FCC RF Test Report

APPLICANT	:	**Nokia Shanghai Bell Co., Ltd.**
EQUIPMENT	:	**Nokia FastMile 5G Receiver High Gain**
BRAND NAME	:	**Nokia**
MODEL NAME	:	**5G16-A**
FCC ID	:	**2ADZR5G16A**
STANDARD	:	**47 CFR Part 2, 22, 24, 27**
CLASSIFICATION	:	**PCS Licensed Transmitter (PCB)**
TEST DATE(S)	:	**Apr. 24, 2023 ~ Jun. 13, 2023**

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

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

Sporton International Inc. (Kunshan)

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

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG341901G	Rev. 01	Initial issue of report	Jun. 20, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (5G NR n5, n26)	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		
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 §24.238(a) §27.53(g)	Conducted Band Edge Measurement (5G NR n2, n5, n25, n26, n71)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §24.238(a) §27.53(g)	Conducted Spurious Emission (5G NR n2, n5, n25, n26, n71)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §24.238(a) §27.53(g)	Radiated Spurious Emission (5G NR n2, n5, n25, n26, n71)	< $43+10\log_{10}(P[Watts])$	PASS	Under limit 19.21 dB at 1655.00 MHz

Conformity Assessment Condition:

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

Disclaimer:

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

1 General Description

1.1 Applicant

Nokia Shanghai Bell Co., Ltd.
388#, Ningqiao Road, China (Shanghai) Pilot Free Trade Zone, Shanghai 201206, China

1.2 Manufacturer

Nokia Solutions and Networks Oy
Karakaari 7, 02610 Espoo, Finland

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Nokia FastMile 5G Receiver High Gain
Brand Name	Nokia
Model Name	5G16-A
FCC ID	2ADZR5G16A
IMEI Code	Conducted : 355231280005044 Radiation : 35523128005010
HW Version	3TG02369Axxx, x:A~Z
SW Version	5GReceiver-HG-2_D230200B31T0001E0147
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n25 : 1850 MHz ~ 1915 MHz 5G NR n26 : 824 MHz ~ 849 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 n26 : 869 MHz ~ 894 MHz 5G NR n71: 617 MHz ~ 652 MHz
Bandwidth	**15kHz:** n2: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz n5: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz n25: 5MHz / 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n26/n71: 5MHz / 10MHz / 15MHz / 20MHz **30kHz:** n2: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz n5: 10MHz / 15MHz / 20MHz / 25MHz n25: 10MHz / 15MHz / 20MHz / 25MHz / 30MHz / 35MHz / 40MHz / 45MHz n26/n71: 10MHz / 15MHz / 20MHz

SCS	15kHz/30kHz
Antenna Gain	**<Ant. 0>** n2: 13.67 dBi n25: 13.72 dBi **<Ant. 1>** n2: 13.66 dBi n25: 13.66 dBi **<Ant. 4>** n5: 2.39 dBi n26: 2.39 dBi n71: 1.09 dBi **<Ant. 5>** n5: 2.23 dBi n26: 2.23 dBi n71: 1.28 dBi
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 of Ant.0 for 5G NR n2/n25, and Ant.4 for n5/n26/n71 are shown in the report.
2. 5G NR support antenna switch function, SA mode work on Ant.0/4, NSA mode switch to Ant.1/5, conducted items full test the Ant.0/4 by referring to the maximum output power, RSE test Ant.0/4 for SA mode and Ant.1/5 for NSA mode.
3. 5G NR n26 only support SA mode, n2/n5/n25/n71 support SA mode and NSA mode. According to the maximum power between SA and NSA mode, SA covers NSA mode for conducted items.
4. 5G NR n2/n5/n25/n26/n71 support SCS 15kHz and 30kHz. According to the maximum power, full test 15kHz to cover 30kHz.
5. 5G NR n71 support intra band ENDC_(n)71AA, the max power test three conditions: LTE Max & NR Min / LTE Min & NR Max / LTE & NR Averaged, the maximum EIRP only show NR Max, and the other items only test LTE & NR Averaged, due to the LTE Max and NR Max have been tested stand alone mode separately.
6. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
7. The EN-DC mode combination could be referred to the product spec.

1.5 Modification of EUT

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

1.6 Maximum ERP/EIRP Power 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	1.6106	4M47G7D	1.3677	4M47W7D
10	1855.0 ~ 1905.0	1.6069	9M29G7D	1.3709	9M27W7D
15	1857.5 ~ 1902.5	1.6331	14M1G7D	1.3646	14M1W7D
20	1860.0 ~ 1900.0	1.6368	19M0G7D	1.3583	19M0W7D
25	1862.5 ~ 1897.5	1.5631	23M8G7D	1.2560	23M8W7D
30	1865.0 ~ 1895.0	1.5171	28M7G7D	1.2388	28M6W7D
35	1867.5 ~ 1892.5	1.4962	33M6G7D	1.2162	33M6W7D
40	1870. ~ 1890.0	1.6711	38M6G7D	1.2474	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	1.6444	4M47G7D	1.3740	4M47W7D
10	1855.0 ~ 1910.0	1.6596	9M29G7D	1.3614	9M27W7D
15	1857.5 ~ 1907.5	1.6482	14M1G7D	1.3836	14M1W7D
20	1860.0 ~ 1905.0	1.6711	19M0G7D	1.3772	19M0W7D
25	1862.5 ~ 1902.5	1.6069	23M8G7D	1.3122	23M8W7D
30	1865.0 ~ 1900.0	1.5668	28M7G7D	1.2912	28M6W7D
35	1867.5 ~ 1897.5	1.5346	33M6G7D	1.2794	33M6W7D
40	1870. ~ 1895.0	1.5488	38M6G7D	1.2647	38M6W7D
45	1872.5 ~ 1892.5	1.6943	43M1G7D	1.3062	43M2W7D

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	0.2432	4M46G7D	0.2099	4M47W7D
10	829.0 ~ 844.0	0.2472	9M28G7D	0.2080	9M30W7D
15	831.5 ~ 841.5	0.2455	14M1G7D	0.2113	14M1W7D
20	834.0 ~ 839.0	0.2472	18M9G7D	0.2109	18M9W7D
25	836.5	0.2541	23M7G7D	0.1968	23M7W7D

5G NR n26		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	0.2529	4M46G7D	0.2153	4M47W7D
10	829.0 ~ 844.0	0.2541	9M28G7D	0.2163	9M30W7D
15	831.5 ~ 841.5	0.2535	14M1G7D	0.2138	14M1W7D
20	834.0 ~ 839.0	0.2547	18M9G7D	0.2203	18M9W7D

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	0.1837	4M47G7D	0.1435	4M47W7D
10	668.0 ~ 693.0	0.1837	9M28G7D	0.1439	9M29W7D
15	670.5 ~ 690.5	0.1795	14M1G7D	0.1432	14M1W7D
20	673.0 ~ 688.0	0.1866	18M9G7D	0.1466	18M9W7D

ENDC n71AA	PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5M+15M	0.1574	18M9G7D	0.1581	18M9W7D
10M+15M	0.1607	24M1G7D	0.1607	24M1W7D
15M+10M	0.1567	24M2G7D	0.1596	24M3W7D
20M+5M	0.1679	24M6G7D	0.1614	24M8W7D

Note:

1. 5G NR n26 overlaps the entire frequency range of 5G NR n5. Therefore, the test results provided in this report covers 5G NR n5 and the portion of 5G NR n26 subject to Part 22, and n5 additional supports BW 25MHz, the n5 BW_25M is full tested in the report.
2. 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.
3. All modulations have been tested, only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS	CN1257	314309

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

<table>
<tr><td>Test Firm</td><td colspan="3">Sporton International Inc. (ShenZhen)</td></tr>
<tr><td>Test Site Location</td><td colspan="3">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</td></tr>
<tr><td rowspan="2">Test Site No.</td><td>Sporton Site No.</td><td>FCC Designation No.</td><td>FCC Test Firm Registration No.</td></tr>
<tr><td>TH01-SZ</td><td>CN1256</td><td>421272</td></tr>
</table>

Test data subcontracted: Conducted test cases in section 3 of this report

1.8 Test Software

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

1.9 Applicable Standards

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

- 47 CFR Part 2, 22, 24, 27
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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

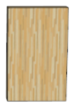
2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned flip open and close state in three orthogonal panels X, Y, Z. The worst cases (Y plane) were recorded in this report.

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

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50-70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	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	v	v	v	v
	n5	v	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	v
	n26	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	n25				v						-	-	-	-	v	v				v	v	v	v	v
	n26				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		v	
	n25	v	v	v	v	v	v	v	v	v	-	-	-	-	v	v	v	v	v		v		v	
	n26	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v		v		v	
	n71	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v		v		v	

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	35	40	45	50-70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Conducted Band Edge	n5					v									v	v				v	v	v		v
	n25	v				v				v	-	-	-	-	v	v				v	v	v		v
	n26	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n71	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
Conducted Spurious Emission	n5					v					-	-	-	-	v	v				v		v	v	v
	n25	v				v				v	-	-	-	-	v	v				v		v	v	v
	n26	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n71	v	v		v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
Frequency Stability	n25				v						-	-	-	-		v					v		v	
	n26				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	v
	n25	v	v	v	v	v	v	v	v	v	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n26	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	n25	Worst Case																					v	
	n26	Worst Case																					v	
	n71	Worst Case																					v	

Note

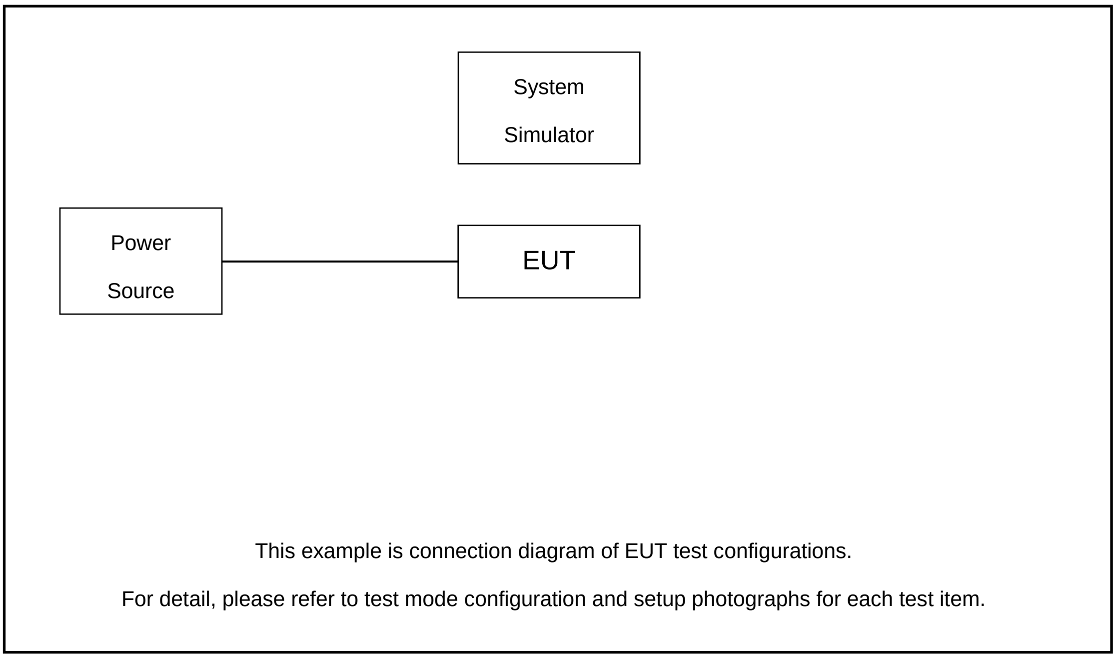
1. The mark “v “ means that this configuration is chosen for testing
2. The mark “-“ means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
4. Frequency Stability : Normal Voltage = 54V ; Low Voltage =48V. ; High Voltage =57V
5. All test items are based on engineering evaluation.

Test Items	Band	Bandwidth (MHz)				Modulation					RB #			Test Channel		
		20+5	15+10	10+15	5+15	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Half	Full	L	M	H
Max. Output Power	n71AA	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Peak-to-Average Ratio	n71AA	v				v	v				v		v	v	v	v
26dB and 99% Bandwidth	n71AA	v	v	v	v	v	v	v	v	v			v		v	
Conducted Band Edge	n71AA	v		v	v	v	v				v		v	v		v
Conducted Spurious Emission	n71AA	v		v	v	v	v				v			v	v	v
E.R.P.	n71AA	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n71AA	Worst Case													v	

Note

1. The mark “v “ means that this configuration is chosen for testing
2. The mark “-“ means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
4. Frequency Stability：Normal Voltage = 54V ；Low Voltage =48V.；High Voltage =57V
5. All test items are based on engineering evaluation.

2.2 Connection Diagram of Test System



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

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820/8821	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 + attenuator factor.

Following shows an offset computation example with cable loss 7.6 dB.

Example :

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

= 7.6 (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	1880	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
25	Channel	-	167300	-
	Frequency	-	836.5	-
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**
45	Channel	374500	376500	378500
	Frequency	1872.5	1882.5	1892.5
40	Channel	374000	376500	379000
	Frequency	1870	1882.5	1895
35	Channel	373500	376500	379500
	Frequency	1867.5	1882.5	1897.5
30	Channel	373000	376500	380000
	Frequency	1865	1882.5	1900
25	Channel	372500	376500	380500
	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 n26 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 n71 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
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

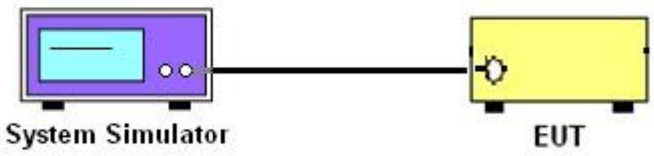
3 Conducted Test Items

3.1 Measuring Instruments

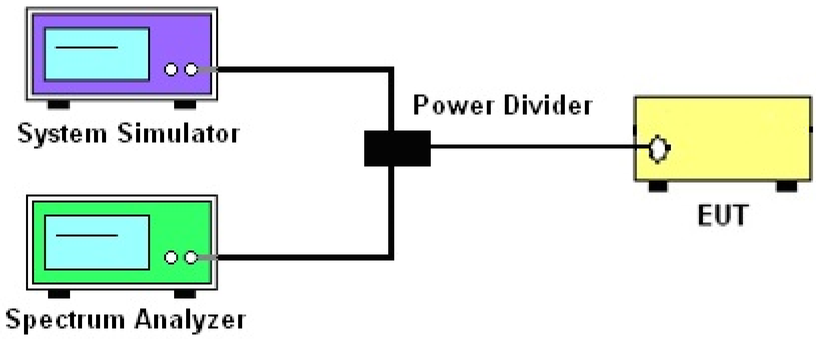
See list of measuring instruments of this test report.

3.2 Test Setup

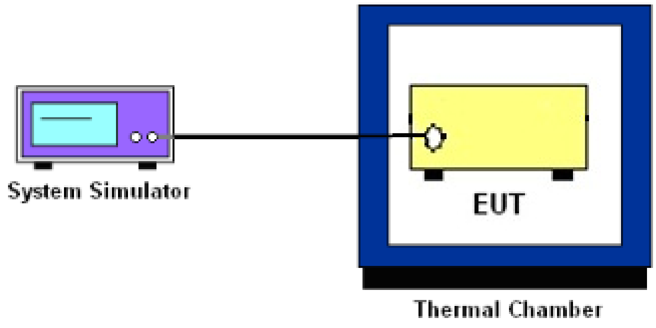
3.2.1 Conducted Output Power



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 fixed subscriber must not exceed 3 Watts for 5G NR n5, n26.

The ERP of fixed subscriber must not exceed 3 Watts for 5G NR n71.

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

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 (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.

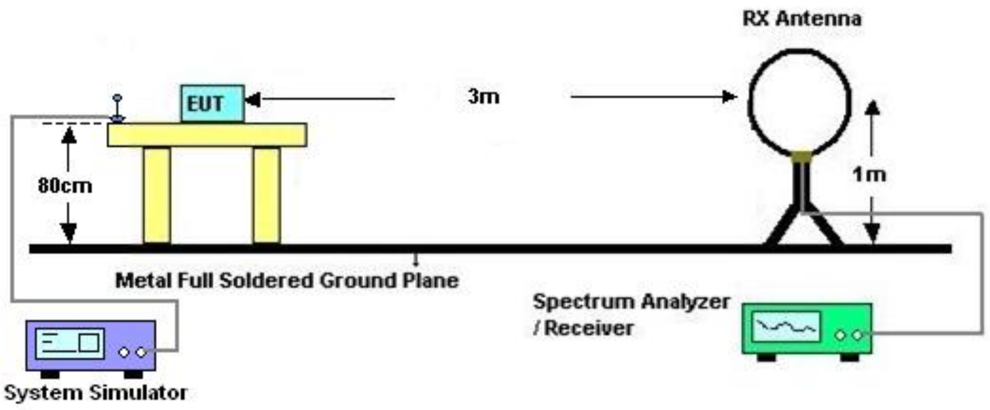
4 Radiated Test Items

4.1 Measuring Instruments

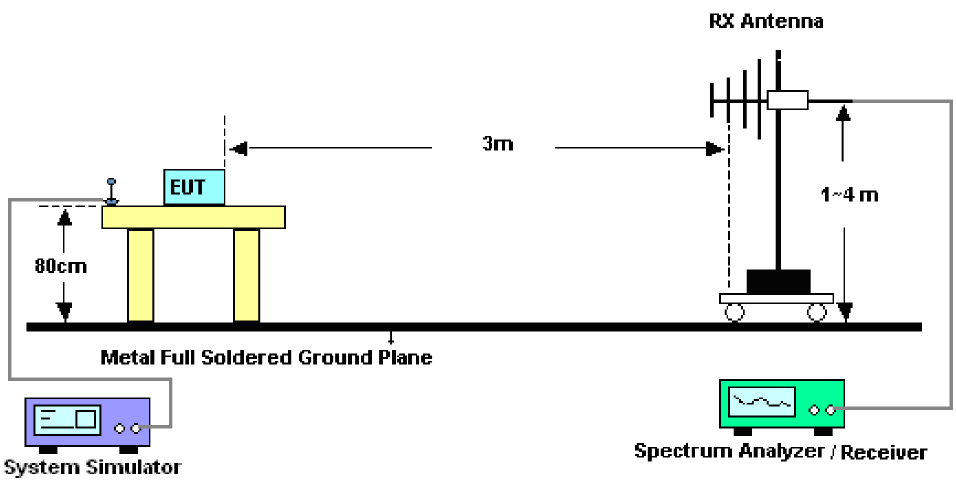
See list of measuring instruments of this test report.

4.2 Test Setup

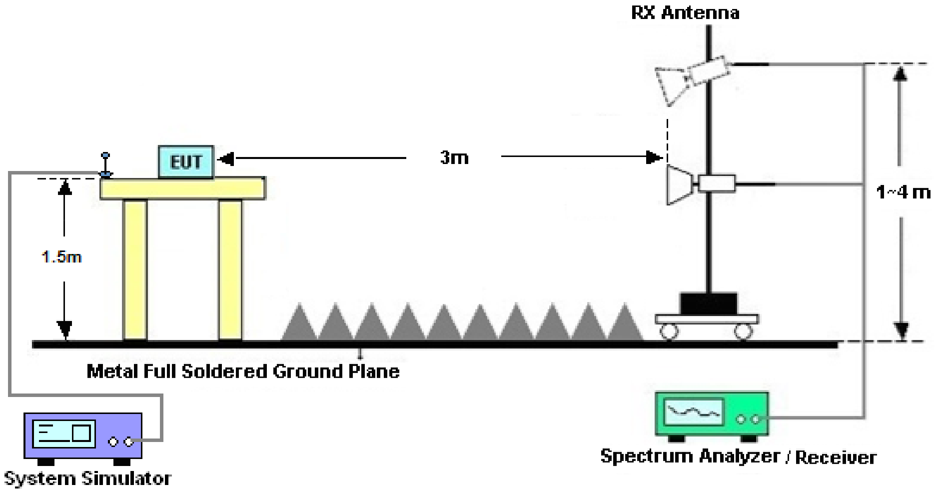
4.2.1 For radiated test below 30MHz



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. 06, 2023	Apr. 24, 2023~ Jun. 13, 2023	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2022	Apr. 24, 2023~ Jun. 13, 2023	Dec. 24, 2023	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 07, 2022	Apr. 24, 2023~ Jun. 13, 2023	Jul. 06, 2023	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 12, 2022	May 30, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 16, 2022	May 30, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	May 30, 2023	Apr. 08, 2024	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Oct. 16, 2022	May 30, 2023	Oct. 15, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 08, 2023	May 30, 2023	Jan. 07, 2024	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jul. 11, 2022	May 30, 2023	Jul. 10, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40G GA	060728	18~40GHz	Jan. 05, 2023	May 30, 2023	Jan. 04, 2024	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 12, 2022	May 30, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 12, 2022	May 30, 2023	Oct. 11, 2023	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	May 30, 2023	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	May 30, 2023	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	May 30, 2023	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

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

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

FR1 N2(Ant 0)– SCS 15k

Transmitter Conducted Output Power And EIRP, $(G_T - L_C)$=13.67dBi

NR Band	SCS	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	18.26	31.93	1.5596
2	15	5	370500	1852.5	DFT-s-OFDM 16 QAM	1@1	17.44	31.11	1.2912
2	15	5	376000	1880	DFT-s-OFDM QPSK	1@1	18.4	32.07	1.6106
2	15	5	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.69	31.36	1.3677
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@1	18.25	31.92	1.5560
2	15	5	381500	1907.5	DFT-s-OFDM 16 QAM	1@1	17.55	31.22	1.3243
2	15	10	371000	1855	DFT-s-OFDM QPSK	1@1	18.23	31.9	1.5488
2	15	10	371000	1855	DFT-s-OFDM 16 QAM	1@1	17.46	31.13	1.2972
2	15	10	376000	1880	DFT-s-OFDM QPSK	1@1	18.39	32.06	1.6069
2	15	10	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.7	31.37	1.3709
2	15	10	381000	1905	DFT-s-OFDM QPSK	1@1	18.38	32.05	1.6032
2	15	10	381000	1905	DFT-s-OFDM 16 QAM	1@1	17.64	31.31	1.3521
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@1	18.23	31.9	1.5488
2	15	15	371500	1857.5	DFT-s-OFDM 16 QAM	1@1	17.45	31.12	1.2942
2	15	15	376000	1880	DFT-s-OFDM QPSK	1@1	18.45	32.12	1.6293
2	15	15	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.67	31.34	1.3614
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@1	18.46	32.13	1.6331
2	15	15	380500	1902.5	DFT-s-OFDM 16 QAM	1@1	17.68	31.35	1.3646
2	15	20	372000	1860	DFT-s-OFDM QPSK	1@1	18.2	31.87	1.5382
2	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@1	17.45	31.12	1.2942
2	15	20	376000	1880	DFT-s-OFDM QPSK	1@1	18.47	32.14	1.6368
2	15	20	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.66	31.33	1.3583
2	15	20	380000	1900	DFT-s-OFDM QPSK	1@1	18.46	32.13	1.6331
2	15	20	380000	1900	DFT-s-OFDM 16 QAM	1@1	17.61	31.28	1.3428
2	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@1	17.92	31.59	1.4421
2	15	25	372500	1862.5	DFT-s-OFDM 16 QAM	1@1	17.05	30.72	1.1803
2	15	25	376000	1880	DFT-s-OFDM QPSK	1@1	18.23	31.9	1.5488
2	15	25	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.32	30.99	1.2560
2	15	25	379500	1897.5	DFT-s-OFDM QPSK	1@1	18.27	31.94	1.5631
2	15	25	379500	1897.5	DFT-s-OFDM 16 QAM	1@1	17.31	30.98	1.2531
2	15	30	373000	1865	DFT-s-OFDM QPSK	1@1	17.92	31.59	1.4421
2	15	30	373000	1865	DFT-s-OFDM 16 QAM	1@1	17.09	30.76	1.1912
2	15	30	376000	1880	DFT-s-OFDM QPSK	1@1	18.1	31.77	1.5031
2	15	30	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.26	30.93	1.2388
2	15	30	379000	1895	DFT-s-OFDM QPSK	1@1	18.14	31.81	1.5171
2	15	30	379000	1895	DFT-s-OFDM 16 QAM	1@1	17.25	30.92	1.2359
2	15	35	373500	1867.5	DFT-s-OFDM QPSK	1@1	17.78	31.45	1.3964
2	15	35	373500	1867.5	DFT-s-OFDM 16 QAM	1@1	17.06	30.73	1.1830
2	15	35	376000	1880	DFT-s-OFDM QPSK	1@1	18.08	31.75	1.4962
2	15	35	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.17	30.84	1.2134

2	15	35	378500	1892.5	DFT-s-OFDM QPSK	1@1	18.07	31.74	1.4928
2	15	35	378500	1892.5	DFT-s-OFDM 16 QAM	1@1	17.18	30.85	1.2162
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	108@54	17.89	31.56	1.4322
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@1	17.77	31.44	1.3932
2	15	40	374000	1870	DFT-s-OFDM PI/2 BPSK	1@214	18.12	31.79	1.5101
2	15	40	374000	1870	DFT-s-OFDM QPSK	108@54	18	31.67	1.4689
2	15	40	374000	1870	DFT-s-OFDM QPSK	1@1	17.8	31.47	1.4028
2	15	40	374000	1870	DFT-s-OFDM QPSK	1@214	18.18	31.85	1.5311
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	108@54	17.09	30.76	1.1912
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@1	16.86	30.53	1.1298
2	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@214	17.29	30.96	1.2474
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	108@54	15.51	29.18	0.8279
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@1	15.42	29.09	0.8110
2	15	40	374000	1870	DFT-s-OFDM 64 QAM	1@214	15.7	29.37	0.8650
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	108@54	13.54	27.21	0.5260
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@1	13.05	26.72	0.4699
2	15	40	374000	1870	DFT-s-OFDM 256 QAM	1@214	13.52	27.19	0.5236
2	15	40	374000	1870	CP-OFDM QPSK	108@54	16.51	30.18	1.0423
2	15	40	374000	1870	CP-OFDM QPSK	1@1	16.42	30.09	1.0209
2	15	40	374000	1870	CP-OFDM QPSK	1@214	16.79	30.46	1.1117
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	108@54	18.32	31.99	1.5812
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	18.07	31.74	1.4928
2	15	40	376000	1880	DFT-s-OFDM PI/2 BPSK	1@214	18.31	31.98	1.5776
2	15	40	376000	1880	DFT-s-OFDM QPSK	108@54	18.56	32.23	1.6711
2	15	40	376000	1880	DFT-s-OFDM QPSK	1@1	18.15	31.82	1.5205
2	15	40	376000	1880	DFT-s-OFDM QPSK	1@214	18.31	31.98	1.5776
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	108@54	17.26	30.93	1.2388
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	1@1	17.05	30.72	1.1803
2	15	40	376000	1880	DFT-s-OFDM 16 QAM	1@214	17.25	30.92	1.2359
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	108@54	15.68	29.35	0.8610
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	1@1	15.55	29.22	0.8356
2	15	40	376000	1880	DFT-s-OFDM 64 QAM	1@214	15.7	29.37	0.8650
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	108@54	13.69	27.36	0.5445
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	1@1	13.24	26.91	0.4909
2	15	40	376000	1880	DFT-s-OFDM 256 QAM	1@214	13.55	27.22	0.5272
2	15	40	376000	1880	CP-OFDM QPSK	108@54	16.67	30.34	1.0814
2	15	40	376000	1880	CP-OFDM QPSK	1@1	16.36	30.03	1.0069
2	15	40	376000	1880	CP-OFDM QPSK	1@214	16.63	30.3	1.0715
2	15	40	378000	1880	DFT-s-OFDM PI/2 BPSK	108@54	18.19	31.86	1.5346
2	15	40	378000	1890	DFT-s-OFDM PI/2 BPSK	1@1	18	31.67	1.4689
2	15	40	378000	1890	DFT-s-OFDM PI/2 BPSK	1@214	18.02	31.69	1.4757
2	15	40	378000	1890	DFT-s-OFDM QPSK	108@54	18.06	31.73	1.4894
2	15	40	378000	1890	DFT-s-OFDM QPSK	1@1	18.01	31.68	1.4723
2	15	40	378000	1890	DFT-s-OFDM QPSK	1@214	17.97	31.64	1.4588
2	15	40	378000	1890	DFT-s-OFDM 16 QAM	108@54	17.12	30.79	1.1995
2	15	40	378000	1890	DFT-s-OFDM 16 QAM	1@1	17.19	30.86	1.2190

2	15	40	378000	1890	DFT-s-OFDM 16 QAM	1@214	17.16	30.83	1.2106
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	108@54	15.65	29.32	0.8551
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	1@1	15.64	29.31	0.8531
2	15	40	378000	1890	DFT-s-OFDM 64 QAM	1@214	15.65	29.32	0.8551
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	108@54	13.59	27.26	0.5321
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	1@1	13.34	27.01	0.5023
2	15	40	378000	1890	DFT-s-OFDM 256 QAM	1@214	13.34	27.01	0.5023
2	15	40	378000	1890	CP-OFDM QPSK	108@54	16.58	30.25	1.0593
2	15	40	378000	1890	CP-OFDM QPSK	1@1	16.52	30.19	1.0447
2	15	40	378000	1890	CP-OFDM QPSK	1@214	16.68	30.35	1.0839

Software Version: 23.04.1202

FR1 N5(Ant 4)– SCS 15k

Transmitter Conducted Output Power And ERP, (G_T - L_C)=2.39dBi

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	23.62	23.86	0.2432
5	15	5	165300	826.5	DFT-s-OFDM 16 QAM	1@1	22.98	23.22	0.2099
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@1	23.51	23.75	0.2371
5	15	5	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.83	23.07	0.2028
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@1	23.37	23.61	0.2296
5	15	5	169300	846.5	DFT-s-OFDM 16 QAM	1@1	22.65	22.89	0.1945
5	15	10	165800	829	DFT-s-OFDM QPSK	1@1	23.69	23.93	0.2472
5	15	10	165800	829	DFT-s-OFDM 16 QAM	1@1	22.9	23.14	0.2061
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@1	23.59	23.83	0.2415
5	15	10	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.94	23.18	0.2080
5	15	10	168800	844	DFT-s-OFDM QPSK	1@1	23.44	23.68	0.2333
5	15	10	168800	844	DFT-s-OFDM 16 QAM	1@1	22.79	23.03	0.2009
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@1	23.66	23.9	0.2455
5	15	15	166300	831.5	DFT-s-OFDM 16 QAM	1@1	22.94	23.18	0.2080
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@1	23.64	23.88	0.2443
5	15	15	167300	836.5	DFT-s-OFDM 16 QAM	1@1	23.01	23.25	0.2113
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@1	23.52	23.76	0.2377
5	15	15	168300	841.5	DFT-s-OFDM 16 QAM	1@1	22.91	23.15	0.2065
5	15	20	166800	834	DFT-s-OFDM QPSK	1@1	23.65	23.89	0.2449
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@1	22.93	23.17	0.2075
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@1	23.69	23.93	0.2472
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.95	23.19	0.2084
5	15	20	167800	839	DFT-s-OFDM QPSK	1@1	23.68	23.92	0.2466
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@1	23	23.24	0.2109
5	15	25	167300	836.5	DFT-s-OFDM PI/2 BPSK	64@32	23.35	23.59	0.2286
5	15	25	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.74	23.98	0.2500
5	15	25	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@131	23.4	23.64	0.2312
5	15	25	167300	836.5	DFT-s-OFDM QPSK	64@32	23.42	23.66	0.2323
5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@1	23.81	24.05	0.2541

5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@131	23.49	23.73	0.2360
5	15	25	167300	836.5	DFT-s-OFDM 16 QAM	64@32	22.7	22.94	0.1968
5	15	25	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.69	22.93	0.1963
5	15	25	167300	836.5	DFT-s-OFDM 16 QAM	1@131	22.34	22.58	0.1811
5	15	25	167300	836.5	DFT-s-OFDM 64 QAM	64@32	21.17	21.41	0.1384
5	15	25	167300	836.5	DFT-s-OFDM 64 QAM	1@1	21.07	21.31	0.1352
5	15	25	167300	836.5	DFT-s-OFDM 64 QAM	1@131	20.75	20.99	0.1256
5	15	25	167300	836.5	DFT-s-OFDM 256 QAM	64@32	19.11	19.35	0.0861
5	15	25	167300	836.5	DFT-s-OFDM 256 QAM	1@1	19	19.24	0.0839
5	15	25	167300	836.5	DFT-s-OFDM 256 QAM	1@131	18.75	18.99	0.0793
5	15	25	167300	836.5	CP-OFDM QPSK	67@33	22.16	22.4	0.1738
5	15	25	167300	836.5	CP-OFDM QPSK	1@1	22.14	22.38	0.1730
5	15	25	167300	836.5	CP-OFDM QPSK	1@131	21.77	22.01	0.1589

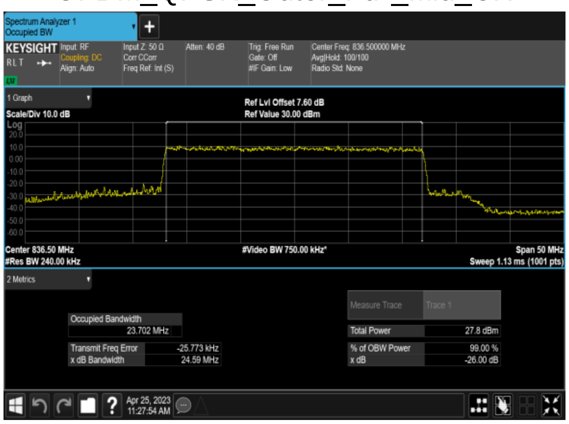
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
5	15	25	167300	836.5	DFT-s-OFDM PI/2 BPSK	128@0	22.831	23.71
5	15	25	167300	836.5	DFT-s-OFDM QPSK	128@0	22.814	23.72
5	15	25	167300	836.5	CP-OFDM QPSK	133@0	23.702	24.59
5	15	25	167300	836.5	CP-OFDM 16 QAM	133@0	23.709	24.52
5	15	25	167300	836.5	CP-OFDM 64 QAM	133@0	23.684	24.62
5	15	25	167300	836.5	CP-OFDM 256 QAM	133@0	23.726	24.59

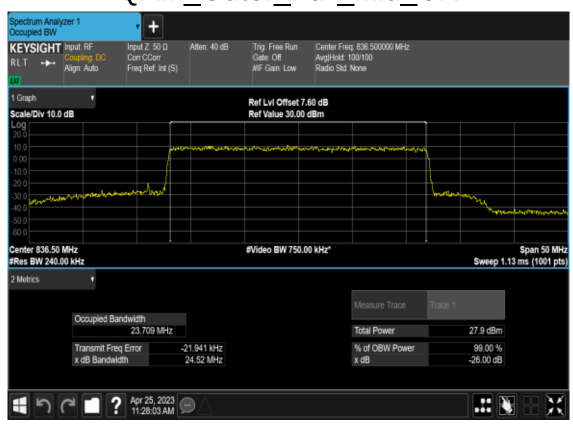
N5(25M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N5(25M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

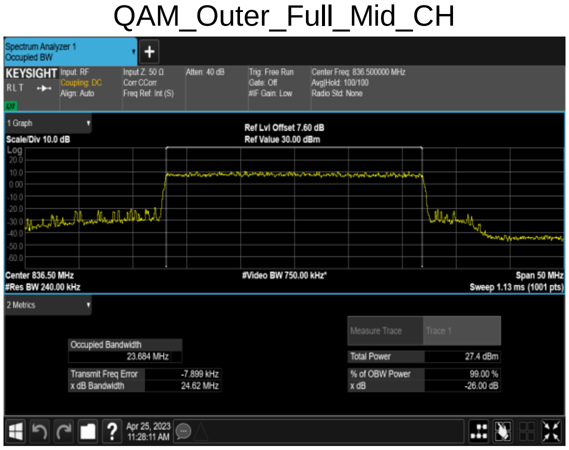
N5(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



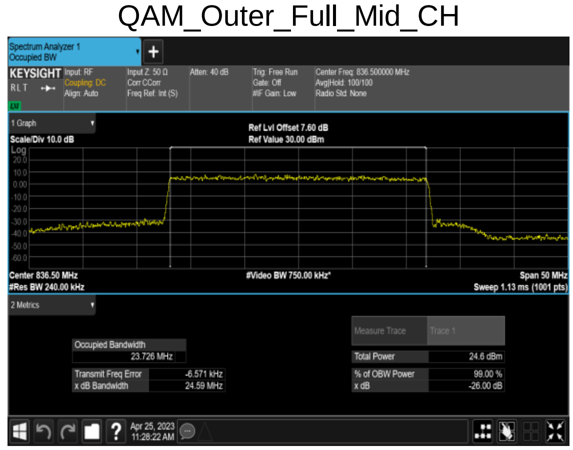
N5(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N5(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



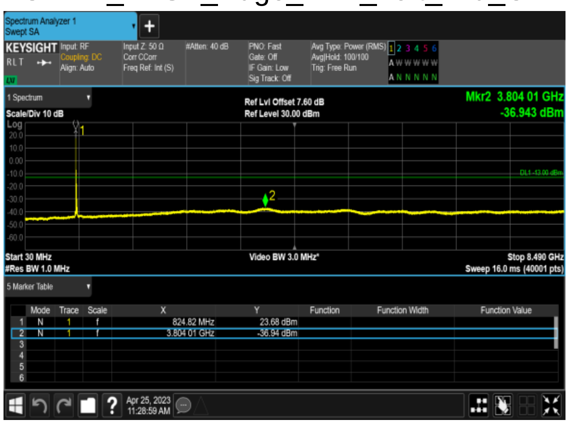
N5(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



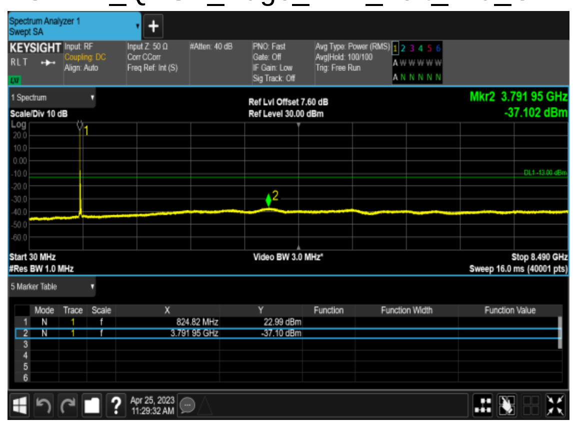
Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	25	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
5	15	25	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

N5(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



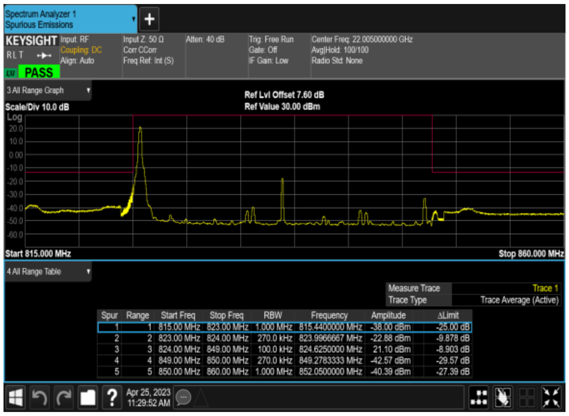
N5(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



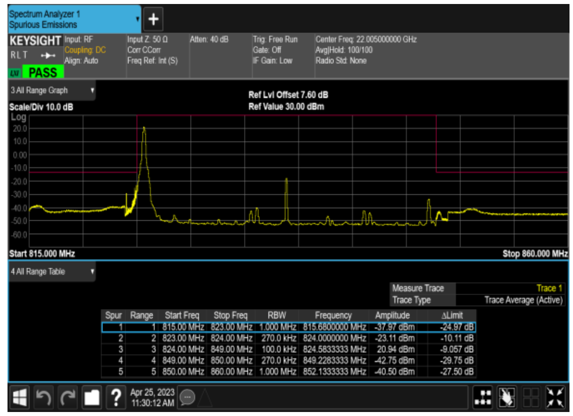
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
5	15	25	167300	836.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM BPSK	1@132	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM QPSK	1@132	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM BPSK	128@0	see graph	**PASS**
5	15	25	167300	836.5	DFT-s-OFDM QPSK	128@0	see graph	**PASS**

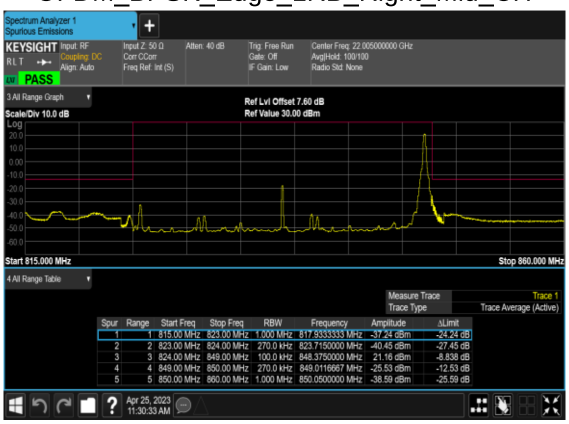
N5(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



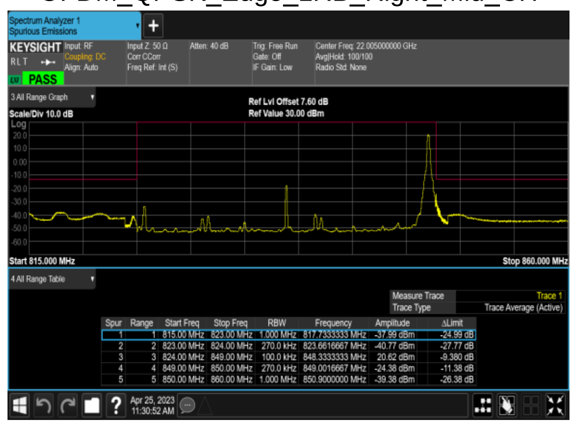
N5(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



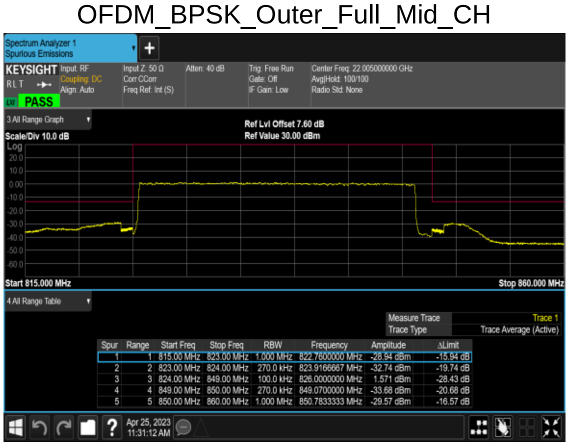
N5(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_Mid_CH



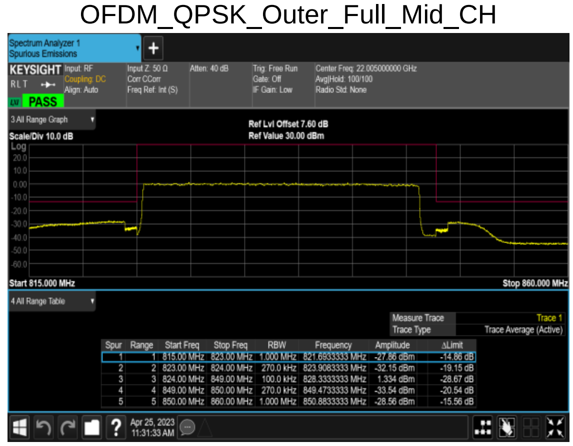
N5(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Mid_CH



N5(25M)_DFT-s-OFDM_BPSK_Outer_Full_Mid_CH



N5(25M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



Software Version: 23.04.1202

FR1 N25(Ant 0)– SCS 15k

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=13.72dBi

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	18.18	31.9	1.5488
25	15	5	370500	1852.5	DFT-s-OFDM 16 QAM	1@1	17.42	31.14	1.3002
25	15	5	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.39	32.11	1.6255
25	15	5	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.56	31.28	1.3428
25	15	5	382500	1912.5	DFT-s-OFDM QPSK	1@1	18.44	32.16	1.6444
25	15	5	382500	1912.5	DFT-s-OFDM 16 QAM	1@1	17.66	31.38	1.3740
25	15	10	371000	1855	DFT-s-OFDM QPSK	1@1	18.23	31.95	1.5668
25	15	10	371000	1855	DFT-s-OFDM 16 QAM	1@1	17.42	31.14	1.3002
25	15	10	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.48	32.2	1.6596
25	15	10	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.62	31.34	1.3614
25	15	10	382000	1910	DFT-s-OFDM QPSK	1@1	18.4	32.12	1.6293
25	15	10	382000	1910	DFT-s-OFDM 16 QAM	1@1	17.56	31.28	1.3428
25	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@1	18.21	31.93	1.5596
25	15	15	371500	1857.5	DFT-s-OFDM 16 QAM	1@1	17.43	31.15	1.3032
25	15	15	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.44	32.16	1.6444
25	15	15	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.69	31.41	1.3836
25	15	15	381500	1907.5	DFT-s-OFDM QPSK	1@1	18.45	32.17	1.6482
25	15	15	381500	1907.5	DFT-s-OFDM 16 QAM	1@1	17.63	31.35	1.3646
25	15	20	372000	1860	DFT-s-OFDM QPSK	1@1	18.26	31.98	1.5776
25	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@1	17.42	31.14	1.3002
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.47	32.19	1.6558
25	15	20	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.62	31.34	1.3614
25	15	20	381000	1905	DFT-s-OFDM QPSK	1@1	18.51	32.23	1.6711
25	15	20	381000	1905	DFT-s-OFDM 16 QAM	1@1	17.67	31.39	1.3772
25	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@1	18.09	31.81	1.5171
25	15	25	372500	1862.5	DFT-s-OFDM 16 QAM	1@1	17.23	30.95	1.2445
25	15	25	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.3	32.02	1.5922
25	15	25	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.43	31.15	1.3032
25	15	25	380500	1902.5	DFT-s-OFDM QPSK	1@1	18.34	32.06	1.6069

25	15	25	380500	1902.5	DFT-s-OFDM 16 QAM	1@1	17.46	31.18	1.3122
25	15	30	373000	1865	DFT-s-OFDM QPSK	1@1	18.05	31.77	1.5031
25	15	30	373000	1865	DFT-s-OFDM 16 QAM	1@1	17.21	30.93	1.2388
25	15	30	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.23	31.95	1.5668
25	15	30	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.37	31.09	1.2853
25	15	30	380000	1900	DFT-s-OFDM QPSK	1@1	18.19	31.91	1.5524
25	15	30	380000	1900	DFT-s-OFDM 16 QAM	1@1	17.39	31.11	1.2912
25	15	35	373500	1867.5	DFT-s-OFDM QPSK	1@1	17.94	31.66	1.4655
25	15	35	373500	1867.5	DFT-s-OFDM 16 QAM	1@1	17.13	30.85	1.2162
25	15	35	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.11	31.83	1.5241
25	15	35	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.28	31	1.2589
25	15	35	379500	1897.5	DFT-s-OFDM QPSK	1@1	18.14	31.86	1.5346
25	15	35	379500	1897.5	DFT-s-OFDM 16 QAM	1@1	17.35	31.07	1.2794
25	15	40	374000	1870	DFT-s-OFDM QPSK	1@1	17.98	31.7	1.4791
25	15	40	374000	1870	DFT-s-OFDM 16 QAM	1@1	17.14	30.86	1.2190
25	15	40	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.1	31.82	1.5205
25	15	40	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.25	30.97	1.2503
25	15	40	379000	1895	DFT-s-OFDM QPSK	1@1	18.18	31.9	1.5488
25	15	40	379000	1895	DFT-s-OFDM 16 QAM	1@1	17.3	31.02	1.2647
25	15	45	374500	1872.5	DFT-s-OFDM PI/2 BPSK	120@60	18.3	32.02	1.5922
25	15	45	374500	1872.5	DFT-s-OFDM PI/2 BPSK	1@1	18.08	31.8	1.5136
25	15	45	374500	1872.5	DFT-s-OFDM PI/2 BPSK	1@240	18.24	31.96	1.5704
25	15	45	374500	1872.5	DFT-s-OFDM QPSK	120@60	18.27	31.99	1.5812
25	15	45	374500	1872.5	DFT-s-OFDM QPSK	1@1	17.93	31.65	1.4622
25	15	45	374500	1872.5	DFT-s-OFDM QPSK	1@240	18.24	31.96	1.5704
25	15	45	374500	1872.5	DFT-s-OFDM 16 QAM	120@60	17.39	31.11	1.2912
25	15	45	374500	1872.5	DFT-s-OFDM 16 QAM	1@1	17.13	30.85	1.2162
25	15	45	374500	1872.5	DFT-s-OFDM 16 QAM	1@240	17.41	31.13	1.2972
25	15	45	374500	1872.5	DFT-s-OFDM 64 QAM	120@60	15.78	29.5	0.8913
25	15	45	374500	1872.5	DFT-s-OFDM 64 QAM	1@1	15.48	29.2	0.8318
25	15	45	374500	1872.5	DFT-s-OFDM 64 QAM	1@240	15.78	29.5	0.8913
25	15	45	374500	1872.5	DFT-s-OFDM 256 QAM	120@60	13.79	27.51	0.5636
25	15	45	374500	1872.5	DFT-s-OFDM 256 QAM	1@1	13.67	27.39	0.5483
25	15	45	374500	1872.5	DFT-s-OFDM 256 QAM	1@240	13.94	27.66	0.5834
25	15	45	374500	1872.5	CP-OFDM QPSK	121@60	16.89	30.61	1.1508

25	15	45	374500	1872.5	CP-OFDM QPSK	1@1	16.5	30.22	1.0520
25	15	45	374500	1872.5	CP-OFDM QPSK	1@240	16.77	30.49	1.1194
25	15	45	376500	1882.5	DFT-s-OFDM PI/2 BPSK	120@60	18.37	32.09	1.6181
25	15	45	376500	1882.5	DFT-s-OFDM PI/2 BPSK	1@1	18.16	31.88	1.5417
25	15	45	376500	1882.5	DFT-s-OFDM PI/2 BPSK	1@240	18.21	31.93	1.5596
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	120@60	18.57	32.29	1.6943
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	1@1	18.08	31.8	1.5136
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	1@240	18.22	31.94	1.5631
25	15	45	376500	1882.5	DFT-s-OFDM 16 QAM	120@60	17.44	31.16	1.3062
25	15	45	376500	1882.5	DFT-s-OFDM 16 QAM	1@1	17.25	30.97	1.2503
25	15	45	376500	1882.5	DFT-s-OFDM 16 QAM	1@240	17.32	31.04	1.2706
25	15	45	376500	1882.5	DFT-s-OFDM 64 QAM	120@60	15.94	29.66	0.9247
25	15	45	376500	1882.5	DFT-s-OFDM 64 QAM	1@1	15.63	29.35	0.8610
25	15	45	376500	1882.5	DFT-s-OFDM 64 QAM	1@240	15.69	29.41	0.8730
25	15	45	376500	1882.5	DFT-s-OFDM 256 QAM	120@60	13.89	27.61	0.5768
25	15	45	376500	1882.5	DFT-s-OFDM 256 QAM	1@1	13.74	27.46	0.5572
25	15	45	376500	1882.5	DFT-s-OFDM 256 QAM	1@240	13.83	27.55	0.5689
25	15	45	376500	1882.5	CP-OFDM QPSK	121@60	16.97	30.69	1.1722
25	15	45	376500	1882.5	CP-OFDM QPSK	1@1	16.73	30.45	1.1092
25	15	45	376500	1882.5	CP-OFDM QPSK	1@240	16.79	30.51	1.1246
25	15	45	378500	1892.5	DFT-s-OFDM PI/2 BPSK	120@60	18.23	31.95	1.5668
25	15	45	378500	1892.5	DFT-s-OFDM PI/2 BPSK	1@1	18.28	32	1.5849
25	15	45	378500	1892.5	DFT-s-OFDM PI/2 BPSK	1@240	18.18	31.9	1.5488
25	15	45	378500	1892.5	DFT-s-OFDM QPSK	120@60	18.22	31.94	1.5631
25	15	45	378500	1892.5	DFT-s-OFDM QPSK	1@1	18.25	31.97	1.5740
25	15	45	378500	1892.5	DFT-s-OFDM QPSK	1@240	18.21	31.93	1.5596
25	15	45	378500	1892.5	DFT-s-OFDM 16 QAM	120@60	17.3	31.02	1.2647
25	15	45	378500	1892.5	DFT-s-OFDM 16 QAM	1@1	17.33	31.05	1.2735
25	15	45	378500	1892.5	DFT-s-OFDM 16 QAM	1@240	17.4	31.12	1.2942
25	15	45	378500	1892.5	DFT-s-OFDM 64 QAM	120@60	15.75	29.47	0.8851
25	15	45	378500	1892.5	DFT-s-OFDM 64 QAM	1@1	15.77	29.49	0.8892
25	15	45	378500	1892.5	DFT-s-OFDM 64 QAM	1@240	15.76	29.48	0.8872
25	15	45	378500	1892.5	DFT-s-OFDM 256 QAM	120@60	13.74	27.46	0.5572
25	15	45	378500	1892.5	DFT-s-OFDM 256 QAM	1@1	13.92	27.64	0.5808
25	15	45	378500	1892.5	DFT-s-OFDM 256 QAM	1@240	13.87	27.59	0.5741

25	15	45	378500	1892.5	CP-OFDM QPSK	121@60	16.81	30.53	1.1298
25	15	45	378500	1892.5	CP-OFDM QPSK	1@1	16.91	30.63	1.1561
25	15	45	378500	1892.5	CP-OFDM QPSK	1@240	16.82	30.54	1.1324

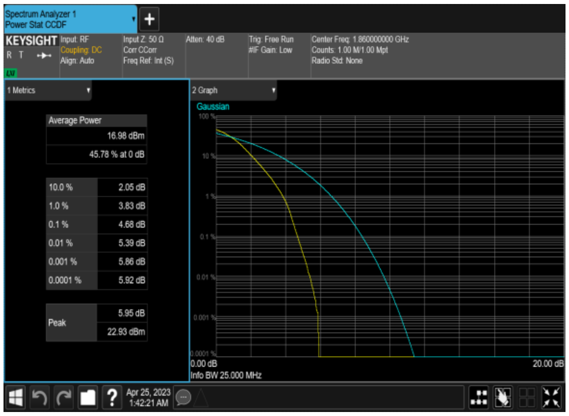
Frequency Stability

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	0.0036	**PASS**	NV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0043	**PASS**	LV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0057	**PASS**	HV
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0035	**PASS**	-30℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0047	**PASS**	-20℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0067	**PASS**	-10℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0042	**PASS**	0℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0063	**PASS**	10℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0036	**PASS**	20℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	30℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0058	**PASS**	40℃
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	0.0035	**PASS**	50℃

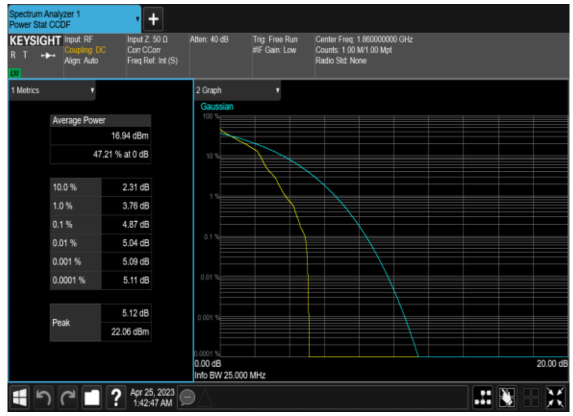
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
25	15	20	372000	1860.0	DFT-s-OFDM PI/2 BPSK	100@0	4.68	13	**PASS**
25	15	20	372000	1860.0	DFT-s-OFDM PI/2 BPSK	1@0	4.87	13	**PASS**
25	15	20	372000	1860.0	DFT-s-OFDM QPSK	100@0	5.65	13	**PASS**
25	15	20	372000	1860.0	DFT-s-OFDM QPSK	1@0	6.21	13	**PASS**
25	15	20	376500	1882.5	DFT-s-OFDM PI/2 BPSK	100@0	4.76	13	**PASS**
25	15	20	376500	1882.5	DFT-s-OFDM PI/2 BPSK	1@0	4.88	13	**PASS**
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	5.96	13	**PASS**
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	1@0	6.08	13	**PASS**
25	15	20	381000	1905.0	DFT-s-OFDM PI/2 BPSK	100@0	4.7	13	**PASS**
25	15	20	381000	1905.0	DFT-s-OFDM PI/2 BPSK	1@0	4.61	13	**PASS**
25	15	20	381000	1905.0	DFT-s-OFDM QPSK	100@0	5.79	13	**PASS**
25	15	20	381000	1905.0	DFT-s-OFDM QPSK	1@0	5.78	13	**PASS**

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



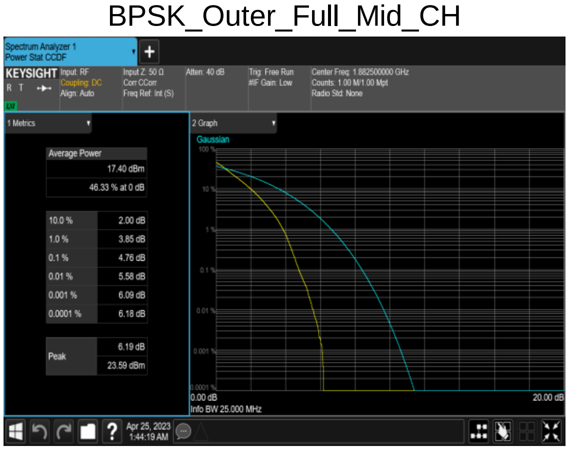
N25(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



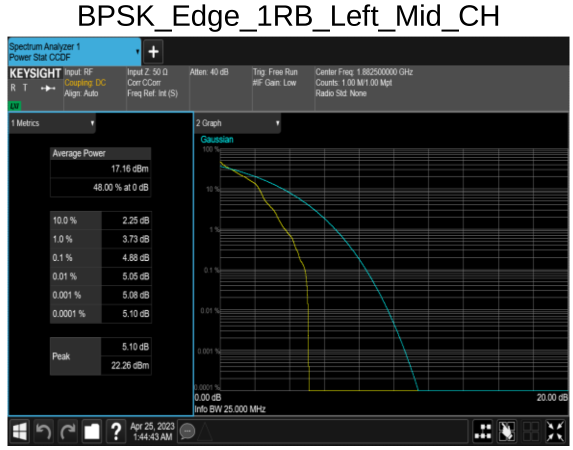
N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

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



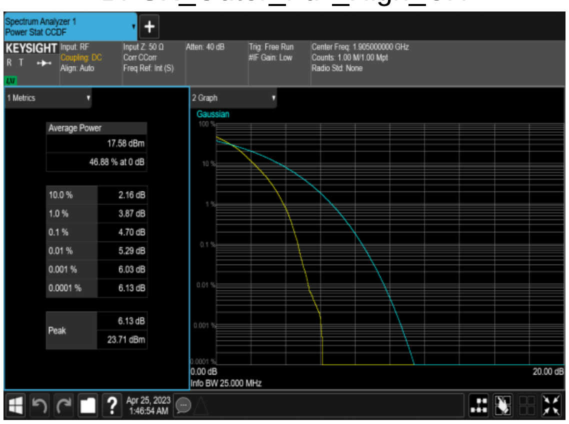
N25(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

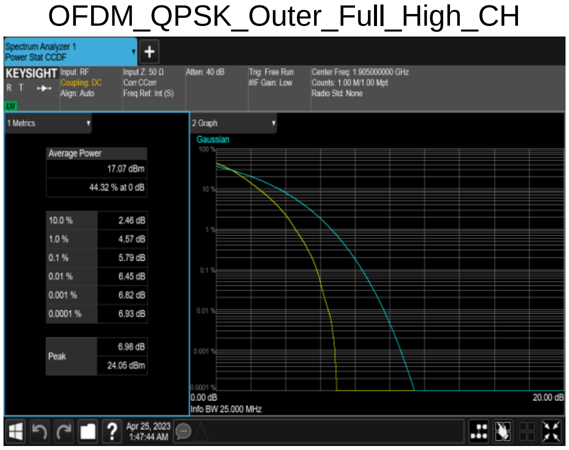
N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

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

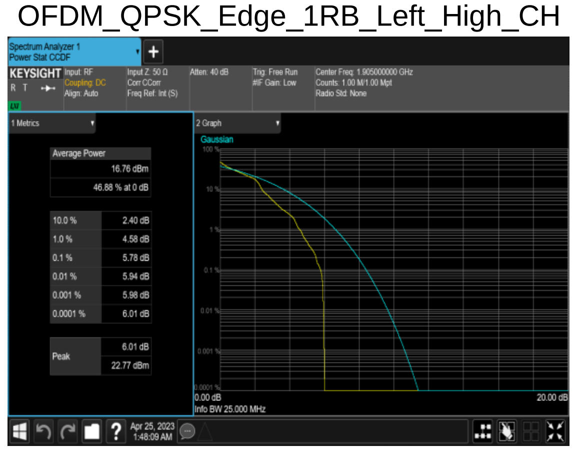


N25(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH

N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N25(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

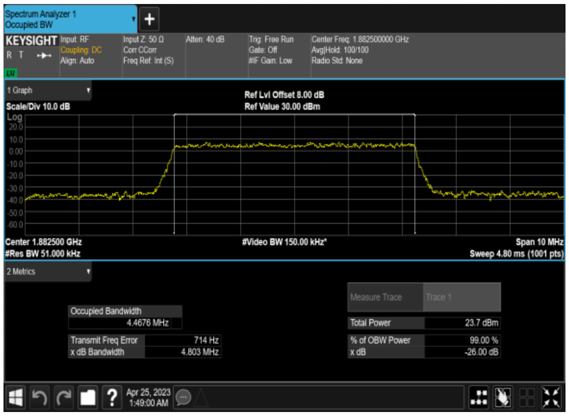


Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
25	15	5	376500	1882.5	DFT-s-OFDM PI/2 BPSK	25@0	4.4676	4.803
25	15	5	376500	1882.5	DFT-s-OFDM QPSK	25@0	4.4708	4.836
25	15	5	376500	1882.5	CP-OFDM QPSK	25@0	4.4584	4.807
25	15	5	376500	1882.5	CP-OFDM 16 QAM	25@0	4.4706	4.8
25	15	5	376500	1882.5	CP-OFDM 64 QAM	25@0	4.4609	4.75
25	15	5	376500	1882.5	CP-OFDM 256 QAM	25@0	4.4726	4.838
25	15	10	376500	1882.5	DFT-s-OFDM PI/2 BPSK	50@0	8.8958	9.343
25	15	10	376500	1882.5	DFT-s-OFDM QPSK	50@0	8.909	9.308
25	15	10	376500	1882.5	CP-OFDM QPSK	52@0	9.2896	9.697
25	15	10	376500	1882.5	CP-OFDM 16 QAM	52@0	9.2719	9.709
25	15	10	376500	1882.5	CP-OFDM 64 QAM	52@0	9.2713	9.733
25	15	10	376500	1882.5	CP-OFDM 256 QAM	52@0	9.2729	9.746
25	15	15	376500	1882.5	DFT-s-OFDM PI/2 BPSK	75@0	13.413	13.93
25	15	15	376500	1882.5	DFT-s-OFDM QPSK	75@0	13.392	13.98
25	15	15	376500	1882.5	CP-OFDM QPSK	79@0	14.087	14.68
25	15	15	376500	1882.5	CP-OFDM 16 QAM	79@0	14.112	14.69
25	15	15	376500	1882.5	CP-OFDM 64 QAM	79@0	14.122	14.6
25	15	15	376500	1882.5	CP-OFDM 256 QAM	79@0	14.139	14.64
25	15	20	376500	1882.5	DFT-s-OFDM PI/2 BPSK	100@0	17.903	18.54
25	15	20	376500	1882.5	DFT-s-OFDM QPSK	100@0	17.91	18.58
25	15	20	376500	1882.5	CP-OFDM QPSK	106@0	18.978	19.71
25	15	20	376500	1882.5	CP-OFDM 16 QAM	106@0	18.976	19.79
25	15	20	376500	1882.5	CP-OFDM 64 QAM	106@0	18.959	19.66
25	15	20	376500	1882.5	CP-OFDM 256 QAM	106@0	18.942	19.64
25	15	25	376500	1882.5	DFT-s-OFDM PI/2 BPSK	128@0	22.935	23.65
25	15	25	376500	1882.5	DFT-s-OFDM QPSK	128@0	22.918	23.75
25	15	25	376500	1882.5	CP-OFDM QPSK	133@0	23.752	24.64
25	15	25	376500	1882.5	CP-OFDM 16 QAM	133@0	23.716	24.52
25	15	25	376500	1882.5	CP-OFDM 64 QAM	133@0	23.795	24.68

25	15	25	376500	1882.5	CP-OFDM 256 QAM	133@0	23.772	24.57
25	15	30	376500	1882.5	DFT-s-OFDM PI/2 BPSK	160@0	28.629	29.71
25	15	30	376500	1882.5	DFT-s-OFDM QPSK	160@0	28.672	29.71
25	15	30	376500	1882.5	CP-OFDM QPSK	160@0	28.608	29.58
25	15	30	376500	1882.5	CP-OFDM 16 QAM	160@0	28.635	29.63
25	15	30	376500	1882.5	CP-OFDM 64 QAM	160@0	28.604	29.72
25	15	30	376500	1882.5	CP-OFDM 256 QAM	160@0	28.62	29.74
25	15	35	376500	1882.5	DFT-s-OFDM PI/2 BPSK	180@0	32.175	33.29
25	15	35	376500	1882.5	DFT-s-OFDM QPSK	180@0	32.231	33.32
25	15	35	376500	1882.5	CP-OFDM QPSK	180@0	33.601	34.63
25	15	35	376500	1882.5	CP-OFDM 16 QAM	180@0	33.606	34.70
25	15	35	376500	1882.5	CP-OFDM 64 QAM	180@0	33.511	34.66
25	15	35	376500	1882.5	CP-OFDM 256 QAM	180@0	33.563	34.68
25	15	40	376500	1882.5	DFT-s-OFDM PI/2 BPSK	216@0	38.505	39.81
25	15	40	376500	1882.5	DFT-s-OFDM QPSK	216@0	38.562	39.9
25	15	40	376500	1882.5	CP-OFDM QPSK	216@0	38.528	39.89
25	15	40	376500	1882.5	CP-OFDM 16 QAM	216@0	38.559	39.86
25	15	40	376500	1882.5	CP-OFDM 64 QAM	216@0	38.496	39.82
25	15	40	376500	1882.5	CP-OFDM 256 QAM	216@0	38.552	39.82
25	15	45	376500	1882.5	DFT-s-OFDM PI/2 BPSK	240@0	42.755	44.24
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	240@0	42.746	44.29
25	15	45	376500	1882.5	CP-OFDM QPSK	242@0	43.088	44.7
25	15	45	376500	1882.5	CP-OFDM 16 QAM	242@0	43.06	44.61
25	15	45	376500	1882.5	CP-OFDM 64 QAM	242@0	43.102	44.6
25	15	45	376500	1882.5	CP-OFDM 256 QAM	242@0	43.158	44.67

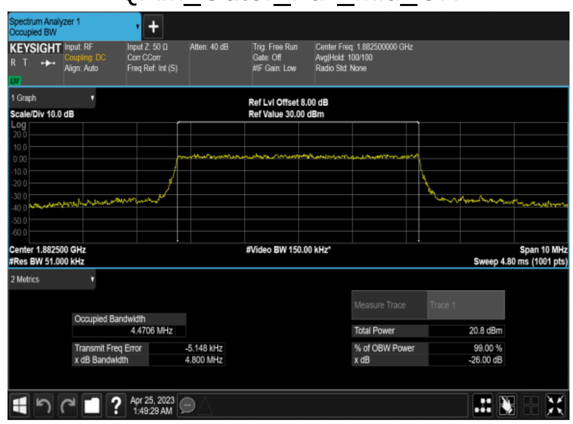
N25(5M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



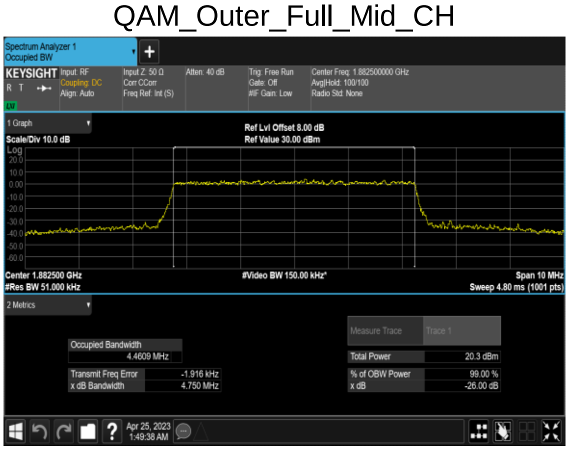
N25(5M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N25(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

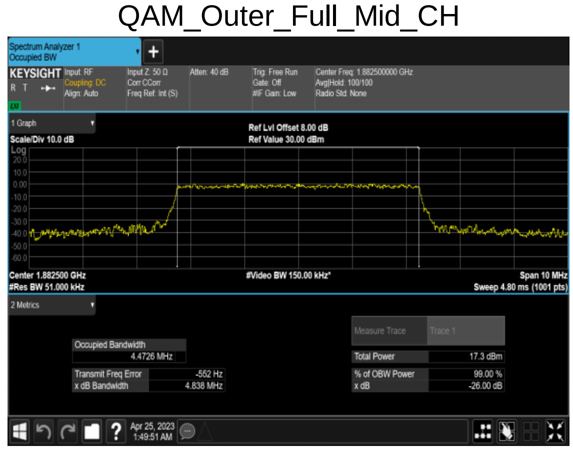
N25(5M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



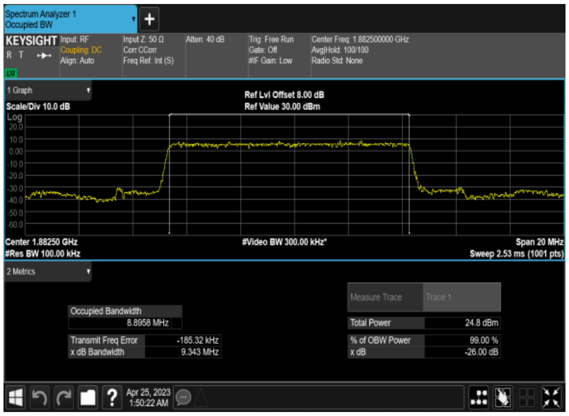
N25(5M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



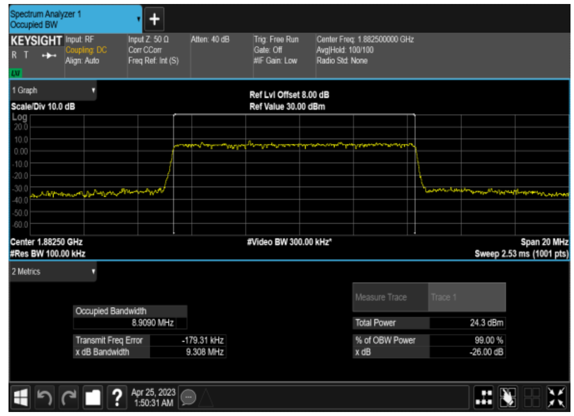
N25(5M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



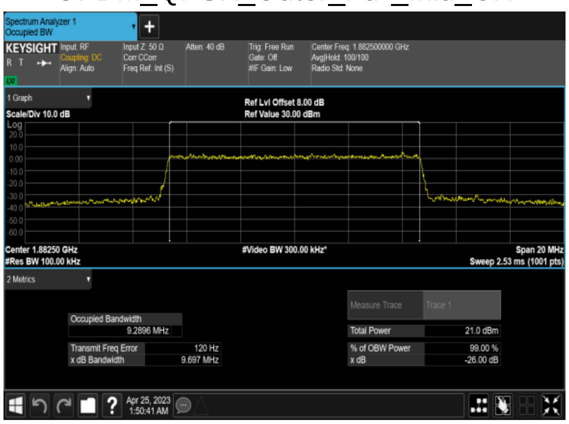
N25(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



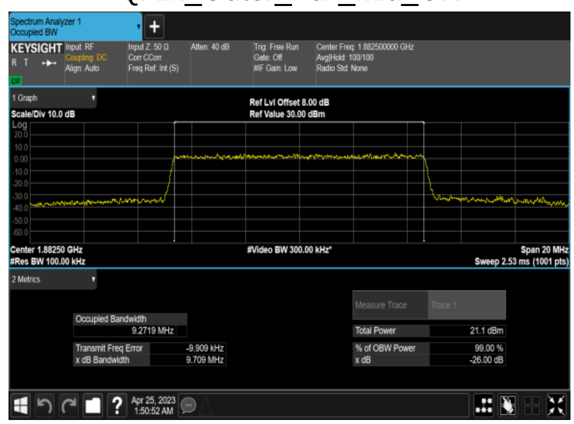
N25(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



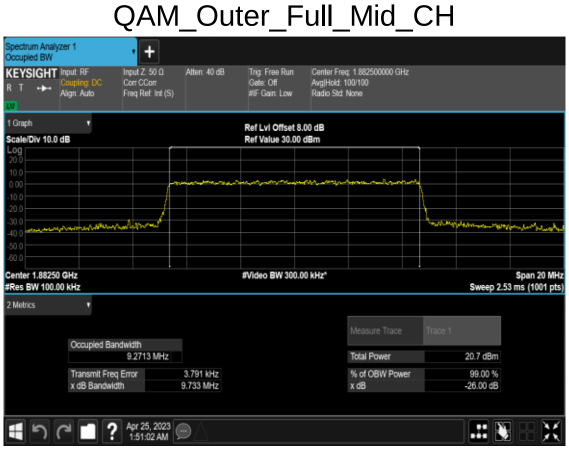
N25(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



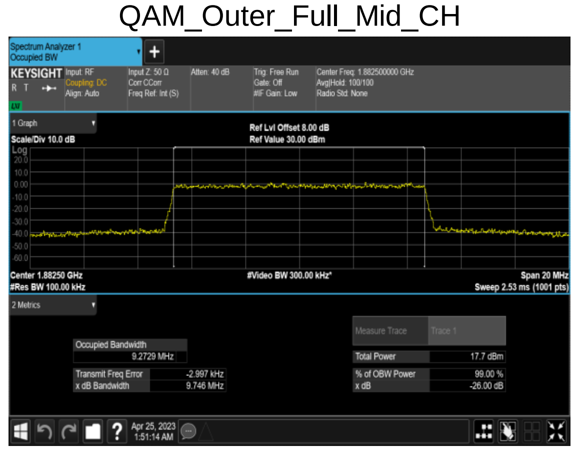
N25(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



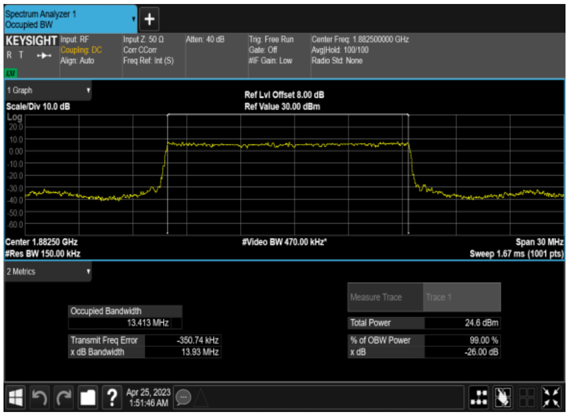
N25(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N25(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



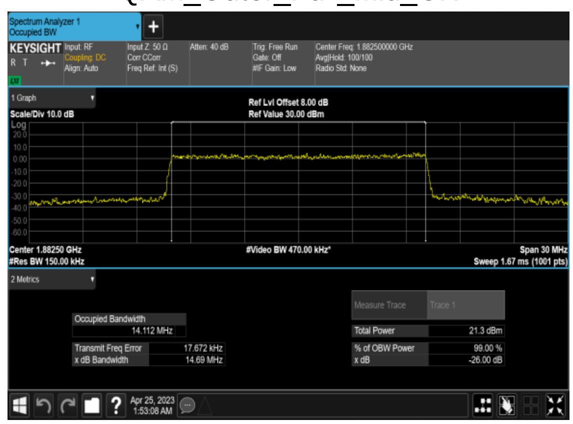
N25(15M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



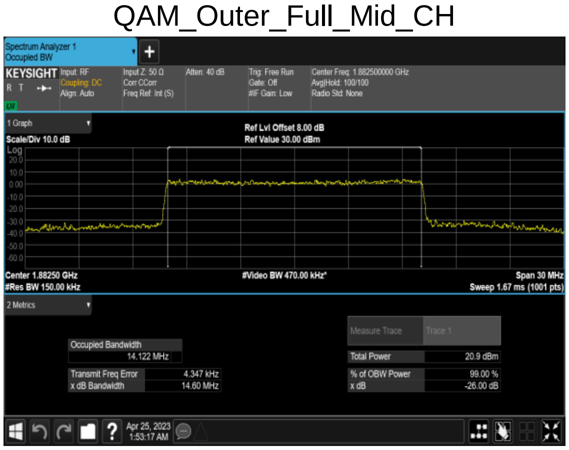
N25(15M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N25(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

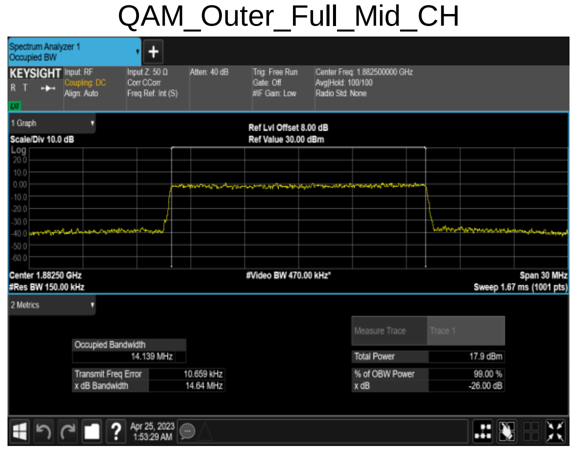
N25(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N25(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N25(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

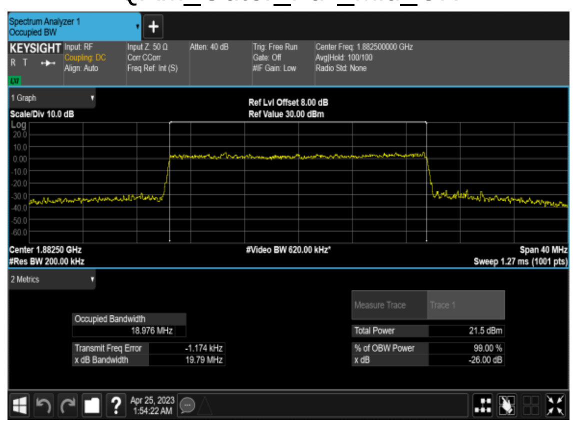


N25(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N25(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N25(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N25(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



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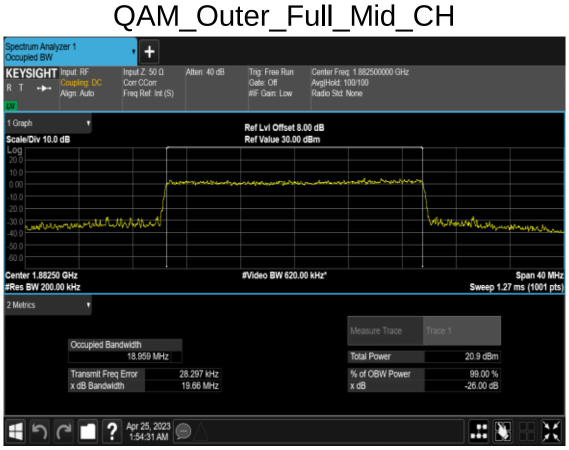

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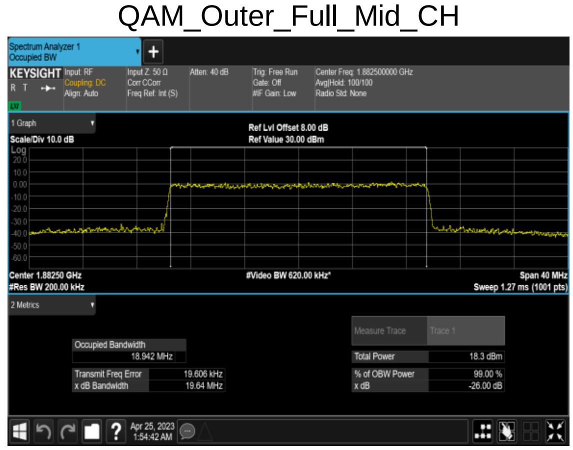
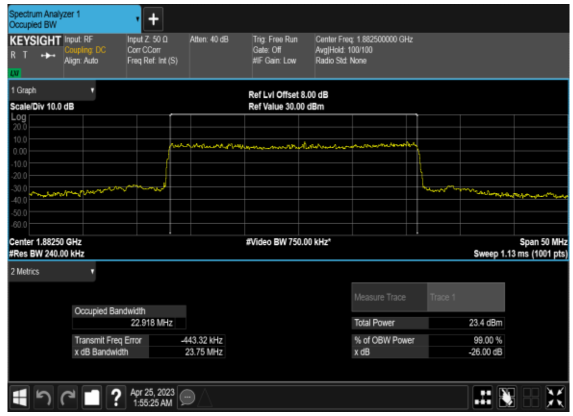
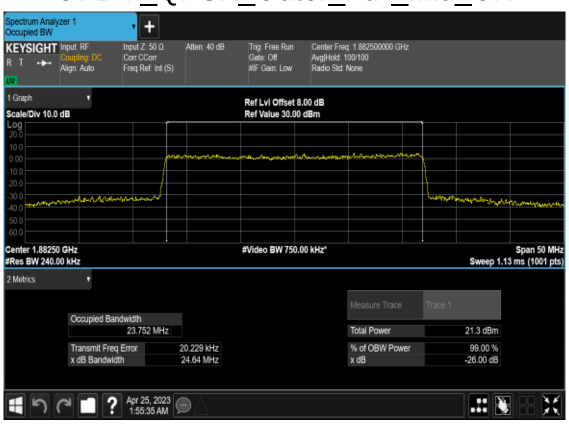


N25(25M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N25(25M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



N25(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



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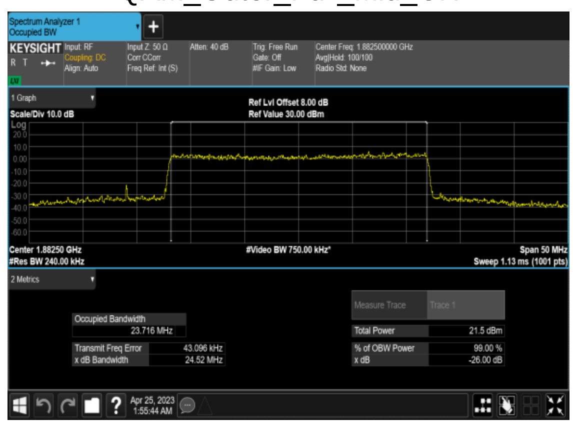

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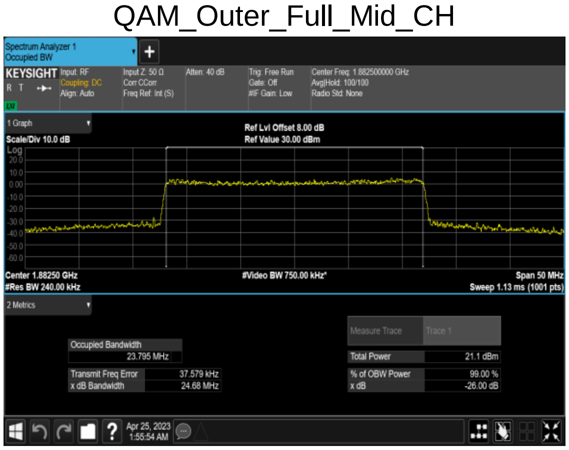
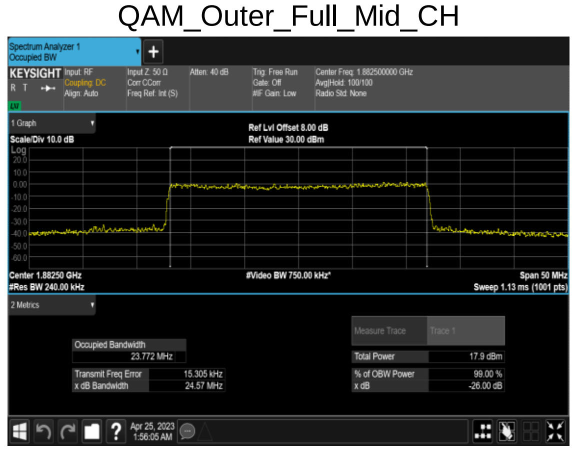


N25(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



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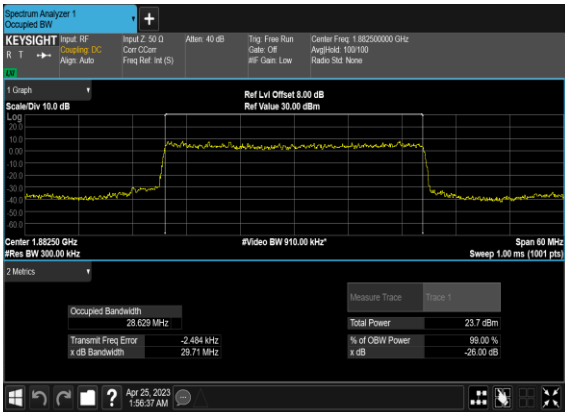

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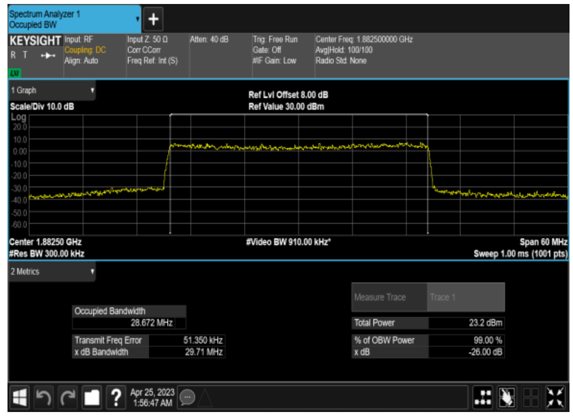
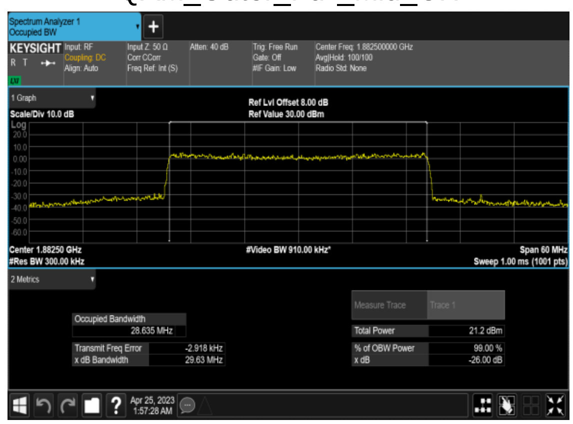


N25(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N25(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



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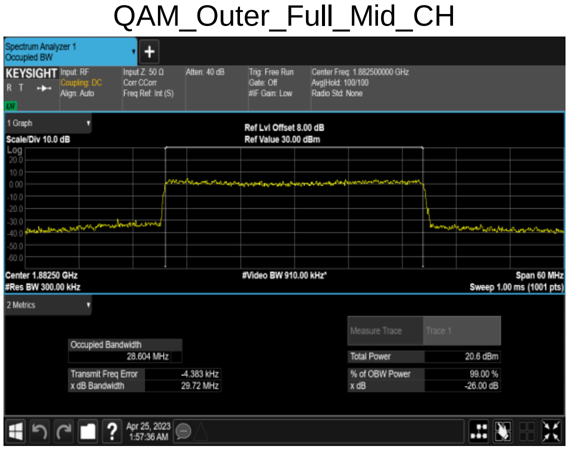

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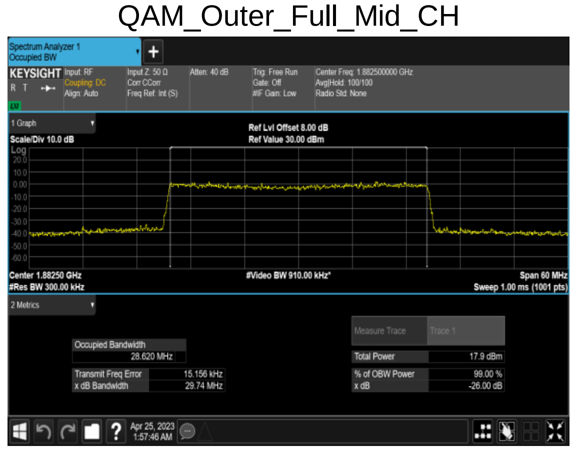
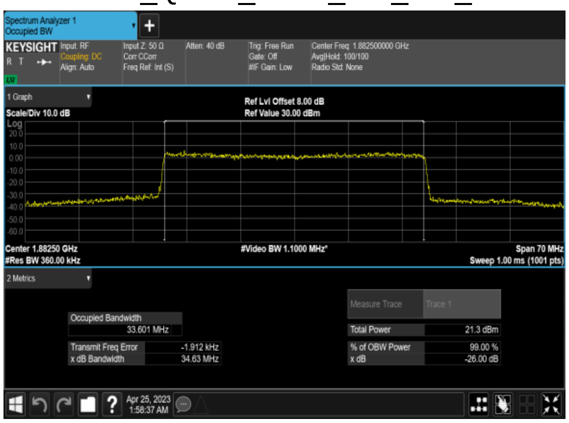


N25(35M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N25(35M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N25(35M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



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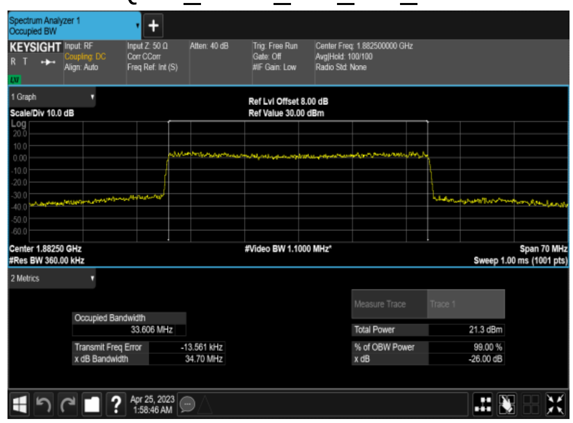
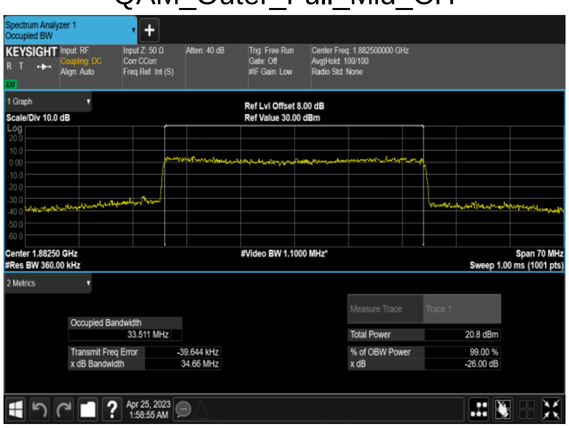


N25(35M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



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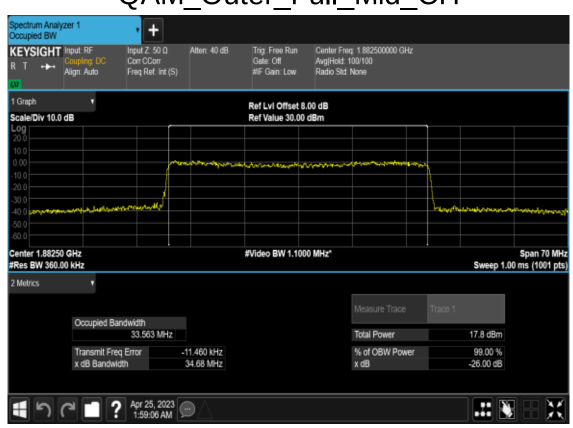
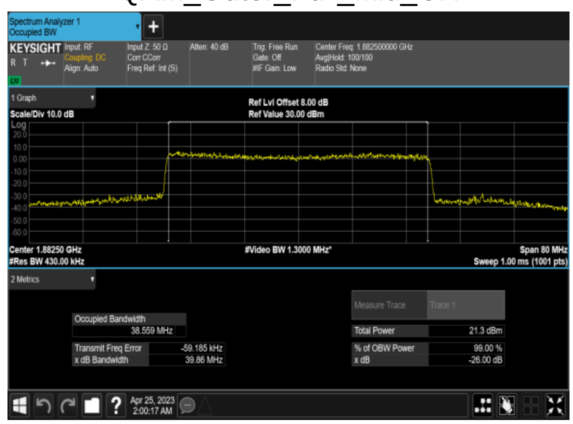


N25(40M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N25(40M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N25(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

N25(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



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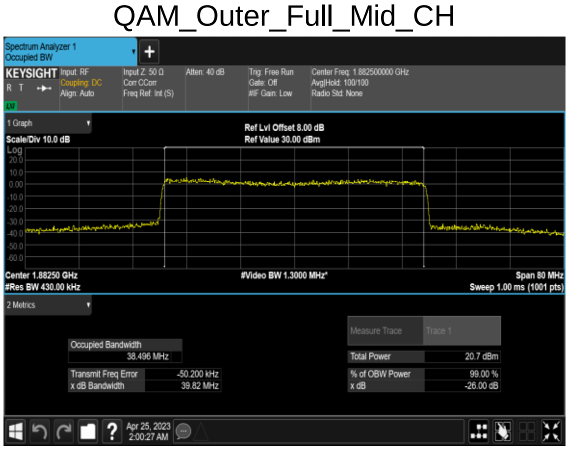

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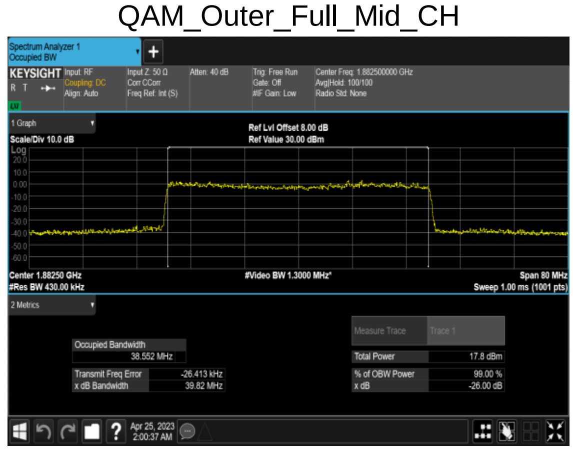
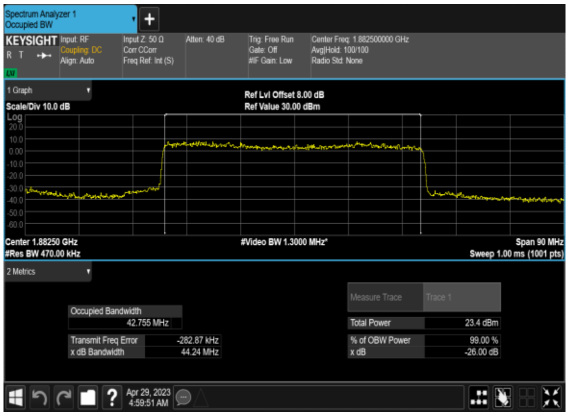


N25(45M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



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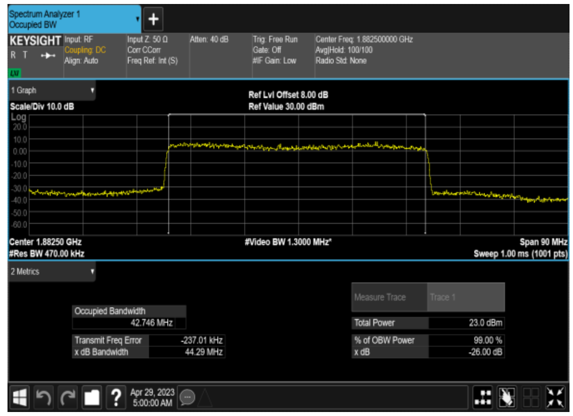

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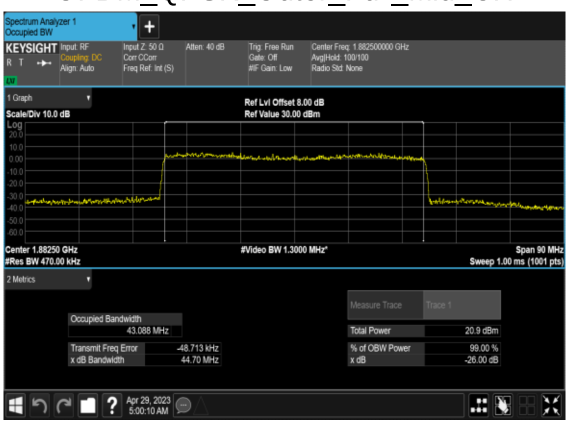

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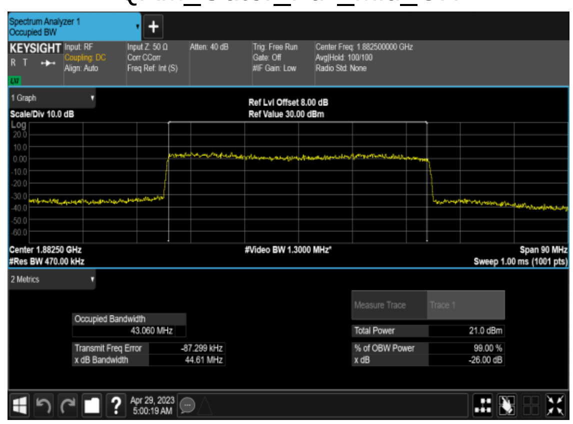
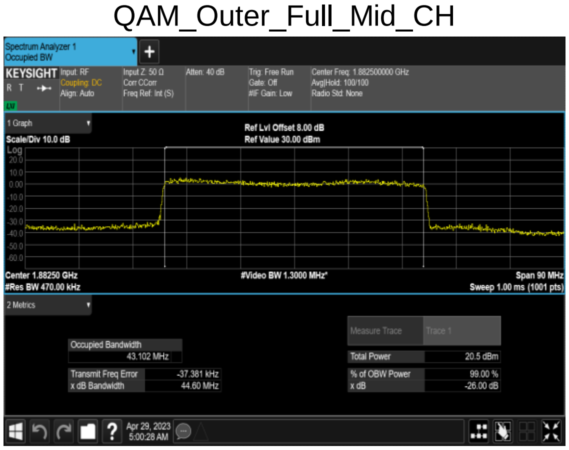


N25(45M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



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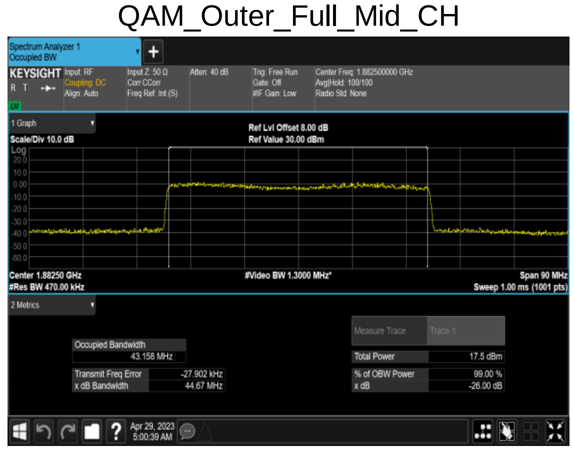

Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
25	15	5	370500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	5	370500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	5	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	5	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	5	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	5	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	5	382500	1912.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	5	382500	1912.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	5	382500	1912.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	5	382500	1912.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	25	372500	1862.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	25	372500	1862.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	25	372500	1862.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	25	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	25	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	25	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	25	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	25	380500	1902.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	25	380500	1902.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**

25	15	25	380500	1902.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	25	380500	1902.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	45	374500	1872.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	45	374500	1872.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	45	374500	1872.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	45	374500	1872.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	45	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	45	376500	1882.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	45	376500	1882.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
25	15	45	378500	1892.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
25	15	45	378500	1892.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
25	15	45	378500	1892.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
25	15	45	378500	1892.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**