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 Subpart O (3700-3980MHz)
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Jan. 16, 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)

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG3D1101R	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(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
3.5	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(l)(2)	Conducted Spurious Emission (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.9	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(l)(2)	Radiated Spurious Emission (5G NR n77, n78)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 10.49 dB at 4611 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/Rx Frequency	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
SCS	15kHz, 30kHz
Bandwidth	n77(15kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50MHz n77(30kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz n78(15kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50MHz n78(30kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz
Antenna Gain	**<Ant. 3>** 5G NR n77: -4.5 dBi 5G NR n78: -4.5 dBi **<Ant. 5>** 5G NR n77: -4.5 dBi 5G NR n78: -4.5 dBi **<Ant. 1>** 5G NR n77: -4.5 dBi 5G NR n78: -4.5 dBi **<Ant. 6>** 5G NR n77: -4.5 dBi

	5G NR n78: -4.5 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum Conducted Power is calculated from max output power and max antenna gain, only the maximum Conducted Power is shown in the report, 5G NR n77/n78 for Antenna 3 and UL MIMO for Ant.(3+5).
2. The device supports n77/n78(1T4R) SRS resources on Ant.1/3/5/6, only the test data of worst Ant.3 is showed in the report according to the maximum power.
3. 5G NR n77/n78 support UL MIMO mode is correlated, the n77/n78 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.
4. 5G NR n77/n78 support SA and NSA mode. The whole testing has assessed SA mode by referring to the higher conducted power.
5. The device supports HPUE mode for 5G NR n77/n78 and PC1.5 for 5G NR n77 UL MIMO.
6. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
7. CA_n77C only supports SCS 30kHz
8. The EN-DC mode combination could be referred to the product spec.
9. 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 n77 SCS 15kHz		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)**
10	3705.00 ~ 3975.00	0.9419	9M31G7D	0.7516	9M34W7D
15	3705.52 ~ 3972.48	0.9462	14M1G7D	0.7396	14M2W7D
20	3710.01 ~ 3969.99	0.9484	19M0G7D	0.7447	19M0W7D
25	3712.50 ~ 3967.50	0.9594	23M8G7D	0.8166	23M8W7D
30	3715.005 ~ 3964.98	0.9572	28M7G7D	0.7621	28M6W7D
40	3720.00 ~ 3960.00	0.9705	38M7G7D	0.7516	38M7W7D
50	3725.01 ~ 3954.99	0.9750	48M3G7D	0.7834	48M3W7D

5G NR n77 SCS 30kHz		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)
10	3705.00 ~ 3975.00	0.9441	8M59G7D	0.7621	8M62W7D
15	3705.52 ~ 3972.48	0.9506	13M6G7D	0.7638	13M6W7D
20	3710.01 ~ 3969.99	0.9572	18M2G7D	0.7762	18M3W7D
25	3712.50 ~ 3967.50	0.9099	23M2G7D	0.8222	23M2W7D
30	3715.02 ~ 3964.98	0.8730	27M9G7D	0.6776	27M9W7D
40	3720.00 ~ 3960.00	0.9594	37M9G7D	0.7762	38M0W7D
50	3725.01 ~ 3954.99	0.9550	47M6G7D	0.7745	47M6W7D
60	3730.02 ~ 3949.98	0.9376	57M9G7D	0.7534	58M0W7D
70	3735.00 ~ 3945.00	0.9268	67M6G7D	0.7482	67M6W7D
80	3740.01 ~ 3939.99	0.9247	77M5G7D	0.7278	77M8W7D
90	3745.02 ~ 3934.98	0.9162	87M6G7D	0.7379	87M7W7D
100	3750.00 ~ 3930.00	0.9661	97M7G7D	0.7852	97M7W7D

5G NR n78 SCS 15kHz		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)
10	3705.00 ~ 3795.00	0.4624	9M31G7D	0.3622	9M34W7D
15	3707.52 ~ 3792.48	0.4732	14M1G7D	0.3639	14M2W7D
20	3710.01 ~ 3789.99	0.4699	19M0G7D	0.3715	19M0W7D
25	3712.50 ~ 3787.50	0.4571	23M8G7D	0.3614	23M8W7D
30	3715.005 ~ 3784.995	0.4742	28M7G7D	0.3681	28M6W7D
40	3720.00 ~ 3780.00	0.4645	38M7G7D	0.3707	38M7W7D
50	3725.01 ~ 3774.99	0.4797	48M3G7D	0.3846	48M3W7D

5G NR n78 SCS 30kHz		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)
10	3705.00 ~ 3795.00	0.4645	8M59G7D	0.3648	8M62W7D
15	3707.52 ~ 3792.48	0.4721	13M6G7D	0.3707	13M6W7D
20	3710.01 ~ 3789.99	0.4710	18M2G7D	0.3767	18M3W7D
25	3712.50 ~ 3787.50	0.4446	23M2G7D	0.3540	23M2W7D
30	3715.02 ~ 3784.98	0.3873	27M9G7D	0.3266	27M9W7D
40	3720.00 ~ 3780.00	0.4688	37M9G7D	0.3724	38M0W7D
50	3725.01 ~ 3774.99	0.4699	47M6G7D	0.3673	47M6W7D
60	3730.02 ~ 3769.98	0.4645	57M9G7D	0.3656	58M0W7D
70	3735.00 ~ 3765.00	0.4688	67M6G7D	0.3750	67M6W7D
80	3740.01 ~ 3759.99	0.4677	77M5G7D	0.3664	77M8W7D
90	3745.02 ~ 3754.98	0.4753	87M6G7D	0.3802	87M7W7D
100	3750.00 ~ 3750.00	0.4775	97M7G7D	0.3811	97M7W7D

5G NR n77C SCS 30kHz	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)
100+100	0.1396	197MG7D	0.1336	196MW7D
100+90	0.1378	187MG7D	0.1387	187MW7D
90+100	0.1381	186MG7D	0.1390	187MW7D
100+80	0.1390	177MG7D	0.1394	176MW7D
80+100	0.1394	177MG7D	0.1371	176MW7D
90+90	0.1384	178MG7D	0.1381	177MW7D
100+70	0.0360	167MG7D	0.0357	167MW7D
70+100	0.0367	167MG7D	0.0365	166MW7D
90+80	0.1359	166MG7D	0.1349	167MW7D
80+90	0.1349	167MG7D	0.1349	166MW7D
100+60	0.1322	156MG7D	0.1337	157MW7D
60+100	0.1301	156MG7D	0.1291	157MW7D
90+70	0.0357	157MG7D	0.0349	157MW7D
70+90	0.0357	157MG7D	0.0357	157MW7D
80+80	0.1337	156MG7D	0.1337	157MW7D
100+50	0.1359	147MG7D	0.1334	147MW7D
50+100	0.1300	146MG7D	0.1297	147MW7D
90+60	0.1328	147MG7D	0.1303	147MW7D
60+90	0.1274	147MG7D	0.1262	147MW7D
80+70	0.0345	146MG7D	0.0347	147MW7D
70+80	0.0353	147MG7D	0.0357	147MW7D
100+40	0.1334	137MG7D	0.1318	137MW7D
40+100	0.1322	137MG7D	0.1330	137MW7D
90+50	0.1346	137MG7D	0.1315	137MW7D
50+90	0.1295	136MG7D	0.1294	136MW7D
80+60	0.1352	137MG7D	0.1328	137MW7D
60+80	0.1300	137MG7D	0.1291	137MW7D
70+70	0.0366	137MG7D	0.0361	137MW7D
100+30	0.1343	127MG7D	0.1312	128MW7D
30+100	0.1330	127MG7D	0.1337	128MW7D
90+40	0.1340	127MG7D	0.1315	128MW7D
40+90	0.1340	126MG7D	0.1328	127MW7D
80+50	0.1340	126MG7D	0.1346	127MW7D
50+80	0.1316	127MG7D	0.1307	127MW7D
70+60	0.0358	127MG7D	0.0358	128MW7D
60+70	0.0355	127MG7D	0.0348	128MW7D
100+25	0.1334	122MG7D	0.1349	123MW7D
25+100	0.1343	121MG7D	0.1352	122MW7D
100+20	0.1343	118MG7D	0.1327	118MW7D
20+100	0.1352	117MG7D	0.1355	118MW7D
90+30	0.1368	117MG7D	0.1349	117MW7D
30+90	0.1352	117MG7D	0.1355	117MW7D

80+40	0.1374	116MG7D	0.1362	117MW7D
40+80	0.1374	117MG7D	0.1334	117MW7D
70+50	0.0386	117MG7D	0.0352	118MW7D
50+70	0.0357	116MG7D	0.0351	117MW7D
60+60	0.1337	117MG7D	0.1292	117MW7D
100+15	0.1361	112MG7D	0.1343	113MW7D
15+100	0.1358	112MG7D	0.1331	113MW7D
90+25	0.1361	113MG7D	0.1337	113MW7D
25+90	0.1377	113MG7D	0.1349	112MW7D
100+10	0.1374	107MG7D	0.1346	108MW7D
10+100	0.1361	107MG7D	0.1330	108MW7D
90+20	0.1355	108MG7D	0.1318	108MW7D
20+90	0.1346	107MG7D	0.1309	107MW7D
80+30	0.1337	107MG7D	0.1318	107MW7D
30+80	0.0893	107MG7D	0.0873	107MW7D
70+40	0.0356	107MG7D	0.0348	107MW7D
40+70	0.0358	107MG7D	0.0345	107MW7D
60+50	0.1298	107MG7D	0.1286	107MW7D
50+60	0.1331	107MG7D	0.1310	107MW7D
90+15	0.0350	102MG7D	0.0344	103MW7D
15+90	0.1355	103MG7D	0.1324	103MW7D
80+25	0.0359	102MG7D	0.0350	103MW7D
25+80	0.1361	103MG7D	0.1330	103MW7D

Note:

1. 5G NR Band n77 overlaps the entire frequency range of Band n78, and n77 power > n78 power, therefore the conducted test results of n77 provided in this report cover n78.
2. All modulations have been tested, and only the worst test results are shown in this section.
3. 5G NR n77/n78 SISO power is lower than MIMO mode, thus not show SISO power here.

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(O)
- 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.

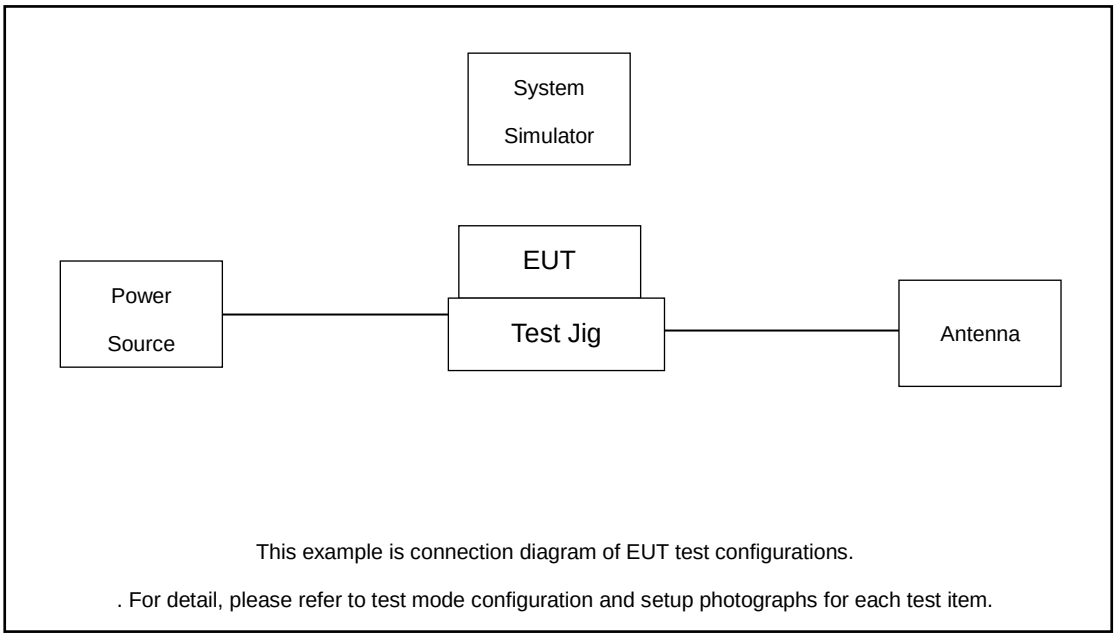
	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)										Modulation					RB #			Test Channel		
		10	15/ 20	25	30/ 40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Partial	Full	L	M	H
Max. Output Power	n77	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n77			v								v	v						v		v	-
26dB and 99% Bandwidth	n77	v	v	v	v	v	v	v	v	v	v		v	v	v	v			v		v	-
Conducted Band Edge	n77	v		v		v					v	v	v				v		v	v		v
Conducted Spurious Emission	n77	v		v		v					v	v	v				v			v	v	v
Frequency Stability	n77			v									v						v		v	-
E.I.R.P	n77	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n77	Worst Case																		-	v	-
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 = 3.80V ；Low Voltage =3.30V. ；High Voltage =4.40V																					

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 100+100M,100+90M,90+100M,100+80M, 80+100M,90+90M,100+70M,70+100M,90+80M 80+90M,100+60M,60+100M,90+70M,70+90M, 80+80M,100+50M,50+100M,90+60M,60+90M,80+70M, 70+80M,100+40M,40+100M,90+50M,50+90M,80+60M, 60+80M,70+70M,90+40M,40+90M,80+50M,50+80M, 70+60M,60+70M,100+20M,20+100M,80+40M,40+80M, 70+50M,50+70M,60+60M,100+15M,15+100M,100+10M, 10+100M,90+20M,20+90M,70+40M,40+70M,60+50M, 50+60M,90+15M,15+90M,100M+30M,30M+100M, 100M+25M,25M+100M,90M+30M,30M+90M,90M+25M, 25M+90M,80M+30M,30M+80M,80M+25M,25M+80M	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	n77C	All supported Bandwidth	All Modulation	1RB, Full RB	L, M, H
E.I.R.P	n77C	All supported Bandwidth	All Modulation	1RB, Full RB	L, M, H
26dB and 99% Bandwidth	n77C	All supported Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	Full RB	M
Conducted Band Edge	n77C	15+90M, 100+40M, 100+100M	PI/2 BPSK, QPSK	1RB, Full RB	L, H
Conducted Spurious Emission	n77C	15+90M, 100+40M, 100+100M	PI/2 BPSK, QPSK	1RB, Full RB	L, M, H
Radiated Spurious Emission	n77C	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. All test items are based on engineering evaluation.

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.

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 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 + attenuator factor.

Following shows an offset computation example with cable loss 1.9 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 1.9 + 10 = 11.9 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G n77 (15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647667	656000	664332
	Frequency	3715.005	3840	3964.98
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647167	656000	664833
	Frequency	3707.505	3840	3972.495
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n77 (30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662332
	Frequency	3745.02	3840	3934.98
80	Channel	649334	656000	662666
	Frequency	3740.01	3840	3939.99
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
60	Channel	648668	656000	663332
	Frequency	3730.02	3840	3949.98
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647668	656000	664332
	Frequency	3715.02	3840	3964.98
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5

20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647168	656000	664832
	Frequency	3707.52	3840	3972.48
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n78(15kHz) Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647667	650000	652333
	Frequency	3715.005	3750	3784.995
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647167	650000	652833
	Frequency	3707.505	3750	3792.495
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

5G n78(30kHz) Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel		650000	
	Frequency		3750	
90	Channel	649668	650000	650332
	Frequency	3745.02	3750	3754.98
80	Channel	649334	650000	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
60	Channel	648668	650000	651332
	Frequency	3730.02	3750	3769.98
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647668	650000	652332
	Frequency	3715.02	3750	3784.98
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647168	650000	652832
	Frequency	3707.52	3750	3792.48
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

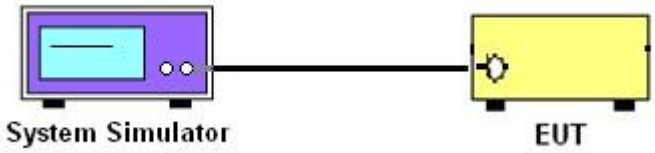
3 Conducted Test Items

3.1 Measuring Instruments

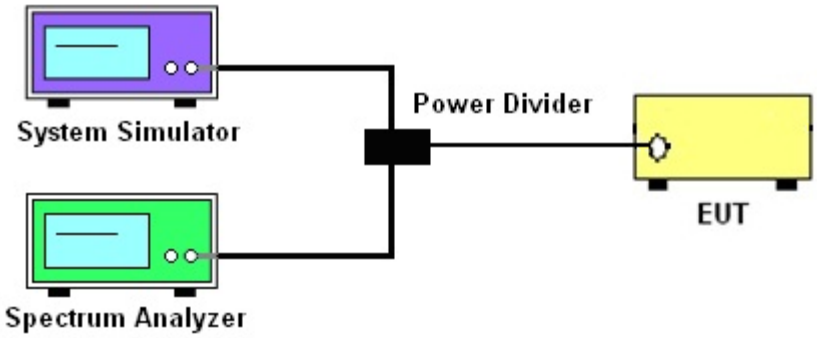
See list of measuring instruments of this test report.

3.2 Test Setup

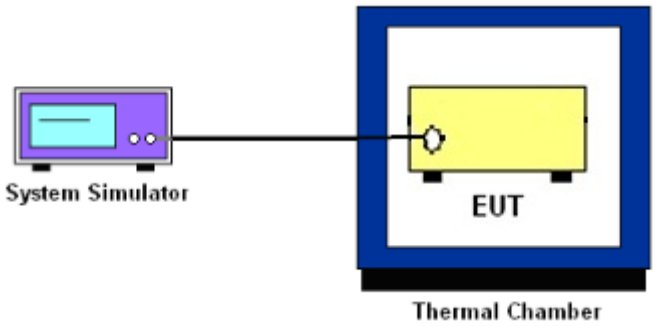
3.2.1 Conducted Output Power



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 EIRP

3.4.1 Description of the Conducted Output Power Measurement and 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 EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n77, n78.

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(l)(2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

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.

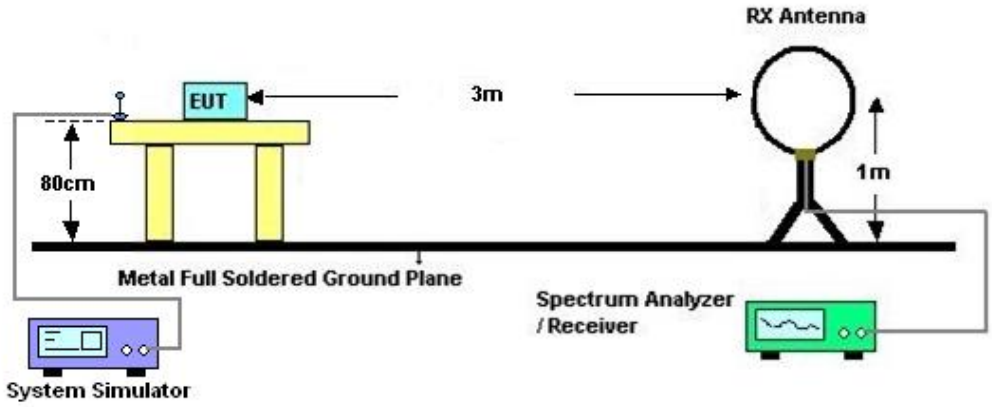
4 Radiated Test Items

4.1 Measuring Instruments

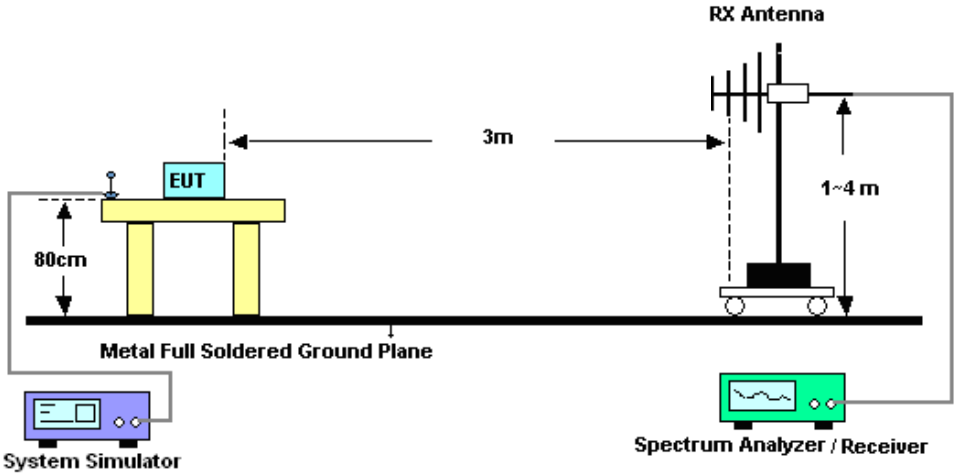
See list of measuring instruments of this test report.

4.2 Test Setup

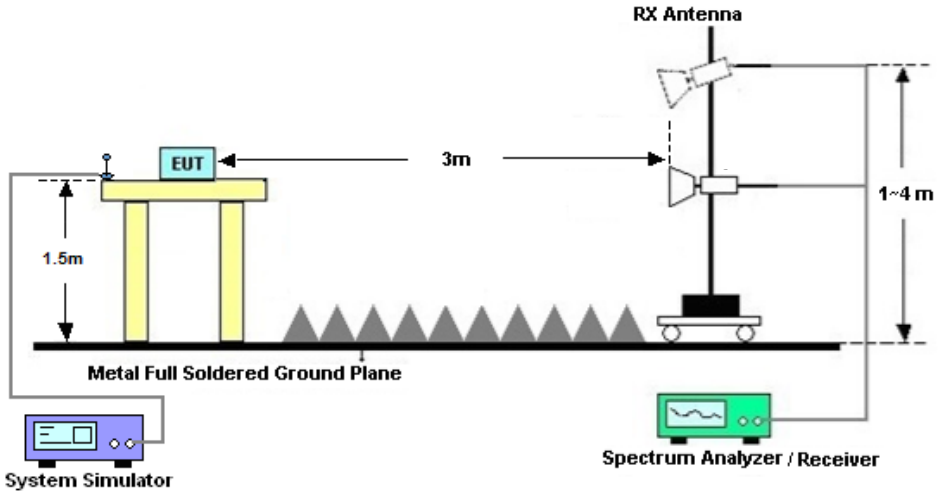
4.2.1 For radiated test below 30MHz



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. 16, 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. 16, 2024~ Apr. 28, 2024	Jul. 06, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Jan. 16, 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. 16, 2024~ Apr. 28, 2024	Jul. 04, 2024	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2023	Apr. 10, 2024	Dec. 26, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Apr. 10, 2024	Jul. 27, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 18, 2023	Apr. 10, 2024	Oct. 17, 2024	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Apr. 10, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 08, 2023	Apr. 10, 2024	Jul. 07, 2024	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 08, 2023	Apr. 10, 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	Apr. 10, 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-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Apr. 10, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023	Apr. 10, 2024	Jul. 06, 2024	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 18, 2023	Apr. 10, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Apr. 10, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Apr. 10, 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))	2.80dB

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

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

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

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

Uncertainty of Radiated Emission Measurement (18 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 :	Hank Lin	**Temperature :**	24~26℃
		Relative Humidity :	50~53%

Software Version: 23.06.1602

FR1 N77_SCS15kHz

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-4.5dB

NR Band	SCS	Band Width	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	15	10	647000	3705	DFT-s-OFDM QPSK	1@1	26.15	21.65	0.1462
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	25.46	20.96	0.1247
77	15	10	656000	3840	DFT-s-OFDM QPSK	1@1	26.05	21.55	0.1429
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.39	20.89	0.1227
77	15	10	665000	3975	DFT-s-OFDM QPSK	1@1	25.67	21.17	0.1309
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	25.35	20.85	0.1216
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	1@1	26.1	21.6	0.1445
77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	1@1	25.39	20.89	0.1227
77	15	15	656000	3840	DFT-s-OFDM QPSK	1@1	26.06	21.56	0.1432
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.35	20.85	0.1216
77	15	15	664833	3972.495	DFT-s-OFDM QPSK	1@1	25.54	21.04	0.1271
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	1@1	25.29	20.79	0.1199
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	26.1	21.6	0.1445
77	15	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	25.41	20.91	0.1233
77	15	20	656000	3840	DFT-s-OFDM QPSK	1@1	26.16	21.66	0.1466
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.42	20.92	0.1236
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@1	25.5	21	0.1259
77	15	20	664666	3969.99	DFT-s-OFDM 16 QAM	1@1	24.96	20.46	0.1112
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@1	25.28	20.78	0.1197
77	15	25	647500	3712.5	DFT-s-OFDM 16 QAM	1@1	24.13	19.63	0.0918
77	15	25	656000	3840	DFT-s-OFDM QPSK	1@1	25.39	20.89	0.1227
77	15	25	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.47	19.97	0.0993
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@1	25.27	20.77	0.1194
77	15	25	664500	3967.5	DFT-s-OFDM 16 QAM	1@1	24.45	19.95	0.0989
77	15	30	647667	3715.005	DFT-s-OFDM QPSK	1@1	26.16	21.66	0.1466
77	15	30	647667	3715.005	DFT-s-OFDM 16 QAM	1@1	25.27	20.77	0.1194
77	15	30	656000	3840	DFT-s-OFDM QPSK	1@1	26.22	21.72	0.1486
77	15	30	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.33	20.83	0.1211
77	15	30	664332	3964.98	DFT-s-OFDM QPSK	1@1	26.23	21.73	0.1489
77	15	30	664332	3964.98	DFT-s-OFDM 16 QAM	1@1	25.63	21.13	0.1297
77	15	40	648000	3720	DFT-s-OFDM QPSK	1@1	26.1	21.6	0.1445
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	25.37	20.87	0.1222
77	15	40	656000	3840	DFT-s-OFDM QPSK	1@1	26.21	21.71	0.1483
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.29	20.79	0.1199
77	15	40	664000	3960	DFT-s-OFDM QPSK	1@1	25.44	20.94	0.1242
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	25.26	20.76	0.1191
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	135@67	26.16	21.66	0.1466
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@1	26	21.5	0.1413
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@268	25.9	21.4	0.1380
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	135@67	25.91	21.41	0.1384
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	26.03	21.53	0.1422
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@268	25.94	21.44	0.1393

77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	135@67	25.23	20.73	0.1183
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	25.3	20.8	0.1202
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@268	25.12	20.62	0.1153
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	135@67	23.21	18.71	0.0743
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@1	23.33	18.83	0.0764
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@268	23.14	18.64	0.0731
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	135@67	20.66	16.16	0.0413
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@1	20.91	16.41	0.0438
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@268	20.76	16.26	0.0423
77	15	50	648334	3725.01	CP-OFDM QPSK	135@67	24.68	20.18	0.1042
77	15	50	648334	3725.01	CP-OFDM QPSK	1@1	24.76	20.26	0.1062
77	15	50	648334	3725.01	CP-OFDM QPSK	1@268	24.73	20.23	0.1054
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	26.21	21.71	0.1483
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	26.26	21.76	0.1500
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@268	25.74	21.24	0.1330
77	15	50	656000	3840	DFT-s-OFDM QPSK	135@67	26.24	21.74	0.1493
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@1	26.15	21.65	0.1462
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@268	25.66	21.16	0.1306
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	135@67	25.27	20.77	0.1194
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.27	20.77	0.1194
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@268	24.95	20.45	0.1109
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	135@67	23.21	18.71	0.0743
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@1	23.29	18.79	0.0757
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@268	23	18.5	0.0708
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	135@67	20.7	16.2	0.0417
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.91	16.41	0.0438
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@268	20.61	16.11	0.0408
77	15	50	656000	3840	CP-OFDM QPSK	135@67	24.7	20.2	0.1047
77	15	50	656000	3840	CP-OFDM QPSK	1@1	24.77	20.27	0.1064
77	15	50	656000	3840	CP-OFDM QPSK	1@268	24.46	19.96	0.0991
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	135@67	25.75	21.25	0.1334
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@1	25.88	21.38	0.1374
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@268	25.63	21.13	0.1297
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	135@67	26.27	21.77	0.1503
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	26.38	21.88	0.1542
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@268	25.73	21.23	0.1327
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	135@67	25.08	20.58	0.1143
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	25.04	20.54	0.1132
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@268	25.13	20.63	0.1156
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	135@67	23.16	18.66	0.0735
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@1	23.05	18.55	0.0716
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@268	23.17	18.67	0.0736
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	135@67	20.64	16.14	0.0411
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@1	20.73	16.23	0.0420
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@268	20.75	16.25	0.0422
77	15	50	663666	3954.99	CP-OFDM QPSK	135@67	24.62	20.12	0.1028
77	15	50	663666	3954.99	CP-OFDM QPSK	1@1	24.5	20	0.1000
77	15	50	663666	3954.99	CP-OFDM QPSK	1@268	24.61	20.11	0.1026

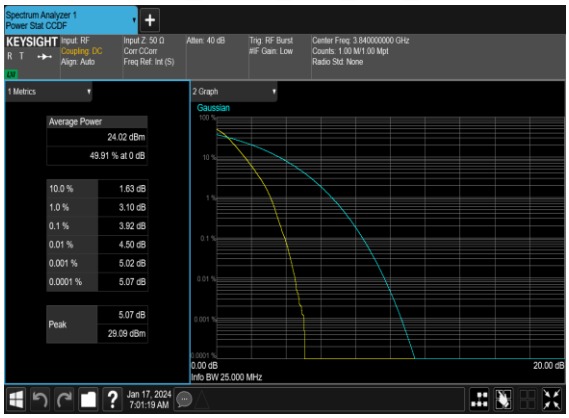
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0024	**PASS**	NV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0061	**PASS**	LV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	HV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0070	**PASS**	-30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0055	**PASS**	-20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0030	**PASS**	-10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0021	**PASS**	0℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0024	**PASS**	20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0065	**PASS**	40℃
77	15	20	656000	3840.0	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
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	100@0	3.92	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	5.17	13	**PASS**

N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

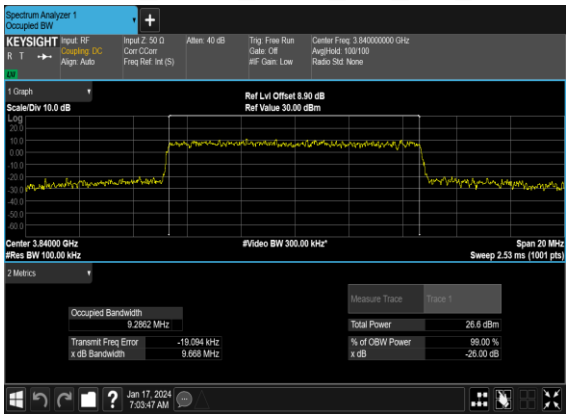


N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

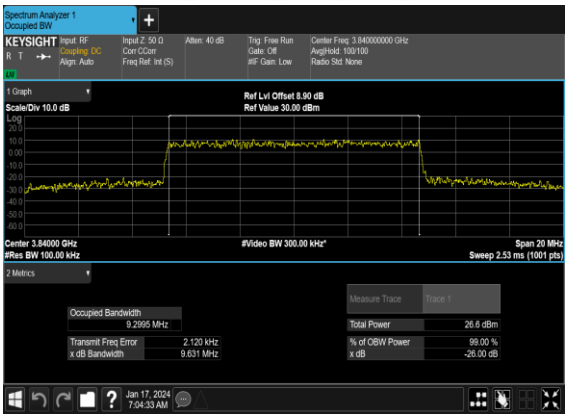
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
77	15	10	656000	3840.0	CP-OFDM QPSK	52@0	9.2862	9.668
77	15	10	656000	3840.0	CP-OFDM 16 QAM	52@0	9.2995	9.631
77	15	10	656000	3840.0	CP-OFDM 64 QAM	52@0	9.2546	9.697
77	15	10	656000	3840.0	CP-OFDM 256 QAM	52@0	9.2663	9.707
77	15	15	656000	3840.0	CP-OFDM QPSK	79@0	14.093	14.64
77	15	15	656000	3840.0	CP-OFDM 16 QAM	79@0	14.155	14.59
77	15	15	656000	3840.0	CP-OFDM 64 QAM	79@0	14.089	14.59
77	15	15	656000	3840.0	CP-OFDM 256 QAM	79@0	14.055	14.56
77	15	20	656000	3840.0	CP-OFDM QPSK	106@0	18.931	19.54
77	15	20	656000	3840.0	CP-OFDM 16 QAM	106@0	18.934	19.65
77	15	20	656000	3840.0	CP-OFDM 64 QAM	106@0	18.886	19.62
77	15	20	656000	3840.0	CP-OFDM 256 QAM	106@0	18.901	19.54
77	15	25	656000	3840.0	CP-OFDM QPSK	133@0	23.816	24.61
77	15	25	656000	3840.0	CP-OFDM 16 QAM	133@0	23.793	24.68
77	15	25	656000	3840.0	CP-OFDM 64 QAM	133@0	23.761	24.6
77	15	25	656000	3840.0	CP-OFDM 256 QAM	133@0	23.745	24.58
77	15	30	656000	3840.0	CP-OFDM QPSK	160@0	28.551	29.49
77	15	30	656000	3840.0	CP-OFDM 16 QAM	160@0	28.606	29.59
77	15	30	656000	3840.0	CP-OFDM 64 QAM	160@0	28.543	29.5
77	15	30	656000	3840.0	CP-OFDM 256 QAM	160@0	28.636	29.61
77	15	40	656000	3840.0	CP-OFDM QPSK	216@0	38.595	39.83
77	15	40	656000	3840.0	CP-OFDM 16 QAM	216@0	38.592	39.85
77	15	40	656000	3840.0	CP-OFDM 64 QAM	216@0	38.642	39.86
77	15	40	656000	3840.0	CP-OFDM 256 QAM	216@0	38.62	39.79
77	15	50	656000	3840.0	CP-OFDM QPSK	270@0	48.157	49.92
77	15	50	656000	3840.0	CP-OFDM 16 QAM	270@0	48.097	49.75
77	15	50	656000	3840.0	CP-OFDM 64 QAM	270@0	48.155	49.67
77	15	50	656000	3840.0	CP-OFDM 256 QAM	270@0	48.283	49.76

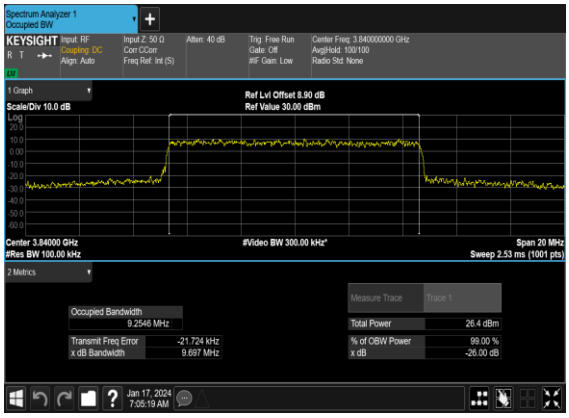
N77(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



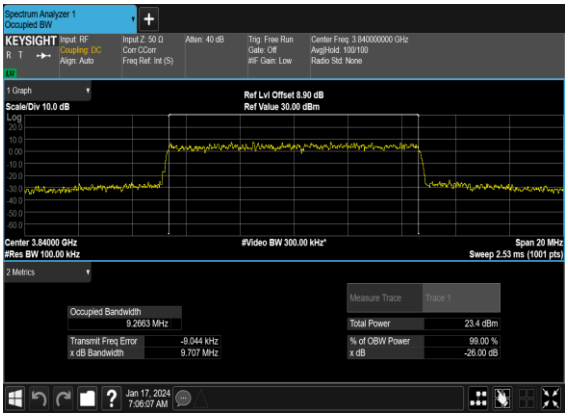
N77(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



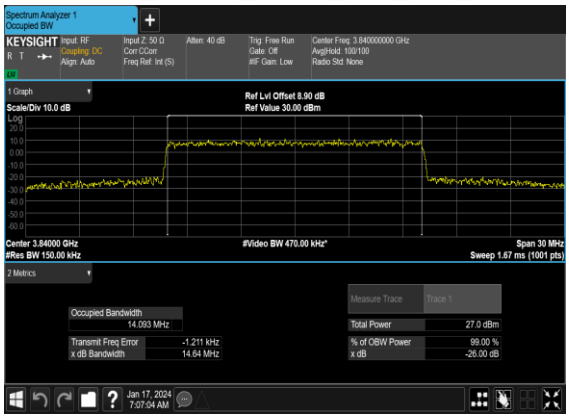
N77(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



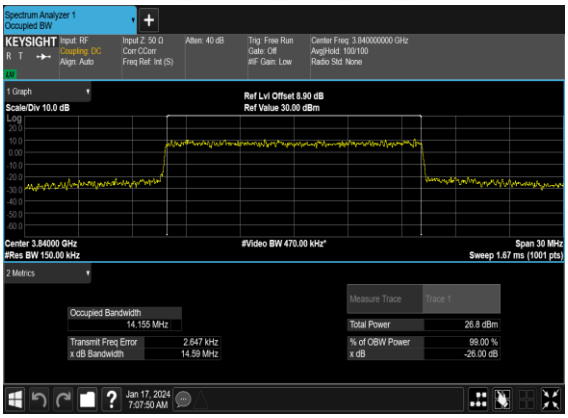
N77(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



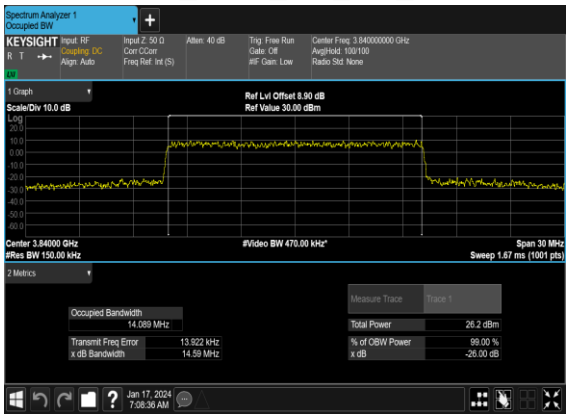
N77(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



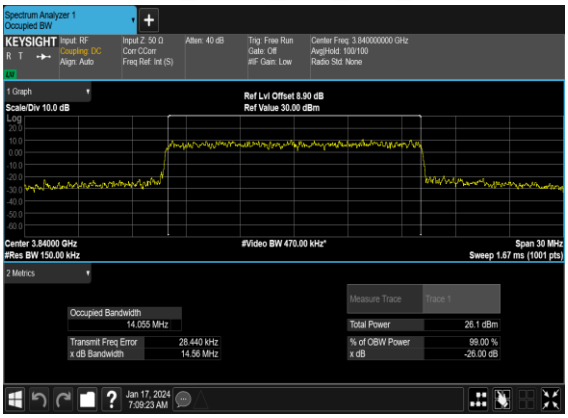
N77(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



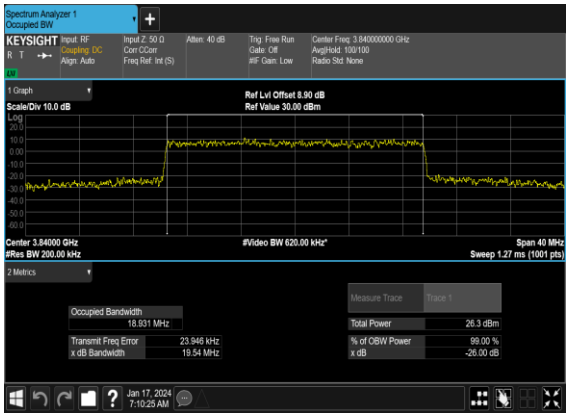
N77(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N77(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

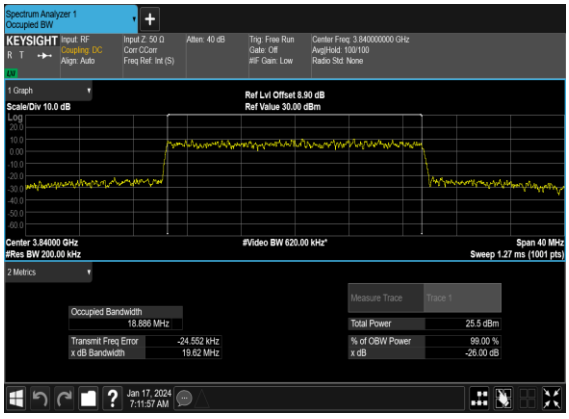


N77(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

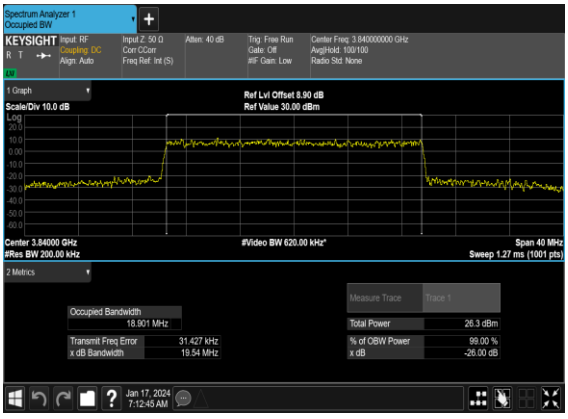


N77(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

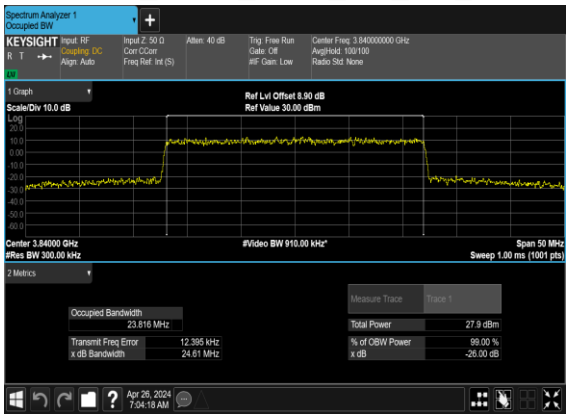
N77(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



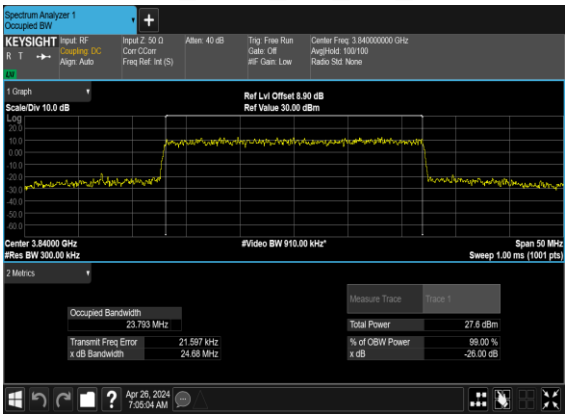
N77(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



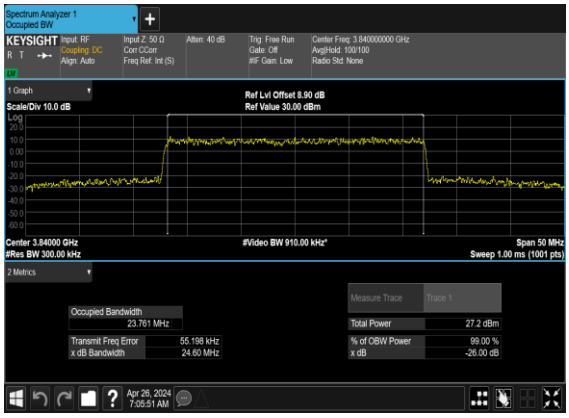
N77(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N77(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

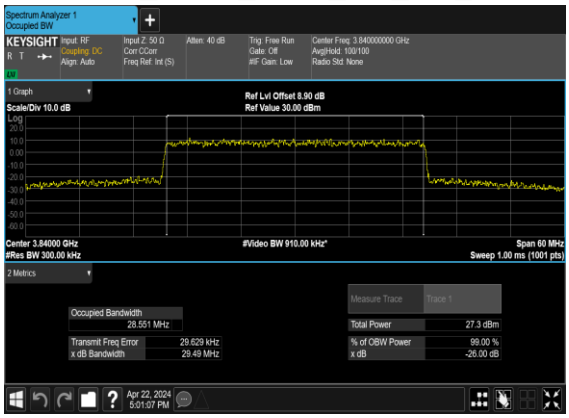


N77(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

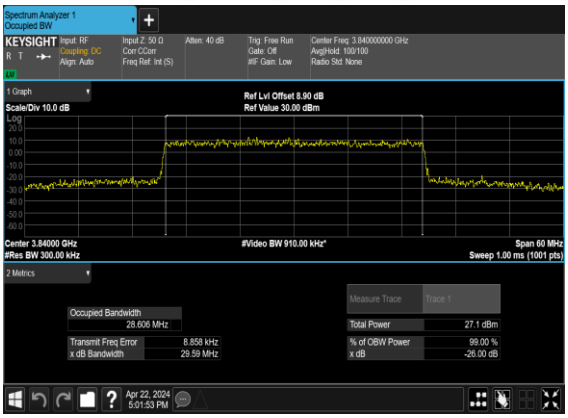


N77(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

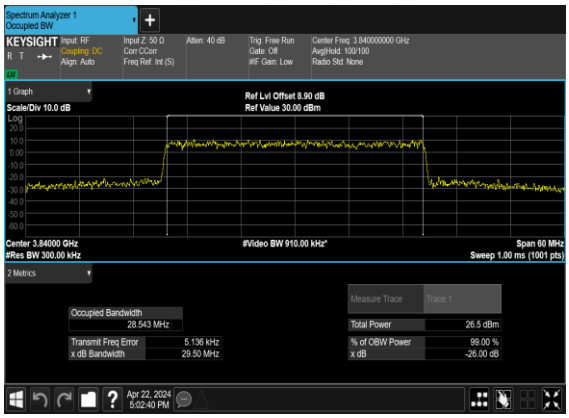
N77(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



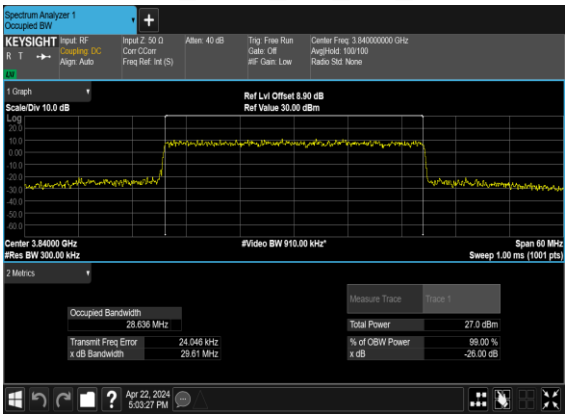
N77(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



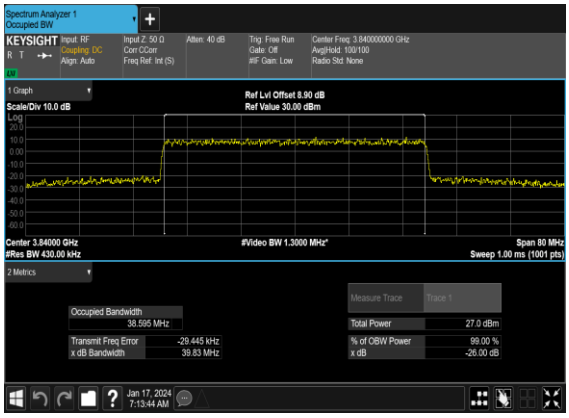
N77(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



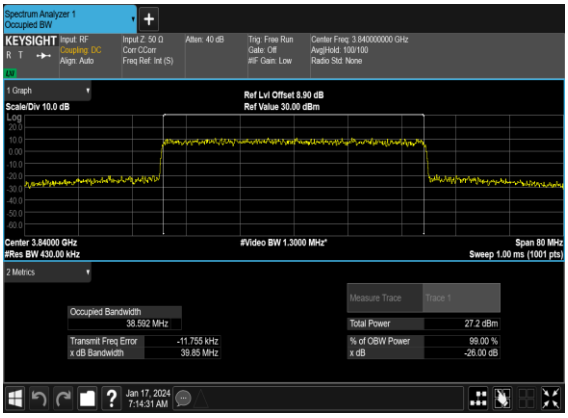
N77(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



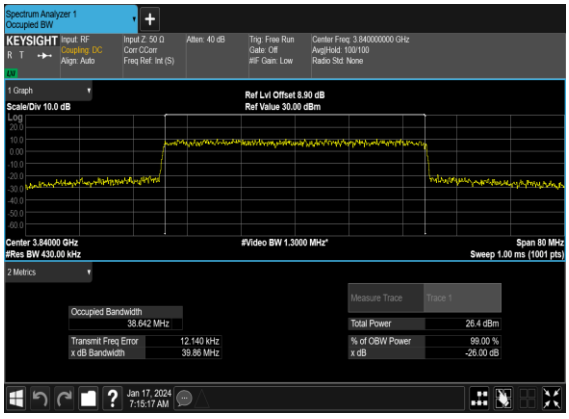
N77(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N77(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



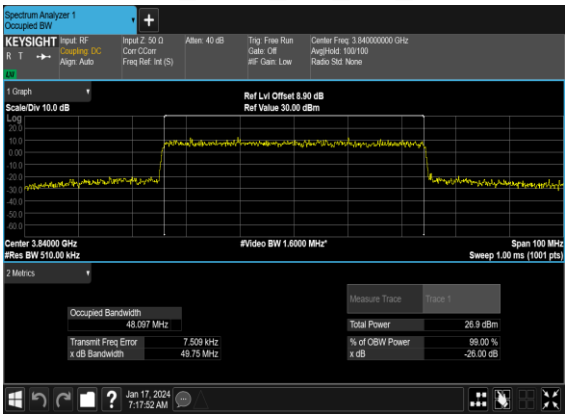
N77(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



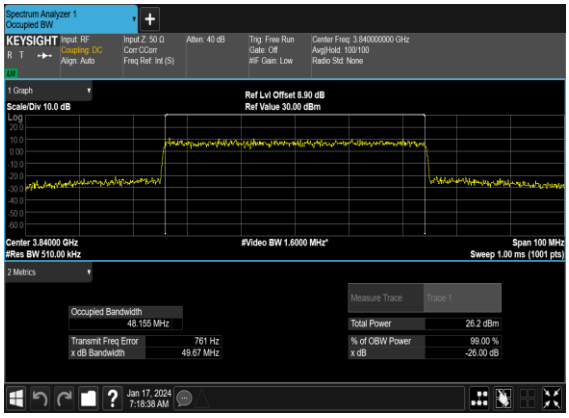
N77(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

N77(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

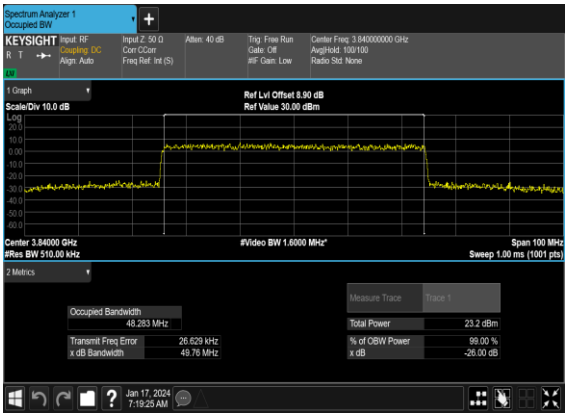
N77(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

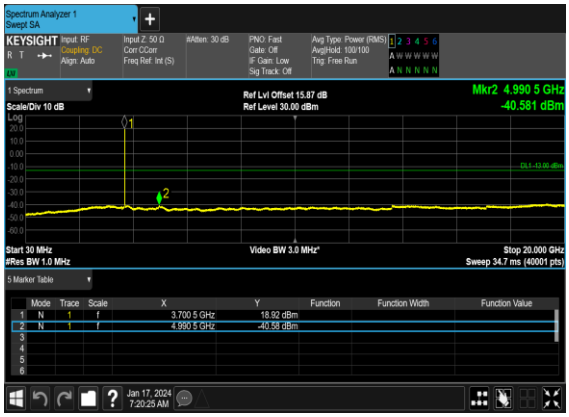


Conducted Spurious Emissions

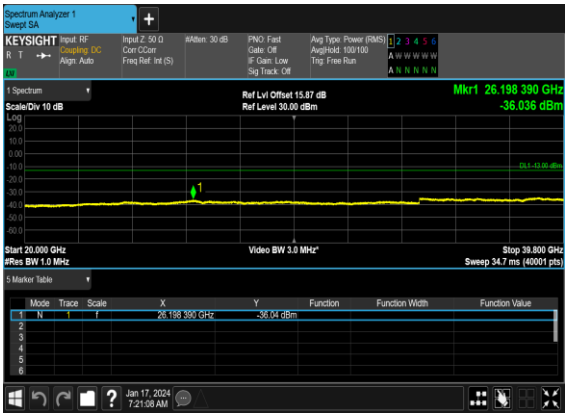
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	25	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	25	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**---**

77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

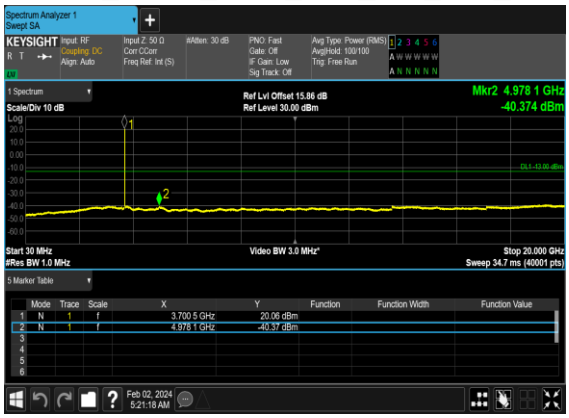
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



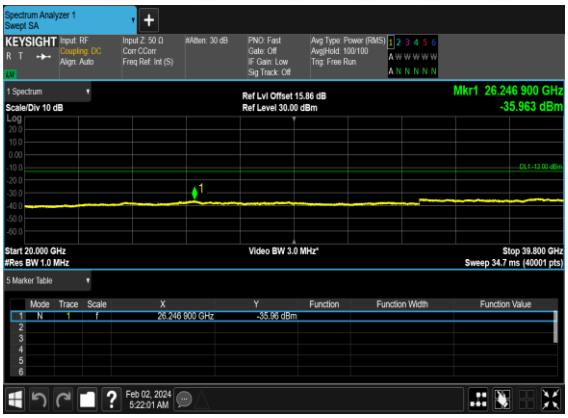
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



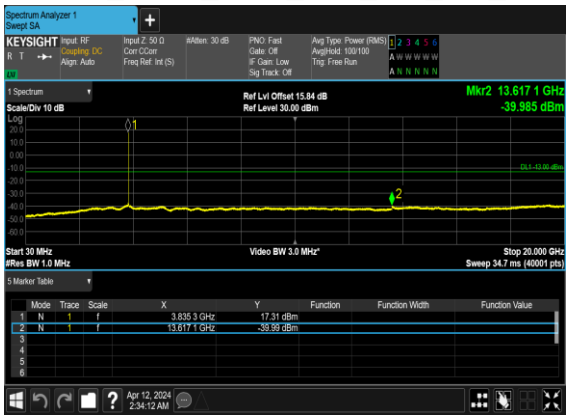
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



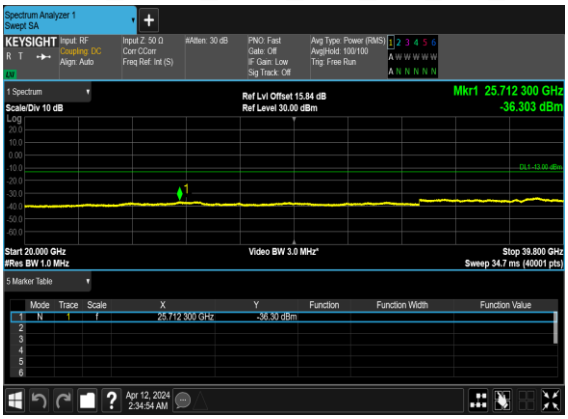
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



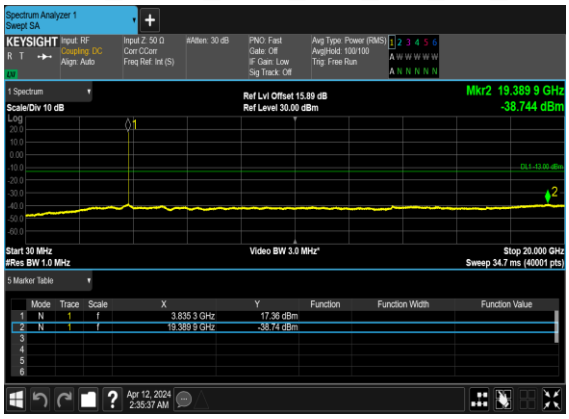
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



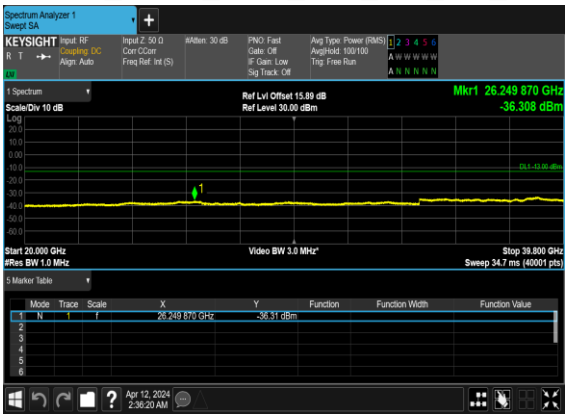
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



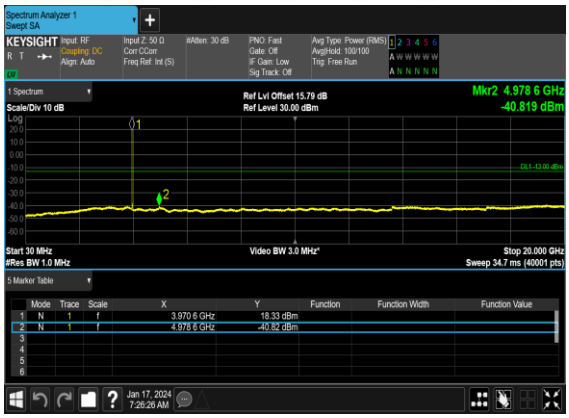
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



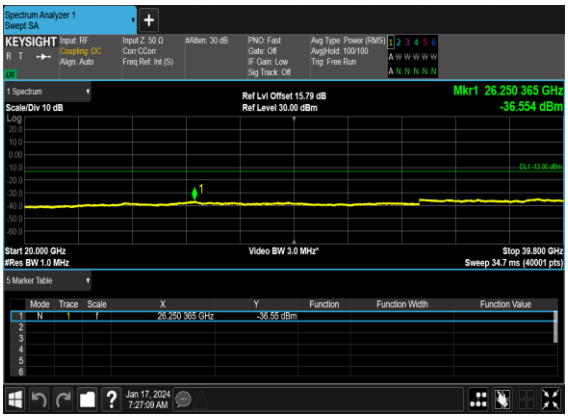
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



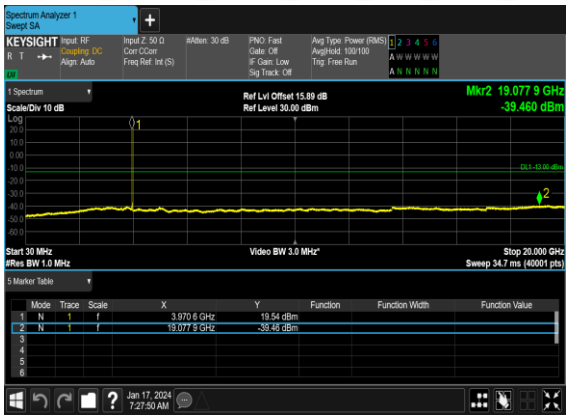
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



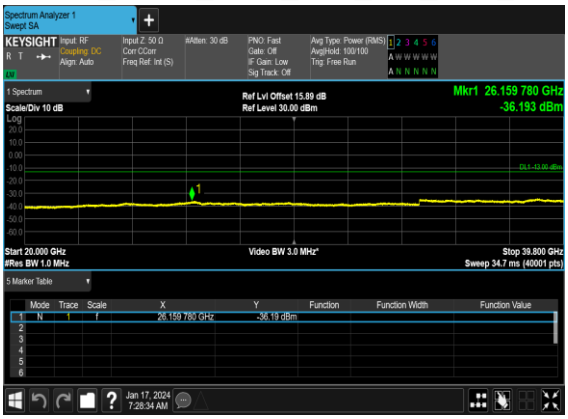
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



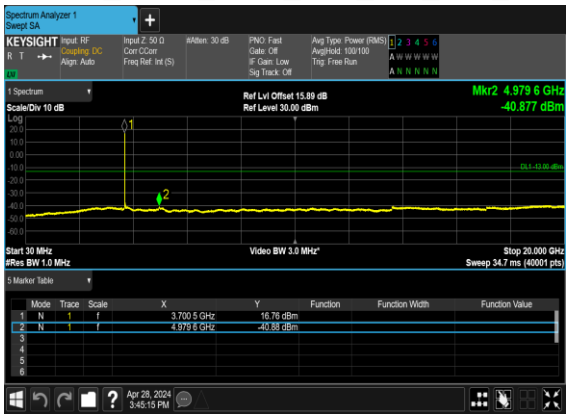
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



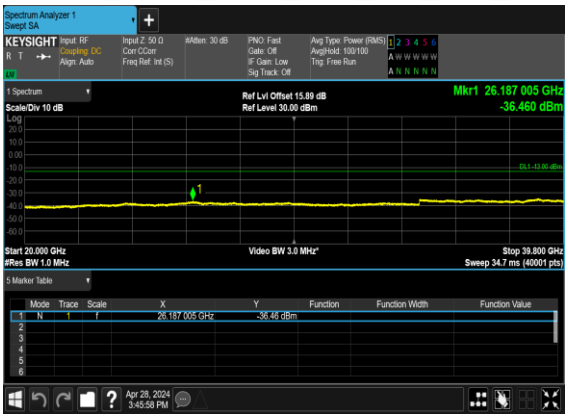
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



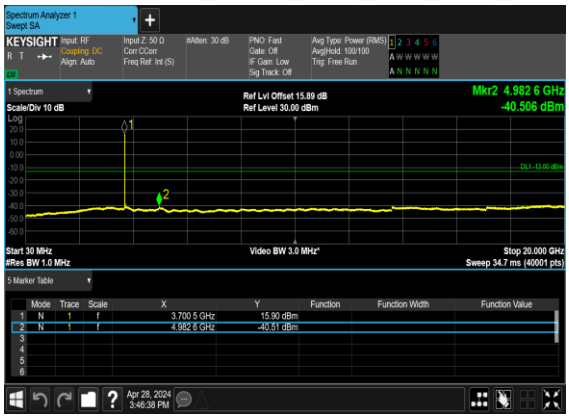
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



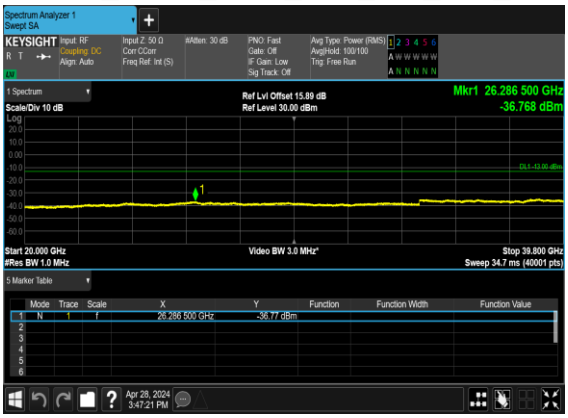
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



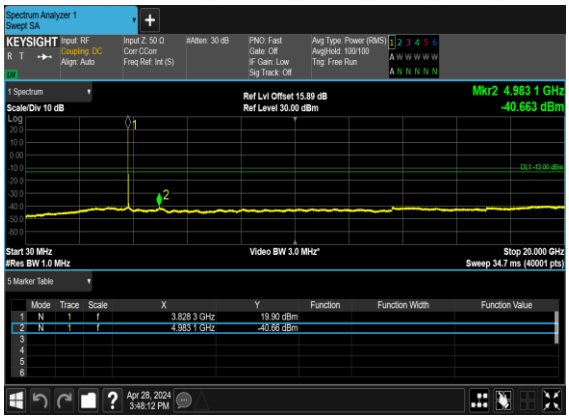
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



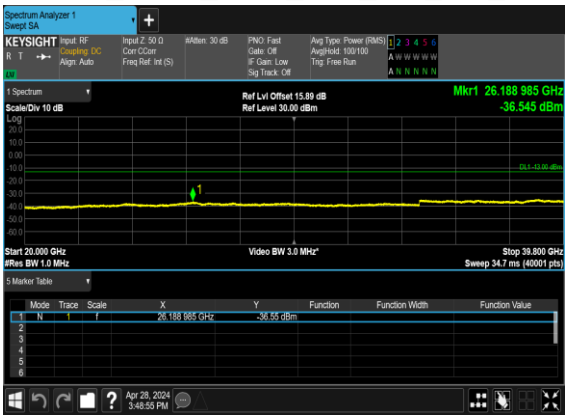
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



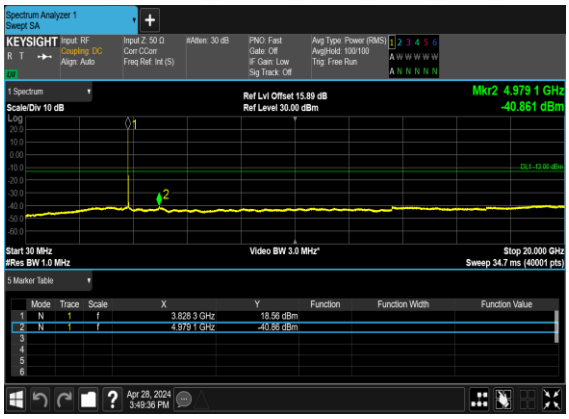
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



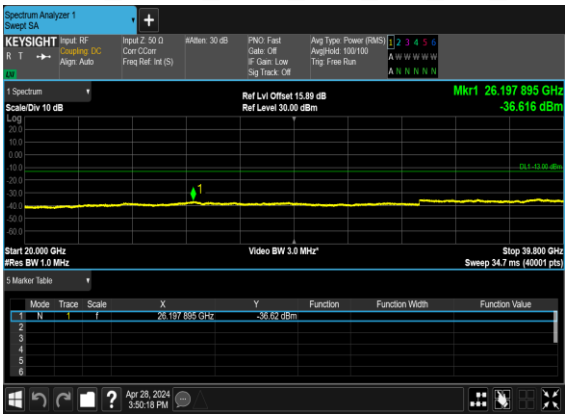
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



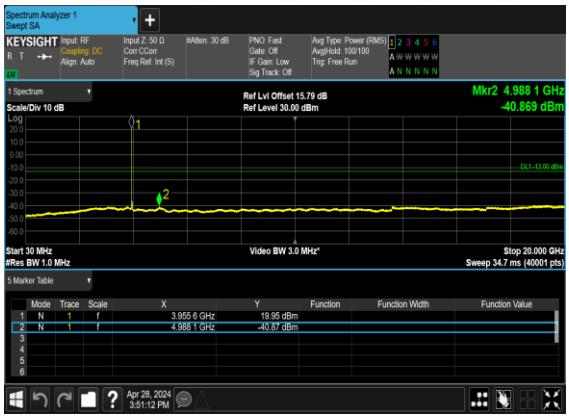
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



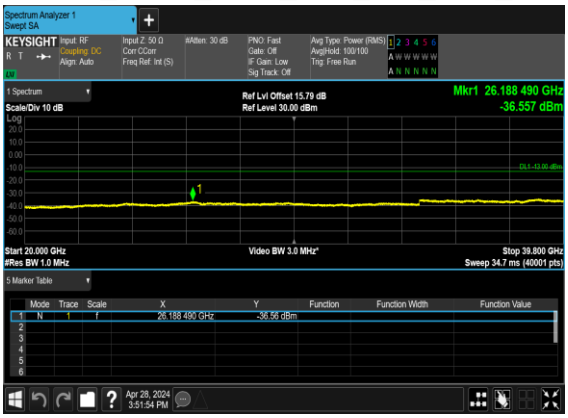
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



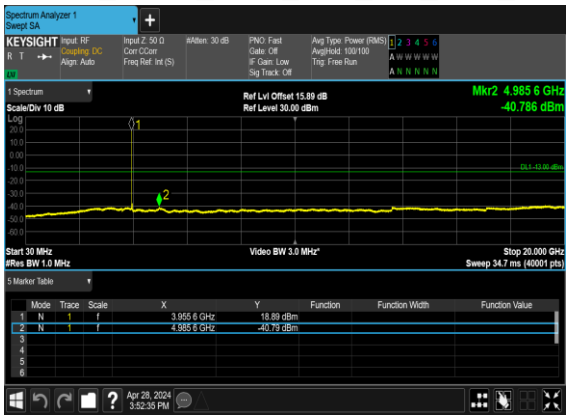
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



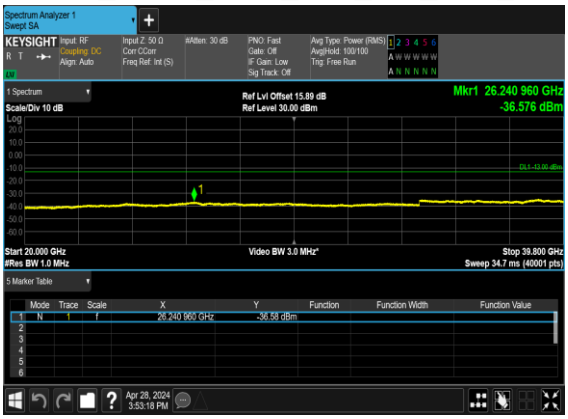
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



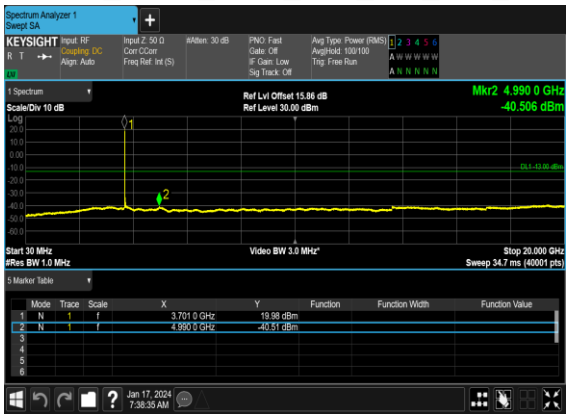
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



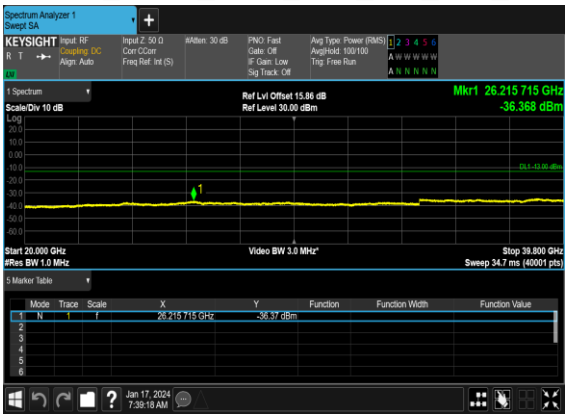
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



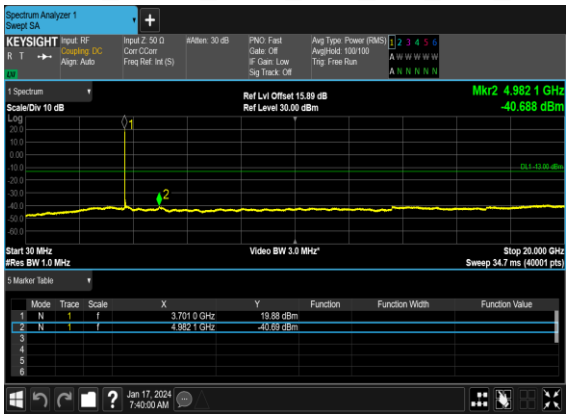
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



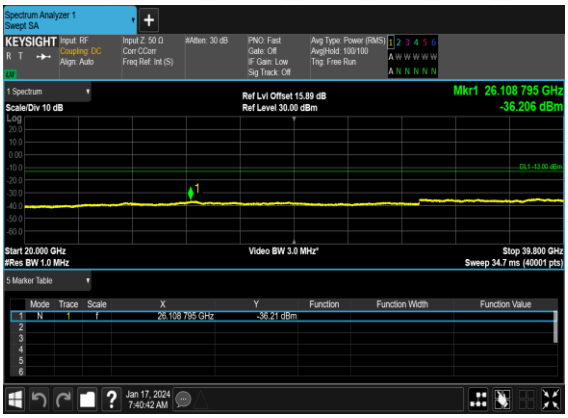
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



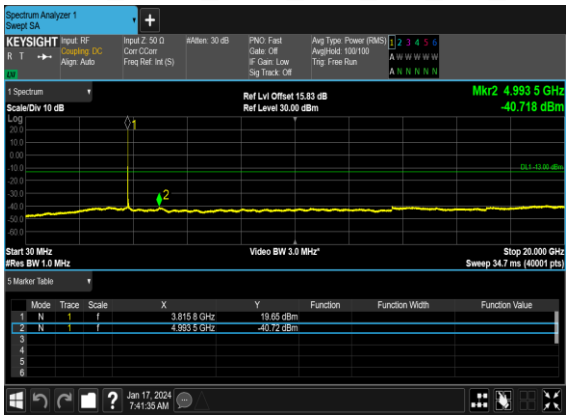
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



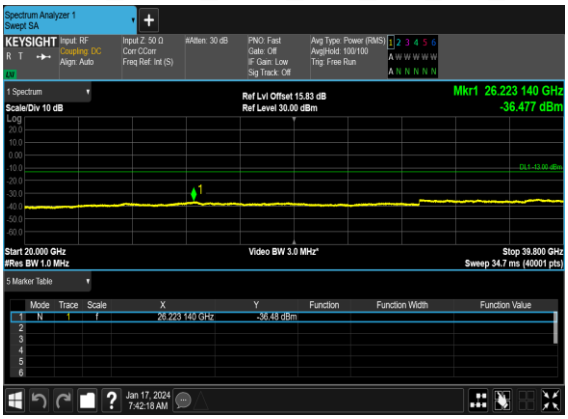
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



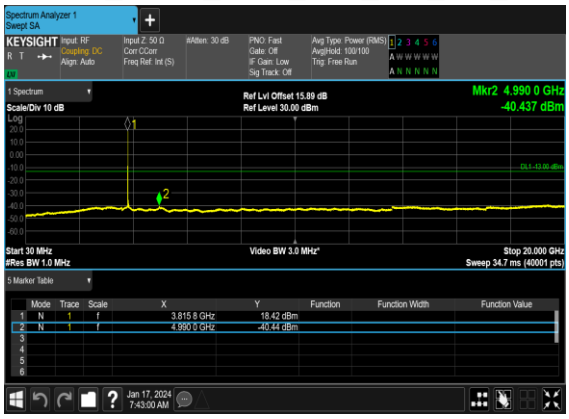
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



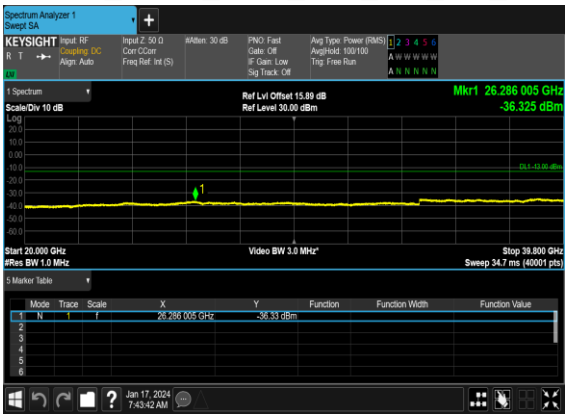
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



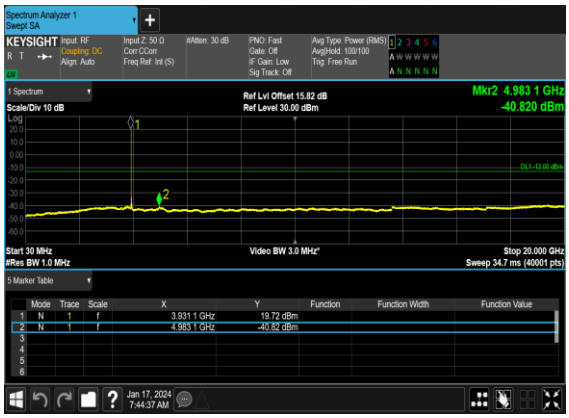
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



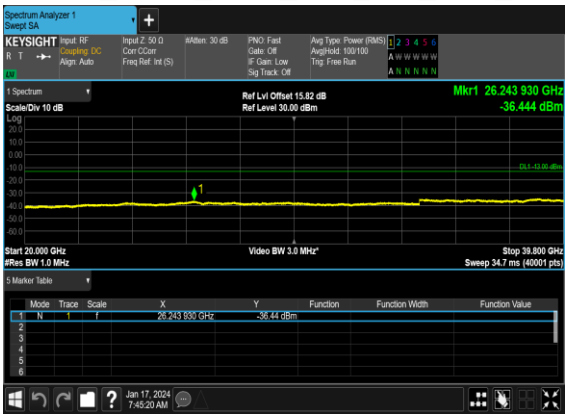
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



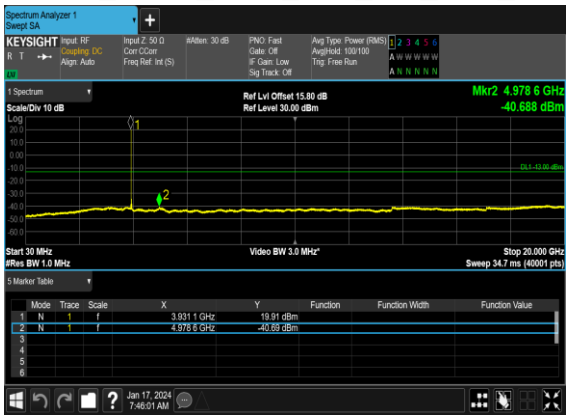
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



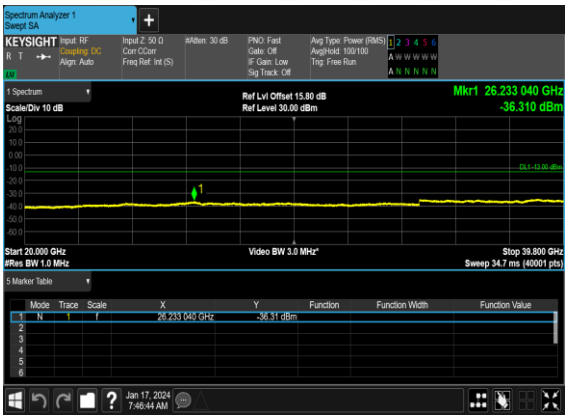
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



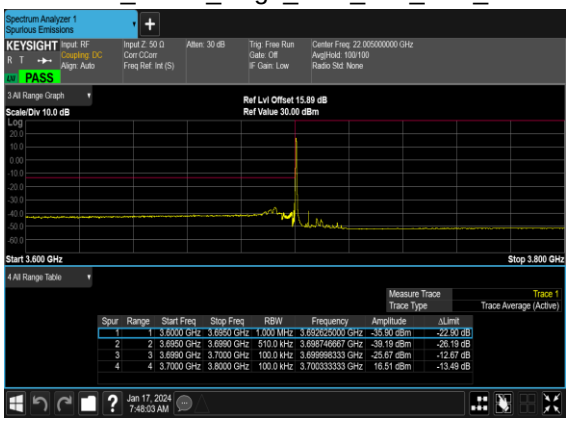
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



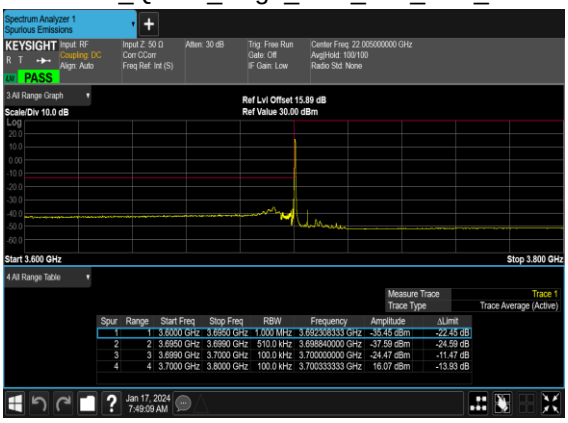
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	128@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	128@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	1@132	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@132	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	128@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	128@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	270@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@269	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@269	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	270@0	see graph	**PASS**

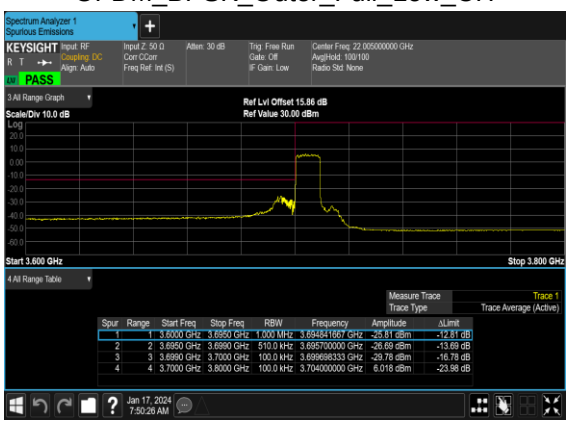
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



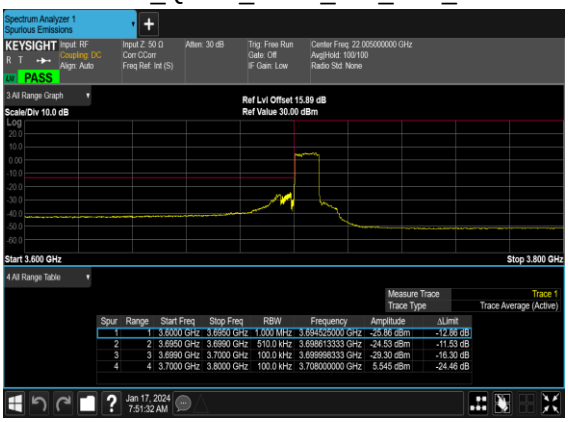
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



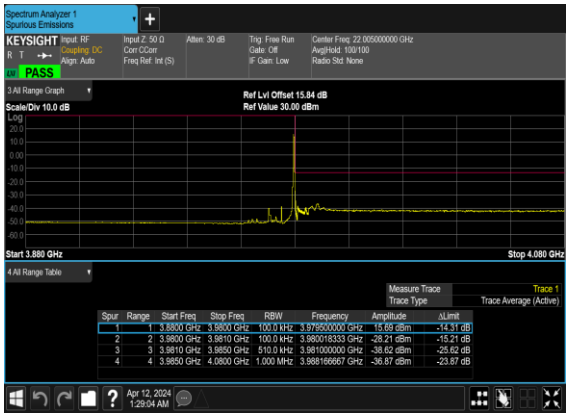
N77(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



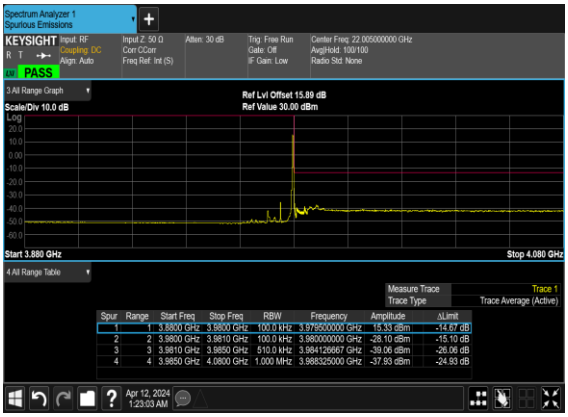
N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



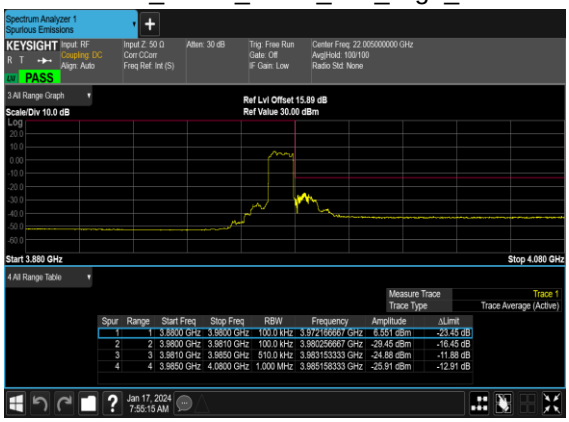
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



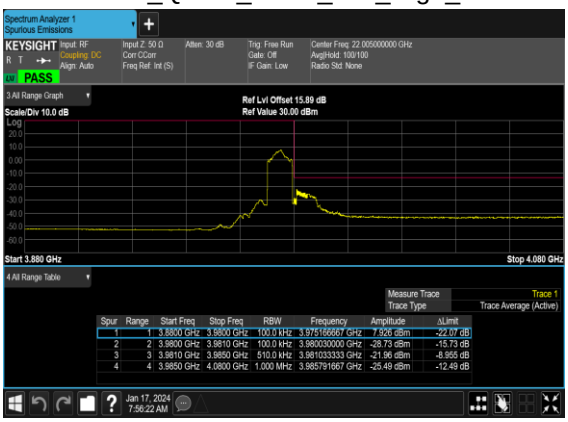
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



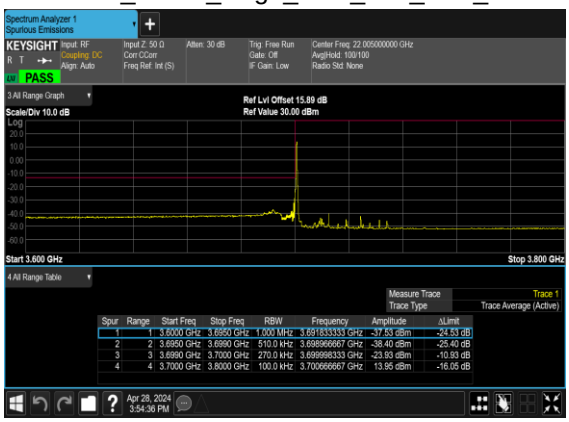
N77(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



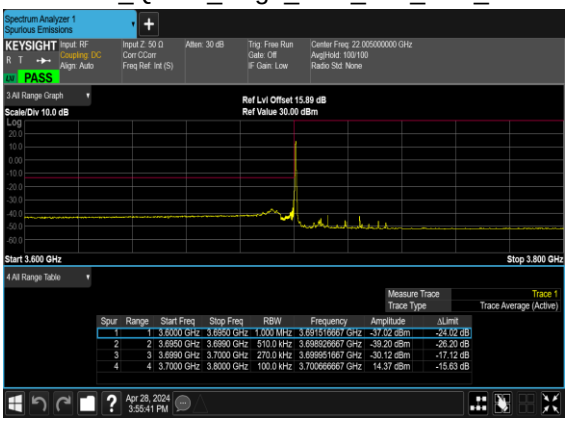
N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

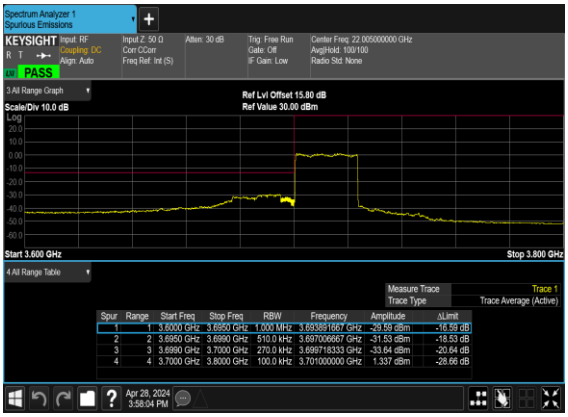


N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

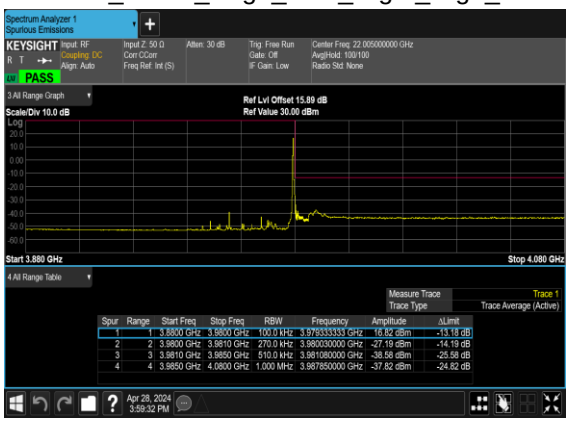


N77(25M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

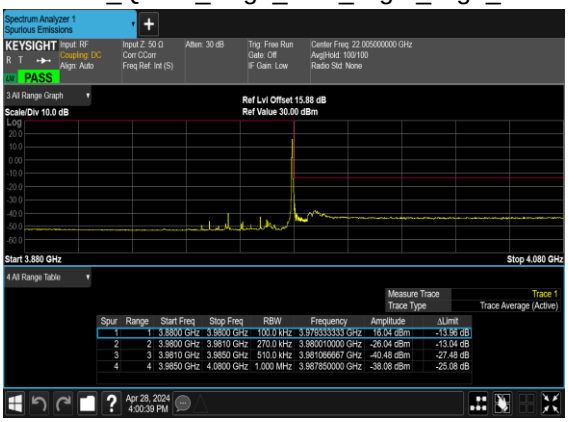
N77(25M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



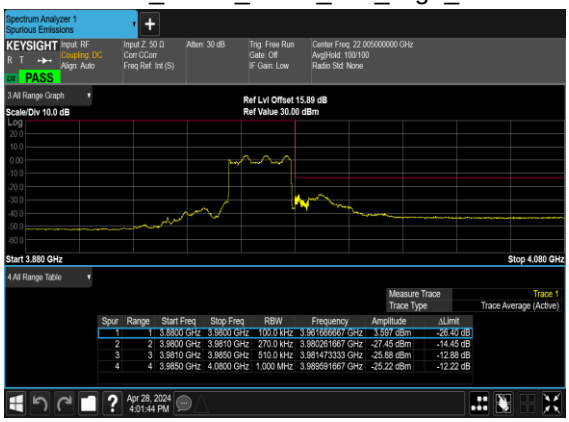
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



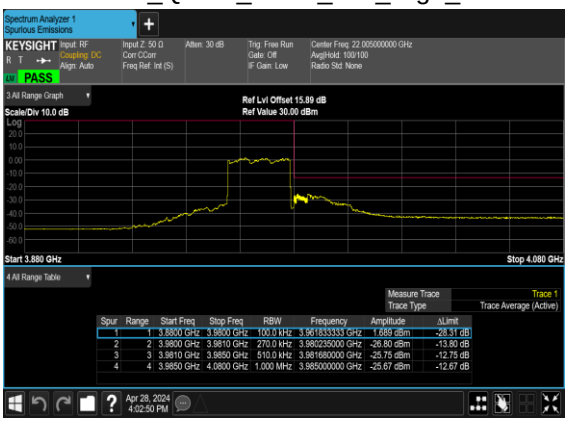
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N77(25M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

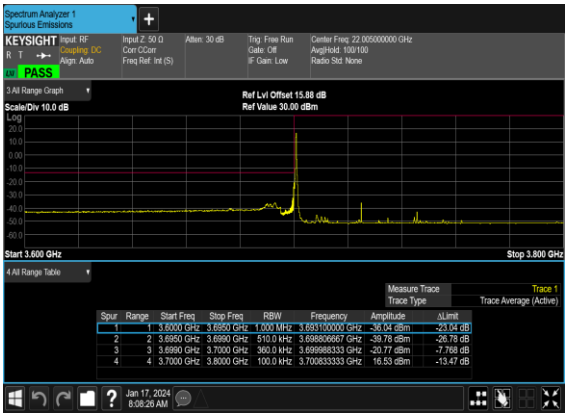


N77(25M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

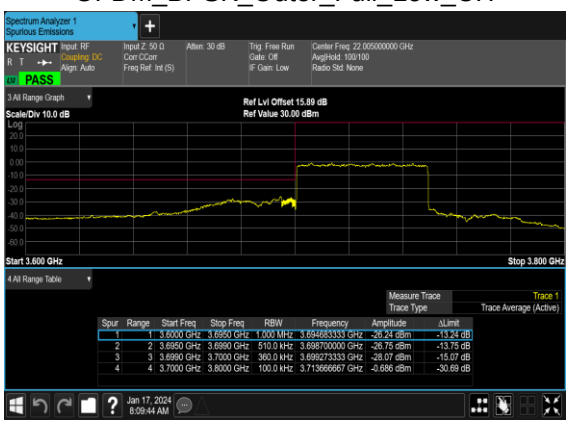


N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

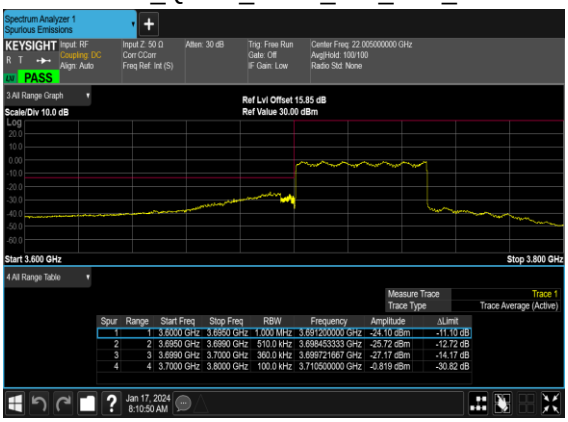
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



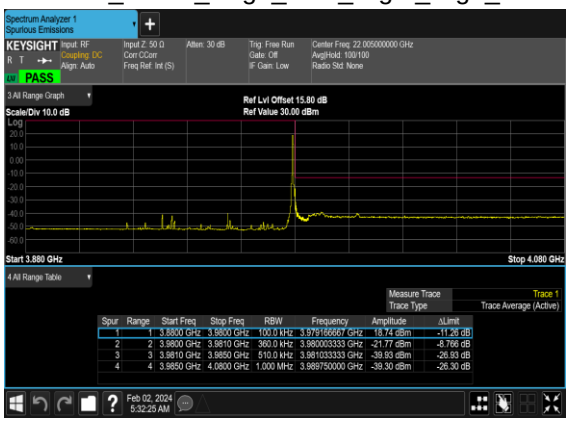
N77(50M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



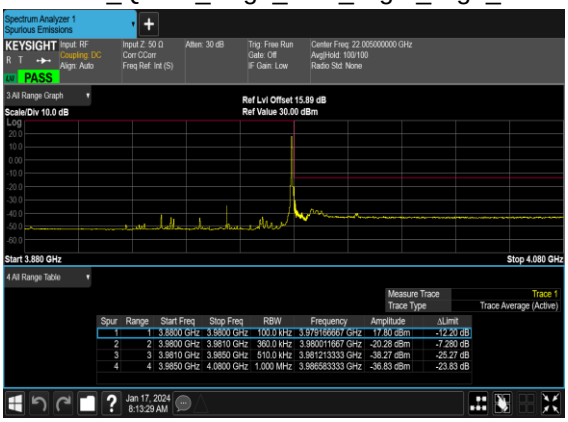
N77(50M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



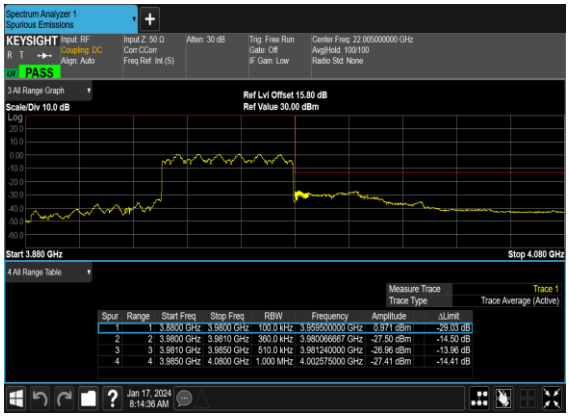
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



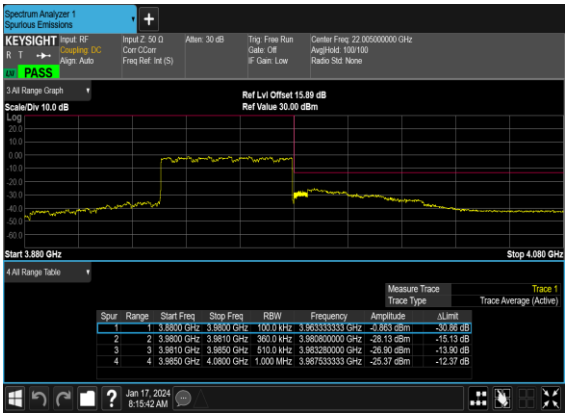
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N77(50M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 N77 MIMO-ANT(3+5)_SCS15kHz

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-1.49dB

NR Band	SCS	Band Width	Arfcn	Freq (MHz)	Modulation	RB	ANT5 Power (dBm)	ANT3 Power (dBm)	Conducted Power (dBm)	EIRP (dBm)	EIRP (W)
77	15	10	647000	3705	DFT-s-OFDM QPSK	1@1	26.82	26.28	29.57	28.08	0.6427
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	25.77	25.31	28.56	27.07	0.5093
77	15	10	656000	3840	DFT-s-OFDM QPSK	1@1	26.85	26.61	29.74	28.25	0.6683
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.84	25.65	28.76	27.27	0.5333
77	15	10	665000	3975	DFT-s-OFDM QPSK	1@1	26.73	26.62	29.69	28.2	0.6607
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	25.36	25.59	28.49	27	0.5012
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	1@1	26.87	26.34	29.62	28.13	0.6501
77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	1@1	25.79	25.34	28.58	27.09	0.5117
77	15	15	656000	3840	DFT-s-OFDM QPSK	1@1	26.91	26.59	29.76	28.27	0.6714
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.58	25.59	28.60	27.11	0.5140
77	15	15	664833	3972.495	DFT-s-OFDM QPSK	1@1	26.75	26.71	29.74	28.25	0.6683
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	1@1	25.73	25.62	28.69	27.2	0.5248
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	26.93	26.38	29.67	28.18	0.6577
77	15	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	25.91	25.44	28.69	27.2	0.5248
77	15	20	656000	3840	DFT-s-OFDM QPSK	1@1	26.9	26.61	29.77	28.28	0.6730
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.82	25.6	28.72	27.23	0.5284
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@1	26.8	26.66	29.74	28.25	0.6683
77	15	20	664666	3969.99	DFT-s-OFDM 16 QAM	1@1	25.72	25.67	28.71	27.22	0.5272
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@1	26.56	27.04	29.82	28.33	0.6808
77	15	25	647500	3712.5	DFT-s-OFDM 16 QAM	1@1	25.9	25.71	28.82	27.33	0.5408
77	15	25	656000	3840	DFT-s-OFDM QPSK	1@1	26.55	26.98	29.78	28.29	0.6745
77	15	25	656000	3840	DFT-s-OFDM 16 QAM	1@1	26.17	26.04	29.12	27.63	0.5794
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@1	26.35	27.01	29.70	28.21	0.6622
77	15	25	664500	3967.5	DFT-s-OFDM 16 QAM	1@1	25.67	25.88	28.79	27.3	0.5370
77	15	30	647667	3715.005	DFT-s-OFDM QPSK	1@1	26.87	26.32	29.61	28.12	0.6486
77	15	30	647667	3715.005	DFT-s-OFDM 16 QAM	1@1	25.78	25.35	28.58	27.09	0.5117
77	15	30	656000	3840	DFT-s-OFDM QPSK	1@1	26.9	26.7	29.81	28.32	0.6792
77	15	30	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.88	25.73	28.82	27.33	0.5408
77	15	30	664332	3964.98	DFT-s-OFDM QPSK	1@1	26.79	26.63	29.72	28.23	0.6653
77	15	30	664332	3964.98	DFT-s-OFDM 16 QAM	1@1	25.7	25.62	28.67	27.18	0.5224
77	15	40	648000	3720	DFT-s-OFDM QPSK	1@1	27.01	26.44	29.74	28.25	0.6683
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	25.83	25.37	28.62	27.13	0.5164
77	15	40	656000	3840	DFT-s-OFDM QPSK	1@1	26.91	26.8	29.87	28.38	0.6887
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.78	25.72	28.76	27.27	0.5333
77	15	40	664000	3960	DFT-s-OFDM QPSK	1@1	26.63	26.53	29.59	28.1	0.6457
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	25.61	25.53	28.58	27.09	0.5117
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	135@67	26.89	26.5	29.71	28.22	0.6637
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@1	26.87	26.34	29.62	28.13	0.6501
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@268	26.83	26.54	29.70	28.21	0.6622
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	135@67	26.9	26.51	29.72	28.23	0.6653
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	26.85	26.28	29.58	28.09	0.6442

77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@268	26.89	26.63	29.77	28.28	0.6730
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	135@67	25.99	25.53	28.78	27.29	0.5358
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	25.85	25.4	28.64	27.15	0.5188
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@268	25.56	25.5	28.54	27.05	0.5070
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	135@67	24.01	23.52	26.78	25.29	0.3381
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@1	24.17	23.52	26.87	25.38	0.3451
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@268	24.13	23.83	26.99	25.5	0.3548
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	135@67	23.98	23.52	26.77	25.28	0.3373
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@1	21.32	21.24	24.29	22.8	0.1905
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@268	21.62	21.01	24.34	22.85	0.1928
77	15	50	648334	3725.01	CP-OFDM QPSK	135@67	25.41	24.99	28.22	26.73	0.4710
77	15	50	648334	3725.01	CP-OFDM QPSK	1@1	25.22	24.77	28.01	26.52	0.4487
77	15	50	648334	3725.01	CP-OFDM QPSK	1@268	25.28	24.98	28.14	26.65	0.4624
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	26.95	26.76	29.87	28.38	0.6887
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	26.85	26.84	29.86	28.37	0.6871
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@268	26.85	26.79	29.83	28.34	0.6823
77	15	50	656000	3840	DFT-s-OFDM QPSK	135@67	26.96	26.8	29.89	28.4	0.6918
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@1	26.79	26.79	29.80	28.31	0.6776
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@268	26.75	26.82	29.80	28.31	0.6776
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	135@67	26.04	25.81	28.94	27.45	0.5559
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	25.82	25.79	28.82	27.33	0.5408
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@268	25.57	25.43	28.51	27.02	0.5035
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	135@67	24.08	23.83	26.97	25.48	0.3532
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@1	24.17	24.05	27.12	25.63	0.3656
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@268	24.16	24.07	27.13	25.64	0.3664
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	135@67	24.05	23.82	26.95	25.46	0.3516
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@1	21.67	21.71	24.70	23.21	0.2094
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@268	21.74	21.66	24.71	23.22	0.2099
77	15	50	656000	3840	CP-OFDM QPSK	135@67	22.98	22.86	25.93	24.44	0.2780
77	15	50	656000	3840	CP-OFDM QPSK	1@1	25.36	25.35	28.37	26.88	0.4875
77	15	50	656000	3840	CP-OFDM QPSK	1@268	25.31	25.3	28.32	26.83	0.4819
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	135@67	26.78	26.75	29.78	28.29	0.6745
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@1	26.67	26.64	29.67	28.18	0.6577
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@268	26.75	26.88	29.83	28.34	0.6823
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	135@67	26.76	26.78	29.78	28.29	0.6745
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	26.45	26.63	29.55	28.06	0.6397
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@268	26.58	26.93	29.77	28.28	0.6730
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	135@67	25.81	25.8	28.82	27.33	0.5408
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	25.71	25.65	28.69	27.2	0.5248
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@268	25.52	25.86	28.70	27.21	0.5260
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	135@67	23.86	23.88	26.88	25.39	0.3459
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@1	24.03	23.96	27.01	25.52	0.3565
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@268	24.11	24.17	27.15	25.66	0.3681
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	135@67	23.84	23.88	26.87	25.38	0.3451
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@1	21.56	21.5	24.54	23.05	0.2018
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@268	21.56	21.7	24.64	23.15	0.2065
77	15	50	663666	3954.99	CP-OFDM QPSK	135@67	25.34	25.31	28.34	26.85	0.4842
77	15	50	663666	3954.99	CP-OFDM QPSK	1@1	25.3	25.24	28.28	26.79	0.4775
77	15	50	663666	3954.99	CP-OFDM QPSK	1@268	25.12	25.39	28.27	26.78	0.4764

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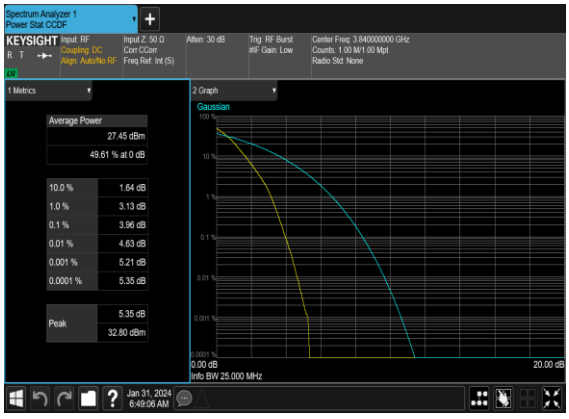
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0070	**PASS**	NV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0034	**PASS**	LV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0029	**PASS**	HV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0038	**PASS**	-30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0020	**PASS**	-20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0041	**PASS**	-10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0070	**PASS**	0℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0027	**PASS**	10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0070	**PASS**	20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0045	**PASS**	30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0033	**PASS**	40℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0069	**PASS**	50℃

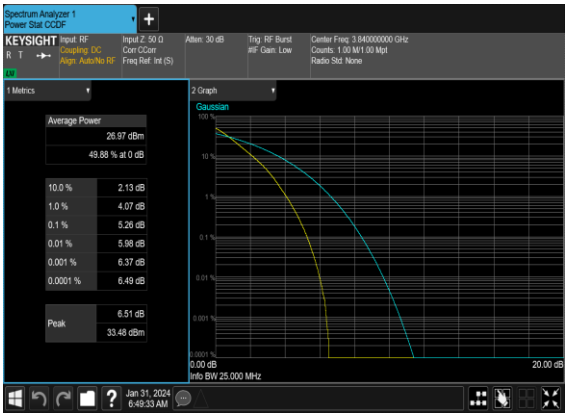
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	100@0	3.96	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	5.26	13	**PASS**

N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N77(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)
77	15	10	656000	3840.0	CP-OFDM QPSK	52@0	9.2979	9.706
77	15	10	656000	3840.0	CP-OFDM 16 QAM	52@0	9.3409	9.735
77	15	10	656000	3840.0	CP-OFDM 64 QAM	52@0	9.2856	9.72
77	15	10	656000	3840.0	CP-OFDM 256 QAM	52@0	9.3047	9.672
77	15	15	656000	3840.0	CP-OFDM QPSK	79@0	14.12	14.7
77	15	15	656000	3840.0	CP-OFDM 16 QAM	79@0	14.136	14.73
77	15	15	656000	3840.0	CP-OFDM 64 QAM	79@0	14.121	14.65
77	15	15	656000	3840.0	CP-OFDM 256 QAM	79@0	14.119	14.64
77	15	20	656000	3840.0	CP-OFDM QPSK	106@0	18.963	19.52
77	15	20	656000	3840.0	CP-OFDM 16 QAM	106@0	18.878	19.57
77	15	20	656000	3840.0	CP-OFDM 64 QAM	106@0	19.004	19.6
77	15	20	656000	3840.0	CP-OFDM 256 QAM	106@0	18.963	19.6
77	15	25	656000	3840.0	CP-OFDM QPSK	133@0	23.742	24.62
77	15	25	656000	3840.0	CP-OFDM 16 QAM	133@0	23.816	24.65
77	15	25	656000	3840.0	CP-OFDM 64 QAM	133@0	23.8	24.61
77	15	25	656000	3840.0	CP-OFDM 256 QAM	133@0	23.739	24.6
77	15	30	656000	3840.0	CP-OFDM QPSK	160@0	28.712	29.56
77	15	30	656000	3840.0	CP-OFDM 16 QAM	160@0	28.588	29.49
77	15	30	656000	3840.0	CP-OFDM 64 QAM	160@0	28.602	29.46
77	15	30	656000	3840.0	CP-OFDM 256 QAM	160@0	28.462	29.54
77	15	40	656000	3840.0	CP-OFDM QPSK	216@0	38.444	39.81
77	15	40	656000	3840.0	CP-OFDM 16 QAM	216@0	38.634	39.87
77	15	40	656000	3840.0	CP-OFDM 64 QAM	216@0	38.487	39.84
77	15	40	656000	3840.0	CP-OFDM 256 QAM	216@0	38.617	39.8
77	15	50	656000	3840.0	CP-OFDM QPSK	270@0	48.297	49.66
77	15	50	656000	3840.0	CP-OFDM 16 QAM	270@0	48.299	49.85
77	15	50	656000	3840.0	CP-OFDM 64 QAM	270@0	48.238	49.77
77	15	50	656000	3840.0	CP-OFDM 256 QAM	270@0	48.12	49.84