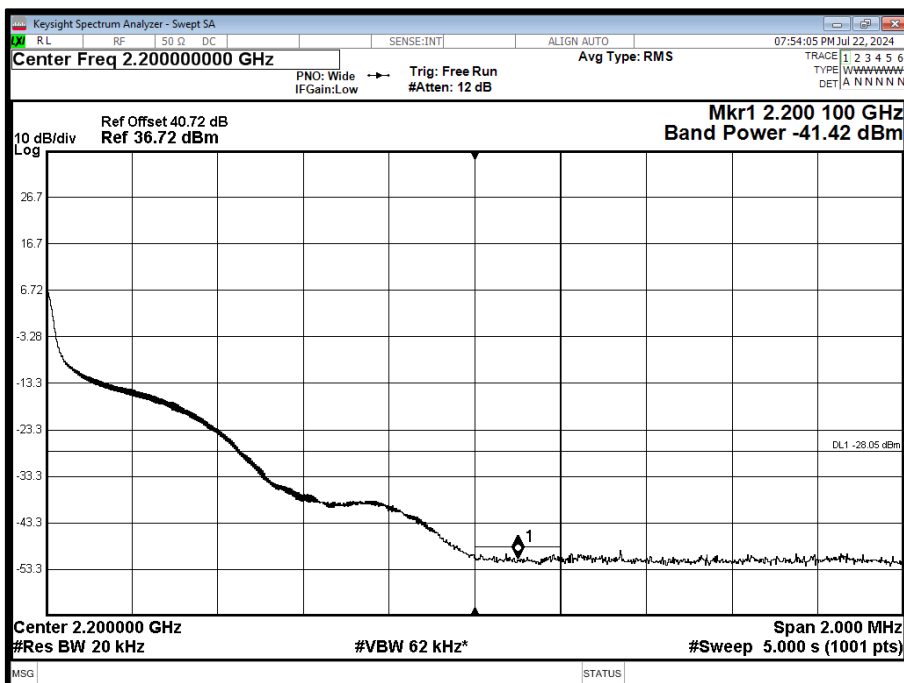
Antenna	LTE Modulation	LTE Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
24	QPSK	5.0 MHz	2,112.5	2,197.5
24	QPSK	10.0 MHz	2,115.0	2,195.0
24	QPSK	15.0 MHz	2,117.5	2,192.5
24	QPSK	20.0 MHz	2,120.0	2,190.0



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T



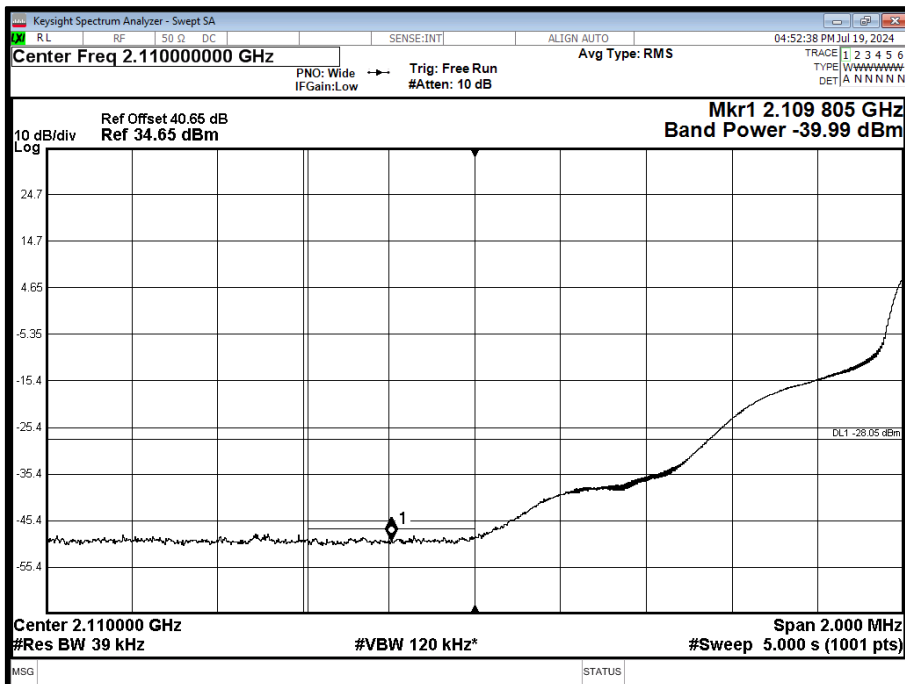


Configuration 2

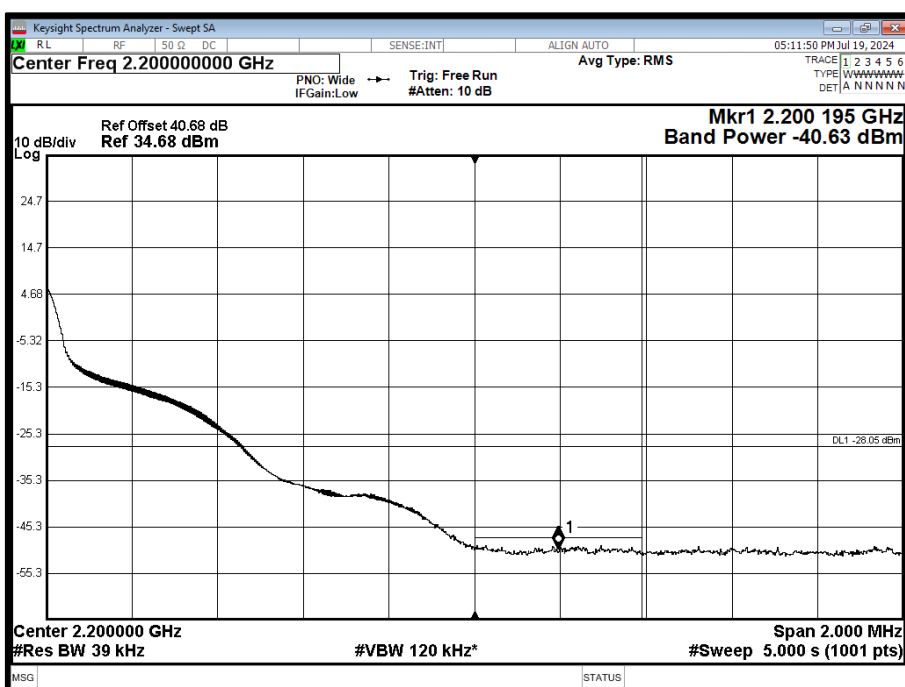
Maximum Output Power 2 x 35.74 dBm

Antenna	LTE Modulation	LTE Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
24	QPSK	20.0 MHz	2120+2140	2190+2170

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T



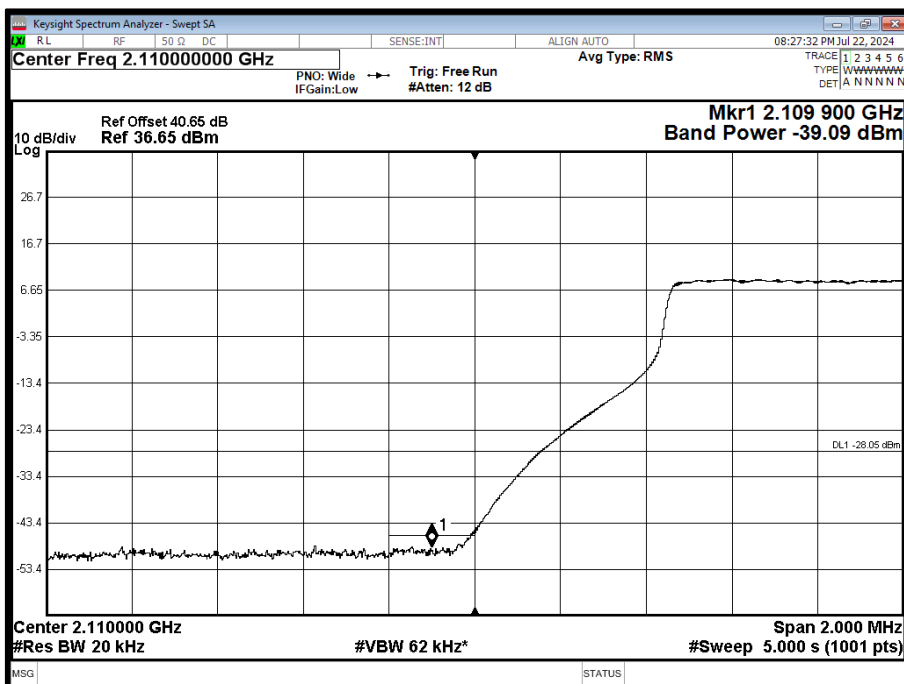


Configuration 3

Maximum Output Power 38.75 dBm

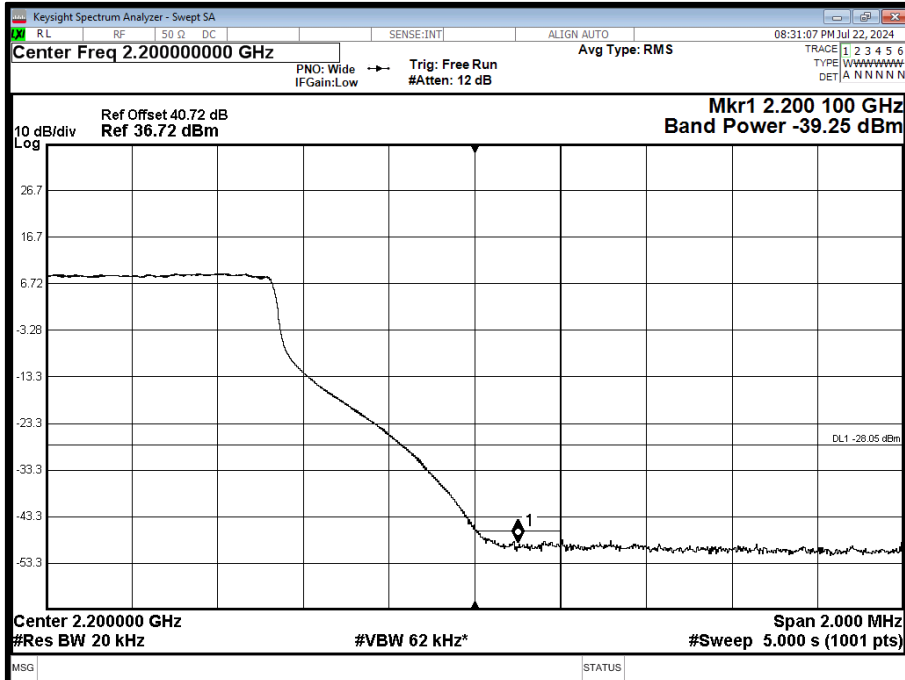
Antenna	NR Modulation	NR Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
24	QPSK	5.0 MHz 15 kHz SCS	2,112.5	2,197.5
24	QPSK	10.0 MHz 15 kHz SCS	2,115.0	2,195.0
24	QPSK	15.0 MHz 15 kHz SCS	2,117.5	2,192.5
24	QPSK	20.0 MHz 15 kHz SCS	2,120.0	2,190.0

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B





Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T



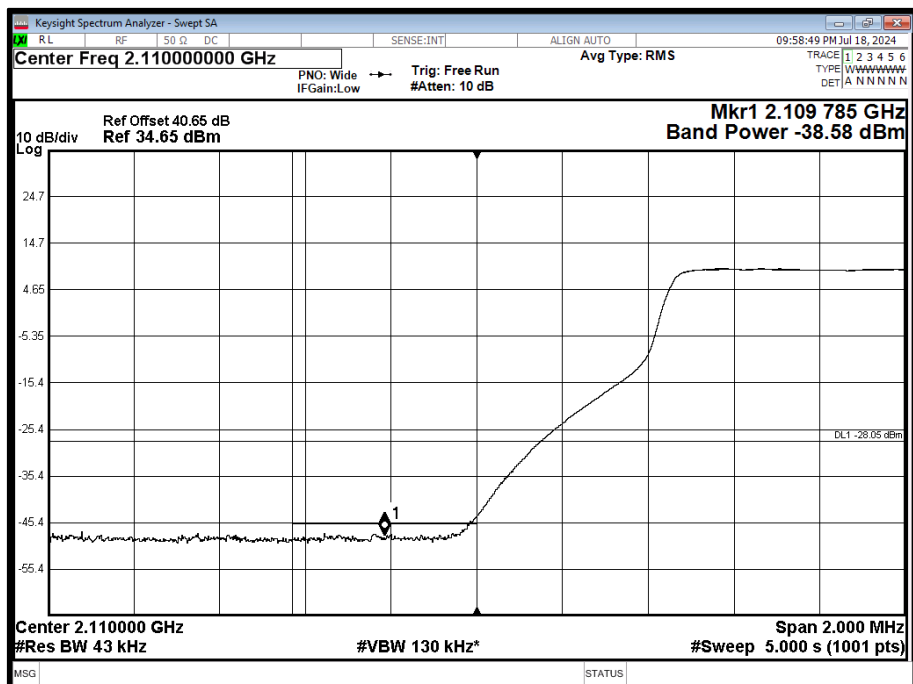


Configuration 4

Maximum Output Power 2 x 35.74 dBm

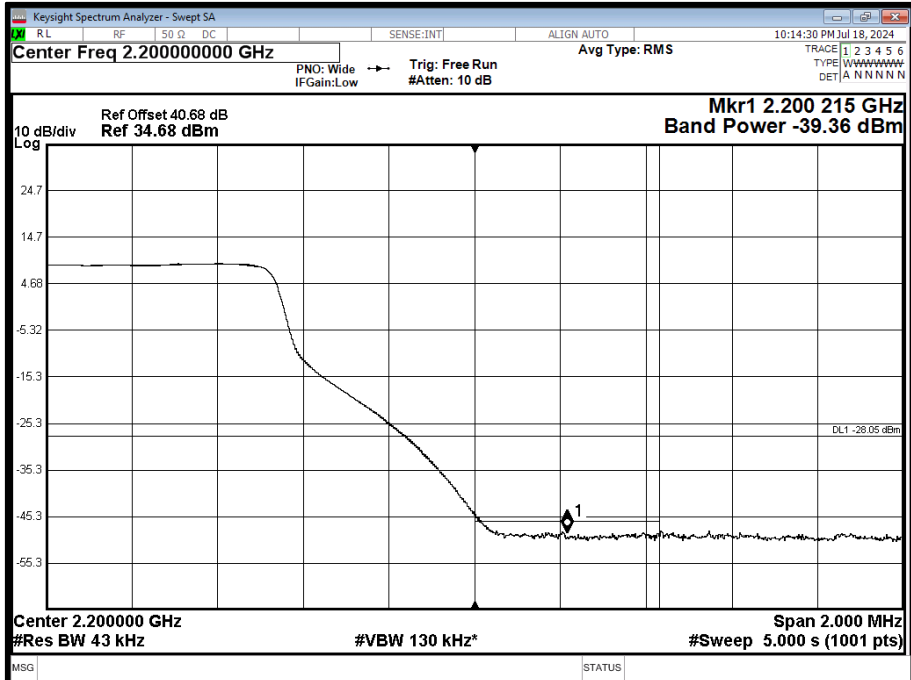
Antenna	NR Modulation	NR Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
24	QPSK	20.0 MHz 15 kHz SCS	2120+2140	2190+2170

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B





Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T





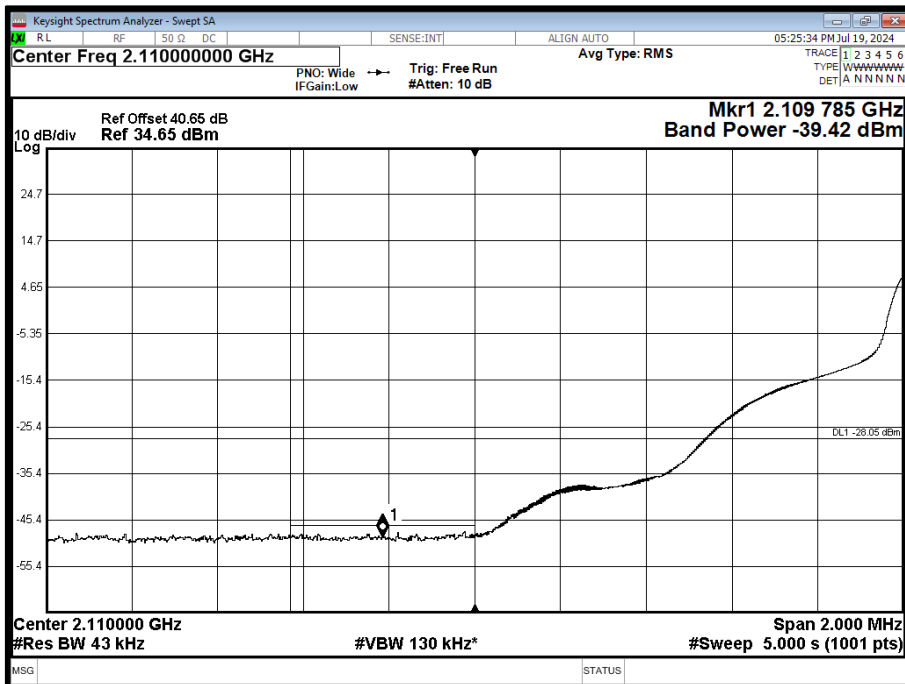


Configuration 5

Maximum Output Power 2 x 35.74 dBm

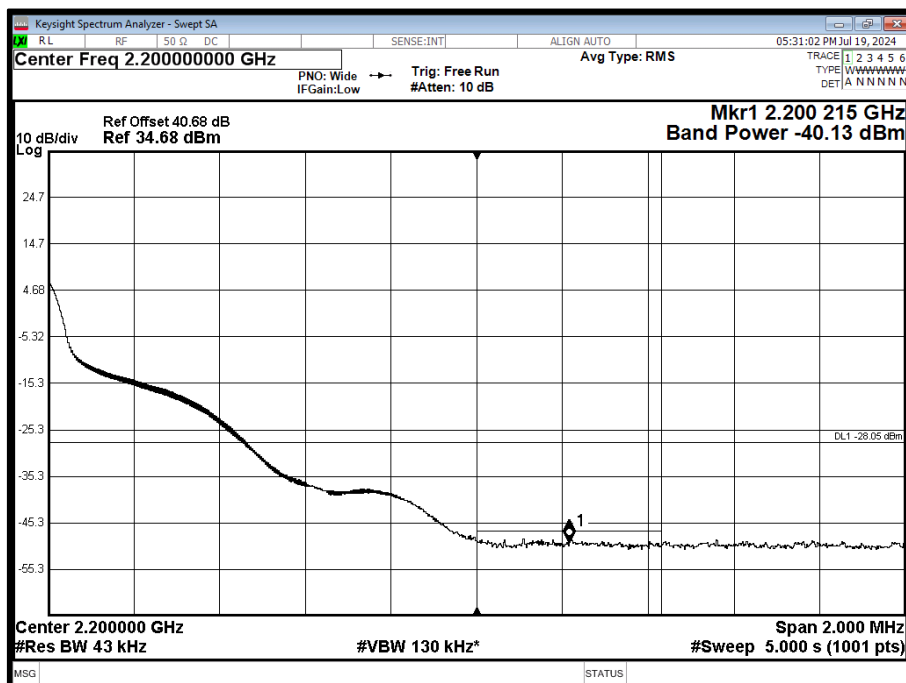
Antenna	LTE / NR Modulation	LTE / NR Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B <sub>RFBW</sub>	Channel Position T <sub>RFBW</sub>
24	QPSK / QPSK	20 MHz / 20 MHz	2120+2140	2190+2170

Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position B





Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position T



Limit	-28.05 dBm
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## **2.4 TRANSMITTER SPURIOUS EMISSIONS**

### **2.4.1 Specification Reference**

FCC CFR 47 Part 27, Clause 27.53  
FCC CFR 47 Part 2, Clause 2.1051

### **2.4.2 Date of Test and Modification State**

29, 30, 31 July and 01-August-2024 - Modification State 0

### **2.4.3 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.4.4 Environmental Conditions**

Ambient Temperature	21.1 - 21.6°C
Relative Humidity	42.5 - 43.3%

### **2.4.5 Test Method**

All measurements were made in accordance with FCC KDB 971168 D01, Clause 6.1.  
All measurements were made in accordance with FCC KDB 971168 D01, Clause 6.1.

Each antenna port has been declared as being equivalent, therefore measurements were made on one antenna port only. To account for this, the limit was tightened by  $10 * \text{Log}(N)$ , where N is equal to the number of MIMO antenna ports.

For the number of antenna ports, the limit was calculated as being:  
 $-13 \text{ dBm} - 10 * \text{Log}(32) = -28.05 \text{ dBm}$ .

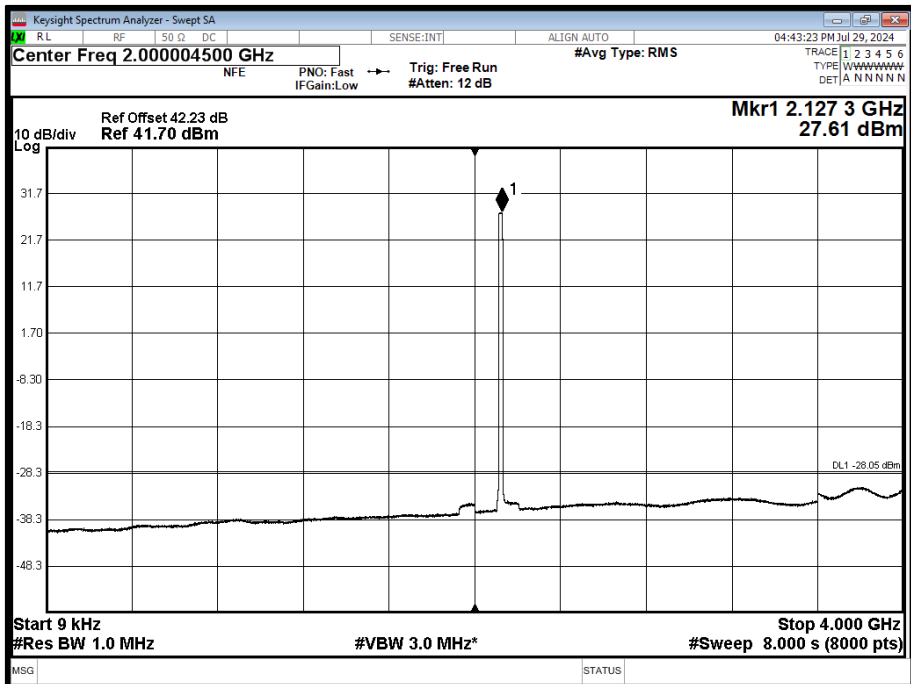
The worst case modulation and bandwidth plots are presented here, all other applicable plots are retained by TÜV SÜD and available for presentation if required.

## 2.4.6 Test Results

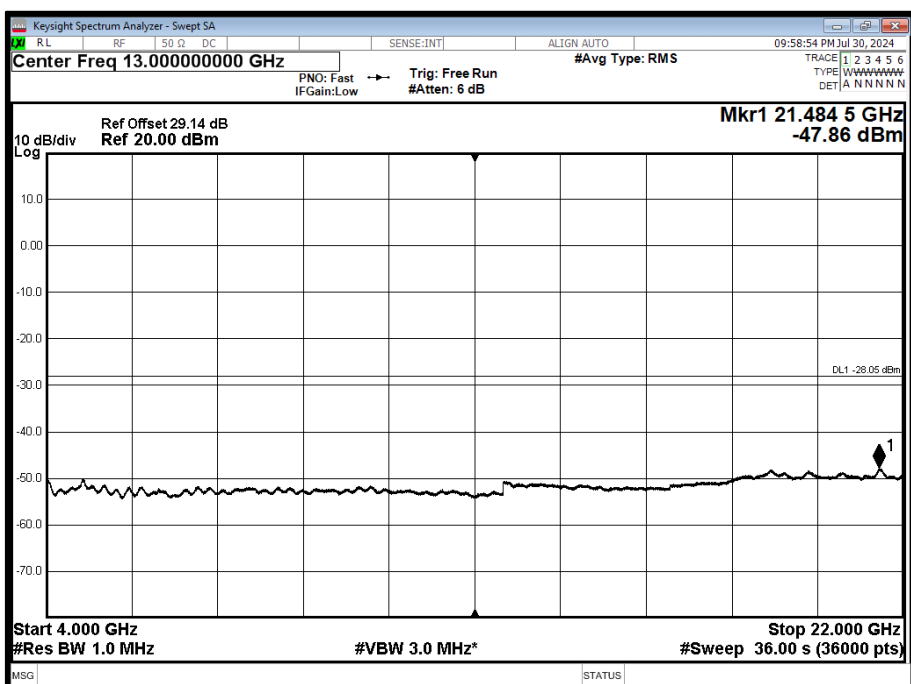
### Configuration 1

Maximum Output Power 38.75 dBm

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz

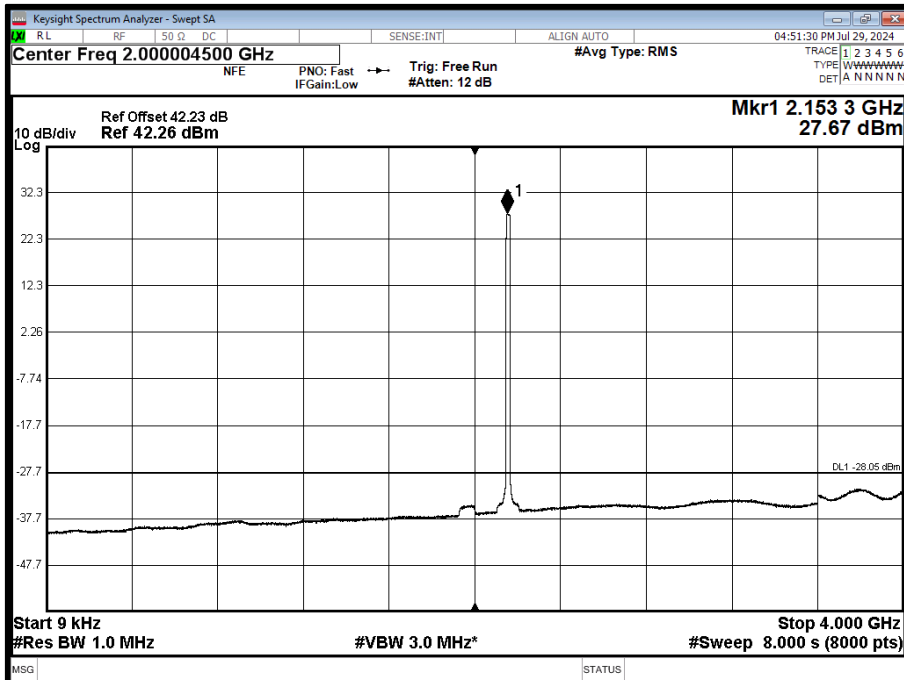


Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 22000 MHz

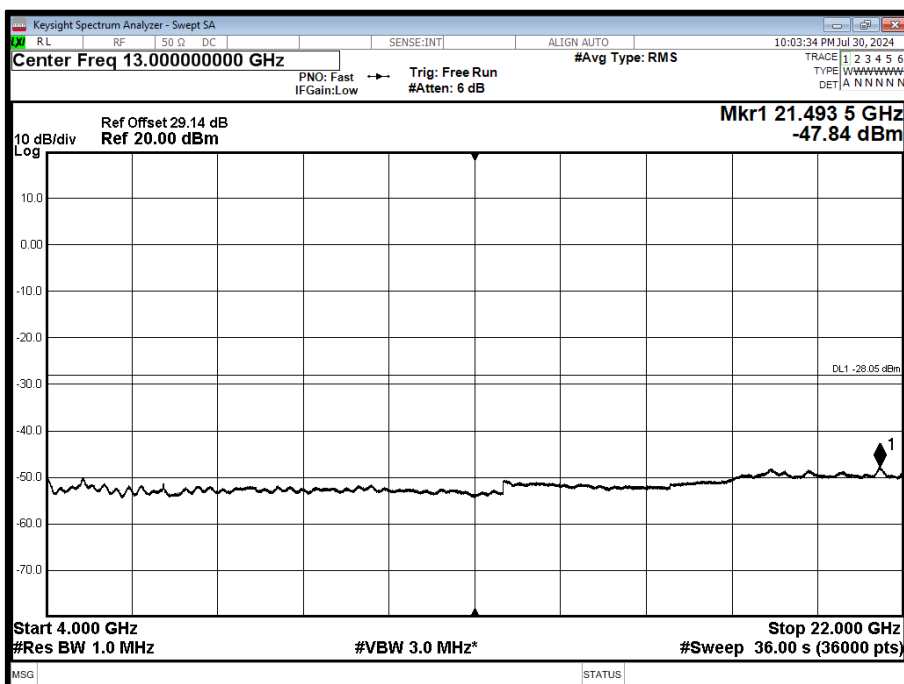




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz

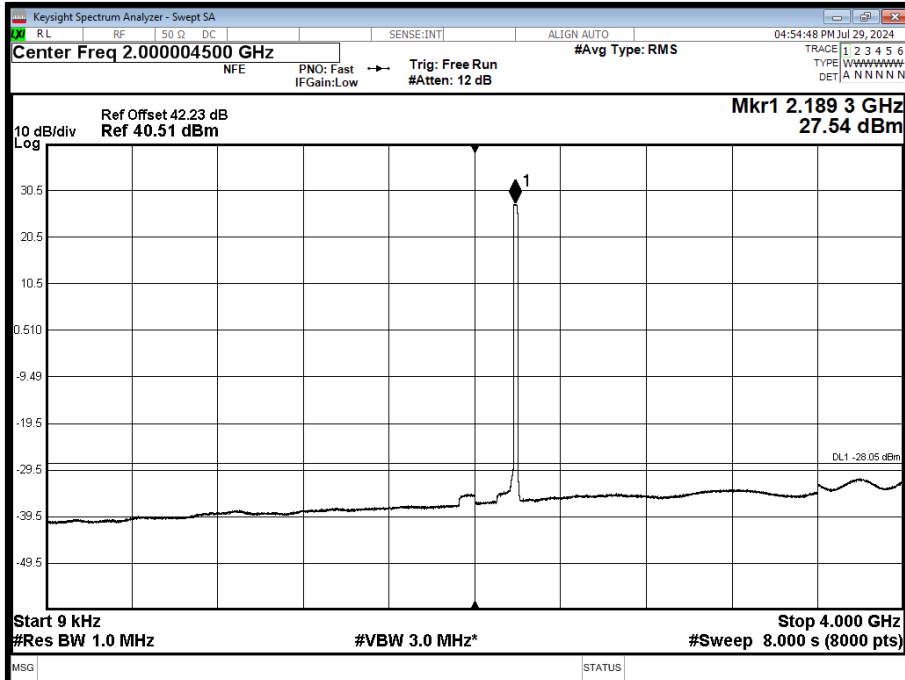


Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 2 - Range 4000 to 22000 MHz

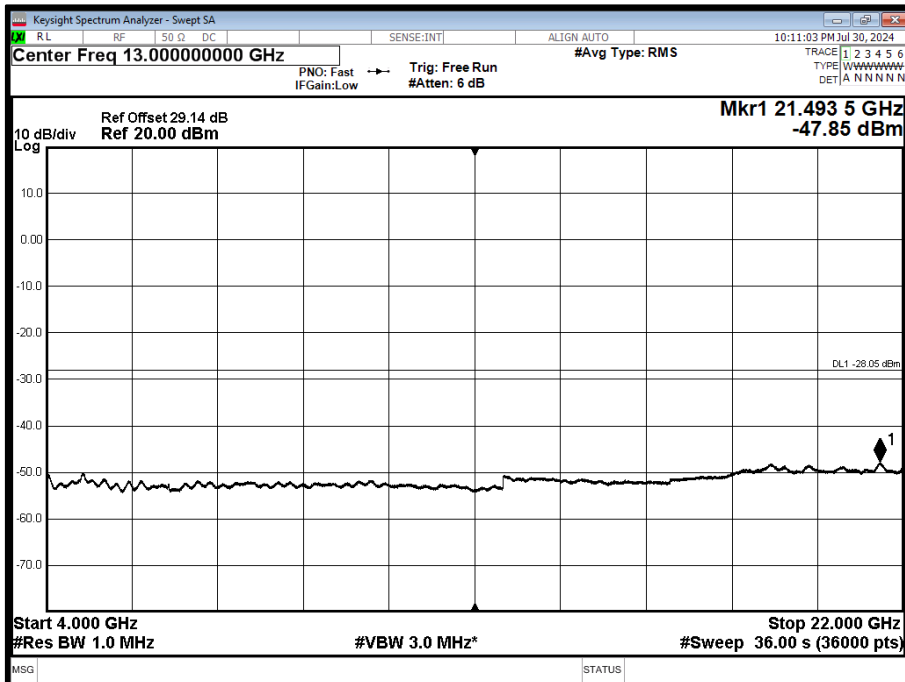




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 2 - Range 4000 to 22000 MHz

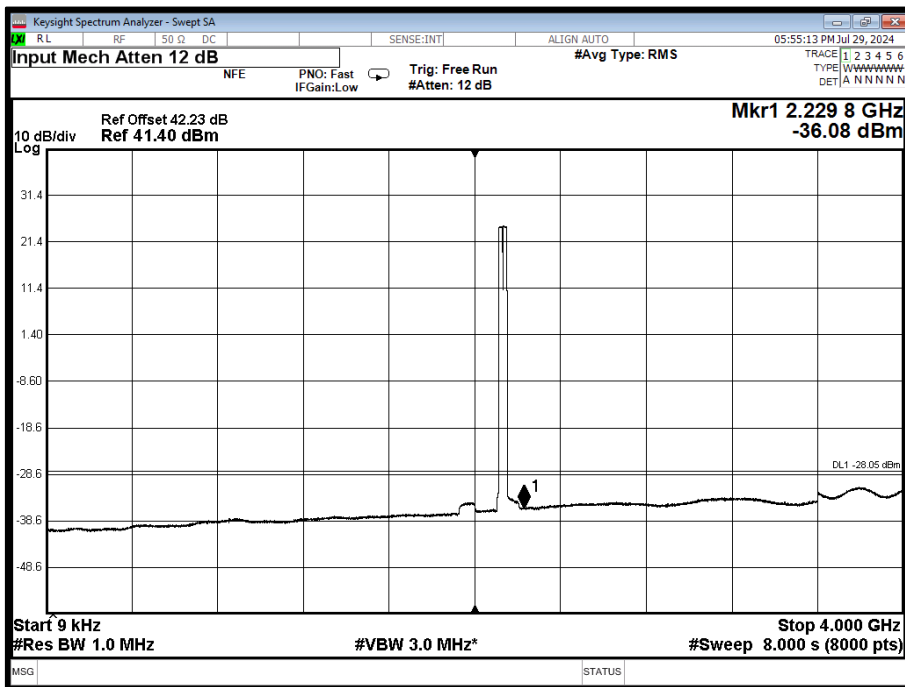




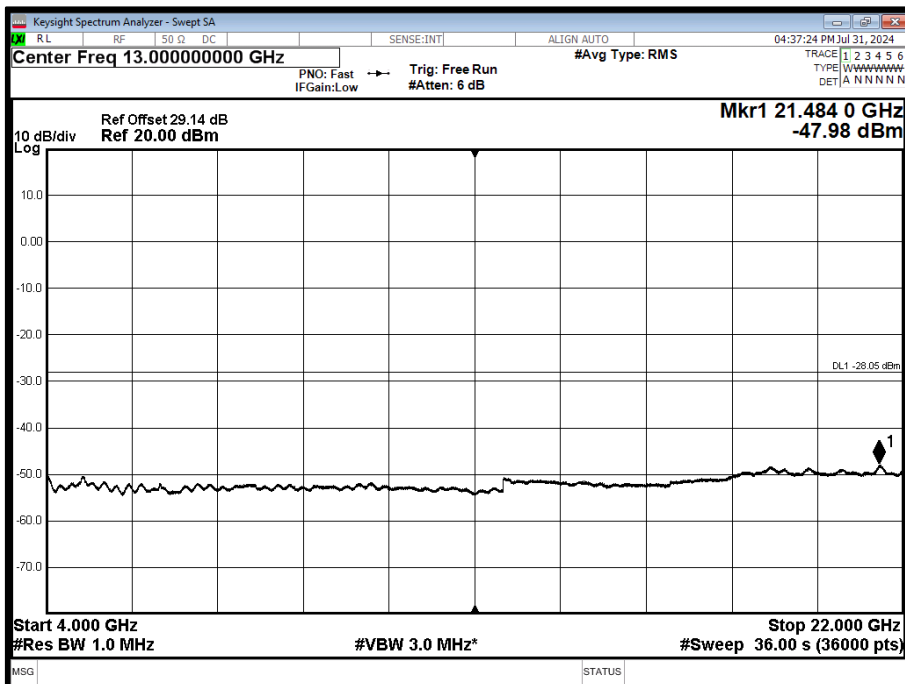
Configuration 2

Maximum Output Power 2 x 35.74 dBm

Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1 - Range 0.009 to 4000 MHz

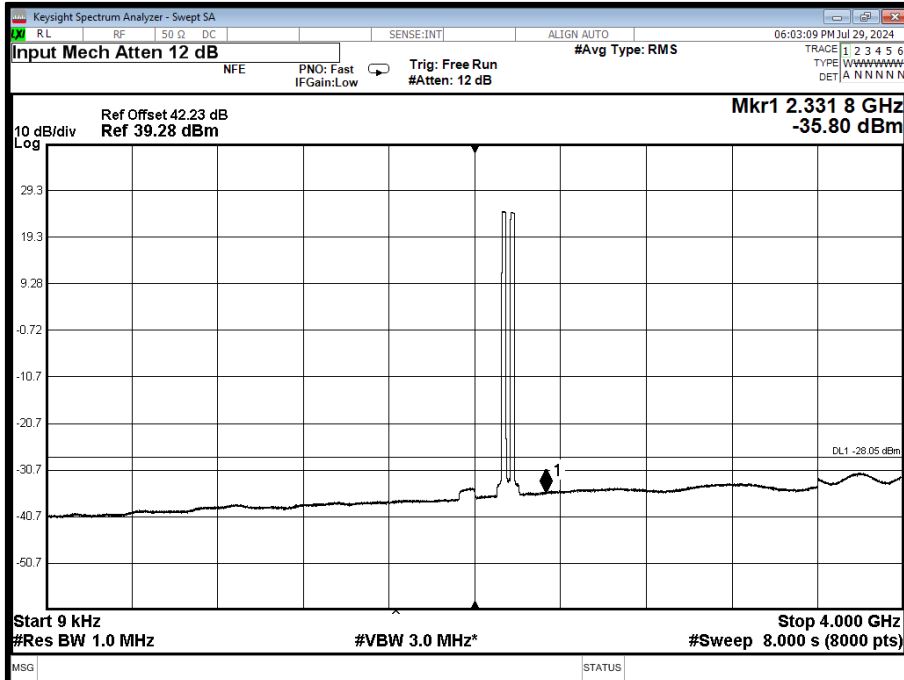


Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 26000 MHz

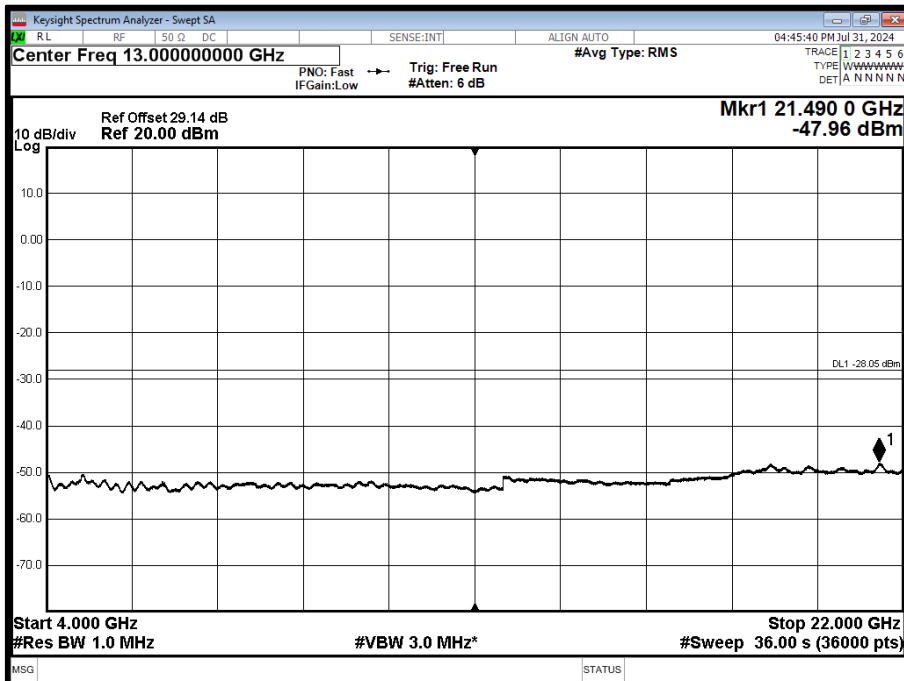




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 1 - Range 0.009 to 4000 MHz



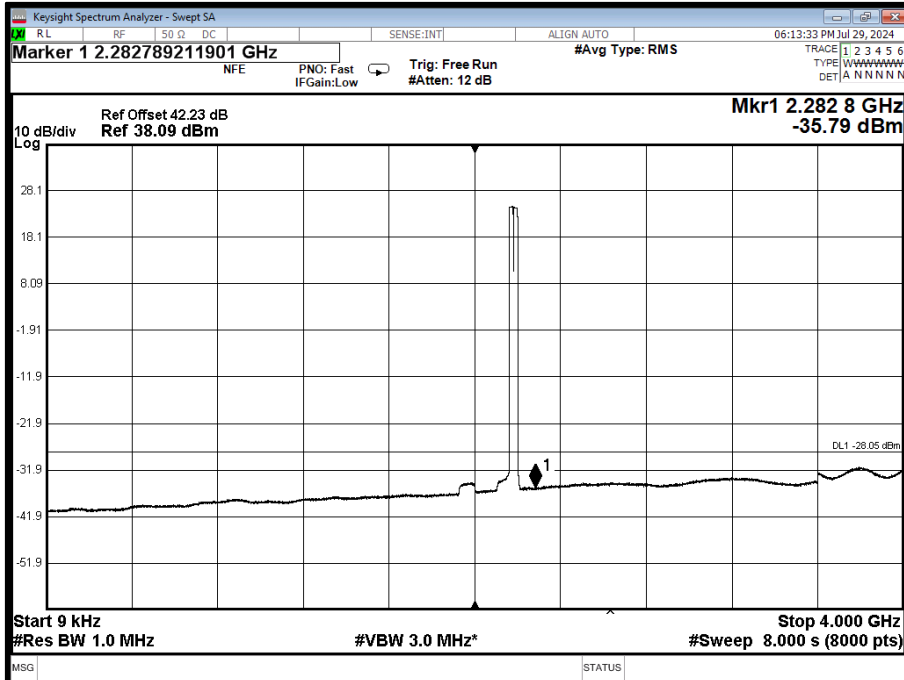
Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position M - Band 2 - Range 4000 to 26000 MHz



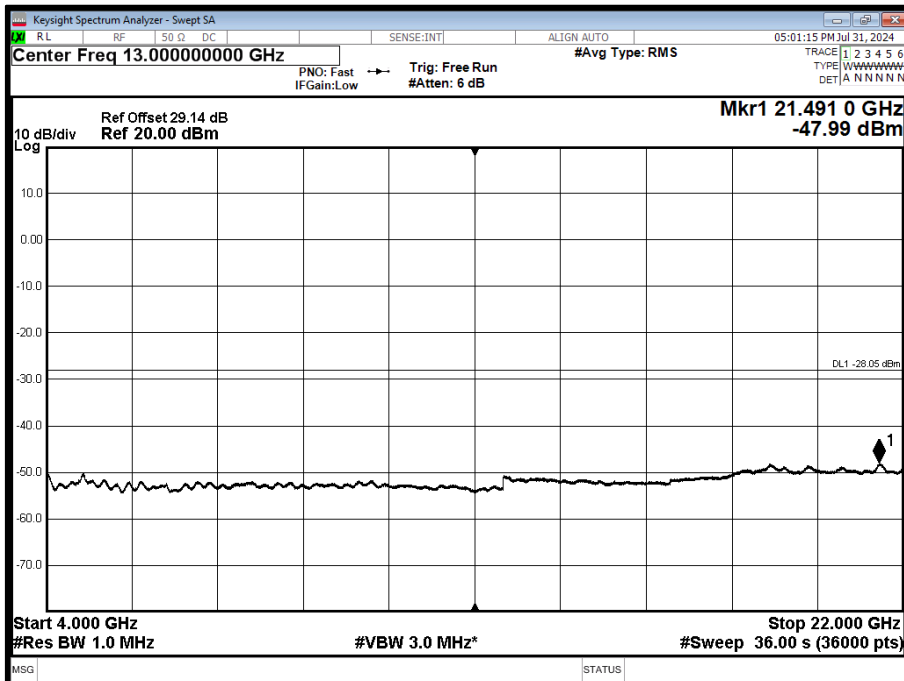




Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 24 - LTE Modulation QPSK - LTE Carrier Bandwidth 20.0 MHz - Channel Position T - Band 2 - Range 4000 to 26000 MHz

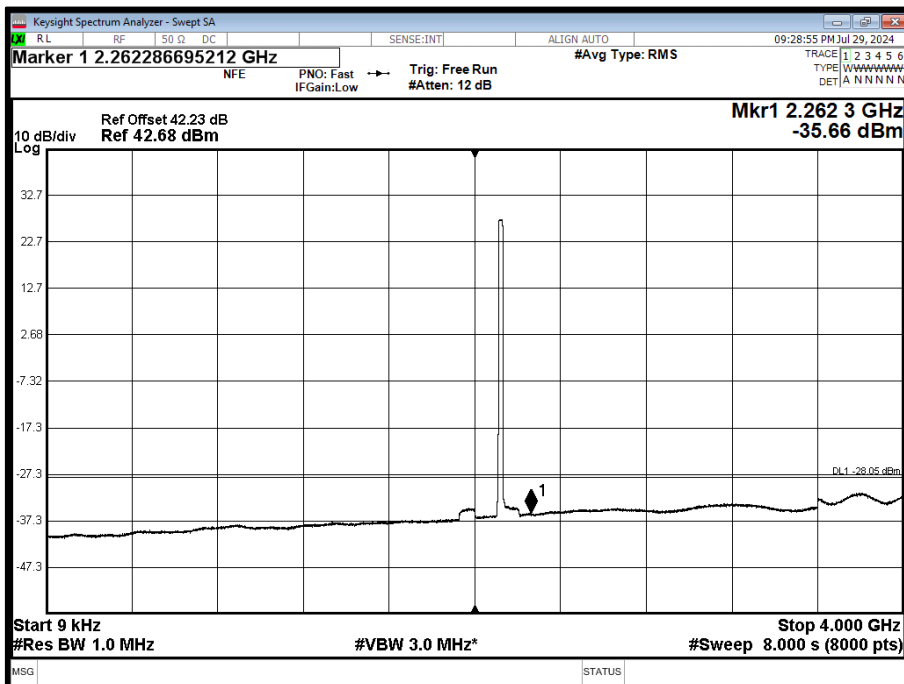




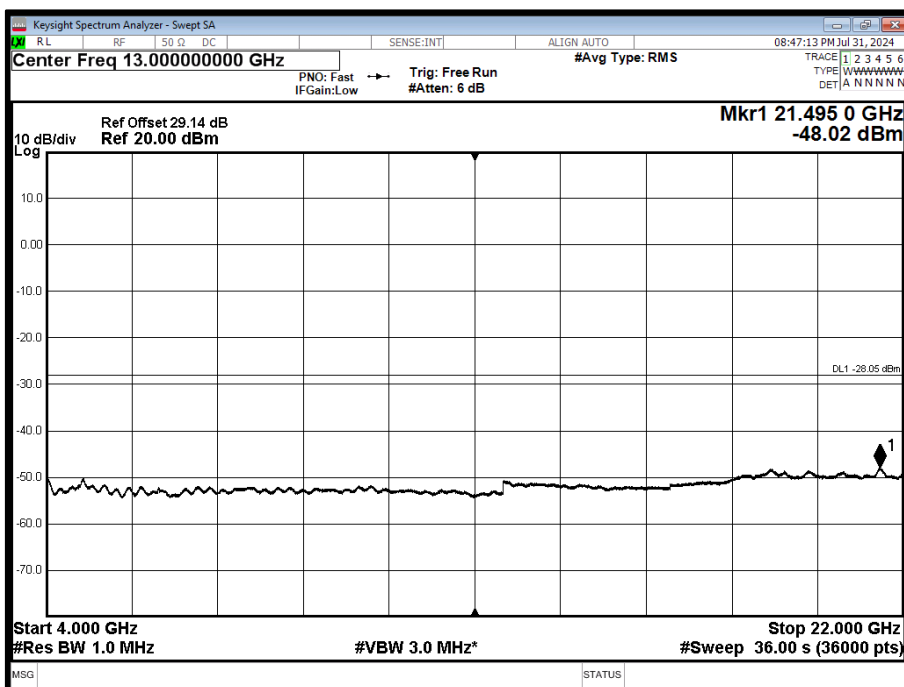
### Configuration 3

Maximum Output Power 38.75 dBm

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B - Band 1 - Range 0.009 to 4000 MHz

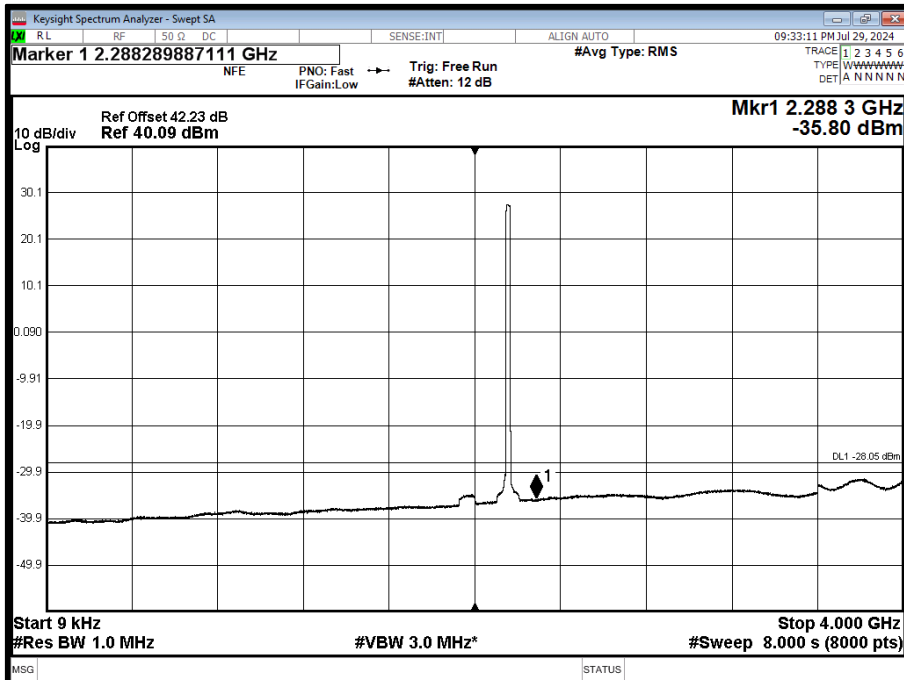


Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B - Band 2 - Range 4000 to 22000 MHz

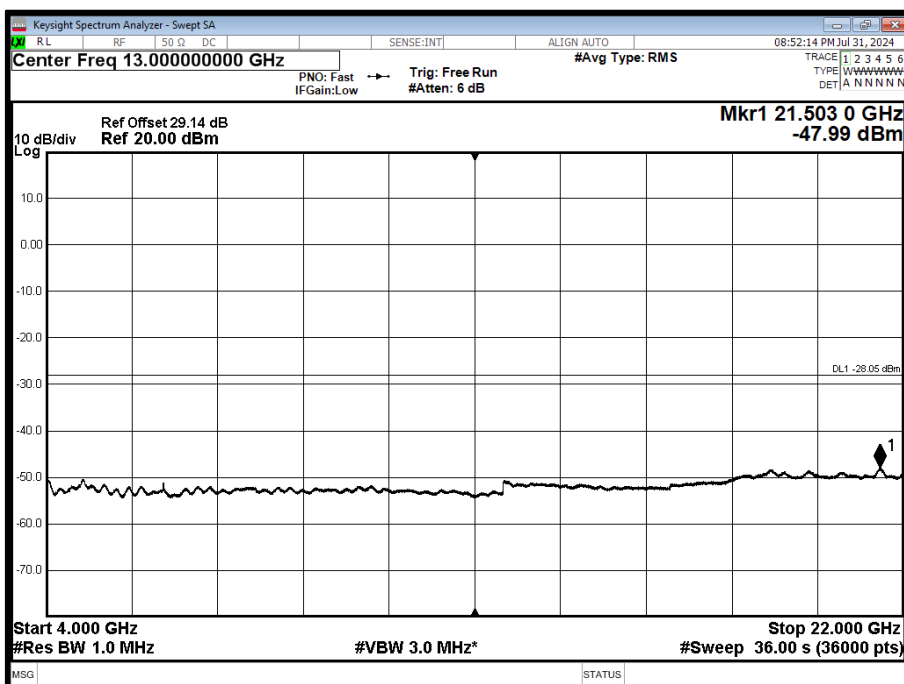




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M - Band 1 - Range 0.009 to 4000 MHz

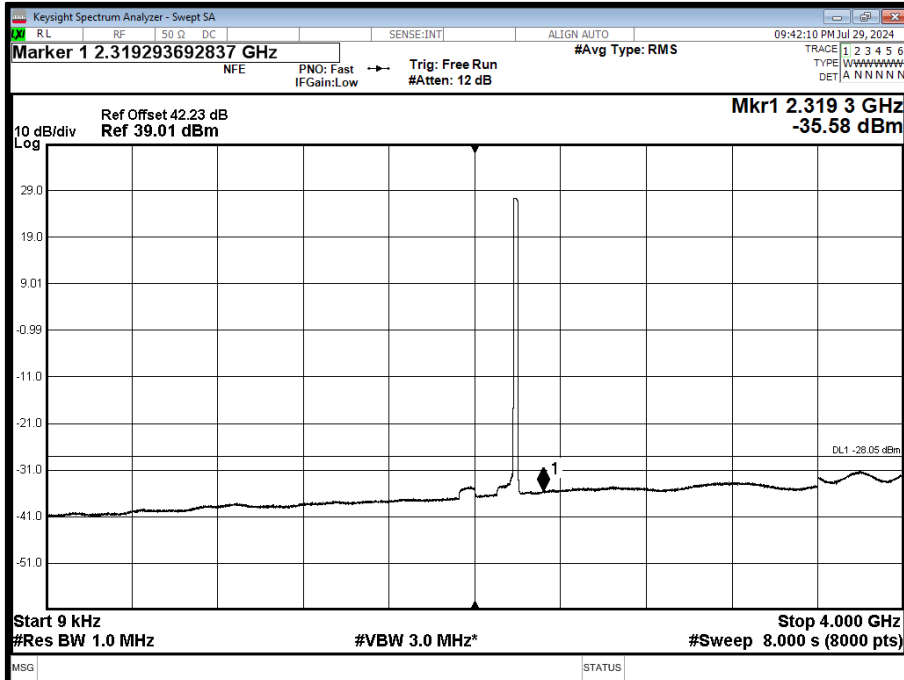


Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M - Band 2 - Range 4000 to 22000 MHz

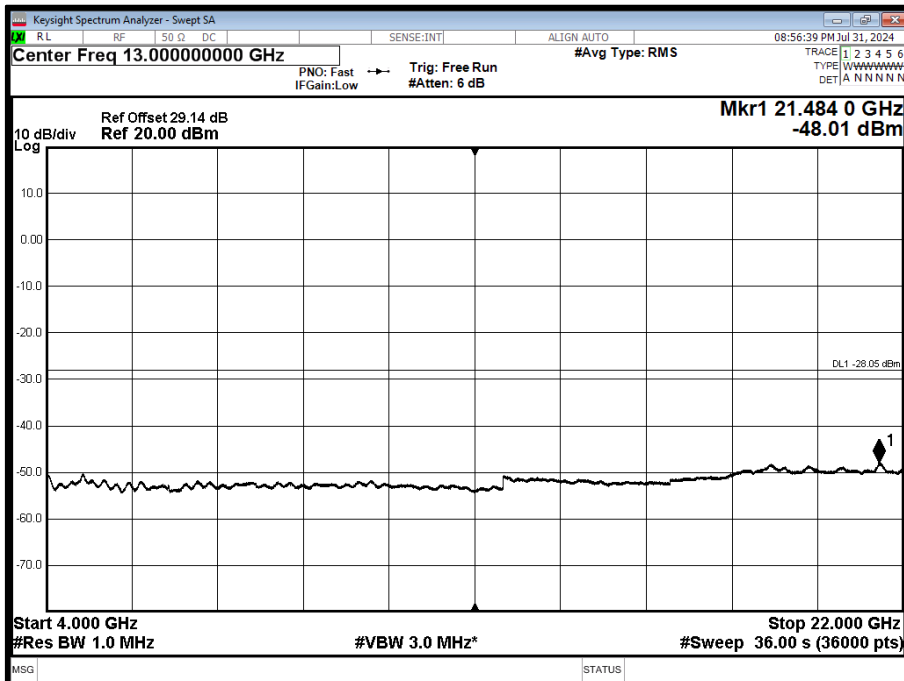




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T - Band 2 - Range 4000 to 22000 MHz

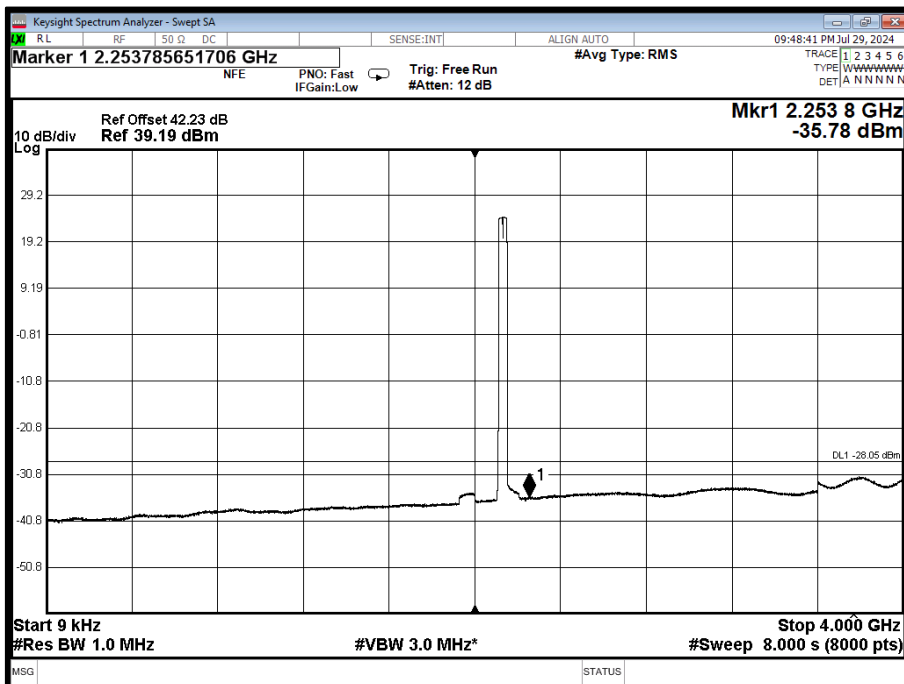




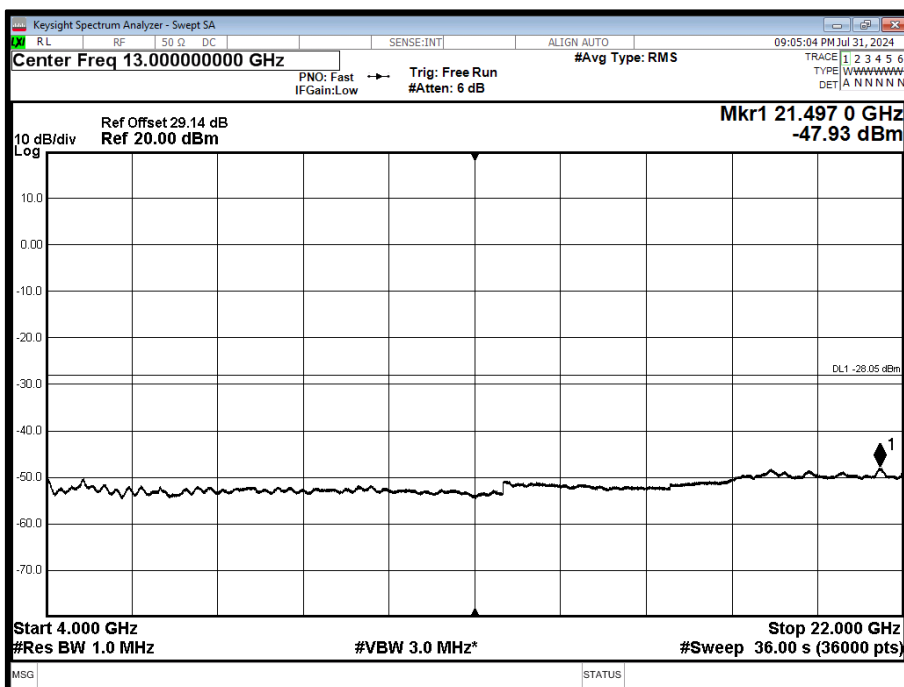
Configuration 4

Maximum Output Power 2 x 35.74 dBm

Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B - Band 1 - Range 0.009 to 4000 MHz

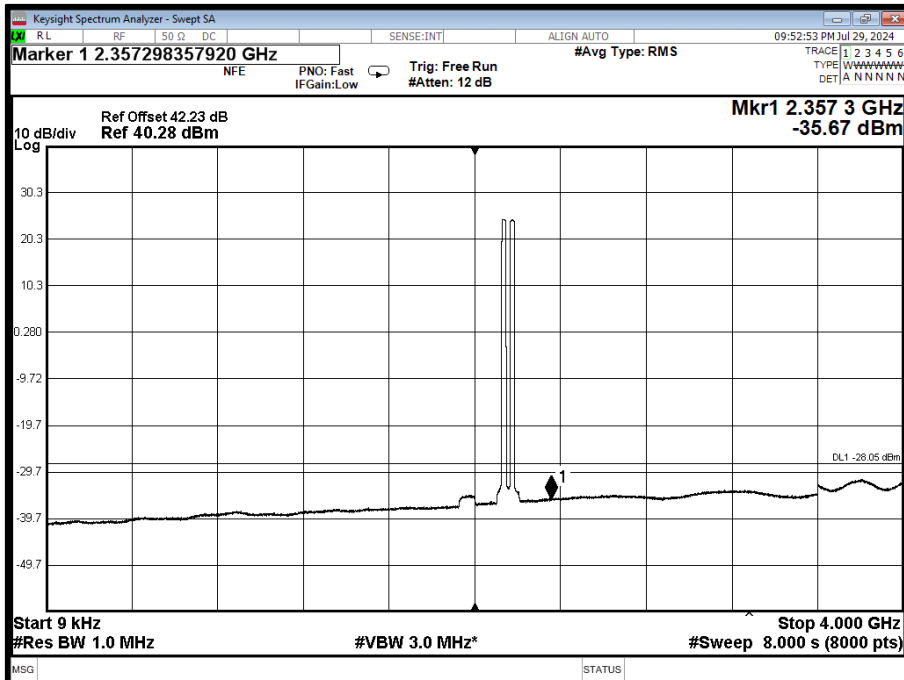


Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position B - Band 2 - Range 4000 to 26000 MHz

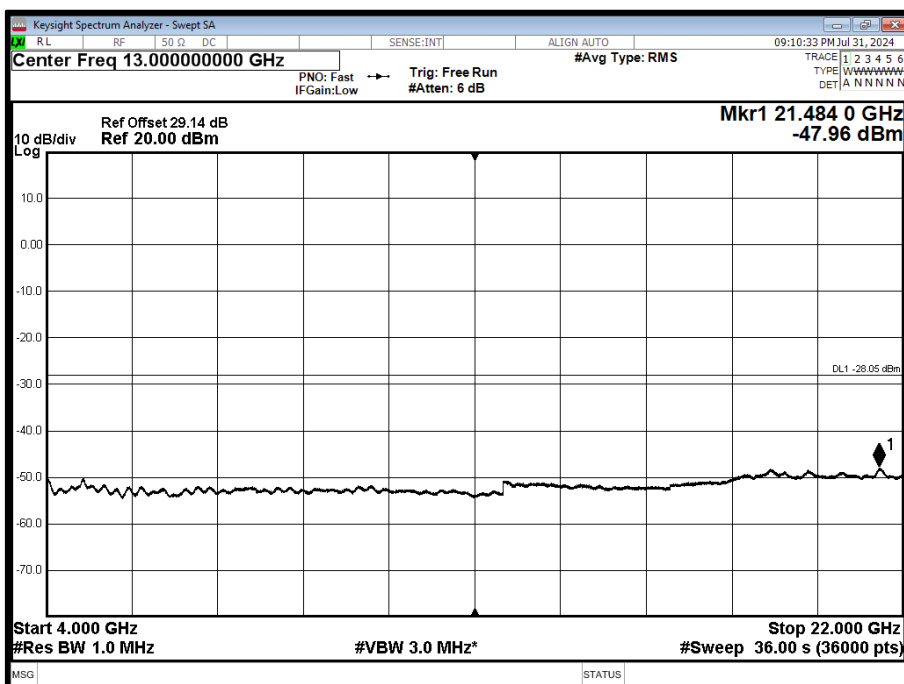




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M - Band 1 - Range 0.009 to 4000 MHz

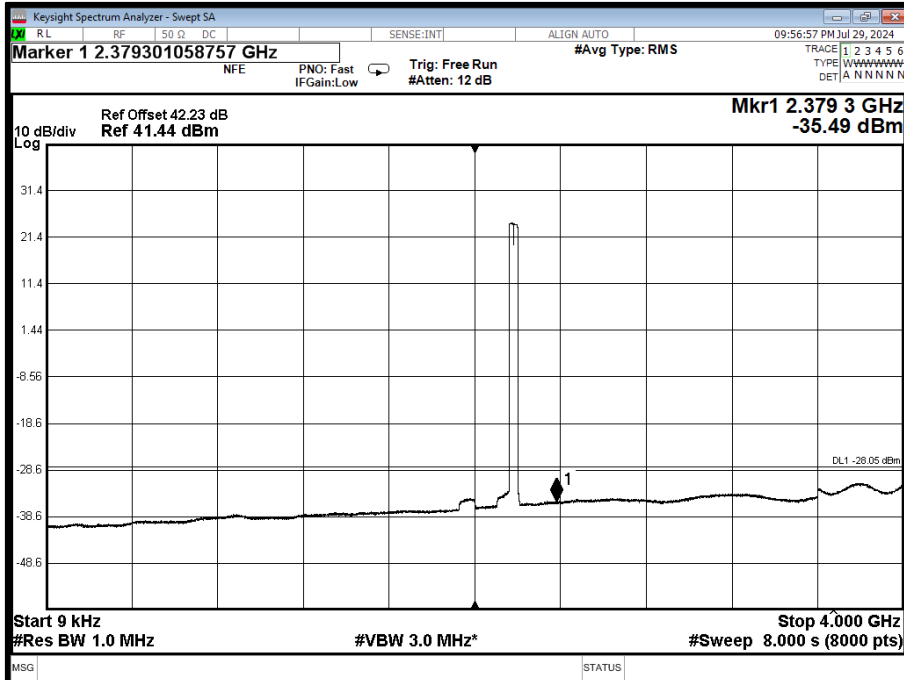


Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position M - Band 2 - Range 4000 to 26000 MHz

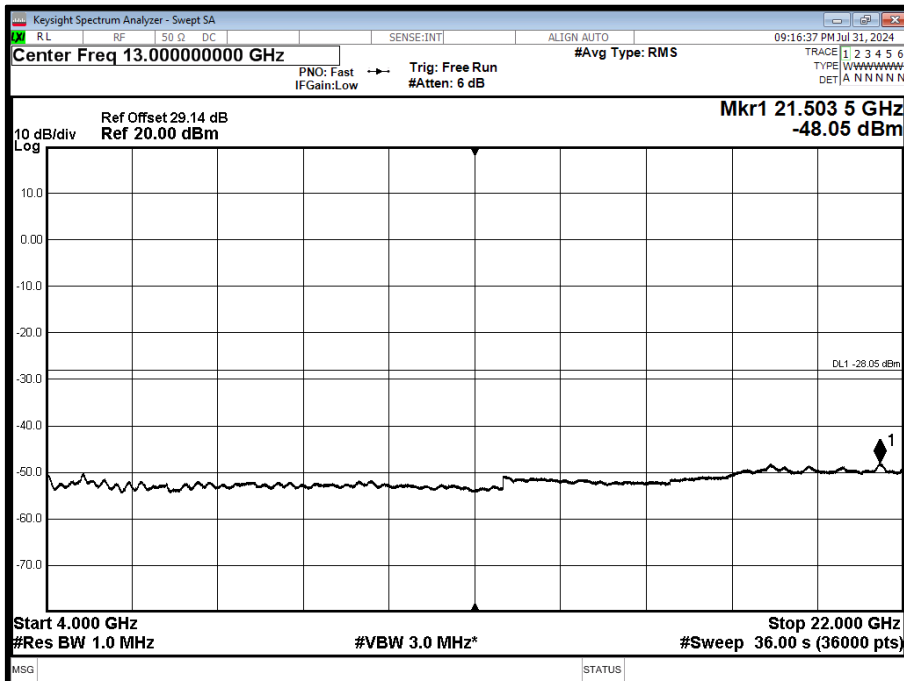




Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T - Band 1 - Range 0.009 to 4000 MHz



Antenna 24 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 15 kHz SCS - Channel Position T - Band 2 - Range 4000 to 26000 MHz

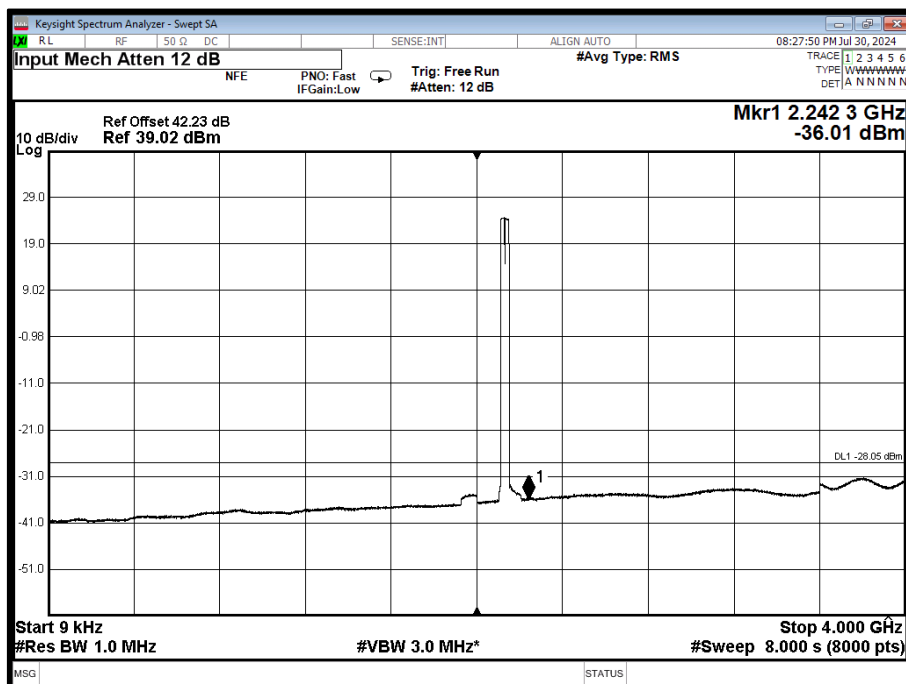




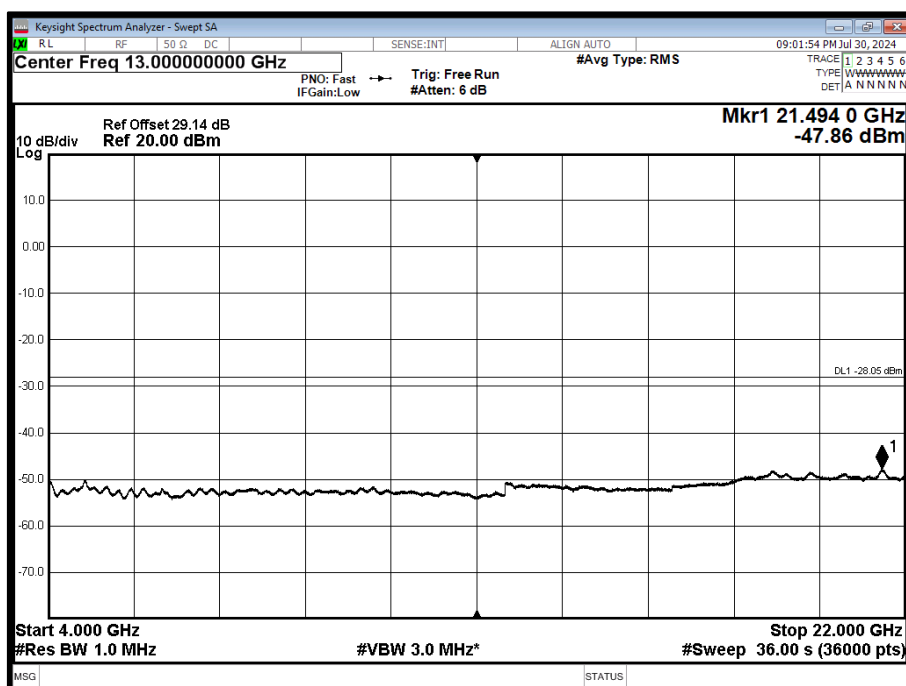
Configuration 5

Maximum Output Power 2 x 35.55 dBm

Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position B- Band 1 - Range 0.009 to 4000 MHz



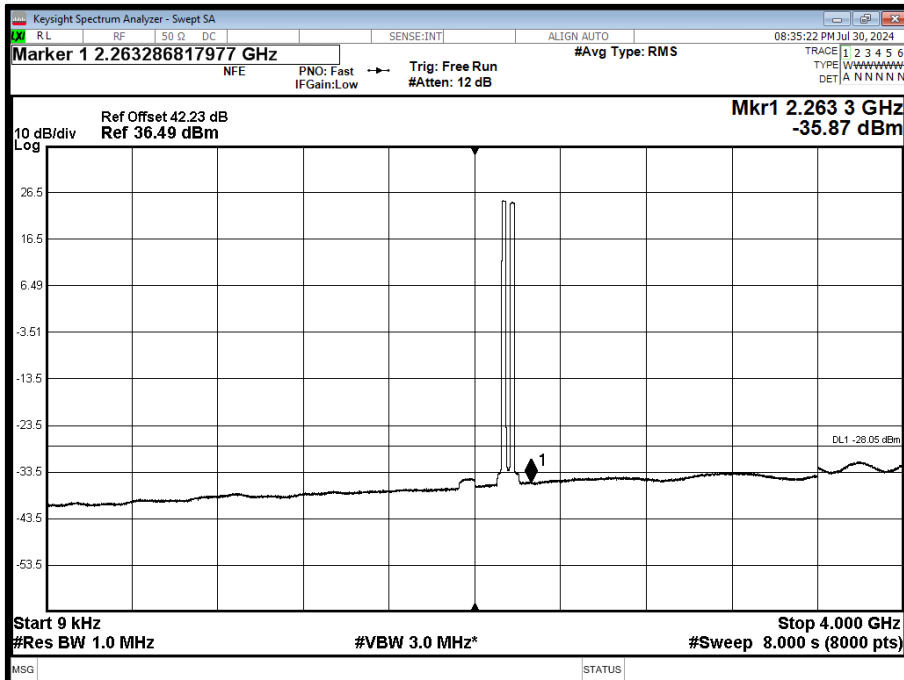
Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position B- Band 2 - Range 4000 to 26000 MHz



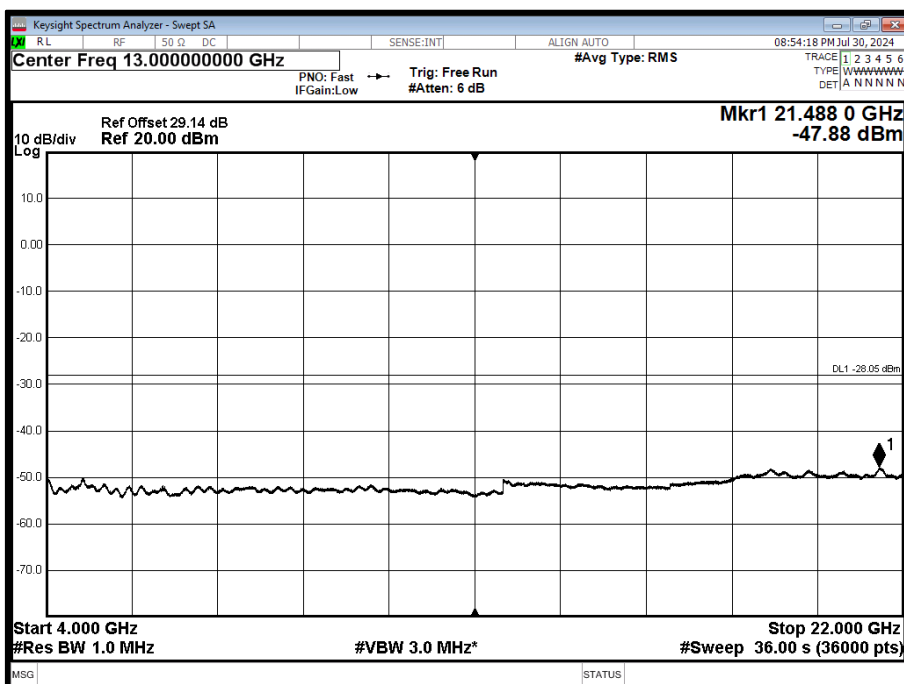




Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position M- Band 1 - Range 0.009 to 4000 MHz

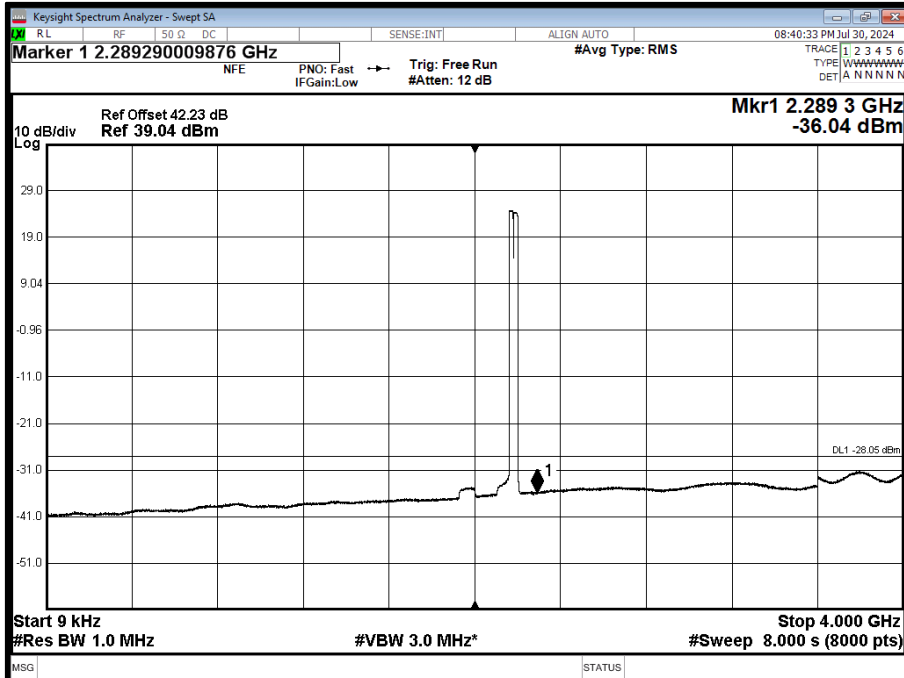


Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position M- Band 2 - Range 4000 to 26000 MHz

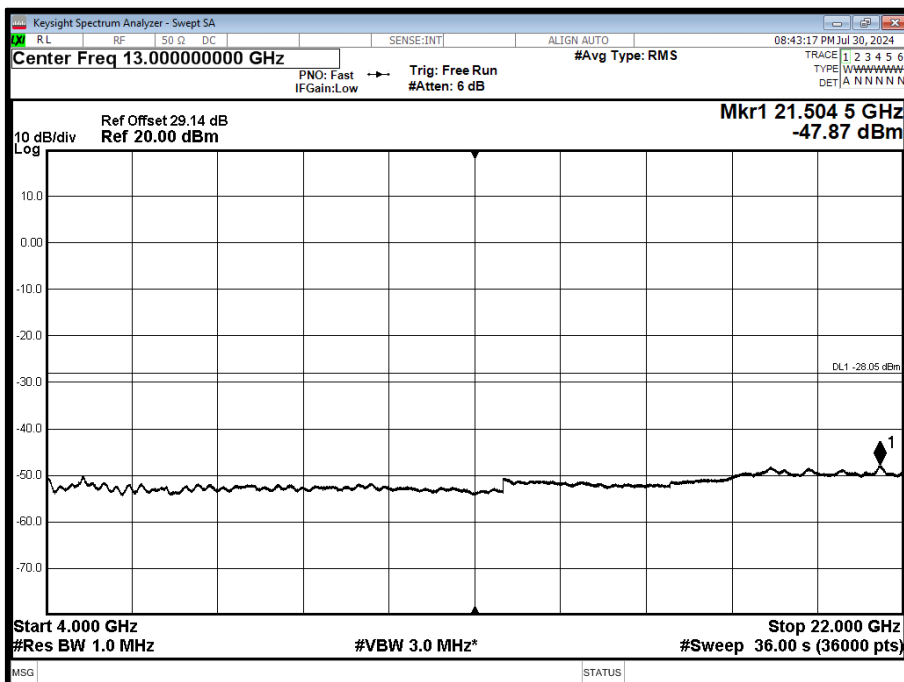




Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position T- Band 1 - Range 0.009 to 4000 MHz



Antenna 24 - LTE / NR Modulation QPSK / QPSK - LTE / NR Carrier Bandwidth 20 MHz 15 kHz SCS / 20 MHz - Channel Position T- Band 2 - Range 4000 to 26000 MHz

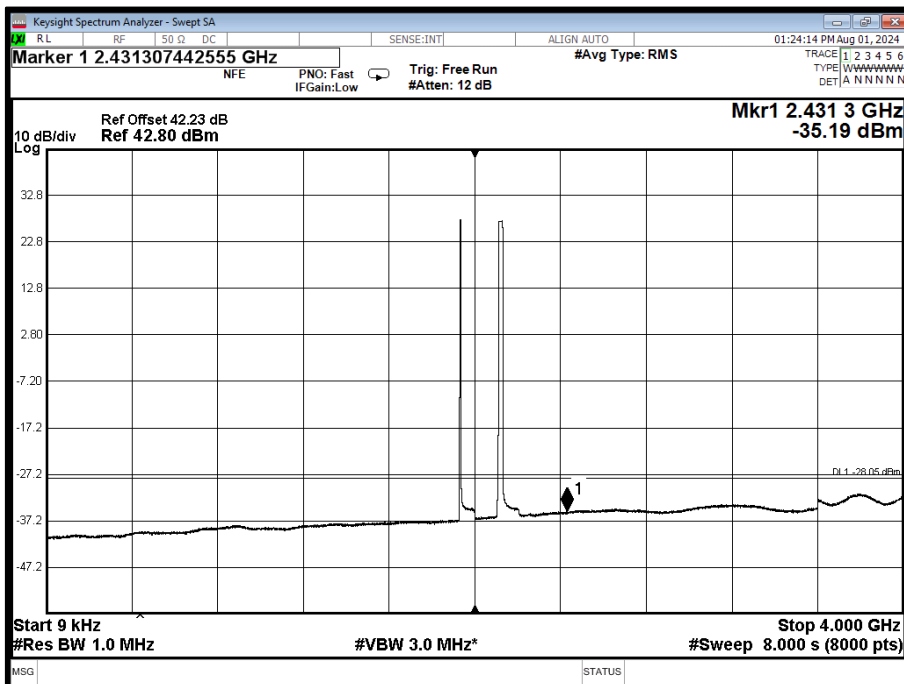




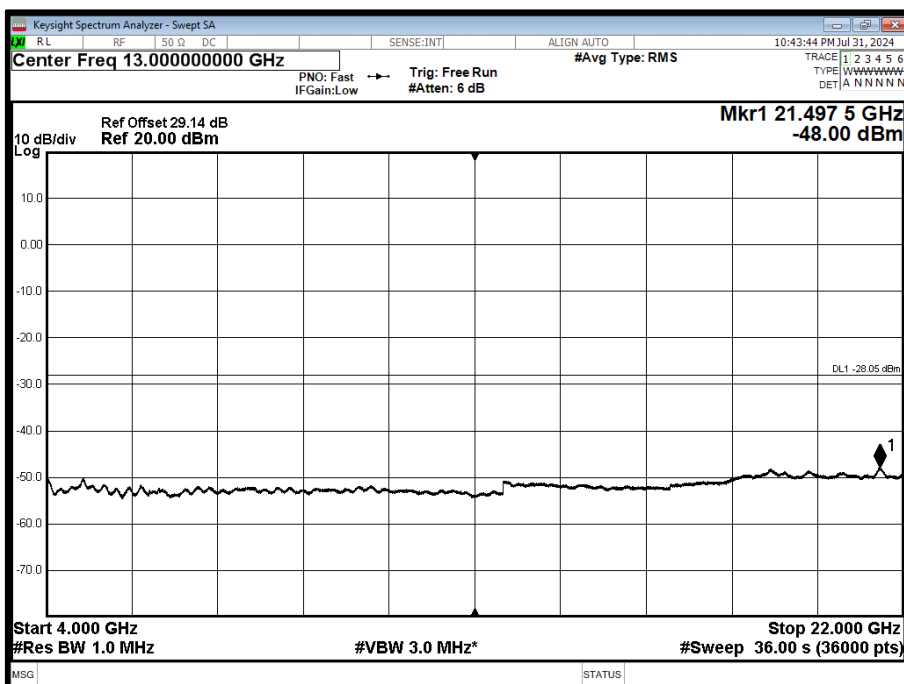
### Configuration 6

Maximum Output Power 32.74(LTE)+ 38.75(NR) dBm

Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position B- Band 1 - Range 0.009 to 4000 MHz

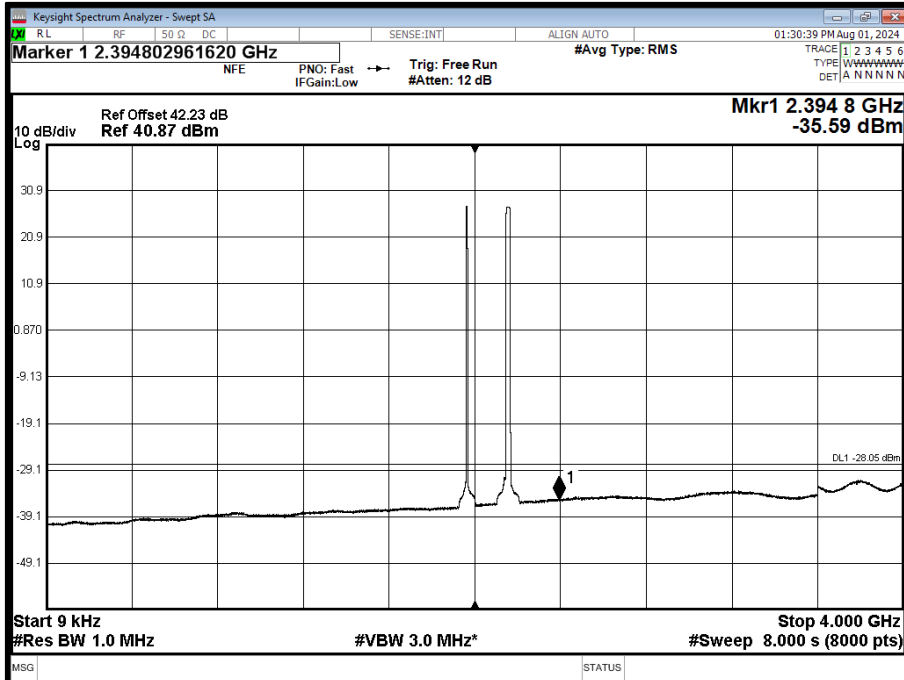


Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position B- Band 2 - Range 4000 to 26000 MHz

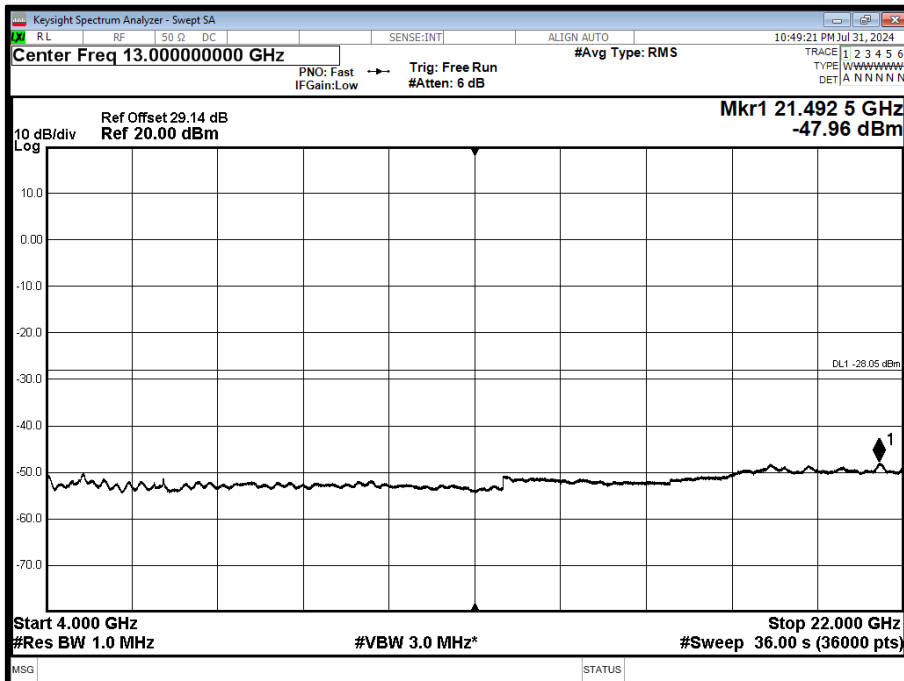




Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position M- Band 1 - Range 0.009 to 4000 MHz

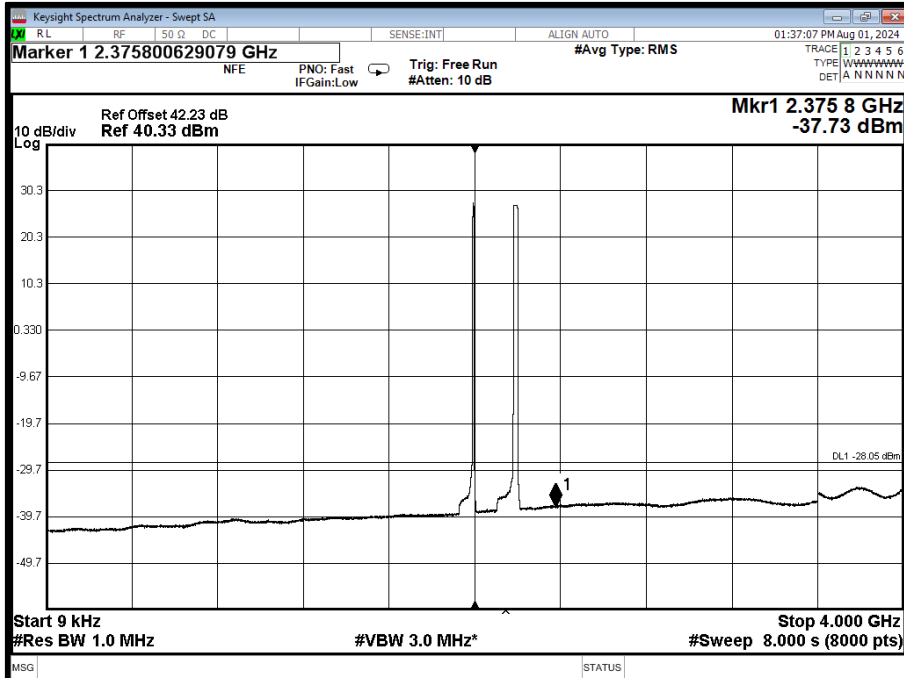


Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position M- Band 2 - Range 4000 to 26000 MHz

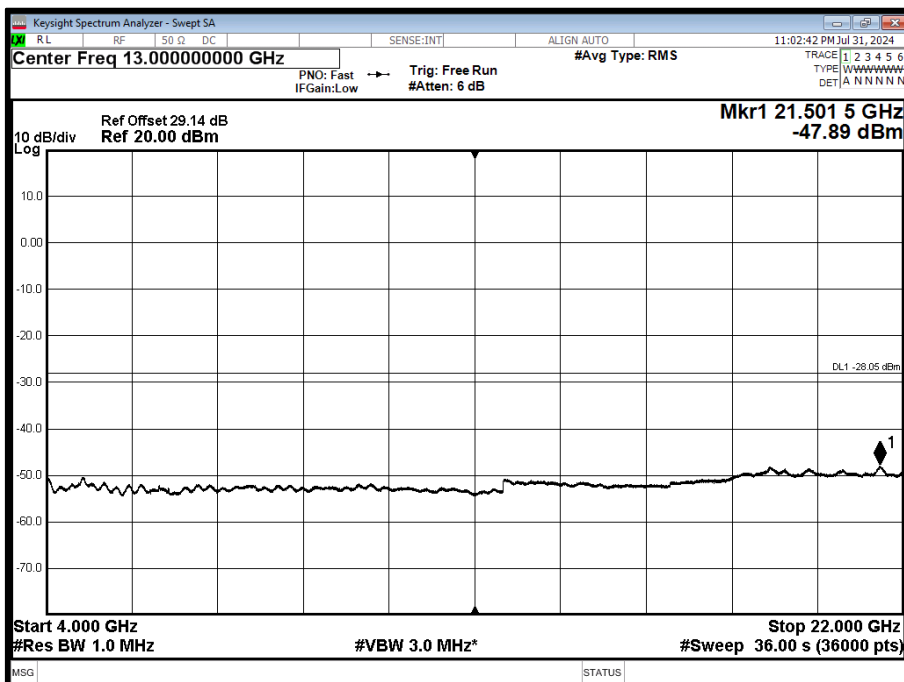




Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position T- Band 1 - Range 0.009 to 4000 MHz



Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position T- Band 2 - Range 4000 to 26000 MHz

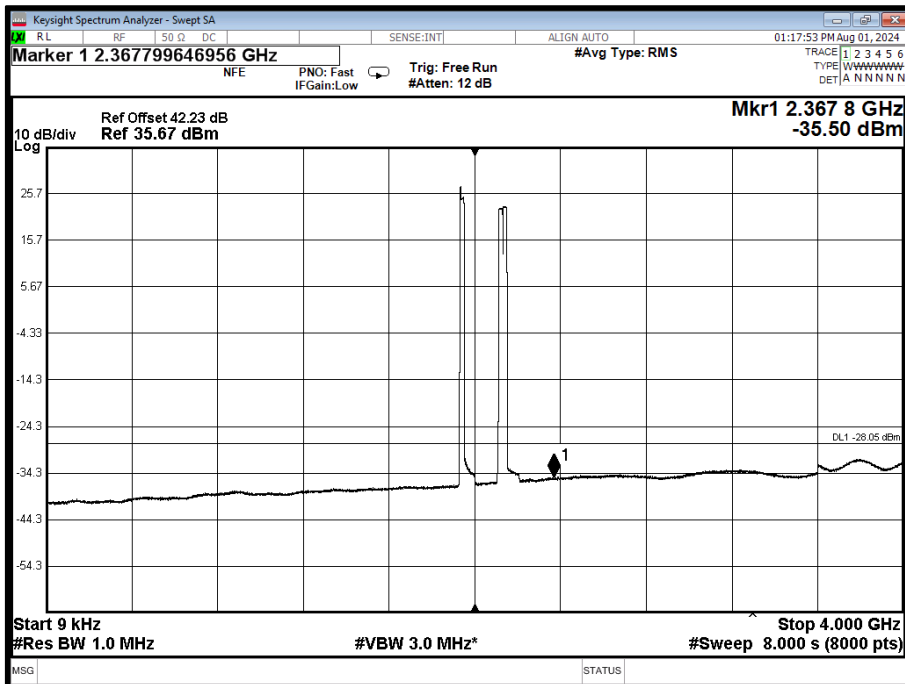




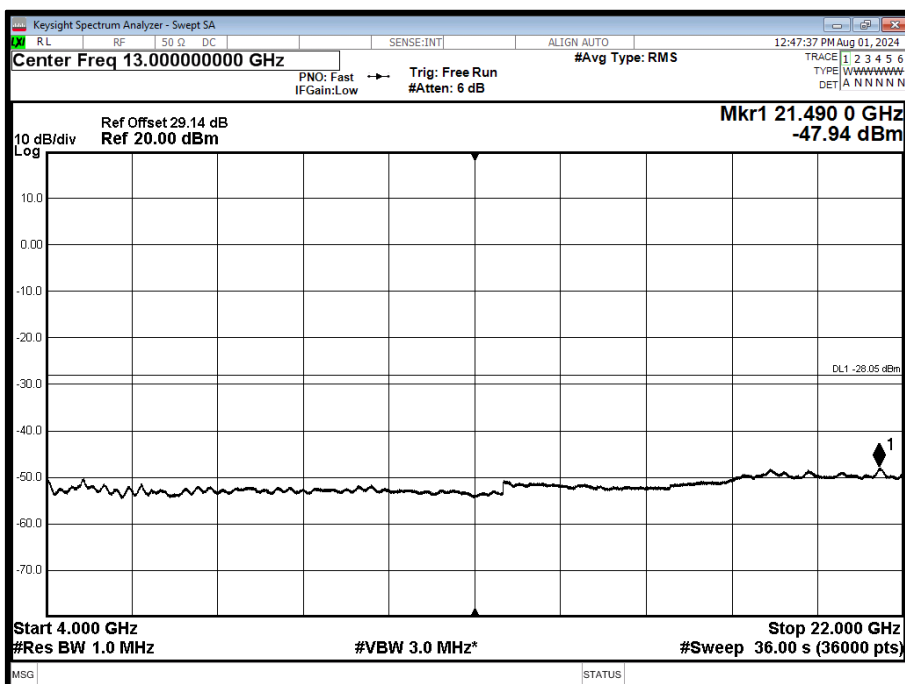
### Configuration 7

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position B- Band 1 - Range 0.009 to 4000 MHz

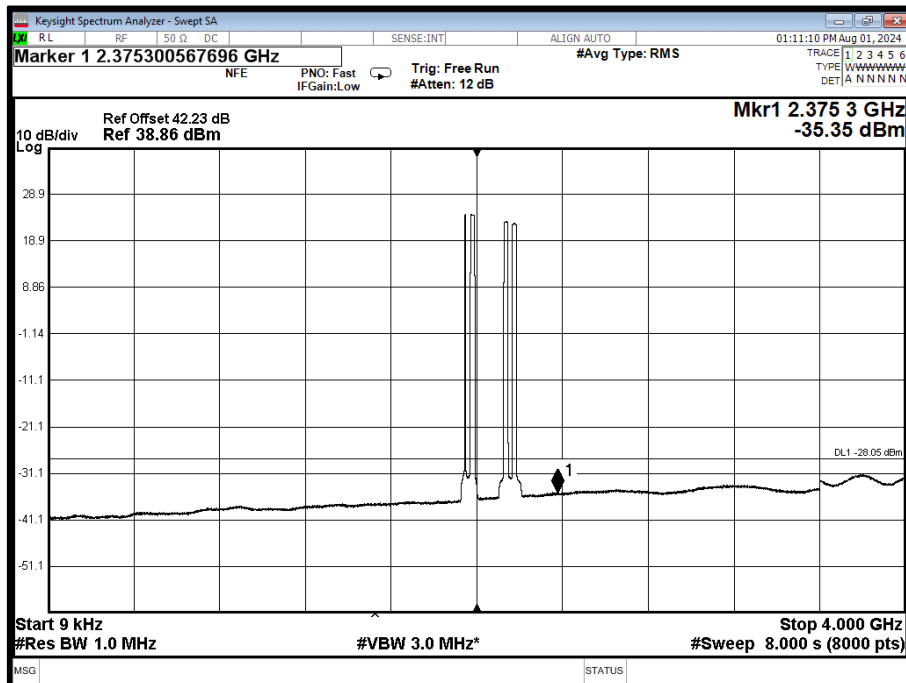


Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position B- Band 2 - Range 4000 to 26000 MHz

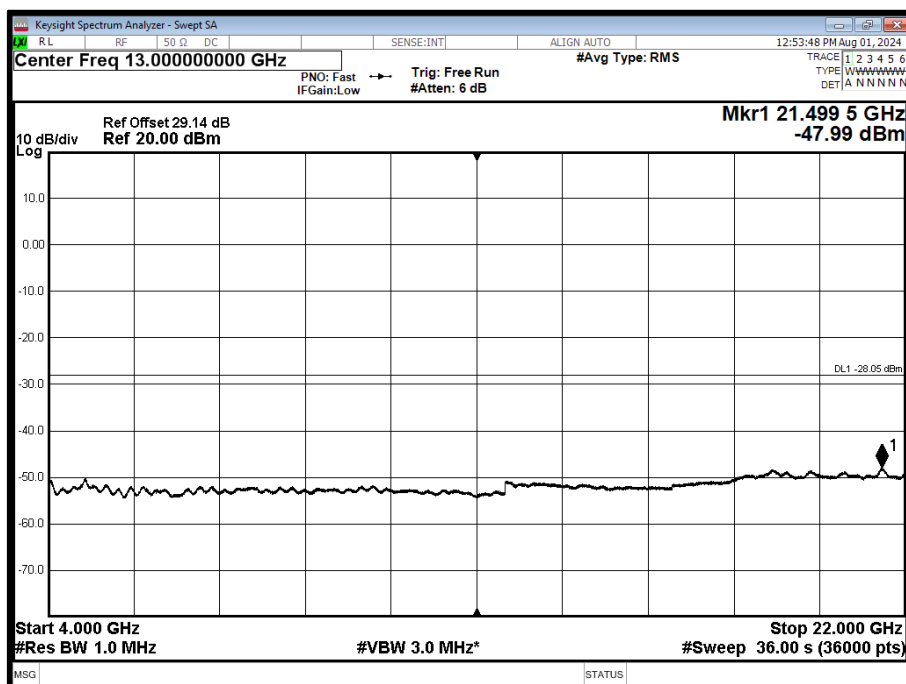




Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position M- Band 1 - Range 0.009 to 4000 MHz

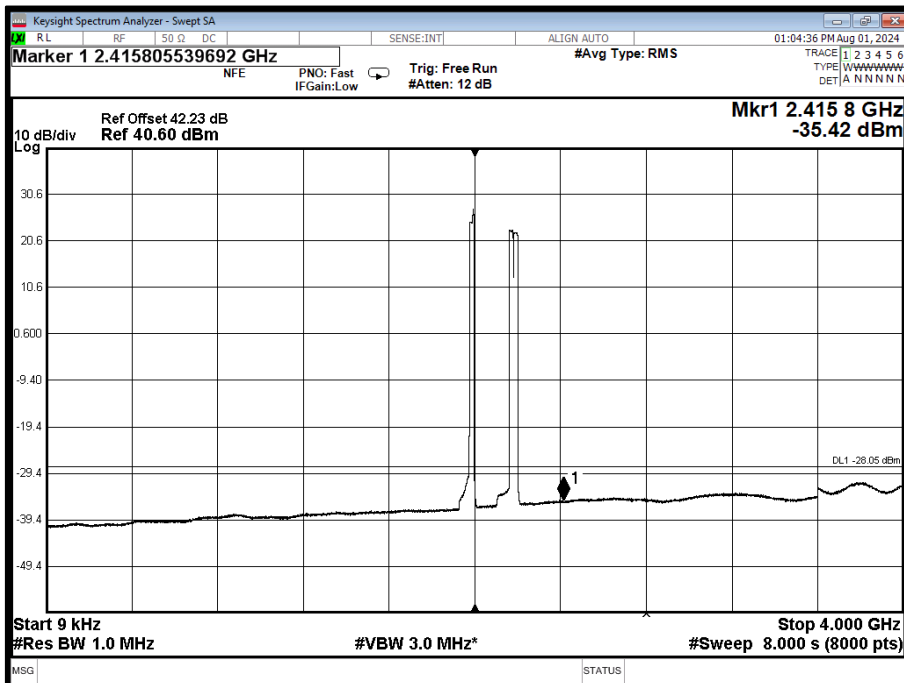


Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position M- Band 2 - Range 4000 to 26000 MHz

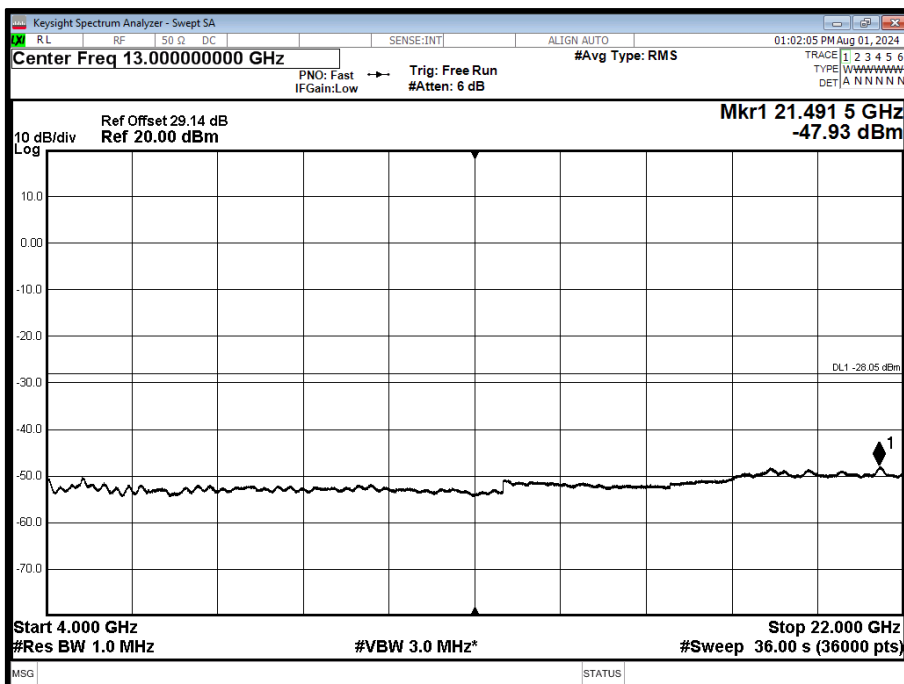




Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position T- Band 1 - Range 0.009 to 4000 MHz



Antenna 28 - LTE / NR Modulation LTE-64QAM Band25 +NR-QPSK Band25 +LTE-QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band25 +NR-20M Band25 +LTE-20M Band66+NR-20M Band66 - Channel Position T- Band 2 - Range 4000 to 26000 MHz

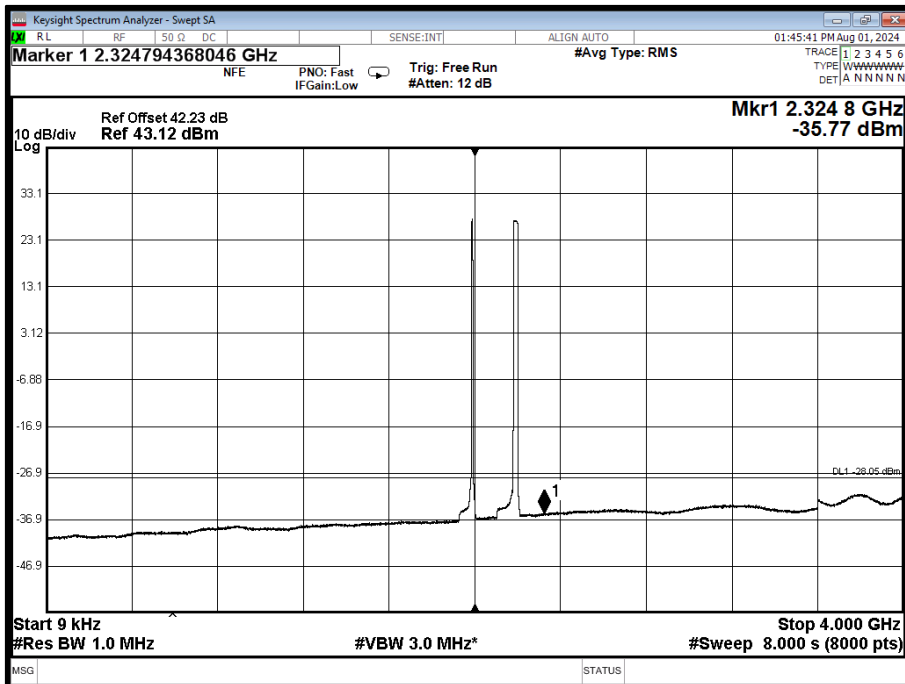




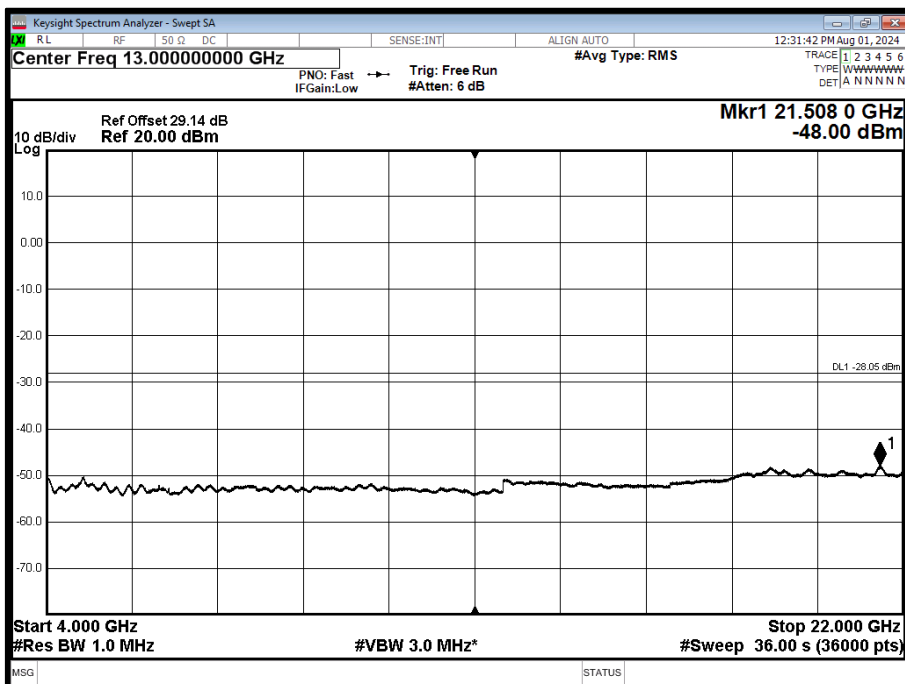


### Configuration 8

Maximum Output Power 32.74(LTE)+ 38.75(NR) dBm  
Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position T- Band 1 - Range 0.009 to 4000 MHz



Antenna 28 - LTE / NR Modulation 64QAM / QPSK - LTE / NR Carrier Bandwidth 5 MHz / 20.0 MHz 15 kHz SCS - Channel Position T- Band 2 - Range 4000 to 26000 MHz

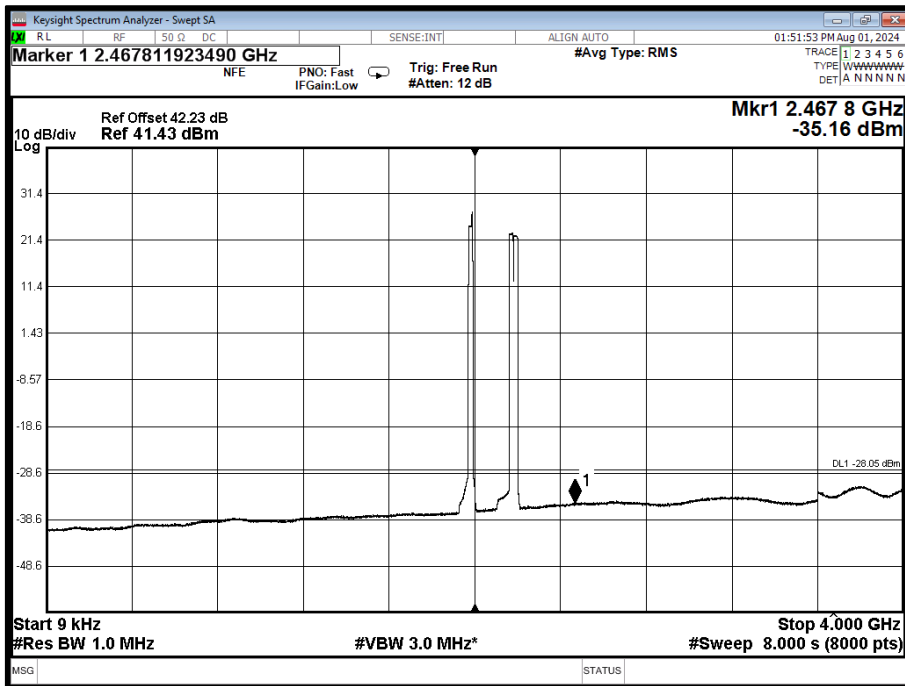




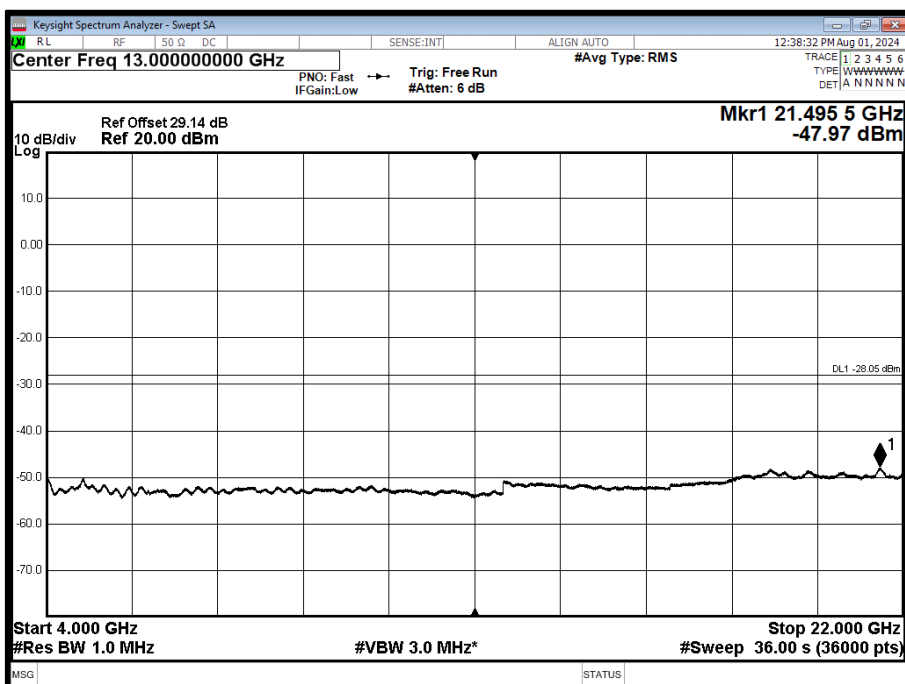
Configuration 9

Maximum Output Power 29.72(LTE)+35.74(NR)+ 33.97(LTE)+33.97(NR) dBm

Antenna 28 - LTE / NR Modulation LTE- 64QAM Band2 +NR- QPSK Band2 +LTE- QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band2 +NR-20M Band2 +LTE-20M Band66+NR-20M Band66 - Channel Position T- Band 1 - Range 0.009 to 4000 MHz



Antenna 28 - LTE / NR Modulation LTE- 64QAM Band2 +NR- QPSK Band2 +LTE- QPSK Band66+NR-QPSK Band66 - LTE / NR Carrier Bandwidth LTE-5M Band2 +NR-20M Band2 +LTE-20M Band66+NR-20M Band66 - Channel Position T- Band 2 - Range 4000 to 26000 MHz





Limit 27.53 (h) (1)

Limit	$-13 \text{ dBm} - 10 * \text{Log} (32) = -28.05 \text{ dBm}.$
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## 2.5 FREQUENCY STABILITY

### 2.5.1 Specification Reference

FCC CFR 47 Part 27, Clause 27.54  
FCC CFR 47 Part 2, Clause 2.1055

### 2.5.2 Date of Test and Modification State

01-August-2024 - Modification State 0

### 2.5.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.5.4 Environmental Conditions

Ambient Temperature 21.3°C  
Relative Humidity 48.8%

### 2.5.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 9 and ANSI C63.26 Clause 5.6

### 2.5.6 Test Results

Configuration 1

Maximum Output Power 38.75 dBm

Temperature	Voltage	Frequency Error (Hz)
		Channel Position M
-30°C	-48.0 V DC	-1.07
-20°C	-48.0 V DC	-1.53
-10°C	-48.0 V DC	1.30
0°C	-48.0 V DC	0.25
+10°C	-48.0 V DC	-1.23
+20°C	-40.8 V DC	-0.30
+20°C	-48.0 V DC	-1.14
+20°C	-55.2 V DC	1.03
+30°C	-48.0 V DC	-1.26
+40°C	-48.0 V DC	1.39
+50°C	-48.0 V DC	0.27



### Configuration 3

Maximum Output Power 38.75 dBm

Temperature	Voltage	Frequency Error (Hz)
		Channel Position M
-30°C	-48.0 V DC	-1.08
-20°C	-48.0 V DC	0.14
-10°C	-48.0 V DC	1.05
0°C	-48.0 V DC	-1.23
+10°C	-48.0 V DC	1.18
+20°C	-40.8 V DC	1.27
+20°C	-48.0 V DC	-1.53
+20°C	-55.2 V DC	-0.92
+30°C	-48.0 V DC	-0.27
+40°C	-48.0 V DC	0.17
+50°C	-48.0 V DC	0.26

### Limit 27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.



### **SECTION 3**

#### **TEST EQUIPMENT USED**



### 3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
<b>Auxillary Equipment</b>					
Computer	MacBook Pro	Apple	BAMS-1002122808	N/A	O/P Mon
PSU	LP2 x 700W	Ericsson	BAMS-1017033678	N/A	O/P Mon
SFP module				N/A	O/P Mon
Power supply (for EUT)	Keysight	N8738A 80V/42A 3360W	BAMS-1001643633	N/A	O/P Mon
<b>Pre-test/ 32 ports</b>					
Hygro meter	Rotronic	HP21	TE-5264	12	08-Aug-2024
ENA Network Analyzer (2Hz-44GHz)	Keysight	E5080B	BAMS 1056688792	12	11-Jan-2025
PXA Signal Analyzer (2Hz-44GHz)	Keysight	N9030A	BAMS 1001562403	12	02-Jan-2025
Digital Multimeter	RS components	ISO-TECH IDM 101	TE-5601	12	23-Feb-2025
Spectrum Sysyem	TUV SUD	N/A	TE5991	N/A	O/P Mon
Milliohm meter	RS PRO	ILOM-508A	TE-006192	12	10-Aug-2024
<b>Maximum Peak Output Power and Peak to Average Ratio - Conducted</b>					
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 004	N/A	O/P Mon
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 002	N/A	O/P Mon
Hygro meter	Rotronic	HP21	TE-5264	12	08-Aug-2024
ENA Network Analyzer (2Hz-44GHz)	Keysight	E5080B	BAMS 1056688792	12	11-Jan-2025
PXA Signal Analyzer (2Hz-44GHz)	Keysight	N9030A	BAMS 1001562403	12	02-Jan-2025
Digital Multimeter	RS components	ISO-TECH IDM 101	TE-5601	12	23-Feb-2025
Spectrum Sysyem	TUV SUD	N/A	TE5991	N/A	O/P Mon
Milliohm meter	RS PRO	ILOM-508A	TE-006192	12	10-Aug-2024
<b>Occupied Bandwidth</b>					
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 004	N/A	O/P Mon
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 002	N/A	O/P Mon
Hygro meter	Rotronic	HP21	TE-5264	12	08-Aug-2024
ENA Network Analyzer (2Hz-44GHz)	Keysight	E5080B	BAMS 1056688792	12	11-Jan-2025
PXA Signal Analyzer (2Hz-44GHz)	Keysight	N9030A	BAMS 1001562403	12	02-Jan-2025
Digital Multimeter	RS components	ISO-TECH IDM 101	TE-5601	12	23-Feb-2025
Spectrum Sysyem	TUV SUD	N/A	TE5991	N/A	O/P Mon
Milliohm meter	RS PRO	ILOM-508A	TE-006192	12	10-Aug-2024
<b>Band Edge</b>					
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 004	N/A	O/P Mon
Atteunator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 002	N/A	O/P Mon
Hygro meter	Rotronic	HP21	TE-5264	12	08-Aug-2024



Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
ENA Network Analyzer (2Hz-44GHz)	Keysight	E5080B	BAMS 1056688792	12	11-Jan-2025
PXA Signal Analyzer (2Hz-44GHz)	Keysight	N9030A	BAMS 1001562403	12	02-Jan-2025
Digital Multimeter	RS components	ISO-TECH IDM 101	TE-5601	12	23-Feb-2025
Spectrum Sysyem	TUV SUD	N/A	TE5991	N/A	O/P Mon
Milliohm meter	RS PRO	ILOM-508A	TE-006192	12	10-Aug-2024
Transmitter Spurious Emissions					
Attenuator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 004	N/A	O/P Mon
Attenuator 20dB	Aeroflex/Weinschel	Model: 6834-20-11	SERIAL NO: 002	N/A	O/P Mon
Hygro meter	Rotronic	HP21	TE-5264	12	08-Aug-2024
ENA Network Analyzer (2Hz-44GHz)	Keysight	E5080B	BAMS 1056688792	12	11-Jan-2025
PXA Signal Analyzer (2Hz-44GHz)	Keysight	N9030A	BAMS 1001562403	12	02-Jan-2025
Digital Multimeter	RS components	ISO-TECH IDM 101	TE-5601	12	23-Feb-2025
Milliohm meter	RS PRO	ILOM-508A	TE-006192	12	10-Aug-2024
High Pass Filter					
Frequency Stability					
Signal and Spectrum Analyzer	Rohde&Schwarz	FSW 2Hz-13.6GHz	BAMS-1001490625	12	22-Apr-2025
System DC Power Supply	Agilent Technologies	N8738A 80V/42A 3360W	BAMS-1001518021	-	-
Climatic Chamber 8	Vötsch Industrietechnik	-	BAMS-1001235891	-	-
Digital Multimeter	RS PRO	RS14	TE6485	12	31-May-2025
Thermo-Hygro-Barometer	RS Pro	N/A	TE 5931	12	12-Jun-2025

TU – Traceability Unschedule

N/A – Not Applicable

O/P Mon – Output Monitored with Calibrated Equipment





### 3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU	MU Unit	
Conducted Maximum Peak Output Power-Spectrum	Up to 8.4 GHz	±1.07	dB	
Conducted Emissions- HP-VEE Software	9K kHz to 22 GHz	±0.89	dB	
Frequency Stability - HP-VEE Software	2110 MHz to 2200 MHz	±74.1	Hz	
Occupied Bandwidth - HP-VEE Software or Spectrum	Up to 20.0 MHz Bandwidth	5 MHz Bandwidth	±32981.6	Hz
		10 MHz Bandwidth	±65818.6	Hz
		15 MHz Bandwidth	±353783.5	Hz
		20.0 MHz Bandwidth	±131634.5	Hz
Band Edge & PSD - Spectrum	Up to 8.4 GHz	±1.05	dB	

#### Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the results of the compliance measurement and does not take into account measurement instrumentation uncertainty as defined in ANSI C63.26:2015 Clause 1.3.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8



### 3.3 MEASUREMENT SOFTWARE USED

List of measurement software versions used for testing.

Instrument	Manufacturer	Type No.	TE No.	Software Version
Spectrum Software Version	TÜV SÜD	SCU004	TE5991	1.11.8
PXA Signal Analyser	Keysight	N9030A	BAMS1001562403	A.19.05
HP-VEE Software	TÜV SÜD	HP_VEE	N/A	V3.35



## **SECTION 5**

### **ACCREDITATION, DISCLAIMERS AND COPYRIGHT**



#### 4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



Accred. no. 10363  
Testing  
ISO/IEC 17025

This report relates only to the actual item/items tested.

Our Swedac Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our Swedac Accreditation.

Results of tests not covered by our Swedac Accreditation Schedule are marked NSA  
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## **ANNEX A**

### **MODULE LIST**



Configurations 1-22 (all tests except Frequency Stability)			
Product	Product No	R-State	Serial No
AIR 3283 B25 B66	KRD 901 892/2	R1C	E23F527361
CT-DU25	LPC102500/1	R3B	T01G522534
Software Version:	CXP2021151/1	Revision:	R21A984
Configurations 1 and 3 (Frequency Stability only)			
Product	Product No	R-State	Serial No
AIR 3283 B25 B66	KRD 901 892/2	R1C	E23F529480
CT-DU25	LPC102500/1	R3B	T01G522088
Software Version:	CXP2021151/1	Revision:	R21A984
External Cables Connected to the EUT			
Port	Type	Length (m)	Specifications
DC in	DC power	2*10 m2	Copper cable
Earth	Ground	50 mm2	300/500V, -40/90 °C
Data_1 & Data_2	Optical fibre cable	20m	Single Mode Duplex