



TEST REPORT

REPORT NUMBER: I22W00068

for

Product Name : Radio 4408 B77G

Designation: Remote Radio Unit

Manufacturer: Ericsson AB

FCC ID: TA8AKRC1610030-1

Requirements/Summary:

Standard	Environmental phenomenon	Compliance
FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations	Yes
FCC 47 CFR Part 27	Miscellaneous wireless communications services	Yes

Chongqing Academy of Information and Communications Technology

Date of issue: Sep 09, 2022

Xiang Luoyong, Director

Approved by

Signature

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 Chongqing Academy of Information and Communications Technology.



Report No.: I22W00068

Revision history

Report Number	Revision	Issue Date	Memo
I22W00068	00	2022-09-09	1 st edition

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

**Summary of test results**

TEST ITEM	FCC REFERANCE	RESULT
Maximum Output Power and Peak to Average Power Ratio and EIRP	27.50 (k)	Pass
Occupied Bandwidth	2.1049	Pass
Spurious Emissions at Band Edge	27.53 (n)	Pass
Conducted Spurious Emissions	27.53 (n)	Pass
Radiated Spurious Emissions	27.53 (n)	Pass
Frequency Stability	27.54	Pass



CONTENTS

1. Test Laboratory	5
1.1. Testing Location	5
1.2. Project data	5
1.3. Signature	5
2. Client Information	6
2.1. Applicant Information	6
2.2. Manufacturer Information	6
3. Equipment under Test (EUT) and Ancillary Equipment (AE)	7
3.1. About EUT	7
3.2. Internal Identification of EUT used during the test	8
3.3. General Description	8
3.4. Configuration Description	8
4. Reference Documents	11
4.1. Reference Documents for testing	11
5. Test Setup	12
6. Laboratory Environment	14
7. Test Equipments Utilized	15
7.1. RF Test System	15
7.2. RSE Test System	15
7.3. Test software	15
8. Measurement Uncertainty	16
9. Test Results	17
9.1 Maximum Output Power and Peak to Average Power Ratio and EIRP	17
9.2 Occupied Bandwidth	51
9.3 Unwanted Emissions at Band Edge	54
9.4 Conducted Unwanted Emissions	124
9.5 Radiated Unwanted Emissions	234
9.6 Frequency Stability	245
Annex A EUT Photos	269

1. Test Laboratory

1.1. Testing Location

Name: Chongqing Academy of Information and Communications Technology

FCC Registration Number: CN1239

Address: No.19 East Road, Xiantao Big-data Valley, Yubei District, Chongqing, People's Republic of China

Postal Code: 401336

Telephone: 0086-23-88069965

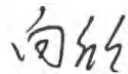
Fax: 0086-23-88608777

1.2. Project data

Testing Start Date: 2022-08-23

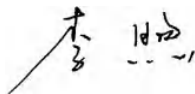
Testing End Date: 2022-09-08

1.3. Signature



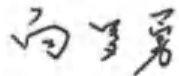
2022-09-08

Xiang Xin
(Prepared this test report)

Date

2022-09-09

Li Xu
(Reviewed this test report)

Date

2022-09-09

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date



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
City: Beijing
Country: China
Telephone: +86 28 85300227
Fax: --
Email: qibin.hu@ericsson.com
Contact Person: Qibin Hu

2.2. Manufacturer Information

Company Name: Ericsson AB
Address /Post: Isafjordsgatan 10, 164 80 Stockholm Sweden
City: Stockholm
Country: Sweden
Telephone: --
Fax: --
Email: --
Contact Person: --

3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Remote Radio Unit
Product Name	Radio 4408 B77G
Product Number	KRC 161 0030/1
Maximum Output Power per Port	37.0 dBm (5W)
Power source	36V DC
Frequency range	3450-3550 MHz
Number of Antenna ports	4 TX/RX
Supported RAT	NR
Maximum RF bandwidth (IBW)	100MHz
Maximum Number of supported carriers per port	Maximum 5 carriers per port for all configuration
Supported modulations	QPSK, 16QAM, 64QAM, 256QAM
Supported Channel Bandwidth	NR: 20 MHz, 30 MHz, 40 MHz, 50 MHz, 60 MHz, 70 MHz, 80 MHz, 90 MHz, 100 MHz with 30 kHz SCS
Option Integrated Directional Antenna	Antenna 6524, KRE 105 281/1, 11.9dBi

3.2. Internal Identification of EUT used during the test

EUT ID	Serial Number	HW Version	SW Version	Date of receipt
S1	EA8B189660	R1A	CXP9013268_15-R91JZ	2022-08-22

*EUT ID: is used to identify the test sample in the lab internally.

3.3. General Description

The Equipment Under Test (EUT) is an Ericsson remote Radio Unit working in the wireless communications services 3500 MHz band which provides communication connections to network in NR modes. The Radio 4408 B77G KRC 161 0030/1 operates from a -48V DC or a 120V AC power supply.

The EUT includes 4 TX/RX ports and it can be configured to transmit in MIMO mode, and MIMO mode 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 Radio 4408 B77G has an optional integrated directional antenna provides directional RF coverage for the radio. The test is performed on the EUT without the optional integrated directional antenna to allow access to the RF Ports for compliance measurements. all RF paths / components are identical.

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

3.4. Configuration Description

Comprehensively a full test was carried out to determine the worst case modulation scheme by measuring the output power from QPSK, 16QAM, 64QAM and 256QAM on B,M,T channel of all antenna ports.

From these tests, it was determined that QPSK was the worst case modulation scheme and the worst case antenna port which was determined by the highest output power from the 4 measured ports on worst case modulation scheme and worst bandwidth. The worst antenna port was antenna C.

Complete testing was carried out on the worst modulation QPSK and worst antenna port C.

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

NR

Configuration	Carrier	NR Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-1C	1NR	20 MHz	3460.02	3500.01	3540.00
		30 MHz	3465.00	3500.01	3535.02
		40 MHz	3470.01	3500.01	3530.01
		50 MHz	3475.02	3500.01	3525.00
		60 MHz	3480.00	3500.01	3520.02
		70 MHz	3485.01	3500.01	3515.01
		80 MHz	3490.02	3500.01	3510.00
		90 MHz	3495.00	3500.01	3505.02
		100 MHz	--	3500.01	--
NR-MIMO-2C	2NR	20 MHz	--	3460.02+3540.00	--
		30 MHz	--	3465.00+3535.02	--
		40 MHz	--	3470.01+3530.01	--
		50 MHz	--	3475.02+3525.00	--
NR-MIMO-5C	5NR	20 MHz	--	3460.02+3480+3500.01+3520.02+3540	--

NR

Configuration	Carrier	NR Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-MIMO-1C-UE	1NR	20 MHz	3460.02	-	3540.00
		30 MHz	3465.00	-	3535.02
		40 MHz	3470.01	-	3530.01
		50 MHz	3475.02	-	3525.00
		60 MHz	3480.00	-	3520.02
		70 MHz	3485.01	-	3515.01
		80 MHz	3490.02	-	3510.00
		90 MHz	3495.00	-	3505.02
		100 MHz	3500.01	-	3500.01
NR-MIMO-2C-UE	2NR	20 MHz	3460.02+3480	-	3520.02+3540
		30 MHz	3465+3495	-	3505.02+3535.02
		40 MHz	3470.01+3510	-	3490.02+3530.01
		50 MHz	3475.02+3525.00	-	3475.02+3525.00
NR-MIMO-3C-UE	3NR	20 MHz	3460.02+3480+3540	-	3460.02+3520.02+3540



4. Reference Documents

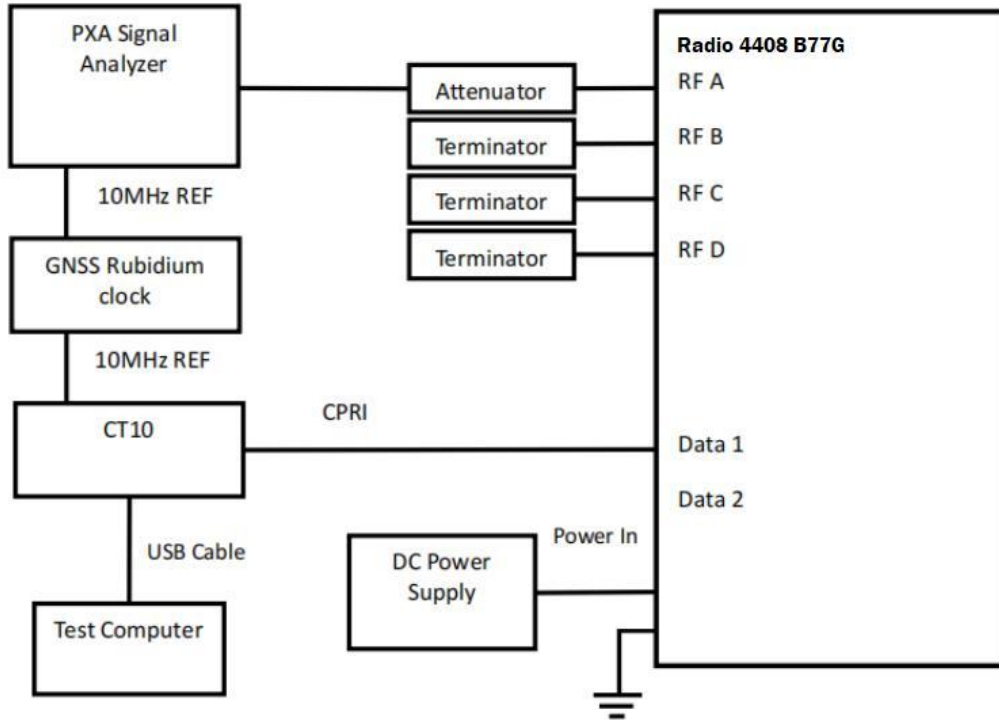
4.1. Reference Documents for testing

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

Reference	Title	Version
FCC CFR 47 Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations	2021
FCC CFR 47 Part 27	Miscellaneous Wireless Communications Services	2021
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
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

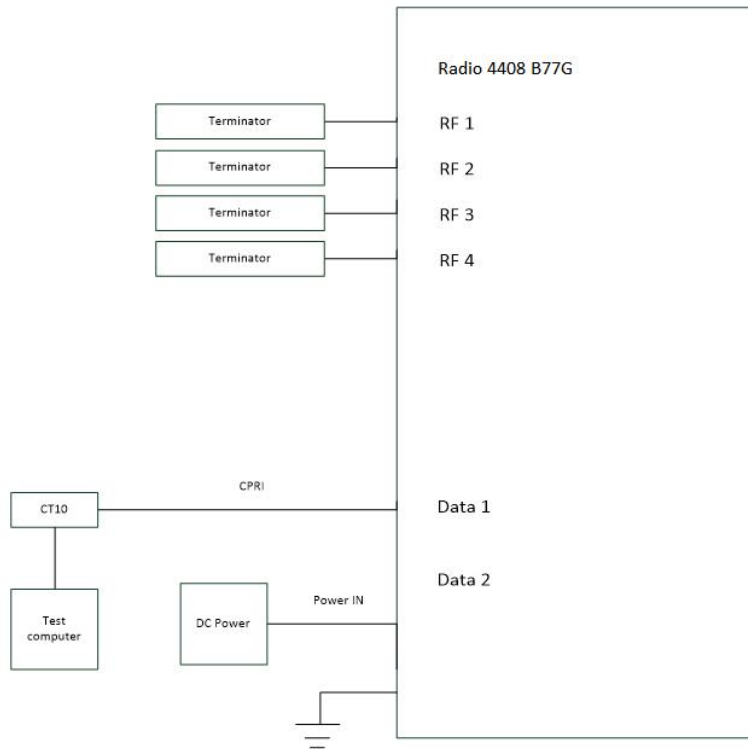
5. Test Setup

Conducted Measurement:



No.	Auxiliary Equipment	Product Number / Model Type	Version
1	Test computer	Preision 3560	--
2	CT10	LPC102487/1	R1C
3	GNSs Rubidium clock	HJ5418A-V1	--
4	DC Power Supply	N8737A	--
5	Attenuator	12.03.J-00195	--
6	Attenuator	12.03.J-00194	--
7	Terminator	WTF100-6G-A-NJ	--

Radiated Measurement:



No.	Auxiliary Equipment	Product Number / Model Type	Version
1	Test computer	Preision 3560	--
2	CT10	LPC102487/1	R1C
3	DC Power Supply	ADG-P-270-100	--
4	Terminator	WTF100-6G-A-NJ	--

6. Laboratory Environment

Control room did not exceed following limits along the Radiated testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	At 3GHz, > 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Semi-anechoic chamber (20.0 meters×11.0 meters×7.9 meters) did not exceed following limits along the Radiated testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	At 3GHz, > 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

5m anechoic chamber (12.5 meters×8.8 meters×7.3 meters) did not exceed following limits along the Radiated testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	At 3GHz, > 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

7. Test Equipments Utilized

7.1. RF Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Climate chamber	HUT711P-3	HJA04X218005 5101010101	--	--	Hardy	2022-10-01
2	Network analyzers	N5230A	MY45000525	--	--	Agilent	2023-06-29
3	Vector Signal Analyser	N9030B	MY57140708	--	--	KEYSIHGT	2023-06-29

7.2. RSE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESU40	100350	01	4.43 SP3	R&S	2023-06-29
2	Ultra-wideband Log Periodic Antenna	VULB 9163	9163-586	--	--	Schwarzbeck	2022-11-11
3	Double Ridged Guide Antenna	9120D	9120D-1103	--	--	Schwarzbeck	2024-05-05
4	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	2023-06-29
5	Horn Antenna	DATE 1152	LM7127	--	--	ETS	2024-09-06
6	Horn Antenna	DATE 1012	LM5945	--	--	ETS	2024-09-06
7	Fully anechoic chamber	FAC-5	--	--	--	TDK	2024-08-30
8	Semi-anechoic chamber	FAC-10	--	--	--	TDK	2024-08-28

7.3. Test software

No.	Name	version	SN	Manufacture
1	EMC32	V 9.26.01	--	R&S
2	EMC32	V10.20.10	--	R&S

8. Measurement Uncertainty

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

Test item		Measurement Uncertainty
Maximum output power		0.34 dB
Occupied Bandwidth		9.27 kHz
Unwanted Emissions at Band Edge		2.95 dB
Conducted Unwanted Emissions		2.95 dB
Radiated Unwanted Emissions	30 MHz - 1 GHz	4.09 dB
	1 GHz - 6 GHz	4.84 dB
	6 GHz - 18 GHz	4.52 dB
	18 GHz - 26 GHz	6.19 dB
	26 GHz - 40 GHz	6.04 dB
Frequency stability		2.31 Hz

9. Test Results

9.1 Maximum Output Power and Peak to Average Power Ratio and EIRP

Specification:	FCC Part 27.50 (k)
Test Results:	Pass

9.1.1 Definitions and Limit:

According to Part 27.50 (k):

The following power requirements apply to stations transmitting in the 3450-3550 MHz band:

(1) The power of each fixed or base station transmitting in the 3450-3550 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an equivalent isotropically radiated power (EIRP) of 3280 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(2) The power of each fixed or base station transmitting in the 3450-3550 MHz band and situated in any geographic location other than that described in paragraph (k)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(ii) An EIRP of 1640 watts/MHz when transmitting with an emissions bandwidth greater than 1 MHz.

(3) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (k)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

(4) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, and any other relevant factors, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

9.1.2 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



Report No.: I22W00068

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.

9.1.3 Measurement result

NR mode:

NR-MIMO-1C

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
				dBm	dBm/MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	20	7.55	37.56	23.89	43.50	29.92	55.40	41.82	62.15	32.23
B			7.56	37.35	23.85						
C			7.57	37.71	23.97						
D			7.50	37.27	23.88						
A	16QAM		7.54	37.25	25.40	43.28	31.39	55.18	43.29	62.15	30.76
B			7.54	37.19	25.28						
C			7.63	37.40	25.41						
D			7.56	37.19	25.40						
A	64QAM		7.58	37.21	23.94	43.34	29.91	55.24	41.81	62.15	32.24
B			7.59	37.26	23.80						
C			7.65	37.42	23.94						
D			7.57	37.39	23.86						
A	256QAM		7.45	37.11	23.90	43.14	29.90	55.04	41.80	62.15	32.25
B			7.53	37.03	23.77						
C			7.63	37.19	23.97						
D			7.50	37.13	23.86						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	20	7.75	37.32	23.68	43.50	29.68	55.40	41.58	62.15	32.47
B			7.94	37.23	23.57						
C			7.78	37.65	23.71						
D			7.94	37.68	23.68						
A	16QAM		7.90	37.31	25.20	43.22	31.14	55.12	43.04	62.15	31.01
B			7.80	37.10	25.01						
C			7.93	37.36	25.23						
D			7.96	37.02	25.05						
A	64QAM		7.91	37.29	23.67	43.30	29.69	55.20	41.59	62.15	32.46
B			7.98	37.21	23.56						
C			7.97	37.37	23.74						
D			7.88	37.23	23.72						
A	256QAM		7.81	37.18	23.70	43.16	29.73	55.06	41.63	62.15	32.42
B			7.94	37.02	23.61						
C			7.89	37.17	23.75						
D			7.86	37.17	23.78						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
				dBm	dBm/MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBm /MHz
A	QPSK	20	7.44	37.56	23.97	43.51	29.96	55.41	41.86	62.15	32.19
B			7.54	37.31	23.83						
C			7.51	37.67	23.95						
D			7.62	37.40	24.01						
A	16QAM		7.60	37.39	25.43	43.30	31.42	55.20	43.32	62.15	30.73
B			7.59	37.13	25.31						
C			7.56	37.32	25.35						
D			7.74	37.29	25.49						
A	64QAM		7.52	37.44	24.02	43.42	29.99	55.32	41.89	62.15	32.16
B			7.61	37.30	23.86						
C			7.66	37.32	23.92						
D			7.65	37.54	24.06						
A	256QAM		7.54	37.33	24.02	43.23	30.00	55.13	41.90	62.15	32.15
B			7.60	37.05	23.88						
C			7.56	37.19	23.92						
D			7.60	37.27	24.08						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	30	7.36	37.47	22.06	43.41	28.07	55.31	39.97	62.15	34.08
B			7.53	37.27	21.94						
C			7.43	37.38	22.02						
D			7.45	37.45	22.17						
A	16QAM		7.41	37.47	23.95	43.38	29.93	55.28	41.83	62.15	32.22
B			7.48	37.23	23.79						
C			7.44	37.28	23.86						
D			7.37	37.47	24.04						
A	64QAM		7.42	37.40	22.05	43.38	28.05	55.28	39.95	62.15	34.1
B			7.42	37.23	21.96						
C			7.47	37.46	22.01						
D			7.42	37.36	22.11						
A	256QAM		7.31	37.26	22.09	43.35	28.07	55.25	39.97	62.15	34.08
B			7.44	37.11	21.95						
C			7.43	37.31	22.01						
D			7.30	37.62	22.15						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	30	7.55	37.42	21.91	43.33	27.89	55.23	39.79	62.15	34.26
B			7.63	37.25	21.74						
C			7.58	37.31	21.91						
D			7.60	37.27	21.90						
A	16QAM		7.55	37.44	23.88	43.35	29.81	55.25	41.71	62.15	32.34
B			7.56	37.22	23.64						
C			7.60	37.29	23.84						
D			7.55	37.38	23.79						
A	64QAM		7.57	37.42	21.93	43.36	27.91	55.26	39.81	62.15	34.24
B			7.59	37.22	21.74						
C			7.61	37.49	21.95						
D			7.53	37.22	21.92						
A	256QAM		7.56	37.31	21.95	43.35	27.92	55.25	39.82	62.15	34.23
B			7.57	37.10	21.76						
C			7.62	37.32	21.96						
D			7.54	37.57	21.93						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	30	7.38	37.41	22.13	43.39	28.11	55.29	40.01	62.15	34.04
B			7.56	37.3	21.97						
C			7.47	37.38	22.14						
D			7.51	37.37	22.13						
A	16QAM		7.48	37.29	23.99	43.35	30.00	55.25	41.90	62.15	32.15
B			7.42	37.28	23.86						
C			7.55	37.34	24.03						
D			7.55	37.42	24.03						
A	64QAM		7.36	37.33	22.13	43.39	28.12	55.29	40.02	62.15	34.03
B			7.45	37.31	22.00						
C			7.50	37.54	22.17						
D			7.44	37.28	22.08						
A	256QAM		7.51	37.31	22.12	43.37	28.12	55.27	40.02	62.15	34.03
B			7.33	37.20	22.02						
C			7.44	37.39	22.18						
D			7.40	37.51	22.06						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
				dBm	dBm/MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBm /MHz
A	QPSK	40	7.49	37.51	20.71	43.45	26.73	55.35	38.63	62.15	35.42
B			7.60	37.45	20.62						
C			7.64	37.44	20.78						
D			7.52	37.31	20.73						
A	16QAM		7.63	37.22	22.70	43.22	28.73	55.12	40.63	62.15	33.42
B			7.63	37.08	22.62						
C			7.45	37.16	22.78						
D			7.52	37.32	22.72						
A	64QAM		7.59	37.50	20.73	43.38	26.76	55.28	38.66	62.15	35.39
B			7.64	37.29	20.66						
C			7.40	37.55	20.80						
D			7.62	37.09	20.75						
A	256QAM		7.55	37.39	20.75	43.31	26.75	55.21	38.65	62.15	35.40
B			7.66	37.03	20.62						
C			7.74	37.36	20.79						
D			7.59	37.35	20.76						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	40	7.57	37.43	20.60	43.42	26.57	55.32	38.47	62.15	35.58
B			7.58	37.38	20.36						
C			7.59	37.43	20.66						
D			7.57	37.35	20.58						
A	16QAM		7.57	37.24	22.57	43.23	28.57	55.13	40.47	62.15	33.58
B			7.60	37.05	22.38						
C			7.59	37.16	22.65						
D			7.56	37.38	22.59						
A	64QAM		7.57	37.35	20.58	43.38	26.62	55.28	38.52	62.15	35.53
B			7.59	37.26	20.46						
C			7.66	37.60	20.69						
D			7.53	37.22	20.65						
A	256QAM		7.56	37.53	20.56	43.33	26.59	55.23	38.49	62.15	35.56
B			7.62	36.95	20.42						
C			7.63	37.37	20.71						
D			7.55	37.37	20.59						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	40	7.44	37.41	20.73	43.45	26.71	55.35	38.61	62.15	35.44
B			7.59	37.43	20.56						
C			7.61	37.49	20.78						
D			7.51	37.37	20.69						
A	16QAM		7.60	37.48	22.69	43.32	28.70	55.22	40.60	62.15	33.45
B			7.58	37.08	22.53						
C			7.62	37.25	22.79						
D			7.56	37.38	22.69						
A	64QAM		7.62	37.31	20.71	43.38	26.74	55.28	38.64	62.15	35.41
B			7.52	37.28	20.62						
C			7.60	37.62	20.84						
D			7.57	37.20	20.70						
A	256QAM		7.61	37.51	20.71	43.36	26.72	55.26	38.62	62.15	35.43
B			7.63	37.03	20.64						
C			7.64	37.42	20.81						
D			7.53	37.38	20.65						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	50	7.67	37.48	19.75	43.25	25.86	55.15	37.76	62.15	36.29
B			7.92	36.93	19.90						
C			7.68	37.32	19.91						
D			7.58	37.16	19.80						
A	16QAM		7.51	37.35	21.38	43.35	27.42	55.25	39.32	62.15	34.73
B			7.60	37.23	21.35						
C			7.65	37.46	21.43						
D			7.57	37.29	21.44						
A	64QAM		7.69	37.21	19.71	43.19	25.80	55.09	37.70	62.15	36.35
B			7.80	36.96	19.86						
C			7.66	37.27	19.76						
D			7.66	37.25	19.78						
A	256QAM		7.60	37.13	19.72	43.08	25.79	54.98	37.69	62.15	36.36
B			7.80	36.76	19.86						
C			7.60	37.15	19.69						
D			7.57	37.17	19.79						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	50	7.56	37.41	19.58	43.18	25.67	55.08	37.57	62.15	36.48
B			7.91	36.89	19.79						
C			7.58	37.12	19.57						
D			7.55	37.20	19.65						
A	16QAM		7.57	37.35	21.30	43.32	27.29	55.22	39.19	62.15	34.86
B			7.62	37.32	21.16						
C			7.60	37.23	21.30						
D			7.60	37.30	21.31						
A	64QAM		7.56	37.26	19.60	43.21	25.65	55.11	37.55	62.15	36.50
B			7.81	37.04	19.71						
C			7.62	37.23	19.60						
D			7.59	37.23	19.61						
A	256QAM		7.59	37.29	19.60	43.13	25.66	55.03	37.56	62.15	36.49
B			7.83	36.82	19.75						
C			7.60	37.15	19.61						
D			7.57	37.16	19.60						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	50	7.67	37.51	19.76	43.24	25.79	55.14	37.69	62.15	36.36
B			7.93	36.93	19.89						
C			7.70	37.20	19.73						
D			7.68	37.21	19.71						
A	16QAM		7.57	37.30	21.42	43.35	27.42	55.25	39.32	62.15	34.73
B			7.68	37.27	21.34						
C			7.68	37.34	21.40						
D			7.68	37.40	21.45						
A	64QAM		7.64	37.49	19.77	43.29	25.82	55.19	37.72	62.15	36.33
B			7.83	37.02	19.84						
C			7.74	37.23	19.78						
D			7.73	37.34	19.80						
A	256QAM		7.60	37.32	19.78	43.19	25.84	55.09	37.74	62.15	36.31
B			7.77	36.86	19.88						
C			7.67	37.22	19.81						
D			7.66	37.27	19.82						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	60	7.57	37.32	18.85	43.32	24.83	55.22	36.73	62.15	37.32
B			7.61	37.17	18.72						
C			7.82	37.41	18.79						
D			7.62	37.28	18.89						
A	16QAM		7.67	37.15	20.60	43.26	26.59	55.16	38.49	62.15	35.56
B			7.73	37.24	20.50						
C			7.78	37.13	20.57						
D			7.68	37.45	20.59						
A	64QAM		7.70	37.17	18.88	43.27	24.85	55.17	36.75	62.15	37.30
B			7.78	37.22	18.68						
C			7.69	37.38	18.84						
D			7.72	37.24	18.92						
A	256QAM		7.67	37.34	18.88	43.20	24.84	55.10	36.74	62.15	37.31
B			7.79	37.04	18.70						
C			7.70	37.22	18.82						
D			7.66	37.10	18.88						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	60	7.48	37.37	18.73	43.33	24.72	55.23	36.62	62.15	37.43
B			7.53	37.16	18.66						
C			7.53	37.40	18.71						
D			7.56	37.29	18.71						
A	16QAM		7.49	37.37	20.50	43.38	26.48	55.28	38.38	62.15	35.67
B			7.54	37.30	20.39						
C			7.55	37.29	20.45						
D			7.55	37.46	20.49						
A	64QAM		7.52	37.40	18.80	43.31	24.72	55.21	36.62	62.15	37.43
B			7.57	37.19	18.63						
C			7.55	37.37	18.69						
D			7.52	37.19	18.67						
A	256QAM		7.48	37.48	18.79	43.24	24.72	55.14	36.62	62.15	37.43
B			7.54	37.05	18.53						
C			7.58	37.24	18.73						
D			7.52	37.08	18.75						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	60	7.67	37.41	18.87	43.34	24.82	55.24	36.72	62.15	37.33
B			7.64	37.13	18.68						
C			7.66	37.42	18.83						
D			7.67	37.30	18.83						
A	16QAM		7.67	37.40	20.62	43.41	26.57	55.31	38.47	62.15	35.58
B			7.66	37.28	20.41						
C			7.77	37.36	20.57						
D			7.65	37.50	20.60						
A	64QAM		7.70	37.42	18.91	43.30	24.85	55.20	36.75	62.15	37.30
B			7.70	37.19	18.69						
C			7.65	37.41	18.91						
D			7.64	37.10	18.79						
A	256QAM		7.59	37.48	18.86	43.26	24.84	55.16	36.74	62.15	37.31
B			7.70	37.12	18.78						
C			7.78	37.25	18.84						
D			7.72	37.08	18.80						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	70	7.84	37.36	18.24	43.24	24.15	55.14	36.05	62.15	38.00
B			7.90	37.20	18.00						
C			7.84	37.24	18.08						
D			7.72	37.06	18.18						
A	16QAM		7.68	37.17	19.96	43.16	25.96	55.06	37.86	62.15	36.19
B			7.73	37.08	19.85						
C			7.73	37.14	19.92						
D			7.67	37.15	20.02						
A	64QAM		7.66	37.20	18.20	43.21	24.17	55.11	36.07	62.15	37.98
B			7.77	37.09	18.07						
C			7.72	37.15	18.13						
D			7.67	37.30	18.21						
A	256QAM		7.82	37.35	18.17	43.32	24.14	55.22	36.04	62.15	38.01
B			7.81	37.30	18.05						
C			7.66	37.30	18.10						
D			7.66	37.25	18.16						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	70	7.66	37.29	18.02	43.25	24.04	55.15	35.94	62.15	38.11
B			7.62	37.22	17.99						
C			7.61	37.29	18.03						
D			7.62	37.11	18.04						
A	16QAM		7.61	37.20	19.85	43.19	25.87	55.09	37.77	62.15	36.28
B			7.61	37.13	19.79						
C			7.62	37.21	19.88						
D			7.64	37.15	19.89						
A	64QAM		7.61	37.16	18.07	43.21	24.11	55.11	36.01	62.15	38.04
B			7.68	37.14	18.03						
C			7.64	37.22	18.10						
D			7.61	37.25	18.14						
A	256QAM		7.64	37.34	18.05	43.32	24.08	55.22	35.98	62.15	38.07
B			7.64	37.30	18.03						
C			7.59	37.35	18.08						
D			7.59	37.21	18.08						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	70	7.78	37.31	18.16	43.29	24.14	55.19	36.04	62.15	38.01
B			7.84	37.24	18.10						
C			7.84	37.31	18.17						
D			7.86	37.21	18.05						
A	16QAM		7.84	37.21	20.01	43.25	25.99	55.15	37.89	62.15	36.16
B			7.78	37.14	19.94						
C			7.74	37.23	20.02						
D			7.76	37.33	19.89						
A	64QAM		7.81	37.36	18.24	43.24	24.20	55.14	36.10	62.15	37.95
B			7.91	37.12	18.14						
C			7.80	37.24	18.21						
D			7.80	37.15	18.13						
A	256QAM		7.72	37.41	18.22	43.36	24.18	55.26	36.08	62.15	37.97
B			7.69	37.27	18.10						
C			7.71	37.35	18.19						
D			7.71	37.34	18.13						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	80	7.64	37.22	17.44	43.25	24.04	55.15	35.94	62.15	38.11
B			7.72	37.27	17.75						
C			7.70	37.26	18.34						
D			7.68	37.17	18.47						
A	16QAM		7.66	37.27	19.40	43.25	25.67	55.15	37.57	62.15	36.48
B			7.68	37.09	19.38						
C			7.65	37.44	19.41						
D			7.77	37.10	20.33						
A	64QAM		7.66	37.12	17.48	43.20	24.03	55.10	35.93	62.15	38.12
B			7.78	37.18	17.65						
C			7.70	37.30	18.32						
D			7.76	37.13	18.49						
A	256QAM		7.60	37.35	17.52	43.24	24.06	55.14	35.96	62.15	38.09
B			7.68	37.06	17.69						
C			7.68	37.34	18.32						
D			7.73	37.26	18.53						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	80	7.54	37.50	17.46	43.31	24.00	55.21	35.90	62.15	38.15
B			7.52	37.18	17.59						
C			7.55	37.25	18.27						
D			7.51	37.21	18.49						
A	16QAM		7.58	37.30	19.29	43.29	25.67	55.19	37.57	62.15	36.48
B			7.50	37.17	19.49						
C			7.51	37.40	19.34						
D			7.53	37.20	20.38						
A	64QAM		7.56	37.18	17.42	43.22	23.99	55.12	35.89	62.15	38.16
B			7.54	37.16	17.60						
C			7.56	37.26	18.24						
D			7.55	37.21	18.54						
A	256QAM		7.50	37.36	17.42	43.31	23.99	55.21	35.89	62.15	38.16
B			7.50	37.10	17.62						
C			7.59	37.31	18.22						
D			7.54	37.37	18.54						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	80	7.80	37.25	17.50	43.28	23.99	55.18	35.89	62.15	38.16
B			7.71	37.18	17.63						
C			7.68	37.25	18.17						
D			7.72	37.34	18.51						
A	16QAM		7.79	37.27	19.33	43.31	25.69	55.21	37.59	62.15	36.46
B			7.64	37.14	19.55						
C			7.72	37.36	19.38						
D			7.70	37.38	20.35						
A	64QAM		7.79	37.19	17.52	43.25	24.03	55.15	35.93	62.15	38.12
B			7.72	37.19	17.71						
C			7.72	37.26	18.16						
D			7.67	37.28	18.56						
A	256QAM		7.74	37.41	17.57	43.35	24.07	55.25	35.97	62.15	38.08
B			7.69	37.10	17.69						
C			7.75	37.37	18.24						
D			7.68	37.42	18.56						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position B								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	90	7.60	37.23	16.96	43.23	23.01	55.13	34.91	62.15	39.14
B			7.62	37.07	16.88						
C			7.65	37.28	17.05						
D			7.75	37.25	17.05						
A	16QAM		7.67	37.27	18.90	43.31	24.92	55.21	36.82	62.15	37.23
B			7.72	37.20	18.80						
C			7.69	37.29	18.92						
D			7.72	37.39	18.99						
A	64QAM		7.71	37.39	16.99	43.32	23.00	55.22	34.90	62.15	39.15
B			7.64	37.21	16.88						
C			7.70	37.30	17.01						
D			7.57	37.31	17.03						
A	256QAM		7.67	37.13	16.91	43.13	23.00	55.03	34.90	62.15	39.15
B			7.68	37.08	16.87						
C			7.73	37.01	17.00						
D			7.79	37.20	17.13						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
				dBm	dBm/MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBm /MHz
A	QPSK	90	7.52	37.21	16.92	43.24	22.99	55.14	34.89	62.15	39.16
B			7.59	37.05	16.86						
C			7.65	37.26	17.00						
D			7.67	37.35	17.10						
A	16QAM		7.66	37.23	18.85	43.30	24.90	55.20	36.80	62.15	37.25
B			7.62	37.20	18.76						
C			7.60	37.30	18.89						
D			7.62	37.39	19.02						
A	64QAM		7.66	37.41	16.99	43.34	23.02	55.24	34.92	62.15	39.13
B			7.55	37.19	16.87						
C			7.66	37.32	17.01						
D			7.60	37.36	17.14						
A	256QAM		7.62	37.20	16.98	43.19	22.97	55.09	34.87	62.15	39.18
B			7.58	37.09	16.84						
C			7.66	37.30	17.01						
D			7.71	37.08	16.98						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position T								
			PAR (dB)	Average Power/PSD		Total Power (dBm)	Total Power (dBm /MHz)	Total EIRP (dBm)	Total EIRP (dBm /MHz)	EIRP limit (dBm /MHz)	GANT* Limit (dBi)
				dBm	dBm/ MHz						
A	QPSK	90	7.68	37.26	16.99	43.24	22.99	55.14	34.89	62.15	39.16
B			7.70	37.06	16.89						
C			7.70	37.26	16.99						
D			7.71	37.28	17.00						
A	16QAM		7.72	37.29	18.93	43.34	24.93	55.24	36.83	62.15	37.22
B			7.69	37.21	18.83						
C			7.77	37.28	18.86						
D			7.70	37.48	19.00						
A	64QAM		7.68	37.44	17.01	43.36	23.04	55.26	34.94	62.15	39.11
B			7.62	37.22	16.92						
C			7.65	37.26	16.97						
D			7.71	37.43	17.18						
A	256QAM		7.75	37.25	17.05	43.22	23.02	55.12	34.92	62.15	39.13
B			7.67	37.08	16.89						
C			7.71	37.27	16.99						
D			7.78	37.19	17.07						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power / PSD								
			Channel position M								
			PAR (dB)	Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
				dBm	dBm/MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBm /MHz
A	QPSK	100	7.78	37.13	16.69	34.08	22.65	45.98	34.55	62.15	39.50
B			7.77	36.86	16.47						
C			7.68	37.12	16.64						
D			7.82	37.14	16.73						
A	16QAM		7.72	37.21	18.52	43.16	24.50	55.06	36.40	62.15	37.65
B			7.76	37.02	18.33						
C			7.69	37.10	18.51						
D			7.73	37.22	18.54						
A	64QAM		7.73	37.15	16.73	43.16	22.70	55.06	34.60	62.15	39.45
B			7.77	37.05	16.55						
C			7.70	37.21	16.72						
D			7.75	37.16	16.73						
A	256QAM		7.80	37.16	16.68	43.17	22.69	55.07	34.59	62.15	39.46
B			7.72	37.08	16.57						
C			7.83	37.18	16.73						
D			7.83	37.17	16.69						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

NR-MIMO-2C

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power							
			Channel position M							
			Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
			dBm	dBm /MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	20	37.45	20.94	43.39	26.87	55.29	38.77	62.15	35.28
B			37.13	20.54						
C			37.53	20.97						
D			37.37	20.94						
A	16QAM		37.57	22.36	43.36	28.37	55.26	40.27	62.15	33.78
B			37.04	22.23						
C			37.38	22.40						
D			37.36	22.41						
A	64QAM		37.20	20.92	43.37	26.91	55.27	38.81	62.15	35.24
B			37.26	20.65						
C			37.51	20.98						
D			37.41	21.00						
A	256QAM		37.52	20.91	43.27	26.89	55.17	38.79	62.15	35.26
B			36.90	20.61						
C			37.41	20.96						
D			37.16	21.00						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power							
			Channel position M							
			Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT*
			dBm	dBm /MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	30	37.20	19.03	43.24	25.05	55.14	36.95	62.15	37.10
B			36.96	18.72						
C			37.28	19.11						
D			37.41	19.24						
A	16QAM		37.14	20.98	43.27	26.93	55.17	38.83	62.15	35.22
B			37.03	20.46						
C			37.30	21.04						
D			37.52	21.13						
A	64QAM		37.32	19.09	43.21	25.06	55.11	36.96	62.15	37.09
B			36.74	18.65						
C			37.34	19.15						
D			37.31	19.23						
A	256QAM		37.34	19.12	43.32	25.09	55.22	36.99	62.15	37.06
B			37.05	18.75						
C			37.25	19.15						
D			37.54	19.25						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power							
			Channel position M							
			Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT*
			dBm	dBm /MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	40	37.23	17.76	43.32	23.78	55.22	35.68	62.15	38.37
B			37.21	17.57						
C			37.35	17.84						
D			37.42	17.86						
A	16QAM		37.46	19.80	43.39	25.80	55.29	37.70	62.15	36.35
B			37.11	19.62						
C			37.37	19.86						
D			37.52	19.84						
A	64QAM		37.27	17.83	43.38	23.84	55.28	35.74	62.15	38.31
B			37.24	17.67						
C			37.55	17.92						
D			37.38	17.84						
A	256QAM		37.37	17.79	43.33	23.83	55.23	35.73	62.15	38.32
B			37.02	17.69						
C			37.53	17.91						
D			37.32	17.83						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power							
			Channel position M							
			Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT*
			dBm	dBm /MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	50	37.06	16.69	43.10	22.94	55.00	34.84	62.15	39.21
B			37.06	17.29						
C			37.10	16.71						
D			37.10	16.96						
A	16QAM		37.07	18.36	43.12	24.42	55.02	36.32	62.15	37.73
B			37.03	18.33						
C			37.13	18.40						
D			37.17	18.50						
A	64QAM		37.15	16.65	43.19	22.74	55.09	34.64	62.15	39.41
B			37.11	16.63						
C			37.20	16.70						
D			37.21	16.90						
A	256QAM		37.01	16.65	43.07	22.75	54.97	34.65	62.15	39.40
B			36.98	16.61						
C			37.09	16.69						
D			37.10	16.95						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

NR-MIMO-5C

Port	Modulation	NR Carrier Bandwidth (MHz)	Peak to Average Ratio (PAR) / Output Power							
			Channel position M							
			Average Power/PSD		Total Power	Total Power	Total EIRP	Total EIRP	EIRP limit	GANT* Limit
			dBm	dBm /MHz	dBm	dBm /MHz	dBm	dBm /MHz	dBm /MHz	dBi
A	QPSK	20	37.37	16.86	43.44	22.91	55.34	34.81	62.15	39.24
B			37.35	16.76						
C			37.63	16.94						
D			37.31	16.89						
A	16QAM		37.23	18.23	43.38	24.34	55.28	36.24	62.15	37.81
B			37.22	18.20						
C			37.51	18.41						
D			37.47	18.36						
A	64QAM		37.18	16.81	43.30	22.92	55.20	34.82	62.15	39.23
B			37.15	16.78						
C			37.39	17.01						
D			37.40	16.93						
A	256QAM		37.15	16.86	43.27	22.91	55.17	34.81	62.15	39.24
B			37.15	16.79						
C			37.28	16.88						
D			37.40	16.93						

Note:

Total Power=Measured Output Power (Port A+Port B+Port C+Port D)

Total EIRP=Total Power + Antenna Gain (Antenna gain is 11.9dBi)

* Maximum antenna system gain (including cable loss), GANT (dBi) 50 ohm, for the tested configurations, to comply with Maximum radiated output power requirements, calculated using measured and summed PSD form all ports.

Test figure as below:



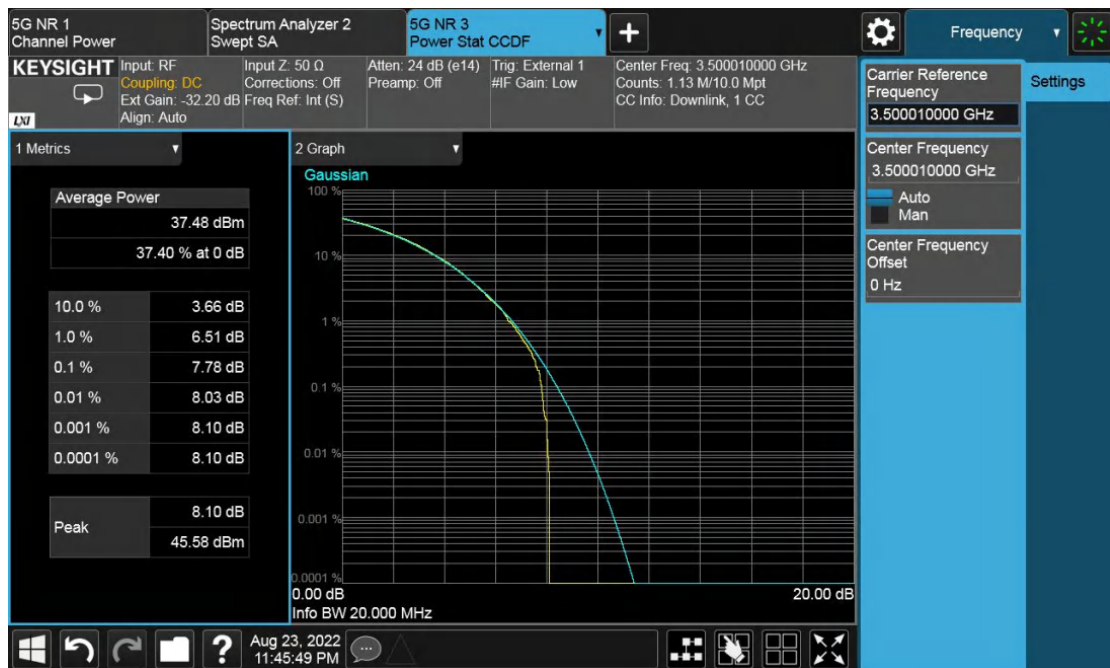
Power, Port C, NR-1C, QPSK, 20MHz, Channel position B



PAR, Port C, NR-1C, QPSK, 20MHz, Channel position B



Power, Port C, NR-1C, QPSK, 20MHz, Channel position M



PAR, Port C, NR-1C, QPSK, 20MHz, Channel position M



Power, Port C, NR-1C, QPSK, 20MHz, Channel position T



PAR, Port C, NR-1C, QPSK, 20MHz, Channel position T

9.2 Occupied Bandwidth

Specification:	FCC Part 2.1049
Test Results:	Pass

9.2.1 Definitions and Limit

According to Part 2.1049:

The emissions bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.2.2 Method of Measurements:

The measurement method is from ANSI C63.26:

- 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 emissions skirts.
- 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.

9.2.3 Measurement result

NR-MIMO-1C

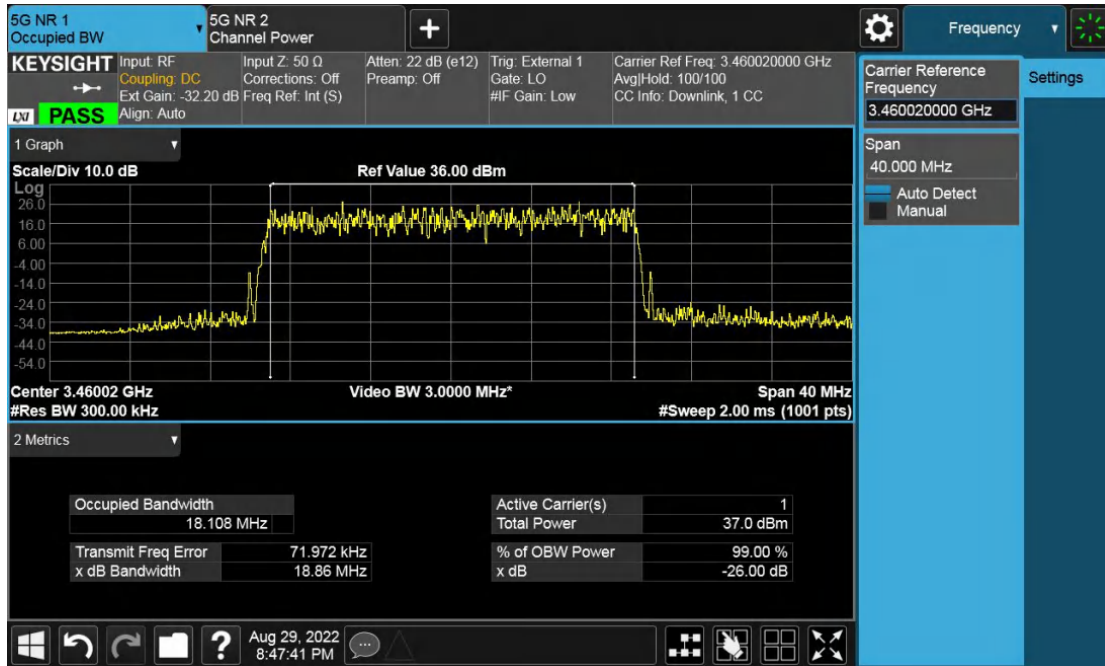
99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel position B	Channel position M	Channel position T
C	QPSK	20M	18.11	18.12	18.12
		30M	27.68	27.75	27.71
		40M	37.96	38.01	37.96
		50M	48.01	48.03	47.98
		60M	57.61	57.60	57.55
		70M	67.90	67.93	67.92
		80M	77.39	77.43	77.38
		90M	87.33	87.38	87.38
		100M	--	97.13	--

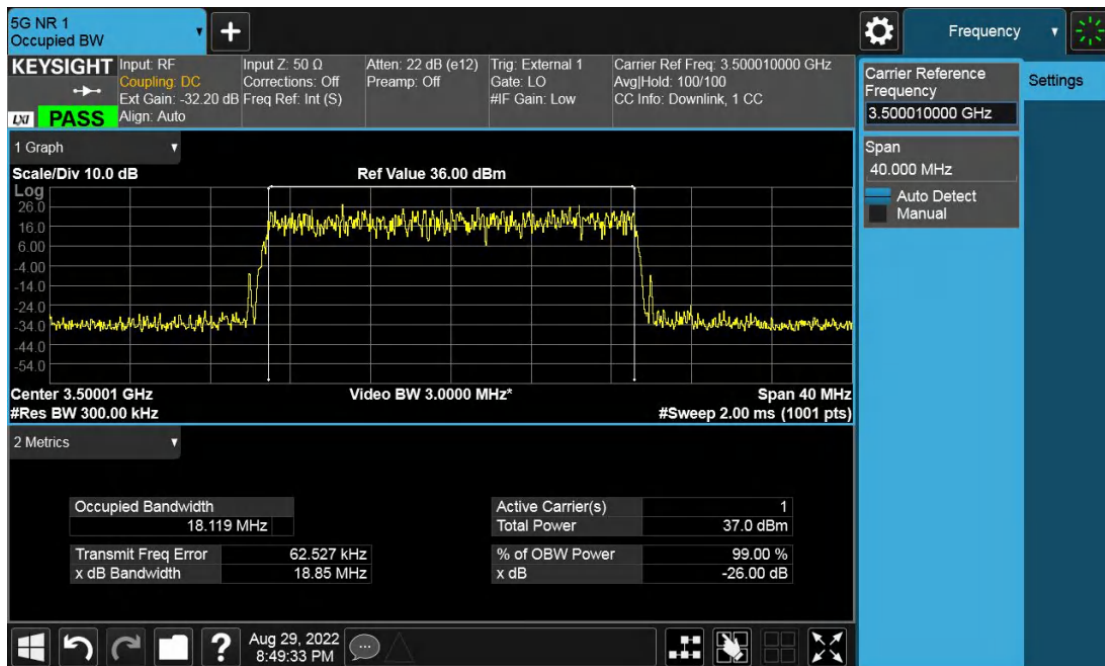
-26dBc Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel position B	Channel position M	Channel position T
C	QPSK	20M	18.86	18.85	18.85
		30M	28.64	28.66	28.67
		40M	39.22	39.23	39.20
		50M	50.15	50.18	50.16
		60M	59.66	59.67	59.66
		70M	69.97	69.99	69.97
		80M	80.12	80.04	80.07
		90M	90.01	90.05	90.04
		100M	--	100.10	--

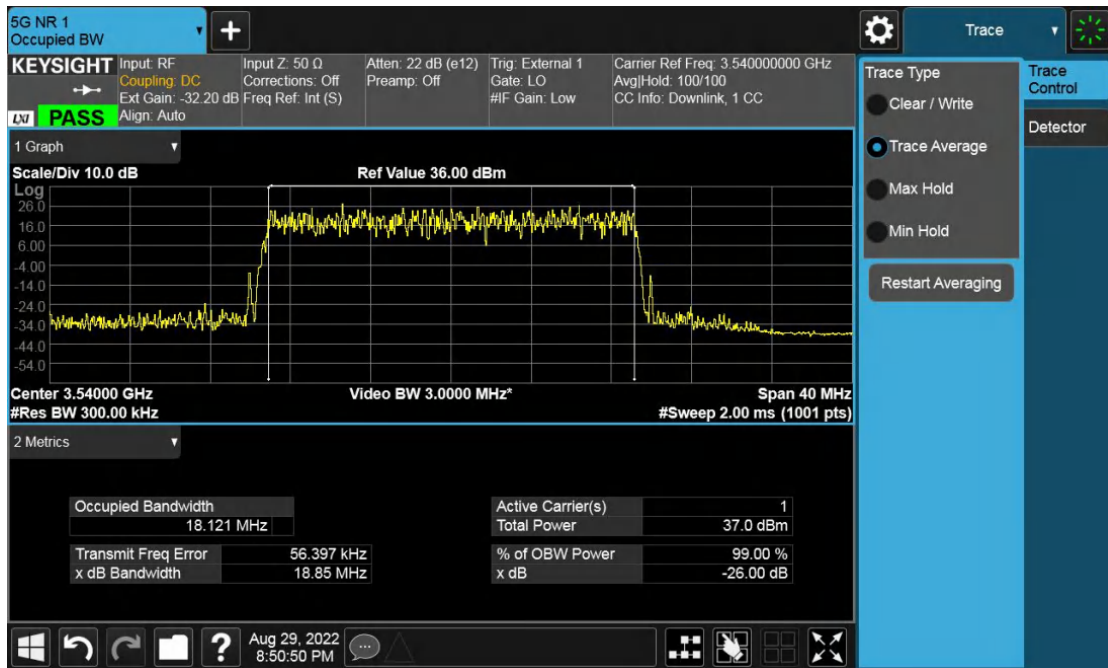
Test figure as below:



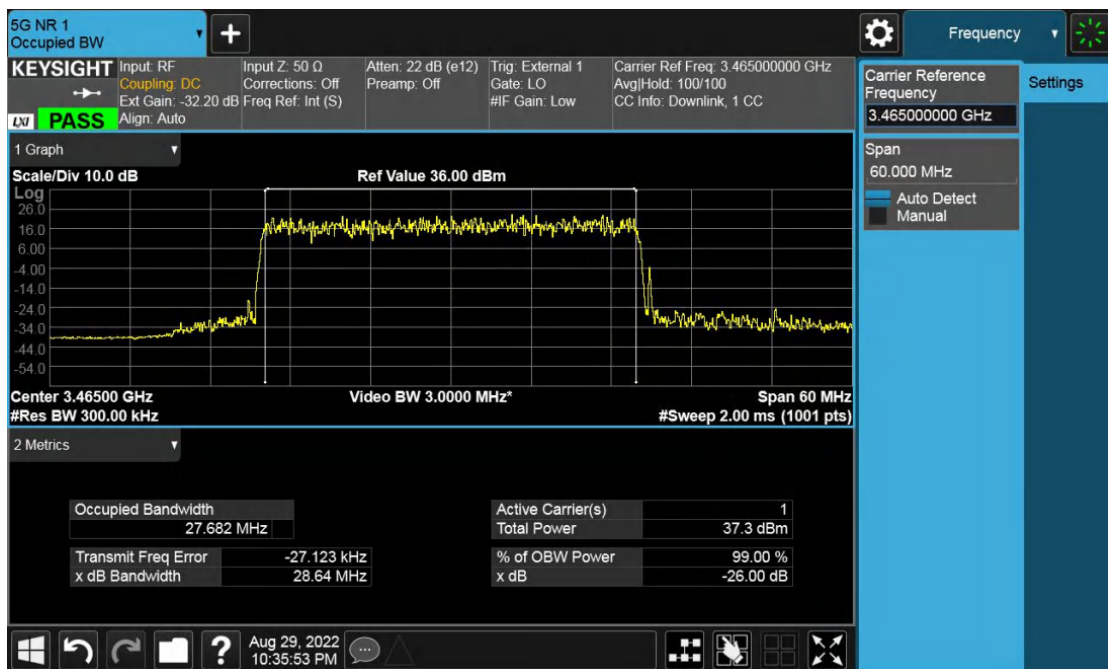
QPSK, 20MHz, Channel position B



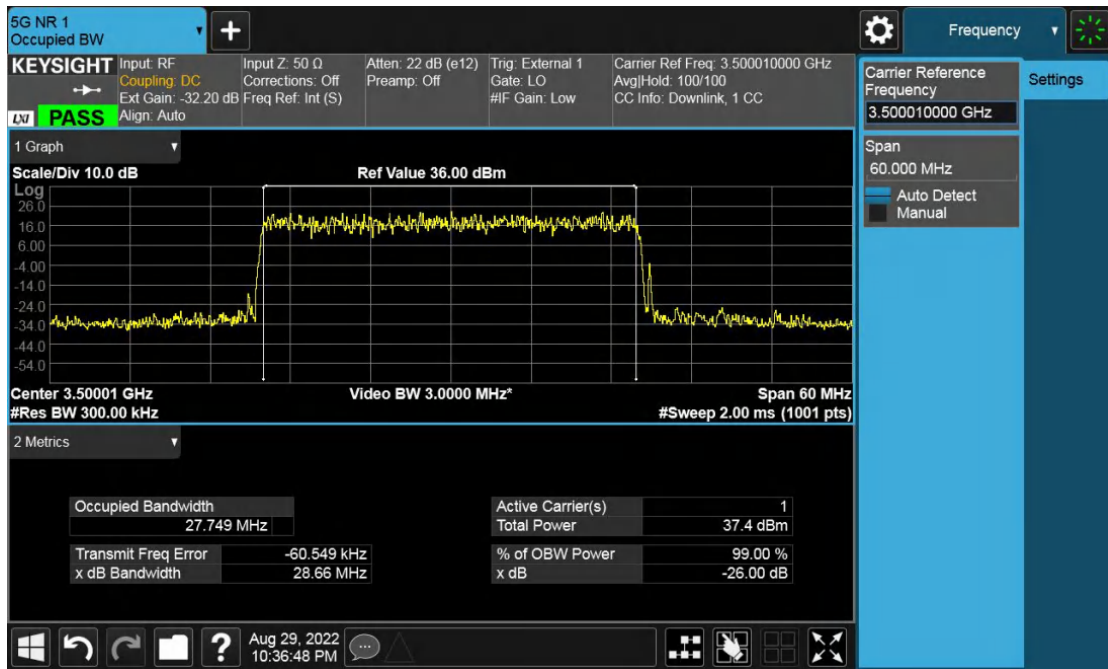
QPSK, 20MHz, Channel position M



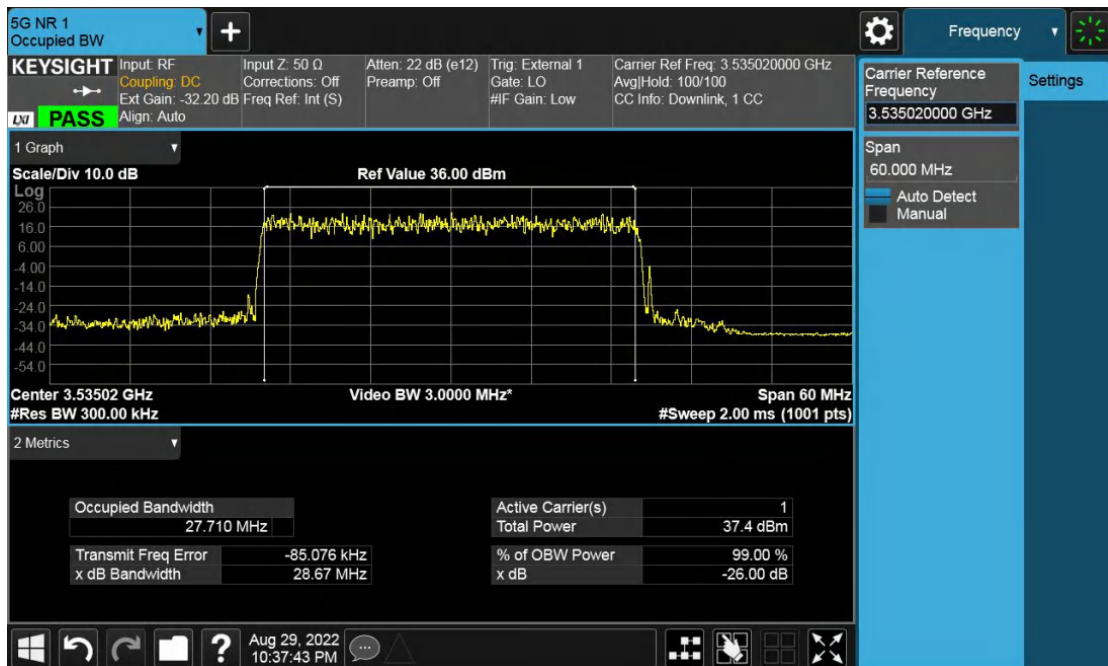
QPSK, 20MHz, Channel position T



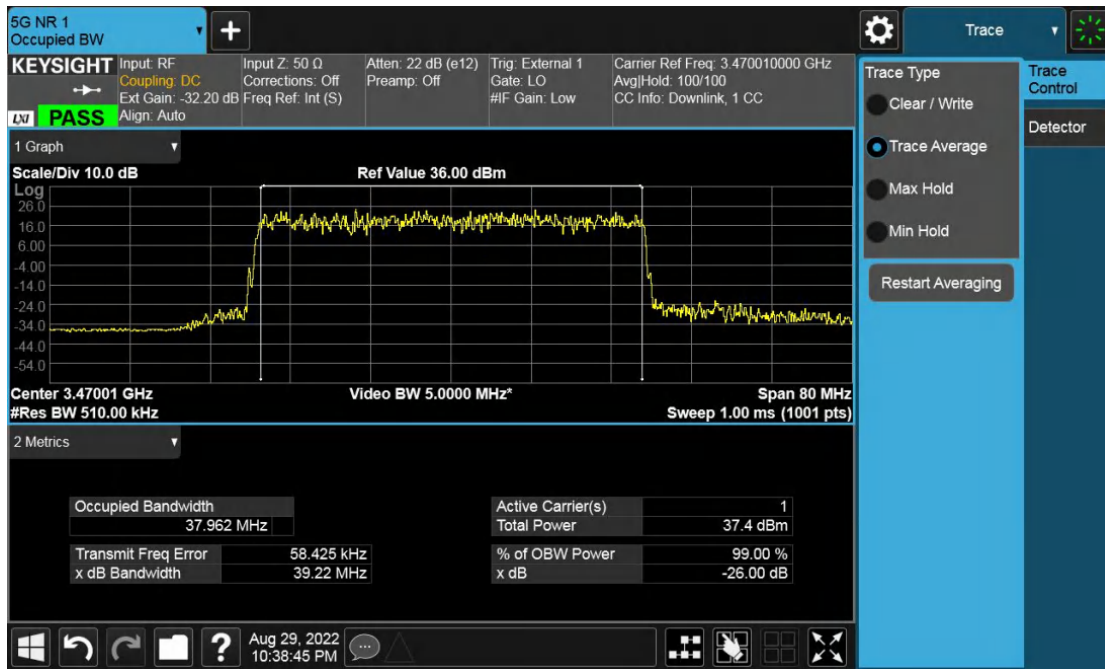
QPSK, 30MHz, Channel position B



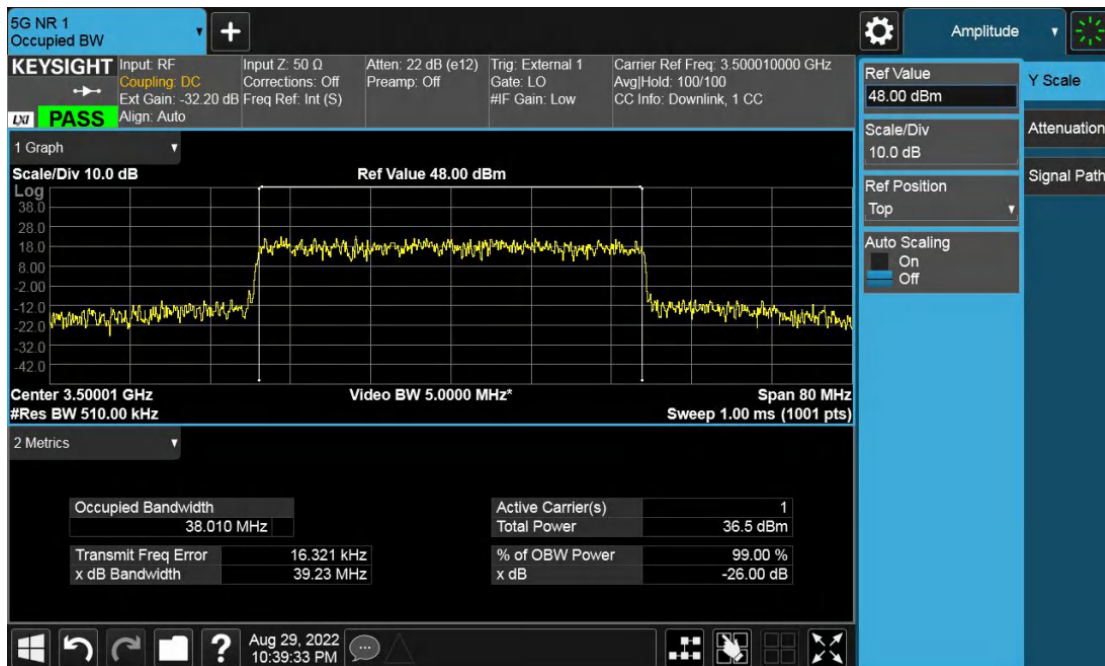
QPSK, 30MHz, Channel position M



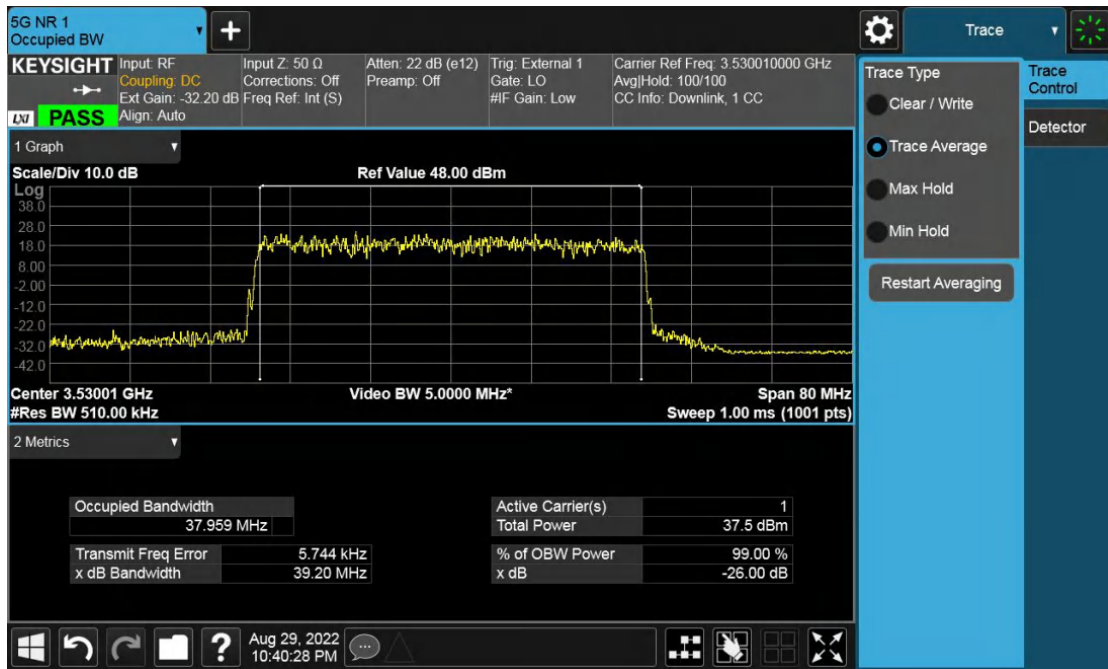
QPSK, 30MHz, Channel position T



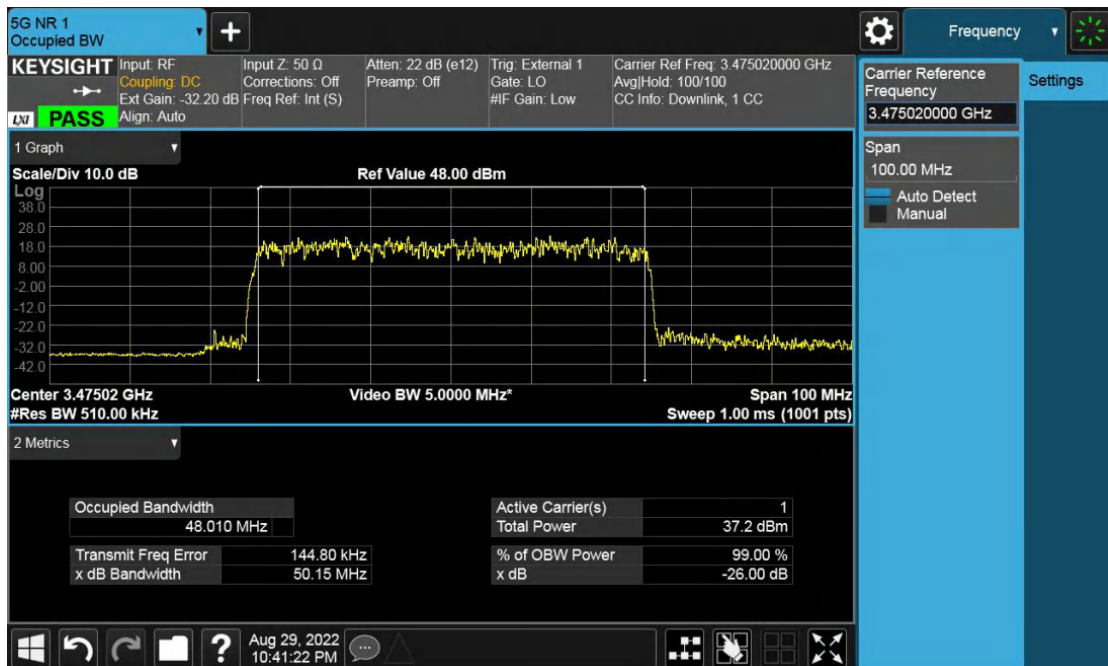
QPSK, 40MHz, Channel position B



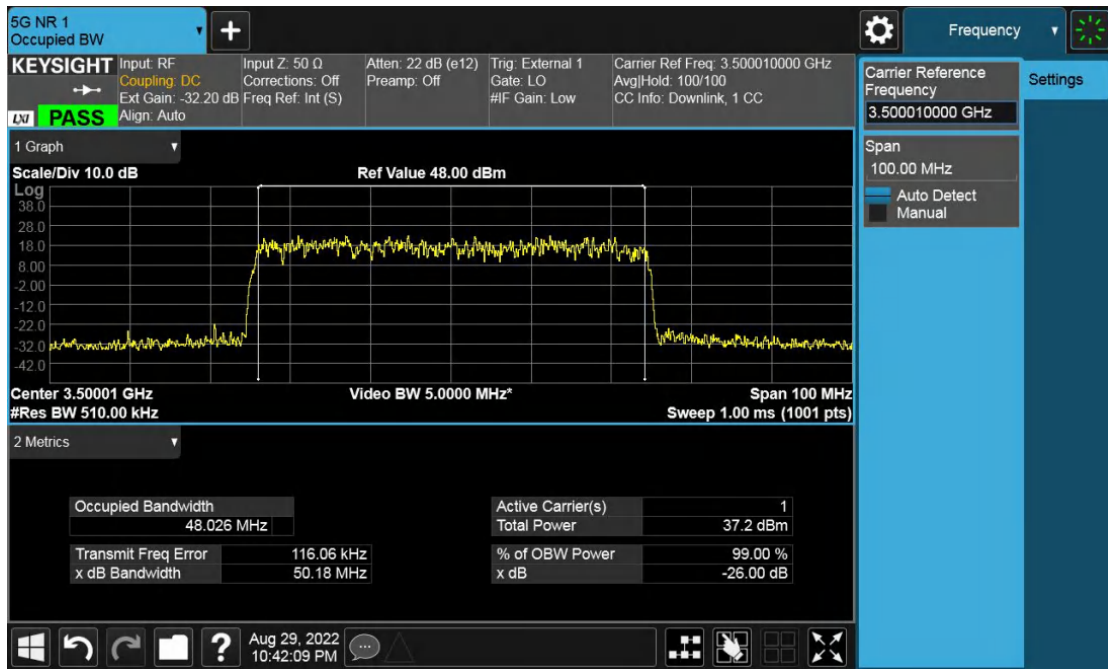
QPSK,40MHz, Channel position M



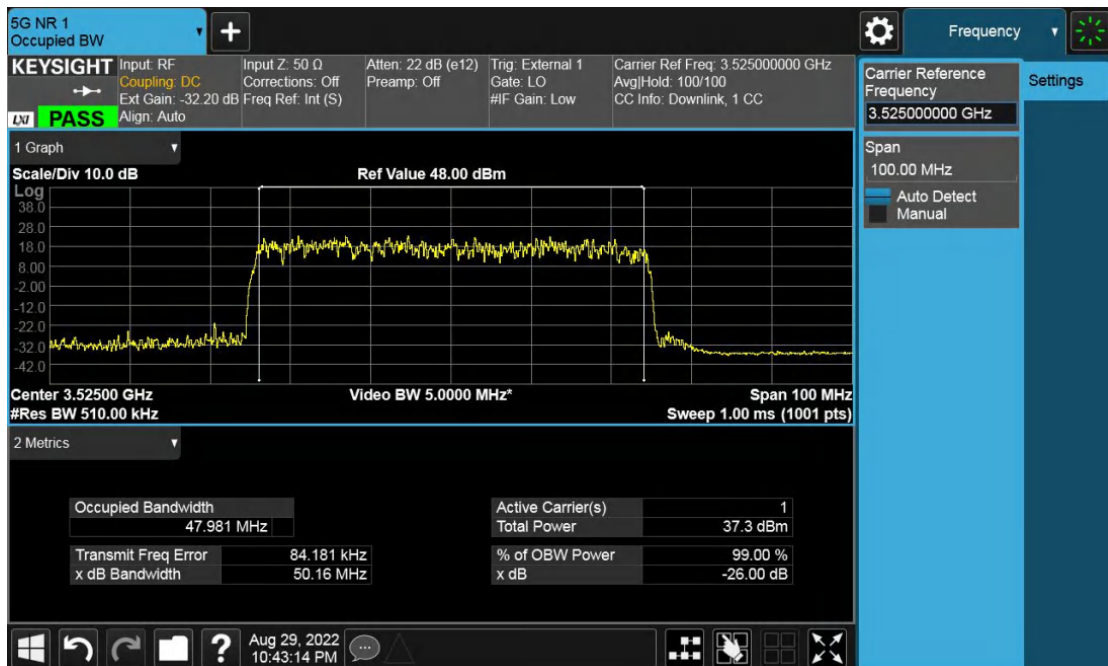
QPSK, 40MHz, Channel position T



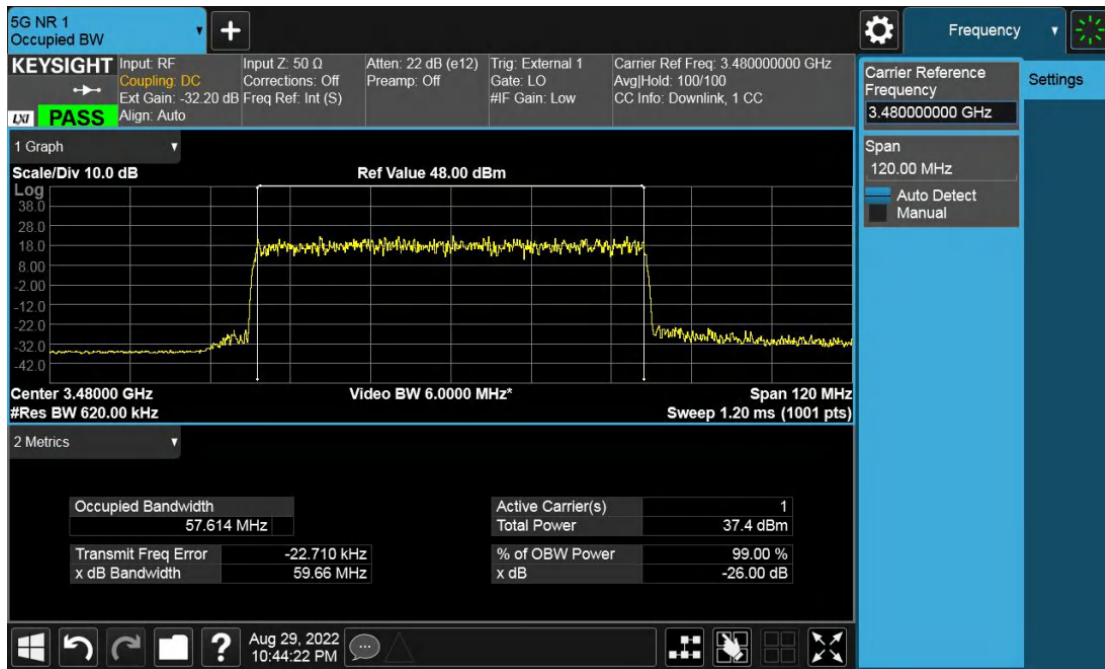
QPSK, 50MHz, Channel position B



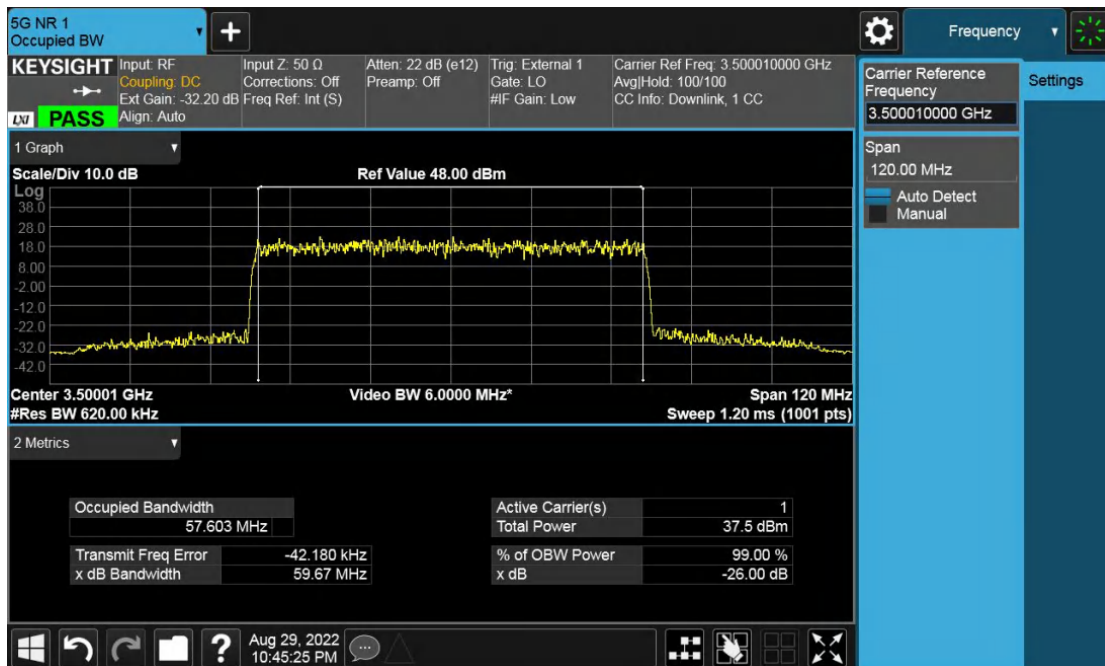
QPSK, 50MHz, Channel position M



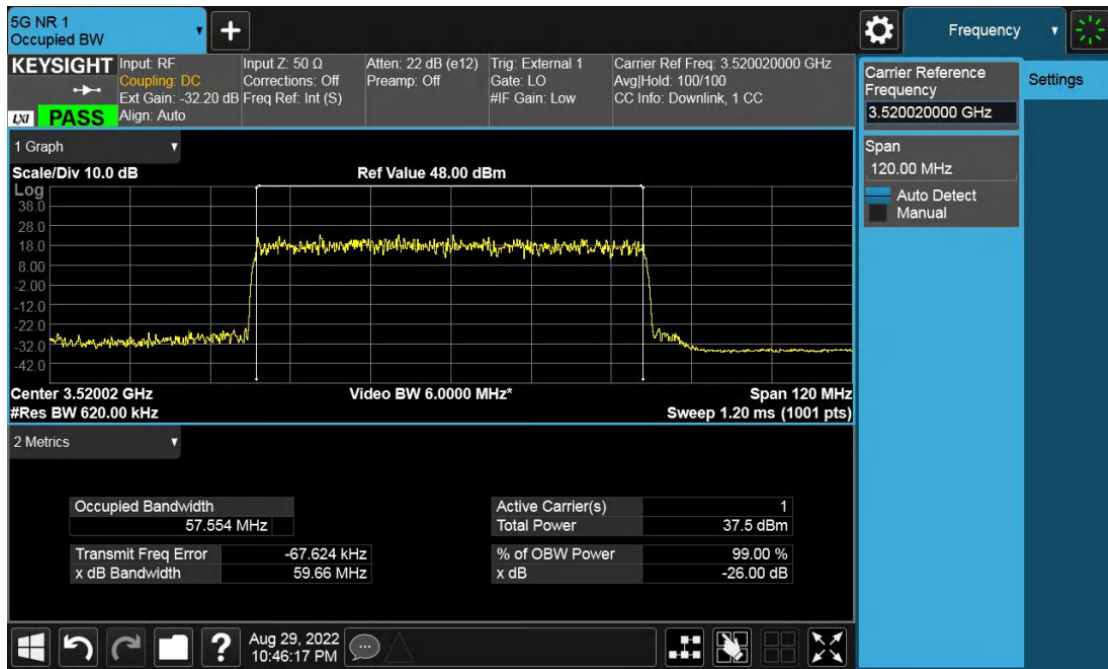
QPSK, 50MHz, Channel position T



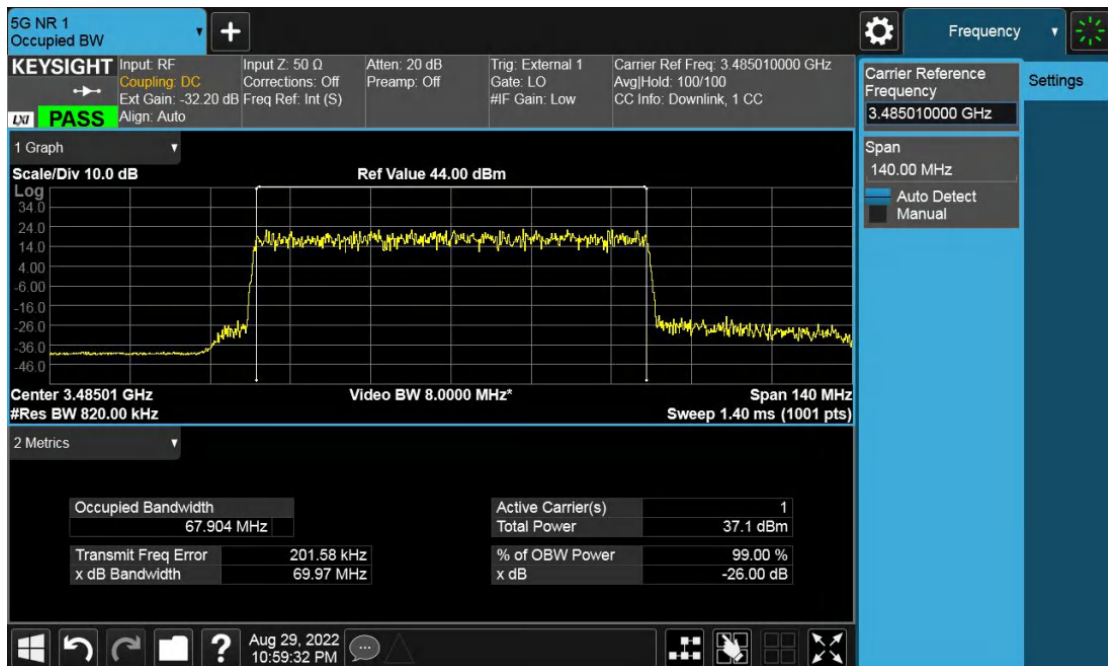
QPSK, 60MHz, Channel position B



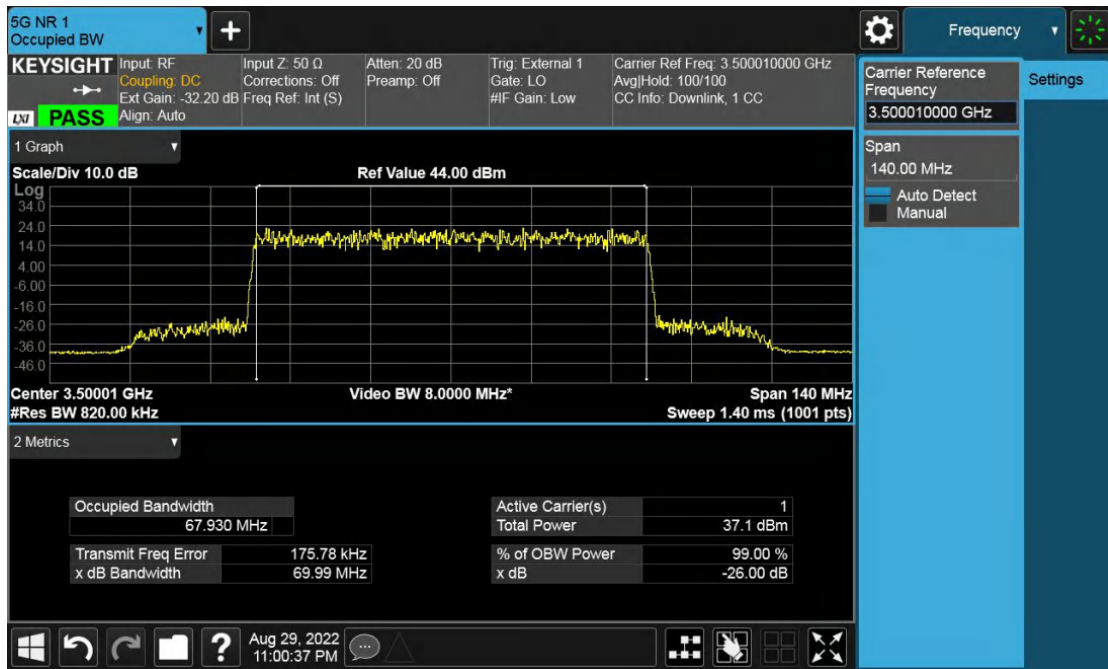
QPSK, 60MHz, Channel position M



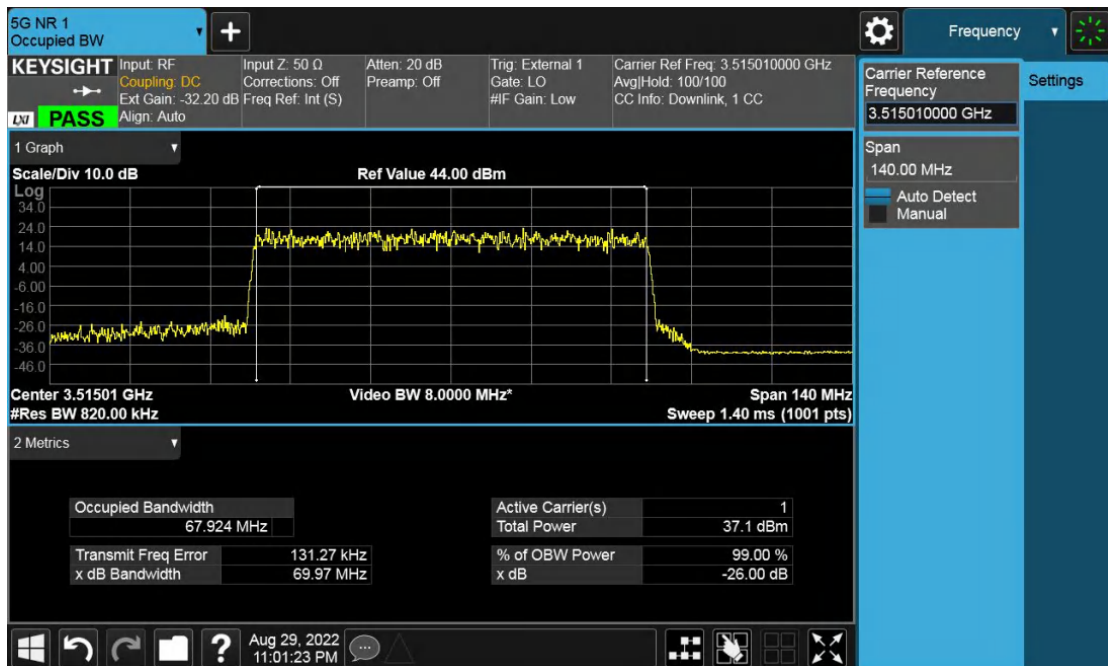
QPSK, 60MHz, Channel position T



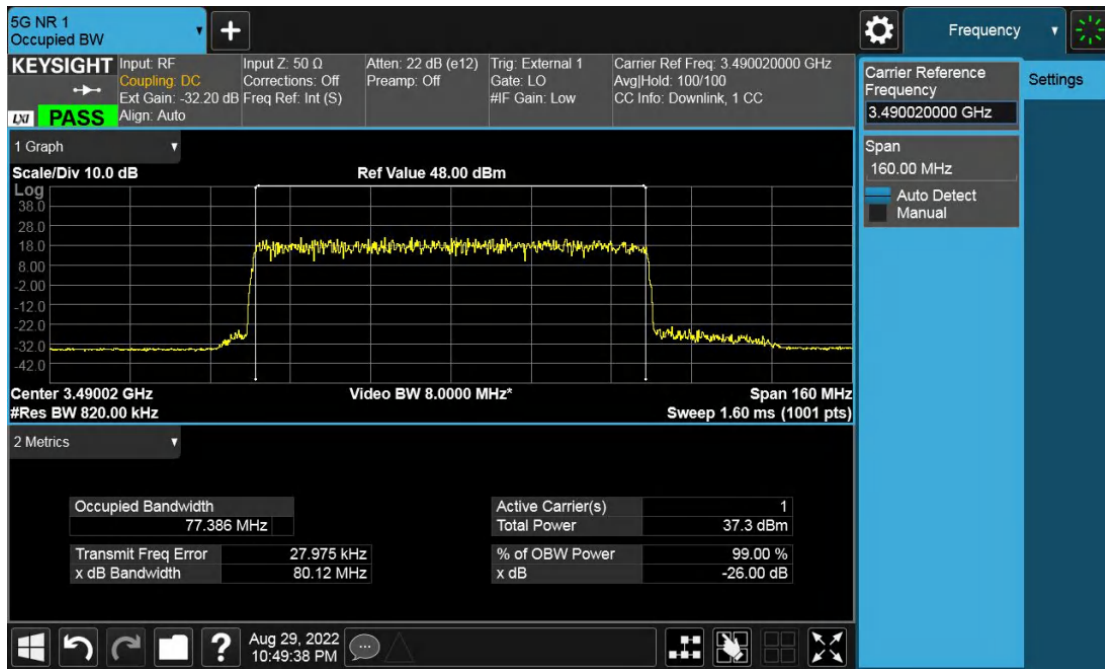
QPSK, 70MHz, Channel position B



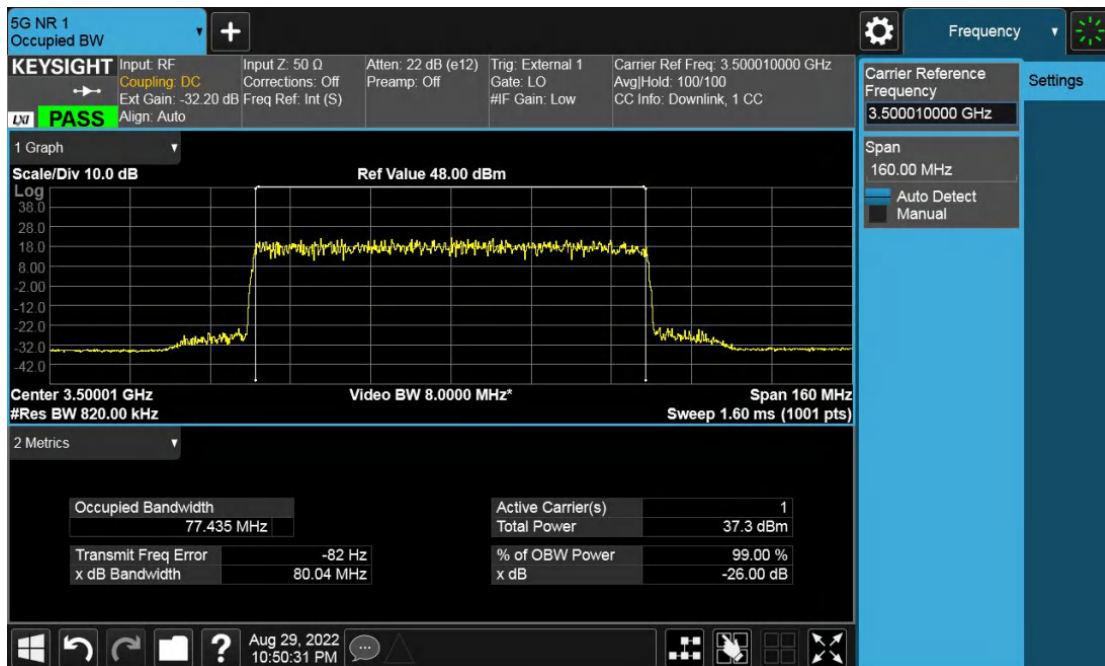
QPSK, 70MHz, Channel position M



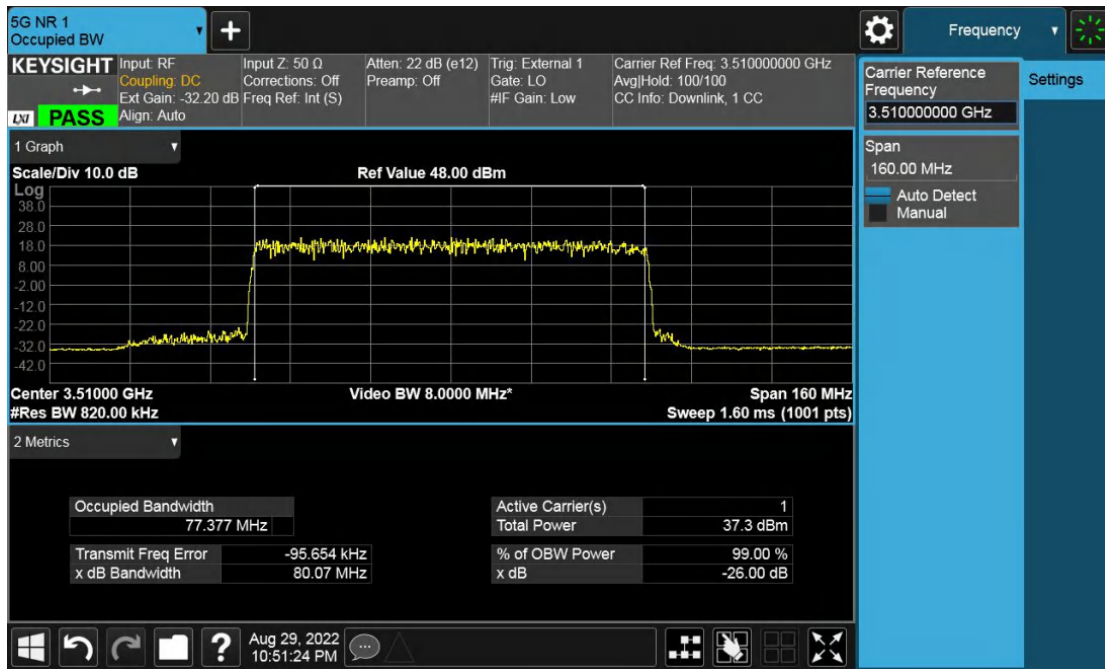
QPSK, 70MHz, Channel position T



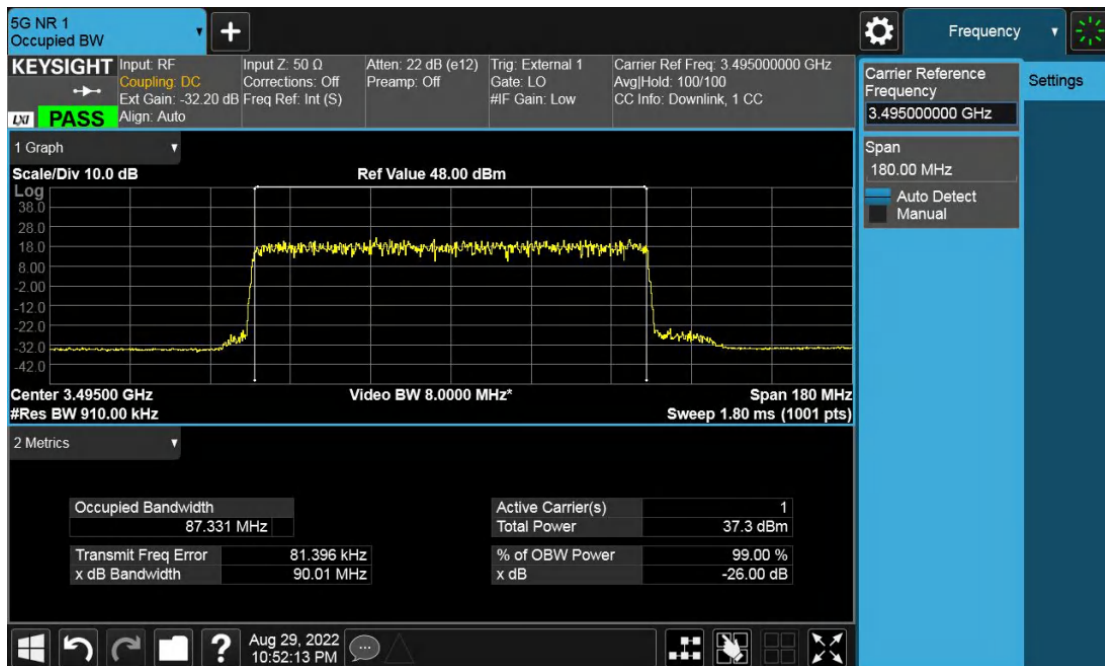
QPSK, 80MHz, Channel position B



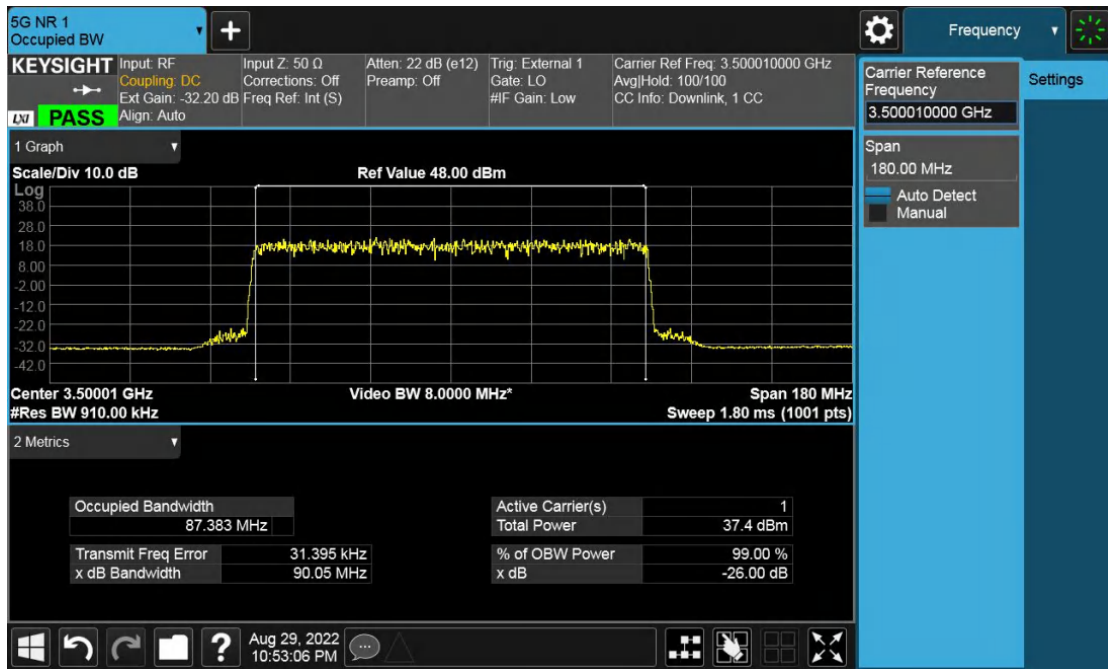
QPSK, 80MHz, Channel position M



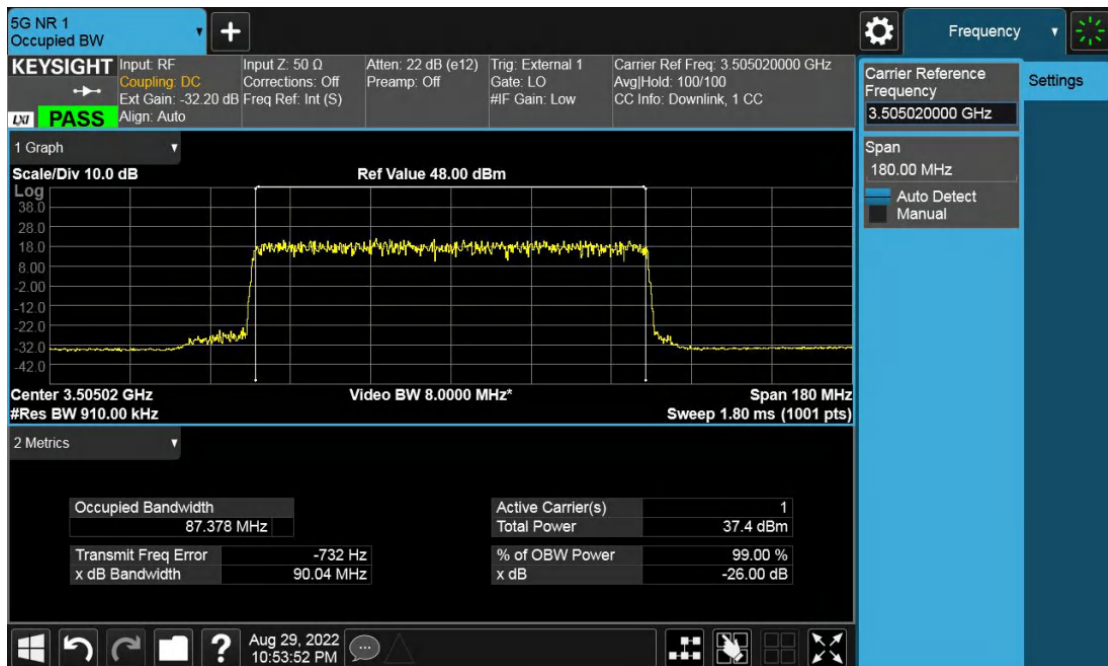
QPSK, 80MHz, Channel position T



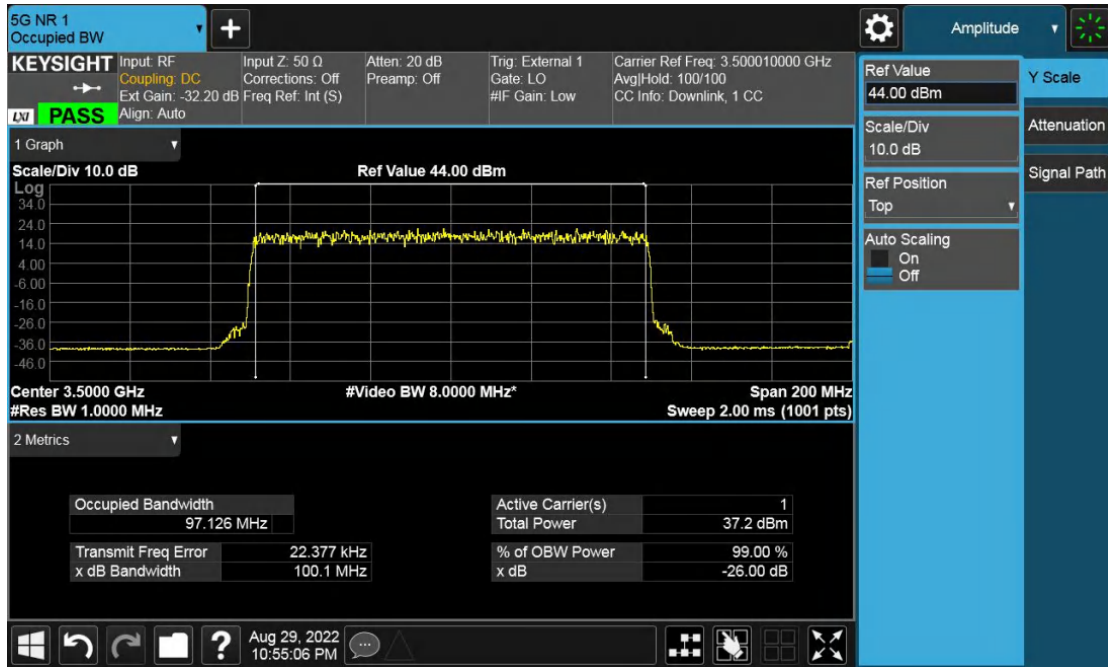
QPSK, 90MHz, Channel position B



QPSK, 90MHz, Channel position M



QPSK, 90MHz, Channel position T



QPSK, 100MHz, Channel position M



9.3 Unwanted Emissions at Band Edge

Specification:	FCC Part 27.53 (n)
Test Results:	Pass

9.3.1 Definitions and Limit

According to Part 27.53 (n):

The following emission limits apply to stations transmitting in the 3450-3550 MHz band:

(1) For base station operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with the provisions of this paragraph (n)(1) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Notwithstanding the channel edge requirement of -13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed -40 dBm/MHz.

9.3.2 Method of Measurements:

The conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. In the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. Notwithstanding the channel edge requirement of -13 dBm per megahertz, for base station operations in the 3450-3550 MHz band, the conducted power of any emission below 3440 MHz or above 3560 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3430 MHz or above 3570 MHz shall not exceed -40 dBm/MHz.

For MIMO mode configurations , the limit was adjusted with a correction of -6.02dB [10log1 /4]] 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.

Spectrum analyzer detector was set as RMS.

9.3.3 Measurement result

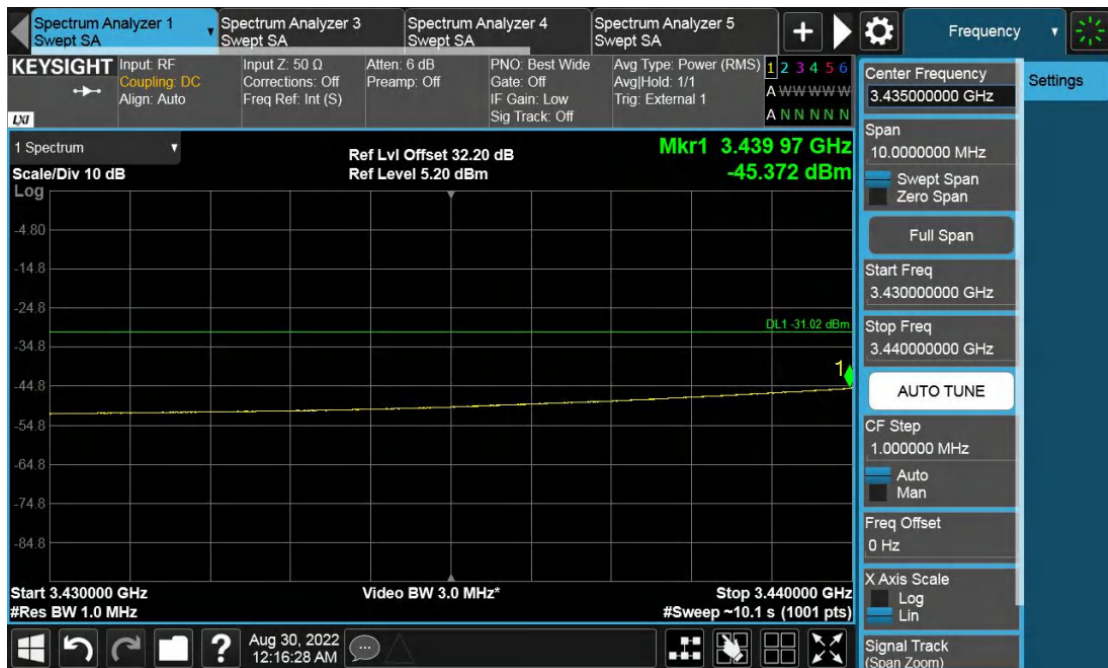
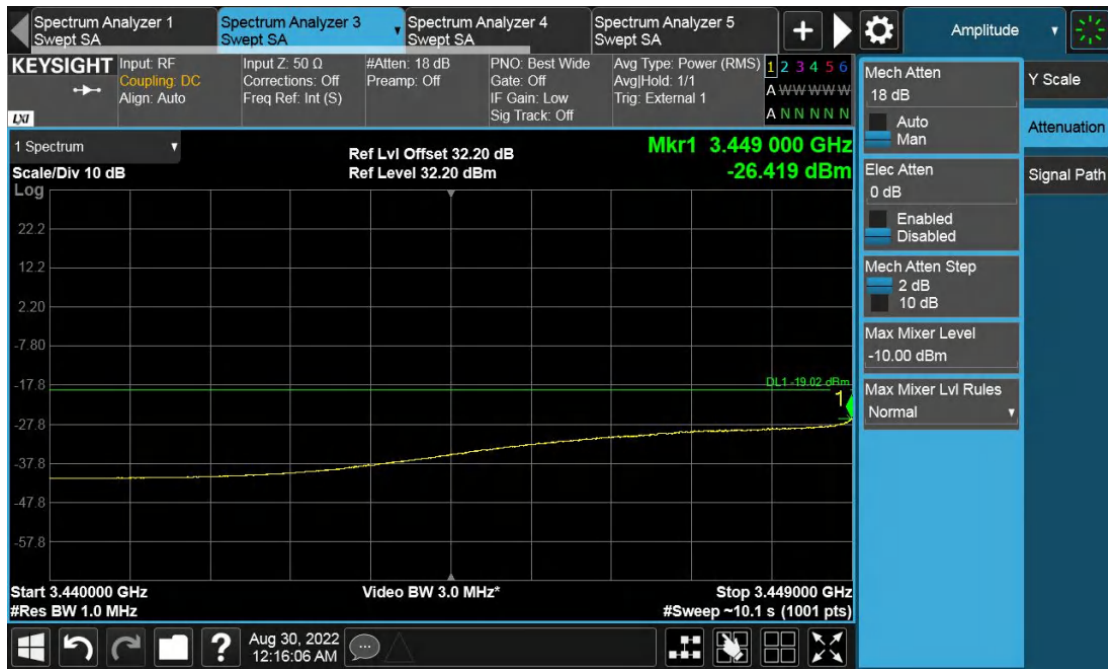
NR mode:

Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	Frequency range (MHz)	RBW (kHz)	Limit (dBm)
C	B	QPSK	20	3449-3450	200	-19.02
				3440-3449	1000	-19.02
				3430-3440	1000	-31.02
	T	QPSK	20	3550-3551	200	-19.02
				3551-3560	1000	-19.02
				3560-3570	1000	-31.02

Test figure as below:





Channel Position B



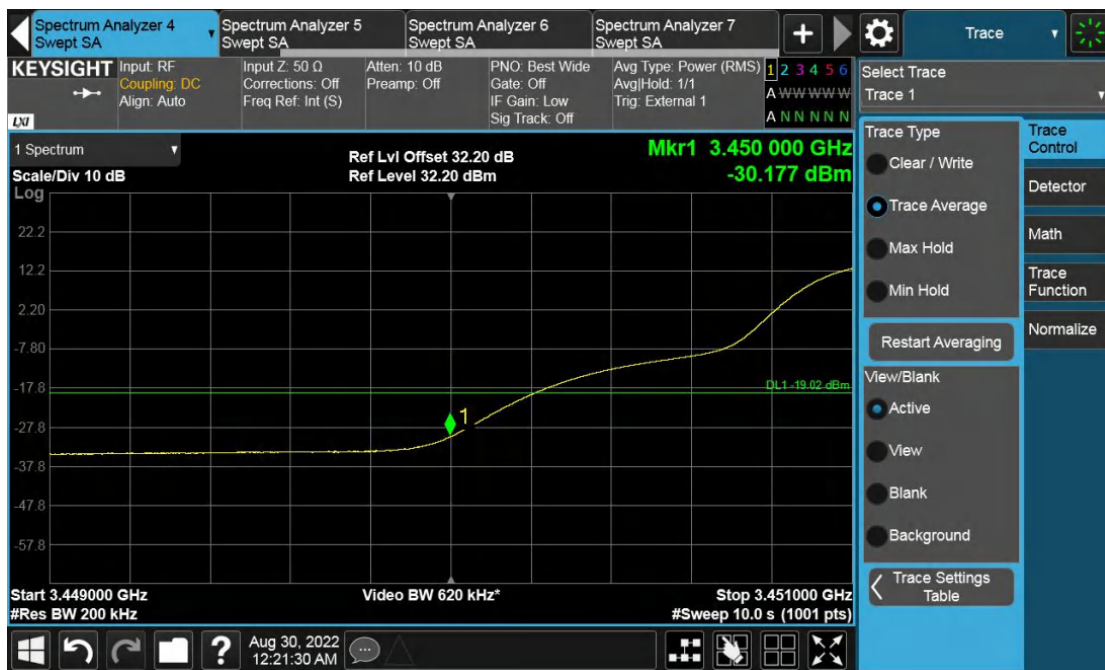


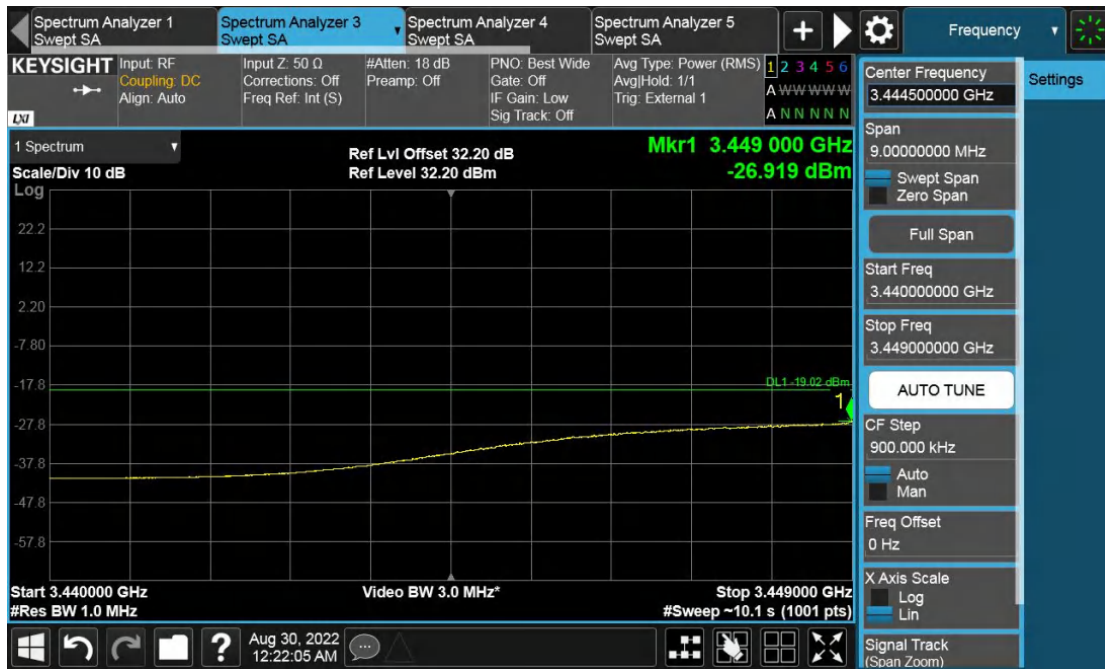
Channel Position T

Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	Frequency range (MHz)	RBW (kHz)	Limit (dBm)
C	B	QPSK	30	3449-3450	200	-19.02
				3440-3449	1000	-19.02
				3430-3440	1000	-31.02
	T	QPSK	30	3550-3551	200	-19.02
				3551-3560	1000	-19.02
				3560-3570	1000	-31.02

Test figure as below:





Channel Position B



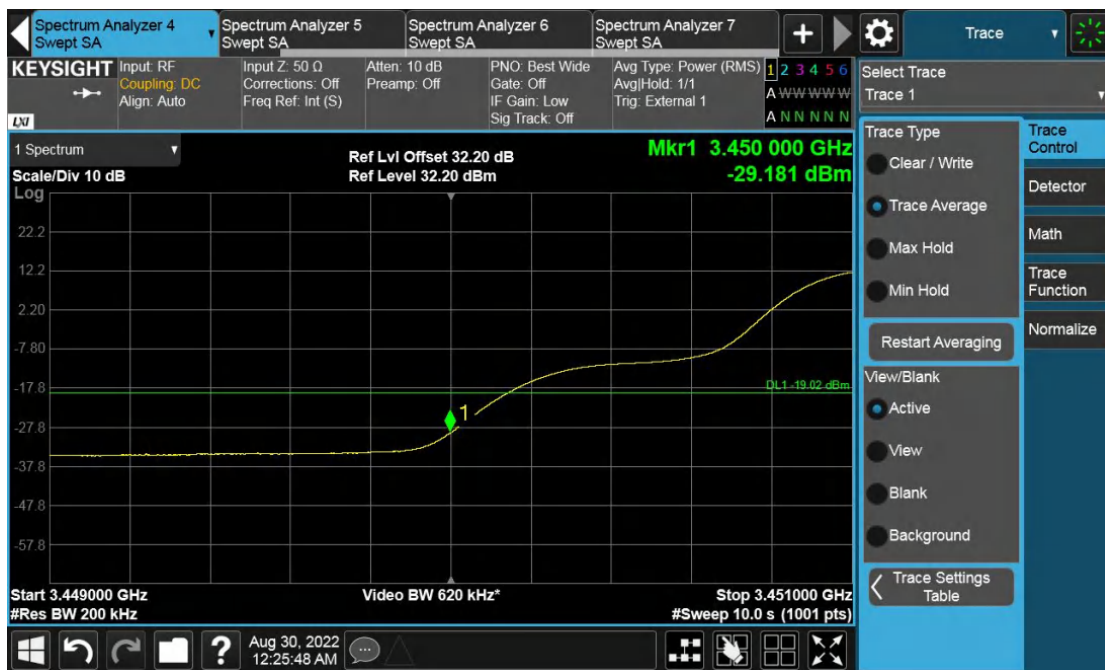


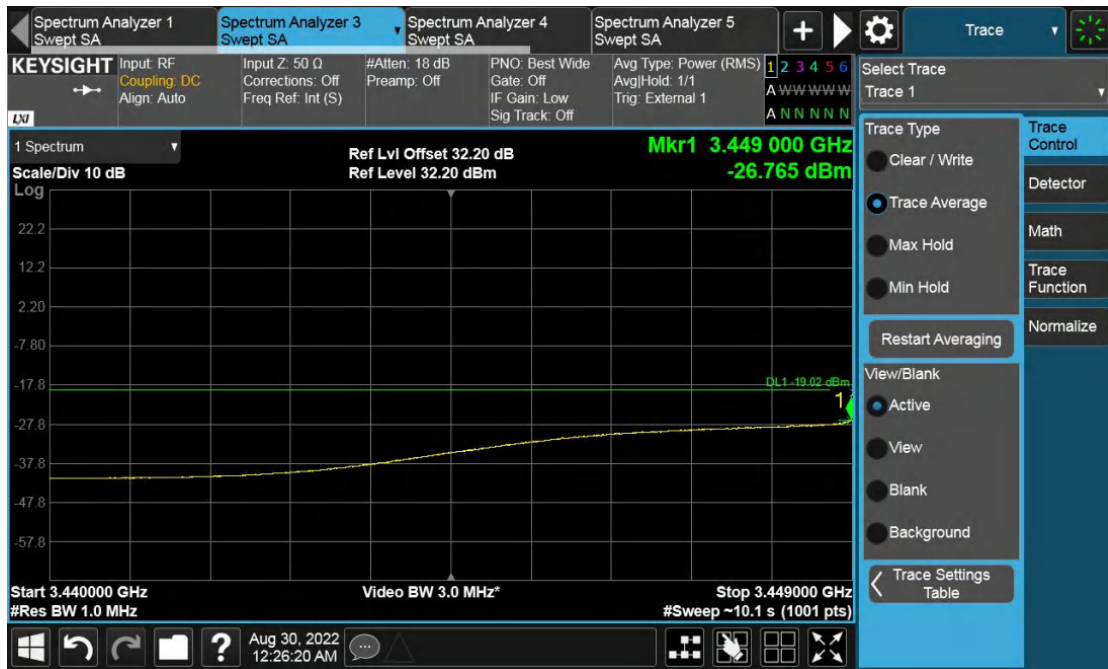
Channel Position T

Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	Frequency range (MHz)	RBW (kHz)	Limit (dBm)
C	B	QPSK	40	3449-3450	200	-19.02
				3440-3449	1000	-19.02
				3430-3440	1000	-31.02
	T	QPSK	40	3550-3551	200	-19.02
				3551-3560	1000	-19.02
				3560-3570	1000	-31.02

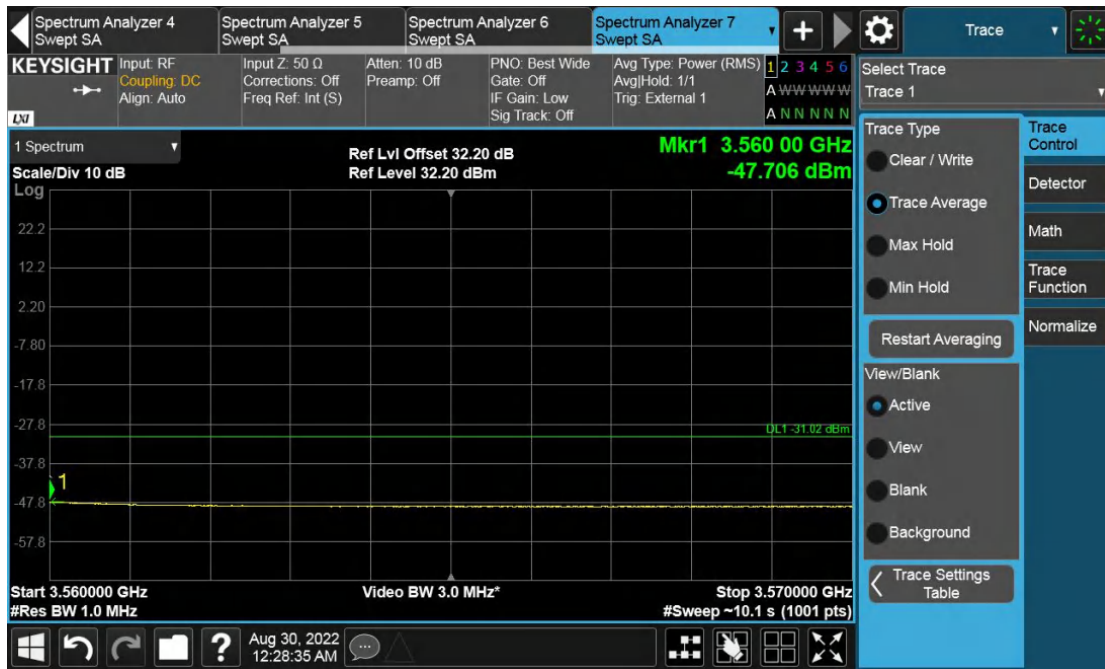
Test figure as below:





Channel Position B





Channel Position T

Configuration NR-MIMO-1C-UE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth	Frequency range (MHz)	RBW (kHz)	Limit (dBm)
C	B	QPSK	50	3449-3450	200	-19.02
				3440-3449	1000	-19.02
				3430-3440	1000	-31.02
	T	QPSK	50	3550-3551	200	-19.02
				3551-3560	1000	-19.02
				3560-3570	1000	-31.02

Test figure as below:

