FCC RF Test Report

APPLICANT	: FIH CO., LTD.
EQUIPMENT	: Internet Gateway
BRAND NAME	: FIH
MODEL NAME	: FWF100V5L
FCC ID	: RYQFWF100V5L
STANDARD	: 47 CFR Part 2, 22, 24, 27
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Aug. 12, 2022 ~ Dec. 30, 2022

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

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APPENDIX A. TEST RESULTS OF CONDUCTED TEST

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG262206D	Rev. 01	Initial issue of report	Jan. 09, 2023

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)	Equivalent Isotropic Radiated Power (5G NR n2)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (5G NR n66)	EIRP < 1Watt		
	§27.50(j)(2)	Equivalent Isotropic Radiated Power (5G NR n77)	EIRP <1640Watt		
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(h) §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n5) (5G NR n2) (5G NR n66) (5G NR n77)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(h) §27.53(l)(2)	Conducted Spurious Emission (5G NR n5) (5G NR n2) (5G NR n66) (5G NR n77)	< 43+10log10(P[Watts])	PASS	-
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) §24.238(a) §27.53(h) §27.53(l)(2)	Radiated Spurious Emission (5G NR n5) (5G NR n2) (5G NR n66) (5G NR n77)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 22.51 dB at 5181.000 MHz

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

1.2 Manufacturer

FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Internet Gateway
Brand Name	FIH
Model Name	FWF100V5L
FCC ID	RYQFWF100V5L
IMEI Code	Conducted: 358835490000905/358835490003404 Radiation: 358835490000293
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n66 : 1710 MHz ~ 1755MHz 5G NR n77: 3700 MHz ~ 3980 MHz
Rx Frequency	5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n66 : 2110 MHz~ 2155 MHz 5G NR n77: 3700 MHz ~ 3980 MHz
SCS	15kHz, 30kHz for n2/n5/n66/n77
Bandwidth	SCS15KHz: n2, n5: 5MHz / 10MHz / 15MHz / 20MHz n66: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n77: 10MHz / 15MHz / 20MHz / 40MHz / 50MHz SCS30KHz: n2, n5: 10MHz / 15MHz / 20MHz n66: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n77: 10MHz / 15MHz / 20MHz / 40MHz / 50MHz / 60MHz / 80MHz / 90MHz / 100MHz
Antenna Type	Monopole
Antenna Gain	n2: 0.19 dBi n5: 0.20 dBi <Ant. 0>n66: 0.97 dBi <Ant. 1>n66: -1.21 dBi <Ant. 1>n77: 0.85 dBi <Ant. 2>n77: 0.59 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.
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
3. 5G NR bands support SA mode and NSA mode. According to the maximum power between SA and NSA mode, SA covers NSA mode(5G NR n5/n66/n77), NSA covers SA mode(5G NR n2).
4. 5G NR n77 support UL MIMO mode, the MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain.
5. For n77 MIMO mode, the conducted BE/Spurious are tested at single antenna port and add 10*log(N_{ANT}) according to KDB 662911 D01.
6. The EN-DC mode combination could be referred to the product spec.
7. 5G NR n77 support MIMO Antenna Ant(1+2).
8. 5G NR n77 UL_MIMO mode only supports CP-OFDM Modulation.
9. 5G NR n2/5/66 SCS 15kHz covers SCS 30kHz according to the maximum power.
10. The device supports two PAs for 5G NR n66(main PA(Ant.1) for SA mode and other PA(Ant.0) for NSA mode).
11. 5G NR n2/5/66 NSA supports SCS15kHz only and 5G NR n77 NSA supports SCS30kHz only.
12. 5G NR n77 single carrier supports Power class 2 and UL_MIMO supports Power class 1.5.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power and Emission Designator

EN-DC_5A_n2A (15kHz)		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	1852.5 ~ 1907.5	0.2799	4M47G7D	0.2234	4M48W7D
10	1855.0 ~ 1905.0	0.2805	9M29G7D	0.2328	9M28W7D
15	1857.5 ~ 1902.5	0.2773	14M1G7D	0.2317	14M1W7D
20	1860.0 ~ 1900.0	0.3062	18M9G7D	0.2466	19M0W7D

5G NR n5(15kHz)		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	0.1545	4M48G7D	0.1222	4M48W7D
10	829.0 ~ 844.0	0.1556	9M30G7D	0.1236	9M33W7D
15	831.5 ~ 841.5	0.1549	14M1G7D	0.1205	14M1W7D
20	834.0 ~ 839.0	0.1603	18M9G7D	0.1274	19M0W7D

5G NR n66(15kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	1712.5 ~ 1752.5	0.1888	4M48G7D	0.1603	4M48W7D
10	1715.0 ~ 1750.0	0.1866	9M27G7D	0.1567	9M30W7D
15	1717.5 ~ 1747.5	0.2133	14M1G7D	0.1585	14M1W7D
20	1720.0 ~ 1745.0	0.2143	18M9G7D	0.1629	19M0W7D
25	1722.5 ~ 1742.5	0.1897	23M7G7D	0.1660	23M7W7D
30	1725.0 ~ 1740.0	0.1995	28M6G7D	0.1702	28M6W7D
40	1730.0 ~ 1735.0	0.2275	38M6G7D	0.1841	38M6W7D

EN-DC_2A_n66A (15kHz)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	1712.5 ~ 1752.5	0.3243	4M47G7D	0.2786	4M46W7D
10	1715.0 ~ 1750.0	0.3266	9M28G7D	0.2793	9M29W7D
15	1717.5 ~ 1747.5	0.3258	14M1G7D	0.2512	14M1W7D
20	1720.0 ~ 1745.0	0.3126	18M9G7D	0.2588	18M9W7D
25	1722.5 ~ 1742.5	0.3133	23M6G7D	0.2624	23M7W7D
30	1725.0 ~ 1740.0	0.3148	28M6G7D	0.2541	28M6W7D
40	1730.0 ~ 1735.0	0.3532	38M6G7D	0.2904	38M6W7D

5G NR n77_Ant.1(15kHz)		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	0.6026	9M29G7D	0.4634	9M31W7D
15	3707.505 ~ 3972.495	0.5929	14M1G7D	0.4519	14M1W7D
20	3710.01 ~ 3969.99	0.6053	18M9G7D	0.4624	19M0W7D
40	3720.00 ~ 3960.00	0.6053	38M6G7D	0.4656	38M5W7D
50	3725.01 ~ 3954.99	0.6516	48M2G7D	0.4842	48M3W7D

5G NR n77_UL MIMO(15kHz)		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	0.7534	9M29G7D	0.6486	9M28W7D
15	3707.505 ~ 3972.495	0.7516	14M1G7D	0.6668	14M1W7D
20	3710.01 ~ 3969.99	0.7413	18M9G7D	0.6982	19M0W7D
40	3720.00 ~ 3960.00	0.7551	38M6G7D	0.6761	38M5W7D
50	3725.01 ~ 3954.99	0.7674	48M2G7D	0.6823	48M3W7D

5G NR n77_Ant.1(30kHz)		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	0.5943	8M59G7D	0.4508	8M59W7D
15	3707.52 ~ 3972.48	0.5848	13M6G7D	0.4416	13M6W7D
20	3710.01 ~ 3969.99	0.5861	18M2G7D	0.4477	18M2W7D
40	3720.00 ~ 3960.00	0.6012	37M8G7D	0.4645	37M9W7D
50	3725.01 ~ 3954.99	0.5916	47M5G7D	0.4539	47M5W7D
60	3730.02 ~ 3949.98	0.5636	57M9G7D	0.4487	57M9W7D
80	3740.01 ~ 3939.99	0.5675	77M4G7D	0.4375	77M5W7D
90	3745.02 ~ 3934.98	0.5636	87M5G7D	0.4416	87M6W7D
100	3750.00 ~ 3930.00	0.6095	97M4G7D	0.4732	97M6W7D

5G NR n77_UL MIMO(30kHz)		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	0.7178	8M57G7D	0.6012	8M60W7D
15	3707.52 ~ 3972.48	0.7161	13M6G7D	0.6067	13M6W7D
20	3710.01 ~ 3969.99	0.7112	18M2G7D	0.6166	18M3W7D
40	3720.00 ~ 3960.00	0.7194	37M9G7D	0.6339	37M9W7D
50	3725.01 ~ 3954.99	0.7079	47M6G7D	0.6353	47M6W7D
60	3730.02 ~ 3949.98	0.6902	57M9G7D	0.6095	57M9W7D
80	3740.01 ~ 3939.99	0.6714	77M5G7D	0.6223	7765W7D
90	3745.02 ~ 3934.98	0.6839	87M5G7D	0.6353	87M3W7D
100	3750.00 ~ 3930.00	0.7430	97M4G7D	0.6295	97M5W7D

Note: All modulations have been tested, and 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 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-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: Conducted test results in section 3 of this report.

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24al

1.9 Applicable Standards

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

- 47 CFR Part 2, 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.

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 plane) were recorded in this report.

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

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

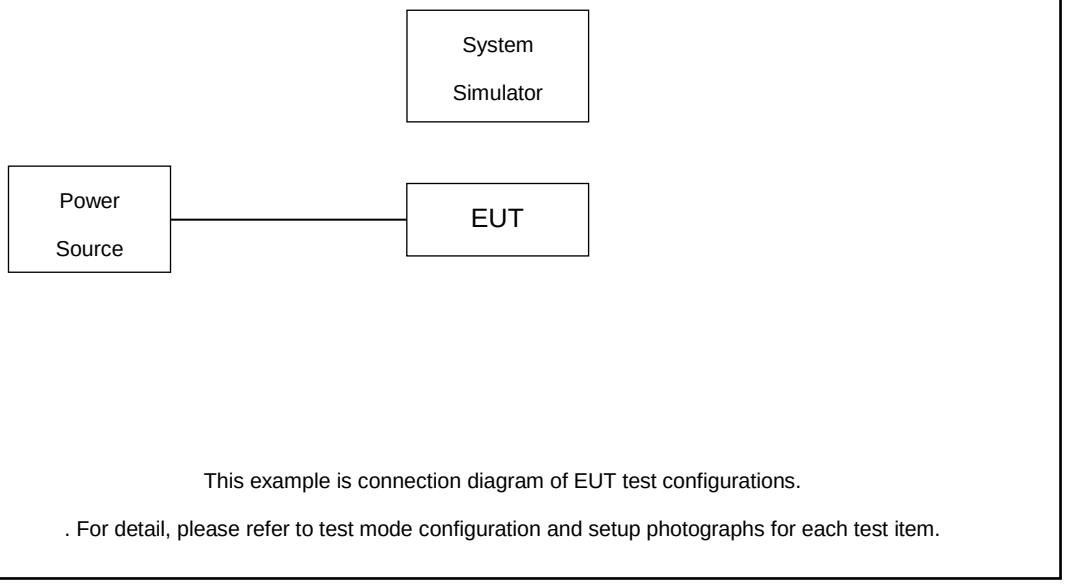
Test Items	5G NR	Bandwidth (MHz)												Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n2	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n77	-	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n2				v	-	-	-	-	-	-	-	-		v				v	v	v	v	v
	n5				v	-	-	-	-	-	-	-	-		v				v	v	v	v	v
	n66				v				-	-	-	-	-		v				v	v	v	v	v
	n77	-			v	-	-	-							v				v	v	v	v	v
26dB and 99% Bandwidth	n2	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v		v		v	
	n5	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v		v		v	
	n66	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v		v		v	
	n77	-	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v		v		v	
Conducted Band Edge	n2	v	v		v	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n5	v			v	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n66	v			v			v	-	-	-	-	-	v	v				v	v	v		v
	n77	-	v		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	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Full	L	M	H
Conducted Spurious Emission	n2	v	v		v	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n5	v	v		v	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n66	v			v			v	-	-	-	-	-	v	v				v		v	v	v
	n77	-	v		v	-	-		v				v	v	v				v		v	v	v
Frequency Stability	n2				v	-	-	-	-	-	-	-	-		v					v		v	
	n5				v	-	-	-	-	-	-	-	-		v					v		v	
	n66				v				-	-	-	-	-		v					v		v	
	n77	-			v	-	-	-							v					v		v	
E.R.P / E.I.R.P	n2	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n77	-	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n2	Worst Case																				v	
	n5	Worst Case																				v	
	n66	Worst Case																				v	
	n77	Worst Case																				v	

Note

1. The mark "**v** " means that this configuration is chosen for testing
2. The mark "-" means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
4. Frequency Stability：Normal Voltage = 12.0V ；Low Voltage =11.4V.；High Voltage =12.6V
5. Test mode include SCS15KHz/30kHz test configuration could refer to Appendix A for details.

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 between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 8.10 dB.

Example :

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

= 8.10 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	372000	376000	380000
	Frequency	1860	1880	1900
15	Channel	371500	376000	380500
	Frequency	1857.5	1880	1902.5
10	Channel	371000	376000	381000
	Frequency	1855	1880	1905
5	Channel	370500	376000	381500
	Frequency	1852.5	1880	1907.5

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 n66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	346000	346500	347000
	Frequency	1730	1732.5	17635
30	Channel	345000	346500	348000
	Frequency	1725	1732.5	1740
25	Channel	344500	346500	348500
	Frequency	1722.5	1732.5	1742.5
20	Channel	344000	346500	349000
	Frequency	1720	1732.5	1745
15	Channel	343500	346500	349500
	Frequency	1717.5	1732.5	1747.5
10	Channel	343000	346500	350000
	Frequency	1715	1732.5	1750
5	Channel	342500	346500	350500
	Frequency	1712.5	1732.5	1752.5

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

5G n77 Channel and Frequency List(30kHz)				
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
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

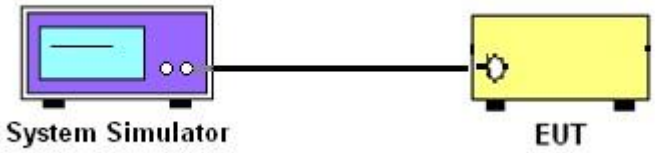
3 Conducted Test Items

3.1 Measuring Instruments

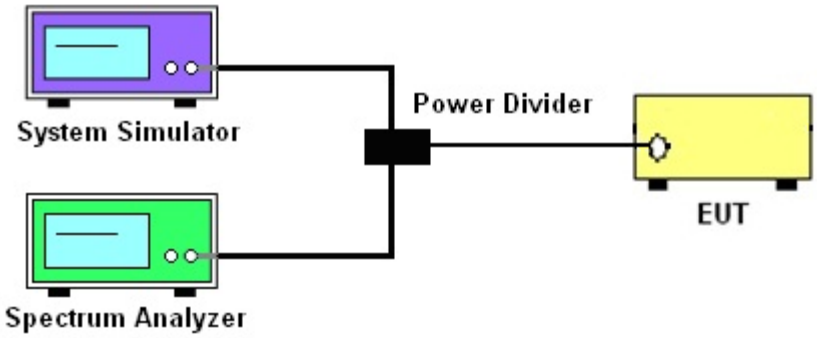
See list of measuring instruments of this test report.

3.2 Test Setup

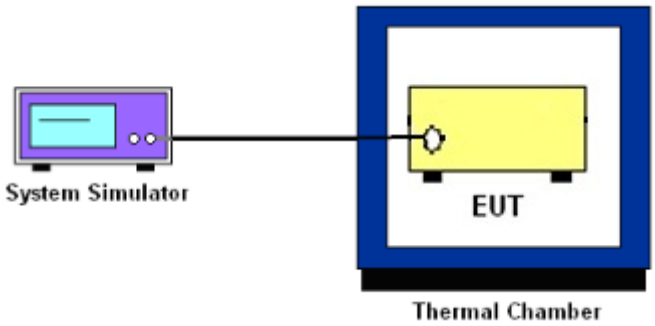
3.2.1 Conducted Output Power



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 n2.

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n66

The EIRP of fixed transmitters must not exceed 1640 Watts for 5G NR n77

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.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the 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 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53(l)(2)

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

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used (generally limited to no less than 1% of the OBW) and the measured power was integrated over the full required measurement bandwidth.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

   Example:

   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

   = P(W)- [43 + 10log(P)] (dB)

   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. 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.

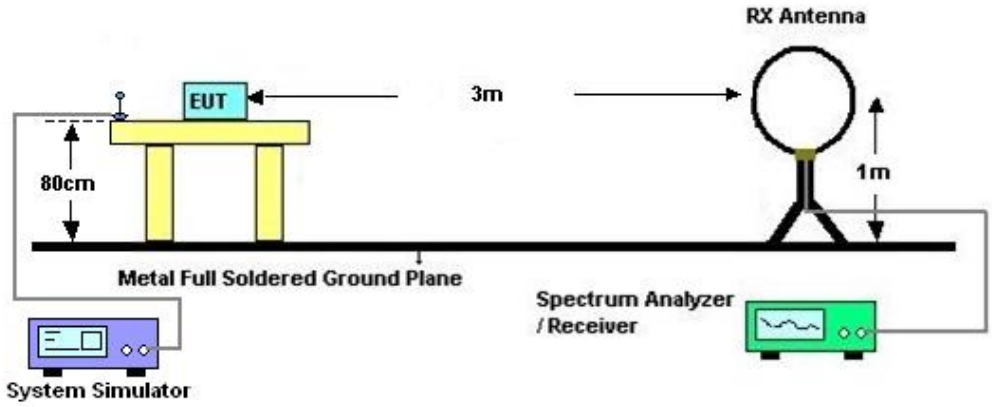
4 Radiated Test Items

4.1 Measuring Instruments

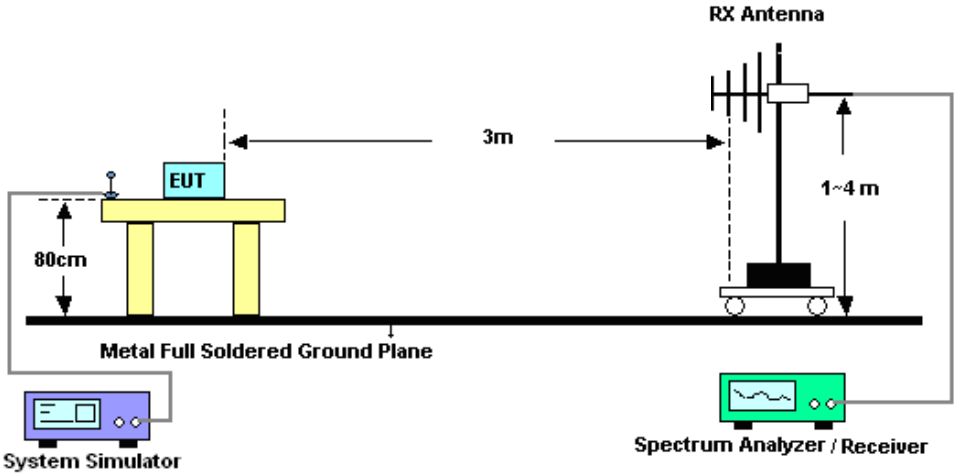
See list of measuring instruments of this test report.

4.2 Test Setup

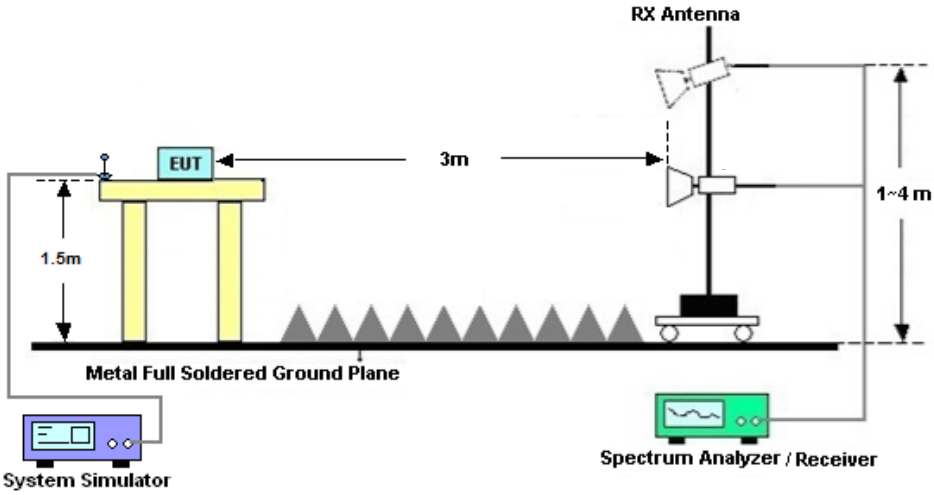
4.2.1 For radiated test below 30MHz



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.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2021	Aug. 12, 2022~ Dec. 30, 2022	Dec. 26, 2022	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 26, 2022		Dec. 25, 2023	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2021	Aug. 12, 2022~ Dec. 30, 2022	Dec. 24, 2022	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 24, 2022		Dec. 23, 2023	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 07, 2022	Aug. 12, 2022~ Dec. 30, 2022	Jul. 06, 2023	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 13, 2021	Aug. 15, 2022~ Nov. 02, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022		Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Aug. 15, 2022~ Nov. 02, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 29, 2022		Oct. 28, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Aug. 15, 2022~ Nov. 02, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Aug. 15, 2022~ Nov. 02, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Aug. 15, 2022~ Nov. 02, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Aug. 15, 2022~ Nov. 02, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2022	Aug. 15, 2022~ Nov. 02, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 13, 2021	Aug. 15, 2022~ Nov. 02, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 12, 2022		Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 13, 2021	Aug. 15, 2022~ Nov. 02, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022		Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 15, 2022~ Nov. 02, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 15, 2022~ Nov. 02, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 15, 2022~ Nov. 02, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Power	±1.34 dB
Conducted Emissions	±1.34 dB
Occupied Channel Bandwidth	±0.13 %

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.3dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.8dB

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Jung Kuo	**Temperature :**	22~23℃
		Relative Humidity :	40~42%

Software Version: 22.02.071401

FR1 N2

LTE Band: 5, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power and EIRP, (G_T - L_C)=0.19dBi

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@1	23.52	23.71	0.2350
2	15	5	386500	1852.5	DFT-s-OFDM 16 QAM	1@1	22.74	22.93	0.1963
2	15	5	392000	1880	DFT-s-OFDM QPSK	1@1	23.91	24.1	0.2570
2	15	5	392000	1880	DFT-s-OFDM 16 QAM	1@1	23.07	23.26	0.2118
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	1@1	24.28	24.47	0.2799
2	15	5	397500	1907.5	DFT-s-OFDM 16 QAM	1@1	23.3	23.49	0.2234
2	15	10	387000	1855	DFT-s-OFDM QPSK	1@1	23.98	24.17	0.2612
2	15	10	387000	1855	DFT-s-OFDM 16 QAM	1@1	23.21	23.4	0.2188
2	15	10	392000	1880	DFT-s-OFDM QPSK	1@1	24.29	24.48	0.2805
2	15	10	392000	1880	DFT-s-OFDM 16 QAM	1@1	23.48	23.67	0.2328
2	15	10	397000	1905	DFT-s-OFDM QPSK	1@1	24.18	24.37	0.2735
2	15	10	397000	1905	DFT-s-OFDM 16 QAM	1@1	23.35	23.54	0.2259
2	15	15	387500	1857.5	DFT-s-OFDM QPSK	1@1	23.99	24.18	0.2618
2	15	15	387500	1857.5	DFT-s-OFDM 16 QAM	1@1	23.21	23.4	0.2188
2	15	15	392000	1880	DFT-s-OFDM QPSK	1@1	24.24	24.43	0.2773
2	15	15	392000	1880	DFT-s-OFDM 16 QAM	1@1	23.46	23.65	0.2317
2	15	15	396500	1902.5	DFT-s-OFDM QPSK	1@1	24.09	24.28	0.2679
2	15	15	396500	1902.5	DFT-s-OFDM 16 QAM	1@1	23.36	23.55	0.2265
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	50@25	24.25	24.44	0.2780
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	1@1	24.07	24.26	0.2667
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	1@104	24.48	24.67	0.2931
2	15	20	388000	1860	DFT-s-OFDM QPSK	50@25	24.39	24.58	0.2871
2	15	20	388000	1860	DFT-s-OFDM QPSK	1@1	24.17	24.36	0.2729
2	15	20	388000	1860	DFT-s-OFDM QPSK	1@104	24.48	24.67	0.2931
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	50@25	23.53	23.72	0.2355
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	1@1	23.3	23.49	0.2234
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	1@104	23.66	23.85	0.2427
2	15	20	388000	1860	DFT-s-OFDM 64 QAM	50@25	21.98	22.17	0.1648
2	15	20	388000	1860	DFT-s-OFDM 64 QAM	1@1	21.79	21.98	0.1578
2	15	20	388000	1860	DFT-s-OFDM 64 QAM	1@104	22.2	22.39	0.1734
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	50@25	20.04	20.23	0.1054
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	1@1	20.1	20.29	0.1069
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	1@104	20.49	20.68	0.1169

2	15	20	388000	1860	CP-OFDM QPSK	53@26	23.02	23.21	0.2094
2	15	20	388000	1860	CP-OFDM QPSK	1@1	23.02	23.21	0.2094
2	15	20	388000	1860	CP-OFDM QPSK	1@104	23.35	23.54	0.2259
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	50@25	24.56	24.75	0.2985
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	1@1	24.43	24.62	0.2897
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	1@104	24.45	24.64	0.2911
2	15	20	392000	1880	DFT-s-OFDM QPSK	50@25	24.67	24.86	0.3062
2	15	20	392000	1880	DFT-s-OFDM QPSK	1@1	24.5	24.69	0.2944
2	15	20	392000	1880	DFT-s-OFDM QPSK	1@104	24.54	24.73	0.2972
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	50@25	23.73	23.92	0.2466
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	1@1	23.59	23.78	0.2388
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	1@104	23.52	23.71	0.2350
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	50@25	22.18	22.37	0.1726
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	1@1	22.1	22.29	0.1694
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	1@104	22	22.19	0.1656
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	50@25	20.23	20.42	0.1102
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	1@1	20.42	20.61	0.1151
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	1@104	20.49	20.68	0.1169
2	15	20	392000	1880	CP-OFDM QPSK	53@26	23.19	23.38	0.2178
2	15	20	392000	1880	CP-OFDM QPSK	1@1	22.86	23.05	0.2018
2	15	20	392000	1880	CP-OFDM QPSK	1@104	23.03	23.22	0.2099
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	50@25	24.49	24.68	0.2938
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	1@1	24.2	24.39	0.2748
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	1@104	24.26	24.45	0.2786
2	15	20	396000	1900	DFT-s-OFDM QPSK	50@25	24.56	24.75	0.2985
2	15	20	396000	1900	DFT-s-OFDM QPSK	1@1	23.98	24.17	0.2612
2	15	20	396000	1900	DFT-s-OFDM QPSK	1@104	24.34	24.53	0.2838
2	15	20	396000	1900	DFT-s-OFDM 16 QAM	50@25	23.65	23.84	0.2421
2	15	20	396000	1900	DFT-s-OFDM 16 QAM	1@1	23.1	23.29	0.2133
2	15	20	396000	1900	DFT-s-OFDM 16 QAM	1@104	23.47	23.66	0.2323
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	50@25	22.11	22.3	0.1698
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	1@1	21.72	21.91	0.1552
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	1@104	22.01	22.2	0.1660
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	50@25	20.15	20.34	0.1081
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	1@1	20.35	20.54	0.1132
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	1@104	20.64	20.83	0.1211
2	15	20	396000	1900	CP-OFDM QPSK	53@26	23.03	23.22	0.2099
2	15	20	396000	1900	CP-OFDM QPSK	1@1	22.7	22.89	0.1945
2	15	20	396000	1900	CP-OFDM QPSK	1@104	23.1	23.29	0.2133

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0068	**PASS**	NV
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0059	**PASS**	LV
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	HV
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0031	**PASS**	-30℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0061	**PASS**	-20℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0054	**PASS**	-10℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0058	**PASS**	0℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0040	**PASS**	10℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0068	**PASS**	20℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0048	**PASS**	30℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0058	**PASS**	40℃
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	0.0068	**PASS**	50℃

Peak to Average Radio

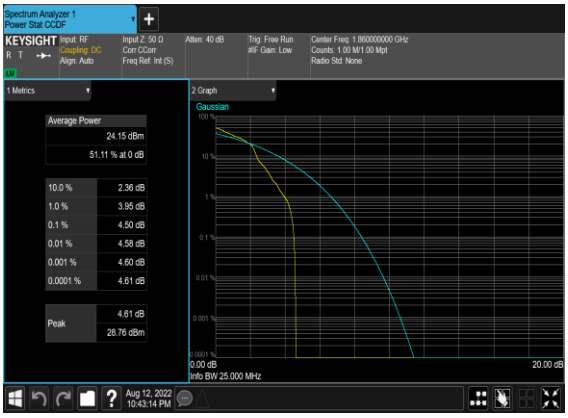
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
2	15	20	388000	1860.0	DFT-s-OFDM PI/2 BPSK	100@0	3.82	13	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM PI/2 BPSK	1@0	3.19	13	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	100@0	4.76	13	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	1@0	4.5	13	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM PI/2 BPSK	100@0	3.66	13	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM PI/2 BPSK	1@0	3.38	13	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	4.90	13	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	1@0	4.98	13	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM PI/2 BPSK	100@0	3.74	13	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM PI/2 BPSK	1@0	3.12	13	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	100@0	4.68	13	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	1@0	4.59	13	**PASS**

B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH

B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH

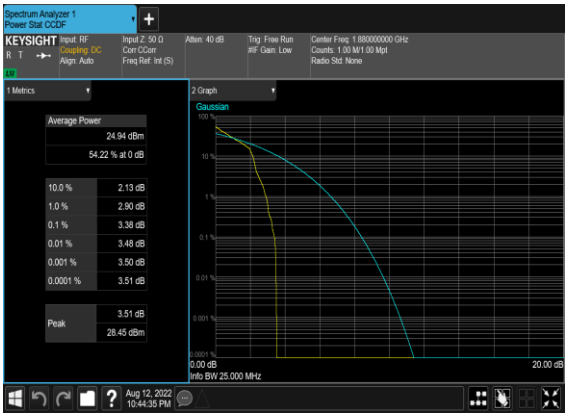
B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

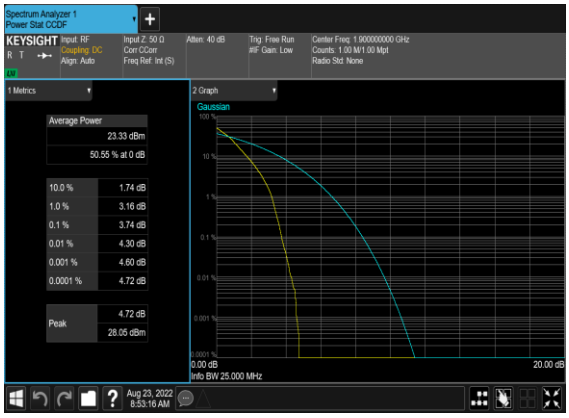
B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



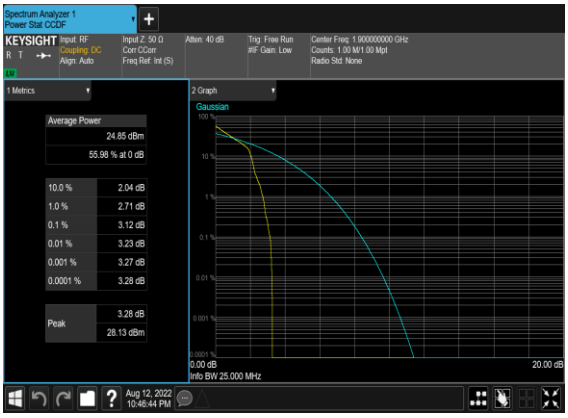
B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

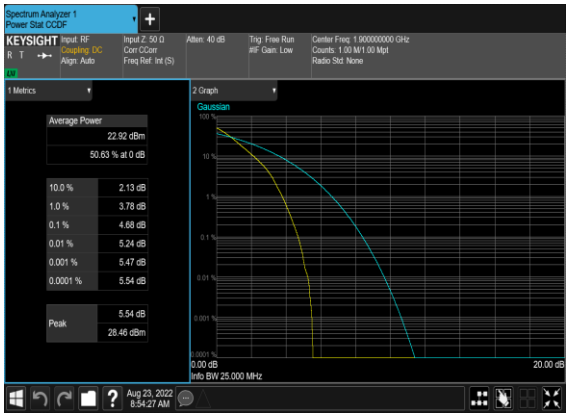
B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



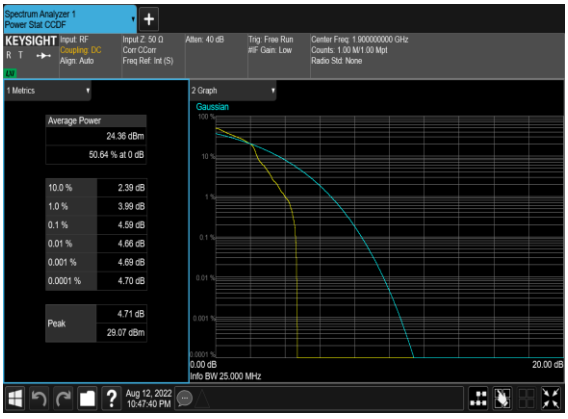
B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



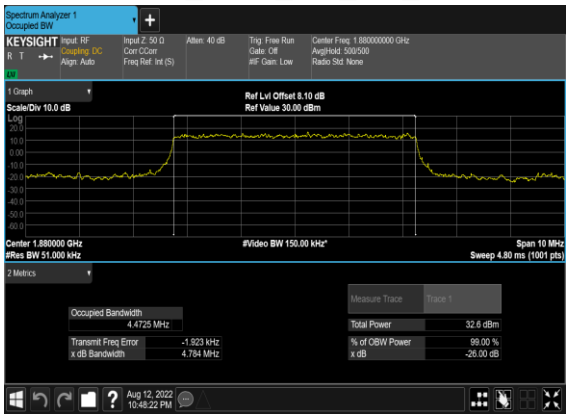
B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



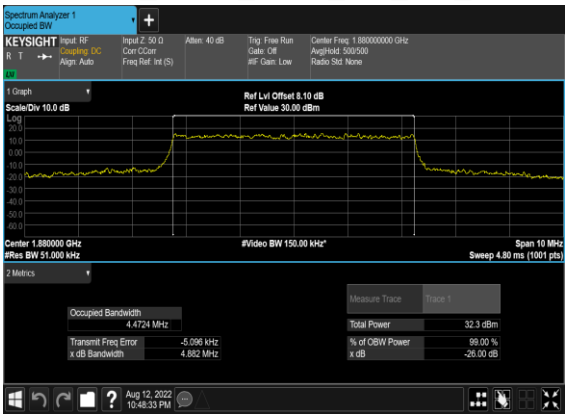
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
2	15	5	392000	1880.0	DFT-s-OFDM PI/2 BPSK	25@0	4.4725	4.784
2	15	5	392000	1880.0	DFT-s-OFDM QPSK	25@0	4.4724	4.882
2	15	5	392000	1880.0	CP-OFDM QPSK	25@0	4.4737	5.842
2	15	5	392000	1880.0	CP-OFDM 16 QAM	25@0	4.4697	4.944
2	15	5	392000	1880.0	CP-OFDM 64 QAM	25@0	4.4792	4.961
2	15	5	392000	1880.0	CP-OFDM 256 QAM	25@0	4.4697	4.837
2	15	10	392000	1880.0	DFT-s-OFDM PI/2 BPSK	50@0	8.9207	9.508
2	15	10	392000	1880.0	DFT-s-OFDM QPSK	50@0	8.9188	9.626
2	15	10	392000	1880.0	CP-OFDM QPSK	52@0	9.2942	9.971
2	15	10	392000	1880.0	CP-OFDM 16 QAM	52@0	9.2765	9.896
2	15	10	392000	1880.0	CP-OFDM 64 QAM	52@0	9.282	9.837
2	15	10	392000	1880.0	CP-OFDM 256 QAM	52@0	9.272	9.87
2	15	15	392000	1880.0	DFT-s-OFDM PI/2 BPSK	75@0	13.355	14.13
2	15	15	392000	1880.0	DFT-s-OFDM QPSK	75@0	13.396	14.13
2	15	15	392000	1880.0	CP-OFDM QPSK	79@0	14.093	14.78
2	15	15	392000	1880.0	CP-OFDM 16 QAM	79@0	14.124	14.75
2	15	15	392000	1880.0	CP-OFDM 64 QAM	79@0	14.109	14.76
2	15	15	392000	1880.0	CP-OFDM 256 QAM	79@0	14.091	14.73
2	15	20	392000	1880.0	DFT-s-OFDM PI/2 BPSK	100@0	17.851	18.89
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	100@0	17.893	19.0
2	15	20	392000	1880.0	CP-OFDM QPSK	106@0	18.91	19.97
2	15	20	392000	1880.0	CP-OFDM 16 QAM	106@0	18.861	19.9
2	15	20	392000	1880.0	CP-OFDM 64 QAM	106@0	18.954	19.92
2	15	20	392000	1880.0	CP-OFDM 256 QAM	106@0	18.877	19.89

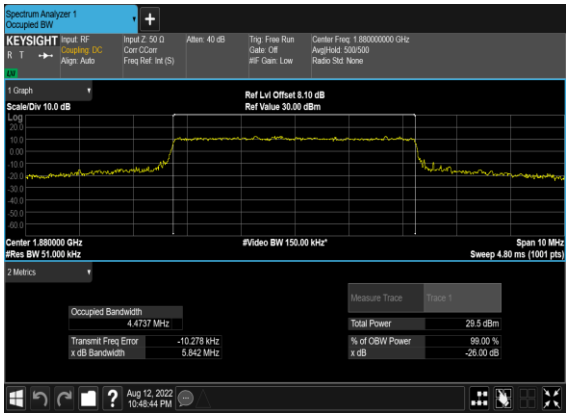
B5_N2(5M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



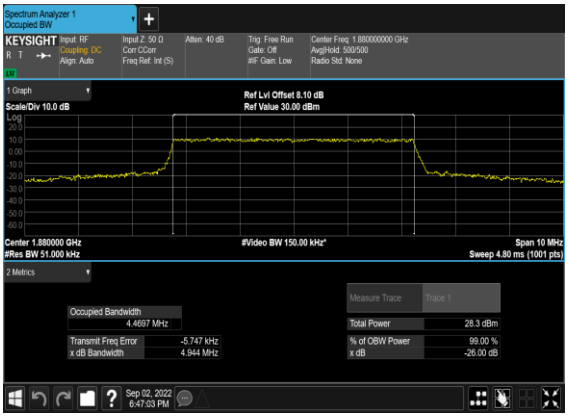
B5_N2(5M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



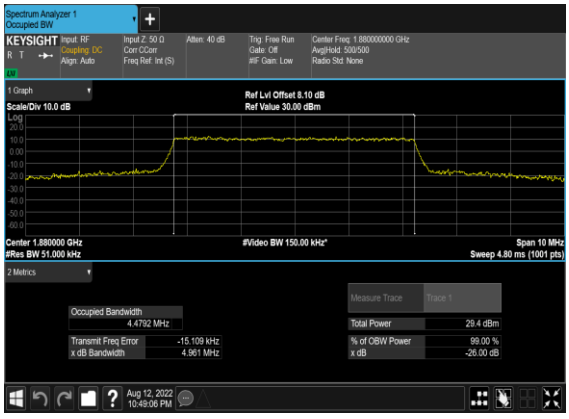
B5_N2(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N2(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



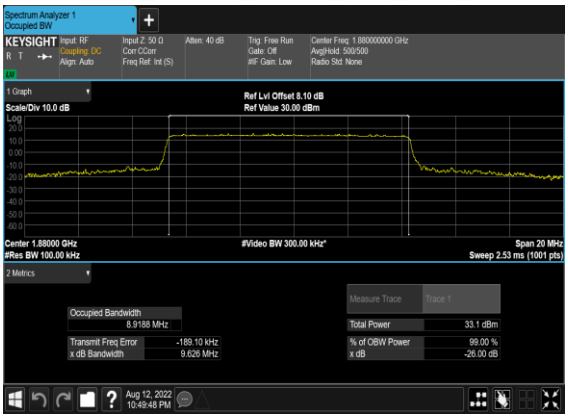
B5_N2(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



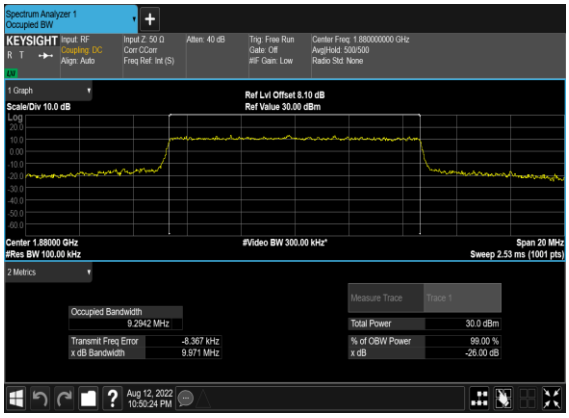
B5_N2(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

B5_N2(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

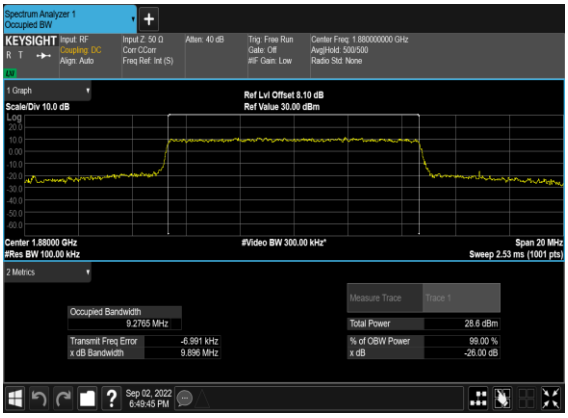
B5_N2(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



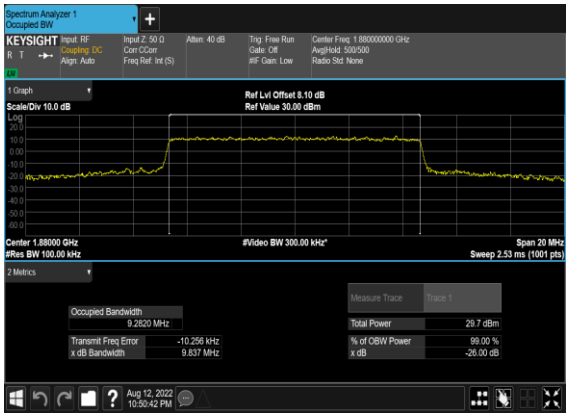
B5_N2(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



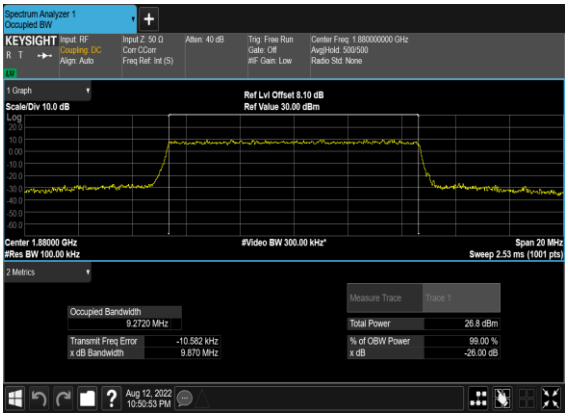
B5_N2(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B5_N2(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

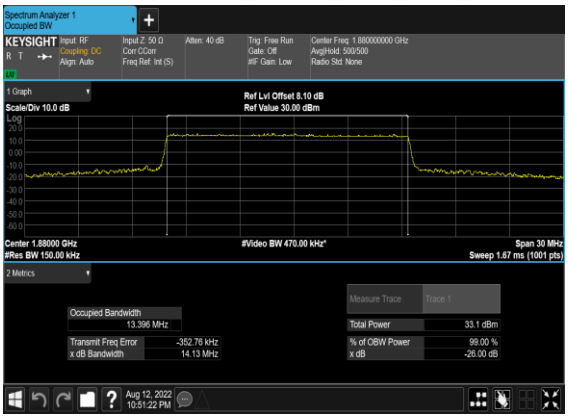


B5_N2(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

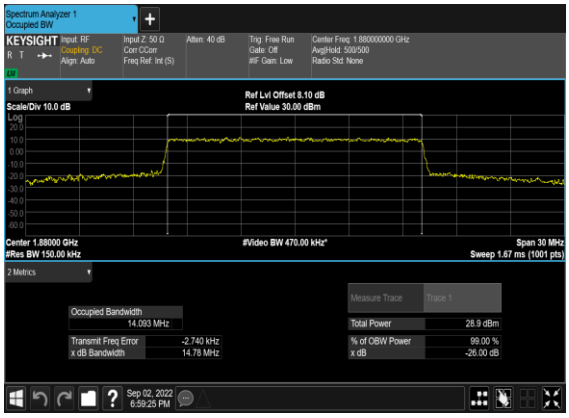


B5_N2(15M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

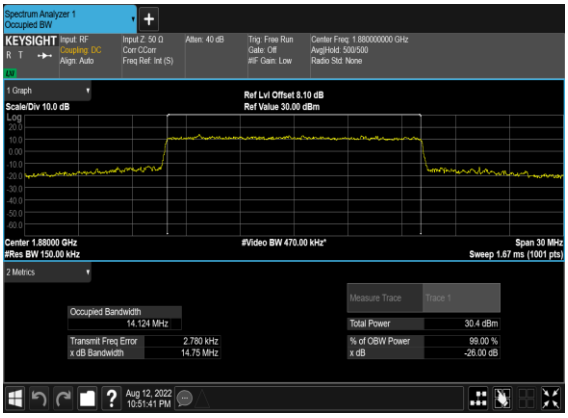
B5_N2(15M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



B5_N2(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



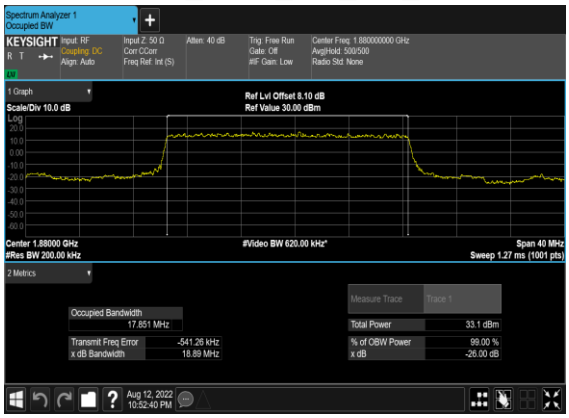
B5_N2(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



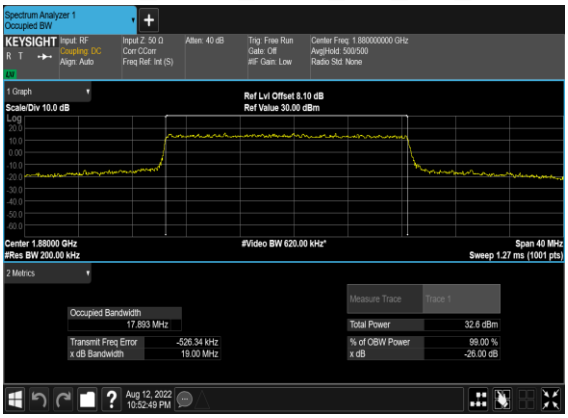
B5_N2(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

B5_N2(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

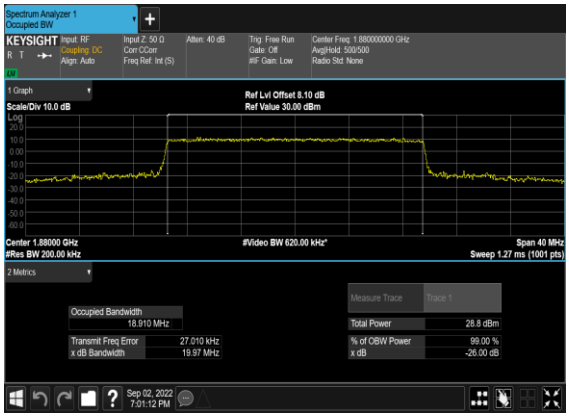
B5_N2(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



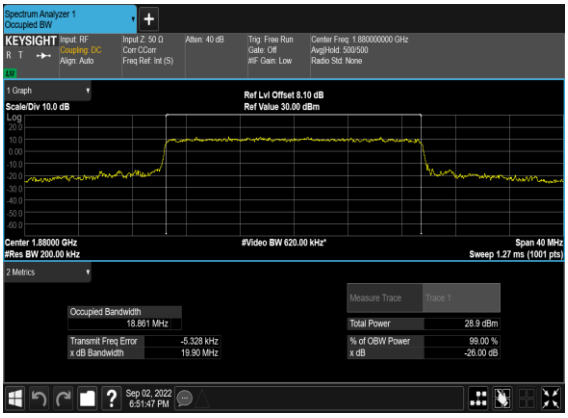
B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



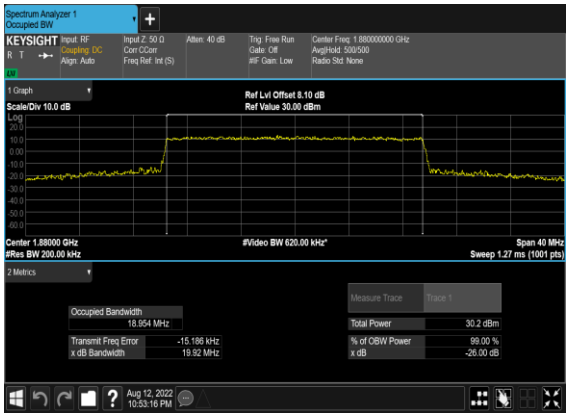
B5_N2(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



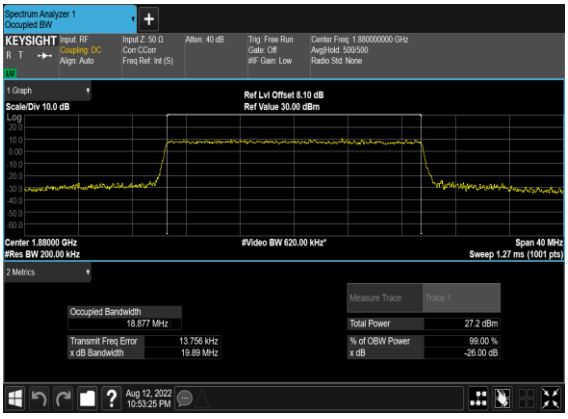
B5_N2(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B5_N2(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



B5_N2(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

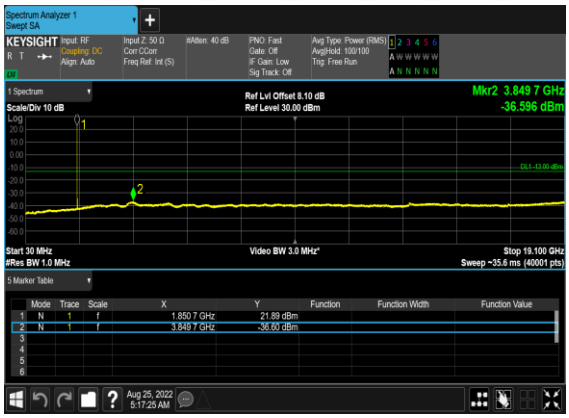


Conducted Spurious Emissions

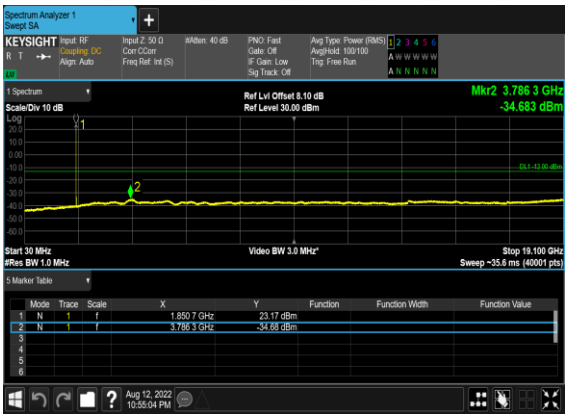
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
2	15	5	386500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	5	386500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	5	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	5	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	5	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	5	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	5	397500	1907.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	10	387000	1855.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	10	387000	1855.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	10	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	10	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	10	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	10	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	10	397000	1905.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	10	397000	1905.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

2	15	10	397000	1905.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	10	397000	1905.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	388000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	392000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	392000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	396000	1900.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

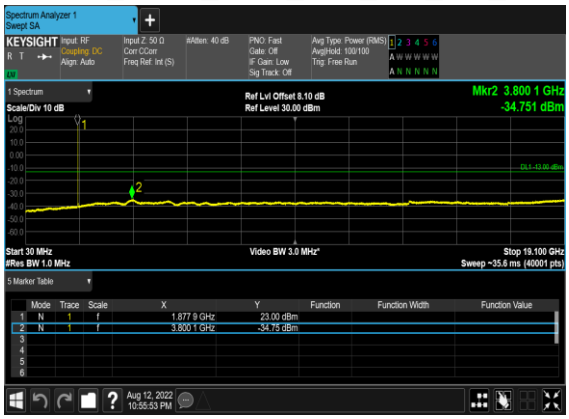
B5_N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



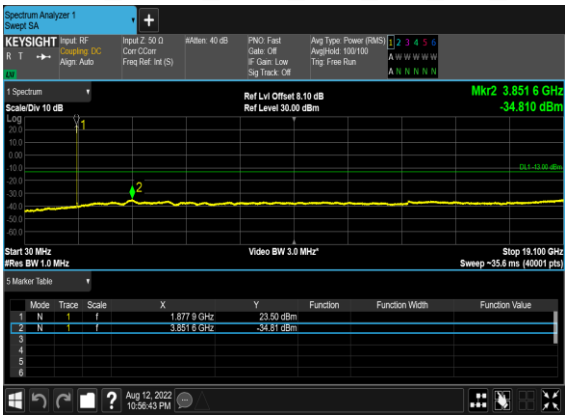
B5_N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



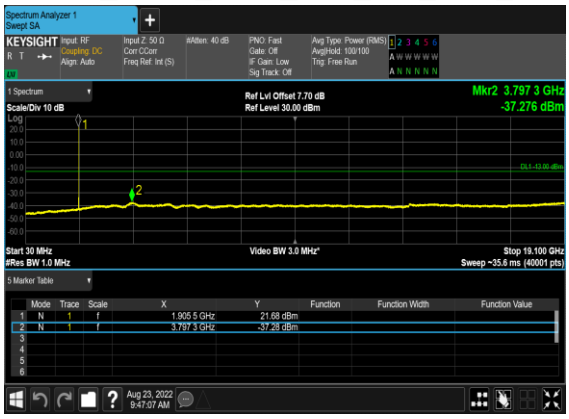
B5_N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



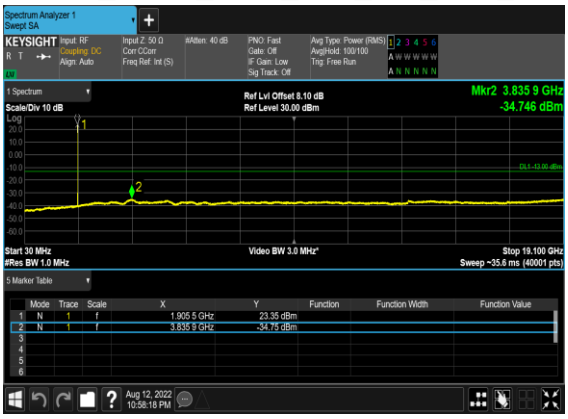
B5_N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



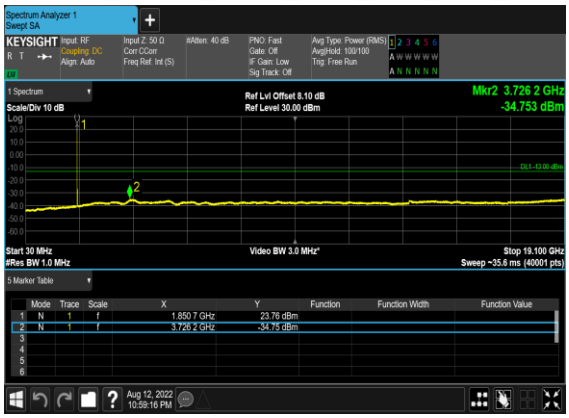
B5_N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



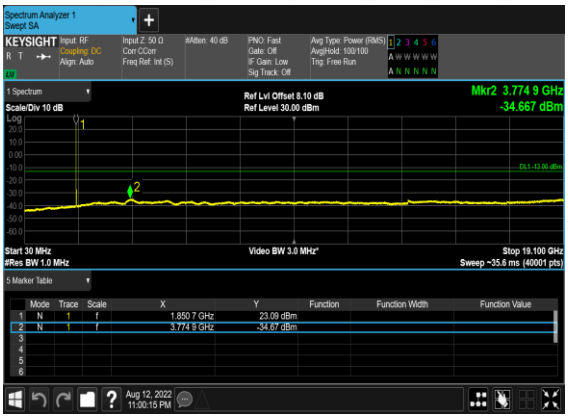
B5_N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



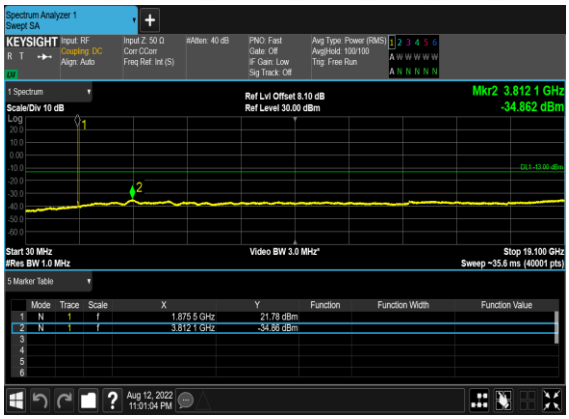
B5_N2(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



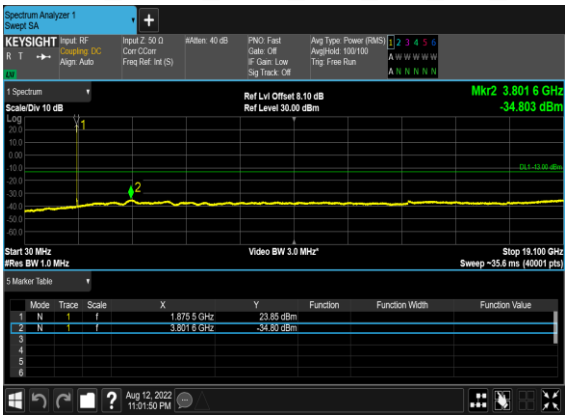
B5_N2(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



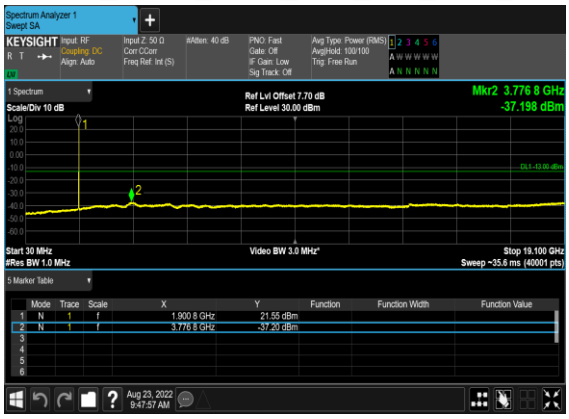
B5_N2(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



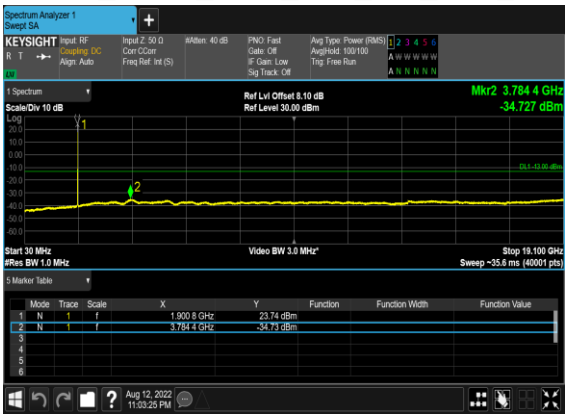
B5_N2(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



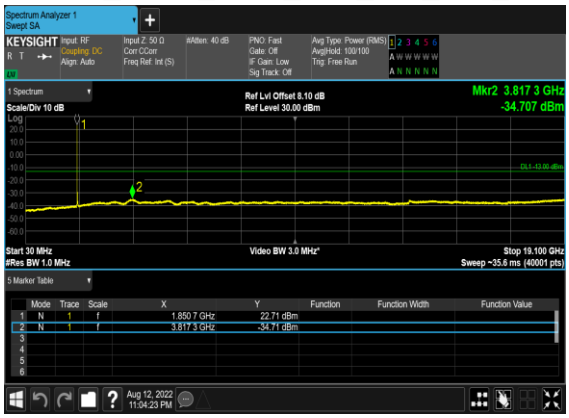
B5_N2(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



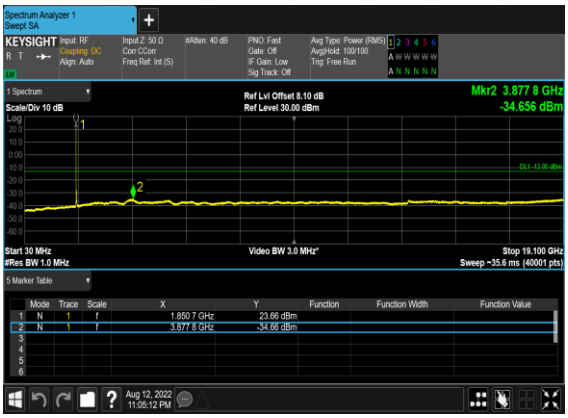
B5_N2(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



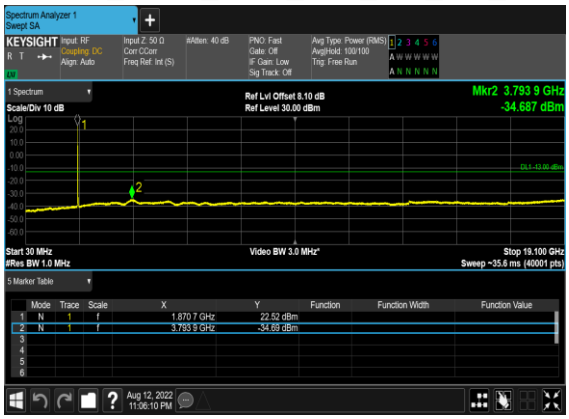
B5_N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



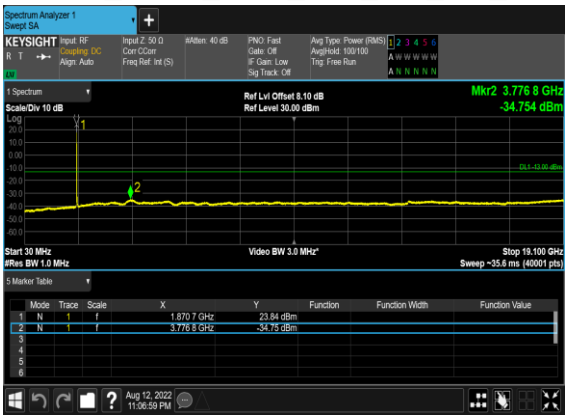
B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



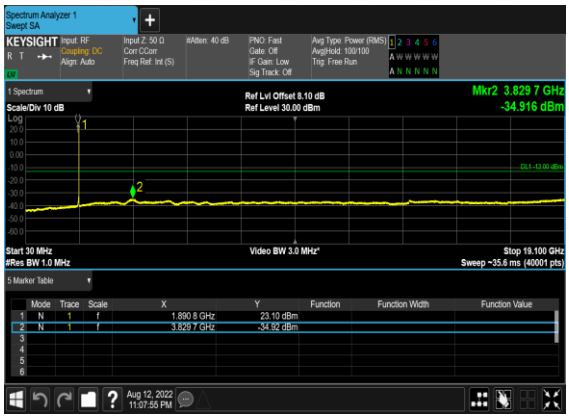
B5_N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



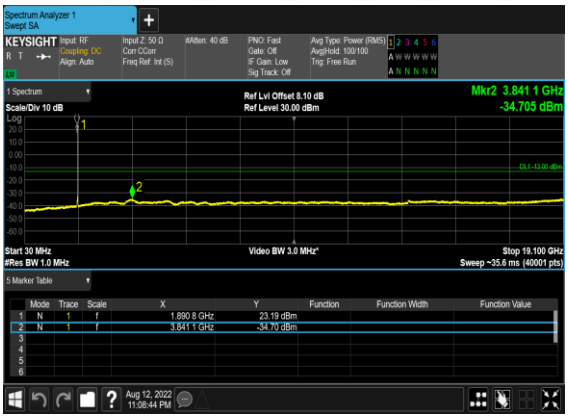
B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



B5_N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



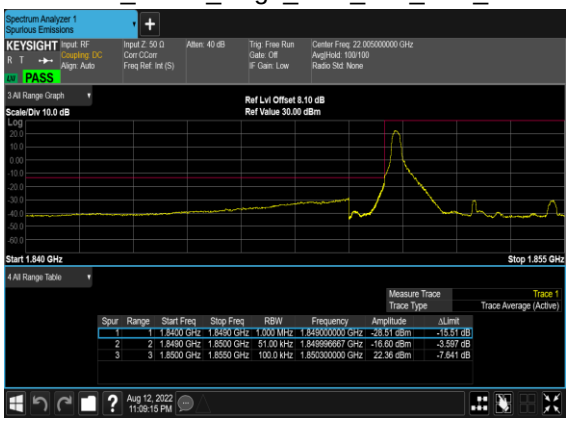
B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



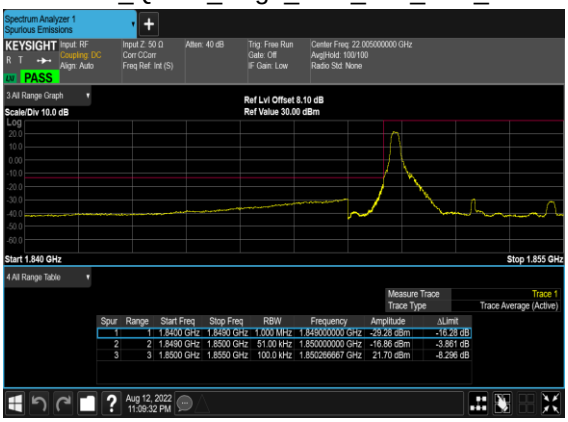
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
2	15	5	386500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	5	386500	1852.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
2	15	10	387000	1855.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
2	15	10	397000	1905.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
2	15	10	397000	1905.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
2	15	10	397000	1905.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
2	15	10	397000	1905.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
2	15	20	388000	1860.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
2	15	20	396000	1900.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**

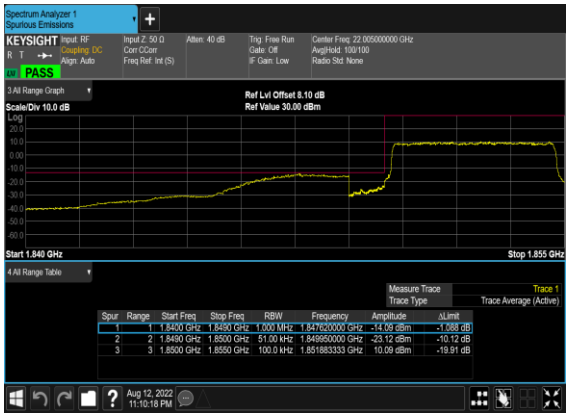
B5_N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



B5_N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

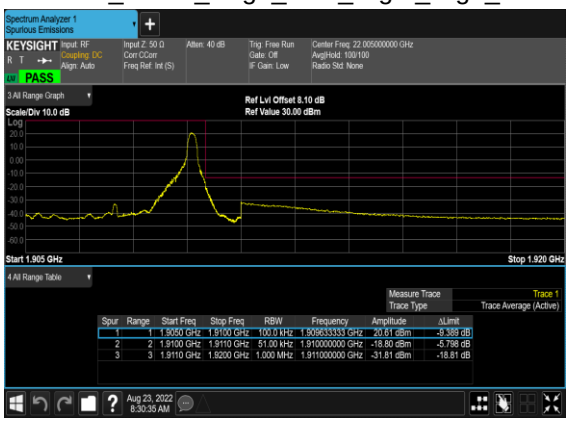


B5_N2(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

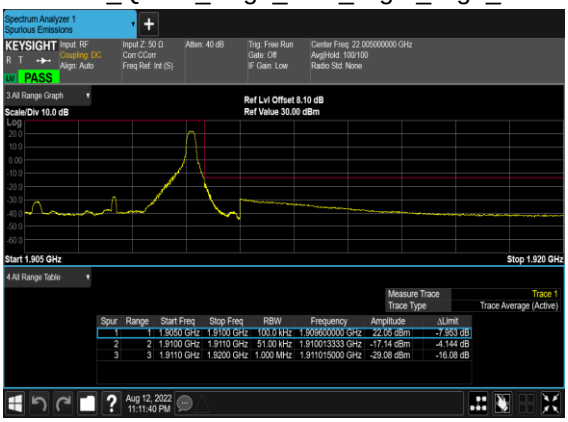


B5_N2(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

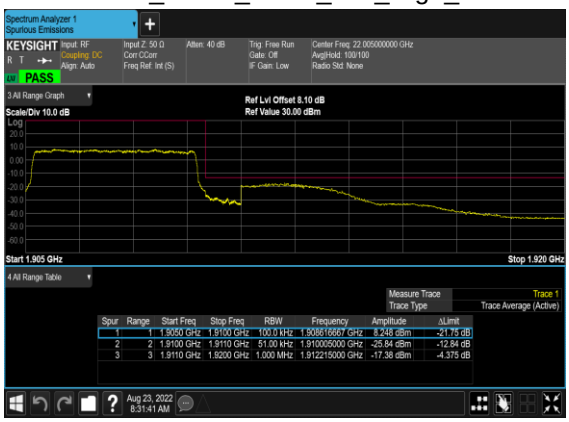
B5_N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



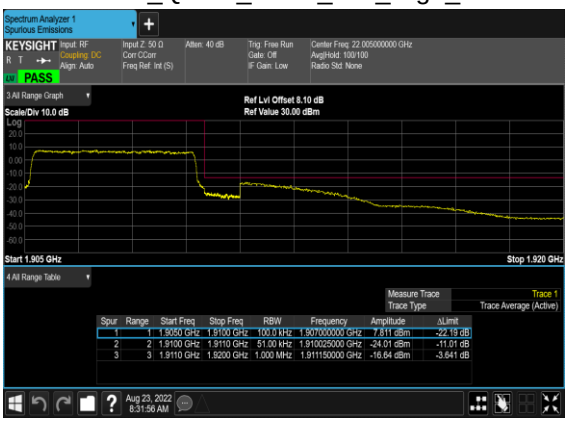
B5_N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



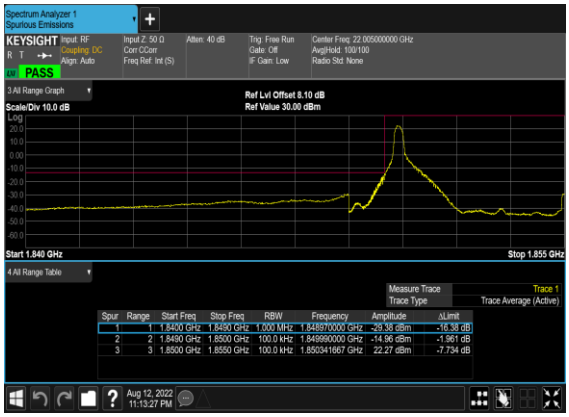
B5_N2(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



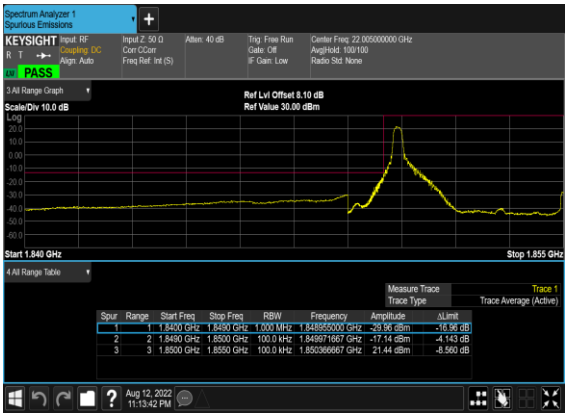
B5_N2(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



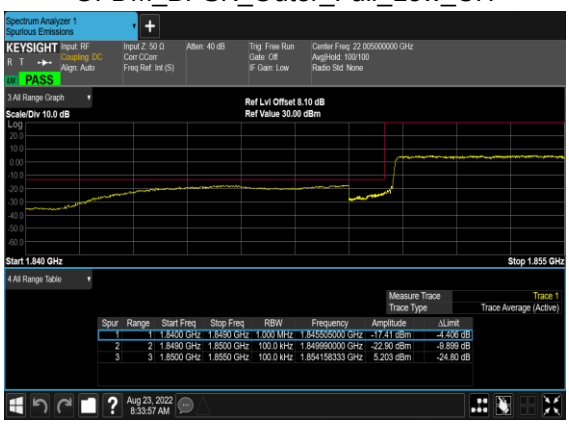
B5_N2(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



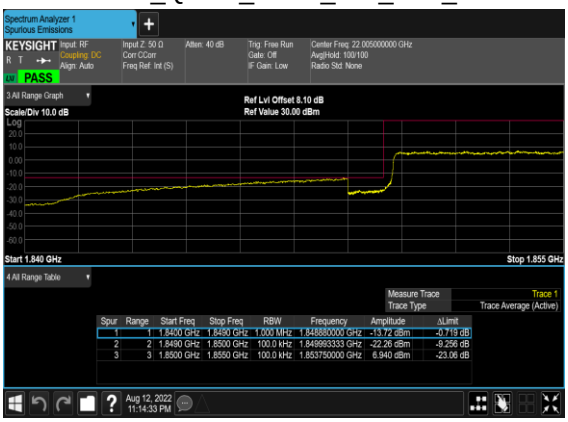
B5_N2(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



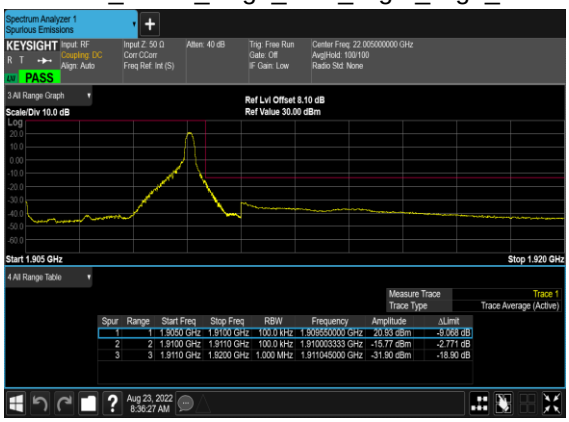
B5_N2(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



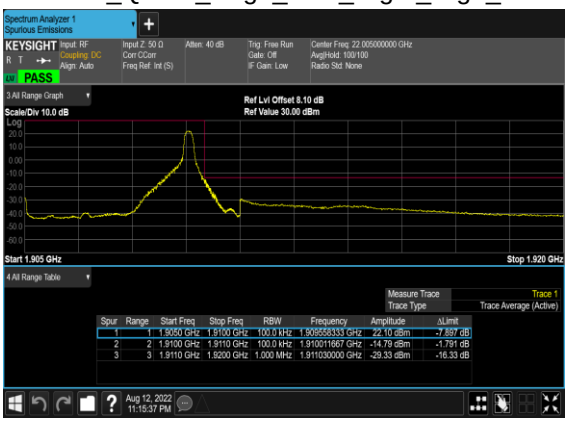
B5_N2(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



B5_N2(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

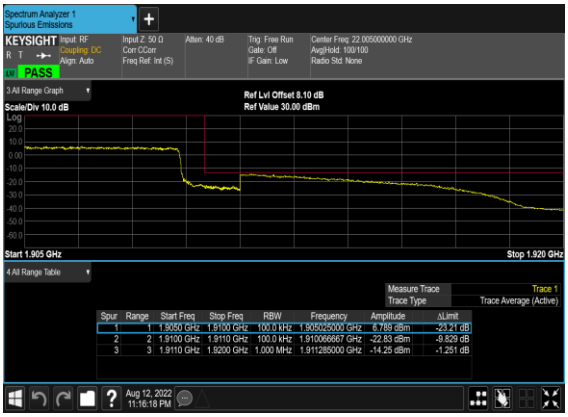


B5_N2(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

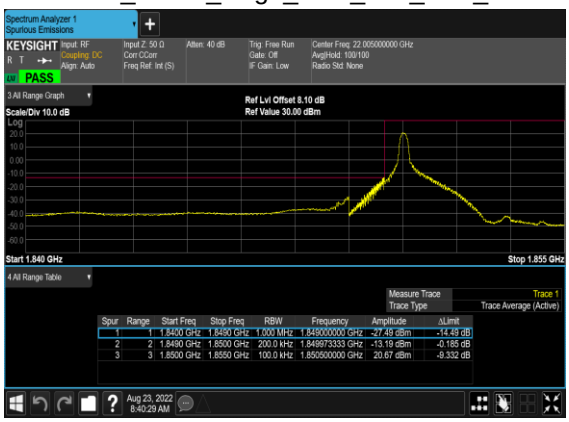


B5_N2(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

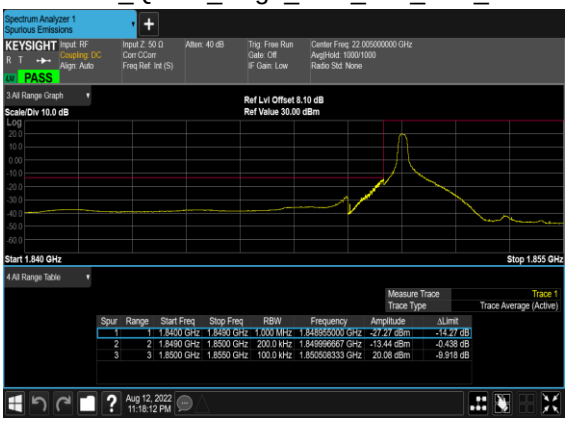
B5_N2(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



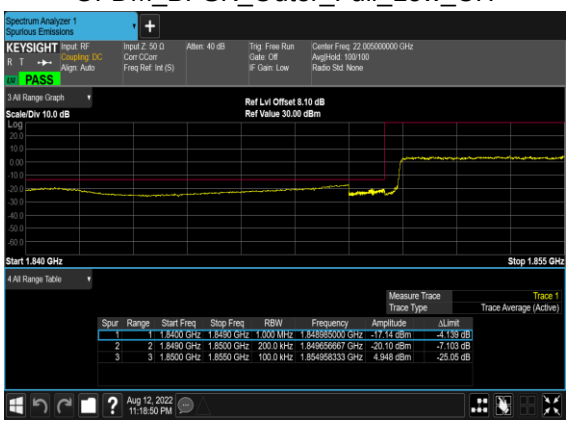
B5_N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



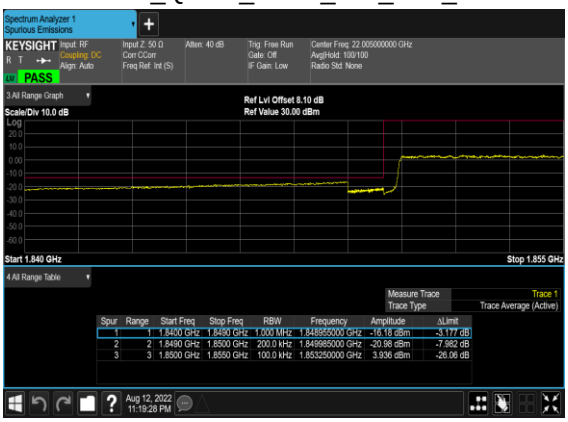
B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



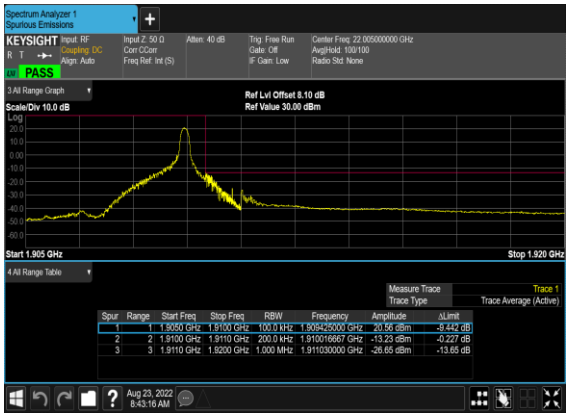
B5_N2(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



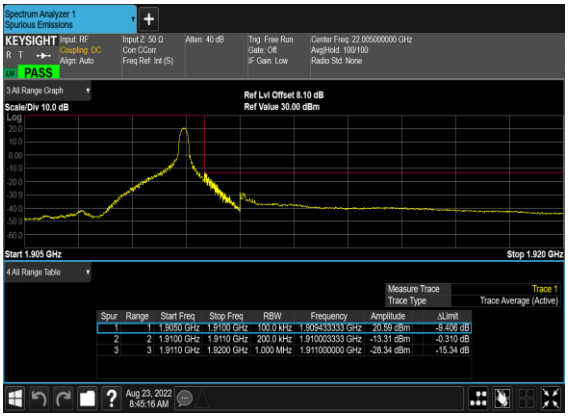
B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



B5_N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



B5_N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



B5_N2(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

B5_N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

Software Version: 22.02.041801

FR1 N5

Transmitter Conducted Output Power and ERP, (GT - LC)= 0.20dBi

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	ERP(dBm)	ERP(W)
5	15	5	174300	826.5	DFT-s-OFDM QPSK	1@1	23.59	21.64	0.1459
5	15	5	174300	826.5	DFT-s-OFDM 16 QAM	1@1	22.41	20.46	0.1112
5	15	5	176300	836.5	DFT-s-OFDM QPSK	1@1	23.84	21.89	0.1545
5	15	5	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.82	20.87	0.1222
5	15	5	178300	846.5	DFT-s-OFDM QPSK	1@1	23.68	21.73	0.1489
5	15	5	178300	846.5	DFT-s-OFDM 16 QAM	1@1	22.54	20.59	0.1146
5	15	10	174800	829	DFT-s-OFDM QPSK	1@1	23.61	21.66	0.1466
5	15	10	174800	829	DFT-s-OFDM 16 QAM	1@1	22.44	20.49	0.1119
5	15	10	176300	836.5	DFT-s-OFDM QPSK	1@1	23.8	21.85	0.1531
5	15	10	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.71	20.76	0.1191
5	15	10	177800	844	DFT-s-OFDM QPSK	1@1	23.87	21.92	0.1556
5	15	10	177800	844	DFT-s-OFDM 16 QAM	1@1	22.87	20.92	0.1236
5	15	15	175300	831.5	DFT-s-OFDM QPSK	1@1	23.59	21.64	0.1459
5	15	15	175300	831.5	DFT-s-OFDM 16 QAM	1@1	22.39	20.44	0.1107
5	15	15	176300	836.5	DFT-s-OFDM QPSK	1@1	23.67	21.72	0.1486
5	15	15	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.57	20.62	0.1153
5	15	15	177300	841.5	DFT-s-OFDM QPSK	1@1	23.85	21.9	0.1549
5	15	15	177300	841.5	DFT-s-OFDM 16 QAM	1@1	22.76	20.81	0.1205
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	50@25	23.76	21.81	0.1517
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	1@1	23.6	21.65	0.1462
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	1@104	23.84	21.89	0.1545
5	15	20	175800	834	DFT-s-OFDM QPSK	50@25	23.8	21.85	0.1531
5	15	20	175800	834	DFT-s-OFDM QPSK	1@1	23.64	21.69	0.1476
5	15	20	175800	834	DFT-s-OFDM QPSK	1@104	23.88	21.93	0.1560
5	15	20	175800	834	DFT-s-OFDM 16 QAM	50@25	22.86	20.91	0.1233
5	15	20	175800	834	DFT-s-OFDM 16 QAM	1@1	22.52	20.57	0.1140
5	15	20	175800	834	DFT-s-OFDM 16 QAM	1@104	22.75	20.8	0.1202
5	15	20	175800	834	DFT-s-OFDM 64 QAM	50@25	21.31	19.36	0.0863
5	15	20	175800	834	DFT-s-OFDM 64 QAM	1@1	21.22	19.27	0.0845

5	15	20	175800	834	DFT-s-OFDM 64 QAM	1@104	21.48	19.53	0.0897
5	15	20	175800	834	DFT-s-OFDM 256 QAM	50@25	19.34	17.39	0.0548
5	15	20	175800	834	DFT-s-OFDM 256 QAM	1@1	18.88	16.93	0.0493
5	15	20	175800	834	DFT-s-OFDM 256 QAM	1@104	19.14	17.19	0.0524
5	15	20	175800	834	CP-OFDM QPSK	53@26	22.29	20.34	0.1081
5	15	20	175800	834	CP-OFDM QPSK	1@1	22.32	20.37	0.1089
5	15	20	175800	834	CP-OFDM QPSK	1@104	22.55	20.6	0.1148
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	23.87	21.92	0.1556
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.67	21.72	0.1486
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	23.8	21.85	0.1531
5	15	20	176300	836.5	DFT-s-OFDM QPSK	50@25	23.89	21.94	0.1563
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@1	23.7	21.75	0.1496
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@104	23.92	21.97	0.1574
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	50@25	22.95	21	0.1259
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.55	20.6	0.1148
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	1@104	22.77	20.82	0.1208
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	50@25	21.41	19.46	0.0883
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	1@1	21.3	19.35	0.0861
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	1@104	21.47	19.52	0.0895
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	50@25	19.45	17.5	0.0562
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	1@1	18.98	17.03	0.0505
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	1@104	19.14	17.19	0.0524
5	15	20	176300	836.5	CP-OFDM QPSK	53@26	22.31	20.36	0.1086
5	15	20	176300	836.5	CP-OFDM QPSK	1@1	22.38	20.43	0.1104
5	15	20	176300	836.5	CP-OFDM QPSK	1@104	22.52	20.57	0.1140
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	50@25	23.86	21.91	0.1552
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	1@1	23.73	21.78	0.1507
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	1@104	23.76	21.81	0.1517
5	15	20	176800	839	DFT-s-OFDM QPSK	50@25	23.96	22.01	0.1589
5	15	20	176800	839	DFT-s-OFDM QPSK	1@1	23.82	21.87	0.1538
5	15	20	176800	839	DFT-s-OFDM QPSK	1@104	24	22.05	0.1603
5	15	20	176800	839	DFT-s-OFDM 16 QAM	50@25	23	21.05	0.1274
5	15	20	176800	839	DFT-s-OFDM 16 QAM	1@1	22.65	20.7	0.1175
5	15	20	176800	839	DFT-s-OFDM 16 QAM	1@104	22.88	20.93	0.1239
5	15	20	176800	839	DFT-s-OFDM 64 QAM	50@25	21.42	19.47	0.0885
5	15	20	176800	839	DFT-s-OFDM 64 QAM	1@1	21.35	19.4	0.0871
5	15	20	176800	839	DFT-s-OFDM 64 QAM	1@104	21.51	19.56	0.0904

5	15	20	176800	839	DFT-s-OFDM 256 QAM	50@25	19.45	17.5	0.0562
5	15	20	176800	839	DFT-s-OFDM 256 QAM	1@1	18.98	17.03	0.0505
5	15	20	176800	839	DFT-s-OFDM 256 QAM	1@104	19.11	17.16	0.0520
5	15	20	176800	839	CP-OFDM QPSK	53@26	22.35	20.4	0.1096
5	15	20	176800	839	CP-OFDM QPSK	1@1	22.47	20.52	0.1127
5	15	20	176800	839	CP-OFDM QPSK	1@104	22.69	20.74	0.1186

Frequency Stability

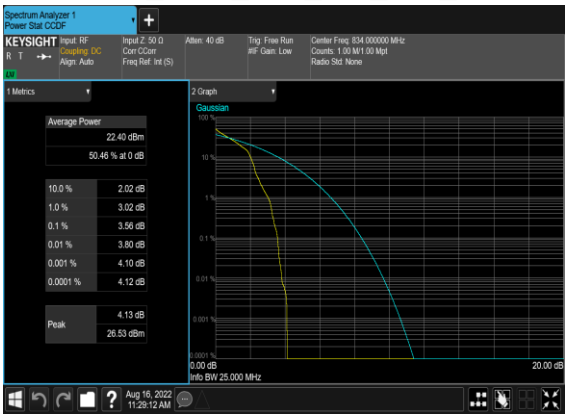
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0021	**PASS**	NV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0032	**PASS**	LV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0050	**PASS**	HV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0045	**PASS**	-30℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0031	**PASS**	-20℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0029	**PASS**	-10℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	0℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0022	**PASS**	10℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0021	**PASS**	20℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0051	**PASS**	30℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0062	**PASS**	40℃
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.0068	**PASS**	50℃

Peak to Average Radio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
5	15	20	175800	834.0	DFT-s-OFDM PI/2 BPSK	100@0	4.28	13	**PASS**
5	15	20	175800	834.0	DFT-s-OFDM PI/2 BPSK	1@0	3.56	13	**PASS**
5	15	20	175800	834.0	DFT-s-OFDM QPSK	100@0	5.11	13	**PASS**
5	15	20	175800	834.0	DFT-s-OFDM QPSK	1@0	5.04	13	**PASS**
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	4.35	13	**PASS**
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@0	3.66	13	**PASS**
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	5.23	13	**PASS**
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@0	5.06	13	**PASS**
5	15	20	176800	839.0	DFT-s-OFDM PI/2 BPSK	100@0	4.27	13	**PASS**
5	15	20	176800	839.0	DFT-s-OFDM PI/2 BPSK	1@0	3.51	13	**PASS**
5	15	20	176800	839.0	DFT-s-OFDM QPSK	100@0	5.19	13	**PASS**
5	15	20	176800	839.0	DFT-s-OFDM QPSK	1@0	4.84	13	**PASS**

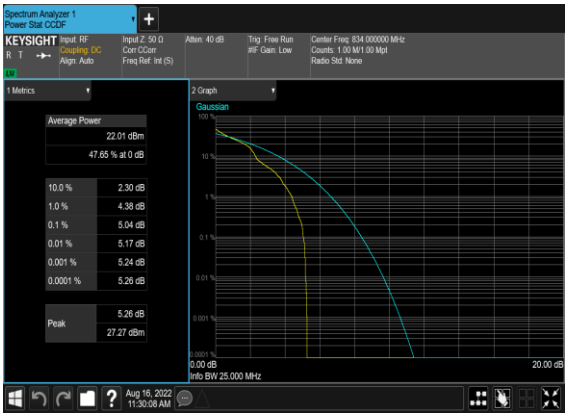
N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH

N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH

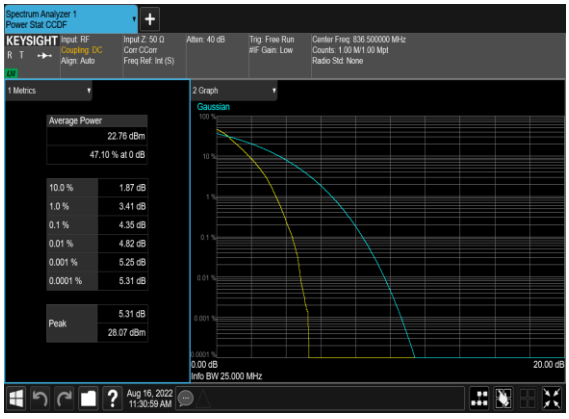


N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH