FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2517-1, XT2517-2, XT2517-3, XT2517V
FCC ID	: IHDT56AT8
STANDARD	: 47 CFR Part 27
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Nov. 09, 2024 ~ Dec. 07, 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.

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

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)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG4O3003N	Rev. 01	Initial issue of report	Dec. 17, 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(b)(10) §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, n70)	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, n70) (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, n70) (5G NR n12, n71)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §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, n70) (5G NR n12, n71)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 40.16 dB at 2096.000 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

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2517-1, XT2517-2, XT2517-3, XT2517V
FCC ID	IHDT56AT8
IMEI Code	Conducted : 358926210030460 Radiation : 358926210036111
HW Version	DVT2
SW Version	VVA35.34
EUT Stage	Identical Prototype

Note: The four models name XT2517-1, XT2517-2, XT2517-3, XT2517V are the same product except model name different for market segment.

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 n70 : 1695 MHz ~ 1710 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 n70 : 1995 MHz ~ 2020 MHz 5G NR n71: 617 MHz ~ 652 MHz	
Bandwidth	n12: 5MHz / 10MHz / 15MHz n66: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz n70: 5MHz / 10MHz / 15MHz / 20MHz(Downlink Only) / 25MHz(Downlink Only) n71: 5MHz / 10MHz / 15MHz / 20MHz	
SCS	15kHz	
Antenna Gain	**<Ant. 0>:**	**<Ant. 1>:**
	n12:-4.5 dBi	n12:-6.3 dBi

	n66:-0.8 dBi	n66:-1.5 dBi
	n70:-0.8 dBi	n70:-1.5 dBi
	n71:-5.0 dBi	n71:-5.3 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	

Remark:

1. The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP are shown in the report, 5G NR n12/n66/n70/n71 for Ant. 0.
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
3. 5G NR n12/n66/n71 support SA mode and NSA mode. According to the maximum power between SA and NSA mode, SA covers NSA mode.
4. 5G NR n70 supports SA mode only.
5. The EN-DC mode combination could be referred to the product spec.
6. The device supports two PAs for 5G NR n66(main PA for SA/NSA mode and other PA for NSA mode), both the PAs are full tested.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP and Emission Designator

5G NR n12		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	701.5 ~ 713.5	0.0438	4M46G7D	0.0401	4M48W7D
10	704.0~ 711.0	0.0465	9M27G7D	0.0383	9M29W7D
15	706.5 ~ 708.5	0.0478	14M1G7D	0.0423	14M1W7D

5G NR n66		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)
5	1712.5 ~ 1777.5	0.1592	4M47G7D	0.1545	4M49W7D
10	1715.0 ~ 1775.0	0.1603	9M28G7D	0.1552	9M30W7D
15	1717.5 ~ 1772.5	0.1679	14M1G7D	0.1626	14M1W7D
20	1720.0 ~ 1770.0	0.1660	18M9G7D	0.1603	19M0W7D
25	1722.5 ~ 1767.5	0.1718	23M7G7D	0.1648	23M8W7D
30	1725.0 ~ 1765.0	0.1637	28M5G7D	0.1589	28M6W7D
35	1727.5 ~ 1762.5	0.1754	33M5G7D	0.1663	33M6W7D
40	1730.0 ~ 1760.0	0.1807	38M6G7D	0.1578	38M6W7D

5G NR n66 EN DC_2A-n66A		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)
5	1712.5 ~ 1777.5	0.1675	4M49G7D	0.1524	4M48W7D
10	1715.0 ~ 1775.0	0.1706	9M28G7D	0.1552	9M30W7D
15	1717.5 ~ 1772.5	0.1690	14M1G7D	0.1531	14M1W7D
20	1720.0 ~ 1770.0	0.1663	18M9G7D	0.1545	19M0W7D
25	1722.5 ~ 1767.5	0.1690	23M7G7D	0.1521	23M8W7D
30	1725.0 ~ 1765.0	0.1710	28M6G7D	0.1556	28M6W7D
35	1727.5 ~ 1762.5	0.1690	33M6G7D	0.1592	33M6W7D
40	1730.0 ~ 1760.0	0.1726	38M5G7D	0.1589	38M6W7D

5G NR n70		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)
5	1697.5 ~ 1707.5	0.1570	4M46G7D	0.1472	4M49W7D
10	1700.0 ~ 1705.0	0.1514	9M29G7D	0.1435	9M29W7D
15	1702.5	0.1652	14M1G7D	0.1507	14M1W7D

5G NR n71		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	665.5 ~ 695.5	0.0404	4M46G7D	0.0322	4M48W7D
10	668.0 ~ 693.0	0.0405	9M27G7D	0.0324	9M27W7D
15	670.5 ~ 690.5	0.0415	14M1G7D	0.0328	14M1W7D
20	673.0 ~ 688.0	0.0445	18M8G7D	0.0407	18M9W7D

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. (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

Test data subcontracted: test cases in section 4.4 of this report.

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

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	210616

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 27
- 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

1.10 Specification of Accessory

Accessories Information				
Battery 1	**Brand Name**	Motorola(COSMX)	**Model Name**	RH50
Battery 2	**Brand Name**	Motorola(SUNWODA)	**Model Name**	RH50
USB Cable 1	**Brand Name**	LUXSHARE	**Model Name**	SC18E08103
USB Cable 2	**Brand Name**	Saibao	**Model Name**	SC18D86731
Stylus	**Brand Name**	Techson	**Model Name**	SO28E49329

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/Y/Z plane) were recorded in this report.

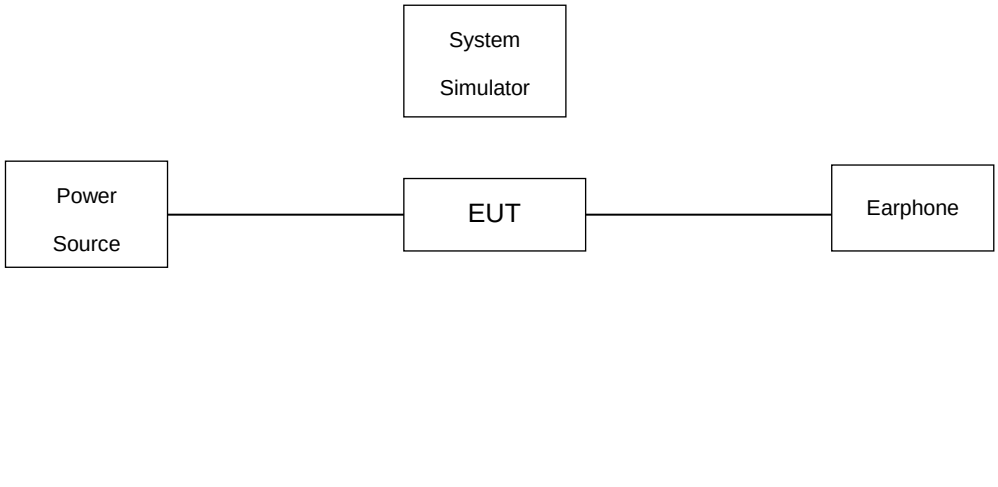
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	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	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	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
	n70	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	
	n70		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	
	n70	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	v				v	v	v		v
	n70	v	v	v	-	-	-	-	-	v	v				v	v	v		v
	n71	v	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	v				v		v	v	v
	n70	v	v	v	-	-	-	-	-	v	v				v		v	v	v
	n71	v	v	v	v					v	v				v		v	v	v
Frequency Stability	n12		v		-	-	-	-	-		v					v		v	
	n66				v						v					v		v	
	n70		v		-	-	-	-	-		v					v		v	
	n71				v						v					v		v	
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
	n70	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
	n70	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 = 3.91V ；Low Voltage =3.40V.；High Voltage =4.50V																		

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.	Earphone	N/A	N/A	N/A	N/A	N/A
5.	Adapter	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 and attenuator factor 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 and attenuator factor.

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				
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				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
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 n70 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
15	Channel	340500		
	Frequency	1702.5		
10	Channel	340000	340500	341000
	Frequency	1700	1702.5	1705
5	Channel	399500	340500	341500
	Frequency	1697.5	1702.5	1707.5

5G NR n71 Channel and Frequency List				
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

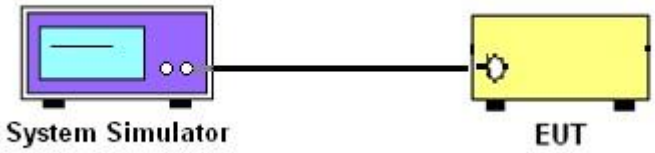
3 Conducted Test Items

3.1 Measuring Instruments

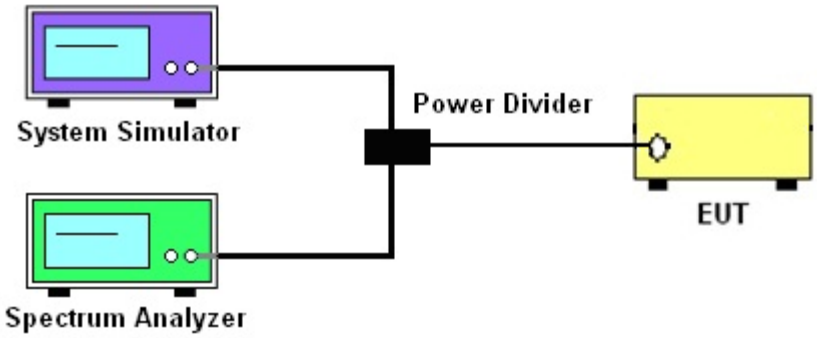
See list of measuring instruments of this test report.

3.2 Test Setup

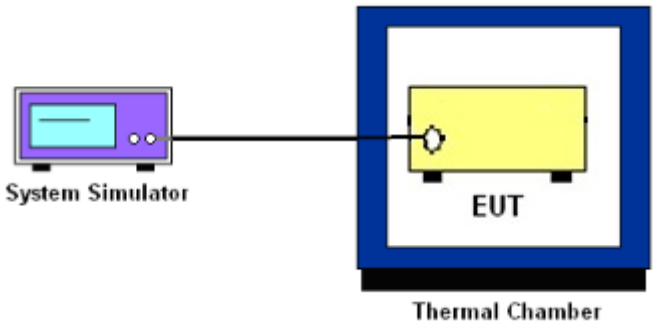
3.2.1 Conducted Output Power



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, n70.

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 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 (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.

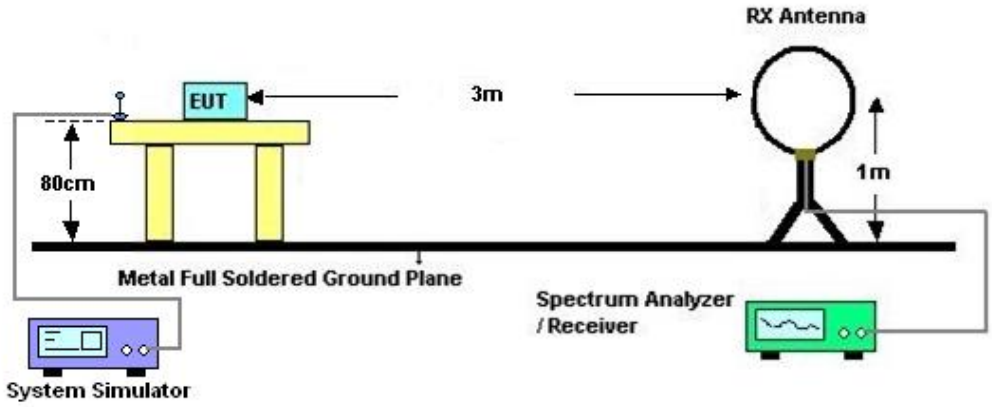
4 Radiated Test Items

4.1 Measuring Instruments

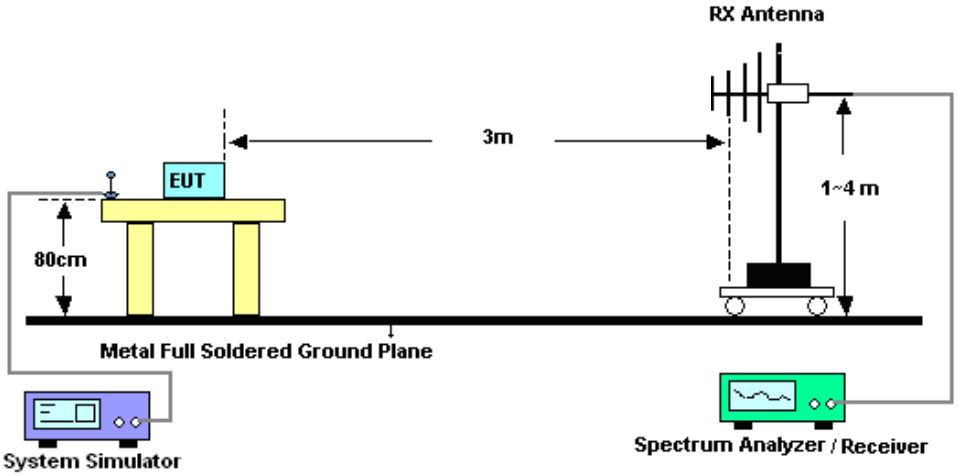
See list of measuring instruments of this test report.

4.2 Test Setup

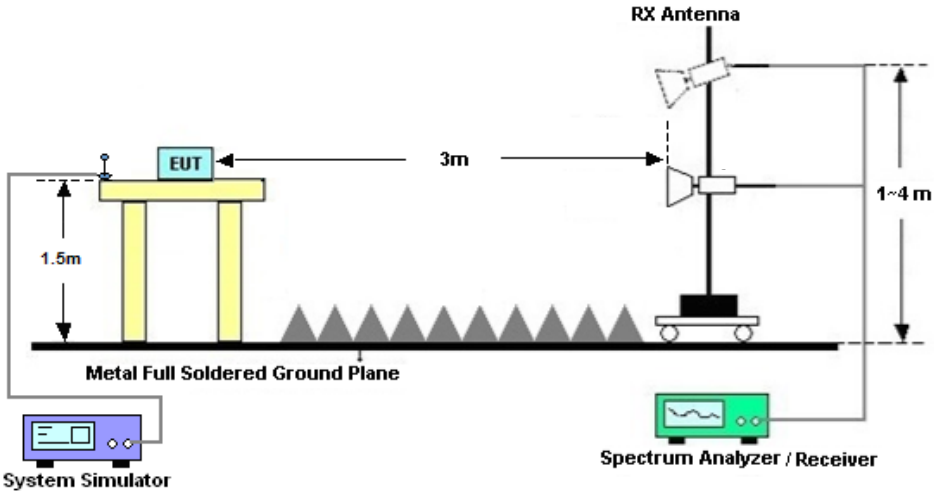
4.2.1 For radiated test below 30MHz



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.

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. 09, 2024	Nov. 09, 2024~ Nov. 28, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Nov. 09, 2024~ Nov. 28, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Nov. 09, 2024~ Nov. 28, 2024	Jul. 02, 2025	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010A	MY55370528	10Hz-44G,MAX 30dB	Oct. 11, 2024	Dec. 07, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 08, 2024	Dec. 07, 2024	Sep. 07, 2025	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Sep. 03, 2024	Dec. 07, 2024	Sep. 02, 2025	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00227860	1GHz~18GHz	Aug. 16, 2024	Dec. 07, 2024	Aug. 15, 2025	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Dec. 07, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Dec. 07, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40G A	060728	18~40GHz	Jan. 02, 2024	Dec. 07, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 09, 2024	Dec. 07, 2024	Oct. 08, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM01G18G A	060892	1Ghz-18Ghz	Oct. 09, 2024	Dec. 07, 2024	Oct. 08, 2025	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Dec. 07, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Dec. 07, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Dec. 07, 2024	NCR	Radiation (03CH04-KS)

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 (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.30dB

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

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

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

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

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

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

---------- 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(Ant.0)

Transmitter Conducted Output Power and ERP, (G_T - L_C)= -4.5dB

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	ERP (dBm)	ERP (W)
12	15	5	140300	701.5	DFT-s-OFDM QPSK	12@6	22.88	16.23	0.0420
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@1	23.02	16.37	0.0434
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@23	23.04	16.39	0.0436
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	12@6	22.42	15.77	0.0378
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	1@1	22.41	15.76	0.0377
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	1@23	22.45	15.8	0.0380
12	15	5	141500	707.5	DFT-s-OFDM QPSK	12@6	23.05	16.4	0.0437
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@1	23.06	16.41	0.0438
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@23	22.94	16.29	0.0426
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	12@6	22.68	16.03	0.0401
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.41	15.76	0.0377
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	1@23	22.44	15.79	0.0379
12	15	5	142700	713.5	DFT-s-OFDM QPSK	12@6	22.96	16.31	0.0428
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@1	22.85	16.2	0.0417
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@23	22.79	16.14	0.0411
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	12@6	22.48	15.83	0.0383
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	1@1	22.42	15.77	0.0378
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	1@23	22.43	15.78	0.0378
12	15	10	140800	704	DFT-s-OFDM QPSK	25@12	22.92	16.27	0.0424
12	15	10	140800	704	DFT-s-OFDM QPSK	1@1	22.95	16.3	0.0427
12	15	10	140800	704	DFT-s-OFDM QPSK	1@50	22.81	16.16	0.0413
12	15	10	140800	704	DFT-s-OFDM 16 QAM	25@12	22.46	15.81	0.0381
12	15	10	140800	704	DFT-s-OFDM 16 QAM	1@1	22.47	15.82	0.0382
12	15	10	140800	704	DFT-s-OFDM 16 QAM	1@50	22.37	15.72	0.0373
12	15	10	141500	707.5	DFT-s-OFDM QPSK	25@12	22.95	16.3	0.0427
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@1	22.96	16.31	0.0428
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@50	22.94	16.29	0.0426

12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	25@12	22.33	15.68	0.0370
12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.48	15.83	0.0383
12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	1@50	22.39	15.74	0.0375
12	15	10	142200	711	DFT-s-OFDM QPSK	25@12	23.28	16.63	0.0460
12	15	10	142200	711	DFT-s-OFDM QPSK	1@1	23.32	16.67	0.0465
12	15	10	142200	711	DFT-s-OFDM QPSK	1@50	23.11	16.46	0.0443
12	15	10	142200	711	DFT-s-OFDM 16 QAM	25@12	22.34	15.69	0.0371
12	15	10	142200	711	DFT-s-OFDM 16 QAM	1@1	22.44	15.79	0.0379
12	15	10	142200	711	DFT-s-OFDM 16 QAM	1@50	22.22	15.57	0.0361
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	36@18	23.21	16.56	0.0453
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@1	23.07	16.42	0.0439
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@77	22.94	16.29	0.0426
12	15	15	141300	706.5	DFT-s-OFDM QPSK	36@18	23.14	16.49	0.0446
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@1	23.26	16.61	0.0458
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@77	22.97	16.32	0.0429
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	36@18	22.71	16.06	0.0404
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@1	22.86	16.21	0.0418
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@77	22.75	16.1	0.0407
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	36@18	22.32	15.67	0.0369
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@1	22.31	15.66	0.0368
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@77	22.23	15.58	0.0361
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	36@18	20.16	13.51	0.0224
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@1	20.07	13.42	0.0220
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@77	19.94	13.29	0.0213
12	15	15	141300	706.5	CP-OFDM QPSK	39@19	23.14	16.49	0.0446
12	15	15	141300	706.5	CP-OFDM QPSK	1@1	23.18	16.53	0.0450
12	15	15	141300	706.5	CP-OFDM QPSK	1@77	23.07	16.42	0.0439
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	36@18	23.4	16.75	0.0473
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@1	23.21	16.56	0.0453
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@77	23.09	16.44	0.0441
12	15	15	141500	707.5	DFT-s-OFDM QPSK	36@18	23.44	16.79	0.0478
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@1	23.27	16.62	0.0459
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@77	23.14	16.49	0.0446

12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	36@18	22.87	16.22	0.0419
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.91	16.26	0.0423
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@77	22.71	16.06	0.0404
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	36@18	22.39	15.74	0.0375
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@1	22.36	15.71	0.0372
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@77	22.28	15.63	0.0366
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	36@18	20.29	13.64	0.0231
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@1	20.01	13.36	0.0217
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@77	19.93	13.28	0.0213
12	15	15	141500	707.5	CP-OFDM QPSK	39@19	23.24	16.59	0.0456
12	15	15	141500	707.5	CP-OFDM QPSK	1@1	23.21	16.56	0.0453
12	15	15	141500	707.5	CP-OFDM QPSK	1@77	22.67	16.02	0.0400
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	36@18	23.17	16.52	0.0449
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@1	23.05	16.4	0.0437
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@77	22.76	16.11	0.0408
12	15	15	141700	708.5	DFT-s-OFDM QPSK	36@18	23.19	16.54	0.0451
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@1	23.1	16.45	0.0442
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@77	22.83	16.18	0.0415
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	36@18	22.83	16.18	0.0415
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@1	22.84	16.19	0.0416
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@77	22.57	15.92	0.0391
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	36@18	22.37	15.72	0.0373
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@1	22.37	15.72	0.0373
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@77	22.15	15.5	0.0355
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	36@18	20.25	13.6	0.0229
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@1	20.05	13.4	0.0219
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@77	19.8	13.15	0.0207
12	15	15	141700	708.5	CP-OFDM QPSK	39@19	23.24	16.59	0.0456
12	15	15	141700	708.5	CP-OFDM QPSK	1@1	22.84	16.19	0.0416
12	15	15	141700	708.5	CP-OFDM QPSK	1@77	22.53	15.88	0.0387

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (Hz)	Verdict	Environment
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	10.8	**PASS**	NV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	14.2	**PASS**	LV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	13.5	**PASS**	HV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	18.4	**PASS**	-30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	13.8	**PASS**	-20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	17.3	**PASS**	-10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	18.3	**PASS**	0℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	10.8	**PASS**	10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	12.1	**PASS**	20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	14.1	**PASS**	30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	13.9	**PASS**	40℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	14.6	**PASS**	50℃

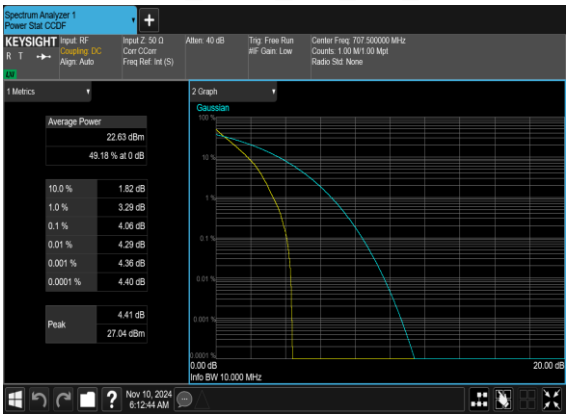
|MAX(△f)| = 18.4 Hz

Frequency Stability	Frequency (MHz)	Limit Line	Result
f_L – |MAX(△f)|	699.3761816	≧ 699 MHz	PASS
f_H + |MAX(△f)|	715.8285184	≦ 716 MHz	

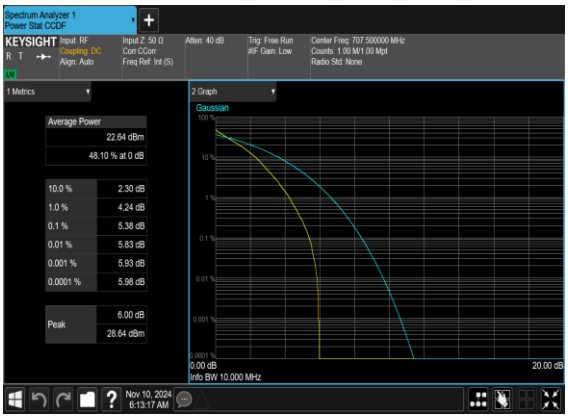
Peak to Average Ratio

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	4.05	13	**PASS**
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	5.38	13	**PASS**

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



N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



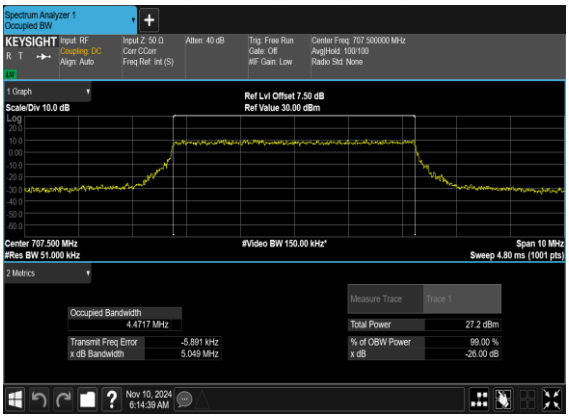
Occupied Bandwidth

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	4.4642	5.077
12	15	5	141500	707.5	CP-OFDM 16 QAM	25@0	4.4781	5.139
12	15	5	141500	707.5	CP-OFDM 64 QAM	25@0	4.4717	5.049
12	15	5	141500	707.5	CP-OFDM 256 QAM	25@0	4.4775	5.091
12	15	10	141500	707.5	CP-OFDM QPSK	52@0	9.2733	9.943
12	15	10	141500	707.5	CP-OFDM 16 QAM	52@0	9.2857	10.01
12	15	10	141500	707.5	CP-OFDM 64 QAM	52@0	9.2559	9.863
12	15	10	141500	707.5	CP-OFDM 256 QAM	52@0	9.2769	9.892
12	15	15	141500	707.5	CP-OFDM QPSK	79@0	14.086	14.9
12	15	15	141500	707.5	CP-OFDM 16 QAM	79@0	14.079	14.85
12	15	15	141500	707.5	CP-OFDM 64 QAM	79@0	14.046	14.76
12	15	15	141500	707.5	CP-OFDM 256 QAM	79@0	14.06	14.94

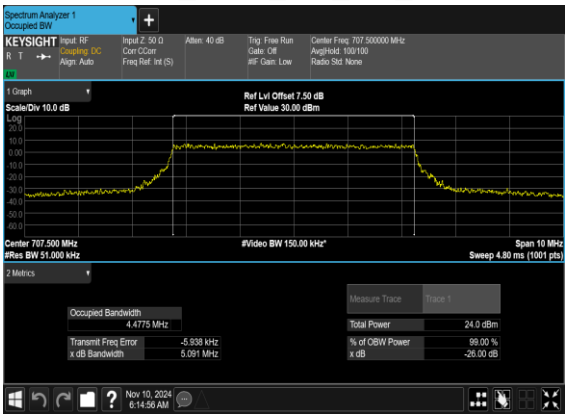
N12(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N12(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

N12(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

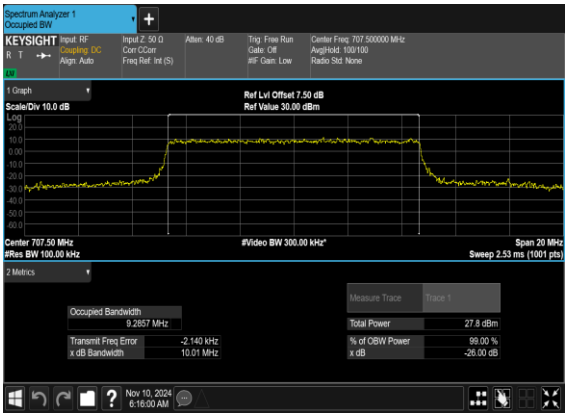


N12(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



N12(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

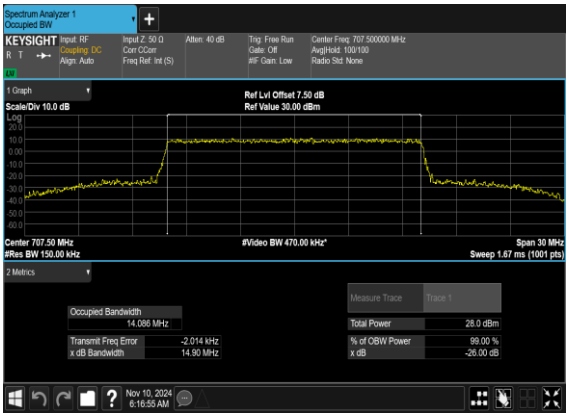
N12(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



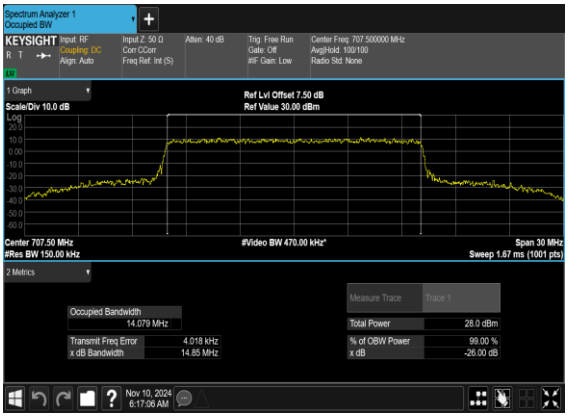
N12(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

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

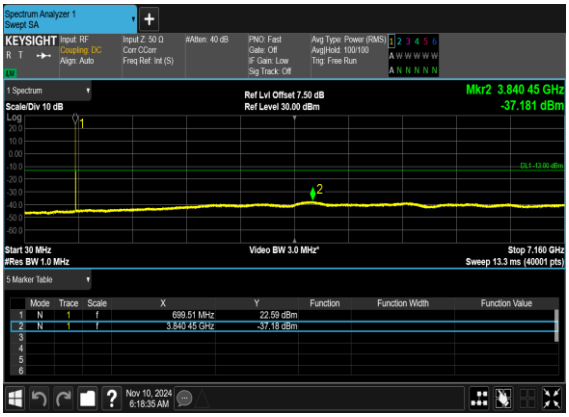
N12(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

Conducted Spurious Emissions

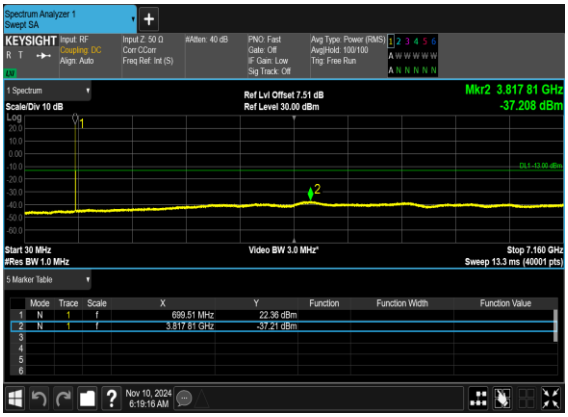
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see 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**

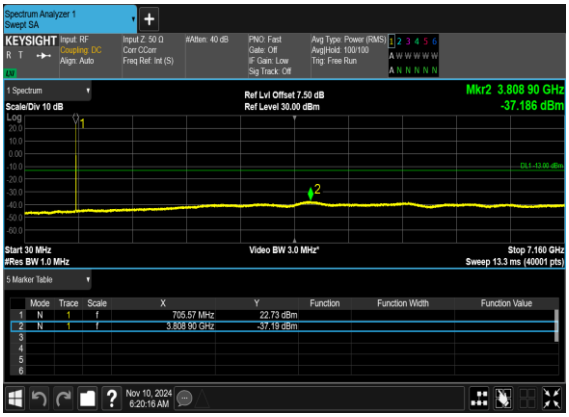
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



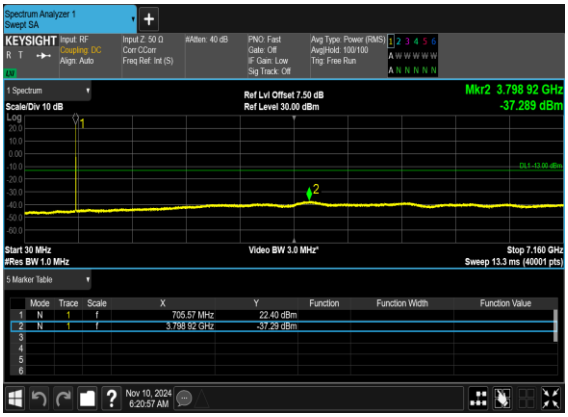
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



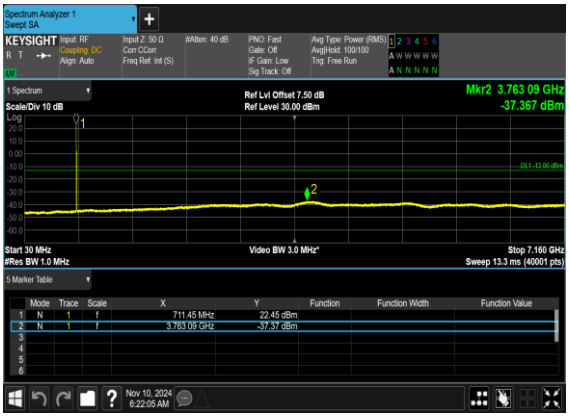
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



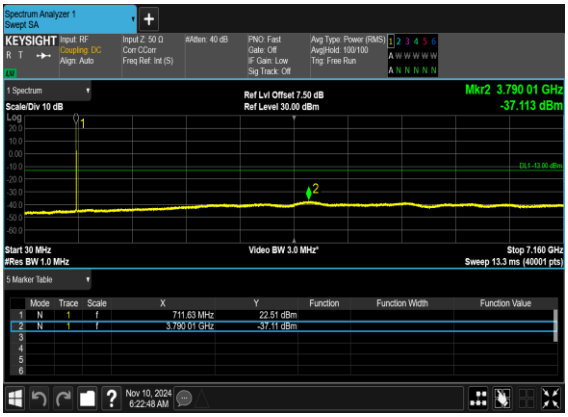
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



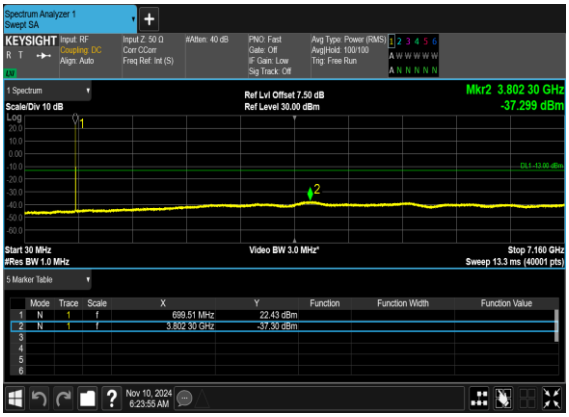
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



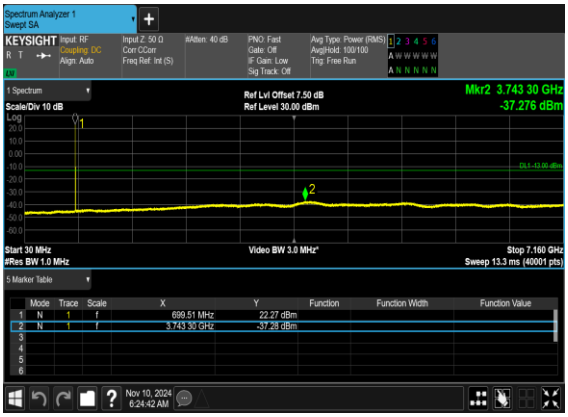
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



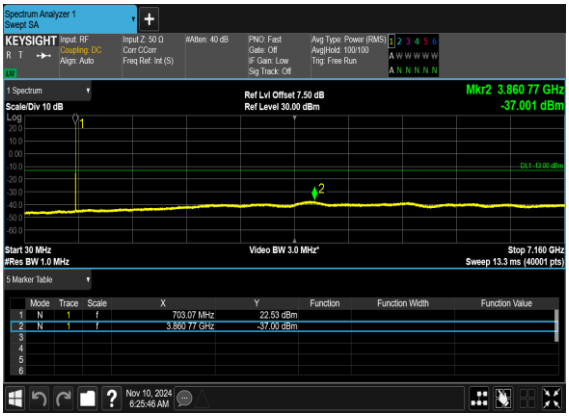
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



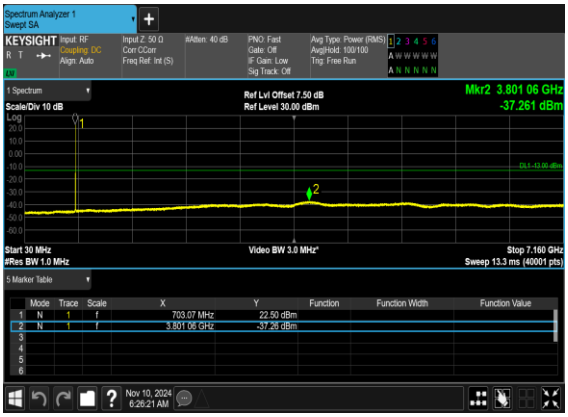
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



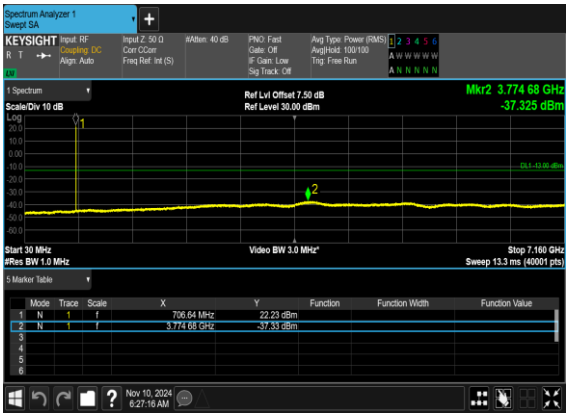
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



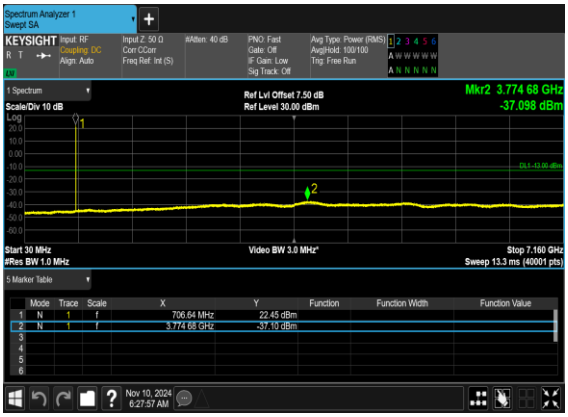
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



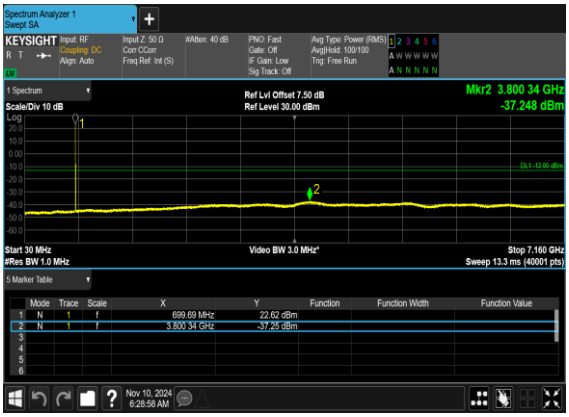
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



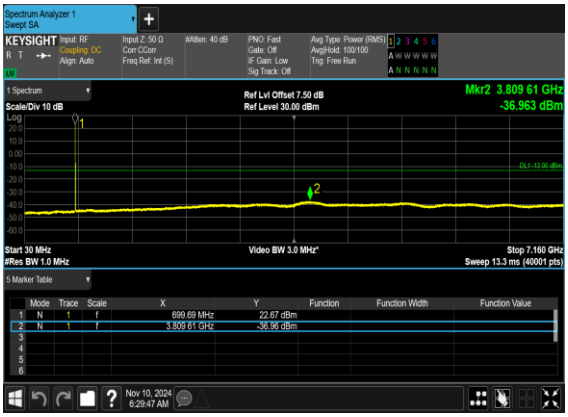
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



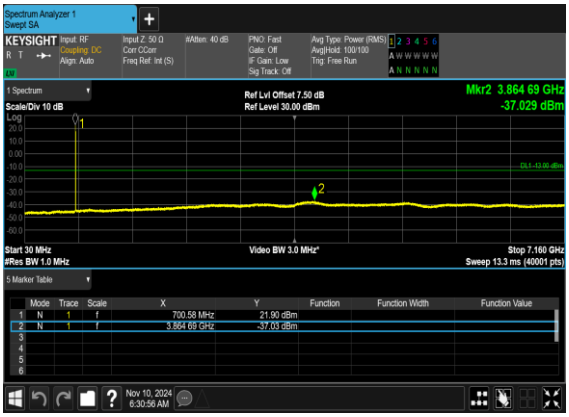
N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



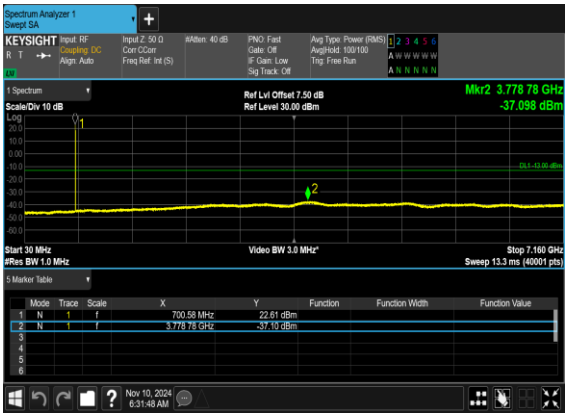
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



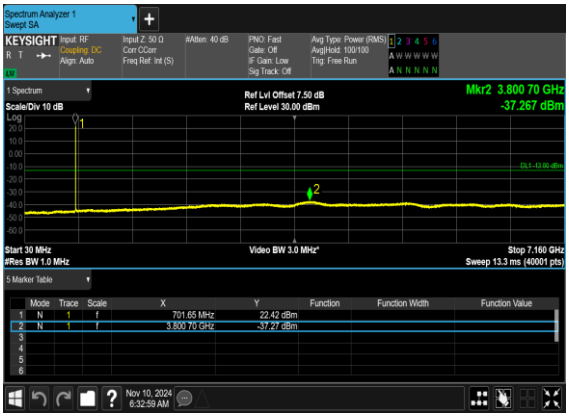
N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



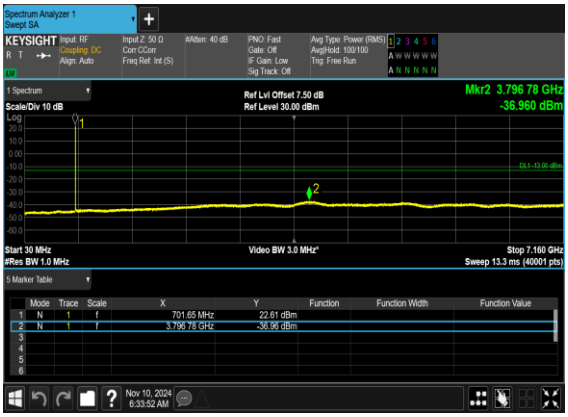
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

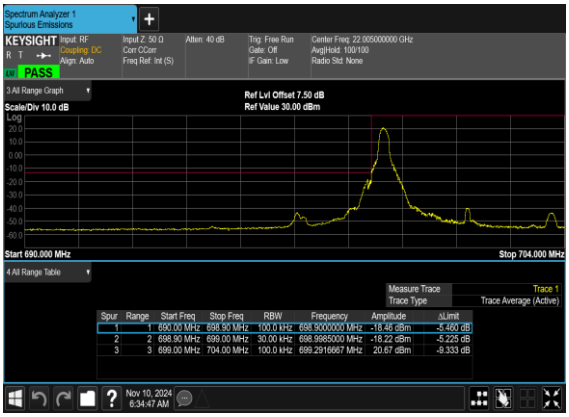


Conducted Band Edge

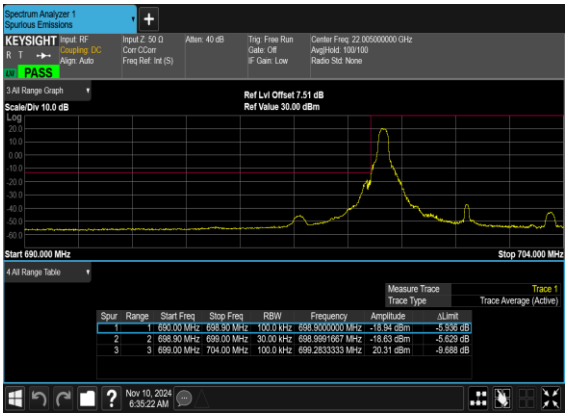
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	25@0	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**

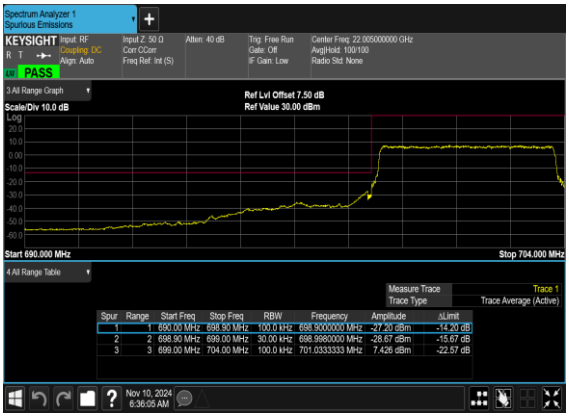
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



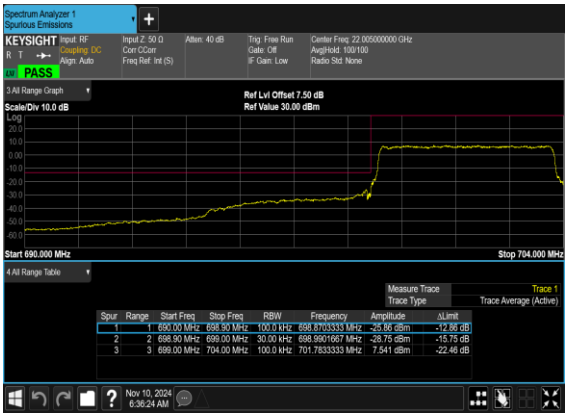
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



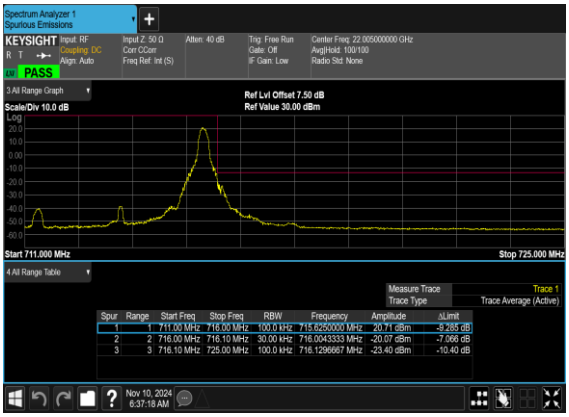
N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



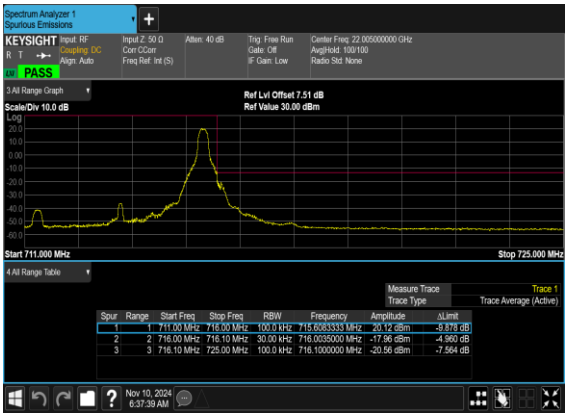
N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



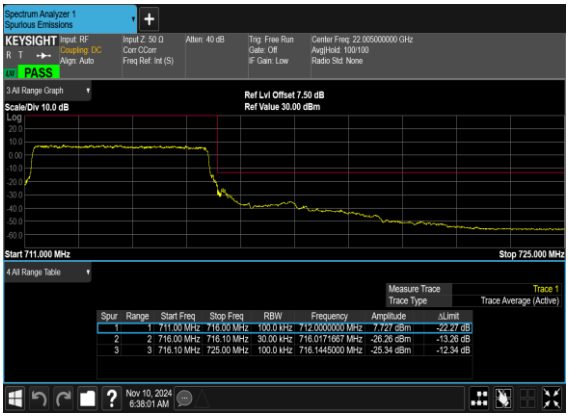
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



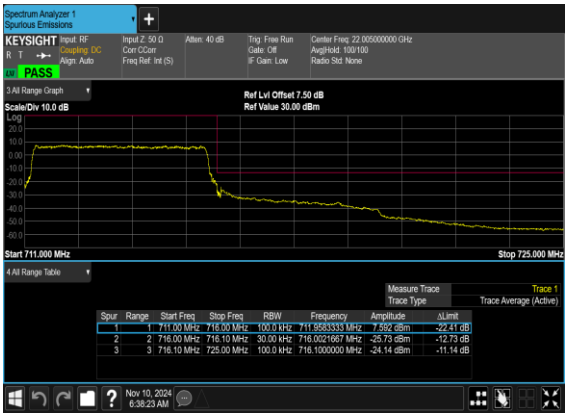
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



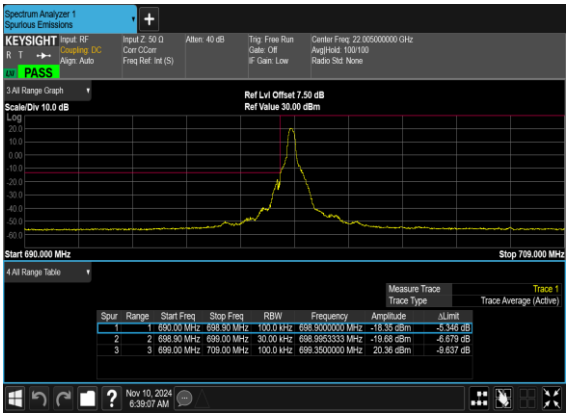
N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



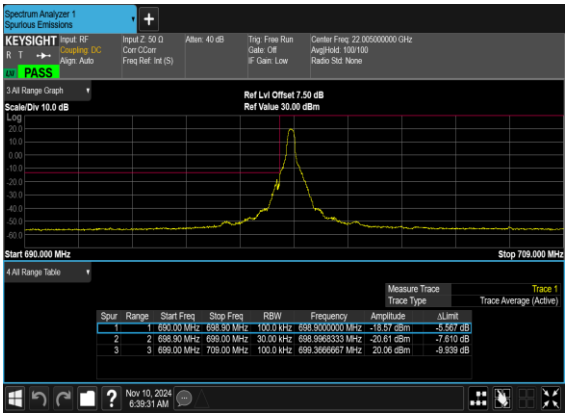
N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



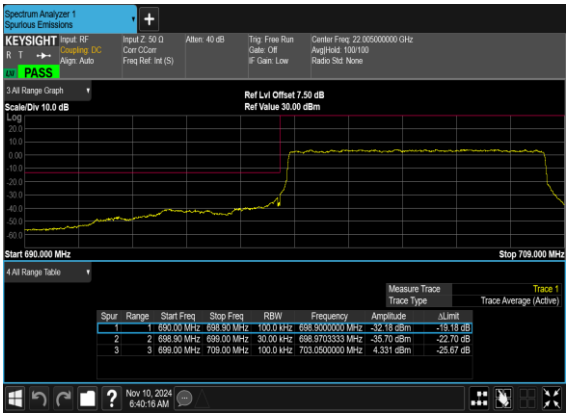
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



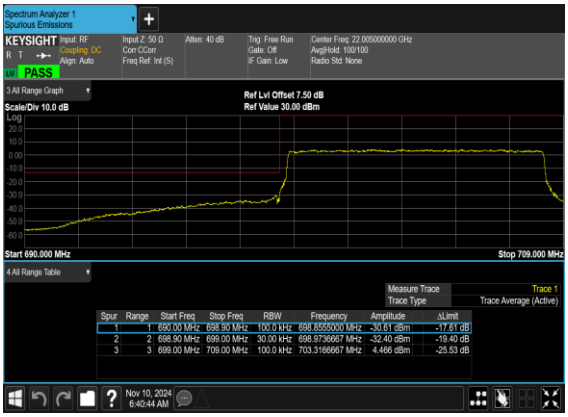
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



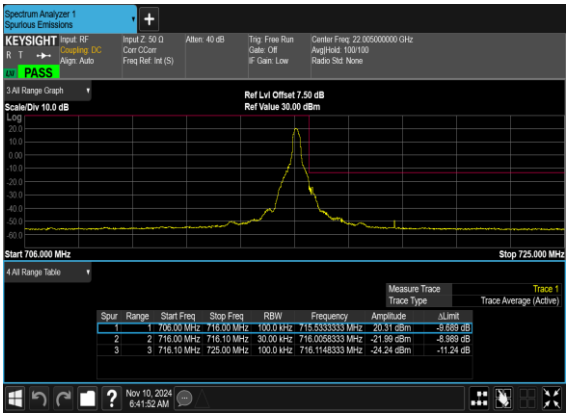
N12(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



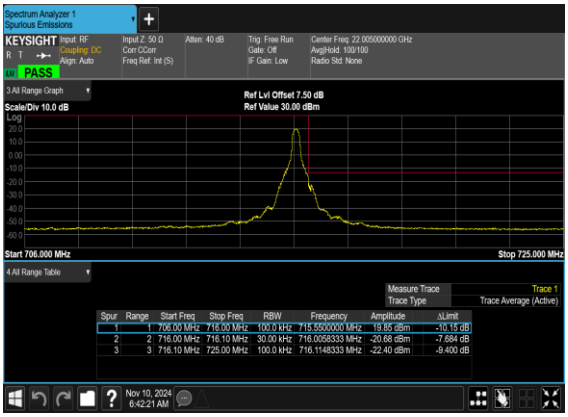
N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



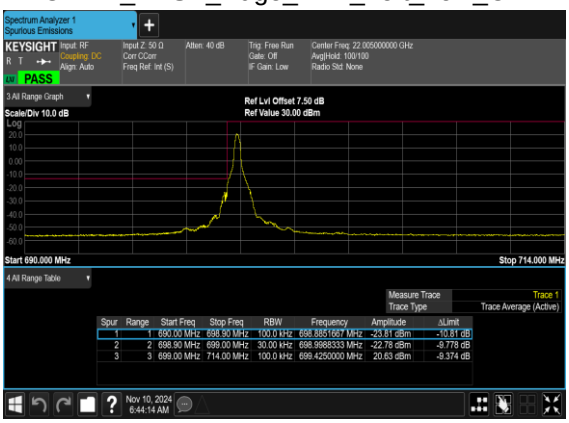
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



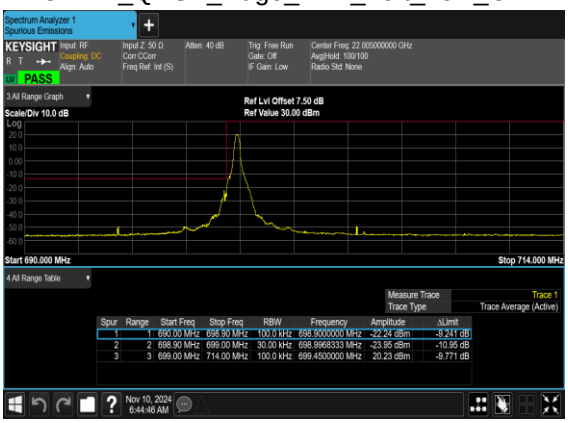
N12(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

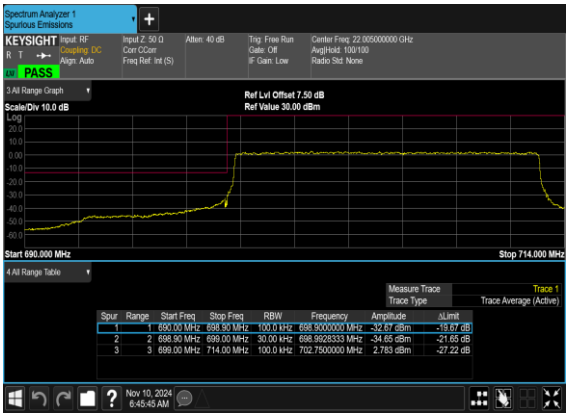
N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



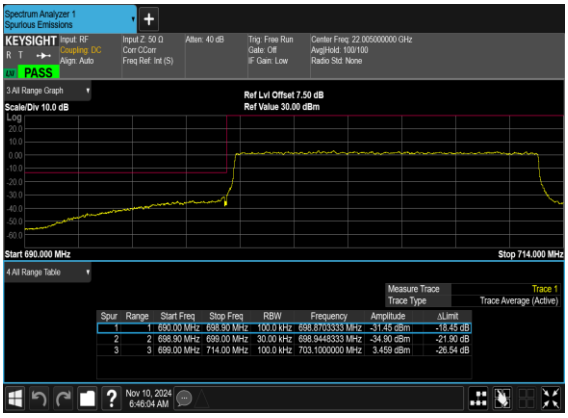
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



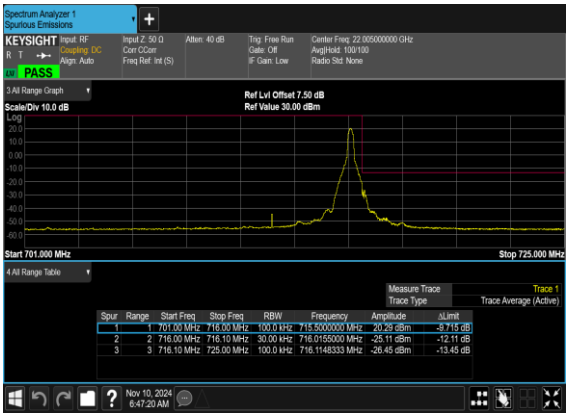
N12(15M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



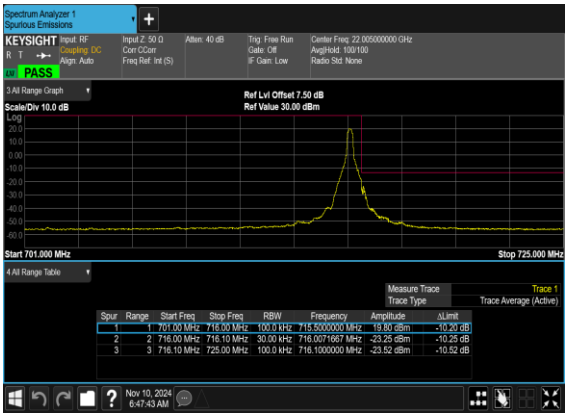
N12(15M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

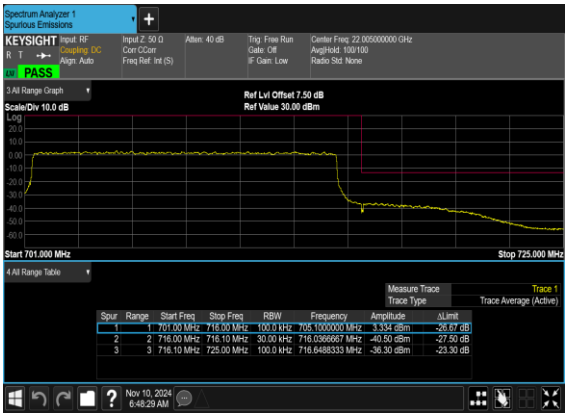


N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



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 N12+2A (Ant.1+0)

Transmitter Conducted Output Power and EIRP, (G_T - L_C)= -6.3dB

NR Band	SCS	Band Width	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	14.7	0.0295
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	1@1	22.76	14.31	0.0270
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@1	22.87	14.42	0.0277
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.41	13.96	0.0249
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@1	22.81	14.36	0.0273
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	1@1	22.46	14.01	0.0252
12	15	10	140800	704	DFT-s-OFDM QPSK	1@1	22.98	14.53	0.0284
12	15	10	140800	704	DFT-s-OFDM 16 QAM	1@1	22.5	14.05	0.0254
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@1	22.87	14.42	0.0277
12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.43	13.98	0.0250
12	15	10	142200	711	DFT-s-OFDM QPSK	1@1	22.86	14.41	0.0276
12	15	10	142200	711	DFT-s-OFDM 16 QAM	1@1	22.42	13.97	0.0249
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	36@18	23.22	14.77	0.0300
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@1	23.07	14.62	0.0290
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@77	22.89	14.44	0.0278
12	15	15	141300	706.5	DFT-s-OFDM QPSK	36@18	23.32	14.87	0.0307
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@1	23.05	14.6	0.0288
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@77	22.9	14.45	0.0279
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	36@18	22.93	14.48	0.0281
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@1	22.79	14.34	0.0272
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@77	22.64	14.19	0.0262
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	36@18	21.94	13.49	0.0223
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@1	21.68	13.23	0.0210
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@77	21.46	13.01	0.0200
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	36@18	19.8	11.35	0.0136
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@1	19.48	11.03	0.0127
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@77	19.21	10.76	0.0119

12	15	15	141300	706.5	CP-OFDM QPSK	39@19	22.8	14.35	0.0272
12	15	15	141300	706.5	CP-OFDM QPSK	1@1	22.73	14.28	0.0268
12	15	15	141300	706.5	CP-OFDM QPSK	1@77	22.51	14.06	0.0255
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	36@18	23.18	14.73	0.0297
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@1	23.15	14.7	0.0295
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@77	22.85	14.4	0.0275
12	15	15	141500	707.5	DFT-s-OFDM QPSK	36@18	23.2	14.75	0.0299
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@1	23.01	14.56	0.0286
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@77	22.78	14.33	0.0271
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	36@18	22.83	14.38	0.0274
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@1	22.8	14.35	0.0272
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@77	22.59	14.14	0.0259
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	36@18	21.84	13.39	0.0218
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@1	21.64	13.19	0.0208
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@77	21.45	13	0.0200
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	36@18	19.74	11.29	0.0135
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@1	19.46	11.01	0.0126
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@77	19.19	10.74	0.0119
12	15	15	141500	707.5	CP-OFDM QPSK	39@19	22.78	14.33	0.0271
12	15	15	141500	707.5	CP-OFDM QPSK	1@1	22.71	14.26	0.0267
12	15	15	141500	707.5	CP-OFDM QPSK	1@77	22.45	14	0.0251
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	36@18	23.17	14.72	0.0296
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@1	23.11	14.66	0.0292
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@77	22.81	14.36	0.0273
12	15	15	141700	708.5	DFT-s-OFDM QPSK	36@18	23.21	14.76	0.0299
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@1	23.06	14.61	0.0289
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@77	22.76	14.31	0.0270
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	36@18	22.82	14.37	0.0274
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@1	22.8	14.35	0.0272
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@77	22.55	14.1	0.0257
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	36@18	21.85	13.4	0.0219
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@1	21.7	13.25	0.0211
12	15	15	141700	708.5	DFT-s-OFDM 64	1@7	21.4	12.95	0.0197

					QAM	7			
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	36@18	19.75	11.3	0.0135
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@1	19.55	11.1	0.0129
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@77	19.17	10.72	0.0118
12	15	15	141700	708.5	CP-OFDM QPSK	39@19	22.73	14.28	0.0268
12	15	15	141700	708.5	CP-OFDM QPSK	1@1	22.73	14.28	0.0268
12	15	15	141700	708.5	CP-OFDM QPSK	1@77	22.38	13.93	0.0247

Software Version: 23.06.1602

FR1 N66(Ant.0)

Transmitter Conducted Output Power and EIRP, (G_T - L_C)= -0.8dB

NR Band	SCS	BandWidth	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	12@6	22.72	21.92	0.1556
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	1@1	22.77	21.97	0.1574
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	1@23	22.79	21.99	0.1581
66	15	5	342500	1712.5	DFT-s-OFDM 16 QAM	12@6	22.37	21.57	0.1435
66	15	5	342500	1712.5	DFT-s-OFDM 16 QAM	1@1	22.59	21.79	0.1510
66	15	5	342500	1712.5	DFT-s-OFDM 16 QAM	1@23	22.6	21.8	0.1514
66	15	5	349000	1745	DFT-s-OFDM QPSK	12@6	22.78	21.98	0.1578
66	15	5	349000	1745	DFT-s-OFDM QPSK	1@1	22.77	21.97	0.1574
66	15	5	349000	1745	DFT-s-OFDM QPSK	1@23	22.8	22	0.1585
66	15	5	349000	1745	DFT-s-OFDM 16 QAM	12@6	22.43	21.63	0.1455
66	15	5	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.69	21.89	0.1545
66	15	5	349000	1745	DFT-s-OFDM 16 QAM	1@23	22.66	21.86	0.1535
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	12@6	22.68	21.88	0.1542
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@1	22.77	21.97	0.1574
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@23	22.82	22.02	0.1592
66	15	5	355500	1777.5	DFT-s-OFDM 16 QAM	12@6	22.41	21.61	0.1449
66	15	5	355500	1777.5	DFT-s-OFDM 16 QAM	1@1	22.62	21.82	0.1521
66	15	5	355500	1777.5	DFT-s-OFDM 16 QAM	1@23	22.66	21.86	0.1535
66	15	10	343000	1715	DFT-s-OFDM QPSK	25@12	22.75	21.95	0.1567
66	15	10	343000	1715	DFT-s-OFDM QPSK	1@1	22.63	21.83	0.1524
66	15	10	343000	1715	DFT-s-OFDM QPSK	1@50	22.56	21.76	0.1500
66	15	10	343000	1715	DFT-s-OFDM 16 QAM	25@12	22.44	21.64	0.1459
66	15	10	343000	1715	DFT-s-OFDM 16 QAM	1@1	22.64	21.84	0.1528
66	15	10	343000	1715	DFT-s-OFDM 16 QAM	1@50	22.51	21.71	0.1483
66	15	10	349000	1745	DFT-s-OFDM QPSK	25@12	22.72	21.92	0.1556
66	15	10	349000	1745	DFT-s-OFDM QPSK	1@1	22.63	21.83	0.1524
66	15	10	349000	1745	DFT-s-OFDM QPSK	1@50	22.69	21.89	0.1545

66	15	10	349000	1745	DFT-s-OFDM 16 QAM	25@12	22.56	21.76	0.1500
66	15	10	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.58	21.78	0.1507
66	15	10	349000	1745	DFT-s-OFDM 16 QAM	1@50	22.66	21.86	0.1535
66	15	10	355000	1775	DFT-s-OFDM QPSK	25@12	22.75	21.95	0.1567
66	15	10	355000	1775	DFT-s-OFDM QPSK	1@1	22.79	21.99	0.1581
66	15	10	355000	1775	DFT-s-OFDM QPSK	1@50	22.85	22.05	0.1603
66	15	10	355000	1775	DFT-s-OFDM 16 QAM	25@12	22.54	21.74	0.1493
66	15	10	355000	1775	DFT-s-OFDM 16 QAM	1@1	22.71	21.91	0.1552
66	15	10	355000	1775	DFT-s-OFDM 16 QAM	1@50	22.69	21.89	0.1545
66	15	15	343500	1717.5	DFT-s-OFDM QPSK	36@18	22.72	21.92	0.1556
66	15	15	343500	1717.5	DFT-s-OFDM QPSK	1@1	22.93	22.13	0.1633
66	15	15	343500	1717.5	DFT-s-OFDM QPSK	1@77	22.92	22.12	0.1629
66	15	15	343500	1717.5	DFT-s-OFDM 16 QAM	36@18	22.58	21.78	0.1507
66	15	15	343500	1717.5	DFT-s-OFDM 16 QAM	1@1	22.71	21.91	0.1552
66	15	15	343500	1717.5	DFT-s-OFDM 16 QAM	1@77	22.72	21.92	0.1556
66	15	15	349000	1745	DFT-s-OFDM QPSK	36@18	22.95	22.15	0.1641
66	15	15	349000	1745	DFT-s-OFDM QPSK	1@1	22.95	22.15	0.1641
66	15	15	349000	1745	DFT-s-OFDM QPSK	1@77	23.05	22.25	0.1679
66	15	15	349000	1745	DFT-s-OFDM 16 QAM	36@18	22.75	21.95	0.1567
66	15	15	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.8	22	0.1585
66	15	15	349000	1745	DFT-s-OFDM 16 QAM	1@77	22.91	22.11	0.1626
66	15	15	354500	1772.5	DFT-s-OFDM QPSK	36@18	22.85	22.05	0.1603
66	15	15	354500	1772.5	DFT-s-OFDM QPSK	1@1	22.89	22.09	0.1618
66	15	15	354500	1772.5	DFT-s-OFDM QPSK	1@77	22.84	22.04	0.1600
66	15	15	354500	1772.5	DFT-s-OFDM 16 QAM	36@18	22.66	21.86	0.1535
66	15	15	354500	1772.5	DFT-s-OFDM 16 QAM	1@1	22.71	21.91	0.1552
66	15	15	354500	1772.5	DFT-s-OFDM 16 QAM	1@77	22.73	21.93	0.1560
66	15	20	344000	1720	DFT-s-OFDM QPSK	50@25	22.8	22	0.1585
66	15	20	344000	1720	DFT-s-OFDM QPSK	1@1	22.91	22.11	0.1626
66	15	20	344000	1720	DFT-s-OFDM QPSK	1@104	22.87	22.07	0.1611
66	15	20	344000	1720	DFT-s-OFDM 16 QAM	50@25	22.54	21.74	0.1493
66	15	20	344000	1720	DFT-s-OFDM 16 QAM	1@1	22.69	21.89	0.1545

66	15	20	344000	1720	DFT-s-OFDM 16 QAM	1@104	22.61	21.81	0.1517
66	15	20	349000	1745	DFT-s-OFDM QPSK	50@25	22.89	22.09	0.1618
66	15	20	349000	1745	DFT-s-OFDM QPSK	1@1	22.92	22.12	0.1629
66	15	20	349000	1745	DFT-s-OFDM QPSK	1@104	23	22.2	0.1660
66	15	20	349000	1745	DFT-s-OFDM 16 QAM	50@25	22.77	21.97	0.1574
66	15	20	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.74	21.94	0.1563
66	15	20	349000	1745	DFT-s-OFDM 16 QAM	1@104	22.85	22.05	0.1603
66	15	20	354000	1770	DFT-s-OFDM QPSK	50@25	22.93	22.13	0.1633
66	15	20	354000	1770	DFT-s-OFDM QPSK	1@1	22.97	22.17	0.1648
66	15	20	354000	1770	DFT-s-OFDM QPSK	1@104	22.94	22.14	0.1637
66	15	20	354000	1770	DFT-s-OFDM 16 QAM	50@25	22.68	21.88	0.1542
66	15	20	354000	1770	DFT-s-OFDM 16 QAM	1@1	22.75	21.95	0.1567
66	15	20	354000	1770	DFT-s-OFDM 16 QAM	1@104	22.78	21.98	0.1578
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	64@32	22.78	21.98	0.1578
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@1	22.56	21.76	0.1500
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@131	22.83	22.03	0.1596
66	15	25	344500	1722.5	DFT-s-OFDM 16 QAM	64@32	22.58	21.78	0.1507
66	15	25	344500	1722.5	DFT-s-OFDM 16 QAM	1@1	22.79	21.99	0.1581
66	15	25	344500	1722.5	DFT-s-OFDM 16 QAM	1@131	22.76	21.96	0.1570
66	15	25	349000	1745	DFT-s-OFDM QPSK	64@32	22.94	22.14	0.1637
66	15	25	349000	1745	DFT-s-OFDM QPSK	1@1	22.98	22.18	0.1652
66	15	25	349000	1745	DFT-s-OFDM QPSK	1@131	23.08	22.28	0.1690
66	15	25	349000	1745	DFT-s-OFDM 16 QAM	64@32	22.63	21.83	0.1524
66	15	25	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.81	22.01	0.1589
66	15	25	349000	1745	DFT-s-OFDM 16 QAM	1@131	22.9	22.1	0.1622
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	64@32	22.89	22.09	0.1618
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@1	23.15	22.35	0.1718
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@131	23.11	22.31	0.1702
66	15	25	353500	1767.5	DFT-s-OFDM 16 QAM	64@32	22.68	21.88	0.1542
66	15	25	353500	1767.5	DFT-s-OFDM 16 QAM	1@1	22.97	22.17	0.1648
66	15	25	353500	1767.5	DFT-s-OFDM 16 QAM	1@131	22.93	22.13	0.1633
66	15	30	345000	1725	DFT-s-OFDM QPSK	80@40	22.83	22.03	0.1596

66	15	30	345000	1725	DFT-s-OFDM QPSK	1@1	22.71	21.91	0.1552
66	15	30	345000	1725	DFT-s-OFDM QPSK	1@158	22.76	21.96	0.1570
66	15	30	345000	1725	DFT-s-OFDM 16 QAM	80@40	22.49	21.69	0.1476
66	15	30	345000	1725	DFT-s-OFDM 16 QAM	1@1	22.66	21.86	0.1535
66	15	30	345000	1725	DFT-s-OFDM 16 QAM	1@158	22.7	21.9	0.1549
66	15	30	349000	1745	DFT-s-OFDM QPSK	80@40	22.86	22.06	0.1607
66	15	30	349000	1745	DFT-s-OFDM QPSK	1@1	22.69	21.89	0.1545
66	15	30	349000	1745	DFT-s-OFDM QPSK	1@158	22.94	22.14	0.1637
66	15	30	349000	1745	DFT-s-OFDM 16 QAM	80@40	22.65	21.85	0.1531
66	15	30	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.6	21.8	0.1514
66	15	30	349000	1745	DFT-s-OFDM 16 QAM	1@158	22.81	22.01	0.1589
66	15	30	353000	1765	DFT-s-OFDM QPSK	80@40	22.93	22.13	0.1633
66	15	30	353000	1765	DFT-s-OFDM QPSK	1@1	22.93	22.13	0.1633
66	15	30	353000	1765	DFT-s-OFDM QPSK	1@158	22.94	22.14	0.1637
66	15	30	353000	1765	DFT-s-OFDM 16 QAM	80@40	22.73	21.93	0.1560
66	15	30	353000	1765	DFT-s-OFDM 16 QAM	1@1	22.76	21.96	0.1570
66	15	30	353000	1765	DFT-s-OFDM 16 QAM	1@158	22.81	22.01	0.1589
66	15	35	345500	1727.5	DFT-s-OFDM QPSK	90@45	22.78	21.98	0.1578
66	15	35	345500	1727.5	DFT-s-OFDM QPSK	1@1	23.01	22.21	0.1663
66	15	35	345500	1727.5	DFT-s-OFDM QPSK	1@186	23.24	22.44	0.1754
66	15	35	345500	1727.5	DFT-s-OFDM 16 QAM	90@45	22.54	21.74	0.1493
66	15	35	345500	1727.5	DFT-s-OFDM 16 QAM	1@1	22.9	22.1	0.1622
66	15	35	345500	1727.5	DFT-s-OFDM 16 QAM	1@186	22.86	22.06	0.1607
66	15	35	349000	1745	DFT-s-OFDM QPSK	90@45	22.87	22.07	0.1611
66	15	35	349000	1745	DFT-s-OFDM QPSK	1@1	23.01	22.21	0.1663
66	15	35	349000	1745	DFT-s-OFDM QPSK	1@186	23.18	22.38	0.1730
66	15	35	349000	1745	DFT-s-OFDM 16 QAM	90@45	22.65	21.85	0.1531
66	15	35	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.86	22.06	0.1607
66	15	35	349000	1745	DFT-s-OFDM 16 QAM	1@186	23.01	22.21	0.1663
66	15	35	352500	1762.5	DFT-s-OFDM QPSK	90@45	22.95	22.15	0.1641
66	15	35	352500	1762.5	DFT-s-OFDM QPSK	1@1	23.14	22.34	0.1714
66	15	35	352500	1762.5	DFT-s-OFDM QPSK	1@186	23.15	22.35	0.1718

66	15	35	352500	1762.5	DFT-s-OFDM 16 QAM	90@45	22.78	21.98	0.1578
66	15	35	352500	1762.5	DFT-s-OFDM 16 QAM	1@1	22.93	22.13	0.1633
66	15	35	352500	1762.5	DFT-s-OFDM 16 QAM	1@186	22.89	22.09	0.1618
66	15	40	346000	1730	DFT-s-OFDM PI/2 BPSK	108@54	22.96	22.16	0.1644
66	15	40	346000	1730	DFT-s-OFDM PI/2 BPSK	1@1	22.93	22.13	0.1633
66	15	40	346000	1730	DFT-s-OFDM PI/2 BPSK	1@214	22.96	22.16	0.1644
66	15	40	346000	1730	DFT-s-OFDM QPSK	108@54	22.99	22.19	0.1656
66	15	40	346000	1730	DFT-s-OFDM QPSK	1@1	22.89	22.09	0.1618
66	15	40	346000	1730	DFT-s-OFDM QPSK	1@214	22.92	22.12	0.1629
66	15	40	346000	1730	DFT-s-OFDM 16 QAM	108@54	22.62	21.82	0.1521
66	15	40	346000	1730	DFT-s-OFDM 16 QAM	1@1	22.65	21.85	0.1531
66	15	40	346000	1730	DFT-s-OFDM 16 QAM	1@214	22.74	21.94	0.1563
66	15	40	346000	1730	DFT-s-OFDM 64 QAM	108@54	21.97	21.17	0.1309
66	15	40	346000	1730	DFT-s-OFDM 64 QAM	1@1	22	21.2	0.1318
66	15	40	346000	1730	DFT-s-OFDM 64 QAM	1@214	22.13	21.33	0.1358
66	15	40	346000	1730	DFT-s-OFDM 256 QAM	108@54	20	19.2	0.0832
66	15	40	346000	1730	DFT-s-OFDM 256 QAM	1@1	19.86	19.06	0.0805
66	15	40	346000	1730	DFT-s-OFDM 256 QAM	1@214	19.87	19.07	0.0807
66	15	40	346000	1730	CP-OFDM QPSK	108@54	22.98	22.18	0.1652
66	15	40	346000	1730	CP-OFDM QPSK	1@1	23	22.2	0.1660
66	15	40	346000	1730	CP-OFDM QPSK	1@214	22.72	21.92	0.1556
66	15	40	349000	1745	DFT-s-OFDM PI/2 BPSK	108@54	23.06	22.26	0.1683
66	15	40	349000	1745	DFT-s-OFDM PI/2 BPSK	1@1	22.85	22.05	0.1603
66	15	40	349000	1745	DFT-s-OFDM PI/2 BPSK	1@214	22.91	22.11	0.1626
66	15	40	349000	1745	DFT-s-OFDM QPSK	108@54	23.37	22.57	0.1807
66	15	40	349000	1745	DFT-s-OFDM QPSK	1@1	22.91	22.11	0.1626
66	15	40	349000	1745	DFT-s-OFDM QPSK	1@214	22.97	22.17	0.1648
66	15	40	349000	1745	DFT-s-OFDM 16 QAM	108@54	22.72	21.92	0.1556
66	15	40	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.65	21.85	0.1531
66	15	40	349000	1745	DFT-s-OFDM 16 QAM	1@214	22.78	21.98	0.1578
66	15	40	349000	1745	DFT-s-OFDM 64 QAM	108@54	22.09	21.29	0.1346
66	15	40	349000	1745	DFT-s-OFDM 64 QAM	1@1	22.04	21.24	0.1330
66	15	40	349000	1745	DFT-s-OFDM 64 QAM	1@214	22.18	21.38	0.1374

66	15	40	349000	1745	DFT-s-OFDM 256 QAM	108@54	20.07	19.27	0.0845
66	15	40	349000	1745	DFT-s-OFDM 256 QAM	1@1	19.87	19.07	0.0807
66	15	40	349000	1745	DFT-s-OFDM 256 QAM	1@214	19.87	19.07	0.0807
66	15	40	349000	1745	CP-OFDM QPSK	108@54	23.13	22.33	0.1710
66	15	40	349000	1745	CP-OFDM QPSK	1@1	22.98	22.18	0.1652
66	15	40	349000	1745	CP-OFDM QPSK	1@214	22.74	21.94	0.1563
66	15	40	352000	1760	DFT-s-OFDM PI/2 BPSK	108@54	23.09	22.29	0.1694
66	15	40	352000	1760	DFT-s-OFDM PI/2 BPSK	1@1	22.97	22.17	0.1648
66	15	40	352000	1760	DFT-s-OFDM PI/2 BPSK	1@214	22.89	22.09	0.1618
66	15	40	352000	1760	DFT-s-OFDM QPSK	108@54	23.16	22.36	0.1722
66	15	40	352000	1760	DFT-s-OFDM QPSK	1@1	23.09	22.29	0.1694
66	15	40	352000	1760	DFT-s-OFDM QPSK	1@214	22.93	22.13	0.1633
66	15	40	352000	1760	DFT-s-OFDM 16 QAM	108@54	22.76	21.96	0.1570
66	15	40	352000	1760	DFT-s-OFDM 16 QAM	1@1	22.67	21.87	0.1538
66	15	40	352000	1760	DFT-s-OFDM 16 QAM	1@214	22.73	21.93	0.1560
66	15	40	352000	1760	DFT-s-OFDM 64 QAM	108@54	22.15	21.35	0.1365
66	15	40	352000	1760	DFT-s-OFDM 64 QAM	1@1	22.11	21.31	0.1352
66	15	40	352000	1760	DFT-s-OFDM 64 QAM	1@214	22.19	21.39	0.1377
66	15	40	352000	1760	DFT-s-OFDM 256 QAM	108@54	20.02	19.22	0.0836
66	15	40	352000	1760	DFT-s-OFDM 256 QAM	1@1	19.92	19.12	0.0817
66	15	40	352000	1760	DFT-s-OFDM 256 QAM	1@214	19.86	19.06	0.0805
66	15	40	352000	1760	CP-OFDM QPSK	108@54	23.1	22.3	0.1698
66	15	40	352000	1760	CP-OFDM QPSK	1@1	23.11	22.31	0.1702
66	15	40	352000	1760	CP-OFDM QPSK	1@214	22.7	21.9	0.1549

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (Hz)	Verdict	Environment
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	14.7	**PASS**	NV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	13.3	**PASS**	LV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	13.3	**PASS**	HV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	19	**PASS**	-30℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	16.7	**PASS**	-20℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	11.3	**PASS**	-10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	13.4	**PASS**	0℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	14.7	**PASS**	10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	10.5	**PASS**	20℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	13.6	**PASS**	30℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	16.6	**PASS**	40℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	18.8	**PASS**	50℃

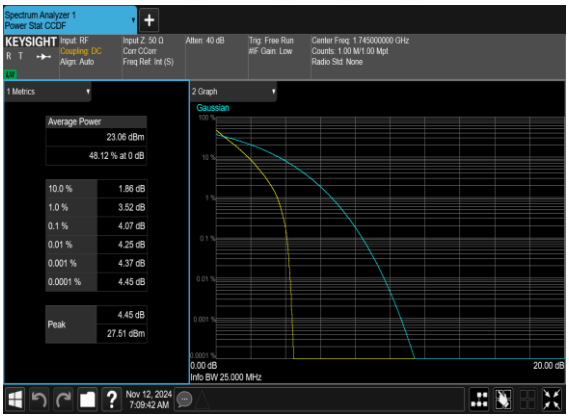
|MAX(△f)| = 19.0 Hz

Frequency Stability	Frequency (MHz)	Limit Line	Result
fL – |MAX(△f)|	1710.525481	≧ 1710 MHz	PASS
fH + |MAX(△f)|	1779.404719	≦ 1780 MHz	

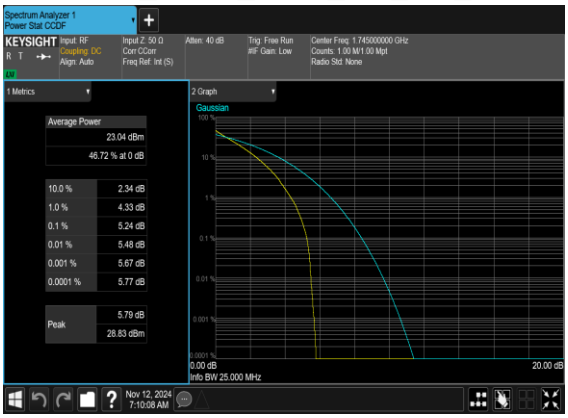
Peak to Average Ratio

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	4.07	13	**PASS**
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	5.24	13	**PASS**

N66(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N66(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

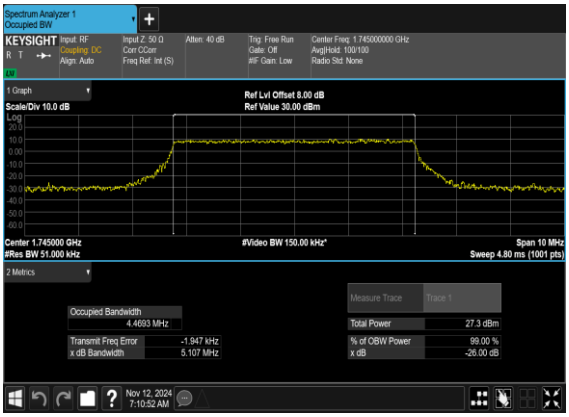


Occupied Bandwidth

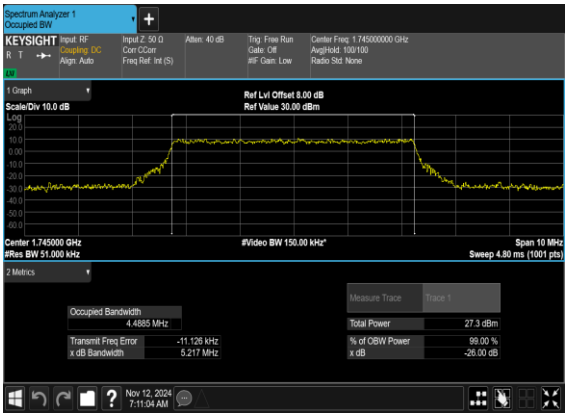
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
66	15	5	349000	1745.0	CP-OFDM QPSK	25@0	4.4693	5.107
66	15	5	349000	1745.0	CP-OFDM 16 QAM	25@0	4.4885	5.217
66	15	5	349000	1745.0	CP-OFDM 64 QAM	25@0	4.4651	4.964
66	15	5	349000	1745.0	CP-OFDM 256 QAM	25@0	4.4782	5.008
66	15	10	349000	1745.0	CP-OFDM QPSK	52@0	9.2831	10.06
66	15	10	349000	1745.0	CP-OFDM 16 QAM	52@0	9.3049	9.906
66	15	10	349000	1745.0	CP-OFDM 64 QAM	52@0	9.2809	9.846
66	15	10	349000	1745.0	CP-OFDM 256 QAM	52@0	9.2685	9.89
66	15	15	349000	1745.0	CP-OFDM QPSK	79@0	14.089	15.0
66	15	15	349000	1745.0	CP-OFDM 16 QAM	79@0	14.079	14.84
66	15	15	349000	1745.0	CP-OFDM 64 QAM	79@0	14.106	14.81
66	15	15	349000	1745.0	CP-OFDM 256 QAM	79@0	14.09	14.91
66	15	20	349000	1745.0	CP-OFDM QPSK	106@0	18.949	19.79
66	15	20	349000	1745.0	CP-OFDM 16 QAM	106@0	18.875	19.8
66	15	20	349000	1745.0	CP-OFDM 64 QAM	106@0	18.907	19.83
66	15	20	349000	1745.0	CP-OFDM 256 QAM	106@0	18.964	19.89
66	15	25	349000	1745.0	CP-OFDM QPSK	133@0	23.725	24.97
66	15	25	349000	1745.0	CP-OFDM 16 QAM	133@0	23.733	24.88
66	15	25	349000	1745.0	CP-OFDM 64 QAM	133@0	23.823	24.69
66	15	25	349000	1745.0	CP-OFDM 256 QAM	133@0	23.68	24.66
66	15	30	349000	1745.0	CP-OFDM QPSK	160@0	28.54	29.62
66	15	30	349000	1745.0	CP-OFDM 16 QAM	160@0	28.594	29.68
66	15	30	349000	1745.0	CP-OFDM 64 QAM	160@0	28.531	29.67
66	15	30	349000	1745.0	CP-OFDM 256 QAM	160@0	28.584	29.78

66	15	35	349000	1745.0	CP-OFDM QPSK	188@0	33.539	34.78
66	15	35	349000	1745.0	CP-OFDM 16 QAM	188@0	33.474	34.76
66	15	35	349000	1745.0	CP-OFDM 64 QAM	188@0	33.569	34.87
66	15	35	349000	1745.0	CP-OFDM 256 QAM	188@0	33.475	34.76
66	15	40	349000	1745.0	CP-OFDM QPSK	216@0	38.583	40.07
66	15	40	349000	1745.0	CP-OFDM 16 QAM	216@0	38.572	40.09
66	15	40	349000	1745.0	CP-OFDM 64 QAM	216@0	38.617	39.99
66	15	40	349000	1745.0	CP-OFDM 256 QAM	216@0	38.482	39.8

N66(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



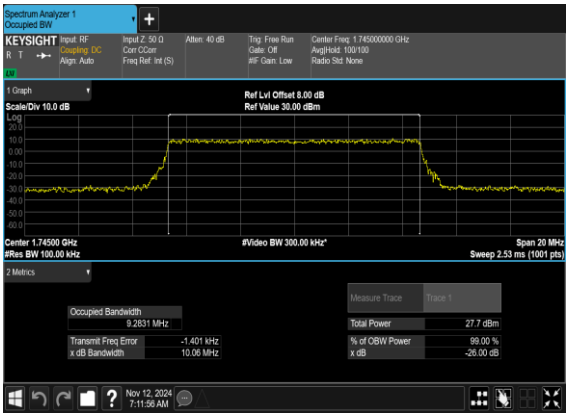
N66(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



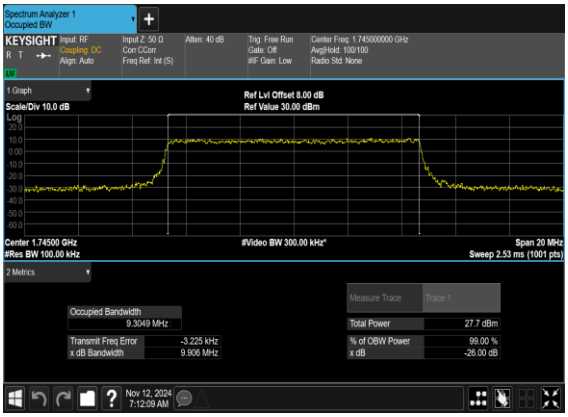
N66(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N66(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

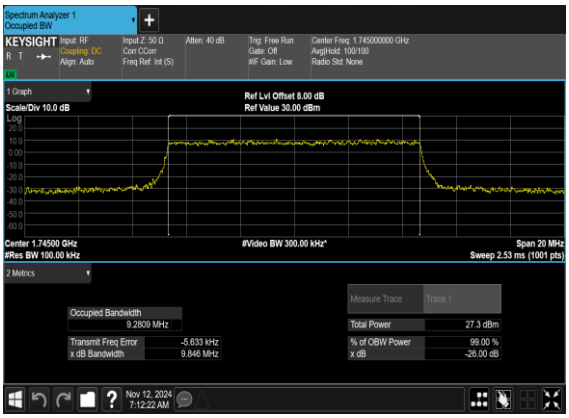
N66(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



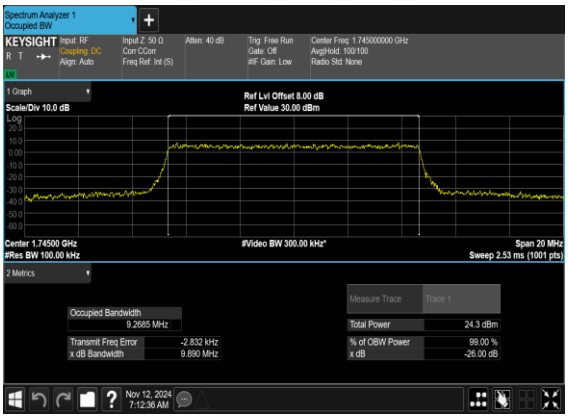
N66(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



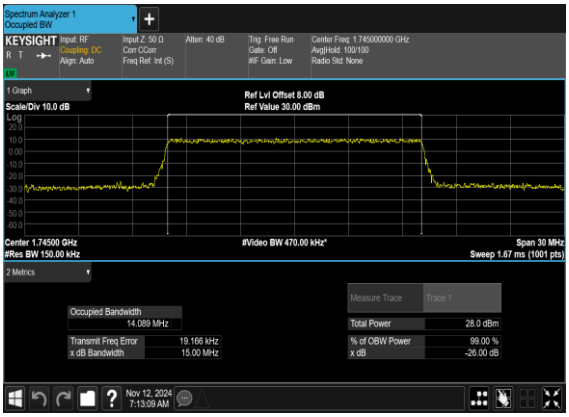
N66(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



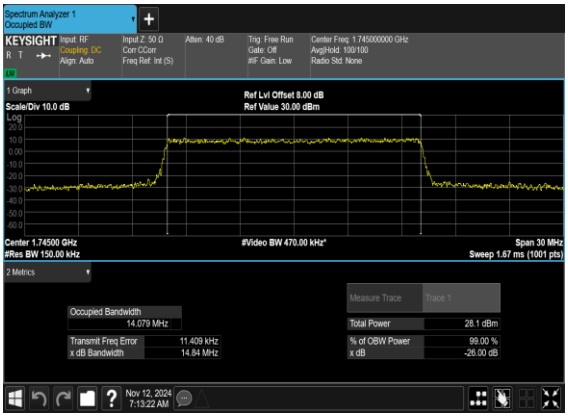
N66(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



N66(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N66(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N66(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N66(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH