FCC RF Test Report

FCC ID	:	UZ7EM45A2
EQUIPMENT	:	Enterprise Mobile
BRAND NAME	:	Zebra
MODEL NAME	:	EM45A2
APPLICANT	:	Zebra Technologies Corporation 3 Overlook Point, Lincolnshire, IL 60069 USA
MANUFACTURER	:	Zebra Technologies Corporation 3 Overlook Point, Lincolnshire, IL 60069 USA
STANDARD	:	47 CFR Part 2, 96
CLASSIFICATION	:	Citizens Band End User Devices (CBE)
EQUIPMENT TYPE	:	End User Equipment
Test Date(s)	:	Jun. 19, 2024 ~ Jul. 05, 2024

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26 and shown compliance with the applicable technical standards.

This report contains data that were produced under subcontract by Sporton International Inc (Shenzhen).

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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History of this test report

Report No.	Version	Description	Issued Date
FG460505P	01	Initial issue of report	Sep. 05, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
-	§96.41	Peak-to-Average Ratio	Not Applicable	Not applicable for End User Devices
3.3	§96.41	Maximum E.I.R.P	Pass	-
		Maximum Power Spectral Density	Not Applicable	Not applicable for End User Devices
3.4	§2.1049 §96.41	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §96.41	Conducted Band Edge Measurement Adjacent Channel Leakage Ratio	Pass	-
3.6	§2.1051 §96.41	Conducted Spurious Emission	Pass	
3.7	§2.1055	Frequency Stability for Temperature & Voltage	Pass	-
4.4	§2.1051 §96.41	Radiated Spurious Emission	Pass	Under limit 3.40 dB at 10806.00 MHz

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Feature of Equipment Under Test

Product Feature	
Equipment	Enterprise Mobile
Brand Name	Zebra
Model Name	EM45A2
FCC ID	UZ7EM45A2
IMEI Code	Conducted: 352991990028965/352991990029377 Radiation: 352991990029096/352991990029708
Tx/Rx Frequency	5G NR n48/n77/n78: 3550 MHz ~ 3700 MHz
SCS	30kHz
Bandwidth	n48: 10MHz / 20MHz / 40MHz n77/n78: 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz
Antenna Type	PIFA Antenna
Antenna Gain	5G NR n48: **<Ant. 4>:** -0.56 dBi 5G NR n77/n78: **<Ant. 2>:** -1.13 dBi **<Ant. 3>:** 0.50 dBi **<Ant. 4>:** -0.56 dBi **<Ant. 6>:** 0.65 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM
HW Version	EV2.5
SW Version	13-32-08.00-TG-U06-STD-ATH-04
MFD	08AUG24
EUT Stage	Identical Prototype

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP is shown in the report, 5G NR n48/n77/n78 for Antenna 4 and UL MIMO for Ant.(4+6).
2. The device supports n77/n78(1T4R) SRS resources on Ant.2/3/4/6, only the test data of worst Ant.4 is showed in the report according to the maximum power.
3. 5G NR nn77/n78 UL MIMO mode only supports CP-OFDM Modulation, and the UL MIMO mode is completely uncorrelated, the directional gain is selected the maximum gain among the MIMO antennas.
4. For n77/n78 UL MIMO mode, the conducted BE/Spurious are tested at single antenna port and add 10*log(N_{ANT}) according to KDB 662911 D01.
5. 5G NR n48/n77/n78 support SA and NSA mode. The whole testing has assessed NSA mode by referring to the higher conducted power for conducted test items.
6. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
7. The EN-DC mode combination could be referred to the product spec
8. For NSA mode of RSE testing, we only choose the combination of the maximum power among all NSA combinations to test.

Specification of Accessory				
Battery	**Brand Name**	Zebra	**Model**	BT-000501
			Part Number	BT-000501-2000

Supported Unit used in test configuration and system				
AC Adapter 1 (Type C Wall Charger 1)	**Brand Name**	Zebra	**Model**	SAWA-102-22520A
			Part Number	PWR-WUA5V45W1US
AC Adapter 2 (Type A Wall Charger 2)	**Brand Name**	Zebra	**Model**	SAWA-65-20005A
			Part Number	PWR-WUA5V12W0US
Earphone 1 (Wired headset USB-C)	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
Earphone 2 (Rugged Bluetooth Headset)	**Brand Name**	Zebra	**Part Number**	HS3100-OTH
Earphone 3 (3.5mm PTT Headset)	**Brand Name**	Zebra	**Part Number**	HDST-35MM-PTT1-02
Earphone 4 (Rugged Headset)	**Brand Name**	Zebra	**Part Number**	HS2100-OTH
3.5mm to 3.5mm audio connector	**Brand Name**	Zebra	**Part Number**	CBL-HS2100-3MS1-01
Type C-Audio Cable (Type C to 3.5mm)	**Brand Name**	Zebra	**Part Number**	ADP-USBC-35MM1-01
USB Cable 1 (USB-C to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-EC5X-USBC3A-01
USB Cable 2 (USB-A to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
EM45 Protective Case	**Brand Name**	Zebra	**Part Number**	SG-EM45EXO1-01

1.2 Maximum EIRP and Emission Designator

ENDC_2A_n48A		PI/2 BPSK / QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3555.00~3694.98	0.1406	8M58G7D	0.1180	8M59W7D
20	3560.01~3690.00	0.0546	18M3G7D	0.0579	18M3W7D
40	3570.00~3679.98	0.0578	37M9G7D	0.0587	37M8W7D

ENDC_2A_n77A		PI/2 BPSK / QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3560.01 ~ 3690.00	0.1611	18M3G7D	0.1346	18M3W7D
30	3565.02 ~ 3684.99	0.1626	27M8G7D	0.1330	27M8W7D
40	3570.00 ~ 3679.98	0.1675	37M9G7D	0.1409	37M8W7D
50	3575.01 ~ 3675.00	0.1567	47M4G7D	0.1334	47M4W7D
60	3580.02 ~ 3669.99	0.1570	57M8G7D	0.1334	57M9W7D
70	3585.00 ~ 3664.98	0.1493	67M4G7D	0.1253	67M6W7D
80	3590.01 ~ 3660.00	0.1545	77M6G7D	0.1236	77M7W7D
90	3595.02 ~ 3654.99	0.1489	87M5G7D	0.1256	87M5W7D
100	3600.00 ~ 3649.98	0.1694	97M6G7D	0.1276	97M6W7D

UL MIMO n77		QPSK		16QAM/64QAM/256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3560.01 ~ 3690.00	0.1972	18M2G7D	0.1766	18M2W7D
30	3565.02 ~ 3684.99	0.1932	27M9G7D	0.1941	27M9W7D
40	3570.00 ~ 3679.98	0.1977	37M9G7D	0.1828	37M8W7D
50	3575.01 ~ 3675.00	0.1936	47M5G7D	0.1746	47M6W7D
60	3580.02 ~ 3669.99	0.1972	58M0G7D	0.1774	57M8W7D
70	3585.00 ~ 3664.98	0.1901	67M5G7D	0.1726	67M7W7D
80	3590.01 ~ 3660.00	0.1914	77M4G7D	0.1706	77M6W7D
90	3595.02 ~ 3654.99	0.1901	87M7G7D	0.1730	87M6W7D
100	3600.00 ~ 3649.98	0.1977	97M7G7D	0.1734	97M6W7D

ENDC_2A_n78A		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3560.01 ~ 3690.00	0.1652	18M3G7D	0.1365	18M3W7D
30	3565.02 ~ 3684.99	0.1611	27M8G7D	0.1390	27M8W7D
40	3570.00 ~ 3679.98	0.1637	37M9G7D	0.1409	37M8W7D
50	3575.01 ~ 3675.00	0.1531	47M4G7D	0.1303	47M4W7D
60	3580.02 ~ 3669.99	0.1524	57M8G7D	0.1282	57M9W7D
70	3585.00 ~ 3664.98	0.1507	67M4G7D	0.1236	67M6W7D
80	3590.01 ~ 3660.00	0.1466	77M6G7D	0.1236	77M7W7D
90	3595.02 ~ 3654.99	0.1503	87M5G7D	0.1239	87M5W7D
100	3600.00 ~ 3649.98	0.1660	97M6G7D	0.1279	97M6W7D

UL MIMO n78		QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3560.01 ~ 3690.00	0.1945	18M2G7D	0.1799	18M2W7D
30	3565.02 ~ 3684.99	0.1932	27M9G7D	0.1791	27M9W7D
40	3570.00 ~ 3679.98	0.1954	37M9G7D	0.1828	37M8W7D
50	3575.01 ~ 3675.00	0.1928	47M5G7D	0.1746	47M6W7D
60	3580.02 ~ 3669.99	0.1923	58M0G7D	0.1746	57M8W7D
70	3585.00 ~ 3664.98	0.1905	67M5G7D	0.1714	67M7W7D
80	3590.01 ~ 3660.00	0.1862	77M4G7D	0.1679	77M6W7D
90	3595.02 ~ 3654.99	0.1897	87M7G7D	0.1694	87M6W7D
100	3600.00 ~ 3649.98	0.1954	97M7G7D	0.1683	97M6W7D

Note:

1. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

2. 5G NR Band n77 overlaps the entire frequency range of Band n48/n78, and n77 power > n48/n78 power, therefore the conducted test results of n77 provided in this report cover n48/n78, except for Bandwidth 10M of n48 is full tested.

1.3 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS	CN1257	314309

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Note: Test data subcontracted: Conducted test cases in section 3.2~3.7 of this report.

1.4 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.5 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26-2015
- 47 CFR Part 2, 96
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 940660 D01 Part 96 CBRS v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

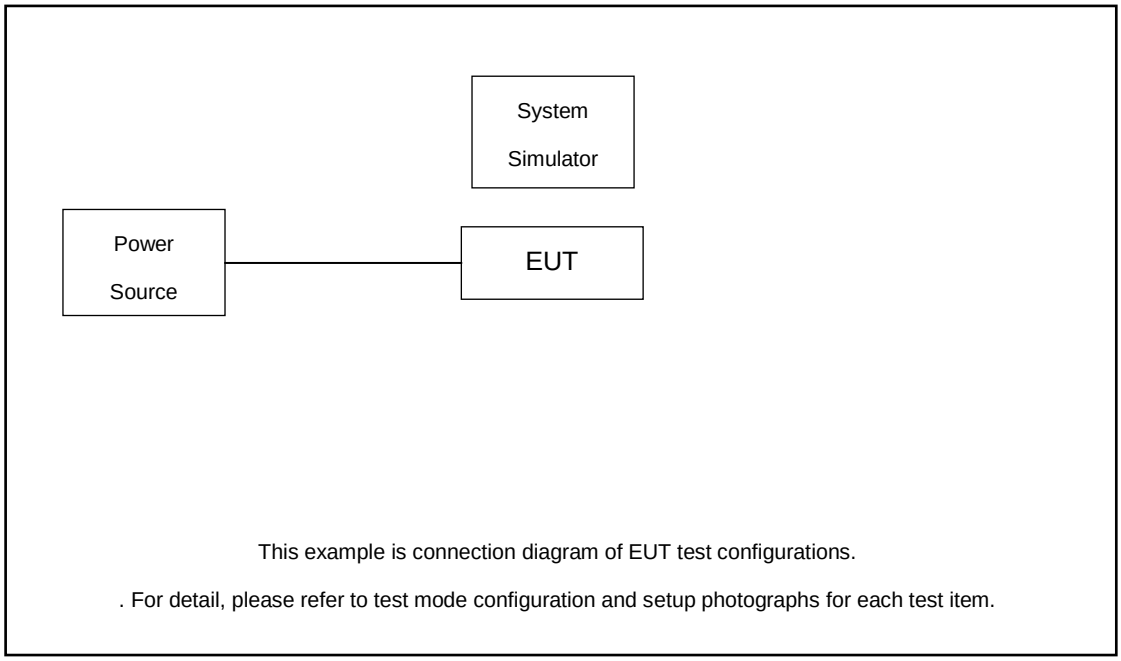
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

Test Items	Band	Bandwidth (MHz)						Modulation					RB #		Test Channel		
		5	10	15	20	30	40	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n48	-	v	-	v	-	v	v	v	v	v	v	v	v	v	v	v
26dB and 99% Bandwidth	n48	-	v	-		-			v	v	v	v		v		v	
Adjacent Channel Leakage Ratio	n48	-	v	-		-		v	v				v	v	v	v	v
Conducted Band Edge	n48	-	v	-		-		v	v				v	v	v	v	v
Conducted Spurious Emission	n48	-	v	-		-		v	v				v		v	v	v
E.I.R.P	n48	-	v	-	v	-	v	v	v	v	v	v	v	v	v	v	v
Frequency Stability	n48	-	v	-		-			v					v		v	
Radiated Spurious Emission	n48	Worst Case													v	v	v
Remark	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. Frequency Stability: Normal Voltage: 3.85Vdc, Extreme Voltage: 3.50Vdc ~4.41Vdc.																

Test Items	5G NR	Bandwidth (MHz)												Modulation					RB #		Test Channel		
		10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n77	-	-	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	-	-	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Adjacent Channel Leakage Ratio	n77	-	-		-			v		-			v	v	v				v	v	v	v	v
26dB and 99% Bandwidth	n77	-	-	v	-	v	v	v	v	v	v	v	v		v	v	v	v		v		v	
Conducted Band Edge	n77	-	-		-			v					v	v	v				v	v	v		v
Conducted Spurious Emission	n77	-	-		-			v					v	v	v				v		v	v	v
Frequency Stability	n77	-	-	v	-										v					v		v	
E.I.R.P	n77	-	-	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	-	-	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n77	Worst Case																			v	v	v
	n78	Worst Case																			v	v	v
Note	5. The mark "**v** " means that this configuration is chosen for testing 6. The mark "-" means that this bandwidth is not supported. 7. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 8. Based on engineering evaluation, only the worst modulations test results are shown in the report. 9. Frequency Stability: Normal Voltage: 3.85Vdc, Extreme Voltage: 3.50Vdc ~4.41Vdc.																						

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820/8821	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 8.9 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 8.9 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n48 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	638000	641666	645332
	Frequency	3570	3624.99	3679.98
20	Channel	637334	641666	646000
	Frequency	3560.01	3624.99	3690
10	Channel	637000	641666	646332
	Frequency	3555	3624.99	3694.98

5G n77/n78 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	640000	641666	643332
	Frequency	3600	3624.99	3649.98
90	Channel	639668	641666	643666
	Frequency	3595.02	3624.99	3654.99
80	Channel	639334	641666	644000
	Frequency	3590.01	3624.99	3660
70	Channel	639000	641666	644332
	Frequency	3585	3624.99	3664.98
60	Channel	638668	641666	644666
	Frequency	3580.02	3624.99	3669.99
50	Channel	638334	641666	645000
	Frequency	3575.01	3624.99	3675
40	Channel	638000	641666	645332
	Frequency	3570	3624.99	3679.98
30	Channel	637668	641666	645666
	Frequency	3565.02	3624.99	3684.99
20	Channel	637334	641666	646000
	Frequency	3560.01	3624.99	3690

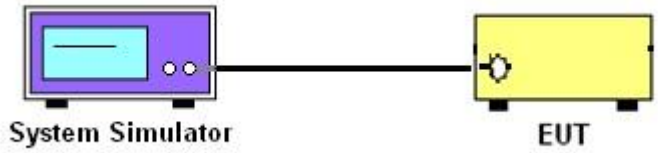
3 Conducted Test Items

3.1 Measuring Instruments

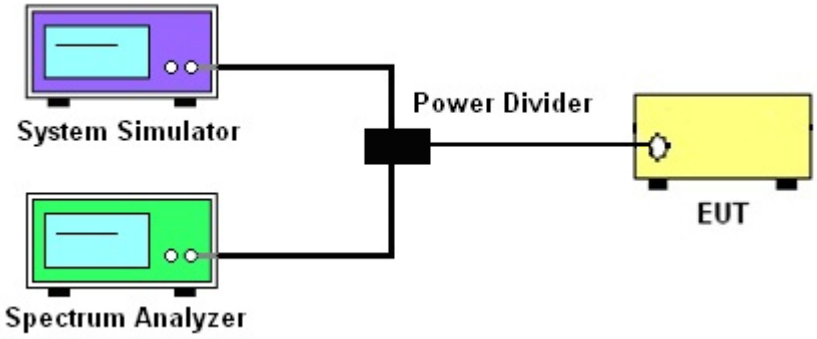
See list of measuring instruments of this test report.

3.1.1 Test Setup

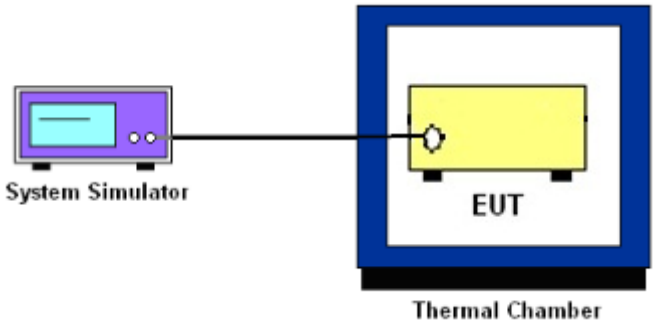
3.1.2 Conducted Output Power



3.1.3 PSD, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.3 EIRP

3.3.1 Description of the EIRP Measurement

EIRP limits for CBRS equipment as below table:

Device		Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
Applied	**End User Device**	23	n/a
☐	**Category A CBSD**	30	20
☐	**Category B CBSD**	47	37

Remark: The worst case EIRP shown in this section is found with LTE operating only using 1RB. As such, the EIRP/10MHz and full channel EIRP values will be identical since 1RB is fully contained within all available channel bandwidths for LTE Band 48 (i.e. 5, 10, 15, 20MHz)

3.3.2 Test Procedures for EIRP

1. Establishing a communications link with the call box (Base station) to measure the Maximum conducted power, the parameters were set to force the EUT transmitting at maximum output power level. Use the average power measurement function to measure total channel power of each channel bandwidth (per ANSI C63.26-2015 Section 5.2.1)

2. Determining ERP and/or EIRP from conducted RF output power measurements (Per ANSI C63.26-2015 Section 5.2.5.5)

   $EIRP = P_T + G_T – L_C$, $ERP = EIRP - 2.15$, where

   P_T = transmitter output power in dBm

   G_T = gain of the transmitting antenna in dBi

   L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4 Occupied Bandwidth

3.4.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
3. The nominal resolution bandwidth (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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

Part 96.41 (e) (1) (ii)

For End User Devices the emission limits outside the fundamental are as follows:

Within 0 MHz to B MHz above and below the assigned channel ≤ −13 dBm/MHz

Greater than B MHz above and below the assigned channel ≤ −25 dBm/MHz

where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device.

Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

Part 96.41 (e) (2)

For CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used
5. Offset has included the duty factor for LTE Band 48. Duty factor =10 log (1/x), where x is the measured duty cycle.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

96.41 (e)(2)

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is −40dBm/MHz.

3.7 Frequency Stability

3.7.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

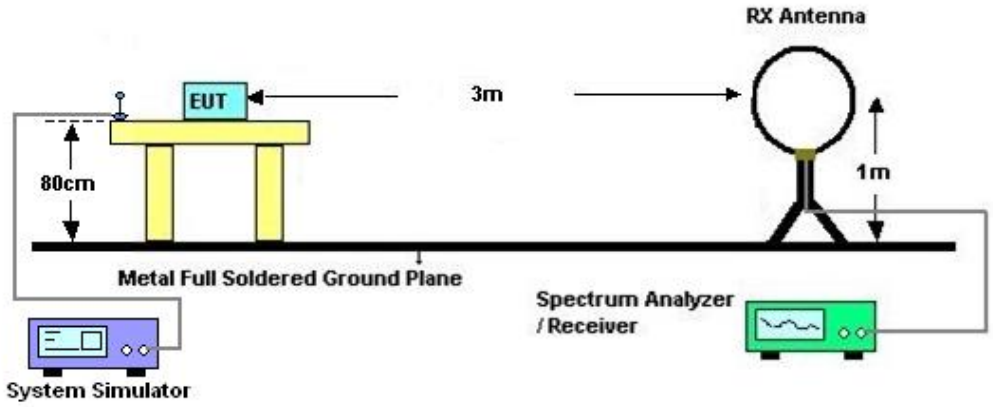
4 Radiated Test Items

4.1 Measuring Instruments

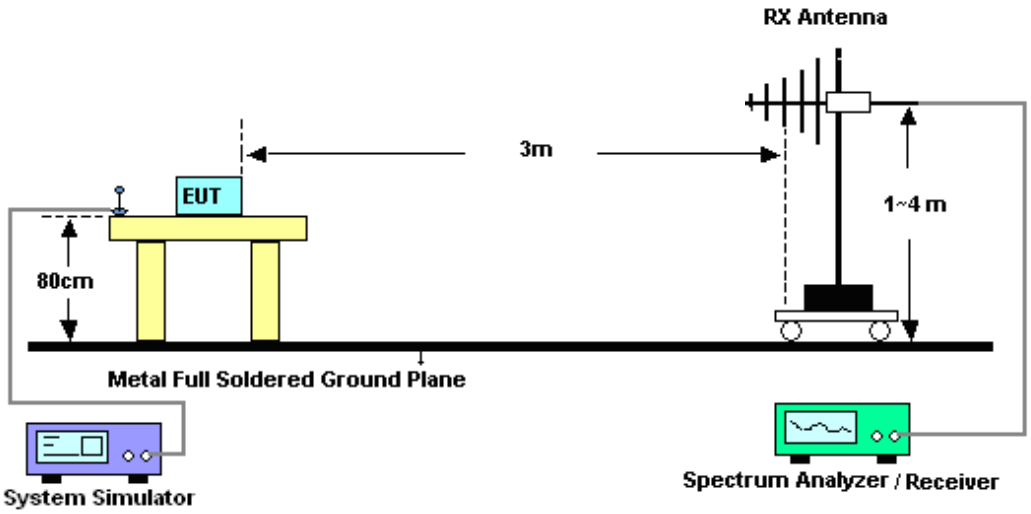
See list of measuring instruments of this test report.

4.2 Test Setup

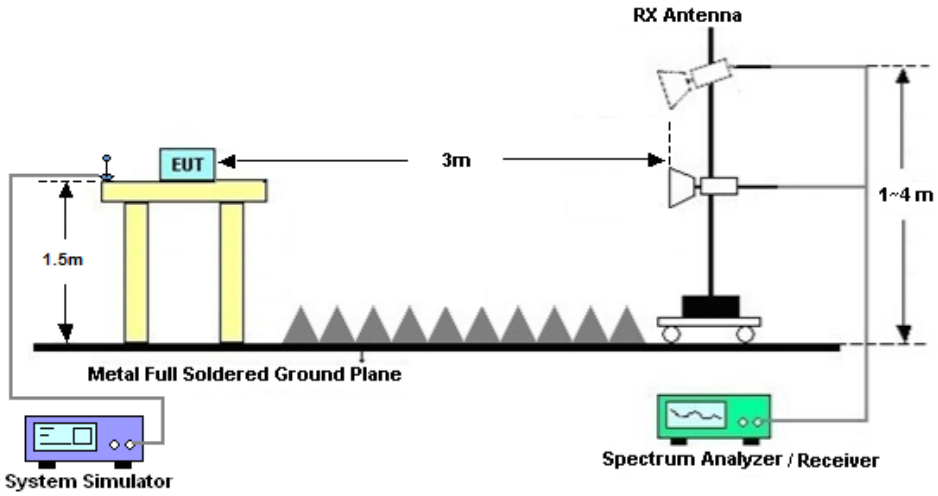
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least -40dBm / MHz.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
   Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = EIRP - 2.15
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
   The limit line is −40dBm/MHz

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Jun. 19, 2024~ Jul. 05, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 16, 2023	Jun. 19, 2024~ Jul. 05, 2024	Oct. 15, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Jun. 19, 2024~ Jul. 05, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 04, 2024	Jun. 19, 2024~ Jul. 05, 2024	Jul. 03, 2025	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 11, 2023	Jul. 05, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11 2023	Jul. 05, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 19, 2023	Jul. 05, 2024	Aug. 18, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 23, 2023	Jul. 05, 2024	Oct. 22, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Jul. 05, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Jul. 05, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Jul. 05, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 11, 2023	Jul. 05, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Amplifier	EM	EM01G18GA	060892	1Ghz-18Ghz	Oct. 11, 2023	Jul. 05, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jul. 05, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jul. 05, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jul. 05, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Conducted Power Density	±1.32 dB
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83 dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83 dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.82 dB

---------- THE END ----------

Appendix A. Test Results of Conducted Test

Test Engineer :	Khan	**Temperature :**	22~23℃
		Relative Humidity :	40~42%

Software Version: 23.06.1602

FR1 N48 (Ant4)

LTE Band: 2, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-0.56dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
48	30	10	637000	3555	DFT-s-OFDM PI/2 BPSK	12@6	21.78	21.22	0.1324
48	30	10	637000	3555	DFT-s-OFDM PI/2 BPSK	1@1	21.8	21.24	0.1330
48	30	10	637000	3555	DFT-s-OFDM PI/2 BPSK	1@22	21.81	21.25	0.1334
48	30	10	637000	3555	DFT-s-OFDM QPSK	12@6	21.83	21.27	0.1340
48	30	10	637000	3555	DFT-s-OFDM QPSK	1@1	21.76	21.2	0.1318
48	30	10	637000	3555	DFT-s-OFDM QPSK	1@22	21.82	21.26	0.1337
48	30	10	637000	3555	DFT-s-OFDM 16 QAM	12@6	20.97	20.41	0.1099
48	30	10	637000	3555	DFT-s-OFDM 16 QAM	1@1	21.12	20.56	0.1138
48	30	10	637000	3555	DFT-s-OFDM 16 QAM	1@22	21.09	20.53	0.1130
48	30	10	637000	3555	DFT-s-OFDM 64 QAM	12@6	19.43	18.87	0.0771
48	30	10	637000	3555	DFT-s-OFDM 64 QAM	1@1	19.42	18.86	0.0769
48	30	10	637000	3555	DFT-s-OFDM 64 QAM	1@22	19.45	18.89	0.0774
48	30	10	637000	3555	DFT-s-OFDM 256 QAM	12@6	17.37	16.81	0.0480
48	30	10	637000	3555	DFT-s-OFDM 256 QAM	1@1	17.13	16.57	0.0454
48	30	10	637000	3555	DFT-s-OFDM 256 QAM	1@22	17.2	16.64	0.0461
48	30	10	637000	3555	CP-OFDM QPSK	12@6	20.42	19.86	0.0968
48	30	10	637000	3555	CP-OFDM QPSK	1@1	20.33	19.77	0.0948
48	30	10	637000	3555	CP-OFDM QPSK	1@22	20.33	19.77	0.0948
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	12@6	22.04	21.48	0.1406
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	21.91	21.35	0.1365
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@22	21.95	21.39	0.1377
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	12@6	21.96	21.4	0.1380
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@1	21.91	21.35	0.1365
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@22	21.87	21.31	0.1352
48	30	10	641666	3624.99	DFT-s-OFDM 16 QAM	12@6	21.17	20.61	0.1151

48	30	10	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.23	20.67	0.1167
48	30	10	641666	3624.99	DFT-s-OFDM 16 QAM	1@22	21.21	20.65	0.1161
48	30	10	641666	3624.99	DFT-s-OFDM 64 QAM	12@6	19.66	19.1	0.0813
48	30	10	641666	3624.99	DFT-s-OFDM 64 QAM	1@1	19.55	18.99	0.0793
48	30	10	641666	3624.99	DFT-s-OFDM 64 QAM	1@22	19.59	19.03	0.0800
48	30	10	641666	3624.99	DFT-s-OFDM 256 QAM	12@6	17.47	16.91	0.0491
48	30	10	641666	3624.99	DFT-s-OFDM 256 QAM	1@1	17.25	16.69	0.0467
48	30	10	641666	3624.99	DFT-s-OFDM 256 QAM	1@22	17.34	16.78	0.0476
48	30	10	641666	3624.99	CP-OFDM QPSK	12@6	20.57	20.01	0.1002
48	30	10	641666	3624.99	CP-OFDM QPSK	1@1	20.39	19.83	0.0962
48	30	10	641666	3624.99	CP-OFDM QPSK	1@22	20.43	19.87	0.0971
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	12@6	21.9	21.34	0.1361
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	1@1	21.86	21.3	0.1349
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	1@22	21.99	21.43	0.1390
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	12@6	21.87	21.31	0.1352
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@1	21.83	21.27	0.1340
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@22	21.96	21.4	0.1380
48	30	10	646332	3694.98	DFT-s-OFDM 16 QAM	12@6	21.06	20.5	0.1122
48	30	10	646332	3694.98	DFT-s-OFDM 16 QAM	1@1	21.28	20.72	0.1180
48	30	10	646332	3694.98	DFT-s-OFDM 16 QAM	1@22	21.25	20.69	0.1172
48	30	10	646332	3694.98	DFT-s-OFDM 64 QAM	12@6	19.54	18.98	0.0791
48	30	10	646332	3694.98	DFT-s-OFDM 64 QAM	1@1	19.47	18.91	0.0778
48	30	10	646332	3694.98	DFT-s-OFDM 64 QAM	1@22	19.64	19.08	0.0809
48	30	10	646332	3694.98	DFT-s-OFDM 256 QAM	12@6	17.43	16.87	0.0486
48	30	10	646332	3694.98	DFT-s-OFDM 256 QAM	1@1	17.13	16.57	0.0454
48	30	10	646332	3694.98	DFT-s-OFDM 256 QAM	1@22	17.29	16.73	0.0471
48	30	10	646332	3694.98	CP-OFDM QPSK	12@6	20.61	20.05	0.1012
48	30	10	646332	3694.98	CP-OFDM QPSK	1@1	20.62	20.06	0.1014
48	30	10	646332	3694.98	CP-OFDM QPSK	1@22	20.67	20.11	0.1026
48	30	20	637334	3560.01	DFT-s-OFDM QPSK	1@1	17.86	17.3	0.0537
48	30	20	637334	3560.01	DFT-s-OFDM 16 QAM	1@1	17.04	16.48	0.0445
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	1@1	17.93	17.37	0.0546

48	30	20	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	18.1	17.54	0.0568
48	30	20	646000	3690	DFT-s-OFDM QPSK	1@1	17.8	17.24	0.0530
48	30	20	646000	3690	DFT-s-OFDM 16 QAM	1@1	18.19	17.63	0.0579
48	30	40	638000	3570	DFT-s-OFDM PI/2 BPSK	50@25	11.65	11.09	0.0129
48	30	40	638000	3570	DFT-s-OFDM PI/2 BPSK	1@1	11.63	11.07	0.0128
48	30	40	638000	3570	DFT-s-OFDM PI/2 BPSK	1@104	11.65	11.09	0.0129
48	30	40	638000	3570	DFT-s-OFDM QPSK	50@25	11.54	10.98	0.0125
48	30	40	638000	3570	DFT-s-OFDM QPSK	1@1	11.55	10.99	0.0126
48	30	40	638000	3570	DFT-s-OFDM QPSK	1@104	11.6	11.04	0.0127
48	30	40	638000	3570	DFT-s-OFDM 16 QAM	50@25	11.08	10.52	0.0113
48	30	40	638000	3570	DFT-s-OFDM 16 QAM	1@1	11.13	10.57	0.0114
48	30	40	638000	3570	DFT-s-OFDM 16 QAM	1@104	11.24	10.68	0.0117
48	30	40	638000	3570	DFT-s-OFDM 64 QAM	50@25	11.07	10.51	0.0112
48	30	40	638000	3570	DFT-s-OFDM 64 QAM	1@1	11.08	10.52	0.0113
48	30	40	638000	3570	DFT-s-OFDM 64 QAM	1@104	11.09	10.53	0.0113
48	30	40	638000	3570	DFT-s-OFDM 256 QAM	50@25	11.1	10.54	0.0113
48	30	40	638000	3570	DFT-s-OFDM 256 QAM	1@1	10.73	10.17	0.0104
48	30	40	638000	3570	DFT-s-OFDM 256 QAM	1@104	10.84	10.28	0.0107
48	30	40	638000	3570	CP-OFDM QPSK	53@26	10.54	9.98	0.0100
48	30	40	638000	3570	CP-OFDM QPSK	1@1	10.54	9.98	0.0100
48	30	40	638000	3570	CP-OFDM QPSK	1@104	10.51	9.95	0.0099
48	30	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	50@25	18.1	17.54	0.0568
48	30	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	18.17	17.61	0.0577
48	30	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@104	18.03	17.47	0.0558
48	30	40	641666	3624.99	DFT-s-OFDM QPSK	50@25	18.18	17.62	0.0578
48	30	40	641666	3624.99	DFT-s-OFDM QPSK	1@1	18.11	17.55	0.0569
48	30	40	641666	3624.99	DFT-s-OFDM QPSK	1@104	18.06	17.5	0.0562
48	30	40	641666	3624.99	DFT-s-OFDM 16 QAM	50@25	18.09	17.53	0.0566
48	30	40	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	18.23	17.67	0.0585
48	30	40	641666	3624.99	DFT-s-OFDM 16 QAM	1@104	18.24	17.68	0.0586
48	30	40	641666	3624.99	DFT-s-OFDM 64 QAM	50@25	18.11	17.55	0.0569
48	30	40	641666	3624.99	DFT-s-OFDM 64 QAM	1@1	18.23	17.67	0.0585

48	30	40	641666	3624.99	DFT-s-OFDM 64 QAM	1@104	18.25	17.69	0.0587
48	30	40	641666	3624.99	DFT-s-OFDM 256 QAM	50@25	17.62	17.06	0.0508
48	30	40	641666	3624.99	DFT-s-OFDM 256 QAM	1@1	17.29	16.73	0.0471
48	30	40	641666	3624.99	DFT-s-OFDM 256 QAM	1@104	17.32	16.76	0.0474
48	30	40	641666	3624.99	CP-OFDM QPSK	53@26	18.18	17.62	0.0578
48	30	40	641666	3624.99	CP-OFDM QPSK	1@1	18.02	17.46	0.0557
48	30	40	641666	3624.99	CP-OFDM QPSK	1@104	18.09	17.53	0.0566
48	30	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	50@25	11.18	10.62	0.0115
48	30	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	1@1	10.56	10	0.0100
48	30	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	1@104	10.49	9.93	0.0098
48	30	40	645332	3679.98	DFT-s-OFDM QPSK	50@25	11.13	10.57	0.0114
48	30	40	645332	3679.98	DFT-s-OFDM QPSK	1@1	10.43	9.87	0.0097
48	30	40	645332	3679.98	DFT-s-OFDM QPSK	1@104	10.52	9.96	0.0099
48	30	40	645332	3679.98	DFT-s-OFDM 16 QAM	50@25	10.68	10.12	0.0103
48	30	40	645332	3679.98	DFT-s-OFDM 16 QAM	1@1	10.22	9.66	0.0092
48	30	40	645332	3679.98	DFT-s-OFDM 16 QAM	1@104	10.18	9.62	0.0092
48	30	40	645332	3679.98	DFT-s-OFDM 64 QAM	50@25	10.6	10.04	0.0101
48	30	40	645332	3679.98	DFT-s-OFDM 64 QAM	1@1	10.1	9.54	0.0090
48	30	40	645332	3679.98	DFT-s-OFDM 64 QAM	1@104	9.97	9.41	0.0087
48	30	40	645332	3679.98	DFT-s-OFDM 256 QAM	50@25	10.66	10.1	0.0102
48	30	40	645332	3679.98	DFT-s-OFDM 256 QAM	1@1	9.74	9.18	0.0083
48	30	40	645332	3679.98	DFT-s-OFDM 256 QAM	1@104	9.62	9.06	0.0081
48	30	40	645332	3679.98	CP-OFDM QPSK	53@26	10.14	9.58	0.0091
48	30	40	645332	3679.98	CP-OFDM QPSK	1@1	9.45	8.89	0.0077
48	30	40	645332	3679.98	CP-OFDM QPSK	1@104	9.52	8.96	0.0079

Frequency Stability

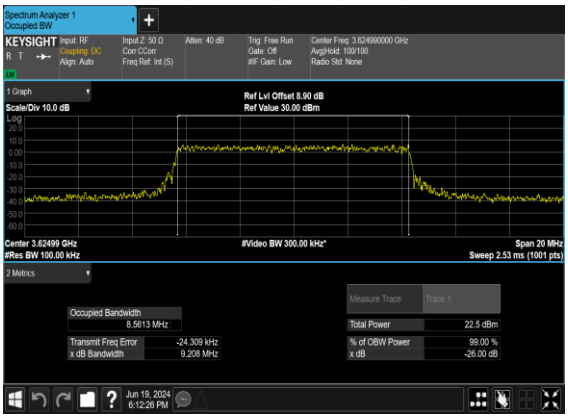
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0	0.00074	**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0		**PASS**	Normal

Occupied Bandwidth

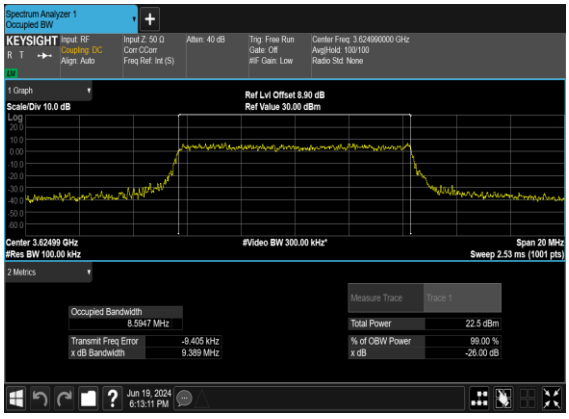
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
48	30	10	641666	3624.99	CP-OFDM QPSK	24@0	8.5758	9.412
48	30	10	641666	3624.99	CP-OFDM 16 QAM	24@0	8.5613	9.208
48	30	10	641666	3624.99	CP-OFDM 64 QAM	24@0	8.5947	9.389
48	30	10	641666	3624.99	CP-OFDM 256 QAM	24@0	8.5718	9.236

B2_N48(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

B2_N48(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B2_N48(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

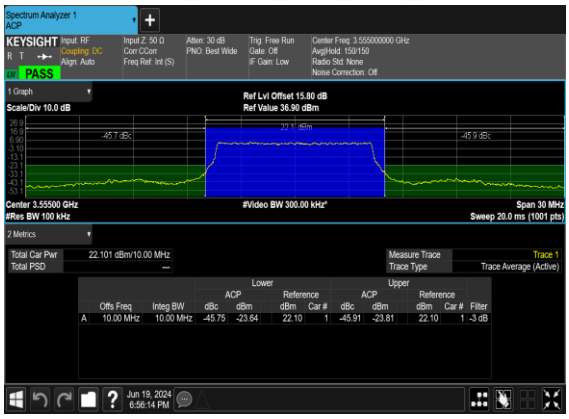


B2_N48(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

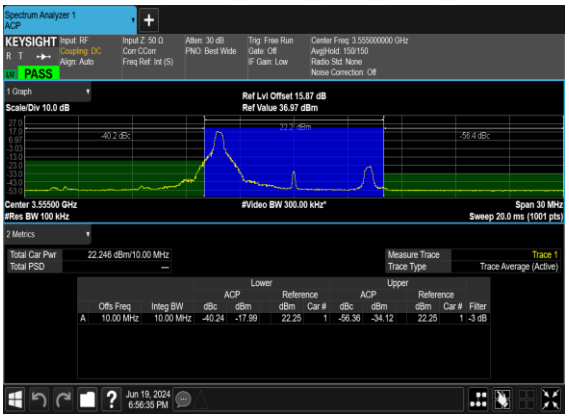
Adjacent Channel Leakage Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Lower Margin	Upper Margin	Result	Verdict
48	30	10	637000	3555.0	DFT-s-OFDM PI/2 BPSK	24@0	-15.75	-15.91	**see graph**	PASS
48	30	10	637000	3555.0	DFT-s-OFDM PI/2 BPSK	1@0	-10.24	-26.36	**see graph**	PASS
48	30	10	637000	3555.0	DFT-s-OFDM PI/2 BPSK	1@23	-26.29	-14.74	**see graph**	PASS
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	24@0	-14.29	-14.76	**see graph**	PASS
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	-12.89	-25.78	**see graph**	PASS
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@23	-25.86	-13.41	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	24@0	-16.12	-16.31	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@0	-10.93	-23.02	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@23	-23.03	-14.18	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0	-14.69	-15.66	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	-11.81	-22.52	**see graph**	PASS
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@23	-23.37	-13.85	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	24@0	-14.18	-14.22	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	1@0	-9.68	-20.91	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	1@23	-22.61	-14.62	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	24@0	-12.34	-12.69	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	-12.66	-21.35	**see graph**	PASS
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@23	-20.57	-11.81	**see graph**	PASS

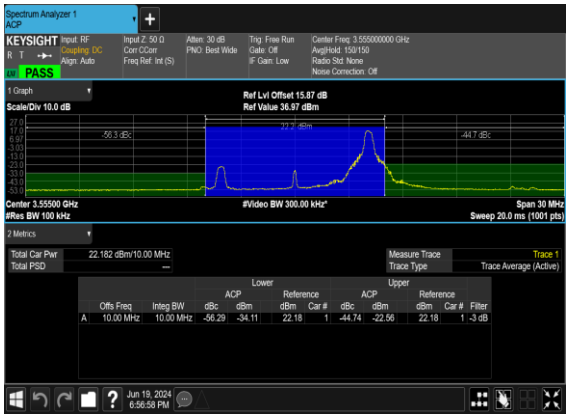
B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



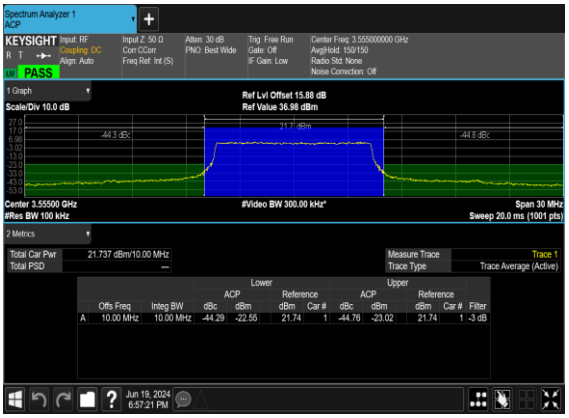
B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



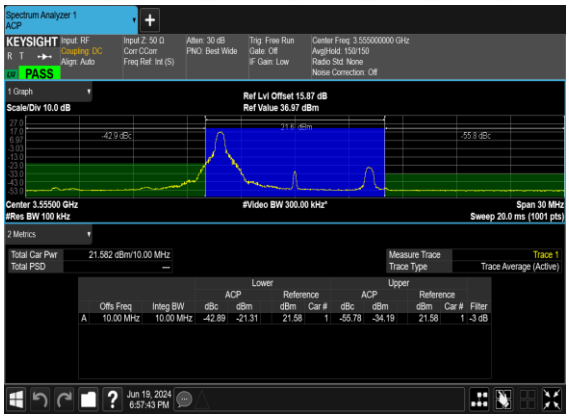
B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Right_Low_CH



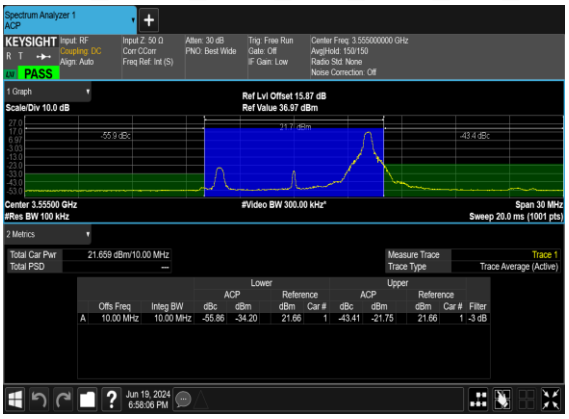
B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



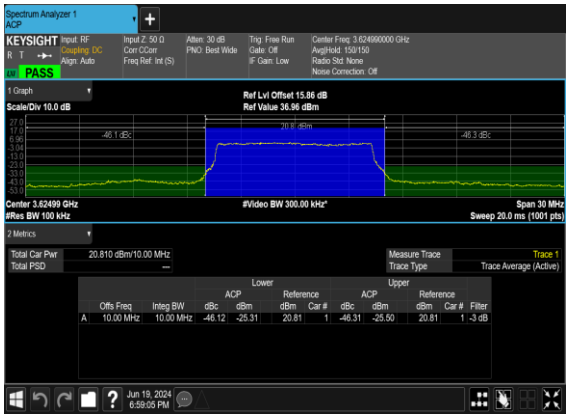
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Low_CH

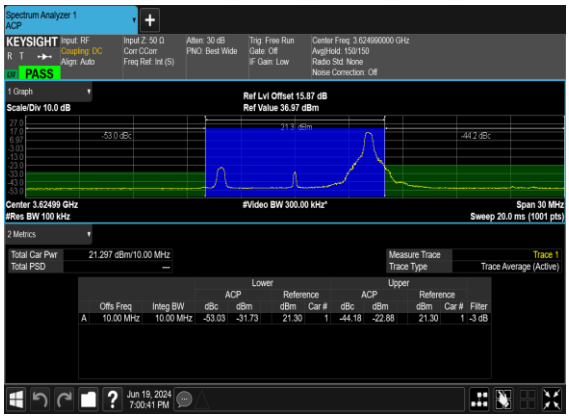


B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

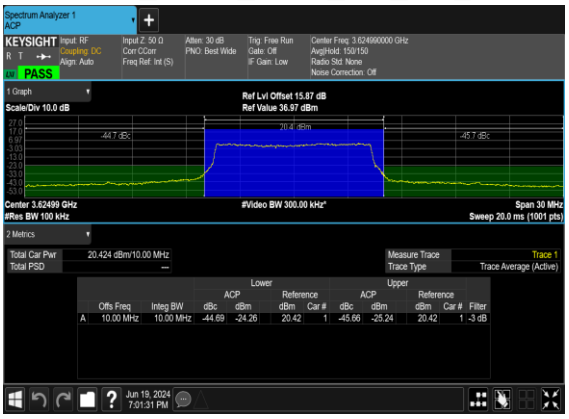


B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH

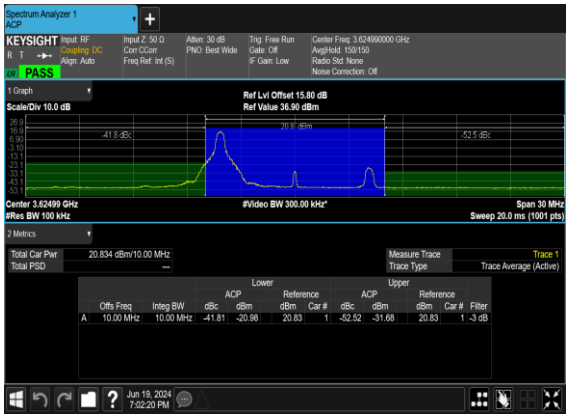
B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Right_Mid_CH



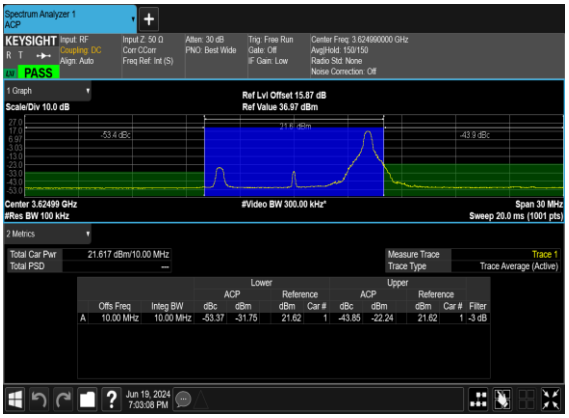
B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



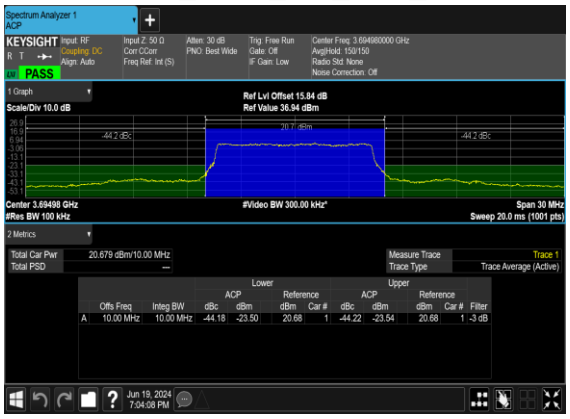
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



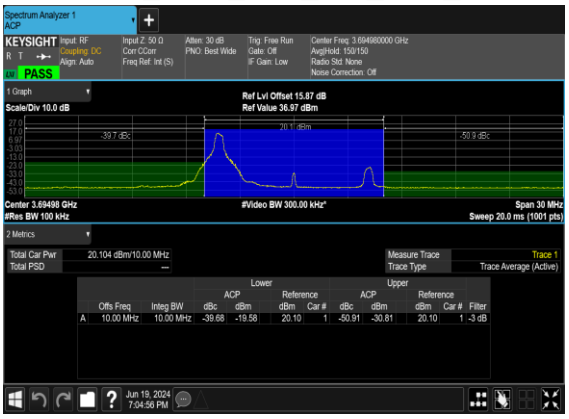
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Mid_CH



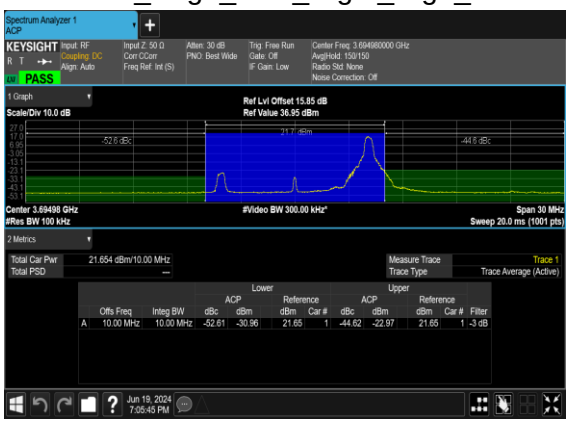
B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH

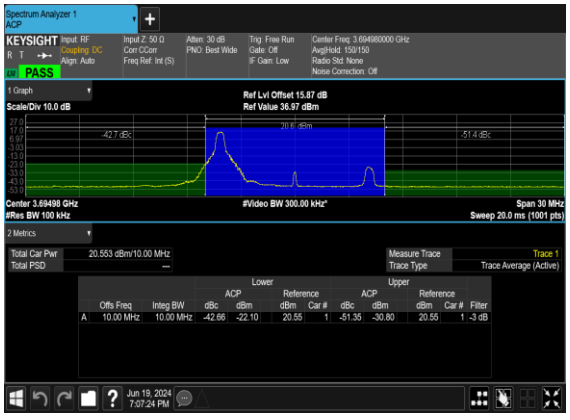


B2_N48(10M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Right_High_CH

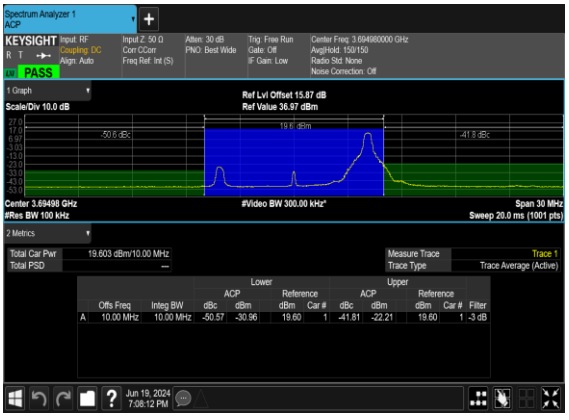


B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



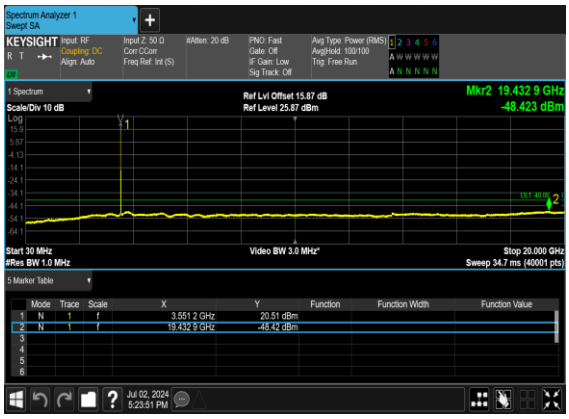
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



Conducted Spurious Emissions

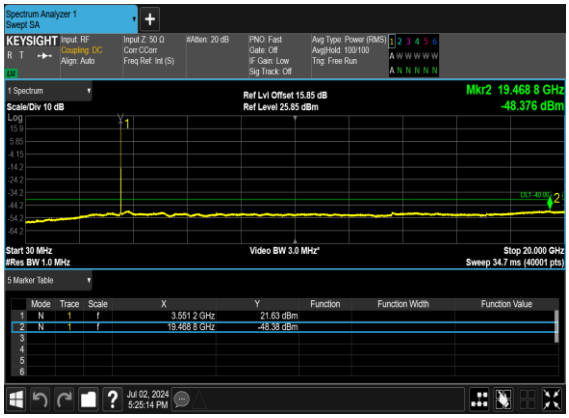
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

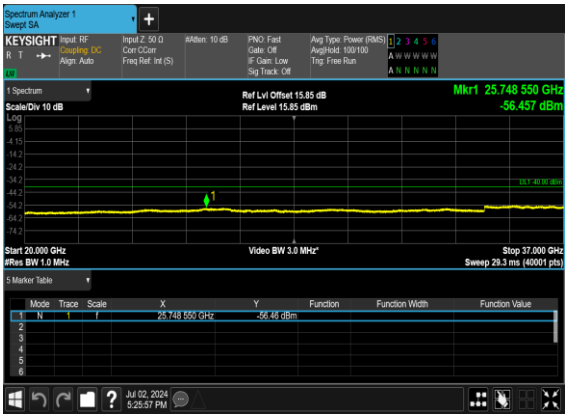


B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

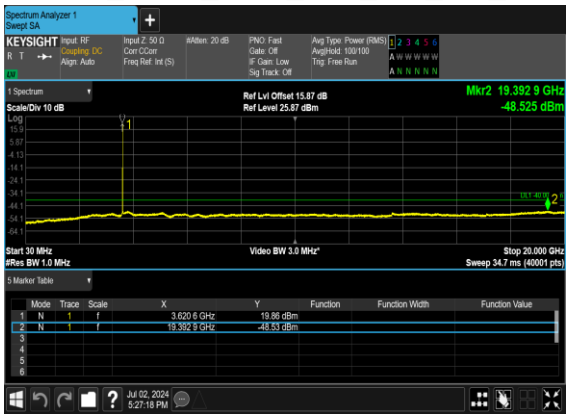
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



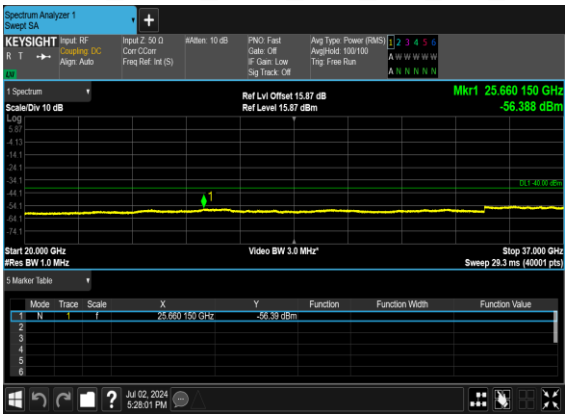
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



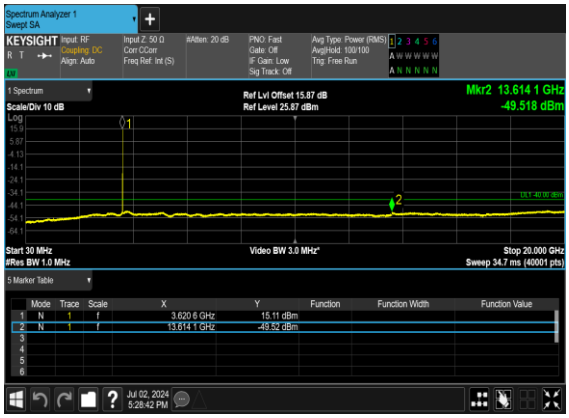
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



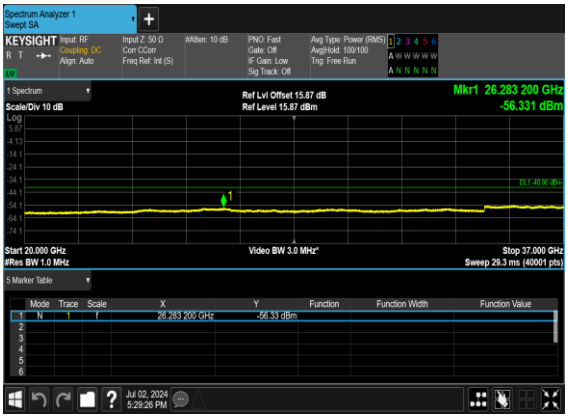
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



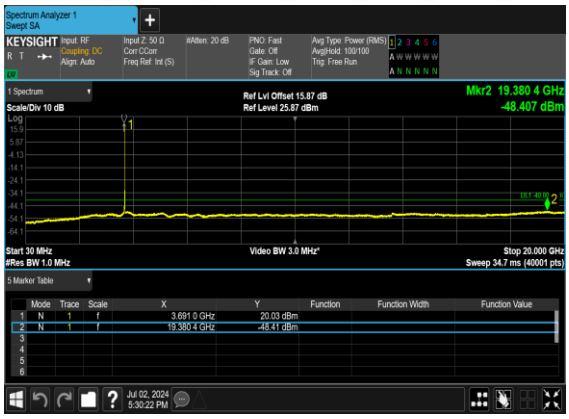
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



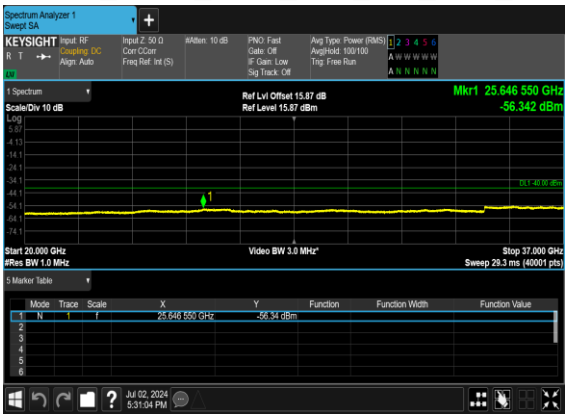
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



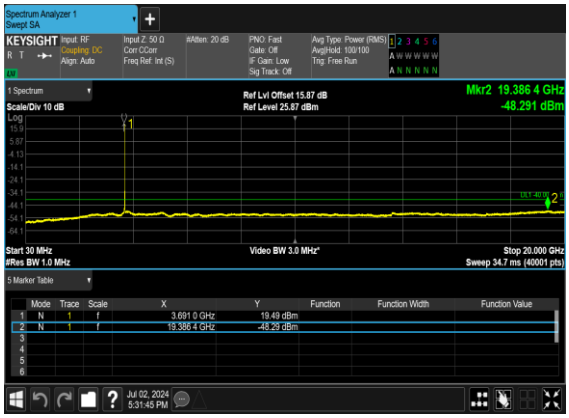
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



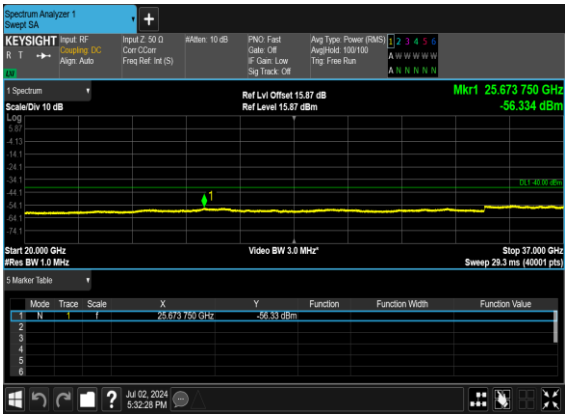
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



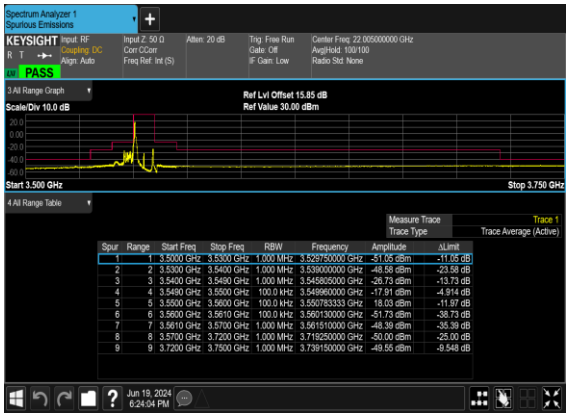
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



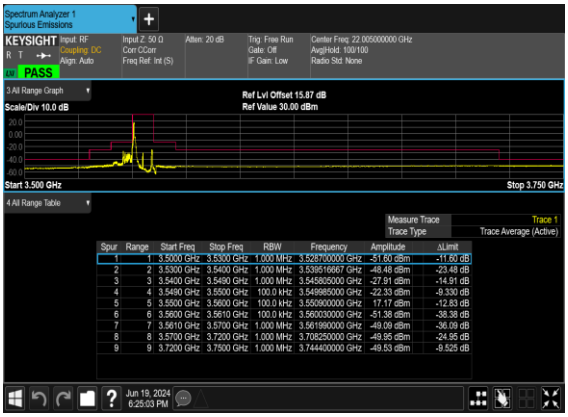
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	1@23	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	1@23	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM BPSK	24@0	see graph	**PASS**
48	30	10	637000	3555.0	DFT-s-OFDM QPSK	24@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	1@23	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	1@23	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM BPSK	24@0	see graph	**PASS**
48	30	10	641666	3624.99	DFT-s-OFDM QPSK	24@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	1@23	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	1@23	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM BPSK	24@0	see graph	**PASS**
48	30	10	646332	3694.98	DFT-s-OFDM QPSK	24@0	see graph	**PASS**

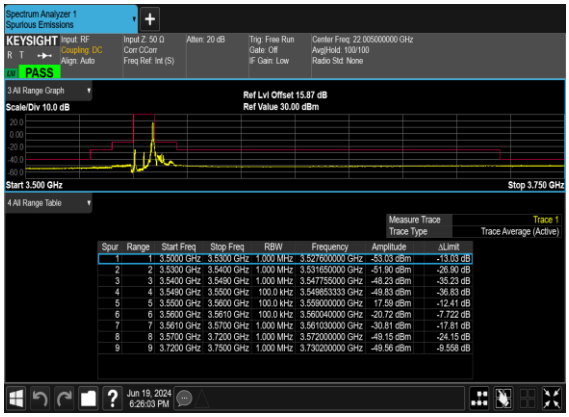
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



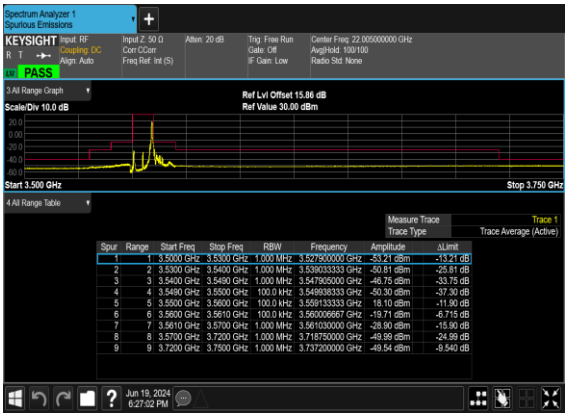
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



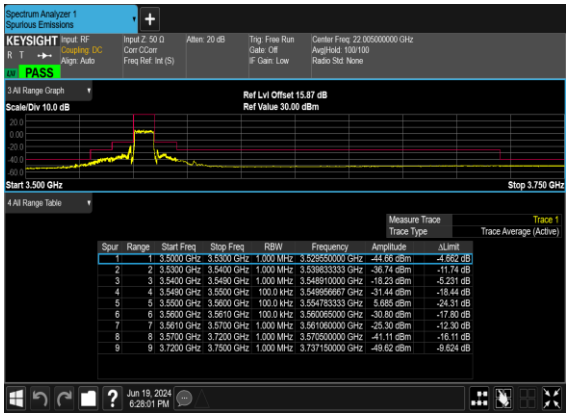
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_Low_CH



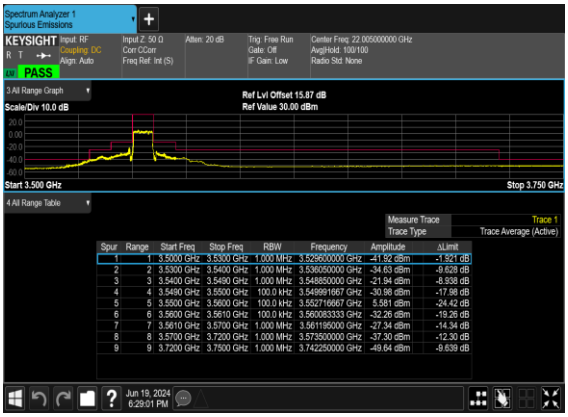
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Low_CH



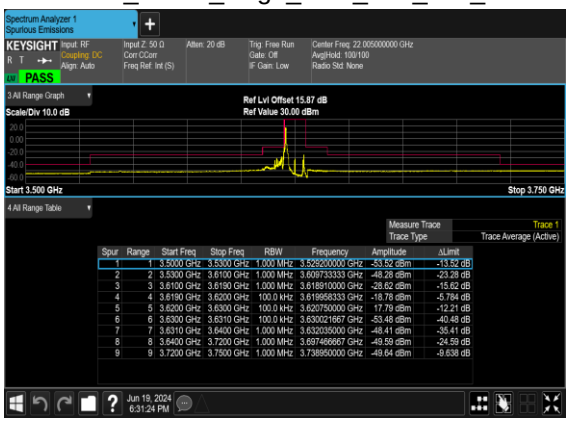
B2_N48(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



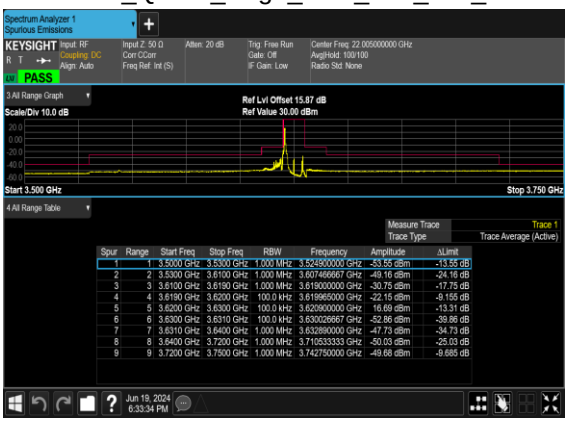
B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

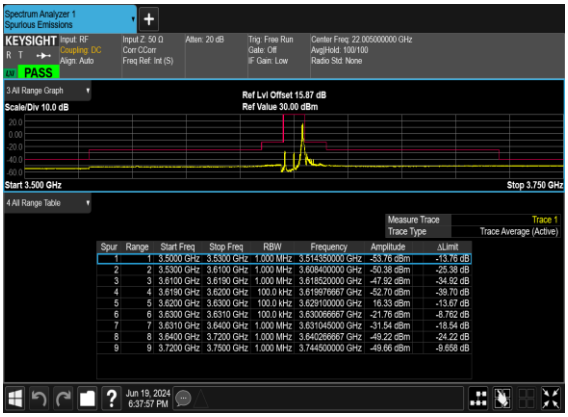


B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

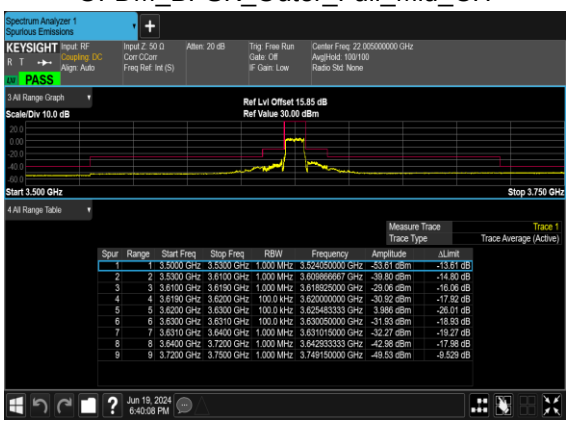


B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_Mid_CH

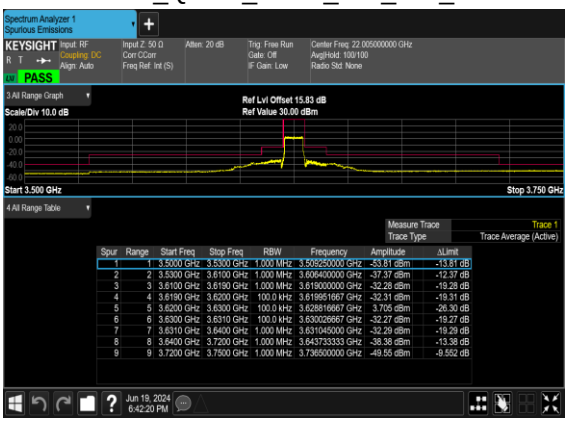
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Mid_CH



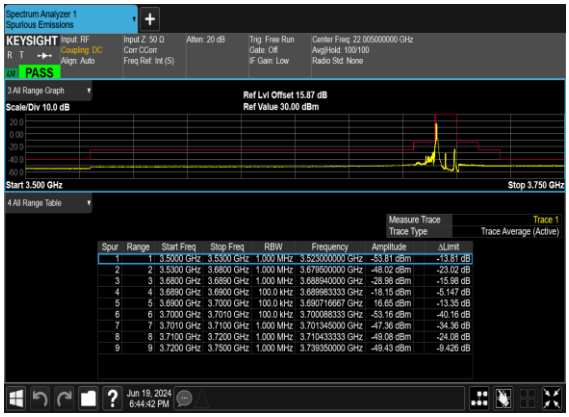
B2_N48(10M)_DFT-s-OFDM_BPSK_Outer_Full_Mid_CH



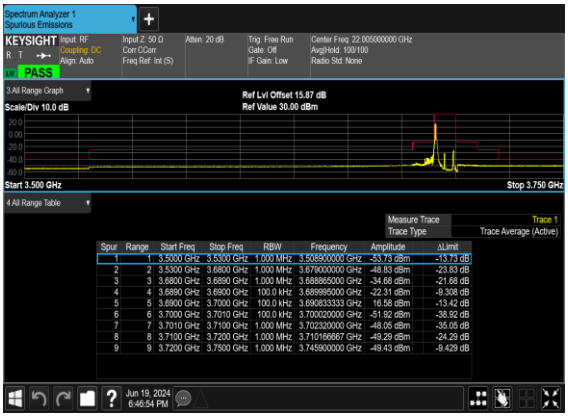
B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



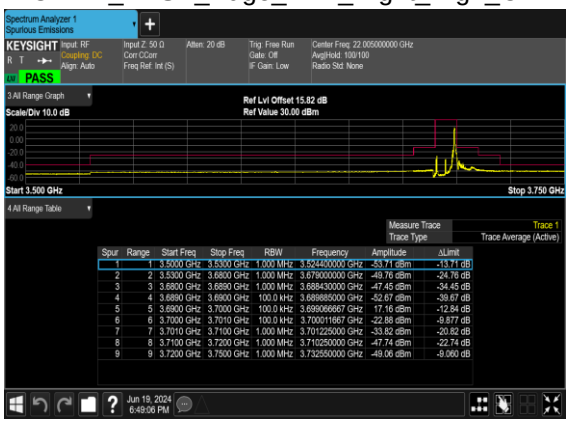
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



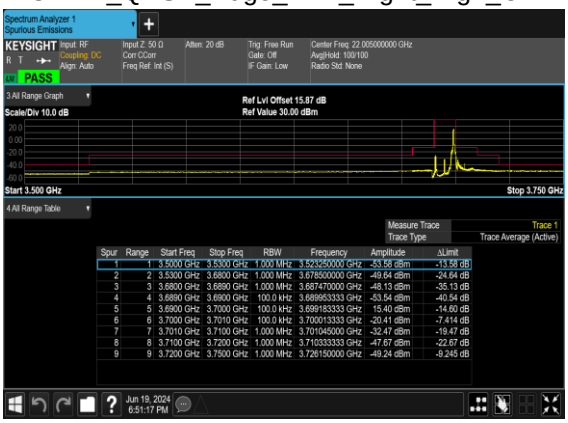
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



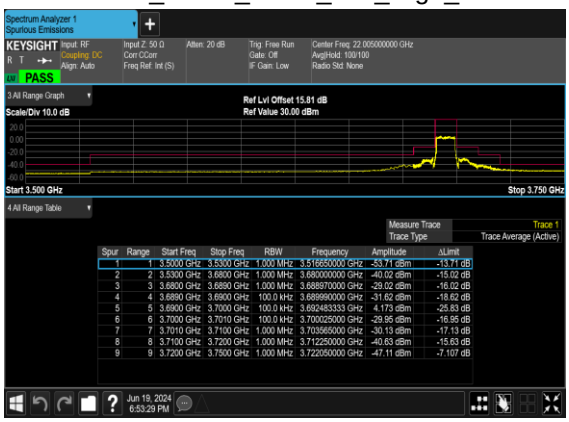
B2_N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



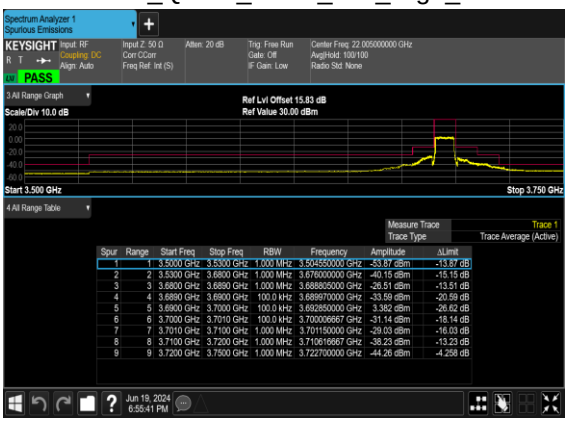
B2_N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



B2_N48(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



B2_N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 N77 SISO (Ant4)

LTE Band: 2, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-0.56dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	30	20	637334	3560.01	DFT-s-OFDM QPSK	1@1	22.52	21.96	0.1570
77	30	20	637334	3560.01	DFT-s-OFDM 16 QAM	1@1	21.68	21.12	0.1294
77	30	20	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.63	22.07	0.1611
77	30	20	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.75	21.19	0.1315
77	30	20	646000	3690	DFT-s-OFDM QPSK	1@1	22.62	22.06	0.1607
77	30	20	646000	3690	DFT-s-OFDM 16 QAM	1@1	21.85	21.29	0.1346
77	30	30	637668	3565.02	DFT-s-OFDM QPSK	1@1	22.52	21.96	0.1570
77	30	30	637668	3565.02	DFT-s-OFDM 16 QAM	1@1	21.8	21.24	0.1330
77	30	30	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.67	22.11	0.1626
77	30	30	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.76	21.2	0.1318
77	30	30	645666	3684.99	DFT-s-OFDM QPSK	1@1	22.18	21.62	0.1452
77	30	30	645666	3684.99	DFT-s-OFDM 16 QAM	1@1	21.34	20.78	0.1197
77	30	40	638000	3570	DFT-s-OFDM QPSK	1@1	22.8	22.24	0.1675
77	30	40	638000	3570	DFT-s-OFDM 16 QAM	1@1	21.93	21.37	0.1371
77	30	40	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.8	22.24	0.1675
77	30	40	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	22.05	21.49	0.1409
77	30	40	645332	3679.98	DFT-s-OFDM QPSK	1@1	22.14	21.58	0.1439
77	30	40	645332	3679.98	DFT-s-OFDM 16 QAM	1@1	21.32	20.76	0.1191
77	30	50	638334	3575.01	DFT-s-OFDM QPSK	1@1	22.44	21.88	0.1542
77	30	50	638334	3575.01	DFT-s-OFDM 16 QAM	1@1	21.66	21.1	0.1288
77	30	50	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.51	21.95	0.1567
77	30	50	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.81	21.25	0.1334
77	30	50	645000	3675	DFT-s-OFDM QPSK	1@1	22.51	21.95	0.1567
77	30	50	645000	3675	DFT-s-OFDM 16 QAM	1@1	21.7	21.14	0.1300
77	30	60	638668	3580.02	DFT-s-OFDM QPSK	1@1	22.34	21.78	0.1507
77	30	60	638668	3580.02	DFT-s-OFDM 16 QAM	1@1	21.57	21.01	0.1262
77	30	60	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.36	21.8	0.1514
77	30	60	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.65	21.09	0.1285
77	30	60	644666	3669.99	DFT-s-OFDM QPSK	1@1	22.52	21.96	0.1570
77	30	60	644666	3669.99	DFT-s-OFDM 16 QAM	1@1	21.81	21.25	0.1334

77	30	70	639000	3585	DFT-s-OFDM QPSK	1@1	22.24	21.68	0.1472
77	30	70	639000	3585	DFT-s-OFDM 16 QAM	1@1	21.5	20.94	0.1242
77	30	70	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.3	21.74	0.1493
77	30	70	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.54	20.98	0.1253
77	30	70	644332	3664.98	DFT-s-OFDM QPSK	1@1	22.24	21.68	0.1472
77	30	70	644332	3664.98	DFT-s-OFDM 16 QAM	1@1	21.44	20.88	0.1225
77	30	80	639334	3590.01	DFT-s-OFDM QPSK	1@1	22.19	21.63	0.1455
77	30	80	639334	3590.01	DFT-s-OFDM 16 QAM	1@1	21.4	20.84	0.1213
77	30	80	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.25	21.69	0.1476
77	30	80	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.32	20.76	0.1191
77	30	80	644000	3660	DFT-s-OFDM QPSK	1@1	22.45	21.89	0.1545
77	30	80	644000	3660	DFT-s-OFDM 16 QAM	1@1	21.48	20.92	0.1236
77	30	90	639668	3595.02	DFT-s-OFDM QPSK	1@1	22.18	21.62	0.1452
77	30	90	639668	3595.02	DFT-s-OFDM 16 QAM	1@1	21.43	20.87	0.1222
77	30	90	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.29	21.73	0.1489
77	30	90	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.55	20.99	0.1256
77	30	90	643666	3654.99	DFT-s-OFDM QPSK	1@1	22.26	21.7	0.1479
77	30	90	643666	3654.99	DFT-s-OFDM 16 QAM	1@1	21.44	20.88	0.1225
77	30	100	640000	3600	DFT-s-OFDM PI/2 BPSK	135@67	22.32	21.76	0.1500
77	30	100	640000	3600	DFT-s-OFDM PI/2 BPSK	1@1	22.35	21.79	0.1510
77	30	100	640000	3600	DFT-s-OFDM PI/2 BPSK	1@271	22.11	21.55	0.1429
77	30	100	640000	3600	DFT-s-OFDM QPSK	135@67	22.29	21.73	0.1489
77	30	100	640000	3600	DFT-s-OFDM QPSK	1@1	22.15	21.59	0.1442
77	30	100	640000	3600	DFT-s-OFDM QPSK	1@271	22.16	21.6	0.1445
77	30	100	640000	3600	DFT-s-OFDM 16 QAM	135@67	21.37	20.81	0.1205
77	30	100	640000	3600	DFT-s-OFDM 16 QAM	1@1	21.42	20.86	0.1219
77	30	100	640000	3600	DFT-s-OFDM 16 QAM	1@271	21.27	20.71	0.1178
77	30	100	640000	3600	DFT-s-OFDM 64 QAM	135@67	19.9	19.34	0.0859
77	30	100	640000	3600	DFT-s-OFDM 64 QAM	1@1	19.84	19.28	0.0847
77	30	100	640000	3600	DFT-s-OFDM 64 QAM	1@271	19.7	19.14	0.0820
77	30	100	640000	3600	DFT-s-OFDM 256 QAM	135@67	17.94	17.38	0.0547
77	30	100	640000	3600	DFT-s-OFDM 256 QAM	1@1	17.55	16.99	0.0500
77	30	100	640000	3600	DFT-s-OFDM 256 QAM	1@271	17.41	16.85	0.0484
77	30	100	640000	3600	CP-OFDM QPSK	137@68	20.84	20.28	0.1067
77	30	100	640000	3600	CP-OFDM QPSK	1@1	20.68	20.12	0.1028
77	30	100	640000	3600	CP-OFDM QPSK	1@271	20.68	20.12	0.1028
77	30	100	641666	3624.99	DFT-s-OFDM PI/2 BPSK	135@67	22.27	21.71	0.1483
77	30	100	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	22.34	21.78	0.1507
77	30	100	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@271	22.05	21.49	0.1409

77	30	100	641666	3624.99	DFT-s-OFDM QPSK	135@67	22.23	21.67	0.1469
77	30	100	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.28	21.72	0.1486
77	30	100	641666	3624.99	DFT-s-OFDM QPSK	1@271	21.95	21.39	0.1377
77	30	100	641666	3624.99	DFT-s-OFDM 16 QAM	135@67	21.3	20.74	0.1186
77	30	100	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.54	20.98	0.1253
77	30	100	641666	3624.99	DFT-s-OFDM 16 QAM	1@271	21.17	20.61	0.1151
77	30	100	641666	3624.99	DFT-s-OFDM 64 QAM	135@67	19.87	19.31	0.0853
77	30	100	641666	3624.99	DFT-s-OFDM 64 QAM	1@1	19.85	19.29	0.0849
77	30	100	641666	3624.99	DFT-s-OFDM 64 QAM	1@271	19.59	19.03	0.0800
77	30	100	641666	3624.99	DFT-s-OFDM 256 QAM	135@67	17.81	17.25	0.0531
77	30	100	641666	3624.99	DFT-s-OFDM 256 QAM	1@1	17.69	17.13	0.0516
77	30	100	641666	3624.99	DFT-s-OFDM 256 QAM	1@271	17.3	16.74	0.0472
77	30	100	641666	3624.99	CP-OFDM QPSK	137@68	20.83	20.27	0.1064
77	30	100	641666	3624.99	CP-OFDM QPSK	1@1	20.82	20.26	0.1062
77	30	100	641666	3624.99	CP-OFDM QPSK	1@271	20.63	20.07	0.1016
77	30	100	643332	3649.98	DFT-s-OFDM PI/2 BPSK	135@67	22.21	21.65	0.1462
77	30	100	643332	3649.98	DFT-s-OFDM PI/2 BPSK	1@1	22.35	21.79	0.1510
77	30	100	643332	3649.98	DFT-s-OFDM PI/2 BPSK	1@271	22.07	21.51	0.1416
77	30	100	643332	3649.98	DFT-s-OFDM QPSK	135@67	22.16	21.6	0.1445
77	30	100	643332	3649.98	DFT-s-OFDM QPSK	1@1	22.85	22.29	0.1694
77	30	100	643332	3649.98	DFT-s-OFDM QPSK	1@271	22.01	21.45	0.1396
77	30	100	643332	3649.98	DFT-s-OFDM 16 QAM	135@67	21.33	20.77	0.1194
77	30	100	643332	3649.98	DFT-s-OFDM 16 QAM	1@1	21.62	21.06	0.1276
77	30	100	643332	3649.98	DFT-s-OFDM 16 QAM	1@271	21.15	20.59	0.1146
77	30	100	643332	3649.98	DFT-s-OFDM 64 QAM	135@67	19.8	19.24	0.0839
77	30	100	643332	3649.98	DFT-s-OFDM 64 QAM	1@1	19.99	19.43	0.0877
77	30	100	643332	3649.98	DFT-s-OFDM 64 QAM	1@271	19.65	19.09	0.0811
77	30	100	643332	3649.98	DFT-s-OFDM 256 QAM	135@67	17.81	17.25	0.0531
77	30	100	643332	3649.98	DFT-s-OFDM 256 QAM	1@1	17.66	17.1	0.0513
77	30	100	643332	3649.98	DFT-s-OFDM 256 QAM	1@271	17.52	16.96	0.0497
77	30	100	643332	3649.98	CP-OFDM QPSK	137@68	20.77	20.21	0.1050
77	30	100	643332	3649.98	CP-OFDM QPSK	1@1	20.87	20.31	0.1074
77	30	100	643332	3649.98	CP-OFDM QPSK	1@271	20.57	20.01	0.1002

Frequency Stability

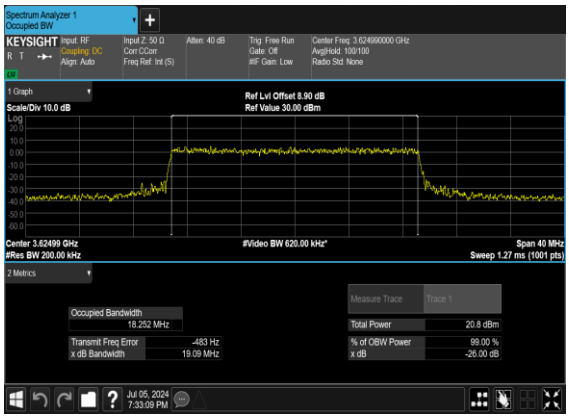
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0028	**PASS**	NV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0055	**PASS**	LV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0021	**PASS**	HV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0065	**PASS**	-30℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0050	**PASS**	-20℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0026	**PASS**	-10℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0038	**PASS**	0℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0022	**PASS**	10℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0028	**PASS**	20℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0066	**PASS**	30℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0059	**PASS**	40℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0056	**PASS**	50℃

Occupied Bandwidth

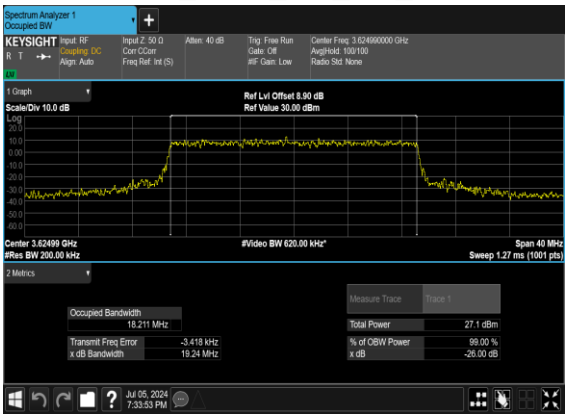
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
77	30	20	641666	3624.99	CP-OFDM QPSK	51@0	18.252	19.09
77	30	20	641666	3624.99	CP-OFDM 16 QAM	51@0	18.211	19.24
77	30	20	641666	3624.99	CP-OFDM 64 QAM	51@0	18.132	18.87
77	30	20	641666	3624.99	CP-OFDM 256 QAM	51@0	18.261	19.12
77	30	30	641666	3624.99	CP-OFDM QPSK	78@0	27.831	28.87
77	30	30	641666	3624.99	CP-OFDM 16 QAM	78@0	27.837	29.17
77	30	30	641666	3624.99	CP-OFDM 64 QAM	78@0	27.807	28.75
77	30	30	641666	3624.99	CP-OFDM 256 QAM	78@0	27.828	28.9
77	30	40	641666	3624.99	CP-OFDM QPSK	106@0	37.858	39.52
77	30	40	641666	3624.99	CP-OFDM 16 QAM	106@0	37.792	39.37
77	30	40	641666	3624.99	CP-OFDM 64 QAM	106@0	37.849	39.2
77	30	40	641666	3624.99	CP-OFDM 256 QAM	106@0	37.773	39.26
77	30	50	641666	3624.99	CP-OFDM QPSK	133@0	47.404	49.26
77	30	50	641666	3624.99	CP-OFDM 16 QAM	133@0	47.441	49.07
77	30	50	641666	3624.99	CP-OFDM 64 QAM	133@0	47.353	48.95
77	30	50	641666	3624.99	CP-OFDM 256 QAM	133@0	47.313	48.96
77	30	60	641666	3624.99	CP-OFDM QPSK	162@0	57.818	59.7
77	30	60	641666	3624.99	CP-OFDM 16 QAM	162@0	57.876	59.78
77	30	60	641666	3624.99	CP-OFDM 64 QAM	162@0	57.683	59.68
77	30	60	641666	3624.99	CP-OFDM 256 QAM	162@0	57.802	59.74
77	30	70	641666	3624.99	CP-OFDM QPSK	189@0	67.406	69.76
77	30	70	641666	3624.99	CP-OFDM 16 QAM	189@0	67.568	69.76

77	30	70	641666	3624.99	CP-OFDM 64 QAM	189@0	67.474	69.67
77	30	70	641666	3624.99	CP-OFDM 256 QAM	189@0	67.522	69.71
77	30	80	641666	3624.99	CP-OFDM QPSK	217@0	77.587	80.09
77	30	80	641666	3624.99	CP-OFDM 16 QAM	217@0	77.54	79.89
77	30	80	641666	3624.99	CP-OFDM 64 QAM	217@0	77.369	79.88
77	30	80	641666	3624.99	CP-OFDM 256 QAM	217@0	77.651	79.88
77	30	90	641666	3624.99	CP-OFDM QPSK	245@0	87.49	90.24
77	30	90	641666	3624.99	CP-OFDM 16 QAM	245@0	87.462	90.34
77	30	90	641666	3624.99	CP-OFDM 64 QAM	245@0	87.376	90.28
77	30	90	641666	3624.99	CP-OFDM 256 QAM	245@0	87.524	90.31
77	30	100	641666	3624.99	CP-OFDM QPSK	273@0	97.56	100.6
77	30	100	641666	3624.99	CP-OFDM 16 QAM	273@0	97.51	100.5
77	30	100	641666	3624.99	CP-OFDM 64 QAM	273@0	97.556	100.5
77	30	100	641666	3624.99	CP-OFDM 256 QAM	273@0	97.638	100.5

B2_N77(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

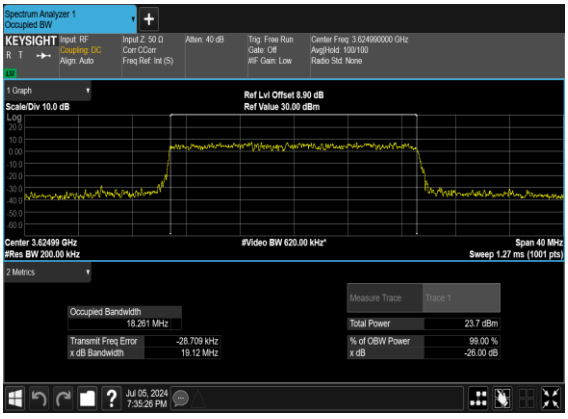


B2_N77(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

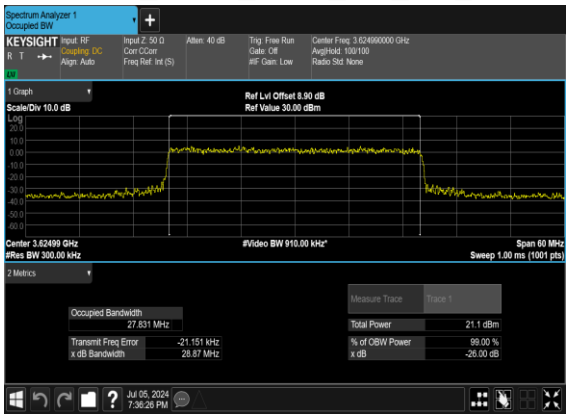


B2_N77(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

B2_N77(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

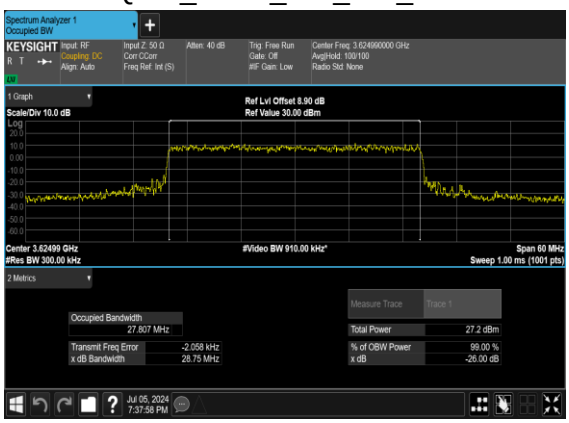


B2_N77(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

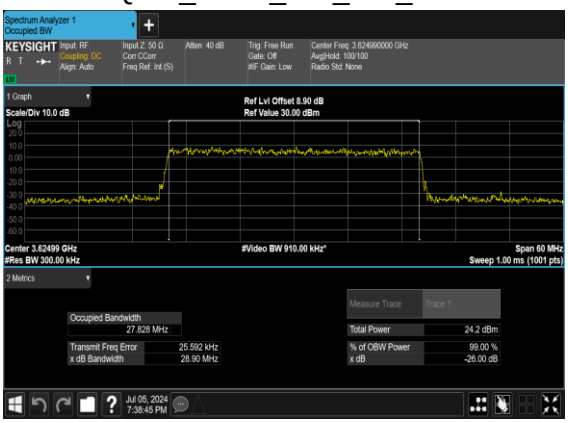


B2_N77(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

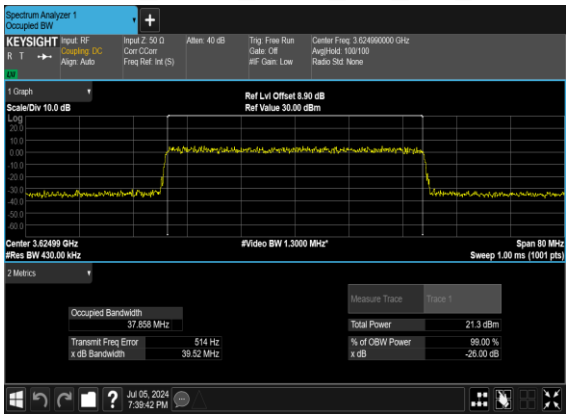
B2_N77(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



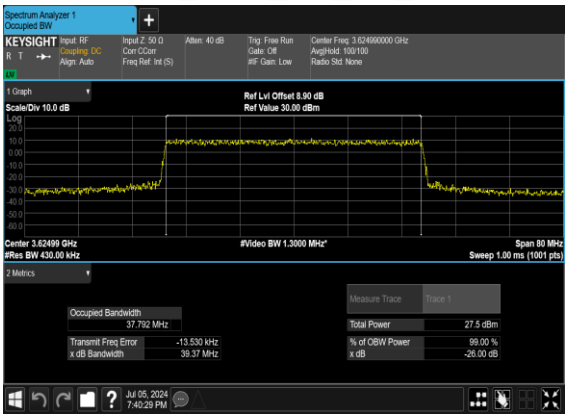
B2_N77(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



B2_N77(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

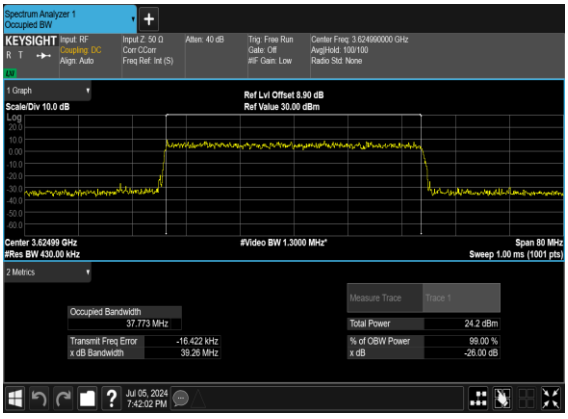


B2_N77(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

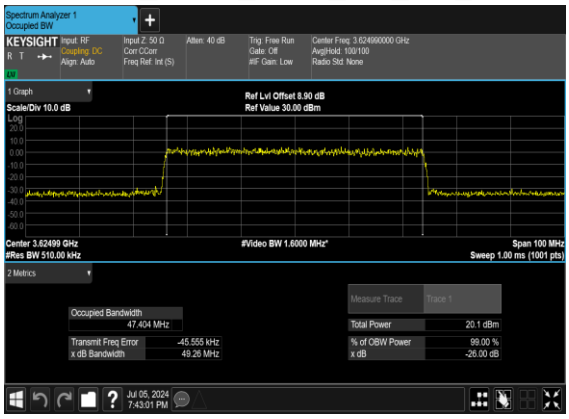


B2_N77(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

B2_N77(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



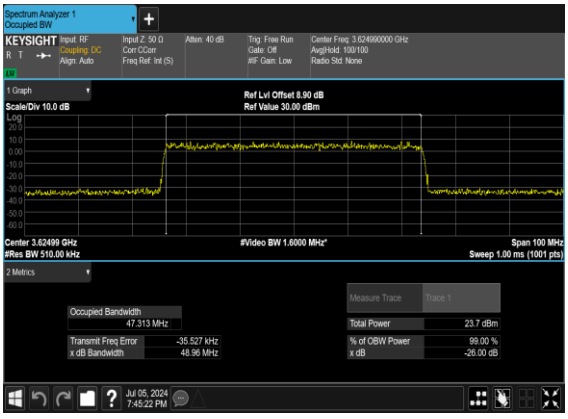
B2_N77(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



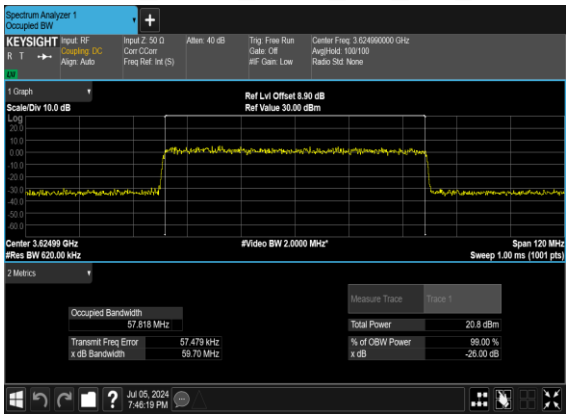
B2_N77(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

B2_N77(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

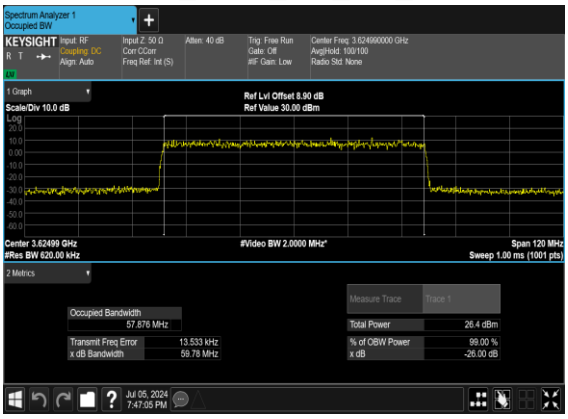
B2_N77(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



B2_N77(60M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

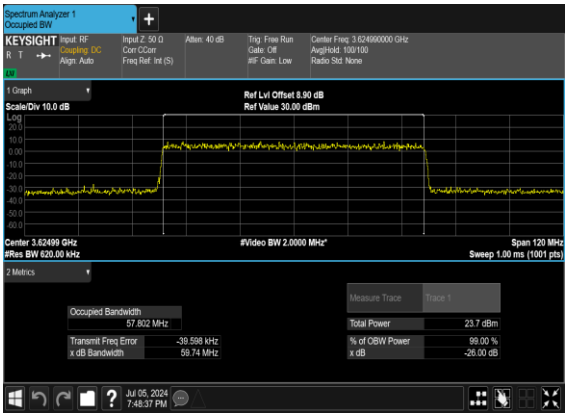


B2_N77(60M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

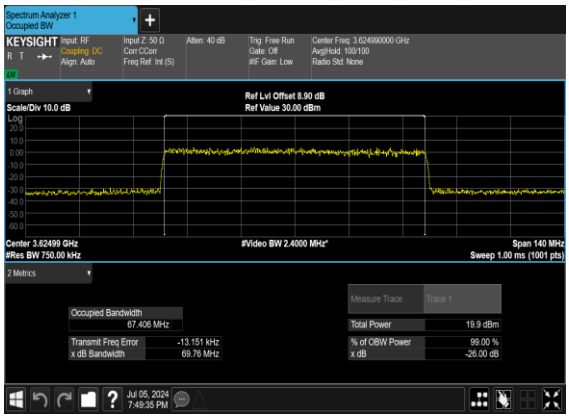


B2_N77(60M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

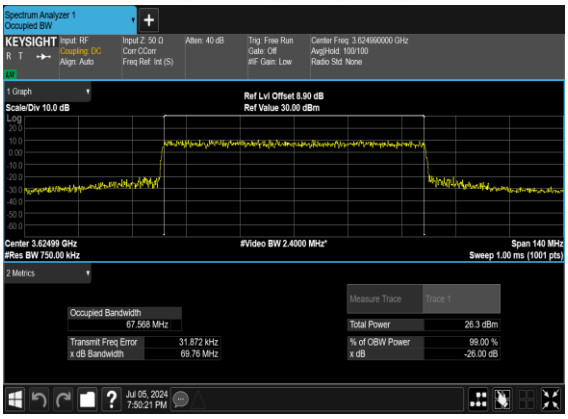
B2_N77(60M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



B2_N77(70M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



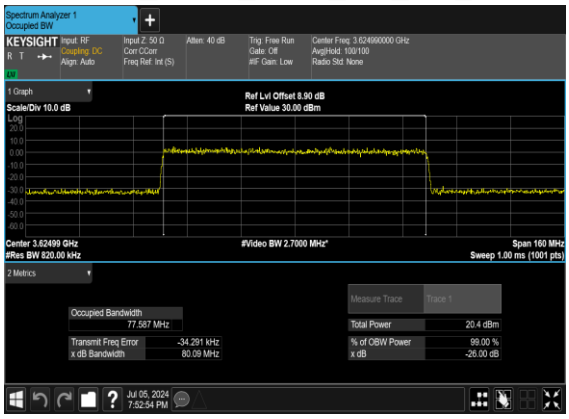
B2_N77(70M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



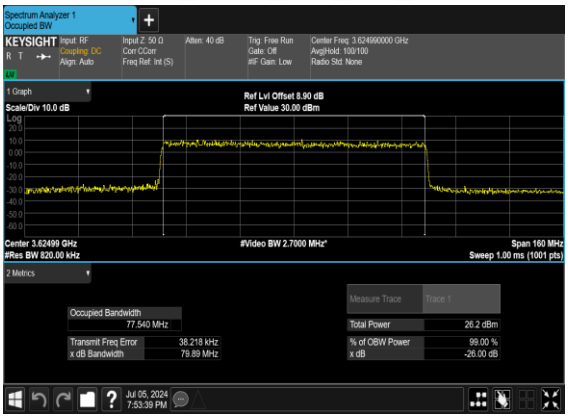
B2_N77(70M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

B2_N77(70M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

B2_N77(80M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B2_N77(80M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B2_N77(80M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

B2_N77(80M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH