



FCC RF Test Report

APPLICANT : OnePlus Technology (Shenzhen) Co.,Ltd.
EQUIPMENT : Mobile Phone
BRAND NAME : ONEPLUS
MODEL NAME : CPH2419, CPH2417
FCC ID : 2ABZ2-AA497
STANDARD : 47 CFR Part 2, 22, 24, 27
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S) : May 27, 2022 ~ Jun. 17, 2022

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



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG251121G	Rev. 01	Initial issue of report	Jul. 08, 2022



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)	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+10log ₁₀ (P[Watts])	PASS	Under limit 22.48 dB at 7578.270 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

OnePlus Technology (Shenzhen) Co.,Ltd.

18C02, 18C03, 18C04, 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, China.

1.2 Manufacturer

OnePlus Technology (Shenzhen) Co.,Ltd.

18C02, 18C03, 18C04, 18C05, Shum Yip Terra Building, Binhe Avenue North, Futian District, Shenzhen, Guangdong, China.

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	ONEPLUS
Model Name	CPH2419, CPH2417
FCC ID	2ABZ2-AA497
IMEI Code	Conducted : 861677060020347 Radiation : 861677060027938
HW Version	2AA495-0
SW Version	CPH2419_11_A.03
EUT Stage	Production Unit

Remark:

1. Only 5G NR bands are tested in this report, all the other RF bands are tested in the other reports separately.
2. The different model name is for different market purpose.

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
SCS	15kHz
Bandwidth	n2, n5, n71: 5MHz / 10MHz / 15MHz / 20MHz n25: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 40MHz n66: 5MHz / 10MHz / 15MHz / 20MHz / 30MHz / 40MHz
Antenna Type	Fixed Internal Antenna
Antenna Gain	<Ant. 0> n5: -4.5 dBi n71: -4.5 dBi <Ant. 1> n5: -4.0 dBi n71: -4.0 dBi <Ant. 2> n2: -3.0 dBi n25: -3.0 dBi n66: -3.0 dBi <Ant. 3> n2: -2.0 dBi n25: -2.0 dBi n66: -2.0 dBi <Ant. 5> n66: -3.0 dBi <Ant. 6> n66: -3.0 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Note:

1. The maximum ERP/EIRP is calculated from max output power and antenna gain, only the maximum ERP/EIRP is shown in the report: 5G NR n5/n71 for Ant. 1 and n2/n25/n66 for Ant.3.
2. 5G NR Bands support SA and NSA mode. The whole testing has assessed SA mode for n25/n66/n71 and NSA mode for n2/n5 by referring to the higher conducted power for conducted test items.
3. For NSA mode of all EN-DC combination, we only show the combination of the maximum power among all NSA combinations in the report.
4. The EN-DC mode combination could be referred to the SAR report.

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

5G NR n2 (EN DC_5A-n2A)		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	0.1510	4M48G7D	0.1211	4M48W7D
10	1855.0 ~ 1905.0	0.1486	9M28G7D	0.1211	9M30W7D
15	1857.5 ~ 1902.5	0.1567	14M1G7D	0.1245	14M1W7D
20	1860.0 ~ 1900.0	0.1578	18M9G7D	0.1245	18M9W7D

5G NR n5 (EN DC_2A-n5A)		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	0.0564	4M48G7D	0.0449	4M50W7D
10	829.0 ~ 844.0	0.0548	9M28G7D	0.0444	9M29W7D
15	831.5 ~ 841.5	0.0585	14M1G7D	0.0467	14M1W7D
20	834.0 ~ 839.0	0.0596	18M9G7D	0.0465	19M0W7D

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	0.1574	4M48G7D	0.1285	4M48W7D
10	1855.0 ~ 1910.0	0.1556	9M28G7D	0.1268	9M30W7D
15	1857.5 ~ 1907.5	0.1622	14M1G7D	0.1312	14M1W7D
20	1860.0 ~ 1905.0	0.1596	18M9G7D	0.1282	18M9W7D
25	1862.5 ~ 1902.5	0.1603	23M7G7D	0.1294	23M8W7D
30	1865.0 ~ 1900.0	0.1603	28M7G7D	0.1282	28M6W7D
40	1870.0 ~ 1895.0	0.1644	38M5G7D	0.1334	38M6W7D



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	0.1545	4M49G7D	0.1239	4M49W7D
10	1715.0 ~ 1775.0	0.1493	9M28G7D	0.1199	9M28W7D
15	1717.5 ~ 1772.5	0.1596	14M1G7D	0.1279	14M1W7D
20	1720.0 ~ 1770.0	0.1589	18M9G7D	0.1285	18M9W7D
30	1725.0 ~ 1765.0	0.1600	28M6G7D	0.1265	28M5W7D
40	1730.0 ~ 1760.0	0.1622	38M5G7D	0.1279	38M6W7D

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	0.0614	4M48G7D	0.0497	4M49W7D
10	668.0 ~ 693.0	0.0617	9M27G7D	0.0495	9M28W7D
15	670.5 ~ 690.5	0.0622	14M1G7D	0.0507	14M1W7D
20	673.0 ~ 688.0	0.0631	18M9G7D	0.0516	18M9W7D

Note:

1. 5G NR Band n25 overlaps the entire frequency range of Band n2. Therefore, the conducted test results provided in this report covers Band n25 as well as Band n2.
2. 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. (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 China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH01-SZ	CN1256	421272

1.8 Test Software

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

1.9 Applicable Standards

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

- ♦ 47 CFR Part 2, 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/Y/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.

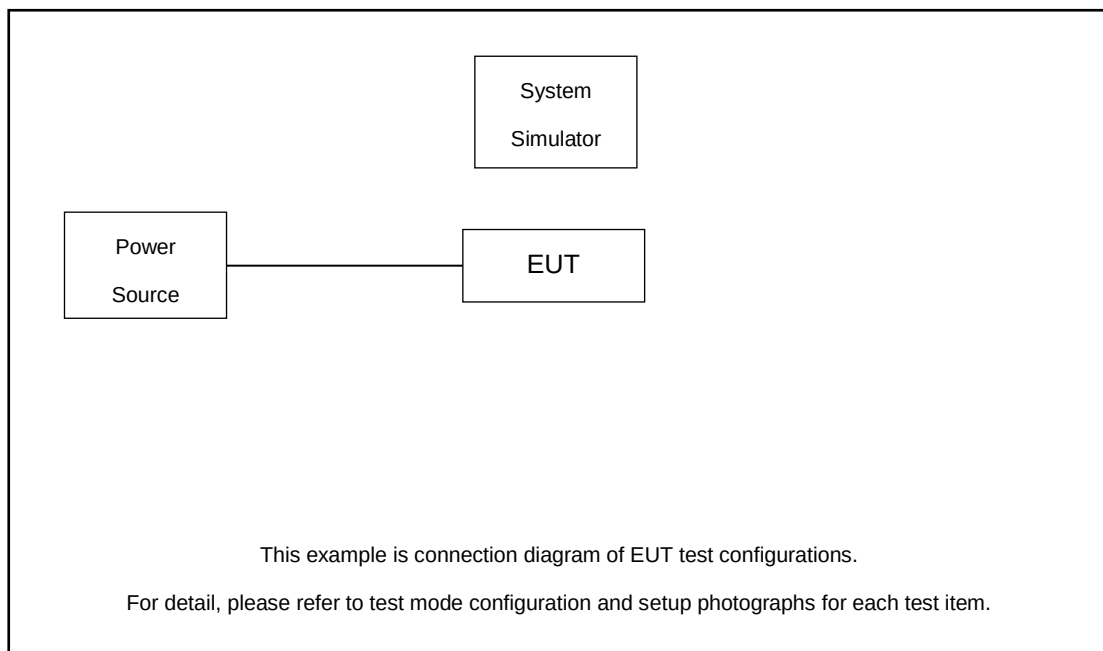
Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

Test Items	5G NR	Bandwidth (MHz)							Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	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
	n25	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
	n71	v	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n5				v	-	-	-	v	v				v	v	v	v	v
	n25				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
26dB and 99% Bandwidth	n5	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	
	n66	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	
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	40	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	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	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
	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
	n66	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
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. Based on engineering evaluation, only the worst modulation test results are shown in the report. 5. Nominal Voltage: 7.78Vdc. Maximum Voltage: 8.96Vdc. Minimum Voltage: 6Vdc																	

2.2 Connection Diagram of Test System



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.	Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	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 7.3 dB.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 7.3 \text{ (dB)} \end{aligned}$$



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	388000	392000	396000
	Frequency	1860	1880	1900
15	Channel	387500	392000	396500
	Frequency	1857.5	1880	1902.5
10	Channel	387000	392000	397000
	Frequency	1855	1880	1905
5	Channel	386500	392000	397500
	Frequency	1852.5	1880	1907.5

5G NR n5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	175800	176300	176800
	Frequency	834	836.5	839
15	Channel	175300	176300	177300
	Frequency	831.5	836.5	841.5
10	Channel	174800	176300	177800
	Frequency	829	836.5	844
5	Channel	174300	176300	178300
	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
30	Channel	389000	392500	396000
	Frequency	1865	1882.5	1900
25	Channel	388500	392500	396500
	Frequency	1862.5	1882.5	1902.5
20	Channel	388000	392500	397000
	Frequency	1860	1882.5	1905
15	Channel	387500	392500	397500
	Frequency	1857.5	1882.5	1907.5
10	Channel	387000	392500	398000
	Frequency	1855	1882.5	1910
5	Channel	386500	392500	398500
	Frequency	1852.5	1882.5	1912.5

5G NR n66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	426000	429000	432000
	Frequency	1730	1745	1760
30	Channel	425000	429000	433000
	Frequency	1725	1745	1765
20	Channel	424000	429000	434000
	Frequency	1720	1745	1770
15	Channel	423500	429000	434500
	Frequency	1717.5	1745	1772.5
10	Channel	423000	429000	435000
	Frequency	1715	1745	1775
5	Channel	422500	429000	435500
	Frequency	1712.5	1745	1777.5



5G NR n71 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	125400	126900	128400
	Frequency	673	680.5	688
15	Channel	124900	126900	128900
	Frequency	670.5	680.5	690.5
10	Channel	124400	126900	129400
	Frequency	668	680.5	693
5	Channel	123900	126900	129900
	Frequency	665.5	680.5	695.5

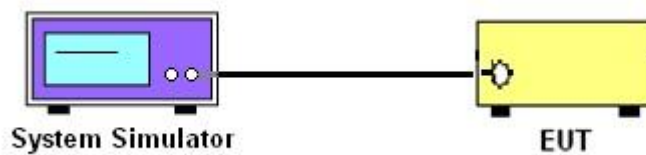
3 Conducted Test Items

3.1 Measuring Instruments

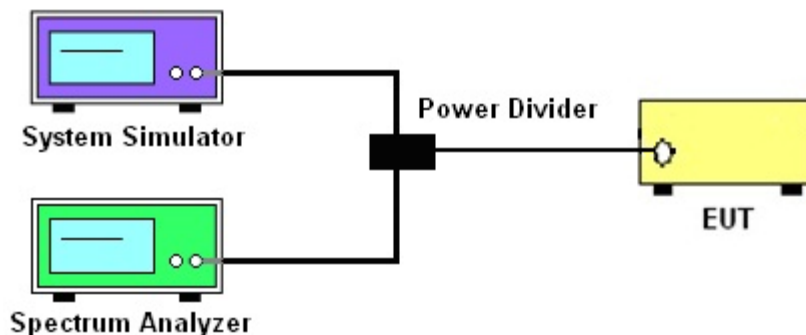
See list of measuring instruments of this test report.

3.2 Test Setup

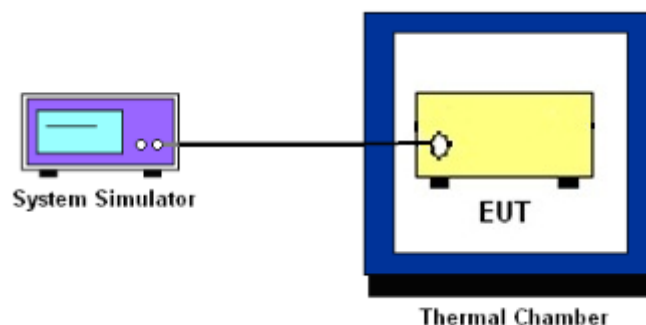
3.2.1 Conducted Output Power



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 and 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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 and 1710 – 1780 MHz band, the FCC limit is $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $43 + 10\log_{10}(P[\text{Watts}])$ dB below the transmitter power $P(\text{Watts})$ 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 $\geq$ 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.
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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}.$$

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 $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.

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 $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) 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 $20\pm 5^{\circ}\text{C}$ 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.

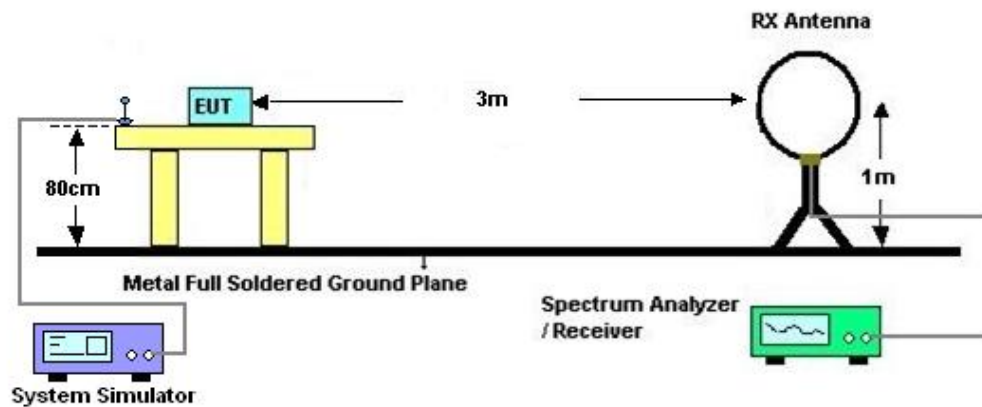
4 Radiated Test Items

4.1 Measuring Instruments

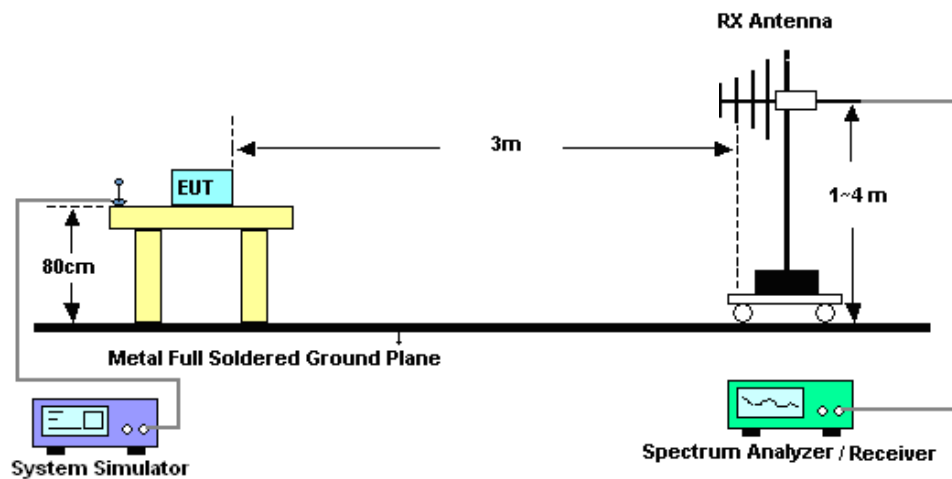
See list of measuring instruments of this test report.

4.2 Test Setup

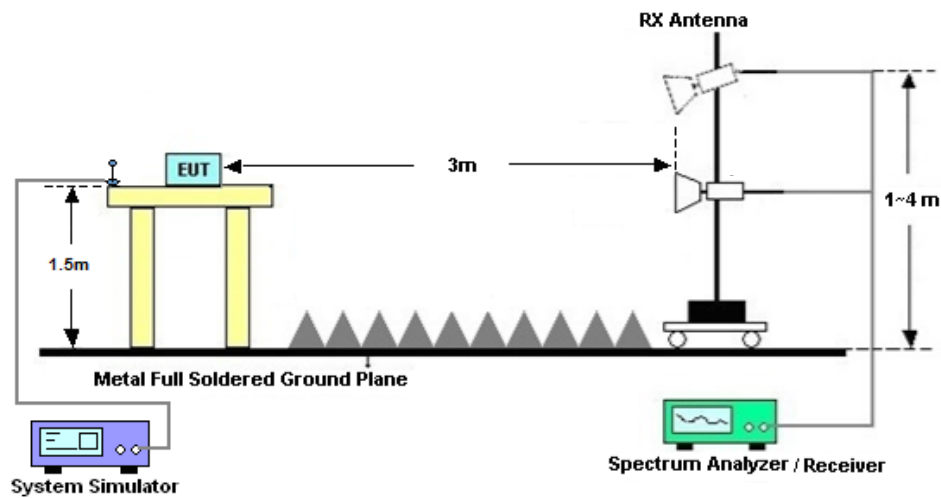
4.2.1 For radiated test below 30MHz



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. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$



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. 07, 2022	May 27, 2022~ Jun. 17, 2022	Apr. 06, 2023	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2021	May 27, 2022~ Jun. 17, 2022	Dec. 24, 2022	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhonggroup	LP-150U	H2014081803	-40~+150°C	Jul. 14, 2021	May 27, 2022~ Jun. 17, 2022	Jul. 13, 2022	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 27, 2021	Jun. 17, 2022	Dec. 26, 2022	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 22, 2021	Jun. 17, 2022	Jun. 21, 2022	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5GHz	Oct. 22, 2021	Jun. 17, 2022	Oct. 21, 2022	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Sep. 28, 2021	Jun. 17, 2022	Sep. 27, 2022	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1474	1GHz~18GHz	Jul. 15, 2021	Jun. 17, 2022	Jul. 14, 2022	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz-40GHz	Apr. 10, 2022	Jun. 17, 2022	Apr. 09, 2023	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 06, 2022	Jun. 17, 2022	Apr. 05, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 22, 2021	Jun. 17, 2022	Oct. 21, 2022	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 13, 2021	Jun. 17, 2022	Jul. 12, 2022	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jun. 17, 2022	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 17, 2022	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 17, 2022	NCR	Radiation (03CH01-SZ)

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% ($U = 2U_c(y)$)	2.48dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.53dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.02dB
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----- THE END -----



Appendix A. Test Results of Conducted Test

Test Engineer :	Jung Guo	Temperature :	22~23°C
		Relative Humidity :	40~42%

FR1 N2(ANT3)

LTE Band: 5(ANT1), LTE BW: 10M, LTE ARFCN: Mid

Conducted Output Power and EIRP (gain=-2.0dBi)

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	EIRP (dBm)	EIRP (W)
2	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@1	23.7	21.7	0.1479
2	15	5	386500	1852.5	DFT-s-OFDM 16 QAM	1@1	22.73	20.73	0.1183
2	15	5	392000	1880	DFT-s-OFDM QPSK	1@1	23.79	21.79	0.1510
2	15	5	392000	1880	DFT-s-OFDM 16 QAM	1@1	22.83	20.83	0.1211
2	15	5	397500	1907.5	DFT-s-OFDM QPSK	1@1	23.69	21.69	0.1476
2	15	5	397500	1907.5	DFT-s-OFDM 16 QAM	1@1	22.8	20.8	0.1202
2	15	10	387000	1855	DFT-s-OFDM QPSK	1@1	23.66	21.66	0.1466
2	15	10	387000	1855	DFT-s-OFDM 16 QAM	1@1	22.75	20.75	0.1189
2	15	10	392000	1880	DFT-s-OFDM QPSK	1@1	23.72	21.72	0.1486
2	15	10	392000	1880	DFT-s-OFDM 16 QAM	1@1	22.75	20.75	0.1189
2	15	10	397000	1905	DFT-s-OFDM QPSK	1@1	23.69	21.69	0.1476
2	15	10	397000	1905	DFT-s-OFDM 16 QAM	1@1	22.83	20.83	0.1211
2	15	15	387500	1857.5	DFT-s-OFDM QPSK	1@1	23.95	21.95	0.1567
2	15	15	387500	1857.5	DFT-s-OFDM 16 QAM	1@1	22.91	20.91	0.1233
2	15	15	392000	1880	DFT-s-OFDM QPSK	1@1	23.87	21.87	0.1538
2	15	15	392000	1880	DFT-s-OFDM 16 QAM	1@1	22.95	20.95	0.1245
2	15	15	396500	1902.5	DFT-s-OFDM QPSK	1@1	23.83	21.83	0.1524
2	15	15	396500	1902.5	DFT-s-OFDM 16 QAM	1@1	22.78	20.78	0.1197
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	50@25	22.4	20.4	0.1096
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	1@1	22.4	20.4	0.1096
2	15	20	388000	1860	DFT-s-OFDM PI/2 BPSK	1@104	22.43	20.43	0.1104
2	15	20	388000	1860	DFT-s-OFDM QPSK	50@25	23.83	21.83	0.1524
2	15	20	388000	1860	DFT-s-OFDM QPSK	1@1	23.84	21.84	0.1528
2	15	20	388000	1860	DFT-s-OFDM QPSK	1@104	23.87	21.87	0.1538
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	50@25	22.87	20.87	0.1222
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	1@1	22.95	20.95	0.1245
2	15	20	388000	1860	DFT-s-OFDM 16 QAM	1@104	22.9	20.9	0.1230
2	15	20	388000	1860	DFT-s-OFDM	50@25	21.47	19.47	0.0885

					64 QAM				
2	15	20	388000	1860	DFT-s-OFDM 64 QAM	1@1	21.6	19.6	0.0912
2	15	20	388000	1860	DFT-s-OFDM 64 QAM	1@104	21.62	19.62	0.0916
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	50@25	19.41	17.41	0.0551
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	1@1	18.85	16.85	0.0484
2	15	20	388000	1860	DFT-s-OFDM 256 QAM	1@104	18.83	16.83	0.0482
2	15	20	388000	1860	CP-OFDM QPSK	53@26	22.4	20.4	0.1096
2	15	20	388000	1860	CP-OFDM QPSK	1@1	22.49	20.49	0.1119
2	15	20	388000	1860	CP-OFDM QPSK	1@104	22.43	20.43	0.1104
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	50@25	22.43	20.43	0.1104
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	1@1	22.44	20.44	0.1107
2	15	20	392000	1880	DFT-s-OFDM PI/2 BPSK	1@104	22.37	20.37	0.1089
2	15	20	392000	1880	DFT-s-OFDM QPSK	50@25	23.83	21.83	0.1524
2	15	20	392000	1880	DFT-s-OFDM QPSK	1@1	23.79	21.79	0.1510
2	15	20	392000	1880	DFT-s-OFDM QPSK	1@104	23.83	21.83	0.1524
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	50@25	22.92	20.92	0.1236
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	1@1	22.87	20.87	0.1222
2	15	20	392000	1880	DFT-s-OFDM 16 QAM	1@104	22.86	20.86	0.1219
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	50@25	21.49	19.49	0.0889
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	1@1	21.63	19.63	0.0918
2	15	20	392000	1880	DFT-s-OFDM 64 QAM	1@104	21.57	19.57	0.0906
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	50@25	19.41	17.41	0.0551
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	1@1	18.91	16.91	0.0491
2	15	20	392000	1880	DFT-s-OFDM 256 QAM	1@104	18.82	16.82	0.0481
2	15	20	392000	1880	CP-OFDM QPSK	53@26	22.4	20.4	0.1096
2	15	20	392000	1880	CP-OFDM QPSK	1@1	22.38	20.38	0.1091
2	15	20	392000	1880	CP-OFDM QPSK	1@104	22.38	20.38	0.1091
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	50@25	23.52	21.52	0.1419
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	1@1	23.32	21.32	0.1355
2	15	20	396000	1900	DFT-s-OFDM PI/2 BPSK	1@104	23.57	21.57	0.1435
2	15	20	396000	1900	DFT-s-OFDM QPSK	50@25	23.98	21.98	0.1578
2	15	20	396000	1900	DFT-s-OFDM QPSK	1@1	23.77	21.77	0.1503
2	15	20	396000	1900	DFT-s-OFDM QPSK	1@104	23.78	21.78	0.1507
2	15	20	396000	1900	DFT-s-OFDM 16 QAM	50@25	22.82	20.82	0.1208

2	15	20	396000	1900	DFT-s-OFDM 16 QAM	1@1	22.82	20.82	0.1208
2	15	20	396000	1900	DFT-s-OFDM 16 QAM	1@104	22.89	20.89	0.1227
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	50@25	21.35	19.35	0.0861
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	1@1	21.5	19.5	0.0891
2	15	20	396000	1900	DFT-s-OFDM 64 QAM	1@104	21.54	19.54	0.0899
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	50@25	19.27	17.27	0.0533
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	1@1	18.83	16.83	0.0482
2	15	20	396000	1900	DFT-s-OFDM 256 QAM	1@104	18.86	16.86	0.0485
2	15	20	396000	1900	CP-OFDM QPSK	53@26	22.31	20.31	0.1074
2	15	20	396000	1900	CP-OFDM QPSK	1@1	22.38	20.38	0.1091
2	15	20	396000	1900	CP-OFDM QPSK	1@104	22.42	20.42	0.1102

FR1 N5(ANT1)

LTE Band: 2(ANT3), LTE BW: 10M, LTE ARFCN: Mid

Conducted Output Power and ERP (gain=-4.0dBi)

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	ERP (dBm)	ERP (W)
5	15	5	174300	826.5	DFT-s-OFDM QPSK	1@1	23.66	17.51	0.0564
5	15	5	174300	826.5	DFT-s-OFDM 16 QAM	1@1	22.67	16.52	0.0449
5	15	5	176300	836.5	DFT-s-OFDM QPSK	1@1	23.58	17.43	0.0553
5	15	5	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.67	16.52	0.0449
5	15	5	178300	846.5	DFT-s-OFDM QPSK	1@1	23.51	17.36	0.0545
5	15	5	178300	846.5	DFT-s-OFDM 16 QAM	1@1	22.53	16.38	0.0435
5	15	10	174800	829	DFT-s-OFDM QPSK	1@1	23.53	17.38	0.0547
5	15	10	174800	829	DFT-s-OFDM 16 QAM	1@1	22.62	16.47	0.0444
5	15	10	176300	836.5	DFT-s-OFDM QPSK	1@1	23.54	17.39	0.0548
5	15	10	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.54	16.39	0.0436
5	15	10	177800	844	DFT-s-OFDM QPSK	1@1	23.5	17.35	0.0543
5	15	10	177800	844	DFT-s-OFDM 16 QAM	1@1	22.58	16.43	0.0440
5	15	15	175300	831.5	DFT-s-OFDM QPSK	1@1	23.82	17.67	0.0585
5	15	15	175300	831.5	DFT-s-OFDM 16 QAM	1@1	22.84	16.69	0.0467
5	15	15	176300	836.5	DFT-s-OFDM QPSK	1@1	23.71	17.56	0.0570
5	15	15	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.77	16.62	0.0459
5	15	15	177300	841.5	DFT-s-OFDM QPSK	1@1	23.68	17.53	0.0566
5	15	15	177300	841.5	DFT-s-OFDM 16 QAM	1@1	22.76	16.61	0.0458
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	50@25	23.26	17.11	0.0514
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	1@1	23.27	17.12	0.0515
5	15	20	175800	834	DFT-s-OFDM PI/2 BPSK	1@104	23.09	16.94	0.0494
5	15	20	175800	834	DFT-s-OFDM QPSK	50@25	23.9	17.75	0.0596
5	15	20	175800	834	DFT-s-OFDM QPSK	1@1	23.64	17.49	0.0561
5	15	20	175800	834	DFT-s-OFDM QPSK	1@104	23.58	17.43	0.0553
5	15	20	175800	834	DFT-s-OFDM 16 QAM	50@25	22.81	16.66	0.0463
5	15	20	175800	834	DFT-s-OFDM 16 QAM	1@1	22.68	16.53	0.0450

5	15	20	175800	834	DFT-s-OFDM 16 QAM	1@104	22.57	16.42	0.0439
5	15	20	175800	834	DFT-s-OFDM 64 QAM	50@25	21.35	15.2	0.0331
5	15	20	175800	834	DFT-s-OFDM 64 QAM	1@1	21.32	15.17	0.0329
5	15	20	175800	834	DFT-s-OFDM 64 QAM	1@104	21.23	15.08	0.0322
5	15	20	175800	834	DFT-s-OFDM 256 QAM	50@25	19.27	13.12	0.0205
5	15	20	175800	834	DFT-s-OFDM 256 QAM	1@1	18.67	12.52	0.0179
5	15	20	175800	834	DFT-s-OFDM 256 QAM	1@104	18.65	12.5	0.0178
5	15	20	175800	834	CP-OFDM QPSK	53@26	22.26	16.11	0.0408
5	15	20	175800	834	CP-OFDM QPSK	1@1	22.27	16.12	0.0409
5	15	20	175800	834	CP-OFDM QPSK	1@104	22.15	16	0.0398
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	23.3	17.15	0.0519
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.19	17.04	0.0506
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	23.02	16.87	0.0486
5	15	20	176300	836.5	DFT-s-OFDM QPSK	50@25	23.73	17.58	0.0573
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@1	23.66	17.51	0.0564
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@104	23.47	17.32	0.0540
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	50@25	22.82	16.67	0.0465
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	1@1	22.7	16.55	0.0452
5	15	20	176300	836.5	DFT-s-OFDM 16 QAM	1@104	22.47	16.32	0.0429
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	50@25	21.37	15.22	0.0333
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	1@1	21.35	15.2	0.0331
5	15	20	176300	836.5	DFT-s-OFDM 64 QAM	1@104	21.07	14.92	0.0310
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	50@25	19.32	13.17	0.0207
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	1@1	18.73	12.58	0.0181
5	15	20	176300	836.5	DFT-s-OFDM 256 QAM	1@104	18.57	12.42	0.0175
5	15	20	176300	836.5	CP-OFDM QPSK	53@26	22.3	16.15	0.0412
5	15	20	176300	836.5	CP-OFDM QPSK	1@1	22.32	16.17	0.0414
5	15	20	176300	836.5	CP-OFDM QPSK	1@104	22.1	15.95	0.0394
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	50@25	23.21	17.06	0.0508
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	1@1	23.11	16.96	0.0497
5	15	20	176800	839	DFT-s-OFDM PI/2 BPSK	1@104	22.91	16.76	0.0474
5	15	20	176800	839	DFT-s-OFDM QPSK	50@25	23.64	17.49	0.0561
5	15	20	176800	839	DFT-s-OFDM QPSK	1@1	23.62	17.47	0.0558
5	15	20	176800	839	DFT-s-OFDM QPSK	1@104	23.31	17.16	0.0520

5	15	20	176800	839	DFT-s-OFDM 16 QAM	50@25	22.79	16.64	0.0461
5	15	20	176800	839	DFT-s-OFDM 16 QAM	1@1	22.63	16.48	0.0445
5	15	20	176800	839	DFT-s-OFDM 16 QAM	1@104	22.37	16.22	0.0419
5	15	20	176800	839	DFT-s-OFDM 64 QAM	50@25	21.3	15.15	0.0327
5	15	20	176800	839	DFT-s-OFDM 64 QAM	1@1	21.25	15.1	0.0324
5	15	20	176800	839	DFT-s-OFDM 64 QAM	1@104	21	14.85	0.0305
5	15	20	176800	839	DFT-s-OFDM 256 QAM	50@25	19.21	13.06	0.0202
5	15	20	176800	839	DFT-s-OFDM 256 QAM	1@1	18.64	12.49	0.0177
5	15	20	176800	839	DFT-s-OFDM 256 QAM	1@104	18.45	12.3	0.0170
5	15	20	176800	839	CP-OFDM QPSK	53@26	22.24	16.09	0.0406
5	15	20	176800	839	CP-OFDM QPSK	1@1	22.24	16.09	0.0406
5	15	20	176800	839	CP-OFDM QPSK	1@104	21.98	15.83	0.0383

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	0.00646	PASS	NV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00578	PASS	LV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00614	PASS	HV
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00479	PASS	-30°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00573	PASS	-20°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00214	PASS	-10°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00287	PASS	0°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00512	PASS	10°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00226	PASS	20°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00223	PASS	30°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00401	PASS	40°C
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	0.00663	PASS	50°C

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	4.08	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	5.78	13	PASS
5	15	20	175800	834.0	DFT-s-OFDM QPSK	1@0	5.73	13	PASS
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	4.17	13	PASS
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	1@0	3.47	13	PASS
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	5.75	13	PASS
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@0	5.67	13	PASS
5	15	20	176800	839.0	DFT-s-OFDM PI/2 BPSK	100@0	4.04	13	PASS
5	15	20	176800	839.0	DFT-s-OFDM PI/2 BPSK	1@0	3.37	13	PASS
5	15	20	176800	839.0	DFT-s-OFDM QPSK	100@0	5.63	13	PASS
5	15	20	176800	839.0	DFT-s-OFDM QPSK	1@0	5.64	13	PASS

B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



B2_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



B2_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



B2_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



B2_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



B2_N5(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



B2_N5(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



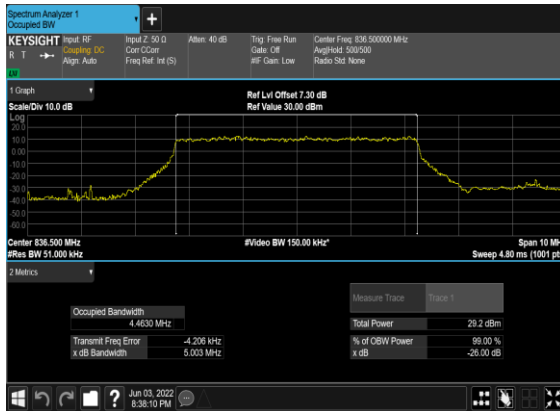
B2_N5(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



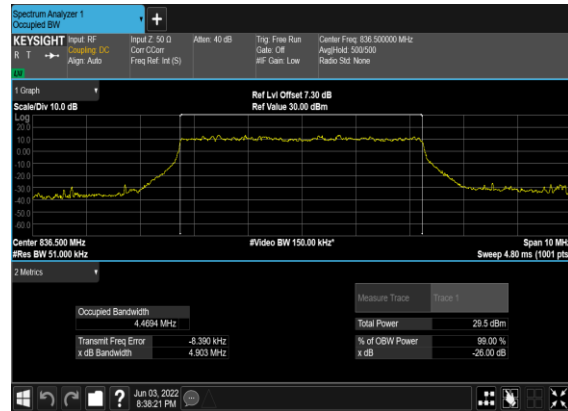
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
5	15	5	176300	836.5	DFT-s-OFDM PI/2 BPSK	25@0	4.463	5.003
5	15	5	176300	836.5	DFT-s-OFDM QPSK	25@0	4.4694	4.903
5	15	5	176300	836.5	CP-OFDM QPSK	25@0	4.4777	5.167
5	15	5	176300	836.5	CP-OFDM 16 QAM	25@0	4.4986	5.162
5	15	5	176300	836.5	CP-OFDM 64 QAM	25@0	4.4909	5.111
5	15	5	176300	836.5	CP-OFDM 256 QAM	25@0	4.4756	5.154
5	15	10	176300	836.5	DFT-s-OFDM PI/2 BPSK	50@0	8.8931	9.616
5	15	10	176300	836.5	DFT-s-OFDM QPSK	50@0	8.9109	9.67
5	15	10	176300	836.5	CP-OFDM QPSK	52@0	9.278	10.05
5	15	10	176300	836.5	CP-OFDM 16 QAM	52@0	9.2584	10.05
5	15	10	176300	836.5	CP-OFDM 64 QAM	52@0	9.2675	9.986
5	15	10	176300	836.5	CP-OFDM 256 QAM	52@0	9.2907	10.09
5	15	15	176300	836.5	DFT-s-OFDM PI/2 BPSK	75@0	13.389	14.16
5	15	15	176300	836.5	DFT-s-OFDM QPSK	75@0	13.384	14.18
5	15	15	176300	836.5	CP-OFDM QPSK	79@0	14.085	14.96
5	15	15	176300	836.5	CP-OFDM 16 QAM	79@0	14.114	15.04
5	15	15	176300	836.5	CP-OFDM 64 QAM	79@0	14.122	15.07
5	15	15	176300	836.5	CP-OFDM 256 QAM	79@0	14.08	14.91
5	15	20	176300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	17.856	18.84
5	15	20	176300	836.5	DFT-s-OFDM QPSK	100@0	17.846	18.81
5	15	20	176300	836.5	CP-OFDM QPSK	106@0	18.913	19.97
5	15	20	176300	836.5	CP-OFDM 16 QAM	106@0	18.914	19.94
5	15	20	176300	836.5	CP-OFDM 64 QAM	106@0	18.916	19.88
5	15	20	176300	836.5	CP-OFDM 256 QAM	106@0	18.965	19.93

B2_N5(5M)_DFT-s-OFDM_PI_2-
BPSK_Outer_Full_Mid_CH



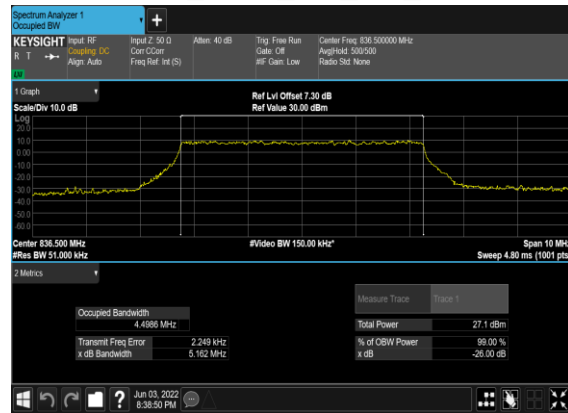
B2_N5(5M)_DFT-s-
OFDM_QPSK_Outer_Full_Mid_CH



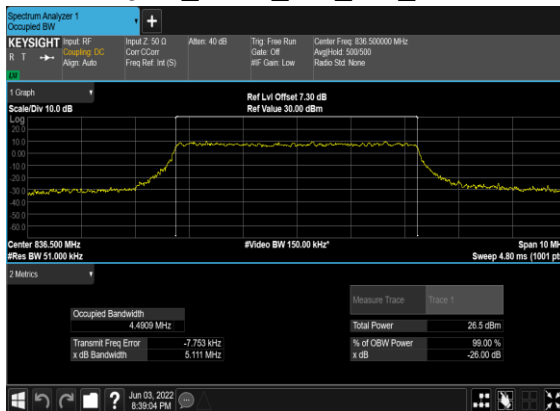
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OFDM_QPSK_Outer_Full_Mid_CH



B2_N5(5M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



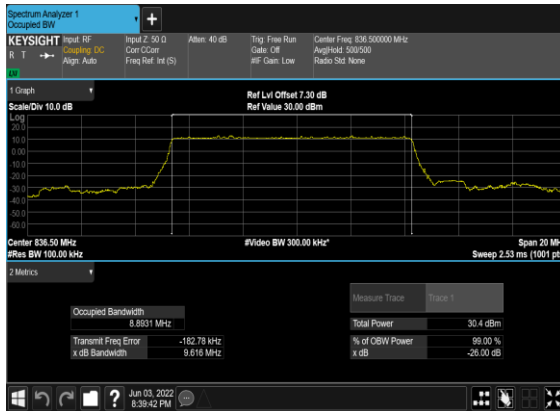
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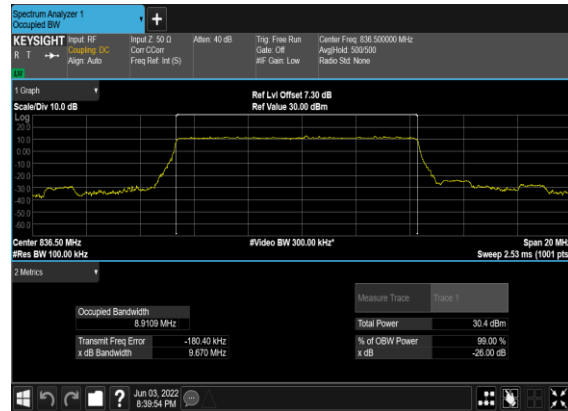
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QAM_Outer_Full_Mid_CH



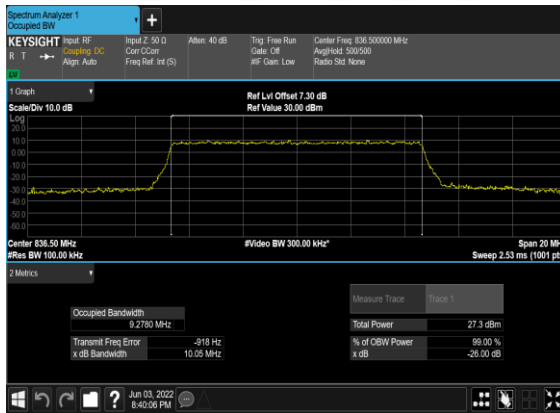
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BPSK_Outer_Full_Mid_CH



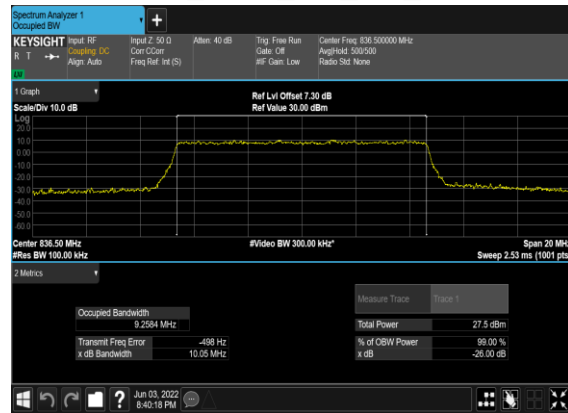
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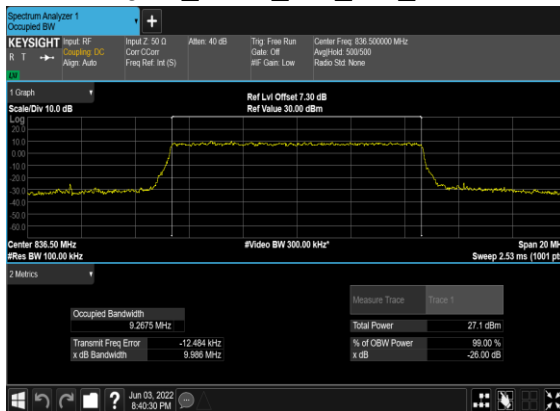
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OFDM_QPSK_Outer_Full_Mid_CH



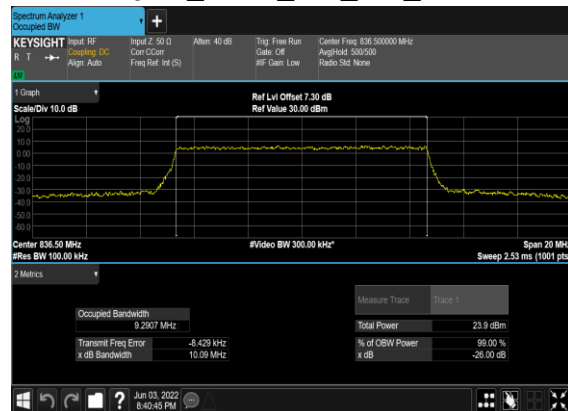
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QAM_Outer_Full_Mid_CH



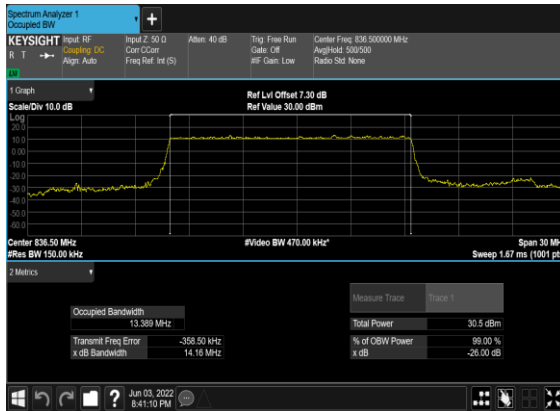
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QAM_Outer_Full_Mid_CH



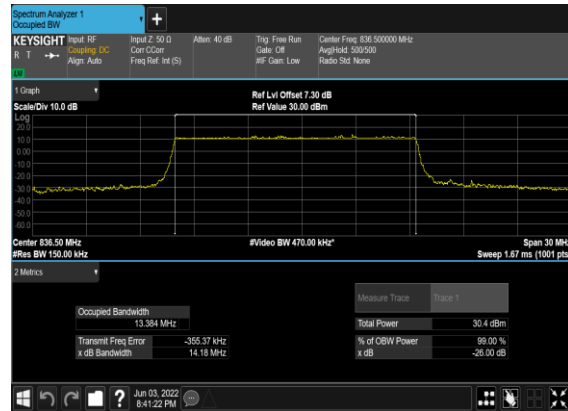
B2_N5(10M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH



B2_N5(15M)_DFT-s-OFDM_PI_2-
BPSK_Outer_Full_Mid_CH



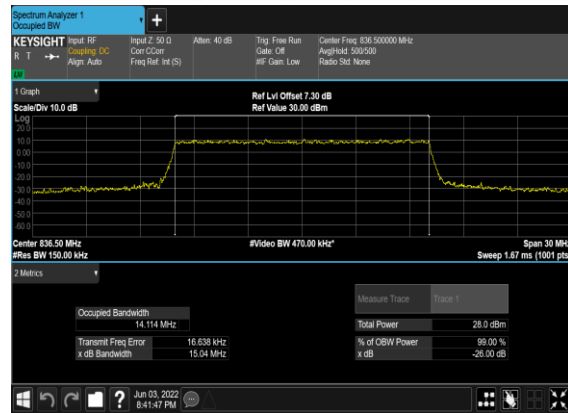
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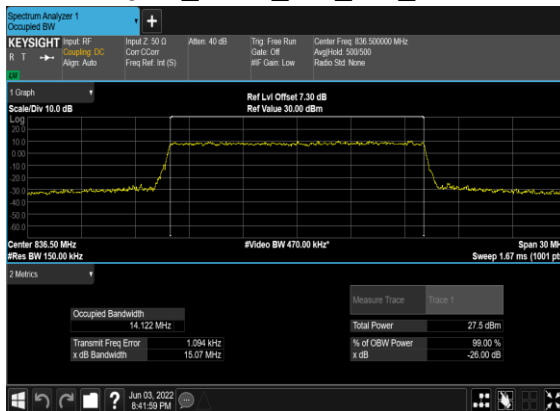
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OFDM_QPSK_Outer_Full_Mid_CH



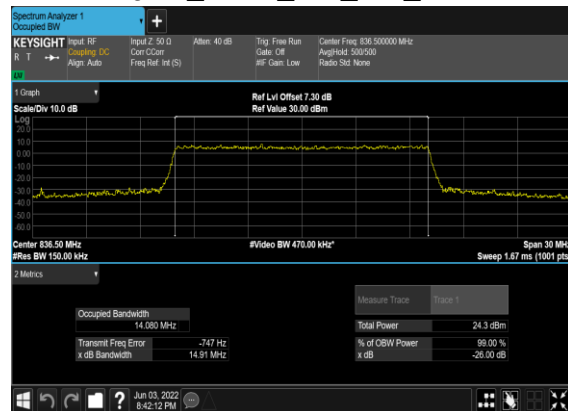
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QAM_Outer_Full_Mid_CH



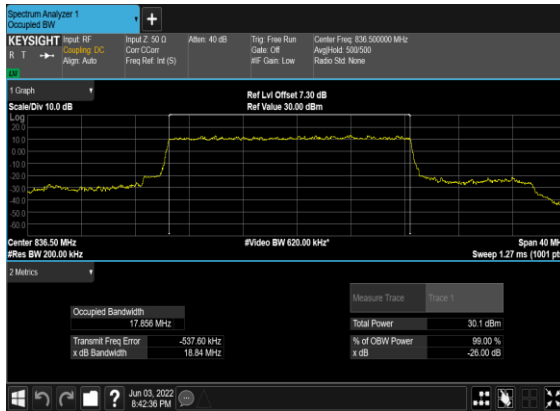
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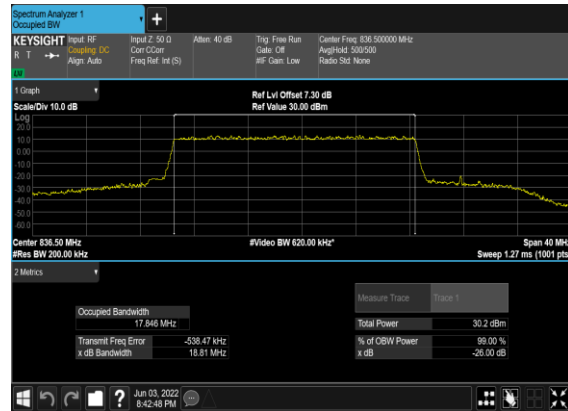
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QAM_Outer_Full_Mid_CH



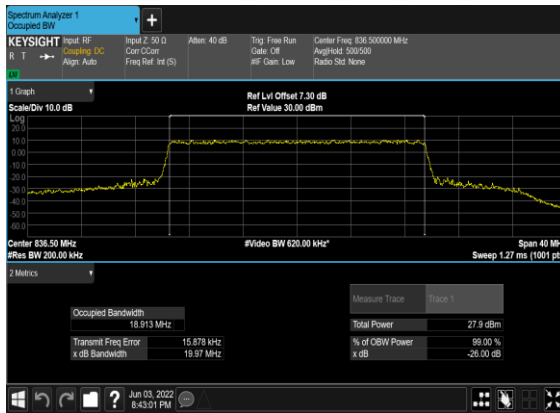
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BPSK_Outer_Full_Mid_CH



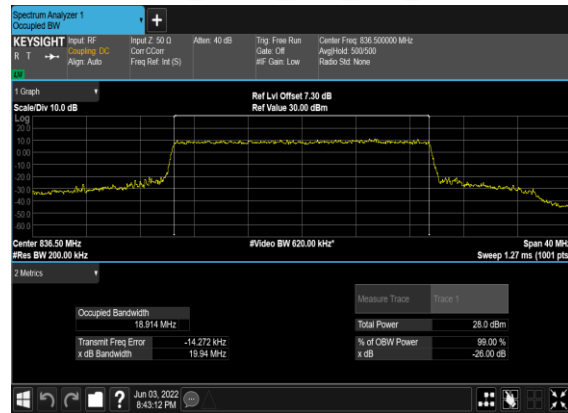
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OFDM_QPSK_Outer_Full_Mid_CH



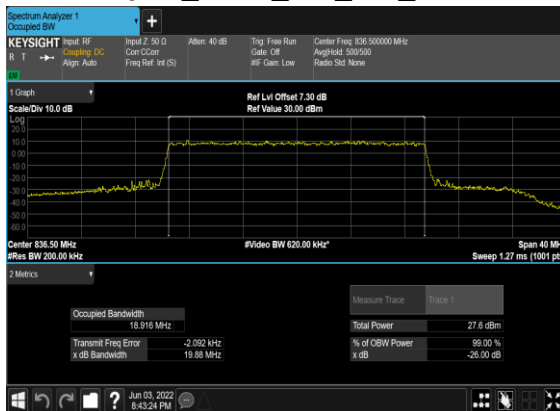
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OFDM_QPSK_Outer_Full_Mid_CH



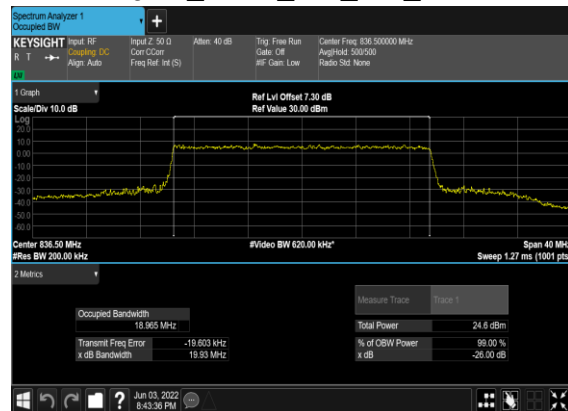
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QAM_Outer_Full_Mid_CH



B2_N5(20M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH



B2_N5(20M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

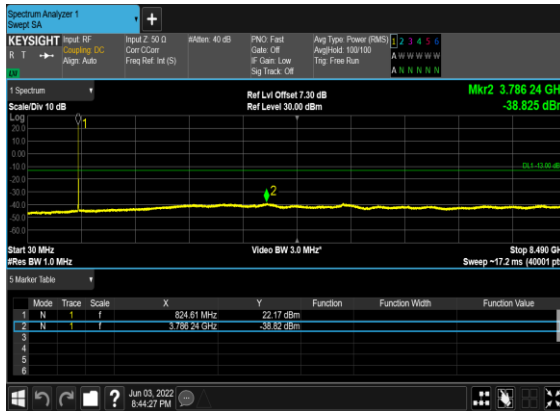


Conducted Spurious Emissions

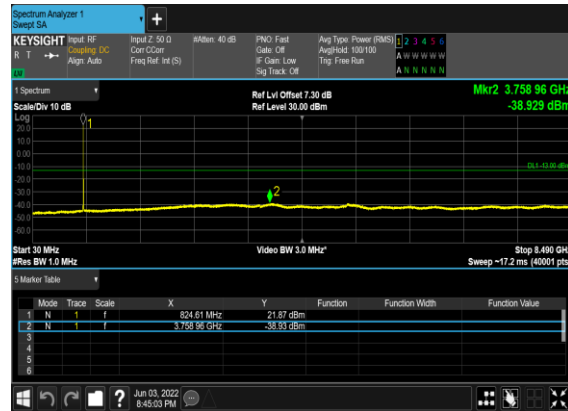
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	5	174300	826.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	174300	826.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	5	174300	826.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	174300	826.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	5	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	5	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	5	178300	846.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	5	178300	846.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	10	174800	829.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	10	174800	829.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	10	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	10	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	10	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	10	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	10	177800	844.0	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	10	177800	844.0	DFT-s-OFDM BPSK	1@0	see graph	PASS

5	15	10	177800	844.0	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	10	177800	844.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	20	175800	834.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	20	175800	834.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	20	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	20	176300	836.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	20	176300	836.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM BPSK	1@0	see graph	---
5	15	20	176800	839.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM QPSK	1@0	see graph	---
5	15	20	176800	839.0	DFT-s-OFDM QPSK	1@0	see graph	PASS

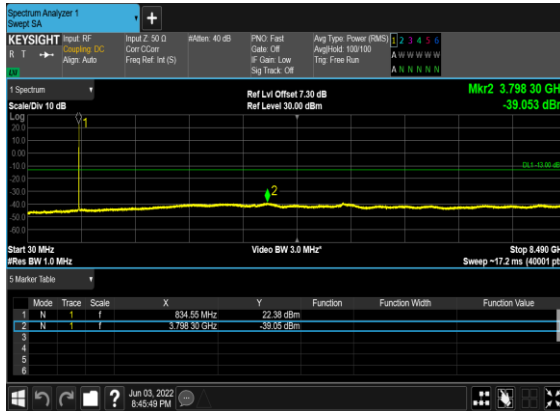
B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



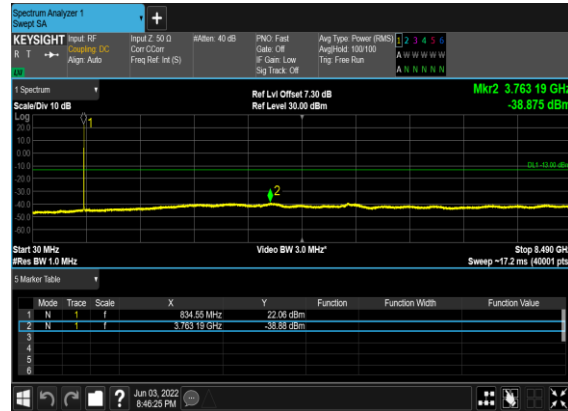
B2_N5(5M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



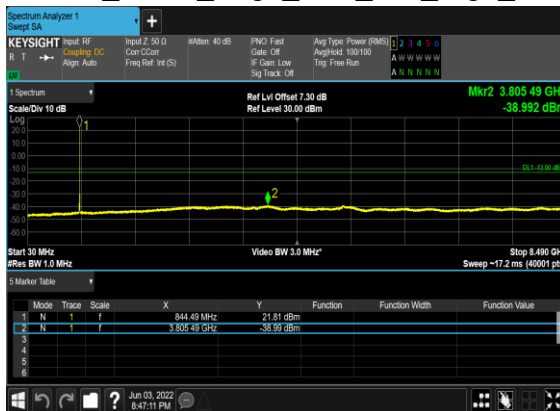
B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH



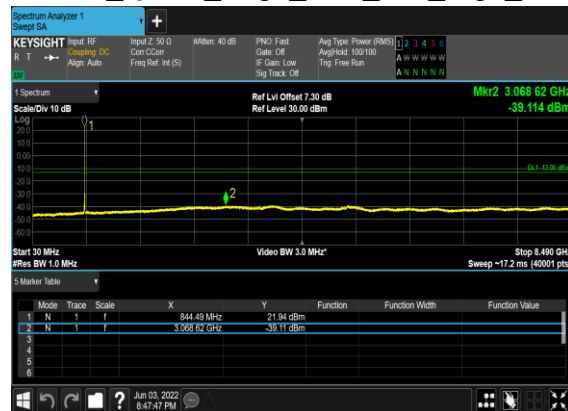
B2_N5(5M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Mid_CH



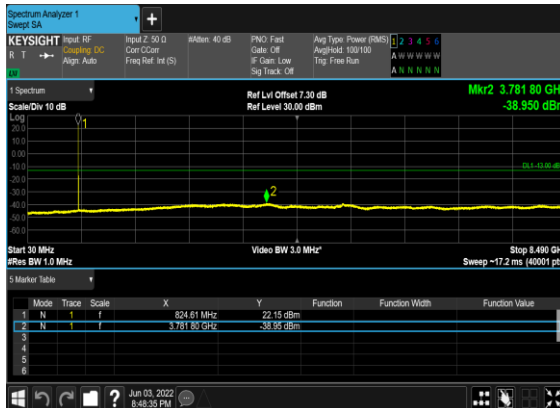
B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



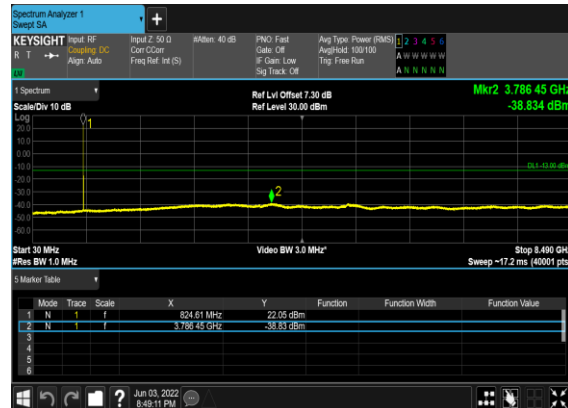
B2_N5(5M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH



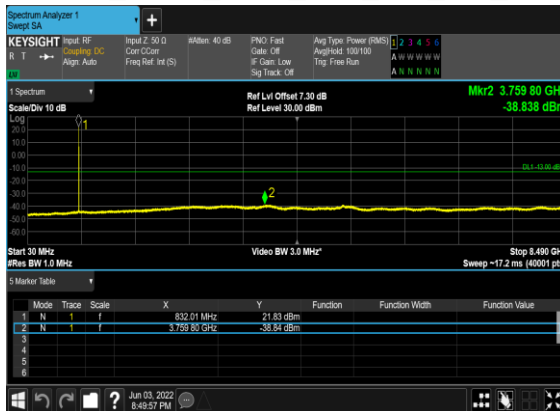
B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



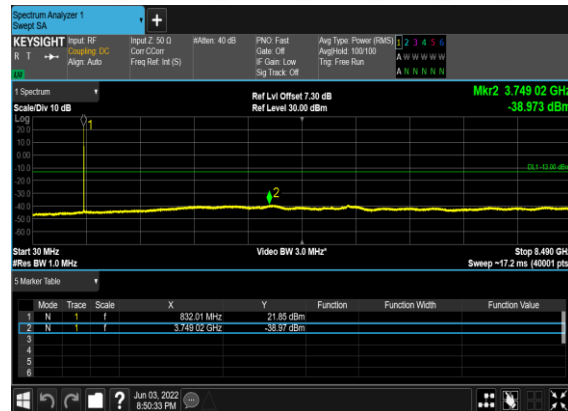
B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



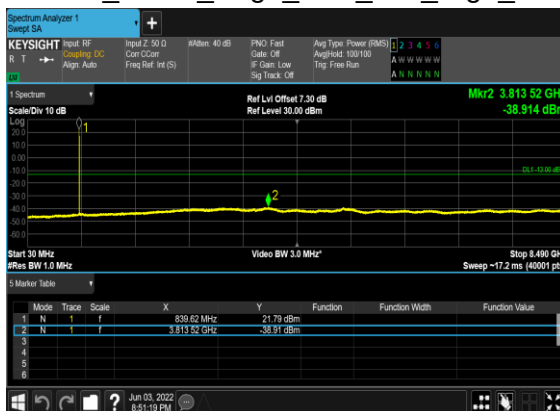
B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH



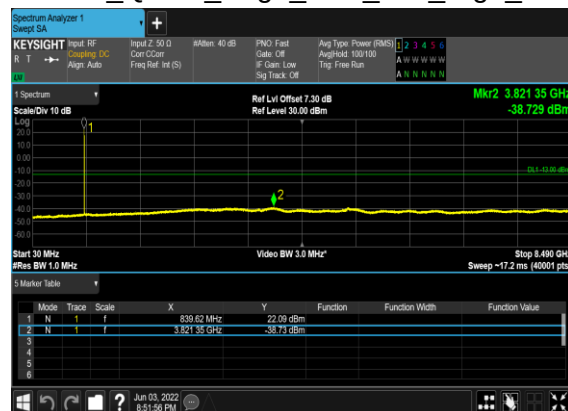
B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Mid_CH



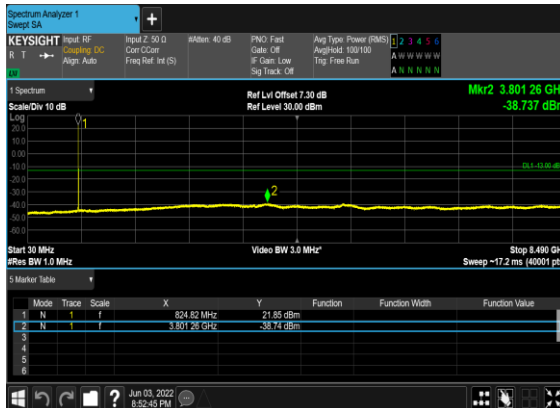
B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



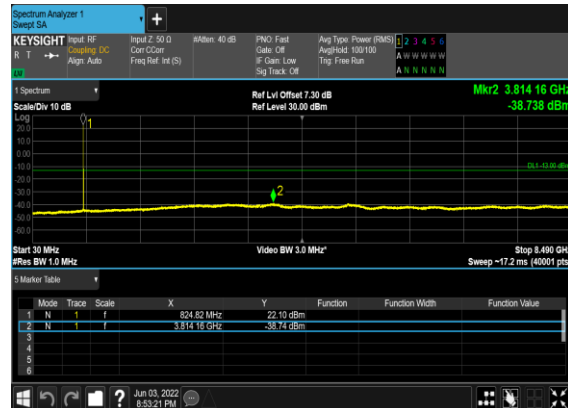
B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH



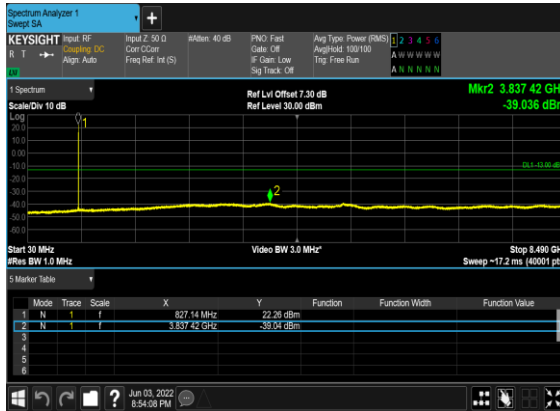
B2_N5(20M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



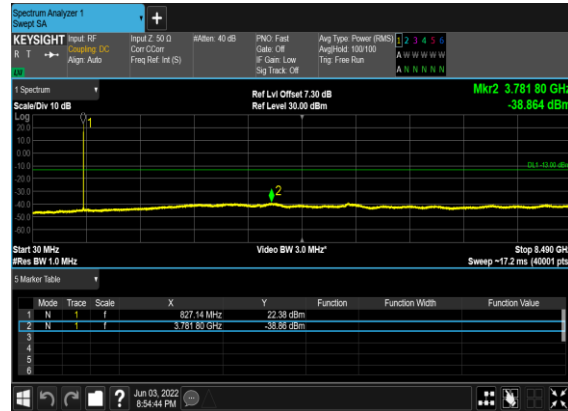
B2_N5(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



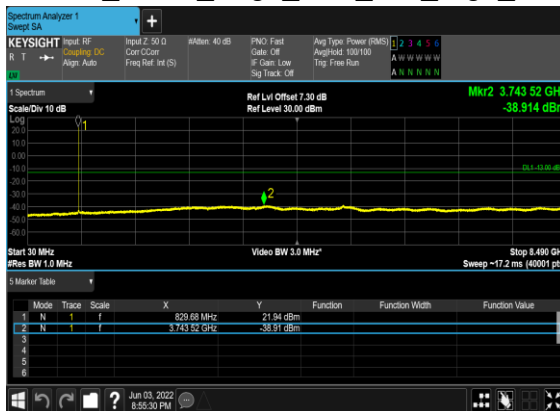
B2_N5(20M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH



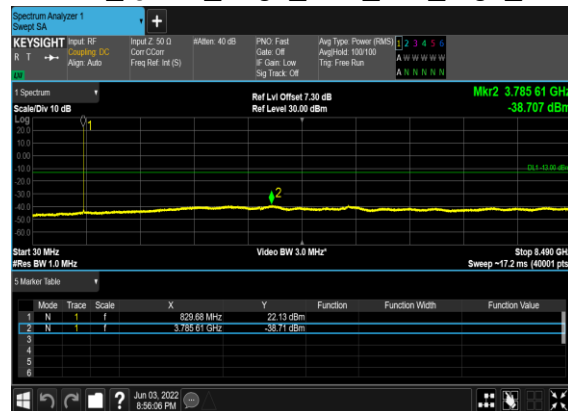
B2_N5(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Mid_CH



B2_N5(20M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



B2_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	174300	826.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	5	174300	826.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	5	174300	826.5	DFT-s-OFDM BPSK	25@0	see graph	PASS
5	15	5	174300	826.5	DFT-s-OFDM QPSK	25@0	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM BPSK	1@24	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM QPSK	1@24	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM BPSK	25@0	see graph	PASS
5	15	5	178300	846.5	DFT-s-OFDM QPSK	25@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM BPSK	50@0	see graph	PASS
5	15	10	174800	829.0	DFT-s-OFDM QPSK	50@0	see graph	PASS
5	15	10	177800	844.0	DFT-s-OFDM BPSK	1@51	see graph	PASS
5	15	10	177800	844.0	DFT-s-OFDM QPSK	1@51	see graph	PASS
5	15	10	177800	844.0	DFT-s-OFDM BPSK	50@0	see graph	PASS
5	15	10	177800	844.0	DFT-s-OFDM QPSK	50@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM BPSK	100@0	see graph	PASS
5	15	20	175800	834.0	DFT-s-OFDM QPSK	100@0	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM BPSK	1@105	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM QPSK	1@105	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM BPSK	100@0	see graph	PASS
5	15	20	176800	839.0	DFT-s-OFDM QPSK	100@0	see graph	PASS

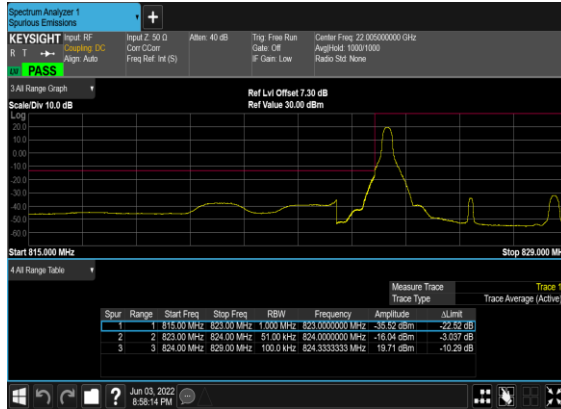
B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH_CH_P
ASS



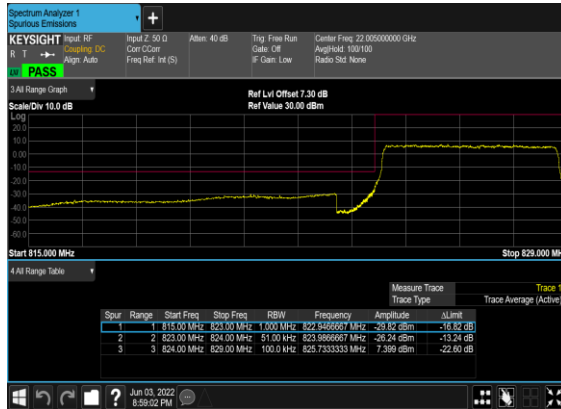
B2_N5(5M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



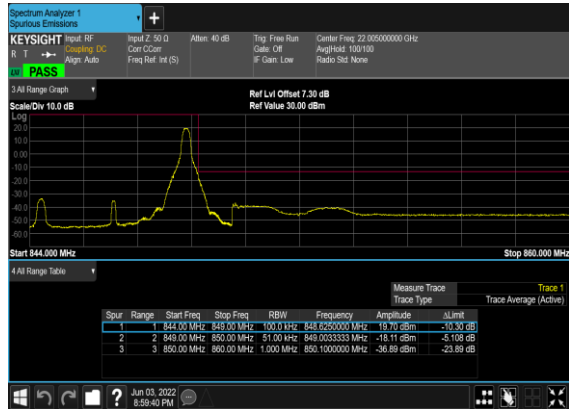
B2_N5(5M)_DFT-s-
OFDM_BPSK_Outer_Full_Low_CH



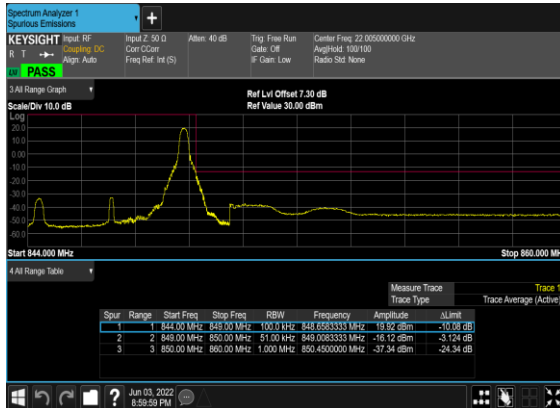
B2_N5(5M)_DFT-s-
OFDM_QPSK_Outer_Full_Low_CH



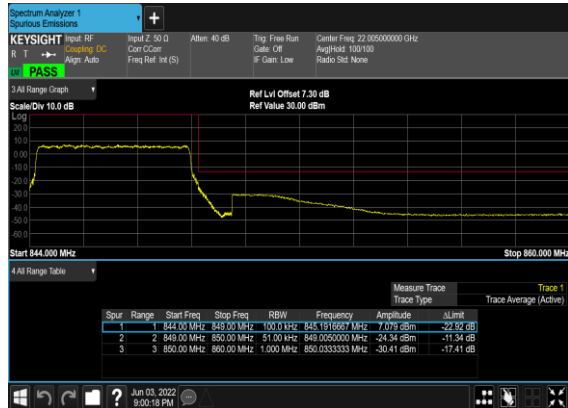
B2_N5(5M)_DFT-s-
OFDM_BPSK_Edge_1RB_Right_High_CH



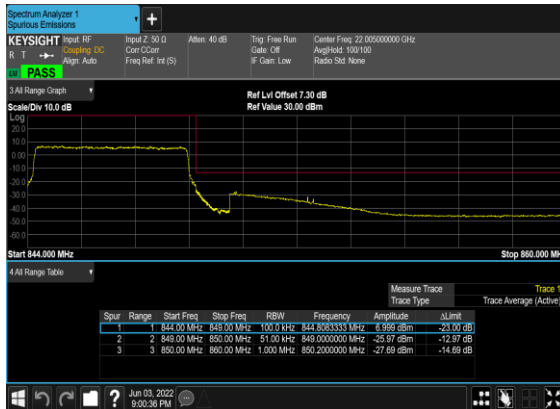
B2_N5(5M)_DFT-s-
OFDM_QPSK_Edge_1RB_Right_High_CH



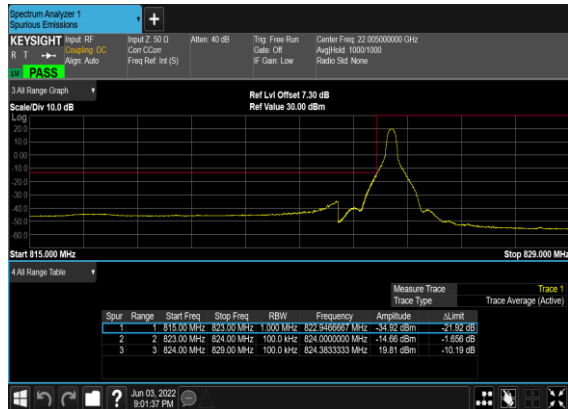
B2_N5(5M)_DFT-s-
OFDM_BPSK_Outer_Full_High_CH



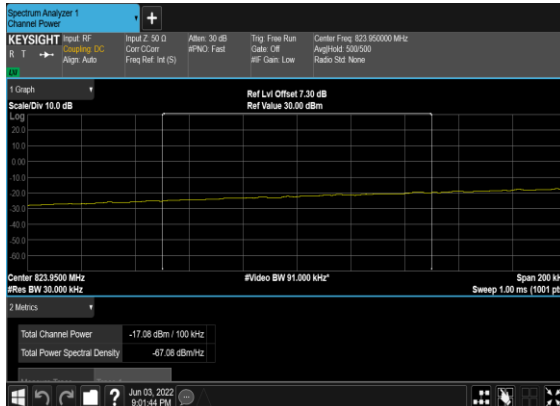
B2_N5(5M)_DFT-s-
OFDM_QPSK_Outer_Full_High_CH



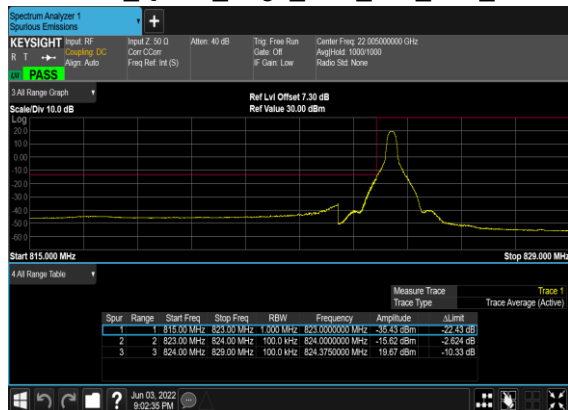
B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH_CHP_



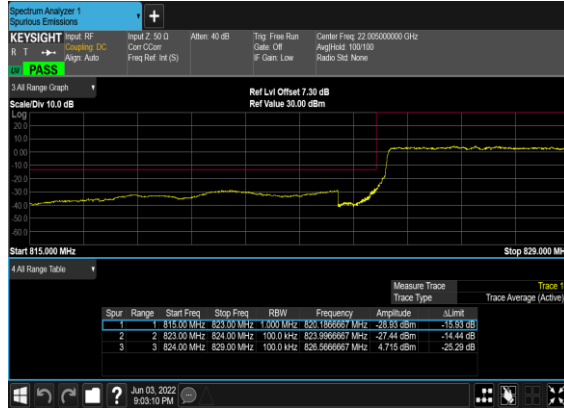
B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH_chp
_PASS



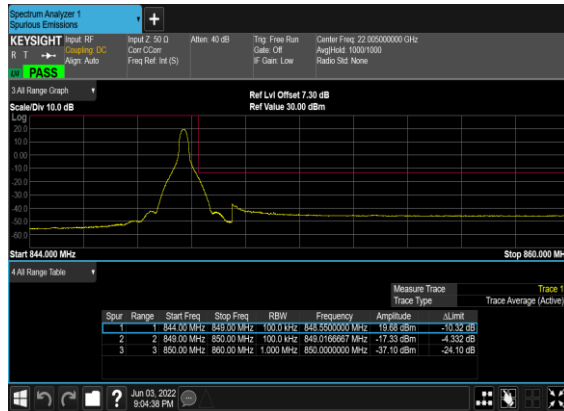
B2_N5(10M)_DFT-s-
OFDM_BPSK_Outer_Full_Low_CH



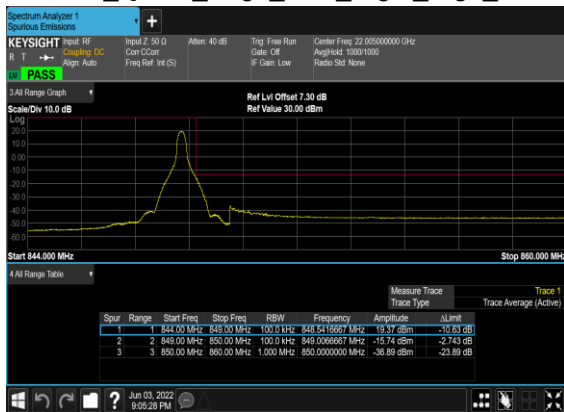
B2_N5(10M)_DFT-s-
OFDM_QPSK_Outer_Full_Low_CH



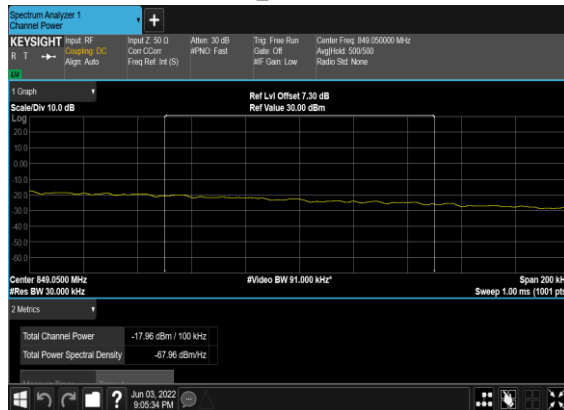
B2_N5(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Right_High_CH



B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Right_High_CH



B2_N5(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Right_High_CH_chp
_PASS



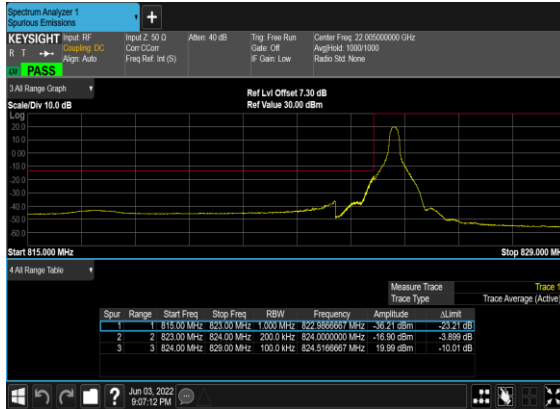
B2_N5(10M)_DFT-s-
OFDM_BPSK_Outer_Full_High_CH



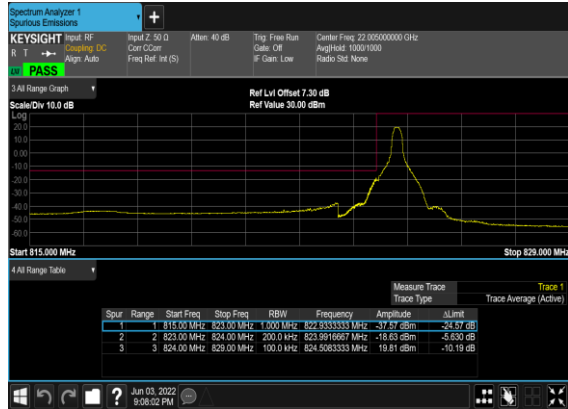
B2_N5(10M)_DFT-s-
OFDM_QPSK_Outer_Full_High_CH



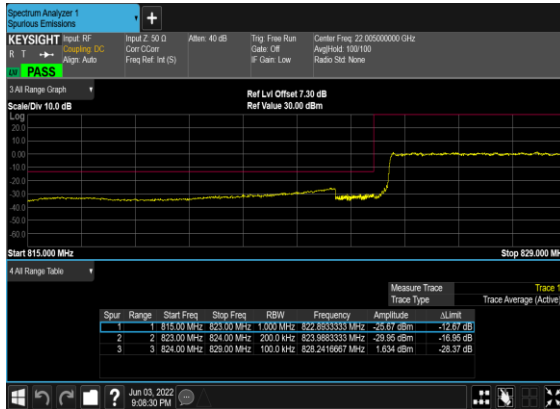
B2_N5(20M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



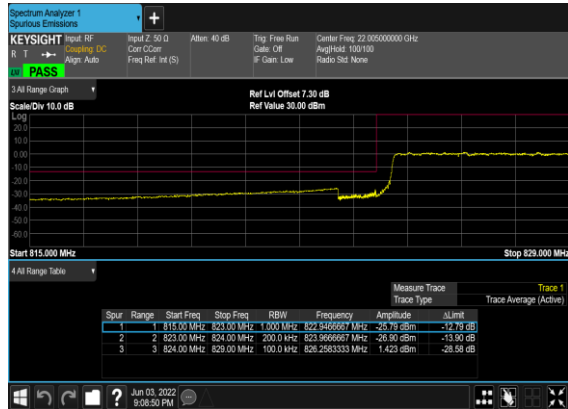
B2_N5(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



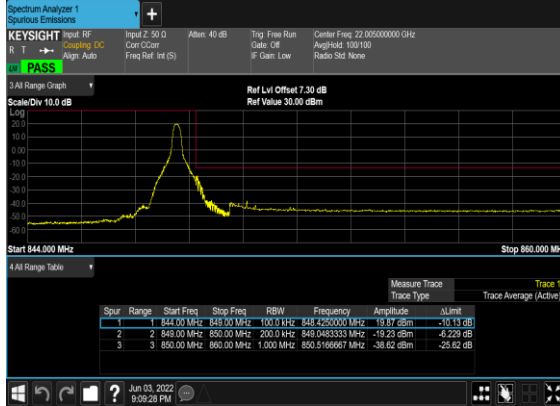
B2_N5(20M)_DFT-s-
OFDM_BPSK_Outer_Full_Low_CH



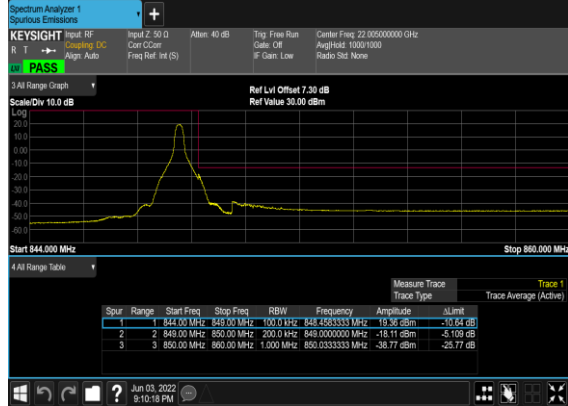
B2_N5(20M)_DFT-s-
OFDM_QPSK_Outer_Full_Low_CH



B2_N5(20M)_DFT-s-
OFDM_BPSK_Edge_1RB_Right_High_CH



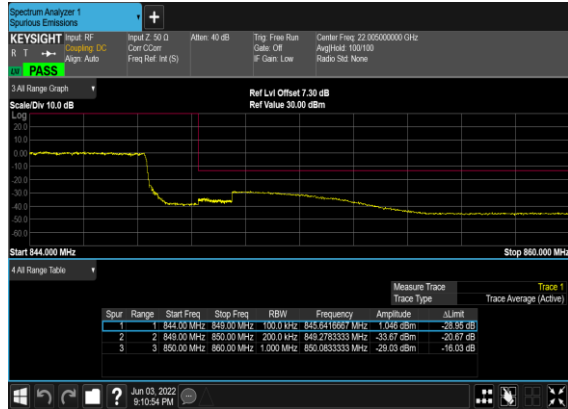
B2_N5(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Right_High_CH



B2_N5(20M)_DFT-s-
OFDM_BPSK_Outer_Full_High_CH



B2_N5(20M)_DFT-s-
OFDM_QPSK_Outer_Full_High_CH



FR1 N25(ANT3)

Conducted Output Power and EIRP (gain=-2.0dBi)

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	EIRP (dBm)	EIRP (W)
25	15	5	386500	1852.5	DFT-s-OFDM QPSK	1@1	23.94	21.94	0.1563
25	15	5	386500	1852.5	DFT-s-OFDM 16 QAM	1@1	23.09	21.09	0.1285
25	15	5	392500	1882.5	DFT-s-OFDM QPSK	1@1	23.97	21.97	0.1574
25	15	5	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.05	21.05	0.1274
25	15	5	398500	1912.5	DFT-s-OFDM QPSK	1@1	23.96	21.96	0.1570
25	15	5	398500	1912.5	DFT-s-OFDM 16 QAM	1@1	23.04	21.04	0.1271
25	15	10	387000	1855	DFT-s-OFDM QPSK	1@1	23.92	21.92	0.1556
25	15	10	387000	1855	DFT-s-OFDM 16 QAM	1@1	23.03	21.03	0.1268
25	15	10	392500	1882.5	DFT-s-OFDM QPSK	1@1	23.89	21.89	0.1545
25	15	10	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23	21	0.1259
25	15	10	398000	1910	DFT-s-OFDM QPSK	1@1	23.87	21.87	0.1538
25	15	10	398000	1910	DFT-s-OFDM 16 QAM	1@1	22.92	20.92	0.1236
25	15	15	387500	1857.5	DFT-s-OFDM QPSK	1@1	24.05	22.05	0.1603
25	15	15	387500	1857.5	DFT-s-OFDM 16 QAM	1@1	23.15	21.15	0.1303
25	15	15	392500	1882.5	DFT-s-OFDM QPSK	1@1	24.1	22.1	0.1622
25	15	15	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.18	21.18	0.1312
25	15	15	397500	1907.5	DFT-s-OFDM QPSK	1@1	24	22	0.1585
25	15	15	397500	1907.5	DFT-s-OFDM 16 QAM	1@1	23.07	21.07	0.1279
25	15	20	388000	1860	DFT-s-OFDM QPSK	1@1	23.95	21.95	0.1567
25	15	20	388000	1860	DFT-s-OFDM 16 QAM	1@1	20.85	18.85	0.0767
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	1@1	24.03	22.03	0.1596
25	15	20	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.05	21.05	0.1274
25	15	20	397000	1905	DFT-s-OFDM QPSK	1@1	24.02	22.02	0.1592
25	15	20	397000	1905	DFT-s-OFDM 16 QAM	1@1	23.08	21.08	0.1282
25	15	25	388500	1862.5	DFT-s-OFDM QPSK	1@1	23.89	21.89	0.1545
25	15	25	388500	1862.5	DFT-s-OFDM 16 QAM	1@1	22.97	20.97	0.1250
25	15	25	392500	1882.5	DFT-s-OFDM QPSK	1@1	24.05	22.05	0.1603
25	15	25	392500	1882.5	DFT-s-OFDM	1@1	23.12	21.12	0.1294

					16 QAM				
25	15	25	396500	1902.5	DFT-s-OFDM QPSK	1@1	23.95	21.95	0.1567
25	15	25	396500	1902.5	DFT-s-OFDM 16 QAM	1@1	23.04	21.04	0.1271
25	15	30	389000	1865	DFT-s-OFDM QPSK	1@1	23.99	21.99	0.1581
25	15	30	389000	1865	DFT-s-OFDM 16 QAM	1@1	21.54	19.54	0.0899
25	15	30	392500	1882.5	DFT-s-OFDM QPSK	1@1	24.05	22.05	0.1603
25	15	30	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.08	21.08	0.1282
25	15	30	396000	1900	DFT-s-OFDM QPSK	1@1	24.02	22.02	0.1592
25	15	30	396000	1900	DFT-s-OFDM 16 QAM	1@1	23.07	21.07	0.1279
25	15	40	390000	1870	DFT-s-OFDM PI/2 BPSK	108@54	22.55	20.55	0.1135
25	15	40	390000	1870	DFT-s-OFDM PI/2 BPSK	1@1	22.29	20.29	0.1069
25	15	40	390000	1870	DFT-s-OFDM PI/2 BPSK	1@214	22.5	20.5	0.1122
25	15	40	390000	1870	DFT-s-OFDM QPSK	108@54	24.05	22.05	0.1603
25	15	40	390000	1870	DFT-s-OFDM QPSK	1@1	23.9	21.9	0.1549
25	15	40	390000	1870	DFT-s-OFDM QPSK	1@214	24.07	22.07	0.1611
25	15	40	390000	1870	DFT-s-OFDM 16 QAM	108@54	23.13	21.13	0.1297
25	15	40	390000	1870	DFT-s-OFDM 16 QAM	1@1	22.99	20.99	0.1256
25	15	40	390000	1870	DFT-s-OFDM 16 QAM	1@214	23.16	21.16	0.1306
25	15	40	390000	1870	DFT-s-OFDM 64 QAM	108@54	21.63	19.63	0.0918
25	15	40	390000	1870	DFT-s-OFDM 64 QAM	1@1	21.5	19.5	0.0891
25	15	40	390000	1870	DFT-s-OFDM 64 QAM	1@214	21.67	19.67	0.0927
25	15	40	390000	1870	DFT-s-OFDM 256 QAM	108@54	19.55	17.55	0.0569
25	15	40	390000	1870	DFT-s-OFDM 256 QAM	1@1	19.28	17.28	0.0535
25	15	40	390000	1870	DFT-s-OFDM 256 QAM	1@214	19.52	17.52	0.0565
25	15	40	390000	1870	CP-OFDM QPSK	108@54	22.56	20.56	0.1138
25	15	40	390000	1870	CP-OFDM QPSK	1@1	22.53	20.53	0.1130
25	15	40	390000	1870	CP-OFDM QPSK	1@214	22.64	20.64	0.1159
25	15	40	392500	1882.5	DFT-s-OFDM PI/2 BPSK	108@54	22.6	20.6	0.1148
25	15	40	392500	1882.5	DFT-s-OFDM PI/2 BPSK	1@1	22.41	20.41	0.1099
25	15	40	392500	1882.5	DFT-s-OFDM PI/2 BPSK	1@214	22.54	20.54	0.1132
25	15	40	392500	1882.5	DFT-s-OFDM QPSK	108@54	24.06	22.06	0.1607
25	15	40	392500	1882.5	DFT-s-OFDM QPSK	1@1	23.92	21.92	0.1556
25	15	40	392500	1882.5	DFT-s-OFDM QPSK	1@214	24.13	22.13	0.1633
25	15	40	392500	1882.5	DFT-s-OFDM 16 QAM	108@54	23.01	21.01	0.1262

25	15	40	392500	1882.5	DFT-s-OFDM 16 QAM	1@1	23.08	21.08	0.1282
25	15	40	392500	1882.5	DFT-s-OFDM 16 QAM	1@214	23.25	21.25	0.1334
25	15	40	392500	1882.5	DFT-s-OFDM 64 QAM	108@54	21.55	19.55	0.0902
25	15	40	392500	1882.5	DFT-s-OFDM 64 QAM	1@1	21.55	19.55	0.0902
25	15	40	392500	1882.5	DFT-s-OFDM 64 QAM	1@214	21.61	19.61	0.0914
25	15	40	392500	1882.5	DFT-s-OFDM 256 QAM	108@54	19.38	17.38	0.0547
25	15	40	392500	1882.5	DFT-s-OFDM 256 QAM	1@1	19.31	17.31	0.0538
25	15	40	392500	1882.5	DFT-s-OFDM 256 QAM	1@214	19.53	17.53	0.0566
25	15	40	392500	1882.5	CP-OFDM QPSK	108@54	22.57	20.57	0.1140
25	15	40	392500	1882.5	CP-OFDM QPSK	1@1	22.6	20.6	0.1148
25	15	40	392500	1882.5	CP-OFDM QPSK	1@214	22.42	20.42	0.1102
25	15	40	395000	1895	DFT-s-OFDM PI/2 BPSK	108@54	22.52	20.52	0.1127
25	15	40	395000	1895	DFT-s-OFDM PI/2 BPSK	1@1	22.42	20.42	0.1102
25	15	40	395000	1895	DFT-s-OFDM PI/2 BPSK	1@214	22.53	20.53	0.1130
25	15	40	395000	1895	DFT-s-OFDM QPSK	108@54	24.01	22.01	0.1589
25	15	40	395000	1895	DFT-s-OFDM QPSK	1@1	23.96	21.96	0.1570
25	15	40	395000	1895	DFT-s-OFDM QPSK	1@214	24.16	22.16	0.1644
25	15	40	395000	1895	DFT-s-OFDM 16 QAM	108@54	23.1	21.1	0.1288
25	15	40	395000	1895	DFT-s-OFDM 16 QAM	1@1	23.12	21.12	0.1294
25	15	40	395000	1895	DFT-s-OFDM 16 QAM	1@214	23.2	21.2	0.1318
25	15	40	395000	1895	DFT-s-OFDM 64 QAM	108@54	21.59	19.59	0.0910
25	15	40	395000	1895	DFT-s-OFDM 64 QAM	1@1	21.58	19.58	0.0908
25	15	40	395000	1895	DFT-s-OFDM 64 QAM	1@214	21.7	19.7	0.0933
25	15	40	395000	1895	DFT-s-OFDM 256 QAM	108@54	19.23	17.23	0.0528
25	15	40	395000	1895	DFT-s-OFDM 256 QAM	1@1	19.35	17.35	0.0543
25	15	40	395000	1895	DFT-s-OFDM 256 QAM	1@214	19.45	17.45	0.0556
25	15	40	395000	1895	CP-OFDM QPSK	108@54	22.52	20.52	0.1127
25	15	40	395000	1895	CP-OFDM QPSK	1@1	22.49	20.49	0.1119
25	15	40	395000	1895	CP-OFDM QPSK	1@214	22.45	20.45	0.1109

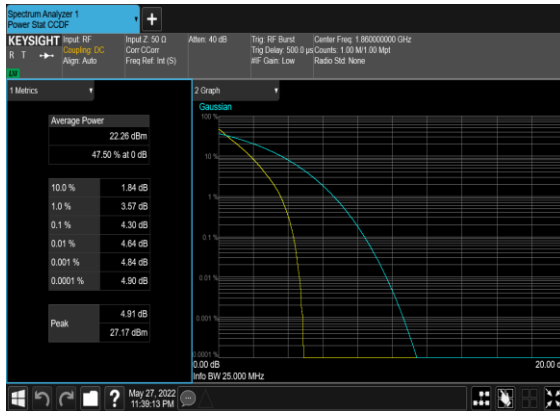
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00252	PASS	NV
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00664	PASS	LV
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00305	PASS	HV
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00287	PASS	-30°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00407	PASS	-20°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00339	PASS	-10°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00454	PASS	0°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00216	PASS	10°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00525	PASS	20°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00629	PASS	30°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00487	PASS	40°C
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	0.00586	PASS	50°C

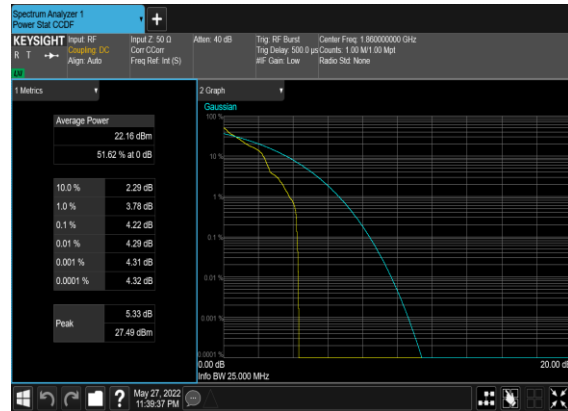
Peak to Average Radio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
25	15	20	388000	1860.0	DFT-s-OFDM PI/2 BPSK	100@0	4.3	13	PASS
25	15	20	388000	1860.0	DFT-s-OFDM PI/2 BPSK	1@0	4.22	13	PASS
25	15	20	388000	1860.0	DFT-s-OFDM QPSK	100@0	5.81	13	PASS
25	15	20	388000	1860.0	DFT-s-OFDM QPSK	1@0	6.34	13	PASS
25	15	20	392500	1882.5	DFT-s-OFDM PI/2 BPSK	100@0	4.1	13	PASS
25	15	20	392500	1882.5	DFT-s-OFDM PI/2 BPSK	1@0	4.14	13	PASS
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	100@0	5.72	13	PASS
25	15	20	392500	1882.5	DFT-s-OFDM QPSK	1@0	6.39	13	PASS
25	15	20	397000	1905.0	DFT-s-OFDM PI/2 BPSK	100@0	4.26	13	PASS
25	15	20	397000	1905.0	DFT-s-OFDM PI/2 BPSK	1@0	4.34	13	PASS
25	15	20	397000	1905.0	DFT-s-OFDM QPSK	100@0	5.79	13	PASS
25	15	20	397000	1905.0	DFT-s-OFDM QPSK	1@0	6.42	13	PASS

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



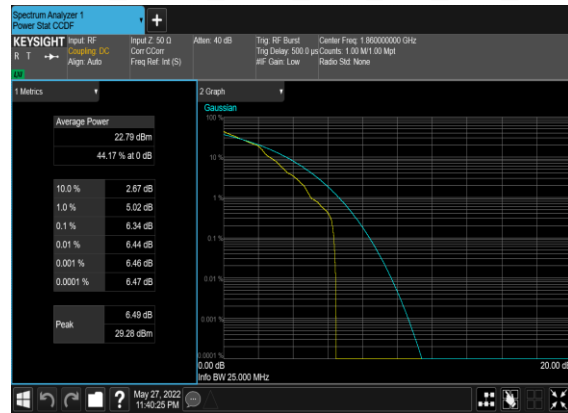
N25(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



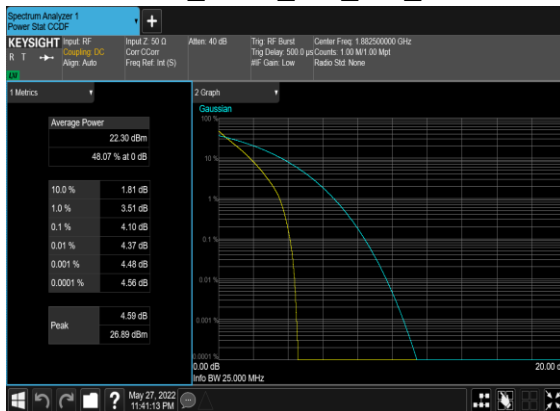
N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



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



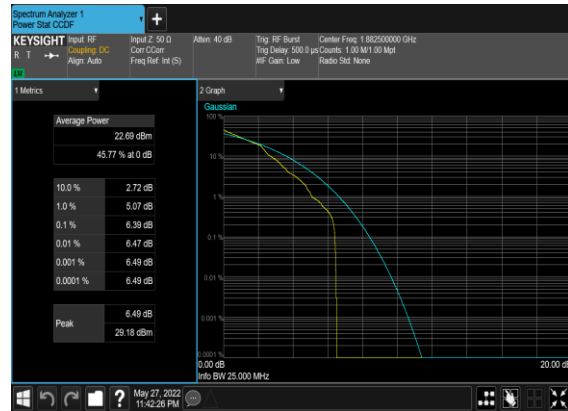
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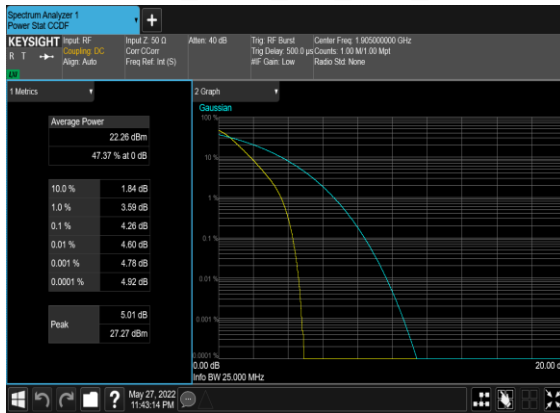
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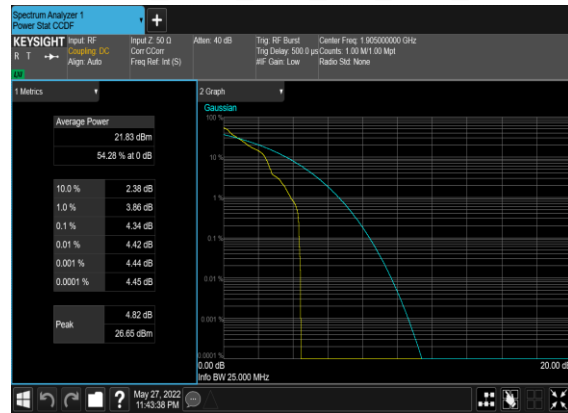
N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



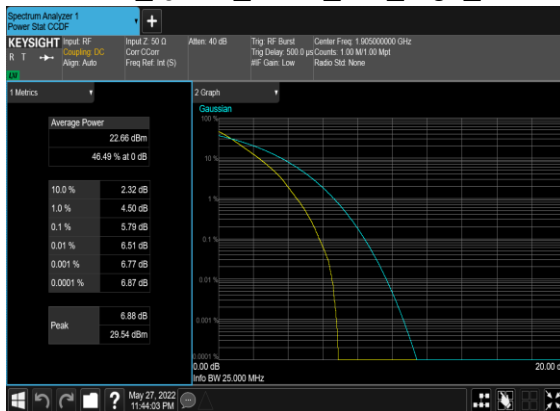
N25(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



N25(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

