FCC RF Test Report

APPLICANT	:	Motorola Mobility LLC
EQUIPMENT	:	Mobile Cellular Phone
BRAND NAME	:	Motorola
MODEL NAME	:	XT2453-3, XT2453-4, XT2453-5, XT2453V
FCC ID	:	IHDT56AR7
STANDARD	:	47 CFR Part 2, 96
CLASSIFICATION	:	Citizens Band End User Devices (CBE)
EQUIPMENT TYPE	:	End User Equipment
TEST DATE(S)	:	Mar. 20, 2024 ~ Apr. 03, 2024

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 and shown compliance with the applicable technical standards.

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED
Cert #5145.02

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

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History of this test report

Report No.	Version	Description	Issued Date
FG422203P	01	Initial issue of report	Apr. 10, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
-	§96.41	Peak-to-Average Ratio	Not Applicable	Not applicable for End User Devices
3.3	§96.41	Maximum E.I.R.P	Pass	-
		Maximum Power Spectral Density	Not Applicable	Not applicable for End User Devices
3.4	§2.1049 §96.41	Occupied Bandwidth	Reporting only	-
3.5	§2.1051 §96.41	Conducted Band Edge Measurement Adjacent Channel Leakage Ratio	Pass	-
3.6	§2.1051 §96.41	Conducted Spurious Emission	Pass	
3.7	§2.1055	Frequency Stability for Temperature & Voltage	Pass	-
4.4	§2.1051 §96.41	Radiated Spurious Emission	Pass	Under limit 9.96 dB at 10824.00 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

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2453-3, XT2453-4, XT2453-5, XT2453V
FCC ID	IHDT56AR7
Tx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
Rx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
SCS	15kHz, 30kHz
Bandwidth	**For SCS 15kHz / SCS 30kHz:** 10MHz / 15MHz / 20MHz / 30MHz / 40MHz
Antenna Gain	<Ant. 3> 5G NR n48: -5.85 dBi <Ant. 4> 5G NR n48: -1.84 dBi <Ant. 6> 5G NR n48: -3.28 dBi <Ant. 8> 5G NR n48: -2.72 dBi
Type of Modulation	DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)
IMEI Code	Conducted: 358394210026253/358394210026261 Radiation: 358394210031030/358394210031048
HW Version	DVT2
SW Version	U3UC34.22
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP are shown in the report, 5G NR n48/n48B for Ant. 4 and n48 UL_MIMO for Ant. (4+6).
3. The device supports n48 (1T4R) SRS resources on Ant.3/4/6/8, only the conducted test results of worst Ant.4 is showed in the report according to the maximum power.
4. 5G NR n48 support SCS 15kHz and 30kHz. According to the maximum power, SCS 15kHz was full test to cover SCS 30kHz.
5. 5G NR n48 UL MIMO supports CP-OFDM Mode only.

6. 5G NR n48 supports UL MIMO mode (the two antennas are completely uncorrelated), the conducted BE/Spurious are tested at single antenna port and add 10*log(N_{ANT}) according to KDB 662911 D01.
7. 5G NR n48 supports SA Mode only and Manufacturer declares that 5G NR n48 channels shall be set NS_27 to reduce the conducted power.

1.4 Maximum EIRP Power and Emission Designator

5G NR n48 - 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	**3555.00~3694.98**	0.1368	9M25G7D	0.1074	9M30W7D
15	**3557.52~3692.49**	0.1242	14M1G7D	0.0973	14M1W7D
20	**3560.01~3690.00**	0.1236	18M9G7D	0.0982	19M0W7D
30	**3565.02~3684.99**	0.1400	28M6G7D	0.1169	28M6W7D
40	**3570.00~3679.98**	0.1400	38M6G7D	0.0984	38M6W7D

5G NR n48 MIMO - SCS 15kHz		QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10	**3555.00~3694.98**	0.0929	9M28G7D	0.0879	9M29W7D
15	**3557.52~3692.49**	0.0827	14M1G7D	0.0795	14M1W7D
20	**3560.01~3690.00**	0.0865	18M9G7D	0.0810	18M9W7D
30	**3565.02~3684.99**	0.1050	28M5G7D	0.0897	28M6W7D
40	**3570.00~3679.98**	0.1064	38M6G7D	0.0986	38M6W7D

5G NR n48B - SCS 15kHz	PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
10+10	0.0951	19M2G7D	0.0850	19M2W7D
10+15	0.0982	23M9G7D	0.0964	24M1W7D
10+20	0.0608	28M6G7D	0.0543	28M7W7D
15+10	0.0985	24M1G7D	0.0960	24M1W7D
15+15	0.0529	29M0G7D	0.0470	28M8W7D
15+20	0.0986	33M9G7D	0.0962	33M9W7D
20+10	0.0586	28M5G7D	0.0524	28M5W7D
20+15	0.0989	33M6G7D	0.0955	33M6W7D

20+20	0.0996	37M0G7D	0.0853	36M9W7D

Note:

1. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.
2. 5G NR n48B supported bandwidth combinations and frequency are followed 3GPP 38.508-1

1.5 Testing Site

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

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-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: Test cases in section 3.2~3.7 for 5G NR n48B of this report.

1.6 Test Software

Item	Site	Manufacture	Name	Version
1.	TH01-KS	SPORTON	FCC_5GNR_China_201027	1.0
2.	TH01-SZ	WCS	WCS-FCC	22.02.041801
3.	03CH04-KS	AUDIX	E3	210616

1.7 Applied Standards

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

- ANSI C63.26-2015
- 47 CFR Part 2, 96
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 940660 D01 Part 96 CBRS v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.8 Specification of Accessory

Specification of Accessory				
Battery 1	**Brand Name**	Motorola	**Model Name**	QR11
Battery 2	**Brand Name**	Motorola	**Model Name**	QR31
USB Cable 1	**Brand Name**	Motorola(CABLETECH)	**Model Name**	SC18E05246
USB Cable 2	**Brand Name**	Motorola(SAIBAO)	**Model Name**	SC18D86732

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

The EUT is a folding phone, pretest the open status and closed status, only the worst status perform final test and record in the report. For the accessories, pretest standalone mode / Earphone mode / Adapter mode / Wireless charging mode, only the worst status perform final test and record in the report.

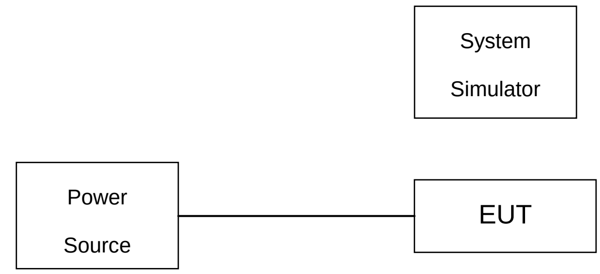
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

Test Items	Band	Bandwidth (MHz)						Modulation					RB #		Test Channel		
		5	10	15	20	30	40	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n48	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
26dB and 99% Bandwidth	n48	-	v	v	v	v -	v		v	v	v	v		v		v	
Adjacent Channel Leakage Ratio	n48	-	v		v		v	v	v				v	v	v	v	v
Conducted Band Edge	n48	-	v		v		v	v	v				v	v	v		v
Conducted Spurious Emission	n48	-	v		v		v	v	v				v		v	v	v
E.I.R.P	n48	-	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Frequency Stability	n48	-			v				v					v		v	
Radiated Spurious Emission	n48	Worst Case														v	
Remark	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. All test items are based on engineering evaluation. 5. Frequency Stability：Normal Voltage = 3.88V ；Low Voltage =3.4V；High Voltage =4.48V																

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 20+20M, 20+15M, 15+20M, 20+10M, 10+20M, 15+15M, 20+5M, 15+10M, 10+15M, 15+5M, 10+10M	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	n48B	All supported Bandwidth	All Modulation	1RB, Full RB	L, M, H
E.I.R.P	n48B	All supported Bandwidth	All Modulation	1RB, Full RB	L, M, H
ACLR	n48B	10+10M, 20+10M, 20+20M	PI/2 BPSK, QPSK	1RB, Full RB	L, M, H
26dB and 99% Bandwidth	n48B	All supported Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	Full RB	M
Conducted Band Edge	n48B	10+10M, 20+10M, 20+20M	PI/2 BPSK, QPSK	1RB, Full RB	L, M, H
Conducted Spurious Emission	n48B	10+10M, 20+10M, 20+20M	PI/2 BPSK, QPSK	1RB, Full RB	L, M, H
Radiated Spurious Emission	n48B	Worst case from maximum power			M

Note:
1. 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.
2. All test items are based on engineering evaluation.

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

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	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 and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.5 dB and 25dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.5 + 25 = 29.5 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n48 Channel and Frequency List for SCS 15k/30k				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	638000	641666	645332
	Frequency	3570	3624.99	3679.98
30	Channel	637668	641666	645666
	Frequency	3565.02	3624.99	3684.99
20	Channel	637334	641666	646000
	Frequency	3560.01	3624.99	3690
15	Channel	637168	641666	646166
	Frequency	3557.52	3624.99	3692.49
10	Channel	637000	641666	646332
	Frequency	3555	3624.99	3694.98

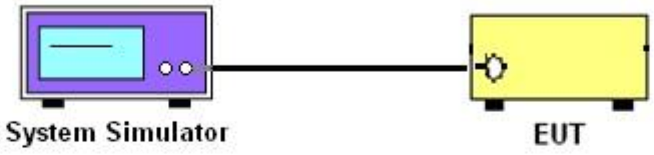
3 Conducted Test Items

3.1 Measuring Instruments

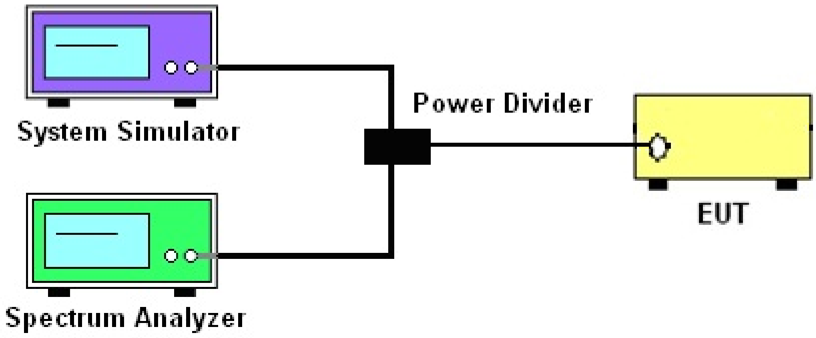
See list of measuring instruments of this test report.

3.1.1 Test Setup

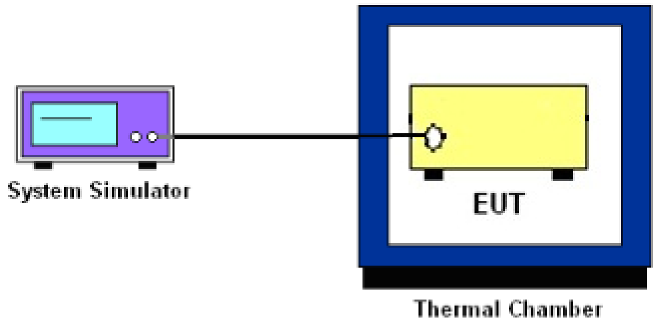
3.1.2 Conducted Output Power



3.1.3 Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.1.4 Frequency Stability



3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Description of the Conducted Output Power 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.

3.2.2 Test Procedures

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

3.3 EIRP

3.3.1 Description of the EIRP Measurement

EIRP limits for CBRS equipment as below table:

Device		Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
Applied	**End User Device**	23	n/a
☐	**Category A CBSD**	30	20
☐	**Category B CBSD**	47	37

Remark:

The worst case EIRP shown in this section is found with NR operating only using 1RB. As such, the EIRP/10MHz and full channel EIRP values will be identical since 1RB is fully contained within all available channel bandwidths for NR n48 (i.e. 10, 20, 30, 40MHz)

3.3.2 Test Procedures for EIRP

1. Establishing a communications link with the call box (Base station) to measure the Maximum conducted power, the parameters were set to force the EUT transmitting at maximum output power level. Use the average power measurement function to measure total channel power of each channel bandwidth (per ANSI C63.26-2015 Section 5.2.1)

2. Determining ERP and/or EIRP from conducted RF output power measurements (Per ANSI C63.26-2015 Section 5.2.5.5)

   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 Occupied Bandwidth

3.4.1 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.

3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. 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.
4. Set the detection mode to peak, and the trace mode to max hold.
5. 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)
6. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
7. 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.
8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.5 Conducted Band Edge

3.5.1 Description of Conducted Band Edge Measurement

Part 96.41 (e) (1) (i)

For CBSD the emission limits outside the fundamental are as follows:

Within 0 MHz to 10 MHz above and below the assigned channel ≤ −13 dBm/MHz

Greater than 10 MHz above and below the assigned channel ≤ −25 dBm/MHz

Part 96.41 (e) (1) (ii)

For End User Devices the emission limits outside the fundamental are as follows:

Within 0 MHz to B MHz above and below the assigned channel ≤ −13 dBm/MHz

Greater than B MHz above and below the assigned channel ≤ −25 dBm/MHz

where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device.

Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.

Part 96.41 (e) (2)

For CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed −25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz

3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used
5. Offset has included the duty factor for Band n48. Duty factor =10 log (1/x), where x is the measured duty cycle.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.6 Conducted Spurious Emission

3.6.1 Description of Conducted Spurious Emission Measurement

96.41 (e)(2)

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed −40dBm/MHz.

3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. 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.
3. The middle channel for the highest RF power within the transmitting frequency was measured.
4. The conducted spurious emission for the whole frequency range was taken.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
6. Set spectrum analyzer with RMS detector.
7. Taking the record of maximum spurious emission.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. The limit line is −40dBm/MHz.

3.7 Frequency Stability

3.7.1 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

3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. 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.
3. 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.

3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

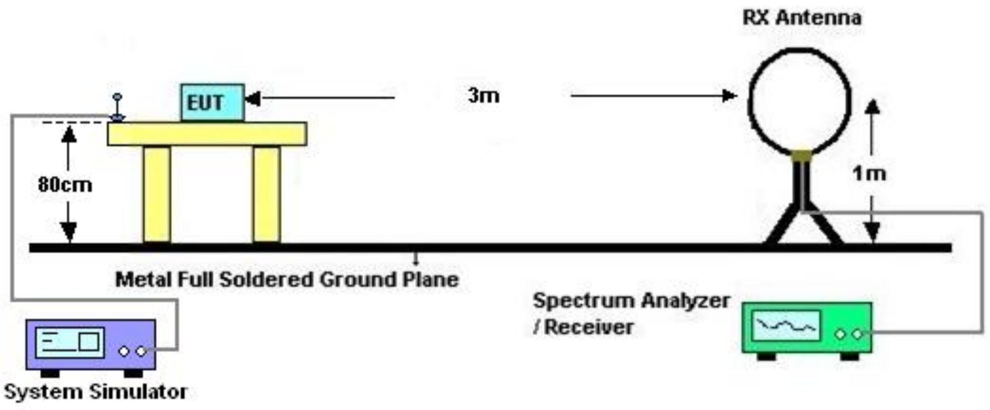
4 Radiated Test Items

4.1 Measuring Instruments

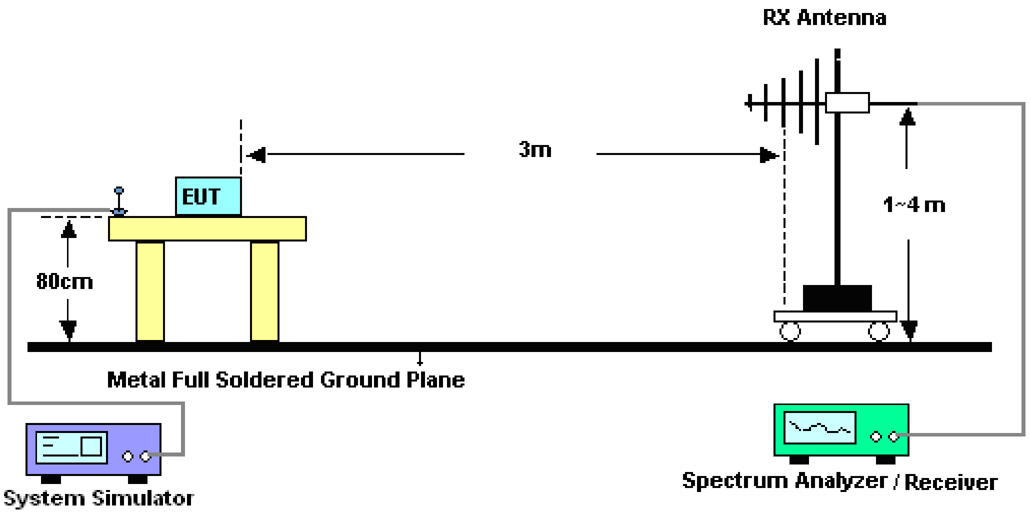
See list of measuring instruments of this test report.

4.2 Test Setup

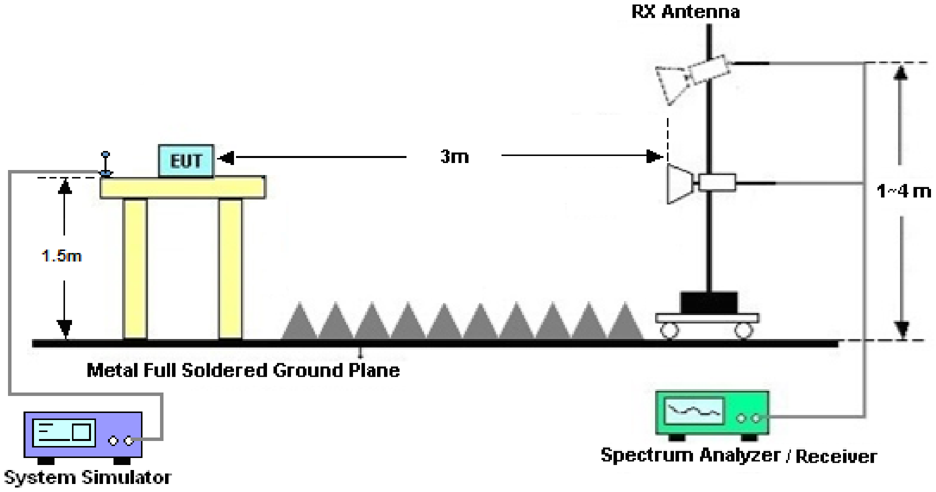
4.2.1 For radiated test below 30MHz



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 Measurement

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 -40dBm / MHz.

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

4.4.2 Test Procedures

1. 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.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
   Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = EIRP - 2.15
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
   The limit line is −40dBm/MHz

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Mar. 20, 2024~ Apr. 03, 2024	Oct. 09, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Mar. 20, 2024~ Apr. 03, 2024	NCR	Conducted (TH01-KS)
Temperature &humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 06, 2023	Mar. 20, 2024~ Apr. 03, 2024	Jul. 05, 2024	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 06, 2023	Mar. 20, 2024~ Apr. 03, 2024	Apr. 05, 2024	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04265	60.06.020.0077	0.4GHz~26.5GHz	Dec. 25, 2023	Mar. 20, 2024~ Apr. 03, 2024	Dec. 24, 2024	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 05, 2023	Mar. 20, 2024~ Apr. 03, 2024	Jul. 04, 2024	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11, 2023	Mar. 28, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Apr. 09, 2023	Mar. 28, 2024	Apr. 08, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00251694	1GHz~18GHz	Jul. 12, 2023	Mar. 28, 2024	Jul. 11, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2024	Mar. 28, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	380827	9KHz-1GHz	Jul. 06, 2023	Mar. 28, 2024	Jul. 05, 2024	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2024	Mar. 28, 2024	Jan. 04, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
Amplifier	Agilent	8449B	3008A02370	1Ghz-18Ghz	Oct. 10, 2023	Mar. 28, 2024	Oct. 09, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Mar. 28, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

Uncertainty of Conducted Measurement (TH01-SZ)

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

Uncertainty of Conducted Measurement (TH01-KS)

Conducted Spurious Emission & Bandedge	±2.26 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.46 dB
Peak to Average Ratio	±0.46 dB
Frequency Stability	±0.4 ppm

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

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

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

Software Version: 23.06.1602

FR1 N48 SCS 15KHz (ANT4)

Transmitter Conducted Output Power And EIRP, $(G_T - L_C)$=-1.84dB

NR Band	SCS	BandWidth	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
48	15	40	638000	3570	DFT-s-OFDM PI/2 BPSK	108@54	12.49	10.65	0.0116
48	15	40	638000	3570	DFT-s-OFDM PI/2 BPSK	1@1	12.75	10.91	0.0123
48	15	40	638000	3570	DFT-s-OFDM PI/2 BPSK	1@214	11.94	10.1	0.0102
48	15	40	638000	3570	DFT-s-OFDM QPSK	108@54	12.45	10.61	0.0115
48	15	40	638000	3570	DFT-s-OFDM QPSK	1@1	12.76	10.92	0.0124
48	15	40	638000	3570	DFT-s-OFDM QPSK	1@214	11.95	10.11	0.0103
48	15	40	638000	3570	DFT-s-OFDM 16 QAM	108@54	12	10.16	0.0104
48	15	40	638000	3570	DFT-s-OFDM 16 QAM	1@1	12.12	10.28	0.0107
48	15	40	638000	3570	DFT-s-OFDM 16 QAM	1@214	11.32	9.48	0.0089
48	15	40	638000	3570	DFT-s-OFDM 64 QAM	108@54	12.01	10.17	0.0104
48	15	40	638000	3570	DFT-s-OFDM 64 QAM	1@1	12.26	10.42	0.0110
48	15	40	638000	3570	DFT-s-OFDM 64 QAM	1@214	11.49	9.65	0.0092
48	15	40	638000	3570	DFT-s-OFDM 256 QAM	108@54	12.01	10.17	0.0104
48	15	40	638000	3570	DFT-s-OFDM 256 QAM	1@1	12.35	10.51	0.0112
48	15	40	638000	3570	DFT-s-OFDM 256 QAM	1@214	11.56	9.72	0.0094
48	15	40	638000	3570	CP-OFDM QPSK	108@54	11.49	9.65	0.0092
48	15	40	638000	3570	CP-OFDM QPSK	1@1	11.82	9.98	0.0100
48	15	40	638000	3570	CP-OFDM QPSK	1@214	10.98	9.14	0.0082
48	15	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	108@54	23.3	21.46	0.1400
48	15	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	18.5	16.66	0.0463
48	15	40	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@214	18.38	16.54	0.0451
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	108@54	22.75	20.91	0.1233
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@1	18.58	16.74	0.0472
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@214	18.37	16.53	0.0450
48	15	40	641666	3624.99	DFT-s-OFDM 16 QAM	108@54	21.77	19.93	0.0984
48	15	40	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	18.45	16.61	0.0458
48	15	40	641666	3624.99	DFT-s-OFDM 16 QAM	1@214	18.44	16.6	0.0457
48	15	40	641666	3624.99	DFT-s-OFDM 64 QAM	108@54	20.07	18.23	0.0665
48	15	40	641666	3624.99	DFT-s-OFDM 64 QAM	1@1	18.5	16.66	0.0463

48	15	40	641666	3624.99	DFT-s-OFDM 64 QAM	1@214	18.31	16.47	0.0444
48	15	40	641666	3624.99	DFT-s-OFDM 256 QAM	108@54	18.13	16.29	0.0426
48	15	40	641666	3624.99	DFT-s-OFDM 256 QAM	1@1	18.09	16.25	0.0422
48	15	40	641666	3624.99	DFT-s-OFDM 256 QAM	1@214	17.96	16.12	0.0409
48	15	40	641666	3624.99	CP-OFDM QPSK	108@54	21.26	19.42	0.0875
48	15	40	641666	3624.99	CP-OFDM QPSK	1@1	18.6	16.76	0.0474
48	15	40	641666	3624.99	CP-OFDM QPSK	1@214	18.41	16.57	0.0454
48	15	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	108@54	11.94	10.1	0.0102
48	15	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	1@1	11.9	10.06	0.0101
48	15	40	645332	3679.98	DFT-s-OFDM PI/2 BPSK	1@214	12.01	10.17	0.0104
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	108@54	11.95	10.11	0.0103
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@1	11.92	10.08	0.0102
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@214	11.97	10.13	0.0103
48	15	40	645332	3679.98	DFT-s-OFDM 16 QAM	108@54	11.47	9.63	0.0092
48	15	40	645332	3679.98	DFT-s-OFDM 16 QAM	1@1	11.4	9.56	0.0090
48	15	40	645332	3679.98	DFT-s-OFDM 16 QAM	1@214	11.45	9.61	0.0091
48	15	40	645332	3679.98	DFT-s-OFDM 64 QAM	108@54	11.46	9.62	0.0092
48	15	40	645332	3679.98	DFT-s-OFDM 64 QAM	1@1	11.3	9.46	0.0088
48	15	40	645332	3679.98	DFT-s-OFDM 64 QAM	1@214	11.44	9.6	0.0091
48	15	40	645332	3679.98	DFT-s-OFDM 256 QAM	108@54	11.46	9.62	0.0092
48	15	40	645332	3679.98	DFT-s-OFDM 256 QAM	1@1	11.46	9.62	0.0092
48	15	40	645332	3679.98	DFT-s-OFDM 256 QAM	1@214	11.55	9.71	0.0094
48	15	40	645332	3679.98	CP-OFDM QPSK	108@54	10.92	9.08	0.0081
48	15	40	645332	3679.98	CP-OFDM QPSK	1@1	10.99	9.15	0.0082
48	15	40	645332	3679.98	CP-OFDM QPSK	1@214	11.03	9.19	0.0083
48	15	10	637000	3555	DFT-s-OFDM PI/2 BPSK	1@1	23.16	21.32	0.1355
48	15	10	637000	3555	DFT-s-OFDM QPSK	1@1	23.2	21.36	0.1368
48	15	10	637000	3555	DFT-s-OFDM 16 QAM	1@1	22.15	20.31	0.1074
48	15	10	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	22.72	20.88	0.1225
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.8	20.96	0.1247
48	15	10	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.72	19.88	0.0973
48	15	10	646332	3694.98	DFT-s-OFDM PI/2 BPSK	1@1	22.6	20.76	0.1191
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@1	22.66	20.82	0.1208
48	15	10	646332	3694.98	DFT-s-OFDM 16 QAM	1@1	21.66	19.82	0.0959
48	15	15	637168	3557.52	DFT-s-OFDM PI/2 BPSK	1@1	19.21	17.37	0.0546

48	15	15	637168	3557.52	DFT-s-OFDM QPSK	1@1	19.26	17.42	0.0552
48	15	15	637168	3557.52	DFT-s-OFDM 16 QAM	1@1	18.14	16.3	0.0427
48	15	15	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	22.78	20.94	0.1242
48	15	15	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.78	20.94	0.1242
48	15	15	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.72	19.88	0.0973
48	15	15	646166	3692.49	DFT-s-OFDM PI/2 BPSK	1@1	22.62	20.78	0.1197
48	15	15	646166	3692.49	DFT-s-OFDM QPSK	1@1	22.66	20.82	0.1208
48	15	15	646166	3692.49	DFT-s-OFDM 16 QAM	1@1	21.61	19.77	0.0948
48	15	20	637334	3560.01	DFT-s-OFDM PI/2 BPSK	1@1	19.25	17.41	0.0551
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@1	19.3	17.46	0.0557
48	15	20	637334	3560.01	DFT-s-OFDM 16 QAM	1@1	18.17	16.33	0.0430
48	15	20	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	22.74	20.9	0.1230
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.76	20.92	0.1236
48	15	20	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.76	19.92	0.0982
48	15	20	646000	3690	DFT-s-OFDM PI/2 BPSK	1@1	22.62	20.78	0.1197
48	15	20	646000	3690	DFT-s-OFDM QPSK	1@1	22.69	20.85	0.1216
48	15	20	646000	3690	DFT-s-OFDM 16 QAM	1@1	21.67	19.83	0.0962
48	15	30	637668	3565.02	DFT-s-OFDM PI/2 BPSK	1@1	23.28	21.44	0.1393
48	15	30	637668	3565.02	DFT-s-OFDM QPSK	1@1	23.3	21.46	0.1400
48	15	30	637668	3565.02	DFT-s-OFDM 16 QAM	1@1	22.52	20.68	0.1169
48	15	30	641666	3624.99	DFT-s-OFDM PI/2 BPSK	1@1	22.74	20.9	0.1230
48	15	30	641666	3624.99	DFT-s-OFDM QPSK	1@1	22.82	20.98	0.1253
48	15	30	641666	3624.99	DFT-s-OFDM 16 QAM	1@1	21.79	19.95	0.0989
48	15	30	645666	3684.99	DFT-s-OFDM PI/2 BPSK	1@1	22.75	20.91	0.1233
48	15	30	645666	3684.99	DFT-s-OFDM QPSK	1@1	22.82	20.98	0.1253
48	15	30	645666	3684.99	DFT-s-OFDM 16 QAM	1@1	21.8	19.96	0.0991

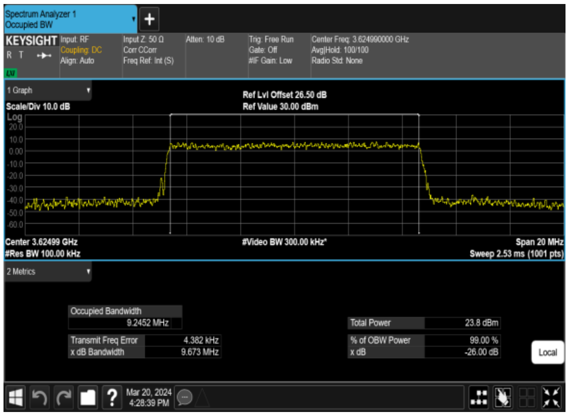
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00341	**PASS**	NV
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00255	**PASS**	LV
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00326	**PASS**	HV
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00144	**PASS**	-30℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00357	**PASS**	-20℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00245	**PASS**	-10℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00132	**PASS**	0℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00625	**PASS**	10℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00337	**PASS**	20℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00412	**PASS**	30℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00326	**PASS**	40℃
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	100@0	0.00142	**PASS**	50℃

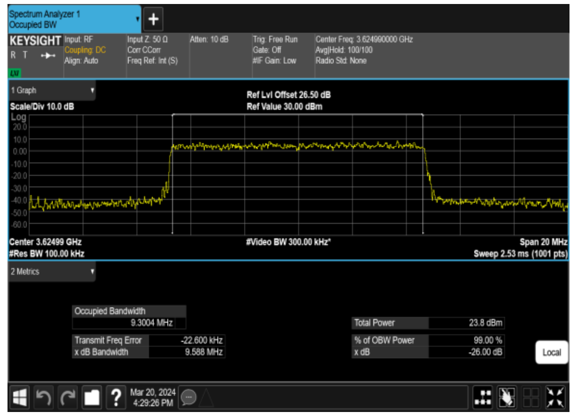
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
48	15	10	641666	3624.99	CP-OFDM QPSK	52@0	9.2452	9.673
48	15	10	641666	3624.99	CP-OFDM 16 QAM	52@0	9.3004	9.588
48	15	10	641666	3624.99	CP-OFDM 64 QAM	52@0	9.2836	9.633
48	15	10	641666	3624.99	CP-OFDM 256 QAM	52@0	9.2416	9.654
48	15	15	641666	3624.99	CP-OFDM QPSK	79@0	14.095	14.57
48	15	15	641666	3624.99	CP-OFDM 16 QAM	79@0	14.114	14.57
48	15	15	641666	3624.99	CP-OFDM 64 QAM	79@0	14.138	14.58
48	15	15	641666	3624.99	CP-OFDM 256 QAM	79@0	14.089	14.63
48	15	20	641666	3624.99	CP-OFDM QPSK	106@0	18.877	19.51
48	15	20	641666	3624.99	CP-OFDM 16 QAM	106@0	18.962	19.54
48	15	20	641666	3624.99	CP-OFDM 64 QAM	106@0	18.913	19.61
48	15	20	641666	3624.99	CP-OFDM 256 QAM	106@0	18.898	19.57
48	15	30	641666	3624.99	CP-OFDM QPSK	160@0	28.565	29.48
48	15	30	641666	3624.99	CP-OFDM 16 QAM	160@0	28.407	29.57
48	15	30	641666	3624.99	CP-OFDM 64 QAM	160@0	28.477	29.51
48	15	30	641666	3624.99	CP-OFDM 256 QAM	160@0	28.566	29.59
48	15	40	641666	3624.99	CP-OFDM QPSK	216@0	38.626	39.85
48	15	40	641666	3624.99	CP-OFDM 16 QAM	216@0	38.46	39.86
48	15	40	641666	3624.99	CP-OFDM 64 QAM	216@0	38.562	39.79
48	15	40	641666	3624.99	CP-OFDM 256 QAM	216@0	38.605	39.86

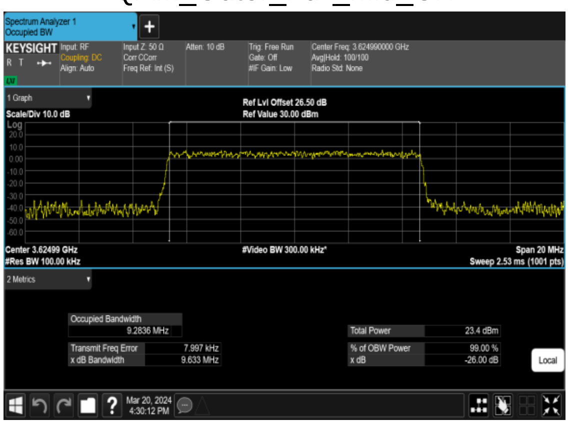
N48(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



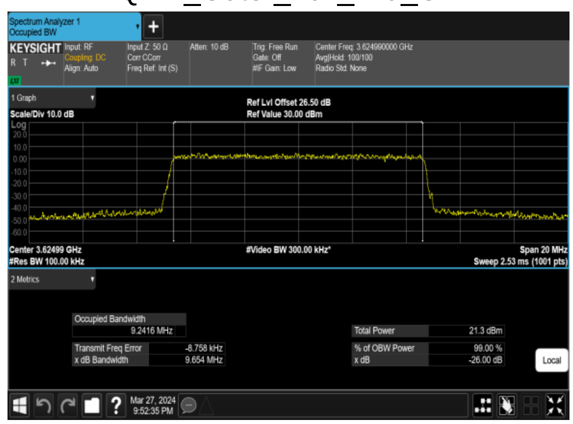
N48(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



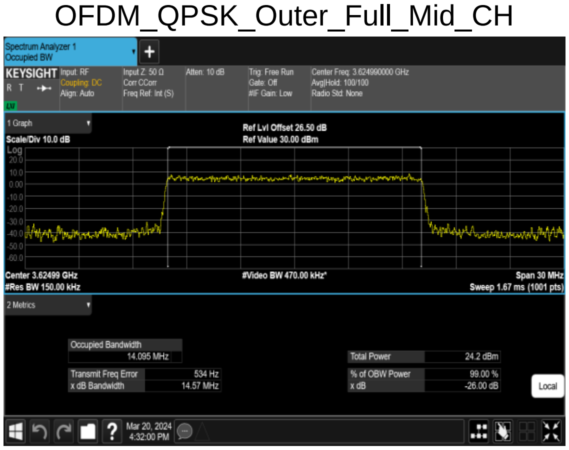
N48(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



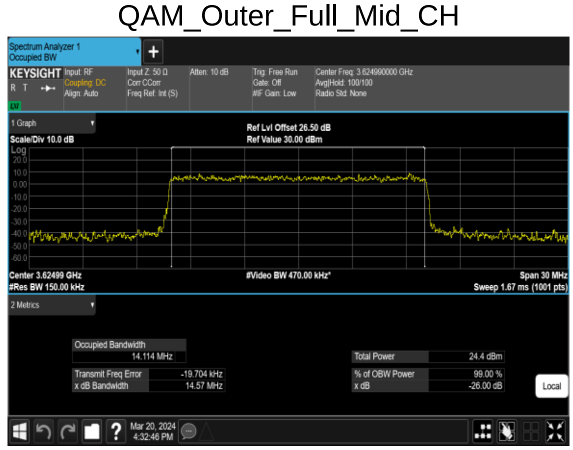
N48(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



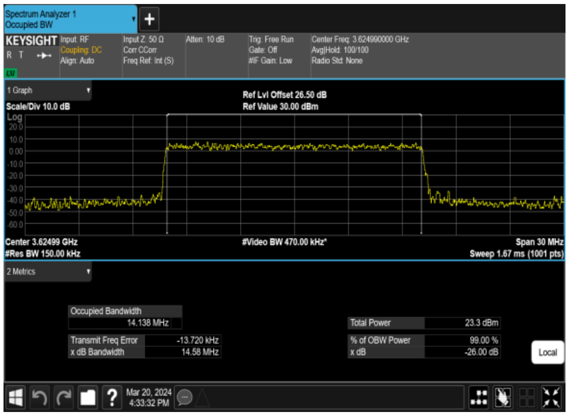
N48(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



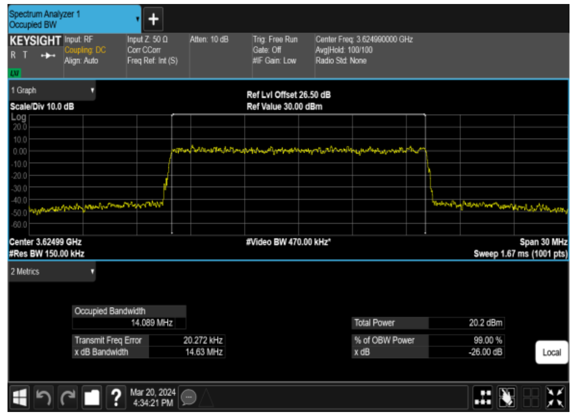
N48(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



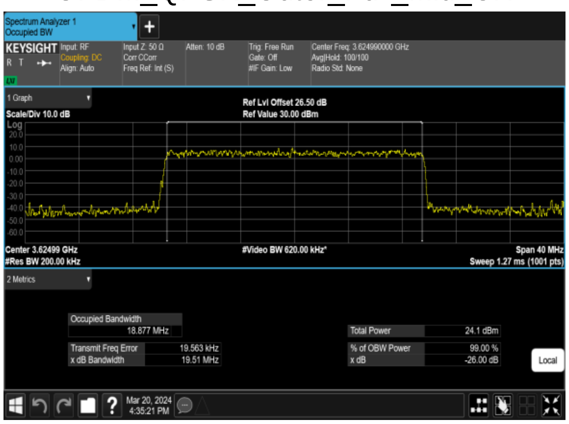
N48(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



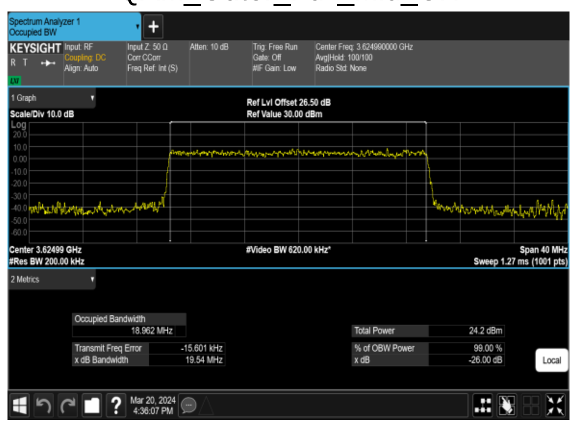
N48(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



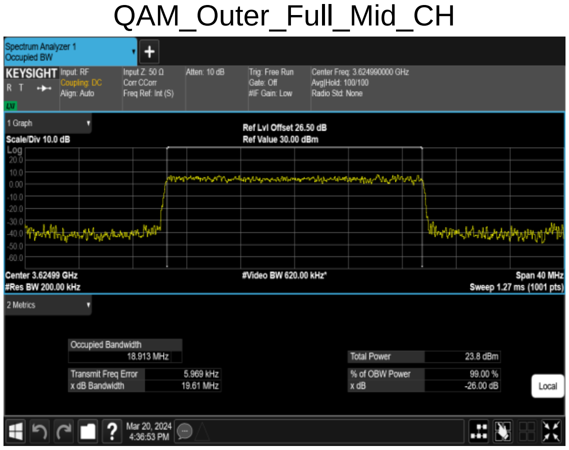
N48(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



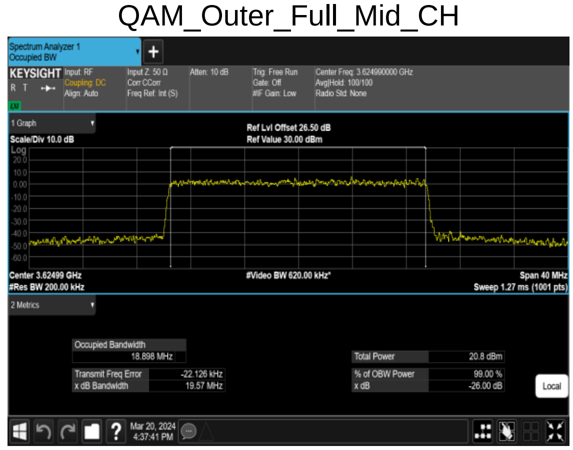
N48(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



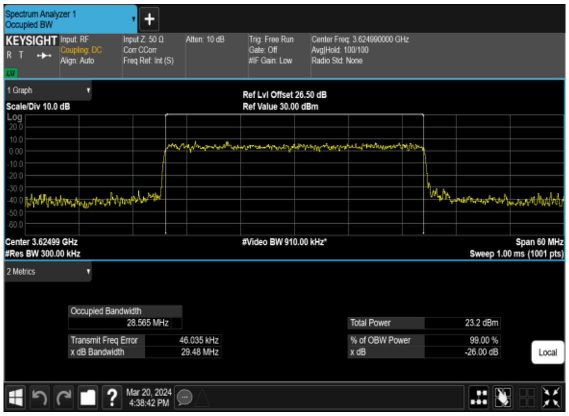
N48(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



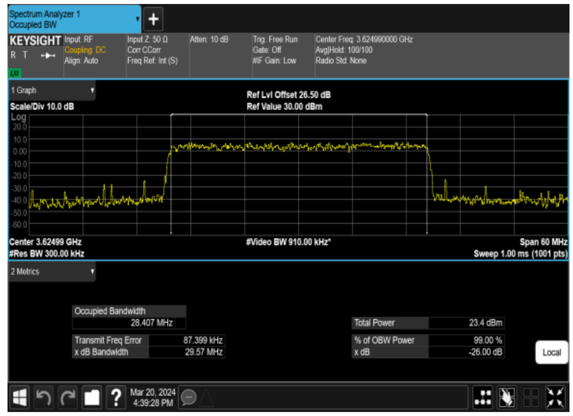
N48(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



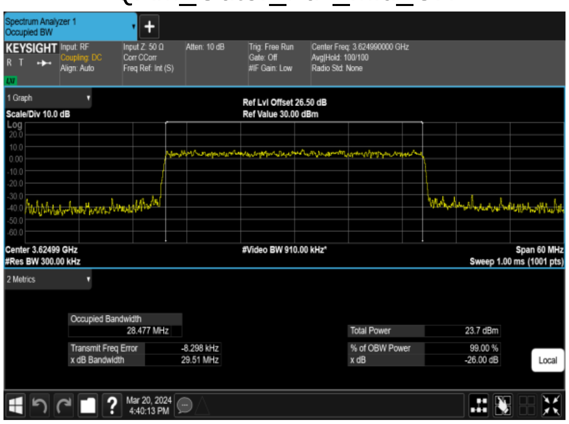
N48(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



N48(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N48(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



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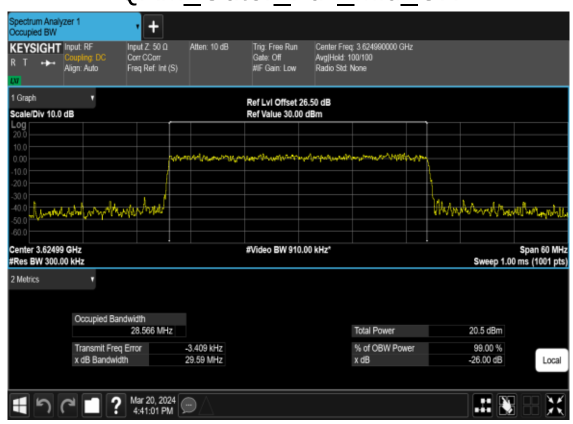
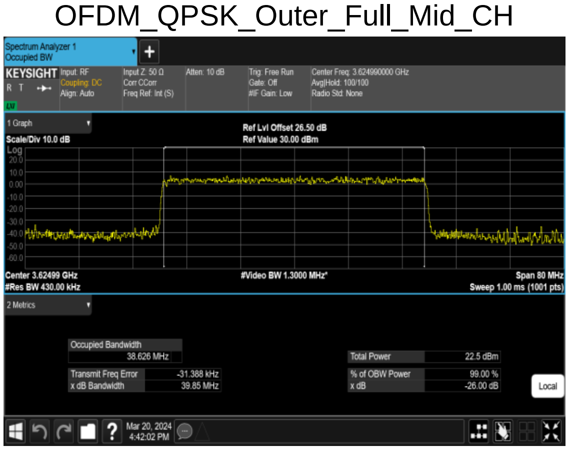
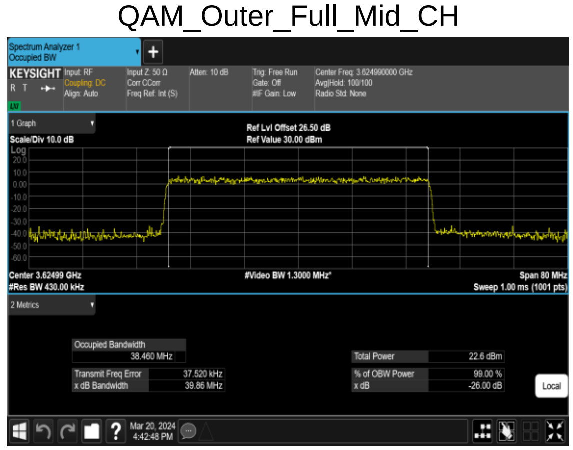


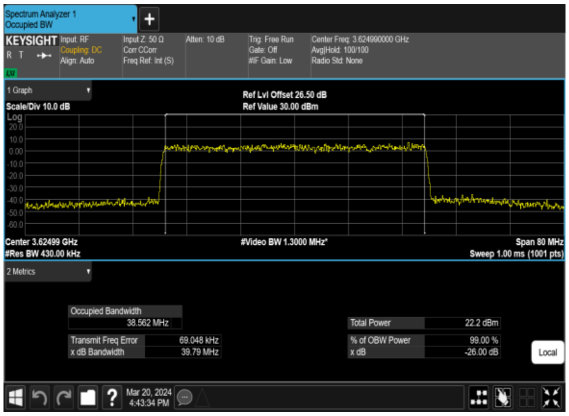
N48(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



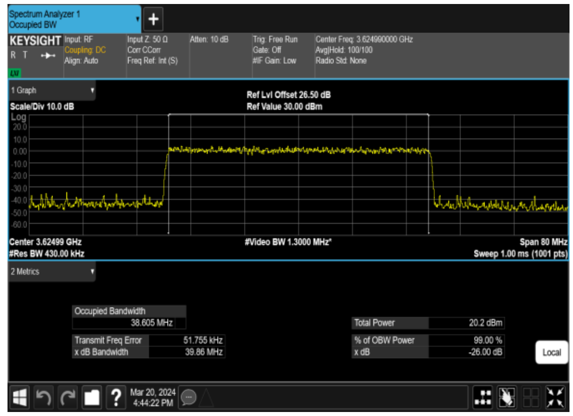
N48(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N48(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N48(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



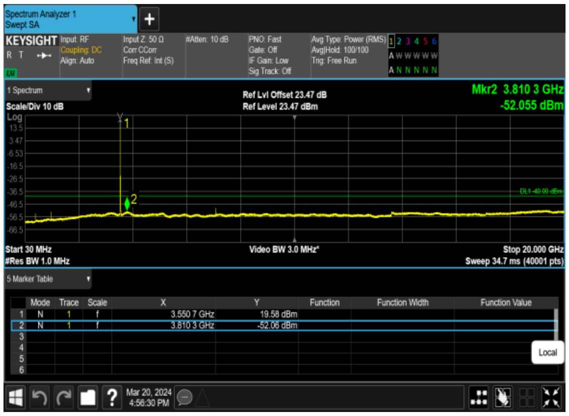
Conducted Spurious Emissions

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

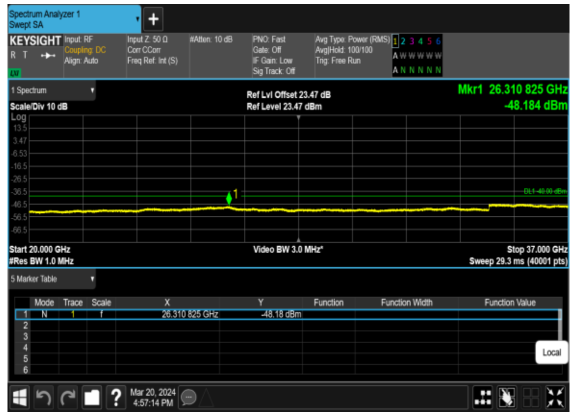
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

48	15	40	645332	3679.98	DFT-s-OFDM BPSK	1@0	see graph	**---**
48	15	40	645332	3679.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@0	see graph	**---**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

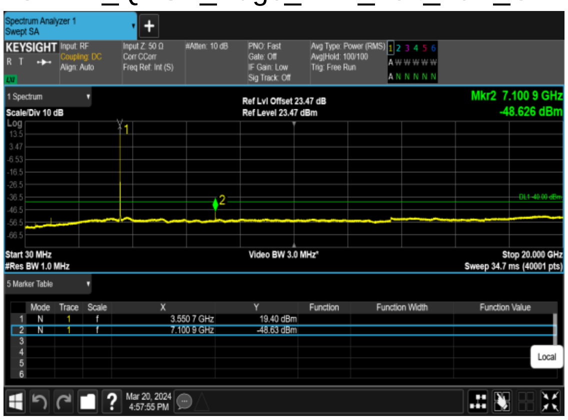
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



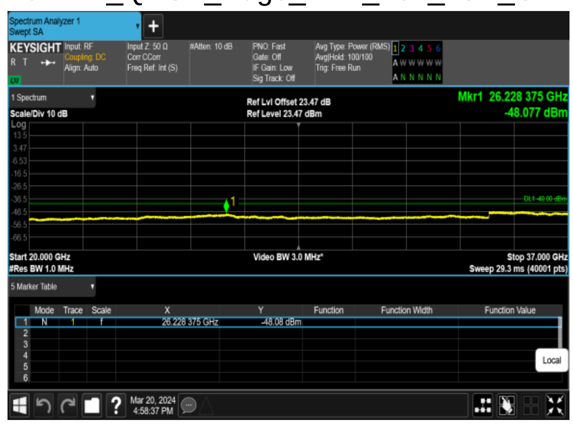
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



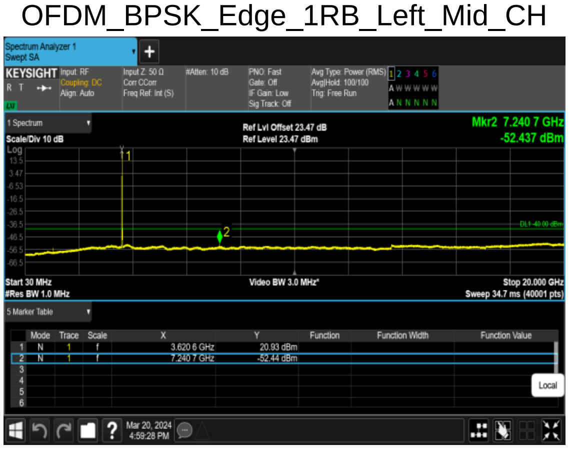
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



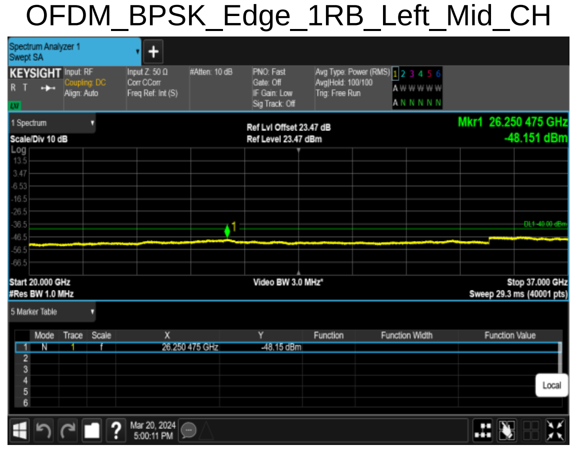
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



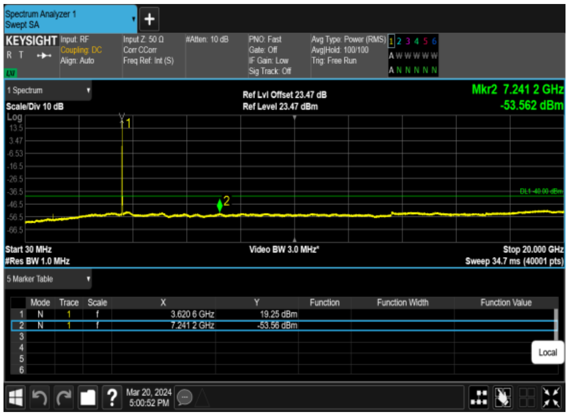
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



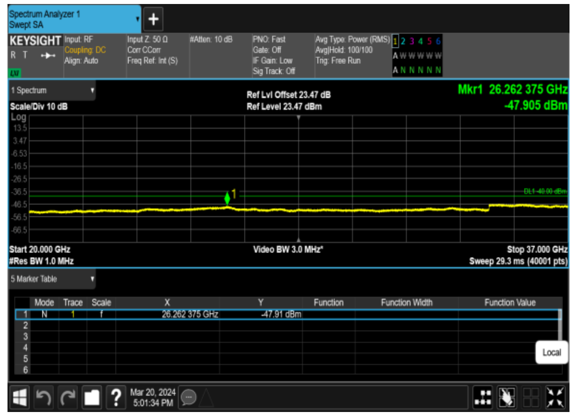
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



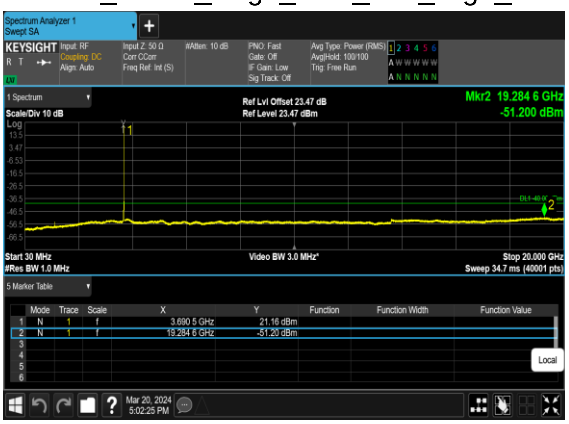
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



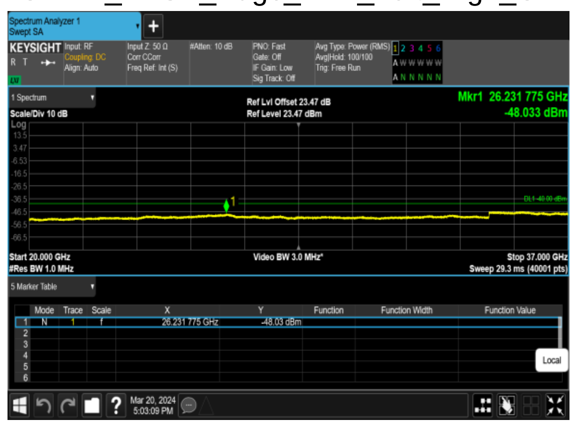
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



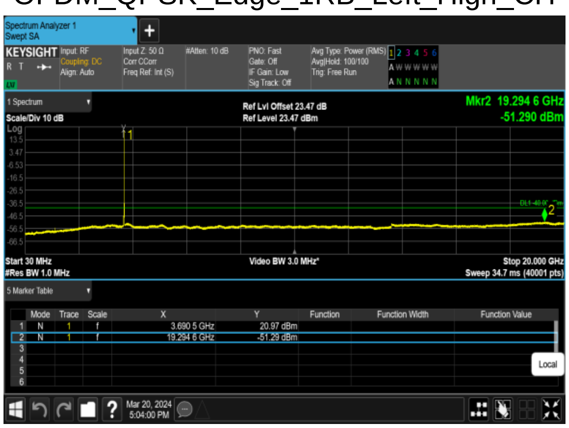
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



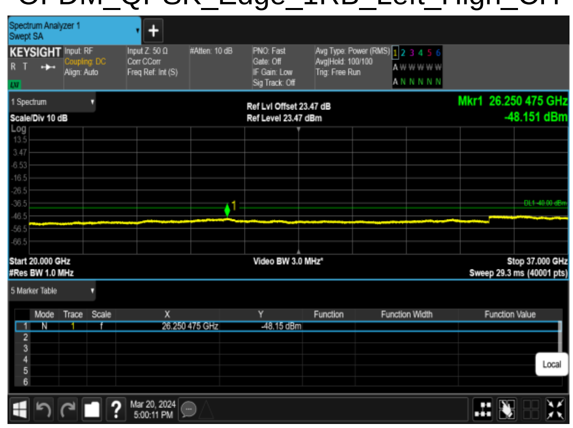
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



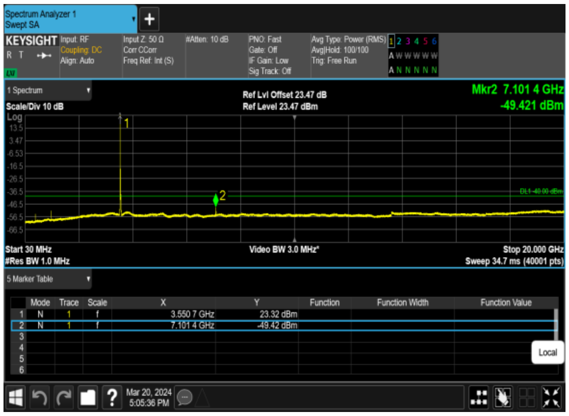
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



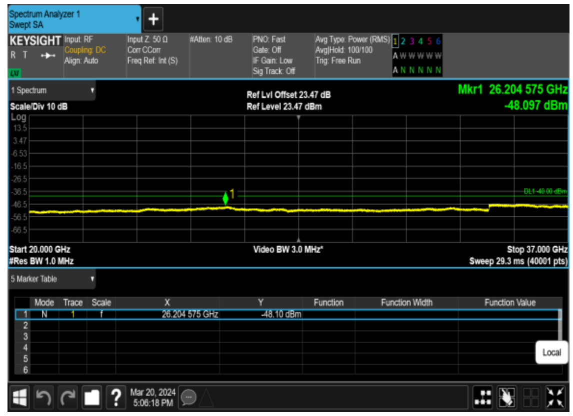
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



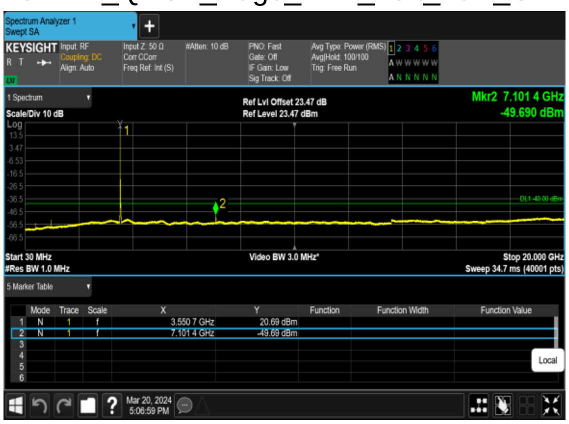
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



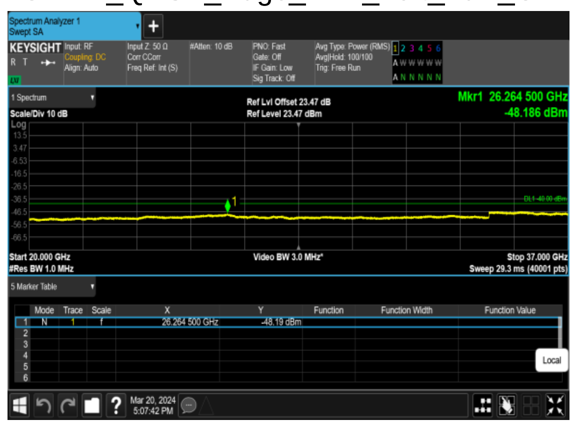
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



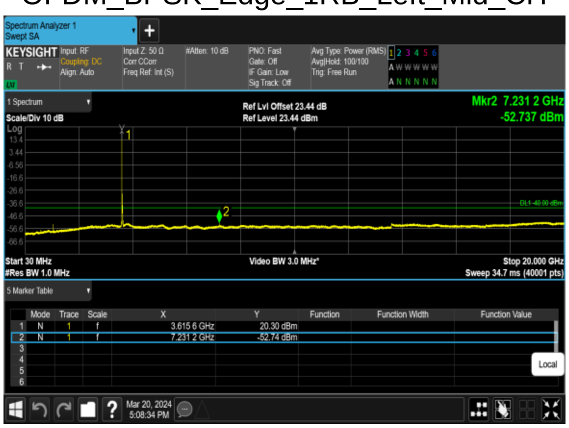
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



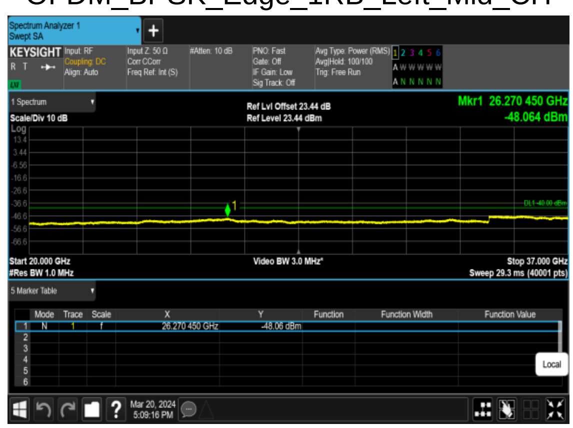
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



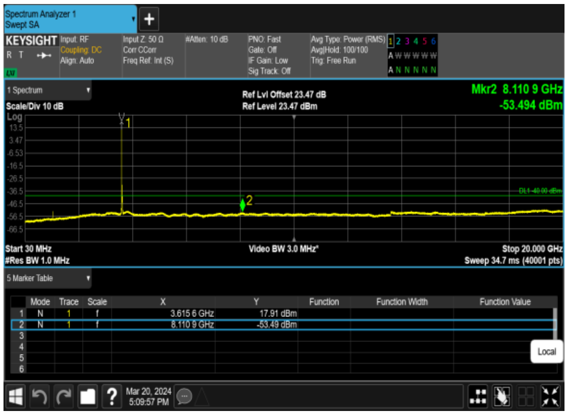
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

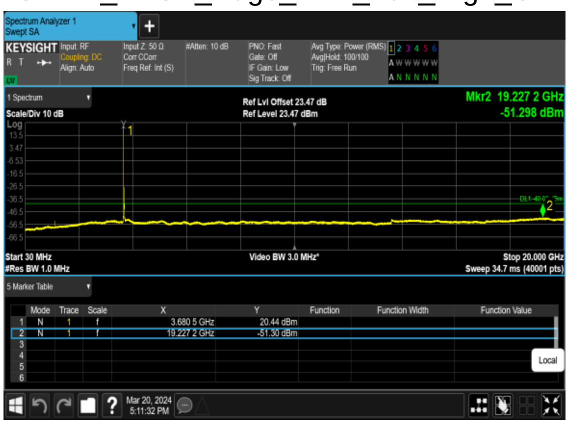


N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

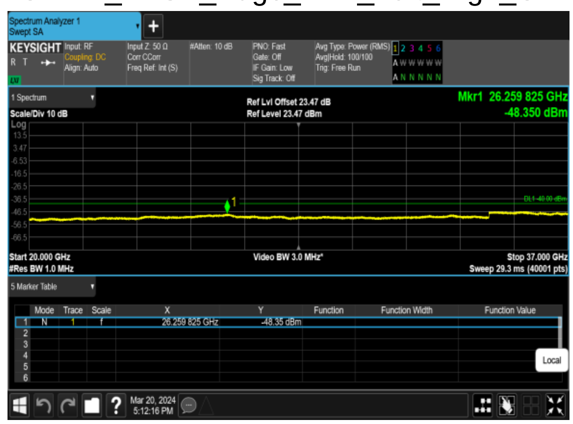


N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

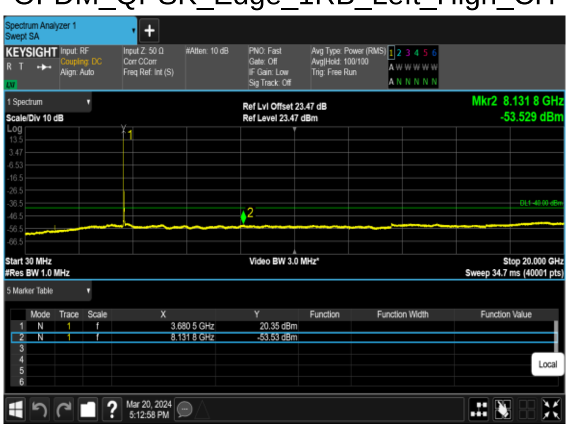
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



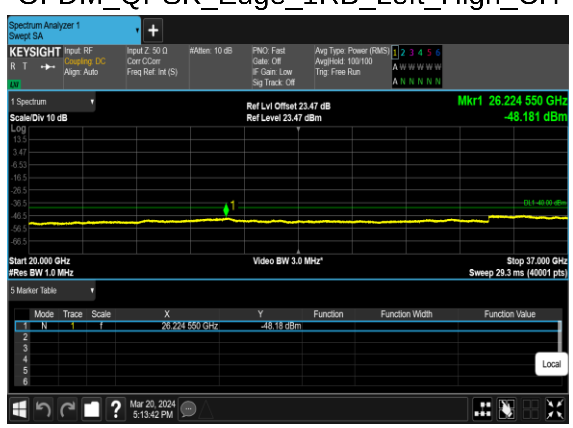
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



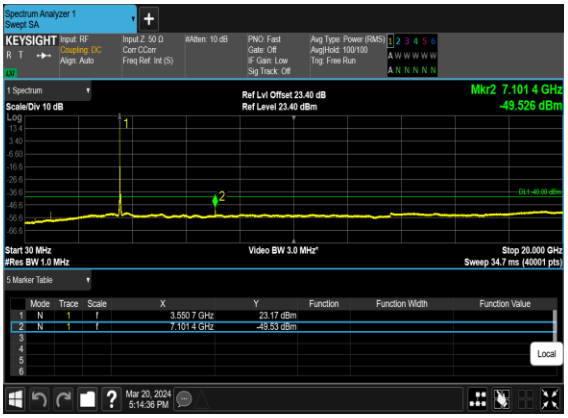
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



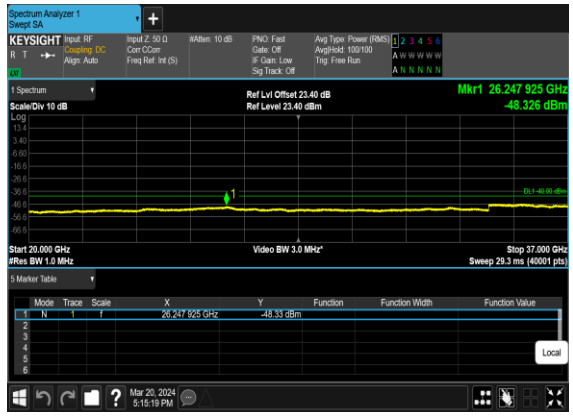
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



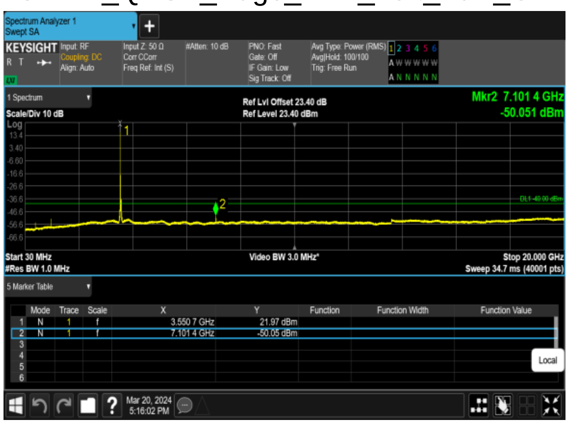
N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



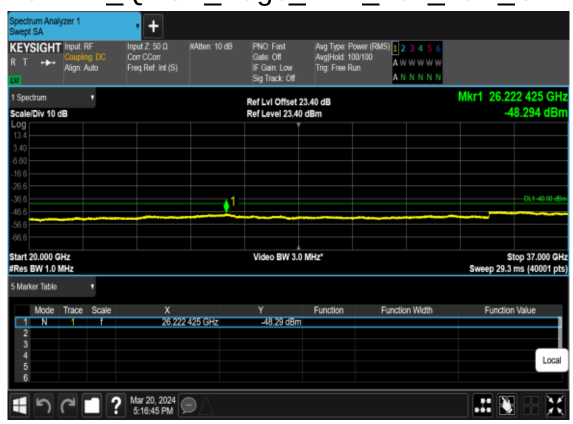
N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



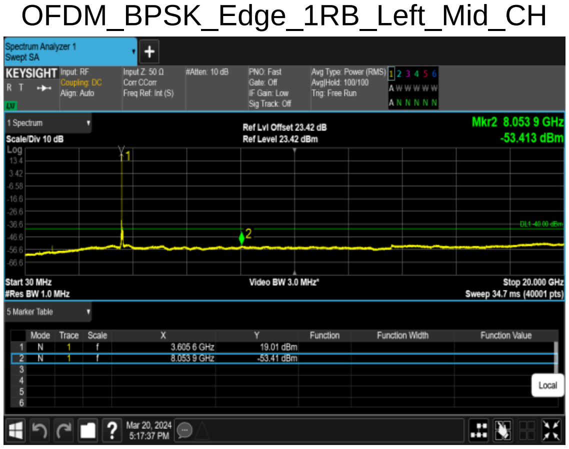
N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



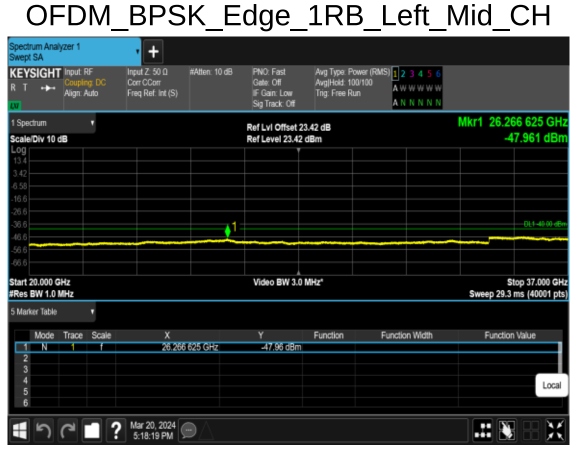
N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



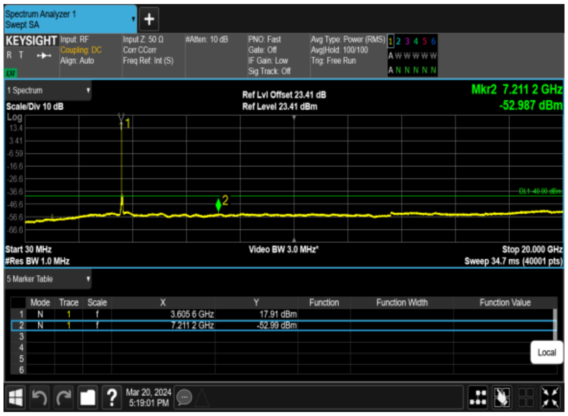
N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

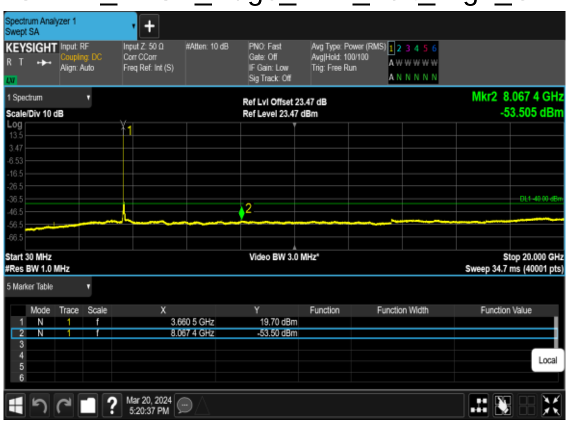


N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

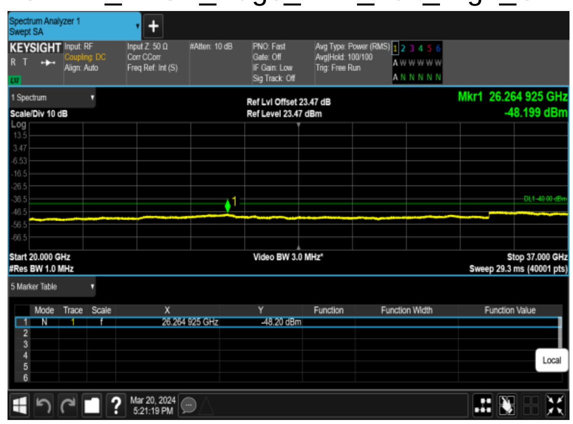


N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

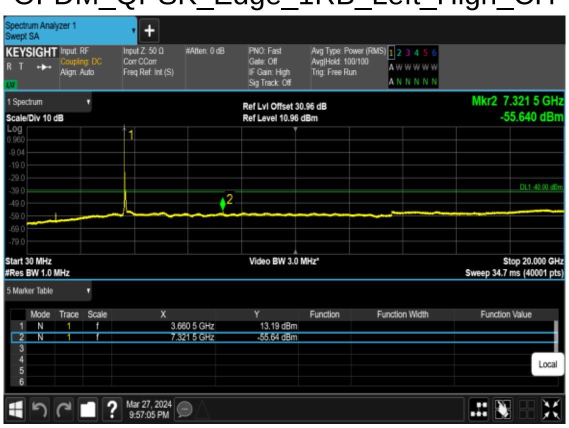
N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



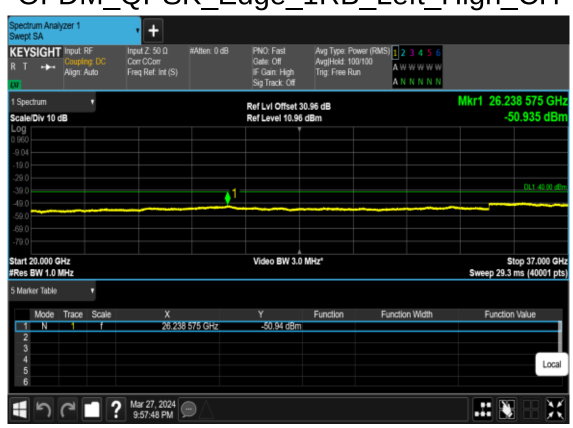
N48(40M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N48(40M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



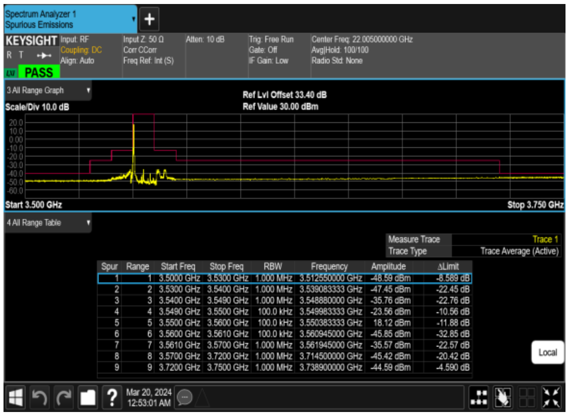
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
48	15	10	637000	3555.0	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
48	15	10	646332	3694.98	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
48	15	20	637334	3560.01	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
48	15	20	646000	3690.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**

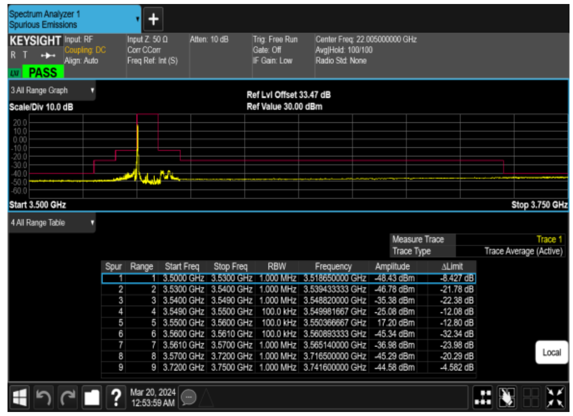
48	15	20	646000	3690.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	1@215	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	1@215	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM BPSK	216@0	see graph	**PASS**
48	15	40	638000	3570.0	DFT-s-OFDM QPSK	216@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM BPSK	1@215	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	1@215	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM BPSK	216@0	see graph	**PASS**
48	15	40	645332	3679.98	DFT-s-OFDM QPSK	216@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	1@51	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	1@51	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM BPSK	50@0	see graph	**PASS**
48	15	10	641666	3624.99	DFT-s-OFDM QPSK	50@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
48	15	20	641666	3624.99	DFT-s-OFDM	100@0	see graph	**PASS**

					QPSK			
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	1@215	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	1@215	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM BPSK	216@0	see graph	**PASS**
48	15	40	641666	3624.99	DFT-s-OFDM QPSK	216@0	see graph	**PASS**

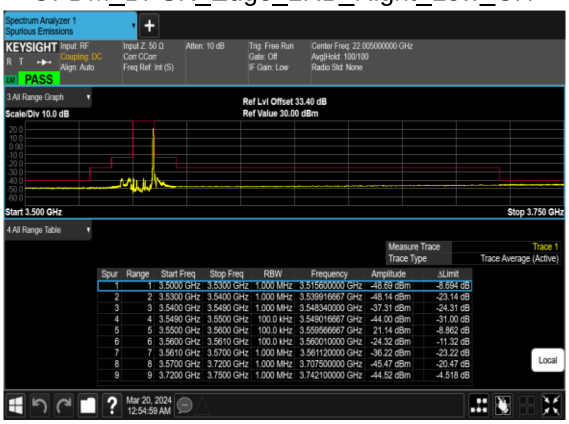
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



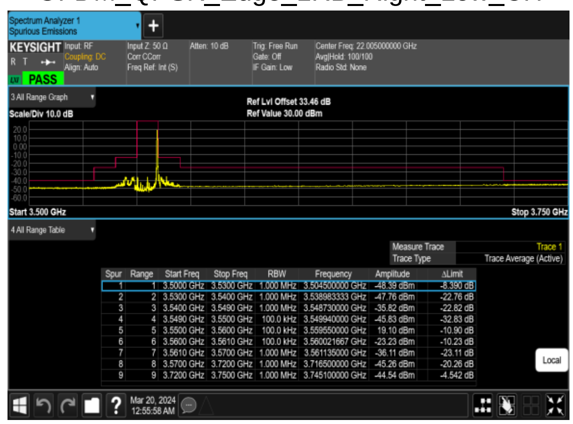
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



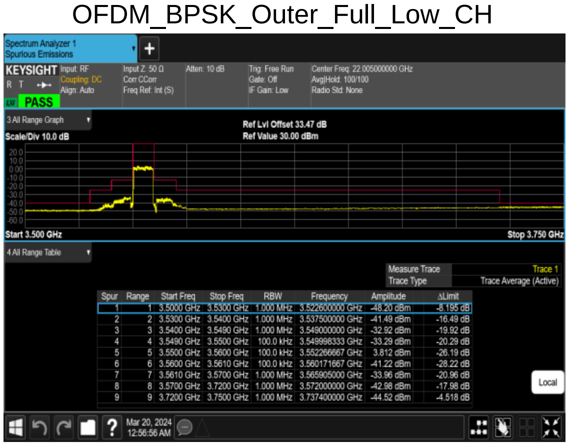
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_Low_CH



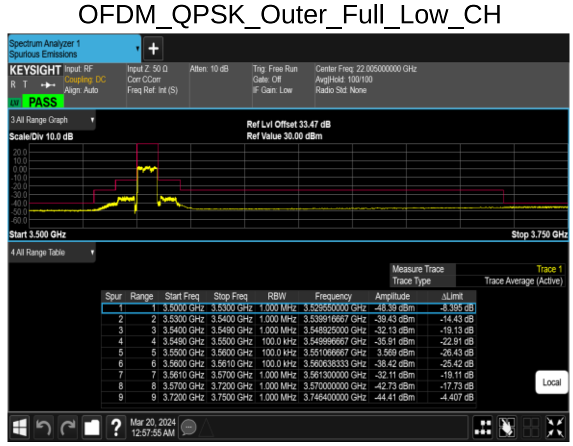
N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Low_CH



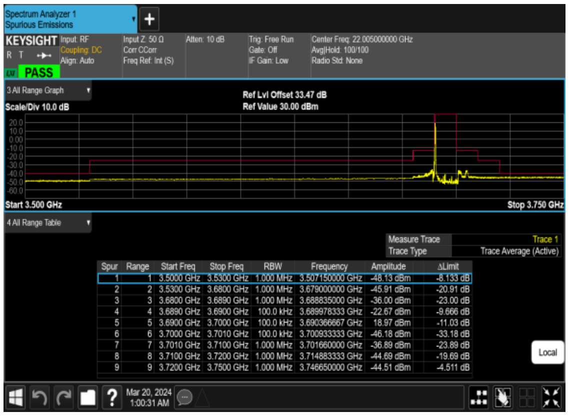
N48(10M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



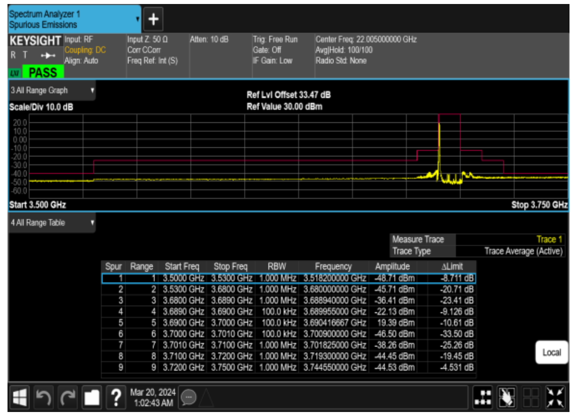
N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



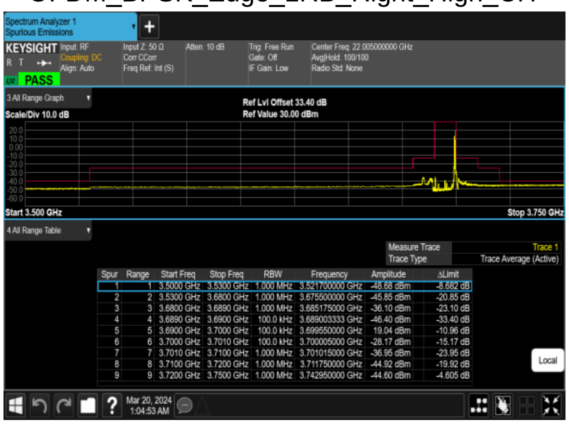
N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N48(10M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N48(10M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



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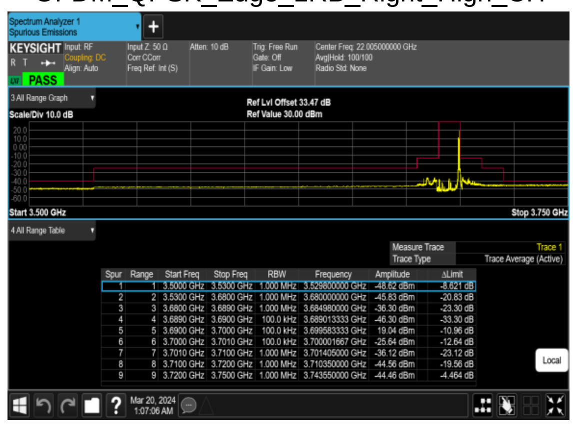
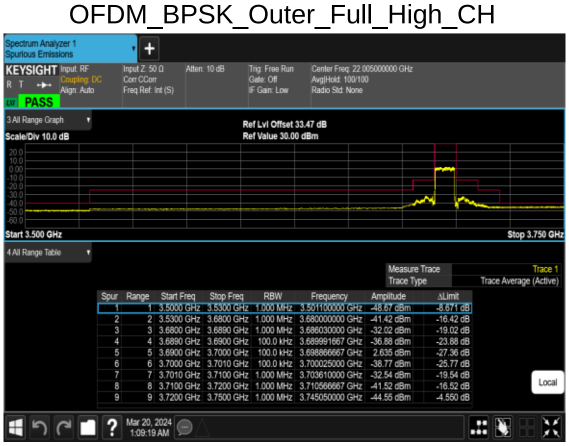
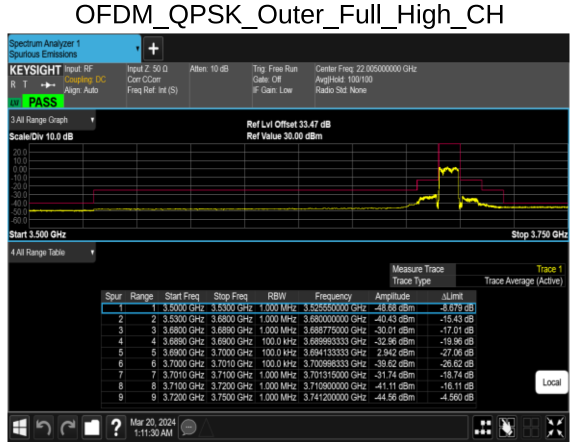


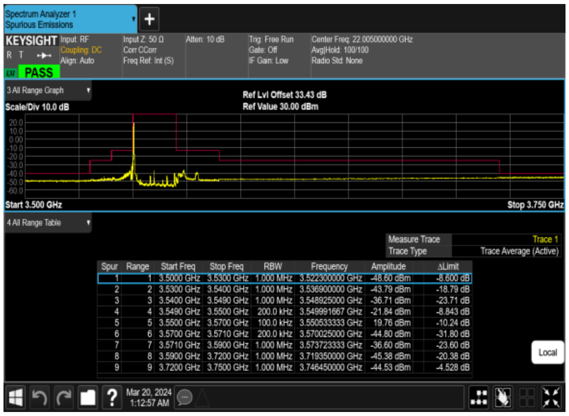
N48(10M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



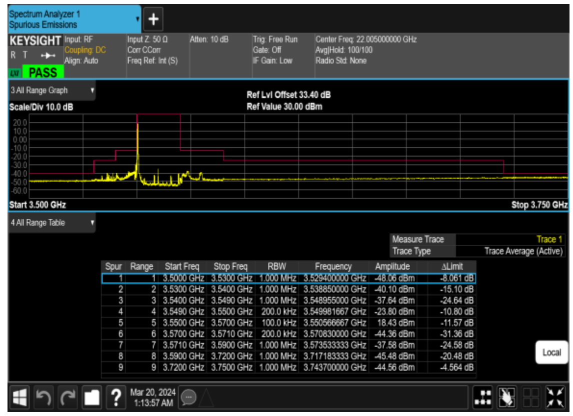
N48(10M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



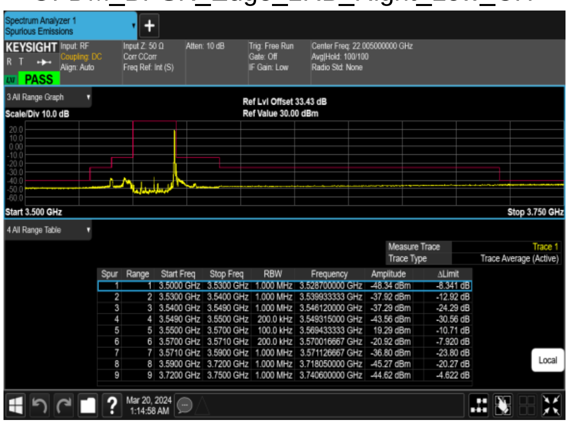
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



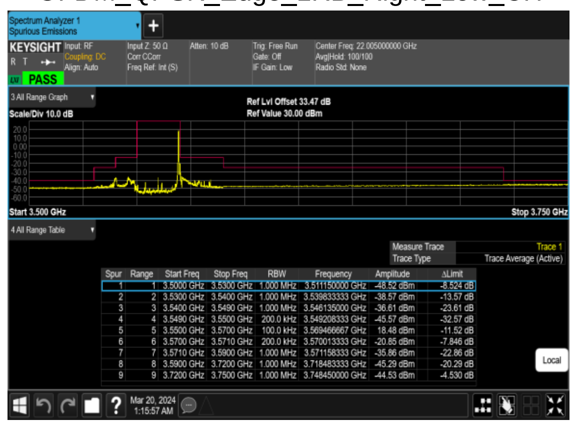
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



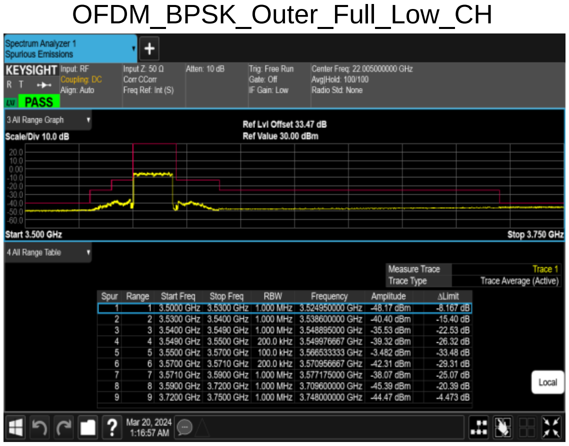
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_Low_CH



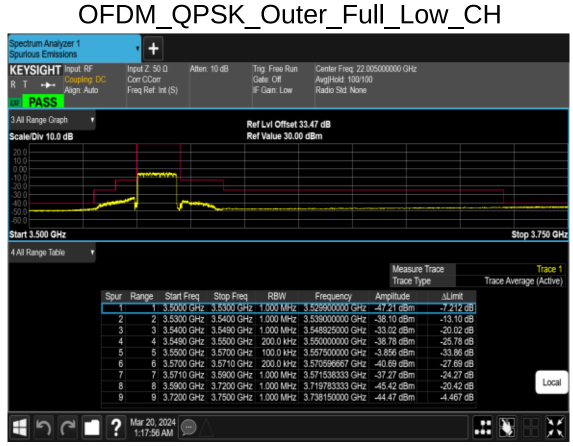
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_Low_CH



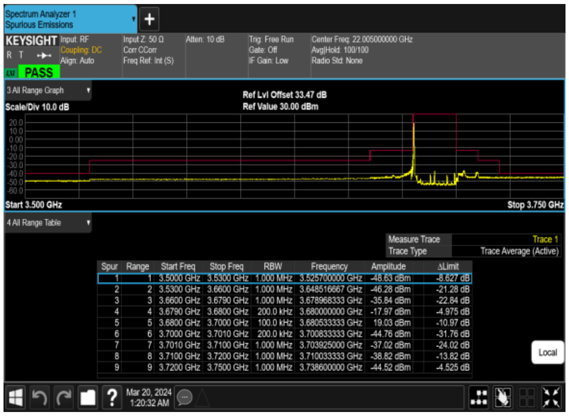
N48(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



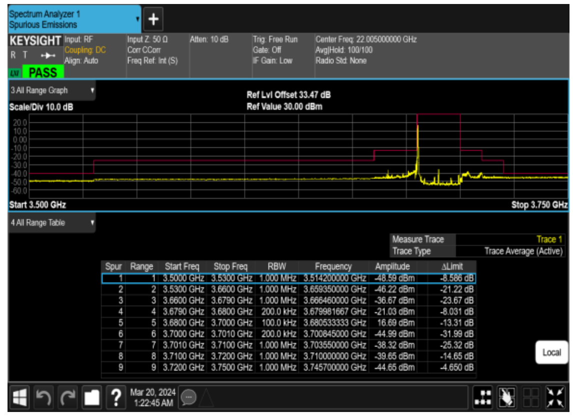
N48(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



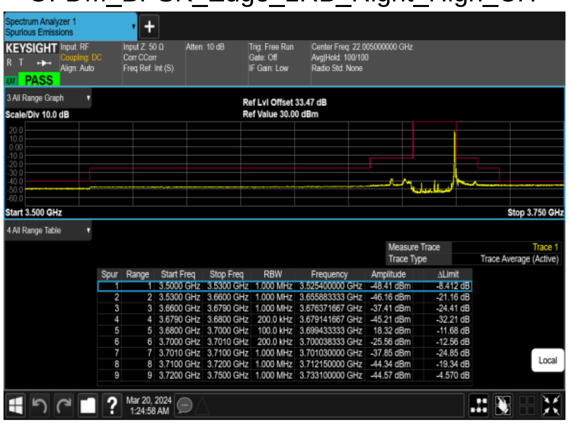
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



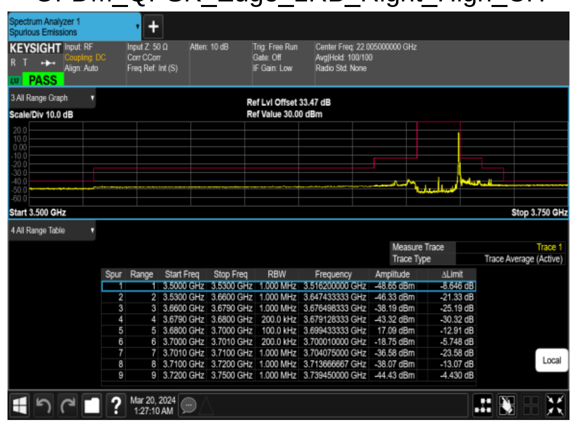
N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



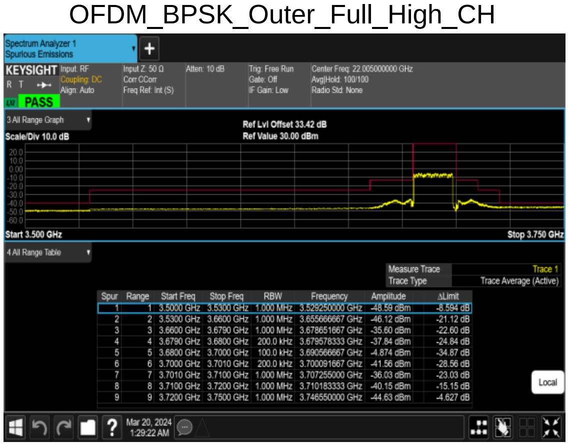
N48(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



N48(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N48(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N48(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH