TEST REPORT

No. 25B02Z101067-001

for

Ericsson AB Antenna Integrated Radio Unit

AIR 1672 B48 B77D

FCC ID: TA8AKRD901258

In accordance with FCC CFR 47 Part 27 and Part 96

Issued Date: 2025-07-09

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.

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: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Description	Issue Date
25B02Z101067-001	Rev.0	1st edition	2025-07-09

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

CONTENTS

1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA 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: 2025-05-29

Testing End Date: 2025-06-26

1.4. Signature

Dong Yuan

(Prepared this test report)

Zhou Yu

(Reviewed this test report)

Zhao Huilin

(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:	Zhe Liu
Email:	zhe.liu@ericsson.com
Telephone:	15510181929

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 1672 B48 B77D
Product Number	KRD 901 258/1, KRD 901 258/11 (with antenna) KRD 901 258/2, KRD 901 258/21 (CAB unit for test)
FCC ID	TA8AKRD901258
Antenna Gain	B77D: 19.5dBi B48: 10.5dBi (layer compensated gain), 19.5dBi (effective gain)
Maximum rated output power	B48+B77D: 80W B77D: 80W, PSD: 2W/MHz B48: 40W, PSD: 0.4W/MHz
Power source	100-240VAC, 50/60Hz
Serial Number	EA8B964559
Hardware Version	R1B
Software Version	UP: CXP2020666/2_R32B15, PIS: CXP2021151/1_R45B21
Frequency range	B77D: RX: 3700MHz - 3980MHz, TX: 3700MHz - 3980MHz B48: RX: 3550MHz - 3700MHz, TX: 3550MHz - 3700MHz
Number of Antenna ports	16
Maximum RF bandwidth (IBW)	400MHz
Maximum Number of supported carriers per port	B48+B77D: up to 4 carriers B77D: up to 2 carriers B48: up to 2 carriers
Supported modulations	QPSK, 16QAM, 64QAM and 256QAM
Supported Channel bandwidth	NR: 20/40/60/80/100 MHz for B77D NR: 10/20/30/40/50/60/70/80/90/100M for B48
Date of receipt	2025-05-29

3.2. General Description

The Equipment Under Test (EUT) AIR 1672 B48 B77D is an Ericsson Radio Unit working in the wireless communication services 3550-3980MHz band which provides communication connections to 3550-3980MHz network. The AIR 1672 B48 B77D operates from 100-240V AC power source.

The EUT includes 16 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. The path loss between the EUT and the spectrum analyzer was measured and recorded for the test band using signal generator and spectrum analyzer. The path loss was entered into the spectrum analyzer as input/output corrections.

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 QPSK was the worst-case modulation scheme and was used for all testing.
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 13 for NR mode.

The settings below were used for all measurements unless otherwise noted:

Dual-band mode

Configuration	Carrier	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-2C 10+40M	2NR	10+40	3555+3720	3625.02+3840	3694.98+3960
NR-MIMO-2C 20+40M	2NR	20+40	3560.01+3840	3625.02+3840	3690+3840
NR-MIMO-2C 30+40M	2NR	30+40	3565.02+3840	3625.02+3840	3684.99+3840
NR-MIMO-2C 40+40M	2NR	40+40	3570+3840	3625.02+3840	3679.98+3840
NR-MIMO-2C 50+40M	2NR	50+40	3575.01+3840	3625.02+3840	3675+3840
NR-MIMO-2C 60+40M	2NR	60+40	3580.02+3840	3625.02+3840	3669.99+3840
NR-MIMO-2C 70+40M	2NR	70+40	3585+3840	3625.02+3840	3664.98+3840
NR-MIMO-2C 80+40M	2NR	80+40	3590.01+3840	3625.02+3840	3660+3840
NR-MIMO-2C 90+40M	2NR	90+40	3595.02+3840	3625.02+3840	3654.99+3840
NR-MIMO-2C 100+20M	2NR	100+20	3600+3840	3625.02+3840	3649.98+3840
NR-MIMO-3C 20+20+40M	3NR	20+20+40	-	3560.01+3690+3840	-
NR-MIMO-3C 30+30+40M	3NR	30+30+40	-	3565.02+3685.02+3840	-
NR-MIMO-3C 40+40+40M	3NR	40+40+40	-	3570+3679.98+3840	-
NR-MIMO-3C 50+50+20M	3NR	50+50+20	-	3575.01+3675+3840	-
NR-MIMO-4C 10+10+20+20M	4NR	10+10+20+20	-	3620.01+3630+3830.01+3850.02	-
NR-MIMO-4C-CA 50+50+40+60M	4NR	50+50+40+60	-	3600+3650.01+3820.02+3870	-
NR-MIMO-2C 10+60M	2NR	10+60	3625.02+3730.02	3625.02+3840	3625.02+3949.98
NR-MIMO-2C 10+80M	2NR	10+80	3625.02+3740.01	3625.02+3840	3625.02+3939.99
NR-MIMO-2C 10+100M	2NR	10+100	3625.02+3750	3625.02+3840	3625.02+3930
NR-MIMO-3C 10+20+20M	3NR	10+20+20	-	3625.02+3710.01+3969.99	-
NR-MIMO-3C 10+40+40M	3NR	10+40+40	-	3625.02+3720+3960	-
NR-MIMO-3C 10+60+60M	3NR	10+60+60	-	3625.02+3730.02+3949.98	-
NR-MIMO-3C 10+80+80M	3NR	10+80+80	-	3625.02+3740.01+3939.99	-

Configuration	Carrier	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-2C-BE 10+60M	2NR	10+60	3625.02+3730.02	3625.02+3840	3625.02+3949.98
NR-MIMO-2C-BE 20+40M	2NR	20+40	3560.01+3840	3625.02+3840	3690+3840
NR-MIMO-2C-BE 30+40M	2NR	30+40	3565.02+3840	3625.02+3840	3684.99+3840
NR-MIMO-2C-BE 40+40M	2NR	40+40	3570+3840	3625.02+3840	3679.98+3840
NR-MIMO-2C-BE 50+40M	2NR	50+40	3575.01+3840	3625.02+3840	3675+3840
NR-MIMO-2C-BE 60+40M	2NR	60+40	3580.02+3840	3625.02+3840	3669.99+3840
NR-MIMO-2C-BE 70+40M	2NR	70+40	3585+3840	3625.02+3840	3664.98+3840
NR-MIMO-2C-BE 80+40M	2NR	80+40	3590.01+3840	3625.02+3840	3660+3840
NR-MIMO-2C-BE 90+40M	2NR	90+40	3595.02+3840	3625.02+3840	3654.99+3840
NR-MIMO-2C-BE 100+20M	2NR	100+20	3600+3840	3625.02+3840	3649.98+3840
NR-MIMO-4C-BE 10+10+20+20M	4NR	10+10+20+20	3555+3565.02+3830.01+3850.02	3620.01+3630+3830.01+3850.02	3684.99+3694.98+3830.01+3850.02
NR-MIMO-3C-BE 50+50+20M	3NR	50+50+20	3575.01+3625.02+3840	3600+3650.01+3840	3624.99+3675+3840
NR-MIMO-2C-BE 10+100M	2NR	10+100	3625.02+3750	N/A	3625.02+3930
NR-MIMO-3C-BE 10+40+40M	3NR	10+40+40	3625.02+3720+3760.02	N/A	3625.02+3920.01+3960
NR-MIMO-3C-BE 10+60+60M	3NR	10+60+60	3625.02+3730.02+3790.02	N/A	3625.02+3890.01+3949.98

N/A – Not Applicable

Single B48 mode

Configuration	Carrier	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-1C 10M	1NR	10	3555	3625.02	3694.98
NR-MIMO-1C 20M	1NR	20	3560.01	3625.02	3690
NR-MIMO-1C 30M	1NR	30	3565.02	3625.02	3684.99
NR-MIMO-1C 40M	1NR	40	3570	3625.02	3679.98
NR-MIMO-1C 50M	1NR	50	3575.01	3625.02	3675
NR-MIMO-1C 60M	1NR	60	3580.02	3625.02	3669.99
NR-MIMO-1C 70M	1NR	70	3585	3625.02	3664.98
NR-MIMO-1C 80M	1NR	80	3590.01	3625.02	3660
NR-MIMO-1C 90M	1NR	90	3595.02	3625.02	3654.99
NR-MIMO-1C 100M	1NR	100	3600	3625.02	3649.98

Note: In these carrier configurations B77D was in the operated mode but not tested, as B48 cannot be operated in single band mode.

4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters are supplied by the customer, which are the bases of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example antenna gain).

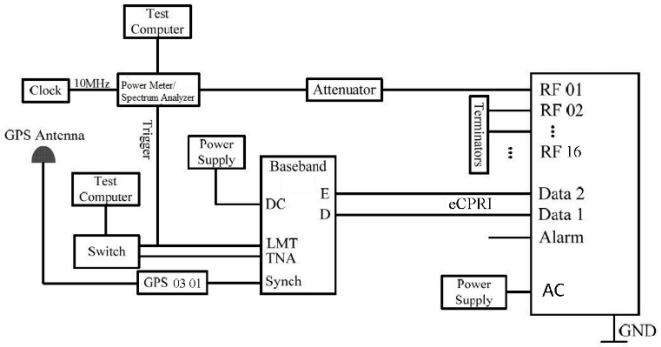
4.2. Reference Documents for testing

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

Reference	Title	Version
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-23 Edition
FCC Part 96	CITIZENS BROADBAND RADIO SERVICE	10-1-23 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
FCC Waiver DA 25-387	ORDER (for Samsung and Ericsson waivers of sections 96.41(e) and 2.947(f))	May 2, 2025

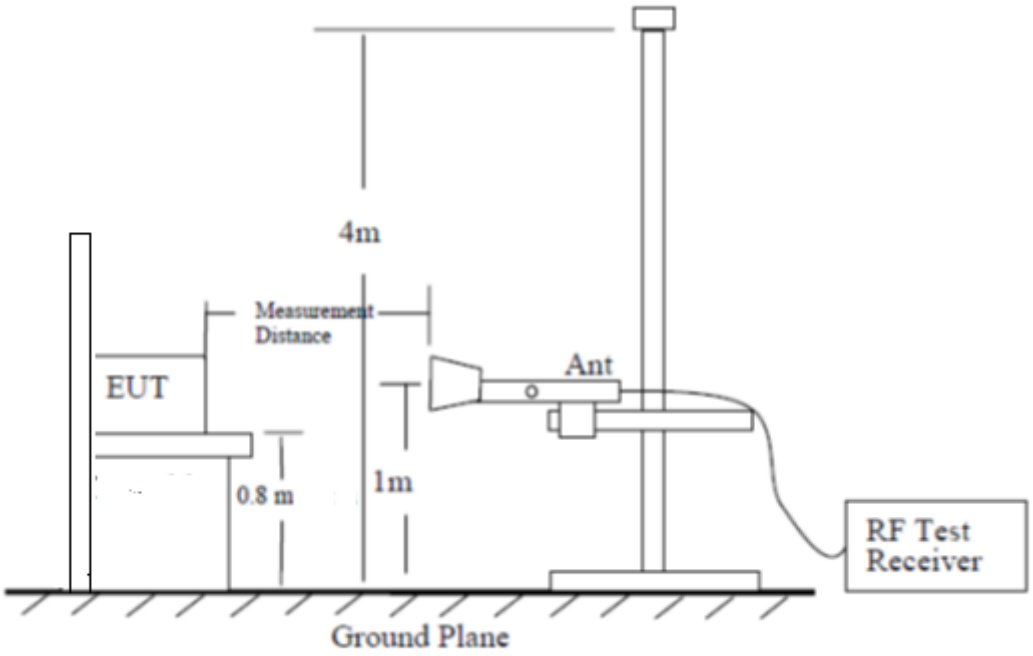
5. TEST SETUP

Test Setup, Conducted Measurement:

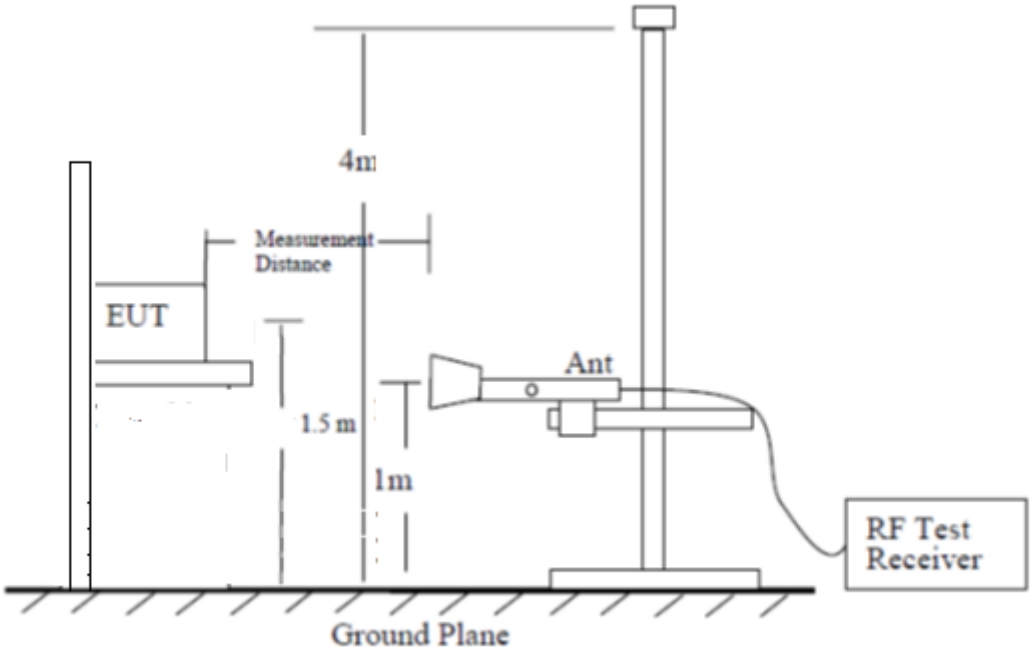


No.	Auxiliary Equipment	Model Type	Version
1	Test Computer	DELL PowerEdge R440	-
2	Baseband	KDU 137 0015/1	R3C
3	Terminator	SHX 6G	-
4	Attenuator	Rosenberger 53AS120-K20	-

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), 96.41(b), 96.41(g), 2.1046	Pass
2	Occupied Bandwidth	27.53(m), 96.41 (e), 2.1049	Pass
3	Transmitter unwanted emissions at Band Edge	96.41 (e), 2.1051, FCC Waiver DA 25-387	Pass
4	Transmitter unwanted emissions - Conducted Spurious Emission	27.53(l), 96.41 (e), 2.1051, FCC Waiver DA 25-387	Pass
5	Radiated Spurious Emission	27.53(l), 96.41 (e), 2.1053 FCC Waiver DA 25-387	Pass
6	Frequency Stability	27.54, 2.1055	Pass

8. Test Equipment Utilized

Description	TYPE	series number	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
Power Supply	AFV-P-2500B	F118060012	Preen	2026-04-24	1 year
20dB Attenuator	53AS120-K20	74842	Rosenberger	-	-
Spectrum Analyzer	N9030	MY57142378	Keysight	2026-02-20	1 year
Climate Chamber	GPS-4	0010-003512	Espec	2026-03-13	1 year
Test Receiver	ESW44	103015	R&S	2026-01-15	1 year
Antenna	VULB9163	235	Schwarzbeck	2025-08-27	1 year
Antenna	3117	00058888	ETS-Lindgren	2025-09-18	1 year
Test Receiver	FSV40	101047	R&S	2025-07-28	1 year
Antenna	LB-180400-25-C-KF	J211060826	A-INFO	2025-08-29	1 year

9. MEASUREMENT UNCERTAINTY

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

Test Discipline	Measurement Uncertainty
Conducted Maximum Peak Output Power	0.68dB
Occupied Bandwidth	439.79kHz
Conducted Unwanted Emissions	4.5dB
Frequency Stability	11Hz
Radiated Unwanted Emissions	30MHz-1GHz 5.29dB, k=2 1GHz-18GHz 5.62dB, k=2 18GHz-40GHz 3.52dB, k=2

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

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)
FCC CFR 47 Part 96, Clause 96.41(b), 96.41(g)

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

B77D: EIRP: Non-Rural ≤1640 W/MHz, Rural ≤ 3280 W/MHz
B48: Category B CBSD, Maximum EIRP: ≤47dBm/10MHz, Maximum PSD: ≤37dBm/MHz
Peak to Average Ratio: ≤13 dB

A.1.4 Measurement result

Dual-band mode

Configuration NR-MIMO-2C 10M+40M,

Port	Modulation/ Bandwidth (MHz)	Output Power											
		Channel position B				Channel position M				Channel position T			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
0	QPSK/10	22.78	22.78	13.56	8.71	23.61	23.61	14.27	8.71	23.74	23.74	13.91	8.90
1	QPSK/10	23.01	23.01	13.61	8.59	23.85	23.85	14.16	8.73	23.58	23.58	13.80	8.90
2	QPSK/10	22.92	22.92	13.47	8.68	23.96	23.96	14.25	8.69	23.76	23.76	13.95	8.88
3	QPSK/10	22.43	22.43	13.72	8.42	23.11	23.11	14.22	8.49	22.81	22.81	14.07	8.63
4	QPSK/10	22.73	22.73	13.92	8.46	23.39	23.39	14.29	8.52	23.36	23.36	14.24	8.62
5	QPSK/10	22.82	22.82	13.82	8.44	23.62	23.62	14.33	8.62	23.39	23.39	14.21	8.64
6	QPSK/10	22.81	22.81	13.97	8.46	23.37	23.37	14.43	8.64	22.78	22.78	13.62	8.89
7	QPSK/10	22.69	22.69	13.94	8.44	23.41	23.41	14.27	8.54	23.41	23.41	14.23	8.62
8	QPSK/10	22.31	22.31	13.72	8.44	23.58	23.58	14.25	8.49	23.37	23.37	14.13	8.63
9	QPSK/10	22.52	22.52	14.87	8.49	23.39	23.39	14.22	8.51	23.12	23.12	14.05	8.63
10	QPSK/10	22.26	22.26	13.19	8.45	23.57	23.57	14.29	8.51	23.32	23.32	14.11	8.59
11	QPSK/10	22.21	22.21	13.18	8.42	23.39	23.39	14.22	8.48	23.32	23.32	14.22	8.58
12	QPSK/10	22.53	22.53	13.37	8.45	23.23	23.23	14.05	8.51	22.62	22.62	13.45	8.62
13	QPSK/10	23.07	23.07	14.07	8.66	23.59	23.59	14.43	8.71	23.46	23.46	14.32	8.59
14	QPSK/10	22.53	22.53	13.65	8.69	23.31	23.31	14.09	8.73	22.68	22.68	13.52	8.85
15	QPSK/10	22.62	22.62	13.67	8.70	23.54	23.54	14.21	8.69	22.78	22.78	13.51	8.86
Total Power 0-15		34.69	34.69	25.79	-	35.54	35.54	26.29	-	35.27	35.27	26.01	-
Total Power 0-15+10.5dBi		45.19	45.19	36.29	-	46.04	46.04	36.79	-	45.77	45.77	36.51	-

Configuration NR-MIMO-2C 50M+40M,

Port	Modulation/ Bandwidth (MHz)	Output Power											
		Channel position B				Channel position M				Channel position T			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
0	QPSK/50	30.23	23.24	13.53	8.22	30.57	23.58	13.81	8.22	30.26	23.27	13.56	8.34
1	QPSK/50	30.12	23.13	13.55	8.28	30.54	23.55	13.81	8.29	30.23	23.24	13.59	8.36
2	QPSK/50	30.24	23.25	13.46	8.25	30.59	23.60	13.75	8.33	30.27	23.28	13.56	8.32
3	QPSK/50	30.28	23.29	13.54	8.36	30.58	23.59	13.71	8.34	30.37	23.38	13.85	8.41
4	QPSK/50	30.36	23.37	13.41	8.29	30.58	23.59	13.69	8.36	30.28	23.29	13.67	8.29
5	QPSK/50	30.38	23.39	13.49	8.29	30.55	23.56	13.81	8.41	30.12	23.13	13.59	8.36
6	QPSK/50	30.39	23.40	13.52	8.32	30.48	23.49	13.71	8.39	30.31	23.32	13.89	8.41
7	QPSK/50	30.45	23.46	13.68	8.34	30.52	23.53	13.82	8.42	30.53	23.54	13.94	8.42
8	QPSK/50	30.29	23.30	13.73	8.37	30.61	23.62	14.24	8.39	30.35	23.36	13.78	8.41
9	QPSK/50	30.49	23.50	13.64	8.37	30.51	23.52	13.72	8.41	30.47	23.48	13.93	8.42
10	QPSK/50	30.07	23.08	13.55	8.31	30.55	23.56	13.87	8.37	30.49	23.50	13.81	8.35
11	QPSK/50	30.24	23.25	13.71	8.33	30.48	23.49	13.85	8.38	30.39	23.40	13.78	8.41
12	QPSK/50	30.42	23.43	13.73	8.33	30.37	23.38	13.72	8.34	30.08	23.09	13.41	8.39
13	QPSK/50	30.79	23.80	13.97	8.31	30.62	23.63	13.91	8.32	30.55	23.56	14.25	8.29
14	QPSK/50	30.28	23.29	13.61	8.33	30.28	23.29	13.72	8.29	30.12	23.13	13.49	8.33
15	QPSK/50	30.52	23.53	13.82	8.29	30.57	23.58	13.89	8.29	30.36	23.37	13.59	8.32
Total Power 0-15		42.39	35.40	25.66	-	42.57	35.58	25.86	-	42.37	35.38	25.78	-
Total Power 0-15+10.5dBi		52.89	45.90	36.16	-	53.07	46.08	36.36	-	52.87	45.88	36.28	-

Configuration NR-MIMO-2C 100M+20M,

Port	Modulation/ Bandwidth (MHz)	Output Power											
		Channel position B				Channel position M				Channel position T			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
0	QPSK/100	33.33	23.33	13.53	8.08	33.47	23.47	13.59	8.05	33.40	23.40	13.56	8.04
1	QPSK/100	33.29	23.29	13.58	8.11	33.41	23.41	13.53	8.21	33.41	23.41	13.60	8.13
2	QPSK/100	33.39	23.39	13.45	8.11	33.41	23.41	13.47	8.12	33.44	23.44	13.47	8.05
3	QPSK/100	33.16	23.16	13.48	8.17	33.23	23.23	13.57	8.12	33.28	23.28	13.62	8.08
4	QPSK/100	33.39	23.39	13.52	8.13	33.49	23.49	13.53	8.16	33.43	23.43	13.61	8.11
5	QPSK/100	33.16	23.16	13.51	8.15	33.42	23.42	13.79	8.21	33.43	23.43	13.67	8.06
6	QPSK/100	33.27	23.27	13.69	8.18	33.32	23.32	13.86	8.17	33.27	23.27	13.71	8.09
7	QPSK/100	33.11	23.11	13.64	8.21	33.44	23.44	13.83	8.23	33.44	23.44	13.78	8.19
8	QPSK/100	33.14	23.14	13.95	8.17	33.38	23.38	13.73	8.14	33.38	23.38	13.76	8.22
9	QPSK/100	33.32	23.32	13.71	8.19	33.33	23.33	13.79	8.13	33.35	23.35	13.67	8.22
10	QPSK/100	33.12	23.12	13.57	8.14	33.31	23.31	13.71	8.18	33.39	23.39	13.75	8.13
11	QPSK/100	33.09	23.09	13.49	8.17	33.21	23.21	13.57	8.11	33.25	23.25	13.65	8.18
12	QPSK/100	33.16	23.16	13.54	8.16	33.22	23.22	13.56	8.08	33.13	23.13	13.45	8.12
13	QPSK/100	33.44	23.44	14.22	8.18	33.41	23.41	14.13	8.18	33.53	23.53	13.86	8.13
14	QPSK/100	33.16	23.16	13.51	8.16	33.17	23.17	13.52	8.19	33.16	23.16	13.47	8.18
15	QPSK/100	33.21	23.21	13.62	8.13	33.31	23.31	13.65	8.17	33.21	23.21	13.53	8.22
Total Power 0-15		45.28	35.28	25.67	-	45.39	35.39	25.72	-	45.39	35.39	25.68	-
Total Power 0-15+10.5dBi		55.78	45.78	36.17	-	55.89	45.89	36.22	-	55.89	45.89	36.18	-

Configuration NR-MIMO-2C 20+40M / 30+40M / 40+40M / 60+40M / 70+40M / 80+40M / 90+40M

Port	Modulation/ Carrier Bandwidth (MHz)	Output Power											
		Channel position B				Channel position M				Channel position T			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)	POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/20.0	26.44	23.43	13.69	8.31	26.54	23.53	13.76	8.32	26.52	23.51	13.72	8.34
Calculated Total Power+10.5dBi		48.98	45.97	36.23	-	49.08	46.07	36.30	-	49.06	46.05	36.26	-
13	QPSK/30.0	28.18	23.41	13.82	8.29	28.22	23.45	13.81	8.27	28.27	23.50	13.61	8.31
Calculated Total Power+10.5dBi		50.72	45.95	36.36	-	50.76	45.99	36.35	-	50.81	46.04	36.15	-
13	QPSK/40.0	29.01	22.99	13.71	8.25	29.12	23.10	13.81	8.26	29.23	23.21	13.74	8.28
Calculated Total Power+10.5dBi		51.55	45.53	36.25	-	51.66	45.64	36.35	-	51.77	45.75	36.28	-
13	QPSK/60.0	31.17	23.39	13.83	8.31	31.11	23.33	13.73	8.34	31.14	23.36	13.62	8.29
Calculated Total Power+10.5dBi		53.71	45.93	36.37	-	53.65	45.87	36.27	-	53.68	45.90	36.16	-
13	QPSK/70.0	31.87	23.42	13.84	8.28	32.02	23.57	13.68	8.28	31.96	23.51	13.82	8.26
Calculated Total Power+10.5dBi		54.41	45.96	36.38	-	54.56	46.11	36.22	-	54.50	46.05	36.36	-
13	QPSK/80.0	32.39	23.36	13.85	8.25	32.27	23.24	13.74	8.31	32.31	23.28	13.79	8.27
Calculated Total Power+10.5dBi		54.93	45.90	36.39	-	54.81	45.78	36.28	-	54.85	45.82	36.33	-
13	QPSK/90.0	32.98	23.44	13.81	8.24	32.79	23.25	13.78	8.26	32.82	23.28	13.82	8.26
Calculated Total Power+10.5dBi		55.52	45.98	36.35	-	55.33	45.79	36.32	-	55.36	45.82	36.36	-

Configuration NR-MIMO-2C 10+40M, channel position M

Port	Modulation/ Bandwidth (MHz)	Output Power Channel position M			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/10	23.59	23.59	14.43	8.71
Calculated Total Power+10.5dBi		46.13	46.13	36.97	-
13	16QAM/10	23.40	23.40	14.25	8.65
Calculated Total Power+10.5dBi		45.94	45.94	36.79	-
13	64QAM/10	23.58	23.58	14.21	8.49
Calculated Total Power+10.5dBi		46.12	46.12	36.75	-
13	256QAM/10	23.54	23.54	14.20	8.71
Calculated Total Power+10.5dBi		46.08	46.08	36.74	-

Configuration NR-MIMO-3C 20+20+40M / 30+30+40M / 40+40+40M / 50+50+20M, channel position M

Port	Modulation/ Bandwidth (MHz)	Output Power Channel position M			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/20+20+40	29.63	23.61	14.29	-
Calculated Total Power+10.5dBi		52.17	46.15	36.83	-
13	QPSK/30+30+40	31.35	23.57	14.18	-
Calculated Total Power+10.5dBi		53.89	46.11	36.72	-
13	QPSK/40+40+40	32.82	23.79	14.45	-
Calculated Total Power+10.5dBi		55.36	46.33	36.99	-
13	QPSK/50+50+20	33.61	23.61	14.03	-
Calculated Total Power+10.5dBi		56.15	46.15	36.57	-

Configuration NR-MIMO-4C 10+10+20+20M

Port	Modulation/ Bandwidth (MHz)	Output Power Channel position M			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/10+10+20+20	26.49	23.48	14.29	-
Calculated Total Power+10.5dBi		49.03	46.02	36.83	-

Configuration NR-MIMO-4C-CA 50+50+40+60M

Port	Modulation/ Bandwidth (MHz)	Output Power Channel position M			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/50+50+40+60	33.22	23.22	13.84	-
Calculated Total Power+10.5dBi		55.76	45.76	36.38	-

B77D

NR-MIMO-2C 10+40M

Port	Modulation/ 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)
0	QPSK/40	35.89	19.98	7.38	36.44	20.34	7.33	36.53	20.66	7.39
1	QPSK/40	35.97	19.91	7.42	36.46	20.28	7.38	36.37	20.49	7.43
2	QPSK/40	35.85	19.82	7.46	36.40	20.27	7.41	36.41	20.62	7.51
3	QPSK/40	35.78	20.03	7.51	36.25	20.29	7.46	36.24	20.48	7.51
4	QPSK/40	36.61	21.11	7.53	36.92	21.41	7.48	36.56	20.91	7.47
5	QPSK/40	36.28	20.78	7.48	36.91	20.71	7.41	36.33	20.86	7.48
6	QPSK/40	36.46	21.05	7.46	36.91	21.36	7.42	36.36	21.01	7.54
7	QPSK/40	35.79	20.29	7.41	36.97	21.39	7.51	36.53	20.93	7.58
8	QPSK/40	36.17	20.65	7.57	36.52	20.97	7.39	35.89	20.29	7.45
9	QPSK/40	35.39	19.92	7.51	35.87	20.87	7.48	36.11	20.81	7.52
10	QPSK/40	35.56	20.01	7.38	35.93	20.29	7.36	35.92	20.57	7.41
11	QPSK/40	35.56	19.97	7.45	35.88	20.32	7.43	35.86	20.42	7.47
12	QPSK/40	35.49	19.94	7.49	36.21	20.73	7.43	35.65	20.19	7.51
13	QPSK/40	36.64	21.18	7.54	36.98	21.43	7.38	36.48	21.03	7.56
14	QPSK/40	35.78	20.31	7.39	36.49	20.91	7.37	35.79	20.16	7.46
15	QPSK/40	35.81	19.91	7.38	36.52	20.89	7.36	35.78	20.09	7.45
Total Power 0-15		48.00	32.37	-	48.54	32.84	-	48.23	32.65	-
Total Power 0-15+19.5dBi		67.50	51.87	-	68.04	52.34	-	67.73	52.15	-

Configuration NR-MIMO-2C 10+40M, channel position M

Port	Modulation/ Bandwidth (MHz)	Output Power		
		POWER (dBm)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/40	36.98	21.42	7.53
Calculated Total Power+19.5dBi		68.52	52.96	-
13	16QAM/40	36.55	21.29	7.37
Calculated Total Power+19.5dBi		68.09	52.83	-
13	64QAM/40	36.66	21.31	7.36
Calculated Total Power+19.5dBi		68.20	52.85	-
13	256QAM/40	36.69	21.26	7.45
Calculated Total Power+19.5dBi		68.23	52.80	-

Configuration NR-MIMO-2C 100+20M / 10+60M / 10+80M / 10+100M, channel position M

Port	Modulation/ Bandwidth (MHz)	Output Power		
		POWER (dBm)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/20	33.38	21.12	7.85
Calculated Total Power+19.5dBi		64.92	52.66	-
13	QPSK/60	36.41	18.96	7.48
Calculated Total Power+19.5dBi		67.95	50.50	-
13	QPSK/80	36.35	17.83	7.42
Calculated Total Power+19.5dBi		67.89	49.37	-
13	QPSK/100	36.31	16.68	7.46
Calculated Total Power+19.5dBi		67.85	48.22	-

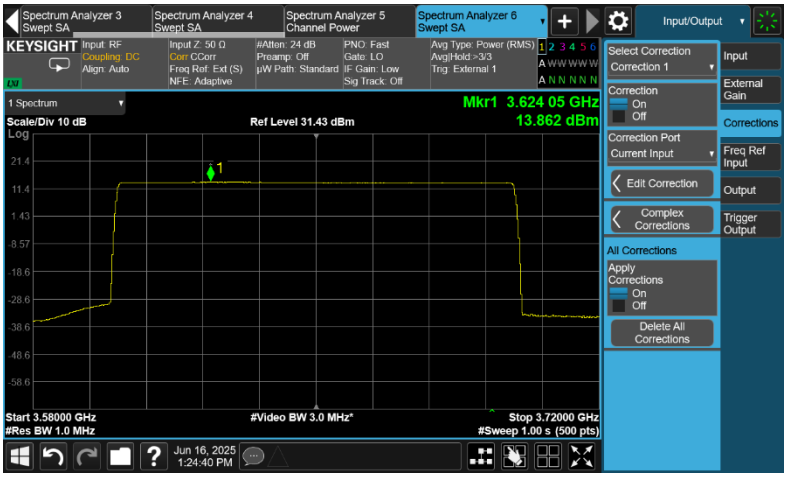
Configuration NR-MIMO-3C 10+20+20M / 10+40+40M / 10+60+60M / 10+80+80M, channel position M

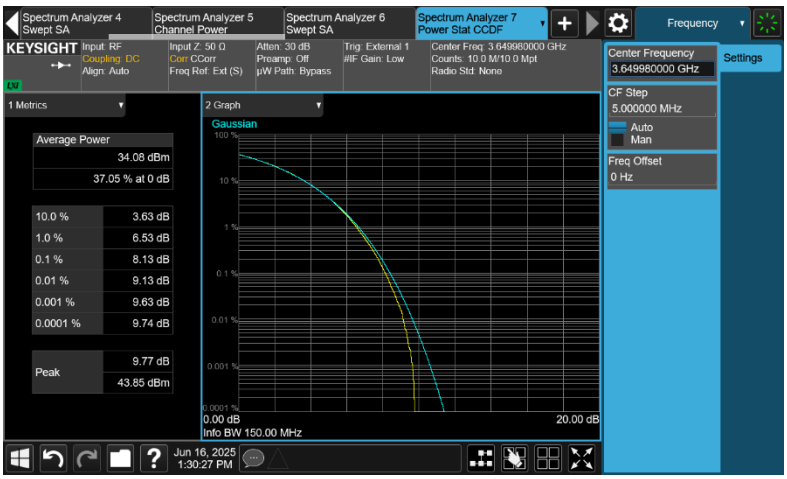
Port	Modulation/ Bandwidth (MHz)	Output Power		
		POWER (dBm)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/10+20+20	35.91	20.73	-
Calculated Total Power+19.5dBi		67.45	52.27	-
13	QPSK/10+40+40	35.97	17.59	-
Calculated Total Power+19.5dBi		67.51	49.13	-
13	QPSK/10+60+60	35.98	15.55	-
Calculated Total Power+19.5dBi		67.52	47.09	-
13	QPSK/10+80+80	35.95	14.51	-
Calculated Total Power+19.5dBi		67.49	46.05	-

Configuration NR-MIMO-1C, B48

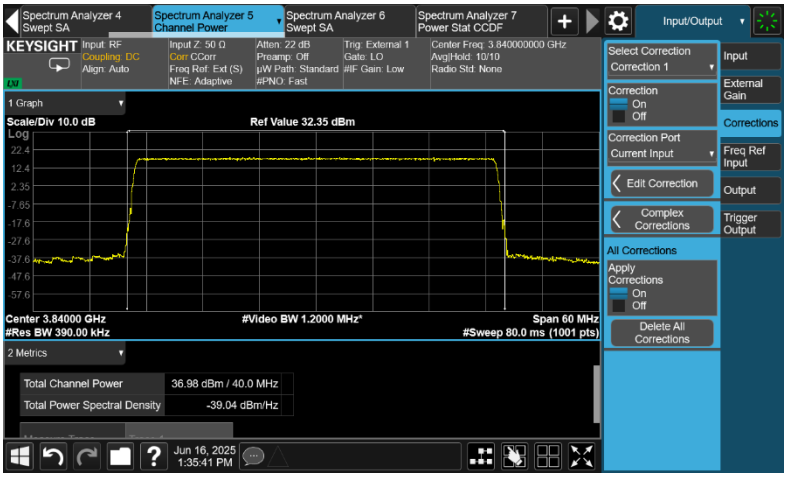
Port	Modulation/ Bandwidth (MHz)	Output Power Channel position M			
		POWER (dBm)	POWER (dBm/10MHz)	POWER (dBm/MHz)	PAR (dB)
13	QPSK/10	23.71	23.71	14.03	8.46
Calculated Total Power+10.5dBi		46.25	46.25	36.57	-
13	QPSK/20	26.64	23.63	13.87	8.31
Calculated Total Power+10.5dBi		49.18	46.17	36.41	-
13	QPSK/30	28.47	23.70	13.94	8.29
Calculated Total Power+10.5dBi		51.01	46.24	36.48	-
13	QPSK/40	29.28	23.26	13.96	8.26
Calculated Total Power+10.5dBi		51.82	45.80	36.50	-
13	QPSK/50	30.93	23.94	14.13	8.41
Calculated Total Power+10.5dBi		53.47	46.48	36.67	-
13	QPSK/60	31.32	23.54	13.87	8.34
Calculated Total Power+10.5dBi		53.86	46.08	36.41	-
13	QPSK/70	32.26	23.81	13.82	8.28
Calculated Total Power+10.5dBi		54.80	46.35	36.36	-
13	QPSK/80	32.38	23.35	13.92	8.25
Calculated Total Power+10.5dBi		54.92	45.89	36.46	-
13	QPSK/90	32.92	23.38	13.94	8.28
Calculated Total Power+10.5dBi		55.46	45.92	36.48	-
13	QPSK/100	33.64	23.64	13.91	8.41
Calculated Total Power+10.5dBi		56.18	46.18	36.45	-

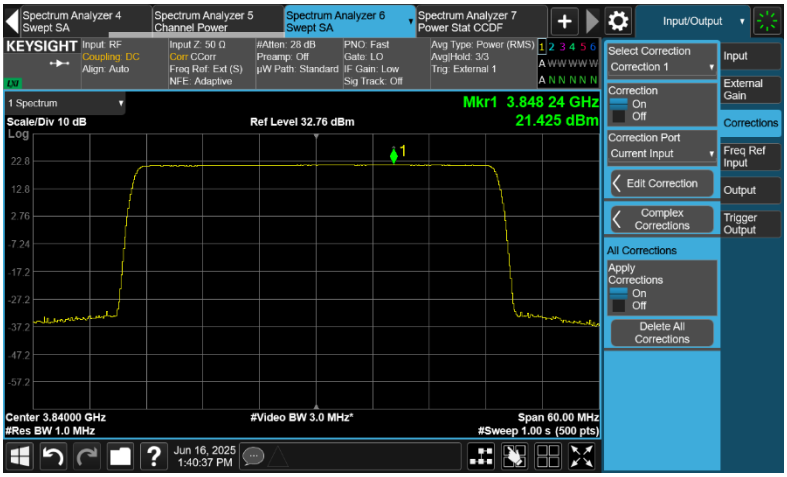
Configuration NR-MIMO-2C 100M+20M,
Port 13, QPSK, NR 100M, Channel position T



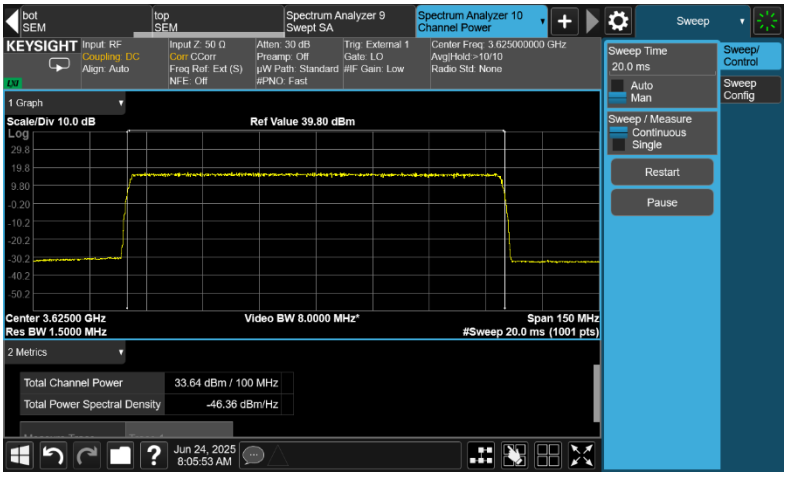


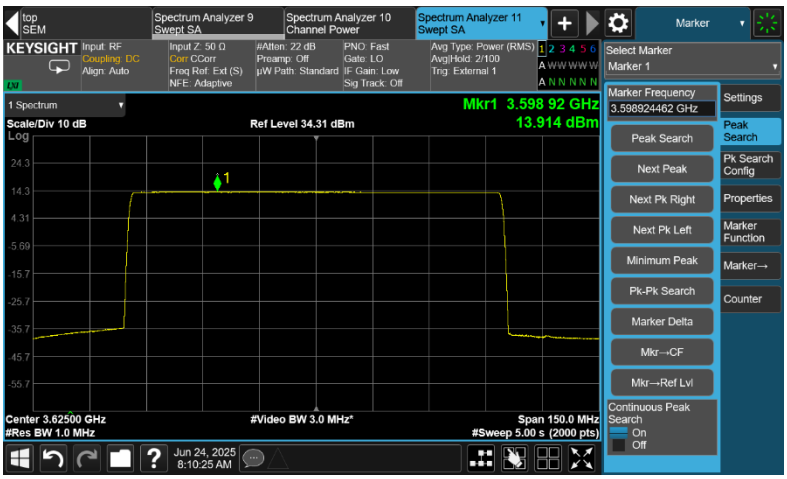
Configuration NR-MIMO-2C 10M+40M,
Port 13, QPSK, NR 40M, Channel position M





Configuration NR-MIMO-1C 100M, B48
Port 13, QPSK, NR 100M, Channel position M





A.2 Occupied Bandwidth

A.2.1 Reference

FCC CFR 47 Part 2, Clause 2.1049
FCC CFR 47 Part 96, Clause 96.41 (e)

A.2.2Method 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 10log (OBW / 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
13	QPSK/10 MHz	9.68	9.54	9.54
13	QPSK/20 MHz	19.75	19.59	19.77
13	QPSK/30 MHz	29.42	29.54	29.53
13	QPSK/40 MHz	39.92	40.09	39.91
13	QPSK/50 MHz	49.77	49.78	49.78
13	QPSK/60 MHz	60.63	60.68	60.68
13	QPSK/70 MHz	70.84	70.71	70.86
13	QPSK/80 MHz	81.06	81.09	81.09
13	QPSK/90 MHz	91.82	91.90	91.91
13	QPSK/100 MHz	102.2	102.3	102.3
13	16QAM/100 MHz	-	102.3	-
13	64QAM/100 MHz	-	102.4	-
13	256QAM/100 MHz	-	102.5	-

99% Occupied Bandwidth

Port	Modulation / Bandwidth	Occupied Bandwidth (MHz)		
		Channel Position B	Channel Position M	Channel Position T
13	QPSK/10 MHz	8.62	8.62	8.62
13	QPSK/20 MHz	18.25	18.24	18.22
13	QPSK/30 MHz	27.81	27.84	27.84
13	QPSK/40 MHz	37.83	37.88	37.88
13	QPSK/50 MHz	47.43	47.49	47.49
13	QPSK/60 MHz	57.71	57.80	57.81
13	QPSK/70 MHz	67.32	67.46	67.47
13	QPSK/80 MHz	77.30	77.42	77.44
13	QPSK/90 MHz	87.42	87.58	87.59
13	QPSK/100 MHz	97.45	97.60	97.63
13	16QAM/100 MHz	-	97.50	-
13	64QAM/100 MHz	-	97.36	-
13	256QAM/100 MHz	-	97.58	-

Configuration NR-MIMO-4C-CA 50+50+40+60M

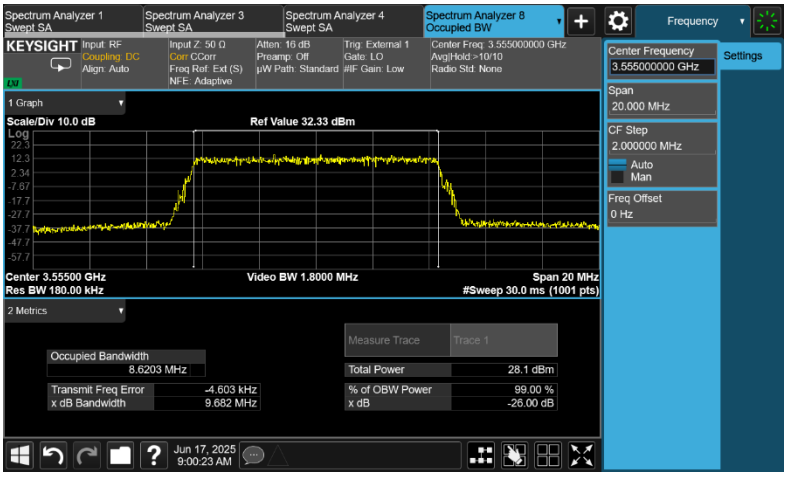
-26dBc Occupied Bandwidth

Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)
		Channel Position M
13	QPSK / CA 2C-50 MHz	101.6

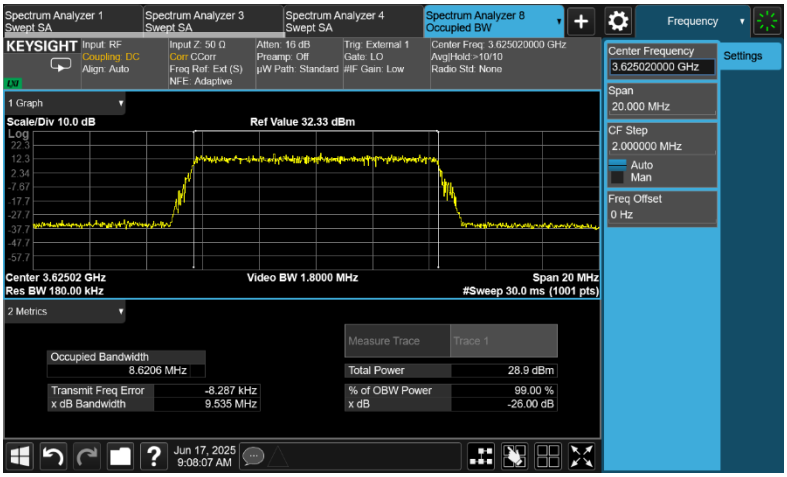
99% Occupied Bandwidth

Antenna	Modulation / Bandwidth	Occupied Bandwidth (MHz)
		Channel Position M
13	QPSK / CA 2C-50 MHz	97.01

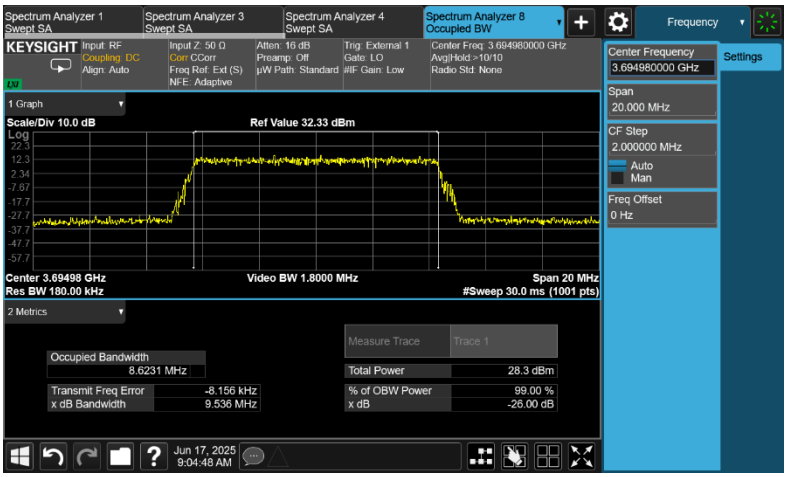
Port 13, QPSK, NR 10M, Channel position B



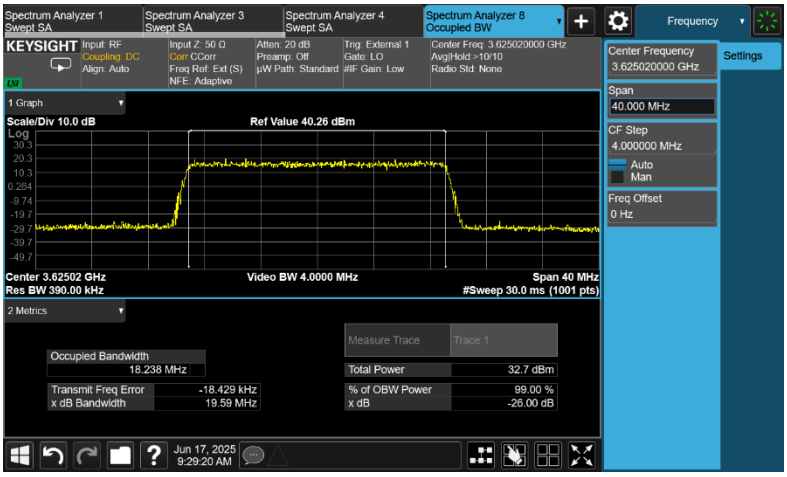
Port 13, QPSK, NR 10M, Channel position M



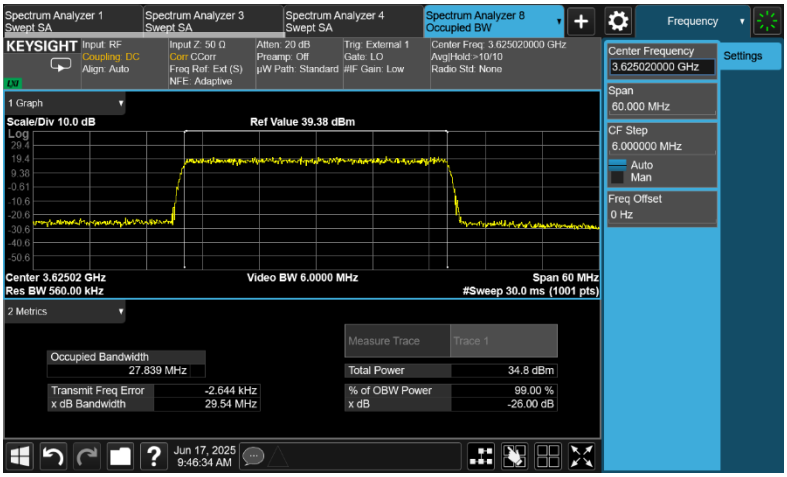
Port 13, QPSK, NR 10M, Channel position T



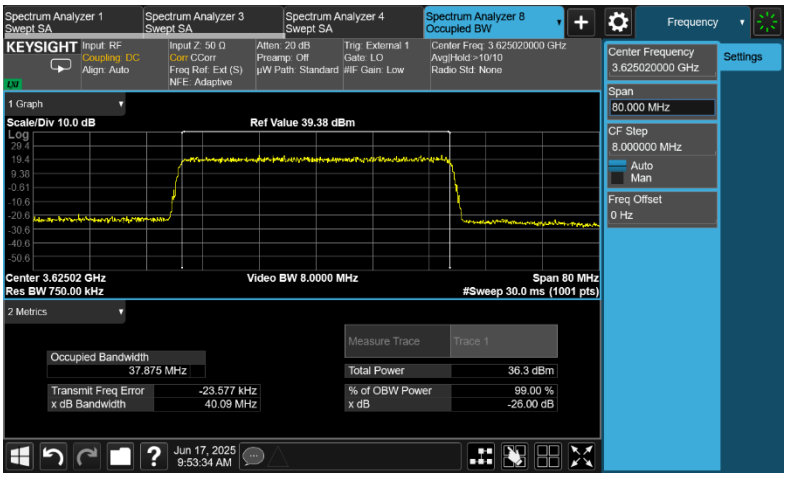
Port 13, QPSK, NR 20M, Channel position M



Port 13, QPSK, NR 30M, Channel position M



Port 13, QPSK, NR 40M, Channel position M

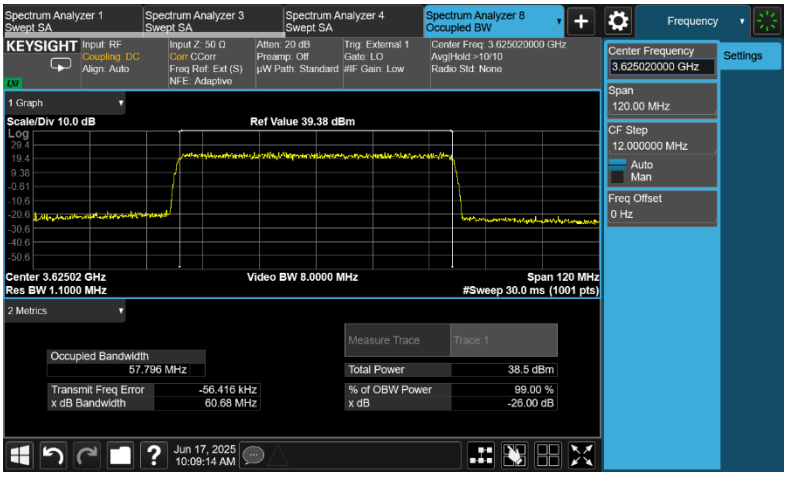


Port 13, QPSK, NR 50M, Channel position B

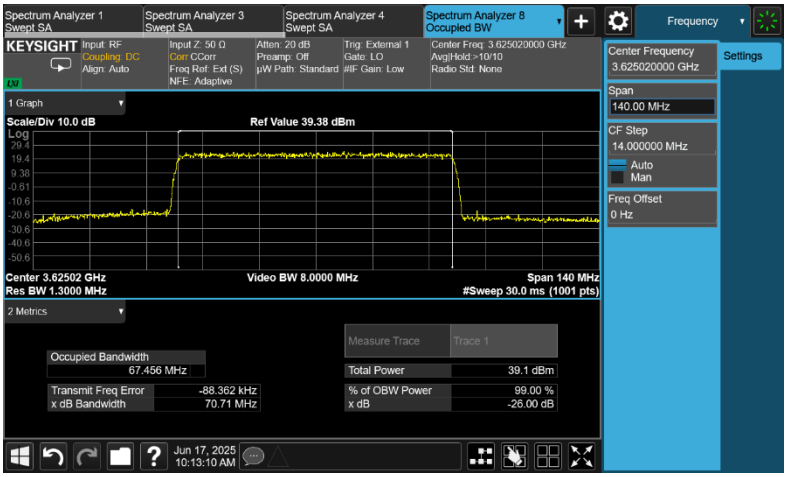
Port 13, QPSK, NR 50M, Channel position M

Port 13, QPSK, NR 50M, Channel position T

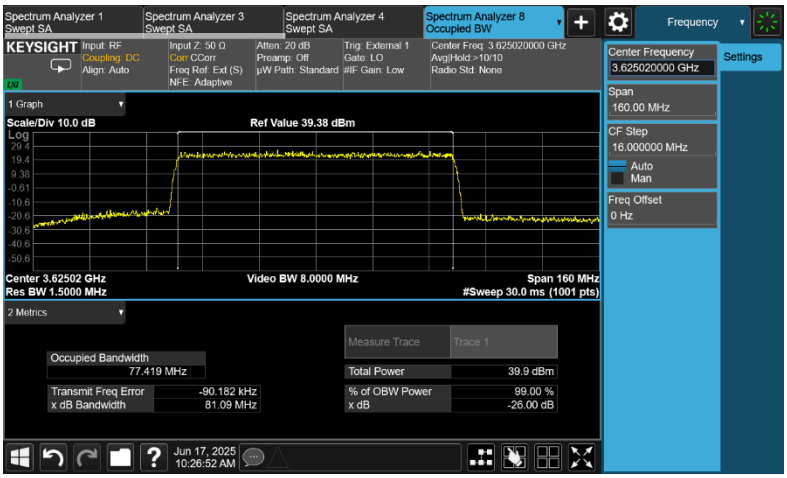
Port 13, QPSK, NR 60M, Channel position M



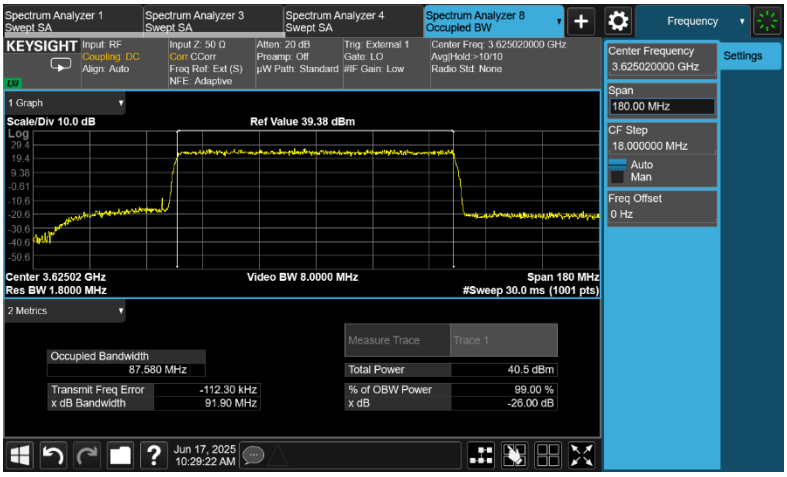
Port 13, QPSK, NR 70M, Channel position M



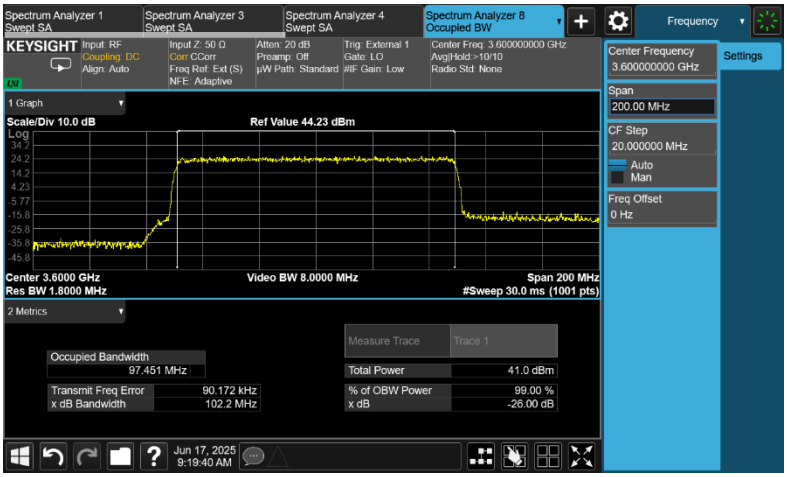
Port 13, QPSK, NR 80M, Channel position M



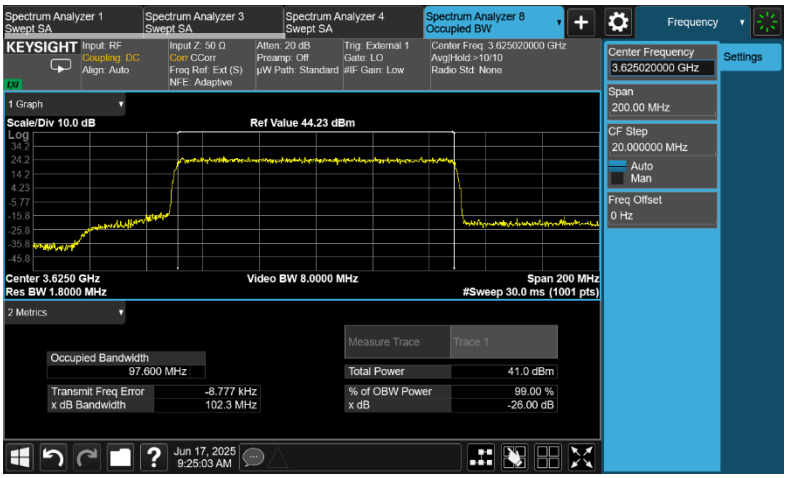
Port 13, QPSK, NR 90M, Channel position M



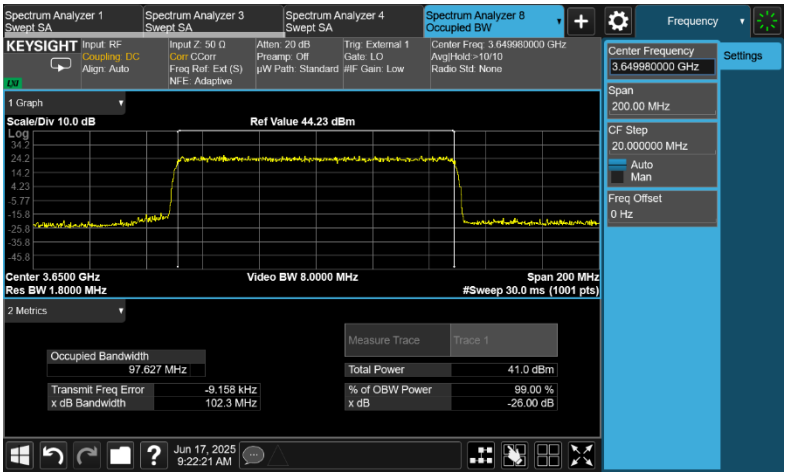
Port 13, QPSK, NR 100M, Channel position B



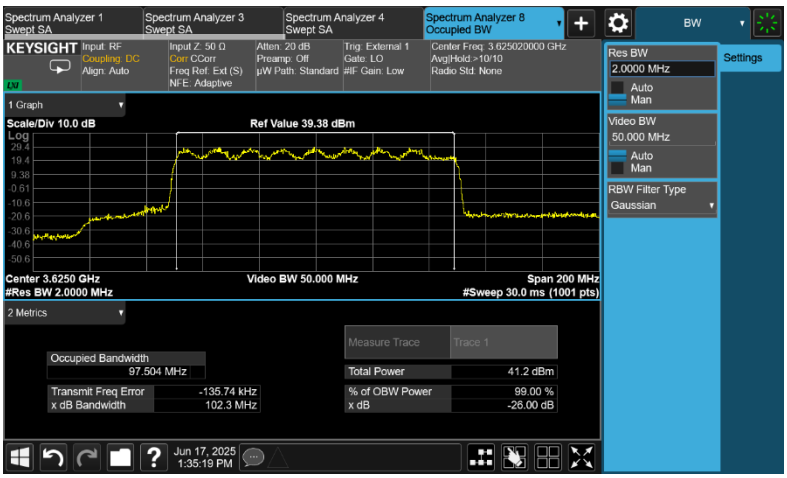
Port 13, QPSK, NR 100M, Channel position M



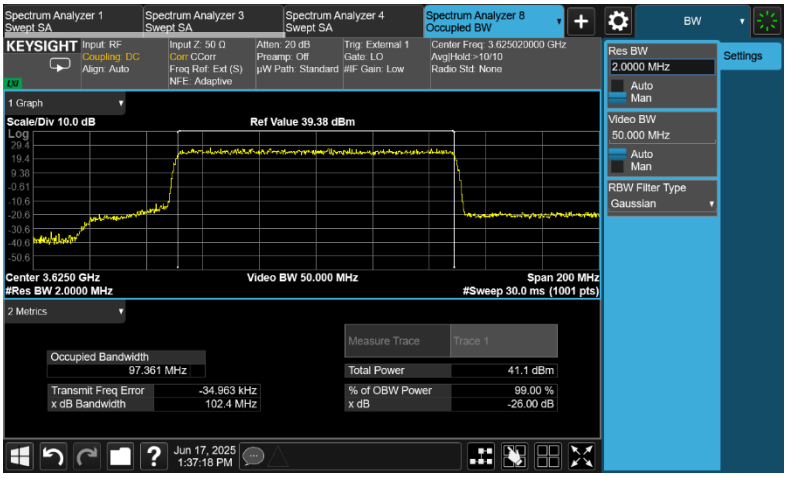
Port 13, QPSK, NR 100M, Channel position T



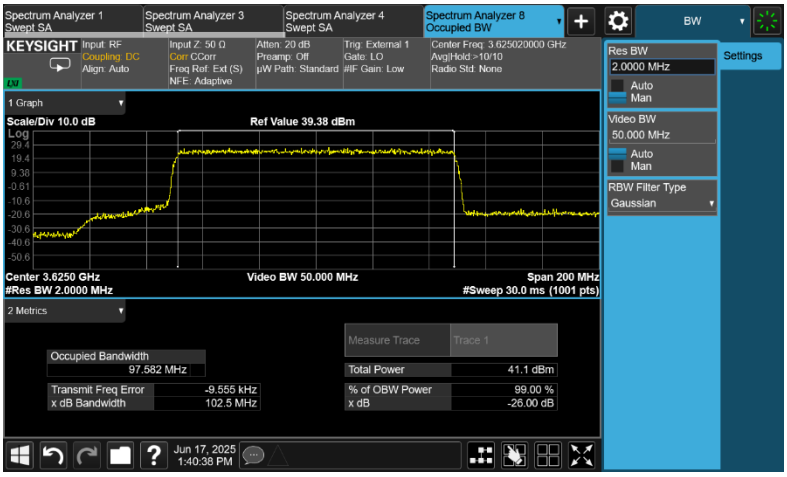
Port 13, 16QAM, NR 100M, Channel position M



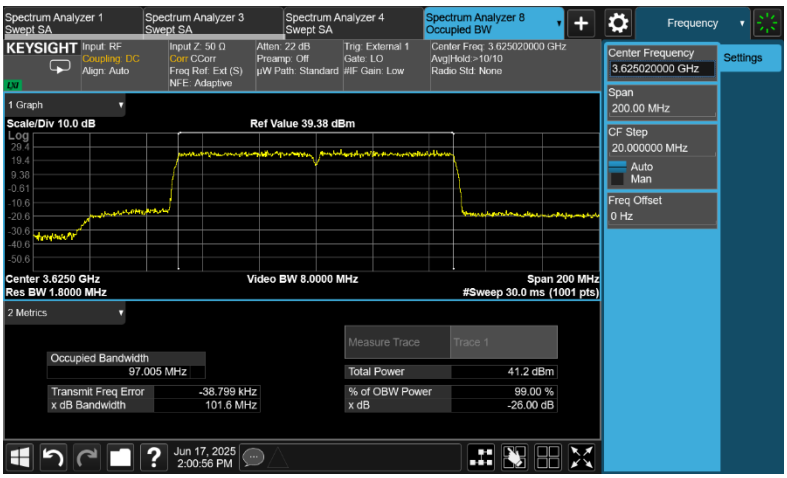
Port 13, 64QAM, NR 100M, Channel position M



Port 13, 256QAM, NR 100M, Channel position M



Port 13, QPSK, CA 2C-50M, Channel position M



A.3 Transmitter unwanted emissions at Band Edge

A.3.1 Reference

FCC CFR 47 Part 2, Clause 2.1051
FCC CFR 47 Part 96, Clause 96.41(e)
FCC Waiver DA 25-387

A.3.2 Method of measurement

For MIMO mode configurations, the limit was adjusted with a correction of -12.04dB [10Log16] by using the Measure and Add 10Log(N) dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports. Then the -13dBm limit was adjusted to -25.05dBm, -25dBm limit was adjusted to -37.04dBm and -40dBm limit was adjusted to -52.04dBm.

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed and a RBW of 1MHz for measurements of emissions > 1MHz away from the band edges.
The limit was adjusted with -13.01dB [10Log(30/600)] to compensate for the reduced measurement bandwidth 30kHz for emission less than 1MHz away from the NR 60MHz band edges.
The limit was adjusted with -13.01dB [10Log(35/700)] to compensate for the reduced measurement bandwidth 35kHz for emission less than 1MHz away from the NR 70MHz band edges.
The limit was adjusted with -13.01dB [10Log(40/800)] to compensate for the reduced measurement bandwidth 40kHz for emission less than 1MHz away from the NR 80MHz band edges.
The limit was adjusted with -13.01dB [10Log(45/900)] to compensate for the reduced measurement bandwidth 45kHz for emission less than 1MHz away from the NR 90MHz band edges.
The limit was adjusted with -13.01dB [10Log(50/1000)] to compensate for the reduced measurement bandwidth 50kHz for emission less than 1MHz away from the NR 100MHz, 2C 50MHz and 2C 60MHz band edges.
Spectrum analyzer detector was set as RMS.

A.3.3 Measurement limit

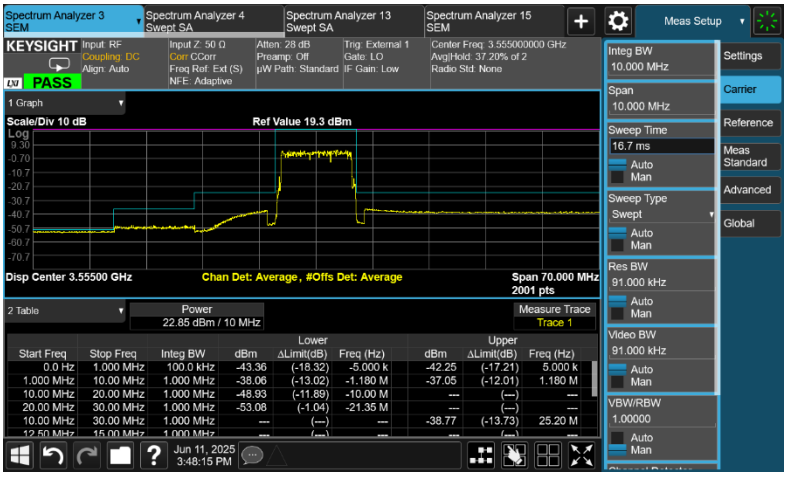
Dual-band mode:
below 3530 MHz: ≤-40dBm/MHz
3530MHz-3540MHz: ≤-25dBm/MHz
Above 3540MHz: ≤-13dBm/MHz

Single B48 mode:
0-10MHz from channel edge: ≤-13dBm/MHz
>10MHz from channel edge: ≤-25dBm/MHz
3530MHz-3540MHz and 3710MHz-4GHz: ≤-25dBm/MHz
below 3530 MHz and above 4GHz: ≤-40dBm/MHz

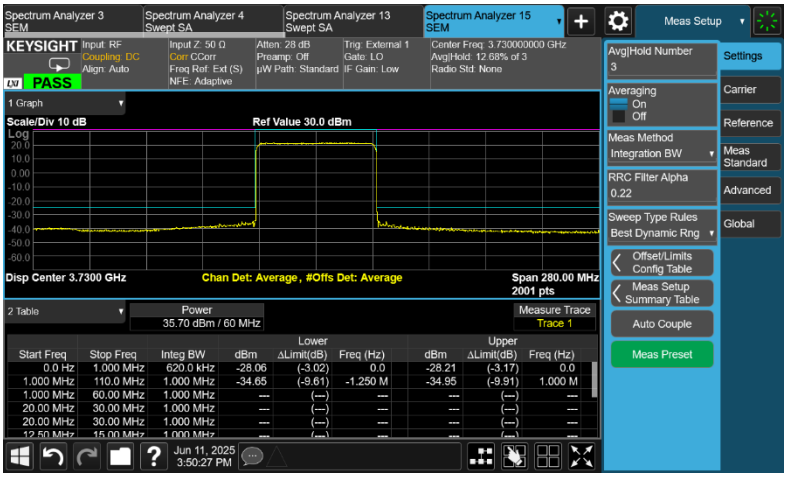
A.3.4 Measurement result

Configuration NR-MIMO-2C-BE, QPSK

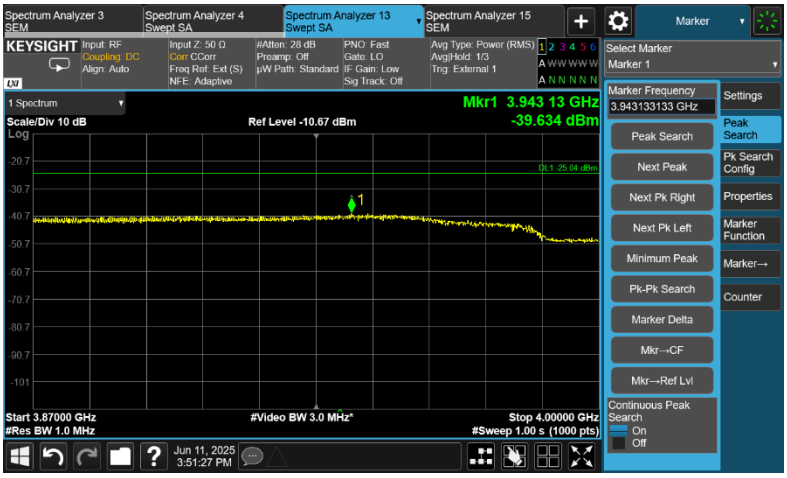
Port 13, Channel Position B, 10MHz + 60MHz



3520MHz-3590MHz

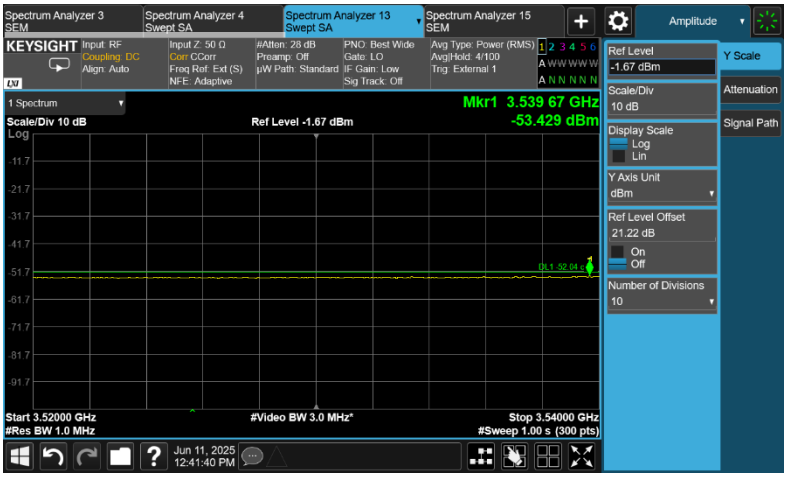


3590MHz-3870MHz

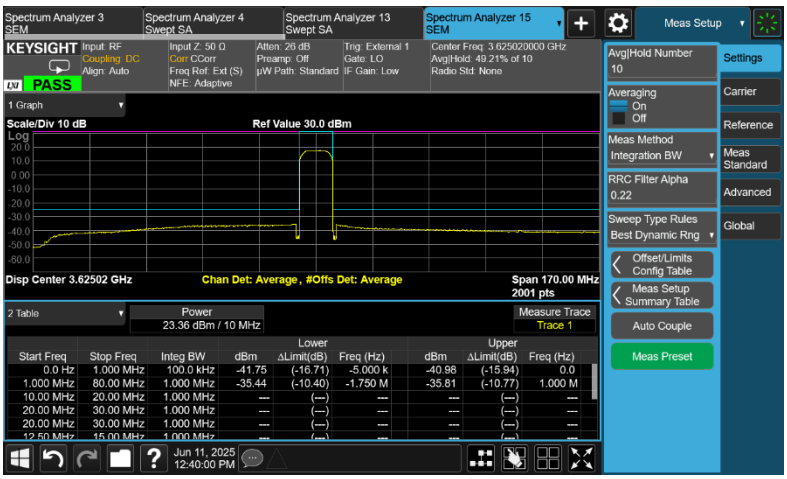


3870MHz-4000MHz

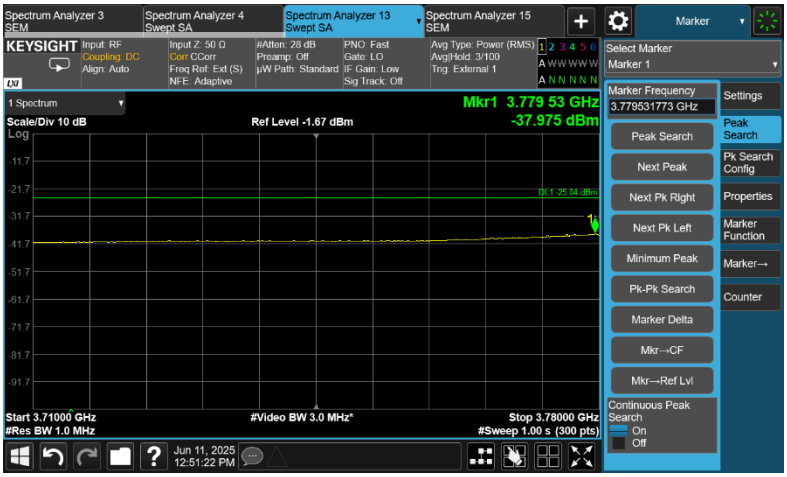
Port 13, Channel Position M, 10MHz + 60MHz



3520MHz-3540MHz



3540MHz -3710MHz



3710MHz-3780MHz