



**Add value.  
Inspire trust.**

# Report On

FCC Testing of the  
Ericsson AIR 6419 B77G, KRD 901 238/3, NR (3450-3550 MHz) Base  
Station in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 27

**COMMERCIAL-IN-CONFIDENCE**

**FCC: TA8AKRD901238**

PREPARED BY

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

Maggie Whiting  
Key Account Manager

APPROVED BY

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

Steve Scarfe  
Authorised Signatory

DATED

16 May 2022

**Document 75953996 Report 01 Issue 1**

**May-2022**



## CONTENTS

Section	Page No
<b>1</b>	<b>REPORT INFORMATION ..... 2</b>
1.1	Report Details ..... 3
1.2	Brief Summary of Results ..... 4
1.3	Test Rationale..... 5
1.4	Configuration Description ..... 6
1.5	Declaration of Build Status ..... 8
1.6	Product Information ..... 10
1.7	Test Setup ..... 11
1.8	Test Conditions..... 12
1.9	Deviation From The Standard ..... 12
1.10	Modification Record ..... 12
1.11	Additional Information ..... 13
<b>2</b>	<b>TEST DETAILS ..... 14</b>
2.1	Maximum Peak Output Power and Peak to Average Ratio - Conducted..... 15
2.2	Occupied Bandwidth..... 44
2.3	Band Edge ..... 73
2.4	Transmitter Spurious Emissions..... 88
2.5	Frequency Stability ..... 195
<b>3</b>	<b>TEST EQUIPMENT USED ..... 196</b>
3.1	Test Equipment Used ..... 197
3.2	Measurement Uncertainty ..... 199
3.3	Measurement Software Used ..... 200
<b>4</b>	<b>ACCREDITATION, DISCLAIMERS AND COPYRIGHT..... 201</b>
4.1	Accreditation, Disclaimers and Copyright..... 202
<b>ANNEX A</b>	<b>Module Lists.....A.2</b>



## **SECTION 1**

### **REPORT INFORMATION**



## 1.1 REPORT DETAILS

Manufacturer	Ericsson
Address	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden
Product Name & Product Number	AIR 6419 B77G - KRD 901 238/3
Serial Number(s)	E23D828139 E23D829867
Software Version	CXP2030039/7-R22A127
Hardware Version	R1B
Non-Tested Variant (See Section 1.11 Additional Information)	KRD 901 238/1 KRD 901 238/11 KRD 901 238/31
Test Specification/Issue/Date	FCC CFR 47 Part 2: 2020 FCC CFR 47 Part 27: 2020
Test Plan	AIR 6419 B77G FCC Test Plan Ver 05
Start of Test	12-April-2022
Finish of Test	13-May-2022
Name of Engineer(s)	Raj Kumar Kallem, Hector Trujillo, Shashi Kiran, Brian Scarfe
Related Document(s)	KDB 971168 D01 v02r02 KDB 662911 D01 v02r01 FCC Response to Inquiry Tracking Number 154167 ANSI C63.26-2015

---

### 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: 2020, FCC CFR 47 Part 27: 2020. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

---

Raj Kumar Kallem, Hector Trujillo, Shashi Kiran, Brian Scarfe



## 1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 2, 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 Emissions	Pass*

\* - Testing for Radiated Spurious Emissions are recorded in the following reports

- FCC Part 15B – Intertek Test Report reference 2202277STO-102
- FCC Part 27 – Intertek Test Report reference 2202277STO-101



### **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	RAT	No Of carriers	Carrier Bandwidth	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	NR	1	10 MHz 30kHz SCS	3455	3500	3545	40	27.96
			20 MHz 30kHz SCS	3460	3500	3540	80	30.97
			30 MHz 30kHz SCS	3465	3500	3535	120	32.73
			40 MHz 30kHz SCS	3470	3500	3530	160	33.98
			50 MHz 30kHz SCS	3475	3500	3525	200	34.95
			60 MHz 30kHz SCS	3480	3500	3520	240	35.74
			70 MHz 30kHz SCS	3485	3500	3515	280	36.41
			80 MHz 30kHz SCS	3490	3500	3510	320	36.98
			90 MHz 30kHz SCS	3495	3500	3505	320	36.98
			100 MHz 30kHz SCS		3500		320	36.98
2 MC-1	NR 4W/MHz	2	10 MHz 30kHz SCS	-	3455+3545	-	2x 40	2x 27.96
2 MC-2			20 MHz 30kHz SCS	-	3460+3540	-	2x 80	2x 30.97
			30 MHz 30kHz SCS	-	3465+3534.99	-	2x 120	2x 32.73
			10 MHz 30kHz SCS	3455+3465	3495+3505	3535+3545	2x 40	2x 27.96
3 MC-1			20 MHz 30kHz SCS	3460+3480	3490+3510	3520+3540	2x 80	2x 30.97
			30 MHz 30kHz SCS	3465+3495	3485+3515	3505+3535	2x 120	2x 32.73
			10 MHz 30kHz SCS	-	3455+3535+3545	-	3x 40	3x 27.96
3 MC-2			20 MHz 30kHz SCS	-	3460+3520+3540	-	3x 80	3x 30.97
			10 MHz 30kHz SCS	3455+3465+3475	3490+3500+3510	3525+3535+3545	3x 40	3x 27.96
			20 MHz 30kHz SCS	3460+3480+3500	3480+3500+3520	3500+3520+3540	3x 80	3x 30.97
4	NR	1	10 MHz 30kHz SCS	3455	3500	3545	80	30.97
			20 MHz 30kHz SCS	3460	3500	3540	160	33.98
			30 MHz 30kHz SCS	3465	3500	3535	240	35.74
			40 MHz 30kHz SCS	3470	3500	3530	320	36.98
			50 MHz 30kHz SCS	3475	3500	3525	320	36.98
			60 MHz 30kHz SCS	3480	3500	3520	320	36.98
			70 MHz 30kHz SCS	3485	3500	3515	320	36.98
			80 MHz 30kHz SCS	3490	3500	3510	320	36.98
			90 MHz 30kHz SCS	3495	3500	3505	320	36.98
			100 MHz 30kHz SCS		3500		320	36.98
5 MC-1	NR 8W/MHz	2	10 MHz 30kHz SCS	-	3455+3545	-	2x 80	2x 30.97
5 MC-2			20 MHz 30kHz SCS	-	3460+3540	-	2x 160	2x 33.97
			30 MHz 30kHz SCS	-	3465+3534.99	-	2x 160	2x 33.97
			40 MHz 30kHz SCS	-	3470+3530	-	2x 160	2x 33.97
6 MC-1			50 MHz 30kHz SCS	-	3475+3525	-	2x 160	2x 33.97
			10 MHz 30kHz SCS	3455+3465	3495+3505	3535+3545	2x 80	2x 30.97
			20 MHz 30kHz SCS	3460+3480	3490+3510	3520+3540	2x 160	2x 33.97
			30 MHz 30kHz SCS	3465+3495	3485+3515	3505+3535	2x 160	2x 33.97
			40 MHz 30kHz SCS	3470+3510	3480+3520	3490+3530	2x 160	2x 33.97
50 MHz 30kHz SCS			-	3475+3525	-	2x 160	2x 33.97	
6 MC-1	3	10 MHz 30kHz SCS	-	3455+3535+3545	-	3x 80	3x 30.97	
		20 MHz 30kHz SCS	-	3460+3520+3540	-	3x 106,7	3x 32.21	



Config No	RAT	No Of carriers	Carrier Bandwidth	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
6 MC-2	NR 8W/MHz	3	30 MHz 30kHz SCS	-	3465+3504.99+3534.99	-	3x 106,7	3x 32.21
			10 MHz 30kHz SCS	3455+3465+3475	3490+3500+3510	3525+3535+3545	3x 80	3x 30.97
			20 MHz 30kHz SCS	3460+3480+3500	3480+3500+3520	3500+3520+3540	3x 106,7	3x 32.21
			30 MHz 30kHz SCS	3465+34953525	3470+3500+3530	3475+3505+3535	3x 106,7	3x 32.21





**1.5 DECLARATION OF BUILD STATUS**

<b>Equipment Description</b>	
Technical Description: (Please provide a brief description of the intended use of the equipment including the technologies the product supports)	AIR Antenna Integrated Radio AAS
Manufacturer:	Ericsson AB
Model:	AIR 6419 B77G
Part Number:	KRD 901 238/1 (with un-security software and antenna) KRD 901 238/11** (with security software and antenna) KRD 901 238/3*(with un-security software and SRDNB) KRD 901 238/31(with security software and SRDNB)  Note*: Tested unit Note**: This will be the marketed, sold unit.
Hardware Version:	R1B
Software Version:	CXP 2030039/7 R22A127
FCC ID of the product under test	TA8AKRD901238
IC ID of the product under test	N/A
<b>Intentional Radiators</b>	
RAT	NR
Frequency Range (MHz to MHz)	3450 - 3550 MHz
Conducted Declared Output Power (dBm)	4W/MHz up to max 320W Non Rural areas 8W/MHz up to max 320W Rural areas
Antenna Gain (dBi)	25,5 dBi
Supported Bandwidth(s) (MHz)	10,20,30,40,50,60,70,80,90,100 MHz
Modulation Scheme(s)	QPSK,16QAM,64QA,256QAM
ITU Emission Designator	10 MHz BW <sub>channel</sub> : 8M57W7D 20 MHz BW <sub>channel</sub> : 18M3W7D 30 MHz BW <sub>channel</sub> : 28M0W7D 40 MHz BW <sub>channel</sub> : 38M0W7D 50 MHz BW <sub>channel</sub> : 47M6W7D 60 MHz BW <sub>channel</sub> : 58M0W7D 70 MHz BW <sub>channel</sub> : 67M6W7D 80 MHz BW <sub>channel</sub> : 77M5W7D 90 MHz BW <sub>channel</sub> : 87M6W7D 100 MHz BW <sub>channel</sub> : 97M3W7D 100 MHz BW <sub>channel</sub> : 100MW7D (max BW for NR carrier aggregation) support both contiguous and non-contiguous operation
duty cycle	75%
Total Horizontal Plane Beamwith	65°
IBW	100 MHz
Maximum number of carriers	3
<b>Unintentional Radiators</b>	
Highest frequency generated or used in the device or on which the device operates or tunes	CPRI 25,78 GHz
Class B Digital Device (Use in residential environment)	Class B Digital Device
DC Power Supply (Delete if Not Applicable)	



Nominal voltage:	-48V		
Extreme upper voltage:	-58.5V		
Extreme lower voltage:	-36V		
Max current:	-48V:30A    -36V:40A		
Temperature			
Minimum temperature:	-40°C		
Maximum temperature:	55°C		
Antenna Characteristics			
Temporary antenna connector (Delete if Not Applicable)	State impedance	50	Ohm
Integral antenna (Delete if Not Applicable)	Type:	AAS (Advanced Antenna System)	
Ancillaries			
Model:	Part Number:	Notes:	
SFP+ CPRI & 10GBase-LR 10km 1310nm -40/+85C	RDH 102 65/3	Used during conducted tests by TUV	
SFP+ CPRI & 10GBase-LR Lite (Very High Temp) 1310nm	RDH 102 65/25	Used during frequency stability test by TUV	
SFP28 25GBASE-LR -40/+85 C	RDH 102 75/3	Used during radiated emission test by Intertek	
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:	12/05/2022		

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

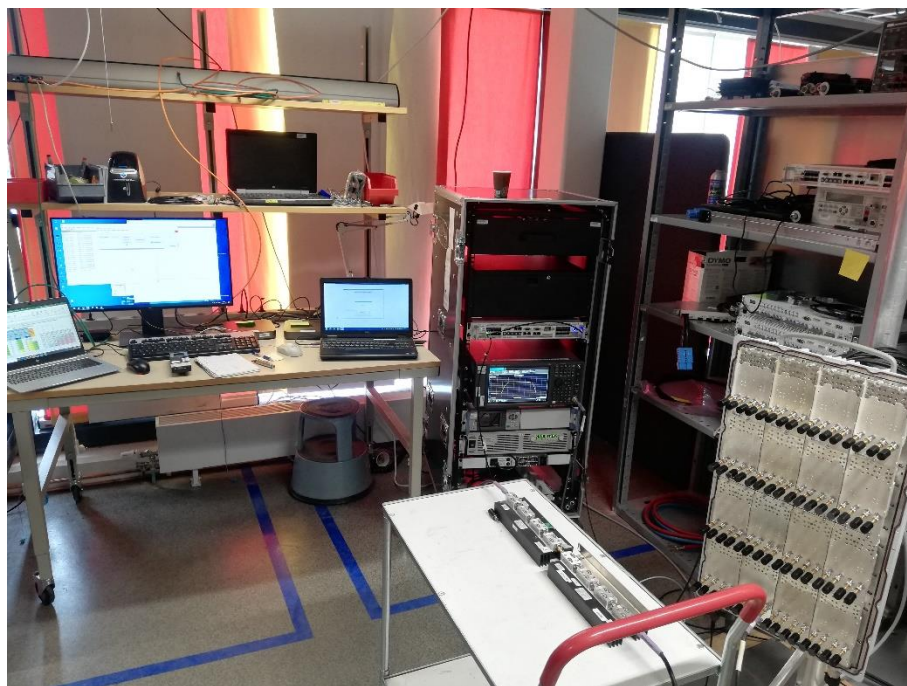
## 1.6 PRODUCT INFORMATION

### 1.6.1 Technical Description

The Equipment Under Test (EUT) AIR 6419 B77G - KRD 901 238/3 is an Ericsson AB Radio Unit working in the public mobile service Band 77G band which provides communication connections to Band 77G 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.

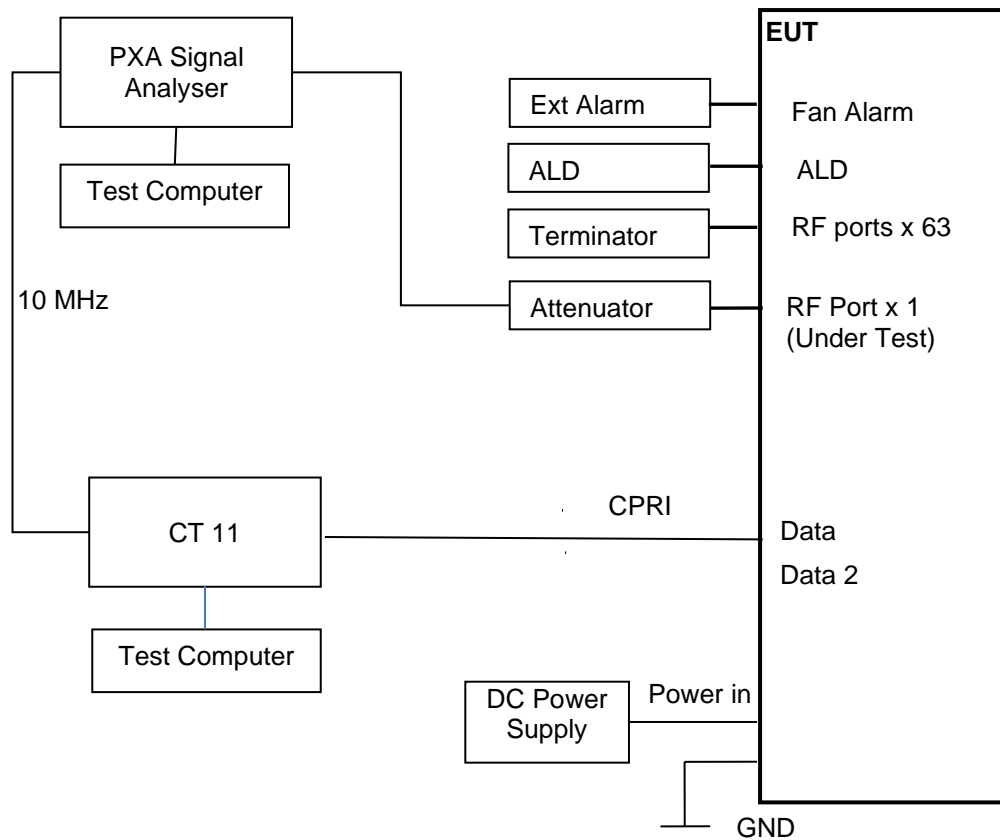


Equipment Under Test



## 1.7 TEST SETUP

### Conducted Test Set Up





## 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 -54V 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 Case	Module 1	Module 2
Maximum Peak Output Power and Peak to Average Ratio - Conducted	Hector Trujillo, Shashi Kiran, Raj Kumar Kallem	N/A
Occupied Bandwidth	Hector Trujillo, Shashi Kiran	N/A
Band Edge	Brian Scarfe, Shashi Kiran	N/A
Transmitter Spurious Emissions	Hector Trujillo, Shashi Kiran, Raj Kumar Kallem	N/A
Frequency Stability	N/A	Raj Kumar Kallem

## 1.9 DEVIATION FROM THE STANDARD

No deviations from the applicable test standards made during testing.

## 1.10 MODIFICATION RECORD

No modifications were made to the EUT during testing.



**1.11 ADDITIONAL INFORMATION**

Ericsson will limit this product through the software from operating across the whole of Band 77, it will be limited to Band 77G.

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

Worst case modulation was 16QAM using Test Model 3.2 as defined in 3GPP TS 38.104.

The port with the highest power was Port 62.

The worst-case Bandwidth was 10 MHz.

These worst-case results are presented in this report to demonstrate compliance for the following tests.

Section	Specification Clause		Test Description	Result
	FCC CFR 47 Part 2	FCC CFR 47 Part 27		
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

For the following tests Test Model 1.1 from 3GPP TS 38.104 (QPSK modulation scheme) was used as this is defined by 3GPP as the worst case modulation scheme and Test Model for output power and associated measurements.

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
2.5	2.1055	27.54	Frequency Stability	Pass

To expedite testing two AIR 6419 B77G 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. Ericsson declared that testing on Module 2 should use the same worst case Ports that were measured on Module 1 as this would be representative.

Ericsson have provided the following details about the variants of the AIR 6419 B77G, KRD 901 221.

The differences between KRD 901 283/3 and KRD 901 283/1, KRD 901 283/11 and KRD 901 283/31 are as below:

KRD 901 283/1 (with un-security software and antenna)

KRD 901 283/11\*\* (with security software and antenna)

KRD 901 283/3\*(with un-security software and CAB/RDNC board for testing purpose)

KRD 901 283/31(with security software and CAB/RDNC board for testing purpose)

Note\*: Tested unit

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

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.



## **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  
ISED RSS-130, Clause 4.6  
FCC CFR 47 Part 2, Clause 2.1046

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

29 April and 03,06, 09, 10, 11, 12,13-May -2022 - 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	23.1 - 23.4°C
Relative Humidity	17.6 - 18.6%

### **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.

All measurements for Power Spectral Density (PSD) were made in accordance with ANSI C63.26 clause 5.7.2., see FCC Inquiry Tracking Number 154167 for further details. The measured power is integrated over the full required reference bandwidth.

### **2.1.6 Test Results**





Configuration 1

Maximum Output Power 27.96,30.97,32.73,33.98,34.95,35.74,36.41,36.99,36.99 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 0-63		Declared Gain	Total EIRP	Non-Rural EIRP Limit	Limit Margin
dBm	dBm/MHz	dBm		dBm/MHz							
62	QPSK	10.0 MHz 30 kHz SCS	9.47	27.56	18.24	45.62	36.30	25.50	61.80	62.15	0.35
62	QPSK	20.0 MHz 30 kHz SCS	9.27	30.54	18.04	48.60	36.10	25.50	61.60	62.15	0.55
62	QPSK	30.0 MHz 30 kHz SCS	9.50	32.20	17.98	50.26	36.04	25.50	61.54	62.15	0.61
62	QPSK	40.0 MHz 30 kHz SCS	9.34	33.61	18.04	51.67	36.10	25.50	61.60	62.15	0.55
62	QPSK	50.0 MHz 30 kHz SCS	9.14	34.61	18.04	52.67	36.10	25.50	61.60	62.15	0.55
62	QPSK	60.0 MHz 30 kHz SCS	9.46	35.28	18.03	53.34	36.09	25.50	61.59	62.15	0.56
62	QPSK	70.0 MHz 30 kHz SCS	9.14	36.11	17.95	54.17	36.01	25.50	61.51	62.15	0.64

Remarks

In accordance with FCC KDB 662911 D01 V02r01 E 2) c) for In-Band Power Spectral Density (PSD) Measurements, Measure and add  $10\log(N_{ANT})$ , where N is the Number of outputs the following calculation was made.

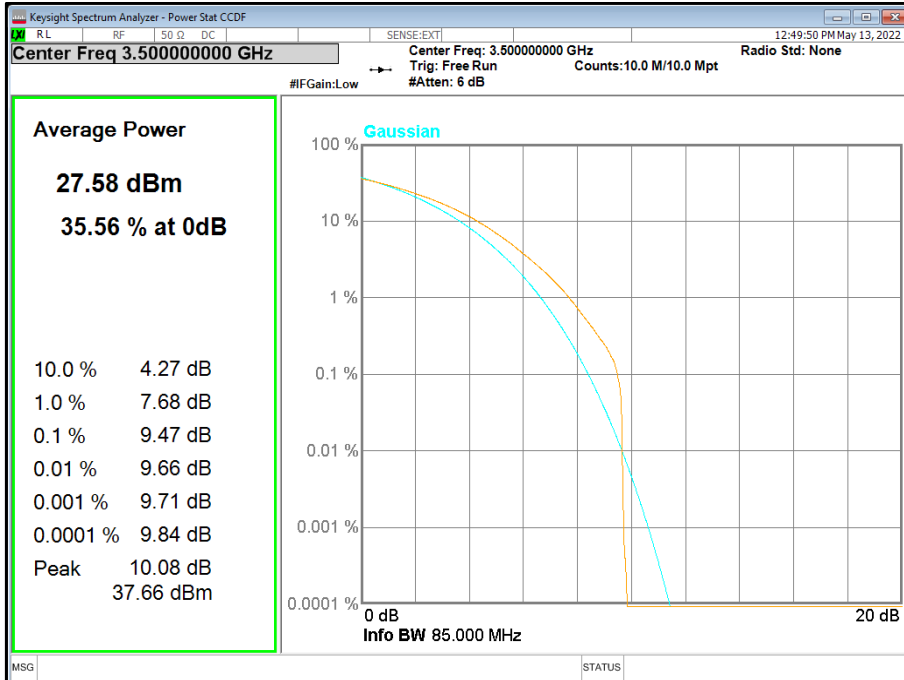
$$\text{Total Power} = \text{Measured Output Power (port x, worst case)} + 10\log(N_{ANT})$$

Where NANT refers to the number of Ports.

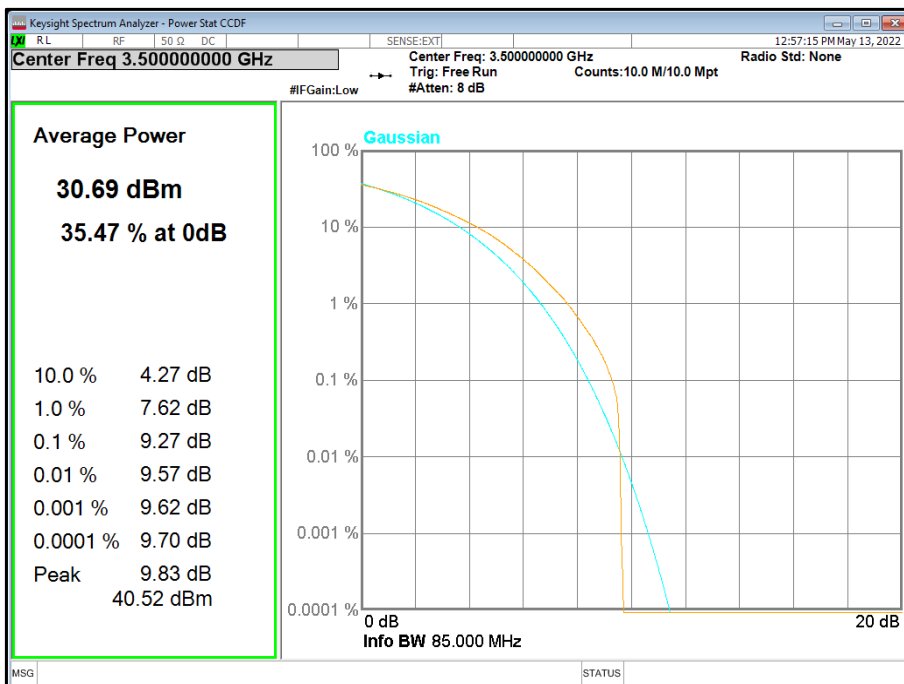
$$\text{Maximum Total Power (EIRP)} = \text{Total Power (port 62)} + \text{Antenna Gain} + 10\log(64)$$



Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position M

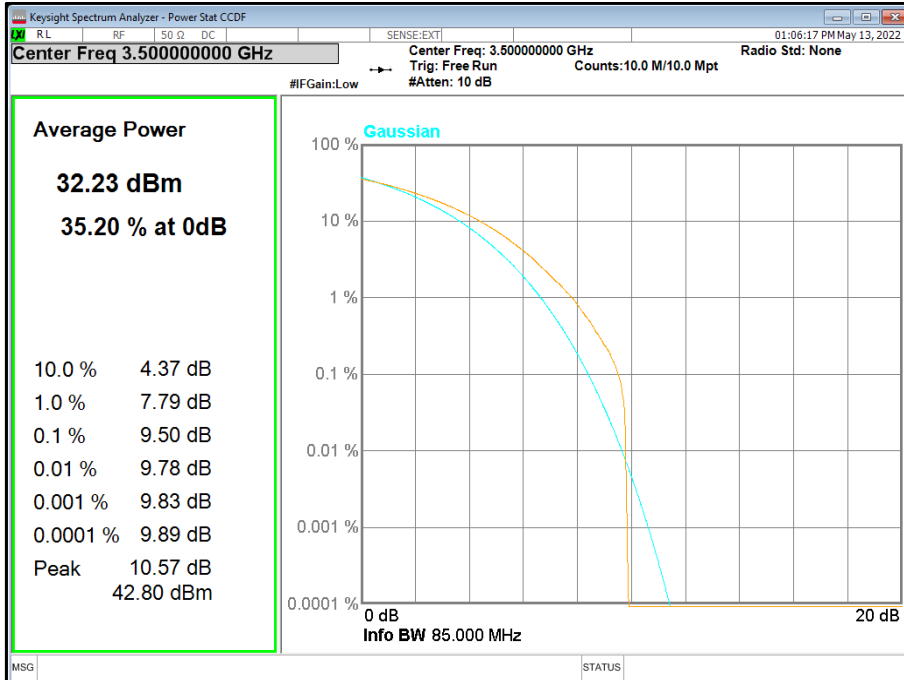


Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position M

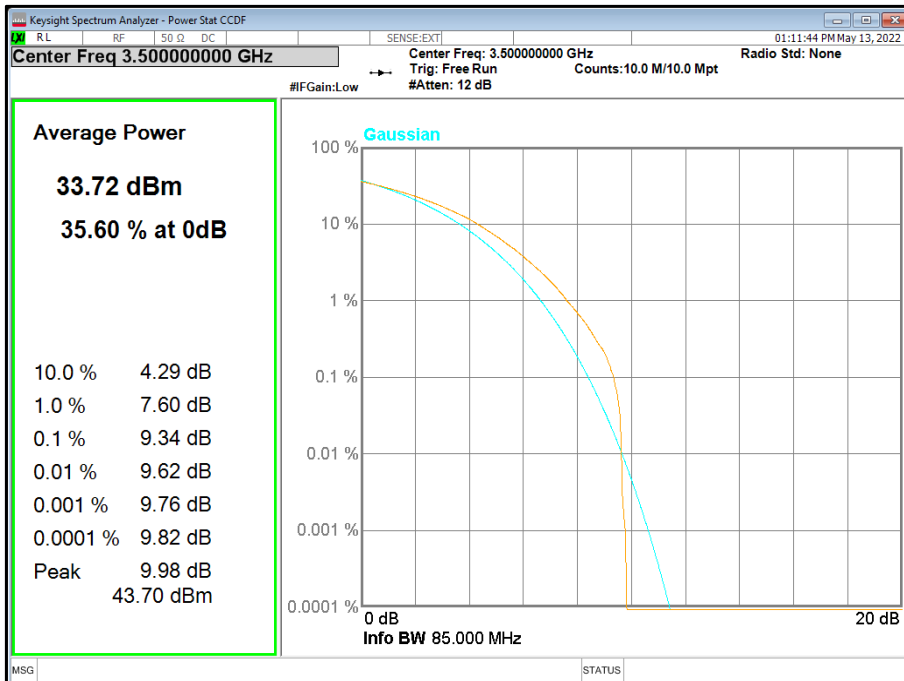




Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position M

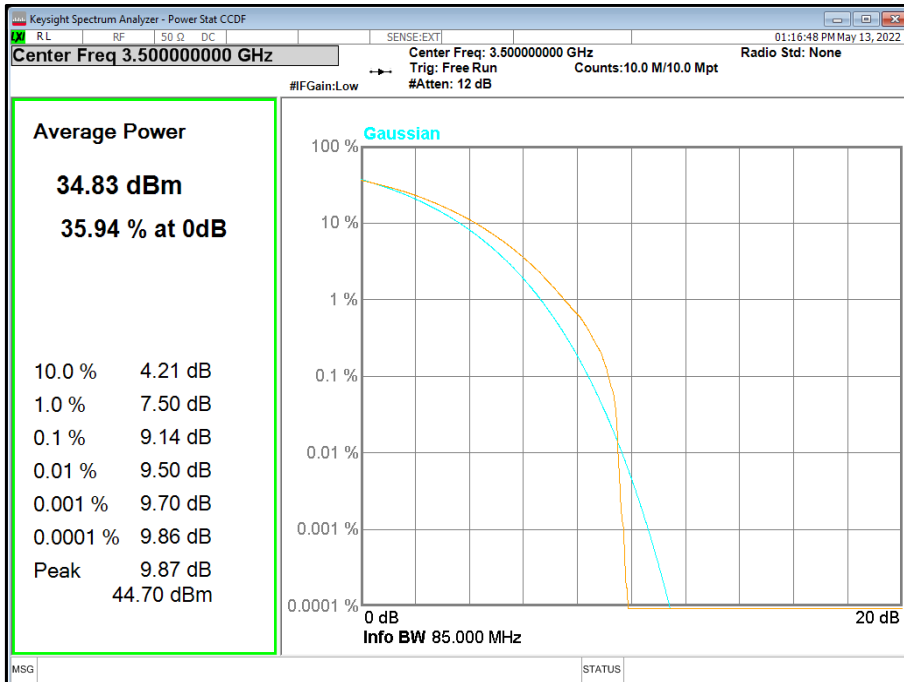


Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position M

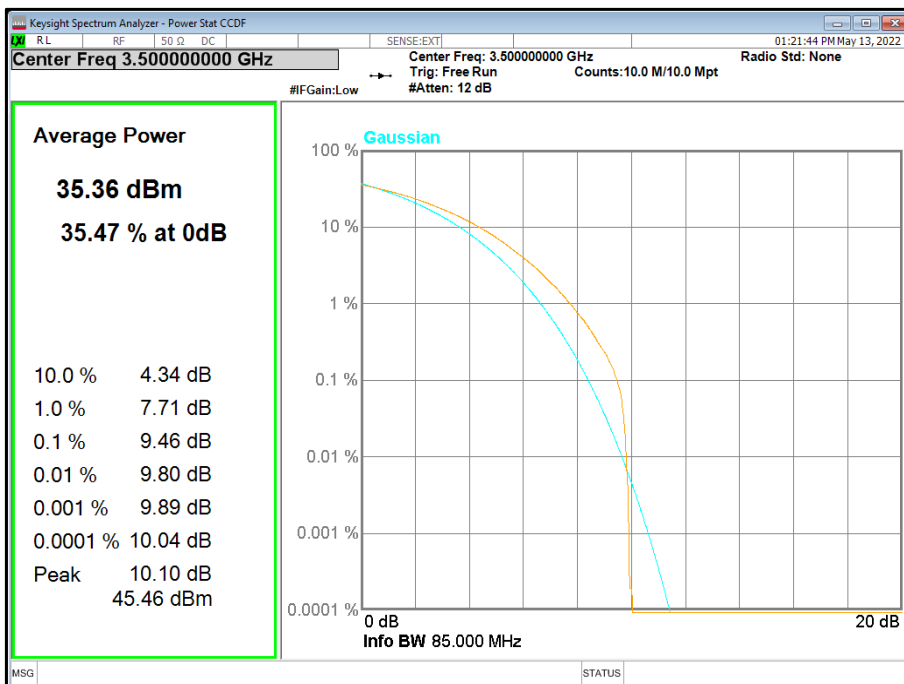




Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position M

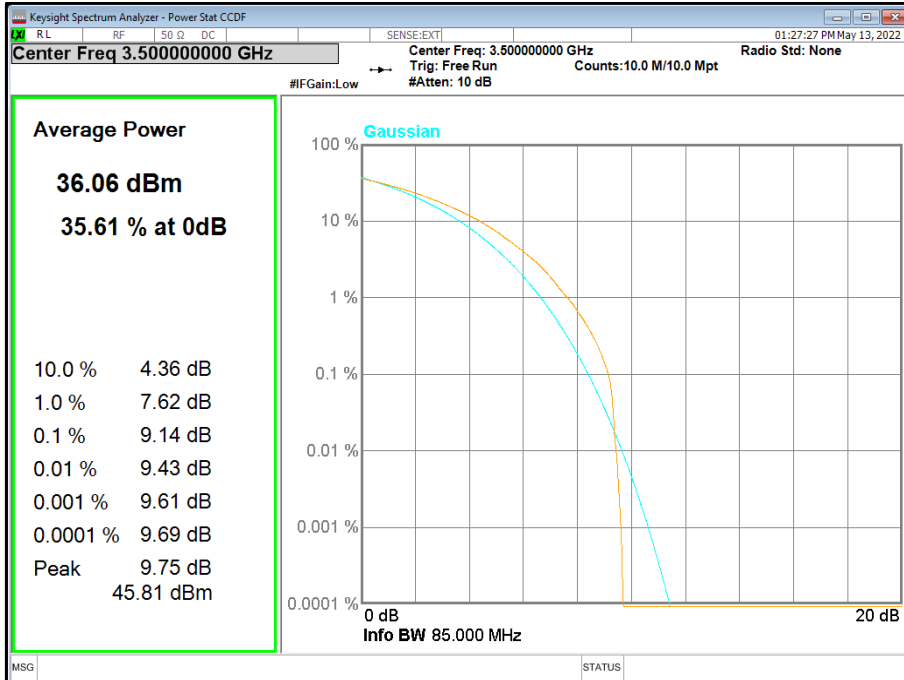


Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position M





**Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position M**



**Configuration 2**

Maximum Output Power 2x27.96,2x30.97,2x32.73 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
62	QPSK	10.0 MHz 30 kHz SCS	-	30.33	18.14
62	QPSK	20.0 MHz 30 kHz SCS	-	33.22	18.15
62	QPSK	30.0 MHz 30 kHz SCS	-	35.21	18.03

**Configuration 3**

Maximum Output Power 3x27.96,3x30.97 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
62	QPSK	10.0 MHz 30 kHz SCS	-	-	32.11
62	QPSK	20.0 MHz 30 kHz SCS	-	-	35.26



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			PAR (dB)	Channel Position B	
				Average Power/PSD	
				dBm	dBm/MHz
0	QPSK	10.00 MHz 30 kHz SCS	9.26	30.95	21.73
1	QPSK	10.0 MHz 30 kHz SCS	9.58	30.60	21.47
2	QPSK	10.0 MHz 30 kHz SCS	9.44	30.87	21.73
3	QPSK	10.0 MHz 30 kHz SCS	9.40	31.03	21.78
4	QPSK	10.0 MHz 30 kHz SCS	9.27	30.89	21.70
5	QPSK	10.0 MHz 30 kHz SCS	9.57	30.82	21.54
6	QPSK	10.0 MHz 30 kHz SCS	9.48	30.96	21.76
7	QPSK	10.0 MHz 30 kHz SCS	9.41	30.52	21.38
8	QPSK	10.0 MHz 30 kHz SCS	9.55	30.42	21.39
9	QPSK	10.0 MHz 30 kHz SCS	9.30	31.01	21.73
10	QPSK	10.0 MHz 30 kHz SCS	9.47	30.50	21.44
11	QPSK	10.0 MHz 30 kHz SCS	9.38	30.79	21.59
12	QPSK	10.0 MHz 30 kHz SCS	9.55	30.85	21.65
13	QPSK	10.0 MHz 30 kHz SCS	9.49	30.88	21.73
14	QPSK	10.0 MHz 30 kHz SCS	9.29	30.49	21.37
15	QPSK	10.0 MHz 30 kHz SCS	9.42	30.65	21.53
16	QPSK	10.0 MHz 30 kHz SCS	9.24	30.71	21.61
17	QPSK	10.0 MHz 30 kHz SCS	9.48	30.73	21.57
18	QPSK	10.0 MHz 30 kHz SCS	9.11	30.82	21.56
19	QPSK	10.0 MHz 30 kHz SCS	9.38	30.89	21.69
20	QPSK	10.0 MHz 30 kHz SCS	9.46	30.91	21.67
21	QPSK	10.0 MHz 30 kHz SCS	9.29	30.82	21.69
22	QPSK	10.0 MHz 30 kHz SCS	9.69	30.70	21.59
23	QPSK	10.0 MHz 30 kHz SCS	9.28	31.17	21.87
24	QPSK	10.0 MHz 30 kHz SCS	9.74	31.09	21.91
25	QPSK	10.0 MHz 30 kHz SCS	9.35	30.85	21.70
26	QPSK	10.0 MHz 30 kHz SCS	9.22	30.85	21.63
27	QPSK	10.0 MHz 30 kHz SCS	9.37	30.86	21.71
28	QPSK	10.0 MHz 30 kHz SCS	9.48	31.07	21.95
29	QPSK	10.0 MHz 30 kHz SCS	9.45	30.98	21.84

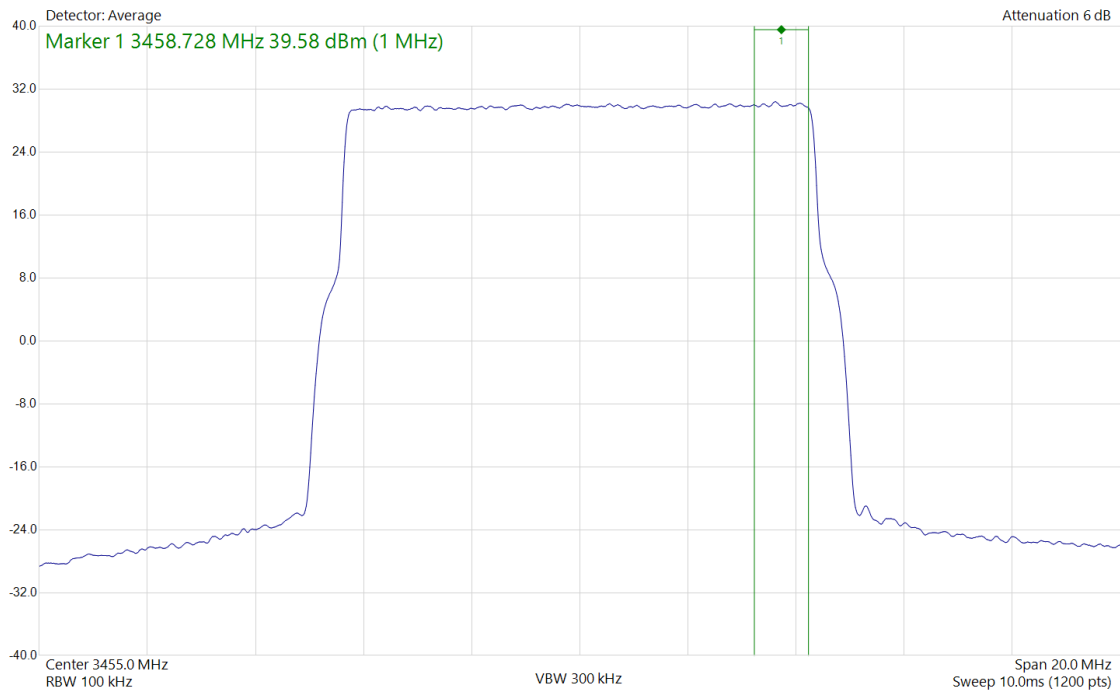


Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position B		
			PAR (dB)	Average Power/PSD	
dBm	dBm				
30	QPSK	10.0 MHz 30 kHz SCS	9.14	31.10	21.93
31	QPSK	10.0 MHz 30 kHz SCS	9.34	31.19	21.90
32	QPSK	10.0 MHz 30 kHz SCS	9.28	31.13	21.86
33	QPSK	10.0 MHz 30 kHz SCS	9.12	30.67	21.48
34	QPSK	10.0 MHz 30 kHz SCS	9.60	30.96	21.79
35	QPSK	10.0 MHz 30 kHz SCS	9.24	30.81	21.63
36	QPSK	10.0 MHz 30 kHz SCS	9.54	31.04	21.83
37	QPSK	10.0 MHz 30 kHz SCS	9.55	30.63	21.45
38	QPSK	10.0 MHz 30 kHz SCS	9.40	31.03	21.92
39	QPSK	10.0 MHz 30 kHz SCS	9.64	30.78	21.58
40	QPSK	10.0 MHz 30 kHz SCS	9.51	30.56	21.40
41	QPSK	10.0 MHz 30 kHz SCS	9.39	30.89	21.83
42	QPSK	10.0 MHz 30 kHz SCS	9.52	30.46	21.28
43	QPSK	10.0 MHz 30 kHz SCS	9.45	30.59	21.34
44	QPSK	10.0 MHz 30 kHz SCS	9.44	30.63	21.45
45	QPSK	10.0 MHz 30 kHz SCS	9.48	30.91	21.66
46	QPSK	10.0 MHz 30 kHz SCS	9.70	30.54	21.42
47	QPSK	10.0 MHz 30 kHz SCS	9.55	30.97	21.64
48	QPSK	10.0 MHz 30 kHz SCS	9.58	30.98	21.75
49	QPSK	10.0 MHz 30 kHz SCS	9.65	30.80	21.57
50	QPSK	10.0 MHz 30 kHz SCS	9.65	30.87	21.70
51	QPSK	10.0 MHz 30 kHz SCS	9.42	30.76	21.66
52	QPSK	10.0 MHz 30 kHz SCS	9.61	30.96	21.79
53	QPSK	10.0 MHz 30 kHz SCS	9.66	30.83	21.64
54	QPSK	10.0 MHz 30 kHz SCS	9.79	30.85	21.71
55	QPSK	10.0 MHz 30 kHz SCS	9.51	30.76	21.61
56	QPSK	10.0 MHz 30 kHz SCS	9.54	31.11	21.79
57	QPSK	10.0 MHz 30 kHz SCS	9.39	31.12	21.84
58	QPSK	10.0 MHz 30 kHz SCS	9.56	31.24	21.97
59	QPSK	10.0 MHz 30 kHz SCS	9.65	31.29	22.01
60	QPSK	10.0 MHz 30 kHz SCS	9.57	31.50	22.25
61	QPSK	10.0 MHz 30 kHz SCS	9.55	31.31	22.11
62	QPSK	10.0 MHz 30 kHz SCS	9.44	31.29	22.13
63	QPSK	10.0 MHz 30 kHz SCS	9.53	31.02	21.83

Remarks

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) a) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectra across the outputs the following plot has been produced using the bin-by bin summing method.



**Calculations:**

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.58	25.5	65.08	3280	65.15

Testing at 100MHz Bandwidth is reported under Channel Position T only as the Bandwidth is equal to the IBW.





Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position B		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
0	QPSK	20.00 MHz 30 kHz SCS	9.51	33.82	21.39
1	QPSK	20.00 MHz 30 kHz SCS	9.34	33.18	20.97
2	QPSK	20.00 MHz 30 kHz SCS	9.40	33.51	21.19
3	QPSK	20.00 MHz 30 kHz SCS	9.48	33.29	21.04
4	QPSK	20.00 MHz 30 kHz SCS	9.37	33.44	21.05
5	QPSK	20.00 MHz 30 kHz SCS	9.13	33.36	20.84
6	QPSK	20.00 MHz 30 kHz SCS	9.65	33.45	21.14
7	QPSK	20.00 MHz 30 kHz SCS	9.43	33.34	20.81
8	QPSK	20.00 MHz 30 kHz SCS	9.31	33.34	20.82
9	QPSK	20.00 MHz 30 kHz SCS	9.28	33.45	21.00
10	QPSK	20.00 MHz 30 kHz SCS	9.28	33.41	20.82
11	QPSK	20.00 MHz 30 kHz SCS	9.36	33.22	20.98
12	QPSK	20.00 MHz 30 kHz SCS	9.38	33.35	21.00
13	QPSK	20.00 MHz 30 kHz SCS	9.41	33.65	21.19
14	QPSK	20.00 MHz 30 kHz SCS	9.25	32.91	20.61
15	QPSK	20.00 MHz 30 kHz SCS	9.22	33.26	21.13
16	QPSK	20.00 MHz 30 kHz SCS	9.16	33.29	21.14
17	QPSK	20.00 MHz 30 kHz SCS	9.24	33.55	21.08
18	QPSK	20.00 MHz 30 kHz SCS	9.41	33.90	21.14
19	QPSK	20.00 MHz 30 kHz SCS	9.32	33.09	21.25
20	QPSK	20.00 MHz 30 kHz SCS	9.38	33.49	21.01
21	QPSK	20.00 MHz 30 kHz SCS	9.49	33.51	21.14
22	QPSK	20.00 MHz 30 kHz SCS	9.19	33.35	21.05
23	QPSK	20.00 MHz 30 kHz SCS	9.53	33.55	21.30
24	QPSK	20.00 MHz 30 kHz SCS	9.38	33.83	21.33
25	QPSK	20.00 MHz 30 kHz SCS	9.24	33.65	21.21
26	QPSK	20.00 MHz 30 kHz SCS	9.44	33.49	21.06
27	QPSK	20.00 MHz 30 kHz SCS	9.51	33.47	21.15
28	QPSK	20.00 MHz 30 kHz SCS	9.54	33.00	21.34
29	QPSK	20.00 MHz 30 kHz SCS	9.45	33.78	21.35
30	QPSK	20.00 MHz 30 kHz SCS	9.41	33.86	21.40
31	QPSK	20.00 MHz 30 kHz SCS	9.44	33.38	21.05
32	QPSK	20.00 MHz 30 kHz SCS	9.37	33.67	21.23
33	QPSK	20.00 MHz 30 kHz SCS	9.34	33.36	20.87
34	QPSK	20.00 MHz 30 kHz SCS	9.45	33.21	21.13
35	QPSK	20.00 MHz 30 kHz SCS	9.36	33.21	21.05
36	QPSK	20.00 MHz 30 kHz SCS	9.42	33.40	21.17
37	QPSK	20.00 MHz 30 kHz SCS	9.66	33.17	20.79
38	QPSK	20.00 MHz 30 kHz SCS	9.47	33.36	21.24
39	QPSK	20.00 MHz 30 kHz SCS	9.58	33.14	20.83
40	QPSK	20.00 MHz 30 kHz SCS	9.38	33.09	20.68
41	QPSK	20.00 MHz 30 kHz SCS	9.23	33.41	21.04
42	QPSK	20.00 MHz 30 kHz SCS	9.26	33.15	20.56
43	QPSK	20.00 MHz 30 kHz SCS	9.65	32.86	20.65
44	QPSK	20.00 MHz 30 kHz SCS	9.26	33.20	20.82
45	QPSK	20.00 MHz 30 kHz SCS	9.39	33.34	21.02
46	QPSK	20.00 MHz 30 kHz SCS	9.29	33.12	20.64
47	QPSK	20.00 MHz 30 kHz SCS	9.40	33.14	21.15
48	QPSK	20.00 MHz 30 kHz SCS	9.32	33.38	21.31
49	QPSK	20.00 MHz 30 kHz SCS	9.12	33.32	20.98



Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position B		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
50	QPSK	20.00 MHz 30 kHz SCS	9.35	33.33	21.28
51	QPSK	20.00 MHz 30 kHz SCS	9.45	33.48	21.09
52	QPSK	20.00 MHz 30 kHz SCS	9.35	33.38	21.21
53	QPSK	20.00 MHz 30 kHz SCS	9.31	33.43	20.96
54	QPSK	20.00 MHz 30 kHz SCS	9.45	33.21	21.12
55	QPSK	20.00 MHz 30 kHz SCS	9.17	33.38	21.08
56	QPSK	20.00 MHz 30 kHz SCS	9.30	33.46	21.24
57	QPSK	20.00 MHz 30 kHz SCS	9.48	33.58	21.06
58	QPSK	20.00 MHz 30 kHz SCS	9.34	33.62	21.22
59	QPSK	20.00 MHz 30 kHz SCS	9.43	33.66	21.04
60	QPSK	20.00 MHz 30 kHz SCS	9.28	33.92	21.60
61	QPSK	20.00 MHz 30 kHz SCS	9.16	33.77	21.36
62	QPSK	20.00 MHz 30 kHz SCS	9.34	33.51	21.29
63	QPSK	20.00 MHz 30 kHz SCS	9.41	33.76	21.3
Summed Total			-	51.48	39.14

Remarks

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) b) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectral maxima across the outputs the following calculation has been made.

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.14	25.5	64.64	3280	65.15



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position B		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
0	QPSK	30.00 MHz 30 kHz SCS	9.30	35.51	21.32
1	QPSK	30.00 MHz 30 kHz SCS	9.49	35.20	21.01
2	QPSK	30.00 MHz 30 kHz SCS	9.49	35.42	21.05
3	QPSK	30.00 MHz 30 kHz SCS	9.38	35.43	21.14
4	QPSK	30.00 MHz 30 kHz SCS	9.21	35.28	21.11
5	QPSK	30.00 MHz 30 kHz SCS	9.53	35.13	20.88
6	QPSK	30.00 MHz 30 kHz SCS	9.64	35.21	21.02
7	QPSK	30.00 MHz 30 kHz SCS	9.00	35.05	20.74
8	QPSK	30.00 MHz 30 kHz SCS	9.20	35.17	20.79
9	QPSK	30.00 MHz 30 kHz SCS	9.54	35.32	20.94
10	QPSK	30.00 MHz 30 kHz SCS	9.20	34.82	20.71
11	QPSK	30.00 MHz 30 kHz SCS	9.36	35.35	20.98
12	QPSK	30.00 MHz 30 kHz SCS	9.34	35.20	20.89
13	QPSK	30.00 MHz 30 kHz SCS	9.36	35.58	21.02
14	QPSK	30.00 MHz 30 kHz SCS	9.08	34.88	20.53
15	QPSK	30.00 MHz 30 kHz SCS	9.26	35.33	21.07
16	QPSK	30.00 MHz 30 kHz SCS	9.19	35.39	21.07
17	QPSK	30.00 MHz 30 kHz SCS	9.53	35.47	21.10
18	QPSK	30.00 MHz 30 kHz SCS	9.20	35.49	21.18
19	QPSK	30.00 MHz 30 kHz SCS	9.37	35.64	21.17
20	QPSK	30.00 MHz 30 kHz SCS	9.39	35.46	21.10
21	QPSK	30.00 MHz 30 kHz SCS	9.44	35.22	21.01
22	QPSK	30.00 MHz 30 kHz SCS	9.22	35.16	21.01
23	QPSK	30.00 MHz 30 kHz SCS	9.34	35.27	20.95
24	QPSK	30.00 MHz 30 kHz SCS	9.32	34.91	20.87
25	QPSK	30.00 MHz 30 kHz SCS	9.46	35.06	20.78
26	QPSK	30.00 MHz 30 kHz SCS	9.21	34.65	20.72
27	QPSK	30.00 MHz 30 kHz SCS	9.36	34.98	20.92
28	QPSK	30.00 MHz 30 kHz SCS	9.34	35.42	21.05
29	QPSK	30.00 MHz 30 kHz SCS	9.43	35.26	21.06
30	QPSK	30.00 MHz 30 kHz SCS	9.40	35.19	21.09
31	QPSK	30.00 MHz 30 kHz SCS	9.33	35.29	21.01
32	QPSK	30.00 MHz 30 kHz SCS	9.45	35.63	21.18
33	QPSK	30.00 MHz 30 kHz SCS	9.40	35.14	20.80
34	QPSK	30.00 MHz 30 kHz SCS	9.41	35.40	21.06
35	QPSK	30.00 MHz 30 kHz SCS	9.32	35.31	21.06
36	QPSK	30.00 MHz 30 kHz SCS	9.40	35.45	21.20
37	QPSK	30.00 MHz 30 kHz SCS	9.26	34.87	20.74
38	QPSK	30.00 MHz 30 kHz SCS	9.35	35.24	21.15
39	QPSK	30.00 MHz 30 kHz SCS	9.31	34.80	20.80
40	QPSK	30.00 MHz 30 kHz SCS	9.40	34.97	20.59
41	QPSK	30.00 MHz 30 kHz SCS	9.27	35.25	21.00
42	QPSK	30.00 MHz 30 kHz SCS	9.28	34.33	20.42
43	QPSK	30.00 MHz 30 kHz SCS	9.37	34.57	20.53
44	QPSK	30.00 MHz 30 kHz SCS	9.28	34.92	20.70
45	QPSK	30.00 MHz 30 kHz SCS	9.42	35.09	20.96
46	QPSK	30.00 MHz 30 kHz SCS	9.27	34.83	20.47
47	QPSK	30.00 MHz 30 kHz SCS	9.39	35.12	21.02
48	QPSK	30.00 MHz 30 kHz SCS	9.33	35.44	21.22
49	QPSK	30.00 MHz 30 kHz SCS	9.39	35.01	20.84



Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position B		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
50	QPSK	30.00 MHz 30 kHz SCS	9.40	35.70	21.06
51	QPSK	30.00 MHz 30 kHz SCS	9.44	35.07	20.90
52	QPSK	30.00 MHz 30 kHz SCS	9.62	35.27	21.02
53	QPSK	30.00 MHz 30 kHz SCS	9.31	34.88	20.74
54	QPSK	30.00 MHz 30 kHz SCS	9.40	35.14	20.94
55	QPSK	30.00 MHz 30 kHz SCS	9.42	35.25	20.92
56	QPSK	30.00 MHz 30 kHz SCS	9.59	35.22	21.13
57	QPSK	30.00 MHz 30 kHz SCS	9.50	35.56	21.05
58	QPSK	30.00 MHz 30 kHz SCS	9.51	35.56	21.23
59	QPSK	30.00 MHz 30 kHz SCS	9.39	35.46	21.00
60	QPSK	30.00 MHz 30 kHz SCS	9.44	35.99	21.58
61	QPSK	30.00 MHz 30 kHz SCS	9.52	35.70	21.30
62	QPSK	30.00 MHz 30 kHz SCS	9.39	35.63	21.25
63	QPSK	30.00 MHz 30 kHz SCS	9.53	35.58	21.40
Summed Total			-	53.31	39.04

Remarks

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) b) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectral maxima across the outputs the following calculation has been made.

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.04	25.5	64.54	3280	65.15



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 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 0-63		Declared Gain	Total EIRP	Rural EIRP Limit	Limit Margin
	dBm	dBm/MHz	dBm	dBm/MHz	dBi	dBm/MHz	dBm/MHz	dBm/MHz	dB		
62	QPSK	50.0 MHz 30 kHz SCS	8.60	37.16	20.57	55.22	38.63	25.5	64.13	65.15	1.02
62	QPSK	60.0 MHz 30 kHz SCS	8.81	37.21	19.72	55.27	37.78	25.5	63.28	65.15	1.87
62	QPSK	70.0 MHz 30 kHz SCS	9.00	37.10	19.01	55.16	37.07	25.5	62.57	65.15	2.58
62	QPSK	80.0 MHz 30 kHz SCS	8.88	37.03	18.49	55.09	36.55	25.5	62.05	65.15	3.10
62	QPSK	90.0 MHz 30 kHz SCS	8.50	37.24	17.99	55.30	36.05	25.5	61.55	65.15	3.60

Remarks

In accordance with FCC KDB 662911 D01 V02r01 E 2) c) for In-Band Power Spectral Density (PSD) Measurements, Measure and add  $10\log(N_{ANT})$ , where N is the Number of outputs the following calculation was made.

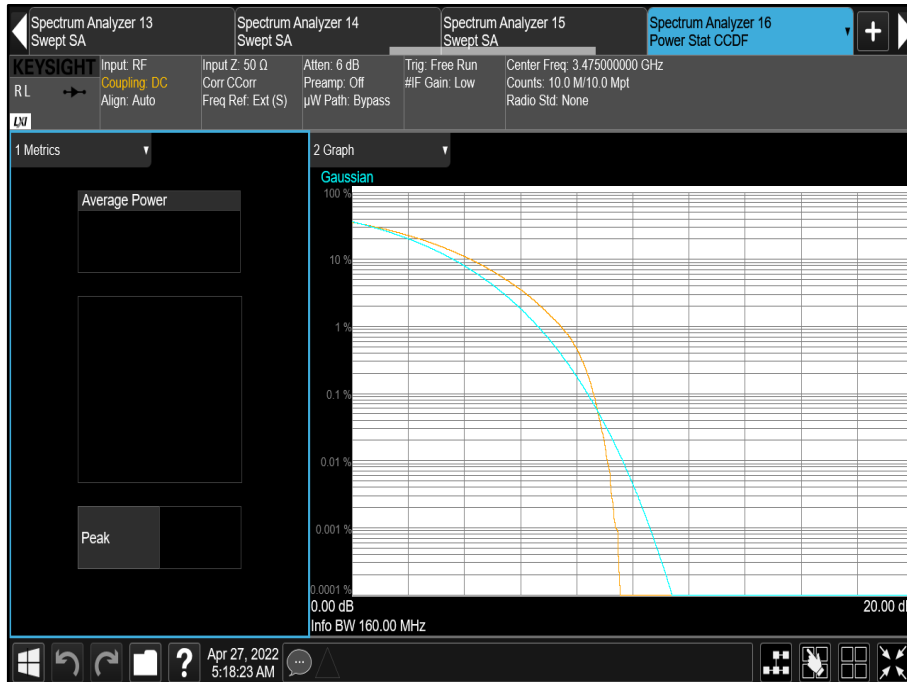
Total Power = Measured Output Power (port x, worst case) +  $10\log(N_{ANT})$

Where NANT refers to the number of Ports.

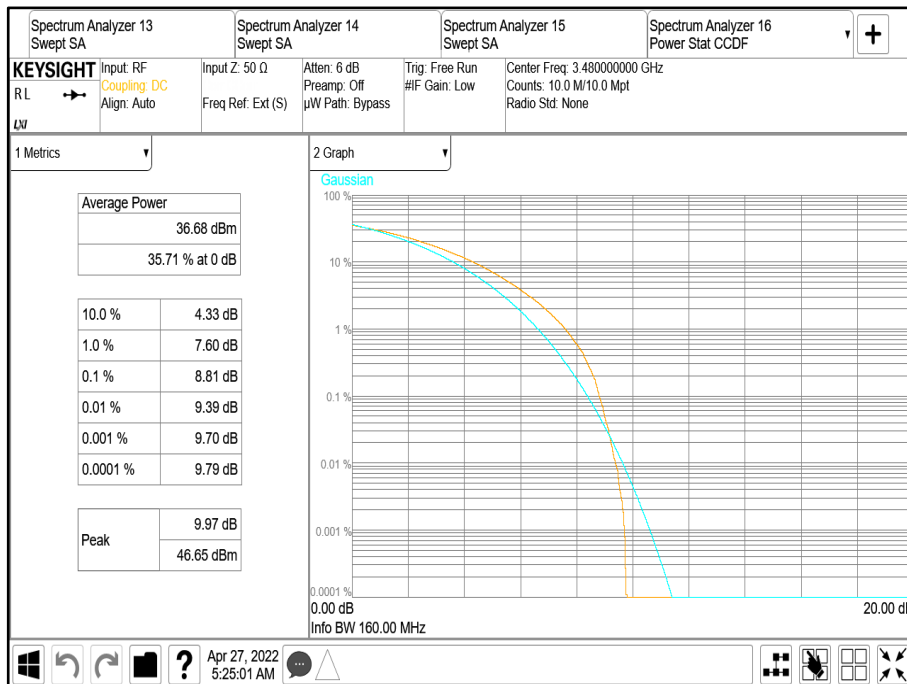
Maximum Total Power (EIRP) = Total Power (port 62) + Antenna Gain +  $10\log(64)$



Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position B

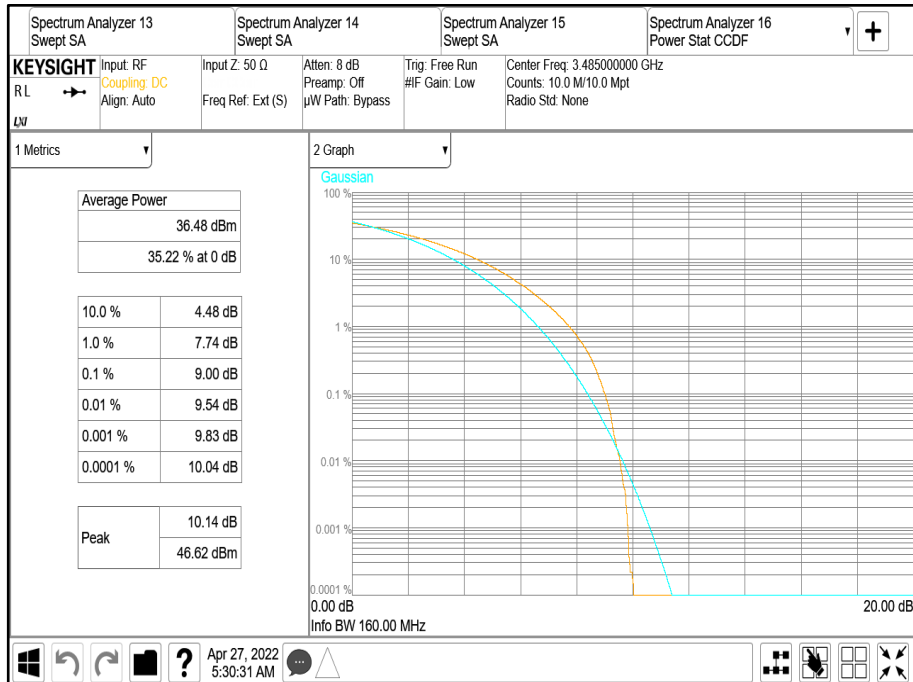


Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position B

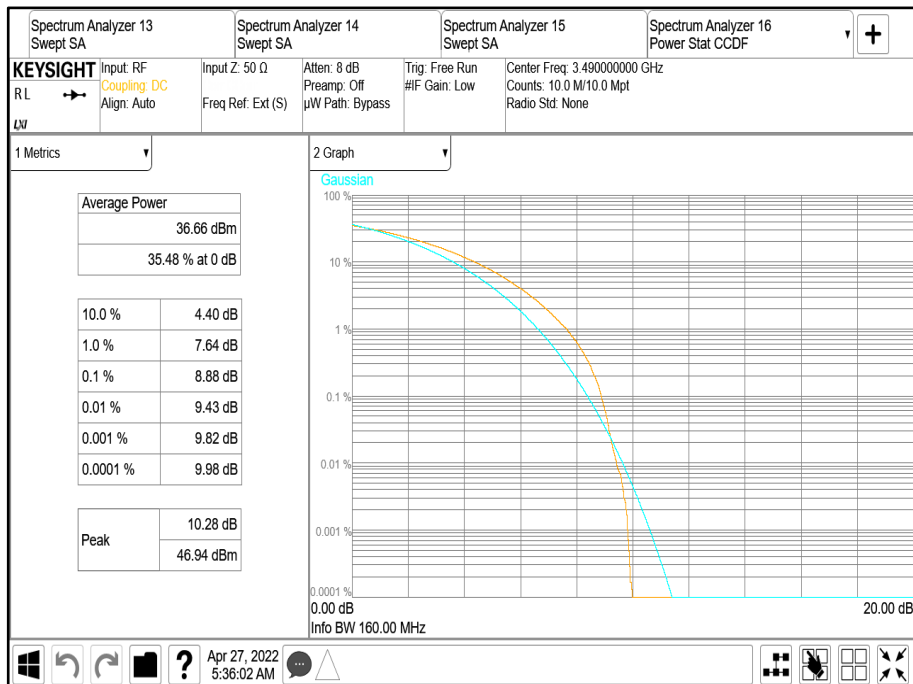




**Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position B**

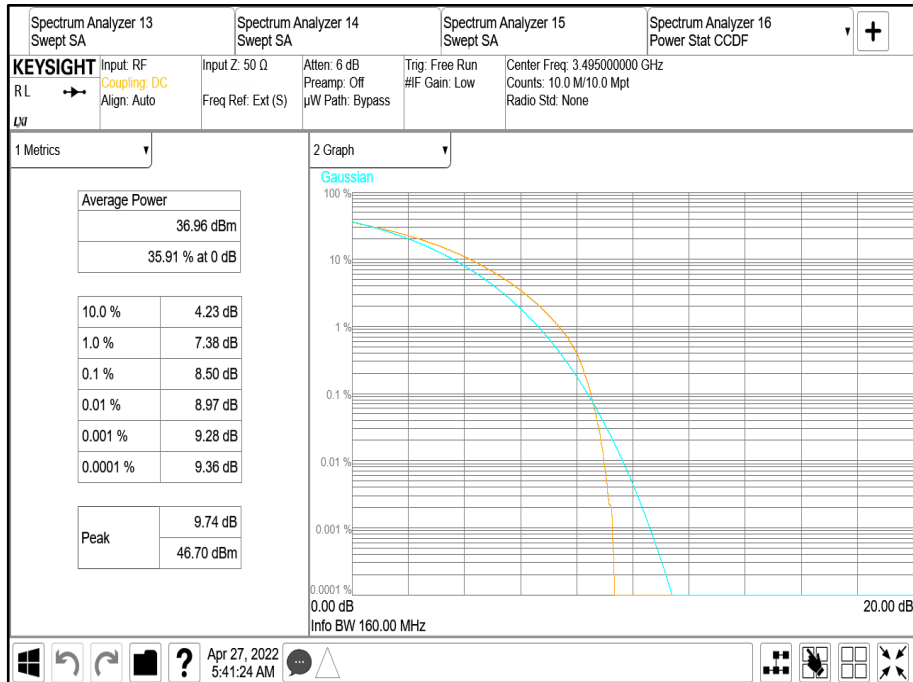


**Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 80.0 MHz 30 kHz SCS - Channel Position B**





Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 90.0 MHz 30 kHz SCS - Channel Position B







Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
0	QPSK	10.0 MHz 30 kHz SCS	9.70	30.27	21.13
1	QPSK	10.0 MHz 30 kHz SCS	9.52	30.45	21.12
2	QPSK	10.0 MHz 30 kHz SCS	9.55	30.53	21.12
3	QPSK	10.0 MHz 30 kHz SCS	9.53	30.59	21.17
4	QPSK	10.0 MHz 30 kHz SCS	9.80	30.64	21.31
5	QPSK	10.0 MHz 30 kHz SCS	9.83	30.78	21.35
6	QPSK	10.0 MHz 30 kHz SCS	9.31	30.66	21.39
7	QPSK	10.0 MHz 30 kHz SCS	9.37	30.65	21.20
8	QPSK	10.0 MHz 30 kHz SCS	9.51	30.40	21.13
9	QPSK	10.0 MHz 30 kHz SCS	9.61	30.55	21.27
10	QPSK	10.0 MHz 30 kHz SCS	9.32	30.55	21.21
11	QPSK	10.0 MHz 30 kHz SCS	9.26	30.71	21.47
12	QPSK	10.0 MHz 30 kHz SCS	9.54	30.76	21.50
13	QPSK	10.0 MHz 30 kHz SCS	9.69	30.82	21.53
14	QPSK	10.0 MHz 30 kHz SCS	9.53	30.51	21.23
15	QPSK	10.0 MHz 30 kHz SCS	9.62	30.99	21.49
16	QPSK	10.0 MHz 30 kHz SCS	9.43	30.60	21.37
17	QPSK	10.0 MHz 30 kHz SCS	9.55	30.88	21.47
18	QPSK	10.0 MHz 30 kHz SCS	9.20	30.79	21.39
19	QPSK	10.0 MHz 30 kHz SCS	9.51	30.75	21.44
20	QPSK	10.0 MHz 30 kHz SCS	9.60	30.52	21.29
21	QPSK	10.0 MHz 30 kHz SCS	9.37	30.89	21.46
22	QPSK	10.0 MHz 30 kHz SCS	9.37	30.55	21.17
23	QPSK	10.0 MHz 30 kHz SCS	9.85	30.97	21.58
24	QPSK	10.0 MHz 30 kHz SCS	9.50	30.56	21.21
25	QPSK	10.0 MHz 30 kHz SCS	9.52	30.62	21.22
26	QPSK	10.0 MHz 30 kHz SCS	9.23	30.72	21.40
27	QPSK	10.0 MHz 30 kHz SCS	9.94	30.84	21.51
28	QPSK	10.0 MHz 30 kHz SCS	9.38	30.83	21.43
29	QPSK	10.0 MHz 30 kHz SCS	9.55	30.69	21.30
30	QPSK	10.0 MHz 30 kHz SCS	9.62	30.57	21.29
31	QPSK	10.0 MHz 30 kHz SCS	9.70	30.64	21.37
32	QPSK	10.0 MHz 30 kHz SCS	9.53	30.68	21.37
33	QPSK	10.0 MHz 30 kHz SCS	9.52	30.48	21.01
34	QPSK	10.0 MHz 30 kHz SCS	9.37	30.80	21.46
35	QPSK	10.0 MHz 30 kHz SCS	9.40	30.54	21.15
36	QPSK	10.0 MHz 30 kHz SCS	9.65	30.91	21.55
37	QPSK	10.0 MHz 30 kHz SCS	9.38	30.46	21.10
38	QPSK	10.0 MHz 30 kHz SCS	9.40	30.61	21.26
39	QPSK	10.0 MHz 30 kHz SCS	9.64	30.47	21.11
40	QPSK	10.0 MHz 30 kHz SCS	9.75	30.27	20.98
41	QPSK	10.0 MHz 30 kHz SCS	9.76	30.91	21.52
42	QPSK	10.0 MHz 30 kHz SCS	9.53	30.27	20.92
43	QPSK	10.0 MHz 30 kHz SCS	9.38	30.41	21.04
44	QPSK	10.0 MHz 30 kHz SCS	9.60	30.50	21.14
45	QPSK	10.0 MHz 30 kHz SCS	9.62	30.83	21.46
46	QPSK	10.0 MHz 30 kHz SCS	9.50	30.26	21.02
47	QPSK	10.0 MHz 30 kHz SCS	9.59	30.89	21.53
48	QPSK	10.0 MHz 30 kHz SCS	9.40	30.97	21.64
49	QPSK	10.0 MHz 30 kHz SCS	9.56	30.40	21.21

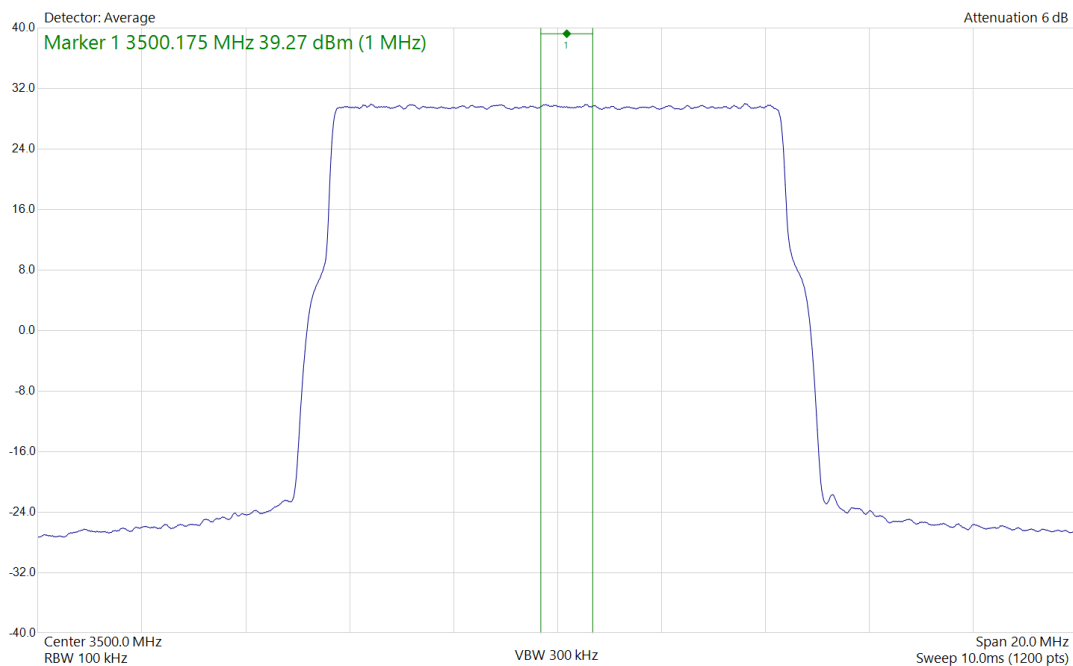


Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm				
50	QPSK	10.0 MHz 30 kHz SCS	9.53	30.96	21.51
51	QPSK	10.0 MHz 30 kHz SCS	9.40	30.87	21.48
52	QPSK	10.0 MHz 30 kHz SCS	9.77	30.84	21.41
53	QPSK	10.0 MHz 30 kHz SCS	9.21	30.61	21.19
54	QPSK	10.0 MHz 30 kHz SCS	9.46	30.74	21.40
55	QPSK	10.0 MHz 30 kHz SCS	9.29	30.66	21.38
56	QPSK	10.0 MHz 30 kHz SCS	9.51	30.74	21.38
57	QPSK	10.0 MHz 30 kHz SCS	9.48	30.78	21.44
58	QPSK	10.0 MHz 30 kHz SCS	9.58	30.92	21.44
59	QPSK	10.0 MHz 30 kHz SCS	9.43	30.84	21.52
60	QPSK	10.0 MHz 30 kHz SCS	9.53	31.37	21.94
61	QPSK	10.0 MHz 30 kHz SCS	9.61	30.98	21.62
62	QPSK	10.0 MHz 30 kHz SCS	9.43	31.17	21.71
63	QPSK	10.0 MHz 30 kHz SCS	9.65	30.86	21.51

**Remarks**

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) a) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectra across the outputs the following plot has been produced using the bin-by bin summing method.



**Calculations:**

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.27	25.5	64.77	3280	65.15



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position T		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
0	QPSK	10.0 MHz 30 kHz SCS	9.54	30.76	21.47
1	QPSK	10.0 MHz 30 kHz SCS	9.54	30.46	21.31
2	QPSK	10.0 MHz 30 kHz SCS	9.40	30.83	21.56
3	QPSK	10.0 MHz 30 kHz SCS	9.42	30.74	21.56
4	QPSK	10.0 MHz 30 kHz SCS	9.22	30.79	21.44
5	QPSK	10.0 MHz 30 kHz SCS	9.66	30.64	21.48
6	QPSK	10.0 MHz 30 kHz SCS	9.31	30.96	21.58
7	QPSK	10.0 MHz 30 kHz SCS	9.80	30.58	21.43
8	QPSK	10.0 MHz 30 kHz SCS	9.30	30.78	21.55
9	QPSK	10.0 MHz 30 kHz SCS	9.45	30.79	21.56
10	QPSK	10.0 MHz 30 kHz SCS	9.18	30.83	21.60
11	QPSK	10.0 MHz 30 kHz SCS	9.39	30.97	21.66
12	QPSK	10.0 MHz 30 kHz SCS	9.59	30.88	21.70
13	QPSK	10.0 MHz 30 kHz SCS	9.39	31.00	21.63
14	QPSK	10.0 MHz 30 kHz SCS	9.42	30.75	21.49
15	QPSK	10.0 MHz 30 kHz SCS	9.49	30.91	21.60
16	QPSK	10.0 MHz 30 kHz SCS	9.46	31.15	21.86
17	QPSK	10.0 MHz 30 kHz SCS	9.53	31.03	21.77
18	QPSK	10.0 MHz 30 kHz SCS	9.49	31.05	21.81
19	QPSK	10.0 MHz 30 kHz SCS	9.19	30.89	21.57
20	QPSK	10.0 MHz 30 kHz SCS	9.40	30.90	21.68
21	QPSK	10.0 MHz 30 kHz SCS	9.47	30.90	21.71
22	QPSK	10.0 MHz 30 kHz SCS	9.42	30.96	21.56
23	QPSK	10.0 MHz 30 kHz SCS	9.76	30.96	21.78
24	QPSK	10.0 MHz 30 kHz SCS	9.65	30.96	21.75
25	QPSK	10.0 MHz 30 kHz SCS	9.43	30.92	21.63
26	QPSK	10.0 MHz 30 kHz SCS	9.49	30.88	21.57
27	QPSK	10.0 MHz 30 kHz SCS	9.61	30.82	21.63
28	QPSK	10.0 MHz 30 kHz SCS	9.28	31.25	22.01
29	QPSK	10.0 MHz 30 kHz SCS	9.41	30.97	21.74
30	QPSK	10.0 MHz 30 kHz SCS	9.45	31.13	21.87
31	QPSK	10.0 MHz 30 kHz SCS	9.55	30.85	21.68
32	QPSK	10.0 MHz 30 kHz SCS	9.48	31.01	21.73
33	QPSK	10.0 MHz 30 kHz SCS	9.44	30.65	21.35
34	QPSK	10.0 MHz 30 kHz SCS	9.62	30.98	21.81
35	QPSK	10.0 MHz 30 kHz SCS	9.35	30.66	21.47
36	QPSK	10.0 MHz 30 kHz SCS	9.55	31.06	21.77
37	QPSK	10.0 MHz 30 kHz SCS	9.23	30.47	21.34
38	QPSK	10.0 MHz 30 kHz SCS	9.38	30.79	21.61
39	QPSK	10.0 MHz 30 kHz SCS	9.41	30.78	21.54
40	QPSK	10.0 MHz 30 kHz SCS	9.58	30.55	21.34
41	QPSK	10.0 MHz 30 kHz SCS	9.37	30.85	21.61
42	QPSK	10.0 MHz 30 kHz SCS	9.53	30.40	21.20
43	QPSK	10.0 MHz 30 kHz SCS	9.26	30.45	21.30
44	QPSK	10.0 MHz 30 kHz SCS	9.29	30.80	21.41
45	QPSK	10.0 MHz 30 kHz SCS	9.45	30.86	21.57
46	QPSK	10.0 MHz 30 kHz SCS	9.27	30.38	21.15
47	QPSK	10.0 MHz 30 kHz SCS	9.44	30.88	21.58
48	QPSK	10.0 MHz 30 kHz SCS	9.51	31.06	21.76
49	QPSK	10.0 MHz 30 kHz SCS	9.24	30.81	21.50

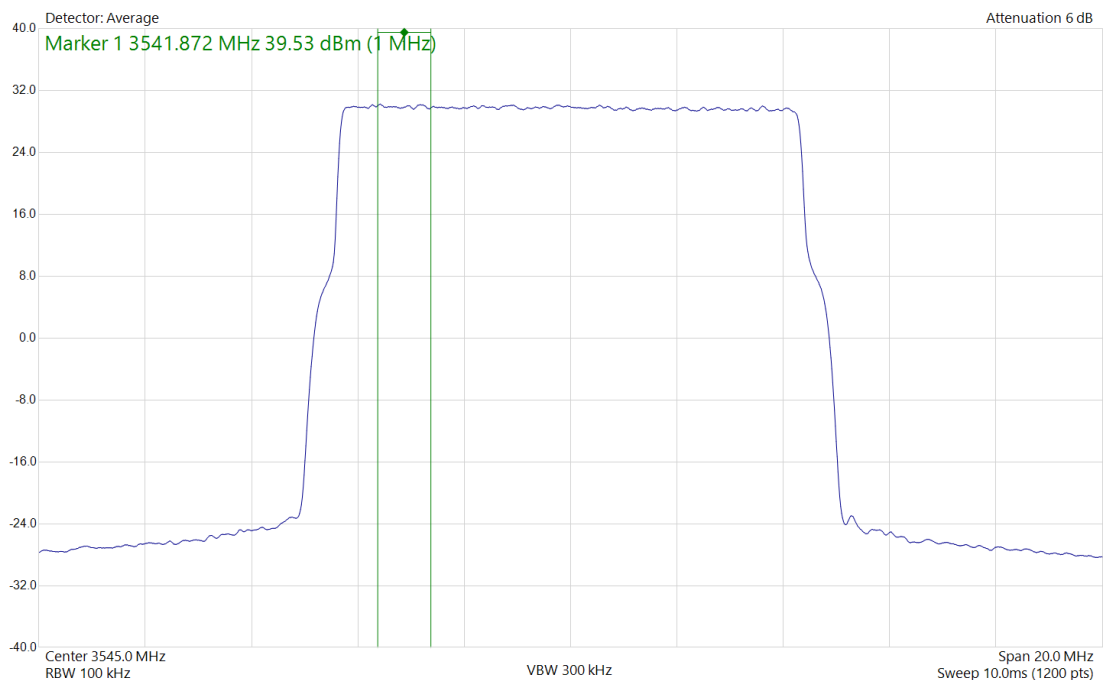


Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position T		
			PAR (dB)	Average Power/PSD	
dBm	dBm				
50	QPSK	10.0 MHz 30 kHz SCS	9.61	31.05	21.75
51	QPSK	10.0 MHz 30 kHz SCS	9.38	31.01	21.64
52	QPSK	10.0 MHz 30 kHz SCS	9.59	30.95	21.68
53	QPSK	10.0 MHz 30 kHz SCS	9.44	30.73	21.49
54	QPSK	10.0 MHz 30 kHz SCS	9.71	30.68	21.47
55	QPSK	10.0 MHz 30 kHz SCS	9.15	30.70	21.45
56	QPSK	10.0 MHz 30 kHz SCS	9.61	31.08	21.86
57	QPSK	10.0 MHz 30 kHz SCS	9.55	31.05	21.75
58	QPSK	10.0 MHz 30 kHz SCS	9.54	31.08	21.81
59	QPSK	10.0 MHz 30 kHz SCS	9.28	31.13	21.82
60	QPSK	10.0 MHz 30 kHz SCS	9.45	31.47	22.24
61	QPSK	10.0 MHz 30 kHz SCS	9.59	31.23	22.06
62	QPSK	10.0 MHz 30 kHz SCS	9.44	31.27	22.13
63	QPSK	10.0 MHz 30 kHz SCS	9.45	31.16	21.93

**Remarks**

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) a) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectra across the outputs the following plot has been produced using the bin-by bin summing method.



**Calculations:**

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.53	25.5	65.03	3280	65.15



Configuration 4

Maximum Output Power 33.98 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 0-63		Declared Gain	Total EIRP	Rural EIRP Limit	Limit Margin
dBm	dBm/MHz	dBm		dBm/MHz							
62	QPSK	20.0 MHz 30 kHz SCS	9.28	33.58	21.38	51.64	39.44	25.50	64.94	65.15	0.21

Remarks

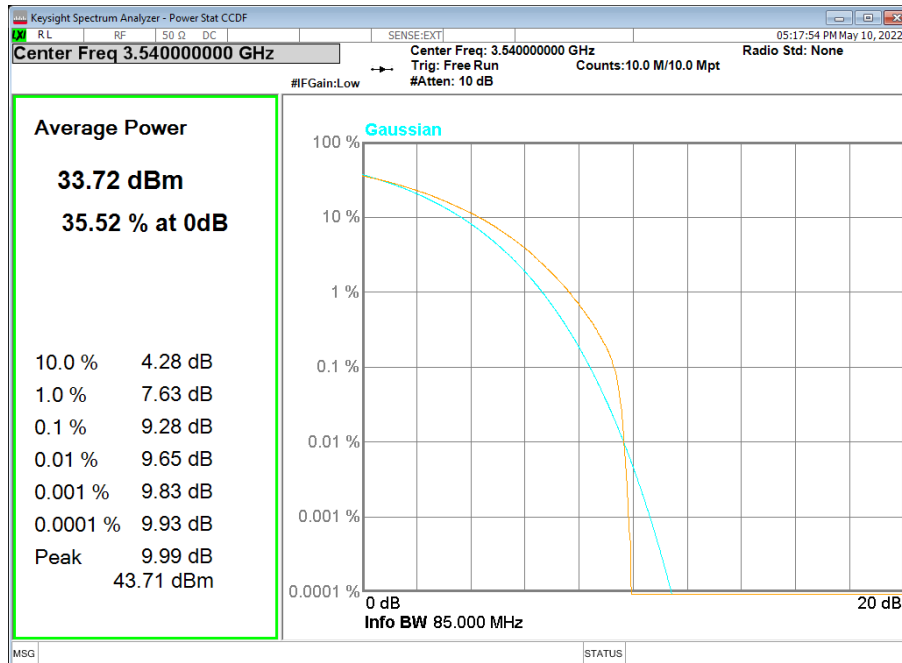
In accordance with FCC KDB 662911 D01 V02r01 E 2) c) for In-Band Power Spectral Density (PSD) Measurements, Measure and add  $10\log(N_{ANT})$ , where N is the Number of outputs the following calculation was made.

Total Power = Measured Output Power (port x, worst case) +  $10\log(N_{ANT})$

Where NANT refers to the number of Ports.

Maximum Total Power (EIRP) = Total Power (port 62) + Antenna Gain +  $10\log(64)$

Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position T





Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position T		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
0	QPSK	30.00 MHz 30 kHz SCS	9.23	35.21	21.24
1	QPSK	30.00 MHz 30 kHz SCS	9.28	35.51	20.96
2	QPSK	30.00 MHz 30 kHz SCS	9.31	35.72	21.28
3	QPSK	30.00 MHz 30 kHz SCS	9.44	35.24	21.14
4	QPSK	30.00 MHz 30 kHz SCS	9.34	35.52	21.18
5	QPSK	30.00 MHz 30 kHz SCS	9.36	35.37	21.12
6	QPSK	30.00 MHz 30 kHz SCS	9.47	35.62	21.23
7	QPSK	30.00 MHz 30 kHz SCS	9.29	35.31	21.03
8	QPSK	30.00 MHz 30 kHz SCS	9.34	35.06	21.10
9	QPSK	30.00 MHz 30 kHz SCS	9.34	35.47	21.16
10	QPSK	30.00 MHz 30 kHz SCS	9.26	35.25	20.98
11	QPSK	30.00 MHz 30 kHz SCS	9.34	35.20	21.11
12	QPSK	30.00 MHz 30 kHz SCS	9.43	35.48	21.38
13	QPSK	30.00 MHz 30 kHz SCS	9.54	35.31	21.26
14	QPSK	30.00 MHz 30 kHz SCS	9.45	35.12	20.95
15	QPSK	30.00 MHz 30 kHz SCS	9.44	35.29	21.21
16	QPSK	30.00 MHz 30 kHz SCS	9.31	35.79	21.27
17	QPSK	30.00 MHz 30 kHz SCS	9.41	35.72	21.29
18	QPSK	30.00 MHz 30 kHz SCS	9.36	35.49	21.41
19	QPSK	30.00 MHz 30 kHz SCS	9.43	35.68	21.44
20	QPSK	30.00 MHz 30 kHz SCS	9.40	35.59	21.39
21	QPSK	30.00 MHz 30 kHz SCS	9.34	35.56	21.46
22	QPSK	30.00 MHz 30 kHz SCS	9.24	35.48	21.26
23	QPSK	30.00 MHz 30 kHz SCS	9.34	35.52	21.50
24	QPSK	30.00 MHz 30 kHz SCS	9.38	35.79	21.52
25	QPSK	30.00 MHz 30 kHz SCS	9.32	35.52	21.32
26	QPSK	30.00 MHz 30 kHz SCS	9.33	35.37	21.42
27	QPSK	30.00 MHz 30 kHz SCS	9.28	35.83	21.42
28	QPSK	30.00 MHz 30 kHz SCS	9.43	35.79	21.63
29	QPSK	30.00 MHz 30 kHz SCS	9.28	35.72	21.49
30	QPSK	30.00 MHz 30 kHz SCS	9.18	35.53	21.55
31	QPSK	30.00 MHz 30 kHz SCS	9.40	35.41	21.46
32	QPSK	30.00 MHz 30 kHz SCS	9.21	35.60	21.38
33	QPSK	30.00 MHz 30 kHz SCS	9.38	35.09	20.89
34	QPSK	30.00 MHz 30 kHz SCS	9.42	35.74	21.47
35	QPSK	30.00 MHz 30 kHz SCS	9.44	35.32	21.15
36	QPSK	30.00 MHz 30 kHz SCS	9.39	35.66	21.33
37	QPSK	30.00 MHz 30 kHz SCS	9.32	35.17	20.94
38	QPSK	30.00 MHz 30 kHz SCS	9.53	35.70	21.44
39	QPSK	30.00 MHz 30 kHz SCS	9.49	35.07	20.95
40	QPSK	30.00 MHz 30 kHz SCS	9.28	35.10	20.88
41	QPSK	30.00 MHz 30 kHz SCS	9.25	35.59	21.28
42	QPSK	30.00 MHz 30 kHz SCS	9.29	34.99	20.69
43	QPSK	30.00 MHz 30 kHz SCS	9.37	35.05	20.84
44	QPSK	30.00 MHz 30 kHz SCS	9.48	35.29	21.09
45	QPSK	30.00 MHz 30 kHz SCS	9.31	35.13	21.21
46	QPSK	30.00 MHz 30 kHz SCS	9.41	34.77	20.68
47	QPSK	30.00 MHz 30 kHz SCS	9.59	35.75	21.37
48	QPSK	30.00 MHz 30 kHz SCS	9.28	35.56	21.48
49	QPSK	30.00 MHz 30 kHz SCS	9.33	35.37	21.04



Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position T		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
50	QPSK	30.00 MHz 30 kHz SCS	9.41	35.64	21.25
51	QPSK	30.00 MHz 30 kHz SCS	9.35	35.47	21.18
52	QPSK	30.00 MHz 30 kHz SCS	9.35	35.51	21.25
53	QPSK	30.00 MHz 30 kHz SCS	9.54	35.24	21.09
54	QPSK	30.00 MHz 30 kHz SCS	9.36	35.52	21.05
55	QPSK	30.00 MHz 30 kHz SCS	9.40	35.38	21.13
56	QPSK	30.00 MHz 30 kHz SCS	9.39	35.81	21.50
57	QPSK	30.00 MHz 30 kHz SCS	9.32	35.29	21.10
58	QPSK	30.00 MHz 30 kHz SCS	9.22	35.61	21.42
59	QPSK	30.00 MHz 30 kHz SCS	9.51	35.19	21.31
60	QPSK	30.00 MHz 30 kHz SCS	9.29	35.85	21.69
61	QPSK	30.00 MHz 30 kHz SCS	9.59	35.56	21.50
62	QPSK	30.00 MHz 30 kHz SCS	9.47	35.98	21.66
63	QPSK	30.00 MHz 30 kHz SCS	9.38	35.89	21.60
Summed Total			-	53.53	39.32

Remarks

Plot data performance for all transmitter ports are on file and available on request.

In accordance with FCC KDB 662911 D01 V02r01 E 2) b) for In-Band Power Spectral Density (PSD) Measurements, Measure and sum the spectral maxima across the outputs the following calculation has been made.

Maximum Total Power (EIRP) = Summed Power on all 64 Ports + Antenna Gain.

Summed PSD (dBm/MHz)	Maximum Antenna gain (dBi)	Maximum Total EIRP (dBm/MHz)	EIRP Limit (W/MHz)	EIRP Limit (dBm/MHz)
39.32	25.5	64.82	3280	65.15



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD								
			PAR (dB)	Average Power/PSD		Total Power Ports 0-63		Declared Gain	Total EIRP	Rural EIRP Limit	Limit Margin
				dBm	dBm/MHz	dBm	dBm/MHz				
62	QPSK	50.0 MHz 30 kHz SCS	8.65	37.15	20.83	55.21	38.89	25.50	64.39	65.15	0.76
62	QPSK	60.0 MHz 30 kHz SCS	8.89	37.33	19.94	55.39	38.00	25.50	63.50	65.15	1.65
62	QPSK	70.0 MHz 30 kHz SCS	8.58	37.26	19.23	55.32	37.29	25.50	62.79	65.15	2.36
62	QPSK	80.0 MHz 30 kHz SCS	8.66	37.37	18.56	55.43	36.62	25.50	62.12	65.15	3.03
62	QPSK	90.0 MHz 30 kHz SCS	8.88	37.00	18.04	55.06	36.10	25.50	61.60	65.15	3.55
62	QPSK	100.0 MHz 30 kHz SCS	8.84	37.17	17.41	55.23	35.47	25.50	60.97	65.15	4.18

Remarks

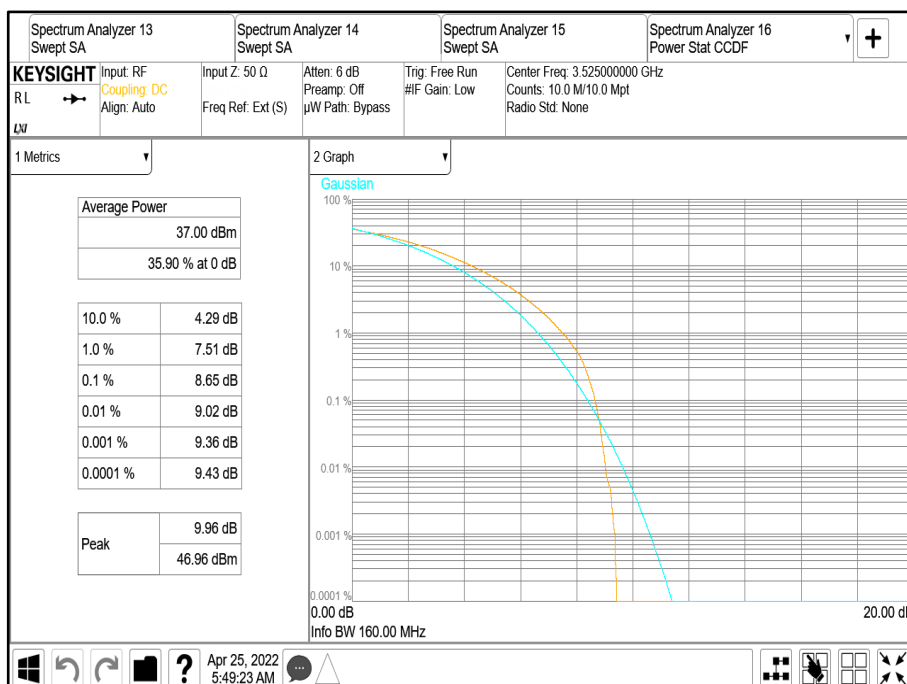
In accordance with FCC KDB 662911 D01 V02r01 E 2) c) for In-Band Power Spectral Density (PSD) Measurements, Measure and add  $10\log(N_{ANT})$ , where N is the Number of outputs the following calculation was made.

Total Power = Measured Output Power (port x, worst case) +  $10\log(N_{ANT})$

Where NANT refers to the number of Ports.

Maximum Total Power (EIRP) = Total Power (port 62) + Antenna Gain +  $10\log(64)$

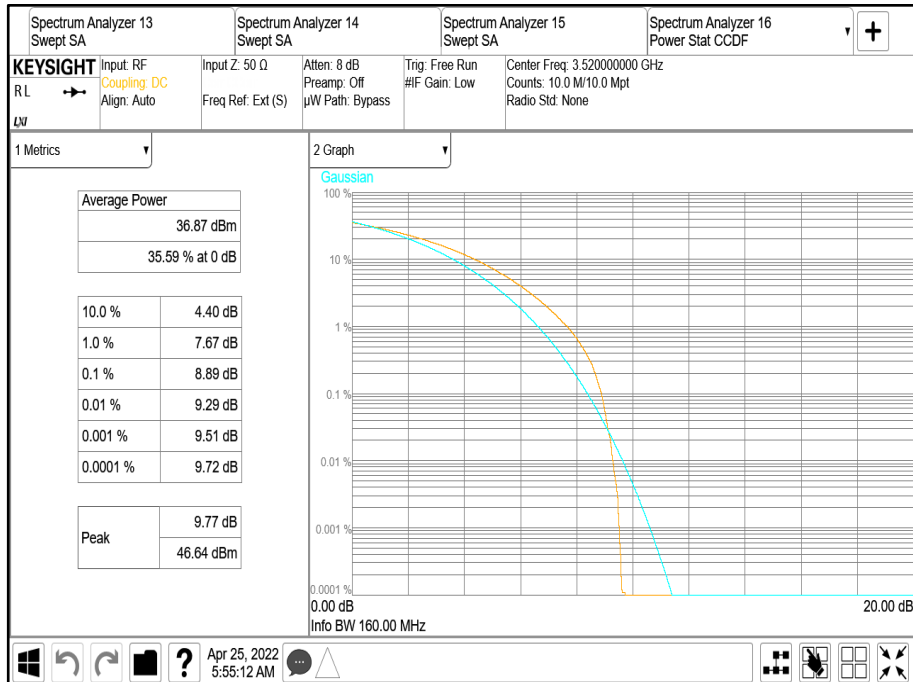
Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position T



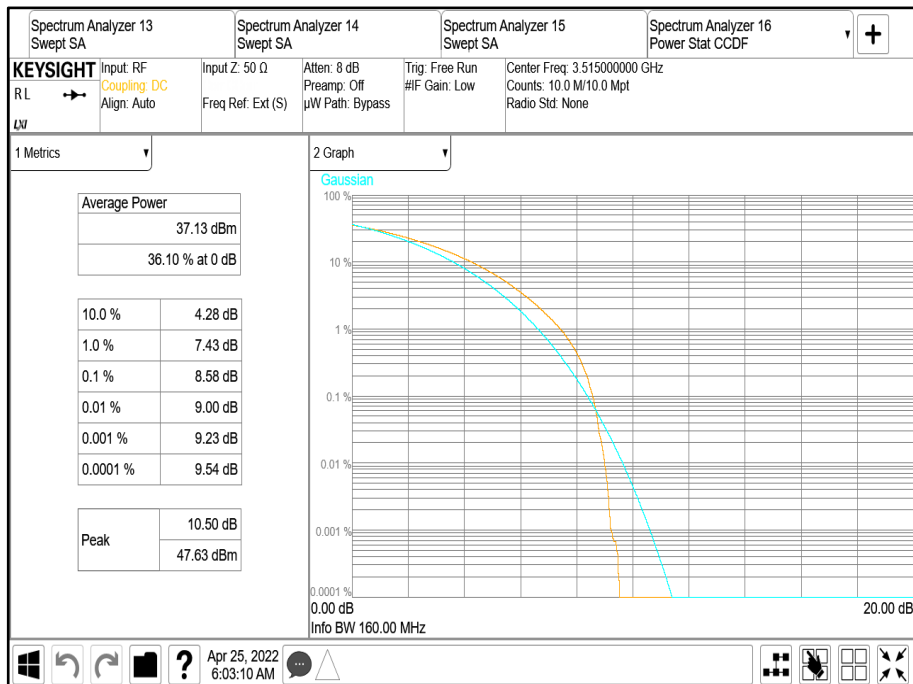




**Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position T**

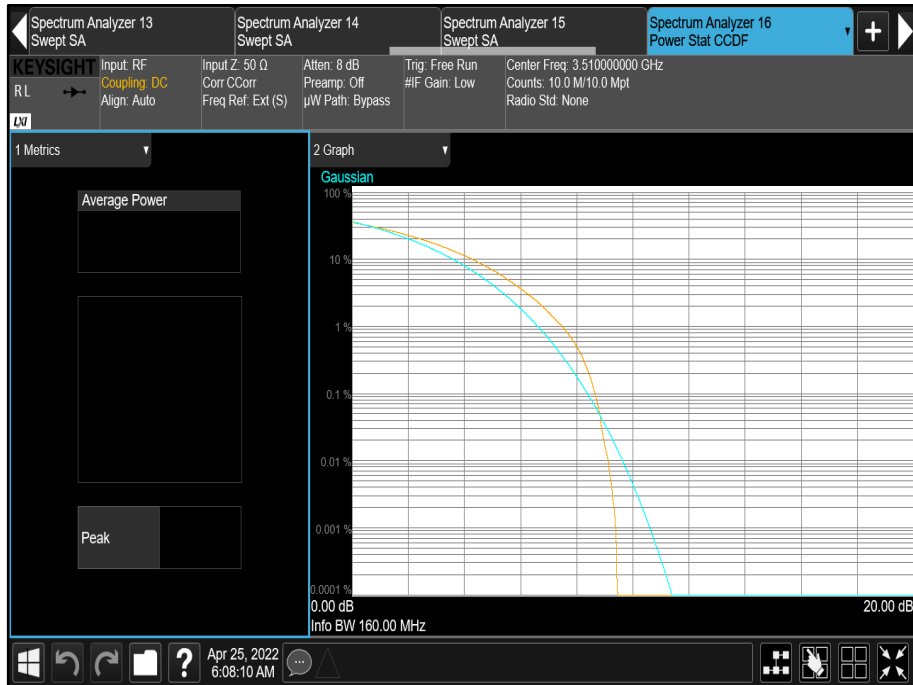


**Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position T**

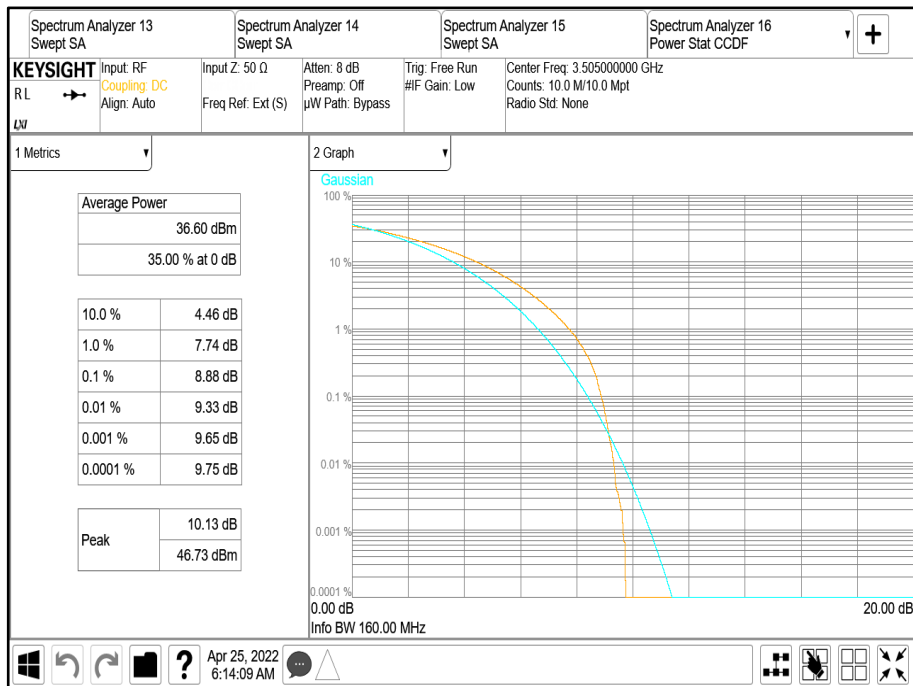




Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 80.0 MHz 30 kHz SCS - Channel Position T

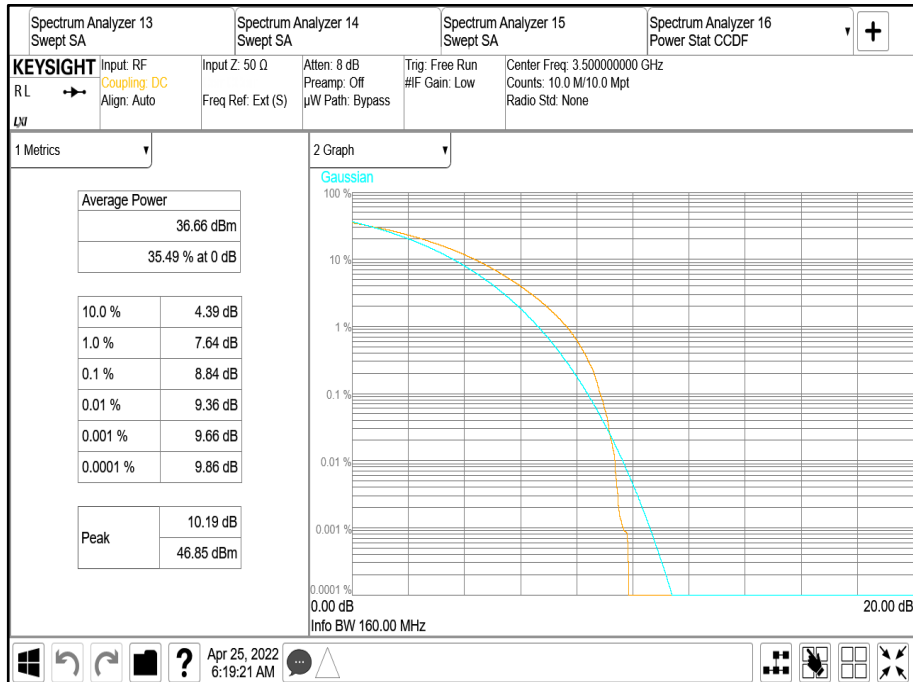


Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 90.0 MHz 30 kHz SCS - Channel Position T





Antenna 62 - NR Modulation QPSK - NR Carrier Bandwidth 100.0 MHz 30 kHz SCS - Channel Position T



Maximum Total Power (EIRP) = Total Power (port 62) + Antenna Gain +10log(64)



Configuration 5

Maximum Output Power 2x30.97,4x(2x33.98) dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
62	QPSK	10.0 MHz 30 kHz SCS	-	33.48	21.21
62	QPSK	20.0 MHz 30 kHz SCS	-	36.40	21.11
62	QPSK	30.0 MHz 30 kHz SCS	-	36.53	19.35
62	QPSK	40.0 MHz 30 kHz SCS	-	36.70	18.07
62	QPSK	50.0 MHz 30 kHz SCS	-	36.67	17.07

Configuration 6

Maximum Output Power 3x30.97,2x(3x32.22) dBm

Antenna	NR Modulation	NR Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power / PSD		
			Channel Position M		
			PAR (dB)	Average Power/PSD	
dBm	dBm/MHz				
62	QPSK	10.0 MHz 30 kHz SCS	-	34.95	21.26
62	QPSK	20.0 MHz 30 kHz SCS	-	36.35	19.37
62	QPSK	30.0 MHz 30 kHz SCS	-	36.49	17.55

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**

12, 19, 20 April-2022 - 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	23.1 - 23.4°C
Relative Humidity	17.6 - 18.6%

### **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).

### **2.2.6 Test Results**



Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

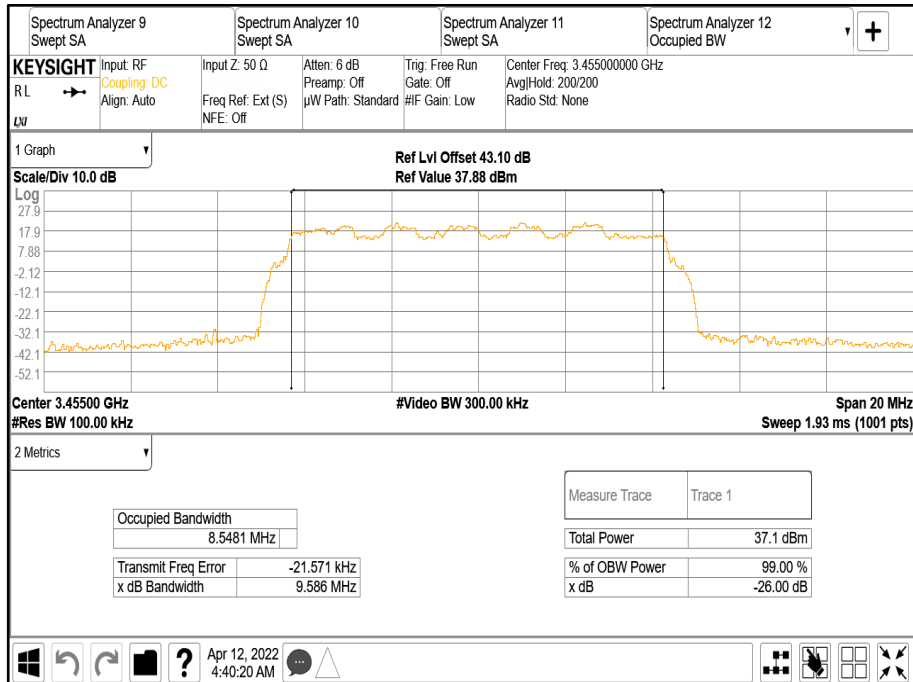
Antenna	NR Modulation	NR Carrier Bandwidth	Result (kHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
62	16QAM	10.0 MHz 30 kHz SCS	8548.14	9585.79	8569.66	9562.51	8544.92	9544.80
62	16QAM	20.0 MHz 30 kHz SCS	18276.76	19649.84	18299.14	19682.11	18318.50	19692.15
62	16QAM	30.0 MHz 30 kHz SCS	27932.36	29585.02	27934.62	29543.54	27927.02	29529.92
62	16QAM	40.0 MHz 30 kHz SCS	37980.44	39535.87	38033.59	39711.28	37994.85	39671.36
62	16QAM	50.0 MHz 30 kHz SCS	47633.69	49617.23	47584.69	49691.78	47475.99	49664.09
62	16QAM	60.0 MHz 30 kHz SCS	57801.95	59765.19	58055.07	59821.17	58039.44	59750.78
62	16QAM	70.0 MHz 30 kHz SCS	67468.10	69692.24	67570.47	69825.60	67518.16	69845.58
62	16QAM	80.0 MHz 30 kHz SCS	77432.93	79903.23	77458.63	80010.93	77504.00	79969.54
62	16QAM	90.0 MHz 30 kHz SCS	87591.00	90200.29	87593.21	90289.79	87487.47	90264.16
62	16QAM	100.0 MHz 30 kHz SCS	-	-	97257.86	100449.40	-	-

Remarks

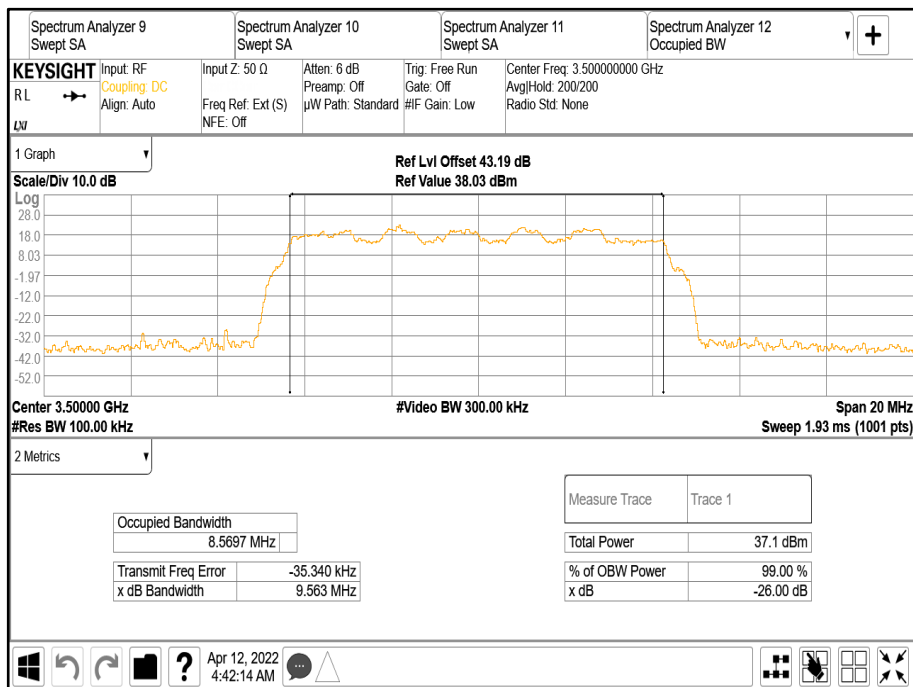
Testing at 100MHz Bandwidth is reported under Channel Position M only as the Bandwidth is equal to the IBW.



**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position B**

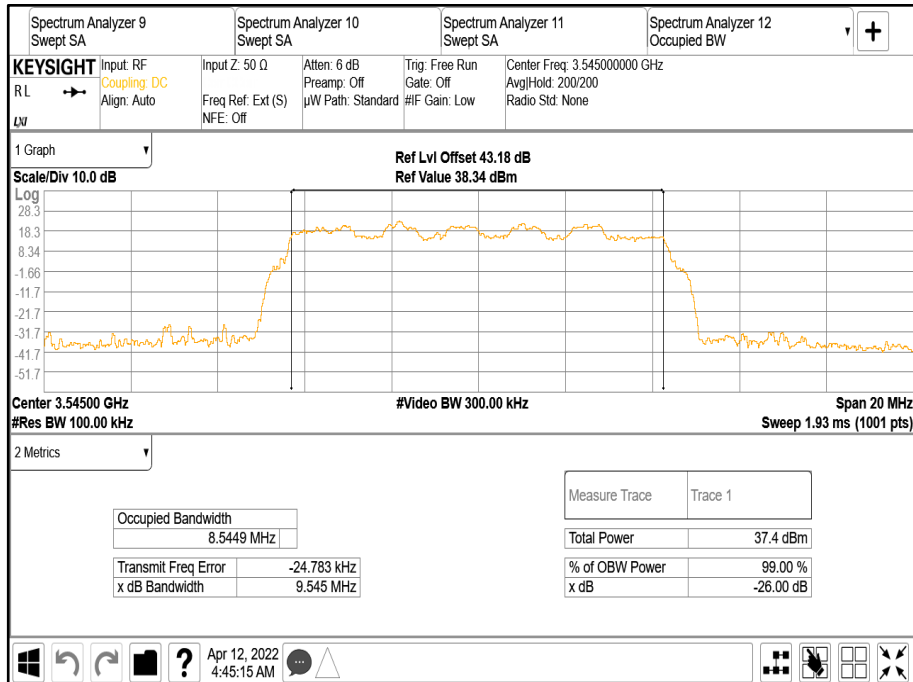


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position M**

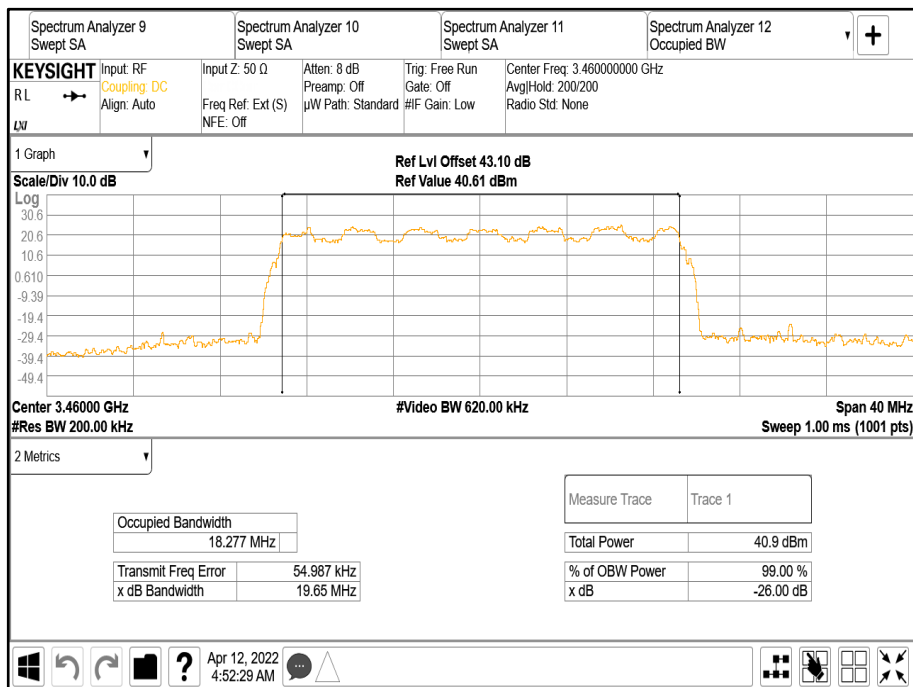




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position T**



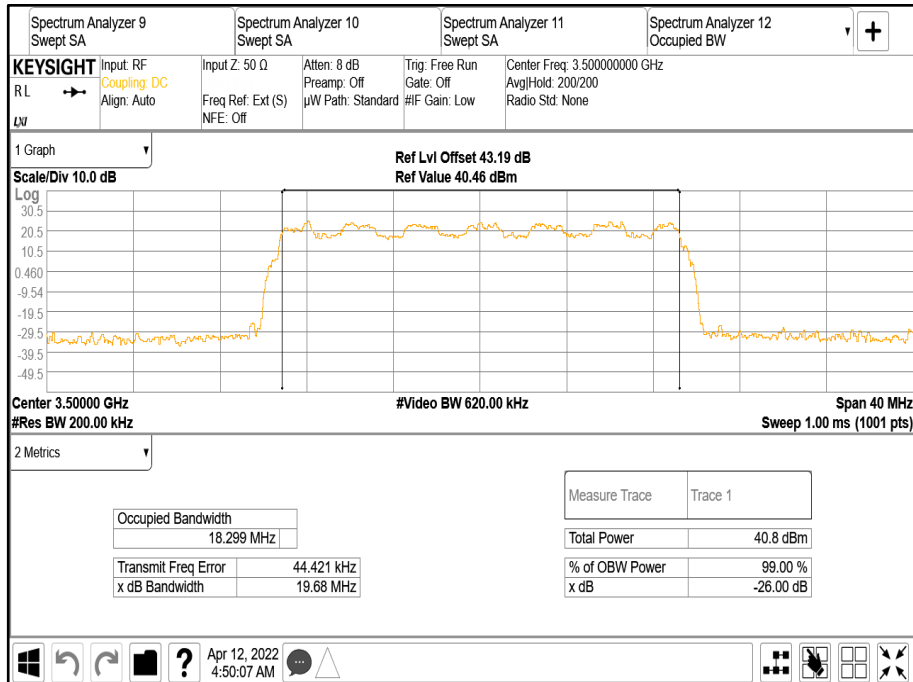
**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position B**



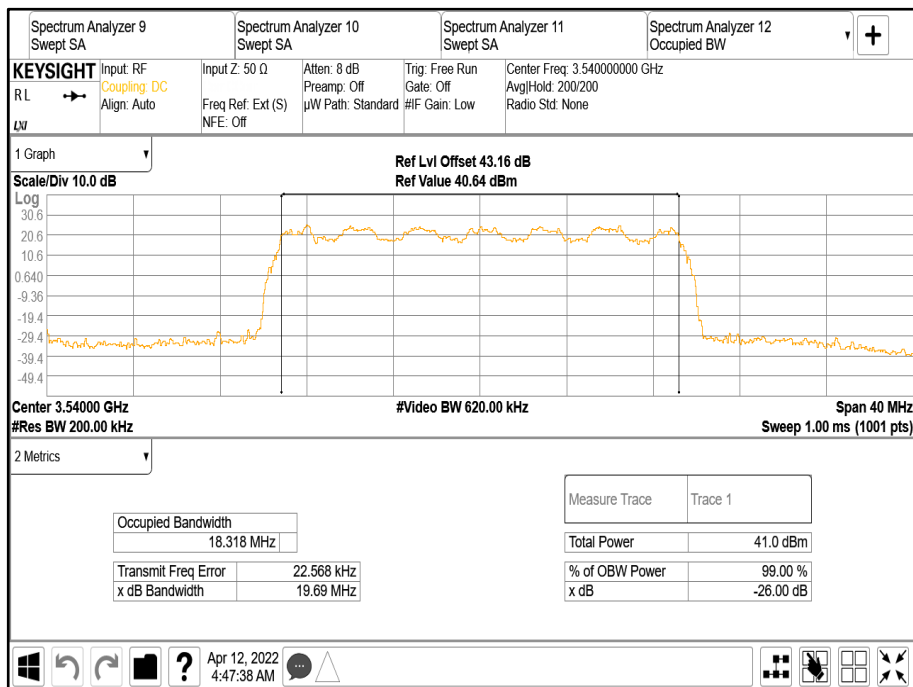




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position M**

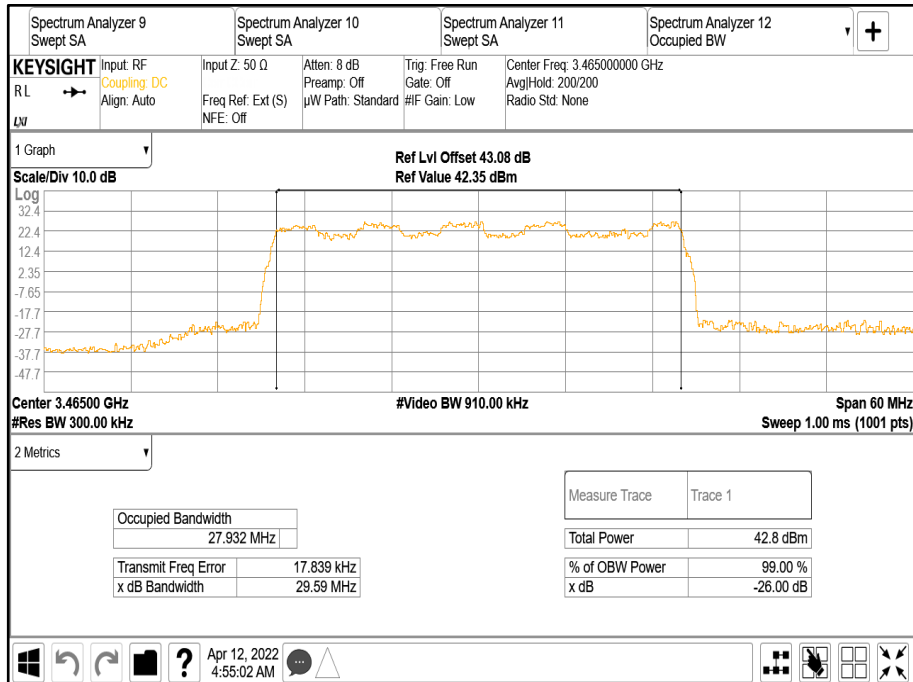


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position T**

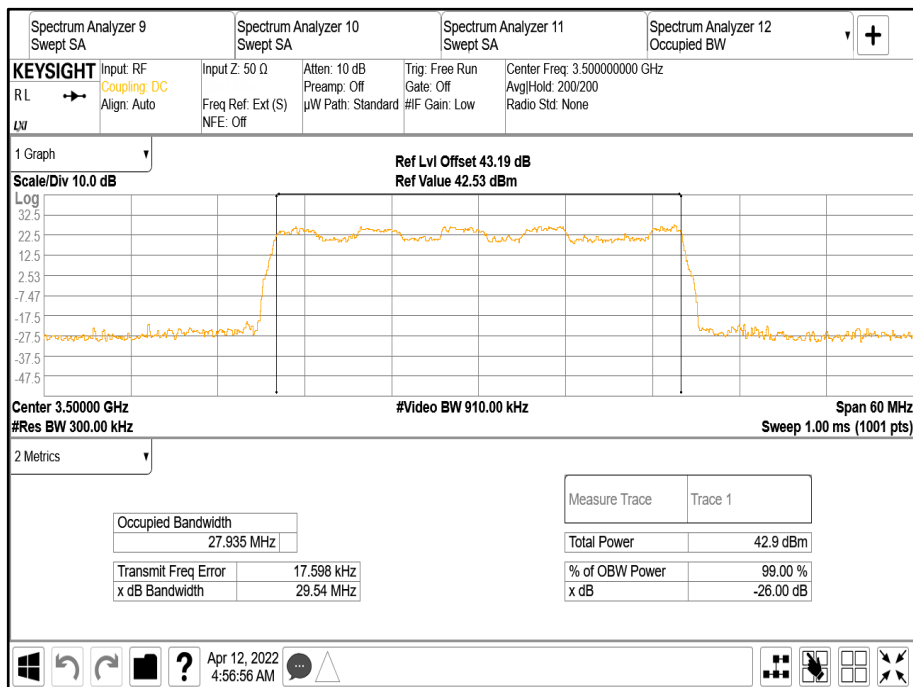




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position B**

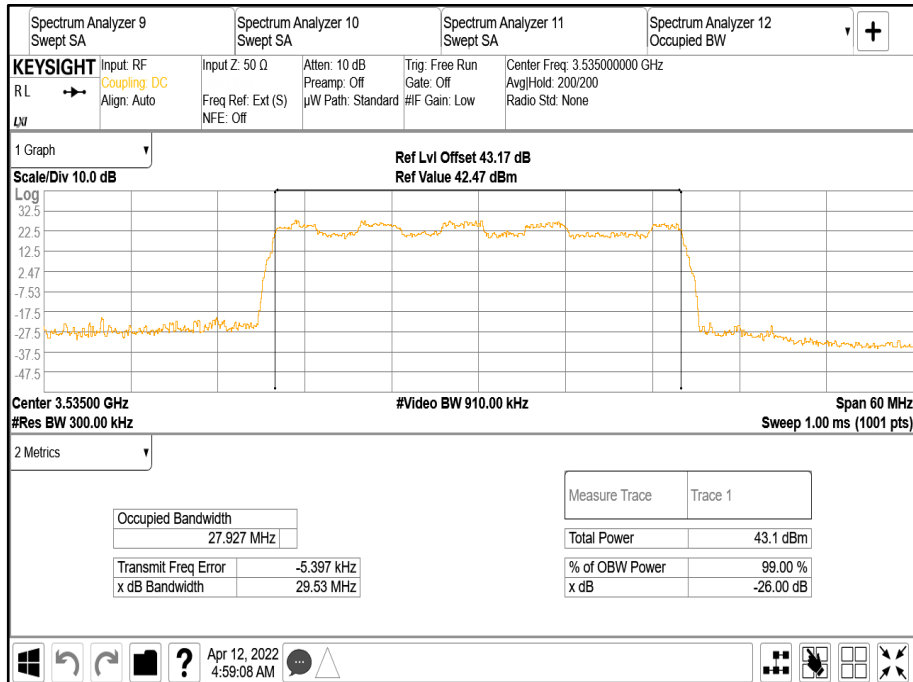


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position M**

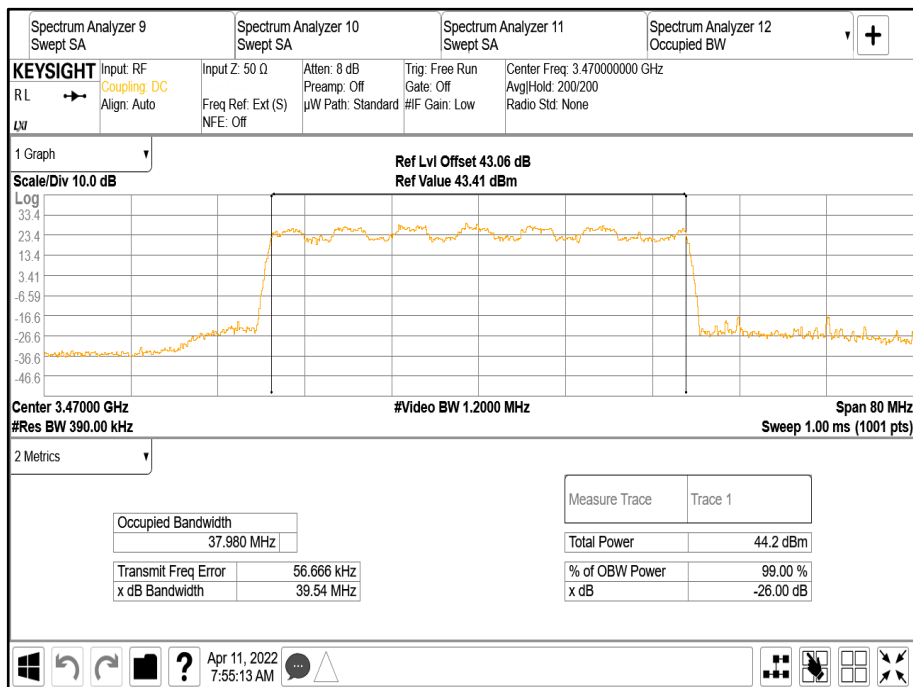




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position T**

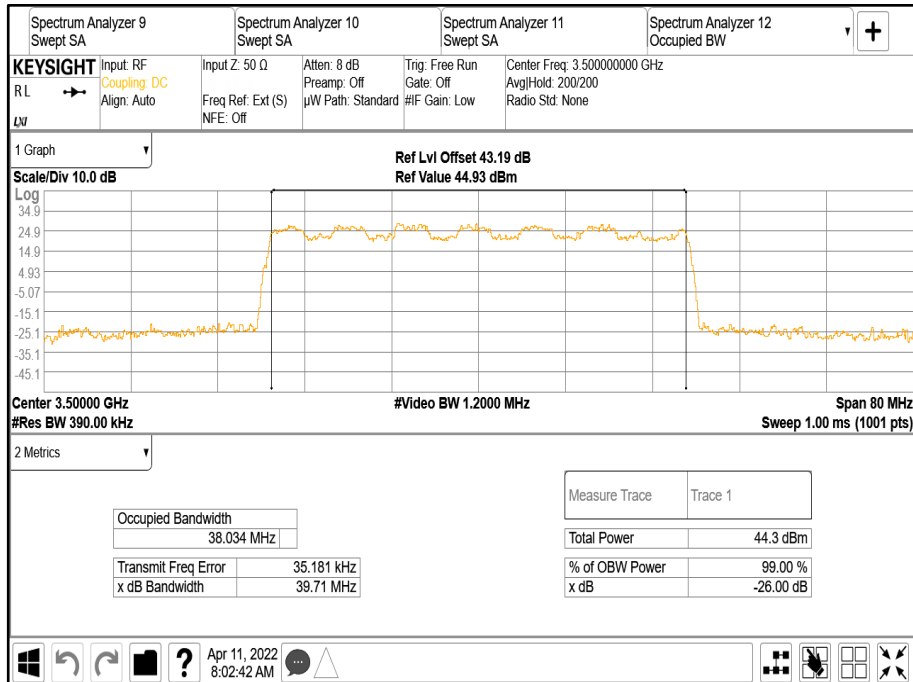


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position B**

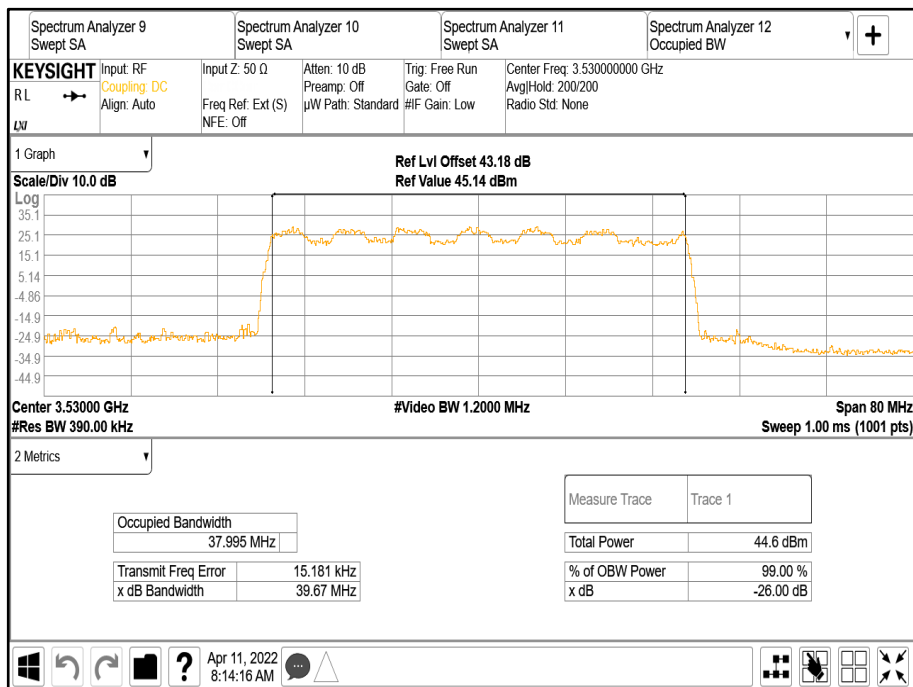




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position M**

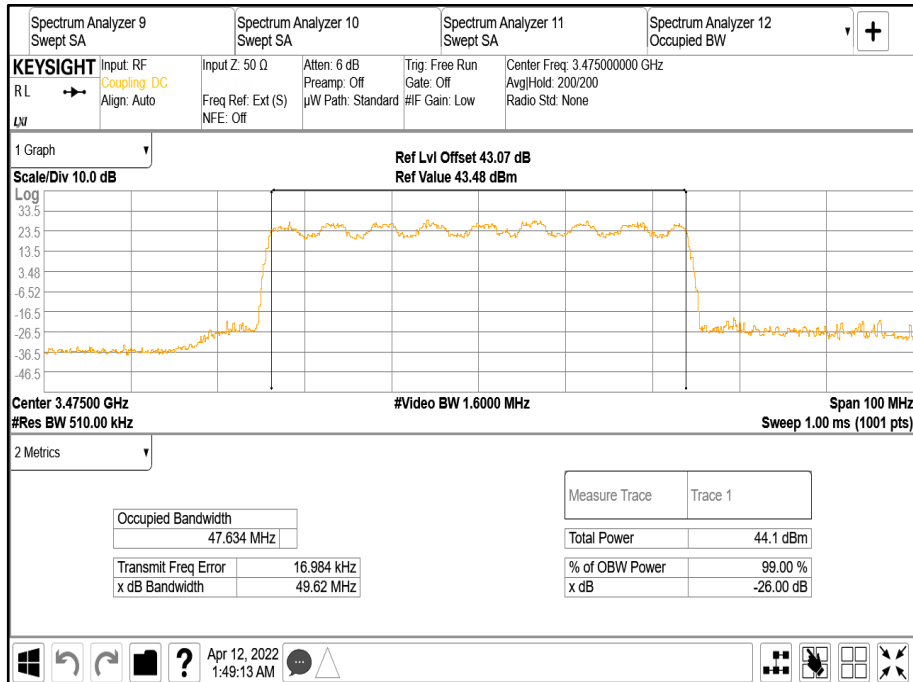


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position T**

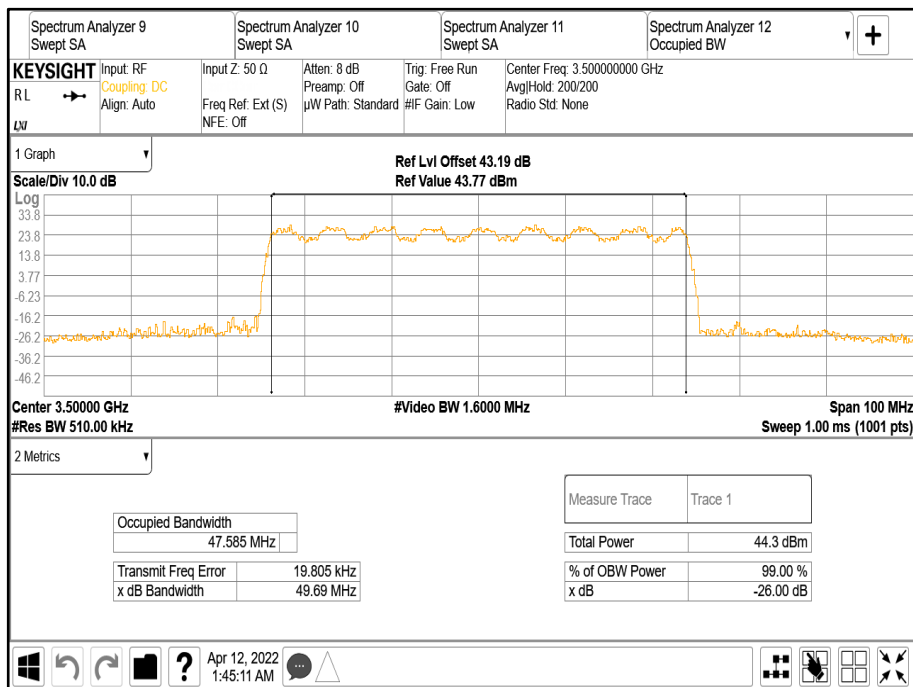




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position B**

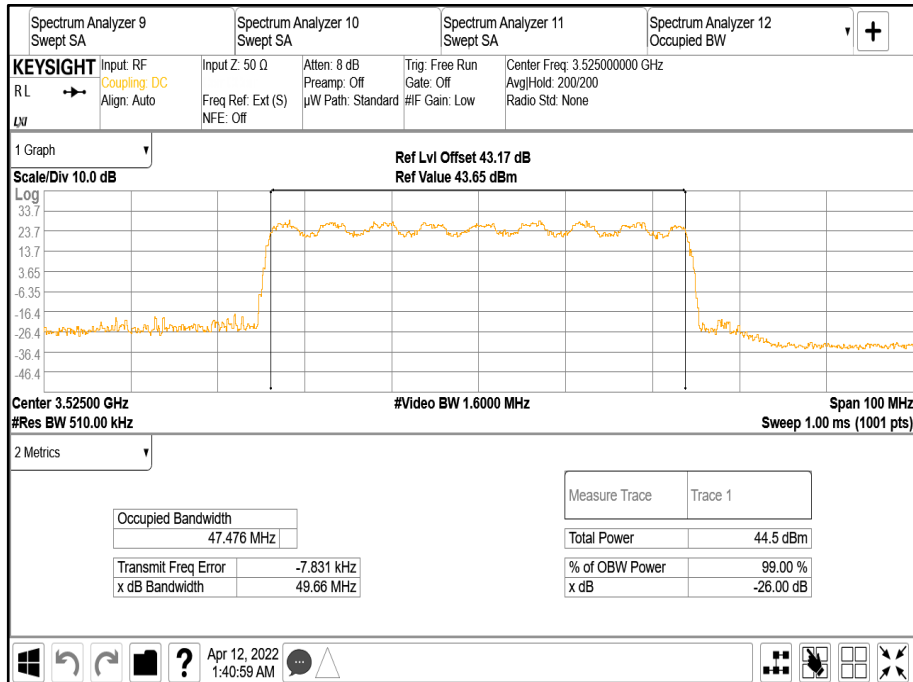


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position M**

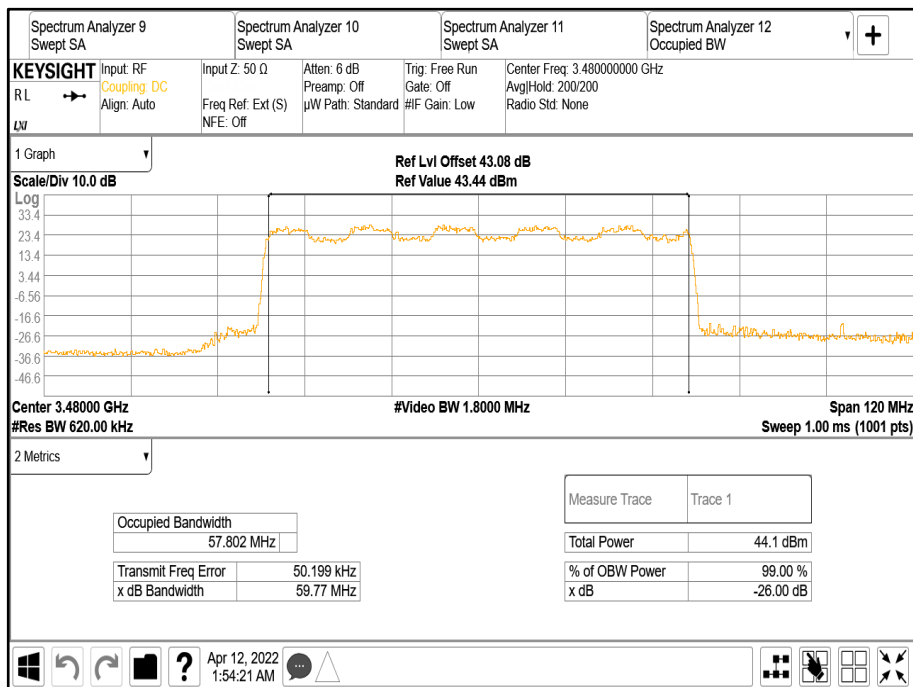




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position T**

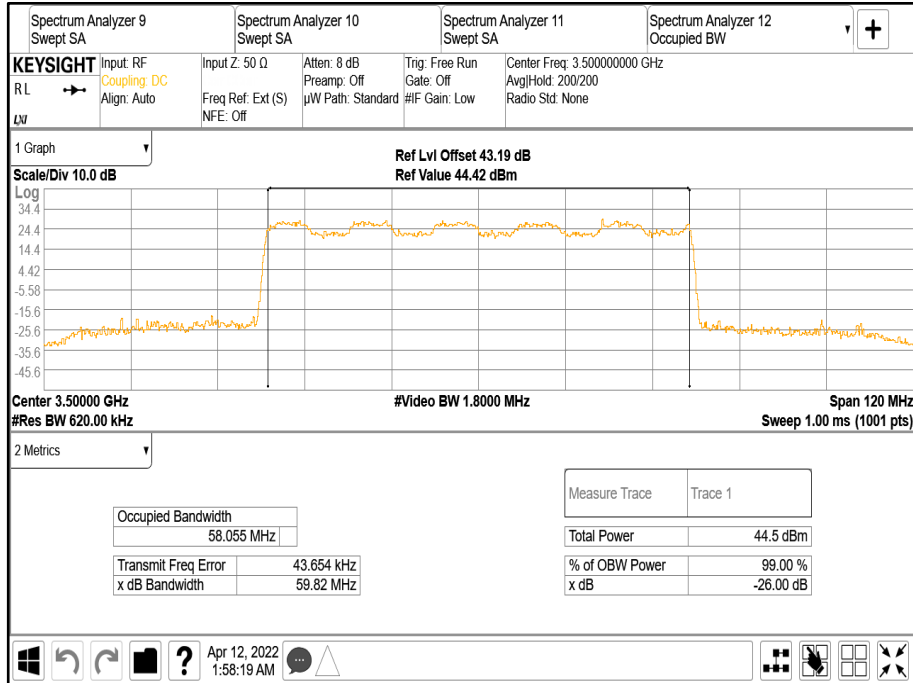


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position B**

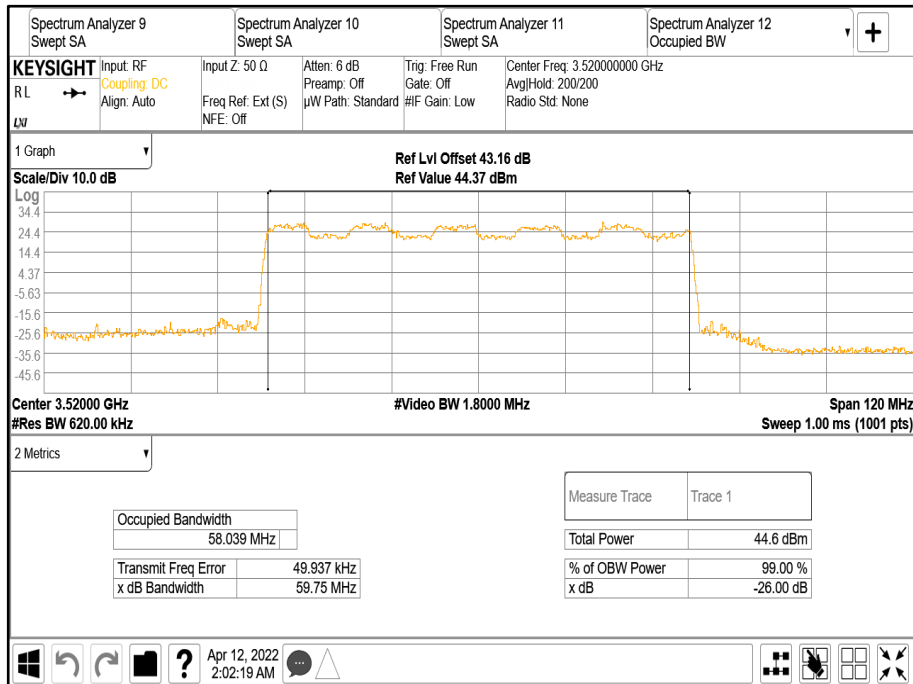




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position M**

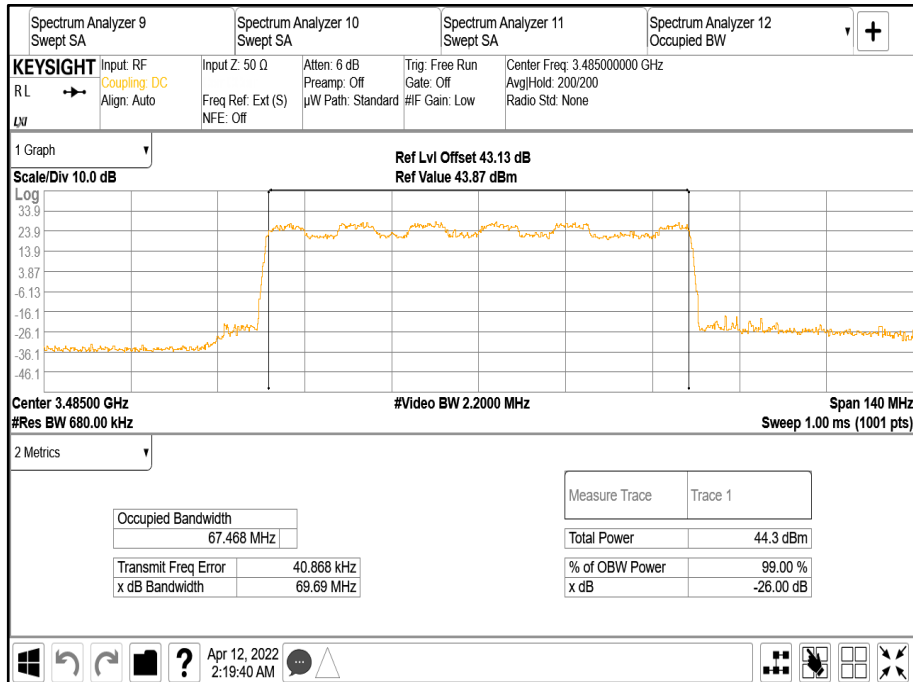


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 60.0 MHz 30 kHz SCS - Channel Position T**

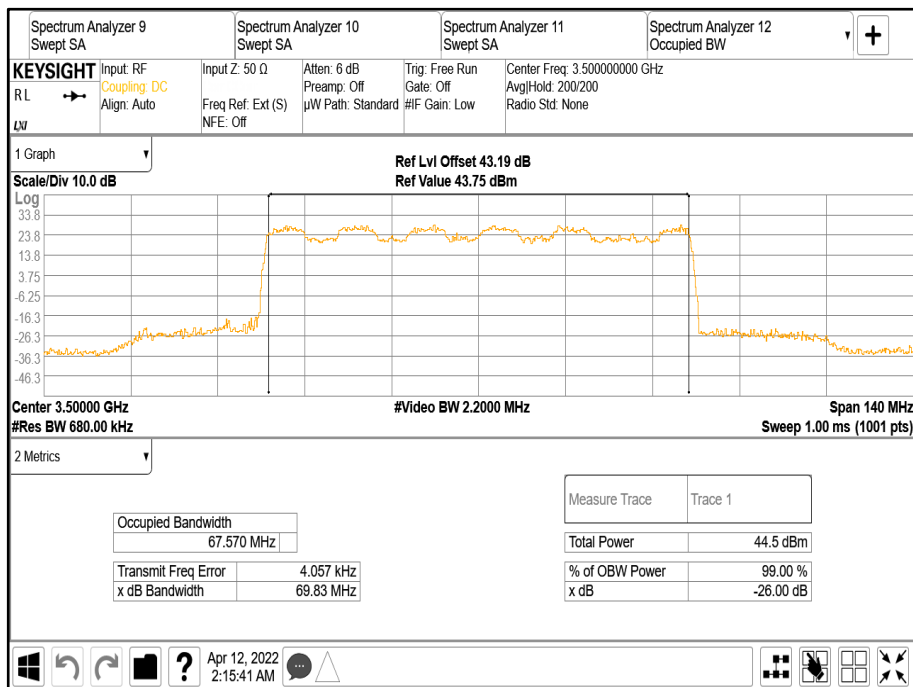




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position B**



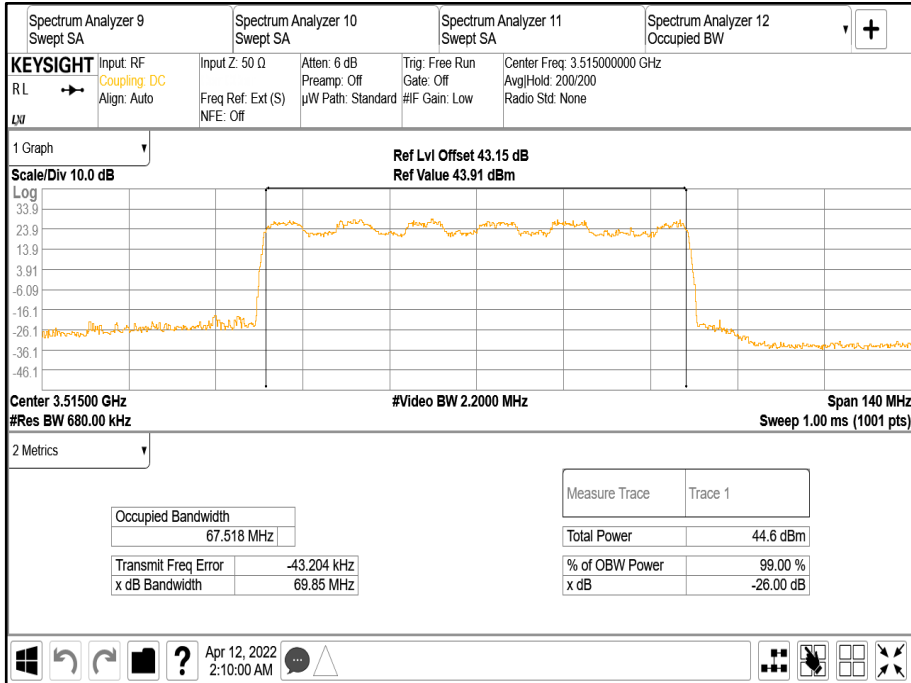
**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position M**



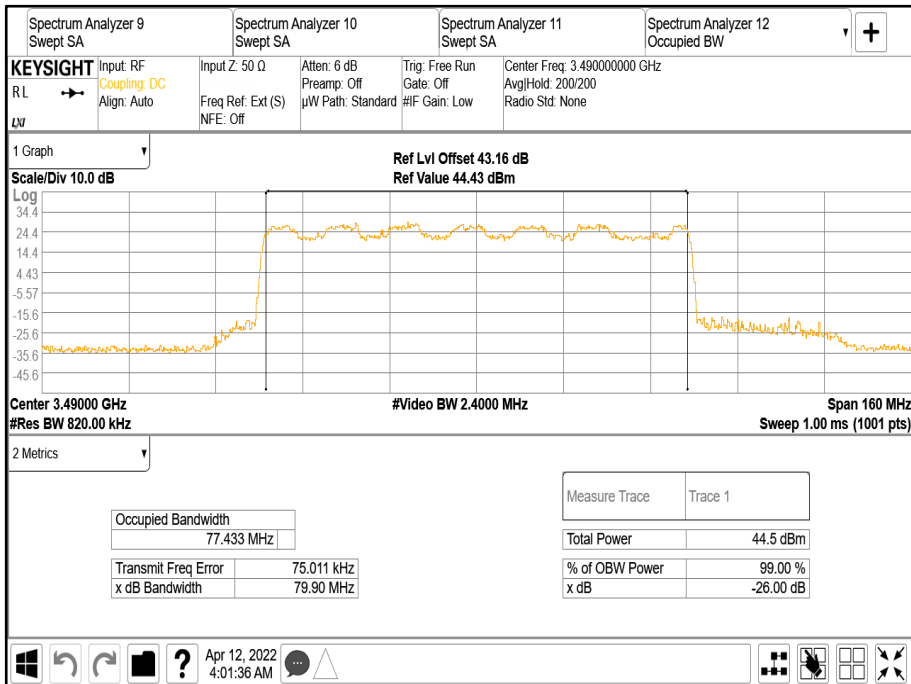




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 70.0 MHz 30 kHz SCS - Channel Position T**

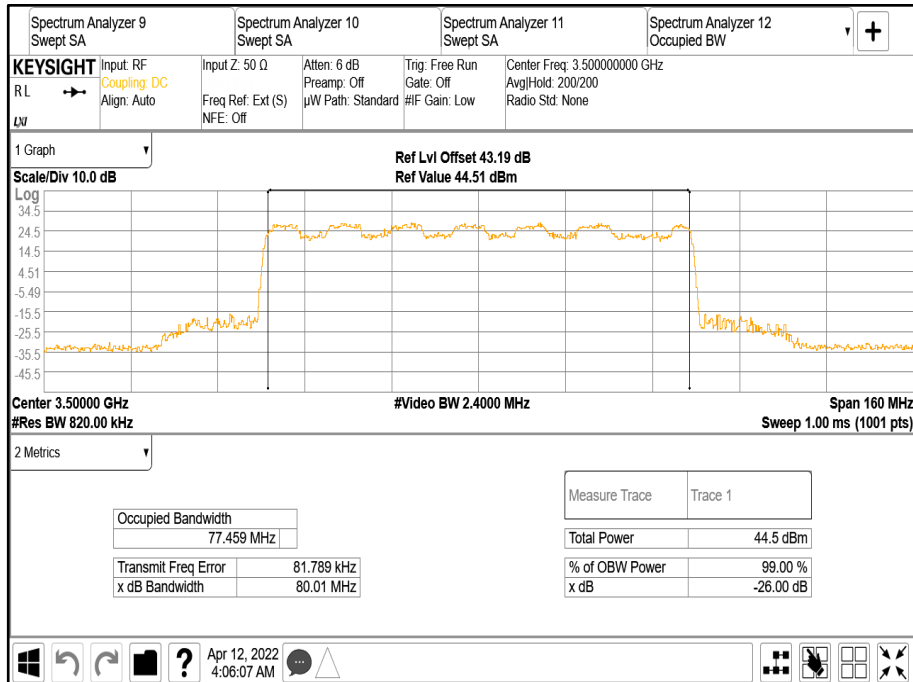


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 80.0 MHz 30 kHz SCS - Channel Position B**

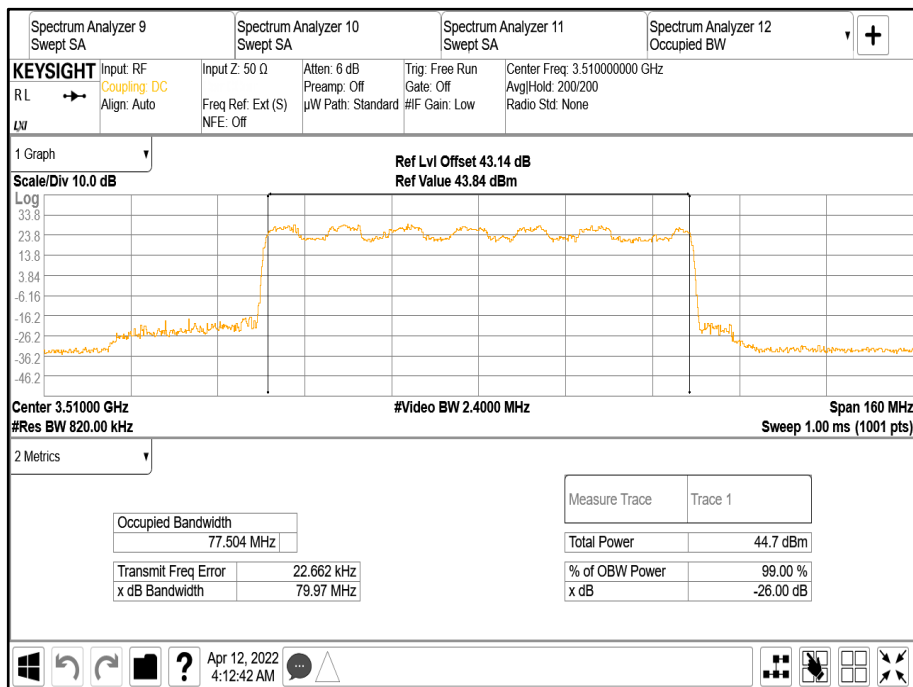




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 80.0 MHz 30 kHz SCS - Channel Position M**

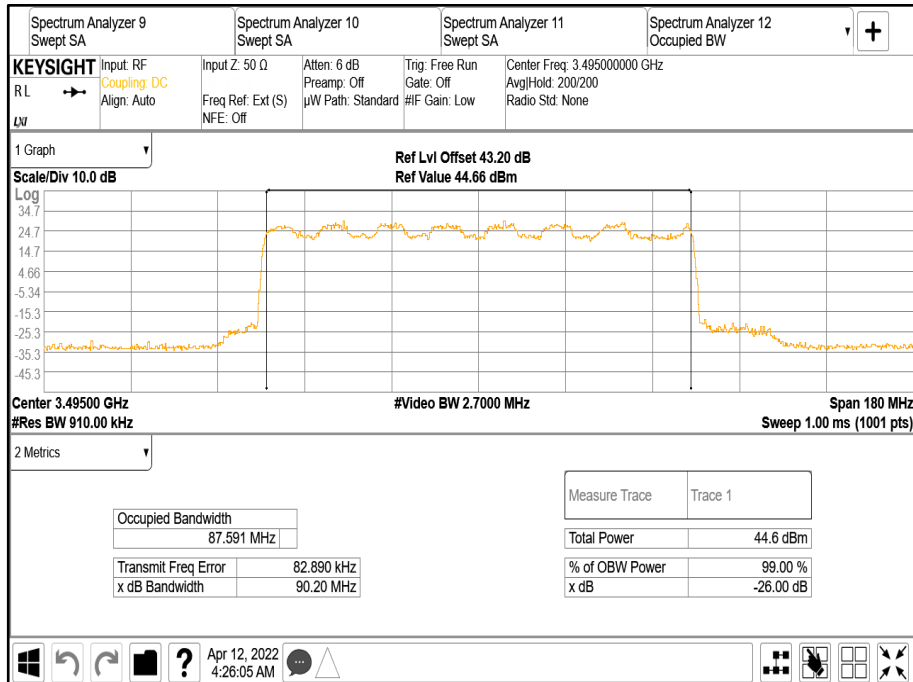


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 80.0 MHz 30 kHz SCS - Channel Position T**

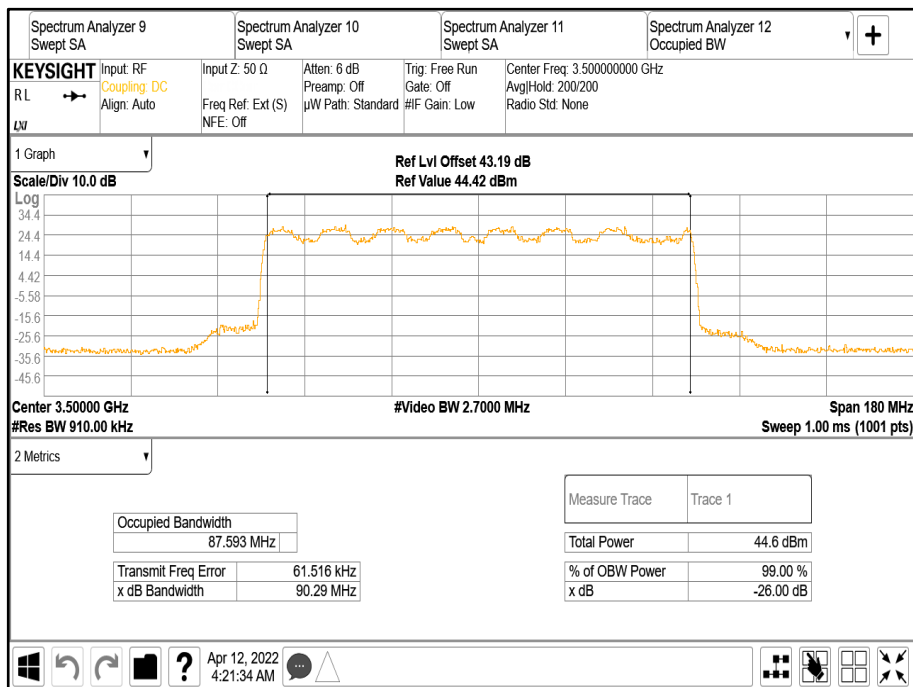




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 90.0 MHz 30 kHz SCS - Channel Position B**

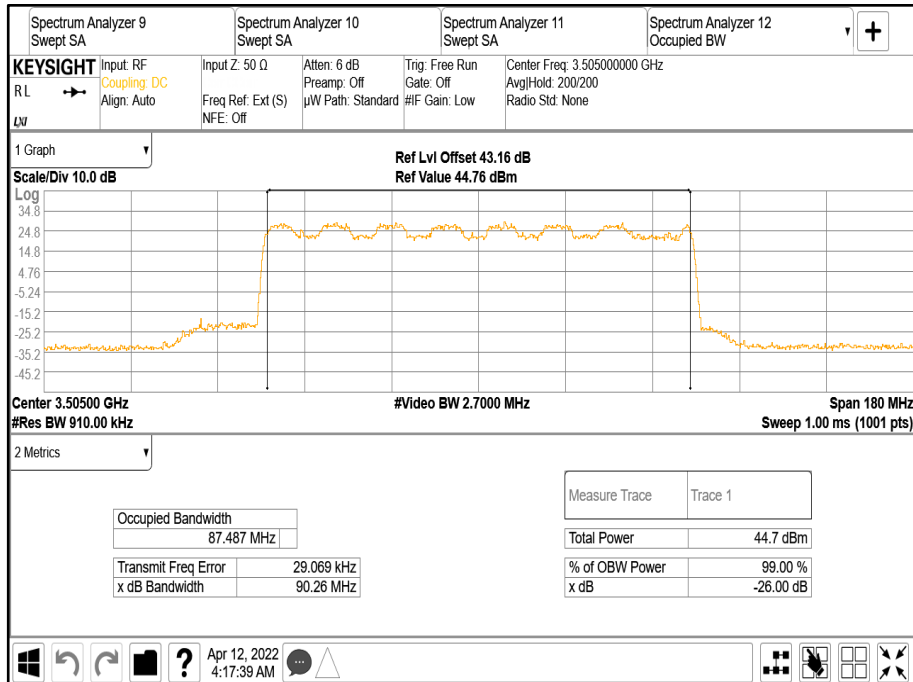


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 90.0 MHz 30 kHz SCS - Channel Position M**

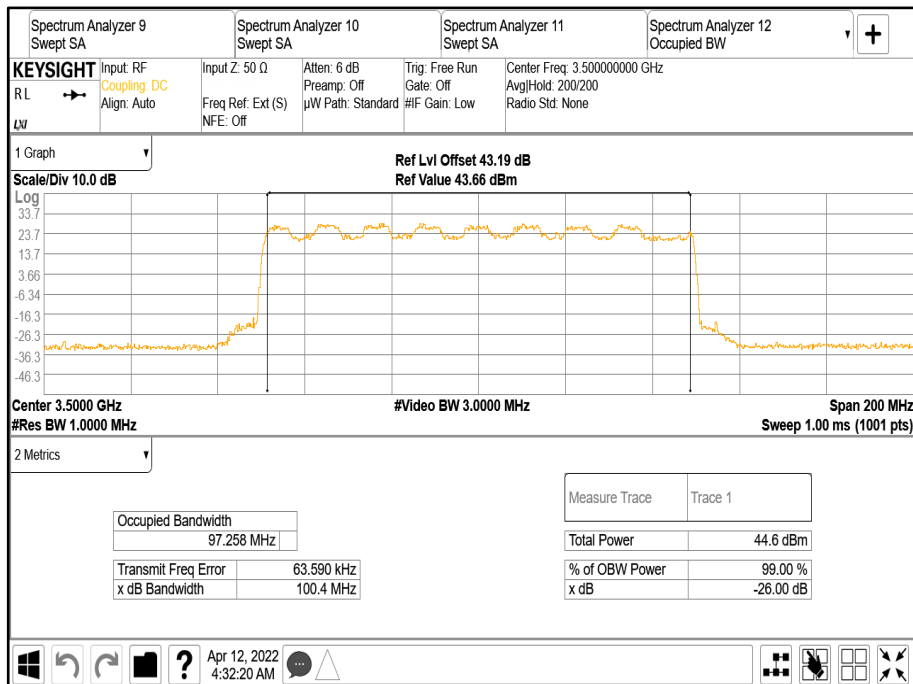




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 90.0 MHz 30 kHz SCS - Channel Position T**



**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 100.0 MHz 30 kHz SCS - Channel Position M**





Configuration 5

Maximum Output Power 2x30.97,4x(2x33.98) dBm

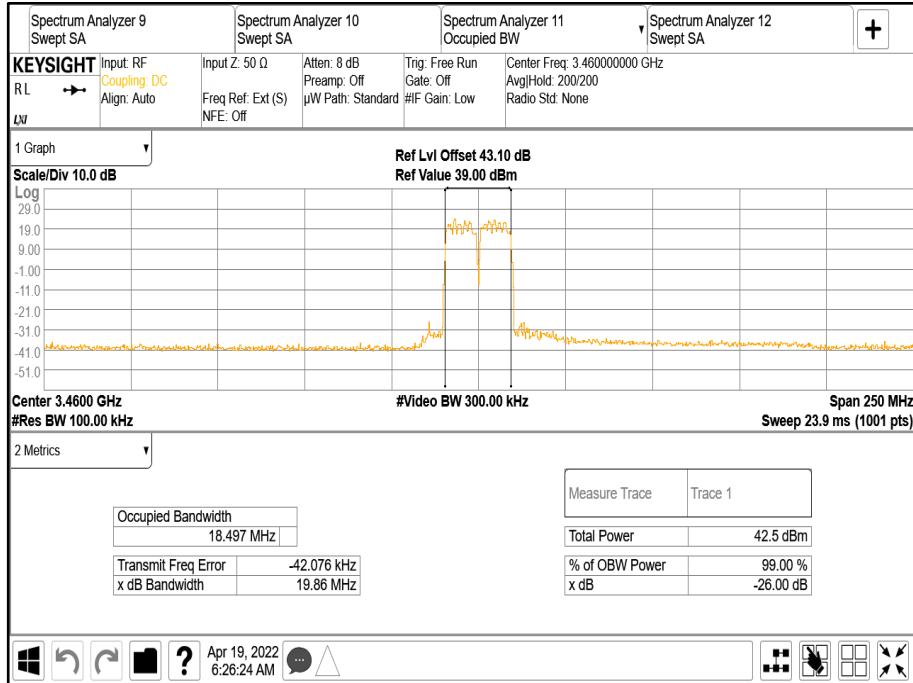
Antenna	NR Modulation	NR Carrier Bandwidth	Result (kHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
62	16QAM	10.0 MHz 30 kHz SCS	18496.76	19855.07	18515.12	19812.89	18452.98	19793.47
62	16QAM	20.0 MHz 30 kHz SCS	38198.98	39810.29	38193.54	39822.11	38190.31	39842.62
62	16QAM	30.0 MHz 30 kHz SCS	57703.36	59765.06	57764.50	59923.53	57733.94	59844.60
62	16QAM	40.0 MHz 30 kHz SCS	77585.17	79856.60	77751.58	79907.44	77639.33	79845.27
62	16QAM	50.0 MHz 30 kHz SCS	-	-	97182.87	99824.99	-	-

Remarks

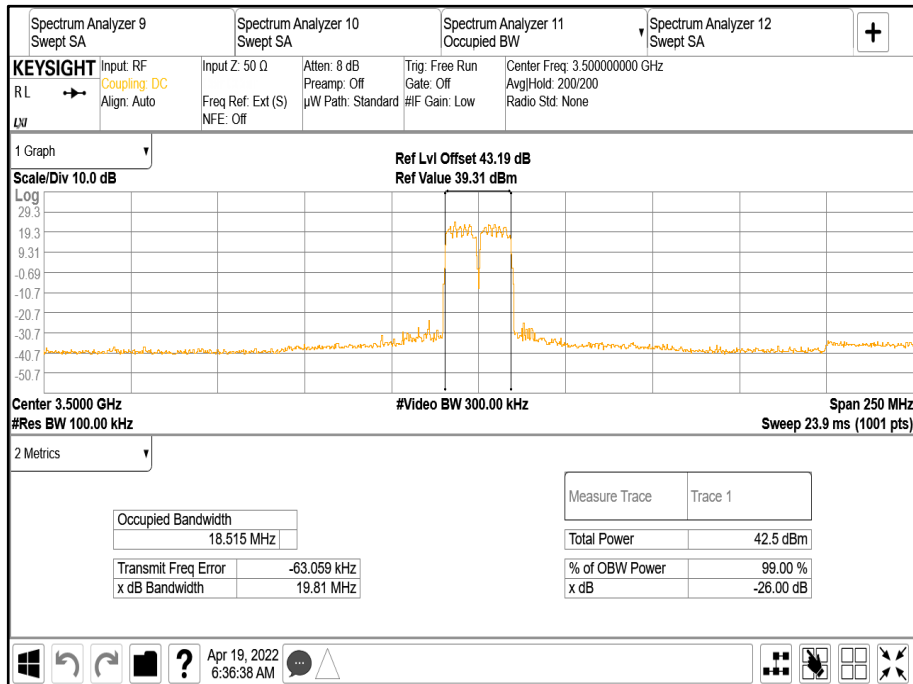
Testing at 50MHz Bandwidth is reported under Channel Position M only as the Bandwidth of two carriers is equal to the IBW.



**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position B**

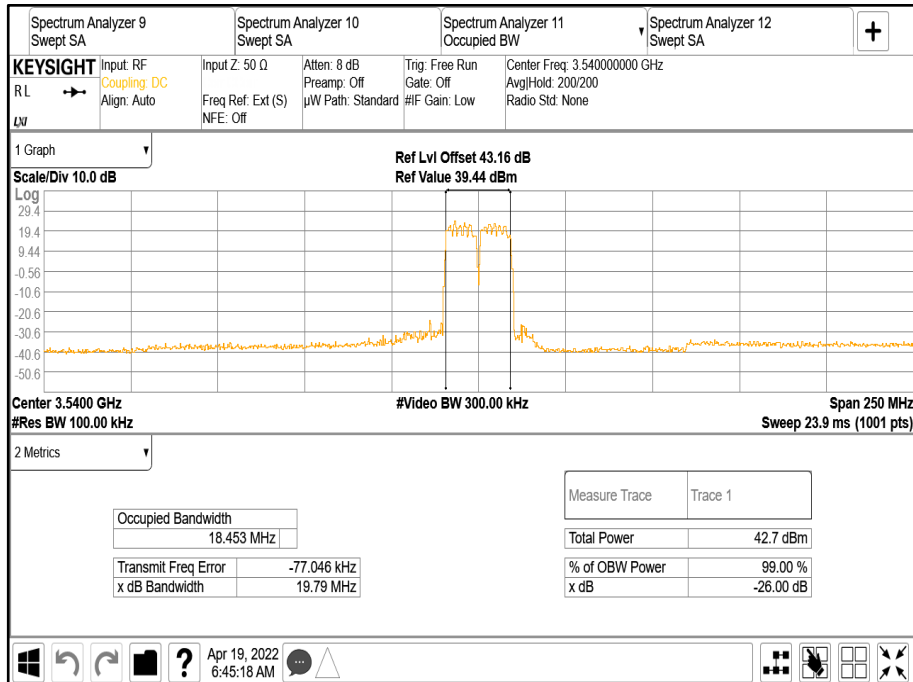


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position M**

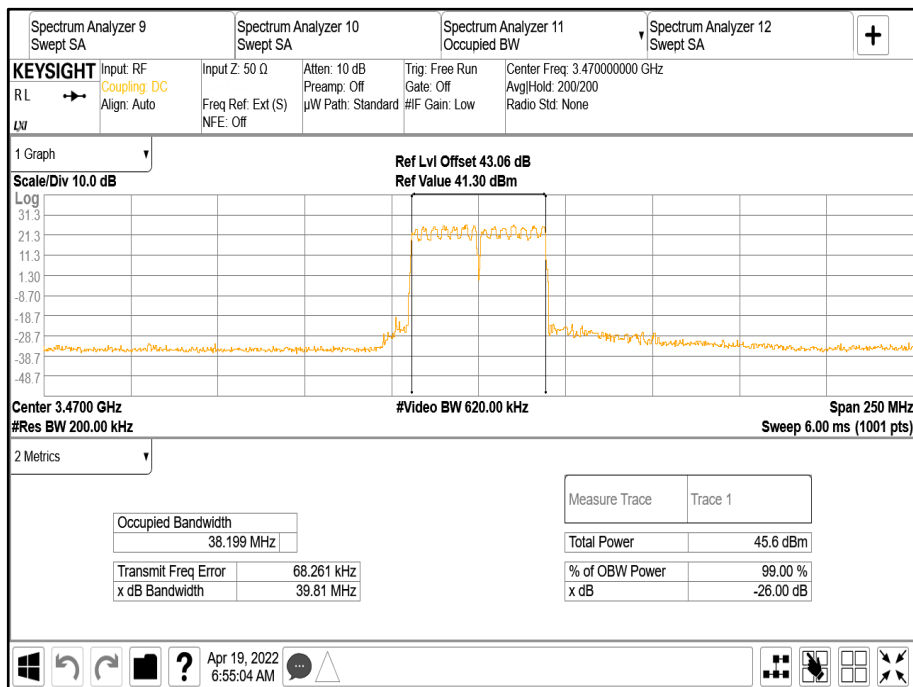




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position T**

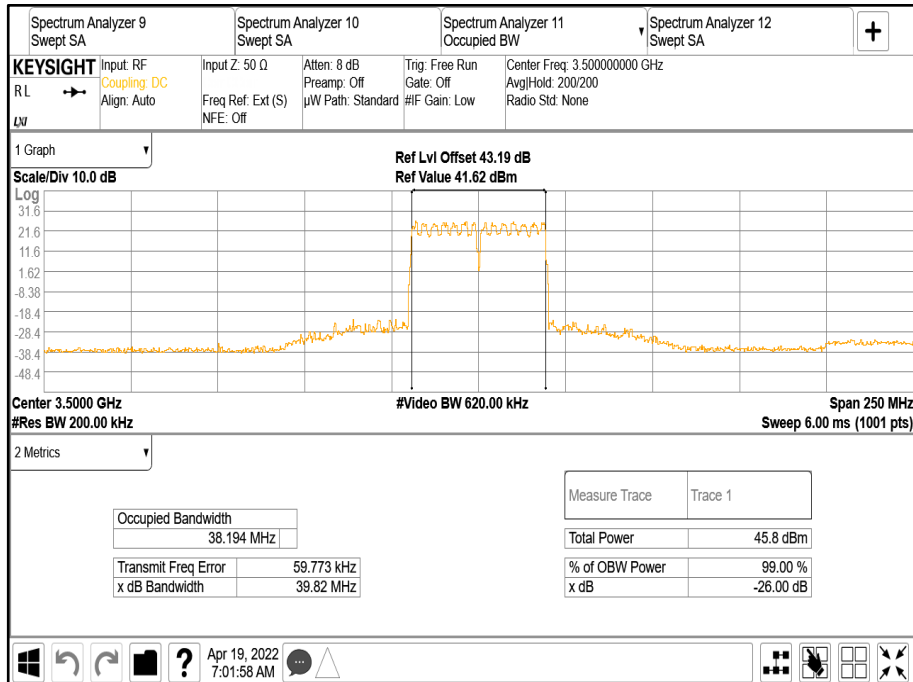


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position B**

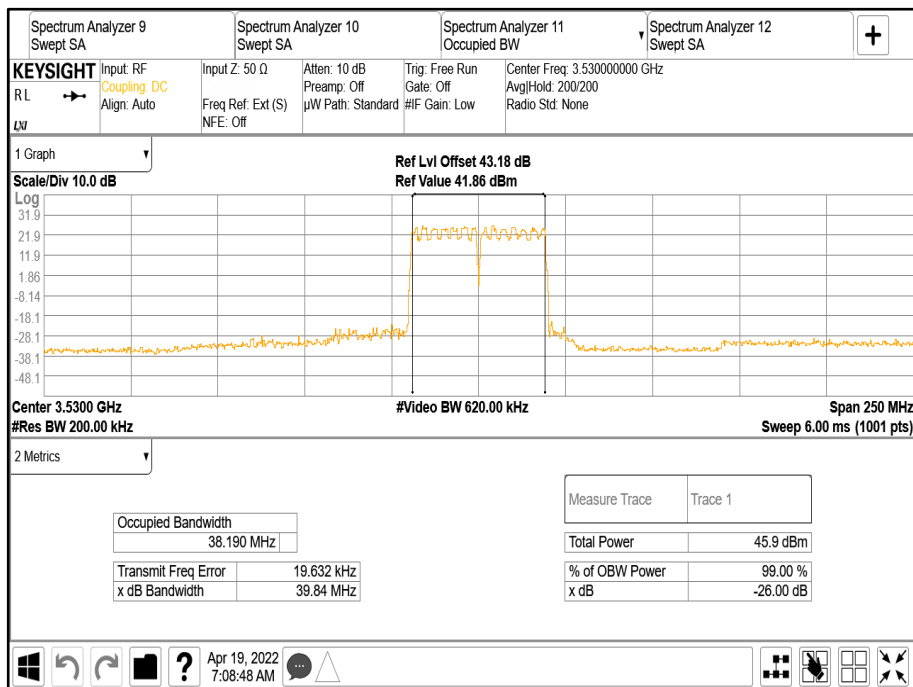




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position M**



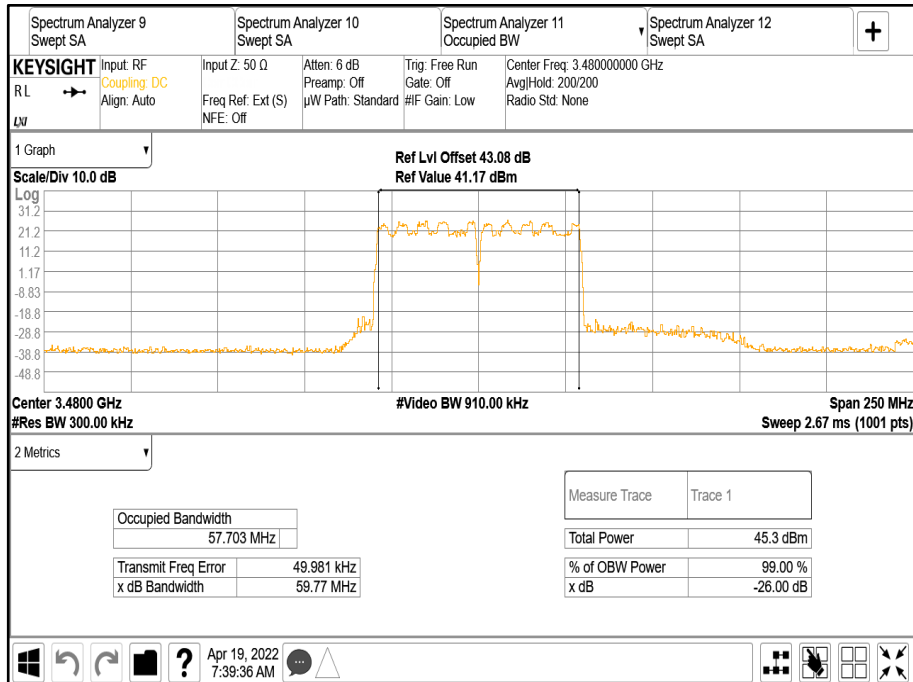
**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position T**



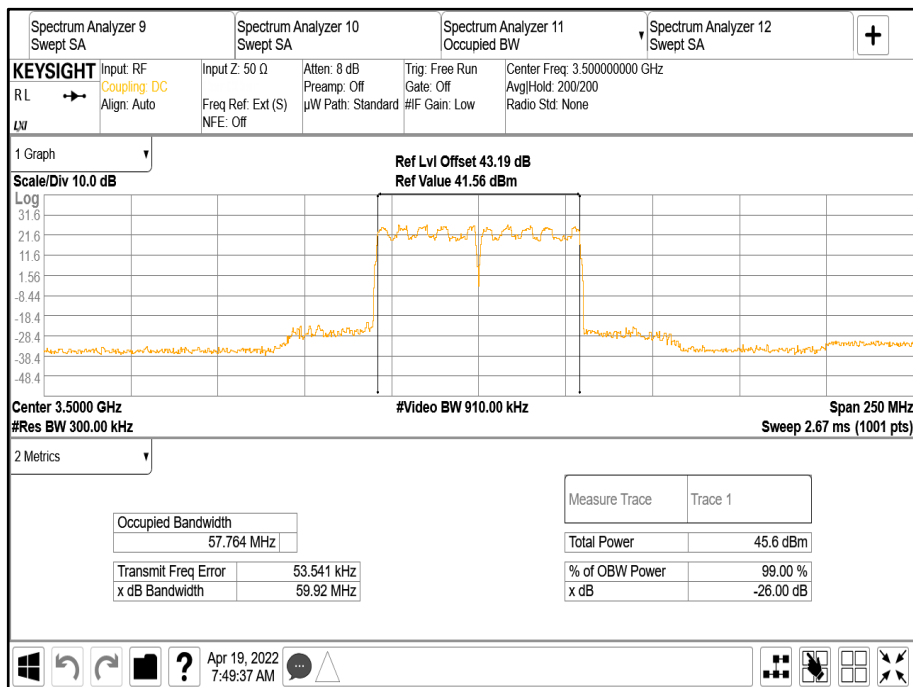




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position B**

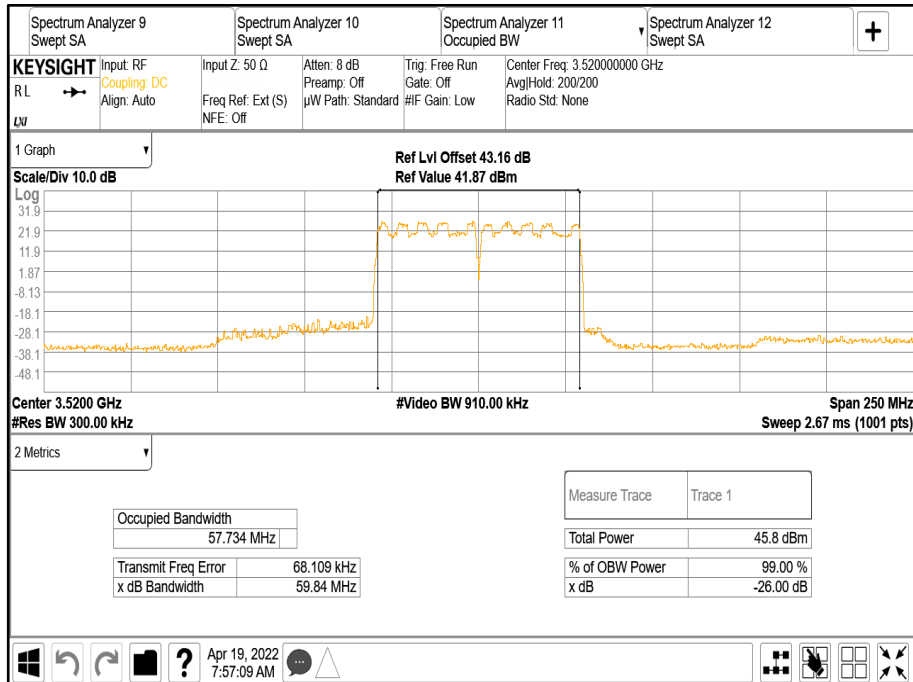


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position M**

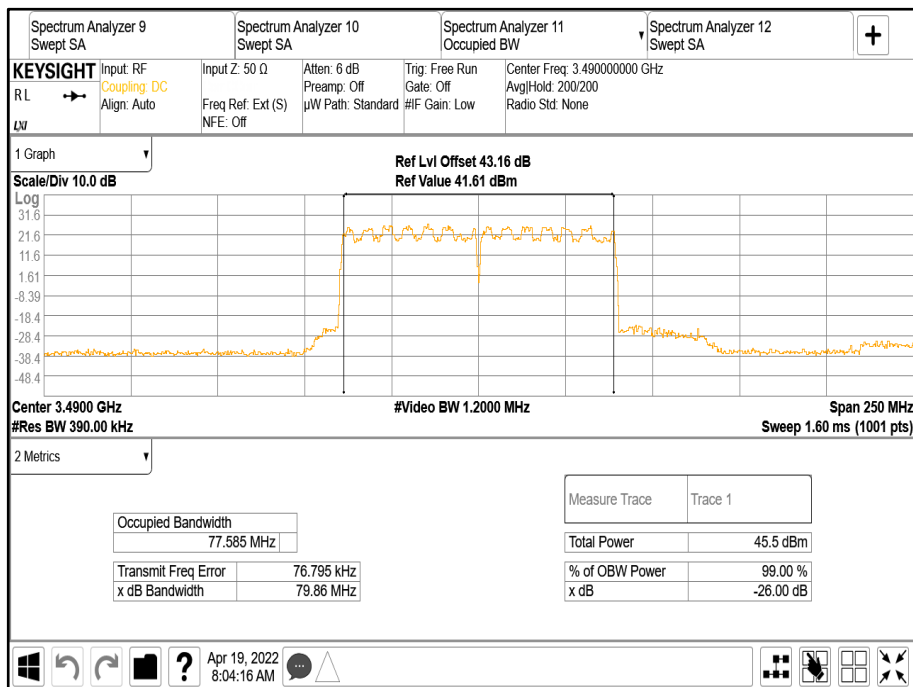




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position T**

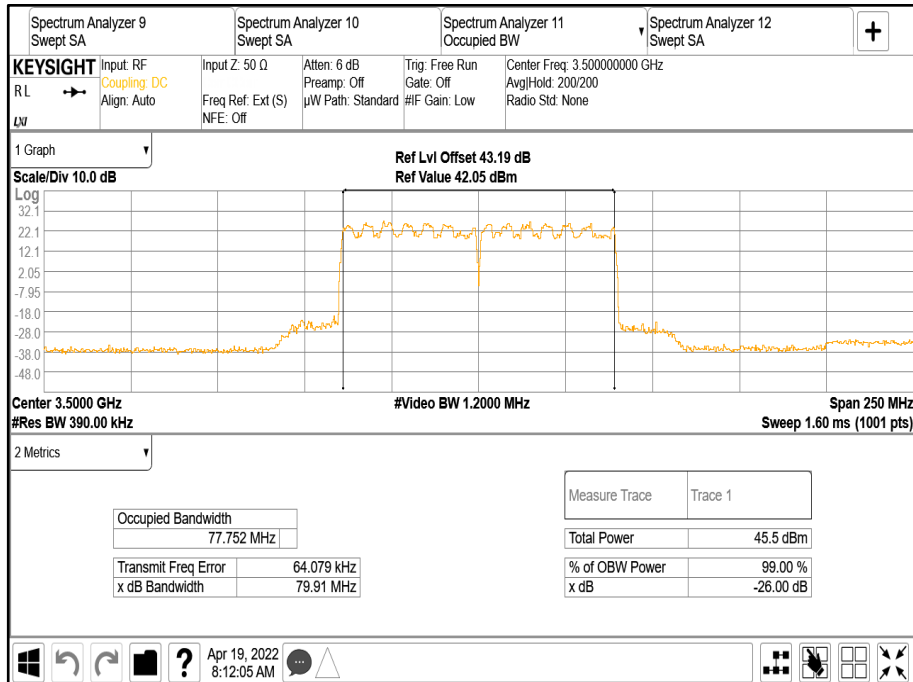


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position B**

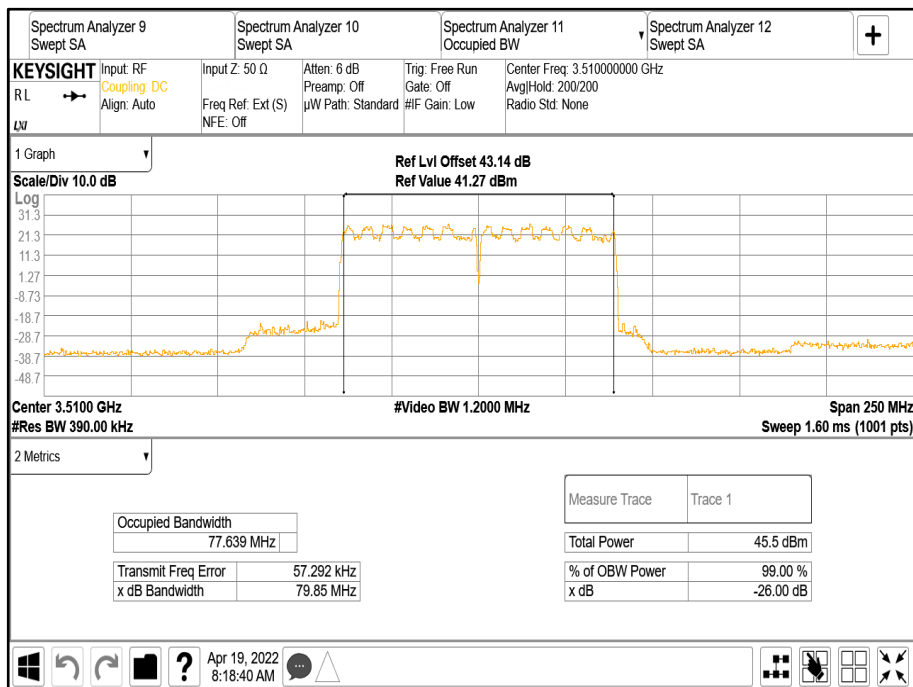




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position M**

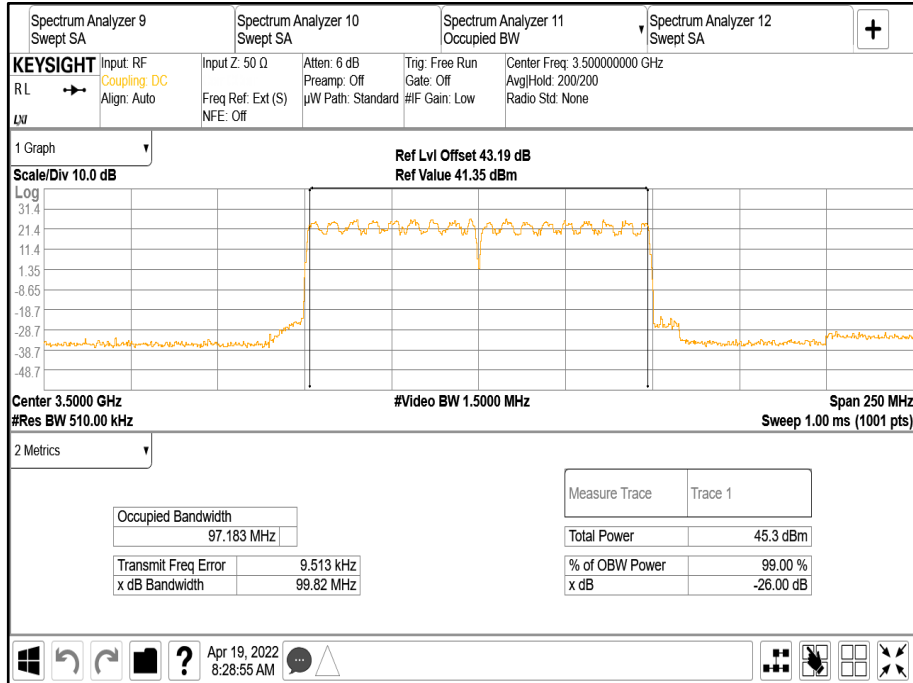


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 40.0 MHz 30 kHz SCS - Channel Position T**





**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 50.0 MHz 30 kHz SCS - Channel Position M**



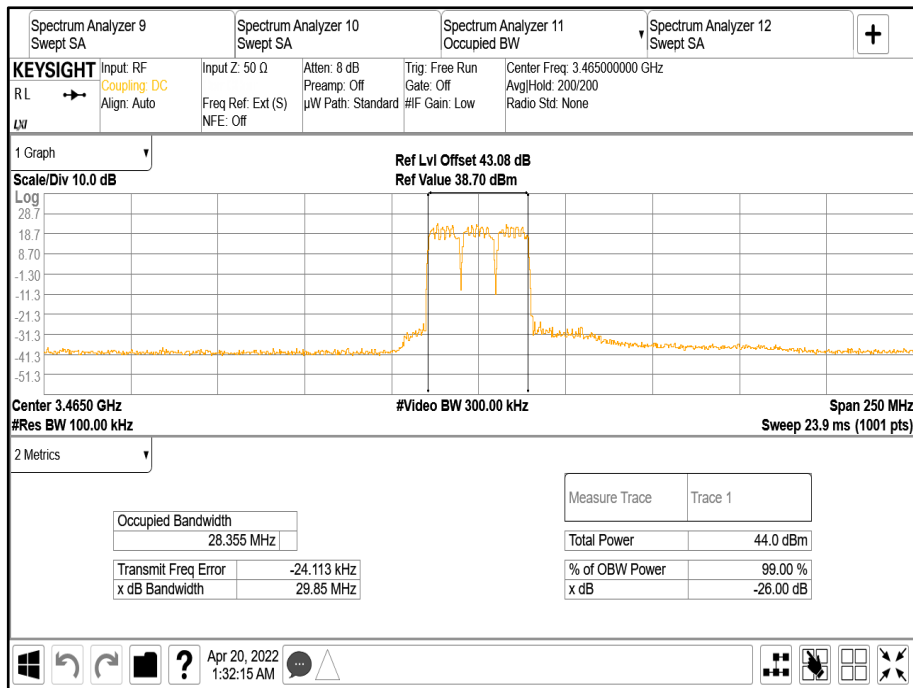


Configuration 6

Maximum Output Power 3x30.97,2x(3x32.22) dBm

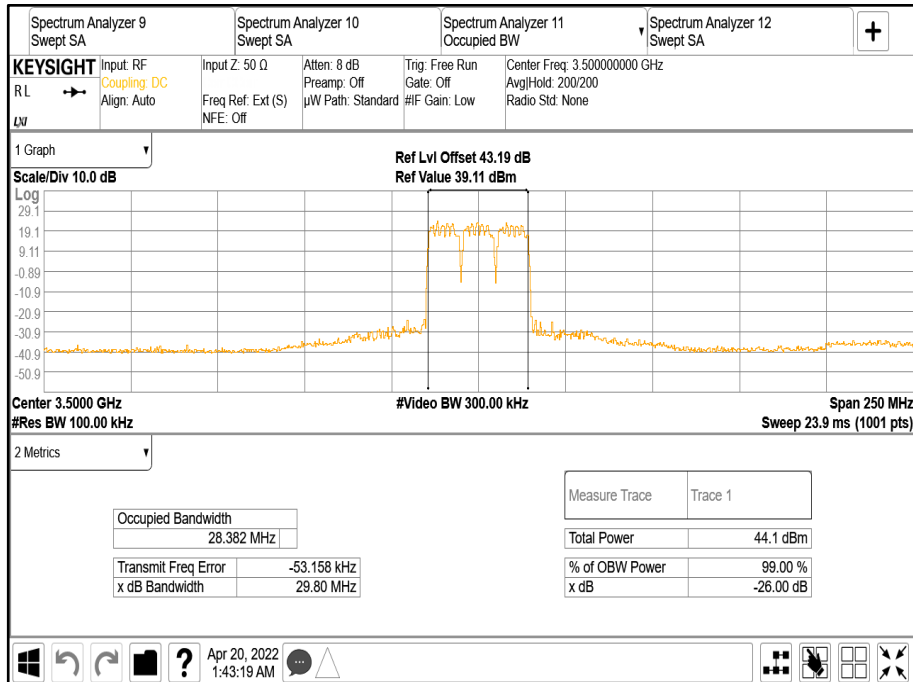
Antenna	NR Modulation	NR Carrier Bandwidth	Result (kHz)					
			Channel Position B		Channel Position M		Channel Position T	
			Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth	Occupied Bandwidth	-26 dB Bandwidth
62	16QAM	10.0 MHz 30 kHz SCS	28354.67	29848.72	28381.80	29797.00	28333.56	29801.11
62	16QAM	20.0 MHz 30 kHz SCS	58000.32	59841.40	58071.95	59910.02	58050.94	59902.42
62	16QAM	30.0 MHz 30 kHz SCS	87448.01	89650.38	87412.98	89883.67	87444.90	89846.67

Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position B

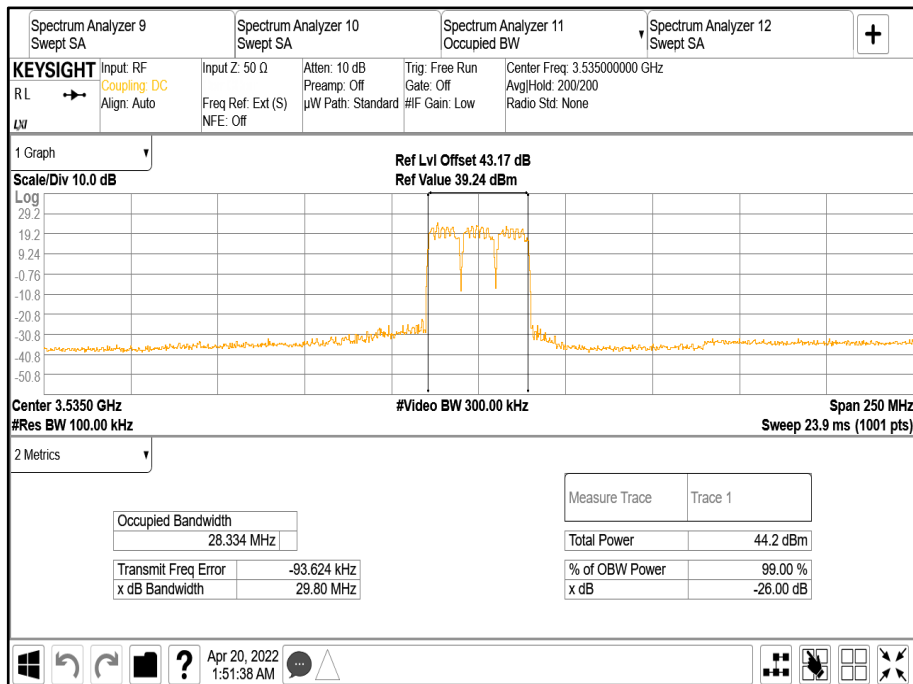




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position M**

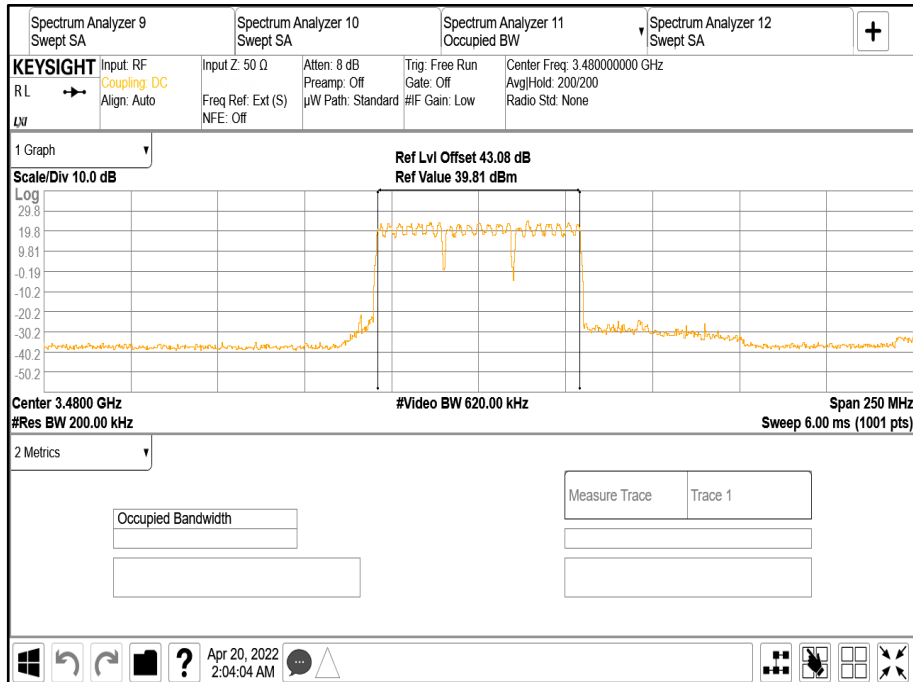


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position T**

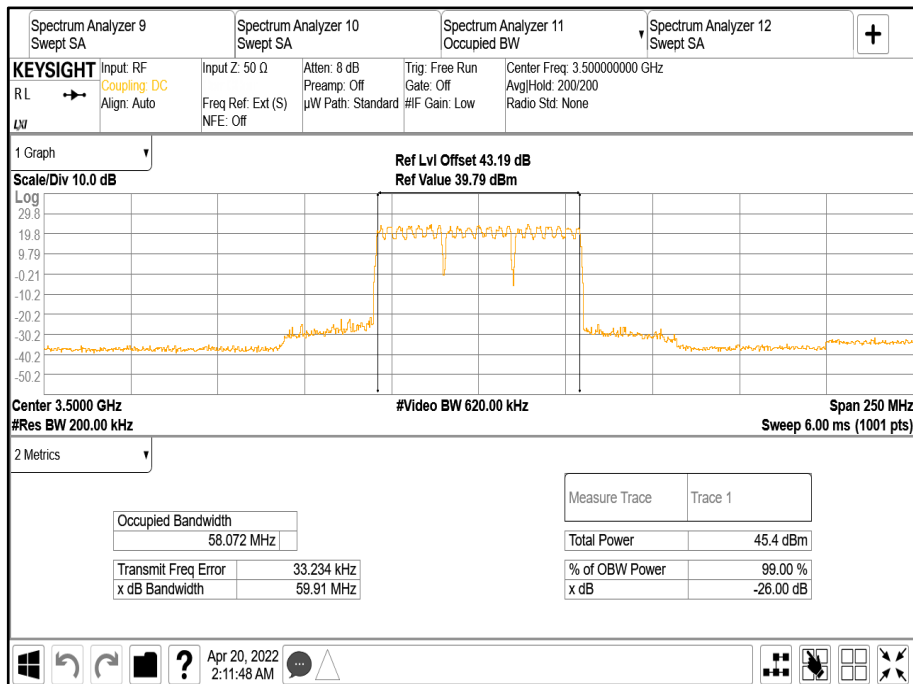




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position B**

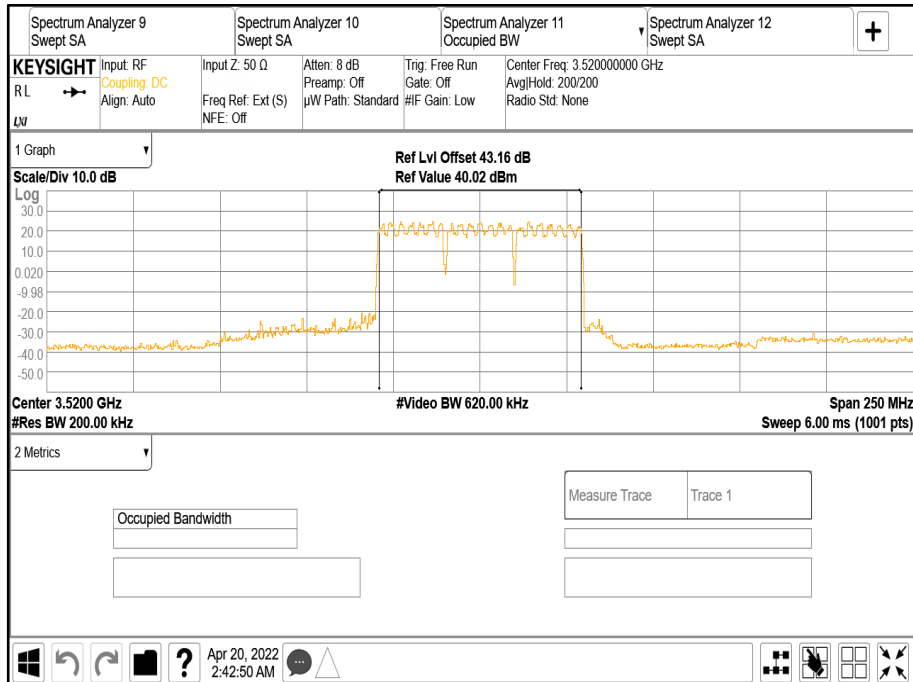


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position M**

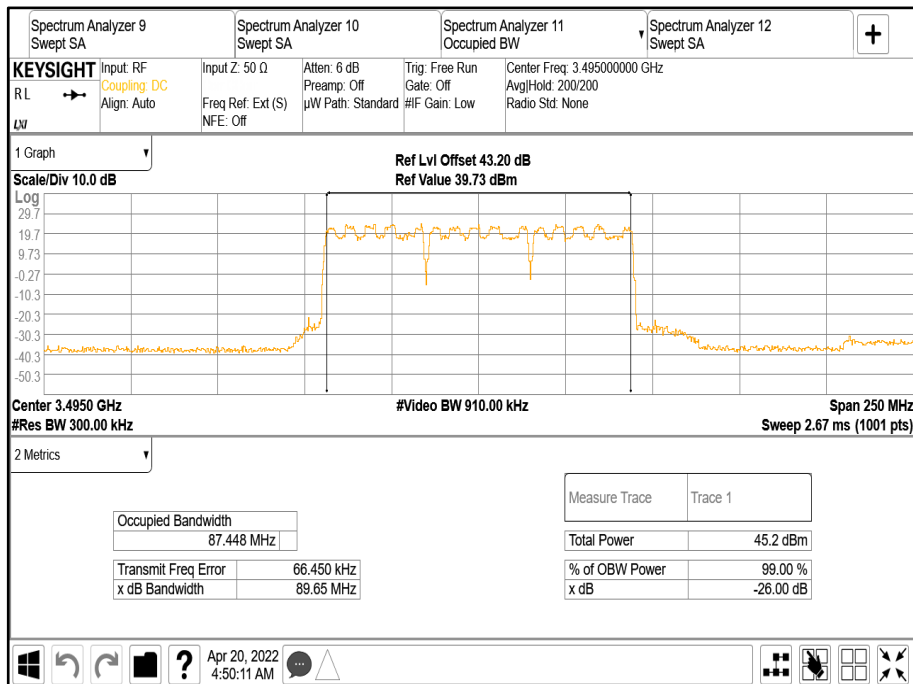




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position T**



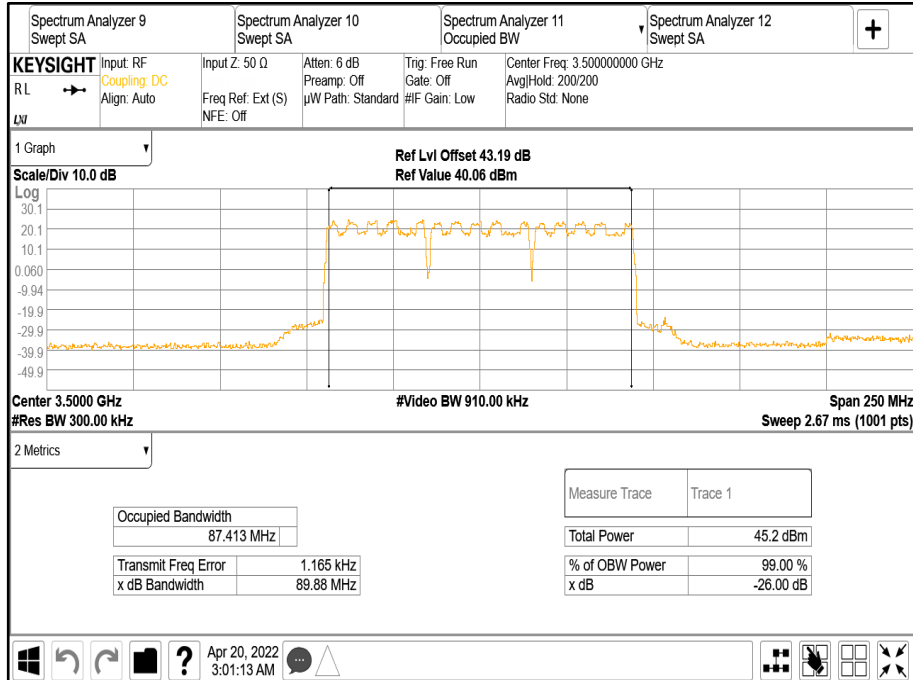
**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position B**



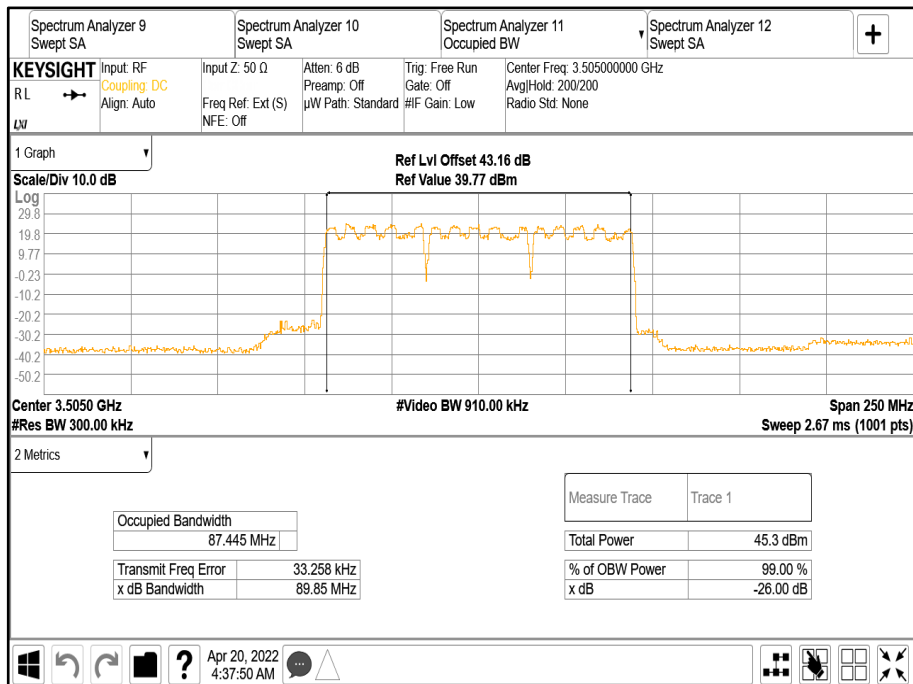




**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position M**



**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 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**

21-April-2022 - 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 23.4°C  
 Relative Humidity 18.6%

**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 single port, the limit was calculated as being  $-13 \text{ dBm} - 10 * \text{Log}(64) = -31 \text{ dBm}$ .

**2.3.6 Test Results**

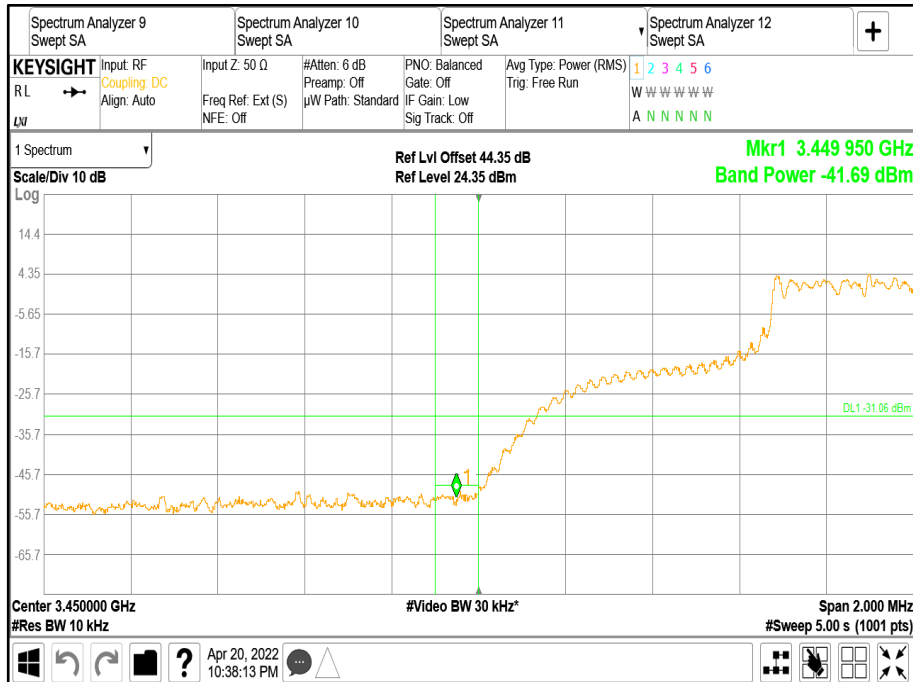
Configuration 4

Maximum Output Power 30.97,33.98,35.74,6x36.99 dBm

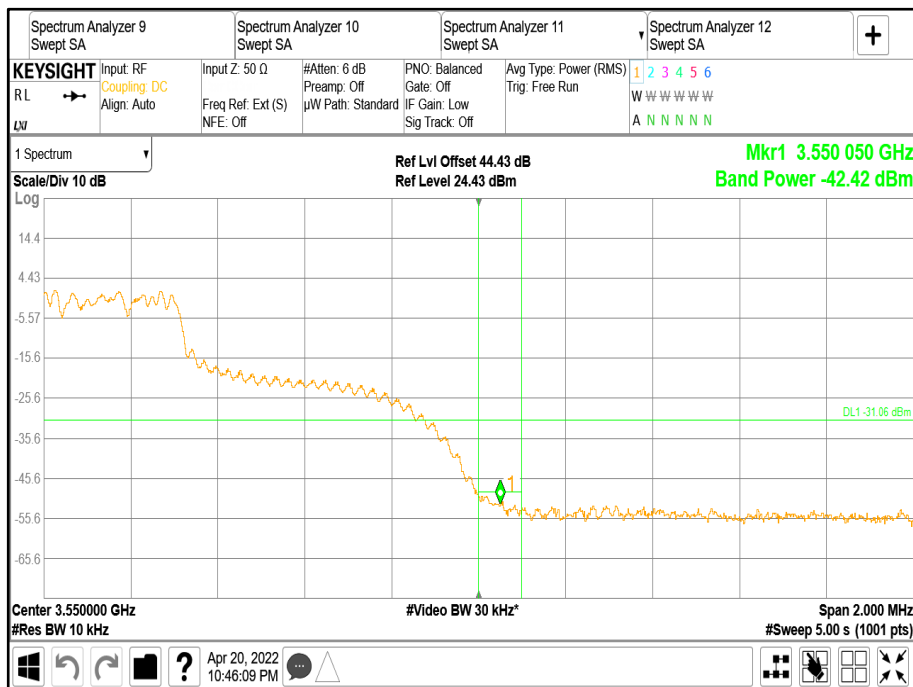
Antenna	NR Modulation	NR Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
62	16QAM	10.0 MHz 30 kHz SCS	3,455.0	3,545.0
62	16QAM	20.0 MHz 30 kHz SCS	3,460.0	3,540.0
62	16QAM	30.0 MHz 30 kHz SCS	3,465.0	3,535.0
62	16QAM	40.0 MHz 30 kHz SCS	3,470.0	3,530.0
62	16QAM	50.0 MHz 30 kHz SCS	3,475.0	3,525.0
62	16QAM	60.0 MHz 30 kHz SCS	3,525.0	3,520.0
62	16QAM	70.0 MHz 30 kHz SCS	3,485.0	3,515.0
62	16QAM	80.0 MHz 30 kHz SCS	3,490.0	3,510.0
62	16QAM	90.0 MHz 30 kHz SCS	3,495.0	3,505.0
62	16QAM	100.0 MHz 30 kHz SCS	3,500.0	3,500.0



**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position B**

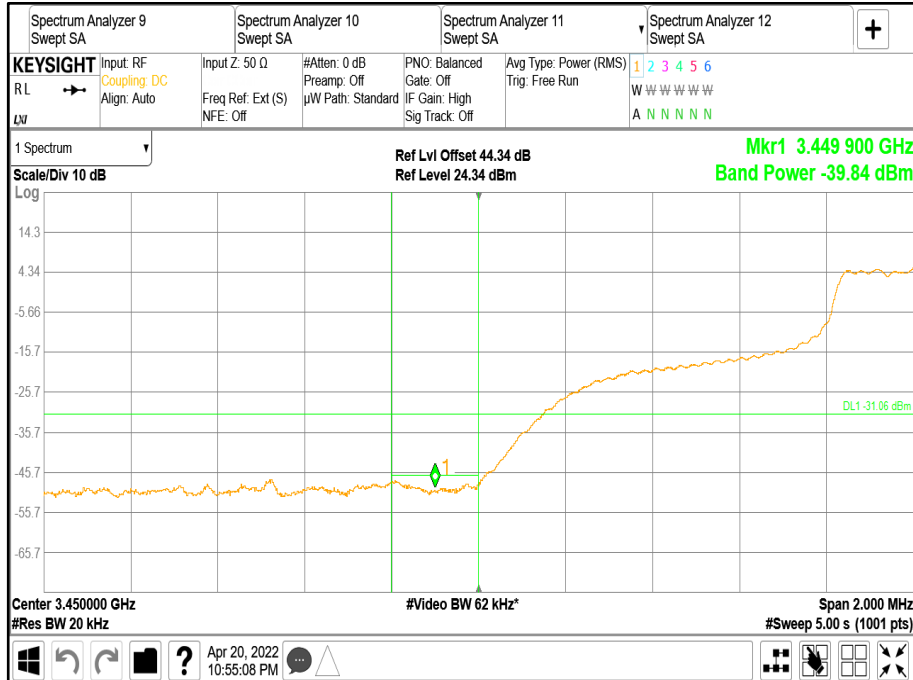


**Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 10.0 MHz 30 kHz SCS - Channel Position T**

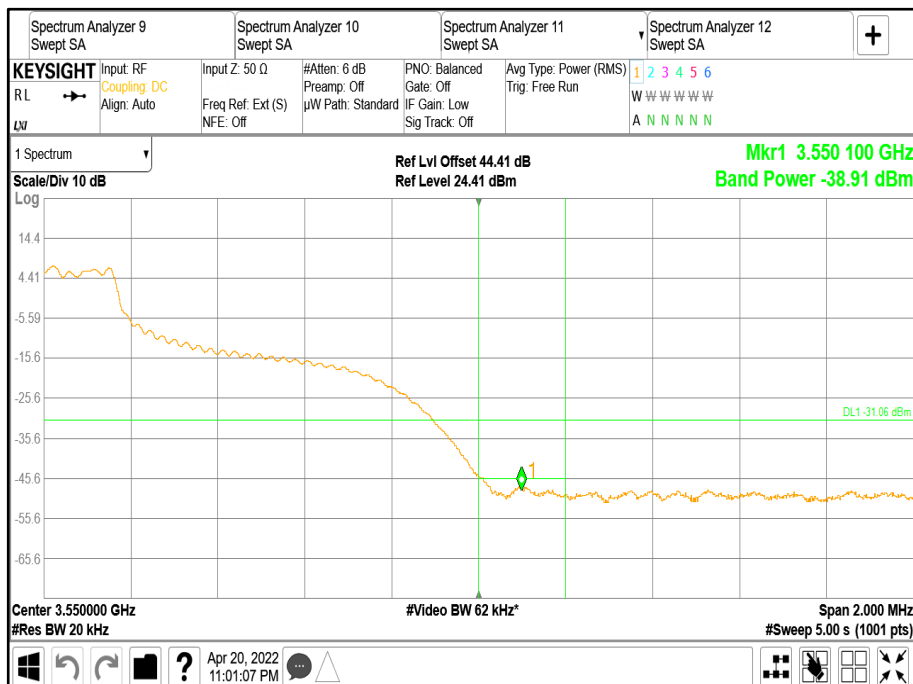




Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position B

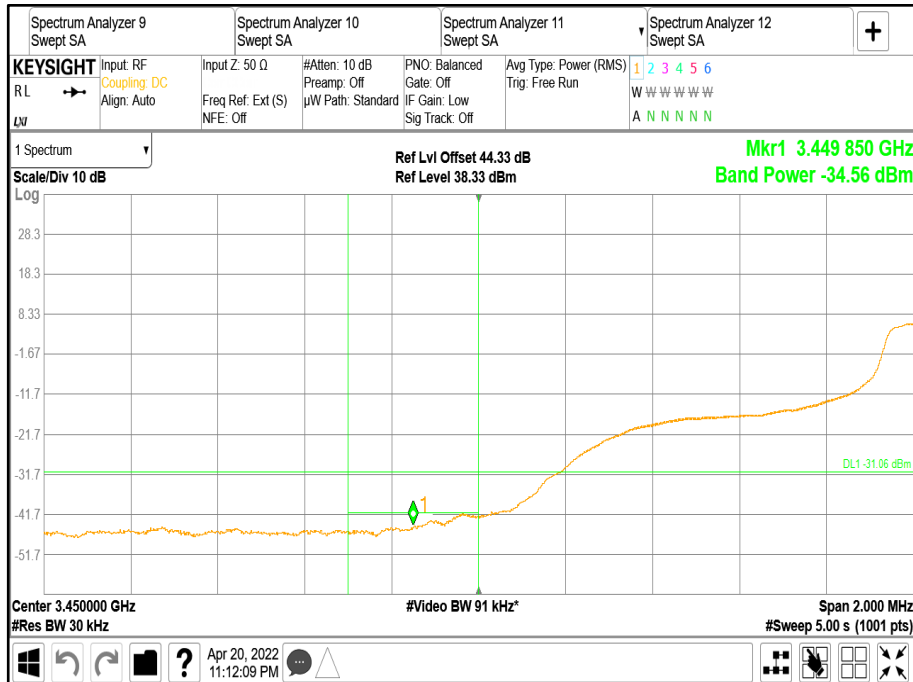


Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 20.0 MHz 30 kHz SCS - Channel Position T





Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position B



Antenna 62 - NR Modulation 16QAM - NR Carrier Bandwidth 30.0 MHz 30 kHz SCS - Channel Position T

