FCC RF Test Report

APPLICANT	: Fibocom Wireless Inc.
EQUIPMENT	: 5G Module
BRAND NAME	: Fibocom
MODEL NAME	: FG370-NA
FCC ID	: ZMOFG370NA
STANDARD	: 47 CFR Part 2, 27
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Jan. 28, 2024 ~ Apr. 28, 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)

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

People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG3D1101L	Rev. 01	Initial issue of report	May 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, 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	§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 12.47 dB at 4611.00 MHz

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Applicant

Fibocom Wireless Inc.

1101, Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,,Shenzhen, China

1.2 Manufacturer

Fibocom Wireless Inc.

1101, Tower A, Building 6, Shenzhen International Innovation Valley, Dashi 1st Rd, Nanshan,,Shenzhen, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	5G Module
Brand Name	Fibocom
Model Name	FG370-NA
FCC ID	ZMOFG370NA
IMEI Code	Conducted : 864952060076756 Radiation : 864952060020580
HW Version	V1.0
SW Version	81140.7000.00.11.01.14
EUT Stage	Production Unit

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	**SCS 15K:** n12: 5MHz / 10MHz / 15MHz n66: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n70: 5MHz / 10MHz / 15MHz / 20MHz* / 25MHz* n71: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz* / 30MHz* / 35MHz* **SCS 30K:** n12:10MHz / 15MHz n66: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz /

	45MHz n70: 10MHz / 15MHz / 20MHz* / 25MHz* n71: 10MHz / 15MHz / 20MHz / 25MHz* / 30MHz* / 35MHz* (* means Downlink only)
SCS	15kHz, 30kHz
Antenna Gain	**<Ant. 8>** n12: 1.58 dBi **<Ant. 3/8>** n66: 1.50 dBi n70: 1.16 dBi n71: 1.39 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 n12/71 for Ant. 8 and n66/n70/n66B for Ant. 3 and n66/71_UL MIMO for Ant.(3+8).
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are tested 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 and SCS 15kHz covers 30kHz.
4. 5G NR n70 supports SA mode only, and SCS 15kHz covers 30kHz.
5. 5G NR n66/71 supports UL MIMO mode is correlated, the MIMO Antenna gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ /2], the conducted BE/Spurious are tested at single antenna port and add 10*log(N_{ANT}) according to KDB 662911 D01.
6. The EN-DC mode combination could be referred to the product spec.
7. For 5G NR n66/n71 ,there are two paths, one path for SA and other path for NSA, the two paths are same RF components thus RF only verify the power for two paths, and full test the path with maximum power.

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		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	0.2838	4M46G7D	0.2254	4M46W7D
10	704.0~ 711.0	0.2805	9M24G7D	0.2228	9M25W7D
15	706.5 ~ 708.5	0.2864	14M0G7D	0.2323	14M1W7D

5G NR n66		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	0.2249	4M48G7D	0.1807	4M47W7D
10	1715.0 ~ 1775.0	0.2259	9M30G7D	0.1945	9M32W7D
15	1717.5 ~ 1772.5	0.2228	14M1G7D	0.2000	14M1W7D
20	1720.0 ~ 1770.0	0.2223	18M9G7D	0.2004	18M9W7D
25	1722.5 ~ 1767.5	0.2218	23M8G7D	0.1968	23M7W7D
30	1725.0 ~ 1765.0	0.2265	28M4G7D	0.1782	28M6W7D
35	1727.5 ~ 1762.5	0.2244	33M5G7D	0.1977	33M5W7D
40	1730.0 ~ 1760.0	0.2275	38M6G7D	0.1936	38M6W7D
45	1732.5 ~ 1757.5	0.2291	43M2G7D	0.1995	43M2W7D

5G NR n66 UL MIMO		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	0.2612	4M46G7D	0.2109	4M48W7D
10	1715.0 ~ 1775.0	0.2667	9M27G7D	0.2198	9M30W7D
15	1717.5 ~ 1772.5	0.2553	14M1G7D	0.2099	14M1W7D
20	1720.0 ~ 1770.0	0.2612	18M9G7D	0.2188	19M0W7D
25	1722.5 ~ 1767.5	0.2553	23M7G7D	0.2133	23M8W7D
30	1725.0 ~ 1765.0	0.2460	28M5G7D	0.1995	28M5W7D
35	1727.5 ~ 1762.5	0.2382	33M6G7D	0.1782	33M5W7D
40	1730.0 ~ 1760.0	0.2535	38M5G7D	0.2023	38M6W7D
45	1732.5 ~ 1757.5	0.2979	43M1G7D	0.2371	43M3W7D

5G NR n70		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	1697.5 ~ 1707.5	0.2547	4M46G7D	0.2168	4M47W7D
10	1700.0 ~ 1705.0	0.2612	9M29G7D	0.2193	9M32W7D
15	1702.5	0.2624	14M1G7D	0.2254	14M1W7D

5G NR n71		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	0.3112	4M46G7D	0.2529	4M47W7D
10	668.0 ~ 693.0	0.3112	9M29G7D	0.2506	9M30W7D
15	670.5 ~ 690.5	0.3105	14M1G7D	0.2512	14M1W7D
20	673.0 ~ 688.0	0.3133	18M9G7D	0.2600	19M0W7D

5G NR n71 UL MIMO		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	0.2917	4M46G7D	0.2399	4M47W7D
10	668.0 ~ 693.0	0.2951	9M27G7D	0.2432	9M30W7D
15	670.5 ~ 690.5	0.2917	14M1G7D	0.2477	14M1W7D
20	673.0 ~ 688.0	0.3097	19M0G7D	0.2582	19M0W7D

5G NR CA_66B	PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Maximum Conducted power (W)	Emission Designator (99%OBW)	Maximum Conducted power (W)	Emission Designator (99%OBW)
10MHz+15MHz	0.1950	23M9G7D	0.1824	24M0W7D
10MHz+20MHz	0.1897	28M6G7D	0.1734	28M6W7D
10MHz+40MHz	0.1633	48M1G7D	0.1656	48M2W7D
15MHz+10MHz	0.2104	23M9G7D	0.1837	23M9W7D
15MHz+15MHz	0.2065	29M4G7D	0.1875	29M4W7D
15MHz+20MHz	0.1977	33M6G7D	0.1849	33M9W7D
20MHz+5MHz	0.0519	23M6G7D	0.0527	23M7W7D
20MHz+10MHz	0.1982	28M7G7D	0.2023	28M9W7D
20MHz+15MHz	0.2084	33M3G7D	0.1782	33M7W7D
40MHz+5MHz	0.0546	43M7G7D	0.0527	43M6W7D
40MHz+10MHz	0.2393	48M2G7D	0.2173	48M3W7D
5MHz+20MHz	0.1959	23M7G7D	0.1854	23M5W7D
5MHz+40MHz	0.1169	43M6G7D	0.0740	43M7W7D

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.**
	03CH01-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-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.

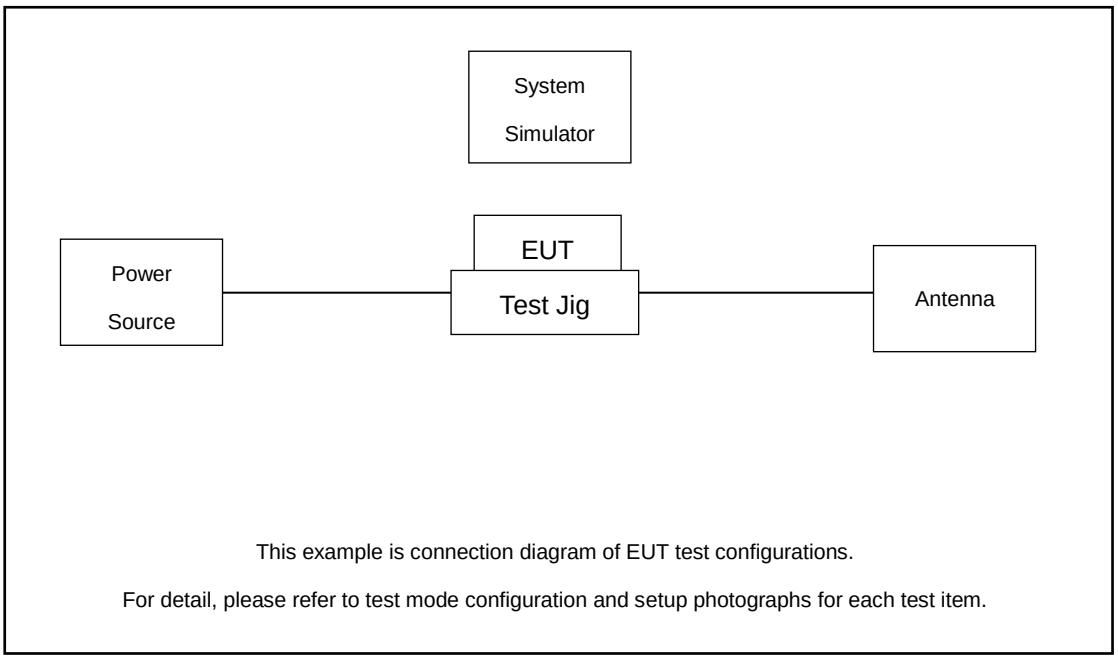
	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

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
	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		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
	n70	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

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
	n70	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	
	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	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	
	n66	Worst Case																							v	
	n70	Worst Case																							v	
	n71	Worst Case																							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 = 3.8V ; Low Voltage =3.3V. ; High Voltage =4.4V																									

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 10+15M, 10+20M, 10+40M, 15+10M, 15+15M, 15+20M, 20+5M, 20+10M, 20+15M, 40+5M, 40+10M, 5+20M, 5+40M,	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	n66B	All supported Bandwidth	All Modulation	1RB, Partial RB, Full RB	L, M, H
26dB and 99% Bandwidth	n66B	All supported Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	Full RB	M
Conducted Band Edge	n66B	10+15M, 20+15M, 40+10M	PI/2 BPSK, QPSK	1RB, Full RB,	L, H
Conducted Spurious Emission	n66B	10+15M, 20+15M, 40+10M	PI/2 BPSK, QPSK	1RB, Full RB,	L, M, H
E.I.R.P	n66B	All supported Bandwidth	All Modulation	1RB, Partial RB, Full RB	L, M, H
Radiated Spurious Emission	n66B	Worst case from maximum power			M
Note: 1. 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. 2. Frequency Stability : Normal Voltage = 3.8V ; Low Voltage =3.3V. ; 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				
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
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 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

Note: SCS 15kHz Covers SCS 30kHz for Bandwidths.

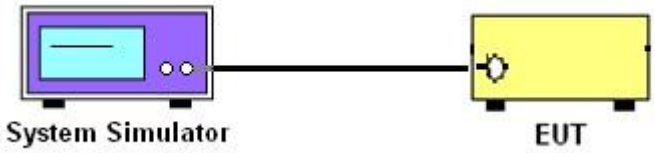
3 Conducted Test Items

3.1 Measuring Instruments

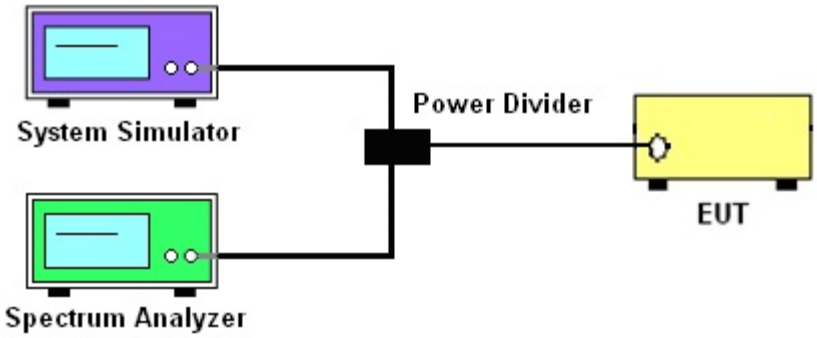
See list of measuring instruments of this test report.

3.2 Test Setup

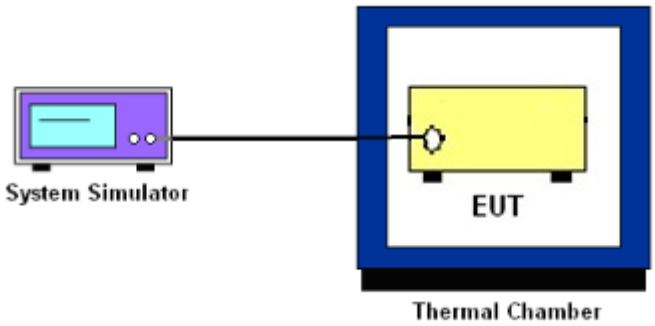
3.2.1 Conducted Output Power



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, 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 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 (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.

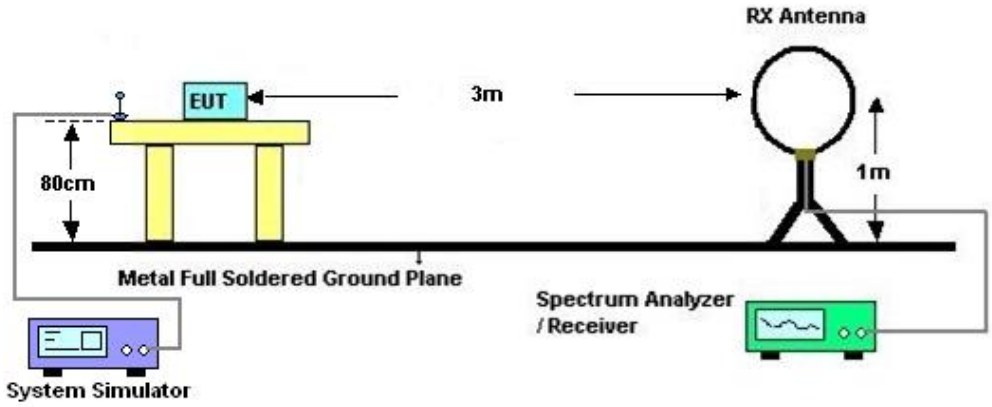
4 Radiated Test Items

4.1 Measuring Instruments

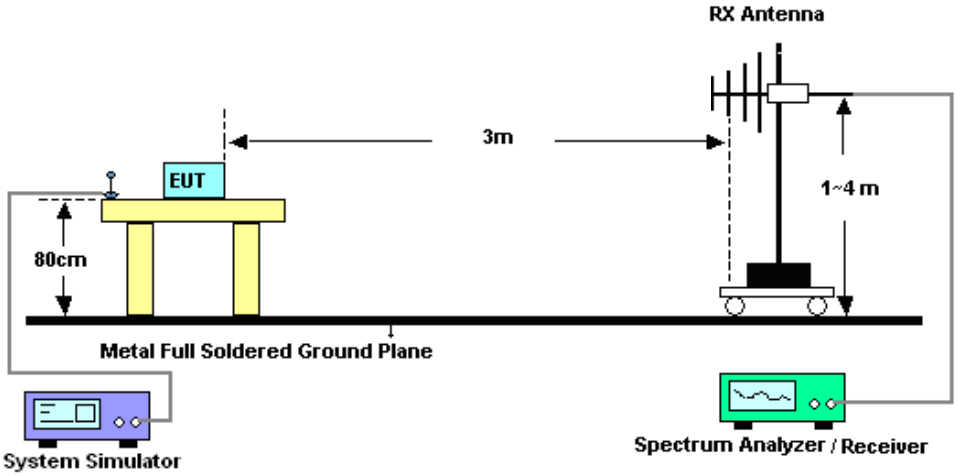
See list of measuring instruments of this test report.

4.2 Test Setup

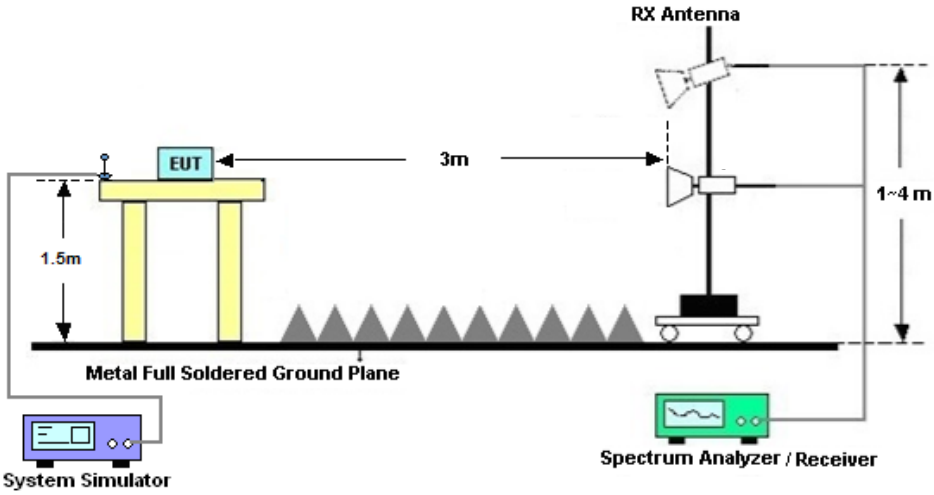
4.2.1 For radiated test below 30MHz



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. 05, 2023	Jan. 28, 2024~ Apr. 28, 2024	Apr. 04, 2024	Conducted (TH01-SZ)
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 04, 2024		Apr. 03, 2025	Conducted (TH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2023	Jan. 28, 2024~ Apr. 28, 2024	Jul. 06, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Jan. 28, 2024~ Apr. 28, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 05, 2023	Jan. 28, 2024~ Apr. 28, 2024	Jul. 04, 2024	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2023	Feb. 01, 2024~ Apr. 28, 2024	Dec. 26, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Feb. 01, 2024~ Apr. 28, 2024	Jul. 27, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 18, 2023	Feb. 01, 2024~ Apr. 28, 2024	Oct. 17, 2024	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Feb. 01, 2024~ Apr. 28, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 08, 2023	Feb. 01, 2024~ Apr. 28, 2024	Jul. 07, 2024	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 08, 2023	Feb. 01, 2024~ Apr. 28, 2024	Apr. 07, 2024	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 07, 2024		Apr. 06, 2025	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 04, 2023	Feb. 01, 2024~ Apr. 28, 2024	Apr. 03, 2024	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 03, 2024		Apr. 02, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Feb. 01, 2024~ Apr. 28, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 07, 2023	Feb. 01, 2024~ Apr. 28, 2024	Jul. 06, 2024	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	61601000198 5	N/A	Oct. 18, 2023	Feb. 01, 2024~ Apr. 28, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Feb. 01, 2024~ Apr. 28, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Feb. 01, 2024~ Apr. 28, 2024	NCR	Radiation (03CH01-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 (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.48dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.53dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.02dB

---------- 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 (ANT8)

Transmitter Conducted Output Power And ERP, (G_T - L_C)=1.58dB

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	24.46	23.89	0.2449
12	15	5	140300	701.5	DFT-s-OFDM 16 QAM	1@1	23.53	22.96	0.1977
12	15	5	141500	707.5	DFT-s-OFDM QPSK	1@1	24.53	23.96	0.2489
12	15	5	141500	707.5	DFT-s-OFDM 16 QAM	1@1	23.53	22.96	0.1977
12	15	5	142700	713.5	DFT-s-OFDM QPSK	1@1	24.46	23.89	0.2449
12	15	5	142700	713.5	DFT-s-OFDM 16 QAM	1@1	23.49	22.92	0.1959
12	15	10	140800	704	DFT-s-OFDM QPSK	1@1	24.44	23.87	0.2438
12	15	10	140800	704	DFT-s-OFDM 16 QAM	1@1	23.38	22.81	0.1910
12	15	10	141500	707.5	DFT-s-OFDM QPSK	1@1	24.48	23.91	0.2460
12	15	10	141500	707.5	DFT-s-OFDM 16 QAM	1@1	23.48	22.91	0.1954
12	15	10	142200	711	DFT-s-OFDM QPSK	1@1	24.41	23.84	0.2421
12	15	10	142200	711	DFT-s-OFDM 16 QAM	1@1	23.45	22.88	0.1941
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	36@18	24.57	24	0.2512
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@1	24.45	23.88	0.2443
12	15	15	141300	706.5	DFT-s-OFDM PI/2 BPSK	1@77	24.43	23.86	0.2432
12	15	15	141300	706.5	DFT-s-OFDM QPSK	36@18	24.53	23.96	0.2489
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@1	24.45	23.88	0.2443
12	15	15	141300	706.5	DFT-s-OFDM QPSK	1@77	24.45	23.88	0.2443
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	36@18	23.49	22.92	0.1959
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@1	23.6	23.03	0.2009
12	15	15	141300	706.5	DFT-s-OFDM 16 QAM	1@77	23.55	22.98	0.1986
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	36@18	22.01	21.44	0.1393
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@1	22.07	21.5	0.1413
12	15	15	141300	706.5	DFT-s-OFDM 64 QAM	1@77	22.1	21.53	0.1422
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	36@18	19.99	19.42	0.0875
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@1	20.33	19.76	0.0946
12	15	15	141300	706.5	DFT-s-OFDM 256 QAM	1@77	20.19	19.62	0.0916
12	15	15	141300	706.5	CP-OFDM QPSK	39@19	22.96	22.39	0.1734
12	15	15	141300	706.5	CP-OFDM QPSK	1@1	23.02	22.45	0.1758
12	15	15	141300	706.5	CP-OFDM QPSK	1@77	22.99	22.42	0.1746
12	15	15	141500	707.5	DFT-s-OFDM	36@18	24.53	23.96	0.2489

					PI/2 BPSK				
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@1	24.51	23.94	0.2477
12	15	15	141500	707.5	DFT-s-OFDM PI/2 BPSK	1@77	24.4	23.83	0.2415
12	15	15	141500	707.5	DFT-s-OFDM QPSK	36@18	24.53	23.96	0.2489
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@1	24.55	23.98	0.2500
12	15	15	141500	707.5	DFT-s-OFDM QPSK	1@77	24.39	23.82	0.2410
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	36@18	23.55	22.98	0.1986
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@1	23.66	23.09	0.2037
12	15	15	141500	707.5	DFT-s-OFDM 16 QAM	1@77	23.56	22.99	0.1991
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	36@18	22	21.43	0.1390
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@1	22.15	21.58	0.1439
12	15	15	141500	707.5	DFT-s-OFDM 64 QAM	1@77	21.99	21.42	0.1387
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	36@18	20.01	19.44	0.0879
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@1	20.22	19.65	0.0923
12	15	15	141500	707.5	DFT-s-OFDM 256 QAM	1@77	20.12	19.55	0.0902
12	15	15	141500	707.5	CP-OFDM QPSK	39@19	22.92	22.35	0.1718
12	15	15	141500	707.5	CP-OFDM QPSK	1@1	22.95	22.38	0.1730
12	15	15	141500	707.5	CP-OFDM QPSK	1@77	22.73	22.16	0.1644
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	36@18	24.46	23.89	0.2449
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@1	24.44	23.87	0.2438
12	15	15	141700	708.5	DFT-s-OFDM PI/2 BPSK	1@77	24.43	23.86	0.2432
12	15	15	141700	708.5	DFT-s-OFDM QPSK	36@18	24.5	23.93	0.2472
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@1	24.46	23.89	0.2449
12	15	15	141700	708.5	DFT-s-OFDM QPSK	1@77	24.36	23.79	0.2393
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	36@18	23.49	22.92	0.1959
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@1	23.61	23.04	0.2014
12	15	15	141700	708.5	DFT-s-OFDM 16 QAM	1@77	23.52	22.95	0.1972
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	36@18	21.99	21.42	0.1387
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@1	22.04	21.47	0.1403
12	15	15	141700	708.5	DFT-s-OFDM 64 QAM	1@77	22.07	21.5	0.1413
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	36@18	19.93	19.36	0.0863
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@1	20.23	19.66	0.0925
12	15	15	141700	708.5	DFT-s-OFDM 256 QAM	1@77	20.21	19.64	0.0920
12	15	15	141700	708.5	CP-OFDM QPSK	39@19	22.94	22.37	0.1726
12	15	15	141700	708.5	CP-OFDM QPSK	1@1	23.04	22.47	0.1766
12	15	15	141700	708.5	CP-OFDM	1@77	22.93	22.36	0.1722

QPSK

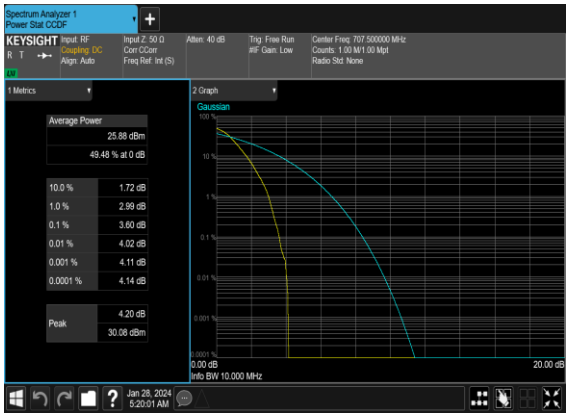
Frequency Stability

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	0.0057	**PASS**	NV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0069	**PASS**	LV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0030	**PASS**	HV
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0055	**PASS**	-30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0043	**PASS**	-20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0030	**PASS**	-10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0040	**PASS**	0℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0062	**PASS**	10℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0057	**PASS**	20℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0069	**PASS**	30℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0036	**PASS**	40℃
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	0.0025	**PASS**	50℃

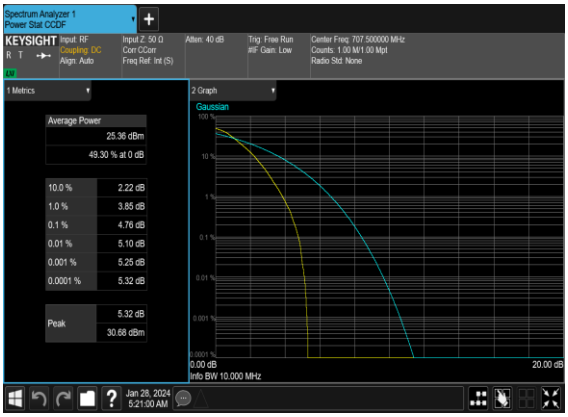
Peak to Average Ratio

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	3.6	13	**PASS**
12	15	10	141500	707.5	DFT-s-OFDM QPSK	50@0	4.76	13	**PASS**

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



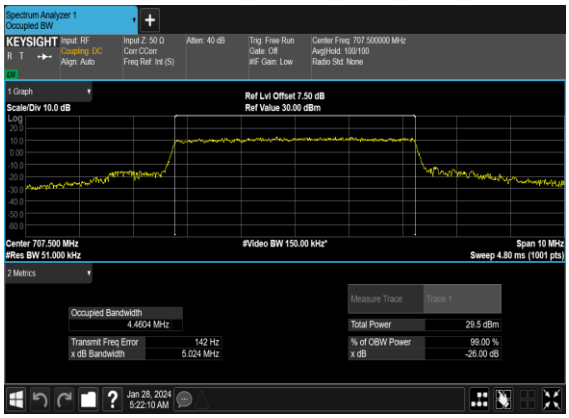
N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



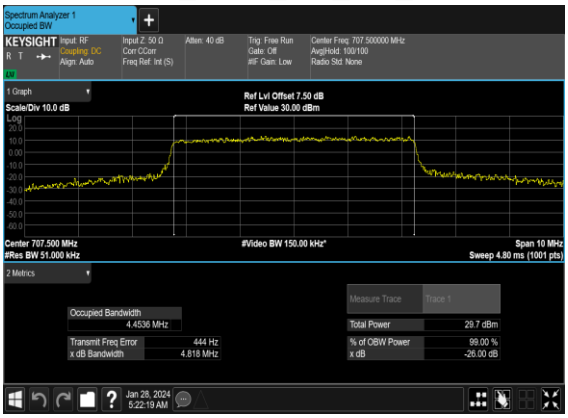
Occupied Bandwidth

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	4.4604	5.024
12	15	5	141500	707.5	CP-OFDM 16 QAM	25@0	4.4536	4.818
12	15	5	141500	707.5	CP-OFDM 64 QAM	25@0	4.4588	4.805
12	15	5	141500	707.5	CP-OFDM 256 QAM	25@0	4.4604	4.729
12	15	10	141500	707.5	CP-OFDM QPSK	52@0	9.2392	9.686
12	15	10	141500	707.5	CP-OFDM 16 QAM	52@0	9.227	9.667
12	15	10	141500	707.5	CP-OFDM 64 QAM	52@0	9.2453	9.71
12	15	10	141500	707.5	CP-OFDM 256 QAM	52@0	9.2389	9.674
12	15	15	141500	707.5	CP-OFDM QPSK	79@0	14.037	14.63
12	15	15	141500	707.5	CP-OFDM 16 QAM	79@0	14.078	14.63
12	15	15	141500	707.5	CP-OFDM 64 QAM	79@0	14.035	14.64
12	15	15	141500	707.5	CP-OFDM 256 QAM	79@0	14.021	14.64

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

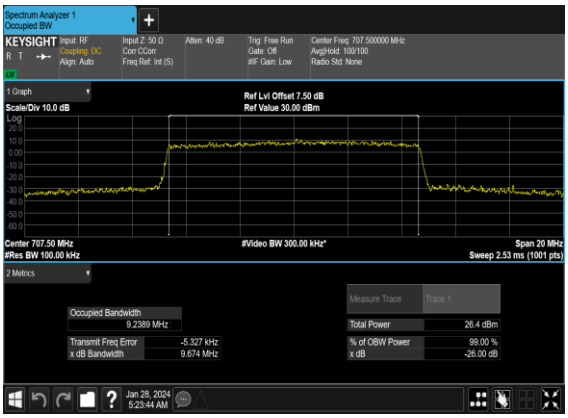
N12(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

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

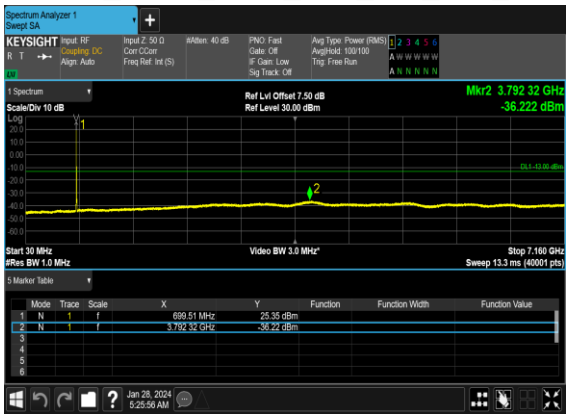
N12(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N12(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

Conducted Spurious Emissions

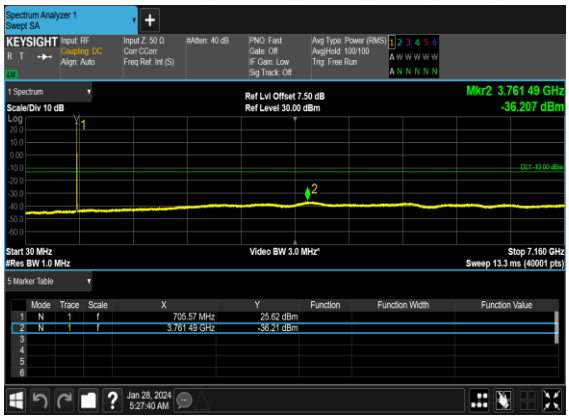
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see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

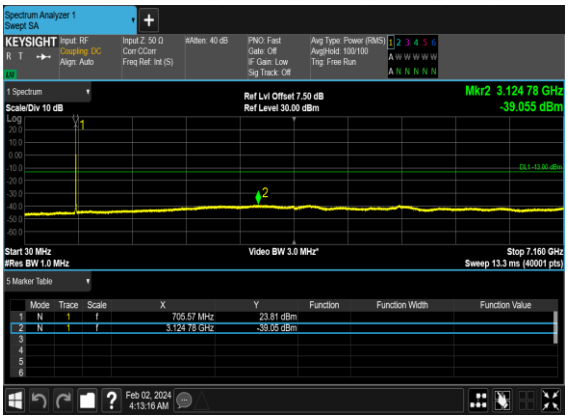


N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

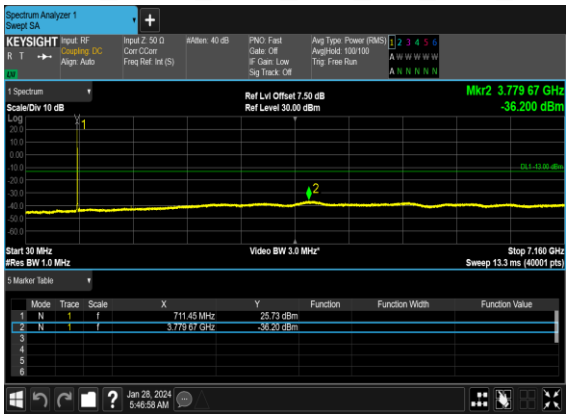
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



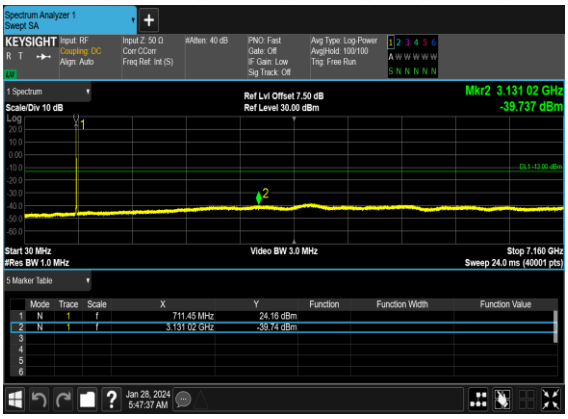
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



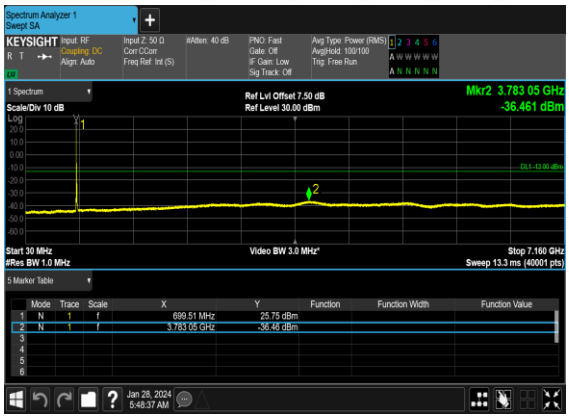
N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



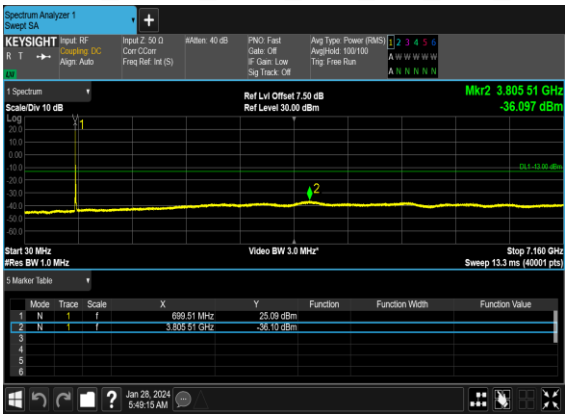
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



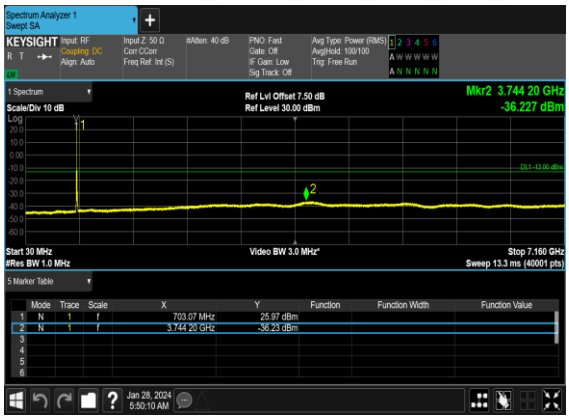
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



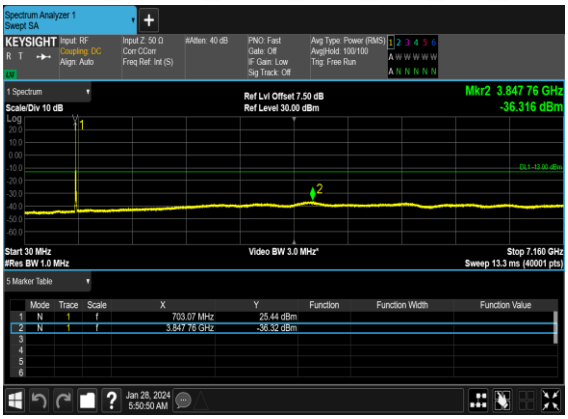
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



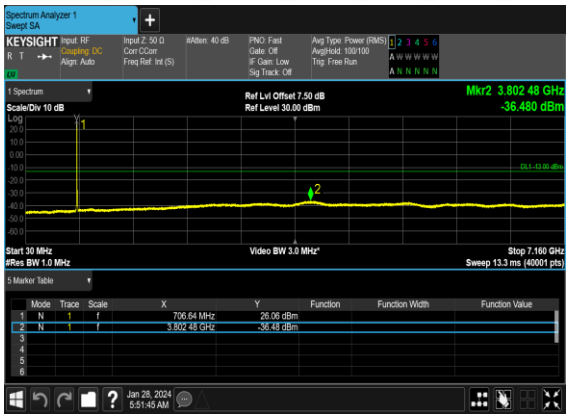
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



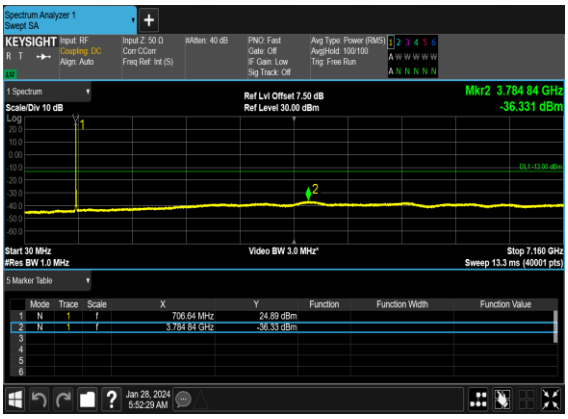
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



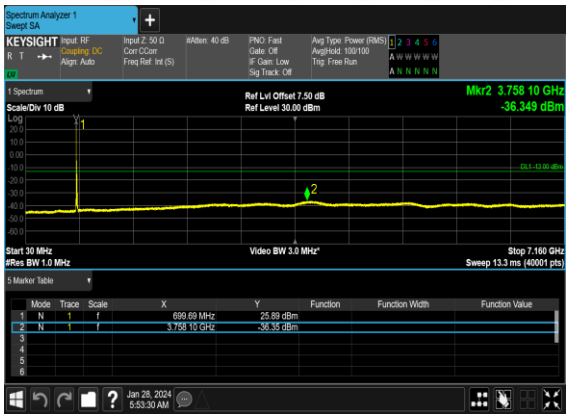
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



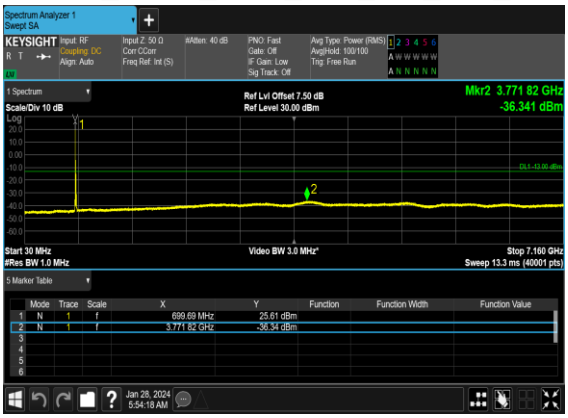
N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

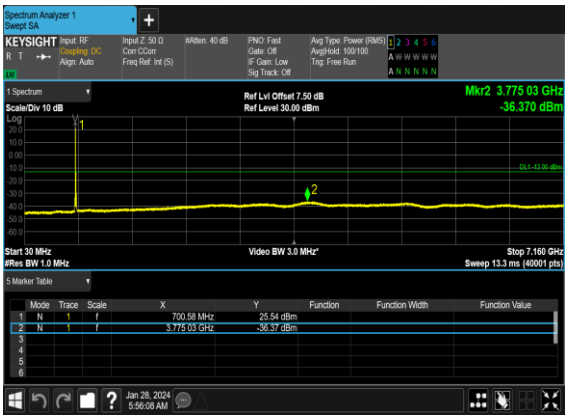


N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

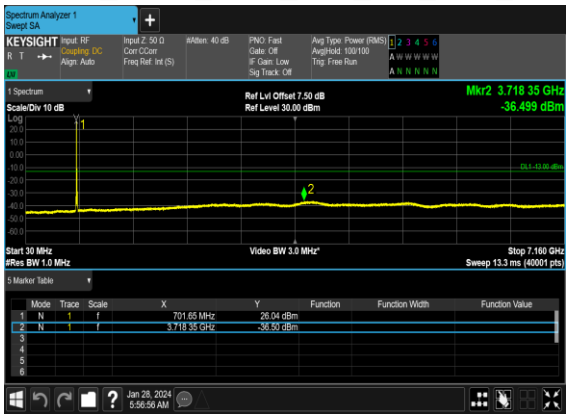


N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

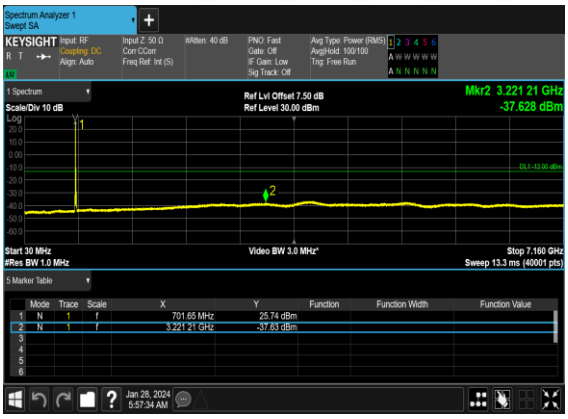
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



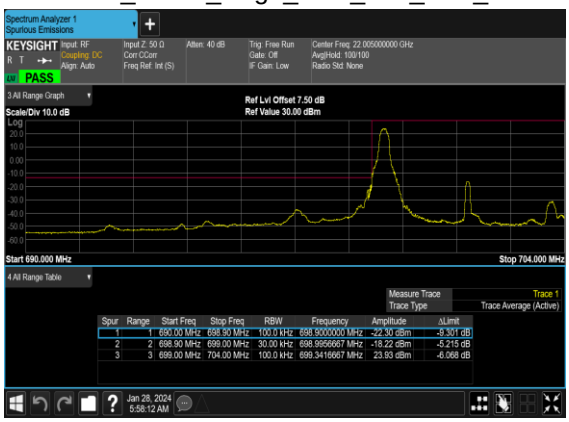
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



Conducted Band Edge

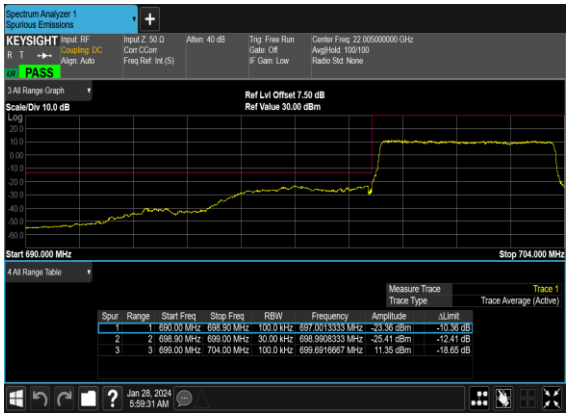
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
12	15	5	140300	701.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
12	15	5	140300	701.5	DFT-s-OFDM QPSK	25@0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



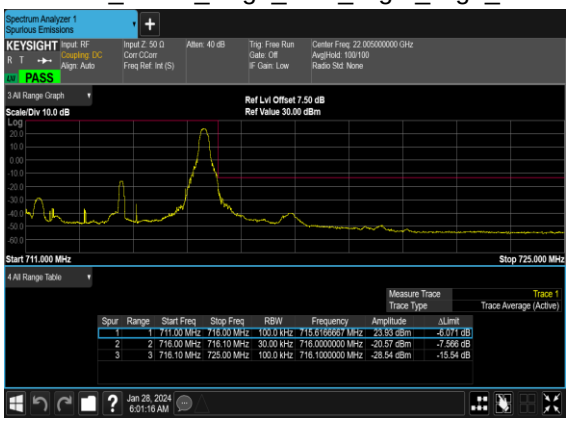
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

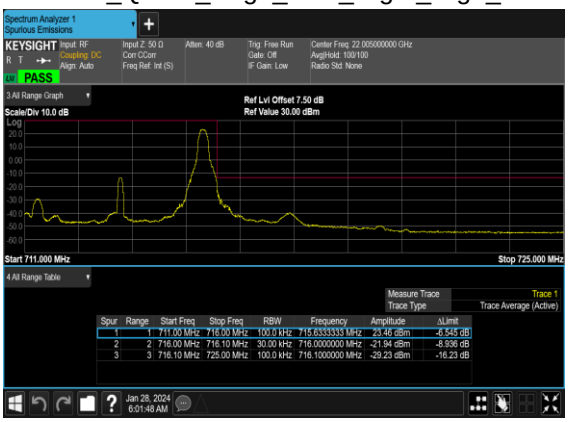


N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

N12(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



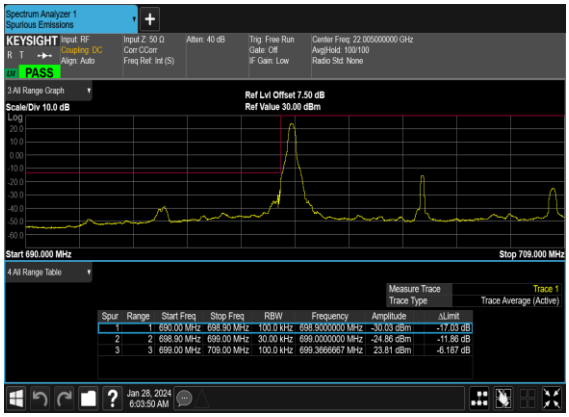
N12(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



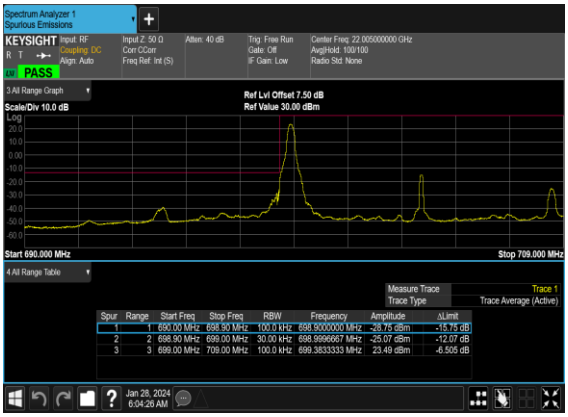
N12(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

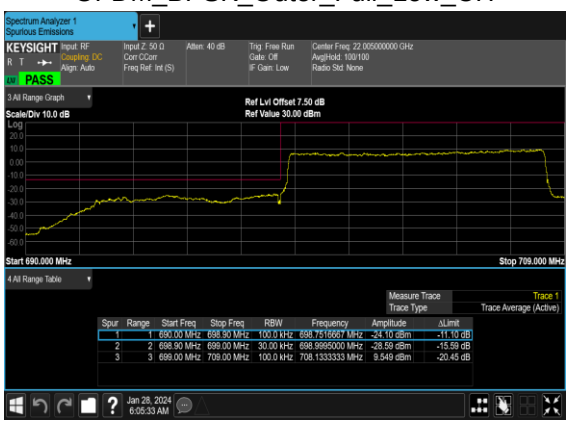
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



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

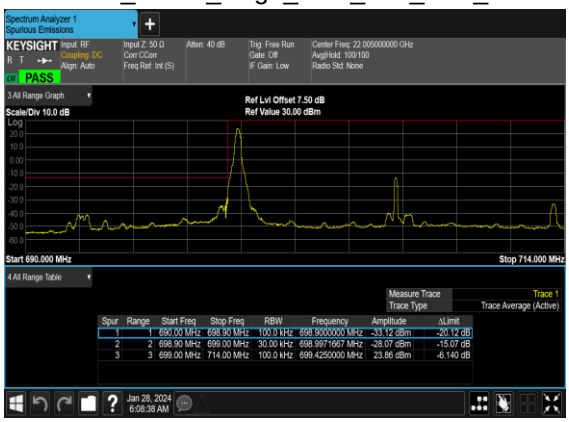
N12(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

N12(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

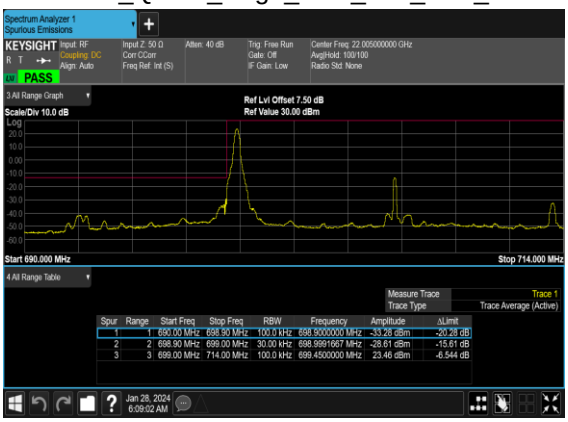
N12(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N12(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

N12(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



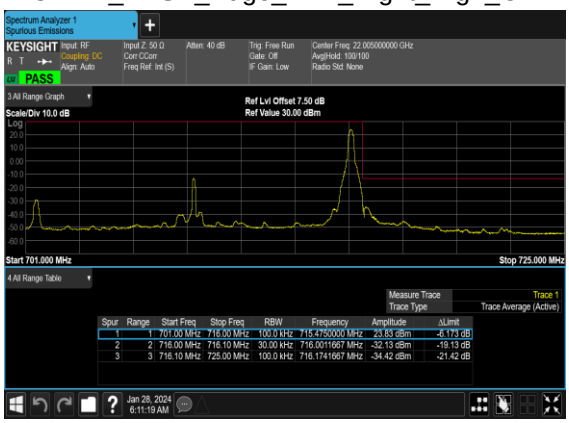
N12(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



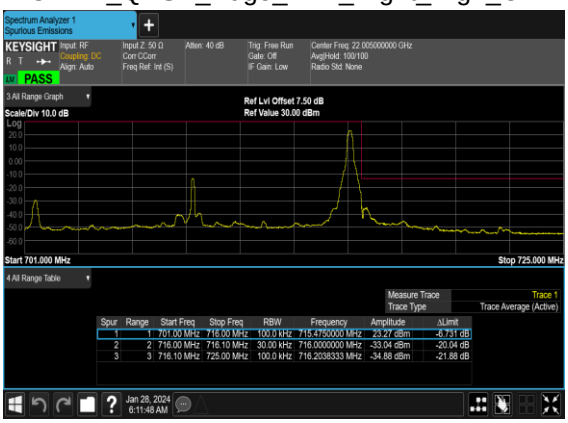
N12(15M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

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 N66 (ANT3)

Transmitter Conducted Output Power and EIRP, (G_T - L_C)=1.5dB

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	23.51	25.01	0.3170
66	15	5	342500	1712.5	DFT-s-OFDM 16 QAM	1@1	22.53	24.03	0.2529
66	15	5	349000	1745	DFT-s-OFDM QPSK	1@1	23.52	25.02	0.3177
66	15	5	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.57	24.07	0.2553
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@1	22.91	24.41	0.2761
66	15	5	355500	1777.5	DFT-s-OFDM 16 QAM	1@1	22.4	23.9	0.2455
66	15	10	343000	1715	DFT-s-OFDM QPSK	1@1	23.54	25.04	0.3192
66	15	10	343000	1715	DFT-s-OFDM 16 QAM	1@1	22.58	24.08	0.2559
66	15	10	349000	1745	DFT-s-OFDM QPSK	1@1	23	24.5	0.2818
66	15	10	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.57	24.07	0.2553
66	15	10	355000	1775	DFT-s-OFDM QPSK	1@1	23.25	24.75	0.2985
66	15	10	355000	1775	DFT-s-OFDM 16 QAM	1@1	22.89	24.39	0.2748
66	15	15	343500	1717.5	DFT-s-OFDM QPSK	1@1	23.48	24.98	0.3148
66	15	15	343500	1717.5	DFT-s-OFDM 16 QAM	1@1	22.65	24.15	0.2600
66	15	15	349000	1745	DFT-s-OFDM QPSK	1@1	23.41	24.91	0.3097
66	15	15	349000	1745	DFT-s-OFDM 16 QAM	1@1	23.01	24.51	0.2825
66	15	15	354500	1772.5	DFT-s-OFDM QPSK	1@1	23.22	24.72	0.2965
66	15	15	354500	1772.5	DFT-s-OFDM 16 QAM	1@1	22.39	23.89	0.2449
66	15	20	344000	1720	DFT-s-OFDM QPSK	1@1	23.02	24.52	0.2831
66	15	20	344000	1720	DFT-s-OFDM 16 QAM	1@1	23.02	24.52	0.2831
66	15	20	349000	1745	DFT-s-OFDM QPSK	1@1	23.47	24.97	0.3141
66	15	20	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.59	24.09	0.2564
66	15	20	354000	1770	DFT-s-OFDM QPSK	1@1	22.81	24.31	0.2698
66	15	20	354000	1770	DFT-s-OFDM 16 QAM	1@1	22.44	23.94	0.2477
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@1	23.46	24.96	0.3133

66	15	25	344500	1722.5	DFT-s-OFDM 16 QAM	1@1	22.87	24.37	0.2735
66	15	25	349000	1745	DFT-s-OFDM QPSK	1@1	23	24.5	0.2818
66	15	25	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.94	24.44	0.2780
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@1	23.32	24.82	0.3034
66	15	25	353500	1767.5	DFT-s-OFDM 16 QAM	1@1	22.3	23.8	0.2399
66	15	30	345000	1725	DFT-s-OFDM QPSK	1@1	23.55	25.05	0.3199
66	15	30	345000	1725	DFT-s-OFDM 16 QAM	1@1	22.37	23.87	0.2438
66	15	30	349000	1745	DFT-s-OFDM QPSK	1@1	23.43	24.93	0.3112
66	15	30	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.51	24.01	0.2518
66	15	30	353000	1765	DFT-s-OFDM QPSK	1@1	23.24	24.74	0.2979
66	15	30	353000	1765	DFT-s-OFDM 16 QAM	1@1	22.34	23.84	0.2421
66	15	35	345500	1727.5	DFT-s-OFDM QPSK	1@1	23.35	24.85	0.3055
66	15	35	345500	1727.5	DFT-s-OFDM 16 QAM	1@1	22.86	24.36	0.2729
66	15	35	349000	1745	DFT-s-OFDM QPSK	1@1	23.45	24.95	0.3126
66	15	35	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.92	24.42	0.2767
66	15	35	352500	1762.5	DFT-s-OFDM QPSK	1@1	23.51	25.01	0.3170
66	15	35	352500	1762.5	DFT-s-OFDM 16 QAM	1@1	22.96	24.46	0.2793
66	15	40	346000	1730	DFT-s-OFDM QPSK	1@1	23.57	25.07	0.3214
66	15	40	346000	1730	DFT-s-OFDM 16 QAM	1@1	22.33	23.83	0.2415
66	15	40	349000	1745	DFT-s-OFDM QPSK	1@1	23.52	25.02	0.3177
66	15	40	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.87	24.37	0.2735
66	15	40	352000	1760	DFT-s-OFDM QPSK	1@1	23.42	24.92	0.3105
66	15	40	352000	1760	DFT-s-OFDM 16 QAM	1@1	22.43	23.93	0.2472
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	120@60	23.53	25.03	0.3184
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	1@1	23.24	24.74	0.2979
66	15	45	346500	1732.5	DFT-s-OFDM PI/2 BPSK	1@240	23.47	24.97	0.3141
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	120@60	23.52	25.02	0.3177
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@1	23.18	24.68	0.2938
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@240	23.44	24.94	0.3119
66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	120@60	22.79	24.29	0.2685
66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	1@1	22.56	24.06	0.2547

66	15	45	346500	1732.5	DFT-s-OFDM 16 QAM	1@240	22.84	24.34	0.2716
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	120@60	21.28	22.78	0.1897
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	1@1	21.23	22.73	0.1875
66	15	45	346500	1732.5	DFT-s-OFDM 64 QAM	1@240	21.45	22.95	0.1972
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	120@60	19.31	20.81	0.1205
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	1@1	19.05	20.55	0.1135
66	15	45	346500	1732.5	DFT-s-OFDM 256 QAM	1@240	19.33	20.83	0.1211
66	15	45	346500	1732.5	CP-OFDM QPSK	121@60	22.26	23.76	0.2377
66	15	45	346500	1732.5	CP-OFDM QPSK	1@1	22.15	23.65	0.2317
66	15	45	346500	1732.5	CP-OFDM QPSK	1@240	22.42	23.92	0.2466
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	120@60	23.49	24.99	0.3155
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	1@1	23.4	24.9	0.3090
66	15	45	349000	1745	DFT-s-OFDM PI/2 BPSK	1@240	23.48	24.98	0.3148
66	15	45	349000	1745	DFT-s-OFDM QPSK	120@60	23.49	24.99	0.3155
66	15	45	349000	1745	DFT-s-OFDM QPSK	1@1	23.31	24.81	0.3027
66	15	45	349000	1745	DFT-s-OFDM QPSK	1@240	23.38	24.88	0.3076
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	120@60	22.89	24.39	0.2748
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	1@1	22.63	24.13	0.2588
66	15	45	349000	1745	DFT-s-OFDM 16 QAM	1@240	22.91	24.41	0.2761
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	120@60	21.39	22.89	0.1945
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	1@1	21.26	22.76	0.1888
66	15	45	349000	1745	DFT-s-OFDM 64 QAM	1@240	21.56	23.06	0.2023
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	120@60	19.4	20.9	0.1230
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	1@1	19.04	20.54	0.1132
66	15	45	349000	1745	DFT-s-OFDM 256 QAM	1@240	19.39	20.89	0.1227
66	15	45	349000	1745	CP-OFDM QPSK	121@60	22.44	23.94	0.2477
66	15	45	349000	1745	CP-OFDM QPSK	1@1	21.99	23.49	0.2234
66	15	45	349000	1745	CP-OFDM QPSK	1@240	22.44	23.94	0.2477
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	120@60	23.54	25.04	0.3192
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	1@1	23.32	24.82	0.3034
66	15	45	351500	1757.5	DFT-s-OFDM PI/2 BPSK	1@240	23.5	25	0.3162

66	15	45	351500	1757.5	DFT-s-OFDM QPSK	120@60	23.6	25.1	0.3236
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@1	23.25	24.75	0.2985
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@240	23.38	24.88	0.3076
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	120@60	23	24.5	0.2818
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	1@1	22.76	24.26	0.2667
66	15	45	351500	1757.5	DFT-s-OFDM 16 QAM	1@240	22.77	24.27	0.2673
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	120@60	21.48	22.98	0.1986
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	1@1	21.39	22.89	0.1945
66	15	45	351500	1757.5	DFT-s-OFDM 64 QAM	1@240	21.39	22.89	0.1945
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	120@60	19.52	21.02	0.1265
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	1@1	19.24	20.74	0.1186
66	15	45	351500	1757.5	DFT-s-OFDM 256 QAM	1@240	19.26	20.76	0.1191
66	15	45	351500	1757.5	CP-OFDM QPSK	121@60	22.51	24.01	0.2518
66	15	45	351500	1757.5	CP-OFDM QPSK	1@1	22.1	23.6	0.2291
66	15	45	351500	1757.5	CP-OFDM QPSK	1@240	22.27	23.77	0.2382

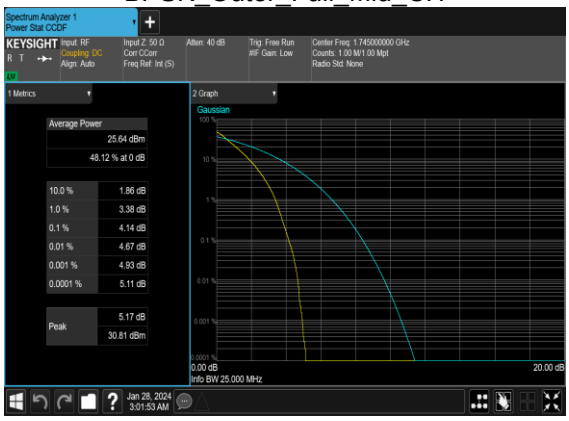
Frequency Stability

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	0.0040	**PASS**	NV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0043	**PASS**	LV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	HV
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0041	**PASS**	-30℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0022	**PASS**	-20℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0067	**PASS**	-10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0068	**PASS**	0℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0060	**PASS**	10℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0040	**PASS**	20℃
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	0.0033	**PASS**	40℃
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	0.0066	**PASS**	50℃

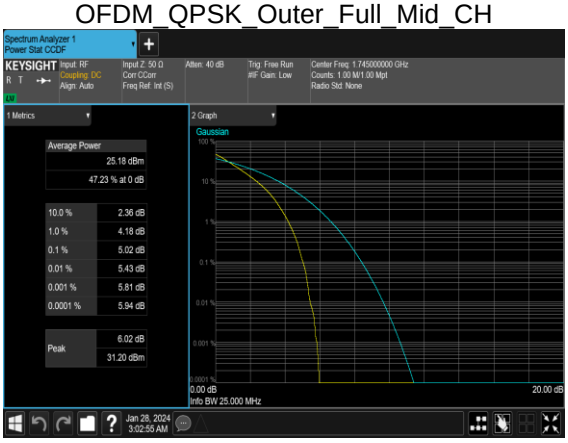
Peak to Average Ratio

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	4.14	13	**PASS**
66	15	20	349000	1745.0	DFT-s-OFDM QPSK	100@0	5.02	13	**PASS**

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



N66(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

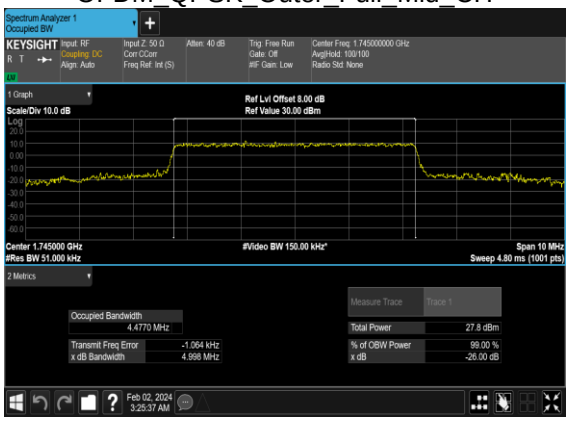


Occupied Bandwidth

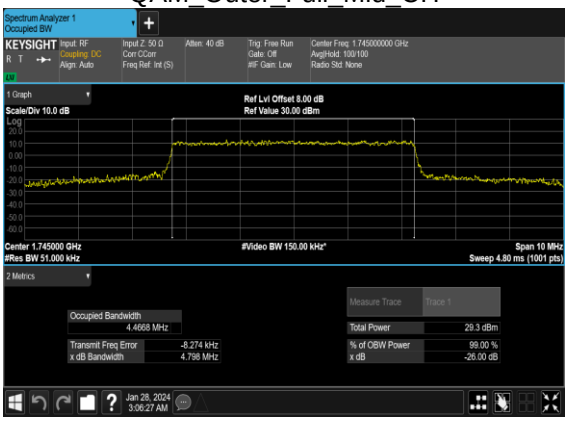
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
66	15	5	349000	1745.0	CP-OFDM QPSK	25@0	4.477	4.998
66	15	5	349000	1745.0	CP-OFDM 16 QAM	25@0	4.4668	4.798
66	15	5	349000	1745.0	CP-OFDM 64 QAM	25@0	4.4647	4.8
66	15	5	349000	1745.0	CP-OFDM 256 QAM	25@0	4.4734	4.769
66	15	10	349000	1745.0	CP-OFDM QPSK	52@0	9.3005	9.787
66	15	10	349000	1745.0	CP-OFDM 16 QAM	52@0	9.2712	9.703
66	15	10	349000	1745.0	CP-OFDM 64 QAM	52@0	9.316	9.774
66	15	10	349000	1745.0	CP-OFDM 256 QAM	52@0	9.2805	9.716
66	15	15	349000	1745.0	CP-OFDM QPSK	79@0	14.076	14.68
66	15	15	349000	1745.0	CP-OFDM 16 QAM	79@0	14.088	14.63
66	15	15	349000	1745.0	CP-OFDM 64 QAM	79@0	14.131	14.69
66	15	15	349000	1745.0	CP-OFDM 256 QAM	79@0	14.066	14.64
66	15	20	349000	1745.0	CP-OFDM QPSK	106@0	18.932	19.57
66	15	20	349000	1745.0	CP-OFDM 16 QAM	106@0	18.927	19.72
66	15	20	349000	1745.0	CP-OFDM 64 QAM	106@0	18.9	19.69
66	15	20	349000	1745.0	CP-OFDM 256 QAM	106@0	18.922	19.6
66	15	25	349000	1745.0	CP-OFDM QPSK	133@0	23.765	24.61
66	15	25	349000	1745.0	CP-OFDM 16 QAM	133@0	23.748	25.3
66	15	25	349000	1745.0	CP-OFDM 64 QAM	133@0	23.671	24.65
66	15	25	349000	1745.0	CP-OFDM 256 QAM	133@0	23.722	24.64
66	15	30	349000	1745.0	CP-OFDM QPSK	160@0	28.441	29.51
66	15	30	349000	1745.0	CP-OFDM 16 QAM	160@0	28.489	29.51
66	15	30	349000	1745.0	CP-OFDM 64 QAM	160@0	28.56	29.51
66	15	30	349000	1745.0	CP-OFDM 256 QAM	160@0	28.518	29.54
66	15	35	349000	1745.0	CP-OFDM QPSK	188@0	33.468	34.77

66	15	35	349000	1745.0	CP-OFDM 16 QAM	188@0	33.478	34.7
66	15	35	349000	1745.0	CP-OFDM 64 QAM	188@0	33.528	34.76
66	15	35	349000	1745.0	CP-OFDM 256 QAM	188@0	33.501	34.76
66	15	40	349000	1745.0	CP-OFDM QPSK	216@0	38.575	40.0
66	15	40	349000	1745.0	CP-OFDM 16 QAM	216@0	38.603	40.03
66	15	40	349000	1745.0	CP-OFDM 64 QAM	216@0	38.543	39.94
66	15	40	349000	1745.0	CP-OFDM 256 QAM	216@0	38.561	39.83
66	15	45	349000	1745.0	CP-OFDM QPSK	242@0	43.215	44.61
66	15	45	349000	1745.0	CP-OFDM 16 QAM	242@0	43.146	44.62
66	15	45	349000	1745.0	CP-OFDM 64 QAM	242@0	43.151	44.64
66	15	45	349000	1745.0	CP-OFDM 256 QAM	242@0	43.143	44.59

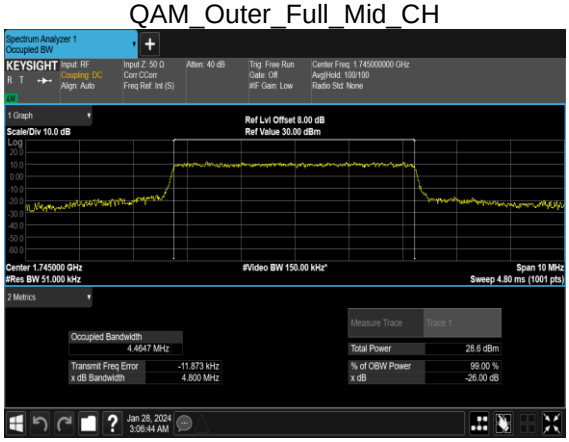
N66(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



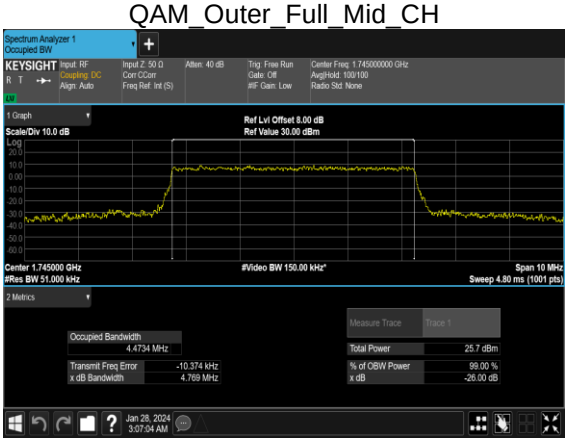
N66(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



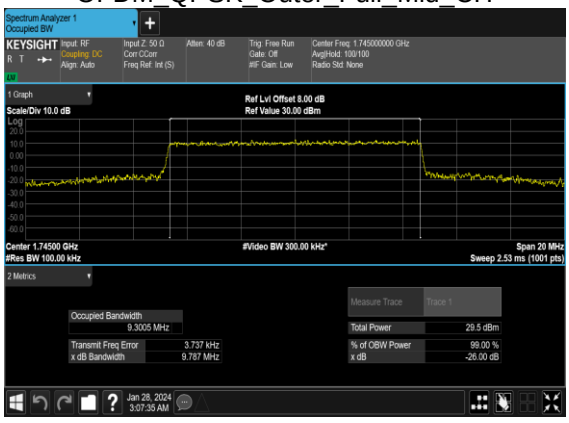
N66(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



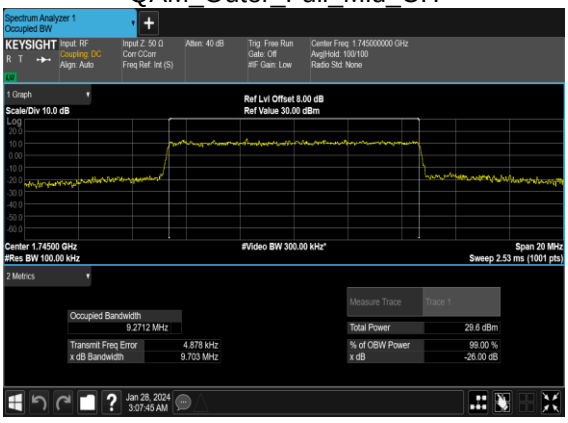
N66(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



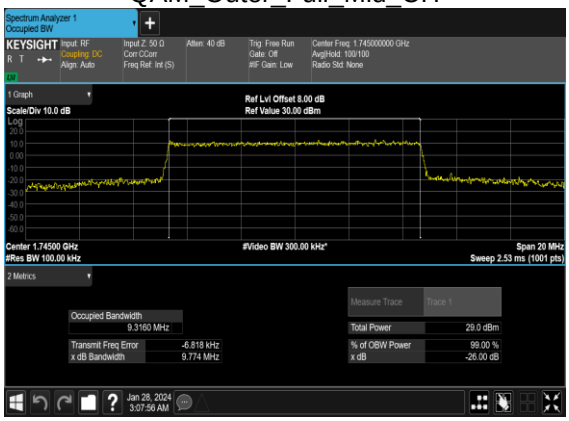
N66(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N66(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

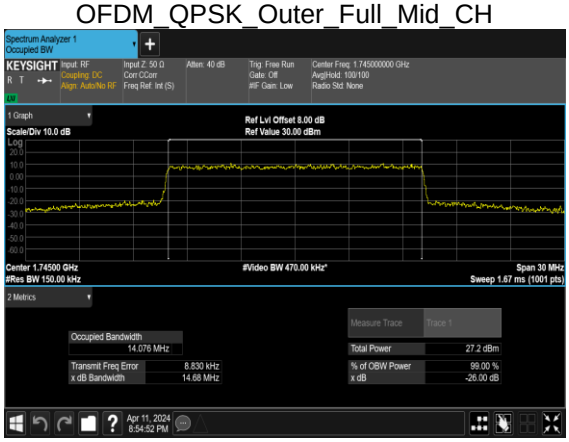


N66(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

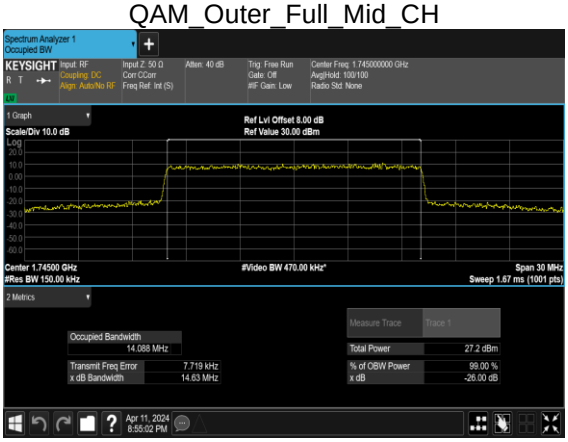


N66(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

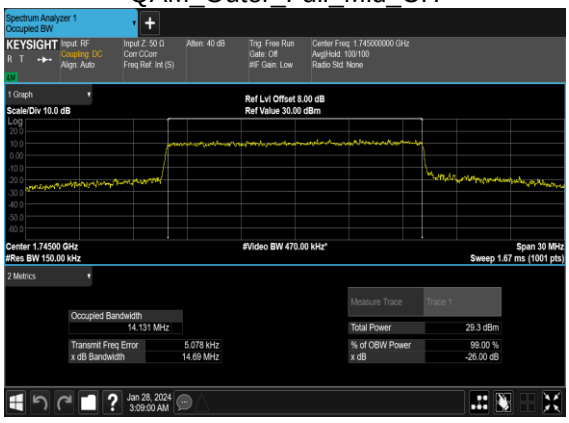
N66(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



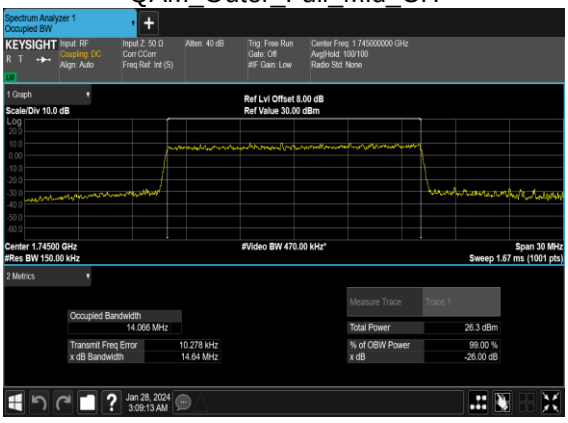
N66(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



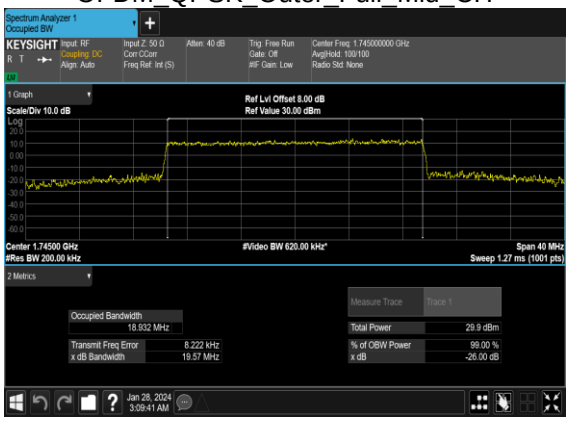
N66(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



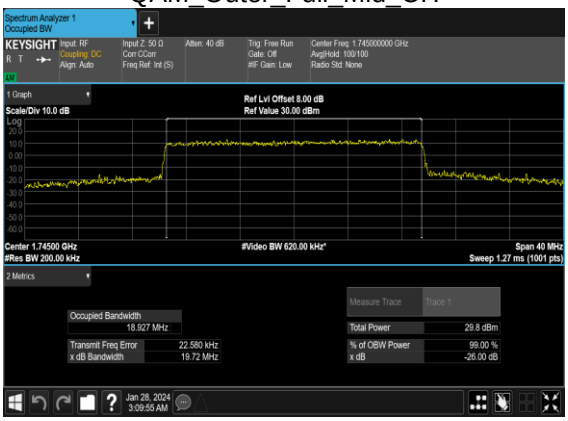
N66(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



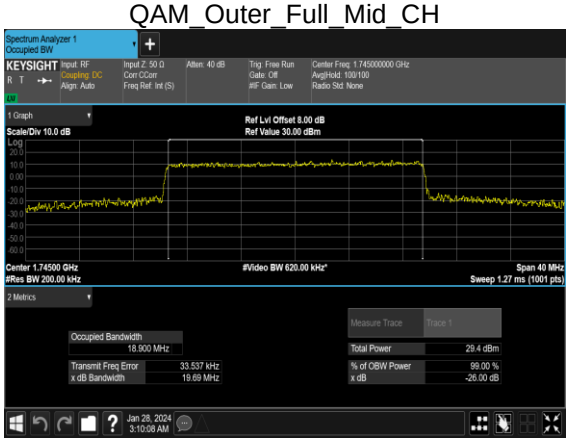
N66(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



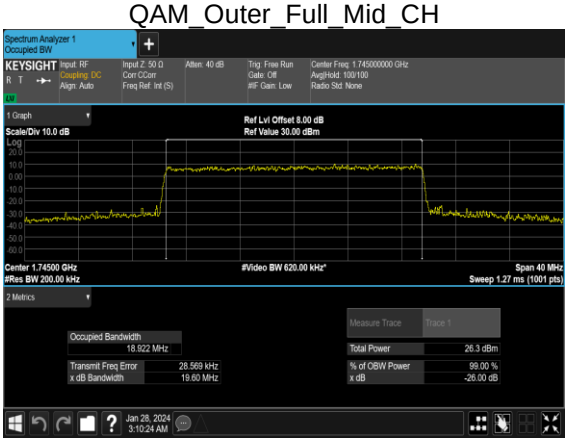
N66(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



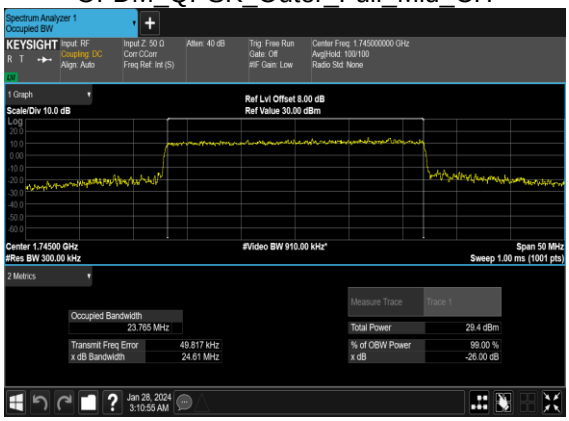
N66(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



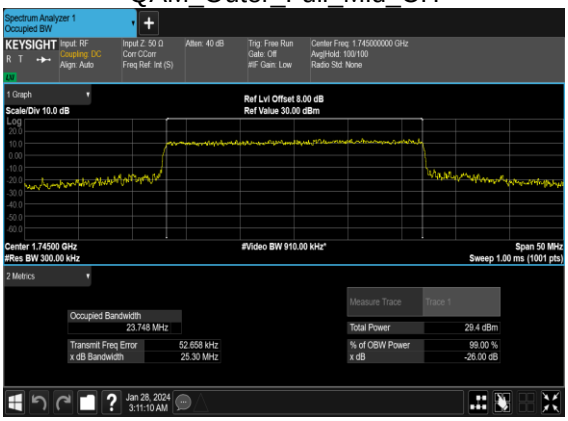
N66(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



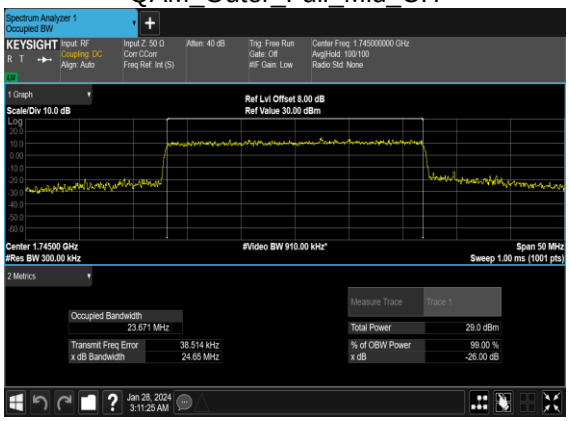
N66(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



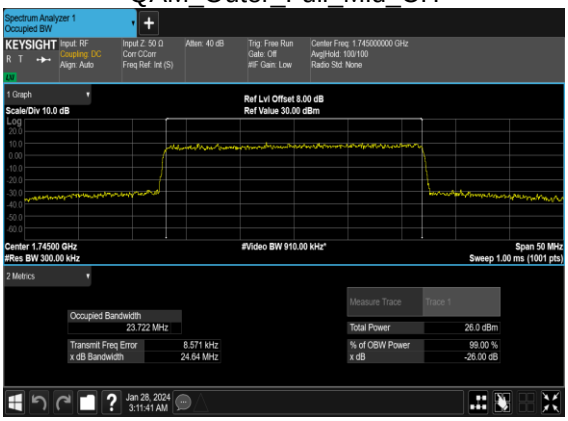
N66(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



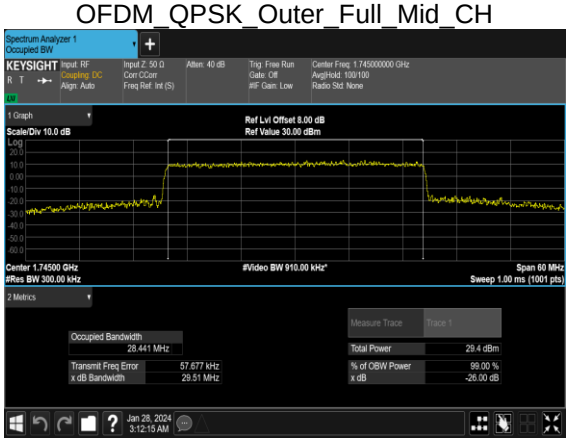
N66(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



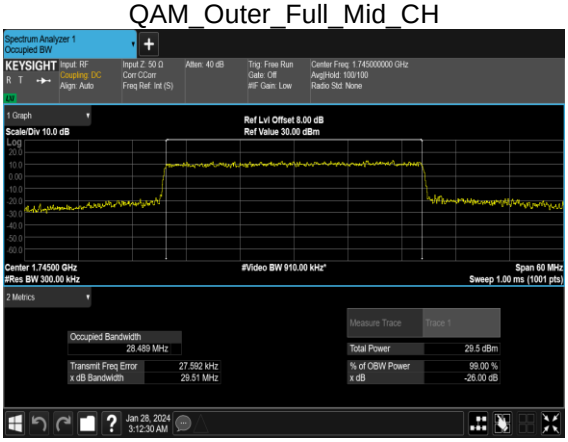
N66(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



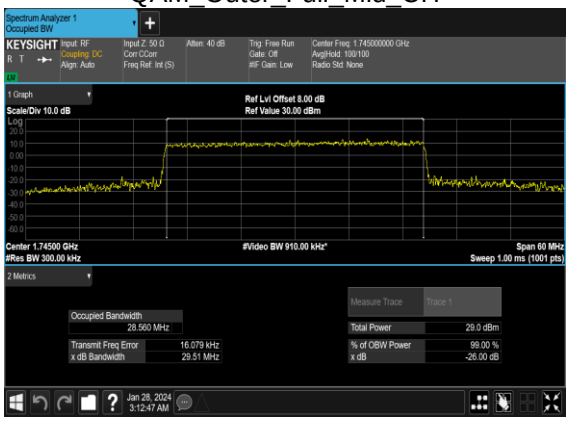
N66(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



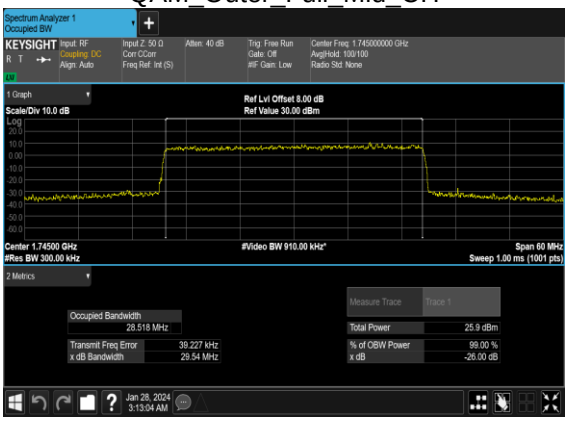
N66(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N66(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

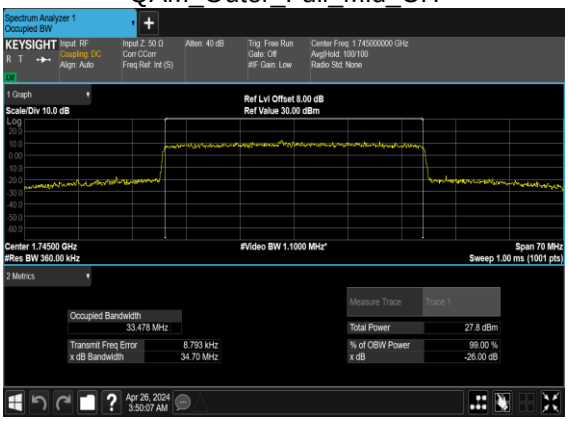


N66(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

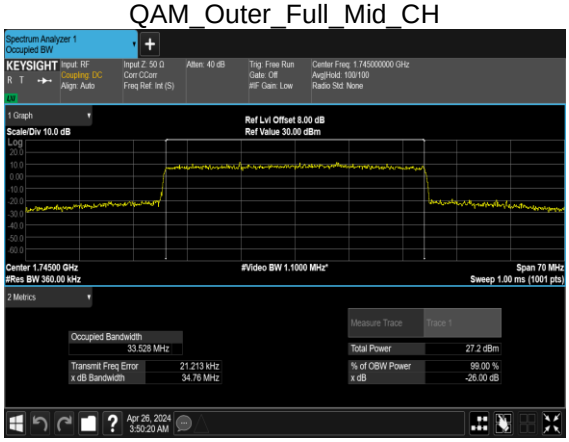


N66(35M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

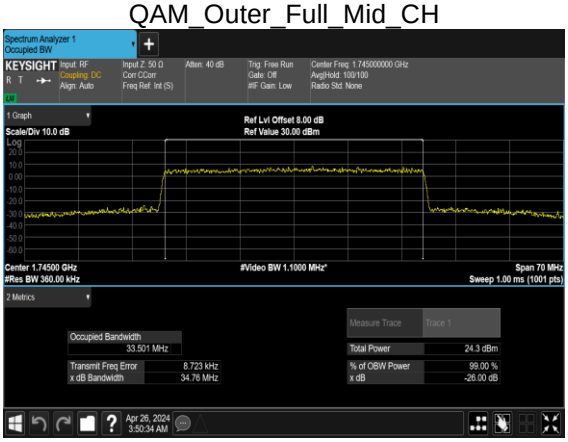
N66(35M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



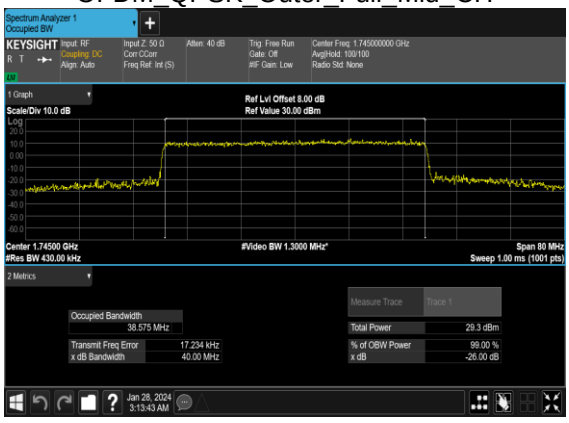
N66(35M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



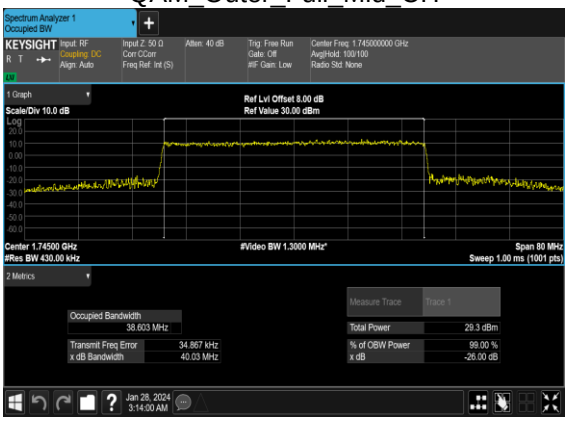
N66(35M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



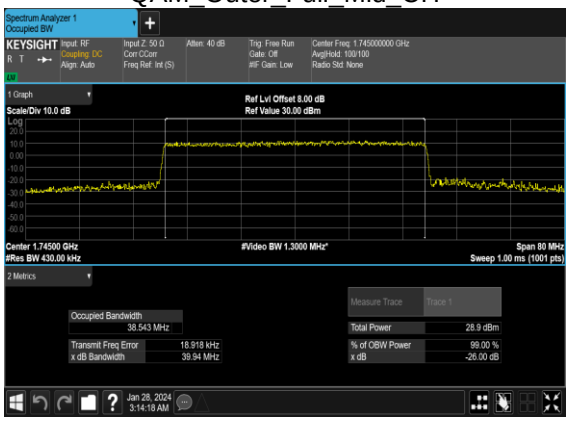
N66(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



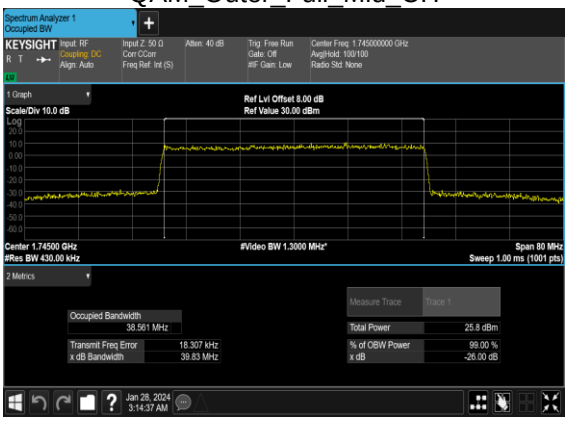
N66(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



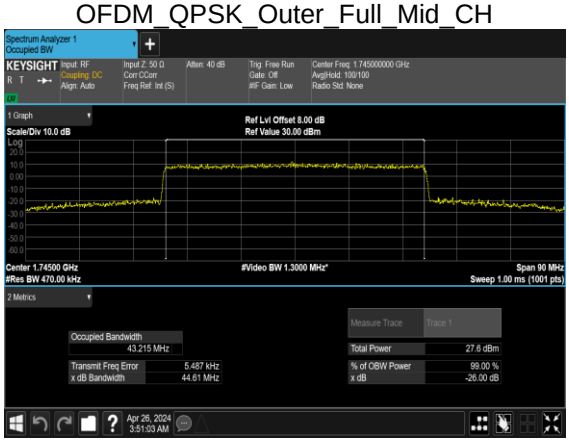
N66(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



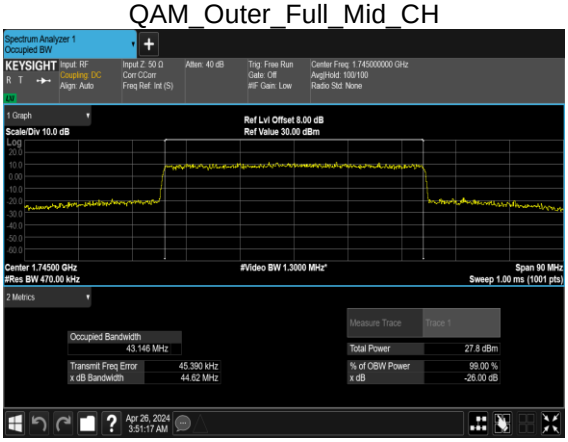
N66(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



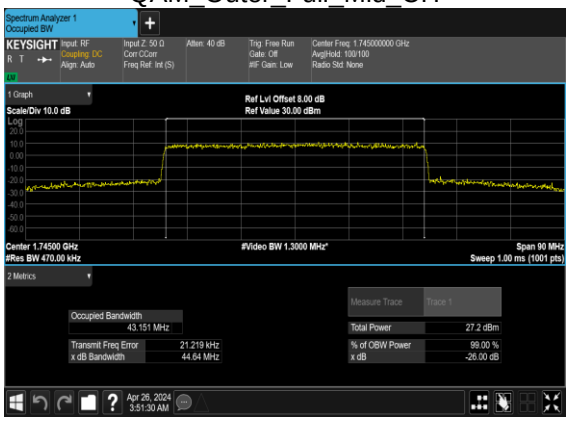
N66(45M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



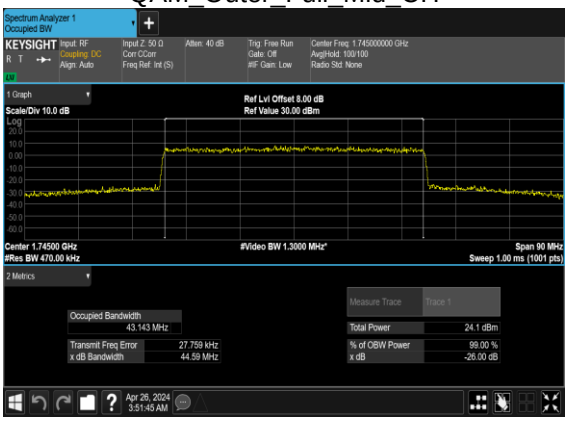
N66(45M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N66(45M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N66(45M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
66	15	5	342500	1712.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	5	342500	1712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	5	342500	1712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	5	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	5	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	5	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	5	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	5	355500	1777.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	5	355500	1777.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	5	355500	1777.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	25	344500	1722.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	25	344500	1722.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	25	344500	1722.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	25	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	25	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	25	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	25	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	25	353500	1767.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	25	353500	1767.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	25	353500	1767.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	45	346500	1732.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	45	346500	1732.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	45	346500	1732.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	45	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	45	349000	1745.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	45	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	45	349000	1745.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
66	15	45	351500	1757.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
66	15	45	351500	1757.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
66	15	45	351500	1757.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**