



CAICT

I23Z60174-WMD01



TEST REPORT

No.I23Z60174-WMD01

for

Ericsson AB Antenna Integrated Radio

AIR 6419 B77D

FCC ID: TA8AKRD901252

In accordance with FCC CFR 47 Part 27

Issued Date: 2023-02-27

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No.52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512,Fax:+86(0)10-62304633-2504

Email: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn

©Copyright. All rights reserved by CTTL.



REPORT HISTORY

Report Number	Revision	Description	Issue Date
I23Z60174-WMD01	Rev.0	1 st edition	2023-02-24
I23Z60174-WMD01	Rev.1	Add NR CA in configuration description	2023-02-27

Note: the latest revision of the test report supersedes all previous version.



CONTENTS

1. TEST LABORATORY	4
1.1. INTRODUCTION & ACCREDITATION.....	4
1.2. TESTING LOCATION	4
1.3. PROJECT DATE	4
1.4. SIGNATURE.....	4
2. CLIENT INFORMATION.....	5
2.1. APPLICANT INFORMATION	5
2.2. MANUFACTURER INFORMATION	5
3. EQUIPMENT UNDER TEST (EUT).....	6
3.1. ABOUT EUT	6
3.2. GENERAL DESCRIPTION	7
3.3. CONFIGURATION DESCRIPTION	8
4. REFERENCE DOCUMENTS	10
4.1. REFERENCE DOCUMENTS FOR TESTING	10
5. TEST SETUP	11
6. LABORATORY ENVIRONMENT	13
7. SUMMARY OF TEST RESULTS	14
8. TEST EQUIPMENT UTILIZED	15
9. MEASUREMENT UNCERTAINTY	15
ANNEX A: MEASUREMENT RESULTS.....	16
A.1 MAXIMUM OUTPUT POWER.....	16
A.2 OCCUPIED BANDWIDTH.....	28
A.3 TRANSMITTER UNWANTED EMISSIONS AT BAND EDGE	42
A.4 TRANSMITTER UNWANTED EMISSIONS - CONDUCTED SPURIOUS EMISSION	51
A.5 RADIATED SPURIOUS EMISSION	64
A.6 FREQUENCY STABILITY	73
ANNEX B: ACCREDITATION CERTIFICATE.....	75

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China100191

Location 2: CTTL (BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology
Development Area, Beijing, P. R. China 100176

1.3. Project date

Testing Start Date: 2023-01-30

Testing End Date: 2023-02-22

1.4. Signature



Dong Yuan

(Prepared this test report)



Zhou Yu

(Reviewed this test report)



Zhao Hui Lin

Deputy Director of the laboratory

(Approved this test report)



2. Client Information

2.1. Applicant Information

Company Name: Ericsson (China) Communications Company Ltd.
Address /Post: Ericsson Tower, No.5 Lize East Street, Chaoyang District, Beijing
100102, P.R.China
Contact: Zheng Zhao
Email: zheng.zhao@ericsson.com
Telephone: +86 13911481257

2.2. Manufacturer Information

Company Name: Ericsson AB
Address /Post: Isafjordsgatan 10, Kista, SE-164 80 Stockholm
Sweden
Contact: /
Email: /
Telephone: /

3. Equipment Under Test (EUT)

3.1. About EUT

Description	Antenna Integrated Radio Unit
Product Name	AIR 6419 B77D
Product Number	KRD 901 252/1, KRD 901 252/11, KRD 901 252/3, KRD 901 252/31 (note)
FCC ID	TA8AKRD901252
Antenna Gain	25dBi
Output power	320W NR 20MHz, max PSD is 4W/MHz NR 40/60/80/100 MHz, max PSD is 4W/MHz (Non-rural) & 8W/MHz (rural)
Power source	-48VDC
Serial Number	EA8B437717
Hardware Version	R1A
Software Version	UP: CXP2020666/1_R66A101, PIS: CXP2030039%7_R40A87
Frequency range	RX: 3700MHz-3980MHz, TX: 3700MHz-3980MHz
Number of Antenna ports	64
Maximum RF bandwidth (IBW)	200MHz
Maximum Number of supported carriers per port	up to 4 carriers
Supported modulations	QPSK, 16QAM, 64QAM and 256QAM
Supported Channel bandwidth	NR:20/40/60/80/100 MHz
Date of receipt	2023-01-30

Note: The differences between the 4 variants are as below, and others are same.

KRD 901 252/1 (with un-security software and antenna)

KRD 901 252/11 (with security software and antenna)

KRD 901 252/3 (with un-security software and CAB board for testing purpose)

KRD 901 252/31 (with security software and CAB board for testing purpose)



3.2. General Description

The Equipment Under Test (EUT) AIR 6419 B77D is an Ericsson Radio Unit working in the wireless communication services 3700-3980MHz band which provides communication connections to 3700-3980MHz network. The AIR 6419 B77D operates from -48V DC power source.

The EUT includes 64 TX/RX ports. It can operate in NR mode. It can be configured to transmit in MIMO mode which was used for measurements as the worst configuration. The complete testing was performed with the EUT transmitting at maximum RF power unless otherwise stated.

A full technical description can be found in the Manufacturer's documentation.

3.3. Configuration Description

The following settings were used to represent all traffic scenarios. The output power was measured on the bottom, middle and top channel of all applicable antenna ports. By measuring the output power of QPSK, 16QAM, 64QAM and 256QAM for NR on one of the antenna ports, it was determined that 256QAM was the worst case modulation scheme and was used for all testing. Below settings were used when determine the worst modulation scheme. Common physical channel parameters are according to 3GPP 38.141 FR1 test models.

Table 1: Specific physical channel parameters of modulation scheme

Parameter	Value
# of PRBs PDSCH $n_{\text{RNTI}} = 0$	$N_{\text{RB}} - 3$
Modulation PDSCH $n_{\text{RNTI}} = 0$	QPSK*
Starting RB location of PDSCH $n_{\text{RNTI}} = 0$	3
Modulation of PDSCH $n_{\text{RNTI}} = 2$	QPSK*
Starting RB location of PDSCH $n_{\text{RNTI}} = 2$	0

*The value is QPSK or 16QAM or 64QAM or 256QAM according to test modulation scheme.

Complete testing was carried out on the worst case antenna port which was established as being the highest output power from the applicable measured ports on worst case modulation scheme. This antenna port was Port 63 for NR mode.

The settings below with rural power levels were used for all measurements unless otherwise noted:

NR

Configuration	Carrier	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-1C	1NR	20MHz	3710.01	3840.00	3970.02
NR-MIMO-1C	1NR	40MHz	3720.00	3840.00	3960.00
NR-MIMO-1C	1NR	60MHz	3730.02	3840.00	3950.01
NR-MIMO-1C	1NR	80MHz	3740.01	3840.00	3940.02
NR-MIMO-1C	1NR	100MHz	3750.00	3840.00	3930.00
NR-MIMO-2C	2NR	20MHz	3710.01+3890.01	3750+3930	3790.02+3970.02
NR-MIMO-2C	2NR	40MHz	3720+3879.99	3760.02+3920.01	3800.01+3960
NR-MIMO-2C	2NR	60MHz	3730.02+3870	3770.01+3909.99	3810+3949.98
NR-MIMO-2C	2NR	80MHz	3740.01+3860.01	3780+3900	3820.02+3940.02
NR-MIMO-2C	2NR	100MHz	3750+3849.99	3790.02+3890.01	3830.01+3930
NR-MIMO-4C	4NR	20MHz	3710.01+3730.02+3870+3890.01	3750.01+3770.01+3909.99+3930	3790.02+3810.03+3950.01+3970.02
NR-MIMO-4C	4NR	40MHz	3720+3760.02+3839.97+3879.99	3760.02+3800.01+3879.99+3920.01	3800.01+3840+3919.98+3960
NR-MIMO-CA	2NR	100MHz	3750+3849.99	3790.02+3890.01	3830.01+3930
NR-MIMO-1C-BE	1NR	20MHz	3710.01	N/A	3970.02
NR-MIMO-1C-BE	1NR	40MHz	3720.00	N/A	3960.00
NR-MIMO-1C-BE	1NR	60MHz	3730.02	N/A	3950.01
NR-MIMO-1C-BE	1NR	80MHz	3740.01	N/A	3940.02
NR-MIMO-1C-BE	1NR	100MHz	3750.00	N/A	3930.00
NR-MIMO-2C-BE	2NR	20MHz	3710.01+3730.02	N/A	3950.01+3970.02
NR-MIMO-2C-BE	2NR	40MHz	3720+3760.02	N/A	3920.01+3960
NR-MIMO-2C-BE	2NR	60MHz	3730.02+3790.02	N/A	3890.01+3950.01
NR-MIMO-2C-BE	2NR	80MHz	3740.01+3820.02	N/A	3860.01+3940.02
NR-MIMO-2C-BE	2NR	100MHz	3750+3849.99	N/A	3830.01+3930

N/A – Not Applicable

4. Reference Documents

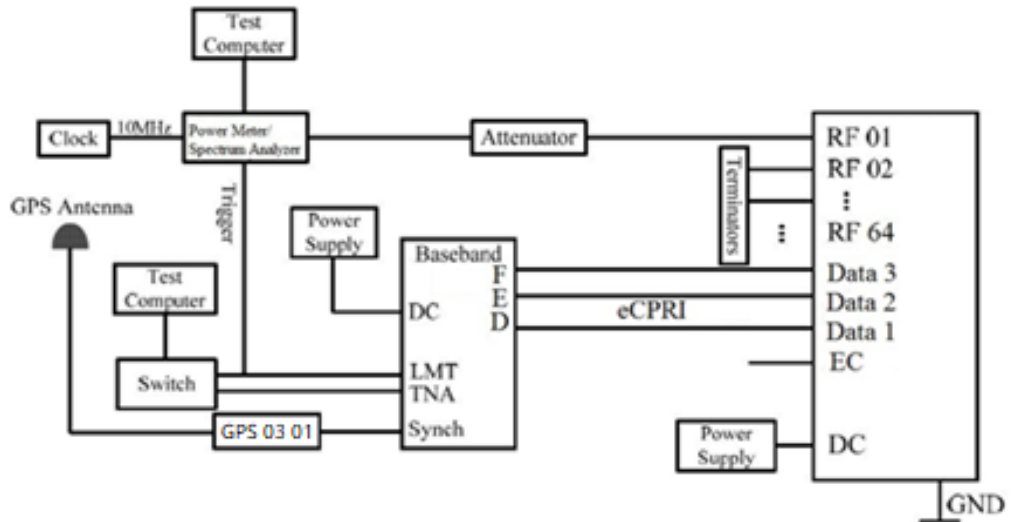
4.1. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-21 Edition
FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS	10-1-21 Edition
ANSI 63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01
KDB 662911 D01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band	v02r01

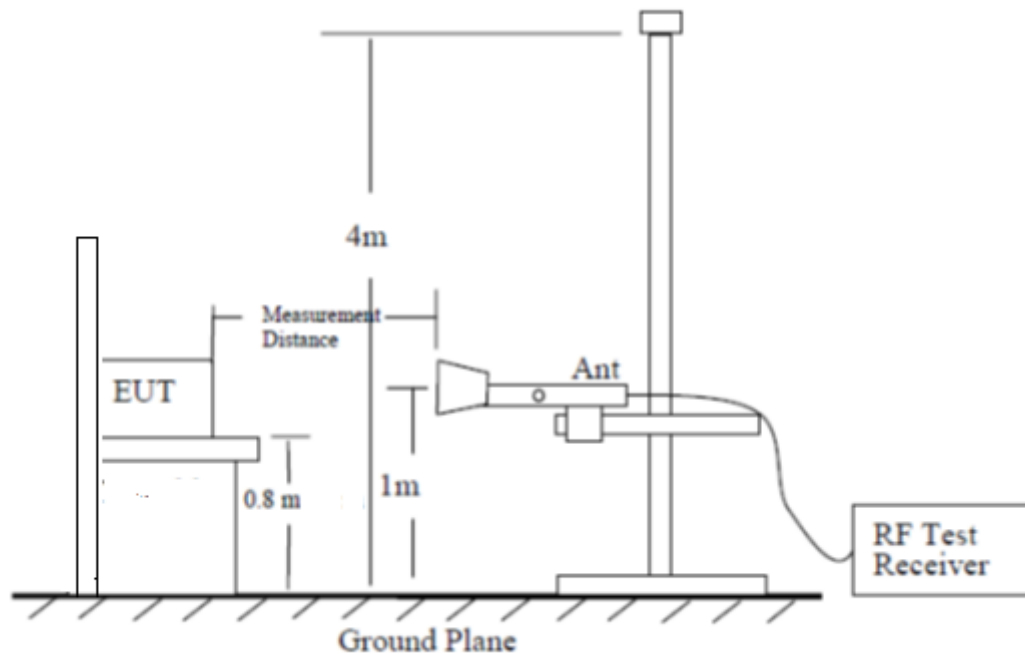
5. TEST SETUP

Test Setup, Conducted Measurement:

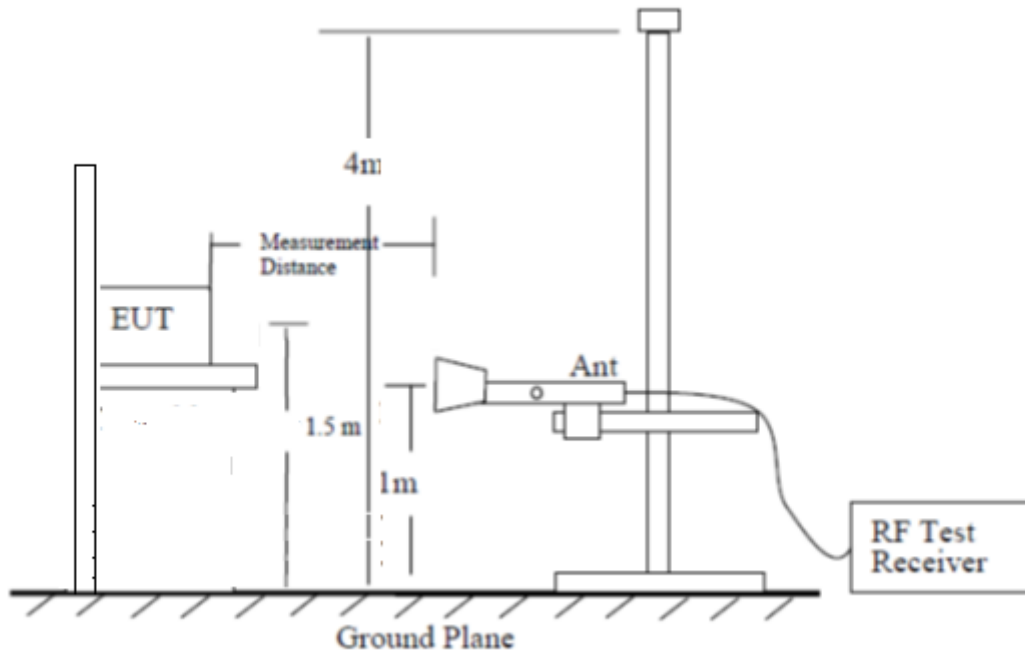


No.	Auxiliary Equipment	Model Type	Version
1	Test Computer	HP EliteBook 8540w	-
2	Baseband	KDU 137 0015/1	R3C
3	Power supply unit	PCR2000M	-
4	Terminator	SHX 6G	-
5	Attenuator	Aeroflex / Weinschel	-

Test Setup, Radiated Measurement:



30MHz-1GHz Radiated Measurement setup (Semi-anechoic chamber)



1GHz-40GHz Radiated Measurement setup (Full-anechoic chamber)

6. LABORATORY ENVIRONMENT

Control room / conducted chamber did not exceed following limits along the testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω

Semi-anechoic chamber(10 meters×6.7 meters×6.15 meters) did not exceed following limits along the testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	<±3.5 dB, 3 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

7. SUMMARY OF TEST RESULTS

Items	Test Name	Clause in FCC rules	Verdict
1	Maximum Output Power	27.50(j), 2.1046	Pass
2	Occupied Bandwidth	27.53(m), 2.1049	Pass
3	Transmitter unwanted emissions at Band Edge	27.53(l), 2.1051	Pass
4	Transmitter unwanted emissions - Conducted Spurious Emission	27.53(l), 2.1051	Pass
5	Radiated Spurious Emission	27.53(l), 2.1053	Pass
6	Frequency Stability	27.54, 2.1055	Pass

8. Test Equipment Utilized

NO.	Description	TYPE	series number	MANUFACTURE	CAL DUE DATE
1	DC Power Supply	PCR2000M	PJ000583	Kikusui	2023-05-13
2	40dB Attenuator	66-40-33	CD4019	Aeroflex / Weinschel	-
3	Spectrum Analyzer	N9030	MY57142378	Keysight	2023-03-01
4	Climate Chamber	GPS-4	0010-003512	Espec	2023-04-29
5	20dB Attenuator	DTS25-20dB	190730	Huaxiang	-
6	Test Receiver	ESU26	100376	R&S	2023-09-22
7	Test Receiver	ESW44	103015	R&S	2023-02-23
8	Antenna	VULB 9163	01177	SCHWARZBECK	2023-08-03
9	Antenna	3117	00119024	ETS	2023-06-07
10	Antenna	LB-180400-25-C-KF	J211060826	A-INFO	2023-02-27

9. MEASUREMENT UNCERTAINTY

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

Test Discipline	Measurement Uncertainty
Conducted Maximum Peak Output Power	0.5dB
Occupied Bandwidth	1.1Hz
Conducted Unwanted Emissions	2.3dB
Frequency Stability	$<\pm 1 \times 10^{-7}$
Radiated Unwanted Emissions	<1GHz 5.88dB, k=2
	>1GHz 4.72dB, k=2

ANNEX A: MEASUREMENT RESULTS

A.1 Maximum Output Power

A.1.1 Reference

FCC CFR 47 Part 2, Clause 2.1046

FCC CFR 47 Part 27, Clause 27.50(j)

A.1.2 Method of Measurements

During the process of testing, the EUT was configured to transmit on maximum power and proper modulation. The transmitter power shall be measured in terms of a root-mean-square (RMS) average value. In case of the EUT was configured to MIMO mode, since the EUT transmits on all antennas simultaneously in the same frequency range, using the Measure-and-Sum approach, the output power at all antennas were tested, and the total output power were then summed mathematically in linear power units according to FCC KDB 662911 D01.

A peak to average ratio measurement is performed at the conducted ports of the EUT for single carrier for single RAT mode. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) was used and 0.1% probability value recorded.

A.1.3 Limit

EIRP: Non-Rural ≤ 1640 W/MHz, Rural ≤ 3280 W/MHz

Peak to Average Ratio: ≤ 13 dB

A.1.4 Measurement result

Configuration NR-MIMO-1C 20.0M

Maximum Output Power 30.97dBm per port for NR Channel Bandwidth 20MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
1	256QAM/20.0	29.77	17.62	8.22	29.75	17.46	8.24	29.59	17.49	8.15
2	256QAM/20.0	29.82	17.71	8.19	29.68	17.45	8.19	29.75	17.59	8.13
3	256QAM/20.0	30.17	17.92	8.20	29.91	17.75	8.21	29.59	17.45	8.18
4	256QAM/20.0	30.19	18.10	8.19	29.79	17.74	8.26	29.63	17.68	8.17
5	256QAM/20.0	30.15	18.05	8.20	29.85	17.77	8.17	29.68	17.72	8.12
6	256QAM/20.0	30.14	18.01	8.21	29.63	17.70	8.22	29.76	17.70	8.18
7	256QAM/20.0	30.11	18.07	8.19	29.70	17.71	8.19	29.68	17.71	8.18
8	256QAM/20.0	29.88	17.76	8.22	29.63	17.53	8.23	29.52	17.31	8.15
9	256QAM/20.0	29.98	17.82	8.22	29.81	17.69	8.22	29.67	17.52	8.19
10	256QAM/20.0	29.85	17.82	8.27	29.51	17.58	8.24	29.59	17.58	8.15
11	256QAM/20.0	30.05	18.02	8.22	29.66	17.72	8.28	29.79	17.72	8.15
12	256QAM/20.0	30.22	17.98	8.25	29.89	17.72	8.21	29.83	17.62	8.16
13	256QAM/20.0	30.01	17.95	8.24	29.86	17.70	8.24	29.77	17.57	8.15
14	256QAM/20.0	29.96	17.82	8.22	29.72	17.61	8.24	29.72	17.63	8.22
15	256QAM/20.0	30.05	18.02	8.18	29.88	17.65	8.17	29.78	17.67	8.18
16	256QAM/20.0	29.97	17.74	8.25	29.72	17.46	8.21	29.74	17.47	8.21
17	256QAM/20.0	30.13	18.02	8.24	29.83	17.63	8.24	29.82	17.60	8.18
18	256QAM/20.0	30.26	18.11	8.21	29.92	17.81	8.19	29.91	17.75	8.12
19	256QAM/20.0	30.19	18.01	8.23	29.85	17.68	8.22	29.85	17.58	8.17
20	256QAM/20.0	30.33	18.19	8.28	30.04	17.87	8.22	29.96	17.81	8.21
21	256QAM/20.0	30.22	18.09	8.25	29.95	17.85	8.22	29.81	17.69	8.19
22	256QAM/20.0	30.25	18.06	8.21	29.73	17.87	8.23	29.73	17.67	8.16
23	256QAM/20.0	29.88	18.03	8.23	29.59	17.75	8.21	29.71	17.95	8.12
24	256QAM/20.0	29.82	17.99	8.26	29.74	17.86	8.19	29.75	17.86	8.13
25	256QAM/20.0	29.97	18.05	8.24	29.68	17.81	8.27	29.77	17.72	8.19
26	256QAM/20.0	29.83	17.95	8.20	29.52	17.79	8.24	29.58	17.81	8.22
27	256QAM/20.0	29.89	17.86	8.25	29.59	17.80	8.28	29.55	17.85	8.24
28	256QAM/20.0	29.68	18.02	8.21	29.70	17.96	8.24	29.54	17.73	8.23
29	256QAM/20.0	29.74	18.01	8.27	29.72	17.89	8.25	29.72	17.80	8.21
30	256QAM/20.0	29.91	18.11	8.26	29.63	17.82	8.28	29.48	17.70	8.21
31	256QAM/20.0	29.97	18.08	8.26	29.71	17.97	8.23	29.74	17.94	8.22
32	256QAM/20.0	29.55	17.63	8.24	29.76	17.87	8.27	29.65	17.96	8.21

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
33	256QAM/20.0	29.92	18.00	8.19	29.55	17.77	8.29	29.49	17.72	8.23
34	256QAM/20.0	30.01	18.15	8.24	29.76	17.69	8.24	29.64	17.79	8.17
35	256QAM/20.0	29.97	18.09	8.26	29.56	17.78	8.29	29.57	17.77	8.21
36	256QAM/20.0	30.04	18.09	8.29	29.71	17.62	8.26	29.59	17.73	8.22
37	256QAM/20.0	29.78	17.87	8.23	29.55	17.72	8.27	29.52	17.64	8.16
38	256QAM/20.0	29.73	17.97	8.21	29.49	17.81	8.26	29.69	17.87	8.24
39	256QAM/20.0	29.62	17.91	8.18	29.75	17.97	8.23	29.62	17.81	8.21
40	256QAM/20.0	29.79	18.02	8.19	29.75	17.94	8.24	29.49	17.76	8.17
41	256QAM/20.0	29.64	17.96	8.22	29.55	17.72	8.26	29.65	17.80	8.19
42	256QAM/20.0	29.83	18.01	8.20	29.54	17.76	8.19	29.52	17.73	8.12
43	256QAM/20.0	29.79	18.05	8.18	29.76	17.98	8.25	29.57	17.73	8.16
44	256QAM/20.0	29.73	18.00	8.19	29.49	17.71	8.18	29.66	17.70	8.15
45	256QAM/20.0	29.89	18.14	8.22	29.61	17.82	8.19	29.59	17.76	8.21
46	256QAM/20.0	29.83	18.12	8.24	29.58	17.80	8.24	29.51	17.77	8.15
47	256QAM/20.0	29.69	18.05	8.23	29.49	17.63	8.21	29.66	17.89	8.18
48	256QAM/20.0	29.68	17.91	8.25	29.71	17.83	8.27	29.59	17.67	8.22
49	256QAM/20.0	29.92	18.09	8.23	29.75	17.98	8.19	29.63	17.81	8.17
50	256QAM/20.0	30.07	18.11	8.15	29.70	17.85	8.23	29.73	17.78	8.15
51	256QAM/20.0	30.21	18.08	8.21	29.79	17.59	8.23	29.64	17.40	8.19
52	256QAM/20.0	30.05	17.83	8.22	29.69	17.52	8.23	29.59	17.47	8.15
53	256QAM/20.0	30.17	17.78	8.23	29.91	17.62	8.22	29.88	17.71	8.15
54	256QAM/20.0	30.27	17.92	8.15	29.85	17.72	8.21	29.79	17.52	8.15
55	256QAM/20.0	30.19	17.81	8.22	29.67	17.79	8.21	29.83	17.73	8.18
56	256QAM/20.0	30.10	17.89	8.18	29.98	17.83	8.22	29.79	17.59	8.15
57	256QAM/20.0	29.83	17.85	8.19	29.51	17.63	8.21	29.53	17.74	8.12
58	256QAM/20.0	29.89	17.92	8.19	29.58	17.70	8.18	29.71	17.87	8.19
59	256QAM/20.0	29.73	17.79	8.21	29.71	17.77	8.22	29.60	17.72	8.16
60	256QAM/20.0	29.95	17.99	8.18	29.56	17.78	8.25	29.71	17.76	8.13
61	256QAM/20.0	30.10	18.05	8.21	29.65	17.67	8.16	29.75	17.63	8.15
62	256QAM/20.0	30.02	18.07	8.26	29.52	17.77	8.22	29.53	17.72	8.16
63	256QAM/20.0	30.83	18.82	8.17	30.42	18.59	8.20	30.33	18.51	8.16
64	256QAM/20.0	29.97	17.98	8.19	29.71	17.75	8.26	29.51	17.69	8.15
Total Power 1-64		48.04	36.05	-	47.78	35.82	-	47.74	35.78	-
Total Power 1-64+25dBi		73.04	61.05	-	72.78	60.82	-	72.74	60.78	-

Configuration NR-MIMO-1C 40.0M

Maximum Output Power 36.99dBm per port for NR Channel Bandwidth 40MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
1	256QAM/40.0	35.51	20.47	7.58	35.59	20.35	7.54	35.53	20.47	7.66
2	256QAM/40.0	35.66	20.56	7.55	35.65	20.42	7.51	35.70	20.51	7.60
3	256QAM/40.0	35.92	20.85	7.55	35.69	20.53	7.54	35.63	20.51	7.65
4	256QAM/40.0	36.03	20.93	7.53	35.70	20.62	7.52	35.77	20.64	7.65
5	256QAM/40.0	35.98	20.88	7.53	35.68	20.59	7.49	35.73	20.55	7.61
6	256QAM/40.0	35.90	20.89	7.53	35.50	20.43	7.51	35.71	20.54	7.61
7	256QAM/40.0	35.99	20.77	7.51	35.66	20.49	7.50	35.53	20.47	7.60
8	256QAM/40.0	35.65	20.55	7.54	35.65	20.35	7.50	35.72	20.34	7.64
9	256QAM/40.0	35.79	20.67	7.55	35.72	20.59	7.51	35.53	20.43	7.62
10	256QAM/40.0	35.56	20.52	7.53	35.63	20.58	7.49	35.74	20.46	7.64
11	256QAM/40.0	35.89	20.79	7.56	35.61	20.51	7.53	35.50	20.37	7.67
12	256QAM/40.0	35.81	20.71	7.52	35.55	20.54	7.49	35.61	20.43	7.63
13	256QAM/40.0	35.87	20.72	7.56	35.65	20.53	7.52	35.69	20.37	7.62
14	256QAM/40.0	35.77	20.54	7.54	35.62	20.37	7.53	35.62	20.44	7.66
15	256QAM/40.0	35.92	20.78	7.53	35.54	20.44	7.50	35.74	20.51	7.61
16	256QAM/40.0	35.96	20.66	7.58	35.50	20.32	7.55	35.66	20.41	7.67
17	256QAM/40.0	35.89	20.71	7.56	35.75	20.45	7.58	35.65	20.43	7.68
18	256QAM/40.0	36.05	20.91	7.55	35.79	20.65	7.51	35.95	20.79	7.66
19	256QAM/40.0	36.01	20.74	7.57	35.72	20.55	7.57	35.88	20.57	7.68
20	256QAM/40.0	36.16	20.98	7.56	35.90	20.77	7.52	35.97	20.88	7.64
21	256QAM/40.0	35.82	20.69	7.55	35.79	20.57	7.51	35.83	20.52	7.64
22	256QAM/40.0	35.95	20.79	7.55	35.81	20.65	7.52	35.79	20.56	7.65
23	256QAM/40.0	35.97	20.87	7.56	35.79	20.52	7.51	35.77	20.70	7.64
24	256QAM/40.0	36.02	20.93	7.56	35.86	20.59	7.51	35.86	20.56	7.66
25	256QAM/40.0	36.01	20.83	7.59	35.87	20.69	7.58	35.88	20.60	7.67
26	256QAM/40.0	35.97	20.86	7.59	35.83	20.64	7.57	35.79	20.61	7.67
27	256QAM/40.0	36.06	20.89	7.61	35.81	20.67	7.60	35.71	20.52	7.70
28	256QAM/40.0	35.89	20.83	7.59	35.88	20.56	7.57	35.81	20.59	7.66
29	256QAM/40.0	35.83	20.75	7.61	35.76	20.52	7.58	35.79	20.52	7.68
30	256QAM/40.0	36.07	20.91	7.63	35.89	20.68	7.60	35.82	20.66	7.72
31	256QAM/40.0	35.95	20.86	7.60	35.77	20.60	7.57	35.81	20.66	7.69
32	256QAM/40.0	35.94	20.83	7.66	35.82	20.56	7.63	35.85	20.68	7.74

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
33	256QAM/40.0	36.13	20.95	7.67	35.87	20.72	7.63	35.83	20.66	7.71
34	256QAM/40.0	36.14	20.92	7.58	35.85	20.64	7.58	35.88	20.80	7.67
35	256QAM/40.0	36.11	20.88	7.63	35.80	20.70	7.61	35.81	20.59	7.70
36	256QAM/40.0	36.09	20.91	7.60	35.76	20.64	7.58	35.90	20.78	7.64
37	256QAM/40.0	35.96	20.82	7.59	35.74	20.56	7.58	35.71	20.63	7.67
38	256QAM/40.0	35.91	20.78	7.63	35.76	20.63	7.61	35.81	20.55	7.68
39	256QAM/40.0	35.77	20.67	7.58	35.62	20.39	7.56	35.66	20.49	7.68
40	256QAM/40.0	35.81	20.69	7.59	35.65	20.43	7.59	35.68	20.52	7.71
41	256QAM/40.0	35.81	20.65	7.55	35.68	20.51	7.54	35.61	20.41	7.62
42	256QAM/40.0	35.89	20.85	7.54	35.65	20.62	7.49	35.86	20.64	7.64
43	256QAM/40.0	35.96	20.74	7.53	35.82	20.36	7.52	35.89	20.56	7.67
44	256QAM/40.0	35.78	20.73	7.55	35.67	20.55	7.49	35.76	20.55	7.65
45	256QAM/40.0	36.09	20.94	7.55	35.79	20.67	7.54	35.82	20.69	7.64
46	256QAM/40.0	35.95	20.92	7.59	35.82	20.69	7.54	35.79	20.53	7.68
47	256QAM/40.0	35.98	20.91	7.55	35.78	20.63	7.51	35.80	20.59	7.65
48	256QAM/40.0	35.81	20.66	7.61	35.72	20.45	7.56	35.66	20.35	7.67
49	256QAM/40.0	35.92	20.89	7.59	35.69	20.52	7.56	35.73	20.41	7.65
50	256QAM/40.0	36.05	20.85	7.55	35.86	20.59	7.50	35.92	20.52	7.63
51	256QAM/40.0	35.97	20.79	7.51	35.83	20.52	7.56	35.87	20.34	7.67
52	256QAM/40.0	36.01	20.74	7.53	35.78	20.54	7.50	35.89	20.54	7.61
53	256QAM/40.0	35.78	20.66	7.52	35.72	20.36	7.51	35.72	20.49	7.66
54	256QAM/40.0	35.61	20.53	7.57	35.74	20.44	7.53	35.76	20.43	7.66
55	256QAM/40.0	35.91	20.70	7.52	35.78	20.47	7.50	35.86	20.40	7.63
56	256QAM/40.0	35.99	20.86	7.54	35.82	20.49	7.52	35.77	20.63	7.63
57	256QAM/40.0	35.62	20.66	7.55	35.75	20.66	7.50	35.51	20.49	7.64
58	256QAM/40.0	35.57	20.62	7.51	35.65	20.45	7.47	35.50	20.53	7.59
59	256QAM/40.0	35.75	20.86	7.53	35.61	20.49	7.50	35.73	20.64	7.63
60	256QAM/40.0	35.72	20.83	7.52	35.69	20.51	7.49	35.59	20.55	7.62
61	256QAM/40.0	35.78	20.89	7.51	35.66	20.68	7.50	35.80	20.67	7.65
62	256QAM/40.0	35.67	20.82	7.56	35.57	20.41	7.52	35.79	20.63	7.67
63	256QAM/40.0	36.69	21.62	7.53	36.35	21.37	7.49	36.33	21.25	7.63
64	256QAM/40.0	35.76	20.79	7.57	35.55	20.45	7.56	35.59	20.56	7.68
Total Power 1-64		53.97	38.86	-	53.80	38.62	-	53.82	38.62	-
Total Power 1-64+25dBi		78.97	63.86	-	78.80	63.62	-	78.82	63.62	-

Configuration NR-MIMO-1C 100.0M

Maximum Output Power 36.99dBm per port for NR Channel Bandwidth 100MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
1	256QAM/100.0	35.75	16.47	7.69	35.63	16.29	7.54	35.62	16.32	7.87
2	256QAM/100.0	35.88	16.59	7.64	35.62	16.33	7.49	35.67	16.36	7.89
3	256QAM/100.0	36.02	16.87	7.65	35.92	16.64	7.51	35.52	16.26	7.85
4	256QAM/100.0	36.15	16.91	7.64	35.94	16.66	7.51	35.71	16.51	7.89
5	256QAM/100.0	36.12	16.85	7.65	35.83	16.62	7.50	35.69	16.43	7.83
6	256QAM/100.0	36.11	16.85	7.67	35.86	16.56	7.52	35.69	16.35	7.82
7	256QAM/100.0	36.05	16.86	7.65	35.76	16.46	7.49	35.55	16.31	7.87
8	256QAM/100.0	35.89	16.54	7.62	35.59	16.31	7.50	35.67	16.25	7.89
9	256QAM/100.0	35.81	16.63	7.62	35.61	16.44	7.51	35.69	16.51	7.89
10	256QAM/100.0	35.82	16.64	7.66	35.55	16.39	7.49	35.72	16.43	7.86
11	256QAM/100.0	36.05	16.78	7.66	35.87	16.55	7.53	35.62	16.32	7.90
12	256QAM/100.0	35.90	16.66	7.66	35.86	16.61	7.49	35.58	16.25	7.89
13	256QAM/100.0	35.87	16.73	7.67	35.69	16.59	7.53	35.75	16.37	7.91
14	256QAM/100.0	35.91	16.79	7.68	35.68	16.47	7.54	35.62	16.37	7.89
15	256QAM/100.0	36.02	16.77	7.61	35.71	16.60	7.51	35.55	16.38	7.89
16	256QAM/100.0	35.86	16.62	7.69	35.60	16.32	7.56	35.51	16.39	7.91
17	256QAM/100.0	35.96	16.70	7.66	35.83	16.59	7.59	35.71	16.44	7.88
18	256QAM/100.0	36.17	16.95	7.65	35.96	16.75	7.51	35.82	16.54	7.86
19	256QAM/100.0	36.09	16.88	7.66	35.86	16.58	7.55	35.75	16.46	7.89
20	256QAM/100.0	36.19	17.02	7.64	36.01	16.86	7.53	35.88	16.57	7.87
21	256QAM/100.0	35.95	16.77	7.66	35.91	16.69	7.51	35.59	16.29	7.87
22	256QAM/100.0	36.14	16.86	7.69	35.99	16.73	7.53	35.81	16.37	7.85
23	256QAM/100.0	36.02	16.83	7.66	35.88	16.54	7.50	35.75	16.43	7.85
24	256QAM/100.0	36.07	16.79	7.66	35.94	16.68	7.52	35.81	16.43	7.87
25	256QAM/100.0	36.11	16.92	7.70	35.85	16.56	7.59	35.77	16.41	7.91
26	256QAM/100.0	36.04	16.89	7.71	35.94	16.71	7.58	35.75	16.38	7.93
27	256QAM/100.0	36.09	16.93	7.69	35.94	16.75	7.59	35.66	16.43	7.91
28	256QAM/100.0	36.01	16.77	7.68	35.91	16.57	7.58	35.79	16.46	7.89
29	256QAM/100.0	36.03	16.66	7.69	35.81	16.49	7.58	35.74	16.26	7.91
30	256QAM/100.0	36.06	16.74	7.70	35.98	16.61	7.60	35.85	16.45	7.91
31	256QAM/100.0	36.05	16.79	7.71	36.00	16.64	7.57	35.60	16.28	7.92
32	256QAM/100.0	36.01	16.67	7.75	35.80	16.55	7.62	35.79	16.43	7.95

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
33	256QAM/100.0	36.12	16.97	7.71	35.99	16.79	7.64	35.82	16.55	7.90
34	256QAM/100.0	36.18	16.99	7.71	35.93	16.76	7.57	35.86	16.55	7.91
35	256QAM/100.0	36.05	16.86	7.74	35.88	16.66	7.61	35.83	16.52	7.95
36	256QAM/100.0	36.08	16.92	7.71	35.79	16.63	7.56	35.82	16.44	7.89
37	256QAM/100.0	35.96	16.87	7.68	35.91	16.68	7.58	35.75	16.33	7.89
38	256QAM/100.0	36.07	16.82	7.71	35.88	16.59	7.59	35.73	16.37	7.91
39	256QAM/100.0	35.97	16.77	7.66	35.89	16.53	7.63	35.66	16.28	7.88
40	256QAM/100.0	35.94	16.58	7.66	35.85	16.60	7.59	35.70	16.32	7.92
41	256QAM/100.0	36.06	16.79	7.62	35.89	16.55	7.52	35.65	16.26	7.88
42	256QAM/100.0	36.08	16.87	7.67	35.93	16.57	7.52	35.81	16.45	7.85
43	256QAM/100.0	36.05	16.89	7.65	35.98	16.66	7.53	35.80	16.39	7.93
44	256QAM/100.0	35.90	16.81	7.65	35.83	16.51	7.50	35.64	16.28	7.87
45	256QAM/100.0	36.12	16.98	7.62	35.92	16.71	7.54	35.77	16.42	7.86
46	256QAM/100.0	36.06	16.80	7.71	36.00	16.67	7.54	35.80	16.31	7.88
47	256QAM/100.0	36.03	16.87	7.64	35.97	16.58	7.51	35.79	16.38	7.92
48	256QAM/100.0	35.96	16.67	7.65	35.82	16.49	7.59	35.56	16.29	7.92
49	256QAM/100.0	36.09	16.92	7.65	35.96	16.68	7.53	35.73	16.20	7.91
50	256QAM/100.0	36.16	16.95	7.66	35.89	16.67	7.51	35.62	16.35	7.87
51	256QAM/100.0	36.13	16.73	7.67	35.86	16.42	7.55	35.54	16.28	7.88
52	256QAM/100.0	36.05	16.76	7.66	35.86	16.56	7.51	35.59	16.25	7.85
53	256QAM/100.0	36.00	16.82	7.65	35.91	16.53	7.52	35.51	16.28	7.85
54	256QAM/100.0	35.93	16.59	7.63	35.74	16.50	7.53	35.56	16.23	7.87
55	256QAM/100.0	36.03	16.78	7.66	35.80	16.54	7.51	35.52	16.29	7.86
56	256QAM/100.0	36.08	16.60	7.64	35.94	16.64	7.52	35.78	16.38	7.89
57	256QAM/100.0	36.07	16.82	7.66	35.81	16.59	7.50	35.55	16.25	7.88
58	256QAM/100.0	36.04	16.78	7.61	35.85	16.61	7.47	35.63	16.33	7.85
59	256QAM/100.0	36.00	16.71	7.71	35.89	16.63	7.50	35.67	16.44	7.82
60	256QAM/100.0	36.08	16.74	7.61	35.93	16.71	7.49	35.83	16.50	7.85
61	256QAM/100.0	36.02	16.94	7.62	35.82	16.78	7.50	35.82	16.47	7.87
62	256QAM/100.0	36.05	16.91	7.64	35.87	16.54	7.53	35.77	16.49	7.89
63	256QAM/100.0	36.86	17.59	7.67	36.62	17.49	7.49	36.41	17.03	7.83
64	256QAM/100.0	36.01	16.77	7.69	35.89	16.53	7.56	35.72	16.41	7.89
Total Power 1-64		54.10	34.87	-	53.93	34.67	-	53.77	34.45	-
Total Power 1-64+25dBi		79.10	59.87	-	78.93	59.67	-	78.77	59.45	-

Configuration NR-MIMO-1C 60.0M, 80.0M

Maximum Output Power 36.99dBm per port for NR Channel Bandwidth 60MHz and 80MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/60.0	36.77	19.78	7.59	36.45	19.37	7.52	36.17	19.18	7.75
Calculated Total Power+25dBi		79.84	62.85	-	79.52	62.44	-	79.24	62.25	-
63	256QAM/80.0	36.89	18.51	7.58	36.71	18.26	7.47	36.42	18.01	7.79
Calculated Total Power+25dBi		79.96	61.58	-	79.78	61.33	-	79.49	61.08	-

Configuration NR-MIMO-1C 40.0M

Maximum Output Power 36.99dBm per port for NR Channel Bandwidth 40MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	QPSK/40.0	36.57	21.51	7.52	36.29	21.19	7.49	36.28	21.03	7.62
Calculated Total Power+25dBi		79.64	64.58	-	79.36	64.26	-	79.35	64.10	-
63	16QAM/40.0	36.26	21.59	7.55	36.13	21.30	7.51	35.89	21.07	7.65
Calculated Total Power+25dBi		79.33	64.66	-	79.20	64.37	-	78.96	64.14	-
63	64QAM/40.0	36.61	21.56	7.53	36.33	21.28	7.49	36.26	21.14	7.62
Calculated Total Power+25dBi		79.68	64.63	-	79.40	64.35	-	79.33	64.21	-
63	256QAM/40.0	36.69	21.62	7.53	36.35	21.37	7.49	36.33	21.25	7.63
Calculated Total Power+25dBi		79.76	64.69	-	79.42	64.44	-	79.40	64.32	-

Configuration NR-MIMO-2C 100.0M

Maximum Output Power 36.99dBm per port for NR 2C 100MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/100.0x2	36.89	14.66	-	36.67	14.47	-	36.37	14.25	-
Calculated Total Power+25dBi		79.96	57.73	-	79.74	57.54	-	79.44	57.32	-

Configuration NR-MIMO-4C 20.0M

Maximum Output Power 36.99dBm per port for NR 4C 20MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
1	256QAM/20.0x4	35.54	17.57	-	35.60	17.79	-	35.53	17.41	-
2	256QAM/20.0x4	35.76	17.69	-	35.73	17.82	-	35.61	17.55	-
3	256QAM/20.0x4	35.61	17.71	-	35.71	17.76	-	35.73	17.75	-
4	256QAM/20.0x4	35.71	17.89	-	35.73	17.89	-	35.52	17.63	-
5	256QAM/20.0x4	35.54	17.69	-	35.56	17.63	-	35.69	17.64	-
6	256QAM/20.0x4	35.64	17.72	-	35.63	17.67	-	35.51	17.49	-
7	256QAM/20.0x4	35.65	17.69	-	35.58	17.53	-	35.64	17.63	-
8	256QAM/20.0x4	35.57	17.62	-	35.56	17.52	-	35.50	17.42	-
9	256QAM/20.0x4	35.55	17.68	-	35.74	17.72	-	35.56	17.59	-
10	256QAM/20.0x4	35.74	17.82	-	35.69	17.79	-	35.51	17.65	-
11	256QAM/20.0x4	35.51	17.69	-	35.53	17.59	-	35.63	17.75	-
12	256QAM/20.0x4	35.60	17.75	-	35.56	17.73	-	35.58	17.76	-
13	256QAM/20.0x4	35.74	17.76	-	35.54	17.69	-	35.63	17.70	-
14	256QAM/20.0x4	35.53	17.62	-	35.73	17.84	-	35.55	17.67	-
15	256QAM/20.0x4	35.54	17.59	-	35.52	17.67	-	35.66	17.74	-
16	256QAM/20.0x4	35.76	17.87	-	35.74	17.82	-	35.52	17.65	-
17	256QAM/20.0x4	35.75	17.81	-	35.67	17.78	-	35.76	17.71	-
18	256QAM/20.0x4	35.81	17.96	-	35.75	17.92	-	35.54	17.71	-
19	256QAM/20.0x4	35.68	17.80	-	35.67	17.73	-	35.75	17.82	-
20	256QAM/20.0x4	35.83	18.03	-	35.79	17.95	-	35.67	17.75	-
21	256QAM/20.0x4	35.73	17.81	-	35.74	17.82	-	35.71	17.81	-
22	256QAM/20.0x4	35.71	17.87	-	35.67	17.85	-	35.56	17.63	-
23	256QAM/20.0x4	35.57	17.76	-	35.51	17.67	-	35.75	17.89	-
24	256QAM/20.0x4	35.62	17.82	-	35.63	17.61	-	35.65	17.83	-
25	256QAM/20.0x4	35.67	17.91	-	35.68	17.67	-	35.68	17.87	-
26	256QAM/20.0x4	35.67	17.81	-	35.62	17.76	-	35.77	17.89	-
27	256QAM/20.0x4	35.69	17.93	-	35.66	17.77	-	35.70	17.81	-
28	256QAM/20.0x4	35.58	17.74	-	35.56	17.62	-	35.67	17.83	-
29	256QAM/20.0x4	35.58	17.64	-	35.51	17.63	-	35.61	17.53	-
30	256QAM/20.0x4	35.71	17.80	-	35.69	17.64	-	35.77	17.87	-
31	256QAM/20.0x4	35.66	17.67	-	35.62	17.60	-	35.75	17.69	-
32	256QAM/20.0x4	35.64	17.72	-	35.67	17.59	-	35.73	17.62	-

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
33	256QAM/20.0x4	35.77	17.91	-	35.72	17.82	-	35.76	17.85	-
34	256QAM/20.0x4	35.81	18.01	-	35.77	17.92	-	35.63	17.72	-
35	256QAM/20.0x4	35.71	17.89	-	35.75	17.89	-	35.75	17.89	-
36	256QAM/20.0x4	35.65	17.81	-	35.58	17.86	-	35.65	17.71	-
37	256QAM/20.0x4	35.75	17.88	-	35.70	17.81	-	35.76	17.79	-
38	256QAM/20.0x4	35.67	17.83	-	35.59	17.78	-	35.72	17.86	-
39	256QAM/20.0x4	35.54	17.81	-	35.57	17.61	-	35.69	17.89	-
40	256QAM/20.0x4	35.67	17.86	-	35.66	17.76	-	35.70	17.87	-
41	256QAM/20.0x4	35.73	17.65	-	35.71	17.57	-	35.59	17.63	-
42	256QAM/20.0x4	35.71	17.78	-	35.67	17.69	-	35.73	17.77	-
43	256QAM/20.0x4	35.69	17.91	-	35.73	17.71	-	35.61	17.64	-
44	256QAM/20.0x4	35.66	17.85	-	35.62	17.68	-	35.67	17.51	-
45	256QAM/20.0x4	35.80	17.88	-	35.76	17.87	-	35.51	17.61	-
46	256QAM/20.0x4	35.75	17.86	-	35.74	17.72	-	35.74	17.63	-
47	256QAM/20.0x4	35.74	17.74	-	35.66	17.73	-	35.52	17.59	-
48	256QAM/20.0x4	35.59	17.72	-	35.57	17.54	-	35.59	17.58	-
49	256QAM/20.0x4	35.66	17.79	-	35.60	17.58	-	35.71	17.77	-
50	256QAM/20.0x4	35.86	17.95	-	35.63	17.82	-	35.50	17.68	-
51	256QAM/20.0x4	35.68	17.78	-	35.61	17.78	-	35.69	17.73	-
52	256QAM/20.0x4	35.76	17.93	-	35.69	17.74	-	35.63	17.71	-
53	256QAM/20.0x4	35.64	17.55	-	35.51	17.45	-	35.55	17.52	-
54	256QAM/20.0x4	35.75	17.66	-	35.72	17.59	-	35.56	17.60	-
55	256QAM/20.0x4	35.55	17.57	-	35.50	17.40	-	35.54	17.72	-
56	256QAM/20.0x4	35.57	17.55	-	35.62	17.44	-	35.68	17.61	-
57	256QAM/20.0x4	35.69	17.45	-	35.73	17.55	-	35.63	17.55	-
58	256QAM/20.0x4	35.67	17.57	-	35.68	17.56	-	35.77	17.78	-
59	256QAM/20.0x4	35.76	17.67	-	35.62	17.64	-	35.74	17.79	-
60	256QAM/20.0x4	35.72	17.76	-	35.76	17.62	-	35.52	17.62	-
61	256QAM/20.0x4	35.75	17.80	-	35.73	17.71	-	35.54	17.65	-
62	256QAM/20.0x4	35.64	17.72	-	35.59	17.63	-	35.65	17.81	-
63	256QAM/20.0x4	36.57	18.52	-	36.52	18.32	-	36.09	18.19	-
64	256QAM/20.0x4	35.78	17.81	-	35.77	17.66	-	35.52	17.60	-
Total Power 1-64		53.75	35.84	-	53.73	35.78	-	53.71	35.77	-
Total Power 1-64+25dB		78.75	60.84	-	78.73	60.78	-	78.71	60.77	-

Configuration NR-MIMO-4C 40.0M

Maximum Output Power 36.99dBm per port for NR 4C 40MHz

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/40.0x4	36.82	15.67	-	36.68	15.39	-	36.32	15.26	-
Calculated Total Power+25dBi		79.89	58.74	-	79.75	58.46	-	79.39	58.33	-

Configuration NR-MIMO-1C 40.0M (non-rural)
Maximum Output Power 33.98dBm per port for NR1C 40MHz (non-rural)

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/40.0	33.76	18.79	8.15	33.39	18.45	8.19	33.21	18.12	8.15
Calculated Total Power+25dBi		76.83	61.86	-	76.46	61.52	-	76.28	61.19	-

Configuration NR-MIMO-1C 60.0M (non-rural)
Maximum Output Power 35.74dBm per port for NR1C 60MHz (non-rural)

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/60.0	35.51	18.62	8.15	35.32	18.35	8.21	35.05	18.03	8.19
Calculated Total Power+25dBi		78.58	61.69	-	78.39	61.42	-	78.12	61.10	-

Configuration NR-MIMO-2C 20.0M (non-rural)
Maximum Output Power 33.98dBm per port for NR 2C 20.0M (non-rural)

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/20.0x2	33.82	18.76	-	33.69	18.59	-	33.35	18.39	-
Calculated Total Power+25dBi		76.89	61.83	-	76.76	61.66	-	76.42	61.46	-

Configuration NR-MIMO-2C 40.0M (non-rural)
Maximum Output Power 36.99dBm per port for NR 2C 40.0M (non-rural)

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power								
		Channel position B			Channel position M			Channel position T		
		POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)	POWER (dBm)	POWER (dBm/MHz)	PAR (db)
63	256QAM/40.0x2	36.86	18.56	-	35.65	18.22	-	36.21	18.12	-
Calculated Total Power+25dBi		79.93	61.63	-	78.72	61.29	-	79.28	61.19	-

A.2 Occupied Bandwidth

A.2.1 Reference

FCC CFR 47 Part 2, Clause 2.1049

FCC CFR 47 Part 27, Clause 27.53 (m)

A.2.2 Method of Measurements

The EUT was set to transmit at maximum power. Using the Occupied Bandwidth measurement function in the spectrum analyzer, the occupied bandwidth was measured in accordance with ANSI 63.26.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) Use the 99% power bandwidth function of the spectrum analyzer and report the measured bandwidth.

A.2.3 Measurement result

Configuration NR-MIMO-1C

-26dBc Occupied Bandwidth

Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)		
		Channel Position B	Channel Position M	Channel Position T
63	256QAM/ 20.0 MHz	19.19	19.47	19.55
63	256QAM/ 40.0 MHz	39.75	39.74	39.67
63	256QAM/ 60.0 MHz	60.67	60.59	60.70
63	256QAM/ 80.0 MHz	81.15	81.08	81.09
63	256QAM/ 100.0 MHz	102.10	102.20	102.20

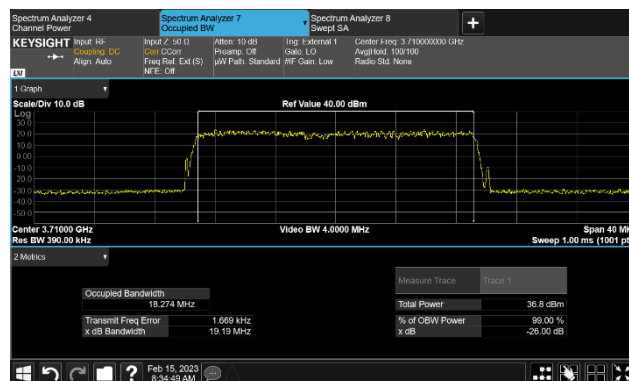
Antenna	Channel Position	Bandwidth	Occupied Bandwidth (MHz)		
			QPSK	16QAM	64QAM
63	M	20.0 MHz	19.48	19.38	19.49
63	M	40.0 MHz	39.74	39.57	39.71
63	M	60.0 MHz	60.54	60.24	60.62
63	M	80.0 MHz	80.93	81.04	81.29
63	M	100.0 MHz	102.10	101.80	102.20

99% Occupied Bandwidth

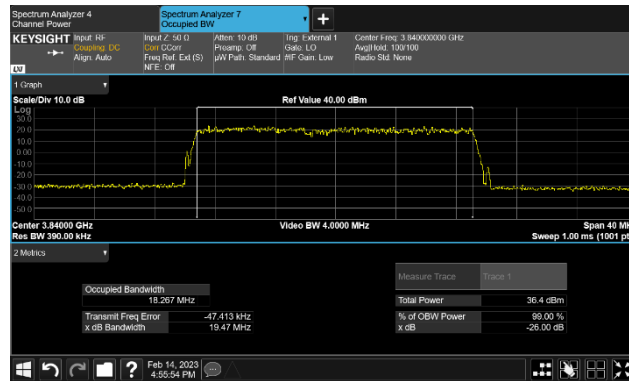
Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)		
		Channel Position B	Channel Position M	Channel Position T
63	256QAM/ 20.0 MHz	18.27	18.27	18.23
63	256QAM/ 40.0 MHz	37.83	37.87	37.89
63	256QAM/ 60.0 MHz	57.94	57.88	57.85
63	256QAM/ 80.0 MHz	76.75	76.93	76.87
63	256QAM/ 100.0 MHz	97.44	97.52	97.44

Antenna	Channel Position	Bandwidth	Occupied Bandwidth (MHz)		
			QPSK	16QAM	64QAM
63	M	20.0 MHz	18.26	18.30	18.25
63	M	40.0 MHz	37.91	37.95	38.03
63	M	60.0 MHz	57.73	57.76	57.81
63	M	80.0 MHz	77.16	77.35	77.09
63	M	100.0 MHz	97.40	97.60	97.70

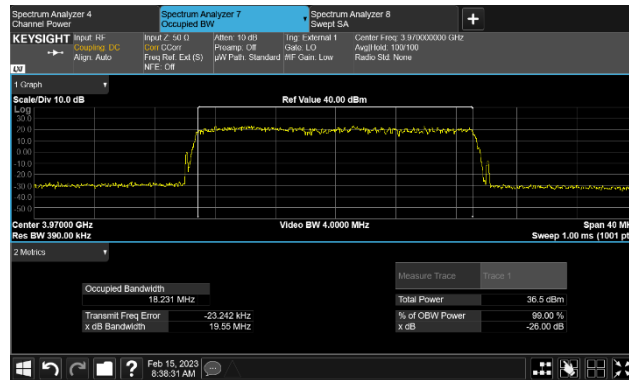
Port 63, 256QAM NR 20.0M Channel position B



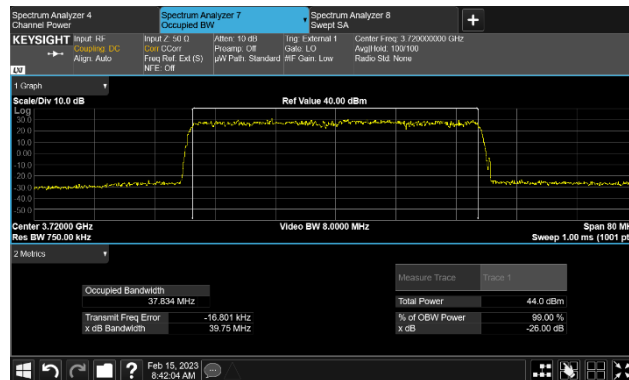
Port 63, 256QAM 20.0M Channel position M



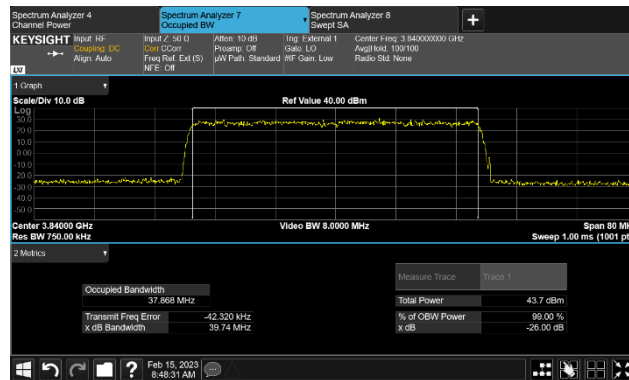
Port 63, 256QAM 20.0M Channel position T



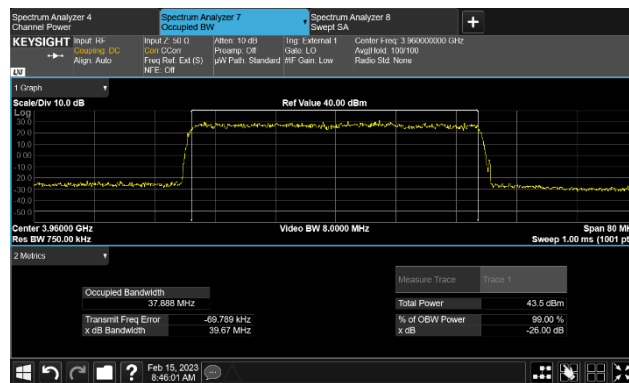
Port 63, 256QAM 40.0M Channel position B



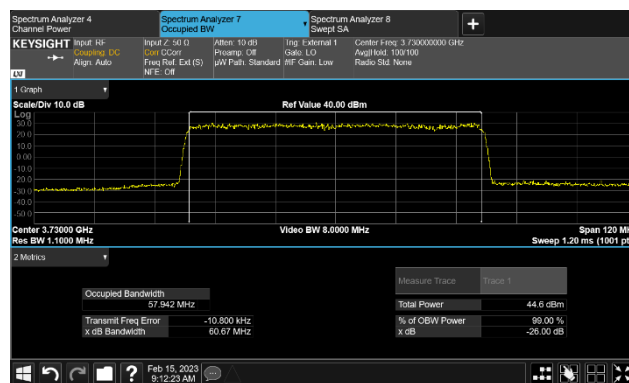
Port 63, 256QAM 40.0M Channel position M



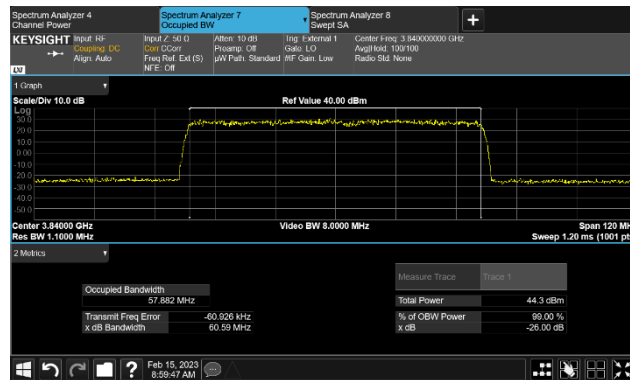
Port 63, 256QAM 40.0M Channel position T



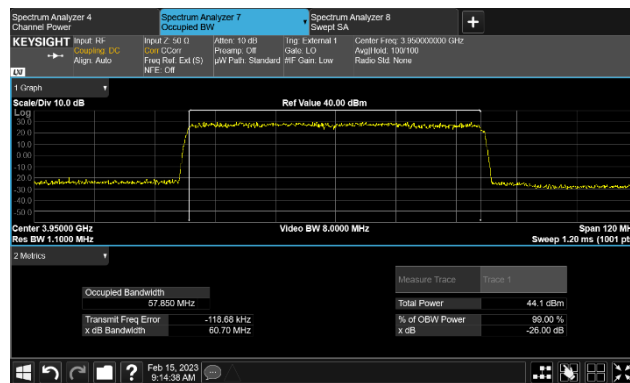
Port 63, 256QAM 60.0M Channel position B



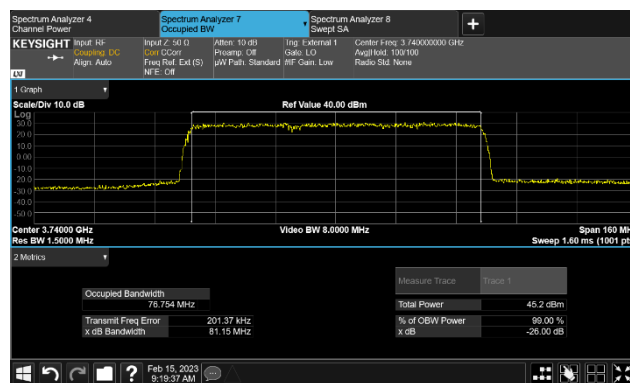
Port 63, 256QAM 60.0M Channel position M



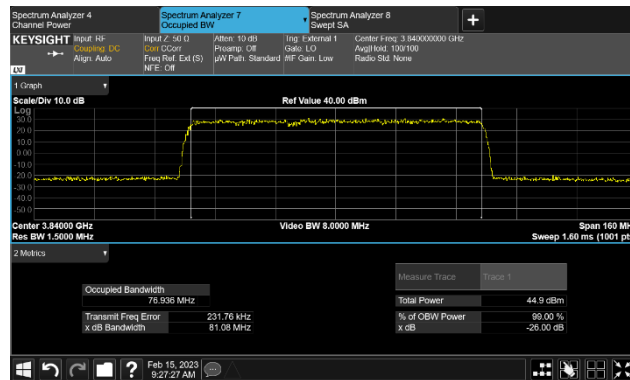
Port 63, 256QAM 60.0M Channel position T



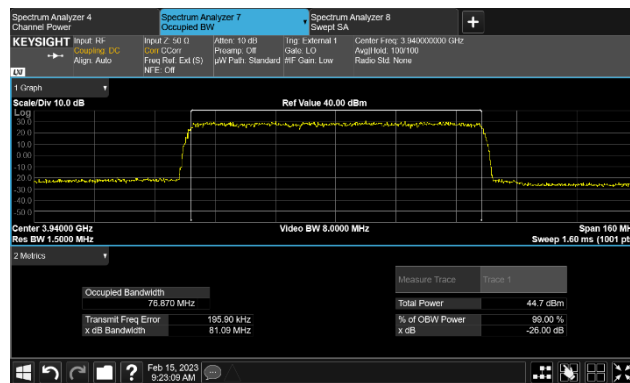
Port 63, 256QAM 80.0M Channel position B



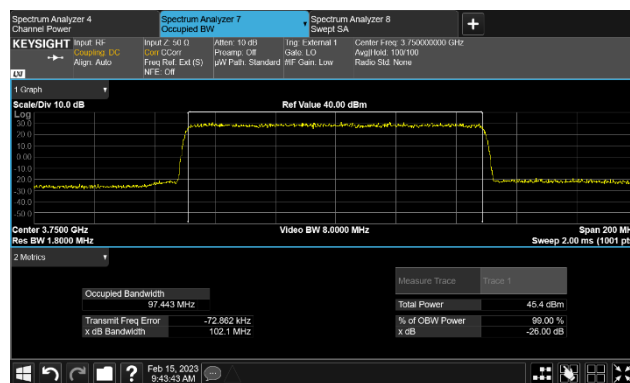
Port 63, 256QAM 80.0M Channel position M



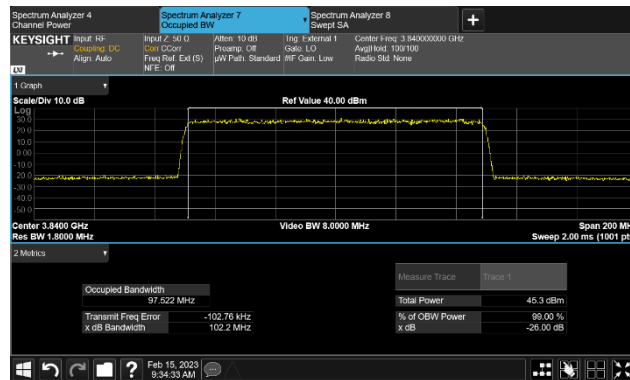
Port 63, 256QAM 80.0M Channel position T



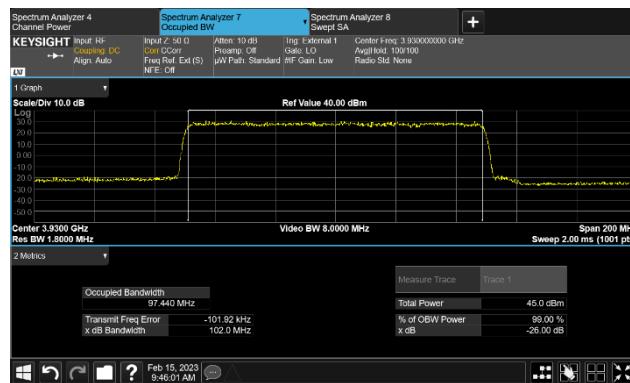
Port 63, 256QAM 100.0M Channel position B



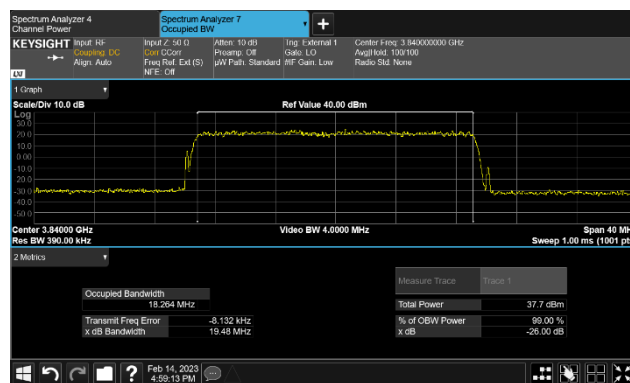
Port 63, 256QAM 100.0M Channel position M



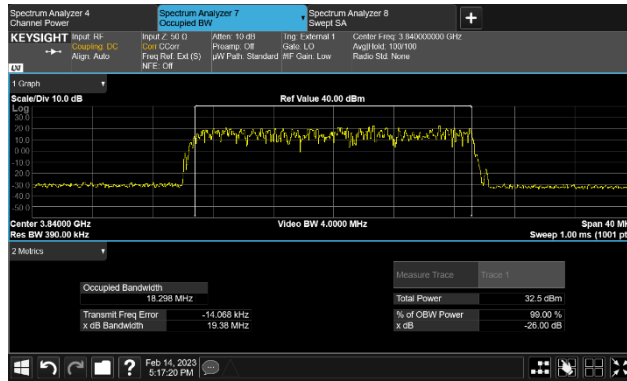
Port 63, 256QAM 100.0M Channel position T



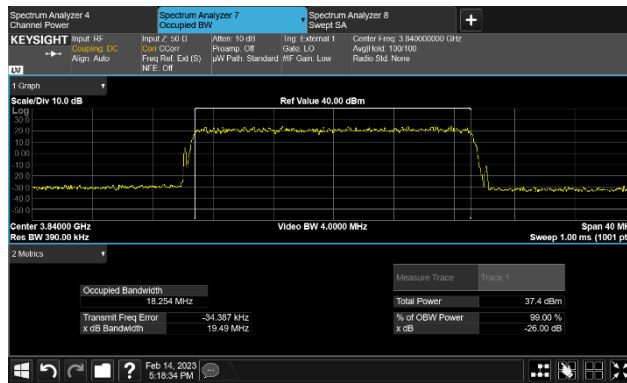
Port 63, QPSK 20.0M Channel position M



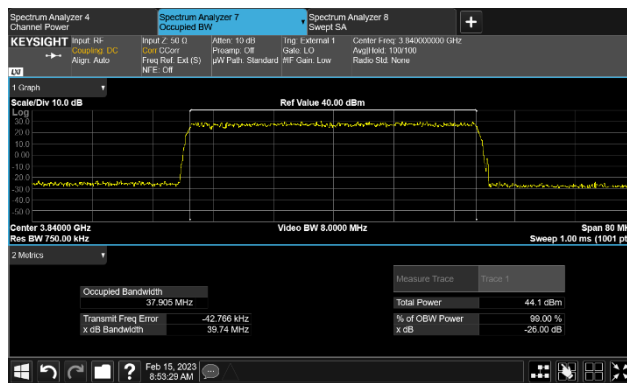
Port 63, 16QAM 20.0M Channel position M



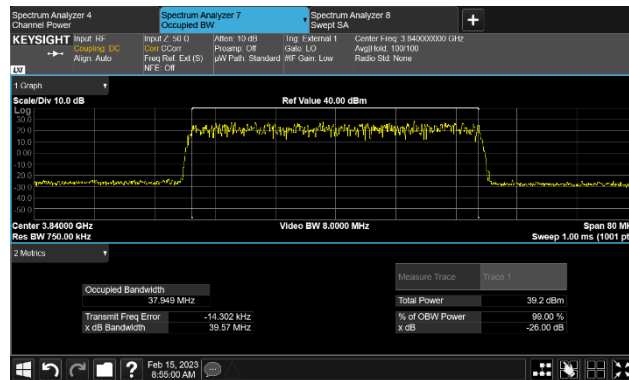
Port 63, 64QAM 20.0M Channel position M



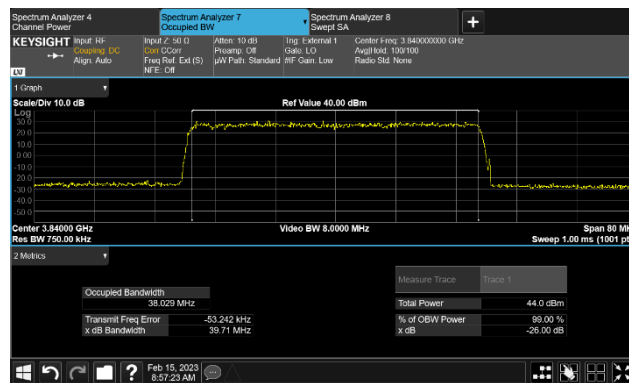
Port 63, QPSK 40.0M Channel position M



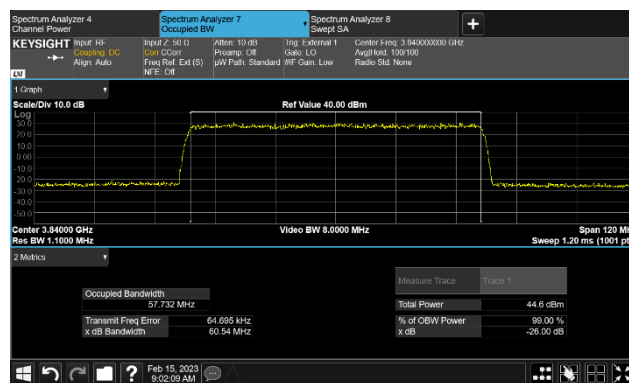
Port 63, 16QAM 40.0M Channel position M



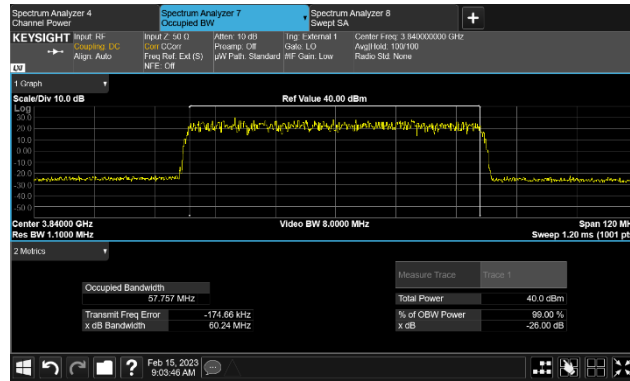
Port 63, 64QAM 40.0M Channel position M



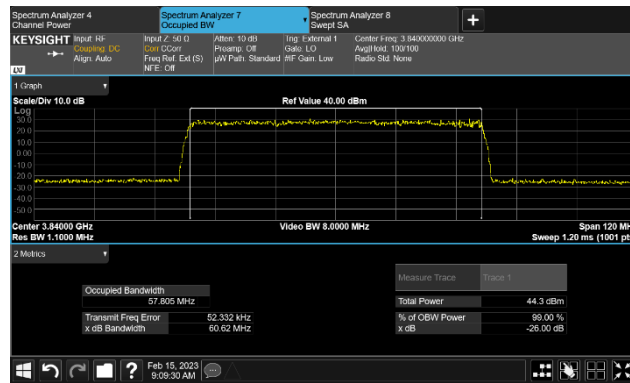
Port 63, QPSK 60.0M Channel position M



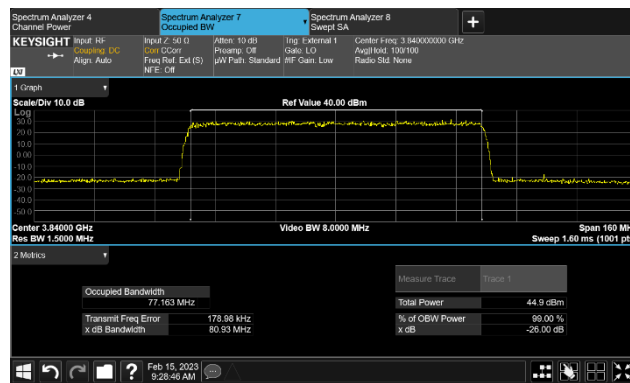
Port 63, 16QAM 60.0M Channel position M



Port 63, 64QAM 60.0M Channel position M



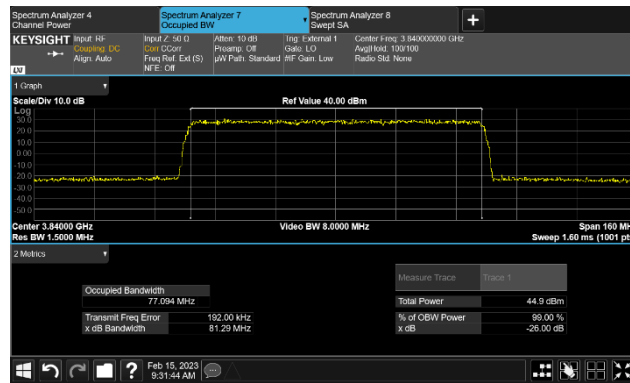
Port 63, QPSK 80.0M Channel position M



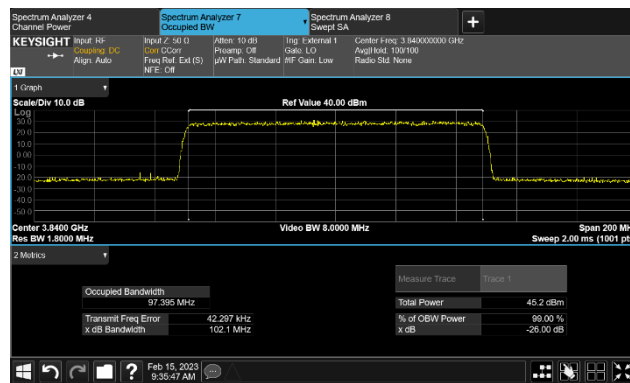
Port 63, 16QAM 80.0M Channel position M



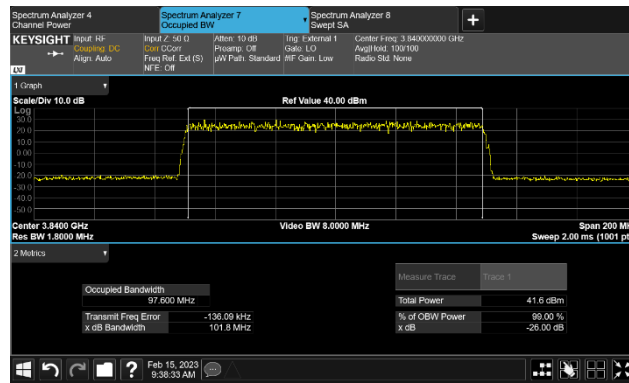
Port 63, 64QAM 80.0M Channel position M



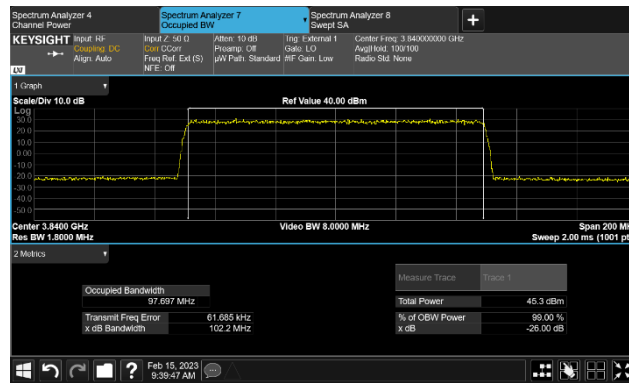
Port 63, QPSK 100.0M Channel position M



Port 63, 16QAM 100.0M Channel position M



Port 63, 64QAM 100.0M Channel position M



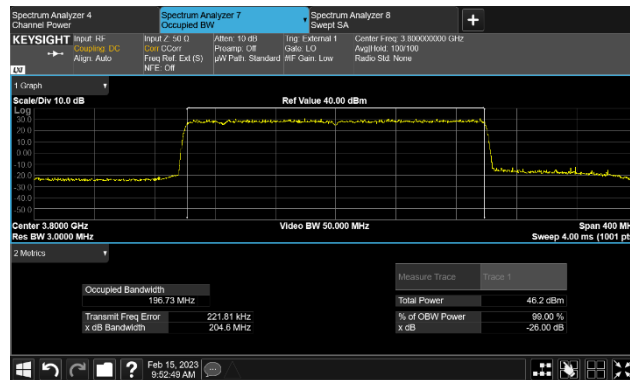
Configuration NR-MIMO-CA
-26dBc Occupied Bandwidth

Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)		
		Channel Position B	Channel Position M	Channel Position T
63	256QAM/ CA 2C-100.0 MHz	204.60	204.80	204.70

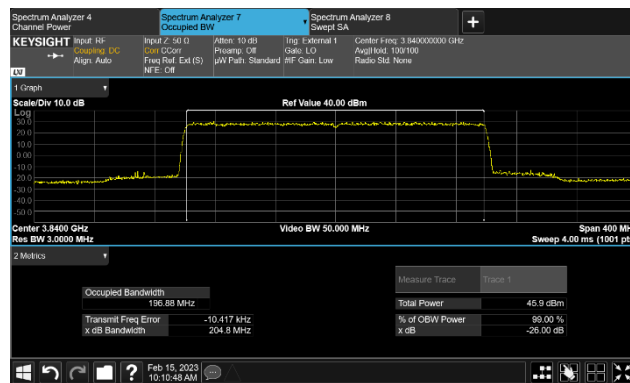
99% Occupied Bandwidth

Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)		
		Channel Position B	Channel Position M	Channel Position T
63	256QAM/ CA 2C-100.0 MHz	196.73	196.88	196.89

Port 63, 256QAM CA 2C-100.0M Channel position B



Port 63, 256QAM CA 2C-100.0M Channel position M



Port 63, 256QAM CA 2C-100.0M Channel position T

