FCC RF Test Report

APPLICANT	: Rolling Wireless S.a r.l.
EQUIPMENT	: 5G Module
BRAND NAME	: Rolling Wireless
MODEL NAME	: RW350R-GL
FCC ID	: 2AX2URW350RGL
STANDARD	: 47 CFR Part 2, 27
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Apr. 03, 2024 ~ Apr. 24, 2024

We, Sporton International Inc. (ShenZhen), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

Sporton International Inc. (ShenZhen)

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG430728M	Rev. 01	Initial issue of report	Jun. 13, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(c)(10)	Effective Radiated Power (5G NR n12, n71)	ERP < 3 Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (5G NR n66)	EIRP < 1Watt		
3.5	N/A	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(h) §27.53(g)	Conducted Band Edge Measurement (5G NR n66) (5G NR n12, n71)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(h) §27.53(g)	Conducted Spurious Emission (5G NR n66) (5G NR n12, n71)	< 43+10log10(P[Watts])	PASS	-
3.9	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(h) §27.53(g)	Radiated Spurious Emission (5G NR n66) (5G NR n12, n71)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 12.22 dB at 10861.500 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 Applicant

Rolling Wireless S.a r.l.
8-10, rue Mathias Hardt 1717, Luxembourg

1.2 Manufacturer

Rolling Wireless S.a r.l.
8-10, rue Mathias Hardt 1717, Luxembourg

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	5G Module
Brand Name	Rolling Wireless
Model Name	RW350R-GL
FCC ID	2AX2URW350RGL
IMEI Code	Conducted: 356413950001763 Radiation: 356413950000682
HW Version	V1.1
SW Version	81601.0000.00.29.24.13
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n12 : 699 MHz ~ 716 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz
Rx Frequency	5G NR n12: 729 MHz ~ 746 MHz 5G NR n66 : 2110 MHz~ 2200 MHz 5G NR n71: 617 MHz ~ 652 MHz
Bandwidth	**SCS 15K:** n12: 5MHz / 10MHz / 15MHz n66: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n71: 5MHz / 10MHz / 15MHz / 20MHz **SCS 30K:** n12:10MHz / 15MHz n66: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n71: 10MHz / 15MHz / 20MHz
SCS	15kHz, 30kHz
Antenna Type	External Monopole Antenna or External PIFA Antenna
Antenna Gain	n12: 3.0 dBi

	n71: 3.0 dBi n66: 3.0 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The device has two optional antennas, they are same antenna gain, RSE pretest the two antennas, choose worst antenna to perform final test and recorded in the report.
2. There are two samples under test, sample 1 is 1st source and sample 2 is 2nd source, the detailed differences could be referred to the RW350R-GL_Operational Description of Product Equality Declaration which is exhibit separately. According to the differences, sample 1 perform full test, sample 2 verify conducted power and found less than sample 1, and sample 2 additional verify the worst case of RSE.
3. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are tested in the report.
4. 5G NR n12 supports SA mode only, According to the maximum power, SCS 15kHz covers 30kHz.
5. 5G NR n66/n71 support SA mode and NSA mode. According to the maximum power between SA and NSA mode, NSA covers SA mode for n66, SA covers NSA mode for n71. and SCS 15kHz covers 30kHz.
6. The EN-DC mode combination could be referred to the product spec.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum Conducted Power and Emission Designator

5G NR n12 -SCS15K		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	701.5 ~ 713.5	0.2094	4M46G7D	0.1542	4M47W7D
10	704.0~ 711.0	0.2042	9M29G7D	0.1493	9M28W7D
15	706.5 ~ 708.5	0.2188	14M1G7D	0.1718	14M1W7D

5G NR n66 -SCS15K		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	1712.5 ~ 1777.5	0.2472	4M46G7D	0.1824	4M47W7D
10	1715.0 ~ 1775.0	0.2382	9M28G7D	0.1782	9M30W7D
15	1717.5 ~ 1772.5	0.2489	14M1G7D	0.1837	14M1W7D
20	1720.0 ~ 1770.0	0.2460	18M9G7D	0.1837	19M0W7D
25	1722.5 ~ 1767.5	0.2393	23M7G7D	0.1849	23M8W7D
30	1725.0 ~ 1765.0	0.2366	28M6G7D	0.1774	28M6W7D
35	1727.5 ~ 1762.5	0.2249	33M5G7D	0.1675	33M6W7D
40	1730.0 ~ 1760.0	0.2228	38M4G7D	0.1663	38M5W7D
45	1732.5 ~ 1757.5	0.2500	43M1G7D	0.1837	43M2W7D

5G NR n71 -SCS15K		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
5	665.5 ~ 695.5	0.2109	4M46G7D	0.1514	4M47W7D
10	668.0 ~ 693.0	0.2018	9M29G7D	0.1500	9M30W7D
15	670.5 ~ 690.5	0.2109	14M1G7D	0.1524	14M1W7D
20	673.0 ~ 688.0	0.2138	19M0G7D	0.1687	19M0W7D

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

1.7 Testing Location

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

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH03-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH03-SZ	AUDIX	E3	6.2009-8-24

1.9 Applicable Standards

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

- 47 CFR Part 2, 27(L), 27(H), 27(N)
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items 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.

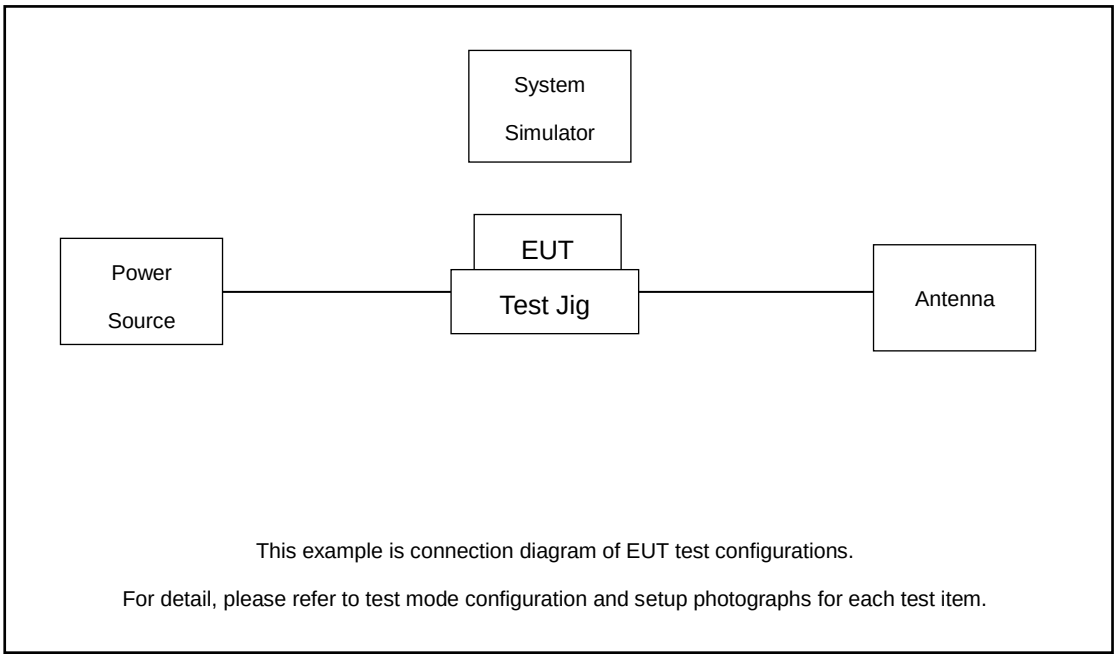
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)															Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n12	v	v	v	-	-	-	-	-		-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n71	v	v	v	v	-	-	-	-		-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n12			v	-	-	-	-	-		-	-	-	-	-	-	v	v					v		v	
	n66				v						-	-	-	-	-	-	v	v					v		v	
	n71				v	-	-	-	-		-	-	-	-	-	-	v	v					v		v	
26dB and 99% Bandwidth	n12	v	v	v	-	-	-	-	-		-	-	-	-	-	-		v	v	v	v		v		v	
	n66	v	v	v	v	v	v	v	v	v	-	-	-	-	-	-		v	v	v	v		v		v	
	n71	v	v	v	v	-	-	-	-		-	-	-	-	-	-		v	v	v	v		v		v	
Conducted Band Edge	n12	v	v	v	-	-	-	-	-		-	-	-	-	-	-	v	v				v	v	v		v
	n66	v				v				v	-	-	-	-	-	-	v	v				v	v	v		v
	n71	v	v		v	-	-	-	-		-	-	-	-	-	-	v	v				v	v	v		v
Conducted Spurious Emission	n12	v	v	v	-	-	-	-	-		-	-	-	-	-	-	v	v				v		v	v	v
	n66	v				v				v	-	-	-	-	-	-	v	v				v		v	v	v
	n71	v	v		v	-	-	-	-		-	-	-	-	-	-	v	v				v		v	v	v
Frequency Stability	n12		v		-	-	-	-	-		-	-	-	-	-	-		v					v		v	
	n66				v						-	-	-	-	-	-		v					v		v	
	n71				v	-	-	-	-		-	-	-	-	-	-		v					v		v	

Test Items	5G NR	Bandwidth (MHz)															Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
E.R.P / E.I.R.P	n12	v	v	v	-	-	-	-	-		-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n71	v	v	v	v	-	-	-	-		-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n12	Worst Case																						v	v	v
	n66	Worst Case																						v	v	v
	n71	Worst Case																						v	v	v
Note	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 = 3.3V ；Low Voltage =3.14V.；High Voltage =4.4V																									

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

For detail, please refer to test mode configuration and setup photographs for each test item.

The EUT has been configuration operated in a manner tended to maximize its emission characteristics in a typical application.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
4.	Antenna	N/A	N/A	N/A	N/A	N/A
5.	Adapter	N/A	N/A	N/A	N/A	N/A
6.	Test Jig	N/A	N/A	N/A	N/A	N/A

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 7.5 dB.

Example :

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

= 7.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n12 Channel and Frequency List for SCS 15K & 30K				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
15	Channel	141300	141500	141700
	Frequency	706.5	707.5	708.5
10	Channel	140800	141500	142200
	Frequency	704	707.5	711
5	Channel	140300	141500	142700
	Frequency	701.5	707.5	713.5

5G NR n66 Channel and Frequency List for SCS 15K & 30K				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
45	Channel	346500	349000	351500
	Frequency	1732.5	1745	1757.5
40	Channel	346000	349000	352000
	Frequency	1730	1745	1760
35	Channel	345500	349000	352500
	Frequency	1727.5	1745	1762.5
30	Channel	345000	349000	353000
	Frequency	1725	1745	1765
25	Channel	344500	349000	353500
	Frequency	1722.5	1745	1767.5
20	Channel	344000	349000	354000
	Frequency	1720	1745	1770
15	Channel	343500	349000	354500
	Frequency	1717.5	1745	1772.5
10	Channel	343000	349000	355000
	Frequency	1715	1745	1775
5	Channel	342500	349000	355500
	Frequency	1712.5	1745	1777.5

5G NR n71 Channel and Frequency List for SCS 15K & 30K				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	134600	136100	137600
	Frequency	673	680.5	688
15	Channel	134100	136100	138100
	Frequency	670.5	680.5	690.5
10	Channel	133600	136100	138600
	Frequency	668	680.5	693
5	Channel	133100	136100	139100
	Frequency	665.5	680.5	695.5

Note: for the bands above, SCS 30kHz does not support 5MHz Bandwidths.

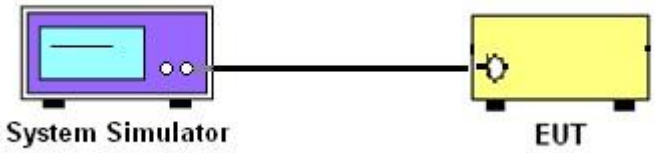
3 Conducted Test Items

3.1 Measuring Instruments

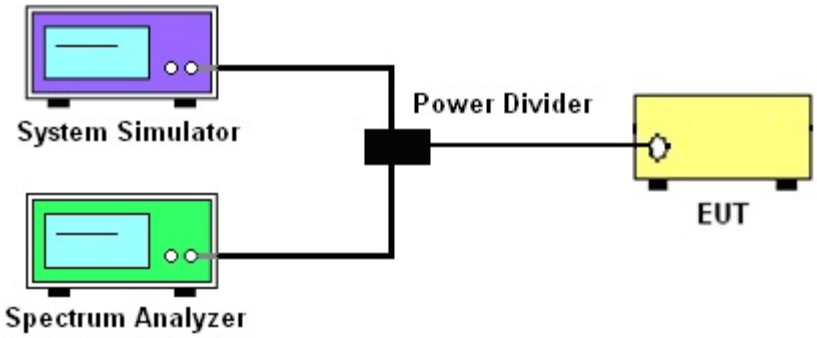
See list of measuring instruments of this test report.

3.2 Test Setup

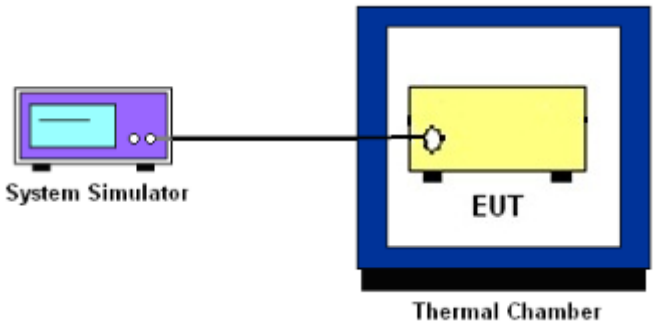
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 Description of the Conducted Output Power Measurement and ERP/EIRP 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.

The ERP of mobile transmitters must not exceed 3 Watts for 5G NR n12, n71.

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n66.

According to KDB 412172 D01 Power Approach,

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

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. 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.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 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.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. 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.
5. Set the detection mode to peak, and the trace mode to max hold.
6. 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)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. 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.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

27.53 (h)

For operations in the 1695 – 1710 MHz and 1710 – 1755 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz 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.

27.53 (c)

For operations in the 776-788 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least 65 + 10 log10 p(watts), dB, for mobile and portable equipment.

27.53 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used (generally limited to no less than 1% of the OBW) and the measured power was integrated over the full required measurement bandwidth.
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. Checked that all the results comply with the emission limit line.

   Example:

   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [43 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. 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.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. 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.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

3.9 Frequency Stability

3.9.1 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.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. 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.
4. 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.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

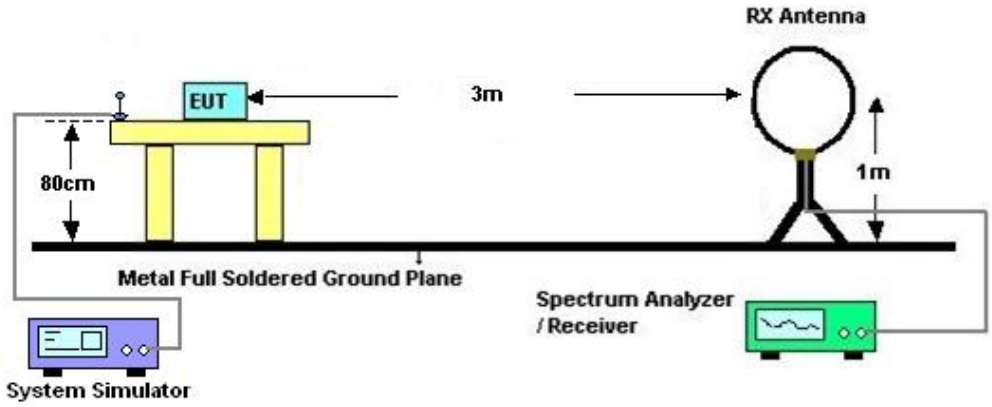
4 Radiated Test Items

4.1 Measuring Instruments

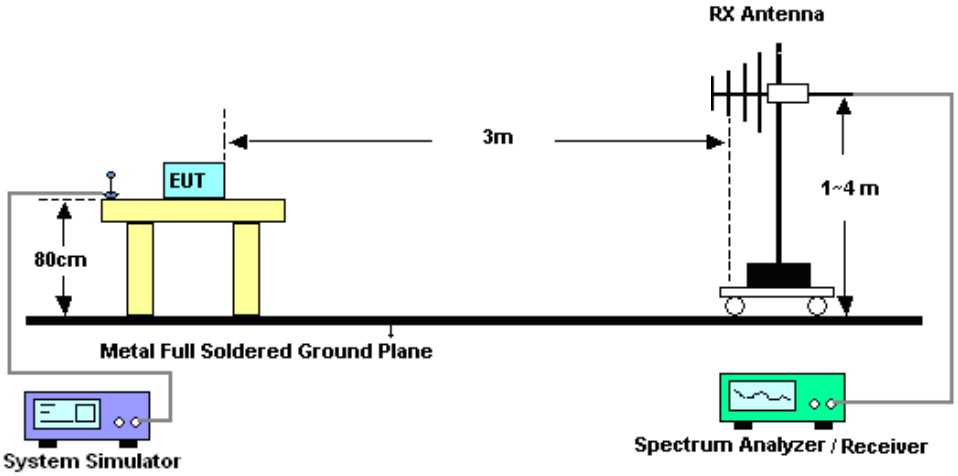
See list of measuring instruments of this test report.

4.2 Test Setup

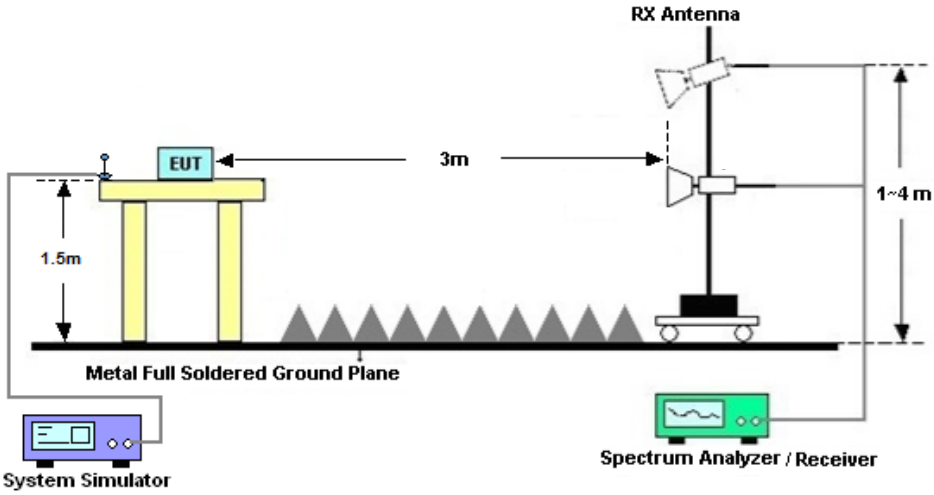
4.2.1 For radiated test below 30MHz



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

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 43 + 10 log (P) dB.

For 5GNR n13

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

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

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. 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.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

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. 08, 2023	Apr. 03, 2024~ Apr. 13, 2024	Apr. 09, 2024	Conducted (TH01-SZ)
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024		Apr. 08, 2025	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Apr. 03, 2024~ Apr. 13, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 05, 2023	Apr. 03, 2024~ Apr. 13, 2024	Jul. 04, 2024	Conducted (TH01-SZ)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Apr. 11, 2024~ Apr. 24, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Apr. 11, 2024~ Apr. 24, 2024	Apr. 08, 2025	Radiation (03CH03-SZ
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 28, 2022	Apr. 11, 2024~ Apr. 24, 2024	Jun. 27, 2024	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Aug. 20, 2023	Apr. 11, 2024~ Apr. 24, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Apr. 11, 2024~ Apr. 24, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Apr. 11, 2024~ Apr. 24, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Apr. 11, 2024~ Apr. 24, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023	Apr. 11, 2024~ Apr. 24, 2024	Jul. 06, 2024	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Apr. 11, 2024~ Apr. 24, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Apr. 11, 2024~ Apr. 24, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Apr. 11, 2024~ Apr. 24, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Apr. 11, 2024~ Apr. 24, 2024	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.0 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.6 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.8 dB

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

Appendix A. Test Results of Conducted Test

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

Software Version: 23.06.1602

FR1 N12 -SCS 15k

Transmitter Conducted Output Power And ERP, (G_T - L_C)=3dBi

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	ERP (dBm)	ERP (W)
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@1	23.15	24	0.2512
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	1@1	21.81	22.66	0.1845
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@1	23.21	24.06	0.2547
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	1@1	21.88	22.73	0.1875
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@1	23.07	23.92	0.2466
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	1@1	21.8	22.65	0.1841
12	15	10	140800	704	DFT-s-OFDM QPSK	1@1	22.95	23.8	0.2399
12	15	10	140800	704	DFT-s-OFDM 16 QAM	1@1	21.61	22.46	0.1762
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@1	23.1	23.95	0.2483
12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	1@1	21.74	22.59	0.1816
12	15	10	142200	711	DFT-s-OFDM QPSK	1@1	22.97	23.82	0.2410
12	15	10	142200	711	DFT-s-OFDM 16 QAM	1@1	21.65	22.5	0.1778
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	36@18	23.3	24.15	0.2600
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@1	23.26	24.11	0.2576
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@77	23.4	24.25	0.2661
12	15	15	141300	706.5	DFT-s-OFDM QPSK	36@18	23.31	24.16	0.2606
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@1	23.16	24.01	0.2518
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@77	23.26	24.11	0.2576
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	36@18	22.35	23.2	0.2089
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@1	21.86	22.71	0.1866
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@77	22.02	22.87	0.1936
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	36@18	20.84	21.69	0.1476
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@1	20.76	21.61	0.1449
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@77	20.87	21.72	0.1486
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	36@18	18.82	19.67	0.0927
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@1	18.69	19.54	0.0899
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@77	18.76	19.61	0.0914
12	15	15	141300	706.5	CP-OFDM QPSK	39@19	21.85	22.7	0.1862
12	15	15	141300	706.5	CP-OFDM QPSK	1@1	21.67	22.52	0.1786
12	15	15	141300	706.5	CP-OFDM QPSK	1@77	21.83	22.68	0.1854
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	36@18	23.26	24.11	0.2576
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@1	23.18	24.03	0.2529
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@77	23.36	24.21	0.2636
12	15	15	141500	707.5	DFT-s-OFDM QPSK	36@18	23.29	24.14	0.2594
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@1	23.16	24.01	0.2518
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@77	23.22	24.07	0.2553
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	36@18	22.29	23.14	0.2061

12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@1	21.82	22.67	0.1849
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@77	21.96	22.81	0.1910
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	36@18	20.75	21.6	0.1445
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@1	20.77	21.62	0.1452
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@77	20.85	21.7	0.1479
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	36@18	18.82	19.67	0.0927
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@1	18.59	19.44	0.0879
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@77	18.73	19.58	0.0908
12	15	15	141500	707.5	CP-OFDM QPSK	39@19	21.82	22.67	0.1849
12	15	15	141500	707.5	CP-OFDM QPSK	1@1	21.61	22.46	0.1762
12	15	15	141500	707.5	CP-OFDM QPSK	1@77	21.74	22.59	0.1816
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	36@18	23.25	24.1	0.2570
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@1	23.18	24.03	0.2529
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@77	23.35	24.2	0.2630
12	15	15	141700	708.5	DFT-s-OFDM QPSK	36@18	23.28	24.13	0.2588
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@1	23.14	23.99	0.2506
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@77	23.28	24.13	0.2588
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	36@18	22.31	23.16	0.2070
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@1	21.8	22.65	0.1841
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@77	21.99	22.84	0.1923
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	36@18	20.82	21.67	0.1469
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@1	20.7	21.55	0.1429
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@77	20.87	21.72	0.1486
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	36@18	18.84	19.69	0.0931
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@1	18.57	19.42	0.0875
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@77	18.73	19.58	0.0908
12	15	15	141700	708.5	CP-OFDM QPSK	39@19	21.8	22.65	0.1841
12	15	15	141700	708.5	CP-OFDM QPSK	1@1	21.61	22.46	0.1762
12	15	15	141700	708.5	CP-OFDM QPSK	1@77	21.7	22.55	0.1799

FR1 N12 -SCS 30k

Transmitter Conducted Output Power And ERP, (G_T - L_C)=3dBi

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP(W)
12	30	10	140800	704	DFT-s-OFDM QPSK	1@1	23.07	23.92	0.2466
12	30	10	140800	704	DFT-s-OFDM 16 QAM	1@1	22.06	22.91	0.1954
12	30	10	141500	707.5	DFT-s-OFDM QPSK	1@1	23.17	24.02	0.2523
12	30	10	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.21	23.06	0.2023
12	30	10	142200	711	DFT-s-OFDM QPSK	1@1	23.16	24.01	0.2518
12	30	10	142200	711	DFT-s-OFDM 16 QAM	1@1	22.15	23	0.1995
12	30	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	18@9	23.3	24.15	0.2600
12	30	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@1	23.18	24.03	0.2529
12	30	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@36	23.28	24.13	0.2588
12	30	15	141300	706.5	DFT-s-OFDM QPSK	18@9	23.31	24.16	0.2606
12	30	15	141300	706.5	DFT-s-OFDM QPSK	1@1	23.11	23.96	0.2489
12	30	15	141300	706.5	DFT-s-OFDM QPSK	1@36	23.11	23.96	0.2489
12	30	15	141300	706.5	DFT-s-OFDM 16 QAM	18@9	22.32	23.17	0.2075
12	30	15	141300	706.5	DFT-s-OFDM 16 QAM	1@1	21.82	22.67	0.1849
12	30	15	141300	706.5	DFT-s-OFDM 16 QAM	1@36	21.68	22.53	0.1791
12	30	15	141300	706.5	DFT-s-OFDM 64 QAM	18@9	20.8	21.65	0.1462
12	30	15	141300	706.5	DFT-s-OFDM 64 QAM	1@1	20.73	21.58	0.1439
12	30	15	141300	706.5	DFT-s-OFDM 64 QAM	1@36	20.75	21.6	0.1445
12	30	15	141300	706.5	DFT-s-OFDM 256 QAM	18@9	18.85	19.7	0.0933
12	30	15	141300	706.5	DFT-s-OFDM 256 QAM	1@1	18.58	19.43	0.0877
12	30	15	141300	706.5	DFT-s-OFDM 256 QAM	1@36	18.62	19.47	0.0885
12	30	15	141300	706.5	CP-OFDM QPSK	19@9	21.75	22.6	0.1820
12	30	15	141300	706.5	CP-OFDM QPSK	1@1	21.68	22.53	0.1791
12	30	15	141300	706.5	CP-OFDM QPSK	1@36	21.64	22.49	0.1774
12	30	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	18@9	23.33	24.18	0.2618
12	30	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@1	23.2	24.05	0.2541
12	30	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@36	23.22	24.07	0.2553
12	30	15	141500	707.5	DFT-s-OFDM QPSK	18@9	23.31	24.16	0.2606
12	30	15	141500	707.5	DFT-s-OFDM QPSK	1@1	23.13	23.98	0.2500
12	30	15	141500	707.5	DFT-s-OFDM QPSK	1@36	23.16	24.01	0.2518
12	30	15	141500	707.5	DFT-s-OFDM 16 QAM	18@9	22.35	23.2	0.2089
12	30	15	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.14	22.99	0.1991
12	30	15	141500	707.5	DFT-s-OFDM 16 QAM	1@36	22.15	23	0.1995
12	30	15	141500	707.5	DFT-s-OFDM 64 QAM	18@9	20.81	21.66	0.1466
12	30	15	141500	707.5	DFT-s-OFDM 64 QAM	1@1	20.54	21.39	0.1377
12	30	15	141500	707.5	DFT-s-OFDM 64 QAM	1@36	20.64	21.49	0.1409
12	30	15	141500	707.5	DFT-s-OFDM 256 QAM	18@9	18.86	19.71	0.0935

12	30	15	141500	707.5	DFT-s-OFDM 256 QAM	1@1	18.52	19.37	0.0865
12	30	15	141500	707.5	DFT-s-OFDM 256 QAM	1@36	18.62	19.47	0.0885
12	30	15	141500	707.5	CP-OFDM QPSK	19@9	21.78	22.63	0.1832
12	30	15	141500	707.5	CP-OFDM QPSK	1@1	21.64	22.49	0.1774
12	30	15	141500	707.5	CP-OFDM QPSK	1@36	21.67	22.52	0.1786
12	30	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	18@9	23.3	24.15	0.2600
12	30	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@1	23.19	24.04	0.2535
12	30	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@36	23.21	24.06	0.2547
12	30	15	141700	708.5	DFT-s-OFDM QPSK	18@9	23.27	24.12	0.2582
12	30	15	141700	708.5	DFT-s-OFDM QPSK	1@1	23.16	24.01	0.2518
12	30	15	141700	708.5	DFT-s-OFDM QPSK	1@36	23.12	23.97	0.2495
12	30	15	141700	708.5	DFT-s-OFDM 16 QAM	18@9	22.28	23.13	0.2056
12	30	15	141700	708.5	DFT-s-OFDM 16 QAM	1@1	21.84	22.69	0.1858
12	30	15	141700	708.5	DFT-s-OFDM 16 QAM	1@36	21.76	22.61	0.1824
12	30	15	141700	708.5	DFT-s-OFDM 64 QAM	18@9	20.77	21.62	0.1452
12	30	15	141700	708.5	DFT-s-OFDM 64 QAM	1@1	20.81	21.66	0.1466
12	30	15	141700	708.5	DFT-s-OFDM 64 QAM	1@36	20.73	21.58	0.1439
12	30	15	141700	708.5	DFT-s-OFDM 256 QAM	18@9	18.88	19.73	0.0940
12	30	15	141700	708.5	DFT-s-OFDM 256 QAM	1@1	18.54	19.39	0.0869
12	30	15	141700	708.5	DFT-s-OFDM 256 QAM	1@36	18.63	19.48	0.0887
12	30	15	141700	708.5	CP-OFDM QPSK	19@9	21.8	22.65	0.1841
12	30	15	141700	708.5	CP-OFDM QPSK	1@1	21.67	22.52	0.1786
12	30	15	141700	708.5	CP-OFDM QPSK	1@36	21.61	22.46	0.1762

FR1 N12 -SCS 30k

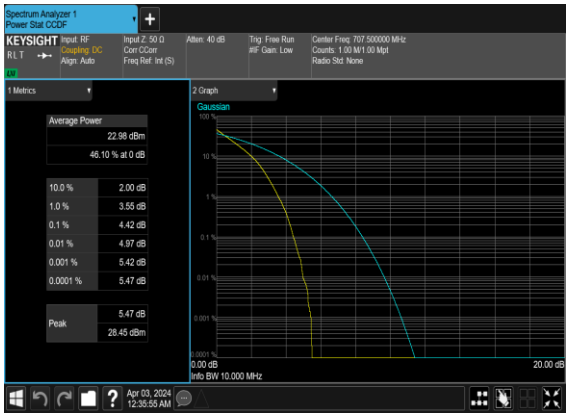
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0065	**PASS**	NV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0046	**PASS**	LV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0053	**PASS**	HV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0025	**PASS**	-30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0037	**PASS**	-20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0032	**PASS**	-10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0029	**PASS**	0℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0050	**PASS**	10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0065	**PASS**	20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0065	**PASS**	30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0033	**PASS**	40℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0049	**PASS**	50℃

Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
12	15	10	141500	707.5	DFT-s-OFDM PI/2 BPSK	50@0	4.42	13	**PASS**
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	5.7	13	**PASS**

N12(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

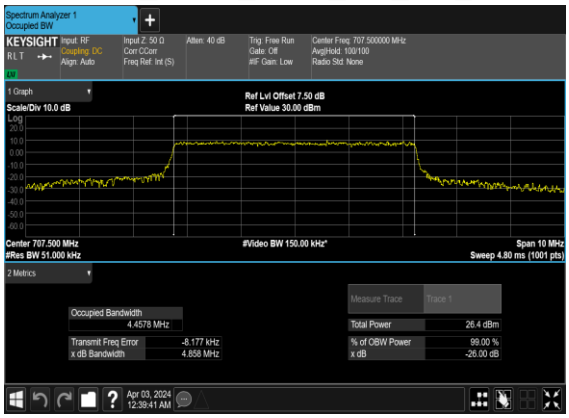


N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

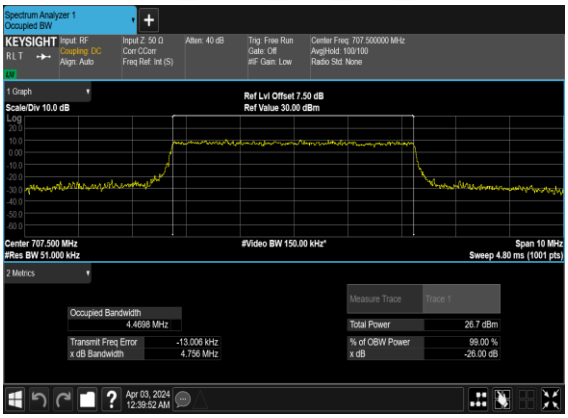
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
12	15	5	141500	707.5	CP-OFDM QPSK	25@0	4.4578	4.858
12	15	5	141500	707.5	CP-OFDM 16 QAM	25@0	4.4698	4.756
12	15	5	141500	707.5	CP-OFDM 64 QAM	25@0	4.4602	4.779
12	15	5	141500	707.5	CP-OFDM 256 QAM	25@0	4.4577	4.804
12	15	10	141500	707.5	CP-OFDM QPSK	52@0	9.2917	9.936
12	15	10	141500	707.5	CP-OFDM 16 QAM	52@0	9.2808	9.881
12	15	10	141500	707.5	CP-OFDM 64 QAM	52@0	9.2812	9.852
12	15	10	141500	707.5	CP-OFDM 256 QAM	52@0	9.2753	9.707
12	15	15	141500	707.5	CP-OFDM QPSK	79@0	14.082	14.7
12	15	15	141500	707.5	CP-OFDM 16 QAM	79@0	14.127	14.76
12	15	15	141500	707.5	CP-OFDM 64 QAM	79@0	14.101	14.77
12	15	15	141500	707.5	CP-OFDM 256 QAM	79@0	14.059	14.66

N12(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

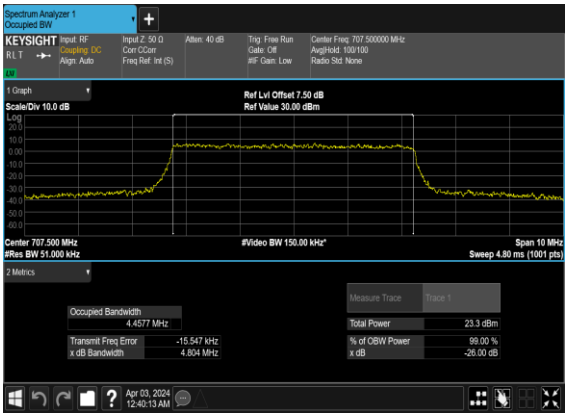


N12(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N12(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

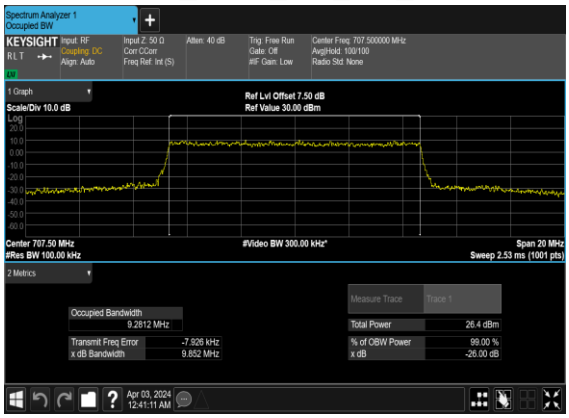
N12(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



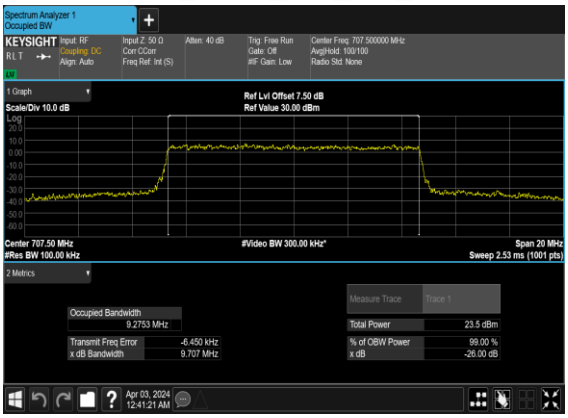
N12(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N12(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

N12(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N12(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

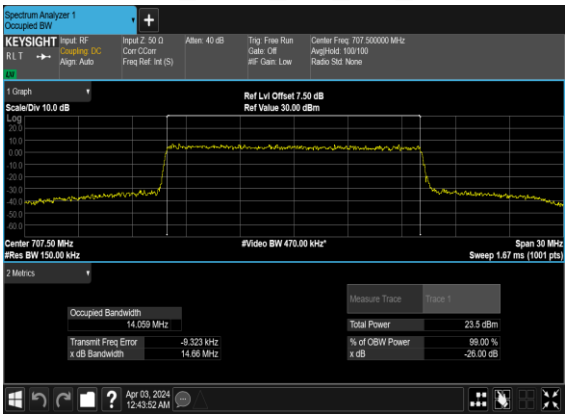


N12(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N12(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

N12(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N12(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

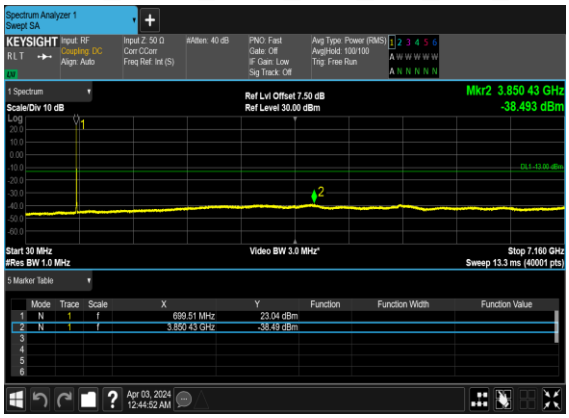


Conducted Spurious Emissions

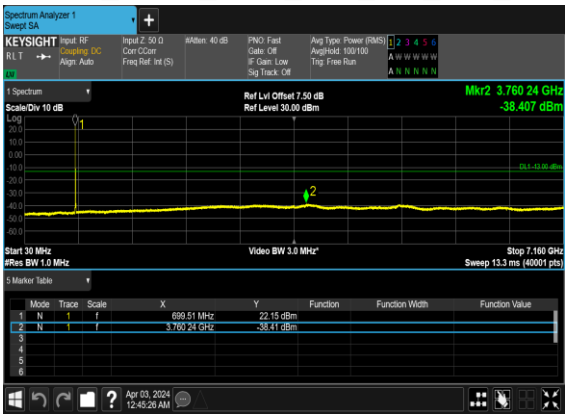
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	5	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	5	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	5	142700	713.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	10	140800	704.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	10	140800	704.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	10	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	10	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	10	142200	711.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	10	142200	711.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

12	15	10	142200	711.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	10	142200	711.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	15	141300	706.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	15	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	15	141500	707.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	15	141700	708.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

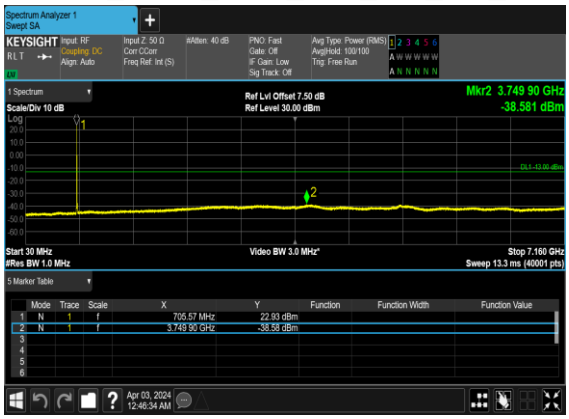
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



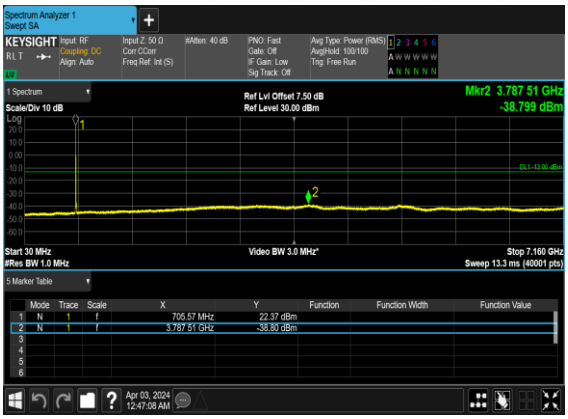
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



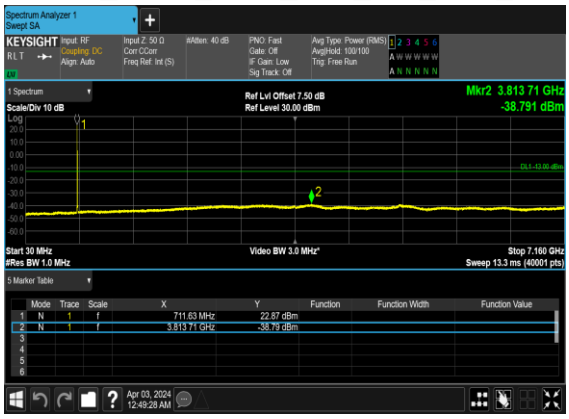
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



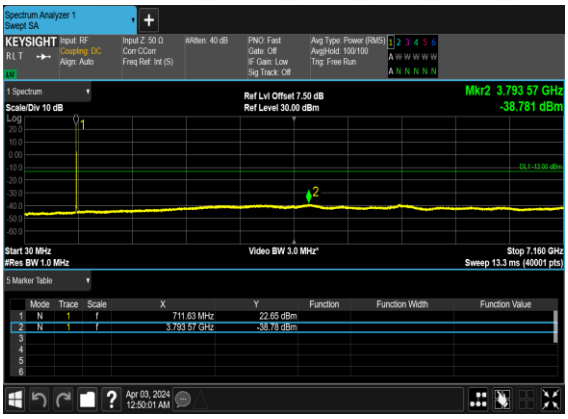
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



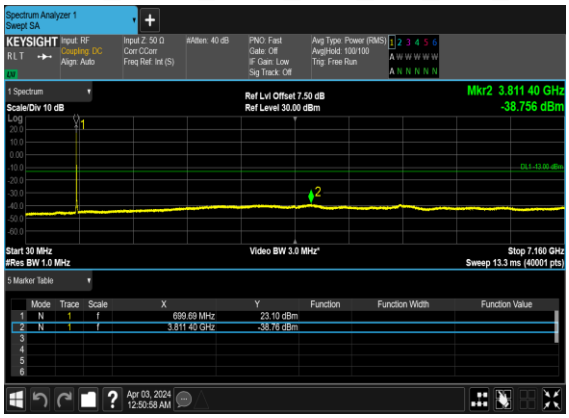
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



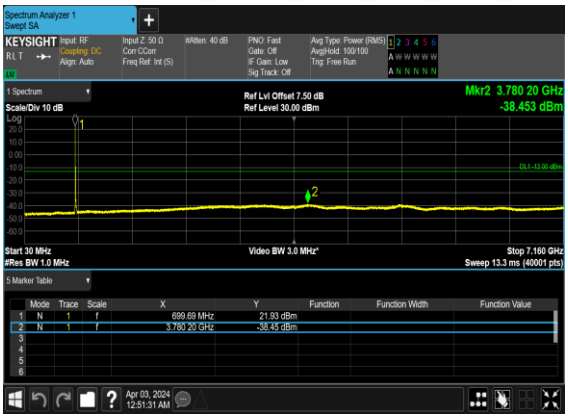
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



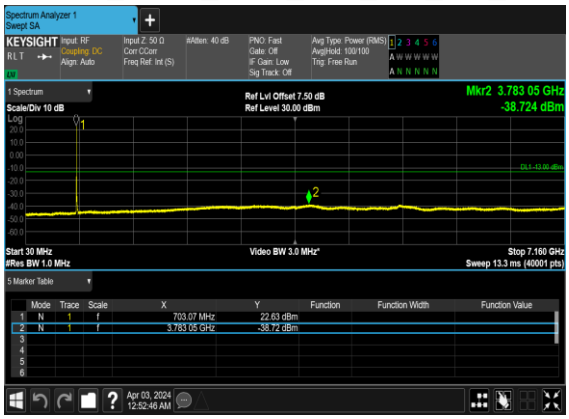
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



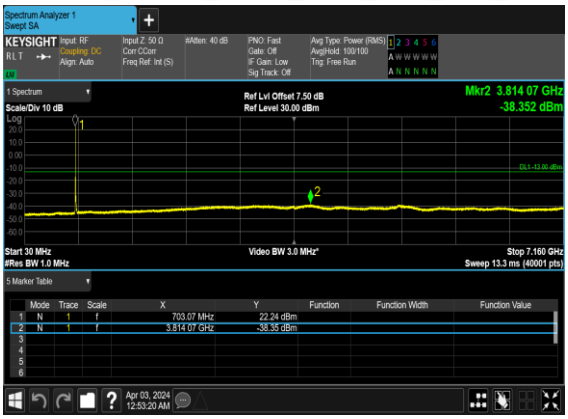
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

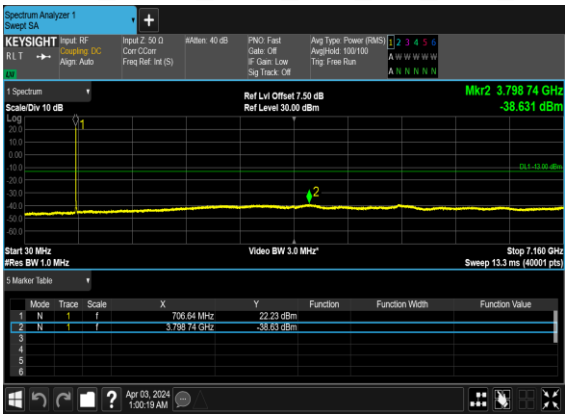


N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

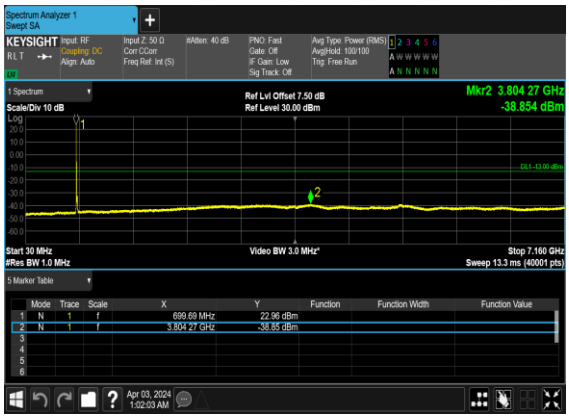


N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

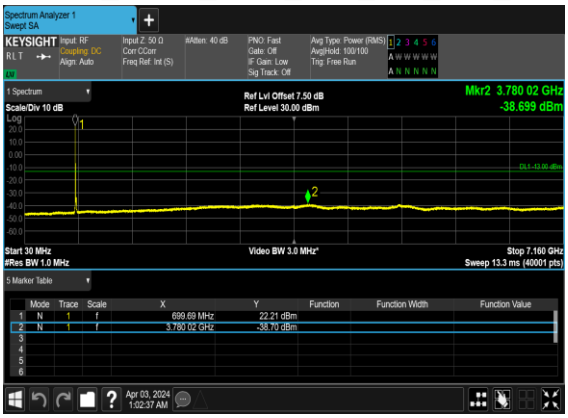
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

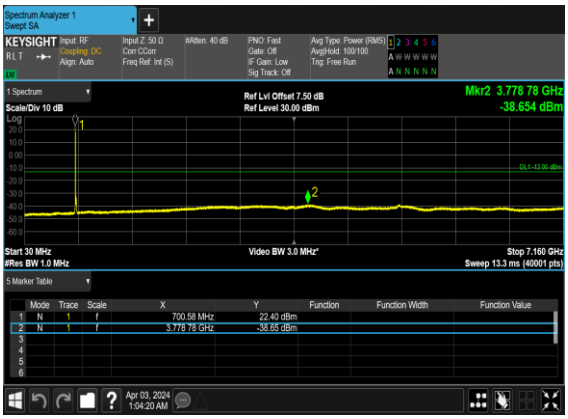


N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



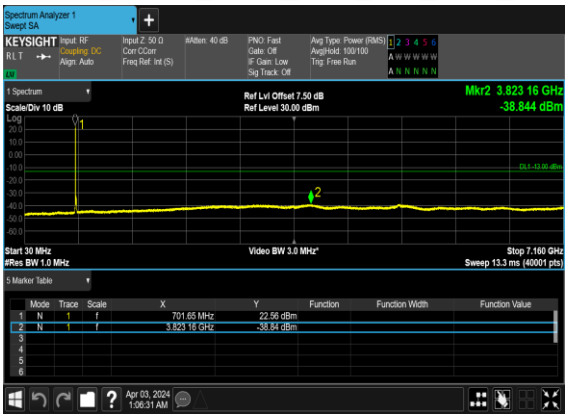
N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

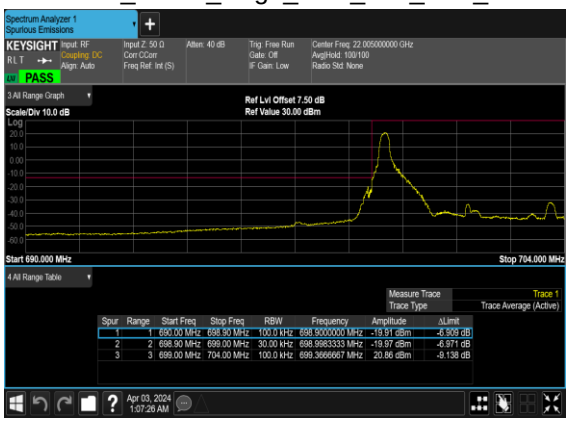
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



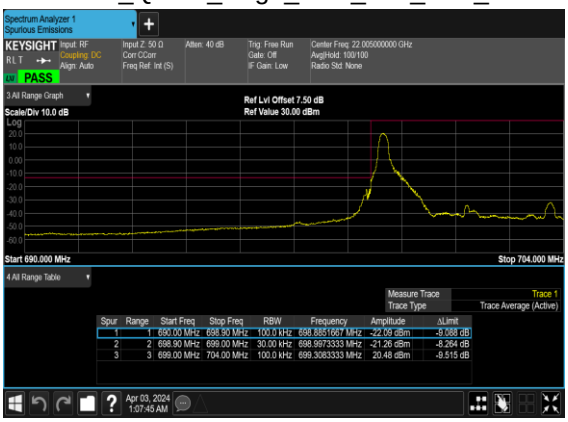
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
12	15	5	142700	713.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
12	15	10	140800	704.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
12	15	10	142200	711.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
12	15	10	142200	711.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
12	15	10	142200	711.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
12	15	10	142200	711.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
12	15	15	141300	706.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM BPSK	1@78	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@78	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
12	15	15	141700	708.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**

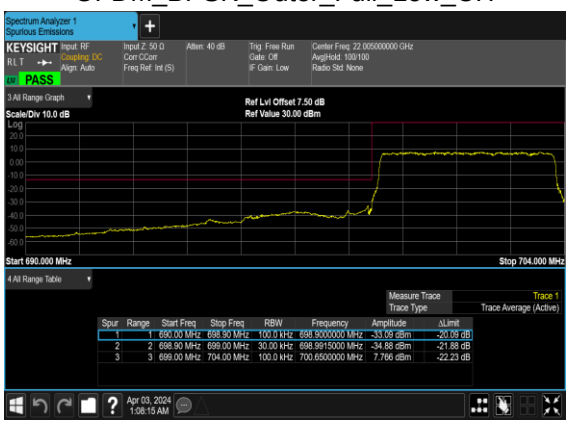
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



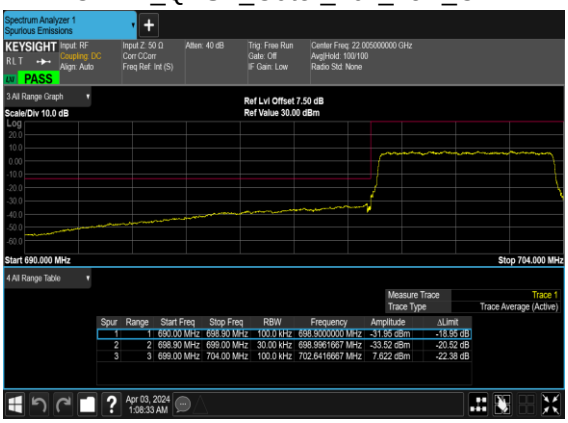
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



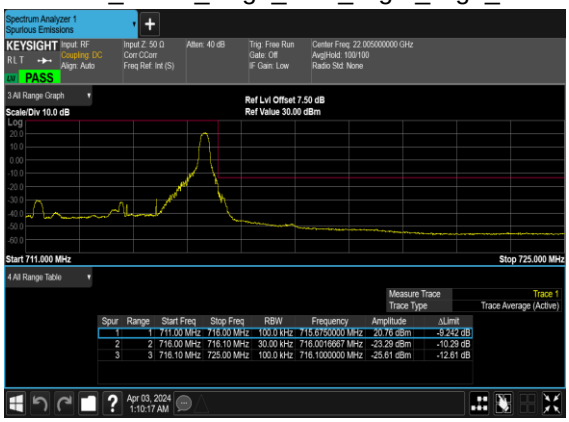
N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



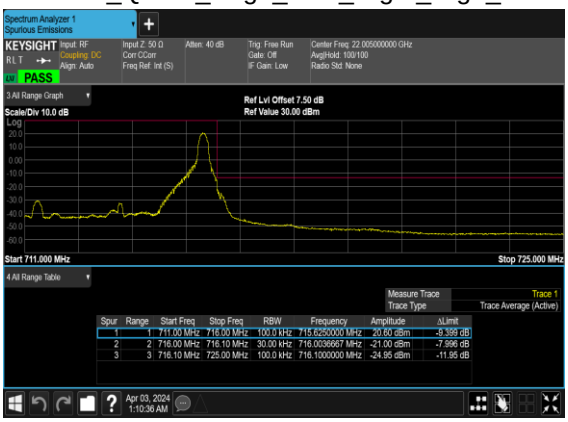
N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



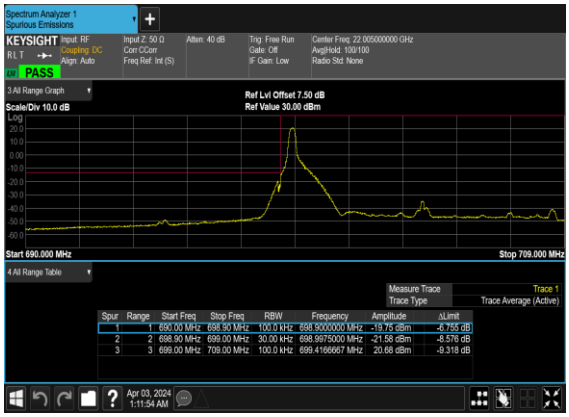
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



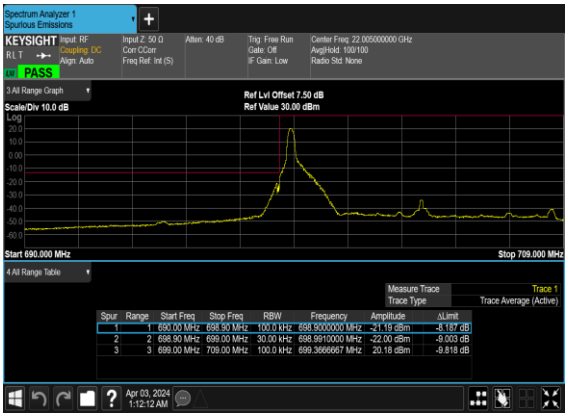
N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

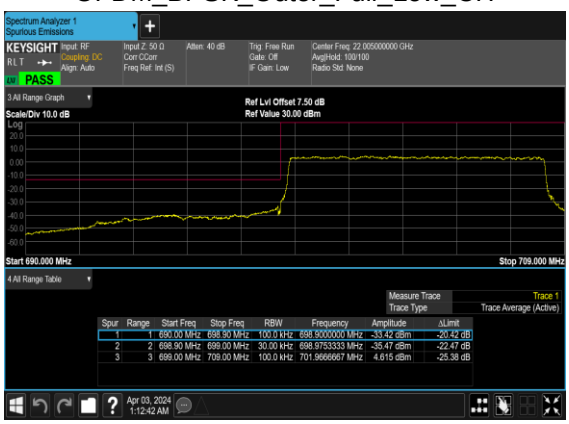
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



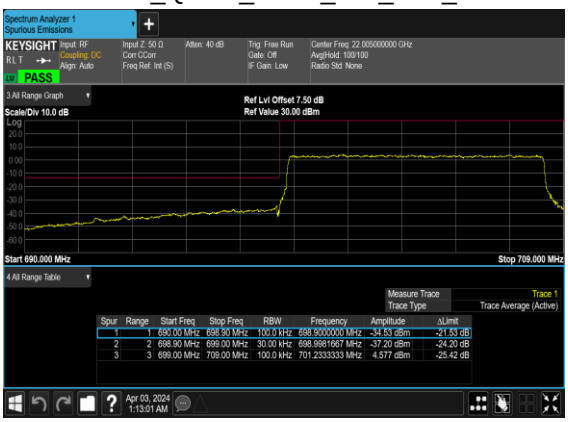
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



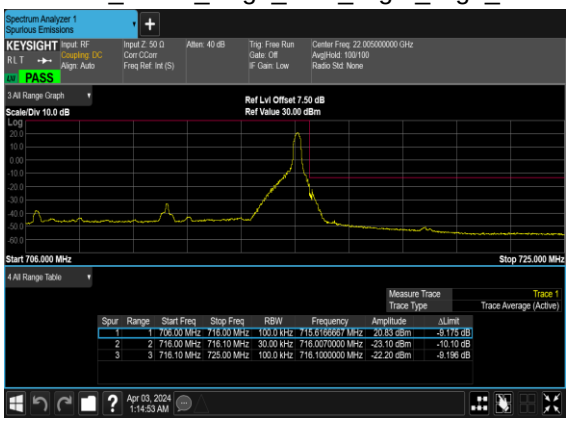
N12(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



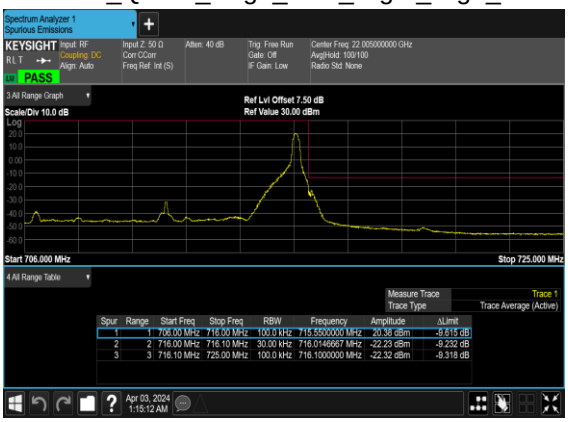
N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



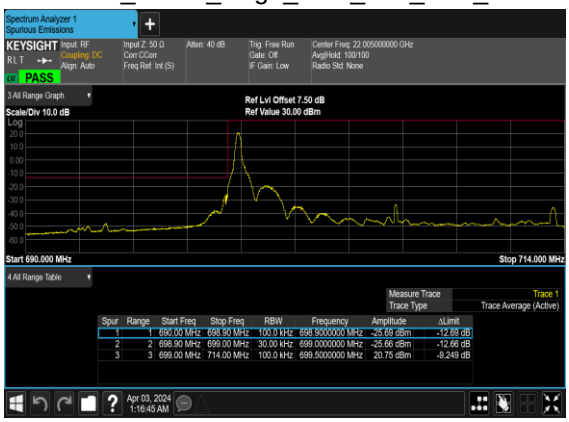
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



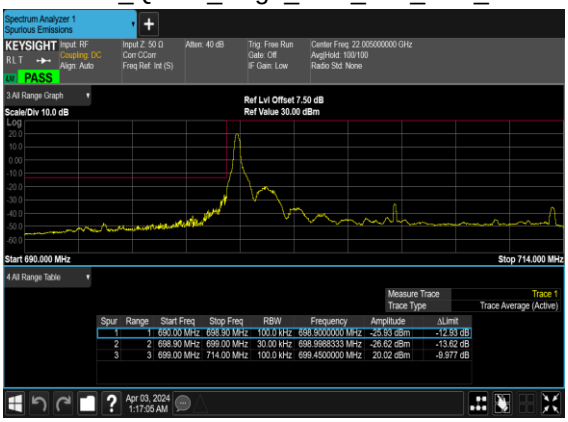
N12(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

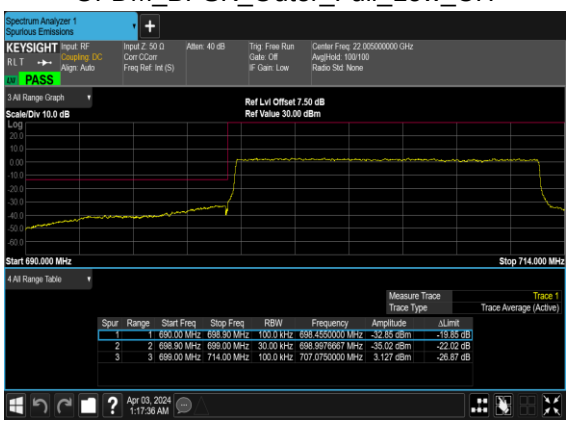
N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



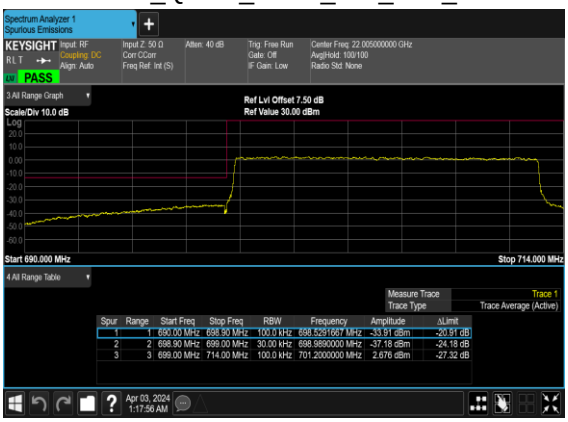
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



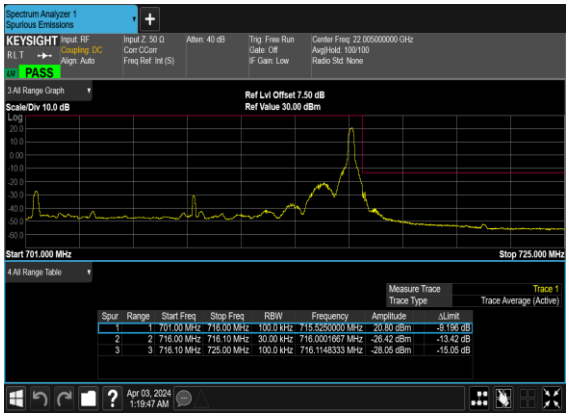
N12(15M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



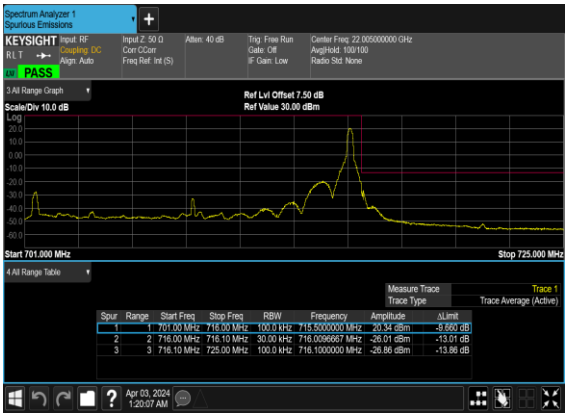
N12(15M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

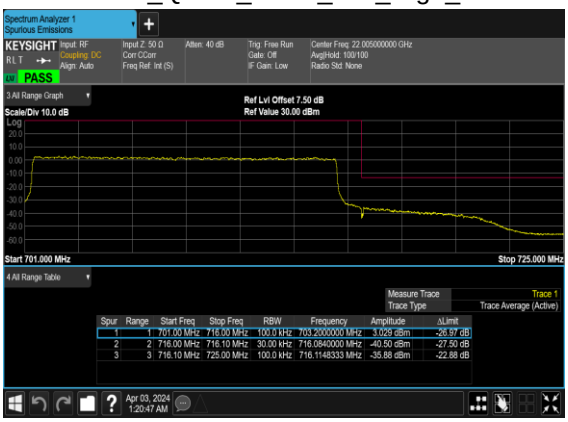


N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N12(15M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(15M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 ENDC_5A_N66A - SCS 15k

LTE Band: 5, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=3dBi

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	1@1	23.93	26.93	0.4932
66	15	5	342500	1712.5	DFT-s-OFDM 16 QAM	1@1	22.46	25.46	0.3516
66	15	5	349000	1745	DFT-s-OFDM QPSK	1@1	23.89	26.89	0.4887
66	15	5	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.61	25.61	0.3639
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@1	23.9	26.9	0.4898
66	15	5	355500	1777.5	DFT-s-OFDM 16 QAM	1@1	22.61	25.61	0.3639
66	15	10	343000	1715	DFT-s-OFDM QPSK	1@1	23.73	26.73	0.4710
66	15	10	343000	1715	DFT-s-OFDM 16 QAM	1@1	22.39	25.39	0.3459
66	15	10	349000	1745	DFT-s-OFDM QPSK	1@1	23.74	26.74	0.4721
66	15	10	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.48	25.48	0.3532
66	15	10	355000	1775	DFT-s-OFDM QPSK	1@1	23.77	26.77	0.4753
66	15	10	355000	1775	DFT-s-OFDM 16 QAM	1@1	22.51	25.51	0.3556
66	15	15	343500	1717.5	DFT-s-OFDM QPSK	1@1	23.91	26.91	0.4909
66	15	15	343500	1717.5	DFT-s-OFDM 16 QAM	1@1	22.51	25.51	0.3556
66	15	15	349000	1745	DFT-s-OFDM QPSK	1@1	23.96	26.96	0.4966
66	15	15	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.64	25.64	0.3664
66	15	15	354500	1772.5	DFT-s-OFDM QPSK	1@1	23.83	26.83	0.4819
66	15	15	354500	1772.5	DFT-s-OFDM 16 QAM	1@1	22.61	25.61	0.3639
66	15	20	344000	1720	DFT-s-OFDM QPSK	1@1	23.81	26.81	0.4797
66	15	20	344000	1720	DFT-s-OFDM 16 QAM	1@1	22.45	25.45	0.3508
66	15	20	349000	1745	DFT-s-OFDM QPSK	1@1	23.91	26.91	0.4909
66	15	20	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.64	25.64	0.3664
66	15	20	354000	1770	DFT-s-OFDM QPSK	1@1	23.78	26.78	0.4764
66	15	20	354000	1770	DFT-s-OFDM 16 QAM	1@1	22.44	25.44	0.3499
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@1	23.73	26.73	0.4710
66	15	25	344500	1722.5	DFT-s-OFDM 16 QAM	1@1	22.46	25.46	0.3516
66	15	25	349000	1745	DFT-s-OFDM QPSK	1@1	23.79	26.79	0.4775
66	15	25	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.67	25.67	0.3690
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@1	23.66	26.66	0.4634
66	15	25	353500	1767.5	DFT-s-OFDM 16 QAM	1@1	22.46	25.46	0.3516
66	15	30	345000	1725	DFT-s-OFDM QPSK	1@1	23.71	26.71	0.4688
66	15	30	345000	1725	DFT-s-OFDM 16 QAM	1@1	22.4	25.4	0.3467
66	15	30	349000	1745	DFT-s-OFDM QPSK	1@1	23.74	26.74	0.4721
66	15	30	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.49	25.49	0.3540
66	15	30	353000	1765	DFT-s-OFDM QPSK	1@1	23.62	26.62	0.4592
66	15	30	353000	1765	DFT-s-OFDM 16 QAM	1@1	22.36	25.36	0.3436

66	15	35	345500	1727.5	DFT-s-OFDM QPSK	1@1	23.46	26.46	0.4426
66	15	35	345500	1727.5	DFT-s-OFDM 16 QAM	1@1	22.21	25.21	0.3319
66	15	35	349000	1745	DFT-s-OFDM QPSK	1@1	23.52	26.52	0.4487
66	15	35	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.24	25.24	0.3342
66	15	35	352500	1762.5	DFT-s-OFDM QPSK	1@1	23.4	26.4	0.4365
66	15	35	352500	1762.5	DFT-s-OFDM 16 QAM	1@1	22.11	25.11	0.3243
66	15	40	346000	1730	DFT-s-OFDM QPSK	1@1	23.48	26.48	0.4446
66	15	40	346000	1730	DFT-s-OFDM 16 QAM	1@1	22.14	25.14	0.3266
66	15	40	349000	1745	DFT-s-OFDM QPSK	1@1	23.4	26.4	0.4365
66	15	40	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.21	25.21	0.3319
66	15	40	352000	1760	DFT-s-OFDM QPSK	1@1	23.28	26.28	0.4246
66	15	40	352000	1760	DFT-s-OFDM 16 QAM	1@1	22.11	25.11	0.3243
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	120@60	23.6	26.6	0.4571
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	1@1	23.32	26.32	0.4285
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	1@240	23.28	26.28	0.4246
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	120@60	23.98	26.98	0.4989
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@1	23.38	26.38	0.4345
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@240	23.33	26.33	0.4295
66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	120@60	22.64	25.64	0.3664
66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	1@1	22.28	25.28	0.3373
66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	1@240	22.29	25.29	0.3381
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	120@60	21.23	24.23	0.2649
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	1@1	20.55	23.55	0.2265
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	1@240	20.49	23.49	0.2234
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	120@60	19.15	22.15	0.1641
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	1@1	19.29	22.29	0.1694
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	1@240	19.25	22.25	0.1679
66	15	45	346500	1732.5	CP-OFDM QPSK	121@60	22.11	25.11	0.3243
66	15	45	346500	1732.5	CP-OFDM QPSK	1@1	21.83	24.83	0.3041
66	15	45	346500	1732.5	CP-OFDM QPSK	1@240	21.78	24.78	0.3006
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	120@60	23.51	26.51	0.4477
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	1@1	23.27	26.27	0.4236
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	1@240	23.37	26.37	0.4335
66	15	45	349000	1745	DFT-s-OFDM QPSK	120@60	23.61	26.61	0.4581
66	15	45	349000	1745	DFT-s-OFDM QPSK	1@1	23.4	26.4	0.4365
66	15	45	349000	1745	DFT-s-OFDM QPSK	1@240	23.47	26.47	0.4436
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	120@60	22.61	25.61	0.3639
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.21	25.21	0.3319
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	1@240	22.33	25.33	0.3412
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	120@60	21.15	24.15	0.2600
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	1@1	20.56	23.56	0.2270
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	1@240	20.69	23.69	0.2339
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	120@60	19.06	22.06	0.1607
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	1@1	19.31	22.31	0.1702
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	1@240	19.4	22.4	0.1738
66	15	45	349000	1745	CP-OFDM QPSK	121@60	22.08	25.08	0.3221

66	15	45	349000	1745	CP-OFDM QPSK	1@1	21.75	24.75	0.2985
66	15	45	349000	1745	CP-OFDM QPSK	1@240	21.78	24.78	0.3006
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	120@60	23.51	26.51	0.4477
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	1@1	23.4	26.4	0.4365
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	1@240	23.48	26.48	0.4446
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	120@60	23.54	26.54	0.4508
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@1	23.45	26.45	0.4416
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@240	23.67	26.67	0.4645
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	120@60	22.53	25.53	0.3573
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	1@1	22.29	25.29	0.3381
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	1@240	22.51	25.51	0.3556
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	120@60	21.14	24.14	0.2594
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	1@1	20.62	23.62	0.2301
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	1@240	20.74	23.74	0.2366
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	120@60	19.07	22.07	0.1611
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	1@1	19.41	22.41	0.1742
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	1@240	19.54	22.54	0.1795
66	15	45	351500	1757.5	CP-OFDM QPSK	121@60	22.05	25.05	0.3199
66	15	45	351500	1757.5	CP-OFDM QPSK	1@1	21.83	24.83	0.3041
66	15	45	351500	1757.5	CP-OFDM QPSK	1@240	21.99	24.99	0.3155

FR1 ENDC_5A_N66A - SCS 30k

LTE Band: 5, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=3dBi

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP(W)
66	30	10	343000	1715	DFT-s-OFDM QPSK	1@1	23.6	26.6	0.4571
66	30	10	343000	1715	DFT-s-OFDM 16 QAM	1@1	22.66	25.66	0.3681
66	30	10	349000	1745	DFT-s-OFDM QPSK	1@1	23.73	26.73	0.4710
66	30	10	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.59	25.59	0.3622
66	30	10	355000	1775	DFT-s-OFDM QPSK	1@1	23.79	26.79	0.4775
66	30	10	355000	1775	DFT-s-OFDM 16 QAM	1@1	22.76	25.76	0.3767
66	30	15	343500	1717.5	DFT-s-OFDM QPSK	1@1	23.57	26.57	0.4539
66	30	15	343500	1717.5	DFT-s-OFDM 16 QAM	1@1	22.62	25.62	0.3648
66	30	15	349000	1745	DFT-s-OFDM QPSK	1@1	23.72	26.72	0.4699
66	30	15	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.64	25.64	0.3664
66	30	15	354500	1772.5	DFT-s-OFDM QPSK	1@1	23.71	26.71	0.4688
66	30	15	354500	1772.5	DFT-s-OFDM 16 QAM	1@1	22.66	25.66	0.3681
66	30	20	344000	1720	DFT-s-OFDM QPSK	1@1	23.51	26.51	0.4477
66	30	20	344000	1720	DFT-s-OFDM 16 QAM	1@1	22.6	25.6	0.3631
66	30	20	349000	1745	DFT-s-OFDM QPSK	1@1	23.86	26.86	0.4853
66	30	20	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.93	25.93	0.3917
66	30	20	354000	1770	DFT-s-OFDM QPSK	1@1	23.9	26.9	0.4898
66	30	20	354000	1770	DFT-s-OFDM 16 QAM	1@1	22.88	25.88	0.3873
66	30	25	344500	1722.5	DFT-s-OFDM QPSK	1@1	22.79	25.79	0.3793
66	30	25	344500	1722.5	DFT-s-OFDM 16 QAM	1@1	22.57	25.57	0.3606
66	30	25	349000	1745	DFT-s-OFDM QPSK	1@1	23.8	26.8	0.4786
66	30	25	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.79	25.79	0.3793
66	30	25	353500	1767.5	DFT-s-OFDM QPSK	1@1	23.61	26.61	0.4581
66	30	25	353500	1767.5	DFT-s-OFDM 16 QAM	1@1	22.59	25.59	0.3622
66	30	30	345000	1725	DFT-s-OFDM QPSK	1@1	23.64	26.64	0.4613
66	30	30	345000	1725	DFT-s-OFDM 16 QAM	1@1	22.61	25.61	0.3639
66	30	30	349000	1745	DFT-s-OFDM QPSK	1@1	23.75	26.75	0.4732
66	30	30	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.73	25.73	0.3741
66	30	30	353000	1765	DFT-s-OFDM QPSK	1@1	23.6	26.6	0.4571
66	30	30	353000	1765	DFT-s-OFDM 16 QAM	1@1	22.56	25.56	0.3597
66	30	35	425500	1727.5	DFT-s-OFDM QPSK	1@1	23.47	26.47	0.4436
66	30	35	425500	1727.5	DFT-s-OFDM 16 QAM	1@1	22.44	25.44	0.3499
66	30	35	429000	1745	DFT-s-OFDM QPSK	1@1	23.61	26.61	0.4581
66	30	35	429000	1745	DFT-s-OFDM 16 QAM	1@1	22.63	25.63	0.3656
66	30	35	432500	1762.5	DFT-s-OFDM QPSK	1@1	23.4	26.4	0.4365
66	30	35	432500	1762.5	DFT-s-OFDM 16 QAM	1@1	22.49	25.49	0.3540

66	30	40	346000	1730	DFT-s-OFDM QPSK	1@1	23.4	26.4	0.4365
66	30	40	346000	1730	DFT-s-OFDM 16 QAM	1@1	22.35	25.35	0.3428
66	30	40	349000	1745	DFT-s-OFDM QPSK	1@1	23.49	26.49	0.4457
66	30	40	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.45	25.45	0.3508
66	30	40	352000	1760	DFT-s-OFDM QPSK	1@1	23.42	26.42	0.4385
66	30	40	352000	1760	DFT-s-OFDM 16 QAM	1@1	22.41	25.41	0.3475
66	30	45	426500	1732.5	DFT-s-OFDM PI/2 BPSK	54@27	23.75	26.75	0.4732
66	30	45	426500	1732.5	DFT-s-OFDM PI/2 BPSK	1@1	23.47	26.47	0.4436
66	30	45	426500	1732.5	DFT-s-OFDM PI/2 BPSK	1@117	23.54	26.54	0.4508
66	30	45	426500	1732.5	DFT-s-OFDM QPSK	54@27	23.81	26.81	0.4797
66	30	45	426500	1732.5	DFT-s-OFDM QPSK	1@1	23.46	26.46	0.4426
66	30	45	426500	1732.5	DFT-s-OFDM QPSK	1@117	23.54	26.54	0.4508
66	30	45	426500	1732.5	DFT-s-OFDM 16 QAM	54@27	22.92	25.92	0.3908
66	30	45	426500	1732.5	DFT-s-OFDM 16 QAM	1@1	22.44	25.44	0.3499
66	30	45	426500	1732.5	DFT-s-OFDM 16 QAM	1@117	22.37	25.37	0.3443
66	30	45	426500	1732.5	DFT-s-OFDM 64 QAM	54@27	21.36	24.36	0.2729
66	30	45	426500	1732.5	DFT-s-OFDM 64 QAM	1@1	21.06	24.06	0.2547
66	30	45	426500	1732.5	DFT-s-OFDM 64 QAM	1@117	21.1	24.1	0.2570
66	30	45	426500	1732.5	DFT-s-OFDM 256 QAM	54@27	19.35	22.35	0.1718
66	30	45	426500	1732.5	DFT-s-OFDM 256 QAM	1@1	19.26	22.26	0.1683
66	30	45	426500	1732.5	DFT-s-OFDM 256 QAM	1@117	19.3	22.3	0.1698
66	30	45	426500	1732.5	CP-OFDM QPSK	59@29	22.43	25.43	0.3491
66	30	45	426500	1732.5	CP-OFDM QPSK	1@1	21.87	24.87	0.3069
66	30	45	426500	1732.5	CP-OFDM QPSK	1@117	21.98	24.98	0.3148
66	30	45	429000	1745	DFT-s-OFDM PI/2 BPSK	54@27	23.76	26.76	0.4742
66	30	45	429000	1745	DFT-s-OFDM PI/2 BPSK	1@1	23.57	26.57	0.4539
66	30	45	429000	1745	DFT-s-OFDM PI/2 BPSK	1@117	23.63	26.63	0.4603
66	30	45	429000	1745	DFT-s-OFDM QPSK	54@27	23.81	26.81	0.4797
66	30	45	429000	1745	DFT-s-OFDM QPSK	1@1	23.69	26.69	0.4667
66	30	45	429000	1745	DFT-s-OFDM QPSK	1@117	23.73	26.73	0.4710
66	30	45	429000	1745	DFT-s-OFDM 16 QAM	54@27	22.83	25.83	0.3828
66	30	45	429000	1745	DFT-s-OFDM 16 QAM	1@1	22.57	25.57	0.3606
66	30	45	429000	1745	DFT-s-OFDM 16 QAM	1@117	22.5	25.5	0.3548
66	30	45	429000	1745	DFT-s-OFDM 64 QAM	54@27	21.34	24.34	0.2716
66	30	45	429000	1745	DFT-s-OFDM 64 QAM	1@1	21.13	24.13	0.2588
66	30	45	429000	1745	DFT-s-OFDM 64 QAM	1@117	21.14	24.14	0.2594
66	30	45	429000	1745	DFT-s-OFDM 256 QAM	54@27	19.38	22.38	0.1730
66	30	45	429000	1745	DFT-s-OFDM 256 QAM	1@1	19.32	22.32	0.1706
66	30	45	429000	1745	DFT-s-OFDM 256 QAM	1@117	19.34	22.34	0.1714
66	30	45	429000	1745	CP-OFDM QPSK	59@29	22.39	25.39	0.3459
66	30	45	429000	1745	CP-OFDM QPSK	1@1	22.03	25.03	0.3184
66	30	45	429000	1745	CP-OFDM QPSK	1@117	22.05	25.05	0.3199
66	30	45	431500	1757.5	DFT-s-OFDM PI/2 BPSK	54@27	23.75	26.75	0.4732

66	30	45	431500	1757.5	DFT-s-OFDM PI/2 BPSK	1@1	23.57	26.57	0.4539
66	30	45	431500	1757.5	DFT-s-OFDM PI/2 BPSK	1@117	23.76	26.76	0.4742
66	30	45	431500	1757.5	DFT-s-OFDM QPSK	54@27	23.77	26.77	0.4753
66	30	45	431500	1757.5	DFT-s-OFDM QPSK	1@1	23.71	26.71	0.4688
66	30	45	431500	1757.5	DFT-s-OFDM QPSK	1@117	23.94	26.94	0.4943
66	30	45	431500	1757.5	DFT-s-OFDM 16 QAM	54@27	22.76	25.76	0.3767
66	30	45	431500	1757.5	DFT-s-OFDM 16 QAM	1@1	22.63	25.63	0.3656
66	30	45	431500	1757.5	DFT-s-OFDM 16 QAM	1@117	23.02	26.02	0.3999
66	30	45	431500	1757.5	DFT-s-OFDM 64 QAM	54@27	21.23	24.23	0.2649
66	30	45	431500	1757.5	DFT-s-OFDM 64 QAM	1@1	21.18	24.18	0.2618
66	30	45	431500	1757.5	DFT-s-OFDM 64 QAM	1@117	21.42	24.42	0.2767
66	30	45	431500	1757.5	DFT-s-OFDM 256 QAM	54@27	19.25	22.25	0.1679
66	30	45	431500	1757.5	DFT-s-OFDM 256 QAM	1@1	19.36	22.36	0.1722
66	30	45	431500	1757.5	DFT-s-OFDM 256 QAM	1@117	19.63	22.63	0.1832
66	30	45	431500	1757.5	CP-OFDM QPSK	59@29	22.34	25.34	0.3420
66	30	45	431500	1757.5	CP-OFDM QPSK	1@1	22	25	0.3162
66	30	45	431500	1757.5	CP-OFDM QPSK	1@117	22.21	25.21	0.3319

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0039	**PASS**	NV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0038	**PASS**	LV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0045	**PASS**	HV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0044	**PASS**	-30℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0036	**PASS**	-20℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0043	**PASS**	-10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0024	**PASS**	0℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0039	**PASS**	20℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0024	**PASS**	30℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0044	**PASS**	40℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0039	**PASS**	50℃

Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
66	15	20	349000	1745.0	DFT-s-OFDM PI/2 BPSK	100@0	4.48	13	**PASS**
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	5.53	13	**PASS**

B5_N66(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

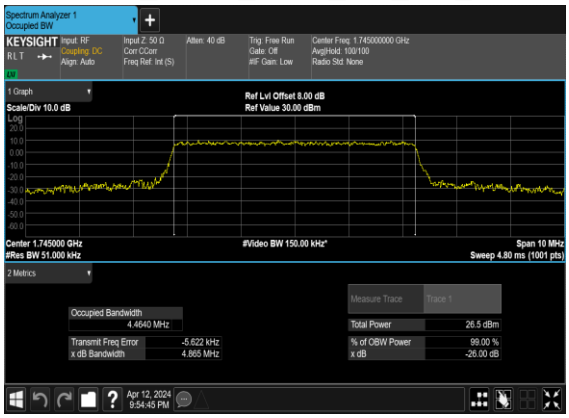
B5_N66(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

Occupied Bandwidth

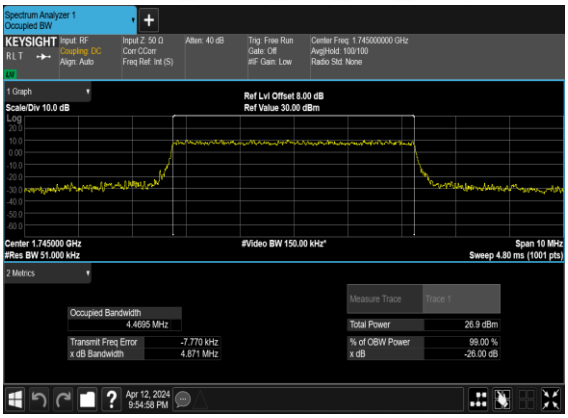
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
66	15	5	349000	1745.0	CP-OFDM QPSK	25@0	4.464	4.865
66	15	5	349000	1745.0	CP-OFDM 16 QAM	25@0	4.4695	4.871
66	15	5	349000	1745.0	CP-OFDM 64 QAM	25@0	4.4726	4.826
66	15	5	349000	1745.0	CP-OFDM 256 QAM	25@0	4.4613	4.786
66	15	10	349000	1745.0	CP-OFDM QPSK	52@0	9.277	9.795
66	15	10	349000	1745.0	CP-OFDM 16 QAM	52@0	9.296	9.828
66	15	10	349000	1745.0	CP-OFDM 64 QAM	52@0	9.2888	9.798
66	15	10	349000	1745.0	CP-OFDM 256 QAM	52@0	9.2919	9.717
66	15	15	349000	1745.0	CP-OFDM QPSK	79@0	14.103	14.76
66	15	15	349000	1745.0	CP-OFDM 16 QAM	79@0	14.068	14.67
66	15	15	349000	1745.0	CP-OFDM 64 QAM	79@0	14.1	14.72
66	15	15	349000	1745.0	CP-OFDM 256 QAM	79@0	14.11	14.75
66	15	20	349000	1745.0	CP-OFDM QPSK	106@0	18.918	19.9
66	15	20	349000	1745.0	CP-OFDM 16 QAM	106@0	18.873	19.93
66	15	20	349000	1745.0	CP-OFDM 64 QAM	106@0	18.978	19.66
66	15	20	349000	1745.0	CP-OFDM 256 QAM	106@0	18.92	19.75
66	15	25	349000	1745.0	CP-OFDM QPSK	133@0	23.743	24.71
66	15	25	349000	1745.0	CP-OFDM 16 QAM	133@0	23.703	24.87
66	15	25	349000	1745.0	CP-OFDM 64 QAM	133@0	23.686	24.87
66	15	25	349000	1745.0	CP-OFDM 256 QAM	133@0	23.765	24.83
66	15	30	349000	1745.0	CP-OFDM QPSK	160@0	28.556	29.56
66	15	30	349000	1745.0	CP-OFDM 16 QAM	160@0	28.551	29.74
66	15	30	349000	1745.0	CP-OFDM 64 QAM	160@0	28.554	29.71
66	15	30	349000	1745.0	CP-OFDM 256 QAM	160@0	28.507	29.66
66	15	35	349000	1745.0	CP-OFDM QPSK	188@0	33.518	34.86

66	15	35	349000	1745.0	CP-OFDM 16 QAM	188@0	33.601	34.85
66	15	35	349000	1745.0	CP-OFDM 64 QAM	188@0	33.477	35.16
66	15	35	349000	1745.0	CP-OFDM 256 QAM	188@0	33.525	35.08
66	15	40	349000	1745.0	CP-OFDM QPSK	216@0	38.422	39.94
66	15	40	349000	1745.0	CP-OFDM 16 QAM	216@0	38.511	39.85
66	15	40	349000	1745.0	CP-OFDM 64 QAM	216@0	38.513	39.87
66	15	40	349000	1745.0	CP-OFDM 256 QAM	216@0	38.539	39.91
66	15	45	349000	1745.0	CP-OFDM QPSK	242@0	43.132	44.81
66	15	45	349000	1745.0	CP-OFDM 16 QAM	242@0	43.09	44.94
66	15	45	349000	1745.0	CP-OFDM 64 QAM	242@0	43.239	44.75
66	15	45	349000	1745.0	CP-OFDM 256 QAM	242@0	43.102	44.81

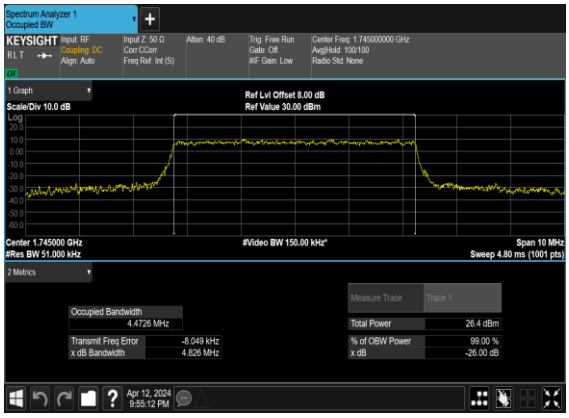
B5_N66(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



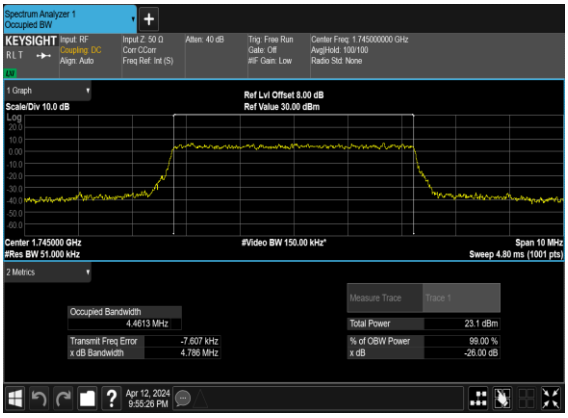
B5_N66(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



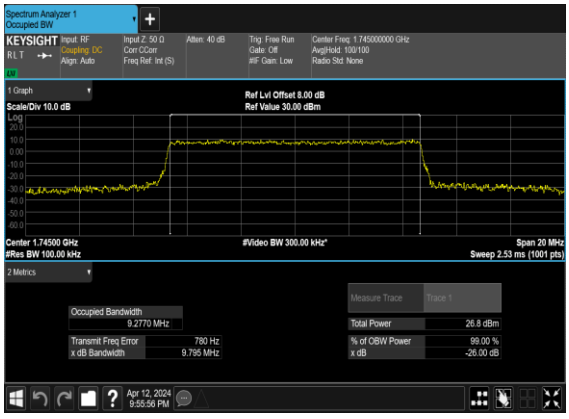
B5_N66(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



B5_N66(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

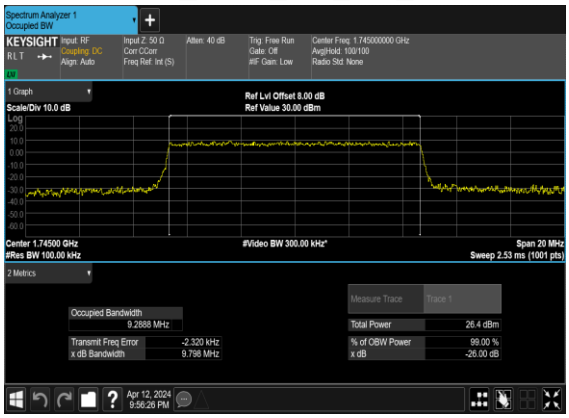


B5_N66(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

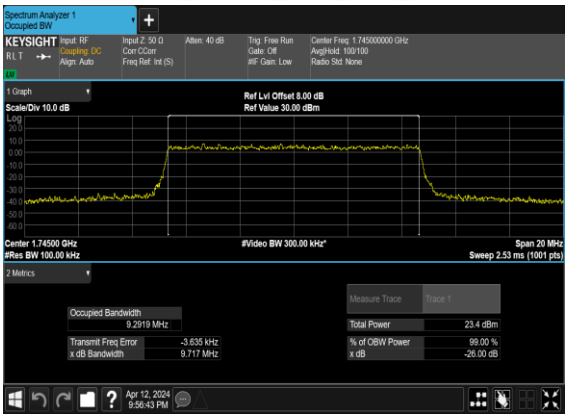


B5_N66(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

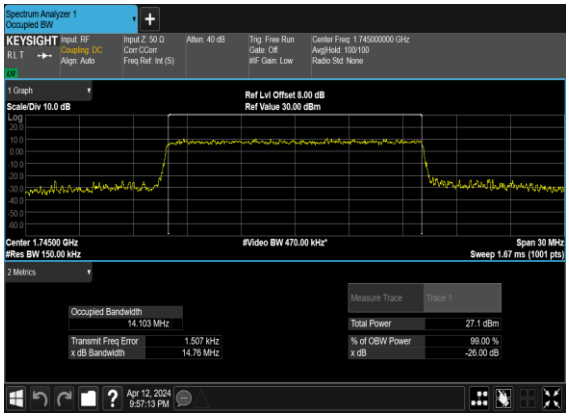
B5_N66(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



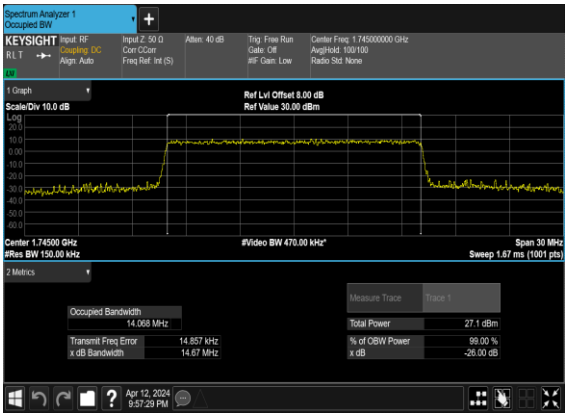
B5_N66(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



B5_N66(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N66(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



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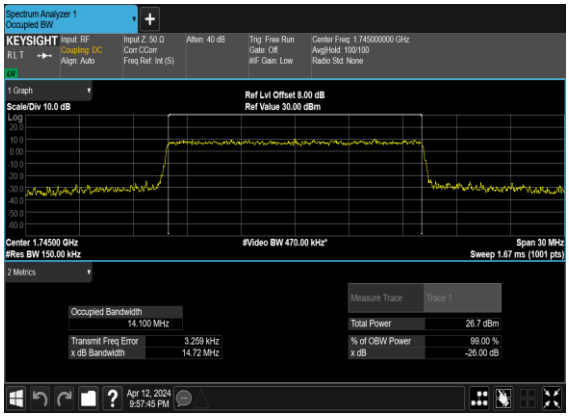
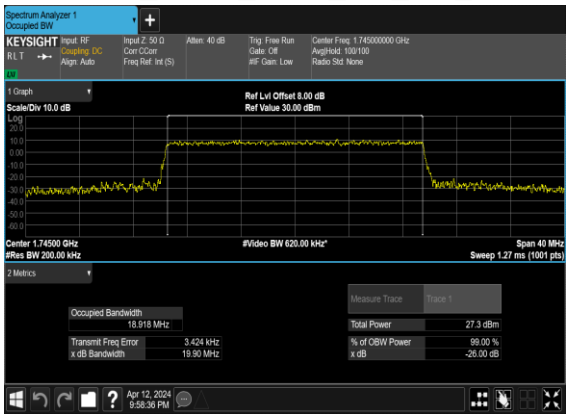
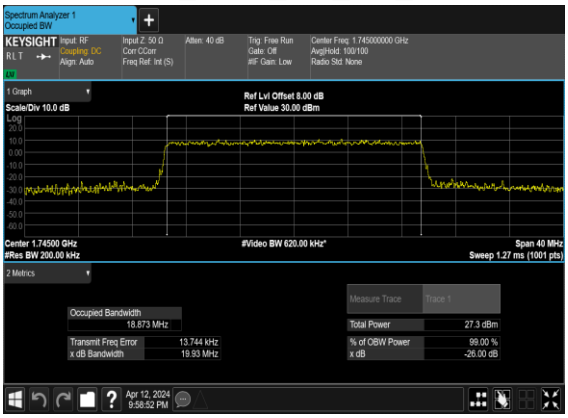


B5_N66(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

B5_N66(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N66(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



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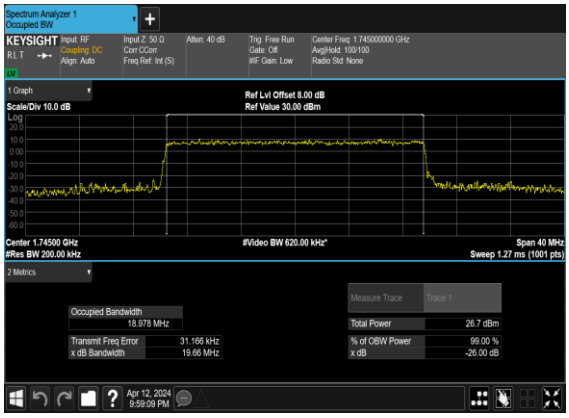
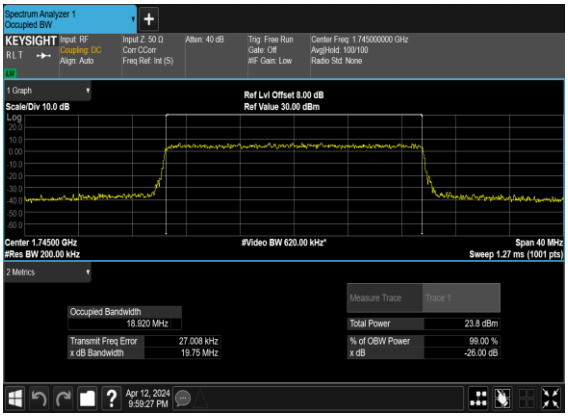
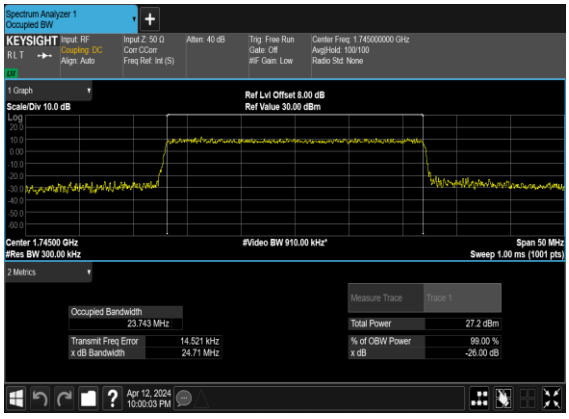


B5_N66(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



B5_N66(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



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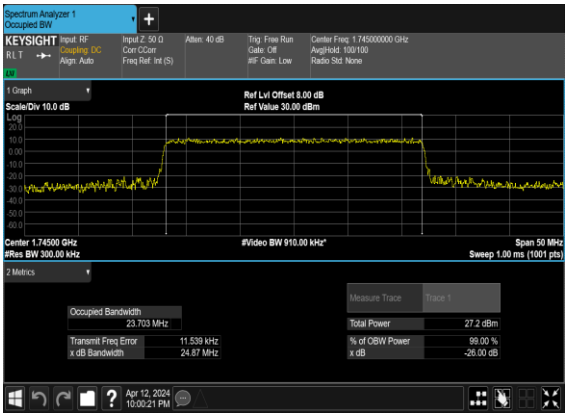
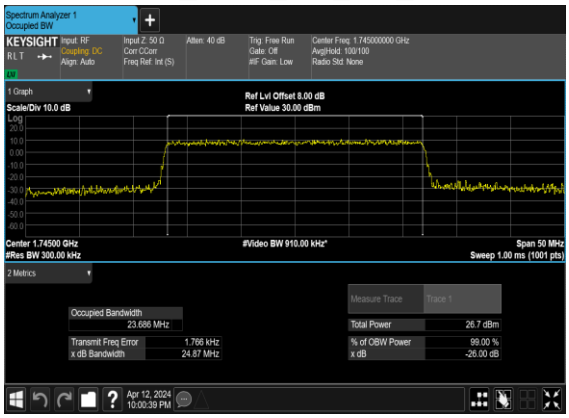
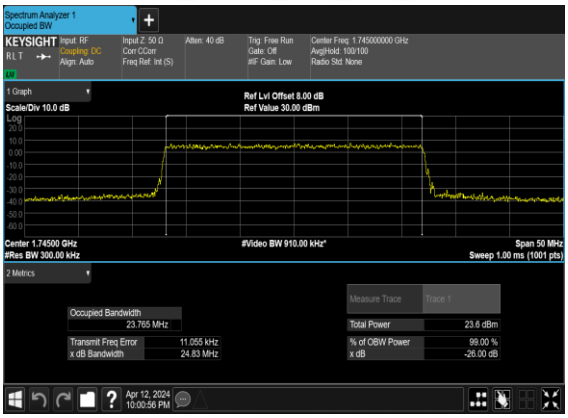


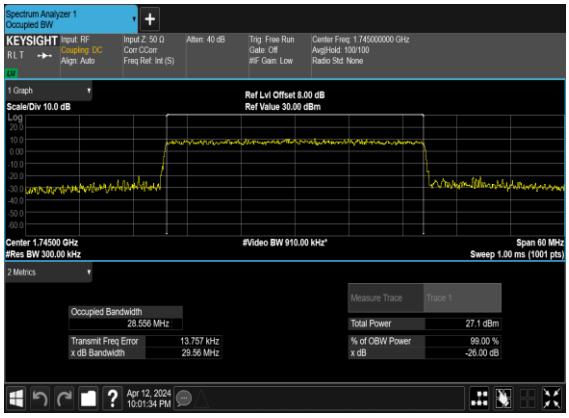
B5_N66(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



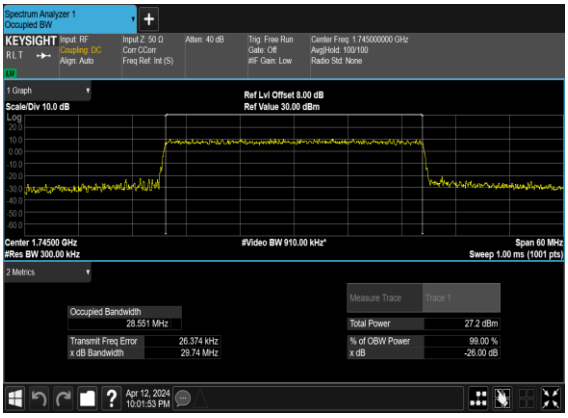
B5_N66(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



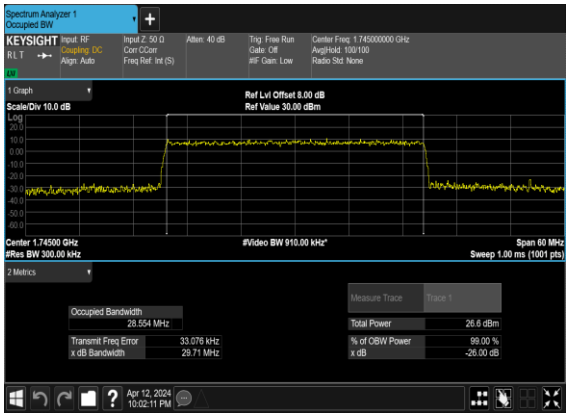
B5_N66(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N66(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B5_N66(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



B5_N66(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH