FCC RF Test Report

APPLICANT	: Xiaomi Communications Co., Ltd.
EQUIPMENT	: Mobile Phone
BRAND NAME	: Redmi
MODEL NAME	: 22031116BG
FCC ID	: 2AFZZ116BG
STANDARD	: 47 CFR Part 2, 27
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Jan. 16, 2022 ~ Jan. 28, 2022

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

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

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

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG180507-03G	Rev. 01	Initial issue of report	Feb. 08, 2022

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	§2.1055 §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 35.33 dB at 7404.00 MHz

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

1 General Description

1.1 Applicant

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	Redmi
Model Name	22031116BG
FCC ID	2AFZZ116BG
IMEI Code	Conducted : 861408060016089/861408060013904 Radiation : 861408060017186/861408060017194
HW Version	P1
SW Version	MIUI 13
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): 10MHz / 15MHz / 20MHz / 40MHz / 50MHz n77, n78(30kHz): 10MHz / 15MHz / 20MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz
Antenna Gain	<Ant. 1> 5G NR n77: -3.2 dBi 5G NR n78: -3.2 dBi <Ant. 3> 5G NR n77: -4.8 dBi 5G NR n78: -5.5 dBi <Ant. 5> 5G NR n77: -1.3 dBi 5G NR n78: -1.5 dBi <Ant. 8> 5G NR n77: -4.1 dBi 5G NR n78: -4.1 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The EIRP is calculated from output power and antenna gain, only the maximum EIRP of n77/n78 for Antenna 5 are shown in the report.
2. 5G NR Bands support SA for n77/n78 and NSA mode for n78.
3. The device supports HPUE mode for 5G NR n77/n78.
4. 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 Power and Emission Designator

5G NR n77 SA(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	0.2489	9M27G7D	0.1991	9M29W7D
15	3707.505 ~ 3972.495	0.2553	14M1G7D	0.2028	14M1W7D
20	3710.01 ~ 3969.99	0.2547	18M9G7D	0.2018	18M9W7D
40	3720.00 ~ 3960.00	0.2559	38M6G7D	0.1986	38M6W7D
50	3725.01 ~ 3954.99	0.2512	48M2G7D	0.2004	48M2W7D

5G NR n77 SA(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	0.2355	8M58G7D	0.1977	8M60W7D
15	3707.52 ~ 3972.48	0.2399	13M6G7D	0.1888	13M6W7D
20	3710.01 ~ 3969.99	0.2410	18M2G7D	0.1941	18M2W7D
40	3720.00 ~ 3960.00	0.2427	37M8G7D	0.1932	37M8W7D
50	3725.01 ~ 3954.99	0.2455	47M5G7D	0.1954	47M5W7D
60	3730.02 ~ 3949.98	0.2427	58M0G7D	0.1928	57M9W7D
70	3735.00 ~ 3945.00	0.2455	67M5G7D	0.1954	67M6W7D
80	3740.01 ~ 3939.99	0.2466	77M5G7D	0.1954	77M6W7D
90	3745.02 ~ 3934.98	0.2460	87M3G7D	0.1954	87M5W7D
100	3750.00 ~ 3930.00	0.2455	97M3G7D	0.1954	97M5W7D

5G NR n78 NSA (15kHz) (EN DC_2A-n78A)		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	0.2754	9M28G7D	0.2234	9M29W7D
15	3707.505 ~ 3792.495	0.2911	14M1G7D	0.2333	14M1W7D
20	3709.995 ~ 3790.005	0.2972	18M9G7D	0.2355	18M9W7D
40	3720.00 ~ 3780.00	0.2965	38M6G7D	0.2388	38M6W7D
50	3725.01 ~ 3774.99	0.2917	48M2G7D	0.2339	48M2W7D

5G NR n78 NSA (30kHz) (EN DC_2A-n78A)		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	0.2812	8M57G7D	0.2234	8M60W7D
15	3707.52 ~ 3792.48	0.2891	13M6G7D	0.2286	13M6W7D
20	3710.01 ~ 3789.99	0.2924	18M2G7D	0.2307	18M3W7D
40	3720.00 ~ 3780.00	0.2904	37M9G7D	0.2317	37M9W7D
50	3725.01 ~ 3774.99	0.2897	47M5G7D	0.2323	47M5W7D
60	3730.02 ~ 3769.98	0.2951	57M9G7D	0.2339	57M9W7D
70	3735.00 ~ 3765.00	0.2877	67M4G7D	0.2317	67M6W7D
80	3740.01 ~ 3759.99	0.2924	77M6G7D	0.2317	77M5W7D
90	3745.02 ~ 3754.98	0.2864	87M4G7D	0.2270	87M5W7D
100	3750.00	0.2838	97M4G7D	0.2265	97M4W7D

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

1.7 Testing Location

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS	CN1257	314309

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

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

Test data subcontracted: conducted test case in section 3.4~3.9 of this report.

1.8 Test Software

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

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.

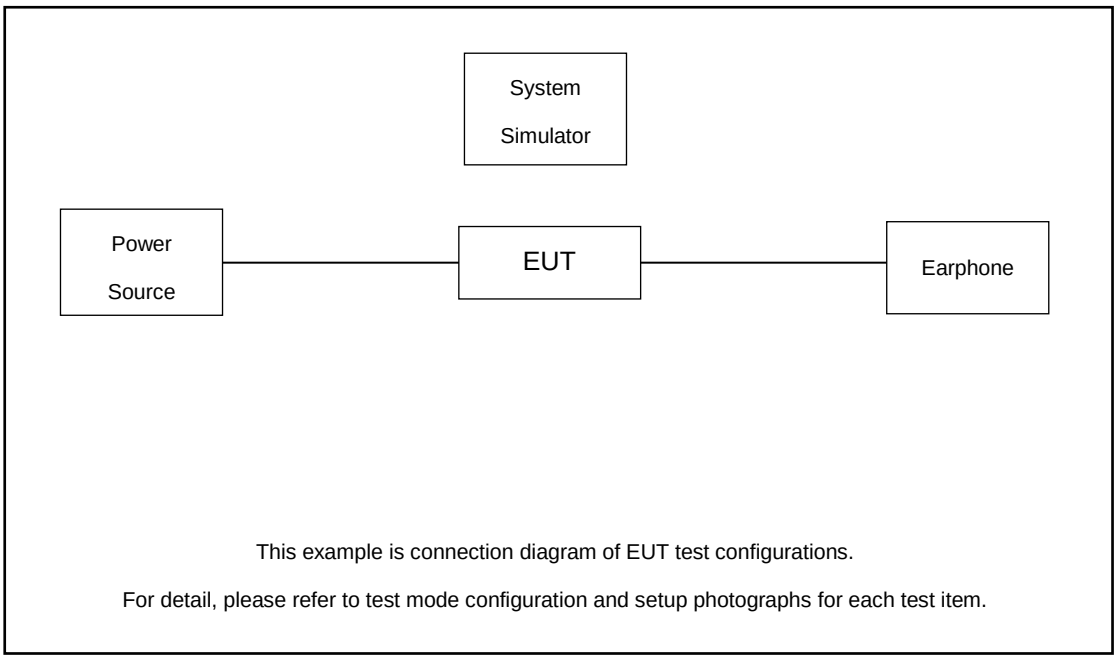
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

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.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)								Modulation					RB #		Test Channel		
		10	15	20	30/40	50	60	70-90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	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
	n78	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	v
	n78			v						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	
	n78	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
	n78	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
	n78	v		v		v	v		v	v	v				v		v	v	v
Frequency Stability	n77			v							v					v		v	
	n78			v							v					v		v	
E.R.P / E.I.R.P	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
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. Based on engineering evaluation, only the worst modulations test results are shown in the report.																		

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

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

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
4.	Earphone	N/A	N/A	N/A	N/A	N/A

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 5.0 dB.

Example :

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

= 5.0 (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
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647167	656000	664833
	Frequency	3707.505	3840	3972.495
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

5G n77 (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
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(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	3720.00	3750	3780.00
20	Channel	647333	650000	652667
	Frequency	3709.995	3750	3790.005
15	Channel	647167	650000	652833
	Frequency	3707.505	3750	3792.495
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

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
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

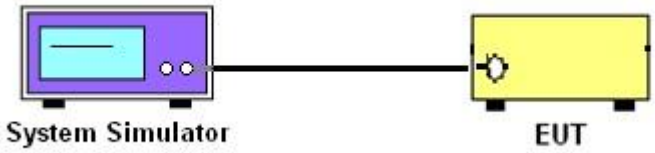
3 Conducted Test Items

3.1 Measuring Instruments

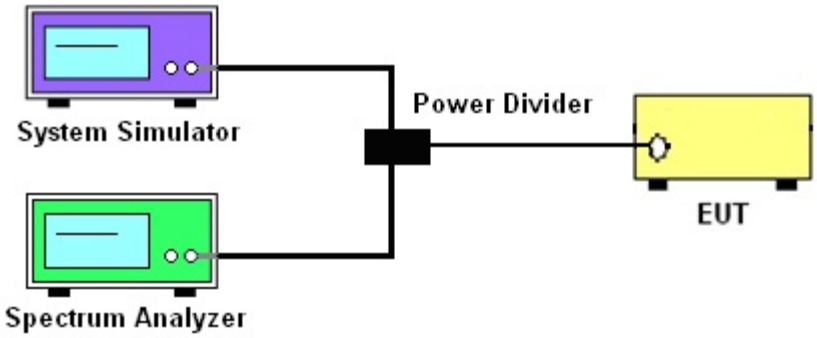
See list of measuring instruments of this test report.

3.2 Test Setup

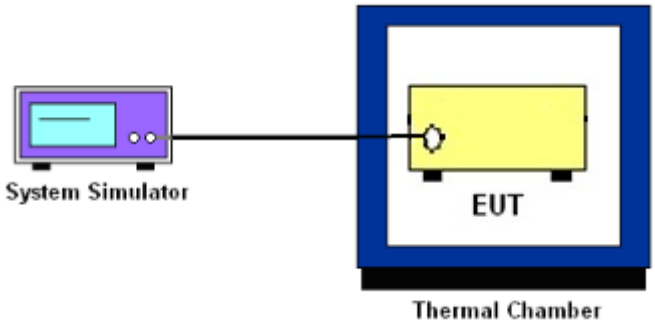
3.2.1 Conducted Output Power



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.
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.

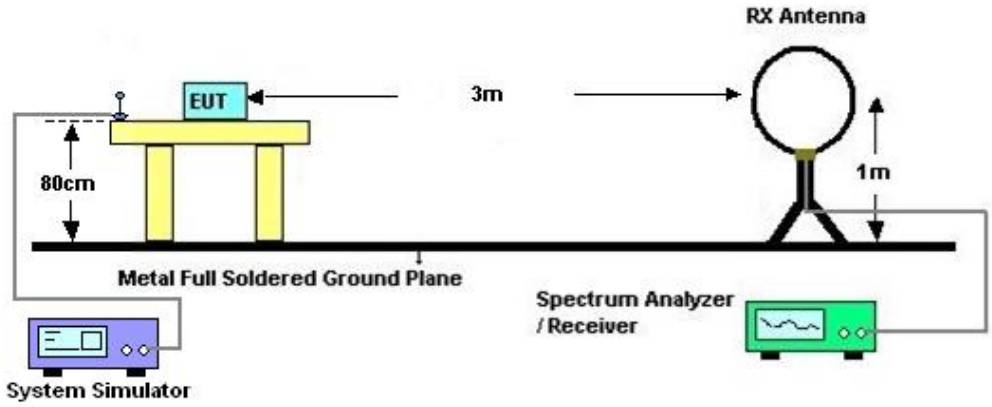
4 Radiated Test Items

4.1 Measuring Instruments

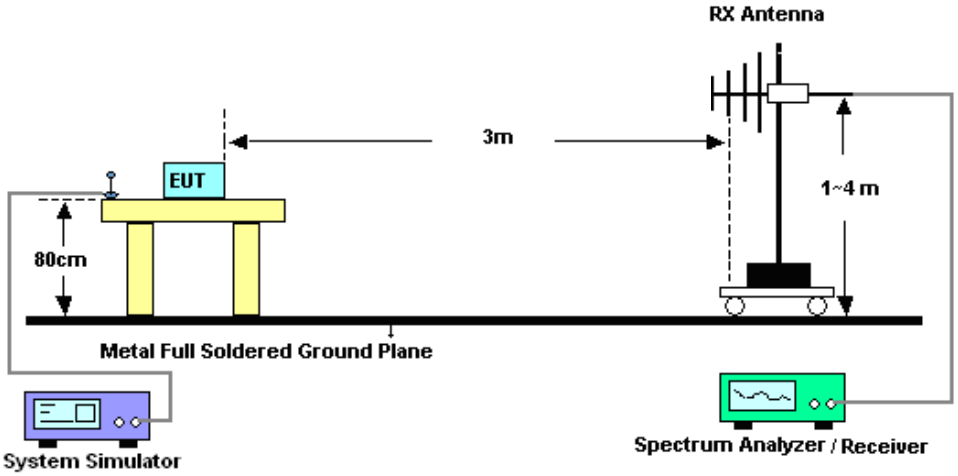
See list of measuring instruments of this test report.

4.2 Test Setup

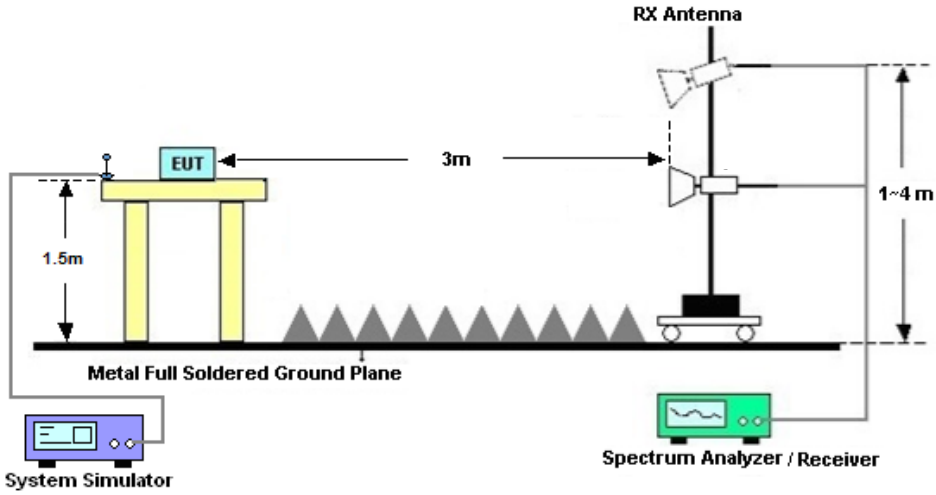
4.2.1 For radiated test below 30MHz



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.
13. For 5G NR n7/n38/n41:
    The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

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. 08, 2021	Jan. 16, 2022~ Jan. 25, 2022	Apr. 07, 2022	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 25, 2021	Jan. 16, 2022~ Jan. 25, 2022	Oct. 24, 2022	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2021	Jan. 16, 2022~ Jan. 25, 2022	Dec. 24, 2022	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 14, 2021	Jan. 16, 2022~ Jan. 25, 2022	Jul. 13, 2022	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Jan. 28, 2022	Apr. 12, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2021	Jan. 28, 2022	May 29, 2022	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 18, 2021	Jan. 28, 2022	Apr. 17, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jan. 28, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Jan. 28, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Jan. 28, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jul. 30, 2021	Jan. 28, 2022	Jul. 29, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Jan. 28, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jan. 28, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jan. 28, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jan. 28, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Software Version: 22.02.011101

FR1 N77 - SCS 15kHz(ANT5)

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-1.3dB

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 PI/2 BPSK	25@12	25.26	23.96	0.2489
77	15	10	647000	3705	DFT-s-OFDM PI/2 BPSK	1@1	25.15	23.85	0.2427
77	15	10	647000	3705	DFT-s-OFDM PI/2 BPSK	1@50	25.11	23.81	0.2404
77	15	10	647000	3705	DFT-s-OFDM QPSK	25@12	25.24	23.94	0.2477
77	15	10	647000	3705	DFT-s-OFDM QPSK	1@1	25.03	23.73	0.2360
77	15	10	647000	3705	DFT-s-OFDM QPSK	1@50	25.03	23.73	0.2360
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	25@12	24.29	22.99	0.1991
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	24.2	22.9	0.1950
77	15	10	647000	3705	DFT-s-OFDM 16 QAM	1@50	24.19	22.89	0.1945
77	15	10	647000	3705	DFT-s-OFDM 64 QAM	25@12	22.72	21.42	0.1387
77	15	10	647000	3705	DFT-s-OFDM 64 QAM	1@1	22.82	21.52	0.1419
77	15	10	647000	3705	DFT-s-OFDM 64 QAM	1@50	22.8	21.5	0.1413
77	15	10	647000	3705	DFT-s-OFDM 256 QAM	25@12	20.6	19.3	0.0851
77	15	10	647000	3705	DFT-s-OFDM 256 QAM	1@1	20.62	19.32	0.0855
77	15	10	647000	3705	DFT-s-OFDM 256 QAM	1@50	20.62	19.32	0.0855
77	15	10	647000	3705	CP-OFDM QPSK	26@13	23.69	22.39	0.1734
77	15	10	647000	3705	CP-OFDM QPSK	1@1	23.62	22.32	0.1706
77	15	10	647000	3705	CP-OFDM QPSK	1@50	23.62	22.32	0.1706
77	15	10	656000	3840	DFT-s-OFDM PI/2 BPSK	25@12	25.06	23.76	0.2377
77	15	10	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	24.98	23.68	0.2333
77	15	10	656000	3840	DFT-s-OFDM PI/2 BPSK	1@50	24.95	23.65	0.2317
77	15	10	656000	3840	DFT-s-OFDM QPSK	25@12	25.09	23.79	0.2393
77	15	10	656000	3840	DFT-s-OFDM QPSK	1@1	24.94	23.64	0.2312
77	15	10	656000	3840	DFT-s-OFDM QPSK	1@50	24.97	23.67	0.2328
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	25@12	24.12	22.82	0.1914
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.14	22.84	0.1923
77	15	10	656000	3840	DFT-s-OFDM 16 QAM	1@50	24.13	22.83	0.1919
77	15	10	656000	3840	DFT-s-OFDM	25@12	22.47	21.17	0.1309

					64 QAM				
77	15	10	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.49	21.19	0.1315
77	15	10	656000	3840	DFT-s-OFDM 64 QAM	1@50	22.48	21.18	0.1312
77	15	10	656000	3840	DFT-s-OFDM 256 QAM	25@12	20.46	19.16	0.0824
77	15	10	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.48	19.18	0.0828
77	15	10	656000	3840	DFT-s-OFDM 256 QAM	1@50	20.42	19.12	0.0817
77	15	10	656000	3840	CP-OFDM QPSK	26@13	23.56	22.26	0.1683
77	15	10	656000	3840	CP-OFDM QPSK	1@1	23.47	22.17	0.1648
77	15	10	656000	3840	CP-OFDM QPSK	1@50	23.44	22.14	0.1637
77	15	10	665000	3975	DFT-s-OFDM PI/2 BPSK	25@12	24.8	23.5	0.2239
77	15	10	665000	3975	DFT-s-OFDM PI/2 BPSK	1@1	24.71	23.41	0.2193
77	15	10	665000	3975	DFT-s-OFDM PI/2 BPSK	1@50	24.75	23.45	0.2213
77	15	10	665000	3975	DFT-s-OFDM QPSK	25@12	24.79	23.49	0.2234
77	15	10	665000	3975	DFT-s-OFDM QPSK	1@1	24.67	23.37	0.2173
77	15	10	665000	3975	DFT-s-OFDM QPSK	1@50	24.69	23.39	0.2183
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	25@12	23.88	22.58	0.1811
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	23.86	22.56	0.1803
77	15	10	665000	3975	DFT-s-OFDM 16 QAM	1@50	23.86	22.56	0.1803
77	15	10	665000	3975	DFT-s-OFDM 64 QAM	25@12	22.22	20.92	0.1236
77	15	10	665000	3975	DFT-s-OFDM 64 QAM	1@1	22.39	21.09	0.1285
77	15	10	665000	3975	DFT-s-OFDM 64 QAM	1@50	22.48	21.18	0.1312
77	15	10	665000	3975	DFT-s-OFDM 256 QAM	25@12	20.23	18.93	0.0782
77	15	10	665000	3975	DFT-s-OFDM 256 QAM	1@1	20.24	18.94	0.0783
77	15	10	665000	3975	DFT-s-OFDM 256 QAM	1@50	20.35	19.05	0.0804
77	15	10	665000	3975	CP-OFDM QPSK	26@13	23.28	21.98	0.1578
77	15	10	665000	3975	CP-OFDM QPSK	1@1	23.18	21.88	0.1542
77	15	10	665000	3975	CP-OFDM QPSK	1@50	23.21	21.91	0.1552
77	15	15	647167	3707.505	DFT-s-OFDM PI/2 BPSK	36@18	25.36	24.06	0.2547
77	15	15	647167	3707.505	DFT-s-OFDM PI/2 BPSK	1@1	25.22	23.92	0.2466
77	15	15	647167	3707.505	DFT-s-OFDM PI/2 BPSK	1@77	25.18	23.88	0.2443
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	36@18	25.37	24.07	0.2553
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	1@1	25.19	23.89	0.2449
77	15	15	647167	3707.505	DFT-s-OFDM QPSK	1@77	25.14	23.84	0.2421
77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	36@18	24.33	23.03	0.2009

77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	1@1	24.37	23.07	0.2028
77	15	15	647167	3707.505	DFT-s-OFDM 16 QAM	1@77	24.35	23.05	0.2018
77	15	15	647167	3707.505	DFT-s-OFDM 64 QAM	36@18	22.8	21.5	0.1413
77	15	15	647167	3707.505	DFT-s-OFDM 64 QAM	1@1	22.78	21.48	0.1406
77	15	15	647167	3707.505	DFT-s-OFDM 64 QAM	1@77	22.72	21.42	0.1387
77	15	15	647167	3707.505	DFT-s-OFDM 256 QAM	36@18	20.7	19.4	0.0871
77	15	15	647167	3707.505	DFT-s-OFDM 256 QAM	1@1	20.58	19.28	0.0847
77	15	15	647167	3707.505	DFT-s-OFDM 256 QAM	1@77	20.6	19.3	0.0851
77	15	15	647167	3707.505	CP-OFDM QPSK	39@19	23.69	22.39	0.1734
77	15	15	647167	3707.505	CP-OFDM QPSK	1@1	23.68	22.38	0.1730
77	15	15	647167	3707.505	CP-OFDM QPSK	1@77	23.65	22.35	0.1718
77	15	15	656000	3840	DFT-s-OFDM PI/2 BPSK	36@18	25.19	23.89	0.2449
77	15	15	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.13	23.83	0.2415
77	15	15	656000	3840	DFT-s-OFDM PI/2 BPSK	1@77	25.04	23.74	0.2366
77	15	15	656000	3840	DFT-s-OFDM QPSK	36@18	25.23	23.93	0.2472
77	15	15	656000	3840	DFT-s-OFDM QPSK	1@1	25	23.7	0.2344
77	15	15	656000	3840	DFT-s-OFDM QPSK	1@77	25	23.7	0.2344
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	36@18	24.24	22.94	0.1968
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.23	22.93	0.1963
77	15	15	656000	3840	DFT-s-OFDM 16 QAM	1@77	24.16	22.86	0.1932
77	15	15	656000	3840	DFT-s-OFDM 64 QAM	36@18	22.71	21.41	0.1384
77	15	15	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.69	21.39	0.1377
77	15	15	656000	3840	DFT-s-OFDM 64 QAM	1@77	22.59	21.29	0.1346
77	15	15	656000	3840	DFT-s-OFDM 256 QAM	36@18	20.58	19.28	0.0847
77	15	15	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.64	19.34	0.0859
77	15	15	656000	3840	DFT-s-OFDM 256 QAM	1@77	20.62	19.32	0.0855
77	15	15	656000	3840	CP-OFDM QPSK	39@19	23.67	22.37	0.1726
77	15	15	656000	3840	CP-OFDM QPSK	1@1	23.55	22.25	0.1679
77	15	15	656000	3840	CP-OFDM QPSK	1@77	23.61	22.31	0.1702
77	15	15	664833	3972.495	DFT-s-OFDM PI/2 BPSK	36@18	24.86	23.56	0.2270
77	15	15	664833	3972.495	DFT-s-OFDM PI/2 BPSK	1@1	24.8	23.5	0.2239
77	15	15	664833	3972.495	DFT-s-OFDM PI/2 BPSK	1@77	24.79	23.49	0.2234
77	15	15	664833	3972.495	DFT-s-OFDM QPSK	36@18	24.95	23.65	0.2317
77	15	15	664833	3972.495	DFT-s-OFDM QPSK	1@1	24.69	23.39	0.2183

77	15	15	664833	3972.495	DFT-s-OFDM QPSK	1@77	24.75	23.45	0.2213
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	36@18	23.91	22.61	0.1824
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	1@1	23.94	22.64	0.1837
77	15	15	664833	3972.495	DFT-s-OFDM 16 QAM	1@77	23.96	22.66	0.1845
77	15	15	664833	3972.495	DFT-s-OFDM 64 QAM	36@18	22.39	21.09	0.1285
77	15	15	664833	3972.495	DFT-s-OFDM 64 QAM	1@1	22.35	21.05	0.1274
77	15	15	664833	3972.495	DFT-s-OFDM 64 QAM	1@77	22.26	20.96	0.1247
77	15	15	664833	3972.495	DFT-s-OFDM 256 QAM	36@18	20.23	18.93	0.0782
77	15	15	664833	3972.495	DFT-s-OFDM 256 QAM	1@1	20.27	18.97	0.0789
77	15	15	664833	3972.495	DFT-s-OFDM 256 QAM	1@77	20.24	18.94	0.0783
77	15	15	664833	3972.495	CP-OFDM QPSK	39@19	23.37	22.07	0.1611
77	15	15	664833	3972.495	CP-OFDM QPSK	1@1	23.2	21.9	0.1549
77	15	15	664833	3972.495	CP-OFDM QPSK	1@77	23.31	22.01	0.1589
77	15	20	647333	3709.995	DFT-s-OFDM PI/2 BPSK	50@25	25.36	24.06	0.2547
77	15	20	647333	3709.995	DFT-s-OFDM PI/2 BPSK	1@1	25.16	23.86	0.2432
77	15	20	647333	3709.995	DFT-s-OFDM PI/2 BPSK	1@104	25.06	23.76	0.2377
77	15	20	647333	3709.995	DFT-s-OFDM QPSK	50@25	25.33	24.03	0.2529
77	15	20	647333	3709.995	DFT-s-OFDM QPSK	1@1	25.03	23.73	0.2360
77	15	20	647333	3709.995	DFT-s-OFDM QPSK	1@104	25	23.7	0.2344
77	15	20	647333	3709.995	DFT-s-OFDM 16 QAM	50@25	24.35	23.05	0.2018
77	15	20	647333	3709.995	DFT-s-OFDM 16 QAM	1@1	24.19	22.89	0.1945
77	15	20	647333	3709.995	DFT-s-OFDM 16 QAM	1@104	24.14	22.84	0.1923
77	15	20	647333	3709.995	DFT-s-OFDM 64 QAM	50@25	22.76	21.46	0.1400
77	15	20	647333	3709.995	DFT-s-OFDM 64 QAM	1@1	22.71	21.41	0.1384
77	15	20	647333	3709.995	DFT-s-OFDM 64 QAM	1@104	22.72	21.42	0.1387
77	15	20	647333	3709.995	DFT-s-OFDM 256 QAM	50@25	20.78	19.48	0.0887
77	15	20	647333	3709.995	DFT-s-OFDM 256 QAM	1@1	20.6	19.3	0.0851
77	15	20	647333	3709.995	DFT-s-OFDM 256 QAM	1@104	20.58	19.28	0.0847
77	15	20	647333	3709.995	CP-OFDM QPSK	53@26	23.77	22.47	0.1766
77	15	20	647333	3709.995	CP-OFDM QPSK	1@1	23.59	22.29	0.1694
77	15	20	647333	3709.995	CP-OFDM QPSK	1@104	23.59	22.29	0.1694
77	15	20	656000	3840	DFT-s-OFDM PI/2 BPSK	50@25	25.22	23.92	0.2466
77	15	20	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.03	23.73	0.2360
77	15	20	656000	3840	DFT-s-OFDM PI/2 BPSK	1@104	25.01	23.71	0.2350

77	15	20	656000	3840	DFT-s-OFDM QPSK	50@25	25.26	23.96	0.2489
77	15	20	656000	3840	DFT-s-OFDM QPSK	1@1	25.03	23.73	0.2360
77	15	20	656000	3840	DFT-s-OFDM QPSK	1@104	24.96	23.66	0.2323
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	50@25	24.23	22.93	0.1963
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.26	22.96	0.1977
77	15	20	656000	3840	DFT-s-OFDM 16 QAM	1@104	24.21	22.91	0.1954
77	15	20	656000	3840	DFT-s-OFDM 64 QAM	50@25	22.65	21.35	0.1365
77	15	20	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.7	21.4	0.1380
77	15	20	656000	3840	DFT-s-OFDM 64 QAM	1@104	22.68	21.38	0.1374
77	15	20	656000	3840	DFT-s-OFDM 256 QAM	50@25	20.65	19.35	0.0861
77	15	20	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.6	19.3	0.0851
77	15	20	656000	3840	DFT-s-OFDM 256 QAM	1@104	20.48	19.18	0.0828
77	15	20	656000	3840	CP-OFDM QPSK	53@26	23.67	22.37	0.1726
77	15	20	656000	3840	CP-OFDM QPSK	1@1	23.57	22.27	0.1687
77	15	20	656000	3840	CP-OFDM QPSK	1@104	23.51	22.21	0.1663
77	15	20	664667	3970.005	DFT-s-OFDM PI/2 BPSK	50@25	24.94	23.64	0.2312
77	15	20	664667	3970.005	DFT-s-OFDM PI/2 BPSK	1@1	24.79	23.49	0.2234
77	15	20	664667	3970.005	DFT-s-OFDM PI/2 BPSK	1@104	24.71	23.41	0.2193
77	15	20	664667	3970.005	DFT-s-OFDM QPSK	50@25	24.95	23.65	0.2317
77	15	20	664667	3970.005	DFT-s-OFDM QPSK	1@1	24.7	23.4	0.2188
77	15	20	664667	3970.005	DFT-s-OFDM QPSK	1@104	24.79	23.49	0.2234
77	15	20	664667	3970.005	DFT-s-OFDM 16 QAM	50@25	23.97	22.67	0.1849
77	15	20	664667	3970.005	DFT-s-OFDM 16 QAM	1@1	23.95	22.65	0.1841
77	15	20	664667	3970.005	DFT-s-OFDM 16 QAM	1@104	23.91	22.61	0.1824
77	15	20	664667	3970.005	DFT-s-OFDM 64 QAM	50@25	22.39	21.09	0.1285
77	15	20	664667	3970.005	DFT-s-OFDM 64 QAM	1@1	22.4	21.1	0.1288
77	15	20	664667	3970.005	DFT-s-OFDM 64 QAM	1@104	22.48	21.18	0.1312
77	15	20	664667	3970.005	DFT-s-OFDM 256 QAM	50@25	20.34	19.04	0.0802
77	15	20	664667	3970.005	DFT-s-OFDM 256 QAM	1@1	20.23	18.93	0.0782
77	15	20	664667	3970.005	DFT-s-OFDM 256 QAM	1@104	20.19	18.89	0.0774
77	15	20	664667	3970.005	CP-OFDM QPSK	53@26	23.33	22.03	0.1596
77	15	20	664667	3970.005	CP-OFDM QPSK	1@1	23.25	21.95	0.1567
77	15	20	664667	3970.005	CP-OFDM QPSK	1@104	23.26	21.96	0.1570
77	15	40	648000	3720	DFT-s-OFDM PI/2 BPSK	108@54	25.3	24	0.2512

77	15	40	648000	3720	DFT-s-OFDM PI/2 BPSK	1@1	24.73	23.43	0.2203
77	15	40	648000	3720	DFT-s-OFDM PI/2 BPSK	1@214	24.83	23.53	0.2254
77	15	40	648000	3720	DFT-s-OFDM QPSK	108@54	25.38	24.08	0.2559
77	15	40	648000	3720	DFT-s-OFDM QPSK	1@1	24.65	23.35	0.2163
77	15	40	648000	3720	DFT-s-OFDM QPSK	1@214	24.71	23.41	0.2193
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	108@54	24.28	22.98	0.1986
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	23.73	22.43	0.1750
77	15	40	648000	3720	DFT-s-OFDM 16 QAM	1@214	23.85	22.55	0.1799
77	15	40	648000	3720	DFT-s-OFDM 64 QAM	108@54	22.81	21.51	0.1416
77	15	40	648000	3720	DFT-s-OFDM 64 QAM	1@1	22.4	21.1	0.1288
77	15	40	648000	3720	DFT-s-OFDM 64 QAM	1@214	22.46	21.16	0.1306
77	15	40	648000	3720	DFT-s-OFDM 256 QAM	108@54	20.79	19.49	0.0889
77	15	40	648000	3720	DFT-s-OFDM 256 QAM	1@1	20.26	18.96	0.0787
77	15	40	648000	3720	DFT-s-OFDM 256 QAM	1@214	20.3	19	0.0794
77	15	40	648000	3720	CP-OFDM QPSK	108@54	23.77	22.47	0.1766
77	15	40	648000	3720	CP-OFDM QPSK	1@1	23.17	21.87	0.1538
77	15	40	648000	3720	CP-OFDM QPSK	1@214	23.21	21.91	0.1552
77	15	40	656000	3840	DFT-s-OFDM PI/2 BPSK	108@54	25.26	23.96	0.2489
77	15	40	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	24.61	23.31	0.2143
77	15	40	656000	3840	DFT-s-OFDM PI/2 BPSK	1@214	24.49	23.19	0.2084
77	15	40	656000	3840	DFT-s-OFDM QPSK	108@54	25.23	23.93	0.2472
77	15	40	656000	3840	DFT-s-OFDM QPSK	1@1	24.53	23.23	0.2104
77	15	40	656000	3840	DFT-s-OFDM QPSK	1@214	24.45	23.15	0.2065
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	108@54	24.2	22.9	0.1950
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.66	22.36	0.1722
77	15	40	656000	3840	DFT-s-OFDM 16 QAM	1@214	23.6	22.3	0.1698
77	15	40	656000	3840	DFT-s-OFDM 64 QAM	108@54	22.71	21.41	0.1384
77	15	40	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.32	21.02	0.1265
77	15	40	656000	3840	DFT-s-OFDM 64 QAM	1@214	22.13	20.83	0.1211
77	15	40	656000	3840	DFT-s-OFDM 256 QAM	108@54	20.64	19.34	0.0859
77	15	40	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.14	18.84	0.0766
77	15	40	656000	3840	DFT-s-OFDM 256 QAM	1@214	20	18.7	0.0741
77	15	40	656000	3840	CP-OFDM QPSK	108@54	23.7	22.4	0.1738
77	15	40	656000	3840	CP-OFDM QPSK	1@1	23.17	21.87	0.1538

77	15	40	656000	3840	CP-OFDM QPSK	1@214	23	21.7	0.1479
77	15	40	664000	3960	DFT-s-OFDM PI/2 BPSK	108@54	24.94	23.64	0.2312
77	15	40	664000	3960	DFT-s-OFDM PI/2 BPSK	1@1	24.36	23.06	0.2023
77	15	40	664000	3960	DFT-s-OFDM PI/2 BPSK	1@214	24.36	23.06	0.2023
77	15	40	664000	3960	DFT-s-OFDM QPSK	108@54	24.94	23.64	0.2312
77	15	40	664000	3960	DFT-s-OFDM QPSK	1@1	24.38	23.08	0.2032
77	15	40	664000	3960	DFT-s-OFDM QPSK	1@214	24.28	22.98	0.1986
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	108@54	24	22.7	0.1862
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	23.61	22.31	0.1702
77	15	40	664000	3960	DFT-s-OFDM 16 QAM	1@214	23.53	22.23	0.1671
77	15	40	664000	3960	DFT-s-OFDM 64 QAM	108@54	22.46	21.16	0.1306
77	15	40	664000	3960	DFT-s-OFDM 64 QAM	1@1	22.07	20.77	0.1194
77	15	40	664000	3960	DFT-s-OFDM 64 QAM	1@214	21.96	20.66	0.1164
77	15	40	664000	3960	DFT-s-OFDM 256 QAM	108@54	20.38	19.08	0.0809
77	15	40	664000	3960	DFT-s-OFDM 256 QAM	1@1	19.99	18.69	0.0740
77	15	40	664000	3960	DFT-s-OFDM 256 QAM	1@214	19.87	18.57	0.0719
77	15	40	664000	3960	CP-OFDM QPSK	108@54	23.44	22.14	0.1637
77	15	40	664000	3960	CP-OFDM QPSK	1@1	22.96	21.66	0.1466
77	15	40	664000	3960	CP-OFDM QPSK	1@214	22.86	21.56	0.1432
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	135@67	25.3	24	0.2512
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@1	24.95	23.65	0.2317
77	15	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@268	25.1	23.8	0.2399
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	135@67	25.29	23.99	0.2506
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	24.89	23.59	0.2286
77	15	50	648334	3725.01	DFT-s-OFDM QPSK	1@268	25.07	23.77	0.2382
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	135@67	24.32	23.02	0.2004
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	24.16	22.86	0.1932
77	15	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@268	24.28	22.98	0.1986
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	135@67	22.76	21.46	0.1400
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@1	22.63	21.33	0.1358
77	15	50	648334	3725.01	DFT-s-OFDM 64 QAM	1@268	22.77	21.47	0.1403
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	135@67	20.8	19.5	0.0891
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@1	20.46	19.16	0.0824
77	15	50	648334	3725.01	DFT-s-OFDM 256 QAM	1@268	20.59	19.29	0.0849

77	15	50	648334	3725.01	CP-OFDM QPSK	135@67	23.8	22.5	0.1778
77	15	50	648334	3725.01	CP-OFDM QPSK	1@1	23.44	22.14	0.1637
77	15	50	648334	3725.01	CP-OFDM QPSK	1@268	23.64	22.34	0.1714
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	25.21	23.91	0.2460
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	24.93	23.63	0.2307
77	15	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@268	24.87	23.57	0.2275
77	15	50	656000	3840	DFT-s-OFDM QPSK	135@67	25.21	23.91	0.2460
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@1	24.88	23.58	0.2280
77	15	50	656000	3840	DFT-s-OFDM QPSK	1@268	24.68	23.38	0.2178
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	135@67	24.25	22.95	0.1972
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	23.93	22.63	0.1832
77	15	50	656000	3840	DFT-s-OFDM 16 QAM	1@268	23.85	22.55	0.1799
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	135@67	22.69	21.39	0.1377
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.63	21.33	0.1358
77	15	50	656000	3840	DFT-s-OFDM 64 QAM	1@268	22.49	21.19	0.1315
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	135@67	20.69	19.39	0.0869
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.39	19.09	0.0811
77	15	50	656000	3840	DFT-s-OFDM 256 QAM	1@268	20.29	18.99	0.0793
77	15	50	656000	3840	CP-OFDM QPSK	135@67	23.74	22.44	0.1754
77	15	50	656000	3840	CP-OFDM QPSK	1@1	23.45	22.15	0.1641
77	15	50	656000	3840	CP-OFDM QPSK	1@268	23.3	22	0.1585
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	135@67	24.84	23.54	0.2259
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@1	24.73	23.43	0.2203
77	15	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@268	24.64	23.34	0.2158
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	135@67	24.89	23.59	0.2286
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	24.68	23.38	0.2178
77	15	50	663666	3954.99	DFT-s-OFDM QPSK	1@268	24.55	23.25	0.2113
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	135@67	23.9	22.6	0.1820
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	23.8	22.5	0.1778
77	15	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@268	23.71	22.41	0.1742
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	135@67	22.38	21.08	0.1282
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@1	22.36	21.06	0.1276
77	15	50	663666	3954.99	DFT-s-OFDM 64 QAM	1@268	22.33	21.03	0.1268
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	135@67	20.34	19.04	0.0802

77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@1	20.22	18.92	0.0780
77	15	50	663666	3954.99	DFT-s-OFDM 256 QAM	1@268	20.09	18.79	0.0757
77	15	50	663666	3954.99	CP-OFDM QPSK	135@67	23.42	22.12	0.1629
77	15	50	663666	3954.99	CP-OFDM QPSK	1@1	23.22	21.92	0.1556
77	15	50	663666	3954.99	CP-OFDM QPSK	1@268	23.17	21.87	0.1538

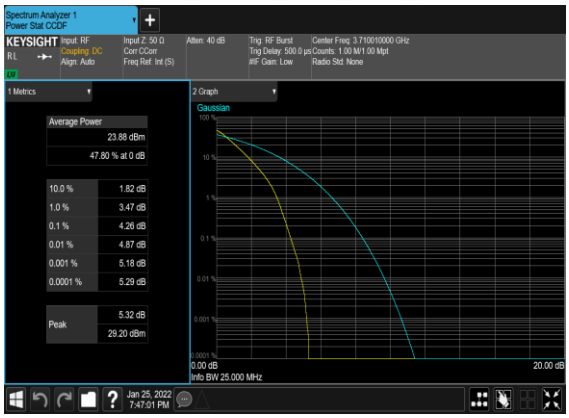
Frequency Stability

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	0.0101	**PASS**	NV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0021	**PASS**	LV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0121	**PASS**	HV
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0112	**PASS**	-30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0128	**PASS**	-20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0116	**PASS**	-10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0127	**PASS**	0℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0211	**PASS**	10℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0123	**PASS**	20℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0115	**PASS**	30℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0151	**PASS**	40℃
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	0.0167	**PASS**	50℃

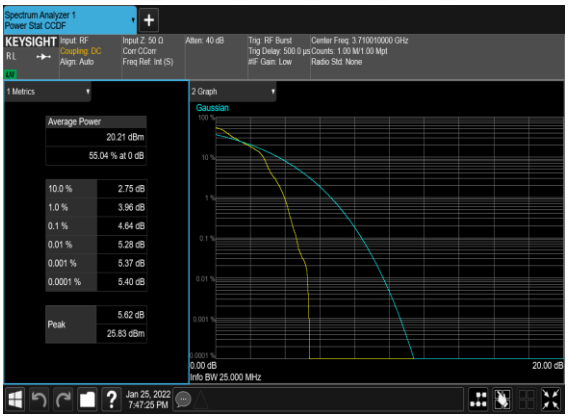
Peak to Average Radio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
77	15	20	647334	3710.01	DFT-s-OFDM PI/2 BPSK	100@0	4.26	13	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM PI/2 BPSK	1@0	4.64	13	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	100@0	5.33	13	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@0	5.77	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	100@0	4.07	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	1@0	4.53	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	5.26	13	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	6.03	13	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM PI/2 BPSK	100@0	4.14	13	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM PI/2 BPSK	1@0	4.67	13	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	100@0	5.34	13	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@0	5.57	13	**PASS**

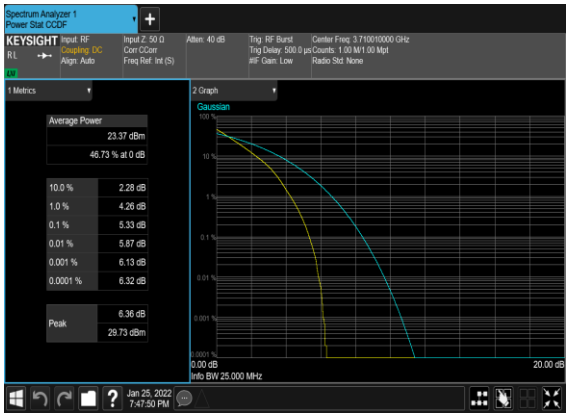
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



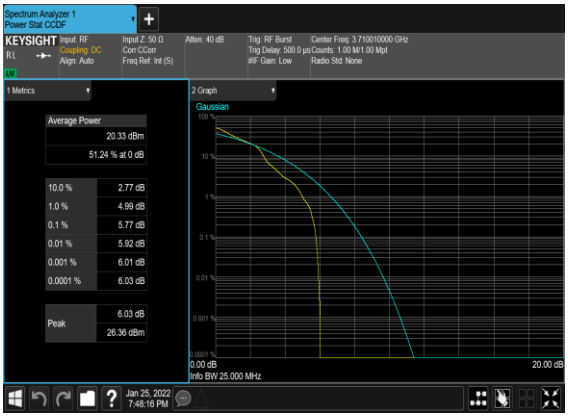
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



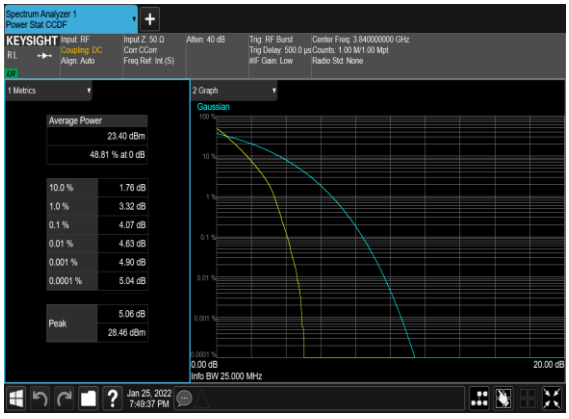
N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



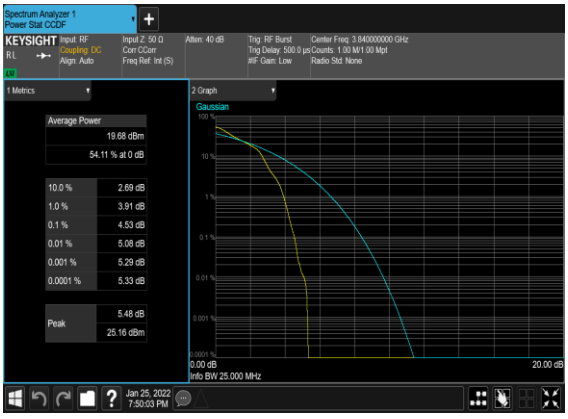
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



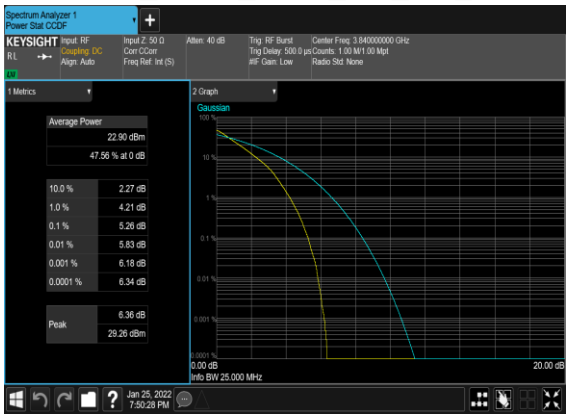
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



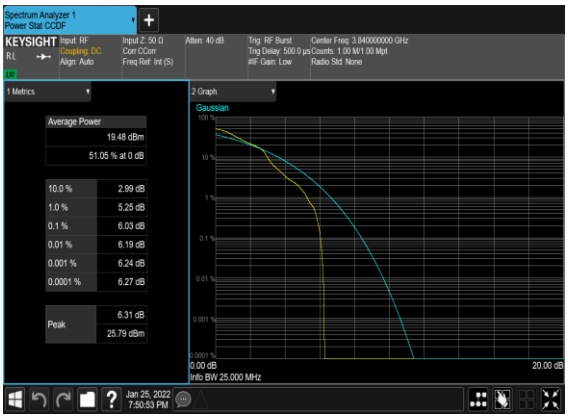
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



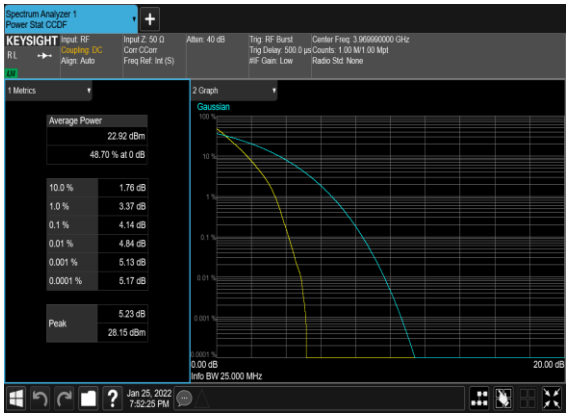
N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



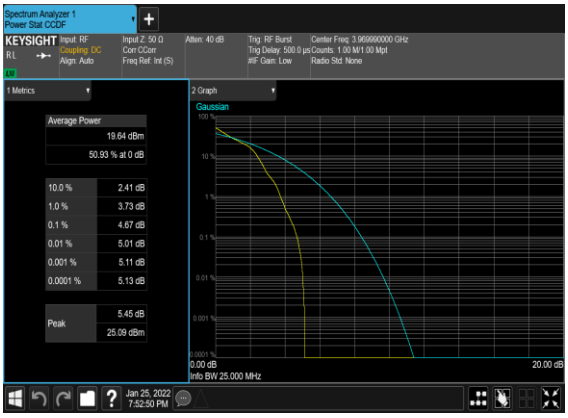
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



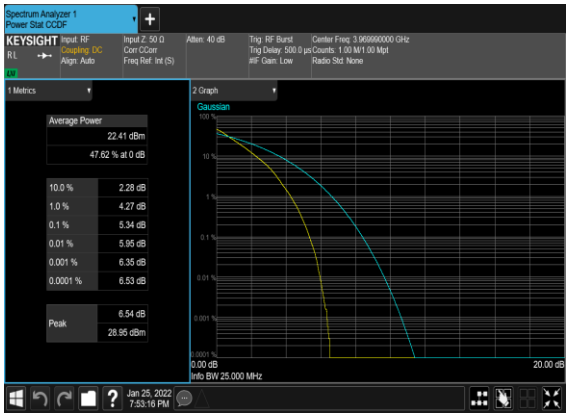
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



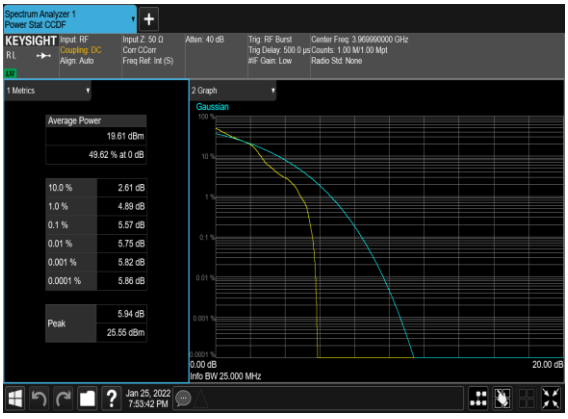
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

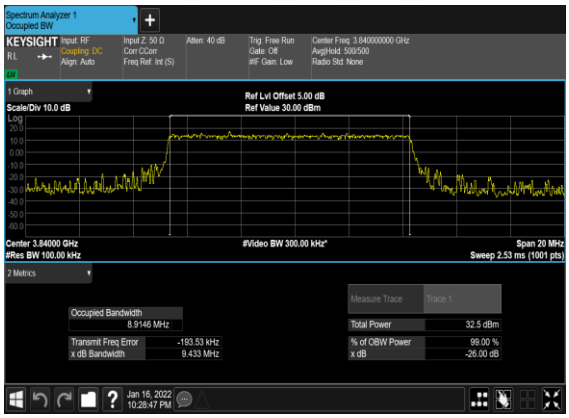


Occupied Bandwidth

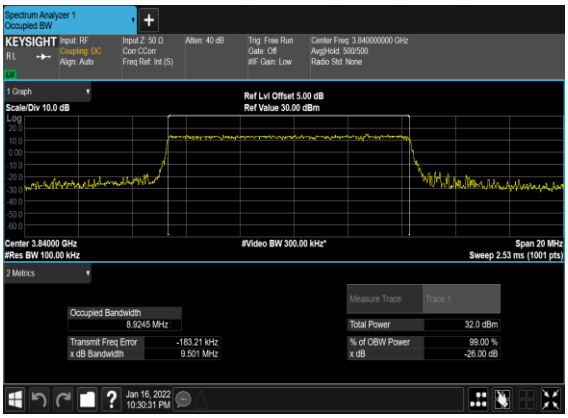
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
77	15	10	656000	3840.0	DFT-s-OFDM PI/2 BPSK	50@0	8.9146	9.433
77	15	10	656000	3840.0	DFT-s-OFDM QPSK	50@0	8.9245	9.501
77	15	10	656000	3840.0	CP-OFDM QPSK	52@0	9.2738	9.81
77	15	10	656000	3840.0	CP-OFDM 16 QAM	52@0	9.2885	9.891
77	15	10	656000	3840.0	CP-OFDM 64 QAM	52@0	9.2834	10.44
77	15	10	656000	3840.0	CP-OFDM 256 QAM	52@0	9.2674	9.677
77	15	15	656000	3840.0	DFT-s-OFDM PI/2 BPSK	75@0	13.383	14.06
77	15	15	656000	3840.0	DFT-s-OFDM QPSK	75@0	13.392	14.11
77	15	15	656000	3840.0	CP-OFDM QPSK	79@0	14.134	14.87
77	15	15	656000	3840.0	CP-OFDM 16 QAM	79@0	14.129	14.69
77	15	15	656000	3840.0	CP-OFDM 64 QAM	79@0	14.11	14.74
77	15	15	656000	3840.0	CP-OFDM 256 QAM	79@0	14.099	14.72
77	15	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	100@0	17.83	18.8
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	100@0	17.846	18.88
77	15	20	656000	3840.0	CP-OFDM QPSK	106@0	18.887	19.86
77	15	20	656000	3840.0	CP-OFDM 16 QAM	106@0	18.914	19.69
77	15	20	656000	3840.0	CP-OFDM 64 QAM	106@0	18.922	19.7
77	15	20	656000	3840.0	CP-OFDM 256 QAM	106@0	18.944	19.75
77	15	40	656000	3840.0	DFT-s-OFDM PI/2 BPSK	216@0	38.521	40.02
77	15	40	656000	3840.0	DFT-s-OFDM QPSK	216@0	38.605	40.03
77	15	40	656000	3840.0	CP-OFDM QPSK	216@0	38.491	39.83
77	15	40	656000	3840.0	CP-OFDM 16 QAM	216@0	38.538	39.91

77	15	40	656000	3840.0	CP-OFDM 64 QAM	216@0	38.605	40.01
77	15	40	656000	3840.0	CP-OFDM 256 QAM	216@0	38.462	39.88
77	15	50	656000	3840.0	DFT-s-OFDM PI/2 BPSK	270@0	48.206	49.81
77	15	50	656000	3840.0	DFT-s-OFDM QPSK	270@0	48.152	49.92
77	15	50	656000	3840.0	CP-OFDM QPSK	270@0	48.169	49.97
77	15	50	656000	3840.0	CP-OFDM 16 QAM	270@0	48.185	49.77
77	15	50	656000	3840.0	CP-OFDM 64 QAM	270@0	48.116	49.81
77	15	50	656000	3840.0	CP-OFDM 256 QAM	270@0	48.16	49.77

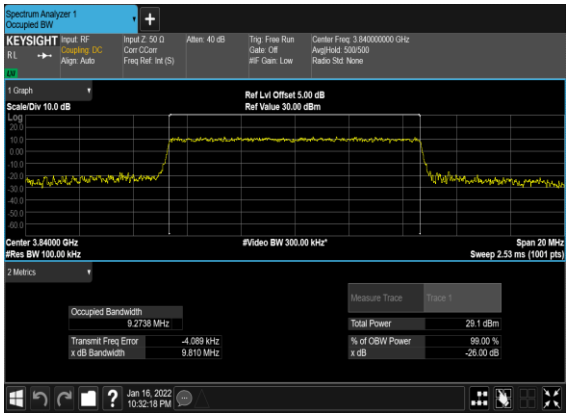
N77(10M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



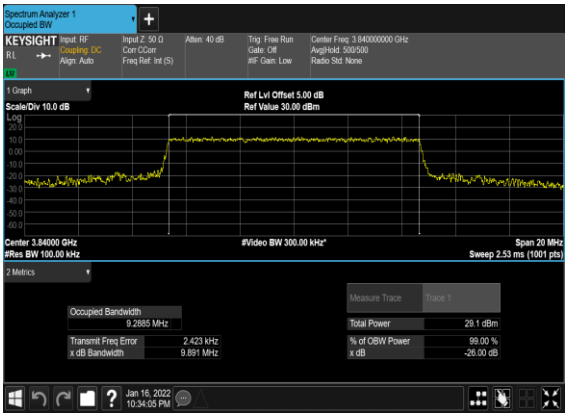
N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



N77(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

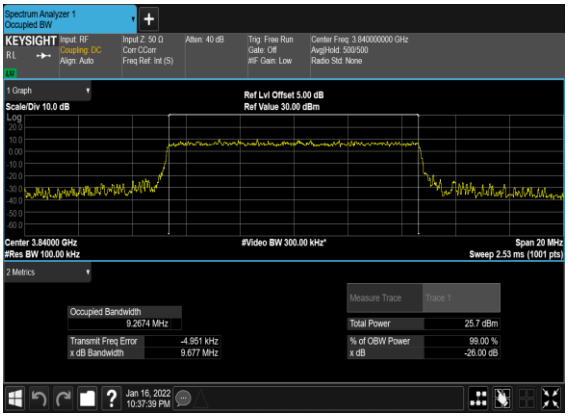


N77(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

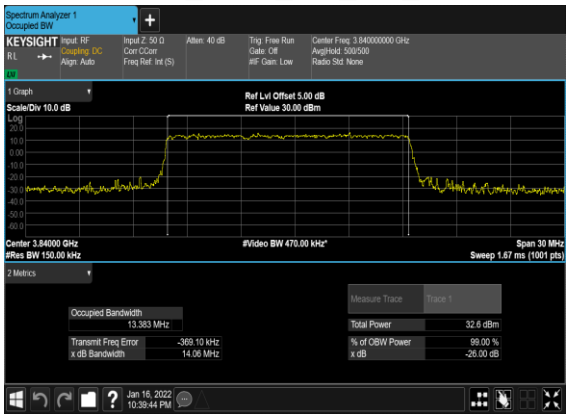


N77(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

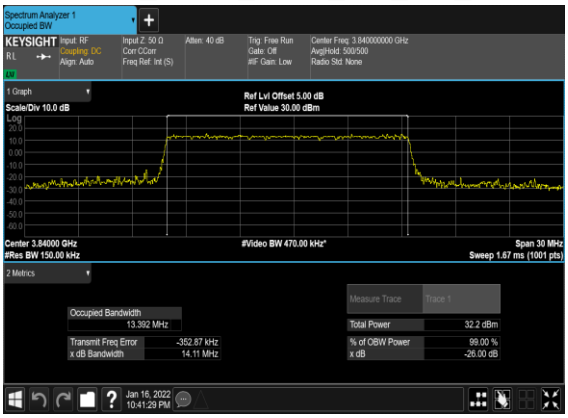
N77(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



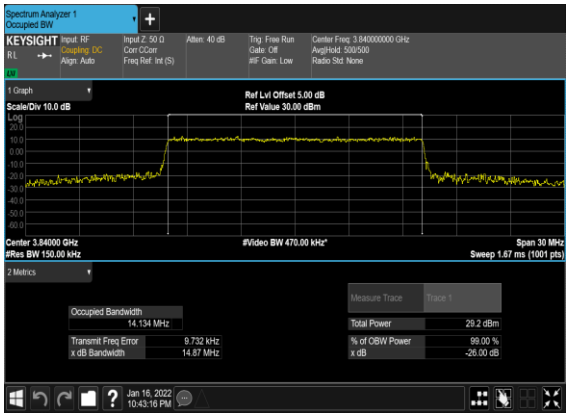
N77(15M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



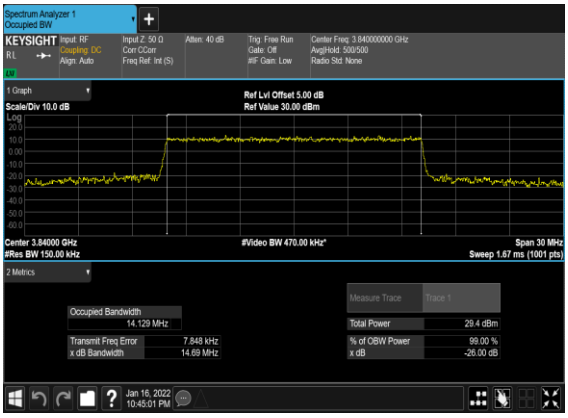
N77(15M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



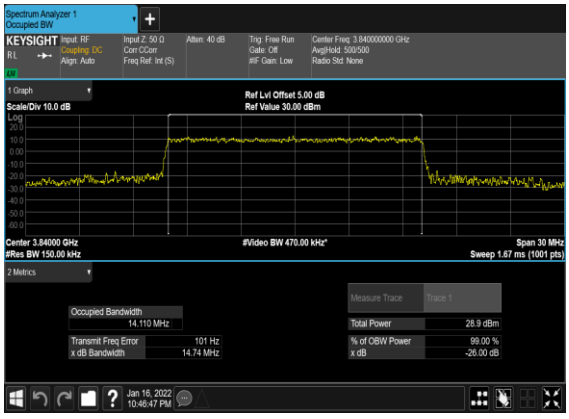
N77(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N77(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

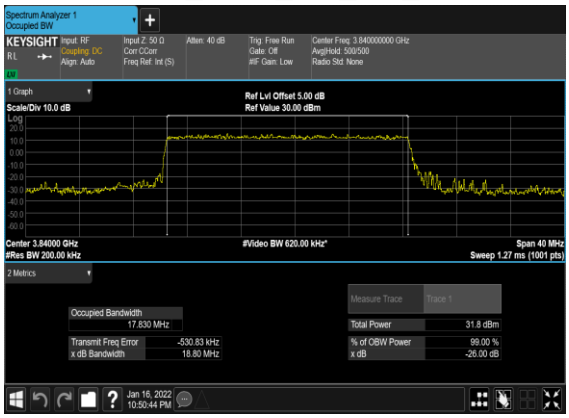


N77(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

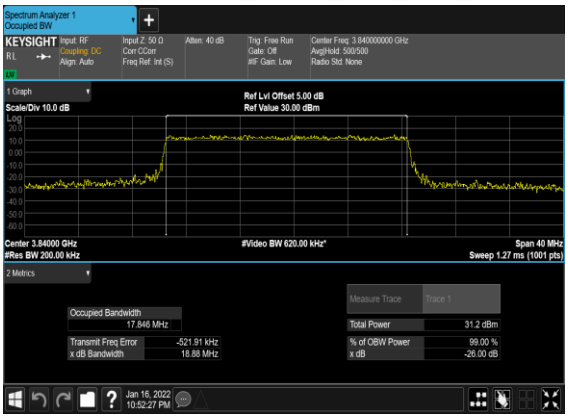


N77(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

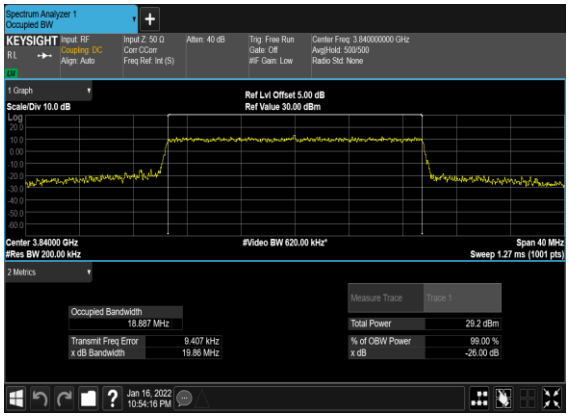
N77(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



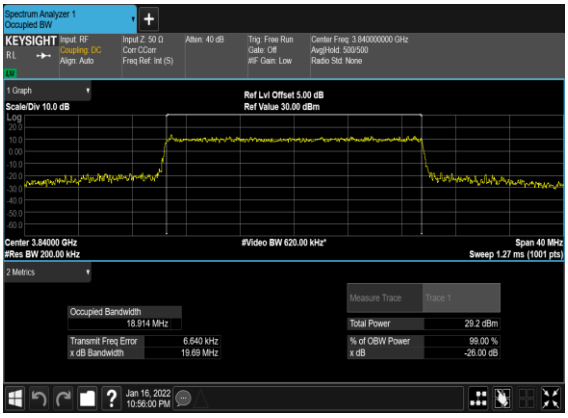
N77(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



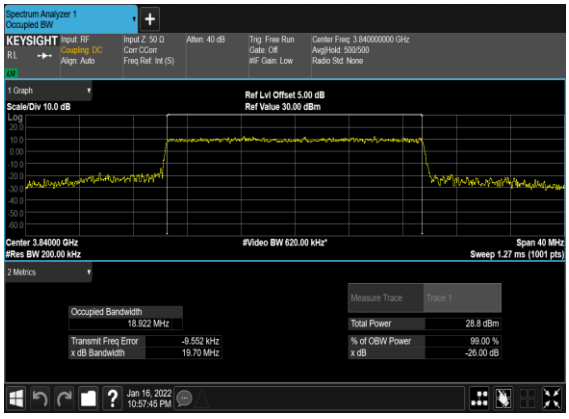
N77(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



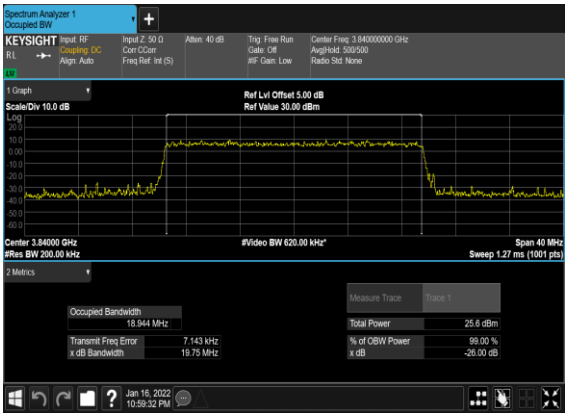
N77(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



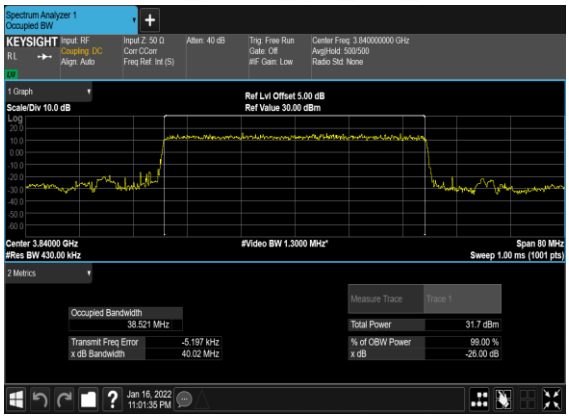
N77(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



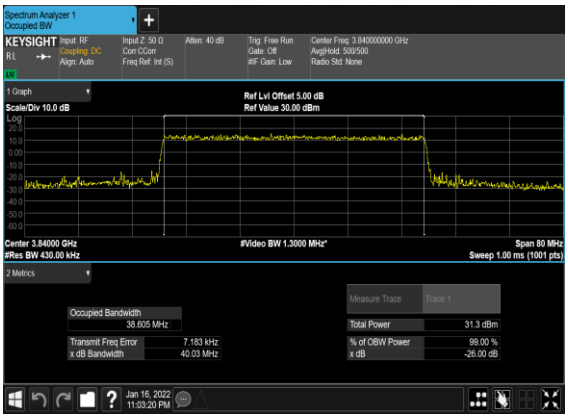
N77(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



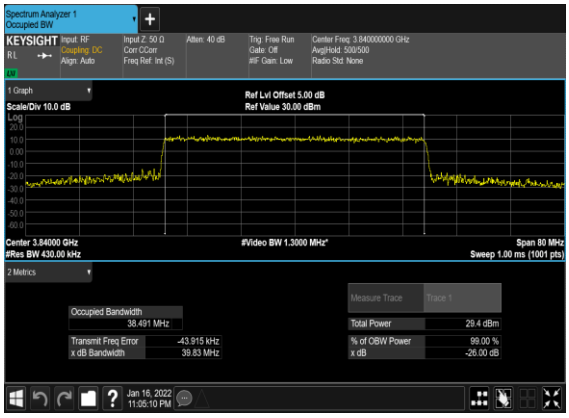
N77(40M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



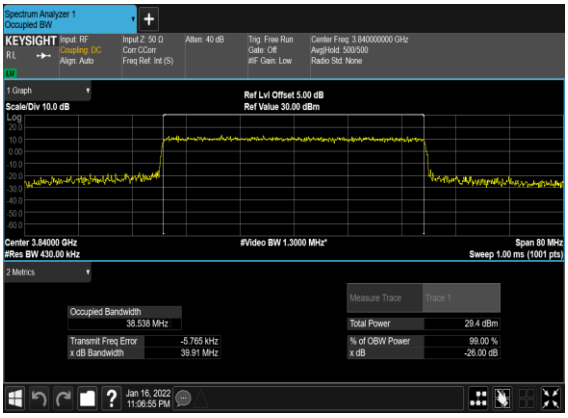
N77(40M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



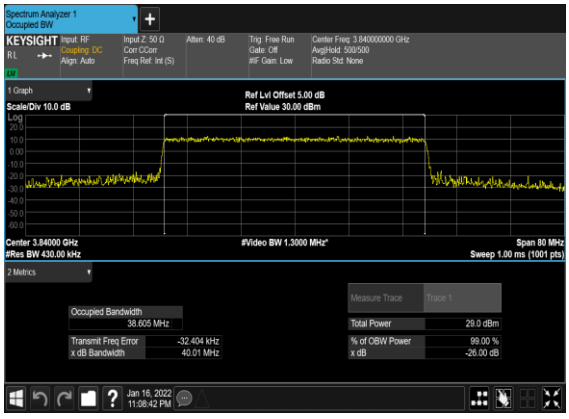
N77(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



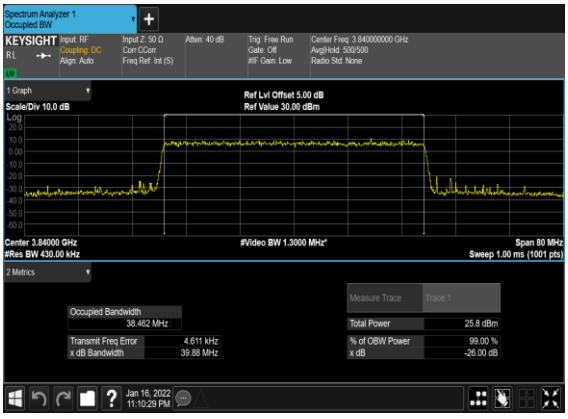
N77(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



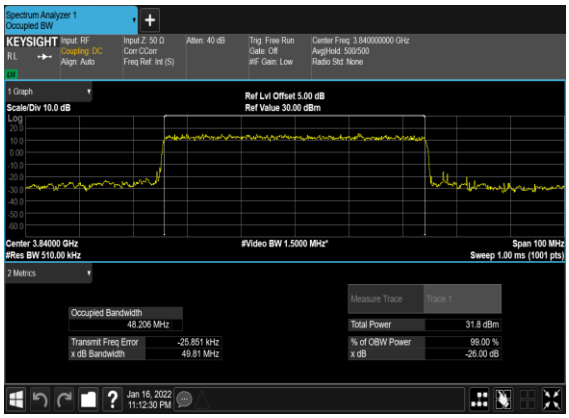
N77(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



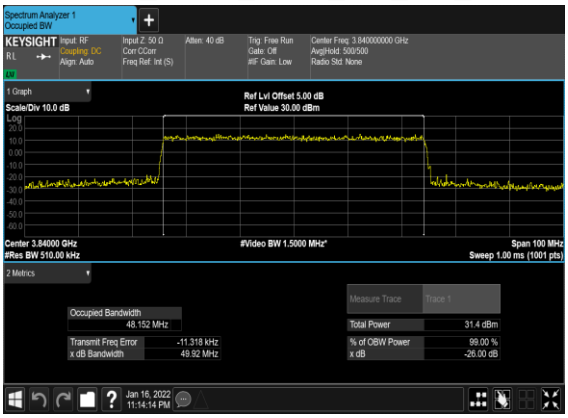
N77(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



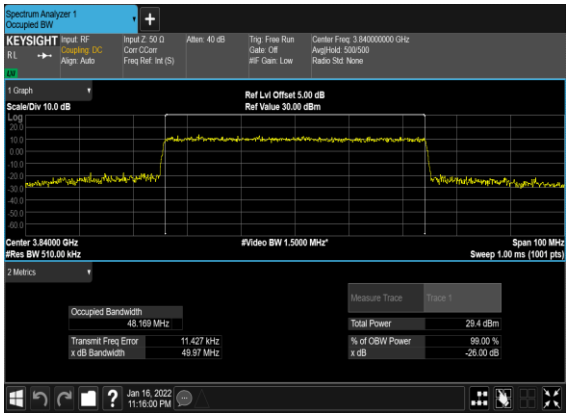
N77(50M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



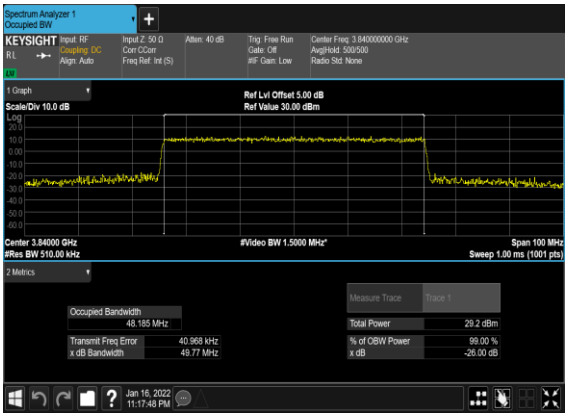
N77(50M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



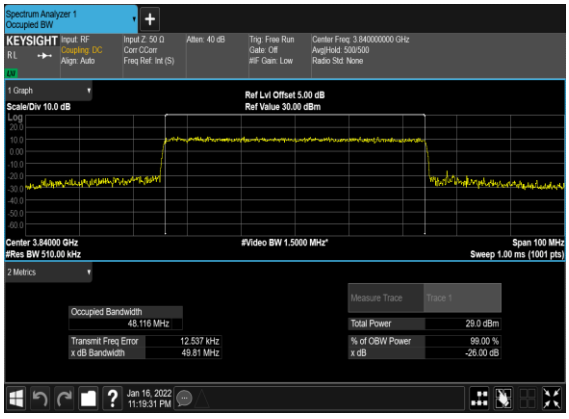
N77(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



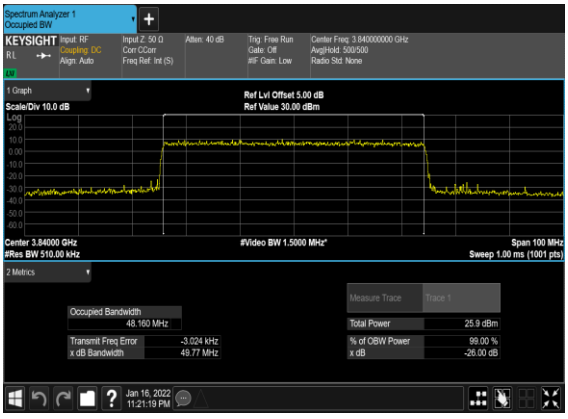
N77(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



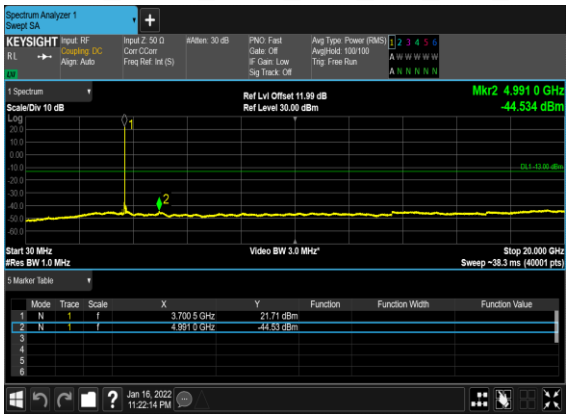
Conducted Spurious Emissions

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	20	647334	3710.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	20	647334	3710.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@0	see graph	**---**

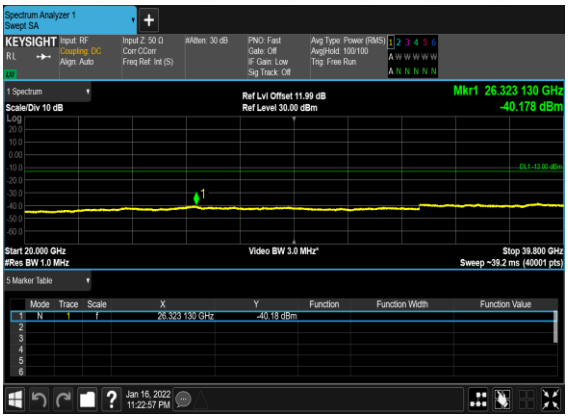
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	20	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
77	15	20	664666	3969.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	664666	3969.99	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**

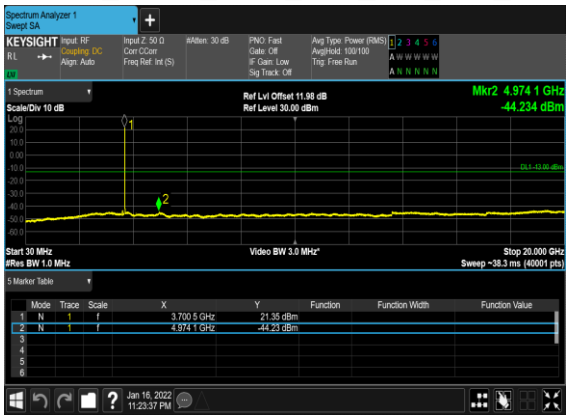
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



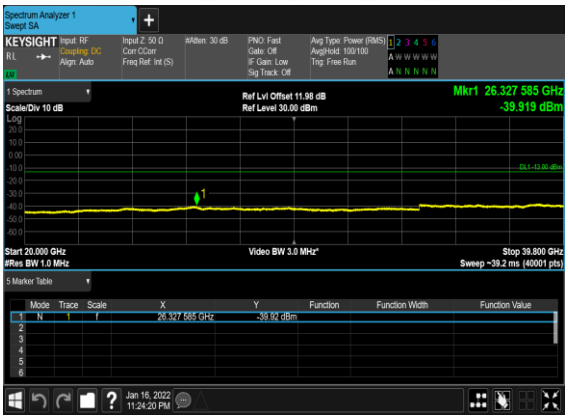
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



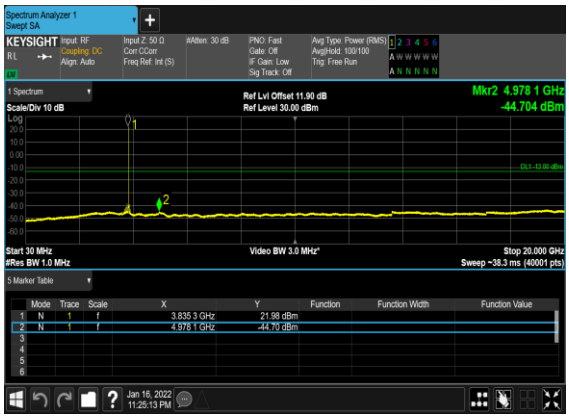
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



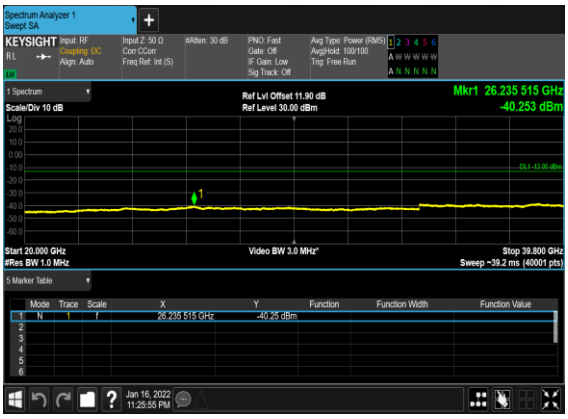
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



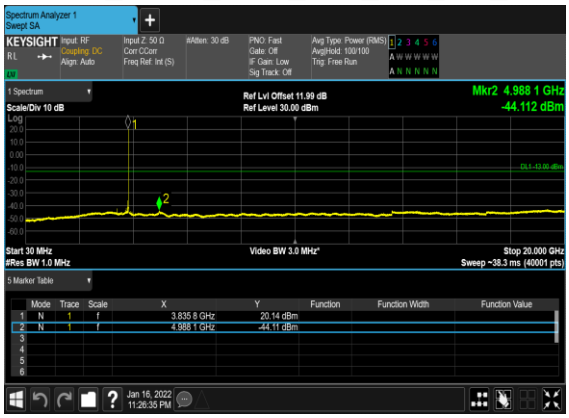
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



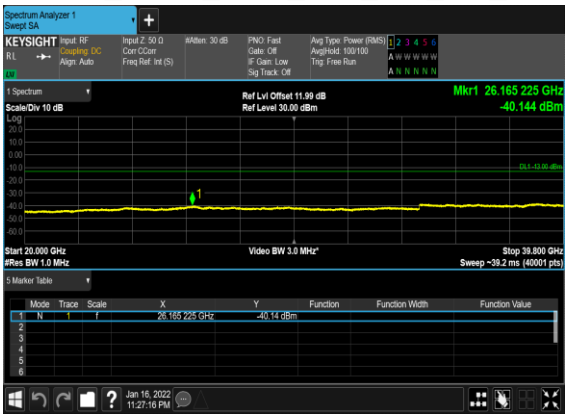
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



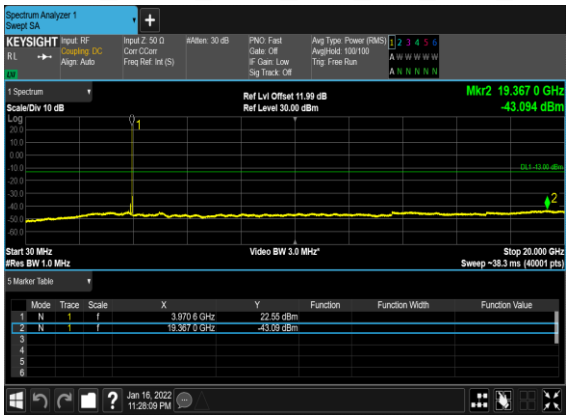
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



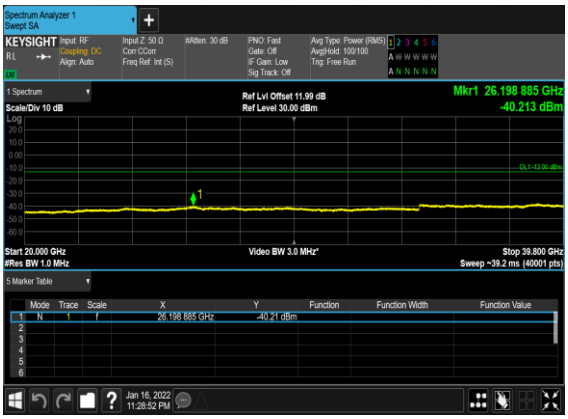
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

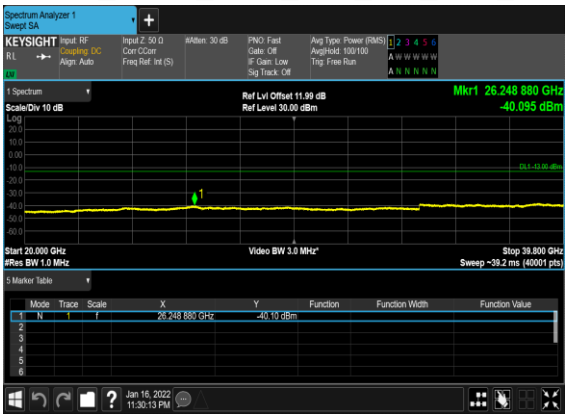


N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



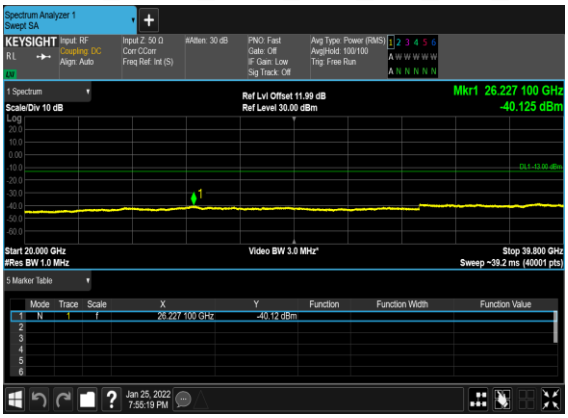
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



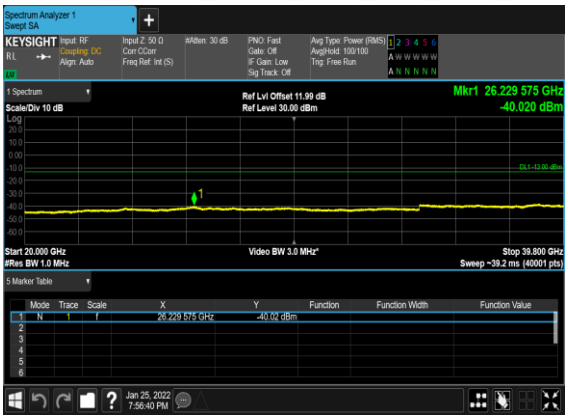
N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH

N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



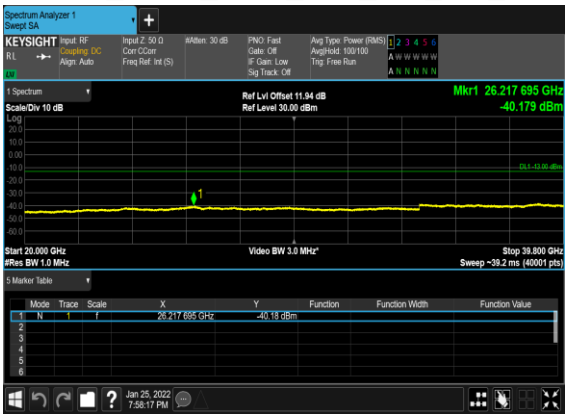
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



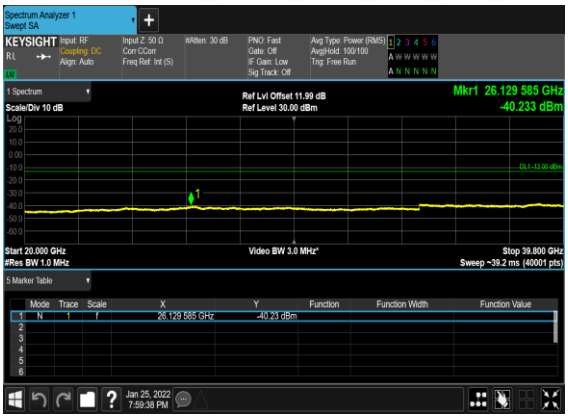
N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

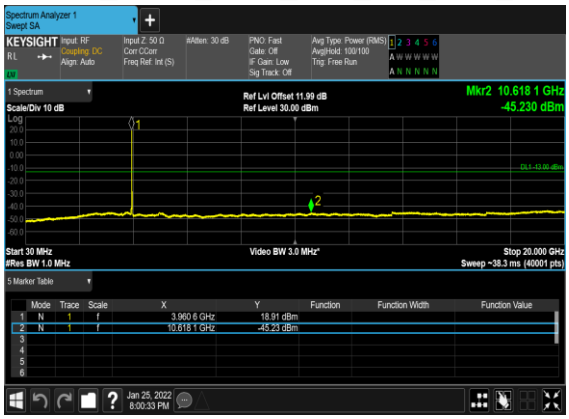


N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

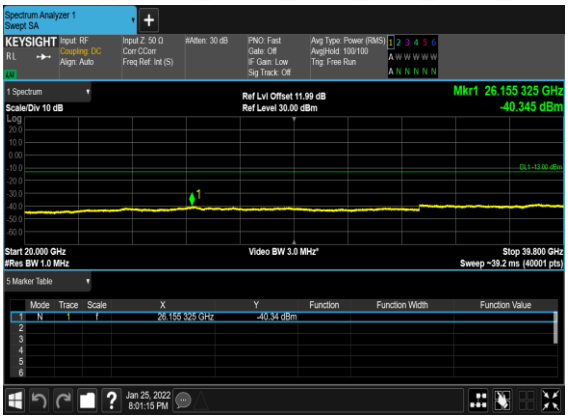
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

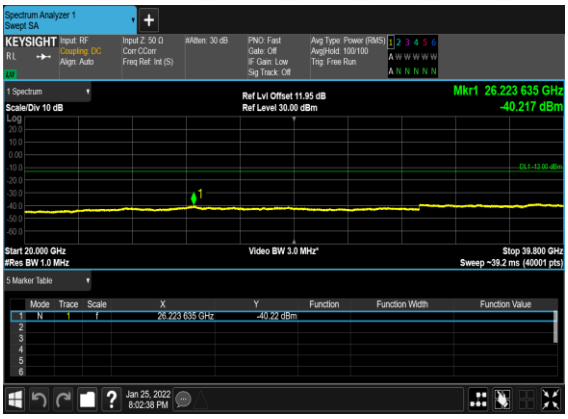


N77(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH

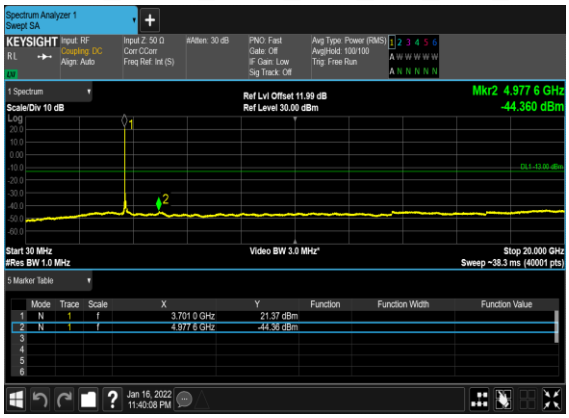


N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

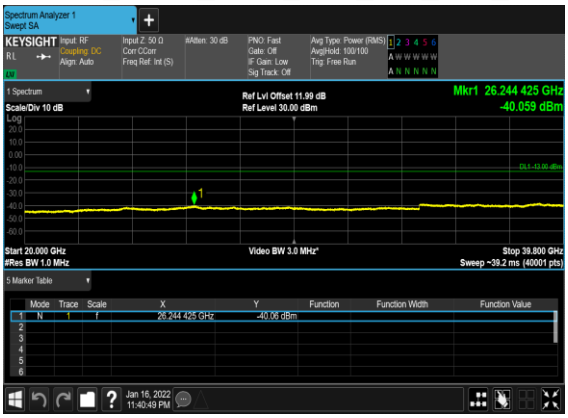
N77(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



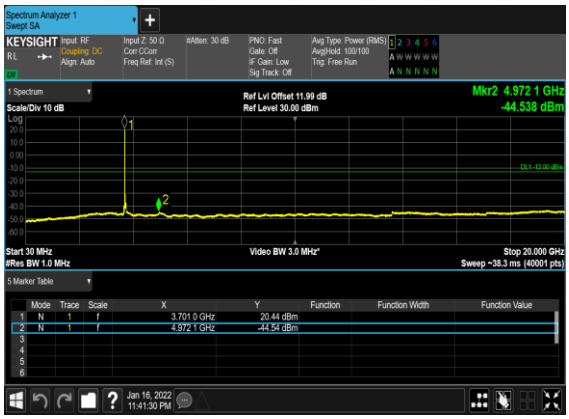
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



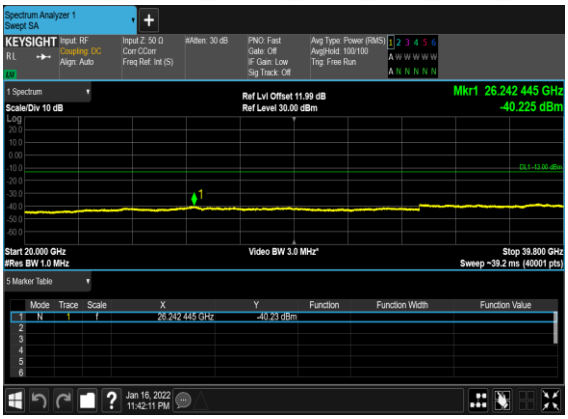
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

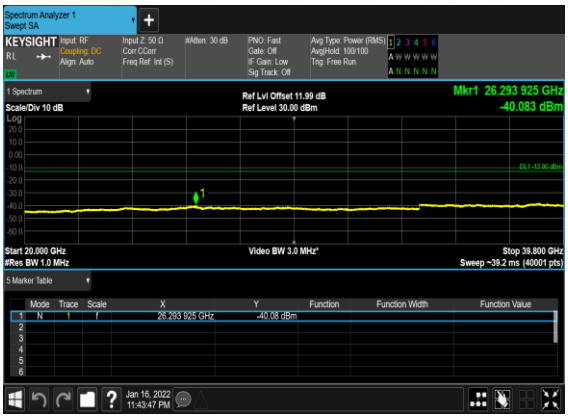


N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

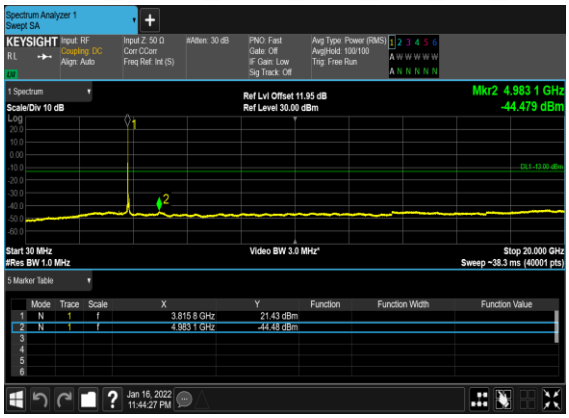


N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

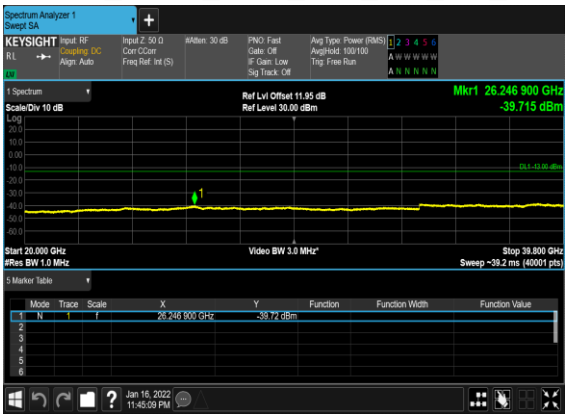
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



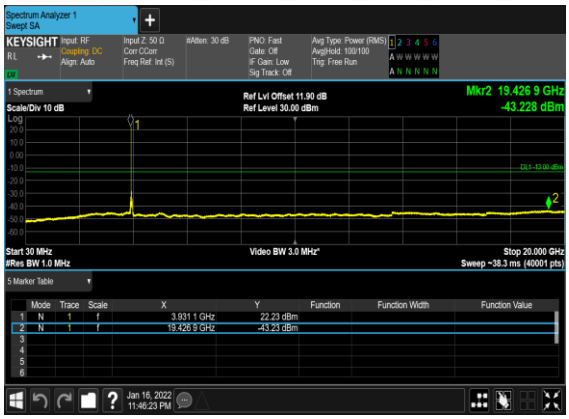
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



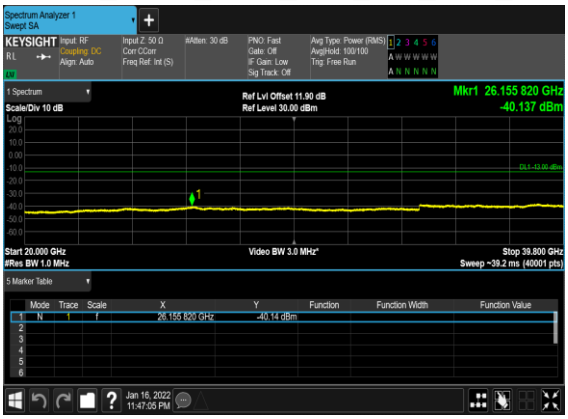
N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



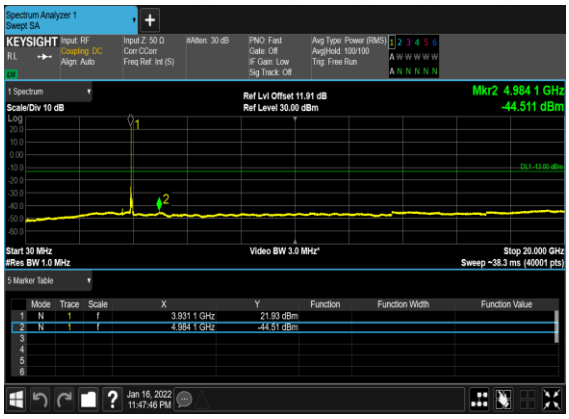
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



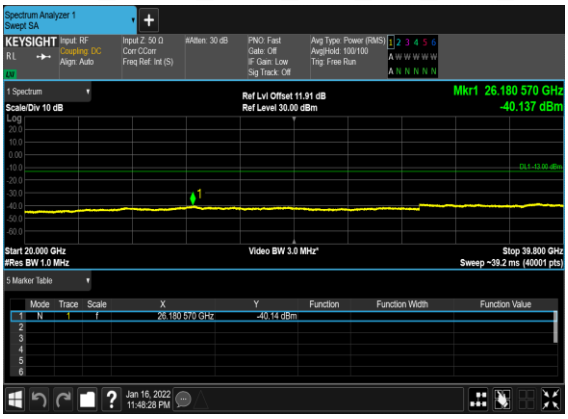
N77(50M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



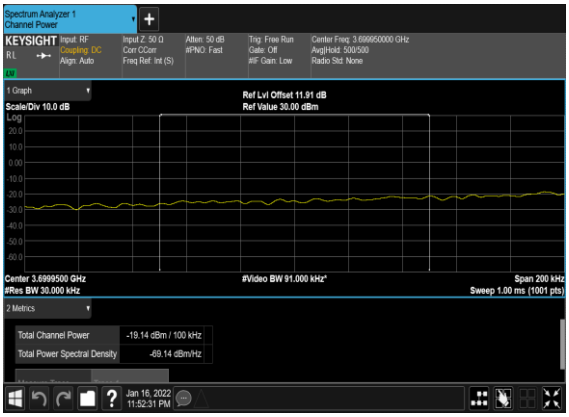
Conducted Band Edge

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	20	647334	3710.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
77	15	20	647334	3710.01	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
77	15	20	664666	3969.99	DFT-s-OFDM QPSK	100@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

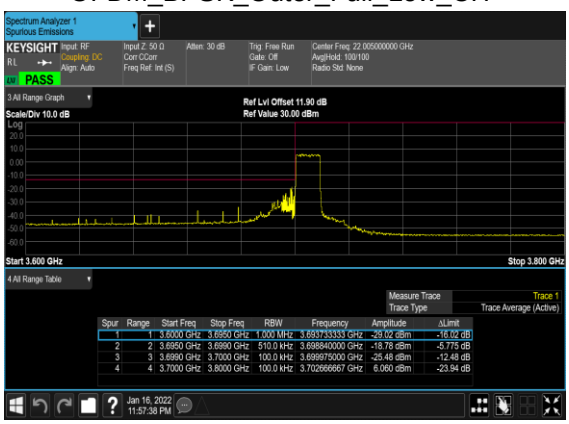
N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH_**CHP_PASS**



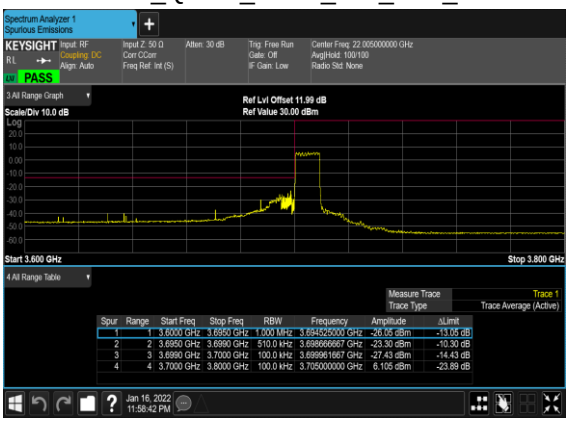
N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

N77(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH_**CHP_PASS**

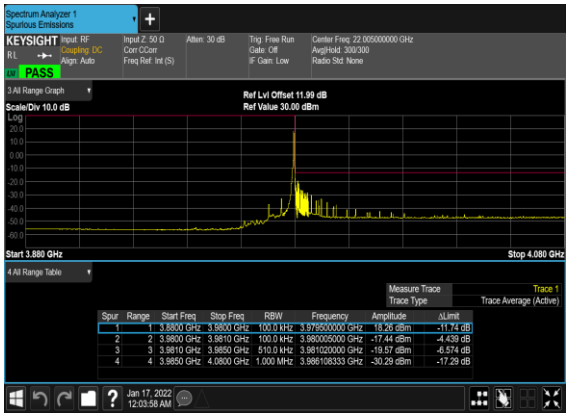
N77(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



N77(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

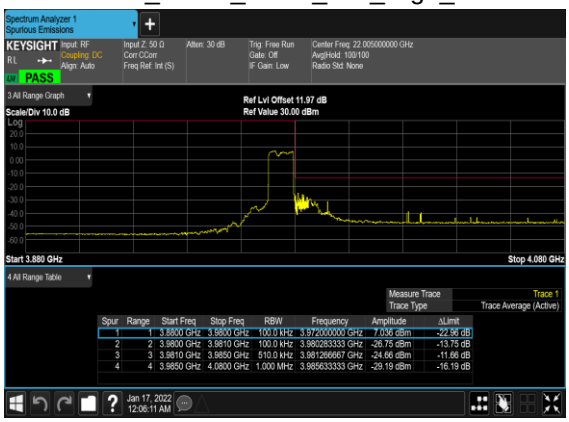


N77(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



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