FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2453-3,XT2453-4,XT2453-5,XT2453V
FCC ID	: IHDT56AR7
STANDARD	: 47 CFR Part 2, 27
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Mar. 08, 2024 ~ Apr. 08, 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.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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
FG422203K	Rev. 01	Initial issue of report	Apr. 10, 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(h)(2)	Equivalent Isotropic Radiated Power (5G NR n7, n41, n38)	EIRP < 2Watt		
3.5	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§27.53(m)(4)	Conducted Band Edge Measurement (5G NR n7, n41, n38)	§27.53(m)(4)	PASS	-
3.8	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (5G NR n7, n41, n38)	< $55+10\log_{10}$(P[Watts])	PASS	-
3.9	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (5G NR n7, n41, n38)	< $55+10\log_{10}$(P[Watts])	PASS	Under limit 20.20 dB at 7626.00 MHz

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

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

1.2 Manufacturer

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

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2453-3,XT2453-4,XT2453-5,XT2453V
FCC ID	IHDT56AR7
IMEI Code	Conducted : 358394210026253/358394210026261(N7/38/41) 358394210025412/358394210025438(N41C) Radiation : 358394210031030/358394210031048
HW Version	DVT2
SW Version	U3UC34.22
EUT Stage	Identical Prototype

Note: The four model names are only for market segment, no other difference

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n38 : 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz
Rx Frequency	5G NR n7 : 2620 MHz ~ 2690 MHz 5G NR n38: 2570 MHz ~ 2620 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz
Bandwidth	n7(15K): 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 50MHz n7(30K): 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 50MHz n38(15K): 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n38(30K): 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n41(15K): 5M / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz / 50MHz n41(30K): 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz

SCS	15kHz, 30kHz
Antenna Gain	**<Ant. 0>:** n7: -1.33 dBi n38: 0.01 dBi n41: 0.01 dBi **<Ant. 1>:** n7: -1.33 dBi n38: -0.66 dBi n41: -0.66 dBi **<Ant. 2>:** n7: -3.56 dBi n38: -3.13 dBi n41: -3.13 dBi **<Ant. 3>:** n7: -3.48 dBi n38: -3.3 dBi n41: -3.3 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP are shown in the report, 5G NR n7/n38/n41/n41C for Ant. 0 and n41_UL MIMO for Ant.(2+3).
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are tested in the report.
3. 5G NR support SA (n7/n38/n41/n41C) mode and NSA(n7/n38/n41) mode. According to the maximum power between SA and NSA mode, SA covers NSA mode.
4. 5G NR n41 supports PC1.5 of UL MIMO mode.
5. 5G NR n41 supports UL MIMO mode (the two antennas are completely correlated), the conducted BE/Spurious are tested at single antenna port and add 10*log(N_{ANT}) according to KDB 662911 D01, MIMO Gain referref to calculation formula according to KDB 662911 D01.
6. The device supports HPUE mode for 5G NR n41.
7. The device supports n7/n38/n41(1T4R) SRS resources on ant.0/1/2/3, only the test data of worst ant.2 is showed in the report according to the maximum power.
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.
10. The device does not support BW5MHz for SCS 30kHz, and has assessed SCS 15kHz covers 30kHz which they are the same bandwidths by referring to their higher conducted power. And extra bandwidths of SCS 30kHz complete evaluation test.
11. 5G NR n41 UL MIMO supports CP-OFDM Mode only.
12. 5G NR n41_ULCA only supports SCS30kHz.

1.5 Modification of EUT

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

1.6 Specification of Accessory

Specification of Accessory				
Battery 1	**Brand Name**	Motorola	**Model Name**	QR11
Battery 2	**Brand Name**	Motorola	**Model Name**	QR31
USB Cable 1	**Brand Name**	Motorola(CABLETECH)	**Model Name**	SC18E05246
USB Cable 2	**Brand Name**	Motorola(SAIBAO)	**Model Name**	SC18D86732

1.7 Maximum EIRP and Emission Designator

5G NR n7– SCS 15k		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
5	2502.5 ~ 2567.5	0.1303	4M47G7D	0.1021	4M49W7D
10	2505.0 ~ 2565.0	0.1321	9M28G7D	0.1016	9M28W7D
15	2507.5 ~ 2562.5	0.1324	14M1G7D	0.0993	14M1W7D
20	2510.0 ~ 2560.0	0.1442	18M9G7D	0.1052	18M9W7D
25	2512.5 ~ 2557.5	0.1256	23M7G7D	0.1016	23M8W7D
30	2515.0 ~ 2555.0	0.1315	28M5G7D	0.1012	28M5W7D
35	2517.5 ~ 2552.5	0.1294	33M6G7D	0.0995	33M6W7D
40	2520.0 ~ 2550.0	0.1297	38M6G7D	0.0993	38M6W7D
50	2525.0 ~ 2545.0	0.1445	48M2G7D	0.0962	48M3W7D

5G NR n38– SCS 15k		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	**Frequency Range (MHz)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**	**Maximum EIRP(W)**	**Emission Designator (99%OBW)**
5	2572.5 ~ 2617.5	0.2133	4M46G7D	0.1581	4M47W7D
10	2575.0 ~ 2615.0	0.1888	9M26G7D	0.1560	9M29W7D
15	2577.5 ~ 2612.5	0.1888	14M2G7D	0.1567	14M1W7D
20	2580.0 ~ 2610.0	0.1986	18M9G7D	0.1570	18M9W7D
25	2582.5 ~ 2607.5	0.1858	23M7G7D	0.1531	24M0W7D
30	2585.0 ~ 2605.0	0.1866	28M8G7D	0.1549	28M7W7D
40	2590.0 ~ 2600.0	0.2023	39M0G7D	0.1552	38M7W7D

5G NR n41 – SCS 15k		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	2498.505 ~ 2687.49	0.3243	4M46G7D	0.2449	4M47W7D
10	2501.01 ~ 2685.00	0.3936	9M26G7D	0.3206	9M29W7D
15	2503.50 ~ 2682.495	0.3882	14M2G7D	0.3090	14M1W7D
20	2506.005 ~ 2679.99	0.3890	18M9G7D	0.3236	18M9W7D
25	2508.51 ~ 2677.50	0.3793	23M7G7D	0.3062	24M0W7D
30	2511.00 ~ 2674.995	0.3802	28M8G7D	0.3090	28M7W7D
35	2513.505 ~ 2672.49	0.2767	33M8G7D	0.2317	33M6W7D
40	2516.01 ~ 2670.00	0.2767	39M0G7D	0.2228	38M7W7D
45	2518.50 ~ 2667.495	0.2748	43M3G7D	0.2213	43M7W7D
50	2521.005 ~ 2664.99	0.3936	48M2G7D	0.2825	48M3W7D

5G NR n41 – SCS 30k		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	0.3926	9M26G7D	0.3055	9M29W7D
15	2503.50 ~ 2682.48	0.3855	14M2G7D	0.2838	14M1W7D
20	2506.02 ~ 2679.99	0.3846	18M9G7D	0.2838	18M9W7D
25	2508.51 ~ 2677.50	0.3837	23M7G7D	0.2838	24M0W7D
30	2511.00 ~ 2674.98	0.3758	28M8G7D	0.2999	28M7W7D
35	2513.52 ~ 2672.49	0.3184	33M8G7D	0.2438	33M6W7D
40	2516.01 ~ 2670.00	0.3793	39M0G7D	0.3006	38M7W7D
45	2518.50 ~ 2667.480	0.3304	43M3G7D	0.2649	43M7W7D
50	2521.02 ~ 2664.99	0.3882	48M2G7D	0.2844	48M3W7D
60	2526.00 ~ 2659.98	0.3681	57M4G7D	0.2754	57M8W7D
70	2531.01 ~ 2655.00	0.3890	67M6G7D	0.2884	67M5W7D
80	2536.02 ~ 2649.99	0.3837	77M3G7D	0.2917	77M6W7D
90	2541.00 ~ 2644.98	0.3864	87M4G7D	0.3069	87M4W7D
100	2546.01 ~ 2640.00	0.3990	97M5G7D	0.3334	97M5W7D

5G NR n41 UL MIMO – SCS 15k		QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	2498.505 ~ 2687.49	0.5175	4M47G7D	0.4662	4M47W7D
10	2501.01 ~ 2685.00	0.6164	9M26G7D	0.5480	9M32W7D
15	2503.50 ~ 2682.495	0.6102	14M1G7D	0.5532	14M1W7D
20	2506.005 ~ 2679.99	0.6174	18M9G7D	0.5453	18M9W7D
25	2508.51 ~ 2677.50	0.6102	23M8G7D	0.5308	23M9W7D
30	2511.00 ~ 2674.995	0.6107	28M6G7D	0.5379	28M5W7D
35	2513.505 ~ 2672.49	0.6031	33M6G7D	0.5295	33M6W7D
40	2516.01 ~ 2670.00	0.5982	38M5G7D	0.5261	38M6W7D
45	2518.50 ~ 2667.495	0.5891	43M1G7D	0.5324	43M2W7D
50	2521.005 ~ 2664.99	0.6174	48M1G7D	0.4981	48M3W7D

5G NR n41 UL MIMO – SCS 30k		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	0.6035	9M26G7D	0.5136	9M32W7D
15	2503.50 ~ 2682.48	0.5857	14M1G7D	0.5044	14M1W7D
20	2506.02 ~ 2679.99	0.5929	18M9G7D	0.5111	18M9W7D
25	2508.51 ~ 2677.50	0.5440	23M8G7D	0.4674	23M9W7D
30	2511.00 ~ 2674.98	0.3128	28M6G7D	0.2689	28M5W7D
35	2513.52 ~ 2672.49	0.3018	33M6G7D	0.2666	33M6W7D
40	2516.01 ~ 2670.00	0.3039	38M5G7D	0.2684	38M6W7D
45	2518.50 ~ 2667.480	0.2968	43M1G7D	0.2637	43M2W7D
50	2521.02 ~ 2664.99	0.2986	48M1G7D	0.2634	48M3W7D
60	2526.00 ~ 2659.98	0.2936	57M8G7D	0.2603	57M9W7D
70	2531.01 ~ 2655.00	0.2976	67M4G7D	0.2607	67M6W7D
80	2536.02 ~ 2649.99	0.2985	77M4G7D	0.2622	77M7W7D
90	2541.00 ~ 2644.98	0.2980	87M5G7D	0.2614	87M5W7D
100	2546.01 ~ 2640.00	0.6268	97M5G7D	0.5052	97M5W7D

NRCA_n41C – SCS 30k	PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
NR BW 10MHz+100MHz	0.2361	106MG7D	0.2366	107MW7D
NR BW 100MHz+10MHz	0.2432	107MG7D	0.2438	108MW7D
NR BW 100MHz+15MHz	0.1318	113MG7D	0.1315	113MW7D
NR BW 100MHz+20MHz	0.2302	118MG7D	0.2312	118MW7D
NR BW 100MHz+30MHz	0.2276	127MG7D	0.2318	127MW7D
NR BW 100MHz+40MHz	0.2623	137MG7D	0.2695	137MW7D
NR BW 15MHz+100MHz	0.2443	112MG7D	0.2477	113MW7D
NR BW 15MHz+90MHz	0.2421	103MG7D	0.2438	102MW7D
NR BW 20MHz+100MHz	0.2339	117MG7D	0.2399	118MW7D
NR BW 20MHz+90MHz	0.2477	107MG7D	0.2449	107MW7D
NR BW 30MHz+100MHz	0.2455	127MG7D	0.2421	127MW7D
NR BW 30MHz+80MHz	0.1176	107MG7D	0.1190	107MW7D
NR BW 30MHz+90MHz	0.2449	117MG7D	0.2404	118MW7D
NR BW 40MHz+100MHz	0.2268	137MG7D	0.2323	137MW7D
NR BW 40MHz+80MHz	0.2325	117MG7D	0.2353	117MW7D
NR BW 40MHz+90MHz	0.2577	127MG7D	0.2534	127MW7D
NR BW 50MHz+60MHz	0.2399	107MG7D	0.2391	107MW7D
NR BW 50MHz+80MHz	0.2498	126MG7D	0.2537	127MW7D
NR BW 50MHz+90MHz	0.2312	137MG7D	0.2252	137MW7D
NR BW 60MHz+50MHz	0.2481	107MG7D	0.2405	107MW7D
NR BW 60MHz+60MHz	0.2336	118MG7D	0.2334	118MW7D
NR BW 60MHz+80MHz	0.2340	137MG7D	0.2329	137MW7D
NR BW 80MHz+30MHz	0.2692	107MG7D	0.2631	107MW7D
NR BW 80MHz+40MHz	0.2301	117MG7D	0.2403	117MW7D
NR BW 80MHz+50MHz	0.2570	127MG7D	0.2587	127MW7D
NR BW 80MHz+60MHz	0.2305	137MG7D	0.2366	137MW7D
NR BW 90MHz+15MHz	0.2427	102MG7D	0.2404	103MW7D
NR BW 90MHz+20MHz	0.2417	108MG7D	0.2406	108MW7D
NR BW 90MHz+30MHz	0.2439	117MG7D	0.2378	118MW7D
NR BW 90MHz+40MHz	0.2538	127MG7D	0.2568	128MW7D
NR BW 90MHz+50MHz	0.2303	137MG7D	0.2294	137MW7D

Note:

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

1.8 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS 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	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 data subcontracted: Test cases in section 3.4~3.9 for 5G NR n41CA of this report.

1.9 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	TH01-SZ	WCS	WCS-FCC	22.02.041801
3.	03CH04-KS	AUDIX	E3	210616

1.10 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
- 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.

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

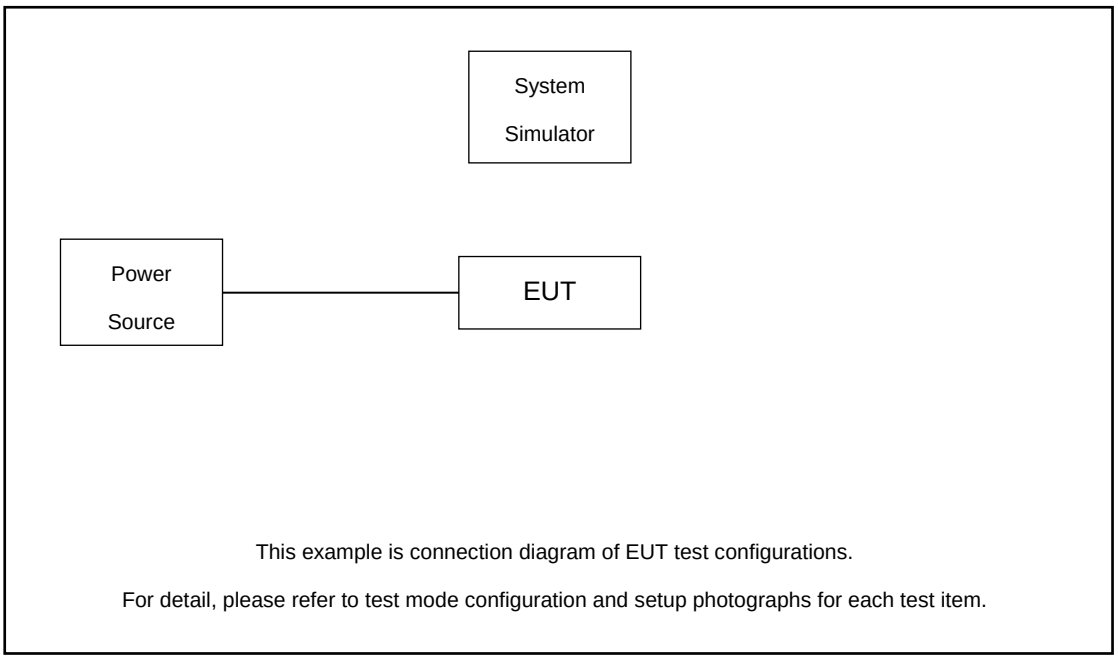
Test Items	5G NR	Bandwidth (MHz)															Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n7	v	v	v	v	v	v	v	v	-	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n38	-	v	v	v	v	v	-	v	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n41	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n7				v					-		-	-	-	-	-	v	v				v	v		v	
	n41				v											v	v	v				v	v		v	
26dB and 99% Bandwidth	n7	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	
Conducted Band Edge	n7	v			v				v	-	v	-	-	-	-	-	v	v				v	v	v		v
	n41	v	v				v				v	v		v		v	v	v				v	v	v		v
Conducted Spurious Emission	n7	v			v				v	-	v	-	-	-	-	-	v	v				v		v	v	v
	n41	v	v				v				v	v		v		v	v	v				v		v	v	v
Frequency Stability	n7				v					-		-	-	-	-	-		v					v		v	
	n41										v					v		v					v		v	
E.I.R.P	n7	v	v	v	v	v	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	v	v	v	v
Radiated	n7	Worst Case																							v	

Test Items	5G NR	Bandwidth (MHz)															Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Spurious Emission	n41	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 = 3.88V ；Low Voltage =3.40V.；High Voltage =4.48V																									

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 10+100M, 100+10M, 100+15, 100+20M, 100+30M, 100+40M, 15+90M, 15+100M, 20+90M, 20+100M, 30+80M, 30+90M, 30+100M, 40+80M, 40+90M, 40+100M, 50+60M, 50+80M, 50+90M, 60+50M, 60+60M, 60+80M, 80+30M, 80+40M, 80+50M, 80+60M 90+15M, 90+20M, 90+30M, 90+40M, 90+50M,	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	n41C	All supported Bandwidth	All Modulation	1RB, Full RB	L, M, H
26dB and 99% Bandwidth	n41C	All supported Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	Full RB	M
Conducted Band Edge	n41C	15+90M, 60+60M, 100+40M	PI/2 BPSK, QPSK	1RB, Full RB	L, H
Conducted Spurious Emission	n41C	15+90M, 60+60M, 100+40M	PI/2 BPSK, QPSK	1RB, Full RB	L, M, H
Radiated Spurious Emission	n41C	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



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

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 6.0 dB and 20dB attenuator.

Example :

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

= 6.0 + 20 = 26.0 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n7 Channel and Frequency List for SCS 15k/30k				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
50	Channel	505000	507000	509000
	Frequency	2525	2535	2545
40	Channel	504000	507000	510000
	Frequency	2520	2535	2550
35	Channel	503500	507000	510500
	Frequency	2517.5	2535	2552.5
30	Channel	503000	507000	511000
	Frequency	2515	2535	2555
25	Channel	502500	507000	511500
	Frequency	2512.5	2535	2557.5
20	Channel	502000	507000	512000
	Frequency	2510	2535	2560
15	Channel	501500	507000	512500
	Frequency	2507.5	2535	2562.5
10	Channel	501000	507000	513000
	Frequency	2505	2535	2565
5	Channel	500500	507000	513500
	Frequency	2502.5	2535	2567.5

5G NR n38 Channel and Frequency List for SCS 15k/30k				
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
5	Channel	514500	519000	523500
	Frequency	2572.5	2595	2617.5

5G NR n41 Channel and Frequency List for SCS 15k				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	504201	518601	532998
	Frequency	2521.005	2593.005	2664.99
45	Channel	503700	518601	533499
	Frequency	2518.5	2593.005	2667.495
40	Channel	503202	518601	534000
	Frequency	2516.01	2593.005	2670
35	Channel	502701	518598	534498
	Frequency	2513.505	2592.99	2672.49
30	Channel	502200	518601	534999
	Frequency	2511	2593.005	2674.995
25	Channel	501702	518598	535500
	Frequency	2508.51	2592.99	2677.5
20	Channel	501201	518601	535998
	Frequency	2506.005	2593.005	2679.99
15	Channel	500700	518601	536499
	Frequency	2503.5	2593.005	2682.495
10	Channel	500202	518601	537000
	Frequency	2501.01	2593.005	2685

5	Channel	499701	518601	537498
	Frequency	2498.505	2593.005	2687.49

5G NR n41 Channel and Frequency List for SCS 30k				
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
45	Channel	503700	518598	533496
	Frequency	2518.5	2592.99	2667.48
40	Channel	503202	518598	534000
	Frequency	2516.01	2592.99	2670
35	Channel	502704	518598	534498
	Frequency	2513.52	2592.99	2672.49
30	Channel	502200	518598	534996
	Frequency	2511	2592.99	2674.98
25	Channel	501702	518598	535500
	Frequency	2508.51	2592.99	2677.5
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

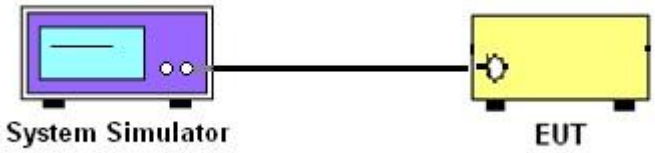
3 Conducted Test Items

3.1 Measuring Instruments

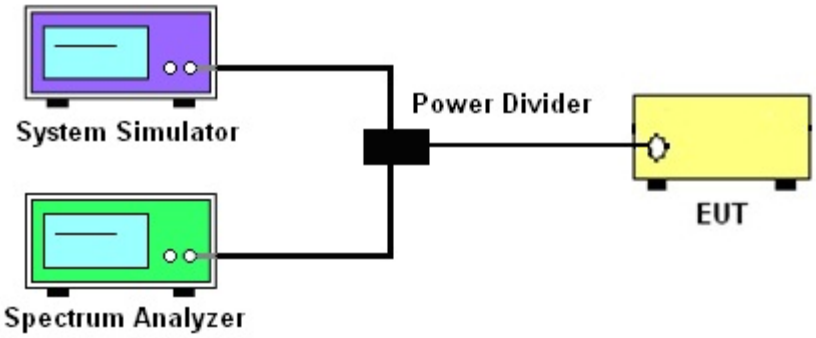
See list of measuring instruments of this test report.

3.2 Test Setup

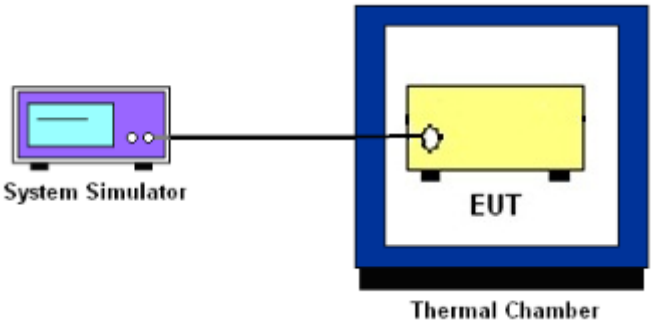
3.2.1 Conducted Output Power



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 2 Watts for 5G NR n7, n38, n41.

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(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.

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 n7/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 n7/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 n7/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.

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.

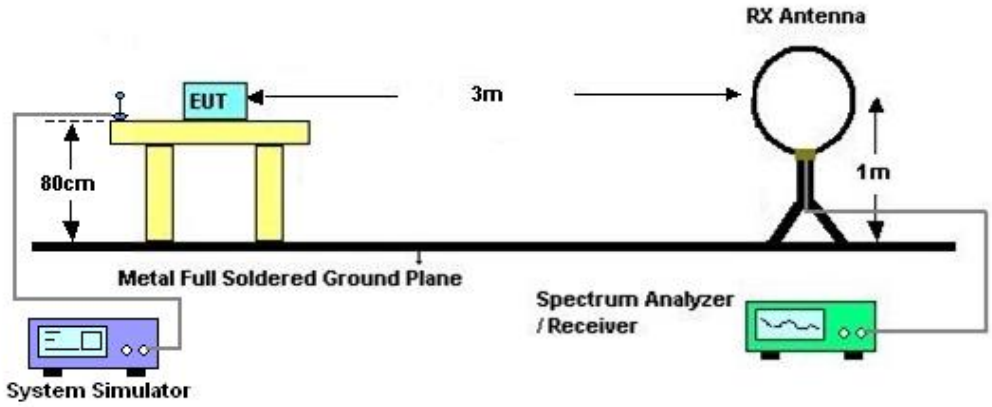
4 Radiated Test Items

4.1 Measuring Instruments

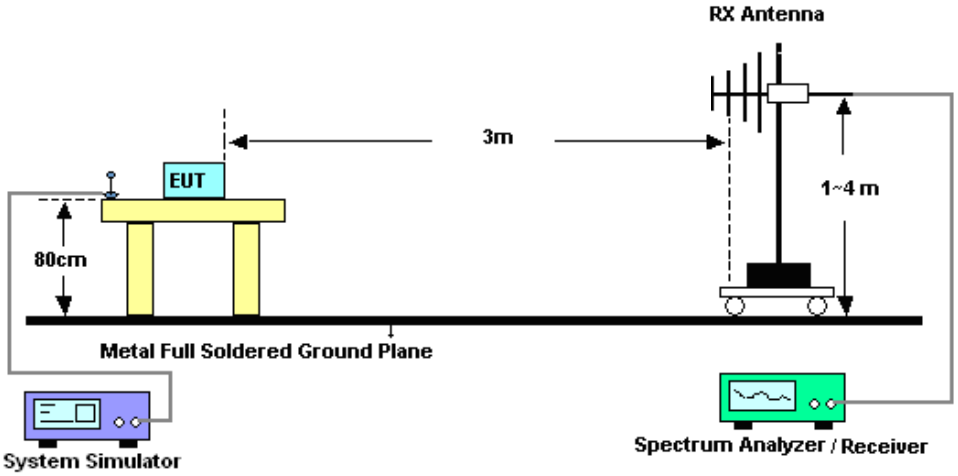
See list of measuring instruments of this test report.

4.2 Test Setup

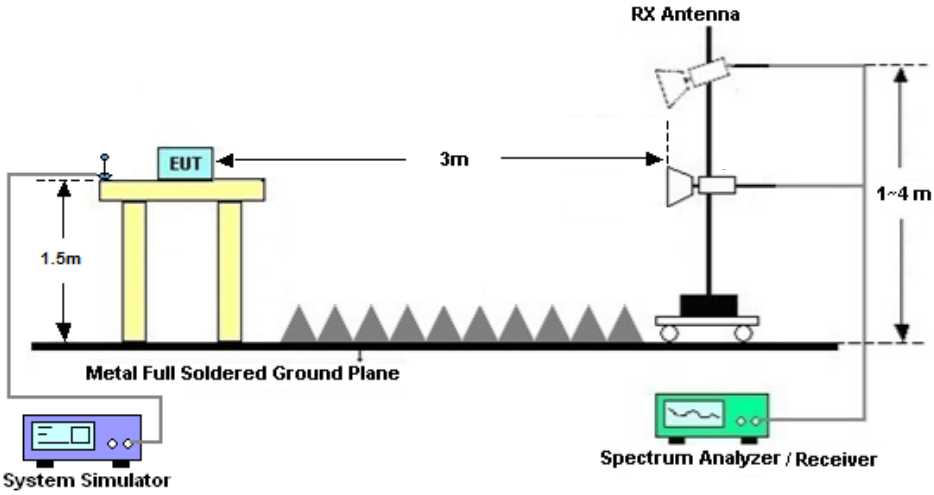
4.2.1 For radiated test below 30MHz



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 n7/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 n7/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	Mar. 08, 2024~ Apr. 08, 2024	Oct. 10, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Mar. 08, 2024~ Apr. 08, 2024	Oct. 09, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Mar. 08, 2024~ Apr. 08, 2024	NCR	Conducted (TH01-KS)
Temperature &humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Mar. 08, 2024~ Apr. 08, 2024	Jul. 05, 2024	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 06, 2023	Mar. 23, 2024~ Mar. 28, 2024	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Mar. 23, 2024~ Mar. 28, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 05, 2023	Mar. 23, 2024~ Mar. 28, 2024	Jul. 04, 2024	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11, 2023	Mar. 28, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	Mar. 28, 2024	Apr. 08, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00251694	1GHz~18GHz	Jul. 12, 2023	Mar. 28, 2024	Jul. 11, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2024	Mar. 28, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Mar. 28, 2024	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2024	Mar. 28, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement (TH01-SZ)

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 Conducted Measurement (TH01-KS)

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 ppm

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.82 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.56 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.54 dB

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

Appendix A. Test Results of Conducted Test

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

Software Version: 23.06.1602

FR1 N7

Transmitter Conducted Output Power And EIRP, (G_T - L_C)= -1.33dB

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
7	15	5	500500	2502.5	DFT-s-OFDM PI/2 BPSK	1@1	21.9	20.57	0.1140
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	1@1	22.24	20.91	0.1233
7	15	5	500500	2502.5	DFT-s-OFDM 16 QAM	1@1	21.27	19.94	0.0986
7	15	5	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.13	20.8	0.1202
7	15	5	507000	2535	DFT-s-OFDM QPSK	1@1	22.48	21.15	0.1303
7	15	5	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.35	20.02	0.1005
7	15	5	513500	2567.5	DFT-s-OFDM PI/2 BPSK	1@1	21.98	20.65	0.1161
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	1@1	22.31	20.98	0.1253
7	15	5	513500	2567.5	DFT-s-OFDM 16 QAM	1@1	21.42	20.09	0.1021
7	15	10	501000	2505	DFT-s-OFDM PI/2 BPSK	1@1	21.96	20.63	0.1156
7	15	10	501000	2505	DFT-s-OFDM QPSK	1@1	22.35	21.02	0.1265
7	15	10	501000	2505	DFT-s-OFDM 16 QAM	1@1	20.66	19.33	0.0857
7	15	10	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.22	20.89	0.1227
7	15	10	507000	2535	DFT-s-OFDM QPSK	1@1	22.54	21.21	0.1321
7	15	10	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.4	20.07	0.1016
7	15	10	513000	2565	DFT-s-OFDM PI/2 BPSK	1@1	22.05	20.72	0.1180
7	15	10	513000	2565	DFT-s-OFDM QPSK	1@1	22.43	21.1	0.1288
7	15	10	513000	2565	DFT-s-OFDM 16 QAM	1@1	21.12	19.79	0.0953
7	15	15	501500	2507.5	DFT-s-OFDM PI/2 BPSK	1@1	22.01	20.68	0.1169
7	15	15	501500	2507.5	DFT-s-OFDM QPSK	1@1	22.33	21	0.1259
7	15	15	501500	2507.5	DFT-s-OFDM 16 QAM	1@1	20.81	19.48	0.0887
7	15	15	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.19	20.86	0.1219
7	15	15	507000	2535	DFT-s-OFDM QPSK	1@1	22.55	21.22	0.1324
7	15	15	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.3	19.97	0.0993
7	15	15	512500	2562.5	DFT-s-OFDM PI/2 BPSK	1@1	22.07	20.74	0.1186
7	15	15	512500	2562.5	DFT-s-OFDM QPSK	1@1	22.45	21.12	0.1294
7	15	15	512500	2562.5	DFT-s-OFDM 16 QAM	1@1	21.25	19.92	0.0982
7	15	20	502000	2510	DFT-s-OFDM PI/2 BPSK	1@1	22	20.67	0.1167
7	15	20	502000	2510	DFT-s-OFDM QPSK	1@1	22.3	20.97	0.1250
7	15	20	502000	2510	DFT-s-OFDM 16 QAM	1@1	20.94	19.61	0.0914
7	15	20	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.21	20.88	0.1225
7	15	20	507000	2535	DFT-s-OFDM QPSK	1@1	22.92	21.59	0.1442
7	15	20	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.25	19.92	0.0982
7	15	20	512000	2560	DFT-s-OFDM PI/2 BPSK	1@1	22.16	20.83	0.1211
7	15	20	512000	2560	DFT-s-OFDM QPSK	1@1	22.49	21.16	0.1306
7	15	20	512000	2560	DFT-s-OFDM 16 QAM	1@1	21.55	20.22	0.1052
7	15	25	502500	2512.5	DFT-s-OFDM PI/2 BPSK	1@1	21.91	20.58	0.1143
7	15	25	502500	2512.5	DFT-s-OFDM QPSK	1@1	22.21	20.88	0.1225
7	15	25	502500	2512.5	DFT-s-OFDM 16 QAM	1@1	20.58	19.25	0.0841
7	15	25	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.04	20.71	0.1178

7	15	25	507000	2535	DFT-s-OFDM QPSK	1@1	22.32	20.99	0.1256
7	15	25	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.19	19.86	0.0968
7	15	25	511500	2557.5	DFT-s-OFDM PI/2 BPSK	1@1	22.04	20.71	0.1178
7	15	25	511500	2557.5	DFT-s-OFDM QPSK	1@1	22.01	20.68	0.1169
7	15	25	511500	2557.5	DFT-s-OFDM 16 QAM	1@1	21.4	20.07	0.1016
7	15	30	503000	2515	DFT-s-OFDM PI/2 BPSK	1@1	21.97	20.64	0.1159
7	15	30	503000	2515	DFT-s-OFDM QPSK	1@1	22.32	20.99	0.1256
7	15	30	503000	2515	DFT-s-OFDM 16 QAM	1@1	21.09	19.76	0.0946
7	15	30	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.1	20.77	0.1194
7	15	30	507000	2535	DFT-s-OFDM QPSK	1@1	22.43	21.1	0.1288
7	15	30	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.38	20.05	0.1012
7	15	30	511000	2555	DFT-s-OFDM PI/2 BPSK	1@1	22.13	20.8	0.1202
7	15	30	511000	2555	DFT-s-OFDM QPSK	1@1	22.52	21.19	0.1315
7	15	30	511000	2555	DFT-s-OFDM 16 QAM	1@1	21.19	19.86	0.0968
7	15	35	503500	2517.5	DFT-s-OFDM PI/2 BPSK	1@1	21.9	20.57	0.1140
7	15	35	503500	2517.5	DFT-s-OFDM QPSK	1@1	22.25	20.92	0.1236
7	15	35	503500	2517.5	DFT-s-OFDM 16 QAM	1@1	21.02	19.69	0.0931
7	15	35	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.03	20.7	0.1175
7	15	35	507000	2535	DFT-s-OFDM QPSK	1@1	22.36	21.03	0.1268
7	15	35	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.31	19.98	0.0995
7	15	35	510500	2552.5	DFT-s-OFDM PI/2 BPSK	1@1	22.06	20.73	0.1183
7	15	35	510500	2552.5	DFT-s-OFDM QPSK	1@1	22.45	21.12	0.1294
7	15	35	510500	2552.5	DFT-s-OFDM 16 QAM	1@1	21.12	19.79	0.0953
7	15	40	504000	2520	DFT-s-OFDM PI/2 BPSK	108@54	22.2	20.87	0.1222
7	15	40	504000	2520	DFT-s-OFDM PI/2 BPSK	1@1	21.97	20.64	0.1159
7	15	40	504000	2520	DFT-s-OFDM PI/2 BPSK	1@214	22.14	20.81	0.1205
7	15	40	504000	2520	DFT-s-OFDM QPSK	108@54	22.2	20.87	0.1222
7	15	40	504000	2520	DFT-s-OFDM QPSK	1@1	22.29	20.96	0.1247
7	15	40	504000	2520	DFT-s-OFDM QPSK	1@214	22.37	21.04	0.1271
7	15	40	504000	2520	DFT-s-OFDM 16 QAM	108@54	21.23	19.9	0.0977
7	15	40	504000	2520	DFT-s-OFDM 16 QAM	1@1	20.97	19.64	0.0920
7	15	40	504000	2520	DFT-s-OFDM 16 QAM	1@214	21.14	19.81	0.0957
7	15	40	504000	2520	DFT-s-OFDM 64 QAM	108@54	19.68	18.35	0.0684
7	15	40	504000	2520	DFT-s-OFDM 64 QAM	1@1	19.42	18.09	0.0644
7	15	40	504000	2520	DFT-s-OFDM 64 QAM	1@214	19.61	18.28	0.0673
7	15	40	504000	2520	DFT-s-OFDM 256 QAM	108@54	17.8	16.47	0.0444
7	15	40	504000	2520	DFT-s-OFDM 256 QAM	1@1	17.45	16.12	0.0409
7	15	40	504000	2520	DFT-s-OFDM 256 QAM	1@214	17.49	16.16	0.0413
7	15	40	504000	2520	CP-OFDM QPSK	108@54	20.65	19.32	0.0855
7	15	40	504000	2520	CP-OFDM QPSK	1@1	20.87	19.54	0.0899
7	15	40	504000	2520	CP-OFDM QPSK	1@214	20.97	19.64	0.0920
7	15	40	507000	2535	DFT-s-OFDM PI/2 BPSK	108@54	22.29	20.96	0.1247
7	15	40	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	22.13	20.8	0.1202
7	15	40	507000	2535	DFT-s-OFDM PI/2 BPSK	1@214	22.06	20.73	0.1183
7	15	40	507000	2535	DFT-s-OFDM QPSK	108@54	22.28	20.95	0.1245
7	15	40	507000	2535	DFT-s-OFDM QPSK	1@1	22.46	21.13	0.1297
7	15	40	507000	2535	DFT-s-OFDM QPSK	1@214	22.23	20.9	0.1230
7	15	40	507000	2535	DFT-s-OFDM 16 QAM	108@54	21.3	19.97	0.0993

7	15	40	507000	2535	DFT-s-OFDM 16 QAM	1@1	21.18	19.85	0.0966
7	15	40	507000	2535	DFT-s-OFDM 16 QAM	1@214	21.11	19.78	0.0951
7	15	40	507000	2535	DFT-s-OFDM 64 QAM	108@54	19.78	18.45	0.0700
7	15	40	507000	2535	DFT-s-OFDM 64 QAM	1@1	19.74	18.41	0.0693
7	15	40	507000	2535	DFT-s-OFDM 64 QAM	1@214	19.72	18.39	0.0690
7	15	40	507000	2535	DFT-s-OFDM 256 QAM	108@54	17.67	16.34	0.0431
7	15	40	507000	2535	DFT-s-OFDM 256 QAM	1@1	17.67	16.34	0.0431
7	15	40	507000	2535	DFT-s-OFDM 256 QAM	1@214	17.48	16.15	0.0412
7	15	40	507000	2535	CP-OFDM QPSK	108@54	20.75	19.42	0.0875
7	15	40	507000	2535	CP-OFDM QPSK	1@1	20.9	19.57	0.0906
7	15	40	507000	2535	CP-OFDM QPSK	1@214	20.79	19.46	0.0883
7	15	40	510000	2550	DFT-s-OFDM PI/2 BPSK	108@54	22.17	20.84	0.1213
7	15	40	510000	2550	DFT-s-OFDM PI/2 BPSK	1@1	22.08	20.75	0.1189
7	15	40	510000	2550	DFT-s-OFDM PI/2 BPSK	1@214	22.03	20.7	0.1175
7	15	40	510000	2550	DFT-s-OFDM QPSK	108@54	22.19	20.86	0.1219
7	15	40	510000	2550	DFT-s-OFDM QPSK	1@1	22.4	21.07	0.1279
7	15	40	510000	2550	DFT-s-OFDM QPSK	1@214	22.21	20.88	0.1225
7	15	40	510000	2550	DFT-s-OFDM 16 QAM	108@54	21.2	19.87	0.0971
7	15	40	510000	2550	DFT-s-OFDM 16 QAM	1@1	21.07	19.74	0.0942
7	15	40	510000	2550	DFT-s-OFDM 16 QAM	1@214	21.04	19.71	0.0935
7	15	40	510000	2550	DFT-s-OFDM 64 QAM	108@54	19.7	18.37	0.0687
7	15	40	510000	2550	DFT-s-OFDM 64 QAM	1@1	19.6	18.27	0.0671
7	15	40	510000	2550	DFT-s-OFDM 64 QAM	1@214	19.59	18.26	0.0670
7	15	40	510000	2550	DFT-s-OFDM 256 QAM	108@54	17.63	16.3	0.0427
7	15	40	510000	2550	DFT-s-OFDM 256 QAM	1@1	17.52	16.19	0.0416
7	15	40	510000	2550	DFT-s-OFDM 256 QAM	1@214	17.55	16.22	0.0419
7	15	40	510000	2550	CP-OFDM QPSK	108@54	20.68	19.35	0.0861
7	15	40	510000	2550	CP-OFDM QPSK	1@1	20.81	19.48	0.0887
7	15	40	510000	2550	CP-OFDM QPSK	1@214	20.81	19.48	0.0887
7	15	50	505000	2525	DFT-s-OFDM PI/2 BPSK	135@67	22.93	21.6	0.1445
7	15	50	505000	2525	DFT-s-OFDM PI/2 BPSK	1@1	22.8	21.47	0.1403
7	15	50	505000	2525	DFT-s-OFDM PI/2 BPSK	1@268	22.03	20.7	0.1175
7	15	50	505000	2525	DFT-s-OFDM QPSK	135@67	22.06	20.73	0.1183
7	15	50	505000	2525	DFT-s-OFDM QPSK	1@1	22.03	20.7	0.1175
7	15	50	505000	2525	DFT-s-OFDM QPSK	1@268	22.02	20.69	0.1172
7	15	50	505000	2525	DFT-s-OFDM 16 QAM	135@67	21.06	19.73	0.0940
7	15	50	505000	2525	DFT-s-OFDM 16 QAM	1@1	20.98	19.65	0.0923
7	15	50	505000	2525	DFT-s-OFDM 16 QAM	1@268	21.16	19.83	0.0962
7	15	50	505000	2525	DFT-s-OFDM 64 QAM	135@67	19.63	18.3	0.0676
7	15	50	505000	2525	DFT-s-OFDM 64 QAM	1@1	19.15	17.82	0.0605
7	15	50	505000	2525	DFT-s-OFDM 64 QAM	1@268	19.35	18.02	0.0634
7	15	50	505000	2525	DFT-s-OFDM 256 QAM	135@67	17.62	16.29	0.0426
7	15	50	505000	2525	DFT-s-OFDM 256 QAM	1@1	17.42	16.09	0.0406
7	15	50	505000	2525	DFT-s-OFDM 256 QAM	1@268	17.6	16.27	0.0424
7	15	50	505000	2525	CP-OFDM QPSK	135@67	20.6	19.27	0.0845
7	15	50	505000	2525	CP-OFDM QPSK	1@1	20.44	19.11	0.0815
7	15	50	505000	2525	CP-OFDM QPSK	1@268	20.48	19.15	0.0822
7	15	50	507000	2535	DFT-s-OFDM PI/2 BPSK	135@67	22.14	20.81	0.1205

7	15	50	507000	2535	DFT-s-OFDM PI/2 BPSK	1@1	21.83	20.5	0.1122
7	15	50	507000	2535	DFT-s-OFDM PI/2 BPSK	1@268	22.01	20.68	0.1169
7	15	50	507000	2535	DFT-s-OFDM QPSK	135@67	22.16	20.83	0.1211
7	15	50	507000	2535	DFT-s-OFDM QPSK	1@1	21.88	20.55	0.1135
7	15	50	507000	2535	DFT-s-OFDM QPSK	1@268	22.05	20.72	0.1180
7	15	50	507000	2535	DFT-s-OFDM 16 QAM	135@67	21.1	19.77	0.0948
7	15	50	507000	2535	DFT-s-OFDM 16 QAM	1@1	20.73	19.4	0.0871
7	15	50	507000	2535	DFT-s-OFDM 16 QAM	1@268	20.94	19.61	0.0914
7	15	50	507000	2535	DFT-s-OFDM 64 QAM	135@67	19.61	18.28	0.0673
7	15	50	507000	2535	DFT-s-OFDM 64 QAM	1@1	19.4	18.07	0.0641
7	15	50	507000	2535	DFT-s-OFDM 64 QAM	1@268	19.51	18.18	0.0658
7	15	50	507000	2535	DFT-s-OFDM 256 QAM	135@67	17.63	16.3	0.0427
7	15	50	507000	2535	DFT-s-OFDM 256 QAM	1@1	17.47	16.14	0.0411
7	15	50	507000	2535	DFT-s-OFDM 256 QAM	1@268	17.59	16.26	0.0423
7	15	50	507000	2535	CP-OFDM QPSK	135@67	20.59	19.26	0.0843
7	15	50	507000	2535	CP-OFDM QPSK	1@1	20.75	19.42	0.0875
7	15	50	507000	2535	CP-OFDM QPSK	1@268	20.51	19.18	0.0828
7	15	50	509000	2545	DFT-s-OFDM PI/2 BPSK	135@67	22.1	20.77	0.1194
7	15	50	509000	2545	DFT-s-OFDM PI/2 BPSK	1@1	21.89	20.56	0.1138
7	15	50	509000	2545	DFT-s-OFDM PI/2 BPSK	1@268	21.97	20.64	0.1159
7	15	50	509000	2545	DFT-s-OFDM QPSK	135@67	22.13	20.8	0.1202
7	15	50	509000	2545	DFT-s-OFDM QPSK	1@1	21.99	20.66	0.1164
7	15	50	509000	2545	DFT-s-OFDM QPSK	1@268	22.08	20.75	0.1189
7	15	50	509000	2545	DFT-s-OFDM 16 QAM	135@67	21.15	19.82	0.0959
7	15	50	509000	2545	DFT-s-OFDM 16 QAM	1@1	20.82	19.49	0.0889
7	15	50	509000	2545	DFT-s-OFDM 16 QAM	1@268	20.9	19.57	0.0906
7	15	50	509000	2545	DFT-s-OFDM 64 QAM	135@67	19.65	18.32	0.0679
7	15	50	509000	2545	DFT-s-OFDM 64 QAM	1@1	19.49	18.16	0.0655
7	15	50	509000	2545	DFT-s-OFDM 64 QAM	1@268	19.62	18.29	0.0675
7	15	50	509000	2545	DFT-s-OFDM 256 QAM	135@67	17.62	16.29	0.0426
7	15	50	509000	2545	DFT-s-OFDM 256 QAM	1@1	17.52	16.19	0.0416
7	15	50	509000	2545	DFT-s-OFDM 256 QAM	1@268	17.72	16.39	0.0436
7	15	50	509000	2545	CP-OFDM QPSK	135@67	20.59	19.26	0.0843
7	15	50	509000	2545	CP-OFDM QPSK	1@1	20.67	19.34	0.0859
7	15	50	509000	2545	CP-OFDM QPSK	1@268	20.66	19.33	0.0857

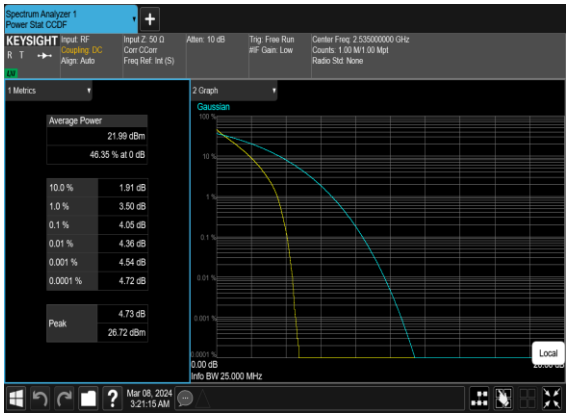
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
2	15	20	507000	2535.0	DFT-s-OFDM QPS	100@0	0.00125	**PASS**	NV
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00231	**PASS**	LV
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	-0.00256	**PASS**	HV
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00521	**PASS**	-30℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00448	**PASS**	-20℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00489	**PASS**	-10℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00592	**PASS**	0℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00625	**PASS**	10℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00153	**PASS**	20℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00354	**PASS**	30℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	-0.00296	**PASS**	40℃
2	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	0.00394	**PASS**	50℃

Peak to Average Ratio

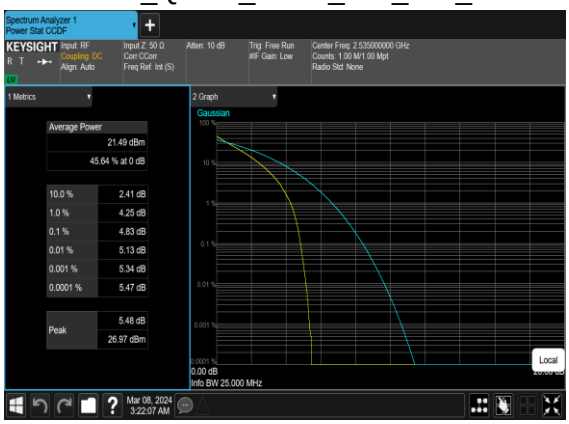
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
7	15	20	507000	2535.0	DFT-s-OFDM PI/2 BPSK	100@0	4.05	13	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM PI/2 BPSK	1@0	3.25	13	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM QPSK	100@0	4.83	13	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM QPSK	1@0	3.97	13	**PASS**

N7(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N7(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH

N7(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



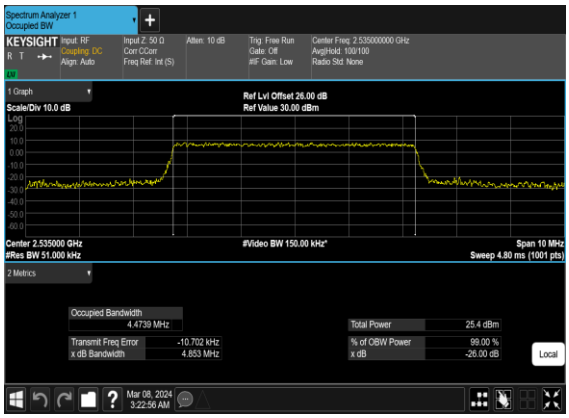
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

Occupied Bandwidth

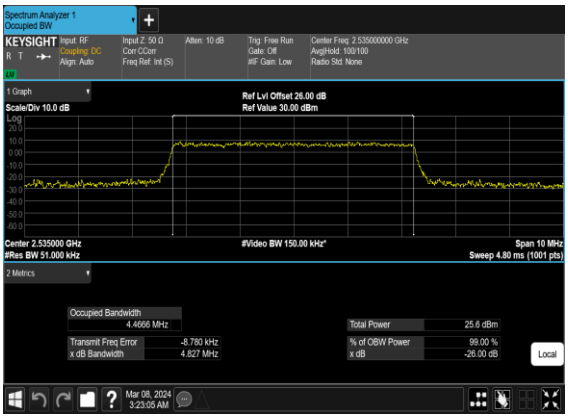
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
7	15	5	507000	2535.0	CP-OFDM QPSK	25@0	4.4739	4.853
7	15	5	507000	2535.0	CP-OFDM 16 QAM	25@0	4.4666	4.827
7	15	5	507000	2535.0	CP-OFDM 64 QAM	25@0	4.487	4.839
7	15	5	507000	2535.0	CP-OFDM 256 QAM	25@0	4.4732	4.839
7	15	10	507000	2535.0	CP-OFDM QPSK	52@0	9.2764	9.722
7	15	10	507000	2535.0	CP-OFDM 16 QAM	52@0	9.2787	9.753
7	15	10	507000	2535.0	CP-OFDM 64 QAM	52@0	9.2597	9.695
7	15	10	507000	2535.0	CP-OFDM 256 QAM	52@0	9.2777	9.787
7	15	15	507000	2535.0	CP-OFDM QPSK	79@0	14.085	14.64
7	15	15	507000	2535.0	CP-OFDM 16 QAM	79@0	14.092	14.71
7	15	15	507000	2535.0	CP-OFDM 64 QAM	79@0	14.084	14.67
7	15	15	507000	2535.0	CP-OFDM 256 QAM	79@0	14.108	14.7
7	15	20	507000	2535.0	CP-OFDM QPSK	106@0	18.943	19.63
7	15	20	507000	2535.0	CP-OFDM 16 QAM	106@0	18.918	19.63
7	15	20	507000	2535.0	CP-OFDM 64 QAM	106@0	18.892	19.65
7	15	20	507000	2535.0	CP-OFDM 256 QAM	106@0	18.891	19.66
7	15	25	507000	2535.0	CP-OFDM QPSK	133@0	23.672	24.69
7	15	25	507000	2535.0	CP-OFDM 16 QAM	133@0	23.754	24.71
7	15	25	507000	2535.0	CP-OFDM 64 QAM	133@0	23.754	24.64
7	15	25	507000	2535.0	CP-OFDM 256 QAM	133@0	23.773	24.66
7	15	30	507000	2535.0	CP-OFDM QPSK	160@0	28.526	29.72
7	15	30	507000	2535.0	CP-OFDM 16 QAM	160@0	28.537	29.65
7	15	30	507000	2535.0	CP-OFDM 64 QAM	160@0	28.525	29.62
7	15	30	507000	2535.0	CP-OFDM 256 QAM	160@0	28.531	29.5
7	15	35	507000	2535.0	CP-OFDM QPSK	188@0	33.56	34.82
7	15	35	507000	2535.0	CP-OFDM 16 QAM	188@0	33.638	34.69

7	15	35	507000	2535.0	CP-OFDM 64 QAM	188@0	33.584	34.84
7	15	35	507000	2535.0	CP-OFDM 256 QAM	188@0	33.583	34.73
7	15	40	507000	2535.0	CP-OFDM QPSK	216@0	38.563	39.91
7	15	40	507000	2535.0	CP-OFDM 16 QAM	216@0	38.572	39.9
7	15	40	507000	2535.0	CP-OFDM 64 QAM	216@0	38.476	39.86
7	15	40	507000	2535.0	CP-OFDM 256 QAM	216@0	38.58	39.84
7	15	50	507000	2535.0	CP-OFDM QPSK	270@0	48.186	49.73
7	15	50	507000	2535.0	CP-OFDM 16 QAM	270@0	48.288	49.75
7	15	50	507000	2535.0	CP-OFDM 64 QAM	270@0	48.085	49.76
7	15	50	507000	2535.0	CP-OFDM 256 QAM	270@0	48.081	49.69

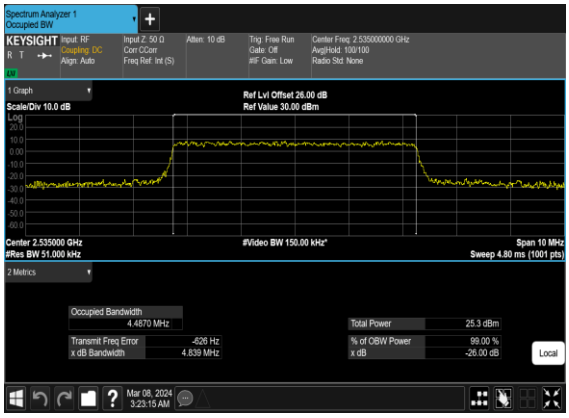
N7(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N7(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



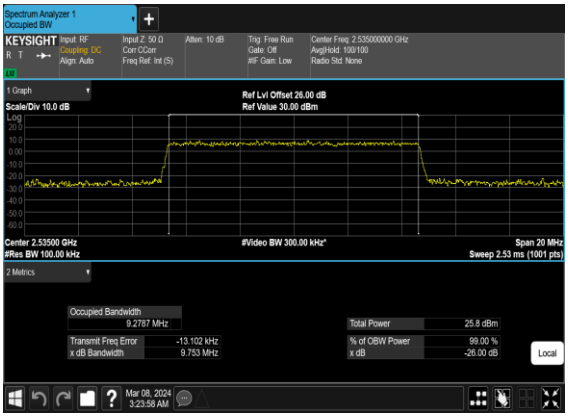
N7(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N7(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

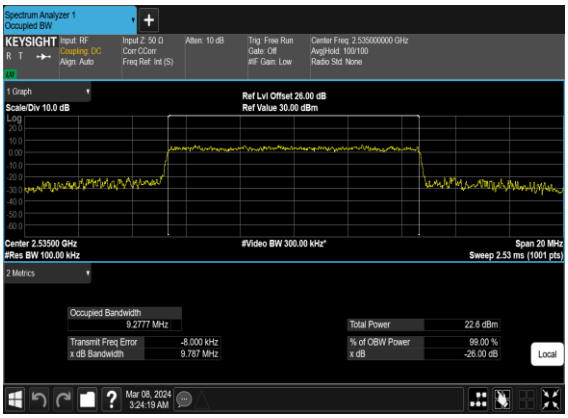
N7(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N7(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

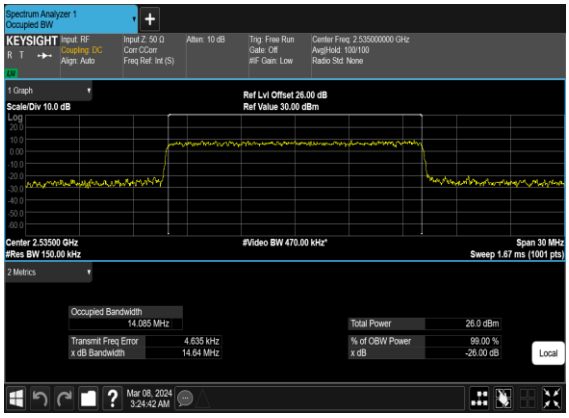


N7(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N7(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

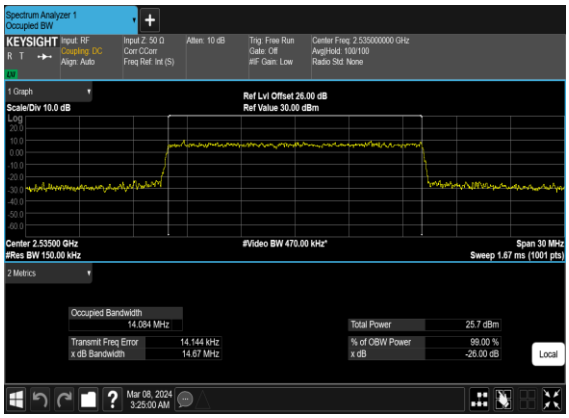


N7(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

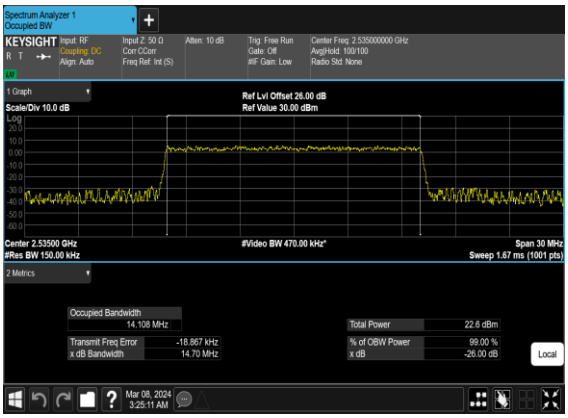


N7(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

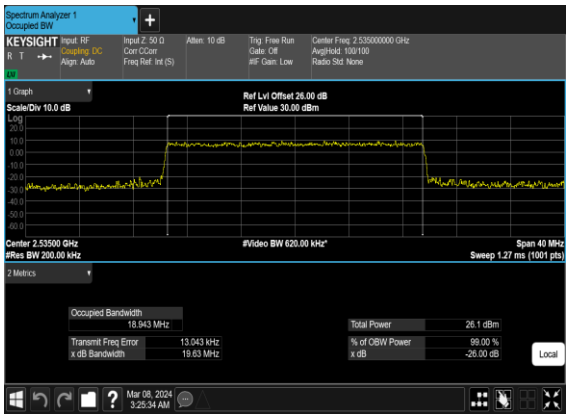
N7(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



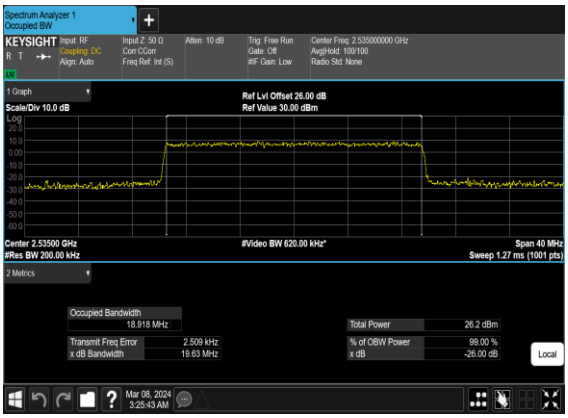
N7(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



N7(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

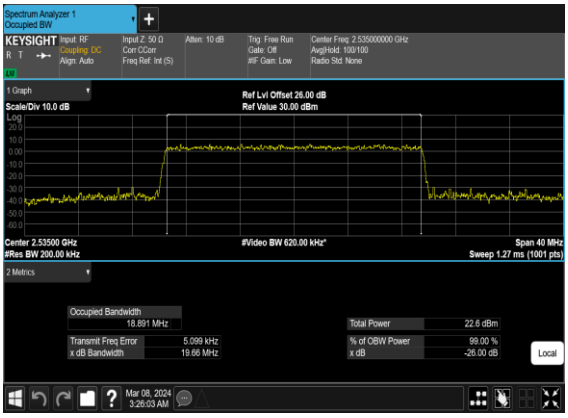


N7(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N7(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

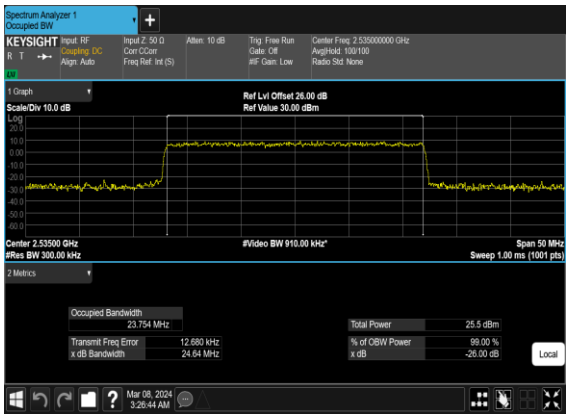
N7(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



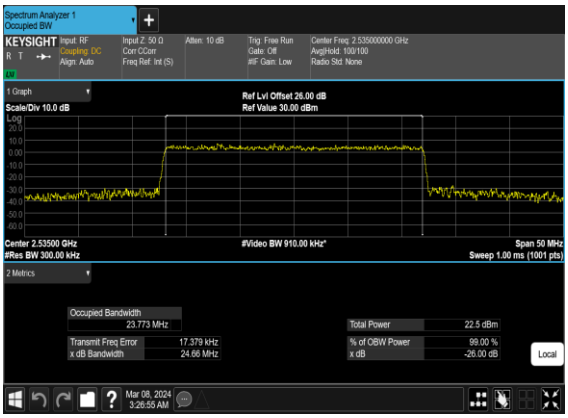
N7(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N7(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

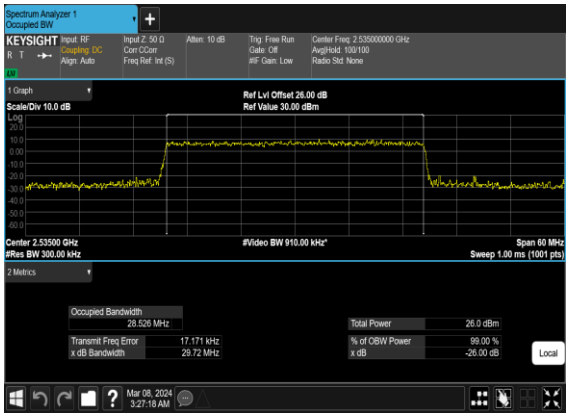
N7(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



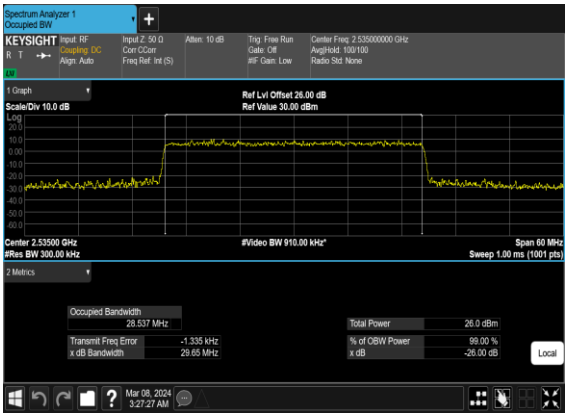
N7(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



N7(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

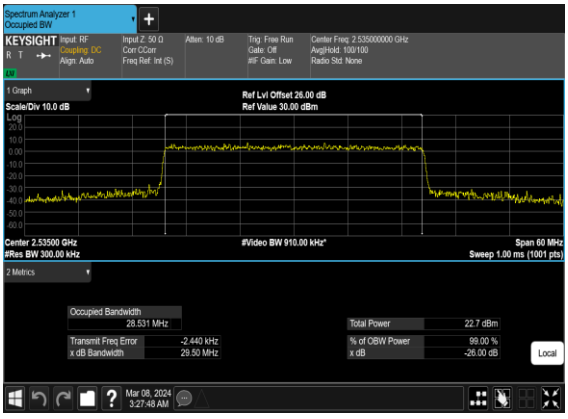


N7(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

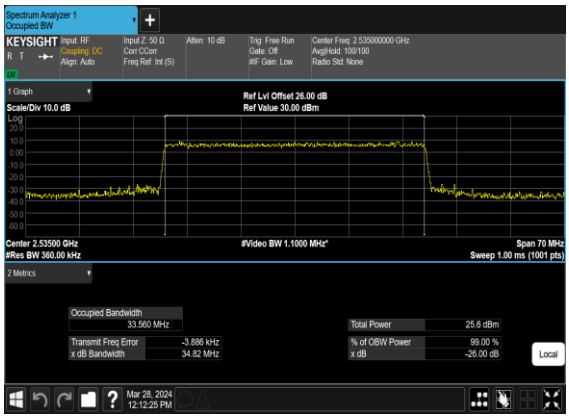


N7(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

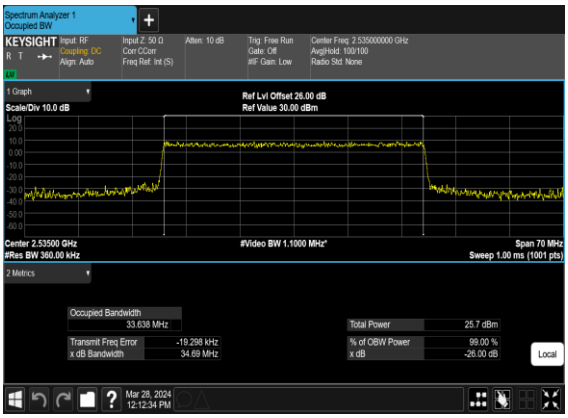
N7(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



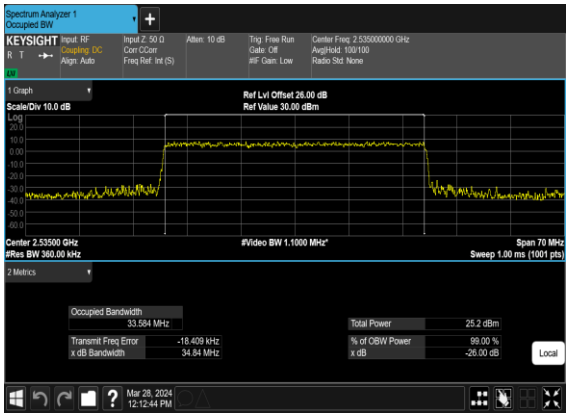
N7(35M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



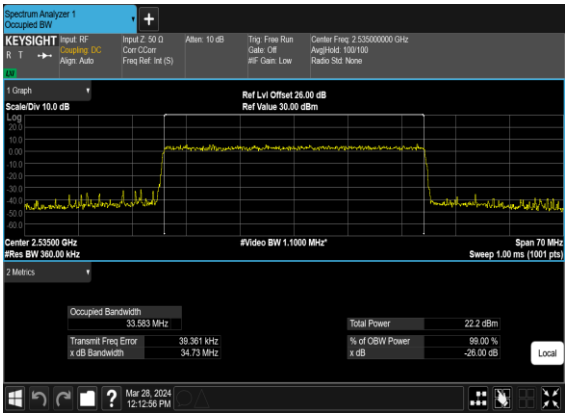
N7(35M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



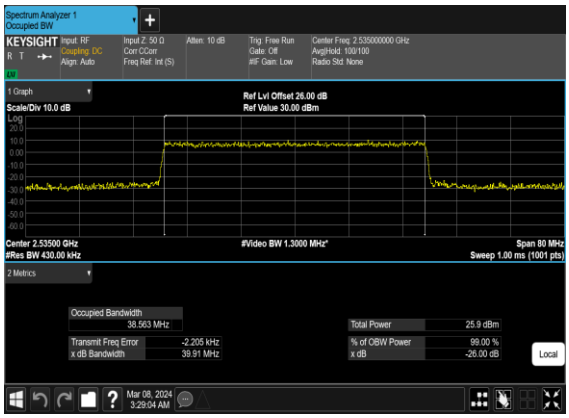
N7(35M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



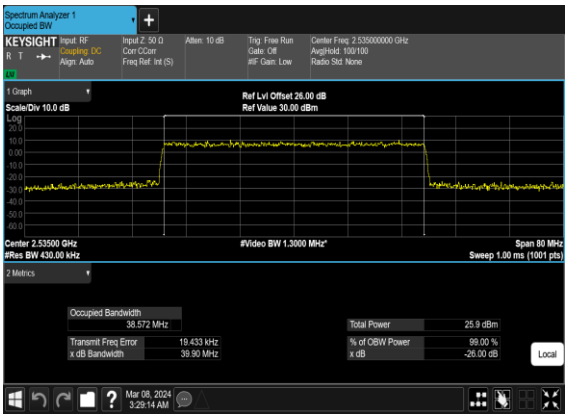
N7(35M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



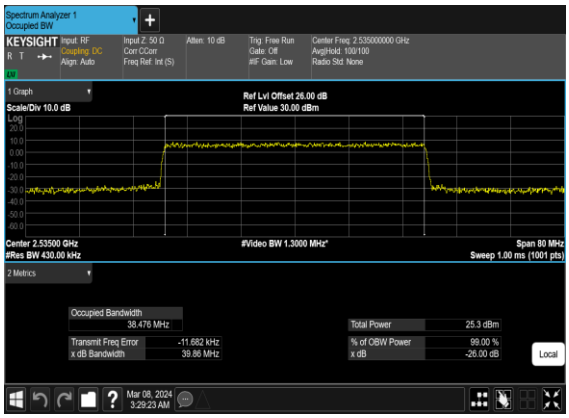
N7(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



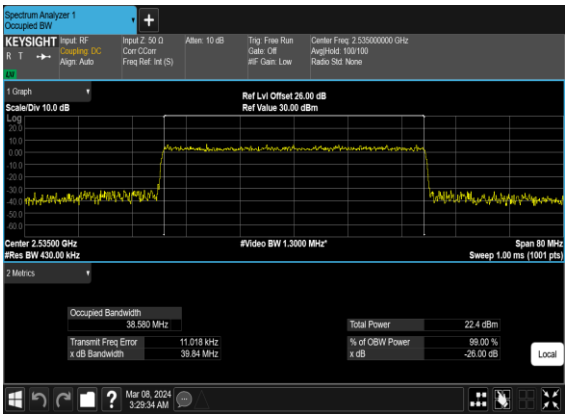
N7(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



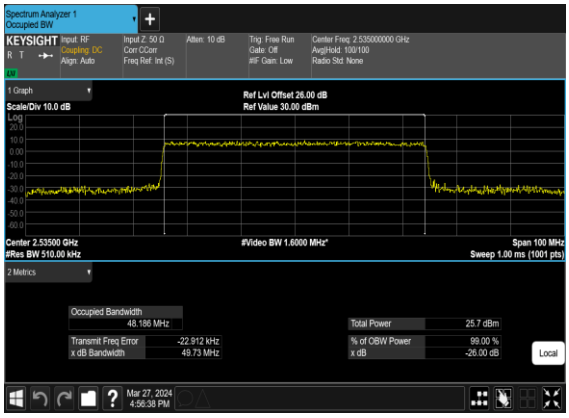
N7(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



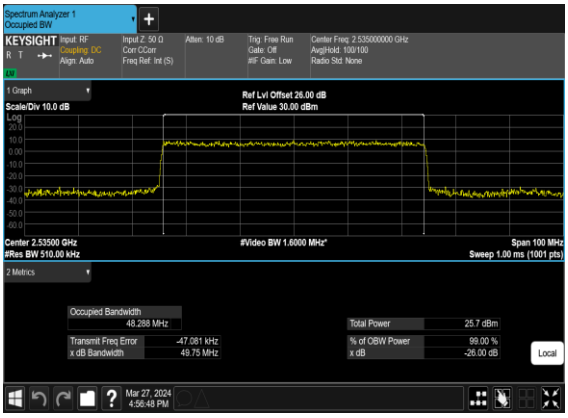
N7(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



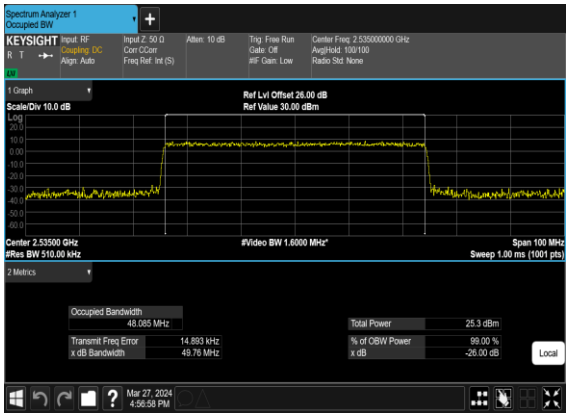
N7(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



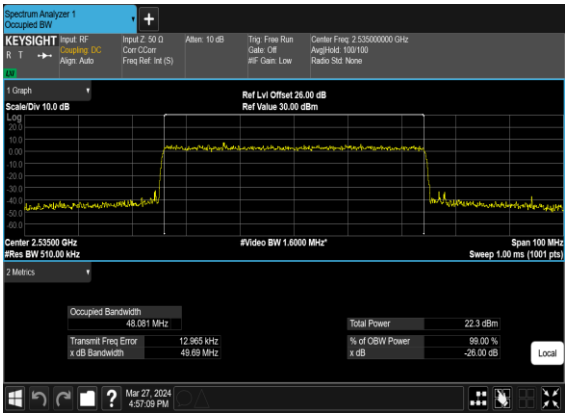
N7(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N7(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N7(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



Conducted Spurious Emissions

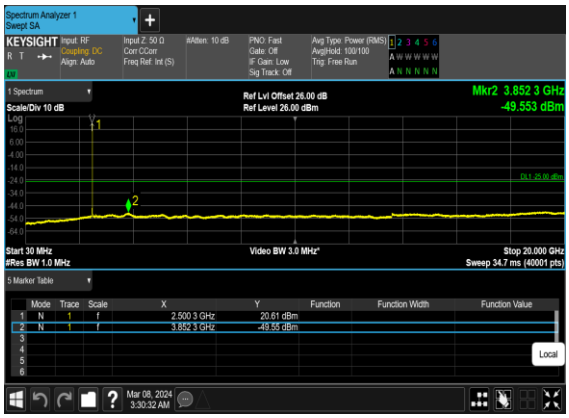
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
7	15	5	500500	2502.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	5	500500	2502.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	5	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	5	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	5	513500	2567.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	20	502000	2510.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

7	15	20	502000	2510.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	20	502000	2510.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	20	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	20	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	20	512000	2560.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	20	512000	2560.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	40	504000	2520.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	40	504000	2520.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	40	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

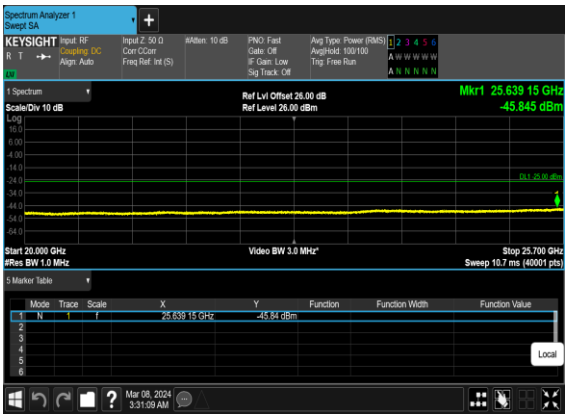
7	15	40	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	40	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	40	510000	2550.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	40	510000	2550.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	50	505000	2525.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	50	505000	2525.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	50	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	507000	2535.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	50	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	507000	2535.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
7	15	50	509000	2545.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

7	15	50	509000	2545.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
7	15	50	509000	2545.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

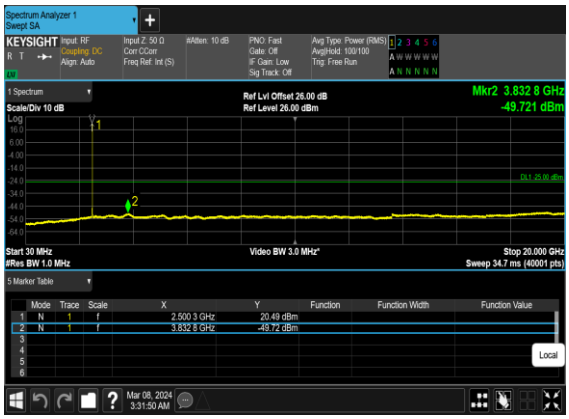
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



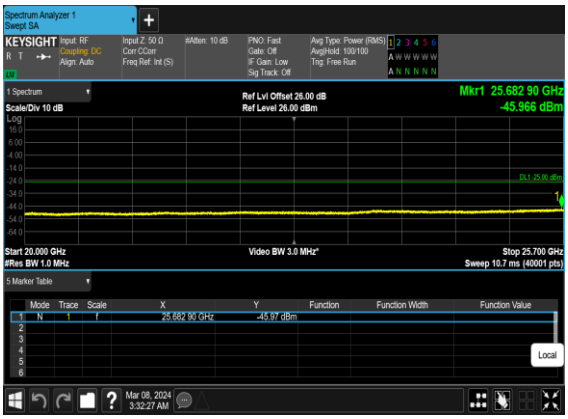
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



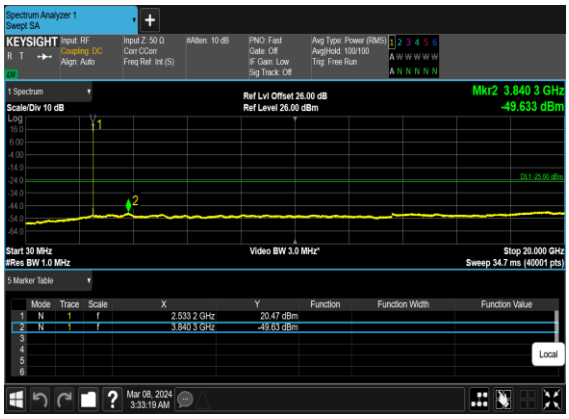
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



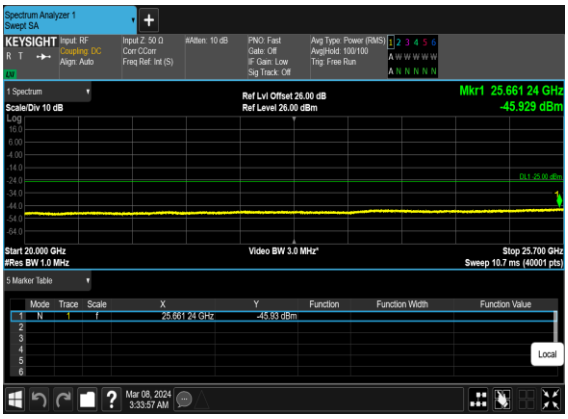
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



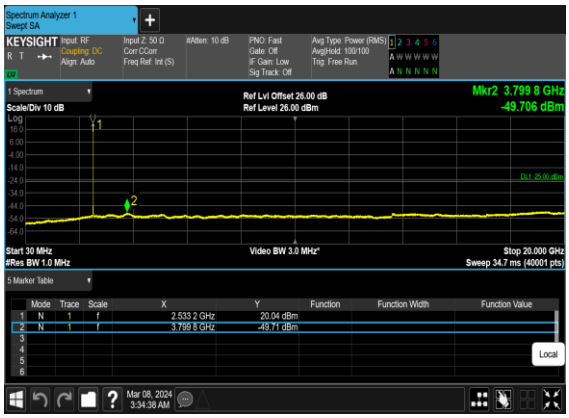
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



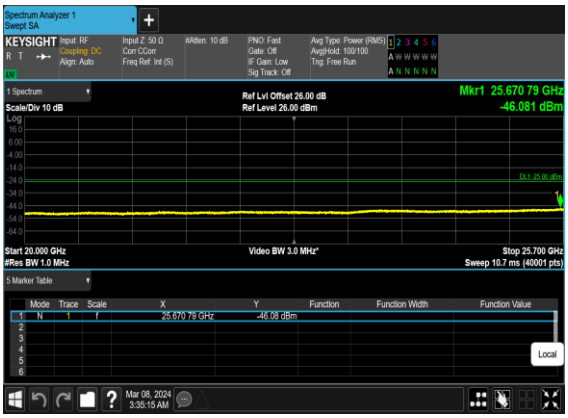
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



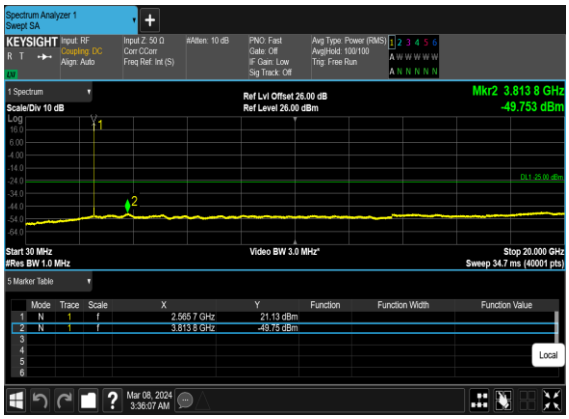
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



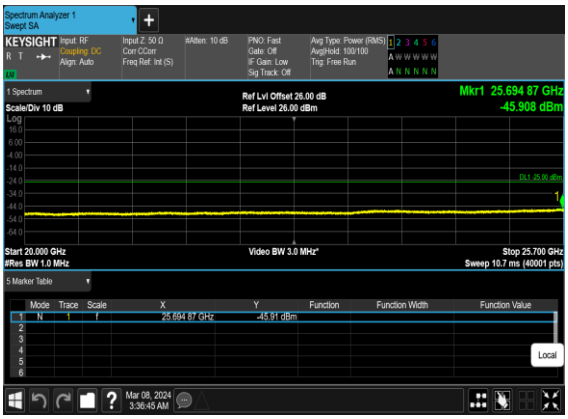
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



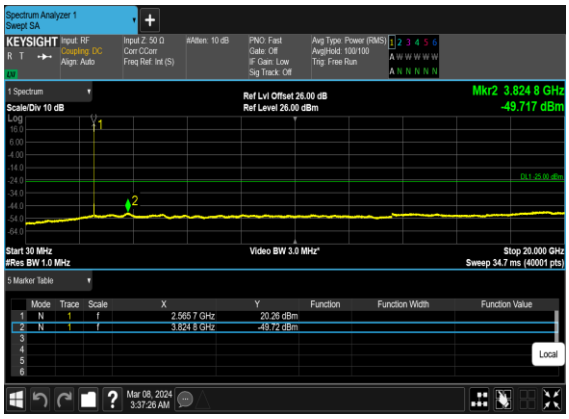
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



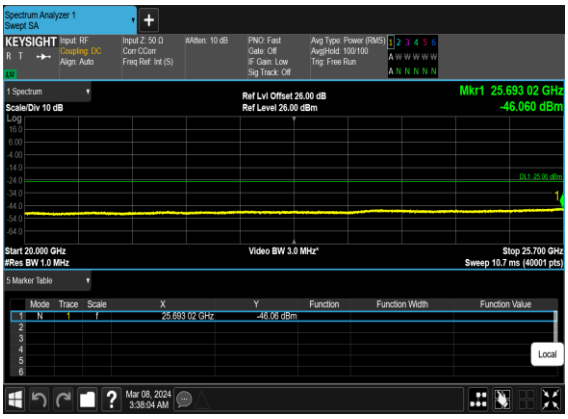
N7(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



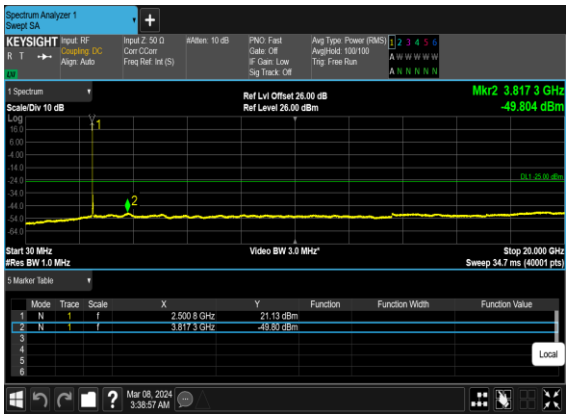
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



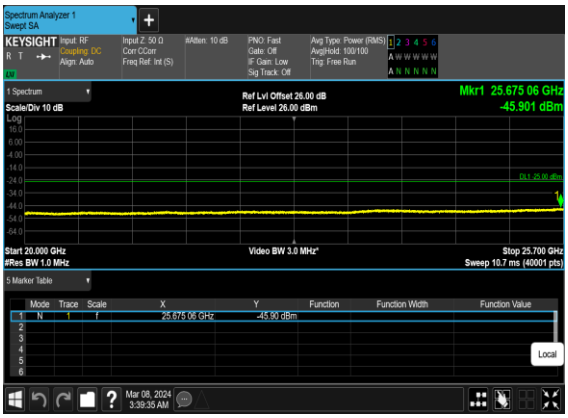
N7(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



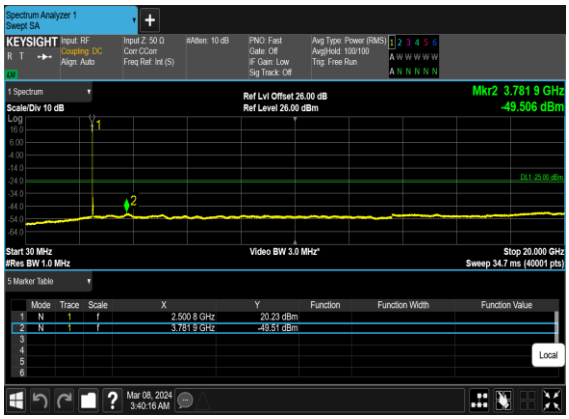
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



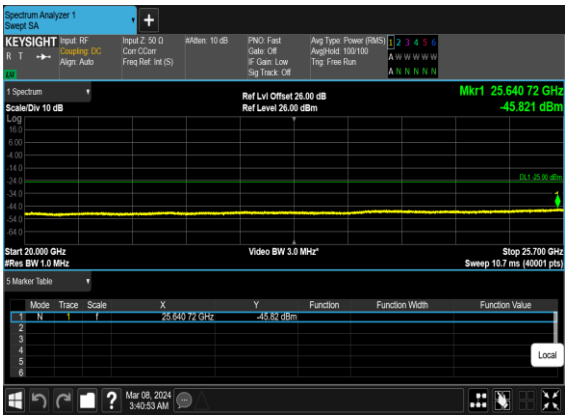
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



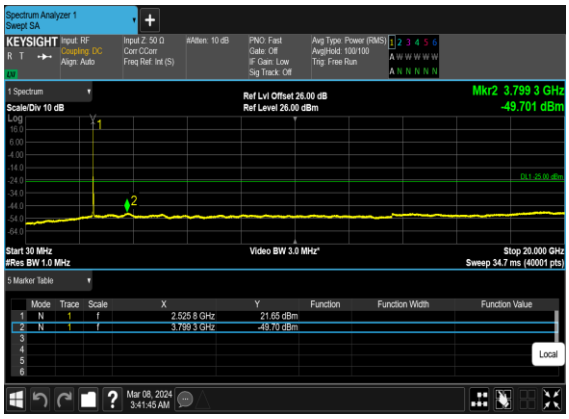
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



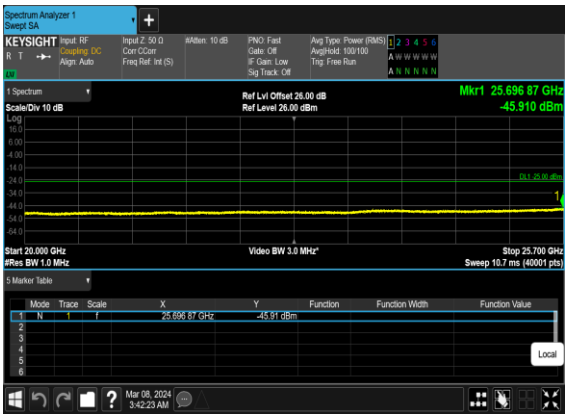
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



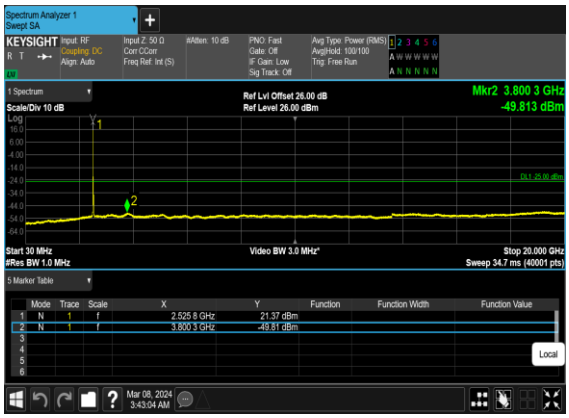
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



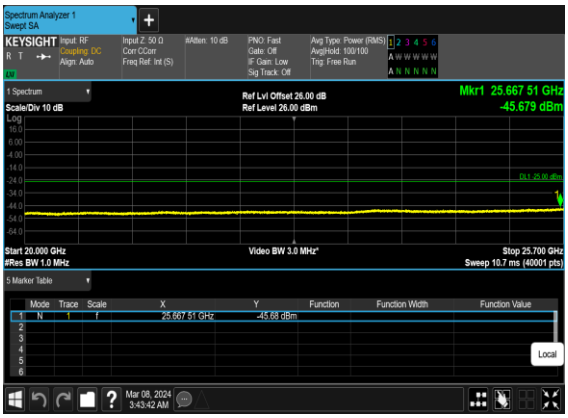
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



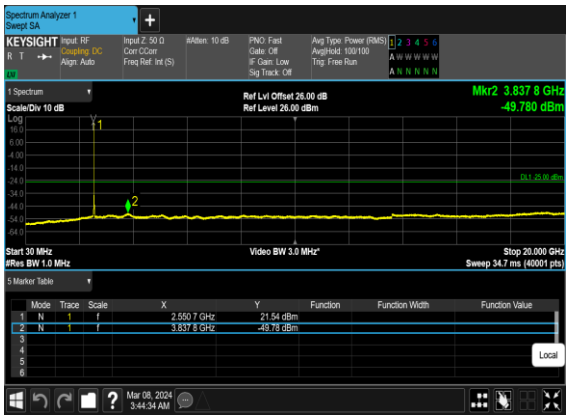
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



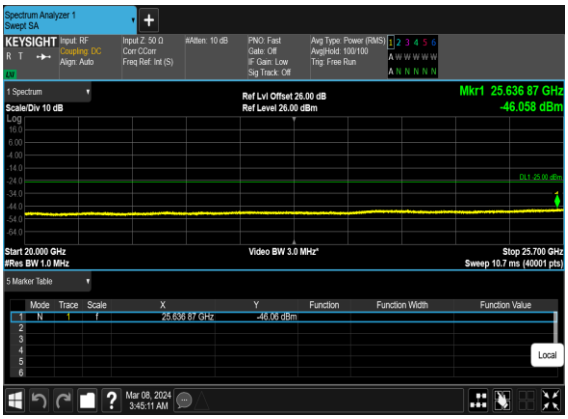
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



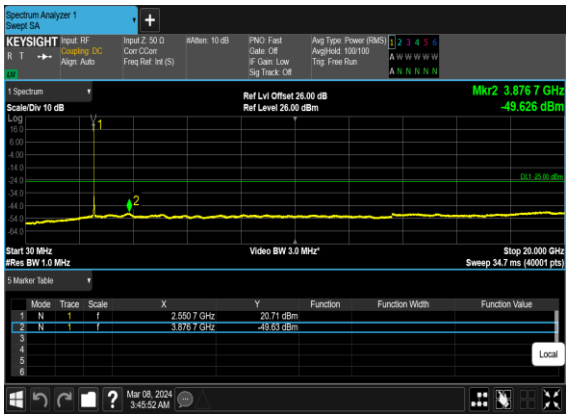
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



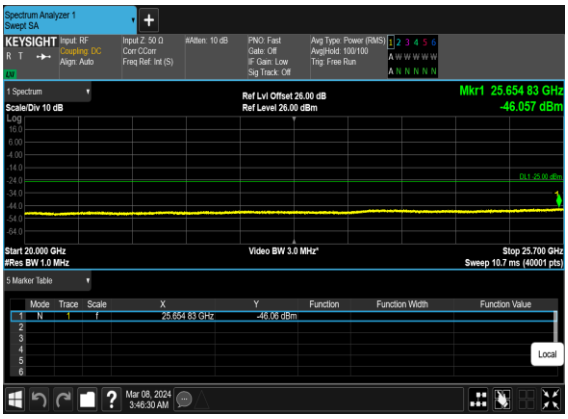
N7(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



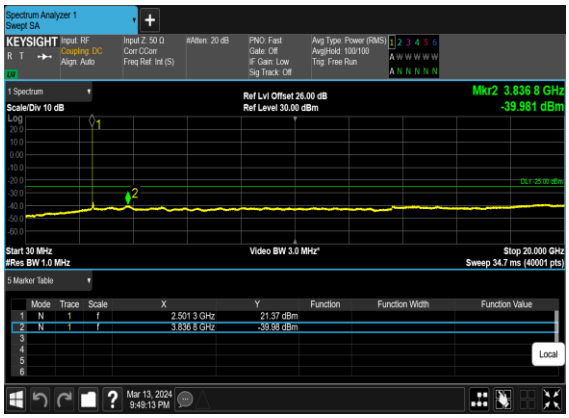
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



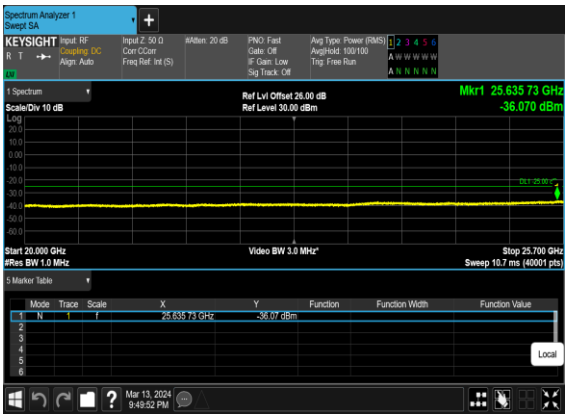
N7(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



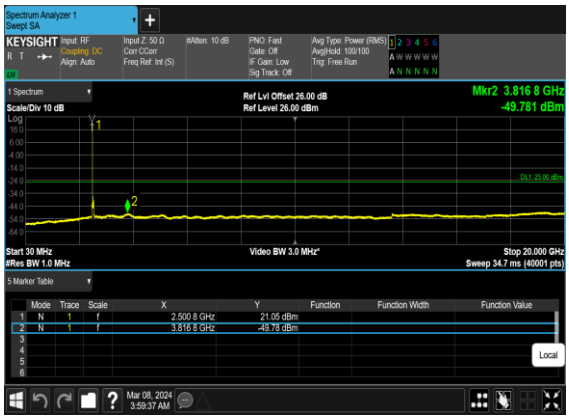
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



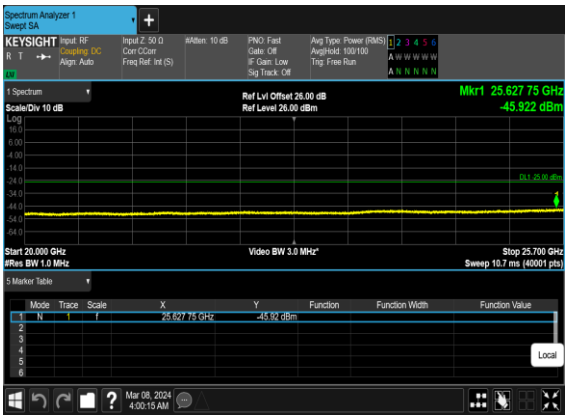
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



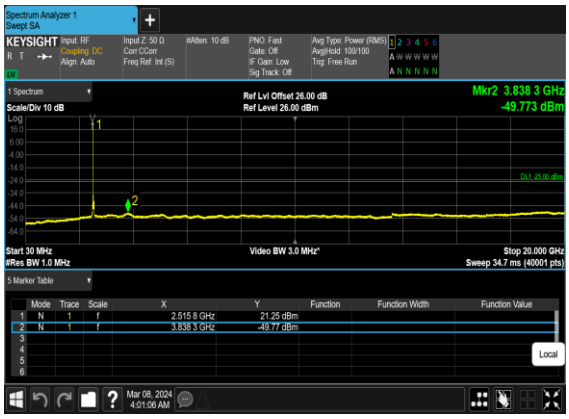
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



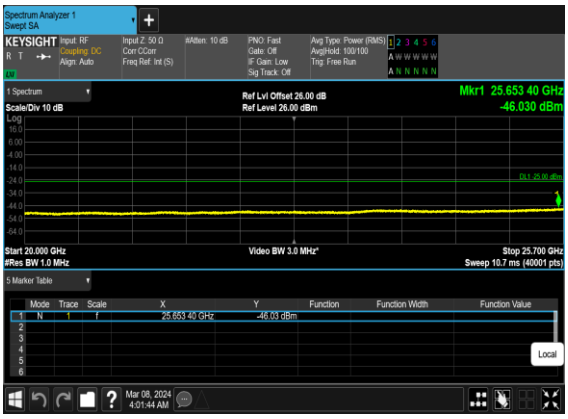
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



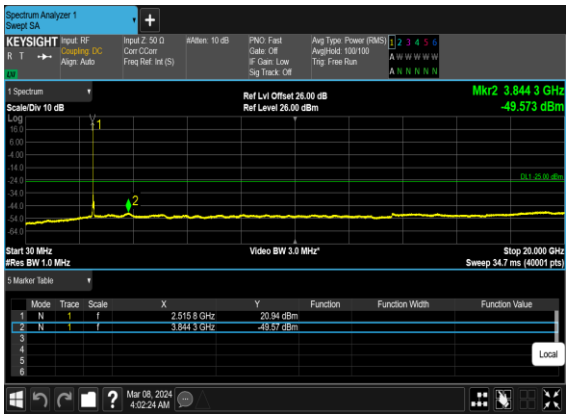
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



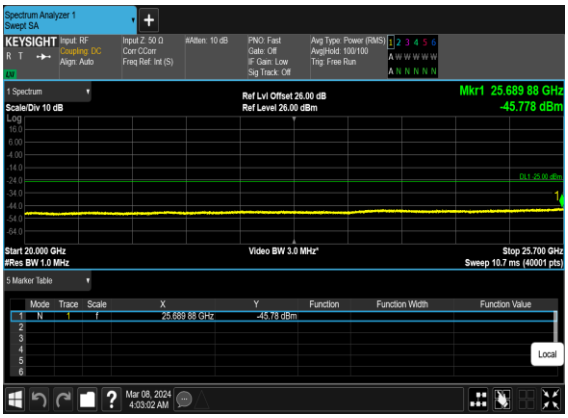
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



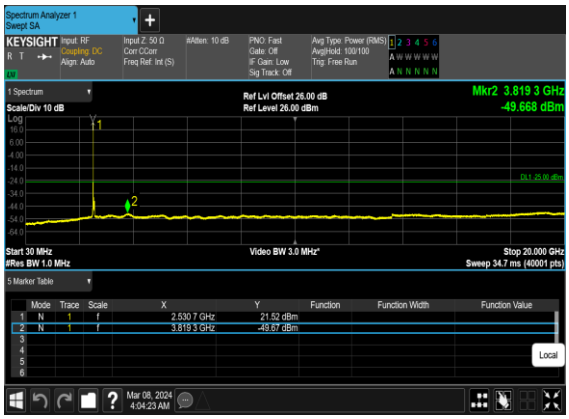
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



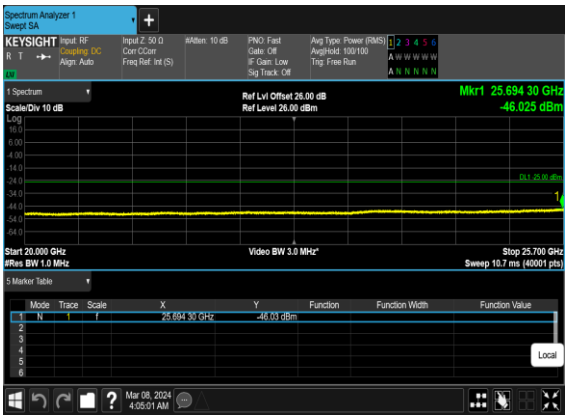
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



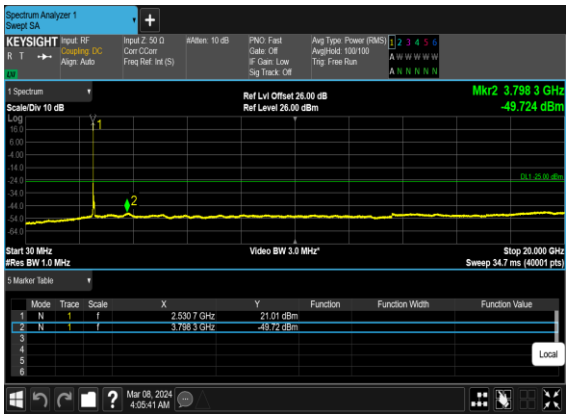
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



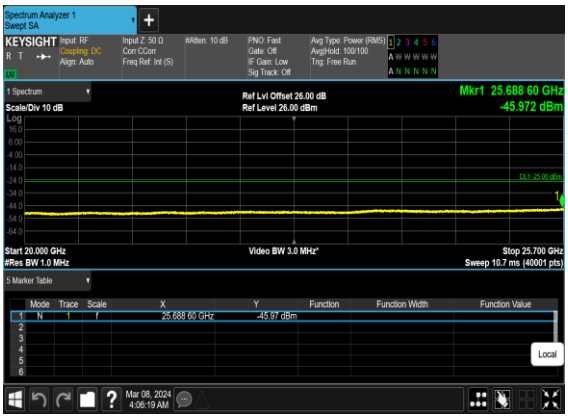
N7(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



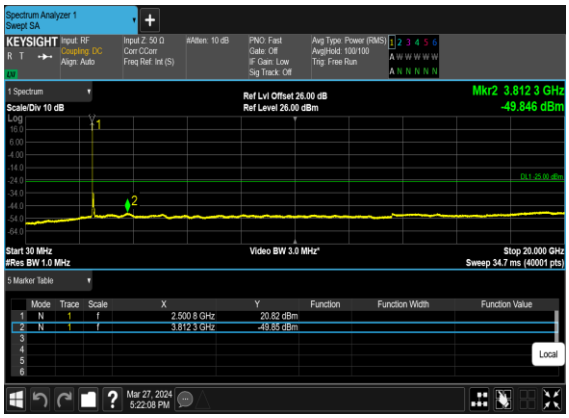
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



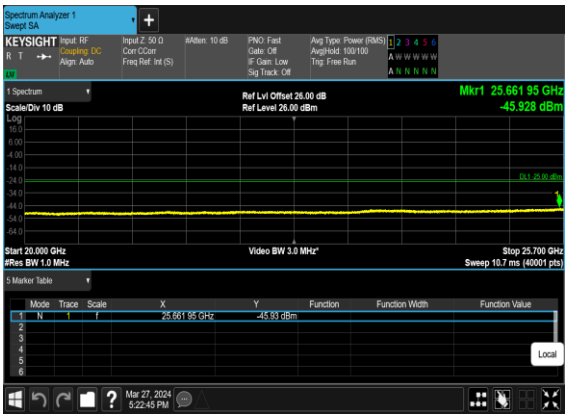
N7(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



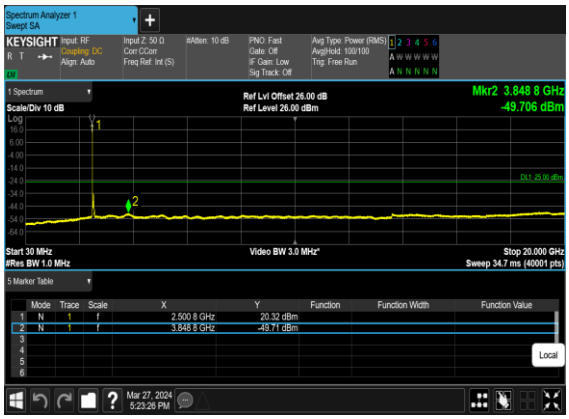
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



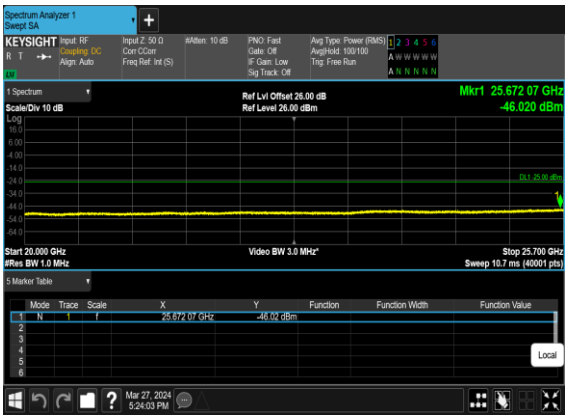
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



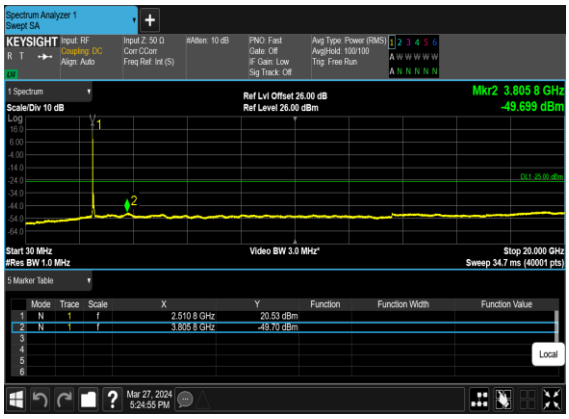
N7(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



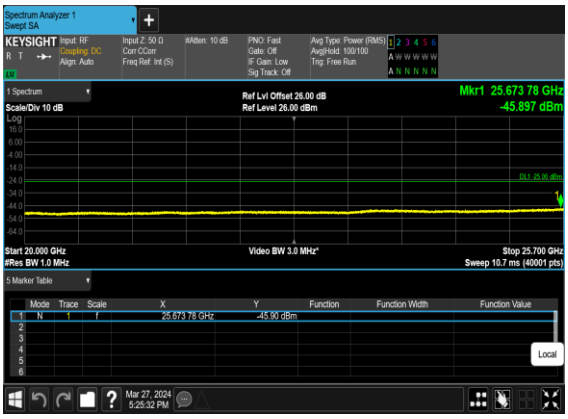
N7(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



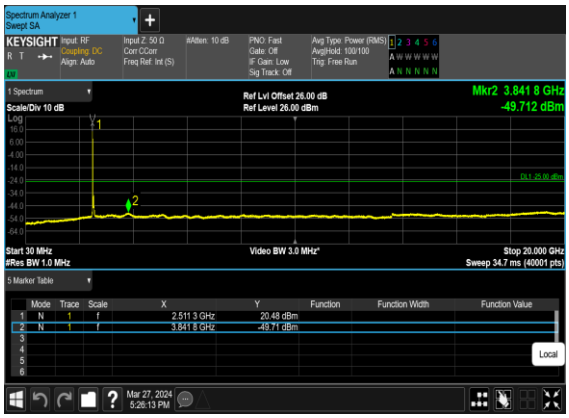
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



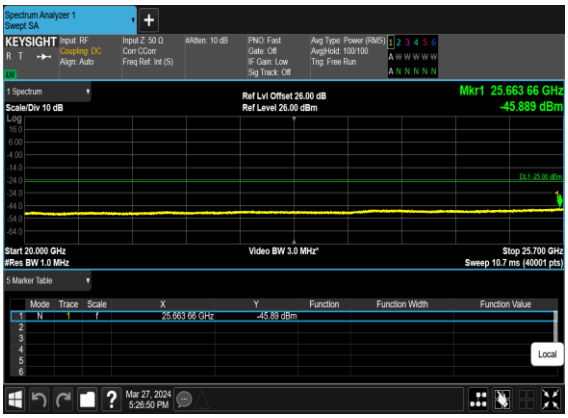
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



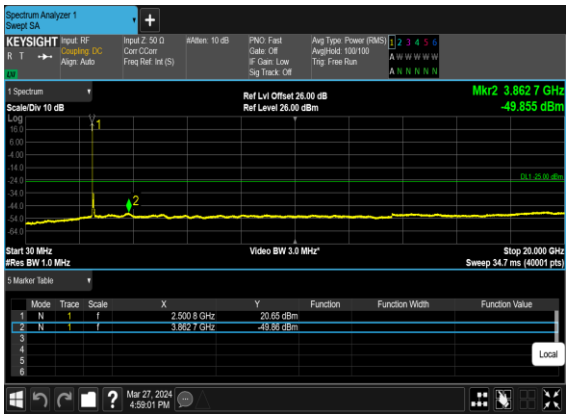
N7(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



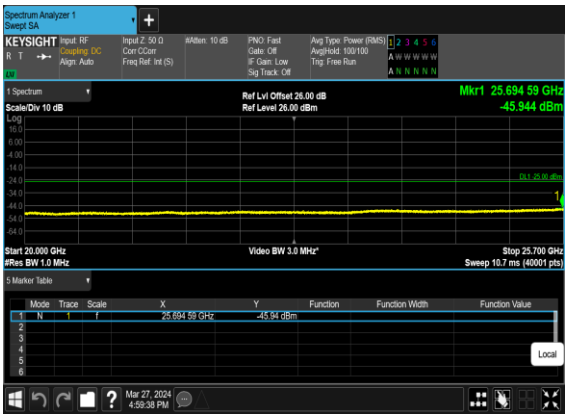
N7(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



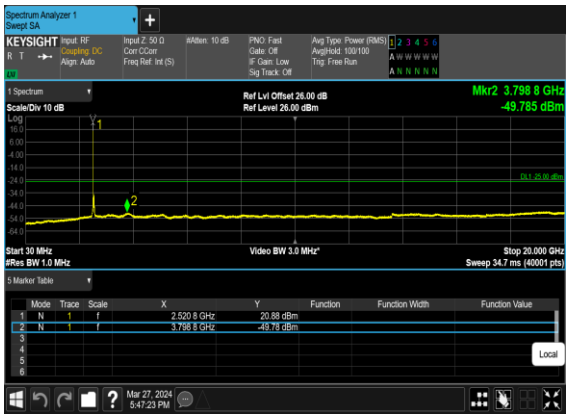
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



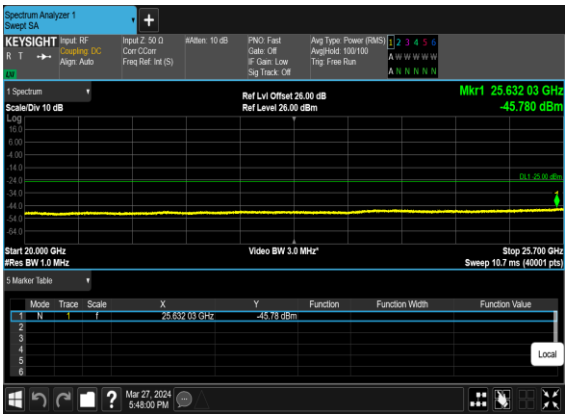
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



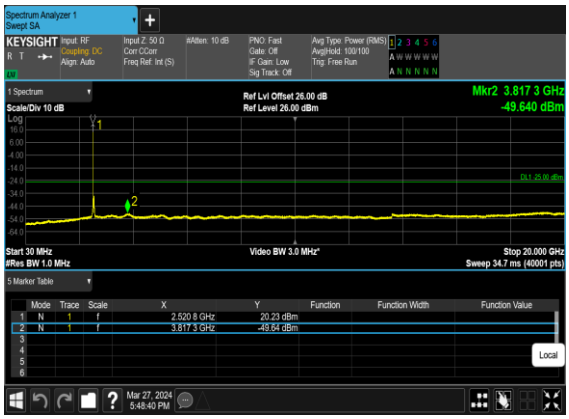
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



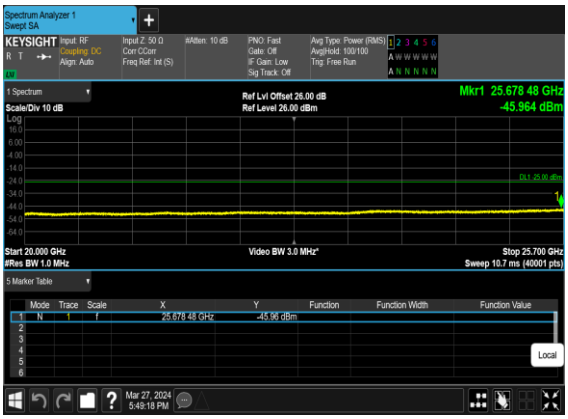
N7(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N7(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N7(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
7	15	5	500500	2502.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
7	15	5	500500	2502.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
7	15	5	513500	2567.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
7	15	20	502000	2510.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
7	15	20	512000	2560.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM BPSK	216@0	see graph	**PASS**
7	15	40	504000	2520.0	DFT-s-OFDM QPSK	216@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM BPSK	1@215	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM QPSK	1@215	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM BPSK	216@0	see graph	**PASS**
7	15	40	510000	2550.0	DFT-s-OFDM QPSK	216@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

7	15	50	505000	2525.0	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
7	15	50	505000	2525.0	DFT-s-OFDM QPSK	270@0	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM BPSK	1@269	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM QPSK	1@269	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
7	15	50	509000	2545.0	DFT-s-OFDM QPSK	270@0	see graph	**PASS**