FCC RF Test Report

APPLICANT	:	OnePlus Technology (Shenzhen) Co., Ltd.
EQUIPMENT	:	Mobile Phone
BRAND NAME	:	ONEPLUS, 1+
MODEL NAME	:	CPH2655
FCC ID	:	2ABZ2-OP23895
STANDARD	:	47 CFR Part 22, 24, 27
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	:	Aug. 01, 2024 ~ Aug. 06, 2024

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.01

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People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY **3**

SUMMARY OF TEST RESULT **4**

1 GENERAL DESCRIPTION **5**

1.1 Applicant 5
1.2 Manufacturer 5
1.3 Product Feature of Equipment Under Test 5
1.4 Product Specification of Equipment Under Test 5
1.5 Modification of EUT 6
1.6 Maximum ERP/EIRP and Emission Designator 7
1.7 Testing Location 9
1.8 Test Software 9
1.9 Applicable Standards 9

2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST **10**

2.1 Test Mode 10
2.2 Connection Diagram of Test System 12
2.3 Support Unit used in test configuration and system 12
2.4 Measurement Results Explanation Example 13
2.5 Frequency List of Low/Middle/High Channels 13

3 CONDUCTED TEST ITEMS **17**

3.1 Measuring Instruments 17
3.2 Test Setup 17
3.3 Test Result of Conducted Test 17
3.4 Conducted Output Power and ERP/EIRP 18
3.5 Peak-to-Average Ratio 19
3.6 Occupied Bandwidth 20
3.7 Conducted Band Edge 21
3.8 Conducted Spurious Emission 23
3.9 Frequency Stability 24

4 RADIATED TEST ITEMS **25**

4.1 Measuring Instruments 25
4.2 Test Setup 25
4.3 Test Result of Radiated Test 26
4.4 Radiated Spurious Emission 27

5 LIST OF MEASURING EQUIPMENT **28**

6 MEASUREMENT UNCERTAINTY **29**

APPENDIX A. TEST RESULTS OF CONDUCTED TEST

APPENDIX B. TEST RESULTS OF RADIATED TEST

APPENDIX C. TEST SETUP PHOTOGRAPHS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG461101I	Rev. 01	Initial issue of report	Sep. 27, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (5G NR n5,)	ERP < 7 Watt		
	§27.50(c)(10)	Effective Radiated Power (5G NR n71)	ERP < 3 Watt		
	§24.232(c)	Equivalent Isotropic Radiated Power (5G NR n2, n25)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (5G NR n66)	EIRP < 1Watt		
3.5	§24.232(d) §27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(h) §27.53(g)	Conducted Band Edge Measurement (5G NR n5) (5G NR n2, n25) (5G NR n66) (5G NR n71)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(h) §27.53(g)	Conducted Spurious Emission (5G NR n5) (5G NR n2, n25) (5G NR n66) (5G NR n71)	< 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(g)	Radiated Spurious Emission (5G NR n5,) (5G NR n2, n25) (5G NR n66) (5G NR n71)	< 43+10$\log_{10}$(P[Watts])	PASS	Under limit 12.25 dB at 10861.50 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

OnePlus Technology (Shenzhen) Co., Ltd.
18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

1.2 Manufacturer

OnePlus Technology (Shenzhen) Co., Ltd.
18C02, 18C03, 18C04, and 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, P.R. China.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	ONEPLUS,
Model Name	CPH2655
FCC ID	2ABZ2-OP23895
IMEI Code	Conducted : 866493070032172/866493070032164 Radiation : 866493070032891/866493070032883
HW Version	11
SW Version	OxygenOS V15.0
EUT Stage	Production Unit

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 n25 : 1850 MHz ~ 1915 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz
Rx Frequency	5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n25 : 1930 MHz ~ 1995 MHz 5G NR n66 : 2110 MHz~ 2200 MHz 5G NR n71: 617 MHz ~ 652 MHz
Bandwidth	n2, n25 : 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz n5 : 5MHz / 10MHz / 15MHz / 20MHz n66 : 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n71: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz

SCS	15kHz
Antenna Gain	**<Ant. 0>:** n2: 2.0 dBi n5: -2.0 dBi n25: 2.0 dBi n66: 1.5 dBi n71: -3.0 dBi **<Ant. 1>:** n5: -4.4 dBi n71: -4.0 dBi **<Ant. 5>:** n2: -0.5 dBi n25: -0.5 dBi n66: -0.5 dBi **<Ant. 6>:** n2: -2.0 dBi n25: -2.0 dBi n66: -2.0 dBi **<Ant. 7>:** n2: 0.5 dBi n25: 0.5 dBi n66: 0.5 dBii
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum ERP/EIRP is calculated from max output power and max antenna gain, only the maximum ERP/EIRP are shown in the report, 5G NR n2/n25/n5/n66/n71 for Ant. 0.
2. 5G NR n2/n5/n25/n66/n71 support SA and NSA mode. According to the maximum power between SA and NSA mode, SA covers NSA mode.
3. 5G NR n2 only support NSA mode on ant 6&7.
4. The device supports two PAs for 5G NR n25/n66 (main PA and other PA for ant 7).
5. The EN-DC mode combination could be referred to the product spec.
6. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP and Emission Designator

5G NR n2		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	0.4111	4M48G7D	0.3206	4M48W7D
10	1855.0 ~ 1905.0	0.4111	9M27G7D	0.3334	9M29W7D
15	1857.5 ~ 1902.5	0.4178	14M1G7D	0.3251	14M1W7D
20	1860.0 ~ 1900.0	0.4083	18M9G7D	0.3177	19M0W7D
25	1862.5 ~ 1897.5	0.4246	23M7G7D	0.3327	23M8W7D
30	1865.0 ~ 1895.0	0.4236	28M5G7D	0.3289	28M6W7D
35	1867.5 ~ 1892.5	0.4121	33M5G7D	0.3296	33M6W7D
40	1870.0 ~ 1890.0	0.4315	38M5G7D	0.3258	38M6W7D

5G NR n25		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 ~ 1912.5	0.4246	4M48G7D	0.3381	4M48W7D
10	1855.0 ~ 1910.0	0.4345	9M27G7D	0.3656	9M29W7D
15	1857.5 ~ 1907.5	0.4335	14M1G7D	0.3388	14M1W7D
20	1860.0 ~ 1905.0	0.4416	18M9G7D	0.3388	19M0W7D
25	1862.5 ~ 1902.5	0.4436	23M7G7D	0.3491	23M8W7D
30	1865.0 ~ 1900.0	0.4426	28M5G7D	0.3396	28M6W7D
35	1867.5 ~ 1897.5	0.4315	33M5G7D	0.3381	33M6W7D
40	1870.0 ~ 1895.0	0.4446	38M5G7D	0.3467	38M6W7D

5G NR n5		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	826.5 ~ 846.5	0.1102	4M46G7D	0.0879	4M49W7D
10	829.0 ~ 844.0	0.1117	9M26G7D	0.0877	9M28W7D
15	831.5 ~ 841.5	0.1107	14M1G7D	0.0859	14M1W7D
20	834.0 ~ 839.0	0.1127	18M9G7D	0.0861	18M9W7D

5G NR n66		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 ~ 1777.5	0.3744	4M47G7D	0.2951	4M48W7D
10	1715.0 ~ 1775.0	0.3899	9M29G7D	0.3063	9M30W7D
15	1717.5 ~ 1772.5	0.3864	14M1G7D	0.2980	14M1W7D
20	1720.0 ~ 1770.0	0.3820	18M9G7D	0.2905	18M9W7D
25	1722.5 ~ 1767.5	0.4004	23M7G7D	0.3059	23M8W7D
30	1725.0 ~ 1765.0	0.4088	28M5G7D	0.3074	28M6W7D
35	1727.5 ~ 1762.5	0.3960	33M5G7D	0.3030	33M6W7D
40	1730.0 ~ 1760.0	0.3946	38M6G7D	0.3165	38M6W7D
45	1732.5 ~ 1757.5	0.4202	43M2G7D	0.3242	43M2W7D

5G NR n71		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	665.5 ~ 695.5	0.0798	4M46G7D	0.0632	4M48W7D
10	668.0 ~ 693.0	0.0782	9M27G7D	0.0618	9M29W7D
15	670.5 ~ 690.5	0.0791	14M1G7D	0.0624	14M1W7D
20	673.0 ~ 688.0	0.0773	18M9G7D	0.0598	18M9W7D
25	675.5 ~ 685.5	0.0750	23M7G7D	0.0597	23M8W7D
30	678.0 ~ 683.0	0.0738	28M5G7D	0.0586	28M5W7D
35	680.5	0.0800	33M5G7D	0.0611	33M5W7D

Note:

1. 5G NR n25 overlaps the entire frequency range of 5G NR n2. Therefore, the test results provided in this report covers 5G NR n25 as well as 5G NR n2.
2. All modulations have been tested, only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

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

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

1.9 Applicable Standards

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

- 47 CFR Part 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 (X/Z 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

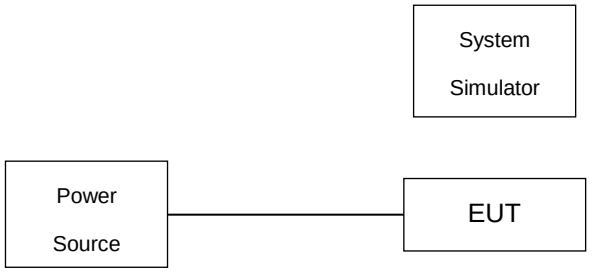
Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	70	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
Max. Output Power	n2	v	v	v	v	v	v	v	v	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n25	v	v	v	v	v	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	v	v
	n71	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n5				v	-	-	-	-	-	-	-	-	-	v	v					v		v	
	n25				v					-	-	-	-	-	v	v					v		v	
	n66				v						-	-	-	-	v	v					v		v	
	n71				v				-	-	-	-	-	-	v	v					v		v	
26dB and 99% Bandwidth	n5	v	v	v	v	-	-	-	-	-	-	-	-	-		v	v	v	v		v		v	
	n25	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	
	n71	v	v	v	v	v	v	v	-	-	-	-	-	-		v	v	v	v		v		v	
Conducted Band Edge	n5	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n25	v			v				v	-	-	-	-	-	v	v				v	v	v		v
	n66	v					v			v	-	-	-	-	v	v				v	v	v		v
	n71	v			v			v	-	-	-	-	-	-	v	v				v	v	v		v

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	70	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Full	L	M	H
Conducted Spurious Emission	n5	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n25	v			v				v	-	-	-	-	-	v	v				v		v	v	v
	n66	v					v			-	-	-	-	-	v	v				v		v	v	v
	n71	v			v			v	-	-	-	-	-	-	v	v				v		v	v	v
Frequency Stability	n5				v	-	-	-	-	-	-	-	-	-		v					v		v	
	n25				v					-	-	-	-	-		v					v		v	
	n66				v					-	-	-	-	-		v					v		v	
	n71				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	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n25	v	v	v	v	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	v	v
	n71	v	v	v	v	v	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n5	Worst Case																				v	v	v
	n25	Worst Case																				v	v	v
	n66	Worst Case																				v	v	v
	n71	Worst Case																				v	v	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 = 8.0V ；Low Voltage =7.2V. ；High Voltage =9.0V

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

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

2.3 Support Unit used in test configuration and system

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

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 7.5 dB.

Example :

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

= 7.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	374000	376000	378000
	Frequency	1870	1880	1890
35	Channel	373500	376000	378500
	Frequency	1867.5	1800	1892.5
30	Channel	373000	376000	379000
	Frequency	1865	1880	1895
25	Channel	372500	376000	379500
	Frequency	1862.5	1880	1897.5
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 n25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	390000	392500	395000
	Frequency	1870	1882.5	1895
35	Channel	373500	376500	379500
	Frequency	1867.5	1882.5	1897.5
30	Channel	389000	392500	396000
	Frequency	1865	1882.5	1900
25	Channel	388500	392500	396500
	Frequency	1862.5	1882.5	1902.5
20	Channel	372000	376500	381000
	Frequency	1860	1882.5	1905
15	Channel	371500	376500	381500
	Frequency	1857.5	1882.5	1907.5
10	Channel	371000	376500	382000
	Frequency	1855	1882.5	1910
5	Channel	370500	376500	382500
	Frequency	1852.5	1882.5	1912.5

5G NR n66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
45	Channel	346500	349000	351500
	Frequency	1732.5	1745	1757.5
40	Channel	346000	349000	352000
	Frequency	1730	1745	1760
35	Channel	345500	349000	352500
	Frequency	1727.5	1745	1762.5
30	Channel	345000	349000	353000
	Frequency	1725	1745	1765
25	Channel	344500	349000	353500
	Frequency	1722.5	1745	1767.5
20	Channel	344000	349000	354000
	Frequency	1720	1745	1770
15	Channel	343500	349000	354500
	Frequency	1717.5	1745	1772.5
10	Channel	343000	349000	355000
	Frequency	1715	1745	1775
5	Channel	342500	349000	355500
	Frequency	1712.5	1745	1777.5

5G NR n71 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
35	Channel	-	136100	-
	Frequency	-	680.5	-
30	Channel	135600	136100	136600
	Frequency	678	680.5	683
25	Channel	135100	136100	137100
	Frequency	675.5	680.5	685.5
20	Channel	134600	136100	137600
	Frequency	673	680.5	688
15	Channel	134100	136100	138100
	Frequency	670.5	680.5	690.5
10	Channel	133600	136100	138600
	Frequency	668	680.5	693
5	Channel	133100	136100	139100
	Frequency	665.5	680.5	695.5

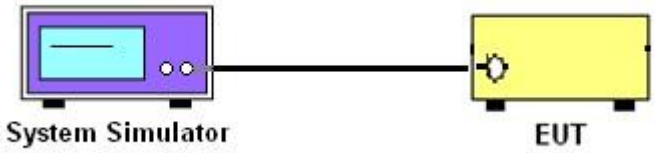
3 Conducted Test Items

3.1 Measuring Instruments

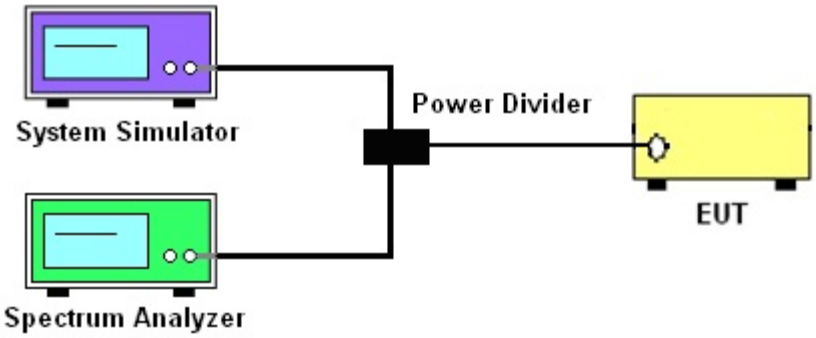
See list of measuring instruments of this test report.

3.2 Test Setup

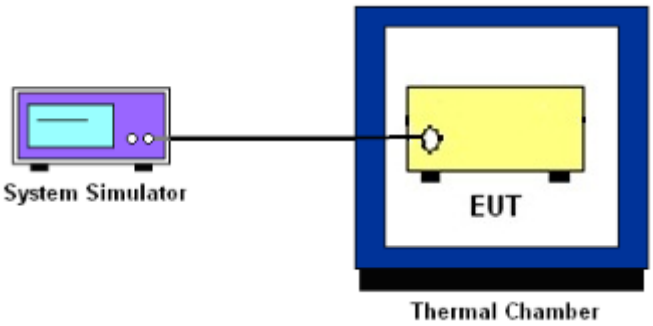
3.2.1 Conducted Output Power



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 ERP of mobile transmitters must not exceed 3 Watts for 5G NR n71.

The EIRP of mobile transmitters must not exceed 2 Watts for 5G NR n2, n25.

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

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 (g)

For operations in the 600MHz band and 698 -746 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

3.7.2 Test Procedures

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

   Example:

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

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

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

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

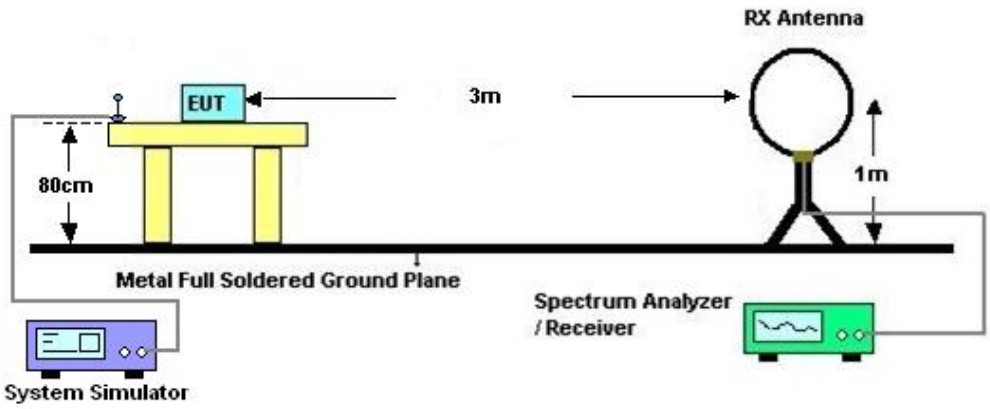
4 Radiated Test Items

4.1 Measuring Instruments

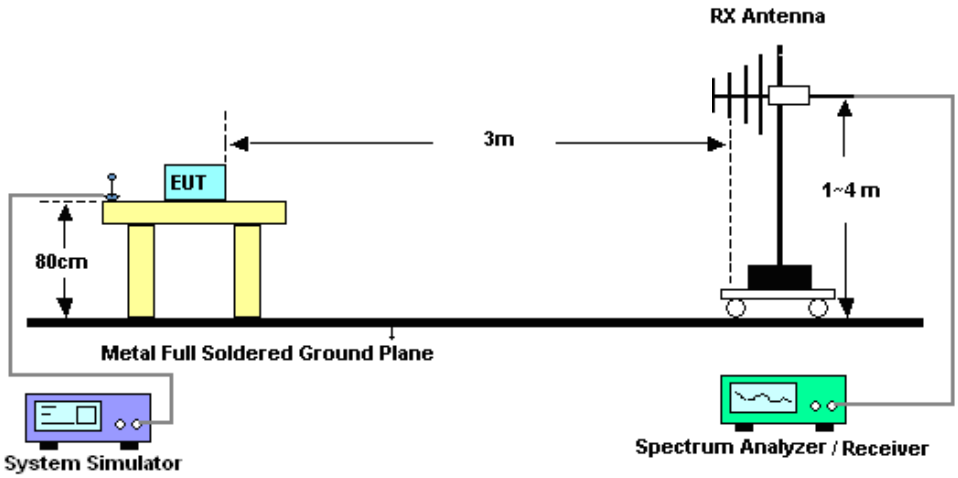
See list of measuring instruments of this test report.

4.2 Test Setup

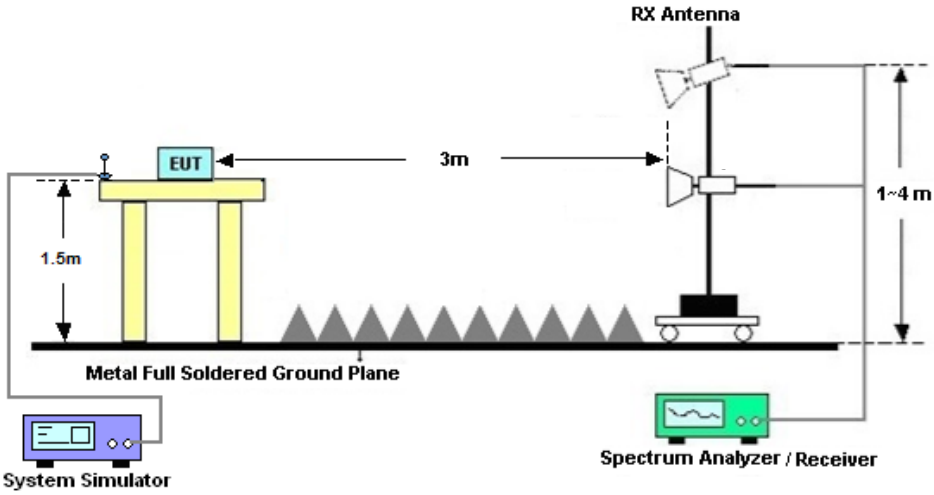
4.2.1 For radiated test below 30MHz



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
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 09, 2024	Aug. 01, 2024~ Aug. 06, 2024	Apr. 08, 2025	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 16, 2023	Aug. 01, 2024~ Aug. 06, 2024	Oct. 15, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2023	Aug. 01, 2024~ Aug. 06, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 03, 2024	Aug. 01, 2024~ Aug. 06, 2024	Jul. 02, 2025	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2023	Aug. 03, 2024~ Aug. 06, 2024	Dec. 26, 2024	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 29, 2023	Aug. 03, 2024~ Aug. 06, 2024	Dec. 28, 2024	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 18, 2023	Aug. 03, 2024~ Aug. 06, 2024	Oct. 17, 2024	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Oct. 24, 2023	Aug. 03, 2024~ Aug. 06, 2024	Oct. 23, 2025	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 04, 2024	Aug. 03, 2024~ Aug. 06, 2024	Jul. 03, 2025	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 09, 2024	Aug. 03, 2024~ Aug. 06, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 09, 2024	Aug. 03, 2024~ Aug. 06, 2024	Apr. 08, 2025	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 18, 2023	Aug. 03, 2024~ Aug. 06, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 03, 2024	Aug. 03, 2024~ Aug. 06, 2024	Jul. 02, 2025	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Oct. 18, 2023	Aug. 03, 2024~ Aug. 06, 2024	Oct. 17, 2024	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Aug. 03, 2024~ Aug. 06, 2024	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Aug. 03, 2024~ Aug. 06, 2024	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±1.34 dB
Occupied Channel Bandwidth	±0.012 MHz
Conducted Power	±1.34 dB
Peak to Average Ratio	±1.34 dB
Frequency Stability	±1.3 Hz

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Software Version: 23.06.1602

FR1 N2-SCS 15k

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=2.0dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@1	23.33	25.33	0.3412
2	15	5	370500	1852.5	DFT-s-OFDM 16 QAM	1@1	22.5	24.5	0.2818
2	15	5	376000	1880	DFT-s-OFDM QPSK	1@1	24.14	26.14	0.4111
2	15	5	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.06	25.06	0.3206
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@1	24.06	26.06	0.4036
2	15	5	381500	1907.5	DFT-s-OFDM 16 QAM	1@1	23.06	25.06	0.3206
2	15	10	371000	1855	DFT-s-OFDM QPSK	1@1	23.97	25.97	0.3954
2	15	10	371000	1855	DFT-s-OFDM 16 QAM	1@1	23.06	25.06	0.3206
2	15	10	376000	1880	DFT-s-OFDM QPSK	1@1	24.14	26.14	0.4111
2	15	10	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.23	25.23	0.3334
2	15	10	381000	1905	DFT-s-OFDM QPSK	1@1	23.7	25.7	0.3715
2	15	10	381000	1905	DFT-s-OFDM 16 QAM	1@1	22.66	24.66	0.2924
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@1	23.02	25.02	0.3177
2	15	15	371500	1857.5	DFT-s-OFDM 16 QAM	1@1	22.22	24.22	0.2642
2	15	15	376000	1880	DFT-s-OFDM QPSK	1@1	24.21	26.21	0.4178
2	15	15	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.12	25.12	0.3251
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@1	23.06	25.06	0.3206
2	15	15	380500	1902.5	DFT-s-OFDM 16 QAM	1@1	22.3	24.3	0.2692
2	15	20	372000	1860	DFT-s-OFDM QPSK	1@1	23.04	25.04	0.3192
2	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@1	22.13	24.13	0.2588
2	15	20	376000	1880	DFT-s-OFDM QPSK	1@1	24.11	26.11	0.4083
2	15	20	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.97	24.97	0.3141
2	15	20	380000	1900	DFT-s-OFDM QPSK	1@1	23.98	25.98	0.3963
2	15	20	380000	1900	DFT-s-OFDM 16 QAM	1@1	23.02	25.02	0.3177
2	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@1	23.48	25.48	0.3532
2	15	25	372500	1862.5	DFT-s-OFDM 16 QAM	1@1	22.57	24.57	0.2864
2	15	25	376000	1880	DFT-s-OFDM QPSK	1@1	23.79	25.79	0.3793
2	15	25	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.92	24.92	0.3105
2	15	25	379500	1897.5	DFT-s-OFDM QPSK	1@1	24.28	26.28	0.4246

2	15	25	379500	1897.5	DFT-s-OFDM 16 QAM	1@1	23.22	25.22	0.3327
2	15	30	373000	1865	DFT-s-OFDM QPSK	1@1	23.29	25.29	0.3381
2	15	30	373000	1865	DFT-s-OFDM 16 QAM	1@1	22.4	24.4	0.2754
2	15	30	376000	1880	DFT-s-OFDM QPSK	1@1	23.86	25.86	0.3855
2	15	30	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.14	25.14	0.3266
2	15	30	379000	1895	DFT-s-OFDM QPSK	1@1	24.27	26.27	0.4236
2	15	30	379000	1895	DFT-s-OFDM 16 QAM	1@1	23.17	25.17	0.3289
2	15	35	373500	1867.5	DFT-s-OFDM QPSK	1@1	23.89	25.89	0.3882
2	15	35	373500	1867.5	DFT-s-OFDM 16 QAM	1@1	23.09	25.09	0.3228
2	15	35	376000	1880	DFT-s-OFDM QPSK	1@1	24.01	26.01	0.3990
2	15	35	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.18	25.18	0.3296
2	15	35	378500	1892.5	DFT-s-OFDM QPSK	1@1	24.15	26.15	0.4121
2	15	35	378500	1892.5	DFT-s-OFDM 16 QAM	1@1	23.02	25.02	0.3177
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	108@54	22.79	24.79	0.3013
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@1	22.6	24.6	0.2884
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@214	22.65	24.65	0.2917
2	15	40	374000	1870	DFT-s-OFDM QPSK	108@54	24.14	26.14	0.4111
2	15	40	374000	1870	DFT-s-OFDM QPSK	1@1	24.06	26.06	0.4036
2	15	40	374000	1870	DFT-s-OFDM QPSK	1@214	24.2	26.2	0.4169
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	108@54	23.03	25.03	0.3184
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@1	22.99	24.99	0.3155
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@214	23.13	25.13	0.3258
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	108@54	21.68	23.68	0.2333
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@1	21.64	23.64	0.2312
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@214	21.61	23.61	0.2296
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	108@54	19.55	21.55	0.1429
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@1	19.07	21.07	0.1279
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@214	19.34	21.34	0.1361
2	15	40	374000	1870	CP-OFDM QPSK	108@54	22.72	24.72	0.2965
2	15	40	374000	1870	CP-OFDM QPSK	1@1	22.75	24.75	0.2985
2	15	40	374000	1870	CP-OFDM QPSK	1@214	22.84	24.84	0.3048
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	108@54	22.64	24.64	0.2911
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	22.52	24.52	0.2831
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	1@214	22.73	24.73	0.2972

2	15	40	376000	1880	DFT-s-OFDM QPSK	108@54	24.35	26.35	0.4315
2	15	40	376000	1880	DFT-s-OFDM QPSK	1@1	24.12	26.12	0.4093
2	15	40	376000	1880	DFT-s-OFDM QPSK	1@214	24.13	26.13	0.4102
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	108@54	23.1	25.1	0.3236
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	1@1	23.08	25.08	0.3221
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	1@214	23.06	25.06	0.3206
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	108@54	21.58	23.58	0.2280
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	1@1	21.58	23.58	0.2280
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	1@214	21.58	23.58	0.2280
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	108@54	19.51	21.51	0.1416
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	1@1	19.24	21.24	0.1330
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	1@214	19.33	21.33	0.1358
2	15	40	376000	1880	CP-OFDM QPSK	108@54	22.68	24.68	0.2938
2	15	40	376000	1880	CP-OFDM QPSK	1@1	22.72	24.72	0.2965
2	15	40	376000	1880	CP-OFDM QPSK	1@214	22.9	24.9	0.3090
2	15	40	378000	1890	DFT-s-OFDM PI/2 BPSK	108@54	22.73	24.73	0.2972
2	15	40	378000	1890	DFT-s-OFDM PI/2 BPSK	1@1	22.69	24.69	0.2944
2	15	40	378000	1890	DFT-s-OFDM PI/2 BPSK	1@214	22.59	24.59	0.2877
2	15	40	378000	1890	DFT-s-OFDM QPSK	108@54	24.21	26.21	0.4178
2	15	40	378000	1890	DFT-s-OFDM QPSK	1@1	24.12	26.12	0.4093
2	15	40	378000	1890	DFT-s-OFDM QPSK	1@214	24.2	26.2	0.4169
2	15	40	378000	1890	DFT-s-OFDM 16 QAM	108@54	23.02	25.02	0.3177
2	15	40	378000	1890	DFT-s-OFDM 16 QAM	1@1	23.12	25.12	0.3251
2	15	40	378000	1890	DFT-s-OFDM 16 QAM	1@214	22.96	24.96	0.3133
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	108@54	21.55	23.55	0.2265
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	1@1	21.55	23.55	0.2265
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	1@214	21.42	23.42	0.2198
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	108@54	19.49	21.49	0.1409
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	1@1	19.13	21.13	0.1297
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	1@214	19.1	21.1	0.1288
2	15	40	378000	1890	CP-OFDM QPSK	108@54	22.69	24.69	0.2944
2	15	40	378000	1890	CP-OFDM QPSK	1@1	22.8	24.8	0.3020
2	15	40	378000	1890	CP-OFDM QPSK	1@214	22.89	24.89	0.3083

Software Version: 23.06.1602

FR1 N5-SCS 15k

Transmitter Conducted Output Power And ERP, (G_T - L_C)=-2.0dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	ERP (dBm)	ERP (W)
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@1	24.57	20.42	0.1102
5	15	5	165300	826.5	DFT-s-OFDM 16 QAM	1@1	23.59	19.44	0.0879
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@1	24.4	20.25	0.1059
5	15	5	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.38	19.23	0.0838
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@1	24.04	19.89	0.0975
5	15	5	169300	846.5	DFT-s-OFDM 16 QAM	1@1	23.14	18.99	0.0793
5	15	10	165800	829	DFT-s-OFDM QPSK	1@1	24.63	20.48	0.1117
5	15	10	165800	829	DFT-s-OFDM 16 QAM	1@1	23.58	19.43	0.0877
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@1	24.54	20.39	0.1094
5	15	10	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.38	19.23	0.0838
5	15	10	168800	844	DFT-s-OFDM QPSK	1@1	24.22	20.07	0.1016
5	15	10	168800	844	DFT-s-OFDM 16 QAM	1@1	23.17	19.02	0.0798
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@1	24.59	20.44	0.1107
5	15	15	166300	831.5	DFT-s-OFDM 16 QAM	1@1	23.49	19.34	0.0859
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@1	24.59	20.44	0.1107
5	15	15	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.46	19.31	0.0853
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@1	24.51	20.36	0.1086
5	15	15	168300	841.5	DFT-s-OFDM 16 QAM	1@1	23.42	19.27	0.0845
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	50@25	23.97	19.82	0.0959
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@1	24.12	19.97	0.0993
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@104	23.63	19.48	0.0887
5	15	20	166800	834	DFT-s-OFDM QPSK	50@25	24.39	20.24	0.1057
5	15	20	166800	834	DFT-s-OFDM QPSK	1@1	24.67	20.52	0.1127
5	15	20	166800	834	DFT-s-OFDM QPSK	1@104	24.16	20.01	0.1002
5	15	20	166800	834	DFT-s-OFDM 16 QAM	50@25	23.21	19.06	0.0805
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@1	23.48	19.33	0.0857
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@104	23.11	18.96	0.0787
5	15	20	166800	834	DFT-s-OFDM 64 QAM	50@25	21.82	17.67	0.0585
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@1	22.07	17.92	0.0619
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@104	21.61	17.46	0.0557
5	15	20	166800	834	DFT-s-OFDM 256 QAM	50@25	19.75	15.6	0.0363
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@1	19.74	15.59	0.0362
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@104	19.33	15.18	0.0330

5	15	20	166800	834	CP-OFDM QPSK	53@26	23.03	18.88	0.0773
5	15	20	166800	834	CP-OFDM QPSK	1@1	23.31	19.16	0.0824
5	15	20	166800	834	CP-OFDM QPSK	1@104	22.48	18.33	0.0681
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	23.95	19.8	0.0955
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	24.04	19.89	0.0975
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	23.54	19.39	0.0869
5	15	20	167300	836.5	DFT-s-OFDM QPSK	50@25	24.4	20.25	0.1059
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@1	24.61	20.46	0.1112
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@104	24.14	19.99	0.0998
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	50@25	23.17	19.02	0.0798
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.5	19.35	0.0861
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@104	22.98	18.83	0.0764
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	50@25	21.76	17.61	0.0577
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@1	22.06	17.91	0.0618
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@104	21.52	17.37	0.0546
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	50@25	19.83	15.68	0.0370
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@1	19.65	15.5	0.0355
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@104	19.15	15	0.0316
5	15	20	167300	836.5	CP-OFDM QPSK	53@26	22.95	18.8	0.0759
5	15	20	167300	836.5	CP-OFDM QPSK	1@1	23.28	19.13	0.0818
5	15	20	167300	836.5	CP-OFDM QPSK	1@104	22.79	18.64	0.0731
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	50@25	23.81	19.66	0.0925
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@1	23.97	19.82	0.0959
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@104	23.6	19.45	0.0881
5	15	20	167800	839	DFT-s-OFDM QPSK	50@25	24.32	20.17	0.1040
5	15	20	167800	839	DFT-s-OFDM QPSK	1@1	24.41	20.26	0.1062
5	15	20	167800	839	DFT-s-OFDM QPSK	1@104	23.94	19.79	0.0953
5	15	20	167800	839	DFT-s-OFDM 16 QAM	50@25	23.18	19.03	0.0800
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@1	23.38	19.23	0.0838
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@104	22.93	18.78	0.0755
5	15	20	167800	839	DFT-s-OFDM 64 QAM	50@25	21.74	17.59	0.0574
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@1	21.97	17.82	0.0605
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@104	21.4	17.25	0.0531
5	15	20	167800	839	DFT-s-OFDM 256 QAM	50@25	19.73	15.58	0.0361
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@1	19.63	15.48	0.0353
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@104	19.2	15.05	0.0320
5	15	20	167800	839	CP-OFDM QPSK	53@26	22.82	18.67	0.0736
5	15	20	167800	839	CP-OFDM QPSK	1@1	23.21	19.06	0.0805
5	15	20	167800	839	CP-OFDM QPSK	1@104	22.37	18.22	0.0664

FR1 N5-SCS 15k

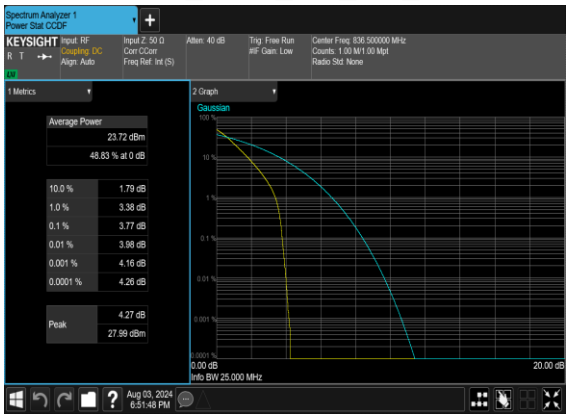
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0061	**PASS**	NV
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0042	**PASS**	LV
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0029	**PASS**	HV
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0061	**PASS**	-30℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0031	**PASS**	-20℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0049	**PASS**	-10℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0057	**PASS**	0℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0029	**PASS**	10℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0061	**PASS**	20℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0038	**PASS**	30℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0041	**PASS**	40℃
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0029	**PASS**	50℃

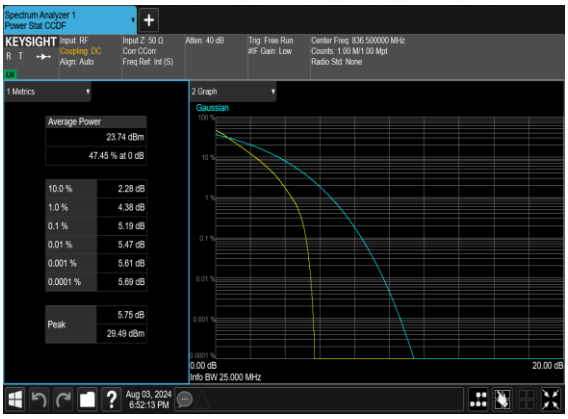
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	3.77	13	**PASS**
5	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	5.19	13	**PASS**

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



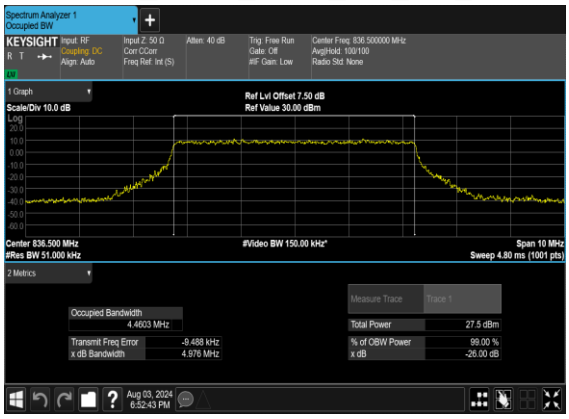
N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



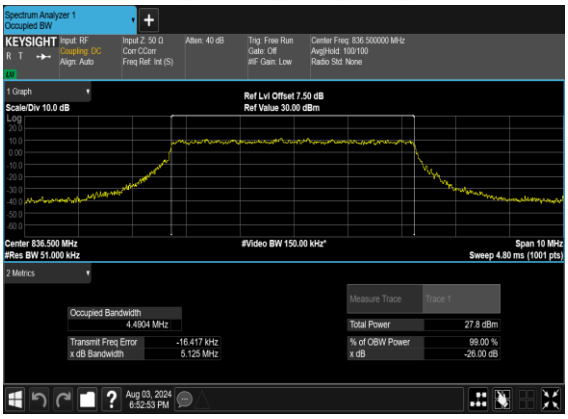
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
5	15	5	167300	836.5	CP-OFDM QPSK	25@0	4.4603	4.976
5	15	5	167300	836.5	CP-OFDM 16 QAM	25@0	4.4904	5.125
5	15	5	167300	836.5	CP-OFDM 64 QAM	25@0	4.4571	5.059
5	15	5	167300	836.5	CP-OFDM 256 QAM	25@0	4.4708	5.069
5	15	10	167300	836.5	CP-OFDM QPSK	52@0	9.2643	10.04
5	15	10	167300	836.5	CP-OFDM 16 QAM	52@0	9.2755	9.945
5	15	10	167300	836.5	CP-OFDM 64 QAM	52@0	9.259	9.756
5	15	10	167300	836.5	CP-OFDM 256 QAM	52@0	9.2713	9.925
5	15	15	167300	836.5	CP-OFDM QPSK	79@0	14.075	14.83
5	15	15	167300	836.5	CP-OFDM 16 QAM	79@0	14.082	14.94
5	15	15	167300	836.5	CP-OFDM 64 QAM	79@0	14.086	14.84
5	15	15	167300	836.5	CP-OFDM 256 QAM	79@0	14.068	14.94
5	15	20	167300	836.5	CP-OFDM QPSK	106@0	18.944	19.73
5	15	20	167300	836.5	CP-OFDM 16 QAM	106@0	18.886	19.81
5	15	20	167300	836.5	CP-OFDM 64 QAM	106@0	18.909	19.81
5	15	20	167300	836.5	CP-OFDM 256 QAM	106@0	18.939	19.66

N5(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

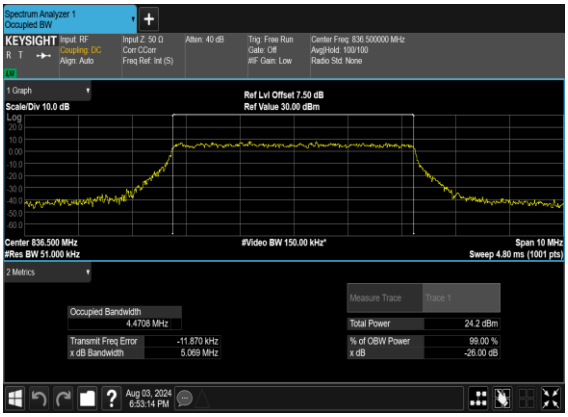


N5(5M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



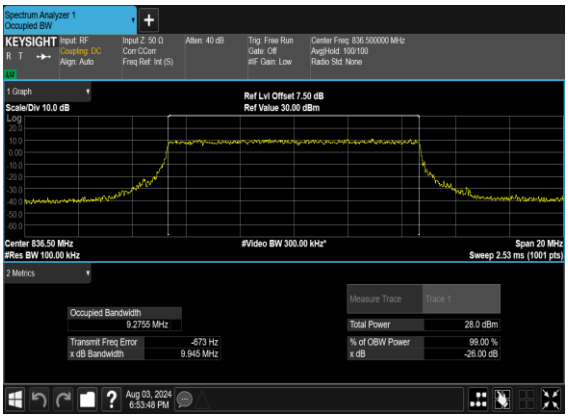
N5(5M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

N5(5M)_CP-OFDM_256QAM_Outer_Full_Mid_CH

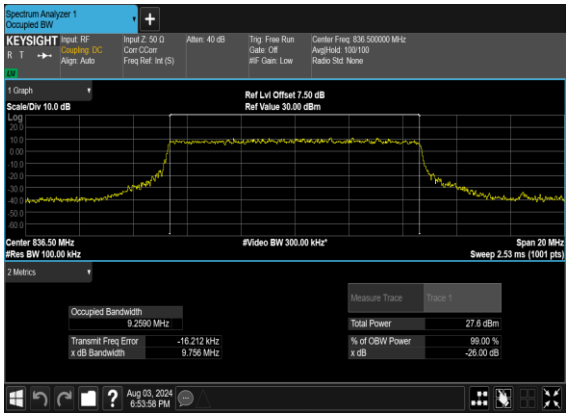


N5(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N5(10M)_CP-OFDM_16QAM_Outer_Full_Mid_CH

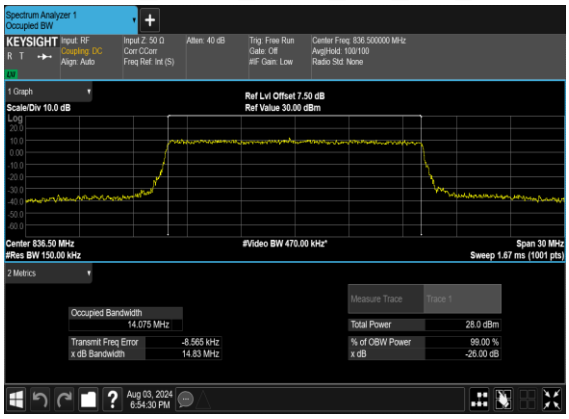


N5(10M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

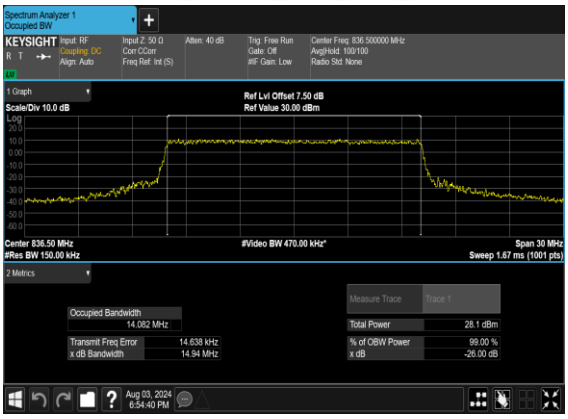


N5(10M)_CP-OFDM_256QAM_Outer_Full_Mid_CH

N5(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N5(15M)_CP-OFDM_16QAM_Outer_Full_Mid_CH

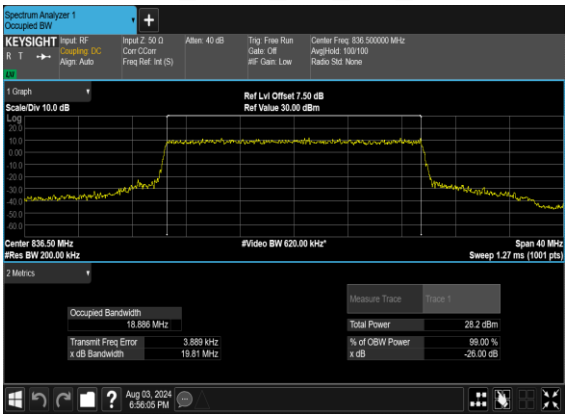


N5(15M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

N5(15M)_CP-OFDM_256QAM_Outer_Full_Mid_CH

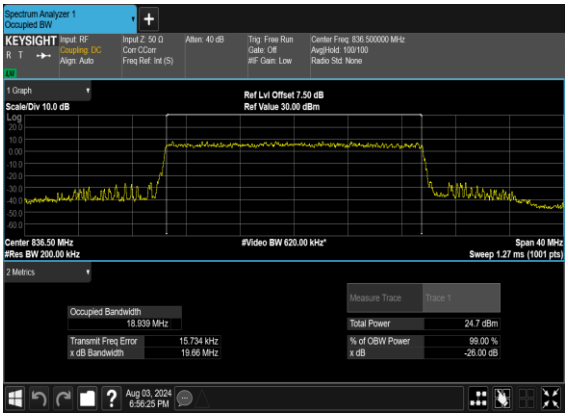
N5(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N5(20M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N5(20M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

N5(20M)_CP-OFDM_256QAM_Outer_Full_Mid_CH



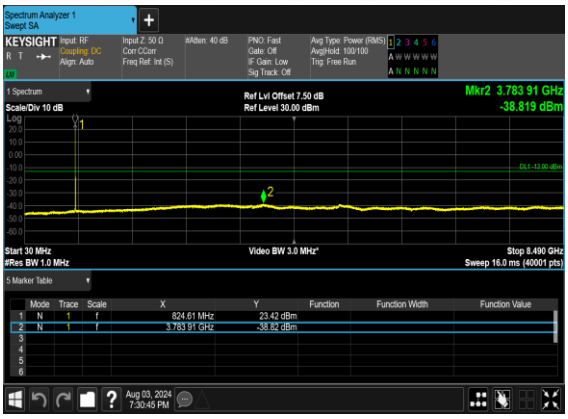
Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	10	165800	829.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	10	165800	829.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	10	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	10	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

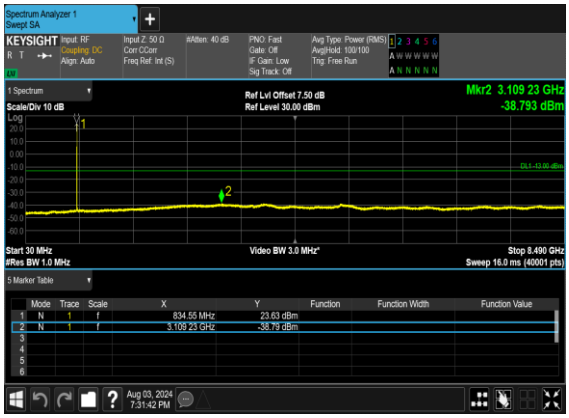
5	15	10	168800	844.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	10	168800	844.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	10	168800	844.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	10	168800	844.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

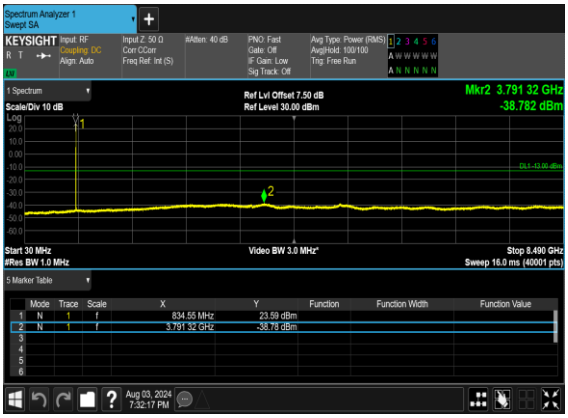
N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

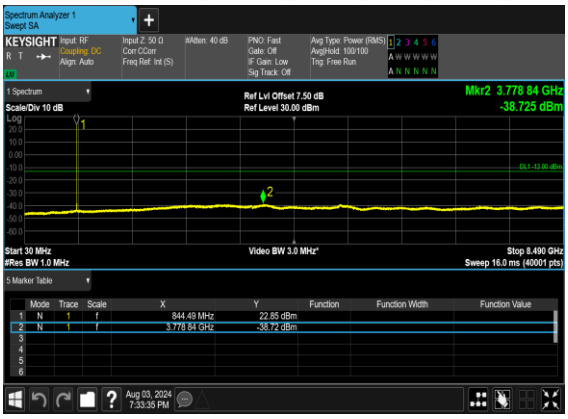


N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

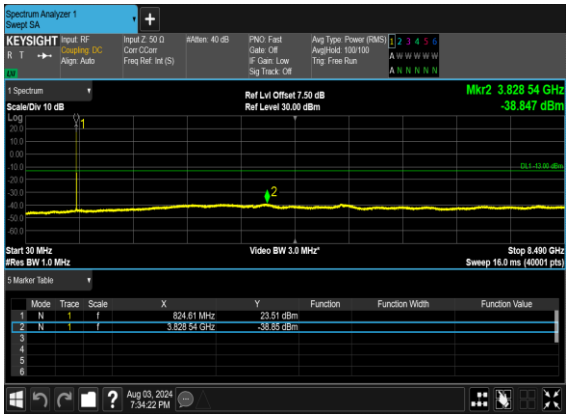


N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

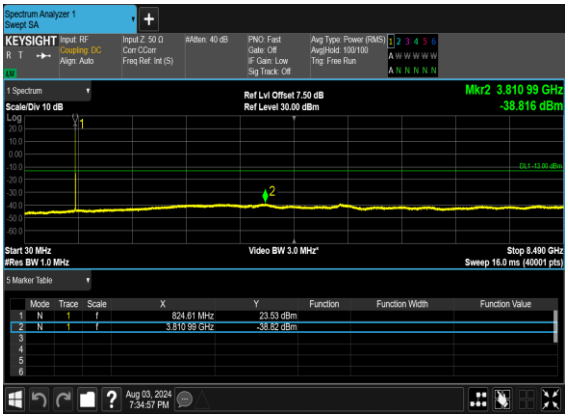
N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

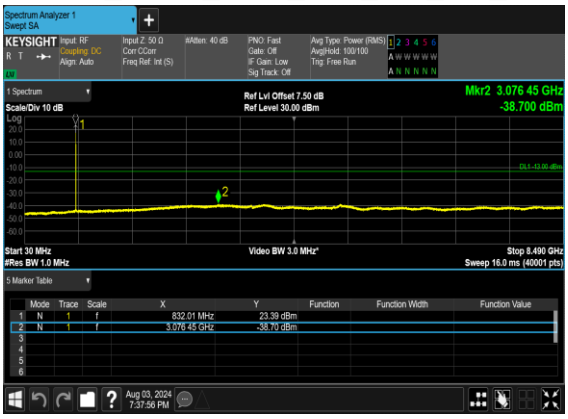


N5(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

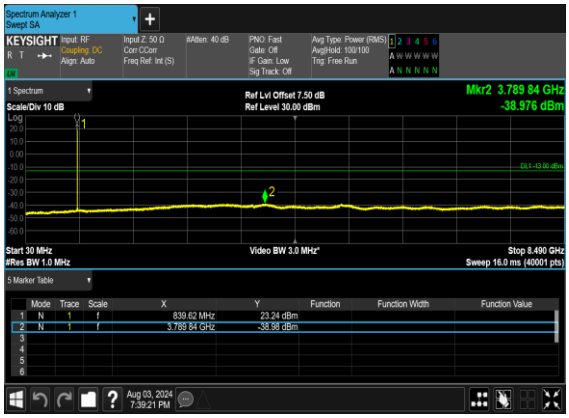


N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

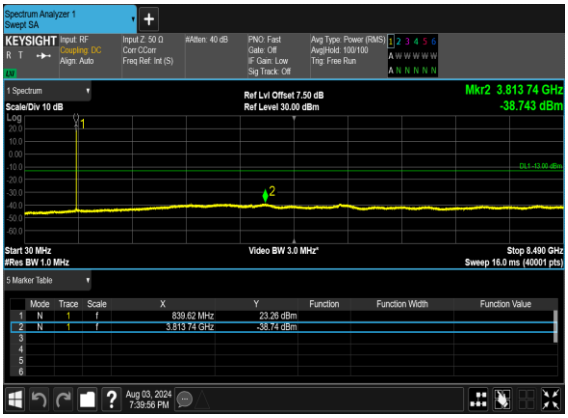
N5(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

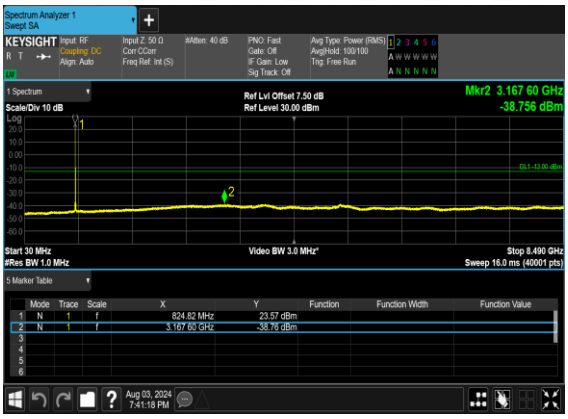


N5(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

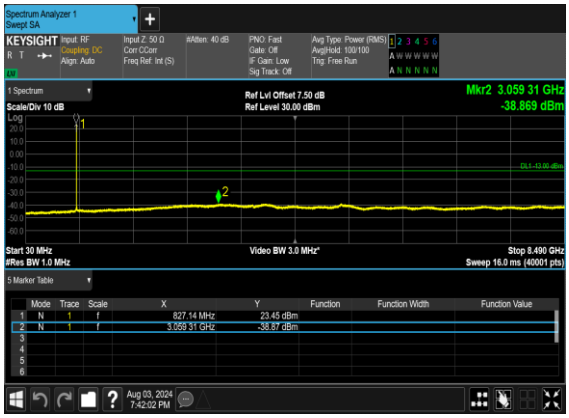


N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

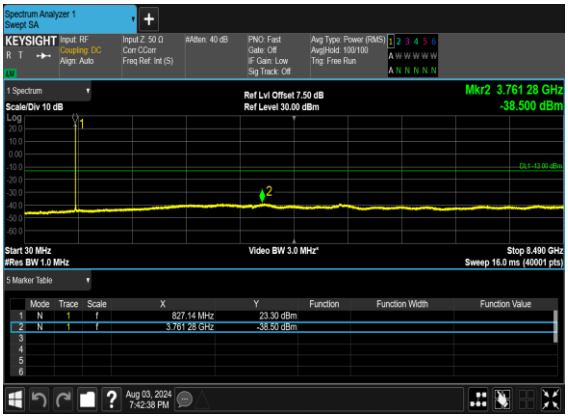
N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

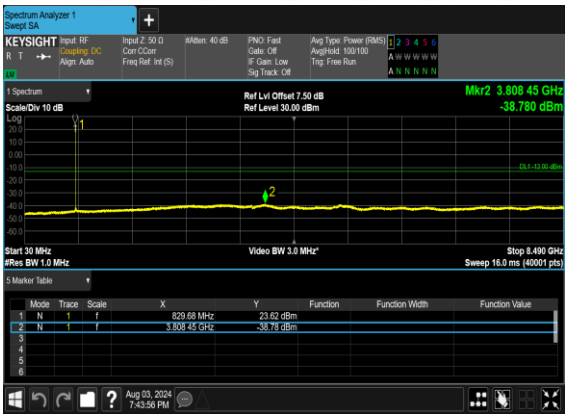


N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

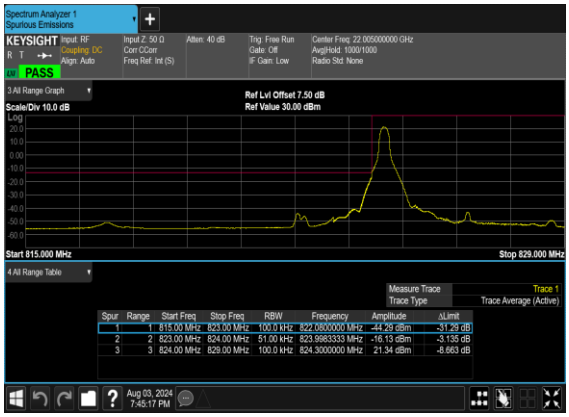


Conducted Band Edge

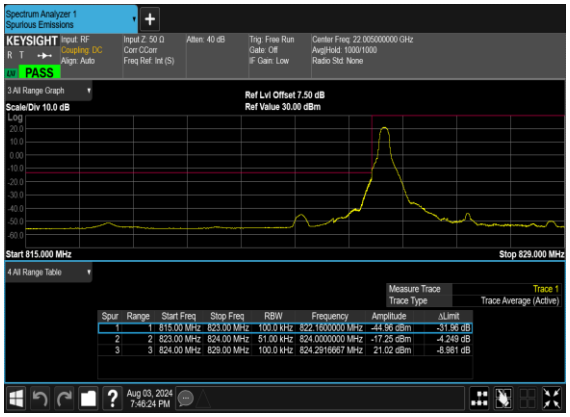
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	5	165300	826.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
5	15	5	165300	826.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
5	15	5	169300	846.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
5	15	10	165800	829.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
5	15	10	168800	844.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
5	15	10	168800	844.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
5	15	10	168800	844.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
5	15	10	168800	844.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
5	15	20	166800	834.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**

5	15	20	167800	839.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
5	15	20	167800	839.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**

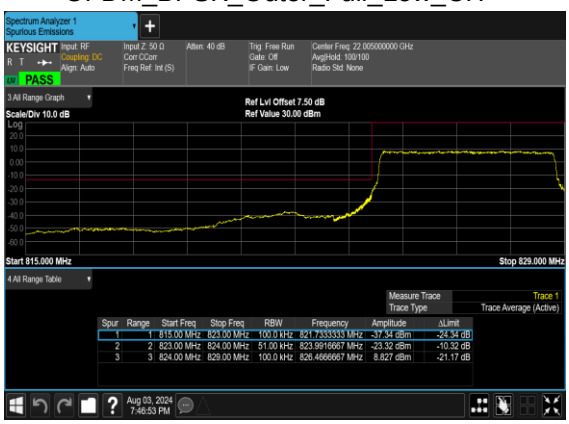
N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

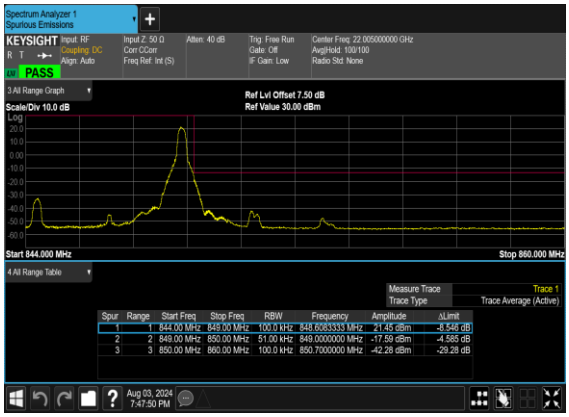


N5(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

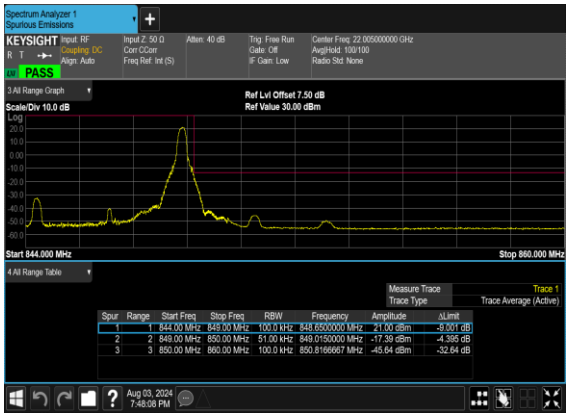


N5(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

N5(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

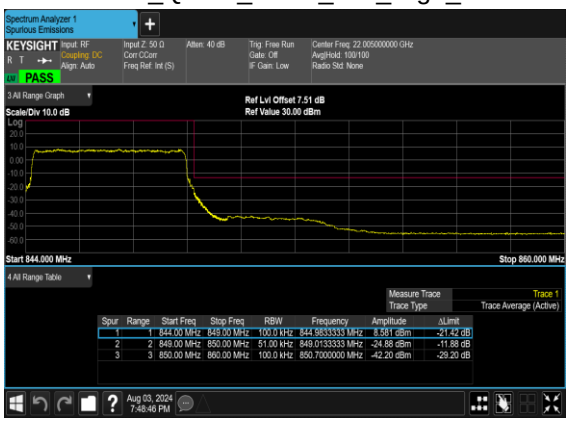


N5(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

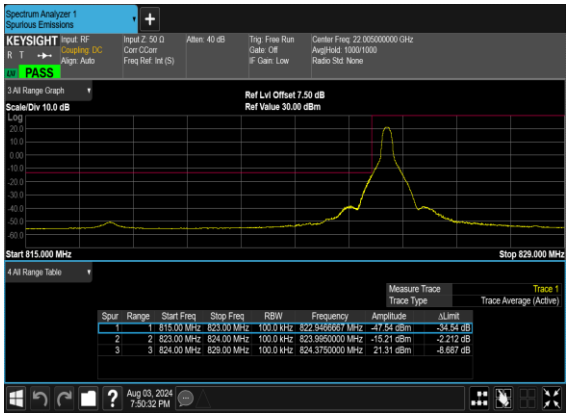


N5(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

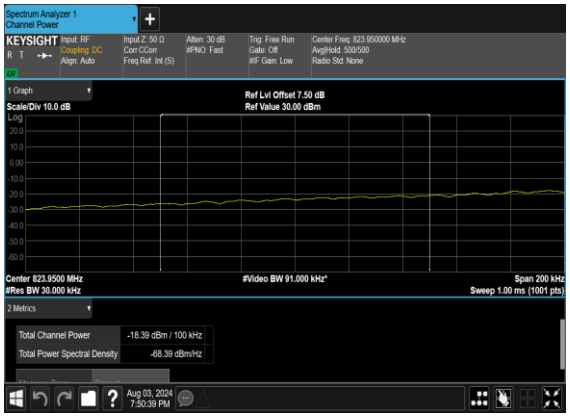
N5(5M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



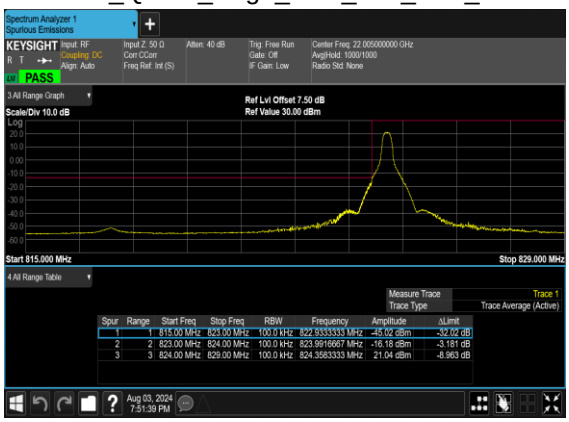
N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



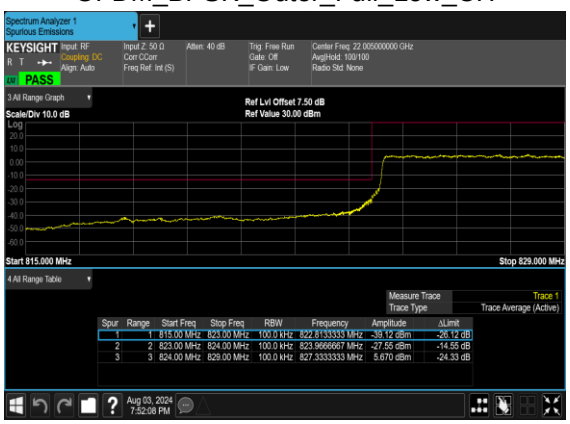
N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH_**CHP_PASS**



N5(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

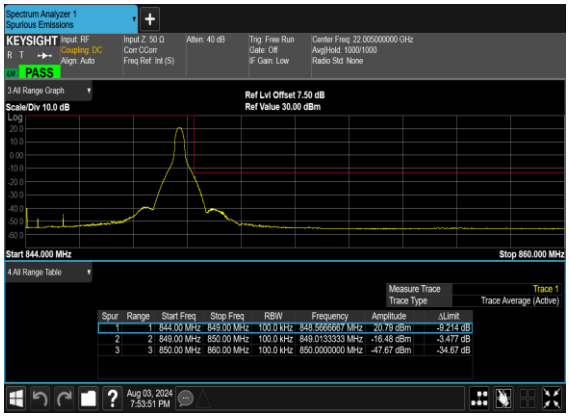


N5(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH

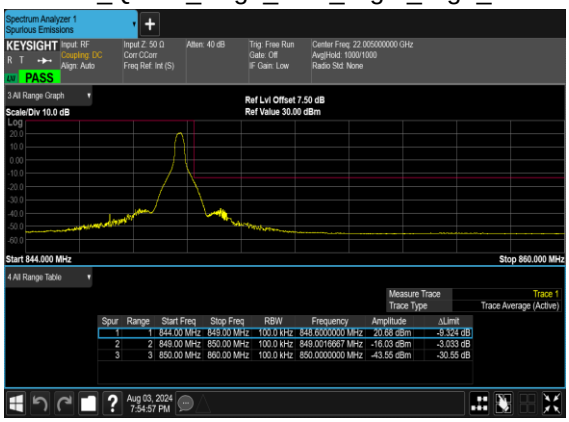


N5(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

N5(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

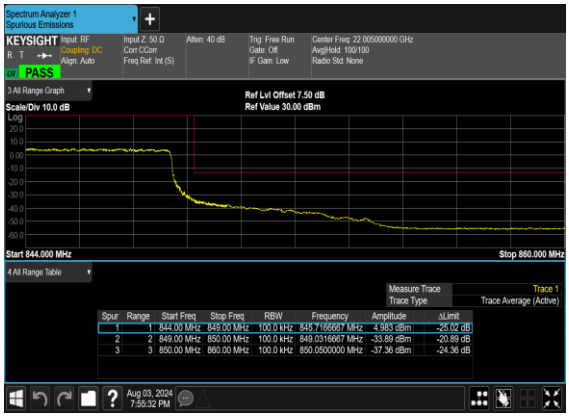


N5(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

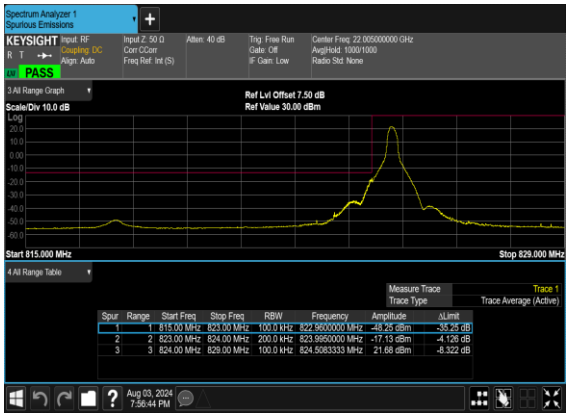


N5(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

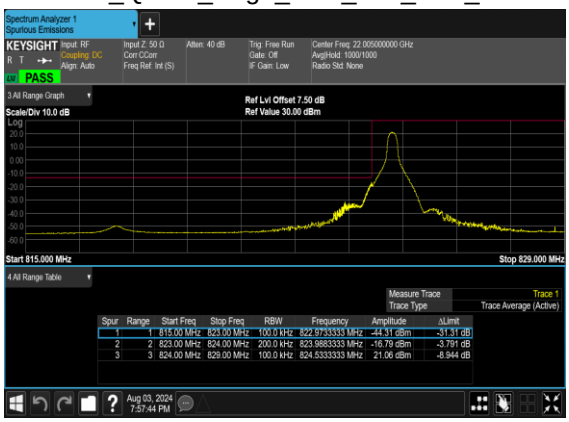
N5(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



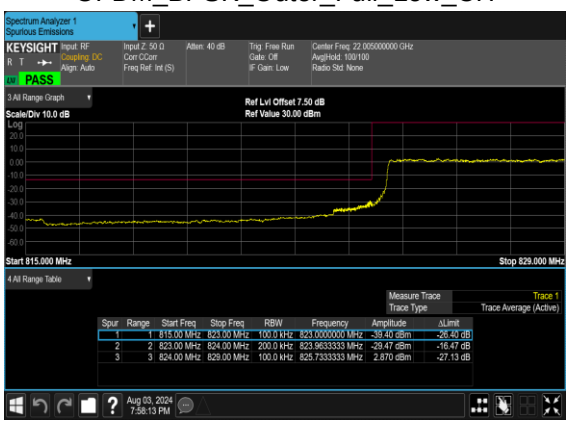
N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



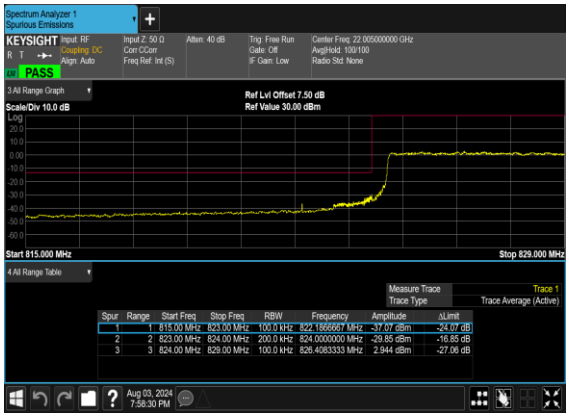
N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



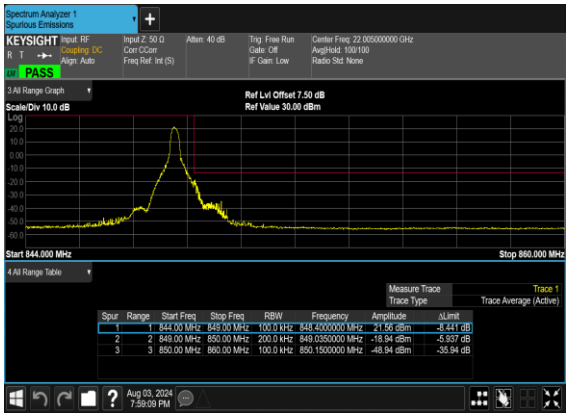
N5(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



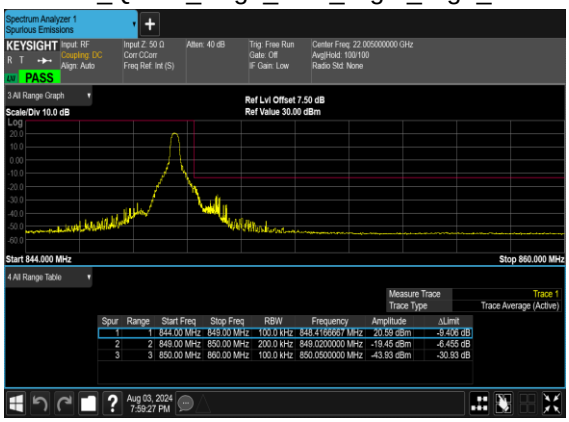
N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



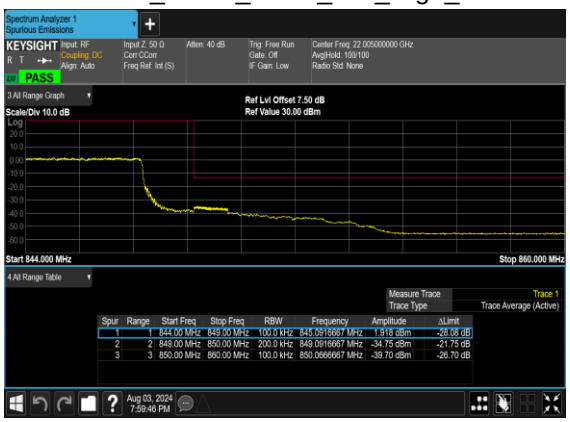
N5(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



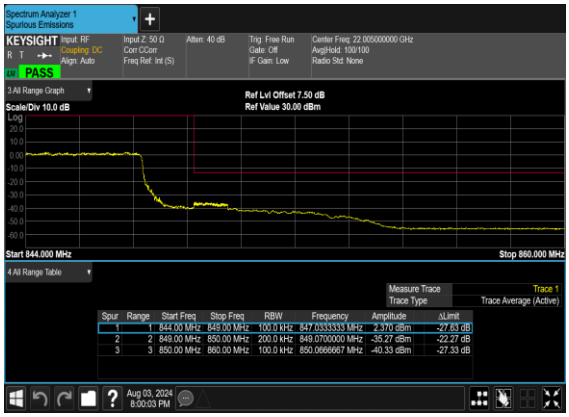
N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N5(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 N25-SCS 15k

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=2.0dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
25	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@1	23.51	25.51	0.3556
25	15	5	370500	1852.5	DFT-s-OFDM 16 QAM	1@1	22.73	24.73	0.2972
25	15	5	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.28	26.28	0.4246
25	15	5	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.29	25.29	0.3381
25	15	5	382500	1912.5	DFT-s-OFDM QPSK	1@1	24.06	26.06	0.4036
25	15	5	382500	1912.5	DFT-s-OFDM 16 QAM	1@1	23.18	25.18	0.3296
25	15	10	371000	1855	DFT-s-OFDM QPSK	1@1	23.53	25.53	0.3573
25	15	10	371000	1855	DFT-s-OFDM 16 QAM	1@1	22.7	24.7	0.2951
25	15	10	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.31	26.31	0.4276
25	15	10	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.32	25.32	0.3404
25	15	10	382000	1910	DFT-s-OFDM QPSK	1@1	24.38	26.38	0.4345
25	15	10	382000	1910	DFT-s-OFDM 16 QAM	1@1	23.63	25.63	0.3656
25	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@1	23.55	25.55	0.3589
25	15	15	371500	1857.5	DFT-s-OFDM 16 QAM	1@1	22.66	24.66	0.2924
25	15	15	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.37	26.37	0.4335
25	15	15	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.3	25.3	0.3388
25	15	15	381500	1907.5	DFT-s-OFDM QPSK	1@1	23.79	25.79	0.3793
25	15	15	381500	1907.5	DFT-s-OFDM 16 QAM	1@1	22.81	24.81	0.3027
25	15	20	372000	1860	DFT-s-OFDM QPSK	1@1	23.38	25.38	0.3451
25	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@1	22.47	24.47	0.2799
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.45	26.45	0.4416
25	15	20	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.3	25.3	0.3388
25	15	20	381000	1905	DFT-s-OFDM QPSK	1@1	23.39	25.39	0.3459
25	15	20	381000	1905	DFT-s-OFDM 16 QAM	1@1	22.54	24.54	0.2844
25	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@1	23.63	25.63	0.3656
25	15	25	372500	1862.5	DFT-s-OFDM 16 QAM	1@1	22.7	24.7	0.2951
25	15	25	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.47	26.47	0.4436
25	15	25	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.43	25.43	0.3491
25	15	25	380500	1902.5	DFT-s-OFDM QPSK	1@1	24.23	26.23	0.4198
25	15	25	380500	1902.5	DFT-s-OFDM 16 QAM	1@1	23.28	25.28	0.3373
25	15	30	373000	1865	DFT-s-OFDM QPSK	1@1	23.83	25.83	0.3828
25	15	30	373000	1865	DFT-s-OFDM 16 QAM	1@1	22.99	24.99	0.3155
25	15	30	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.41	26.41	0.4375

25	15	30	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.25	25.25	0.3350
25	15	30	380000	1900	DFT-s-OFDM QPSK	1@1	24.46	26.46	0.4426
25	15	30	380000	1900	DFT-s-OFDM 16 QAM	1@1	23.31	25.31	0.3396
25	15	35	373500	1867.5	DFT-s-OFDM QPSK	1@1	23.33	25.33	0.3412
25	15	35	373500	1867.5	DFT-s-OFDM 16 QAM	1@1	22.48	24.48	0.2805
25	15	35	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.35	26.35	0.4315
25	15	35	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.24	25.24	0.3342
25	15	35	379500	1897.5	DFT-s-OFDM QPSK	1@1	24.3	26.3	0.4266
25	15	35	379500	1897.5	DFT-s-OFDM 16 QAM	1@1	23.29	25.29	0.3381
25	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	108@54	23.47	25.47	0.3524
25	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@1	23.48	25.48	0.3532
25	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@214	23.52	25.52	0.3565
25	15	40	374000	1870	DFT-s-OFDM QPSK	108@54	24.42	26.42	0.4385
25	15	40	374000	1870	DFT-s-OFDM QPSK	1@1	23.78	25.78	0.3784
25	15	40	374000	1870	DFT-s-OFDM QPSK	1@214	24.48	26.48	0.4446
25	15	40	374000	1870	DFT-s-OFDM 16 QAM	108@54	23.33	25.33	0.3412
25	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@1	23.16	25.16	0.3281
25	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@214	23.4	25.4	0.3467
25	15	40	374000	1870	DFT-s-OFDM 64 QAM	108@54	22.28	24.28	0.2679
25	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@1	22.2	24.2	0.2630
25	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@214	22.3	24.3	0.2692
25	15	40	374000	1870	DFT-s-OFDM 256 QAM	108@54	20.27	22.27	0.1687
25	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@1	19.8	21.8	0.1514
25	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@214	20.13	22.13	0.1633
25	15	40	374000	1870	CP-OFDM QPSK	108@54	23.4	25.4	0.3467
25	15	40	374000	1870	CP-OFDM QPSK	1@1	23.17	25.17	0.3289
25	15	40	374000	1870	CP-OFDM QPSK	1@214	23.61	25.61	0.3639
25	15	40	376500	1882.5	DFT-s-OFDM PI/2 BPSK	108@54	23.35	25.35	0.3428
25	15	40	376500	1882.5	DFT-s-OFDM PI/2 BPSK	1@1	23.31	25.31	0.3396
25	15	40	376500	1882.5	DFT-s-OFDM PI/2 BPSK	1@214	23.34	25.34	0.3420
25	15	40	376500	1882.5	DFT-s-OFDM QPSK	108@54	24.32	26.32	0.4285
25	15	40	376500	1882.5	DFT-s-OFDM QPSK	1@1	24.23	26.23	0.4198
25	15	40	376500	1882.5	DFT-s-OFDM QPSK	1@214	24.29	26.29	0.4256
25	15	40	376500	1882.5	DFT-s-OFDM 16 QAM	108@54	23.23	25.23	0.3334
25	15	40	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.17	25.17	0.3289
25	15	40	376500	1882.5	DFT-s-OFDM 16 QAM	1@214	23.26	25.26	0.3357
25	15	40	376500	1882.5	DFT-s-OFDM 64 QAM	108@54	22.26	24.26	0.2667
25	15	40	376500	1882.5	DFT-s-OFDM 64 QAM	1@1	22.1	24.1	0.2570
25	15	40	376500	1882.5	DFT-s-OFDM 64 QAM	1@214	22.17	24.17	0.2612
25	15	40	376500	1882.5	DFT-s-OFDM 256 QAM	108@54	20.22	22.22	0.1667

25	15	40	376500	1882.5	DFT-s-OFDM 256 QAM	1@1	19.85	21.85	0.1531
25	15	40	376500	1882.5	DFT-s-OFDM 256 QAM	1@214	19.93	21.93	0.1560
25	15	40	376500	1882.5	CP-OFDM QPSK	108@54	23.39	25.39	0.3459
25	15	40	376500	1882.5	CP-OFDM QPSK	1@1	23.05	25.05	0.3199
25	15	40	376500	1882.5	CP-OFDM QPSK	1@214	23.6	25.6	0.3631
25	15	40	379000	1895	DFT-s-OFDM PI/2 BPSK	108@54	23.37	25.37	0.3443
25	15	40	379000	1895	DFT-s-OFDM PI/2 BPSK	1@1	23.35	25.35	0.3428
25	15	40	379000	1895	DFT-s-OFDM PI/2 BPSK	1@214	23.25	25.25	0.3350
25	15	40	379000	1895	DFT-s-OFDM QPSK	108@54	24.32	26.32	0.4285
25	15	40	379000	1895	DFT-s-OFDM QPSK	1@1	24.39	26.39	0.4355
25	15	40	379000	1895	DFT-s-OFDM QPSK	1@214	23.88	25.88	0.3873
25	15	40	379000	1895	DFT-s-OFDM 16 QAM	108@54	23.1	25.1	0.3236
25	15	40	379000	1895	DFT-s-OFDM 16 QAM	1@1	23.28	25.28	0.3373
25	15	40	379000	1895	DFT-s-OFDM 16 QAM	1@214	23.12	25.12	0.3251
25	15	40	379000	1895	DFT-s-OFDM 64 QAM	108@54	22.38	24.38	0.2742
25	15	40	379000	1895	DFT-s-OFDM 64 QAM	1@1	22.37	24.37	0.2735
25	15	40	379000	1895	DFT-s-OFDM 64 QAM	1@214	22.24	24.24	0.2655
25	15	40	379000	1895	DFT-s-OFDM 256 QAM	108@54	20.25	22.25	0.1679
25	15	40	379000	1895	DFT-s-OFDM 256 QAM	1@1	19.92	21.92	0.1556
25	15	40	379000	1895	DFT-s-OFDM 256 QAM	1@214	19.74	21.74	0.1493
25	15	40	379000	1895	CP-OFDM QPSK	108@54	23.49	25.49	0.3540
25	15	40	379000	1895	CP-OFDM QPSK	1@1	23.56	25.56	0.3597
25	15	40	379000	1895	CP-OFDM QPSK	1@214	23.05	25.05	0.3199

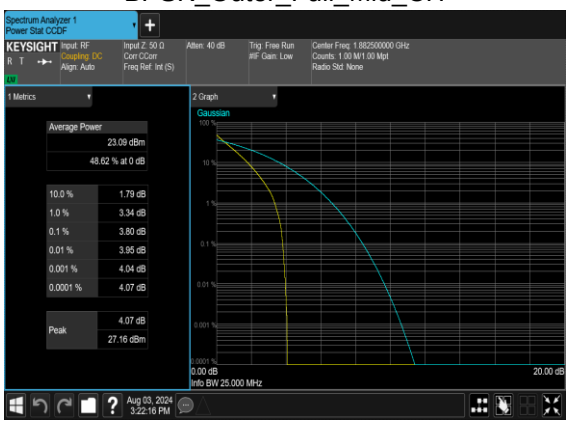
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0042	**PASS**	NV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0031	**PASS**	LV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0037	**PASS**	HV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0059	**PASS**	-30℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0056	**PASS**	-20℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	-10℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0053	**PASS**	0℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0059	**PASS**	10℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0042	**PASS**	20℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0038	**PASS**	30℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0027	**PASS**	40℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	50℃

Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
25	15	20	376500	1882.5	DFT-s-OFDM PI/2 BPSK	100@0	3.8	13	**PASS**
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	5.09	13	**PASS**

N25(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



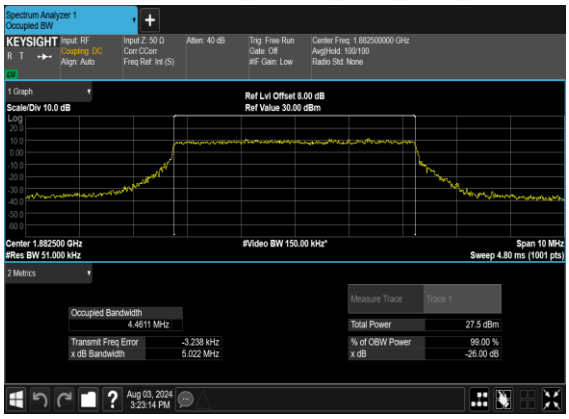
N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

Occupied Bandwidth

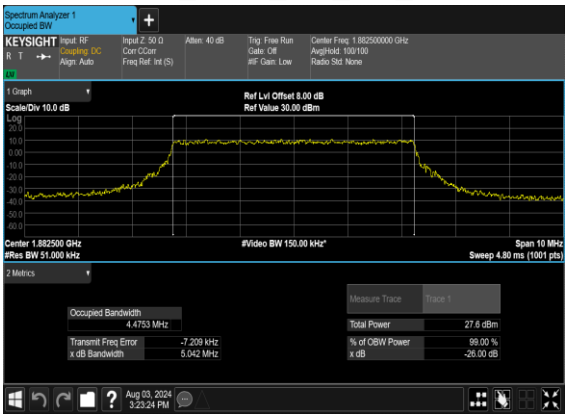
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
25	15	5	376500	1882.5	CP-OFDM QPSK	25@0	4.4611	5.022
25	15	5	376500	1882.5	CP-OFDM 16 QAM	25@0	4.4753	5.042
25	15	5	376500	1882.5	CP-OFDM 64 QAM	25@0	4.4613	5.014
25	15	5	376500	1882.5	CP-OFDM 256 QAM	25@0	4.4755	5.015
25	15	10	376500	1882.5	CP-OFDM QPSK	52@0	9.2736	10.05
25	15	10	376500	1882.5	CP-OFDM 16 QAM	52@0	9.2936	10.06
25	15	10	376500	1882.5	CP-OFDM 64 QAM	52@0	9.2567	9.923
25	15	10	376500	1882.5	CP-OFDM 256 QAM	52@0	9.2904	9.952
25	15	15	376500	1882.5	CP-OFDM QPSK	79@0	14.064	14.85
25	15	15	376500	1882.5	CP-OFDM 16 QAM	79@0	14.079	14.88
25	15	15	376500	1882.5	CP-OFDM 64 QAM	79@0	14.096	14.92
25	15	15	376500	1882.5	CP-OFDM 256 QAM	79@0	14.075	14.77
25	15	20	376500	1882.5	CP-OFDM QPSK	106@0	18.878	19.87
25	15	20	376500	1882.5	CP-OFDM 16 QAM	106@0	18.897	19.92
25	15	20	376500	1882.5	CP-OFDM 64 QAM	106@0	18.898	19.87
25	15	20	376500	1882.5	CP-OFDM 256 QAM	106@0	18.914	19.81
25	15	25	376500	1882.5	CP-OFDM QPSK	133@0	23.686	24.77
25	15	25	376500	1882.5	CP-OFDM 16 QAM	133@0	23.745	24.9
25	15	25	376500	1882.5	CP-OFDM 64 QAM	133@0	23.726	24.76
25	15	25	376500	1882.5	CP-OFDM 256 QAM	133@0	23.758	24.63
25	15	30	376500	1882.5	CP-OFDM QPSK	160@0	28.51	29.66
25	15	30	376500	1882.5	CP-OFDM 16 QAM	160@0	28.494	29.63

25	15	30	376500	1882.5	CP-OFDM 64 QAM	160@0	28.537	29.71
25	15	30	376500	1882.5	CP-OFDM 256 QAM	160@0	28.552	29.72
25	15	35	376500	1882.5	CP-OFDM QPSK	188@0	33.507	34.76
25	15	35	376500	1882.5	CP-OFDM 16 QAM	188@0	33.433	34.69
25	15	35	376500	1882.5	CP-OFDM 64 QAM	188@0	33.539	34.9
25	15	35	376500	1882.5	CP-OFDM 256 QAM	188@0	33.434	34.75
25	15	40	376500	1882.5	CP-OFDM QPSK	216@0	38.547	40.01
25	15	40	376500	1882.5	CP-OFDM 16 QAM	216@0	38.52	39.99
25	15	40	376500	1882.5	CP-OFDM 64 QAM	216@0	38.576	39.97
25	15	40	376500	1882.5	CP-OFDM 256 QAM	216@0	38.583	39.91

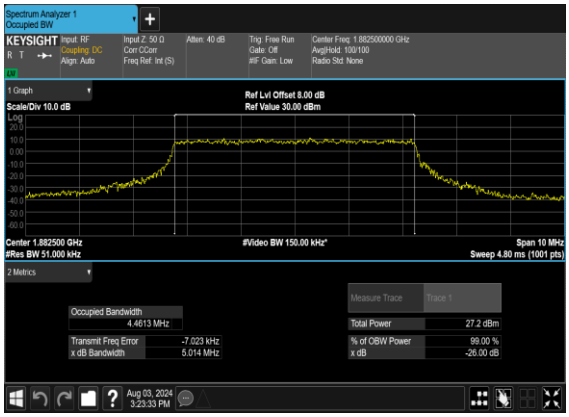
N25(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



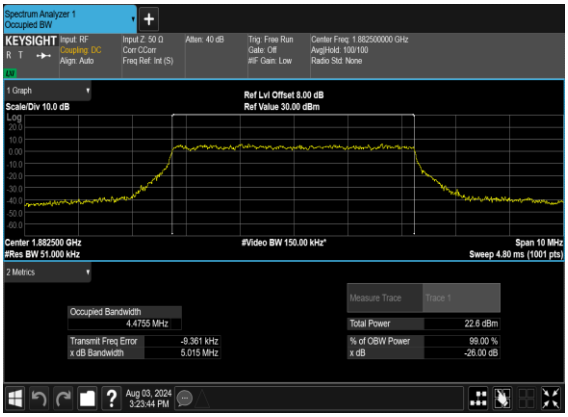
N25(5M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N25(5M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

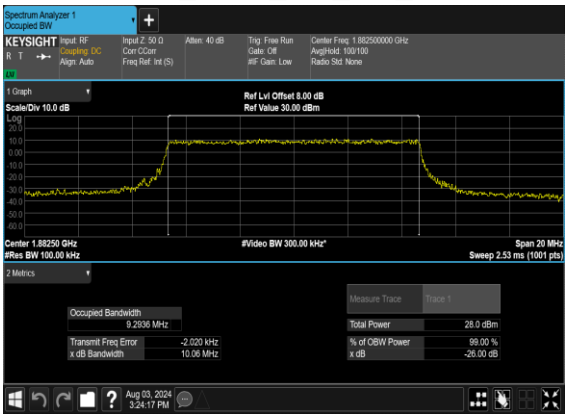


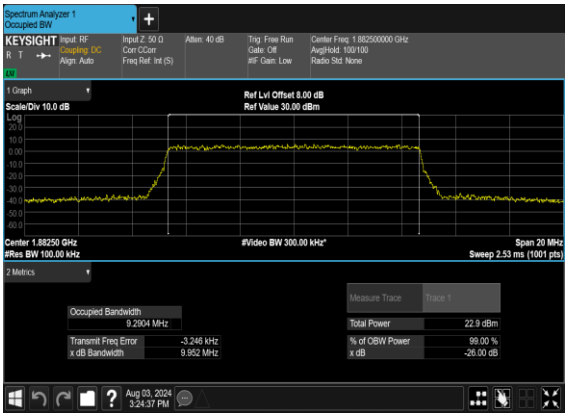
N25(5M)_CP-OFDM_256QAM_Outer_Full_Mid_CH



N25(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N25(10M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



N25(10M)_CP-OFDM_64QAM_Outer_Full_Mid_CH

N25(10M)_CP-OFDM_256QAM_Outer_Full_Mid_CH