FCC RF Test Report

APPLICANT	:	**Motorola Mobility LLC**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**Motorola**
MODEL NAME	:	**XT2433-5, XT2433-4**
FCC ID	:	**IHDT56AS5**
STANDARD	:	**47 CFR Part 22, 27**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**
TEST DATE(S)	:	**May 15, 2024 ~ Aug. 09, 2024**

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

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

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

ACCREDITED
Cert #5145.02

Approved by: Jason Jia

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG422910B	Rev. 01	Initial issue of report	Jul. 31, 2024
FG422910B	Rev. 02	Added RSE test data for EN_DC_ 41A_n77A	Aug. 02, 2024
FG422910B	Rev. 03	Updated conducted power and EIRP for 5G NR n38/41	Aug. 12, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (5G NR n5)	ERP < 7 Watt		
	§24.232(c) §27.50(h)(2)	Equivalent Isotropic Radiated Power (5G NR n41, n38)	EIRP < 2Watt		
	§27.50(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
3.5	§24.232(d) §27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n5) (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (5G NR n41, n38)	§27.53(m)(4)		
3.8	§2.1051 §22.917(a) §27.53(l)(2)	Conducted Spurious Emission (5G NR n5) (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (5G NR n41, n38)	< 55+10log$_{10}$(P[Watts])		
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §27.53(l)(2)	Radiated Spurious Emission (5G NR n5) (5G NR n77, n78)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 21.24 dB at 5089.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (5G NR n41, n38)	< 55+10log$_{10}$(P[Watts])		

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza,Chicago,IL60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza,Chicago,IL60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	Motorola
Model Name	XT2433-5, XT2433-4
FCC ID	IHDT56AS5
IMEI Code	Conducted : 351333780010799 Radiation : 351333780065074/351333780095071
HW Version	DVT2
SW Version	UOA34.101
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n5 : 824 MHz ~ 849 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Rx Frequency	5G NR n5 : 869 MHz ~ 894 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
Bandwidth	**SCS 15K:** n5 : 5MHz / 10MHz / 15MHz / 20MHz **SCS 30K:** n38 : 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n41 : 10MHz / 15MHz / 20MHz / 30MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz n77: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz / 50MHz / 60MHz / 80MHz / 90MHz / 100MHz n78: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz / 50MHz /

	60MHz / 70MHz / 80MHz / 90MHz / 100MHz
SCS	15kHz, 30kHz
Antenna Gain	**<Ant. 0>:** n5 : -5.3 dBi **<Ant. 1>:** n77 : -3.5 dBi n78 : -3.5 dBi **<Ant. 2>:** n77 : -4.92 dBi n78 : -4.92 dBi **<Ant. 4>:** n5 : -7.4 dBi n38 : -3.2 dBi n41 : -3.1 dBi n77 : -3.2 dBi n78 : -3.1 dBi **<Ant. 5>:** n77 : -3.3 dBi n78 : -3.9 dBi **<Ant. 8>:** n77 : -4.96 dBi n78 : -4.96 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 5G NR n5 for Ant. 0 and n38/n41 for Ant. 4 and n77/n78 for Ant. 5 are shown in the report.
2. 5G NR n5 support other PA (for NSA mode: EN_DC 7A_n5A), and the PA is full tested.
3. 5G NR n77/n78 support HPUE mode.
4. 5G NR support SA (n5/n38/n41/n77/n78) mode and NSA(n5/n41/n77/n78) mode. According to the maximum power between SA and NSA mode, SA covers NSA mode.
5. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
6. The EN-DC mode combination could be referred to the product spec.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP and Emission Designator

5G NR n5		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	826.5 ~ 846.5	0.0366	4M47G7D	0.0268	4M49W7D
10	829.0 ~ 844.0	0.0370	9M30G7D	0.0269	9M31W7D
15	831.5 ~ 841.5	0.0408	14M1G7D	0.0334	14M2W7D
20	834.0 ~ 839.0	0.0445	19M0G7D	0.0361	19M0W7D

5G NR n38		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	2575.0 ~ 2615.0	0.1178	8M59G7D	0.1014	8M61W7D
15	2577.5 ~ 2612.5	0.1180	13M6G7D	0.0986	13M6W7D
20	2580.0 ~ 2610.0	0.1178	18M2G7D	0.0847	18M2W7D
25	2582.5 ~ 2607.5	0.1178	23M2G7D	0.1016	23M2W7D
30	2585.0 ~ 2605.0	0.1180	27M9G7D	0.0968	27M9W7D
40	2590.0 ~ 2600.0	0.1189	38M0G7D	0.0989	37M9W7D

5G NR n41		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	2501.01 ~ 2685.00	0.1180	8M59G7D	0.0991	8M61W7D
15	2503.50 ~ 2682.48	0.1148	13M6G7D	0.0853	13M6W7D
20	2506.02 ~ 2679.99	0.1186	18M2G7D	0.0853	18M2W7D
30	2511.00 ~ 2674.98	0.1151	27M9G7D	0.0989	27M9W7D
40	2516.01 ~ 2670.00	0.1167	38M0G7D	0.0979	37M9W7D
50	2521.02 ~ 2664.99	0.1067	47M5G7D	0.1040	47M6W7D
60	2526.00 ~ 2659.98	0.1219	57M8G7D	0.1028	58M1W7D
70	2531.01 ~ 2655.00	0.1208	68M0G7D	0.0982	67M9W7D
80	2536.02 ~ 2649.99	0.1219	77M5G7D	0.1023	77M6W7D
90	2541.00 ~ 2644.98	0.1213	87M4G7D	0.0953	87M5W7D
100	2546.01 ~ 2640.00	0.1216	97M1G7D	0.1074	97M3W7D

5G NR n77		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3975.00	0.2270	8M60G7D	0.1786	8M61W7D
15	3707.52 ~ 3972.48	0.2333	13M6G7D	0.2249	13M6W7D
20	3710.01 ~ 3969.99	0.2280	18M3G7D	0.2570	18M3W7D
25	3712.5 ~ 3967.5	0.2576	23M2G7D	0.2291	23M3W7D
30	3715.02 ~ 3964.98	0.2291	28M0G7D	0.2460	27M9W7D
40	3720.00 ~ 3960.00	0.2600	37M9G7D	0.2265	38M0W7D
50	3725.01 ~ 3954.99	0.2328	47M3G7D	0.1722	47M5W7D
60	3730.02 ~ 3949.98	0.2291	57M9G7D	0.1683	57M9W7D
80	3740.01 ~ 3939.99	0.2355	77M5G7D	0.1694	77M8W7D
90	3745.02 ~ 3934.98	0.2173	87M6G7D	0.1600	87M6W7D
100	3750.00 ~ 3930.00	0.2979	97M2G7D	0.2118	97M3W7D

5G NR n78		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3795.00	0.1706	8M60G7D	0.1758	8M61W7D
15	3707.52 ~ 3792.48	0.1959	13M6G7D	0.1972	13M6W7D
20	3710.01 ~ 3789.99	0.2280	18M3G7D	0.2438	18M3W7D
25	3712.5 ~ 3787.5	0.2254	23M2G7D	0.2296	23M3W7D
30	3715.02 ~ 3784.98	0.2265	28M0G7D	0.2163	27M9W7D
40	3720.00 ~ 3780.00	0.2427	37M9G7D	0.2489	38M0W7D
50	3725.01 ~ 3774.99	0.2495	47M3G7D	0.2377	47M5W7D
60	3730.02 ~ 3769.98	0.2500	57M9G7D	0.2099	57M9W7D
70	3735.00 ~ 3765.00	0.2094	67M9G7D	0.1841	67M9W7D
80	3740.01 ~ 3759.99	0.2178	77M5G7D	0.2270	77M8W7D
90	3745.02 ~ 3754.98	0.2500	87M6G7D	0.2518	87M6W7D
100	3750.00	0.1614	97M2G7D	0.1702	97M3W7D

Note:

1. 5G NR n41 overlaps the entire frequency range of 5G NR n38. Therefore, the test results provided in this report covers 5G NR n41 as well as 5G NR n38 except 25 Bandwidth
2. 5G NR n77 overlaps the entire frequency range of 5G NR n78. Therefore, the test results provided in this report covers 5G NR n77 as well as 5G NR n78 except 70 Bandwidth.
3. All modulations have been tested, only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-KS	CN1257	314309

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

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

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	03CH03-SZ	AUDIX	E3	6.2009-8-24

1.9 Applicable Standards

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

- 47 CFR Part 22, 24, 27
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

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

1.10 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-201L
AC Adapter 1(EU)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-202L
AC Adapter 1(UK)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-203L
AC Adapter 1(IN)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-204
AC Adapter 1(AU)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-205L
AC Adapter 1(AR)	**Brand Name**	Motorola(AOHAI)	**Model Name**	MC-206L
AC Adapter 2(US)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-201L
AC Adapter 2(EU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-202L
AC Adapter 2(UK)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-203L
AC Adapter 2(AU)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-205L
AC Adapter 2(AR)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-206L
AC Adapter 2(BR)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-207L
AC Adapter 2(Chile)	**Brand Name**	Motorola(Salcomp)	**Model Name**	MC-209L
AC Adapter 3(BR)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-207L
AC Adapter 3(US)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-201L
AC Adapter 3(EU)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-202L
AC Adapter 3(AR)	**Brand Name**	Motorola(Chenyang)	**Model Name**	MC-206L
AC Adapter 4(BR)	**Brand Name**	Motorola(Cliptech)	**Model Name**	MC-207L
AC Adapter 5(IN)	**Brand Name**	Motorola(XIHI)	**Model Name**	MC-204
Battery 1	**Brand Name**	Motorola(Sunwoda)	**Model Name**	QG50
Battery 2	**Brand Name**	Motorola(ATL)	**Model Name**	QG50
Battery 3	**Brand Name**	Motorola(JIADE)	**Model Name**	QG50
USB Cable 1	**Brand Name**	Saibao	**Model Name**	SZN-A026A
USB Cable 2	**Brand Name**	Juwei	**Model Name**	JWUB1606-ZN01H

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 (Y/X plane) were recorded in this report.

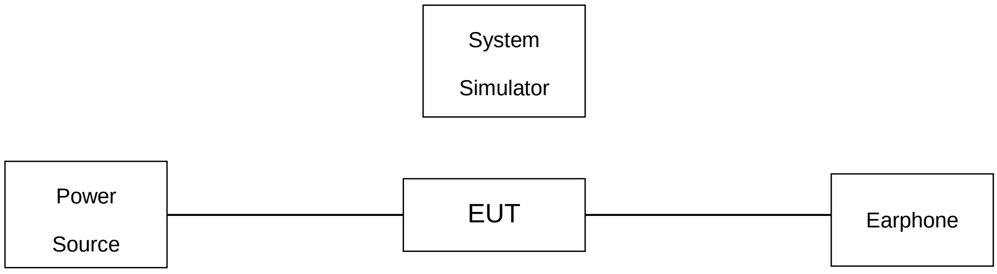
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
Max. Output Power	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n38	-	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n41	-	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	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	v
Peak-to-Average Ratio	n5				v	-	-	-	-	-	-	-	-	-	v	v				v	v		v	
	n38	-				v			-	-	-	-	-	-	v	v				v	v		v	
	n41	-			v	-									v	v				v	v		v	
	n77	-	v								-				v	v				v	v		v	
	n78	-									v				v	v				v	v		v	
26dB and 99% Bandwidth	n5	v	v	v	v	-	-	-	-	-	-	-	-	-		v	v	v	v		v		v	
	n38	-				v			-	-	-	-	-	-		v	v	v	v		v		v	
	n41	-	v	v	v	-	v	v	v	v	v	v	v	v		v	v	v	v		v		v	
	n77	-	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	
Conducted Band Edge	n5	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n38	-				v			-	-	-	-	-	-	v	v				v	v	v		v
	n41	-	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	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
	n77	-	v						v		-			v	v	v				v	v	v		v
	n78	-									v				v	v				v	v	v		v
Conducted Spurious Emission	n5	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n38	-				v			-	-	-	-	-	-	v	v				v		v	v	v
	n41	-	v			-				v				v	v	v				v		v	v	v
	n77	-	v						v		-			v	v	v				v		v	v	v
	n78	-									v				v	v				v		v	v	v
Frequency Stability	n5				v	-	-	-	-	-	-	-	-	-	v						v		v	
	n38	-				v			-	-	-	-	-	-	v						v		v	
	n41	-			v	-									v						v		v	
	n77	-	v								-				v						v		v	
	n78	-									v				v						v		v	
E.R.P / E.I.R.P	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n38	-	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n41	-	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	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	v
Radiated Spurious Emission	n5	Worst Case																					v	
	n41	Worst Case																					v	
	n77	Worst Case																					v	
	n78	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 = 3.91V ; Low Voltage =3.60V. ; High Voltage =4.50V																							

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

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

2.3 Support Unit used in test configuration and system

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

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 6.5 dB and 20dB attenuator.

Example :

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

= 6.5 + 20 = 26.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n38 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	518000	519000	520000
	Frequency	2590	2595	2600
30	Channel	517000	519000	521000
	Frequency	2585	2595	2605
25	Channel	516500	519000	521500
	Frequency	2582.5	2595	2607.5
20	Channel	516000	519000	522000
	Frequency	2580	2595	2610
15	Channel	515500	519000	522500
	Frequency	2577.5	2595	2612.5
10	Channel	515000	519000	523000
	Frequency	2575	2595	2615

5G NR n41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	509202	518598	528000
	Frequency	2546.01	2592.99	2640
90	Channel	508200	518598	528996
	Frequency	2541	2592.99	2644.98
80	Channel	507204	518598	529998
	Frequency	2536.02	2592.99	2649.99
70	Channel	506202	518598	531000
	Frequency	2531.01	2592.99	2655
60	Channel	505200	518598	531996
	Frequency	2526	2592.99	2659.98
50	Channel	504204	518598	532998
	Frequency	2521.02	2592.99	2664.99
40	Channel	503202	518598	534000
	Frequency	2516.01	2592.99	2670
30	Channel	502200	518598	534996
	Frequency	2511	2592.99	2674.98
20	Channel	501204	518598	535998
	Frequency	2506.02	2592.99	2679.99
15	Channel	500700	518598	536496
	Frequency	2503.5	2592.99	2682.48

10	Channel	500202	518598	537000
	Frequency	2501.01	2592.99	2685

5G n77 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
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 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

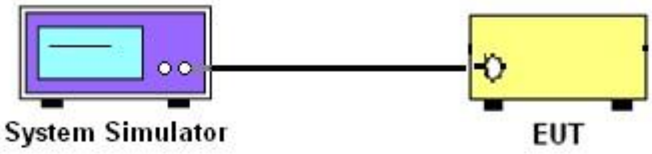
3 Conducted Test Items

3.1 Measuring Instruments

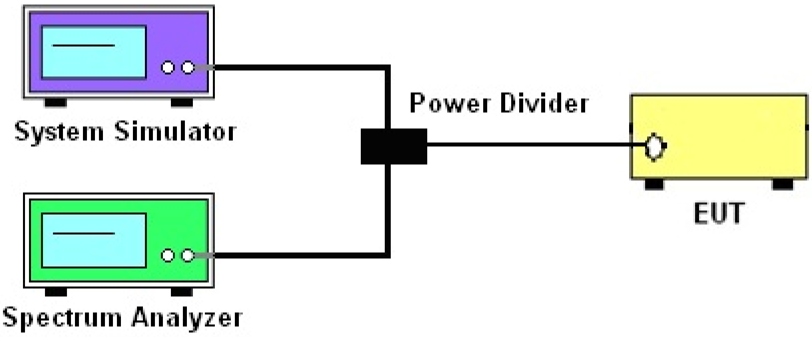
See list of measuring instruments of this test report.

3.2 Test Setup

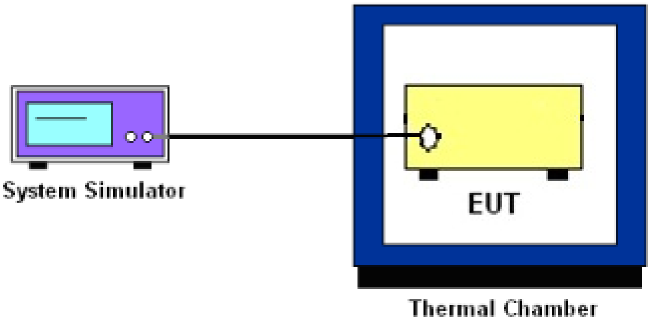
3.2.1 Conducted Output Power



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 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 7 Watts for 5G NR n5.

The EIRP of mobile transmitters must not exceed 2 Watts for 5G NR n38, n41.

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

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz 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(m)(4)

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

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. For 5G NR n38/n41, the other 40 dB, and 55 dB have additionally applied same calculation above.
10. 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.

For 5G NR n38/n41:

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 55 + 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.
11. For 5G NR n38/n41
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [55+ 10log(P)] (dB)
    = [30+ 10log(P)] (dBm) - [55+ 10log(P)] (dB)
    = -25dBm.

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. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

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

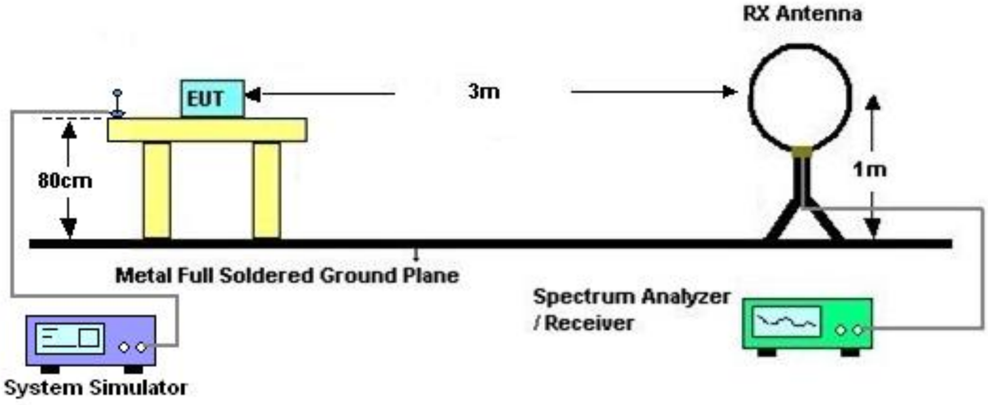
4 Radiated Test Items

4.1 Measuring Instruments

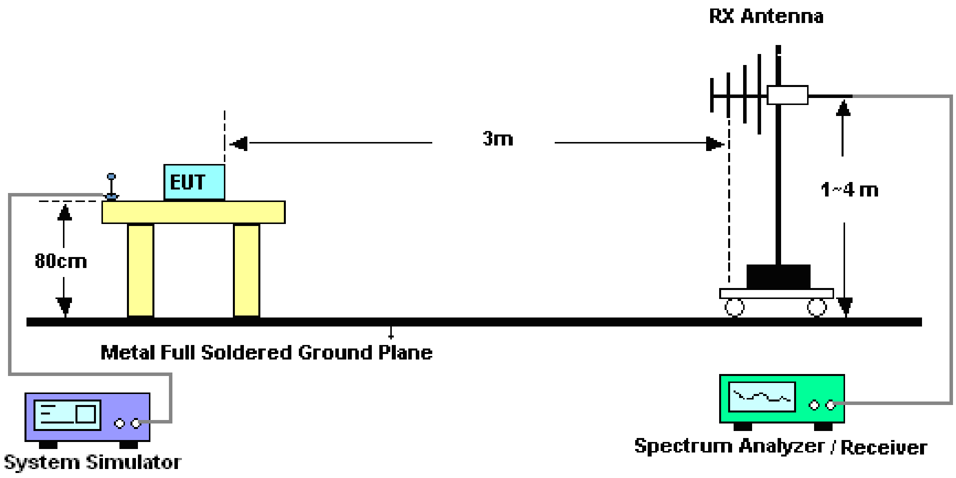
See list of measuring instruments of this test report.

4.2 Test Setup

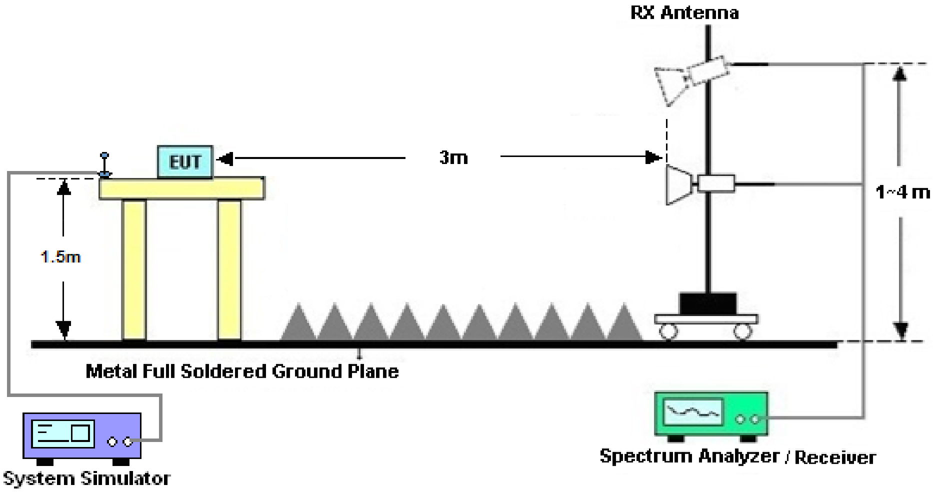
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

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

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

For 5G NR n38/n41

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 55 + 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.
13. For 5G NR n38/n41:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	May 15, 2024~ Aug. 09, 2024	Oct. 10, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	May 15, 2024~ Aug. 09, 2024	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 05, 2023	May 15, 2024~ Aug. 09, 2024	Jul. 04, 2024	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 04, 2024		Jul. 03, 2025	Conducted (TH01-KS)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Jul. 11, 2024~ Aug. 01, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 27, 2024	Jul. 11, 2024~ Aug. 01, 2024	Jun. 26, 2025	Radiation (03CH03-SZ)
EXA Spectrum Anaiyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Jul. 11, 2024~ Aug. 01, 2024	Apr. 08, 2025	Radiation (03CH03-SZ
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	Aug. 20, 2023	Jul. 11, 2024~ Aug. 01, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Jul. 11, 2024~ Aug. 01, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Jul. 11, 2024~ Aug. 01, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 06, 2024	Jul. 11, 2024~ Aug. 01, 2024	Jul. 05, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Jul. 11, 2024~ Aug. 01, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Jul. 11, 2024~ Aug. 01, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Jul. 11, 2024~ Aug. 01, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jul. 11, 2024~ Aug. 01, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jul. 11, 2024~ Aug. 01, 2024	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Conducted Spurious Emission & Bandedge	**±2.26 dB**
Occupied Channel Bandwidth	**±0.1%**
Conducted Power	**±0.46 dB**
Peak to Average Ratio	**±0.46 dB**
Frequency Stability	**±0.4 Hz**

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Software Version: 23.06.1602

FR1 N5 -SCS 15k

LTE Band: 7, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And ERP, (G_T - L_C)=-5.3dBi

NR Band	SCS	BandWidth	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	ERP(dBm)	ERP(W)
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	50@25	22.93	15.48	0.0353
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@1	22.86	15.41	0.0348
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@104	22.96	15.51	0.0356
5	15	20	166800	834	DFT-s-OFDM QPSK	50@25	23.82	16.37	0.0434
5	15	20	166800	834	DFT-s-OFDM QPSK	1@1	22.23	14.78	0.0301
5	15	20	166800	834	DFT-s-OFDM QPSK	1@104	21.89	14.44	0.0278
5	15	20	166800	834	DFT-s-OFDM 16 QAM	50@25	19.46	12.01	0.0159
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@1	21.07	13.62	0.0230
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@104	20.75	13.3	0.0214
5	15	20	166800	834	DFT-s-OFDM 64 QAM	50@25	18.52	11.07	0.0128
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@1	20.18	12.73	0.0187
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@104	19.83	12.38	0.0173
5	15	20	166800	834	DFT-s-OFDM 256 QAM	50@25	16.87	9.42	0.0087
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@1	18.44	10.99	0.0126
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@104	18.12	10.67	0.0117
5	15	20	166800	834	CP-OFDM QPSK	53@26	19.03	11.58	0.0144
5	15	20	166800	834	CP-OFDM QPSK	1@1	20.33	12.88	0.0194
5	15	20	166800	834	CP-OFDM QPSK	1@104	19.96	12.51	0.0178
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	22.91	15.46	0.0352
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.21	15.76	0.0377
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	23.06	15.61	0.0364
5	15	20	167300	836.5	DFT-s-OFDM QPSK	50@25	22.78	15.33	0.0341
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@1	22.56	15.11	0.0324
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@104	23.93	16.48	0.0445
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	50@25	19.2	11.75	0.0150
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.02	15.57	0.0361
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@104	22.81	15.36	0.0344
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	50@25	20.47	13.02	0.0200
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@1	22.11	14.66	0.0292
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@104	21.89	14.44	0.0278
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	50@25	18.83	11.38	0.0137
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@1	20.42	12.97	0.0198
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@104	20.19	12.74	0.0188
5	15	20	167300	836.5	CP-OFDM QPSK	53@26	18.76	11.31	0.0135
5	15	20	167300	836.5	CP-OFDM QPSK	1@1	22.27	14.82	0.0303
5	15	20	167300	836.5	CP-OFDM QPSK	1@104	22.02	14.57	0.0286
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	50@25	22.78	15.33	0.0341

5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@1	23.2	15.75	0.0376
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@104	23.12	15.67	0.0369
5	15	20	167800	839	DFT-s-OFDM QPSK	50@25	22.64	15.19	0.0330
5	15	20	167800	839	DFT-s-OFDM QPSK	1@1	22.25	14.8	0.0302
5	15	20	167800	839	DFT-s-OFDM QPSK	1@104	23	15.55	0.0359
5	15	20	167800	839	DFT-s-OFDM 16 QAM	50@25	21.27	13.82	0.0241
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@1	22.91	15.46	0.0352
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@104	21.86	14.41	0.0276
5	15	20	167800	839	DFT-s-OFDM 64 QAM	50@25	20.3	12.85	0.0193
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@1	22	14.55	0.0285
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@104	21	13.55	0.0226
5	15	20	167800	839	DFT-s-OFDM 256 QAM	50@25	18.78	11.33	0.0136
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@1	20.36	12.91	0.0195
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@104	19.41	11.96	0.0157
5	15	20	167800	839	CP-OFDM QPSK	53@26	20.8	13.35	0.0216
5	15	20	167800	839	CP-OFDM QPSK	1@1	22.16	14.71	0.0296
5	15	20	167800	839	CP-OFDM QPSK	1@104	21.09	13.64	0.0231
5	15	5	165300	826.5	DFT-s-OFDM PI/2 BPSK	1@1	22.76	15.31	0.0340
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@1	22.68	15.23	0.0333
5	15	5	165300	826.5	DFT-s-OFDM 16 QAM	1@1	21.51	14.06	0.0255
5	15	5	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.08	15.63	0.0366
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@1	22.98	15.53	0.0357
5	15	5	167300	836.5	DFT-s-OFDM 16 QAM	1@1	21.73	14.28	0.0268
5	15	5	169300	846.5	DFT-s-OFDM PI/2 BPSK	1@1	22.79	15.34	0.0342
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@1	22.7	15.25	0.0335
5	15	5	169300	846.5	DFT-s-OFDM 16 QAM	1@1	21.55	14.1	0.0257
5	15	10	165800	829	DFT-s-OFDM PI/2 BPSK	1@1	22.89	15.44	0.0350
5	15	10	165800	829	DFT-s-OFDM QPSK	1@1	22.77	15.32	0.0340
5	15	10	165800	829	DFT-s-OFDM 16 QAM	1@1	21.49	14.04	0.0254
5	15	10	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.13	15.68	0.0370
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@1	22.99	15.54	0.0358
5	15	10	167300	836.5	DFT-s-OFDM 16 QAM	1@1	21.75	14.3	0.0269
5	15	10	168800	844	DFT-s-OFDM PI/2 BPSK	1@1	22.44	14.99	0.0316
5	15	10	168800	844	DFT-s-OFDM QPSK	1@1	22.3	14.85	0.0305
5	15	10	168800	844	DFT-s-OFDM 16 QAM	1@1	21.14	13.69	0.0234
5	15	15	166300	831.5	DFT-s-OFDM PI/2 BPSK	1@1	23.01	15.56	0.0360
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@1	23.56	16.11	0.0408
5	15	15	166300	831.5	DFT-s-OFDM 16 QAM	1@1	22.69	15.24	0.0334
5	15	15	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	22.98	15.53	0.0357
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@1	22.89	15.44	0.0350
5	15	15	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.66	15.21	0.0332
5	15	15	168300	841.5	DFT-s-OFDM PI/2 BPSK	1@1	22.64	15.19	0.0330
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@1	23.41	15.96	0.0394
5	15	15	168300	841.5	DFT-s-OFDM 16 QAM	1@1	22.12	14.67	0.0293

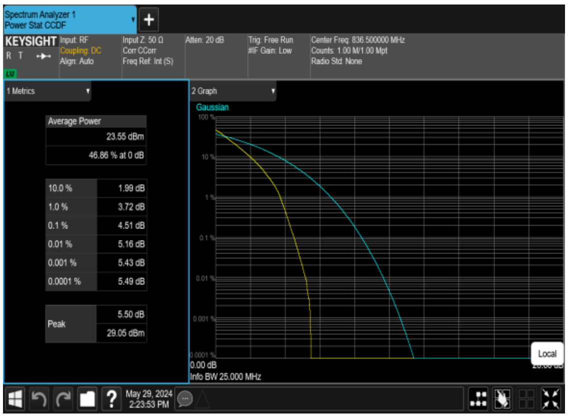
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0026	**PASS**	NV
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0035	**PASS**	LV
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0043	**PASS**	HV
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0019	**PASS**	-30℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0015	**PASS**	-20℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0035	**PASS**	-10℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0014	**PASS**	0℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0022	**PASS**	10℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0005	**PASS**	20℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0014	**PASS**	30℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	-0.0016	**PASS**	40℃
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	0.0007	**PASS**	50℃

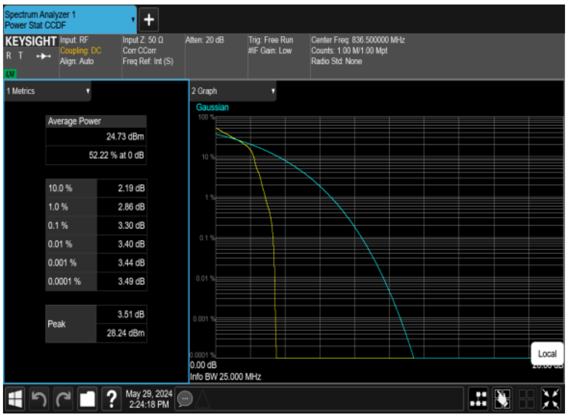
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	4.51	13	PASS
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@0	3.3	13	PASS
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	5.1	13	PASS
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	3.38	13	PASS

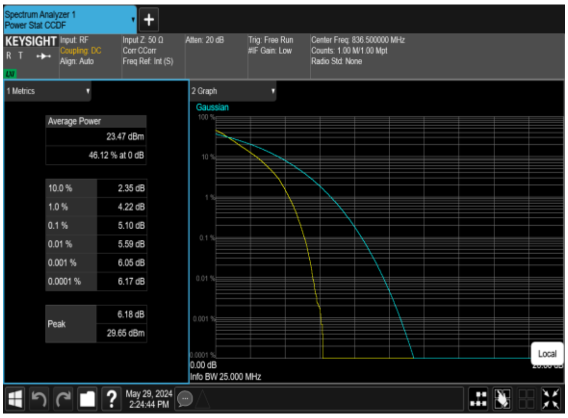
B7_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



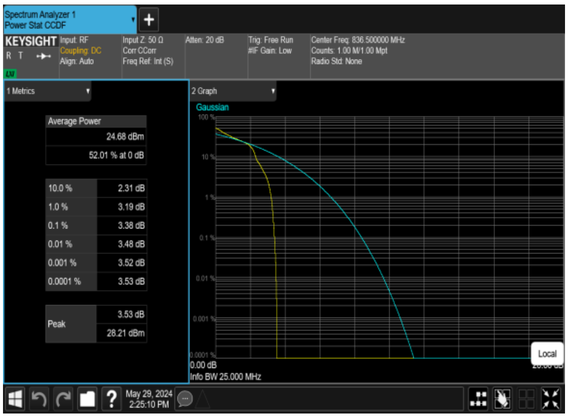
B7_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



B7_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



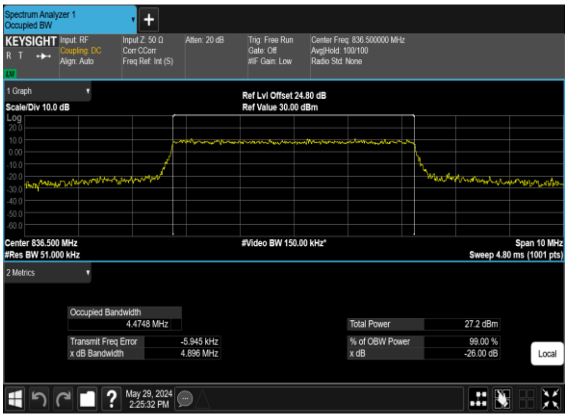
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



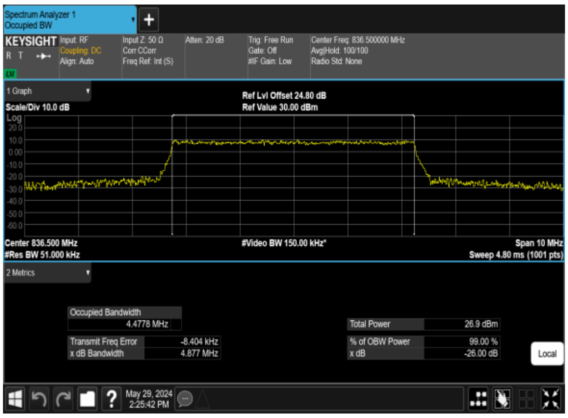
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
5	15	5	167300	836.5	CP-OFDM QPSK	25@0	4.4748	4.896
5	15	5	167300	836.5	CP-OFDM 16 QAM	25@0	4.4778	4.877
5	15	5	167300	836.5	CP-OFDM 64 QAM	25@0	4.4883	4.903
5	15	5	167300	836.5	CP-OFDM 256 QAM	25@0	4.484	4.87
5	15	10	167300	836.5	CP-OFDM QPSK	52@0	9.3	9.816
5	15	10	167300	836.5	CP-OFDM 16 QAM	52@0	9.3049	9.865
5	15	10	167300	836.5	CP-OFDM 64 QAM	52@0	9.3144	9.782
5	15	10	167300	836.5	CP-OFDM 256 QAM	52@0	9.281	9.733
5	15	15	167300	836.5	CP-OFDM QPSK	79@0	14.132	14.84
5	15	15	167300	836.5	CP-OFDM 16 QAM	79@0	14.115	14.92
5	15	15	167300	836.5	CP-OFDM 64 QAM	79@0	14.152	14.91
5	15	15	167300	836.5	CP-OFDM 256 QAM	79@0	14.093	14.78
5	15	20	167300	836.5	CP-OFDM QPSK	106@0	18.974	19.61
5	15	20	167300	836.5	CP-OFDM 16 QAM	106@0	18.977	19.7
5	15	20	167300	836.5	CP-OFDM 64 QAM	106@0	18.999	19.75
5	15	20	167300	836.5	CP-OFDM 256 QAM	106@0	18.933	19.7

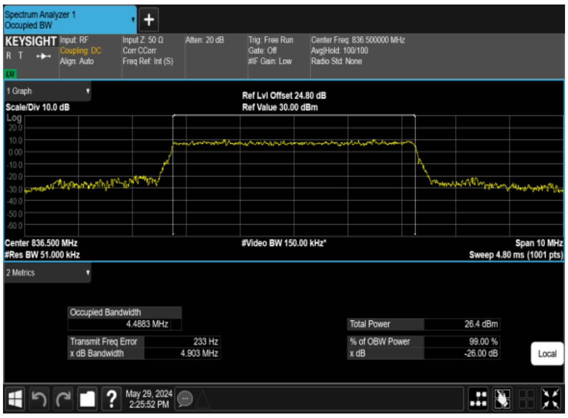
B7_N5(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



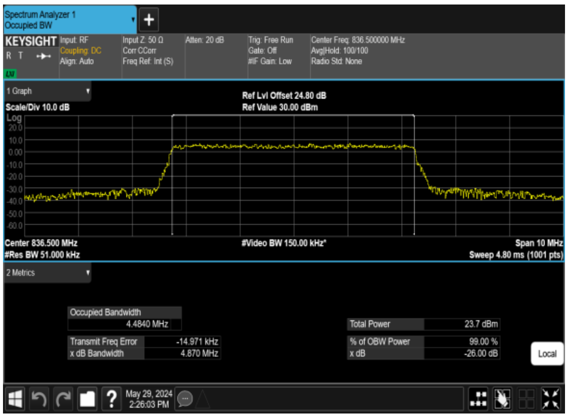
B7_N5(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



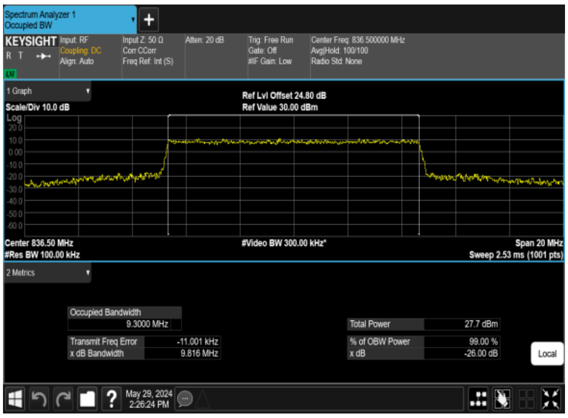
B7_N5(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



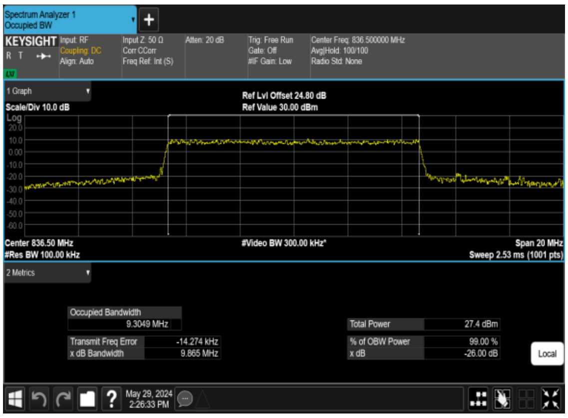
B7_N5(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



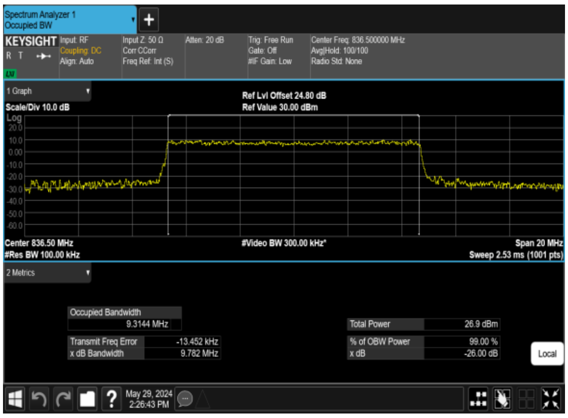
B7_N5(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



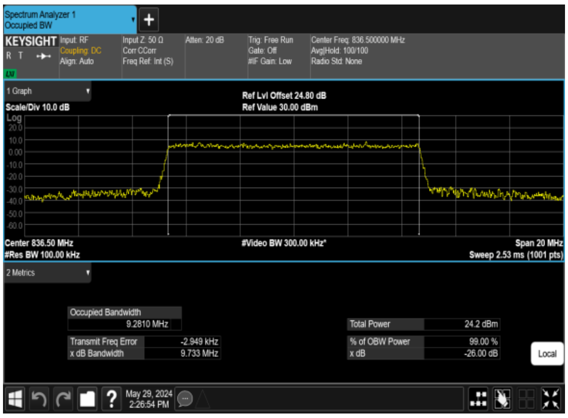
B7_N5(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



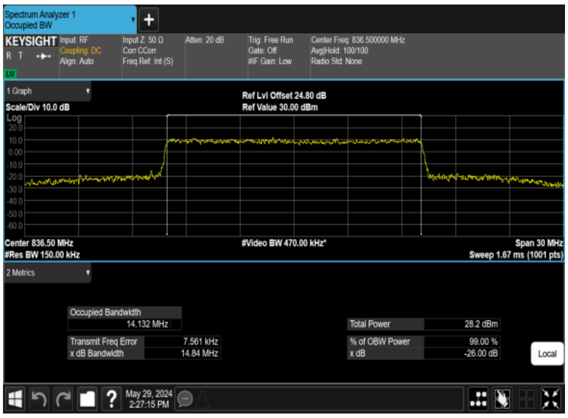
B7_N5(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



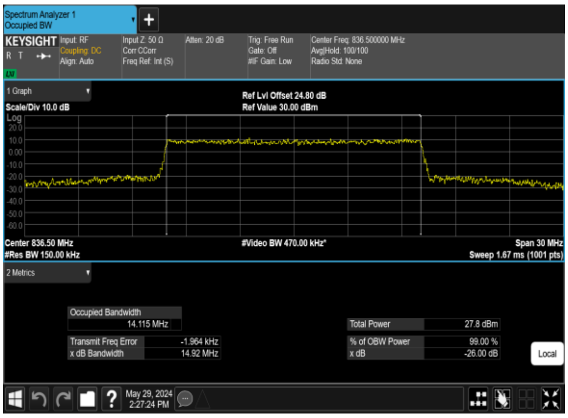
B7_N5(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



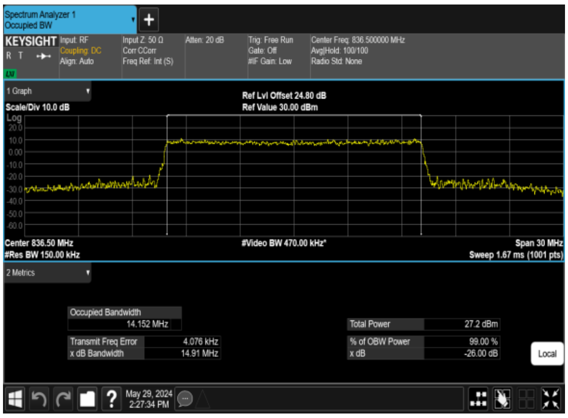
B7_N5(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



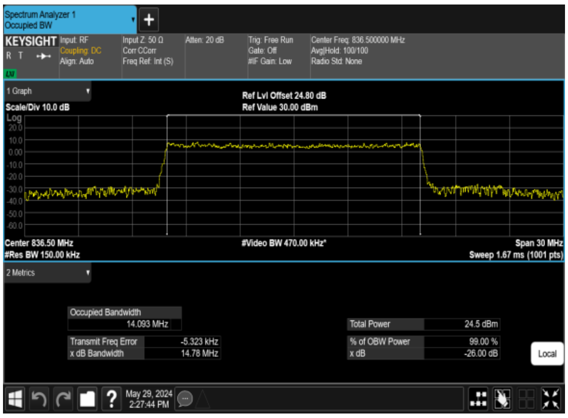
B7_N5(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



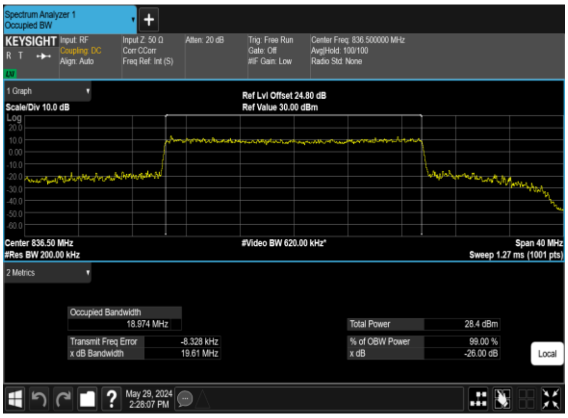
B7_N5(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



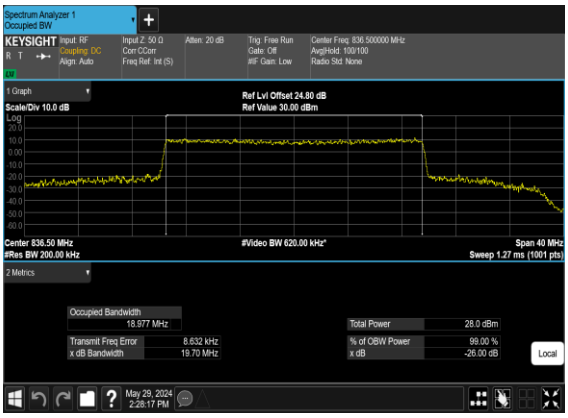
B7_N5(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



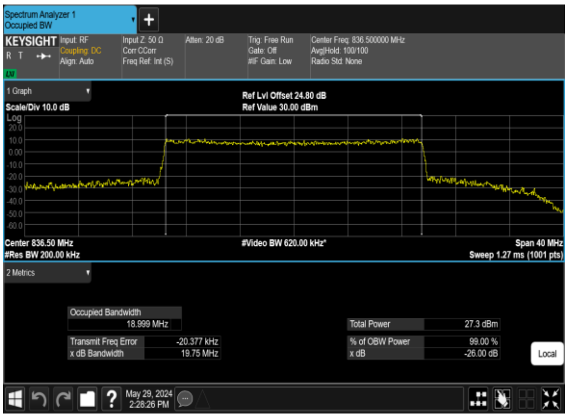
B7_N5(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



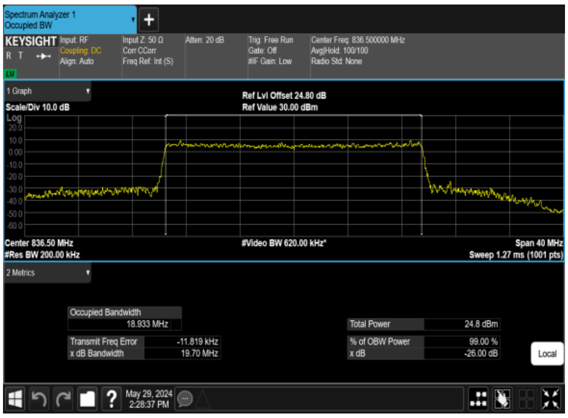
B7_N5(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B7_N5(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



B7_N5(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

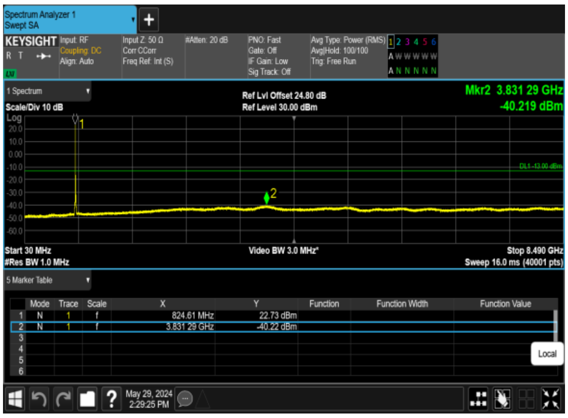


Conducted Spurious Emissions

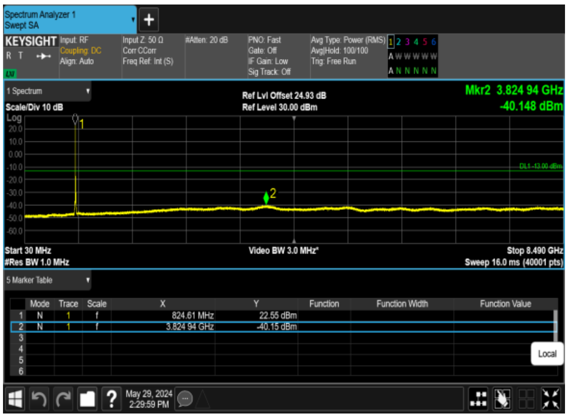
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	15	166300	831.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	15	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	15	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	15	168300	841.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

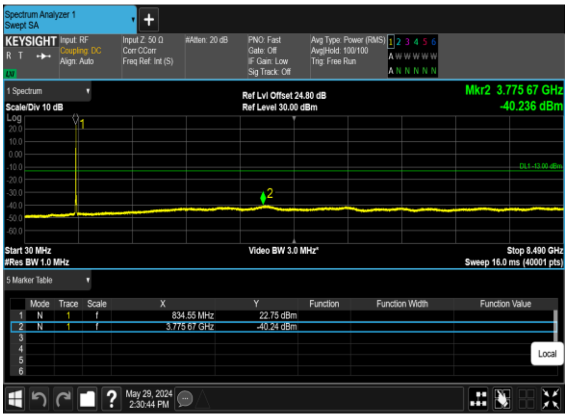
B7_N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



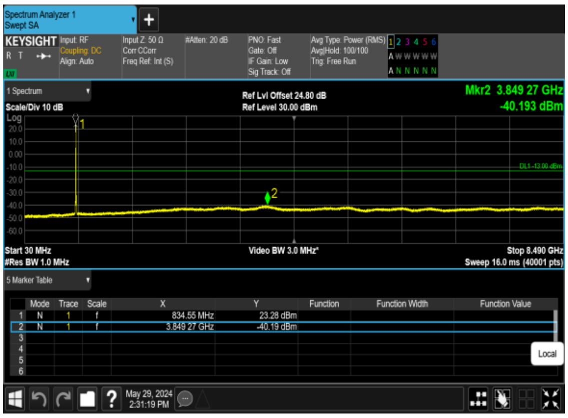
B7_N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



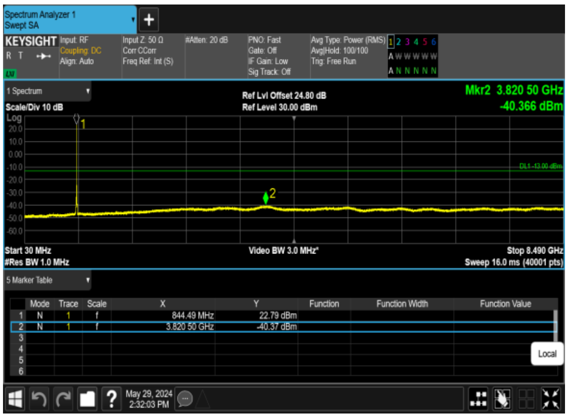
B7_N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



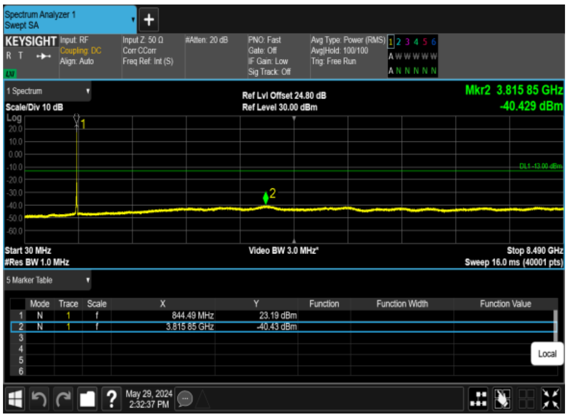
B7_N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



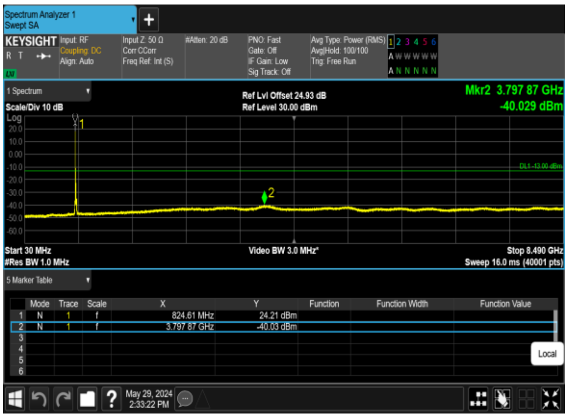
B7_N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



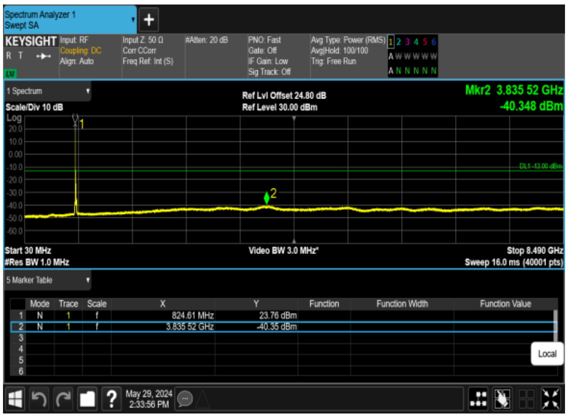
B7_N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



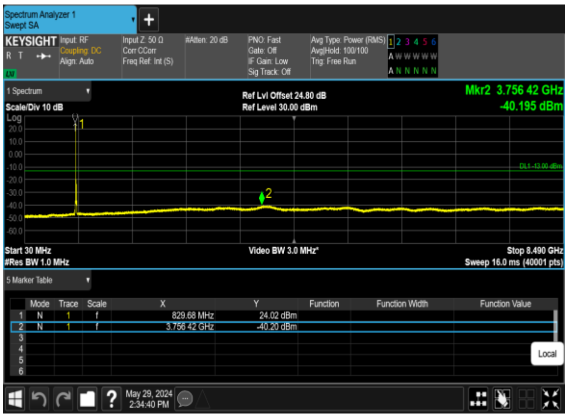
B7_N5(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



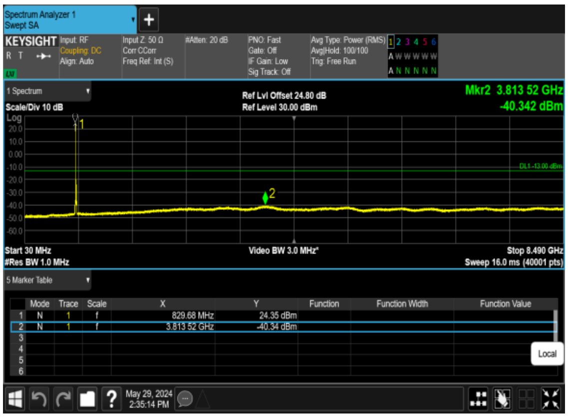
B7_N5(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



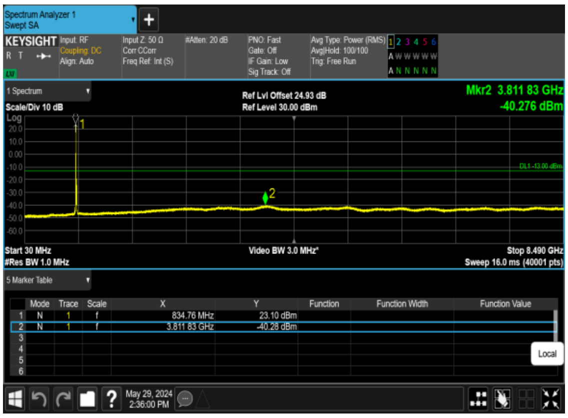
B7_N5(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



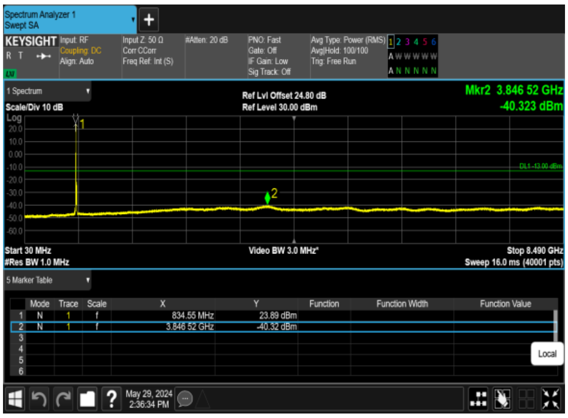
B7_N5(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



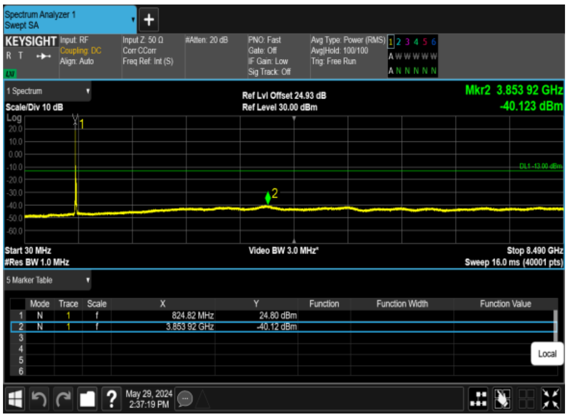
B7_N5(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



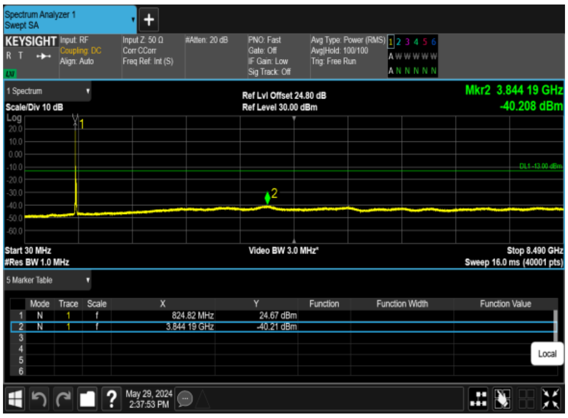
B7_N5(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



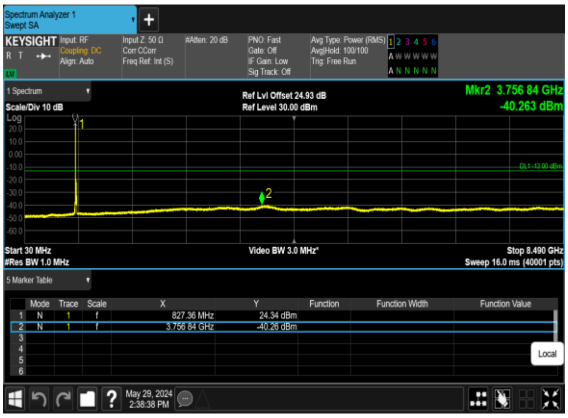
B7_N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



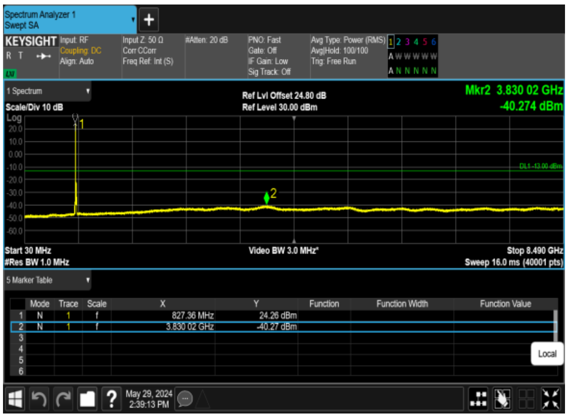
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



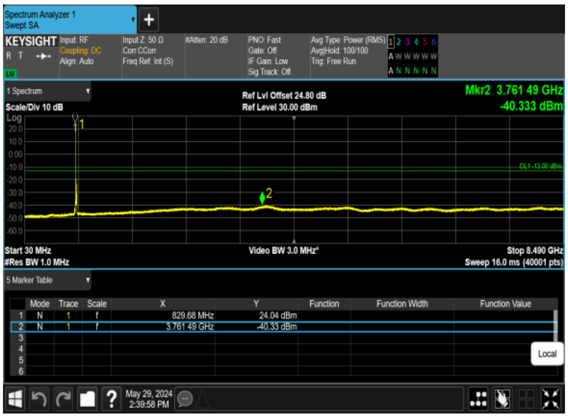
B7_N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



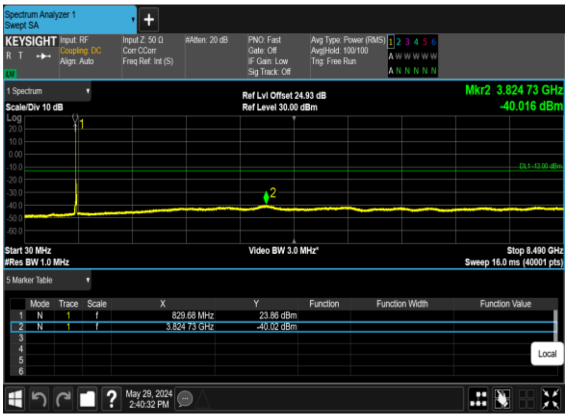
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



B7_N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



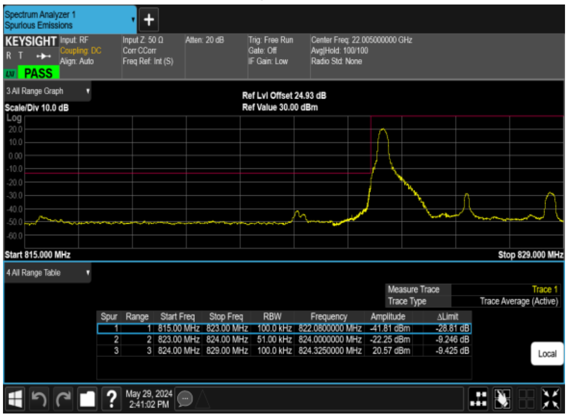
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



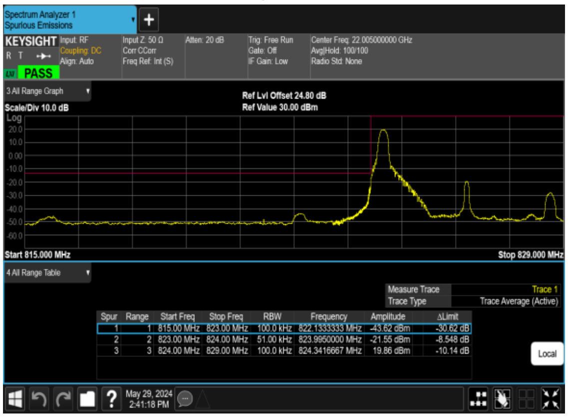
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
5	15	15	166300	831.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM BPSK	1@78	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@78	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
5	15	15	168300	841.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**

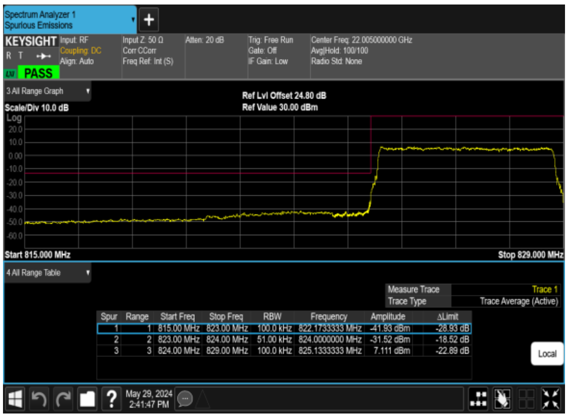
B7_N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



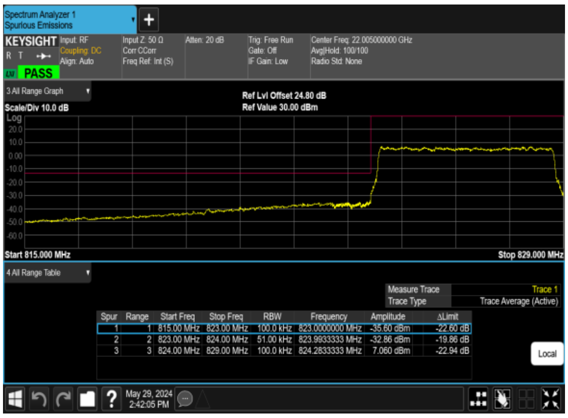
B7_N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



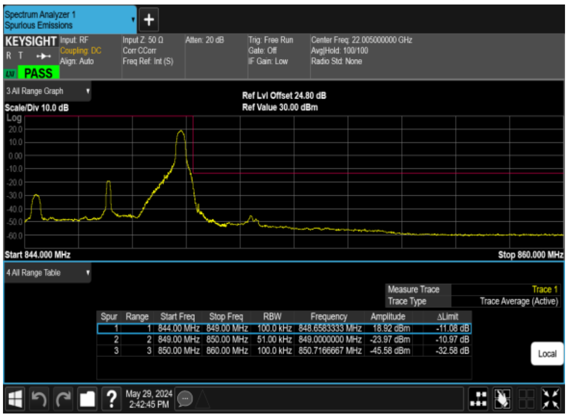
B7_N5(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



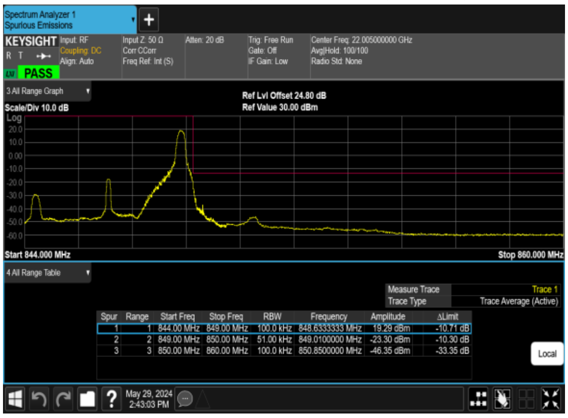
B7_N5(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



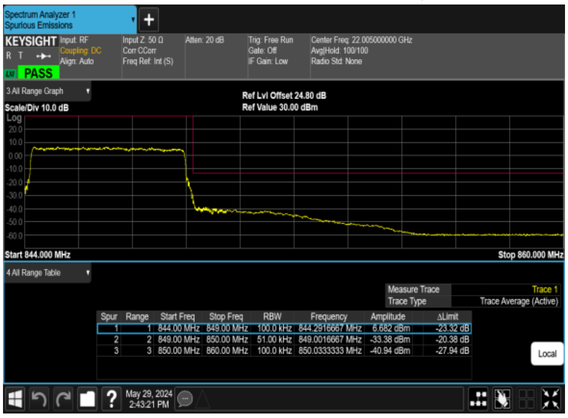
B7_N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



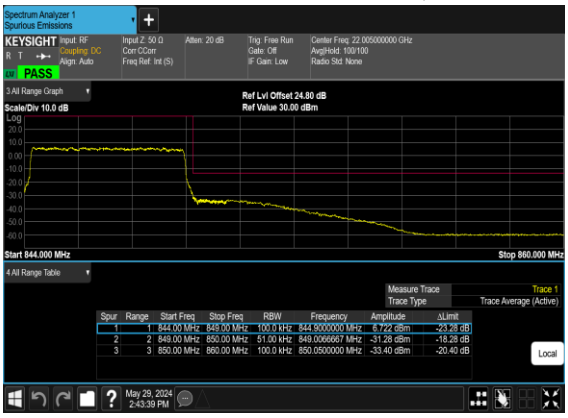
B7_N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



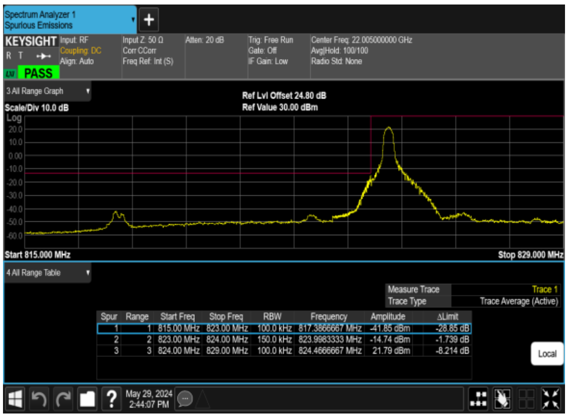
B7_N5(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



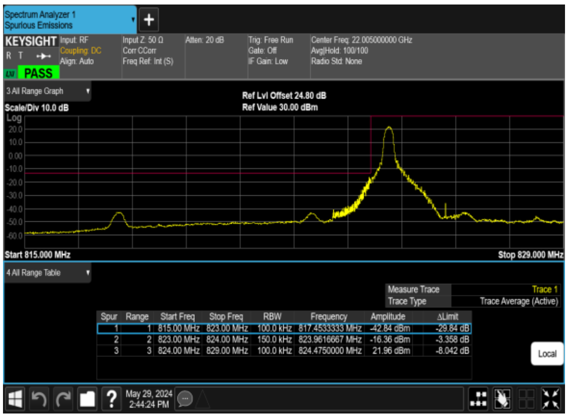
B7_N5(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



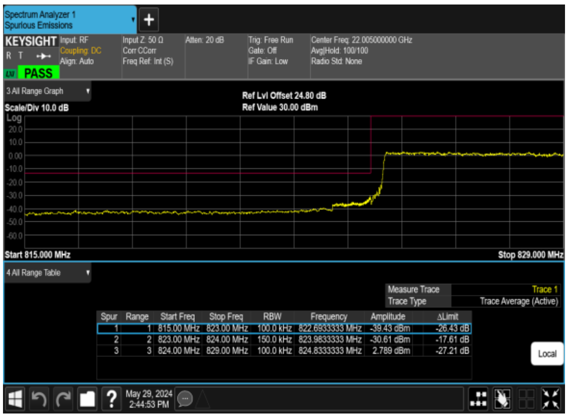
B7_N5(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



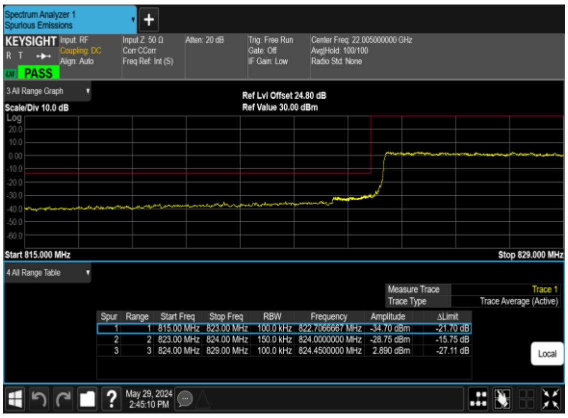
B7_N5(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



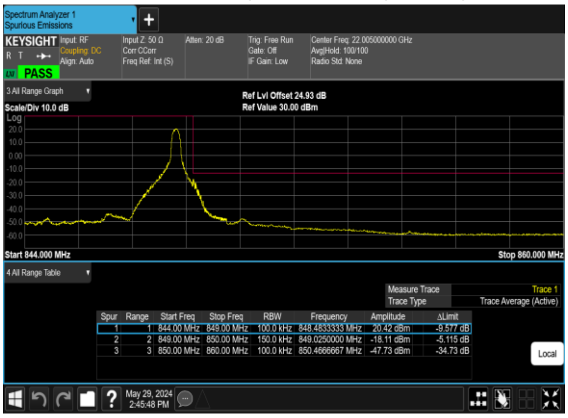
B7_N5(15M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



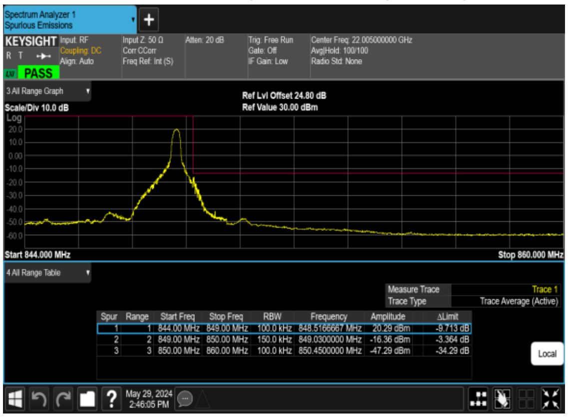
B7_N5(15M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



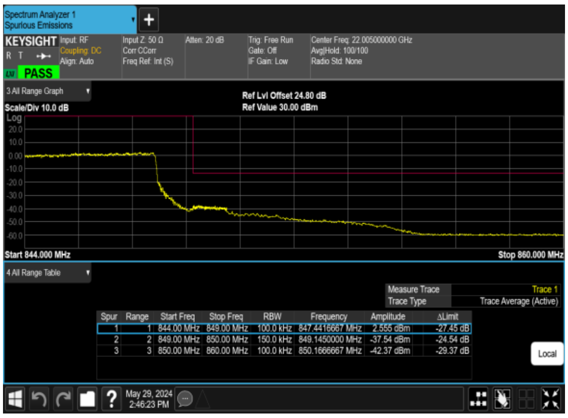
B7_N5(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



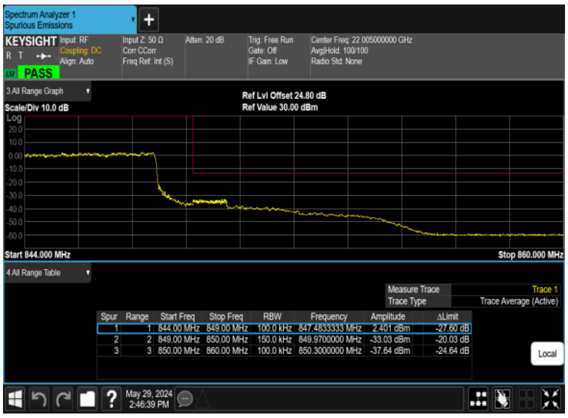
B7_N5(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



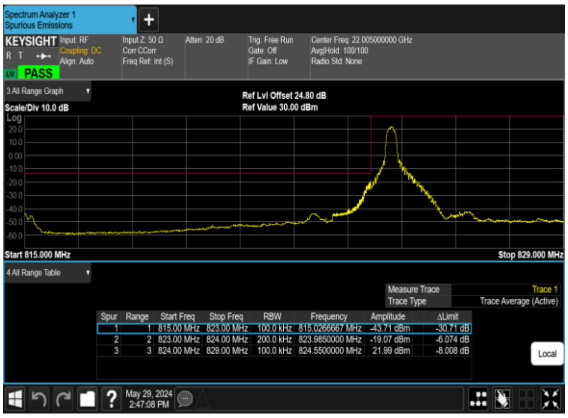
B7_N5(15M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



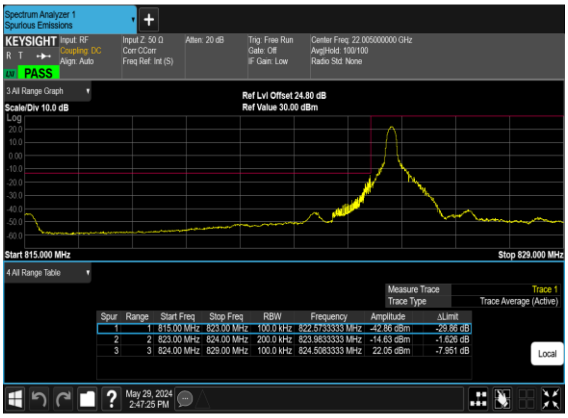
B7_N5(15M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



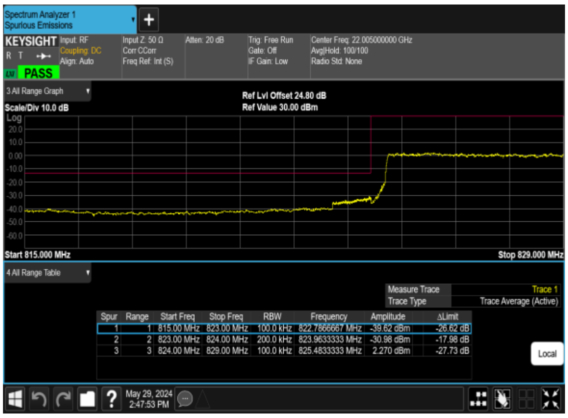
B7_N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



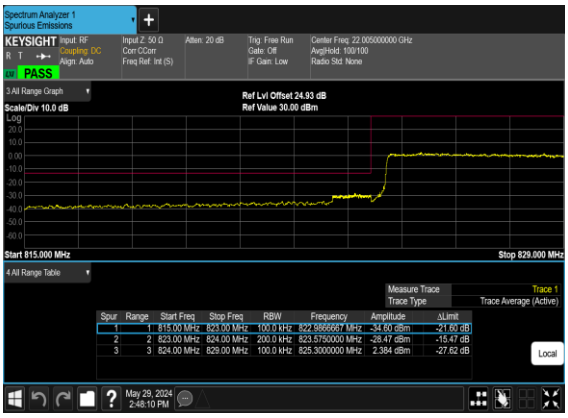
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



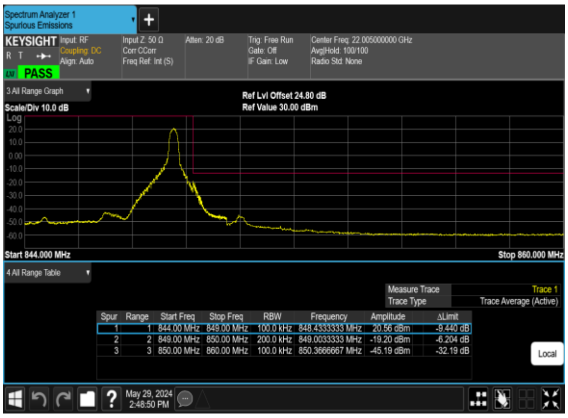
B7_N5(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



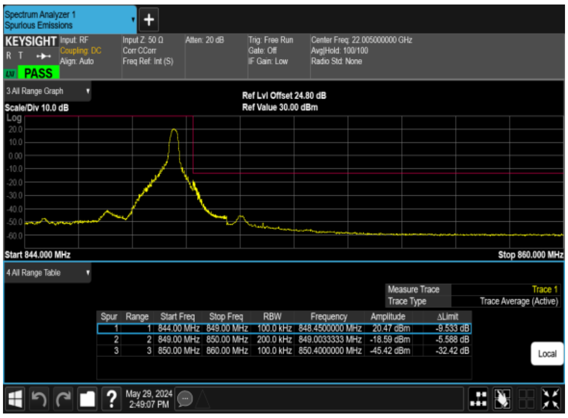
B7_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



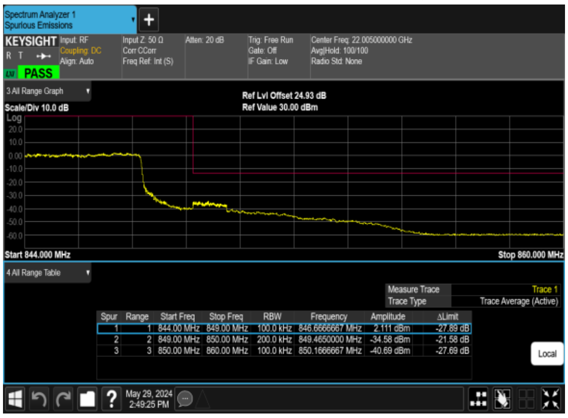
B7_N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



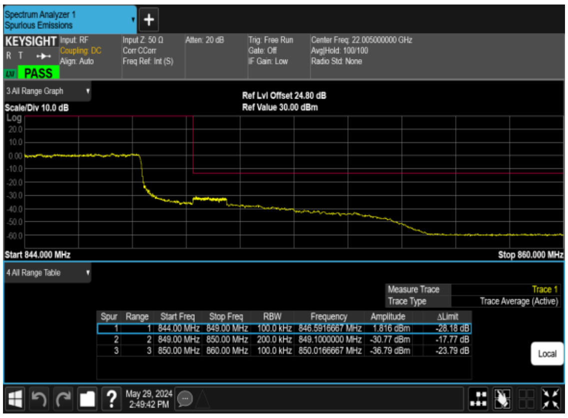
B7_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



B7_N5(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



B7_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 N38-SCS 30k

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-3.2dBi

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
38	30	10	515000	2575	DFT-s-OFDM PI/2 BPSK	1@1	23.86	20.66	0.1164
38	30	10	515000	2575	DFT-s-OFDM QPSK	1@1	23.91	20.71	0.1178
38	30	10	515000	2575	DFT-s-OFDM 16 QAM	1@1	23.09	19.89	0.0975
38	30	10	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	23.71	20.51	0.1125
38	30	10	519000	2595	DFT-s-OFDM QPSK	1@1	23.91	20.71	0.1178
38	30	10	519000	2595	DFT-s-OFDM 16 QAM	1@1	23.26	20.06	0.1014
38	30	10	523000	2615	DFT-s-OFDM PI/2 BPSK	1@1	23.88	20.68	0.1169
38	30	10	523000	2615	DFT-s-OFDM QPSK	1@1	23.71	20.51	0.1125
38	30	10	523000	2615	DFT-s-OFDM 16 QAM	1@1	22.53	19.33	0.0857
38	30	15	515500	2577.5	DFT-s-OFDM PI/2 BPSK	1@1	23.85	20.65	0.1161
38	30	15	515500	2577.5	DFT-s-OFDM QPSK	1@1	23.92	20.72	0.1180
38	30	15	515500	2577.5	DFT-s-OFDM 16 QAM	1@1	23.14	19.94	0.0986
38	30	15	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	23.02	19.82	0.0959
38	30	15	519000	2595	DFT-s-OFDM QPSK	1@1	23.31	20.11	0.1026
38	30	15	519000	2595	DFT-s-OFDM 16 QAM	1@1	22.82	19.62	0.0916
38	30	15	522500	2612.5	DFT-s-OFDM PI/2 BPSK	1@1	23.67	20.47	0.1114
38	30	15	522500	2612.5	DFT-s-OFDM QPSK	1@1	23.72	20.52	0.1127
38	30	15	522500	2612.5	DFT-s-OFDM 16 QAM	1@1	23.08	19.88	0.0973
38	30	20	516000	2580	DFT-s-OFDM PI/2 BPSK	1@1	23.91	20.71	0.1178
38	30	20	516000	2580	DFT-s-OFDM QPSK	1@1	23.41	20.21	0.1050
38	30	20	516000	2580	DFT-s-OFDM 16 QAM	1@1	22.26	19.06	0.0805
38	30	20	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	23.14	19.94	0.0986
38	30	20	519000	2595	DFT-s-OFDM QPSK	1@1	23.31	20.11	0.1026
38	30	20	519000	2595	DFT-s-OFDM 16 QAM	1@1	22.48	19.28	0.0847
38	30	20	522000	2610	DFT-s-OFDM PI/2 BPSK	1@1	23.9	20.7	0.1175
38	30	20	522000	2610	DFT-s-OFDM QPSK	1@1	23.25	20.05	0.1012
38	30	20	522000	2610	DFT-s-OFDM 16 QAM	1@1	22.16	18.96	0.0787
38	30	25	516500	2582.5	DFT-s-OFDM PI/2 BPSK	1@1	23.9	20.7	0.1175
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	1@1	23.91	20.71	0.1178
38	30	25	516500	2582.5	DFT-s-OFDM 16 QAM	1@1	23.27	20.07	0.1016
38	30	25	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	23.78	20.58	0.1143
38	30	25	519000	2595	DFT-s-OFDM QPSK	1@1	23.65	20.45	0.1109
38	30	25	519000	2595	DFT-s-OFDM 16 QAM	1@1	22.48	19.28	0.0847
38	30	25	521500	2607.5	DFT-s-OFDM PI/2 BPSK	1@1	23.83	20.63	0.1156
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	1@1	23.81	20.61	0.1151
38	30	25	521500	2607.5	DFT-s-OFDM 16 QAM	1@1	22.98	19.78	0.0951
38	30	30	517000	2585	DFT-s-OFDM PI/2 BPSK	1@1	23.92	20.72	0.1180
38	30	30	517000	2585	DFT-s-OFDM QPSK	1@1	23.64	20.44	0.1107

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
38	30	30	517000	2585	DFT-s-OFDM 16 QAM	1@1	22.41	19.21	0.0834
38	30	30	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	23.83	20.63	0.1156
38	30	30	519000	2595	DFT-s-OFDM QPSK	1@1	23.92	20.72	0.1180
38	30	30	519000	2595	DFT-s-OFDM 16 QAM	1@1	23.06	19.86	0.0968
38	30	30	521000	2605	DFT-s-OFDM PI/2 BPSK	1@1	23.78	20.58	0.1143
38	30	30	521000	2605	DFT-s-OFDM QPSK	1@1	23.76	20.56	0.1138
38	30	30	521000	2605	DFT-s-OFDM 16 QAM	1@1	22.58	19.38	0.0867
38	30	40	518000	2590	DFT-s-OFDM PI/2 BPSK	50@25	23.04	19.84	0.0964
38	30	40	518000	2590	DFT-s-OFDM PI/2 BPSK	1@1	23.65	20.45	0.1109
38	30	40	518000	2590	DFT-s-OFDM PI/2 BPSK	1@104	23.34	20.14	0.1033
38	30	40	518000	2590	DFT-s-OFDM QPSK	50@25	23.95	20.75	0.1189
38	30	40	518000	2590	DFT-s-OFDM QPSK	1@1	23.84	20.64	0.1159
38	30	40	518000	2590	DFT-s-OFDM QPSK	1@104	23.77	20.57	0.1140
38	30	40	518000	2590	DFT-s-OFDM 16 QAM	50@25	22.39	19.19	0.0830
38	30	40	518000	2590	DFT-s-OFDM 16 QAM	1@1	22.96	19.76	0.0946
38	30	40	518000	2590	DFT-s-OFDM 16 QAM	1@104	22.94	19.74	0.0942
38	30	40	518000	2590	DFT-s-OFDM 64 QAM	50@25	21.52	18.32	0.0679
38	30	40	518000	2590	DFT-s-OFDM 64 QAM	1@1	22.05	18.85	0.0767
38	30	40	518000	2590	DFT-s-OFDM 64 QAM	1@104	21.98	18.78	0.0755
38	30	40	518000	2590	DFT-s-OFDM 256 QAM	50@25	20.59	17.39	0.0548
38	30	40	518000	2590	DFT-s-OFDM 256 QAM	1@1	22.17	18.97	0.0789
38	30	40	518000	2590	DFT-s-OFDM 256 QAM	1@104	22.11	18.91	0.0778
38	30	40	518000	2590	CP-OFDM QPSK	53@26	22.16	18.96	0.0787
38	30	40	518000	2590	CP-OFDM QPSK	1@1	22.07	18.87	0.0771
38	30	40	518000	2590	CP-OFDM QPSK	1@104	22.49	19.29	0.0849
38	30	40	519000	2595	DFT-s-OFDM PI/2 BPSK	50@25	23.72	20.52	0.1127
38	30	40	519000	2595	DFT-s-OFDM PI/2 BPSK	1@1	22.59	19.39	0.0869
38	30	40	519000	2595	DFT-s-OFDM PI/2 BPSK	1@104	23.87	20.67	0.1167
38	30	40	519000	2595	DFT-s-OFDM QPSK	50@25	23.8	20.6	0.1148
38	30	40	519000	2595	DFT-s-OFDM QPSK	1@1	23.35	20.15	0.1035
38	30	40	519000	2595	DFT-s-OFDM QPSK	1@104	23.83	20.63	0.1156
38	30	40	519000	2595	DFT-s-OFDM 16 QAM	50@25	22.82	19.62	0.0916
38	30	40	519000	2595	DFT-s-OFDM 16 QAM	1@1	22.43	19.23	0.0838
38	30	40	519000	2595	DFT-s-OFDM 16 QAM	1@104	23.1	19.9	0.0977
38	30	40	519000	2595	DFT-s-OFDM 64 QAM	50@25	21.78	18.58	0.0721
38	30	40	519000	2595	DFT-s-OFDM 64 QAM	1@1	21.8	18.6	0.0724
38	30	40	519000	2595	DFT-s-OFDM 64 QAM	1@104	22.14	18.94	0.0783
38	30	40	519000	2595	DFT-s-OFDM 256 QAM	50@25	21.62	18.42	0.0695
38	30	40	519000	2595	DFT-s-OFDM 256 QAM	1@1	21.94	18.74	0.0748
38	30	40	519000	2595	DFT-s-OFDM 256 QAM	1@104	22.04	18.84	0.0766
38	30	40	519000	2595	CP-OFDM QPSK	53@26	22.62	19.42	0.0875
38	30	40	519000	2595	CP-OFDM QPSK	1@1	22.32	19.12	0.0817
38	30	40	519000	2595	CP-OFDM QPSK	1@104	22.52	19.32	0.0855
38	30	40	520000	2600	DFT-s-OFDM PI/2 BPSK	50@25	23.76	20.56	0.1138

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
38	30	40	520000	2600	DFT-s-OFDM PI/2 BPSK	1@1	23.45	20.25	0.1059
38	30	40	520000	2600	DFT-s-OFDM PI/2 BPSK	1@104	23.26	20.06	0.1014
38	30	40	520000	2600	DFT-s-OFDM QPSK	50@25	23.83	20.63	0.1156
38	30	40	520000	2600	DFT-s-OFDM QPSK	1@1	23.94	20.74	0.1186
38	30	40	520000	2600	DFT-s-OFDM QPSK	1@104	23.8	20.6	0.1148
38	30	40	520000	2600	DFT-s-OFDM 16 QAM	50@25	22.73	19.53	0.0897
38	30	40	520000	2600	DFT-s-OFDM 16 QAM	1@1	23.03	19.83	0.0962
38	30	40	520000	2600	DFT-s-OFDM 16 QAM	1@104	23.15	19.95	0.0989
38	30	40	520000	2600	DFT-s-OFDM 64 QAM	50@25	21.74	18.54	0.0714
38	30	40	520000	2600	DFT-s-OFDM 64 QAM	1@1	22.09	18.89	0.0774
38	30	40	520000	2600	DFT-s-OFDM 64 QAM	1@104	22.19	18.99	0.0793
38	30	40	520000	2600	DFT-s-OFDM 256 QAM	50@25	20.82	17.62	0.0578
38	30	40	520000	2600	DFT-s-OFDM 256 QAM	1@1	22.34	19.14	0.0820
38	30	40	520000	2600	DFT-s-OFDM 256 QAM	1@104	22.28	19.08	0.0809
38	30	40	520000	2600	CP-OFDM QPSK	53@26	22.43	19.23	0.0838
38	30	40	520000	2600	CP-OFDM QPSK	1@1	22.3	19.1	0.0813
38	30	40	520000	2600	CP-OFDM QPSK	1@104	22.79	19.59	0.0910

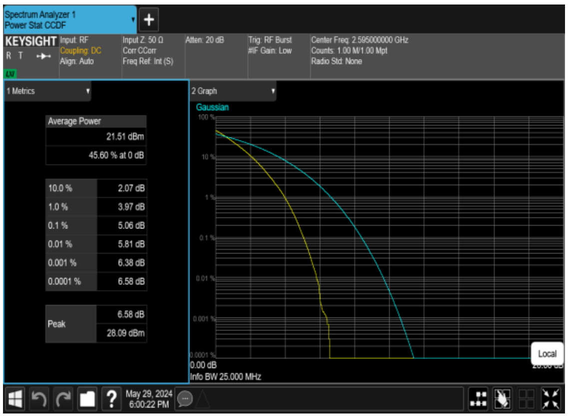
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0042	**PASS**	NV
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0039	**PASS**	LV
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0021	**PASS**	HV
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0006	**PASS**	-30℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0036	**PASS**	-20℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0011	**PASS**	-10℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0044	**PASS**	0℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0114	**PASS**	10℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0058	**PASS**	20℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0082	**PASS**	30℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0033	**PASS**	40℃
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	-0.0006	**PASS**	50℃

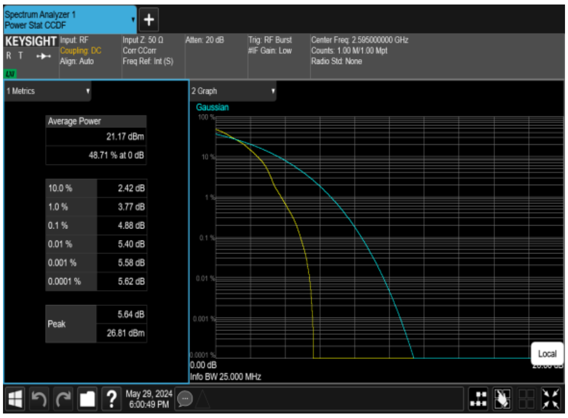
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	64@0	5.06	13	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM PI/2 BPSK	1@0	4.88	13	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM QPSK	64@0	6.13	13	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM QPSK	1@0	5.85	13	**PASS**

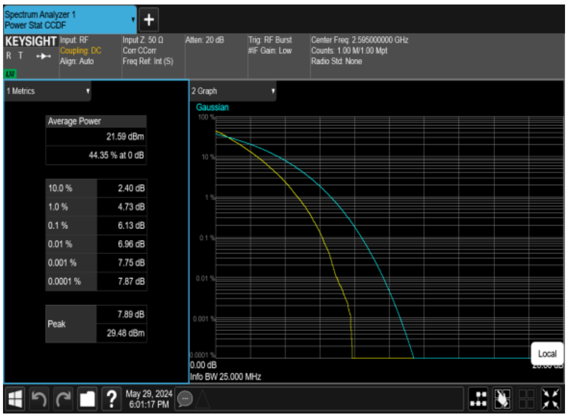
N38(25M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



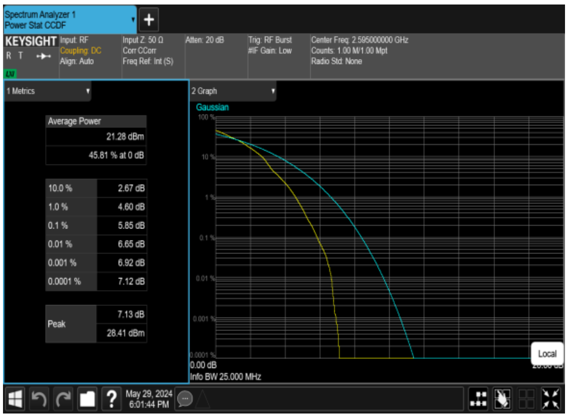
N38(25M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



N38(25M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



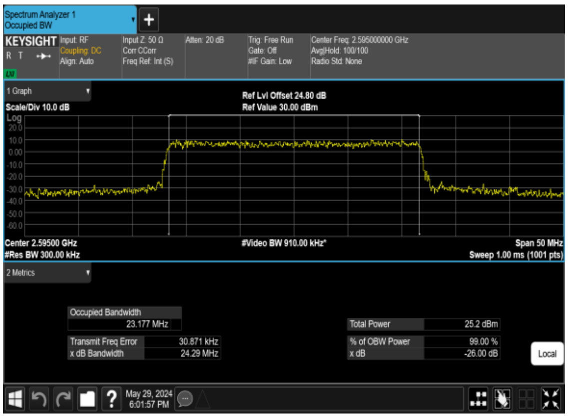
N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



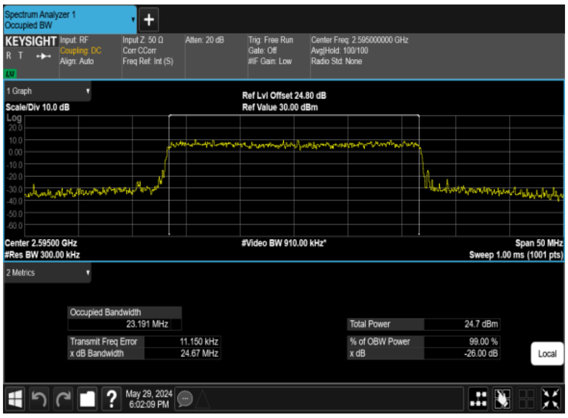
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
38	30	25	519000	2595.0	CP-OFDM QPSK	65@0	23.177	24.29
38	30	25	519000	2595.0	CP-OFDM 16 QAM	65@0	23.191	24.67
38	30	25	519000	2595.0	CP-OFDM 64 QAM	65@0	23.166	24.44
38	30	25	519000	2595.0	CP-OFDM 256 QAM	65@0	23.196	24.72

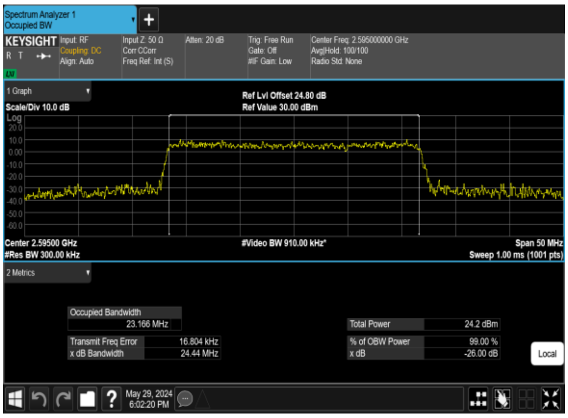
N38(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



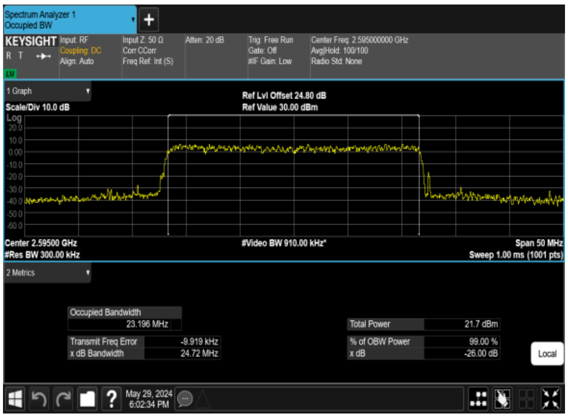
N38(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N38(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



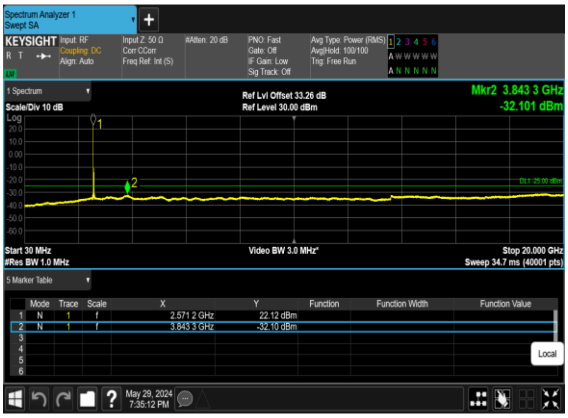
N38(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



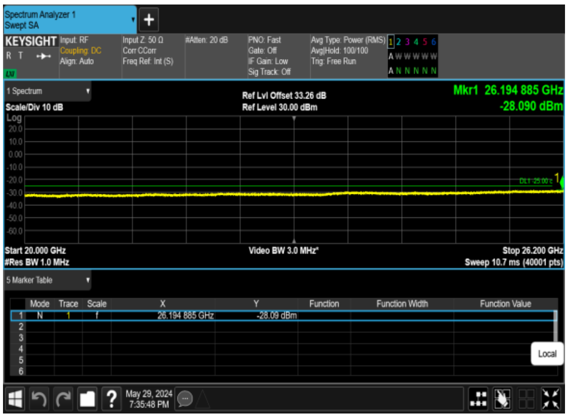
Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
38	30	25	516500	2582.5	DFT-s-OFDM BPSK	1@0	see graph	---
38	30	25	516500	2582.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	1@0	see graph	---
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM BPSK	1@0	see graph	---
38	30	25	519000	2595.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM QPSK	1@0	see graph	---
38	30	25	519000	2595.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	519000	2595.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM BPSK	1@0	see graph	---
38	30	25	521500	2607.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	1@0	see graph	---
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

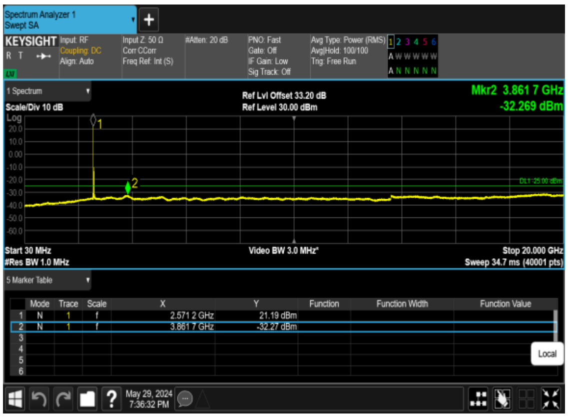
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



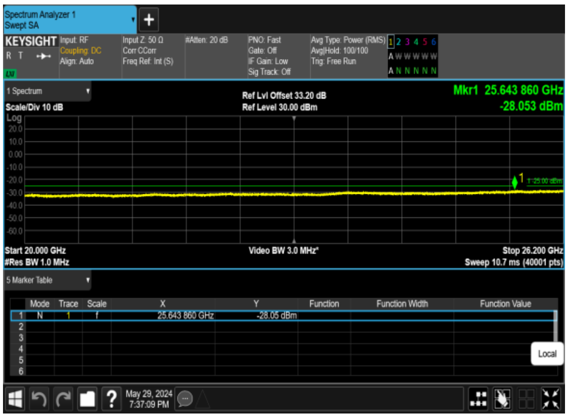
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



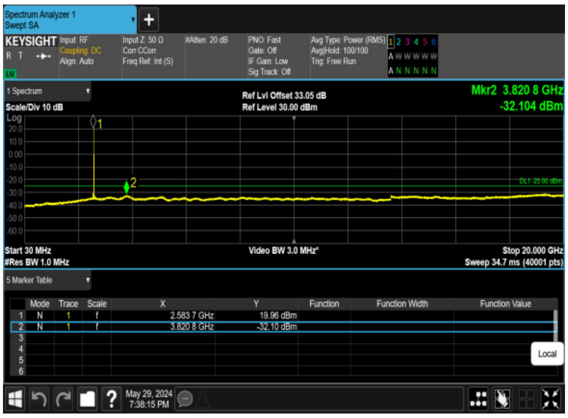
N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



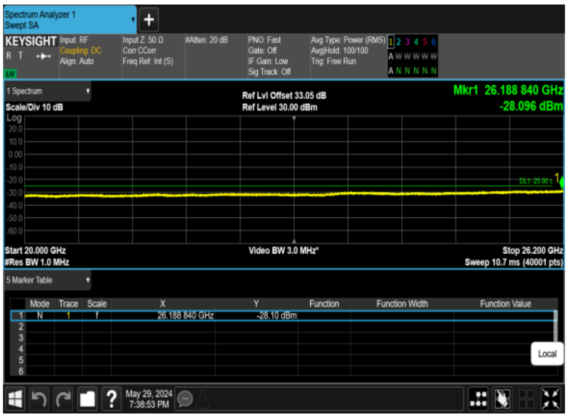
N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



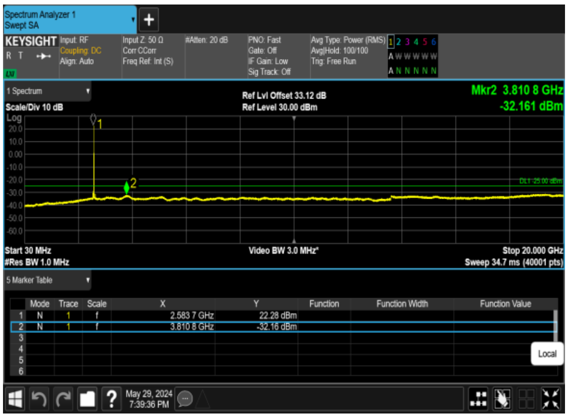
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



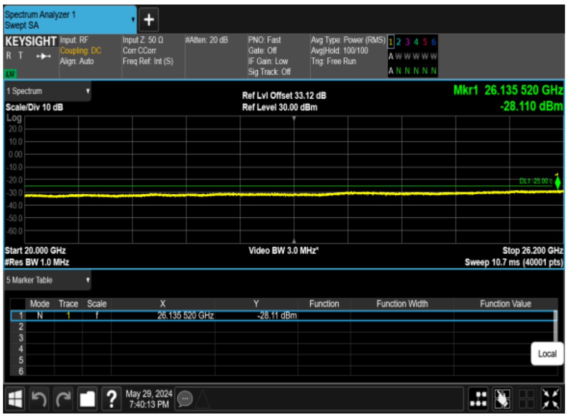
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



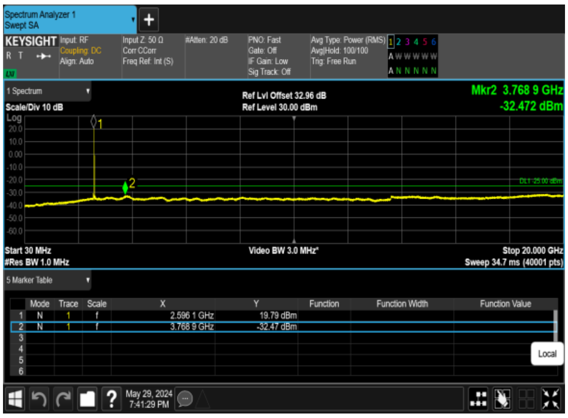
N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



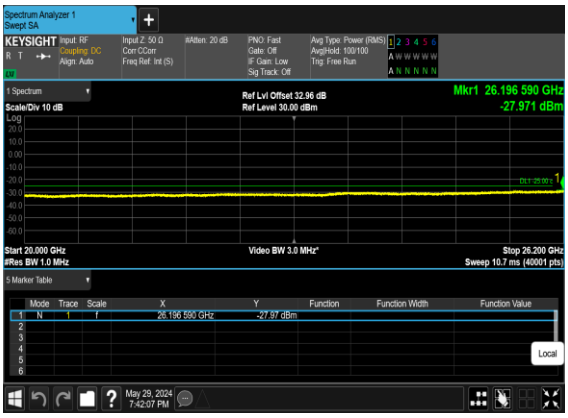
N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



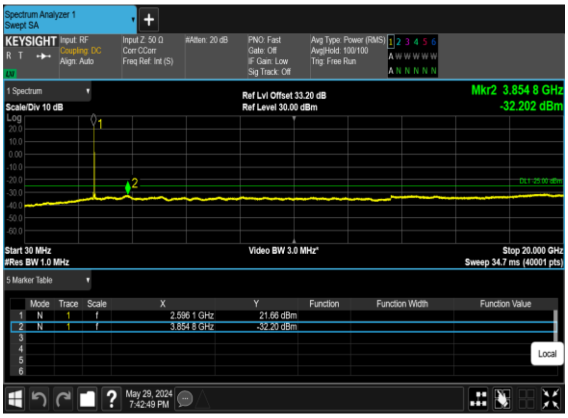
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



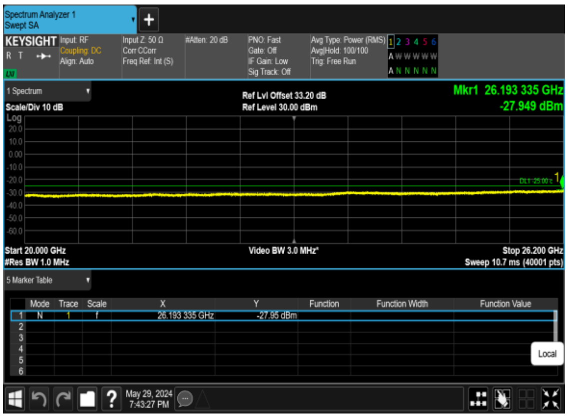
N38(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N38(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N38(25M)_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
38	30	25	516500	2582.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM BPSK	64@0	see graph	**PASS**
38	30	25	516500	2582.5	DFT-s-OFDM QPSK	64@0	see graph	**PASS**
38	30	25	521500	2582.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
38	30	25	521500	2582.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM BPSK	1@64	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	1@64	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM BPSK	64@0	see graph	**PASS**
38	30	25	521500	2607.5	DFT-s-OFDM QPSK	64@0	see graph	**PASS**