FCC RF Test Report

APPLICANT	:	**Xiaomi Communications Co., Ltd.**
EQUIPMENT	:	**Mobile Phone**
BRAND NAME	:	**POCO**
MODEL NAME	:	**2311DRK48G**
FCC ID	:	**2AFZZK48G**
STANDARD	:	**47 CFR Part 2, 27 Subpart O (3700-3980MHz)**
CLASSIFICATION	:	**PCS Licensed Transmitter Held to Ear (PCE)**
TEST DATE(S)	:	**Oct. 11, 2023 ~ Oct 13, 2023**

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

ilac-MRA

ACCREDITED
Cert #5145.01

Sporton International Inc. (ShenZhen)

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG391402I	Rev. 01	Initial issue of report	Nov. 06, 2023

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
3.5	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(l)(2)	Conducted Spurious Emission (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.9	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(l)(2)	Radiated Spurious Emission (5G NR n77, n78)	< $43+10\log_{10}$(P[Watts])	PASS	Under limit 30.74 dB at 10354.00 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

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.2 Manufacturer

Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	POCO
Model Name	2311DRK48G
FCC ID	2AFZZK48G
IMEI Code	Conducted : 863478060034729 Radiation : 863478060040627/863478060040635
HW Version	1351N11A
SW Version	Xiaomi HyperOS 1.0
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency	5G NR n77: 3700 MHz ~ 3980 MHz 5G NR n78: 3700 MHz ~ 3800 MHz
SCS	15kHz, 30kHz
Bandwidth	n77/n78(15kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50MHz n77/n78(30kHz): 10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz
Antenna Gain	**<Ant. 5>** 5G NR n77: -1.8 dBi 5G NR n78: -1.8 dBi **<Ant. 6>** 5G NR n77: 0 dBi 5G NR n78: 0 dBi **<Ant. 7>** 5G NR n77: -0.18 dBi 5G NR n78: -0.18 dBi **<Ant. 8>** 5G NR n77: -1.5 dBi 5G NR n78: -1.5 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP is shown in the report, 5G NR n77/n78 for Antenna 6.
2. The device supports n77/n78(1T4R) SRS resources on Antenna 5/6/7/8, only the test data of worst Antenna 6 is showed in the report according to the maximum power.
3. 5G NR n77 support SA mode, n78 support SA and NSA mode. The whole testing has assessed SA mode by referring to the higher conducted power for conducted test items.
4. The device supports HPUE mode for 5G NR n77/n78.
5. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
6. 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 EIRP and Emission Designator

5G NR n77 SA for SCS 15kHz		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3975.00	0.3327	9M29G7D	0.2588	9M27W7D
15	3707.505 ~ 3972.495	0.3327	14M1G7D	0.2576	14M1W7D
20	3710.01 ~ 3969.99	0.3334	18M9G7D	0.2582	19M0W7D
25	3712.50 ~ 3967.50	0.3251	23M8G7D	0.2483	23M8W7D
30	3715.005 ~ 3964.98	0.3251	28M5G7D	0.2483	28M6W7D
40	3720.00 ~ 3960.00	0.3251	38M5G7D	0.2535	38M6W7D
50	3725.01 ~ 3954.99	0.3334	48M2G7D	0.2679	48M2W7D
5G NR n77 SA for SCS 30kHz		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3975.00	0.3214	9M29G7D	0.2438	9M27W7D
15	3707.52 ~ 3972.48	0.3206	14M1G7D	0.2415	14M1W7D
20	3710.01 ~ 3969.99	0.3221	18M9G7D	0.2427	19M0W7D
25	3712.50 ~ 3967.50	0.3062	23M8G7D	0.2333	23M8W7D
30	3715.02 ~ 3964.98	0.3133	28M5G7D	0.2307	28M6W7D
40	3720.00 ~ 3960.00	0.3041	38M5G7D	0.2399	38M6W7D
50	3725.01 ~ 3954.99	0.3006	48M2G7D	0.2296	48M2W7D
60	3730.02 ~ 3949.98	0.2897	58M0G7D	0.2203	57M8W7D
70	3735.00 ~ 3945.00	0.2904	67M5G7D	0.2244	67M6W7D
80	3740.01 ~ 3939.99	0.2938	77M5G7D	0.2239	77M6W7D
90	3745.02 ~ 3934.98	0.3048	87M3G7D	0.2377	87M5W7D
100	3750.00 ~ 3930.00	0.3296	97M4G7D	0.2529	97M5W7D

5G NR n78 SA for SCS 15kHz		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3795.00	0.4083	9M29G7D	0.3251	9M25W7D
15	3707.505 ~ 3792.495	0.4130	14M1G7D	0.3199	14M1W7D
20	3710.01 ~ 3789.99	0.4140	18M9G7D	0.3327	19M0W7D
25	3712.50 ~ 3787.50	0.4074	23M7G7D	0.3184	23M7W7D
30	3715.005 ~ 3784.995	0.4027	28M5G7D	0.3162	28M6W7D
40	3720.00 ~ 3780.00	0.4064	38M5G7D	0.3281	38M5W7D
50	3725.01 ~ 3774.99	0.4159	48M2G7D	0.3319	48M3W7D
5G NR n78 SA for SCS 30kHz		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	3705.00 ~ 3795.00	0.3864	9M29G7D	0.3133	9M25W7D
15	3707.52 ~ 3792.48	0.3954	14M1G7D	0.3069	14M1W7D
20	3710.01 ~ 3789.99	0.4111	18M9G7D	0.3126	19M0W7D
25	3712.50 ~ 3787.50	0.3908	23M7G7D	0.3133	23M7W7D
30	3715.02 ~ 3784.98	0.3846	28M5G7D	0.3027	28M6W7D
40	3720.00 ~ 3780.00	0.3972	38M5G7D	0.3184	38M5W7D
50	3725.01 ~ 3774.99	0.4074	48M2G7D	0.3221	48M3W7D
60	3730.02 ~ 3769.98	0.3981	57M8G7D	0.3177	57M9W7D
70	3735.00 ~ 3765.00	0.4027	67M3G7D	0.3266	67M5W7D
80	3740.01 ~ 3759.99	0.4111	77M4G7D	0.3296	77M6W7D
90	3745.02 ~ 3754.98	0.3855	87M4G7D	0.3148	87M5W7D
100	3750.00 ~ 3750.00	0.4121	97M3G7D	0.3350	97M6W7D

Note: All modulations have been tested, and only the worst test results are shown in the report.

1.7 Testing Location

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

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

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-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, 27
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

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

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

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

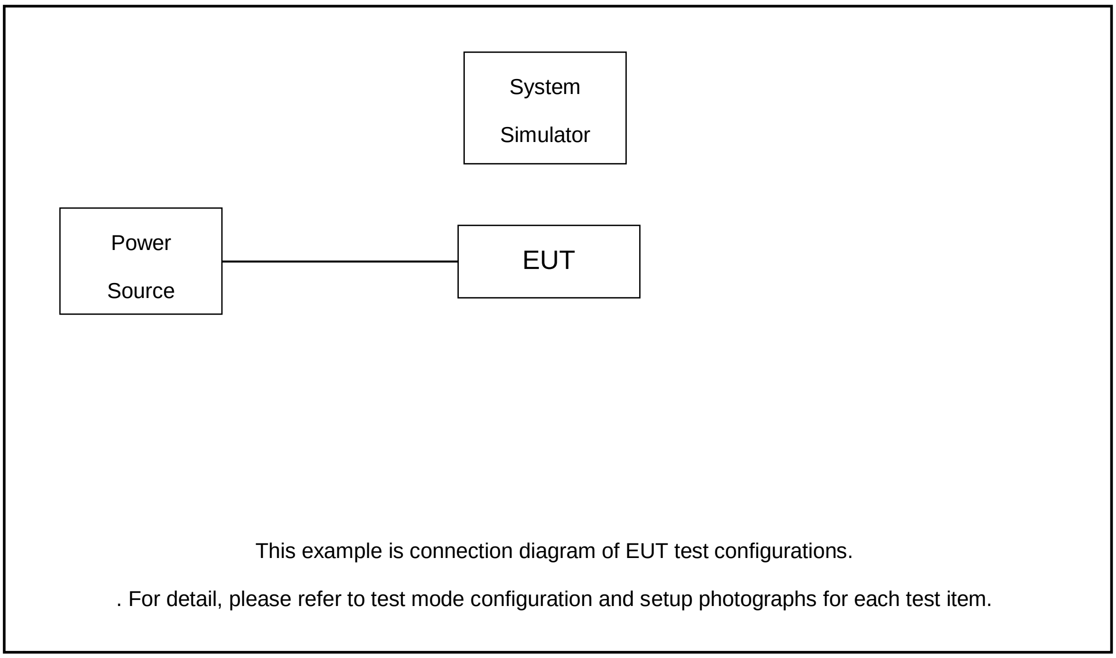
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

Test Items	5G NR	Bandwidth (MHz)												Modulation					RB #			Test Channel		
		10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Partial	Full	L	M	H
Max. Output Power	n77	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n77			v									v	v	v				v		v		v	
	n78			v									v	v	v				v		v		v	
26dB and 99% Bandwidth	n77	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v			v		v	
	n78	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v			v		v	
Conducted Band Edge	n77	v			v			v	v		v		v	v	v				v		v	v		v
	n78	v			v			v	v		v		v	v	v				v		v	v		v
Conducted Spurious Emission	n77	v			v			v	v		v		v	v	v				v			v	v	v
	n78	v			v			v	v		v		v	v	v				v			v	v	v
Frequency Stability	n77			v									v		v						v		v	
	n78			v									v		v				v		v		v	
E.I.R.P	n77	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n77	Worst Case																					v	
	n78	Worst Case																					v	

Note:
1. The mark "**v** " means that this configuration is chosen for testing
2. The mark "-" means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
4. Frequency Stability：Normal Voltage = 3.89V; Low Voltage =3.45V; High Voltage =4.45V.

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.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss

Offset = RF cable loss

Following shows an offset computation example with cable loss 8.90 dB

Example :

Offset(dB) = RF cable loss(dB)

= 8.90(dB)

2.5 Frequency List of Low/Middle/High Channels

5G n77 (15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647667	656000	664332
	Frequency	3715.005	3840	3964.98
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647167	656000	664833
	Frequency	3707.505	3840	3972.495
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n78(15kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647667	650000	652333
	Frequency	3715.005	3750	3784.995
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647167	650000	652833
	Frequency	3707.505	3750	3792.495
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

5G n77 (30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662332
	Frequency	3745.02	3840	3934.98
80	Channel	649334	656000	662666
	Frequency	3740.01	3840	3939.99
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
60	Channel	648668	656000	663332
	Frequency	3730.02	3840	3949.98
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647668	656000	664332
	Frequency	3715.02	3840	3964.98
25	Channel	647500	656000	664500
	Frequency	3712.5	3840	3967.5
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647168	656000	664832
	Frequency	3707.52	3840	3972.48
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n78(30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel		650000	
	Frequency		3750	
90	Channel	649668	650000	650332
	Frequency	3745.02	3750	3754.98
80	Channel	649334	650000	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
60	Channel	648668	650000	651332
	Frequency	3730.02	3750	3769.98
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647668	650000	652332
	Frequency	3715.02	3750	3784.98
25	Channel	647500	650000	652500
	Frequency	3712.5	3750	3787.5
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647168	650000	652832
	Frequency	3707.52	3750	3792.48
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

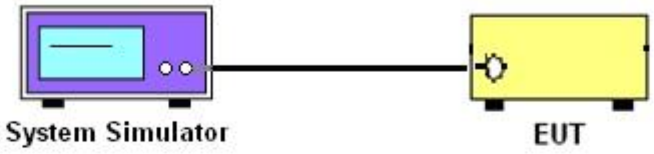
3 Conducted Test Items

3.1 Measuring Instruments

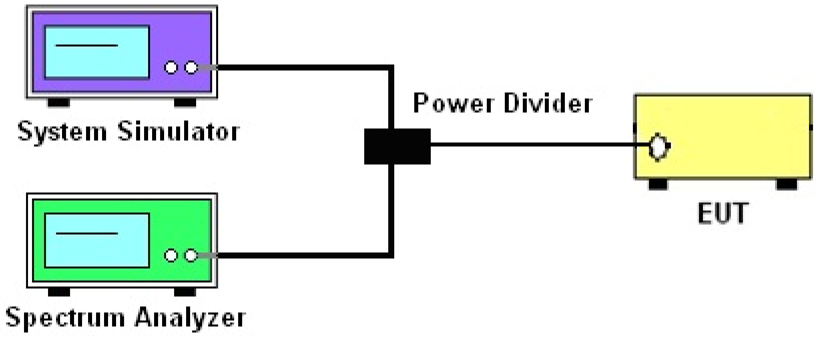
See list of measuring instruments of this test report.

3.2 Test Setup

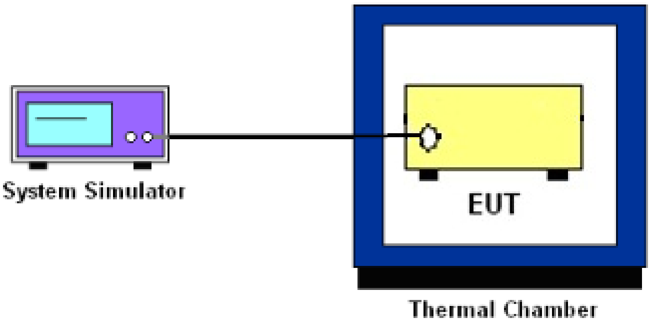
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and EIRP

3.4.1 Description of the Conducted Output Power Measurement and EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n77, n78.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

27.53(l)(2)

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

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used (generally limited to no less than 1% of the OBW) and the measured power was integrated over the full required measurement bandwidth.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.
   Example:
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

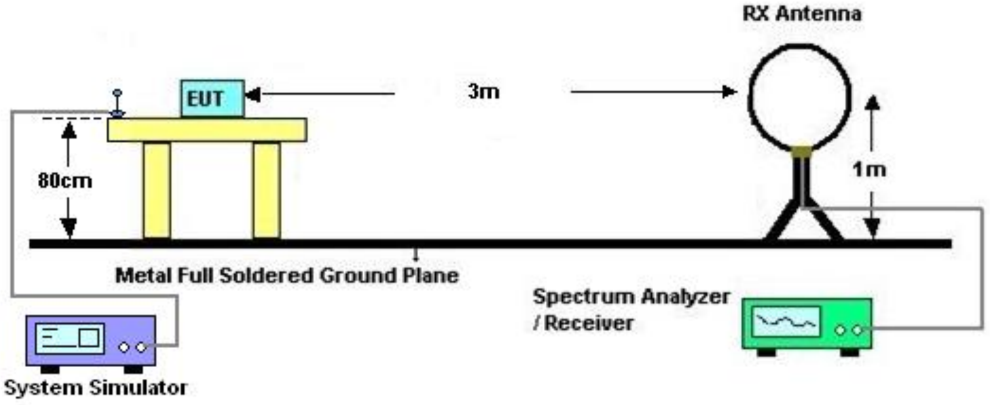
4 Radiated Test Items

4.1 Measuring Instruments

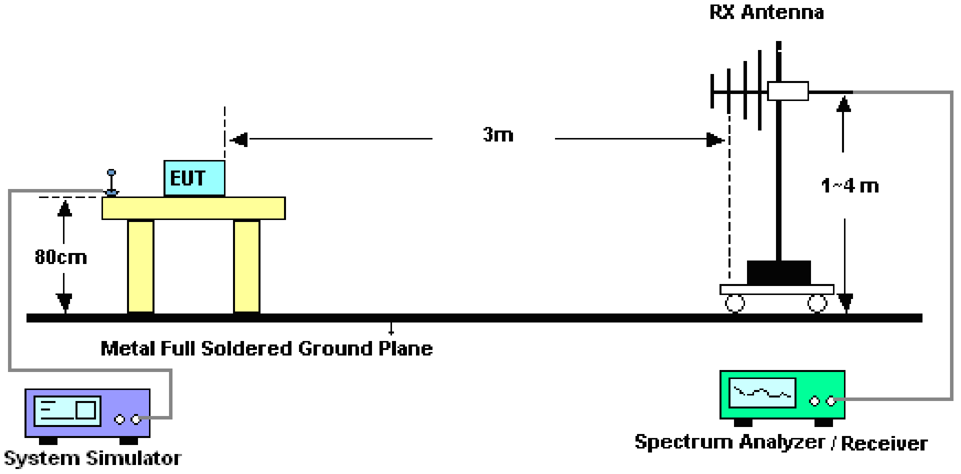
See list of measuring instruments of this test report.

4.2 Test Setup

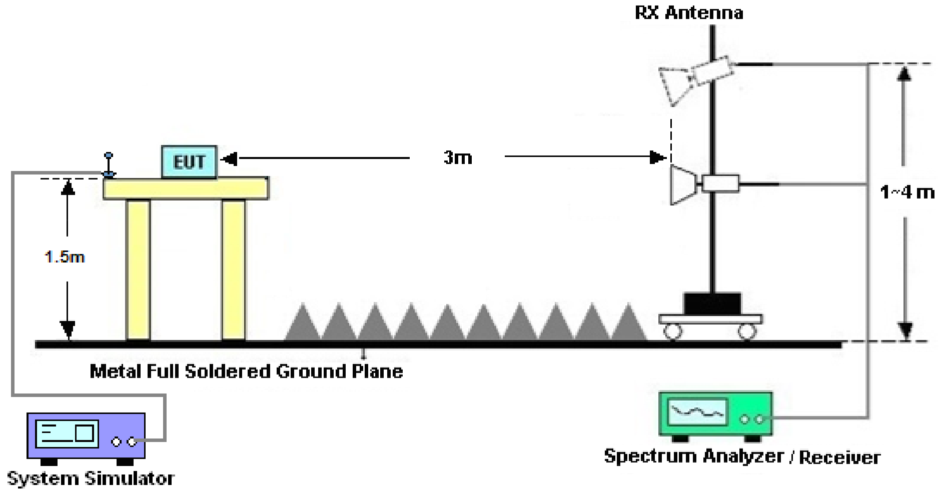
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

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

4.4.2 Test Procedures

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

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 06, 2023	Oct. 12, 2023~ Oct. 13, 2023	Apr. 05, 2024	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 17, 2022	Oct. 12, 2023~ Oct. 13, 2023	Oct. 16, 2023	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 25, 2022	Oct. 12, 2023~ Oct. 13, 2023	Dec. 24, 2023	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 05, 2023	Oct. 12, 2023~ Oct. 13, 2023	Jul. 04, 2024	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Oct. 19, 2022	Oct. 11, 2023	Oct. 18, 2023	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2023	Oct. 11, 2023	Jul. 06, 2024	Radiation (03CH04-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 28, 2022	Oct. 11, 2023	Jun. 27, 2024	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	May 14, 2023	Oct. 11, 2023	May 13, 2024	Radiation (03CH04-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1474	1GHz~18GHz	Jul. 07, 2023	Oct. 11, 2023	Jul. 06, 2024	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	Jul. 08, 2023	Oct. 11, 2023	Jul. 07, 2024	Radiation (03CH04-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 19, 2022	Oct. 11, 2023	Oct. 18, 2023	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Oct. 11, 2023	Oct. 18, 2023	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 07, 2023	Oct. 11, 2023	Jul. 06, 2024	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY57280136	500MHz~26.5GHz	Aug. 21, 2023	Oct. 11, 2023	Aug. 20, 2024	Radiation (03CH04-SZ)
AC Power Source	APC	AFV-S-600B	F119050019	N/A	Nov. 10, 2022	Oct. 11, 2023	Nov. 09, 2023	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Oct. 11, 2023	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Oct. 11, 2023	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted 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))	**2.8dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.1dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.9dB**

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

Appendix A. Test Results of Conducted Test

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

FR1 N77-SCS 15K(ANT6)

Transmitter Conducted Output Power and EIRP, (G_T - L_C)=0dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	15	10	647000	3705	DFT-s-OFDM QPSK	1@1	24.9	24.9	0.3090
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	23.92	23.92	0.2466
77	15	10	656000	3840	DFT-s-OFDM QPSK	1@1	25.22	25.22	0.3327
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.13	24.13	0.2588
77	15	10	665000	3975	DFT-s-OFDM QPSK	1@1	24.67	24.67	0.2931
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	23.74	23.74	0.2366
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	1@1	24.99	24.99	0.3155
77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	1@1	23.91	23.91	0.2460
77	15	15	656000	3840	DFT-s-OFDM QPSK	1@1	25.22	25.22	0.3327
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.11	24.11	0.2576
77	15	15	664833	3972.495	DFT-s-OFDM QPSK	1@1	24.6	24.6	0.2884
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	1@1	23.67	23.67	0.2328
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	24.95	24.95	0.3126
77	15	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	23.92	23.92	0.2466
77	15	20	656000	3840	DFT-s-OFDM QPSK	1@1	25.23	25.23	0.3334
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.12	24.12	0.2582
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@1	24.74	24.74	0.2979
77	15	20	664666	3969.99	DFT-s-OFDM 16 QAM	1@1	23.82	23.82	0.2410
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@1	24.85	24.85	0.3055
77	15	25	647500	3712.5	DFT-s-OFDM 16 QAM	1@1	23.73	23.73	0.2360
77	15	25	656000	3840	DFT-s-OFDM QPSK	1@1	25.12	25.12	0.3251
77	15	25	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.95	23.95	0.2483
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@1	24.8	24.8	0.3020
77	15	25	664500	3967.5	DFT-s-OFDM 16 QAM	1@1	23.73	23.73	0.2360
77	15	30	647667	3715.005	DFT-s-OFDM QPSK	1@1	24.89	24.89	0.3083
77	15	30	647667	3715.005	DFT-s-OFDM 16 QAM	1@1	23.77	23.77	0.2382
77	15	30	656000	3840	DFT-s-OFDM QPSK	1@1	25.12	25.12	0.3251
77	15	30	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.95	23.95	0.2483

77	15	30	664332	3964.98	DFT-s-OFDM QPSK	1@1	24.94	24.94	0.3119
77	15	30	664332	3964.98	DFT-s-OFDM 16 QAM	1@1	23.87	23.87	0.2438
77	15	40	648000	3720	DFT-s-OFDM QPSK	1@1	24.81	24.81	0.3027
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	23.72	23.72	0.2355
77	15	40	656000	3840	DFT-s-OFDM QPSK	1@1	24.94	24.94	0.3119
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.75	23.75	0.2371
77	15	40	664000	3960	DFT-s-OFDM QPSK	1@1	25.12	25.12	0.3251
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	24.04	24.04	0.2535
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	135@67	25.21	25.21	0.3319
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@1	24.78	24.78	0.3006
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@268	24.56	24.56	0.2858
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	135@67	25.23	25.23	0.3334
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	24.91	24.91	0.3097
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@268	24.89	24.89	0.3083
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	135@67	24.28	24.28	0.2679
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	23.91	23.91	0.2460
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@268	23.68	23.68	0.2333
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	135@67	22.73	22.73	0.1875
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@1	22.08	22.08	0.1614
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@268	21.81	21.81	0.1517
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	135@67	20.77	20.77	0.1194
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@1	20.2	20.2	0.1047
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@268	20.06	20.06	0.1014
77	15	50	648334	3725.01	CP-OFDM QPSK	135@67	23.73	23.73	0.2360
77	15	50	648334	3725.01	CP-OFDM QPSK	1@1	23.2	23.2	0.2089
77	15	50	648334	3725.01	CP-OFDM QPSK	1@268	23.09	23.09	0.2037
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	25.04	25.04	0.3192
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	24.71	24.71	0.2958
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@268	24.77	24.77	0.2999
77	15	50	656000	3840	DFT-s-OFDM QPSK	135@67	25.07	25.07	0.3214
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@1	24.88	24.88	0.3076
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@268	25.08	25.08	0.3221
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	135@67	24.04	24.04	0.2535
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.77	23.77	0.2382

77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@268	23.93	23.93	0.2472
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	135@67	22.55	22.55	0.1799
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@1	21.92	21.92	0.1556
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@268	22.08	22.08	0.1614
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	135@67	20.55	20.55	0.1135
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.14	20.14	0.1033
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@268	20.29	20.29	0.1069
77	15	50	656000	3840	CP-OFDM QPSK	135@67	23.5	23.5	0.2239
77	15	50	656000	3840	CP-OFDM QPSK	1@1	23.15	23.15	0.2065
77	15	50	656000	3840	CP-OFDM QPSK	1@268	23.35	23.35	0.2163
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	135@67	24.72	24.72	0.2965
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@1	24.86	24.86	0.3062
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@268	24.62	24.62	0.2897
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	135@67	24.74	24.74	0.2979
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	25.13	25.13	0.3258
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@268	24.79	24.79	0.3013
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	135@67	23.8	23.8	0.2399
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	23.97	23.97	0.2495
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@268	23.74	23.74	0.2366
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	135@67	22.32	22.32	0.1706
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@1	22.16	22.16	0.1644
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@268	21.95	21.95	0.1567
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	135@67	20.32	20.32	0.1076
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@1	20.34	20.34	0.1081
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@268	20.12	20.12	0.1028
77	15	50	663666	3954.99	CP-OFDM QPSK	135@67	23.27	23.27	0.2123
77	15	50	663666	3954.99	CP-OFDM QPSK	1@1	23.32	23.32	0.2148
77	15	50	663666	3954.99	CP-OFDM QPSK	1@268	23.23	23.23	0.2104

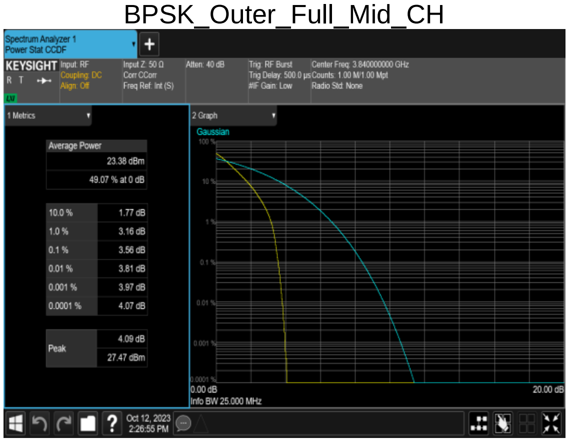
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0036	**PASS**	NV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	LV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0045	**PASS**	HV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0042	**PASS**	-30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0024	**PASS**	-20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0041	**PASS**	-10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0031	**PASS**	0℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0033	**PASS**	10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0036	**PASS**	20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0022	**PASS**	30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0048	**PASS**	40℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0038	**PASS**	50℃

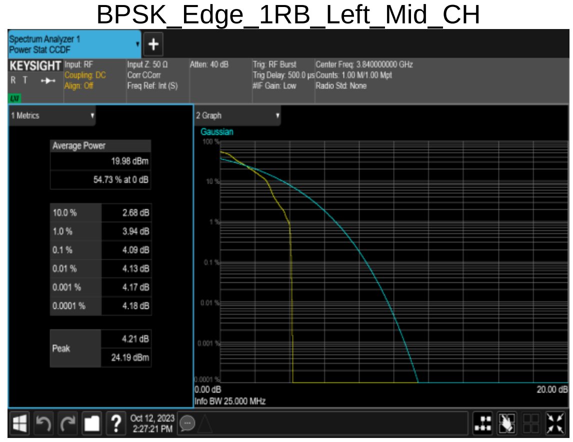
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	100@0	3.56	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	1@0	4.09	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	4.8	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	4.97	13	**PASS**

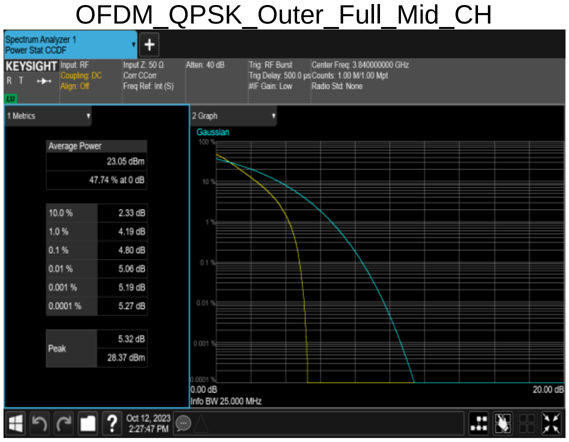
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



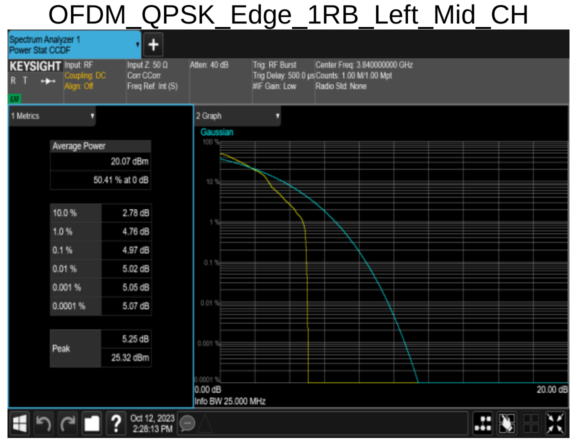
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



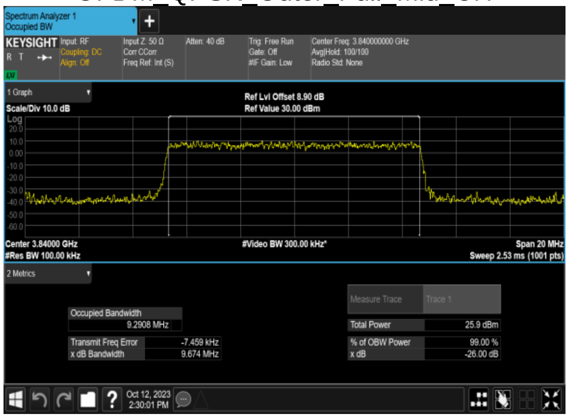
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



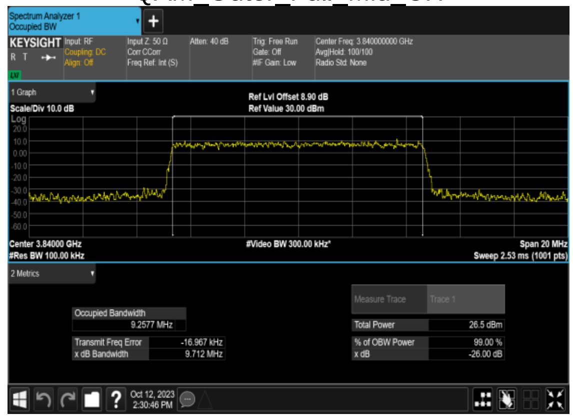
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
77	15	10	656000	3840.0	CP-OFDM QPSK	52@0	9.2908	9.674
77	15	10	656000	3840.0	CP-OFDM 16 QAM	52@0	9.2577	9.712
77	15	10	656000	3840.0	CP-OFDM 64 QAM	52@0	9.2716	9.65
77	15	10	656000	3840.0	CP-OFDM 256 QAM	52@0	9.2738	9.644
77	15	15	656000	3840.0	CP-OFDM QPSK	79@0	14.108	14.62
77	15	15	656000	3840.0	CP-OFDM 16 QAM	79@0	14.107	14.6
77	15	15	656000	3840.0	CP-OFDM 64 QAM	79@0	14.041	14.7
77	15	15	656000	3840.0	CP-OFDM 256 QAM	79@0	14.079	14.68
77	15	20	656000	3840.0	CP-OFDM QPSK	106@0	18.851	19.53
77	15	20	656000	3840.0	CP-OFDM 16 QAM	106@0	18.859	19.56
77	15	20	656000	3840.0	CP-OFDM 64 QAM	106@0	18.953	19.54
77	15	20	656000	3840.0	CP-OFDM 256 QAM	106@0	18.844	19.54
77	15	25	656000	3840.0	CP-OFDM QPSK	133@0	23.765	24.51
77	15	25	656000	3840.0	CP-OFDM 16 QAM	133@0	23.763	24.52
77	15	25	656000	3840.0	CP-OFDM 64 QAM	133@0	23.694	24.5
77	15	25	656000	3840.0	CP-OFDM 256 QAM	133@0	23.634	24.47
77	15	30	656000	3840.0	CP-OFDM QPSK	160@0	28.515	29.65
77	15	30	656000	3840.0	CP-OFDM 16 QAM	160@0	28.597	29.5
77	15	30	656000	3840.0	CP-OFDM 64 QAM	160@0	28.487	29.44
77	15	30	656000	3840.0	CP-OFDM 256 QAM	160@0	28.49	29.52
77	15	40	656000	3840.0	CP-OFDM QPSK	216@0	38.531	39.8
77	15	40	656000	3840.0	CP-OFDM 16 QAM	216@0	38.465	39.84
77	15	40	656000	3840.0	CP-OFDM 64 QAM	216@0	38.576	39.75
77	15	40	656000	3840.0	CP-OFDM 256 QAM	216@0	38.627	39.85
77	15	50	656000	3840.0	CP-OFDM QPSK	270@0	48.204	49.74
77	15	50	656000	3840.0	CP-OFDM 16 QAM	270@0	48.074	49.68
77	15	50	656000	3840.0	CP-OFDM 64 QAM	270@0	48.151	49.74
77	15	50	656000	3840.0	CP-OFDM 256 QAM	270@0	48.108	49.7

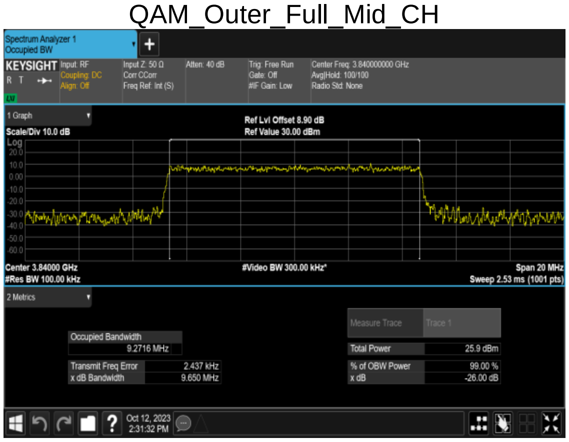
N77(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



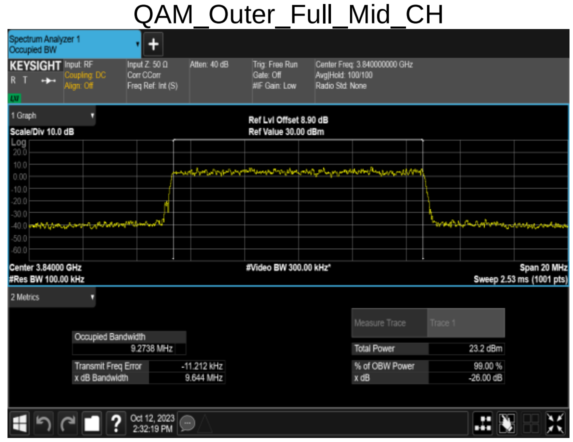
N77(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



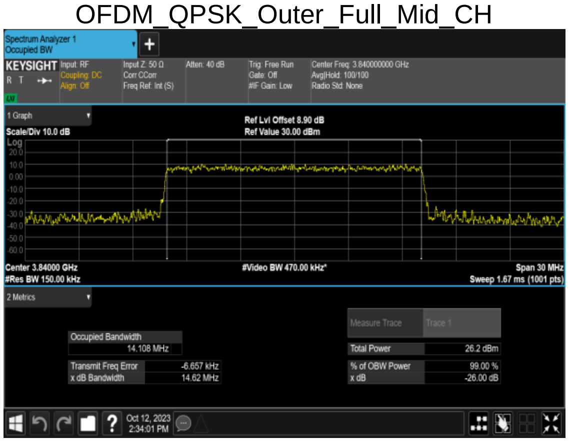
N77(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



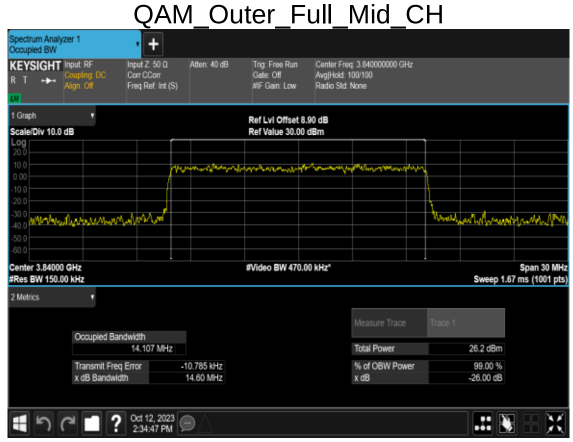
N77(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



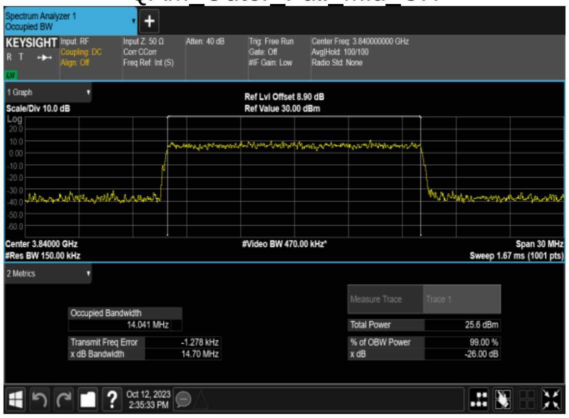
N77(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



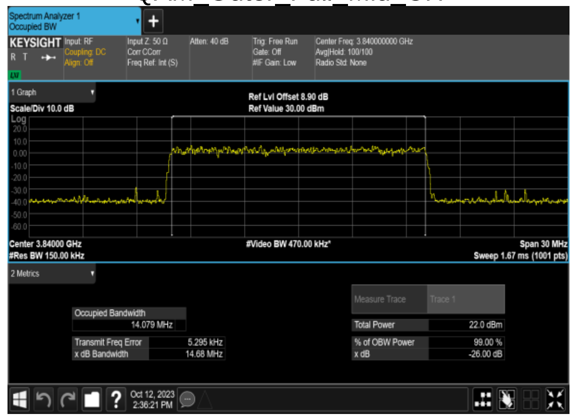
N77(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



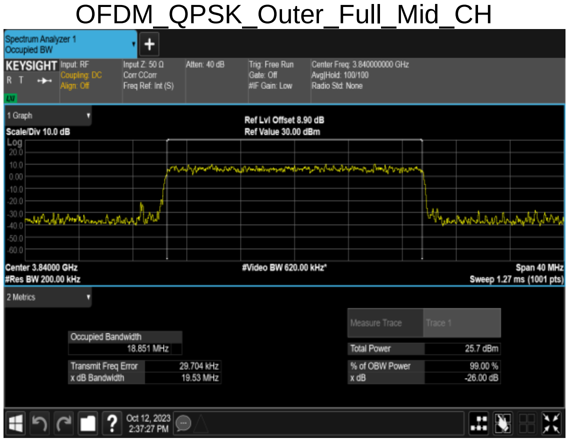
N77(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



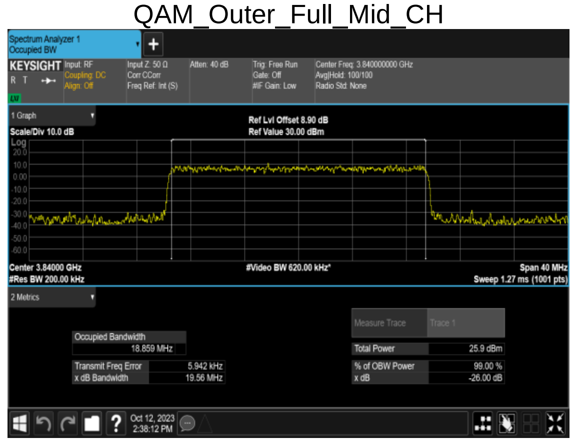
N77(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



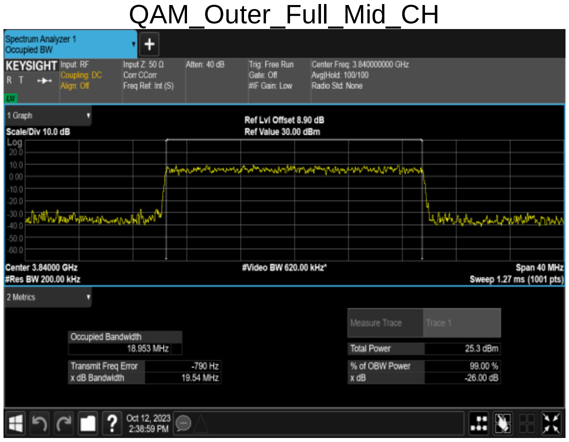
N77(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



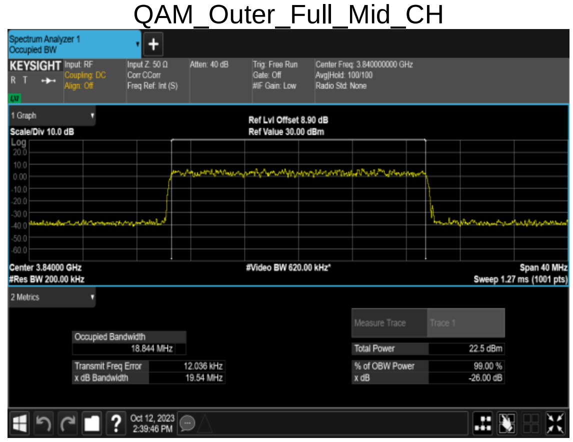
N77(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



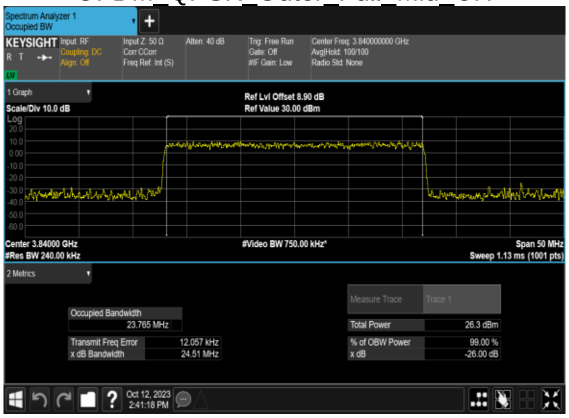
N77(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



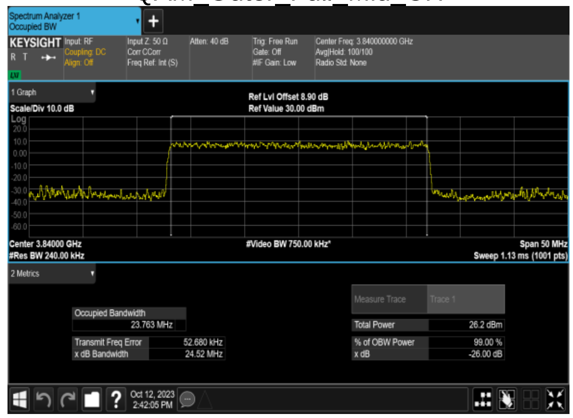
N77(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



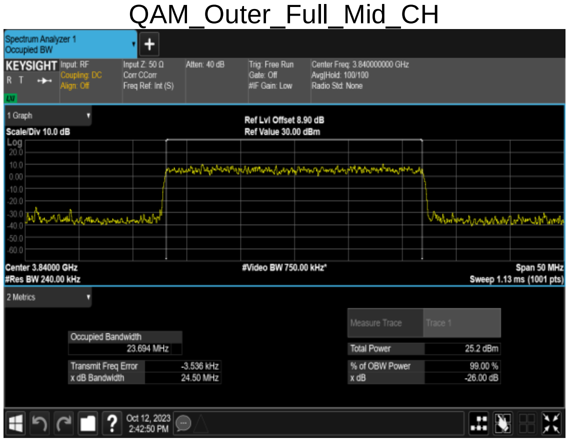
N77(25M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



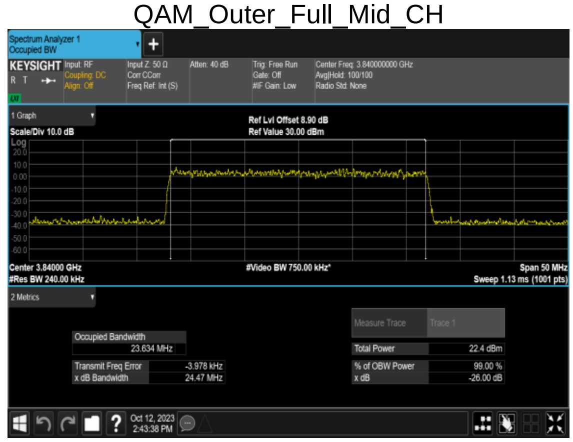
N77(25M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



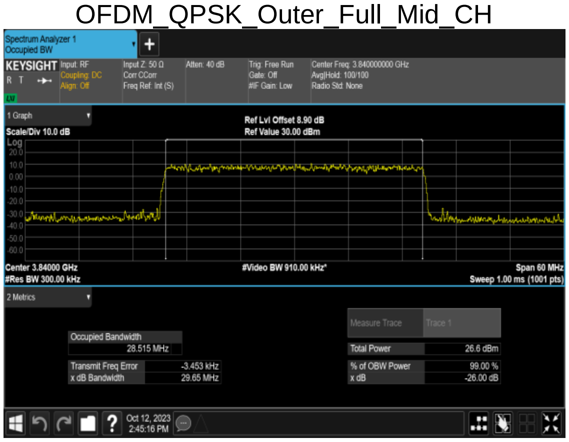
N77(25M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



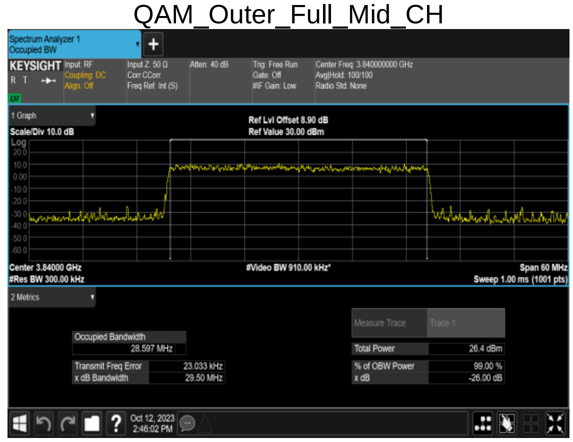
N77(25M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



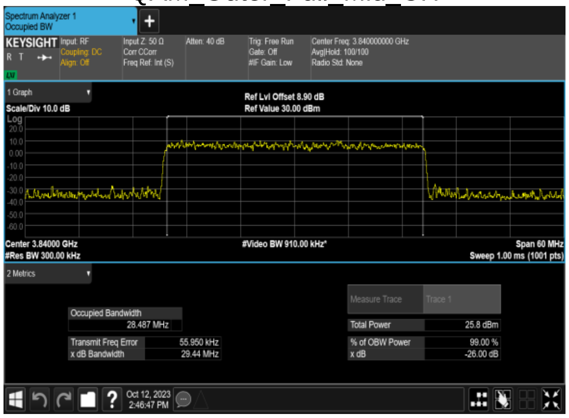
N77(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



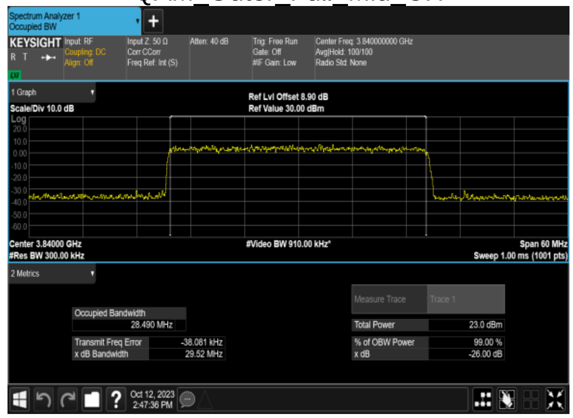
N77(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



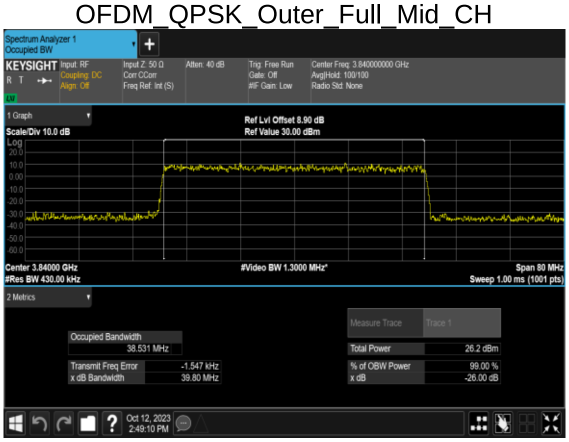
N77(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



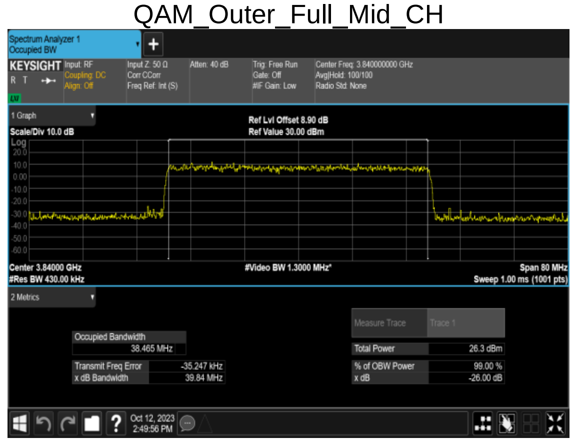
N77(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



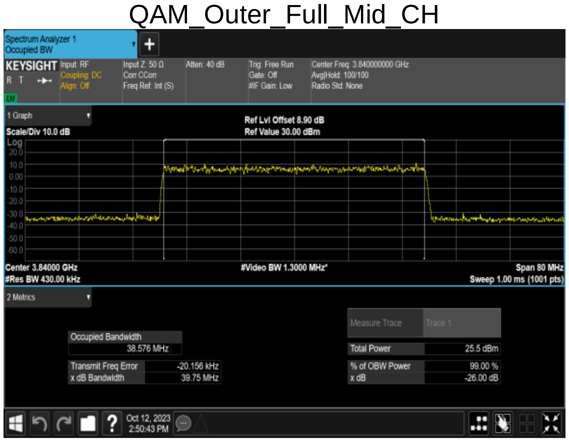
N77(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



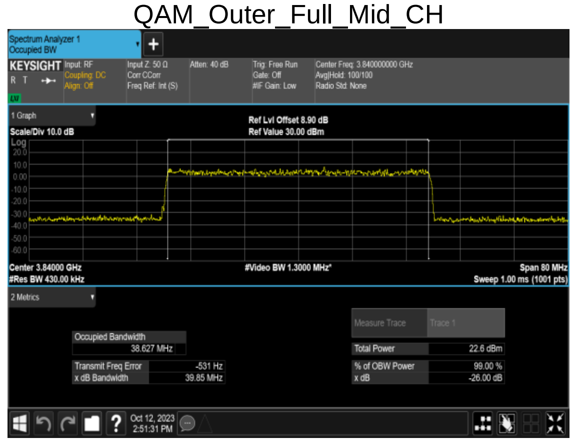
N77(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



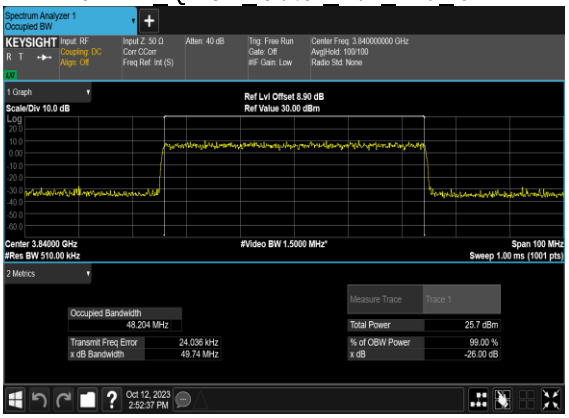
N77(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



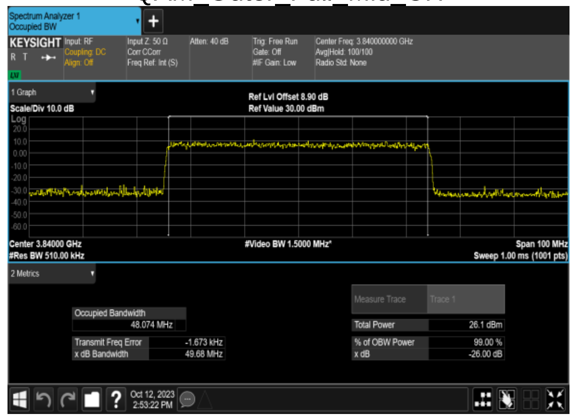
N77(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



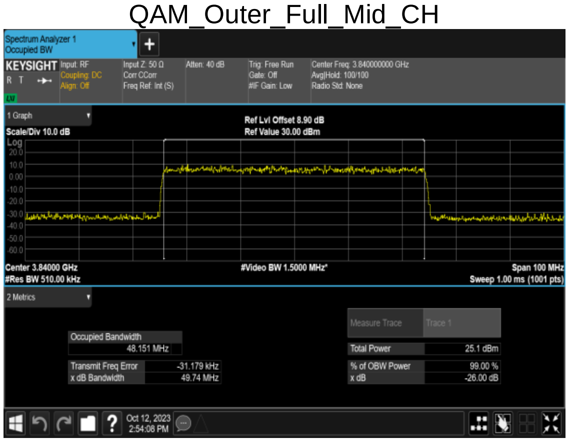
N77(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



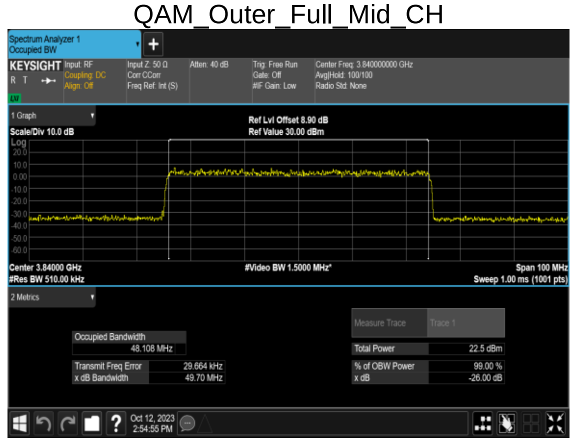
N77(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

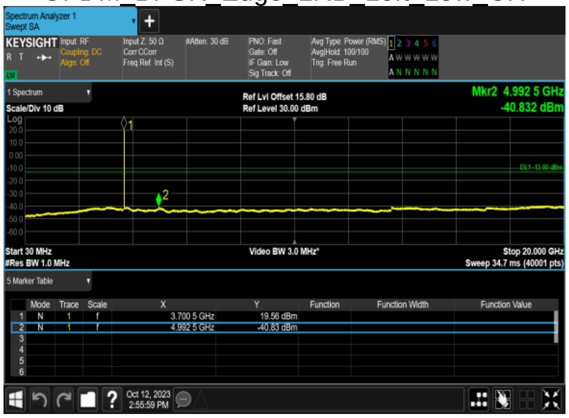


Conducted Spurious Emissions

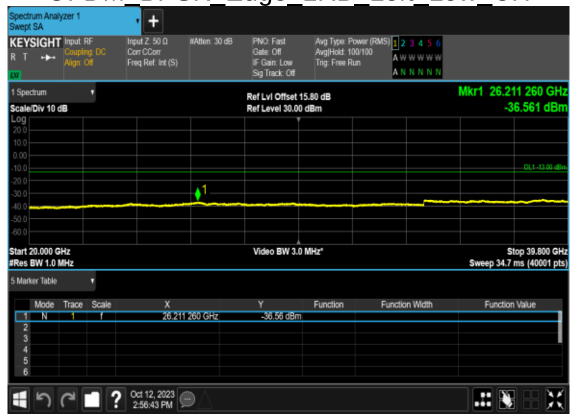
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**---**

77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

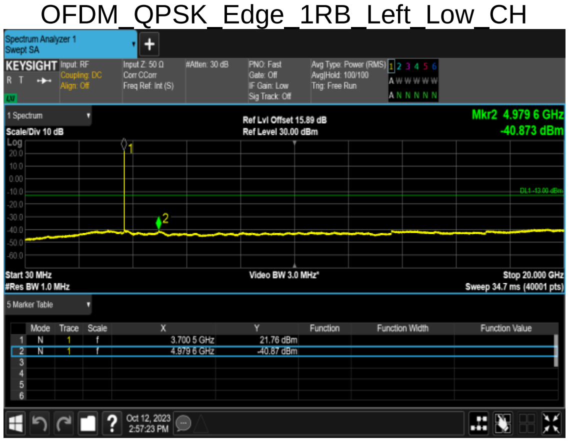
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



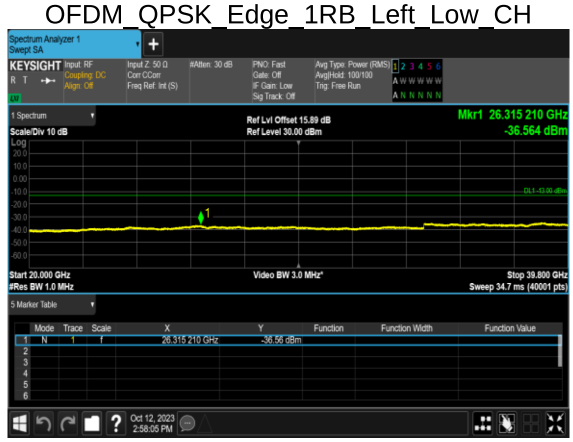
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



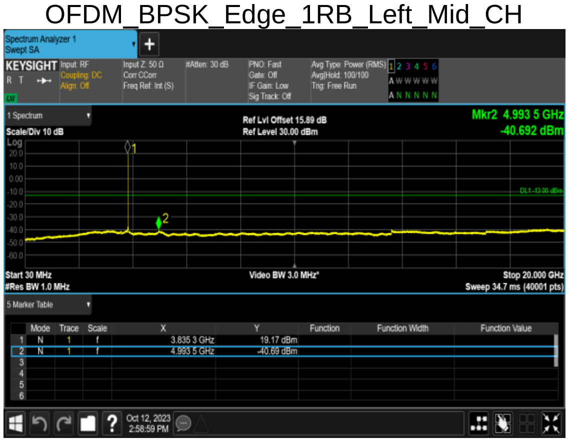
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



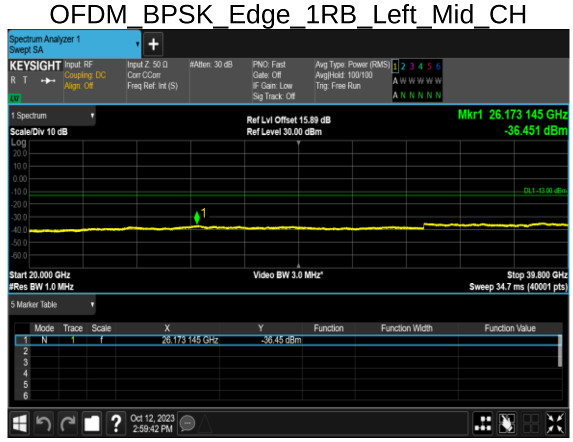
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



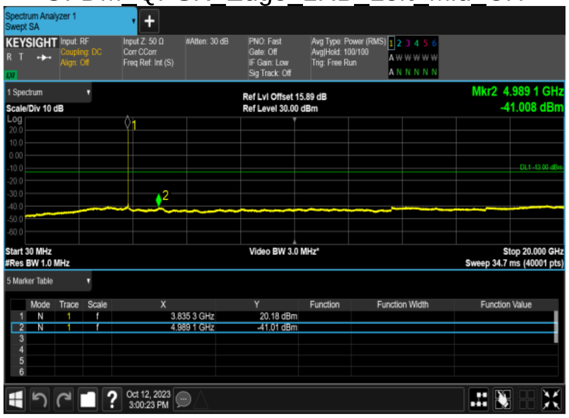
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



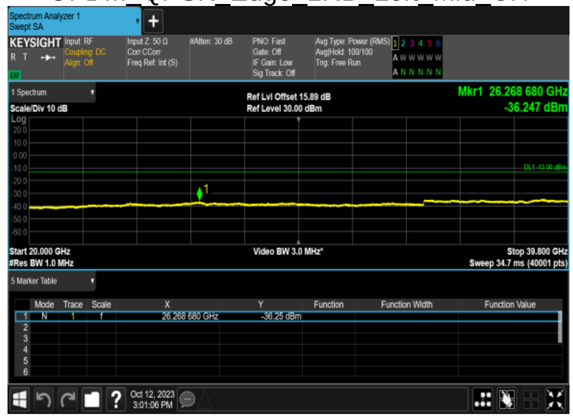
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



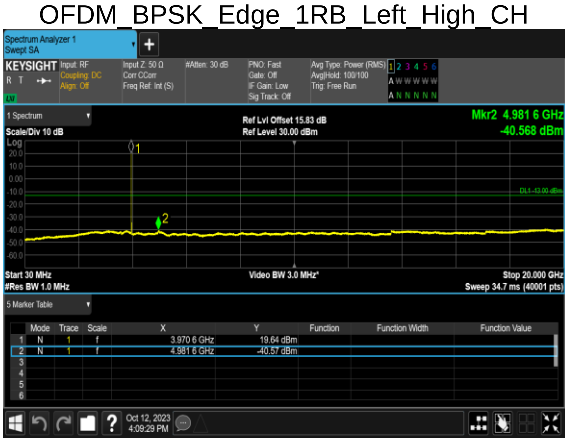
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



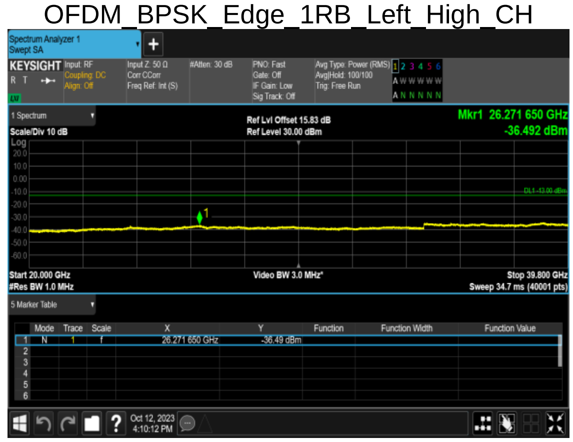
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



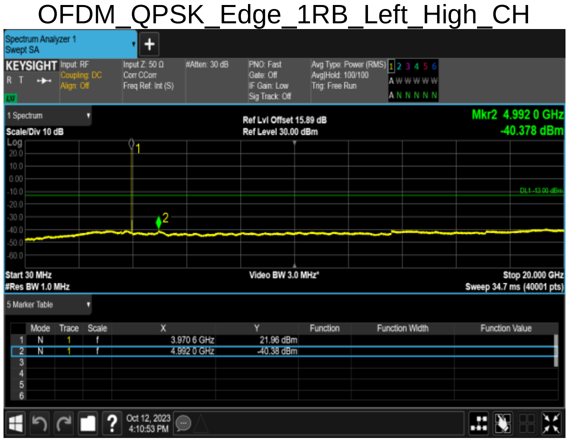
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



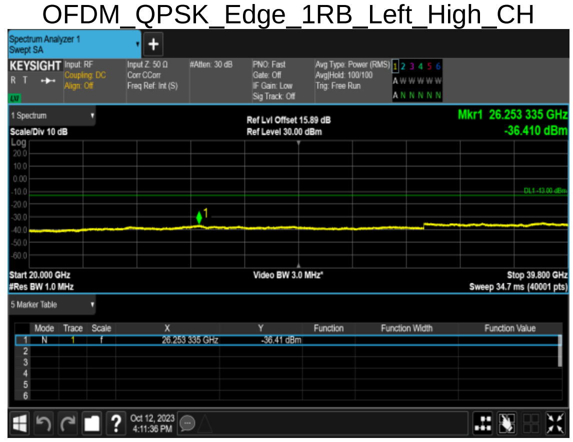
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



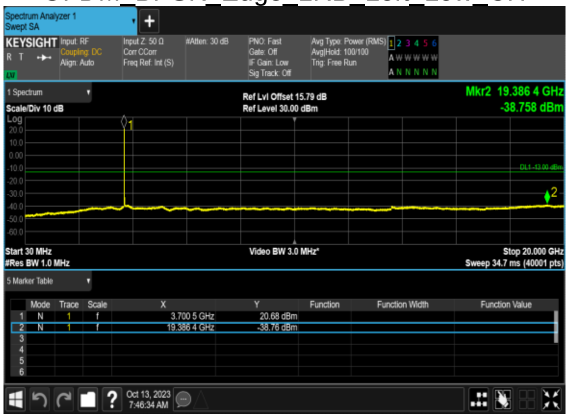
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



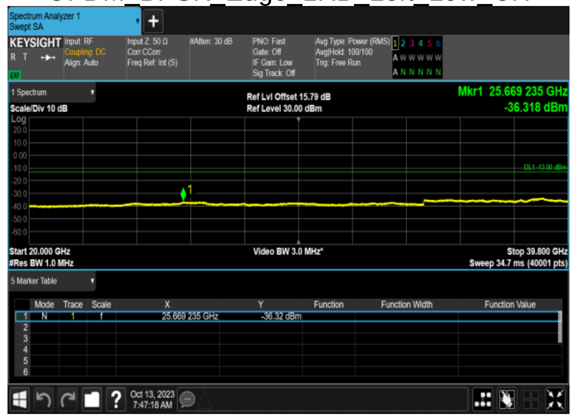
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



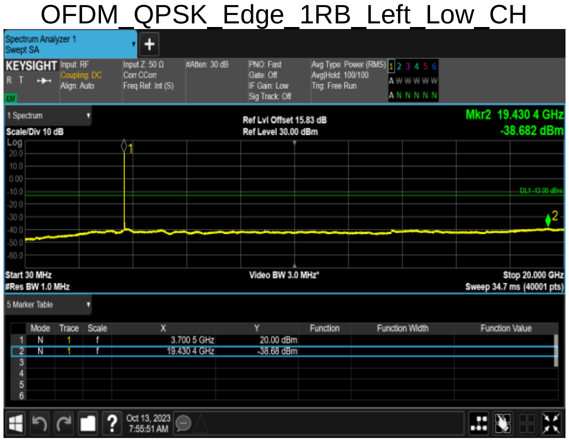
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



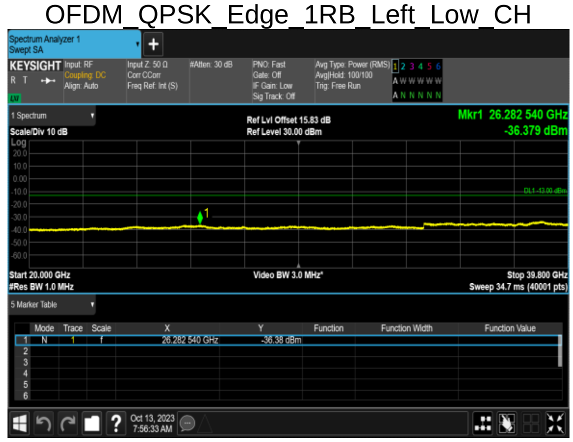
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



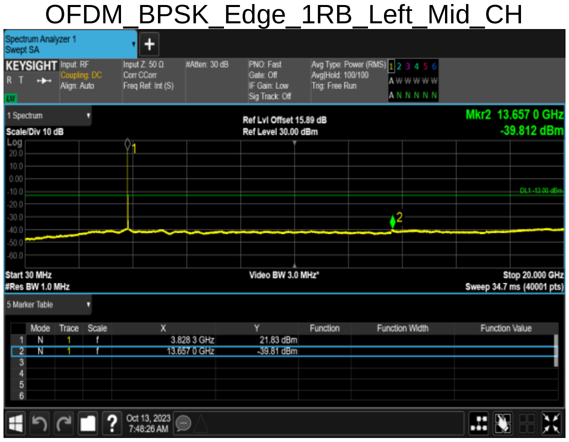
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



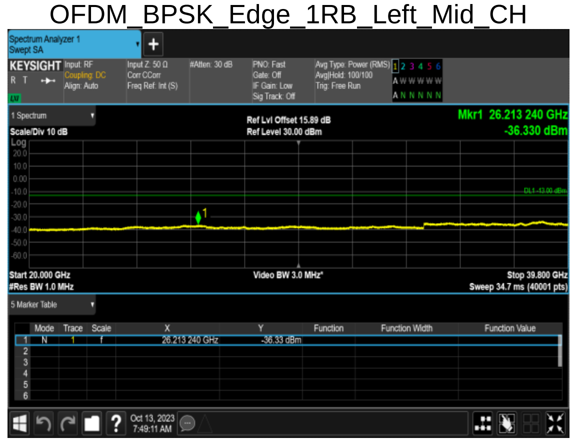
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



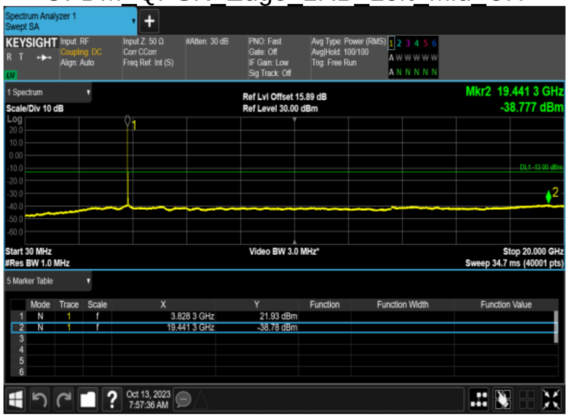
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



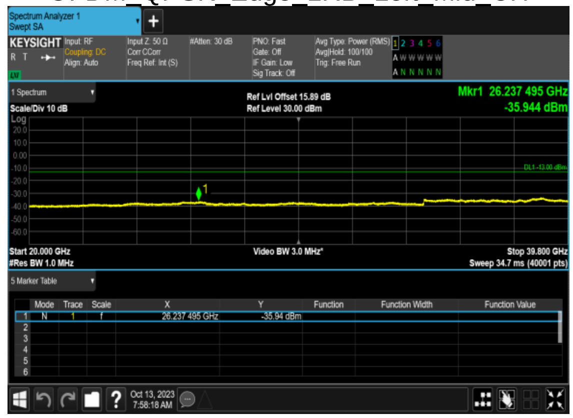
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



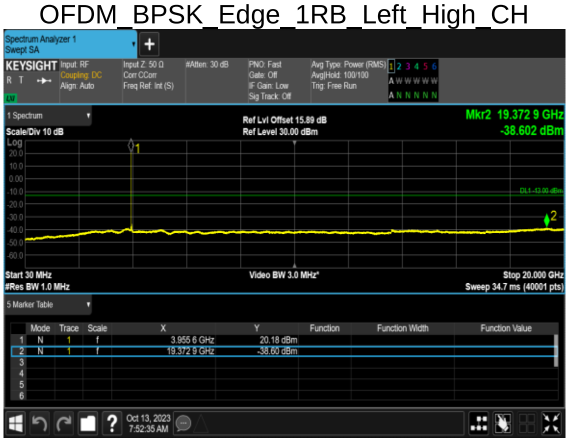
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



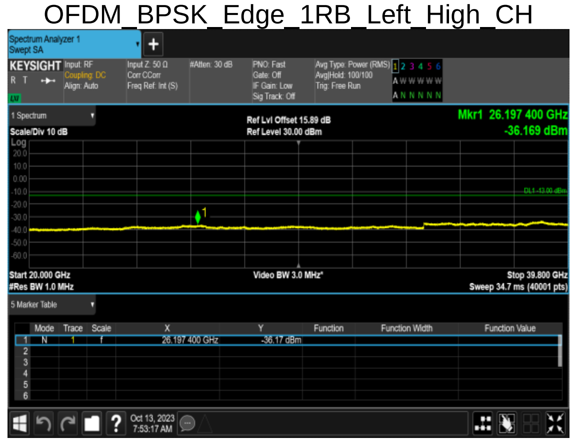
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



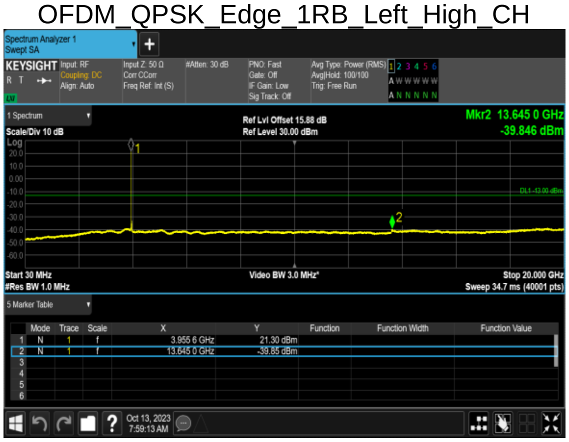
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



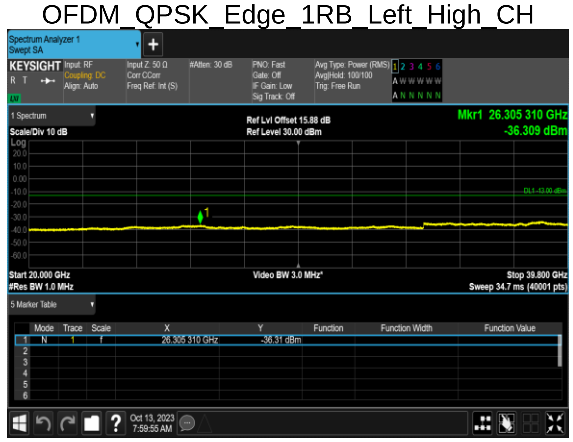
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



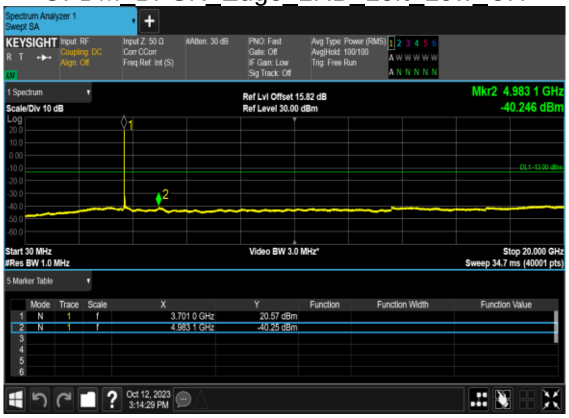
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



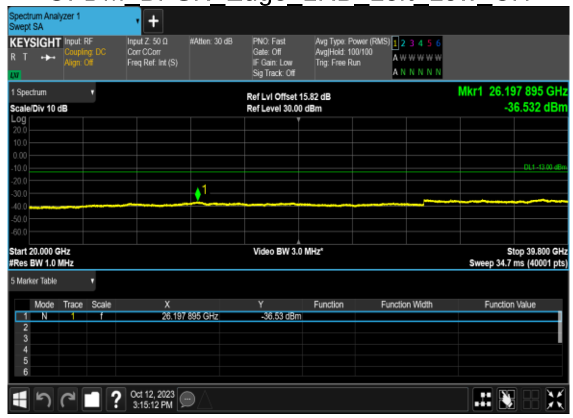
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



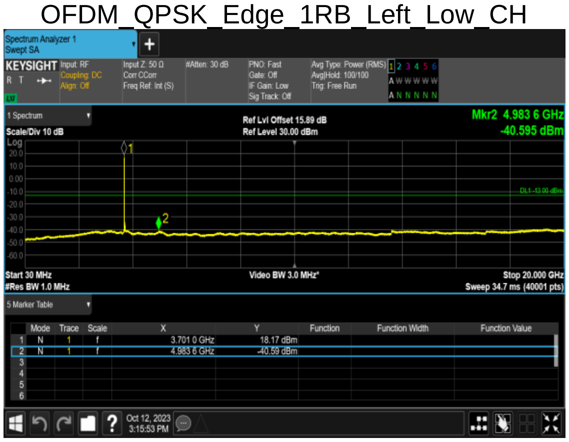
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



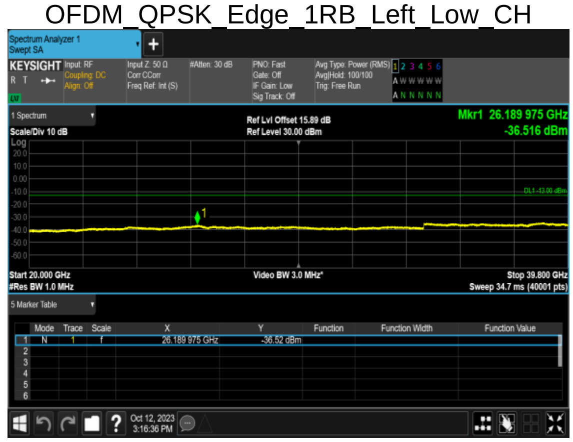
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



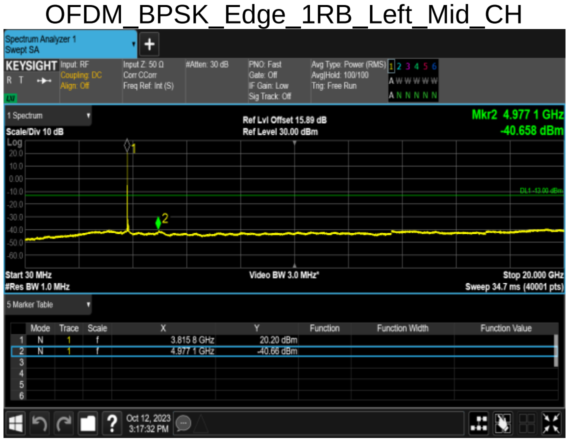
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



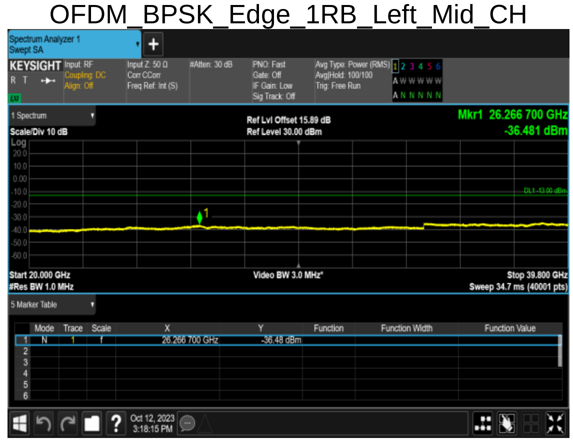
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



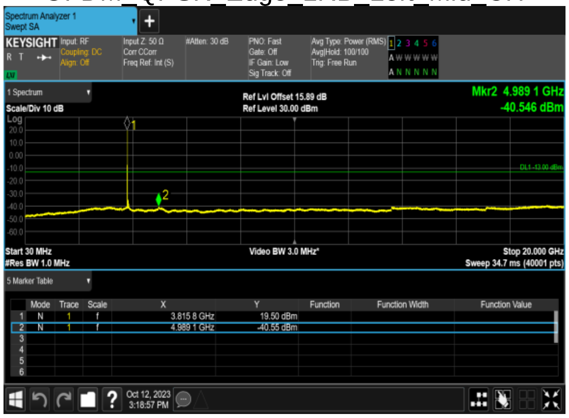
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



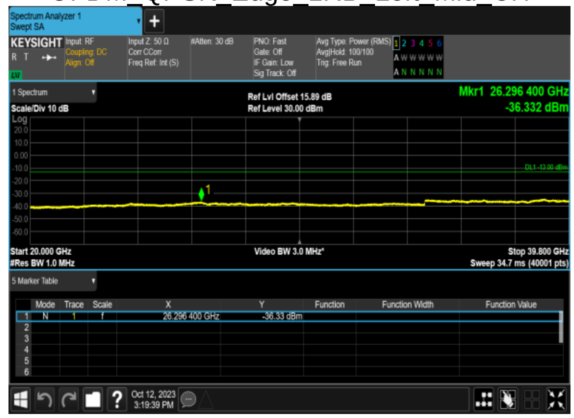
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



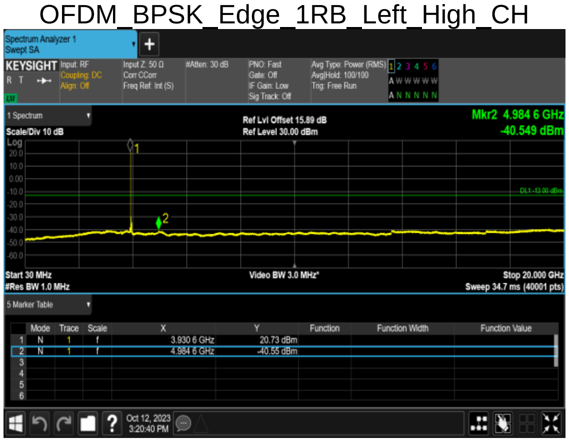
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



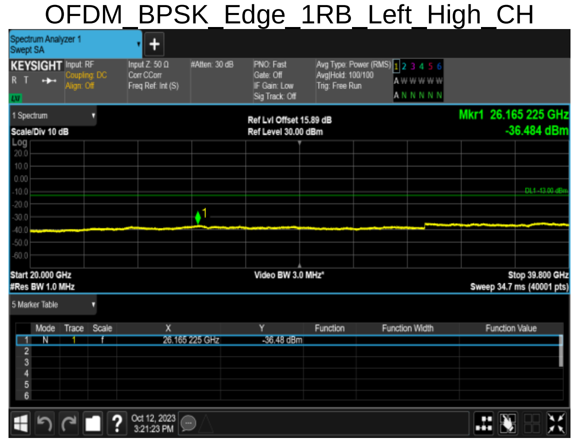
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



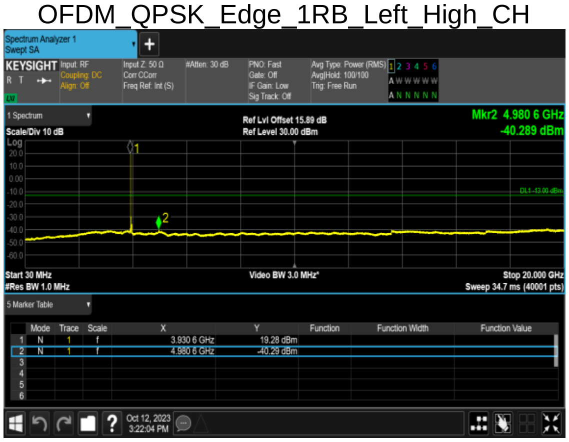
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



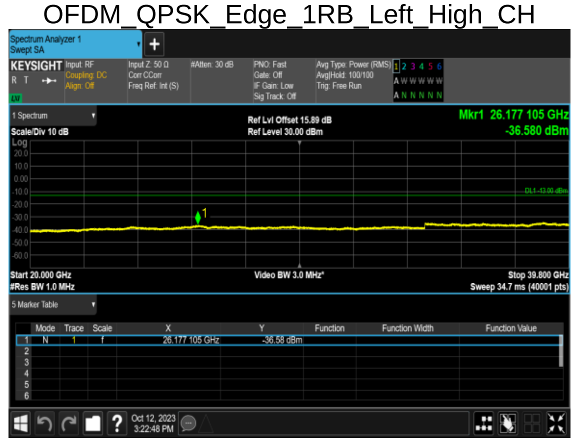
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



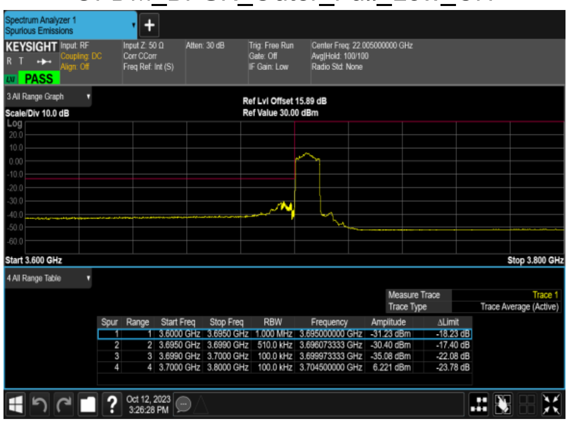
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
77	15	10	647000	3705.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
77	15	10	665000	3975.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM BPSK	128@0	see graph	**PASS**
77	15	25	647500	3712.5	DFT-s-OFDM QPSK	128@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	1@132	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	1@132	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM BPSK	128@0	see graph	**PASS**
77	15	25	664500	3967.5	DFT-s-OFDM QPSK	128@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	270@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	1@269	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@269	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM BPSK	270@0	see graph	**PASS**
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	270@0	see graph	**PASS**

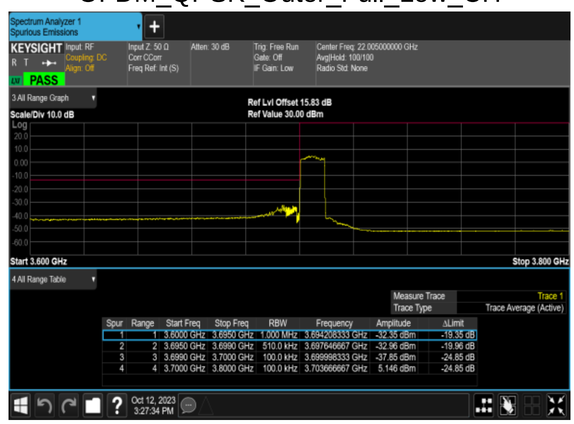
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

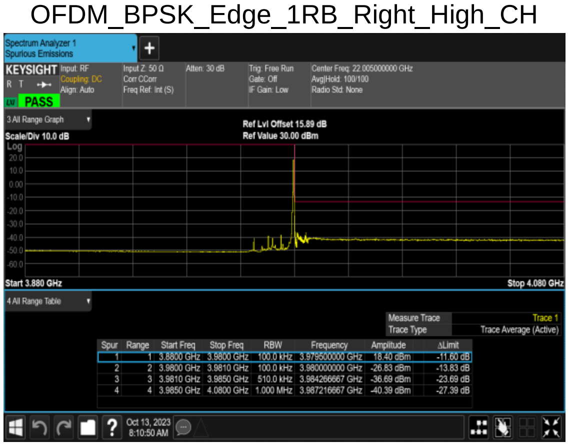
N77(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



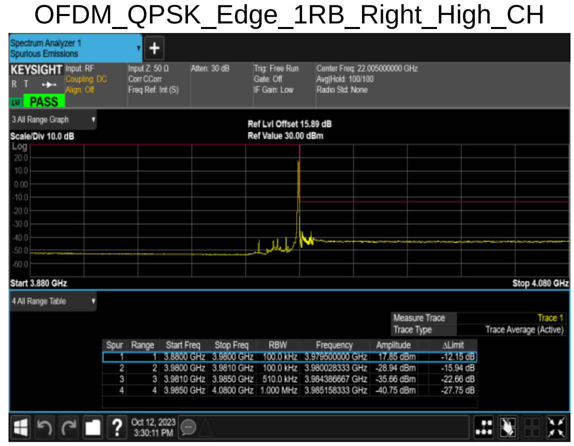
N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



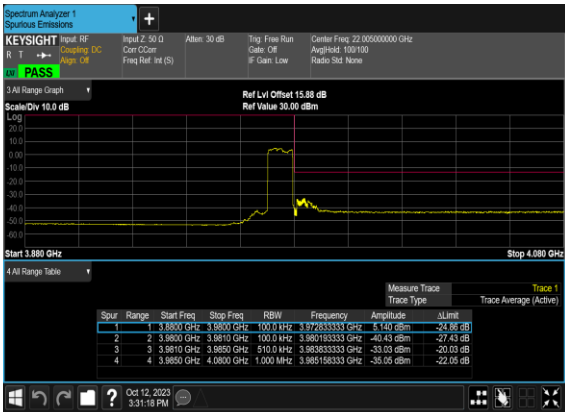
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

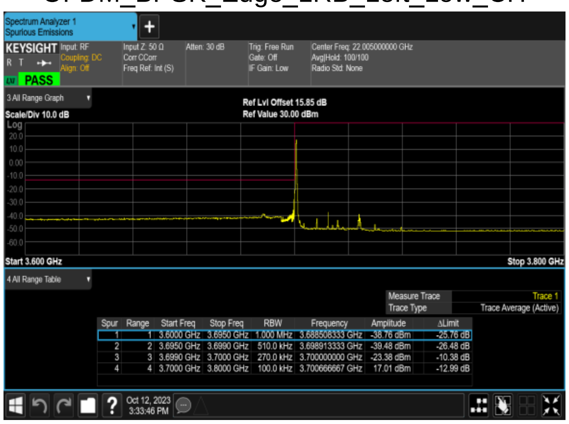


N77(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

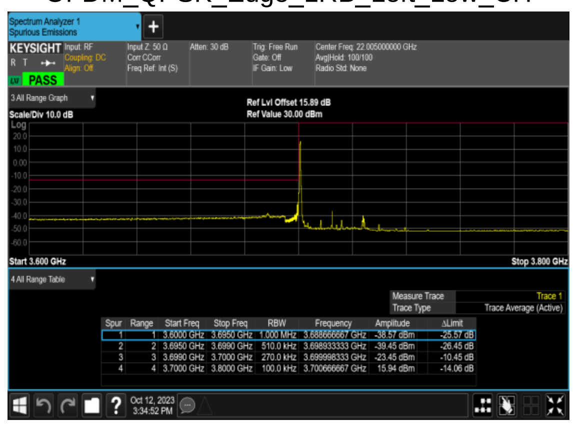


N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

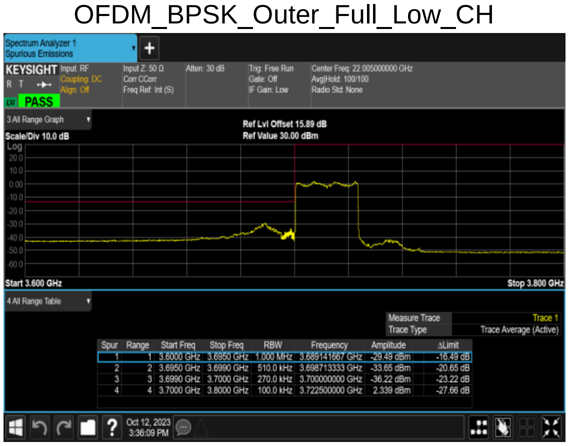
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



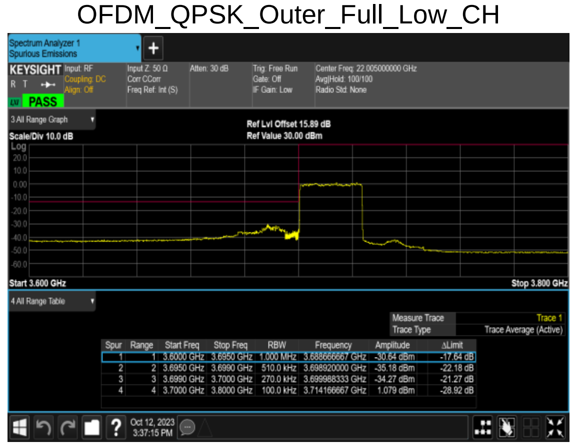
N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N77(25M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



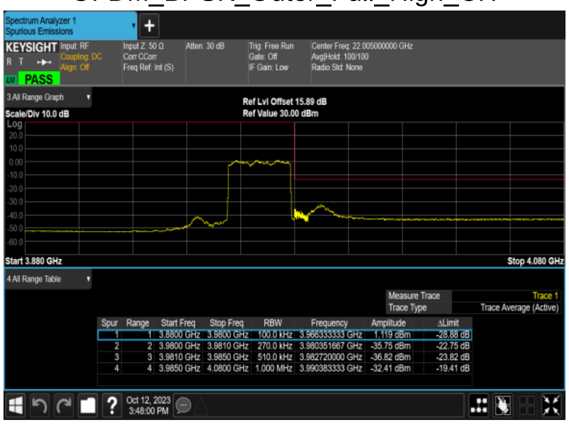
N77(25M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



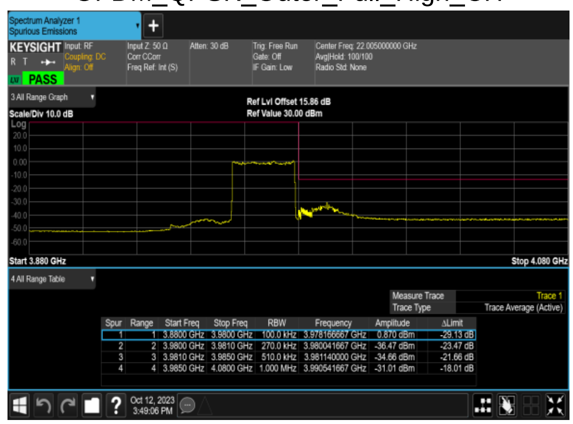
N77(25M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH

N77(25M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH

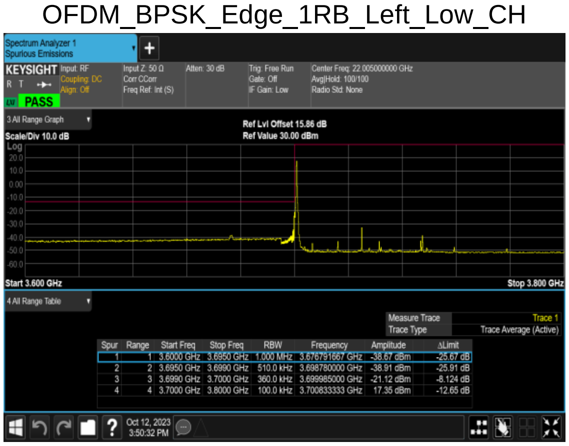
N77(25M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N77(25M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH