



FCC RF Test Report

APPLICANT : Honeywell International Inc
EQUIPMENT : mobile computer
BRAND NAME : Honeywell
MODEL NAME : CT37X1N
FCC ID : HD5-CT37X1N
STANDARD : 47 CFR Part 27 Subpart O (3700-3980MHz)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S) : Sep. 20, 2024 ~ Oct 29, 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 C63.26-2015 and shown compliance with the applicable technical standards.

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

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (Kunshan)

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



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	5
1.5 Modification of EUT	6
1.6 Maximum EIRP and Emission Designator	6
1.7 Testing Location	7
1.8 Test Software	8
1.9 Applicable Standards	8
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
2.1 Test Mode	9
2.2 Connection Diagram of Test System	10
2.3 Support Unit used in test configuration and system	10
2.4 Measurement Results Explanation Example	10
2.5 Frequency List of Low/Middle/High Channels	11
3 CONDUCTED TEST ITEMS	13
3.1 Measuring Instruments	13
3.2 Test Setup	13
3.3 Test Result of Conducted Test	13
3.4 Conducted Output Power and EIRP	14
3.5 Peak-to-Average Ratio	15
3.6 Occupied Bandwidth	16
3.7 Conducted Band Edge	17
3.8 Conducted Spurious Emission	18
3.9 Frequency Stability	19
4 RADIATED TEST ITEMS	20
4.1 Measuring Instruments	20
4.2 Test Setup	20
4.3 Test Result of Radiated Test	21
4.4 Radiated Spurious Emission	22
5 LIST OF MEASURING EQUIPMENT	23
6 MEASUREMENT UNCERTAINTY	24
APPENDIX A. TEST RESULTS OF CONDUCTED TEST	
APPENDIX B. TEST RESULTS OF RADIATED TEST	
APPENDIX C. TEST SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG461912S	Rev. 01	Initial issue of report	Nov. 05, 2024



SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§27.50(j)(3)	Equivalent Isotropic Radiated Power (5G NR n77, n78)	EIRP < 1Watt		
3.5	§27.50(j)(4)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §27.53(l)(2)	Conducted Band Edge Measurement (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §27.53(l)(2)	Conducted Spurious Emission (5G NR n77, n78)	< 43+10log10(P[Watts])	PASS	-
3.9	§27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §27.53(l)(2)	Radiated Spurious Emission (5G NR n77, n78)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 35.68 dB at 7584.00 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/manufacture 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

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707

1.2 Manufacturer

Honeywell International Inc
9680 Old Bailes Rd, Fort Mill, SC 29707

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	mobile computer
Brand Name	Honeywell
Model Name	CT37X1N
FCC ID	HD5-CT37X1N
IMEI Code	Conducted: 990021480035821/990021480035839 Radiation: 990021480030723/990021480032281
HW Version	V1.0
SW Version	OS.31.001-HON.31.001
EUT Stage	Identical Prototype

Remark: There are four models, the four models are for different markets and no other difference.

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	30kHz
Bandwidth	n77/n78: 10 / 15 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100MHz
Antenna Gain	<Ant. 2> 5G NR n77: -2.1 dBi 5G NR n78: -2.1 dBi <Ant. 3> 5G NR n77 : -2.1 dBi 5G NR n78: -2.1 dBi <Ant. 4> 5G NR n77: -2.1 dBi 5G NR n78: -2.1 dBi <Ant. 5> 5G NR n77: -1.9 dBi 5G NR n78: -1.9 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP is calculated from max output power and max antenna gain, only the maximum EIRP is shown in the report, 5G NR n77/n78 for Antenna 2.

2. 5G NR n77/n78 support SA and NSA mode. The whole testing has assessed SA mode for n77 by referring to the higher conducted power for conducted test items, n78 covered by n77.
3. The device supports two PAs for 5G NR n77/78 (main PA and other PA), both the PAs are full tested(n78 covered by n77), only the worst EIRP are shown in the report.
4. All the supported EN-DC combinations are verified conducted power, only the EN-DC combination with highest power are shown in the report.
5. The EN-DC mode combination could be referred to the product spec.
6. The device supports HPUE mode for 5G NR n77/n78.

1.5 Modification of EUT

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

1.6 Maximum EIRP and Emission Designator

5G NR n77		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	0.2188	8M61G7D	0.1778	8M62W7D
15	3707.52 ~ 3972.48	0.2234	13M6G7D	0.1762	13M6W7D
20	3710.01 ~ 3969.99	0.2198	18M3G7D	0.1807	18M3W7D
30	3715.02 ~ 3964.98	0.2203	27M9G7D	0.1791	28M0W7D
40	3720.00 ~ 3960.00	0.2249	37M9G7D	0.1858	37M9W7D
50	3725.01 ~ 3954.99	0.2109	47M6G7D	0.1734	47M6W7D
60	3730.02 ~ 3949.98	0.2065	58M0G7D	0.1641	58M1W7D
70	3735.00 ~ 3945.00	0.2042	67M6G7D	0.1687	67M6W7D
80	3740.01 ~ 3939.99	0.2000	77M5G7D	0.1629	77M7W7D
90	3745.02 ~ 3934.98	0.2009	87M7G7D	0.1622	87M7W7D
100	3750.00 ~ 3930.00	0.2213	97M7G7D	0.1799	97M6W7D



5G NR n78		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	0.2094	8M61G7D	0.1734	8M62W7D
15	3707.52 ~ 3792.48	0.2099	13M6G7D	0.1730	13M6W7D
20	3710.01 ~ 3789.99	0.2104	18M3G7D	0.1799	18M3W7D
30	3715.02 ~ 3784.98	0.2223	27M9G7D	0.1791	28M0W7D
40	3720.00 ~ 3780.00	0.2193	37M9G7D	0.1816	37M9W7D
50	3725.01 ~ 3774.99	0.2143	47M6G7D	0.1671	47M6W7D
60	3730.02 ~ 3769.98	0.2109	58M0G7D	0.1782	58M1W7D
70	3735.00 ~ 3765.00	0.2153	67M6G7D	0.2118	67M6W7D
80	3740.01 ~ 3759.99	0.2143	77M5G7D	0.1791	77M7W7D
90	3745.02 ~ 3754.98	0.2148	87M7G7D	0.1799	87M7W7D
100	3750.00 ~ 3750.00	0.2143	97M7G7D	0.1770	97M6W7D

Note:

1. 5G NR Band n77 overlaps the entire frequency range of Band n78, and n77 power > n78 power, therefore the conducted test results of n77 provided in this report cover n78.
2. All modulations have been tested, and only the worst test results of PSK & QAM are shown in the report.

1.7 Testing Location

Sporton International Inc. (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

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	SPORTON	Part2224_Ver5.0 200330	5.0
2.	03CH04-KS	AUDIX	E3	210616

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 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.

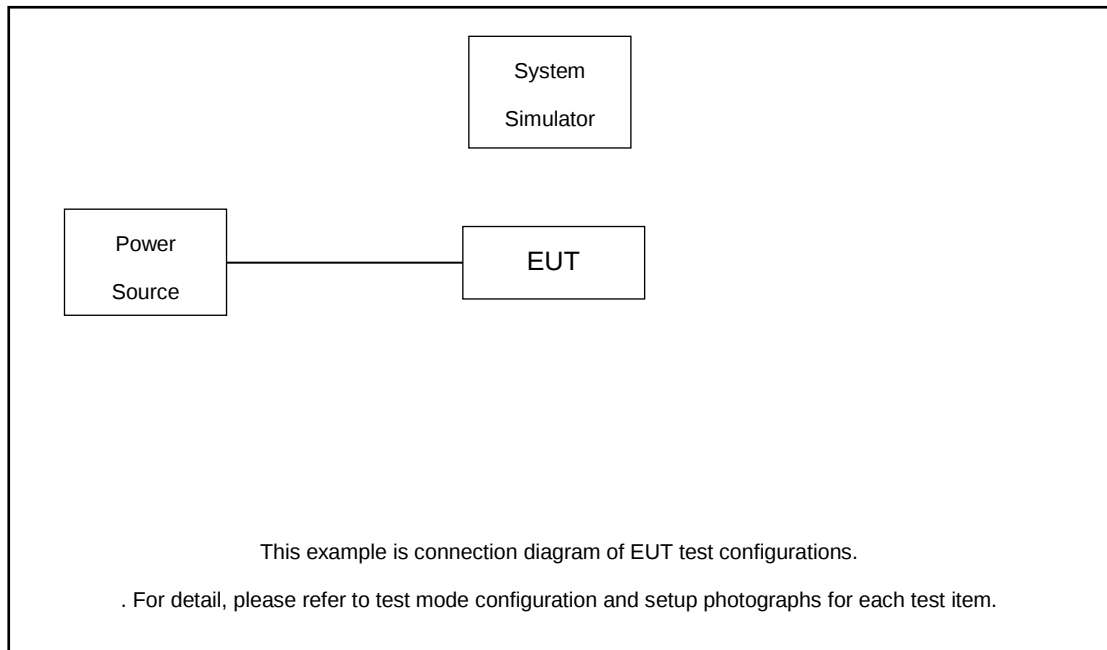
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.

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

Orthogonal Planes of EUT	X Plane	Y Plane	Z Plane
			

Test Items	5G NR	Bandwidth (MHz)										Modulation					RB #			Test Channel		
		10	15	20	25	30	40	50	60	70~90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256 QAM	1	Partial	Full	L	M	H
Max. Output Power	n77	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
	n78	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Peak-to-Average Ratio	n77			v	-							v	v				v		v			
26dB and 99% Bandwidth	n77	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
Conducted Spurious Emission	n77	v			-			v			v	v	v				v			v	v	v
Frequency Stability	n77			v	-								v						v		v	
E.I.R.P	n77	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
	n78	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v		v	v	v	v
Radiated Spurious Emission	n77	Worst Case																		v	v	v
Note	1. The mark “v” means that this configuration is chosen for testing 2. The mark “-” means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. Frequency Stability : Normal Voltage = 3.87V ; Low Voltage =3.5V. ; High Voltage =4.45V																					

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8820C	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 6.5 dB and 20dB attenuator.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\
 &= 6.5 + 20 = 26.5 \text{ (dB)}
 \end{aligned}$$



2.5 Frequency List of Low/Middle/High Channels

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



5G n78(30kHz) Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000		
	Frequency	3750		
90	Channel	649668	650000	650332
	Frequency	3745.02	3750	3754.98
80	Channel	649334	650000	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
60	Channel	648668	650000	651332
	Frequency	3730.02	3750	3769.98
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647668	650000	652332
	Frequency	3715.02	3750	3784.98
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

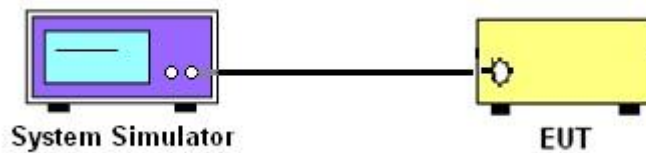
3 Conducted Test Items

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 $\geq$ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

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

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

9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

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

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

3.8.2 Test Procedures

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

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

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.

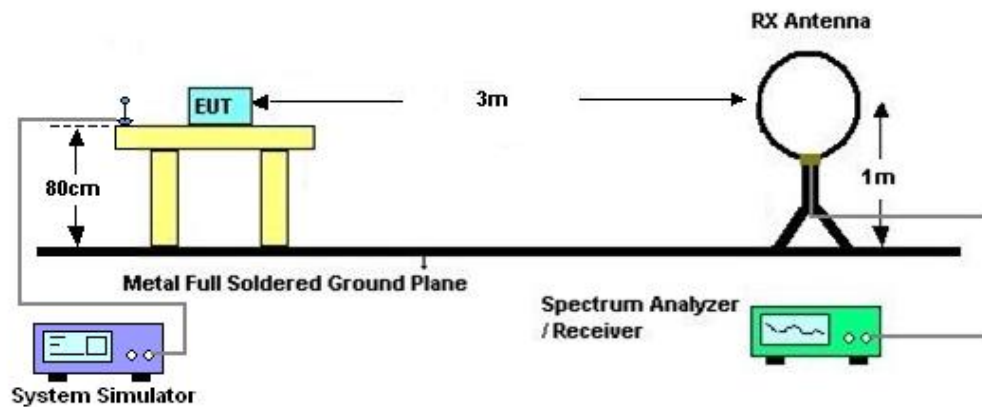
4 Radiated Test Items

4.1 Measuring Instruments

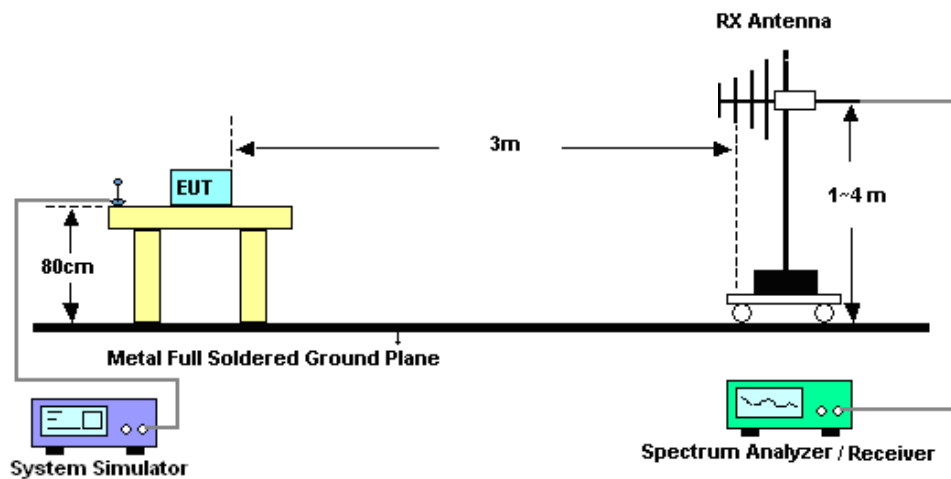
See list of measuring instruments of this test report.

4.2 Test Setup

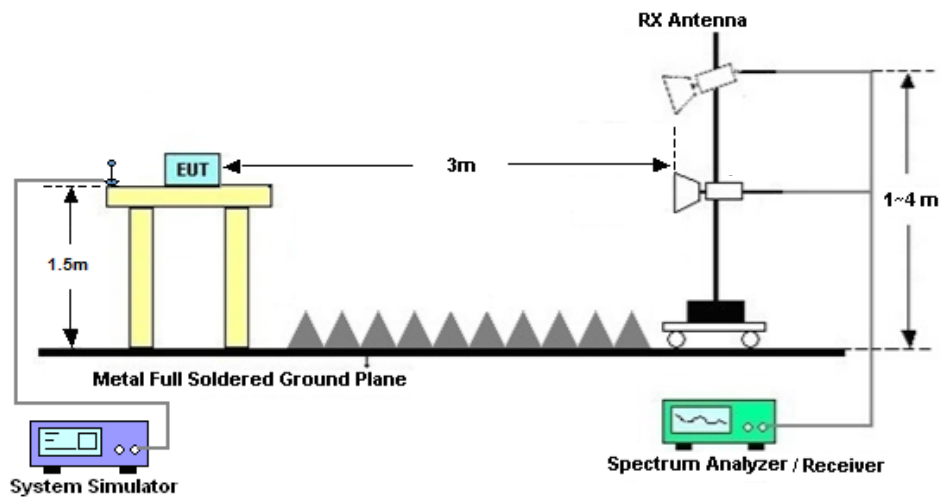
4.2.1 For radiated test below 30MHz



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

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



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 11, 2023 Oct. 11, 2024	Sep. 20, 2024~ Oct. 29, 2024	Oct. 10, 2024 Oct. 10, 2025	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Sep. 20, 2024~ Oct. 29, 2024	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 04, 2024	Sep. 20, 2024~ Oct. 29, 2024	Jul. 03, 2025	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 11, 2024	Oct. 18, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Oct. 18, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 06, 2023	Oct. 18, 2024	Dec. 05, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 23, 2023	Oct. 18, 2024	Oct. 22, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Oct. 18, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Oct. 18, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40G A	060728	18~40GHz	Jan. 02, 2024	Oct. 18, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18G A	060840	1Ghz-18Ghz	Oct. 11, 2024	Oct. 18, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM01G18G A	060892	1Ghz-18Ghz	Oct. 11, 2024	Oct. 18, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 18, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 18, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 18, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

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

Uncertainty of Conducted Measurement

Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Peak to Average Ratio	±0.50 dB
Frequency Stability	±0.04ppm

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.82 dB
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----- THE END -----



Appendix A. Test Results of Conducted Test

Test Engineer :	Smile	Temperature :	22~23℃
		Relative Humidity :	40~42%



Software Version: 23.06.1602

FR1 N77(ANT2)

Transmitter Conducted Output Power And EIRP, (G_T - L_c)=-2.1dB

NR Band	SCS	BandWidth	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
77	30	10	647000	3705	DFT-s-OFDM PI/2 BPSK	1@1	25.42	23.32	0.2148
77	30	10	647000	3705	DFT-s-OFDM QPSK	1@1	25.39	23.29	0.2133
77	30	10	647000	3705	DFT-s-OFDM 16 QAM	1@1	24.60	22.50	0.1778
77	30	10	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.36	23.26	0.2118
77	30	10	656000	3840	DFT-s-OFDM QPSK	1@1	25.40	23.30	0.2138
77	30	10	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.57	22.47	0.1766
77	30	10	665000	3975	DFT-s-OFDM PI/2 BPSK	1@1	25.43	23.33	0.2153
77	30	10	665000	3975	DFT-s-OFDM QPSK	1@1	25.50	23.40	0.2188
77	30	10	665000	3975	DFT-s-OFDM 16 QAM	1@1	24.58	22.48	0.1770
77	30	15	647168	3707.52	DFT-s-OFDM PI/2 BPSK	1@1	25.36	23.26	0.2118
77	30	15	647168	3707.52	DFT-s-OFDM QPSK	1@1	25.34	23.24	0.2109
77	30	15	647168	3707.52	DFT-s-OFDM 16 QAM	1@1	24.56	22.46	0.1762
77	30	15	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.44	23.34	0.2158
77	30	15	656000	3840	DFT-s-OFDM QPSK	1@1	25.35	23.25	0.2113
77	30	15	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.35	22.25	0.1679
77	30	15	664832	3972.48	DFT-s-OFDM PI/2 BPSK	1@1	25.59	23.49	0.2234
77	30	15	664832	3972.48	DFT-s-OFDM QPSK	1@1	25.26	23.16	0.2070
77	30	15	664832	3972.48	DFT-s-OFDM 16 QAM	1@1	24.15	22.05	0.1603
77	30	20	647334	3710.01	DFT-s-OFDM PI/2 BPSK	1@1	25.48	23.38	0.2178
77	30	20	647334	3710.01	DFT-s-OFDM QPSK	1@1	25.46	23.36	0.2168
77	30	20	647334	3710.01	DFT-s-OFDM 16 QAM	1@1	24.57	22.47	0.1766
77	30	20	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.49	23.39	0.2183
77	30	20	656000	3840	DFT-s-OFDM QPSK	1@1	25.45	23.35	0.2163
77	30	20	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.60	22.50	0.1778
77	30	20	664666	3969.99	DFT-s-OFDM PI/2 BPSK	1@1	25.52	23.42	0.2198
77	30	20	664666	3969.99	DFT-s-OFDM QPSK	1@1	25.44	23.34	0.2158
77	30	20	664666	3969.99	DFT-s-OFDM 16 QAM	1@1	24.67	22.57	0.1807
77	30	30	647668	3715.02	DFT-s-OFDM PI/2 BPSK	1@1	25.53	23.43	0.2203
77	30	30	647668	3715.02	DFT-s-OFDM QPSK	1@1	25.37	23.27	0.2123
77	30	30	647668	3715.02	DFT-s-OFDM 16 QAM	1@1	24.56	22.46	0.1762
77	30	30	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.41	23.31	0.2143
77	30	30	656000	3840	DFT-s-OFDM QPSK	1@1	25.33	23.23	0.2104
77	30	30	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.50	22.40	0.1738
77	30	30	664332	3964.98	DFT-s-OFDM PI/2 BPSK	1@1	25.50	23.40	0.2188
77	30	30	664332	3964.98	DFT-s-OFDM QPSK	1@1	25.53	23.43	0.2203



77	30	30	664332	3964.98	DFT-s-OFDM 16 QAM	1@1	24.63	22.53	0.1791
77	30	40	648000	3720	DFT-s-OFDM PI/2 BPSK	1@1	25.60	23.50	0.2239
77	30	40	648000	3720	DFT-s-OFDM QPSK	1@1	25.57	23.47	0.2223
77	30	40	648000	3720	DFT-s-OFDM 16 QAM	1@1	24.79	22.69	0.1858
77	30	40	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.48	23.38	0.2178
77	30	40	656000	3840	DFT-s-OFDM QPSK	1@1	25.48	23.38	0.2178
77	30	40	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.66	22.56	0.1803
77	30	40	664000	3960	DFT-s-OFDM PI/2 BPSK	1@1	25.62	23.52	0.2249
77	30	40	664000	3960	DFT-s-OFDM QPSK	1@1	25.61	23.51	0.2244
77	30	40	664000	3960	DFT-s-OFDM 16 QAM	1@1	24.73	22.63	0.1832
77	30	50	648334	3725.01	DFT-s-OFDM PI/2 BPSK	1@1	25.34	23.24	0.2109
77	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@1	25.27	23.17	0.2075
77	30	50	648334	3725.01	DFT-s-OFDM 16 QAM	1@1	24.36	22.26	0.1683
77	30	50	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.16	23.06	0.2023
77	30	50	656000	3840	DFT-s-OFDM QPSK	1@1	25.14	23.04	0.2014
77	30	50	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.35	22.25	0.1679
77	30	50	663666	3954.99	DFT-s-OFDM PI/2 BPSK	1@1	25.33	23.23	0.2104
77	30	50	663666	3954.99	DFT-s-OFDM QPSK	1@1	25.30	23.20	0.2089
77	30	50	663666	3954.99	DFT-s-OFDM 16 QAM	1@1	24.49	22.39	0.1734
77	30	60	648668	3730.02	DFT-s-OFDM PI/2 BPSK	1@1	25.25	23.15	0.2065
77	30	60	648668	3730.02	DFT-s-OFDM QPSK	1@1	25.22	23.12	0.2051
77	30	60	648668	3730.02	DFT-s-OFDM 16 QAM	1@1	24.24	22.14	0.1637
77	30	60	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.21	23.11	0.2046
77	30	60	656000	3840	DFT-s-OFDM QPSK	1@1	25.15	23.05	0.2018
77	30	60	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.25	22.15	0.1641
77	30	60	663332	3949.98	DFT-s-OFDM PI/2 BPSK	1@1	25.19	23.09	0.2037
77	30	60	663332	3949.98	DFT-s-OFDM QPSK	1@1	25.15	23.05	0.2018
77	30	60	663332	3949.98	DFT-s-OFDM 16 QAM	1@1	24.13	22.03	0.1596
77	30	70	649000	3735	DFT-s-OFDM PI/2 BPSK	1@1	25.20	23.10	0.2042
77	30	70	649000	3735	DFT-s-OFDM QPSK	1@1	25.14	23.04	0.2014
77	30	70	649000	3735	DFT-s-OFDM 16 QAM	1@1	24.37	22.27	0.1687
77	30	70	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.12	23.02	0.2004
77	30	70	656000	3840	DFT-s-OFDM QPSK	1@1	25.11	23.01	0.2000
77	30	70	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.28	22.18	0.1652
77	30	70	663000	3945	DFT-s-OFDM PI/2 BPSK	1@1	25.16	23.06	0.2023
77	30	70	663000	3945	DFT-s-OFDM QPSK	1@1	24.99	22.89	0.1945
77	30	70	663000	3945	DFT-s-OFDM 16 QAM	1@1	24.14	22.04	0.1600
77	30	80	649334	3740.01	DFT-s-OFDM PI/2 BPSK	1@1	25.11	23.01	0.2000
77	30	80	649334	3740.01	DFT-s-OFDM QPSK	1@1	25.09	22.99	0.1991
77	30	80	649334	3740.01	DFT-s-OFDM 16 QAM	1@1	24.19	22.09	0.1618
77	30	80	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.08	22.98	0.1986
77	30	80	656000	3840	DFT-s-OFDM QPSK	1@1	25.09	22.99	0.1991



77	30	80	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.22	22.12	0.1629
77	30	80	662666	3939.99	DFT-s-OFDM PI/2 BPSK	1@1	24.96	22.86	0.1932
77	30	80	662666	3939.99	DFT-s-OFDM QPSK	1@1	24.98	22.88	0.1941
77	30	80	662666	3939.99	DFT-s-OFDM 16 QAM	1@1	24.08	21.98	0.1578
77	30	90	649668	3745.02	DFT-s-OFDM PI/2 BPSK	1@1	24.36	22.26	0.1683
77	30	90	649668	3745.02	DFT-s-OFDM QPSK	1@1	24.32	22.22	0.1667
77	30	90	649668	3745.02	DFT-s-OFDM 16 QAM	1@1	23.51	21.41	0.1384
77	30	90	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.13	23.03	0.2009
77	30	90	656000	3840	DFT-s-OFDM QPSK	1@1	25.11	23.01	0.2000
77	30	90	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.20	22.10	0.1622
77	30	90	662332	3934.98	DFT-s-OFDM PI/2 BPSK	1@1	25.13	23.03	0.2009
77	30	90	662332	3934.98	DFT-s-OFDM QPSK	1@1	24.94	22.84	0.1923
77	30	90	662332	3934.98	DFT-s-OFDM 16 QAM	1@1	24.02	21.92	0.1556
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	135@67	24.90	22.80	0.1905
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@1	25.47	23.37	0.2173
77	30	100	650000	3750	DFT-s-OFDM PI/2 BPSK	1@271	25.52	23.42	0.2198
77	30	100	650000	3750	DFT-s-OFDM QPSK	135@67	24.86	22.76	0.1888
77	30	100	650000	3750	DFT-s-OFDM QPSK	1@1	25.45	23.35	0.2163
77	30	100	650000	3750	DFT-s-OFDM QPSK	1@271	25.55	23.45	0.2213
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	135@67	23.83	21.73	0.1489
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@1	24.65	22.55	0.1799
77	30	100	650000	3750	DFT-s-OFDM 16 QAM	1@271	24.62	22.52	0.1786
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	135@67	22.36	20.26	0.1062
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@1	23.16	21.06	0.1276
77	30	100	650000	3750	DFT-s-OFDM 64 QAM	1@271	23.02	20.92	0.1236
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	135@67	20.06	17.96	0.0625
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@1	20.74	18.64	0.0731
77	30	100	650000	3750	DFT-s-OFDM 256 QAM	1@271	20.36	18.26	0.0670
77	30	100	650000	3750	CP-OFDM QPSK	137@68	23.35	21.25	0.1334
77	30	100	650000	3750	CP-OFDM QPSK	1@1	23.14	21.04	0.1271
77	30	100	650000	3750	CP-OFDM QPSK	1@271	23.41	21.31	0.1352
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	135@67	25.26	23.16	0.2070
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	1@1	25.17	23.07	0.2028
77	30	100	656000	3840	DFT-s-OFDM PI/2 BPSK	1@271	25.13	23.03	0.2009
77	30	100	656000	3840	DFT-s-OFDM QPSK	135@67	25.27	23.17	0.2075
77	30	100	656000	3840	DFT-s-OFDM QPSK	1@1	25.16	23.06	0.2023
77	30	100	656000	3840	DFT-s-OFDM QPSK	1@271	25.15	23.05	0.2018
77	30	100	656000	3840	DFT-s-OFDM 16 QAM	135@67	24.22	22.12	0.1629
77	30	100	656000	3840	DFT-s-OFDM 16 QAM	1@1	24.14	22.04	0.1600
77	30	100	656000	3840	DFT-s-OFDM 16 QAM	1@271	24.27	22.17	0.1648
77	30	100	656000	3840	DFT-s-OFDM 64 QAM	135@67	22.70	20.60	0.1148
77	30	100	656000	3840	DFT-s-OFDM 64 QAM	1@1	22.59	20.49	0.1119



77	30	100	656000	3840	DFT-s-OFDM 64 QAM	1@271	22.73	20.63	0.1156
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	135@67	20.66	18.56	0.0718
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	1@1	20.34	18.24	0.0667
77	30	100	656000	3840	DFT-s-OFDM 256 QAM	1@271	20.44	18.34	0.0682
77	30	100	656000	3840	CP-OFDM QPSK	137@68	23.69	21.59	0.1442
77	30	100	656000	3840	CP-OFDM QPSK	1@1	23.68	21.58	0.1439
77	30	100	656000	3840	CP-OFDM QPSK	1@271	23.69	21.59	0.1442
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	135@67	25.33	23.23	0.2104
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	1@1	25.14	23.04	0.2014
77	30	100	662000	3930	DFT-s-OFDM PI/2 BPSK	1@271	25.34	23.24	0.2109
77	30	100	662000	3930	DFT-s-OFDM QPSK	135@67	25.26	23.16	0.2070
77	30	100	662000	3930	DFT-s-OFDM QPSK	1@1	25.20	23.10	0.2042
77	30	100	662000	3930	DFT-s-OFDM QPSK	1@271	25.45	23.35	0.2163
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	135@67	24.26	22.16	0.1644
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	1@1	24.24	22.14	0.1637
77	30	100	662000	3930	DFT-s-OFDM 16 QAM	1@271	24.51	22.41	0.1742
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	135@67	22.78	20.68	0.1169
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	1@1	22.70	20.60	0.1148
77	30	100	662000	3930	DFT-s-OFDM 64 QAM	1@271	22.96	20.86	0.1219
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	135@67	20.74	18.64	0.0731
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	1@1	20.42	18.32	0.0679
77	30	100	662000	3930	DFT-s-OFDM 256 QAM	1@271	20.65	18.55	0.0716
77	30	100	662000	3930	CP-OFDM QPSK	137@68	23.78	21.68	0.1472
77	30	100	662000	3930	CP-OFDM QPSK	1@1	23.70	21.60	0.1445
77	30	100	662000	3930	CP-OFDM QPSK	1@271	23.87	21.77	0.1503



Frequency Stability

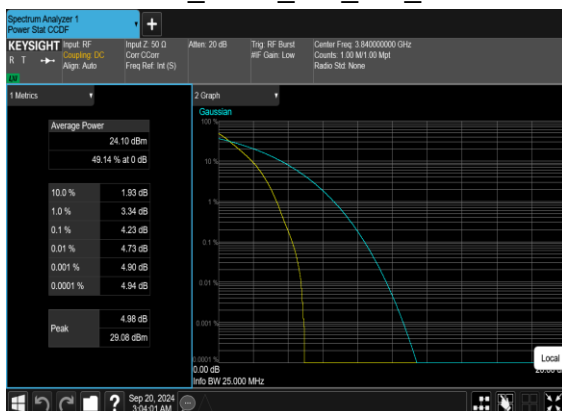
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0054	PASS	NV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0069	PASS	LV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0037	PASS	HV
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0071	PASS	-30℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0067	PASS	-20℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0034	PASS	-10℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0060	PASS	0℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0023	PASS	10℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0062	PASS	20℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0064	PASS	30℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0034	PASS	40℃
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	0.0069	PASS	50℃

**Peak to Average Ratio**

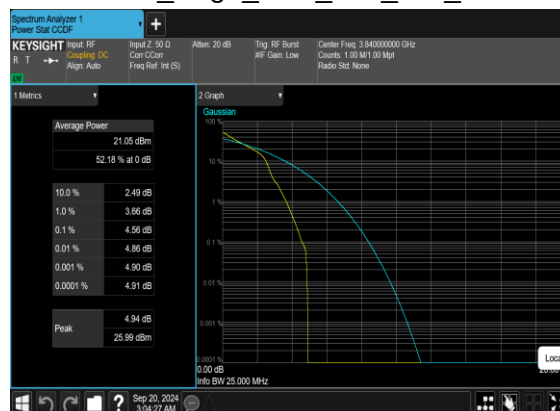
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
77	30	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	50@0	4.23	13	PASS
77	30	20	656000	3840.0	DFT-s-OFDM PI/2 BPSK	1@0	4.56	13	PASS
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	50@0	5.19	13	PASS
77	30	20	656000	3840.0	DFT-s-OFDM QPSK	1@0	5.21	13	PASS



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



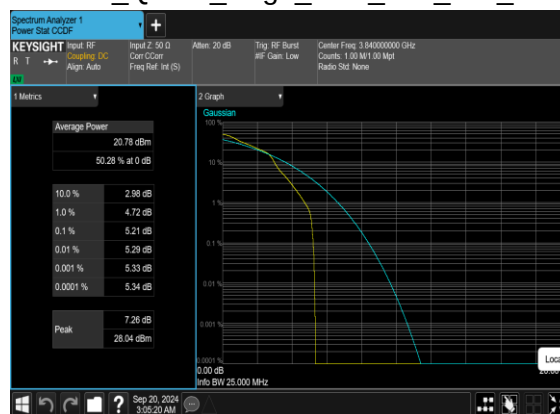
N77(20M)_DFT-s-OFDM_PI_2-
BPSK_Edge_1RB_Left_Mid_CH



N77(20M)_DFT-s-
OFDM_QPSK_Outer_Full_Mid_CH



N77(20M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Mid_CH



**Occupied Bandwidth**

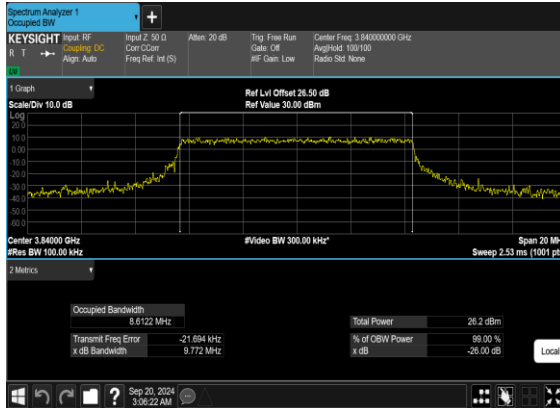
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
77	30	10	656000	3840.0	CP-OFDM QPSK	24@0	8.6122	9.772
77	30	10	656000	3840.0	CP-OFDM 16 QAM	24@0	8.5988	9.663
77	30	10	656000	3840.0	CP-OFDM 64 QAM	24@0	8.6169	11.37
77	30	10	656000	3840.0	CP-OFDM 256 QAM	24@0	8.5747	9.621
77	30	15	656000	3840.0	CP-OFDM QPSK	38@0	13.56	14.93
77	30	15	656000	3840.0	CP-OFDM 16 QAM	38@0	13.603	14.56
77	30	15	656000	3840.0	CP-OFDM 64 QAM	38@0	13.586	14.6
77	30	15	656000	3840.0	CP-OFDM 256 QAM	38@0	13.592	14.48
77	30	20	656000	3840.0	CP-OFDM QPSK	51@0	18.251	21.26
77	30	20	656000	3840.0	CP-OFDM 16 QAM	51@0	18.261	19.31
77	30	20	656000	3840.0	CP-OFDM 64 QAM	51@0	18.173	19.03
77	30	20	656000	3840.0	CP-OFDM 256 QAM	51@0	18.222	19.59
77	30	30	656000	3840.0	CP-OFDM QPSK	78@0	27.826	29.48
77	30	30	656000	3840.0	CP-OFDM 16 QAM	78@0	27.976	28.93
77	30	30	656000	3840.0	CP-OFDM 64 QAM	78@0	27.862	29.7
77	30	30	656000	3840.0	CP-OFDM 256 QAM	78@0	27.862	29.25
77	30	40	656000	3840.0	CP-OFDM QPSK	106@0	37.918	39.36
77	30	40	656000	3840.0	CP-OFDM 16 QAM	106@0	37.809	39.11
77	30	40	656000	3840.0	CP-OFDM 64 QAM	106@0	37.944	39.46
77	30	40	656000	3840.0	CP-OFDM 256 QAM	106@0	37.811	39.49
77	30	50	656000	3840.0	CP-OFDM QPSK	133@0	47.578	49.35
77	30	50	656000	3840.0	CP-OFDM 16 QAM	133@0	47.615	49.01
77	30	50	656000	3840.0	CP-OFDM 64 QAM	133@0	47.426	49.25
77	30	50	656000	3840.0	CP-OFDM 256 QAM	133@0	47.534	49.14
77	30	60	656000	3840.0	CP-OFDM QPSK	162@0	57.85	59.7



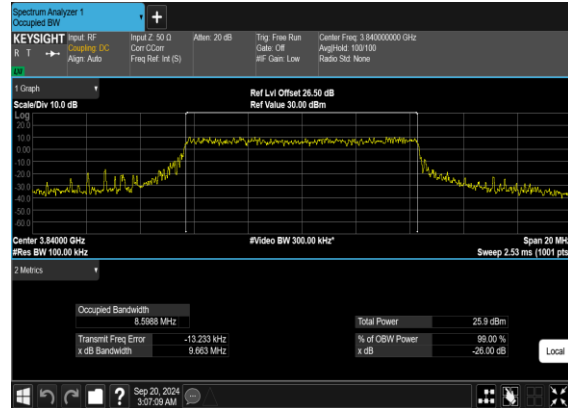
77	30	60	656000	3840.0	CP-OFDM 16 QAM	162@0	58.054	59.74
77	30	60	656000	3840.0	CP-OFDM 64 QAM	162@0	57.827	59.72
77	30	60	656000	3840.0	CP-OFDM 256 QAM	162@0	57.855	59.76
77	30	70	656000	3840.0	CP-OFDM QPSK	189@0	67.583	69.76
77	30	70	656000	3840.0	CP-OFDM 16 QAM	189@0	67.567	69.68
77	30	70	656000	3840.0	CP-OFDM 64 QAM	189@0	67.466	69.87
77	30	70	656000	3840.0	CP-OFDM 256 QAM	189@0	67.58	70.24
77	30	80	656000	3840.0	CP-OFDM QPSK	217@0	77.526	80.2
77	30	80	656000	3840.0	CP-OFDM 16 QAM	217@0	77.52	79.87
77	30	80	656000	3840.0	CP-OFDM 64 QAM	217@0	77.526	80.21
77	30	80	656000	3840.0	CP-OFDM 256 QAM	217@0	77.593	80.56
77	30	90	656000	3840.0	CP-OFDM QPSK	245@0	87.702	90.27
77	30	90	656000	3840.0	CP-OFDM 16 QAM	245@0	87.326	90.26
77	30	90	656000	3840.0	CP-OFDM 64 QAM	245@0	87.552	90.52
77	30	90	656000	3840.0	CP-OFDM 256 QAM	245@0	87.216	90.31
77	30	100	656000	3840.0	CP-OFDM QPSK	273@0	97.482	100.8
77	30	100	656000	3840.0	CP-OFDM 16 QAM	273@0	97.342	101.0
77	30	100	656000	3840.0	CP-OFDM 64 QAM	273@0	97.625	100.7
77	30	100	656000	3840.0	CP-OFDM 256 QAM	273@0	97.348	100.2



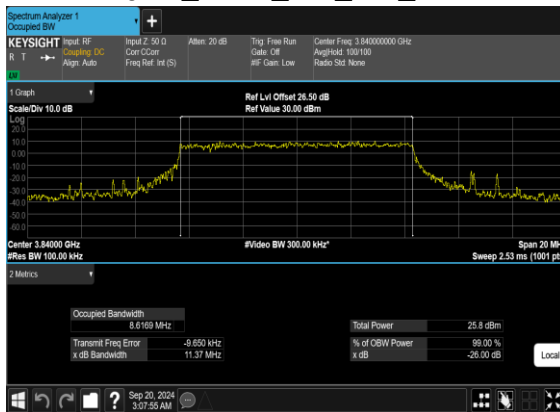
N77(10M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



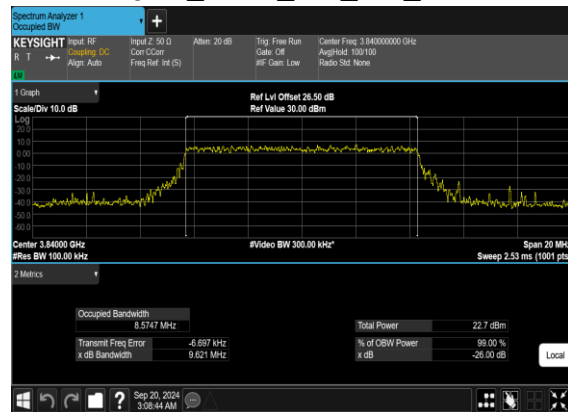
N77(10M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(10M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

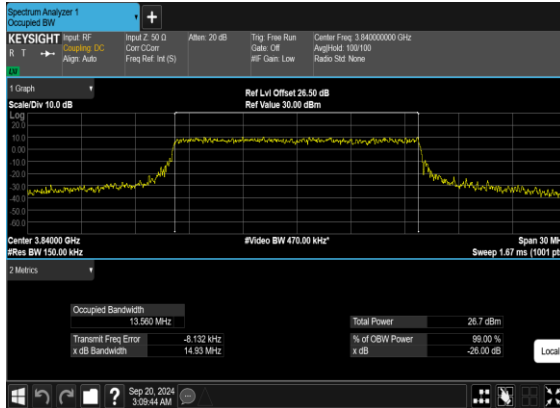


N77(10M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

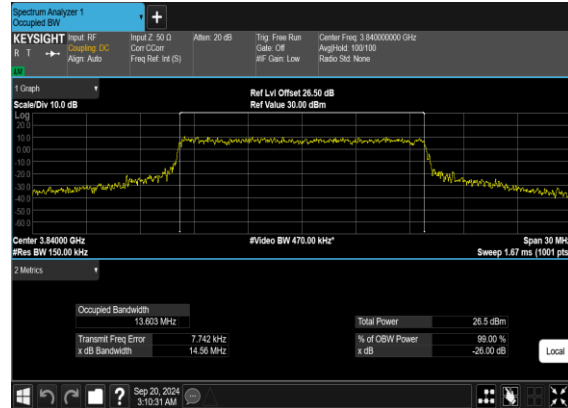




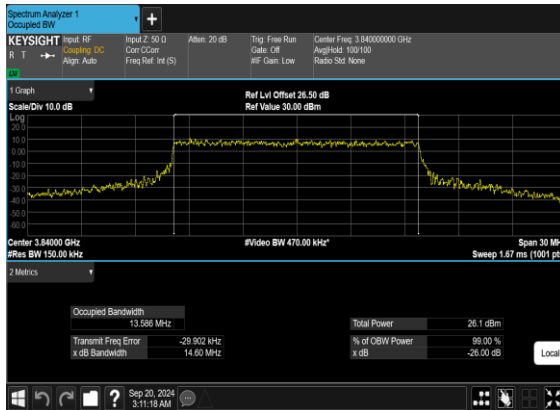
N77(15M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



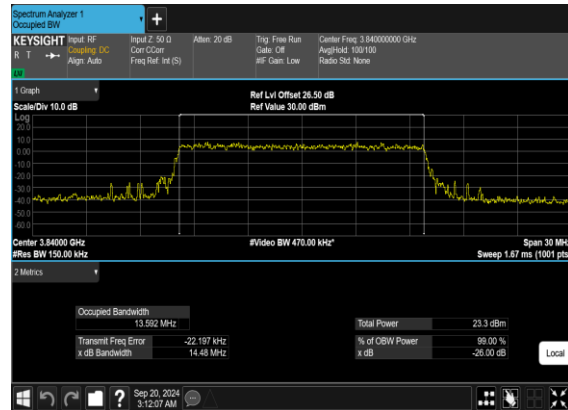
N77(15M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(15M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

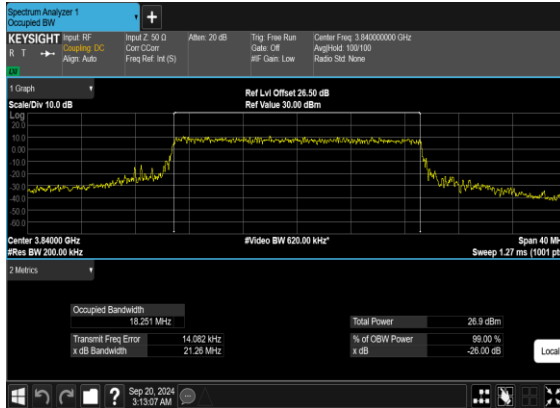


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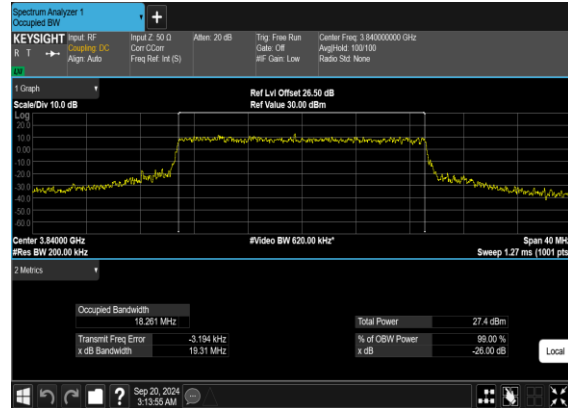




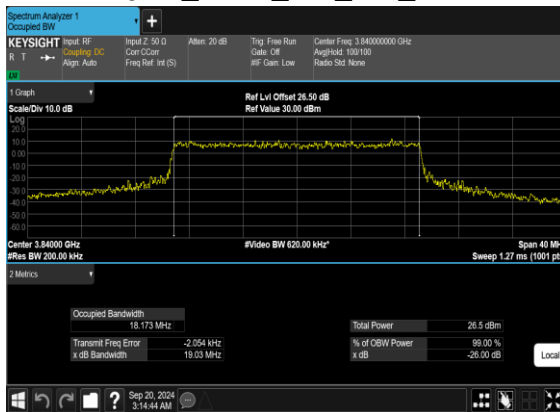
N77(20M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



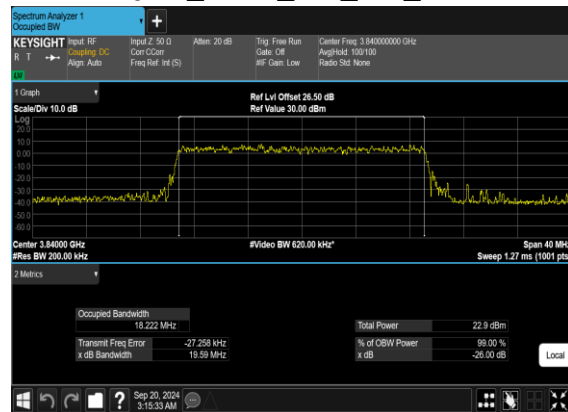
N77(20M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(20M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH



N77(20M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

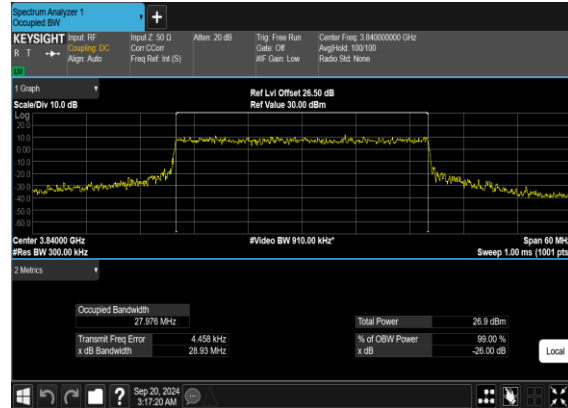




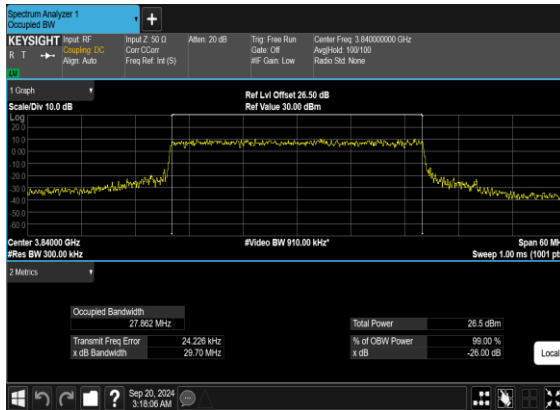
N77(30M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



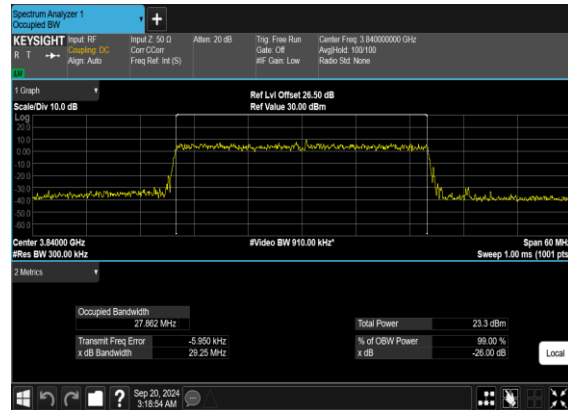
N77(30M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(30M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

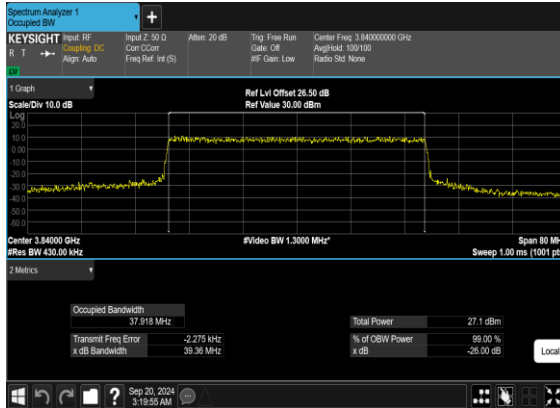


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QAM_Outer_Full_Mid_CH

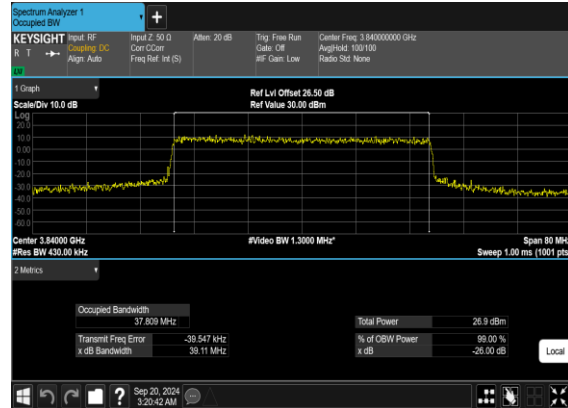




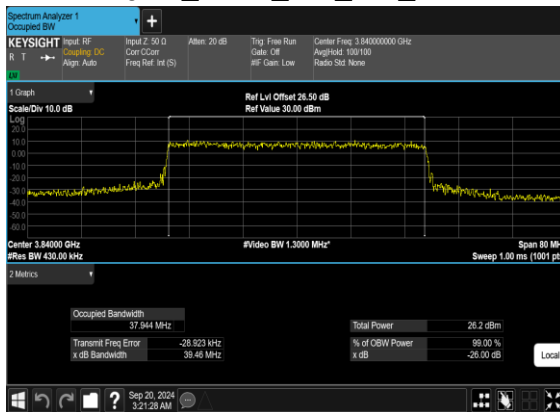
N77(40M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



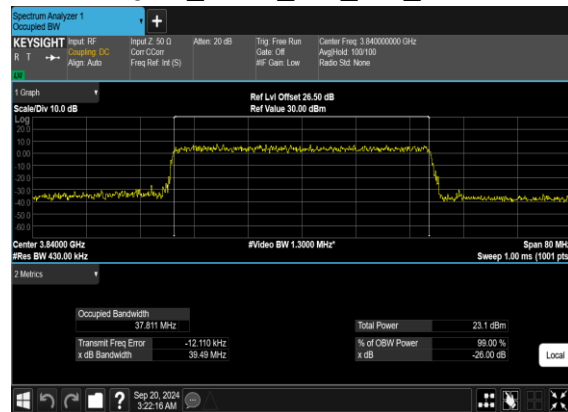
N77(40M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(40M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

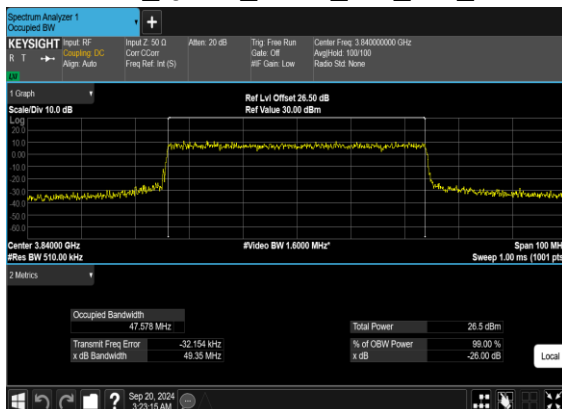


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QAM_Outer_Full_Mid_CH

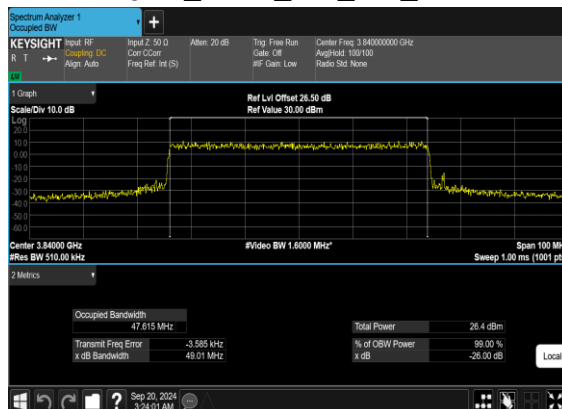




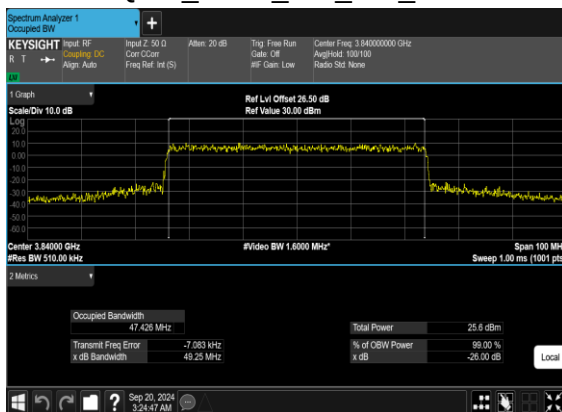
N77(50M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



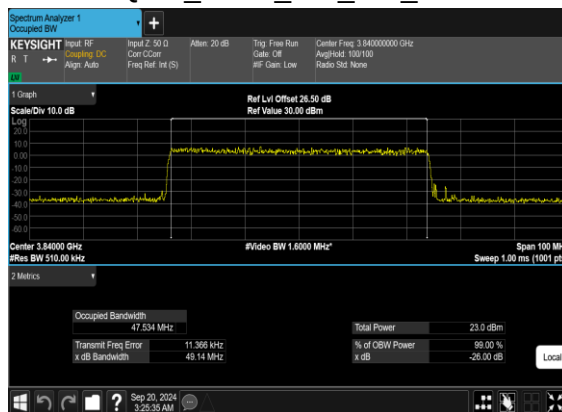
N77(50M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH



N77(50M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

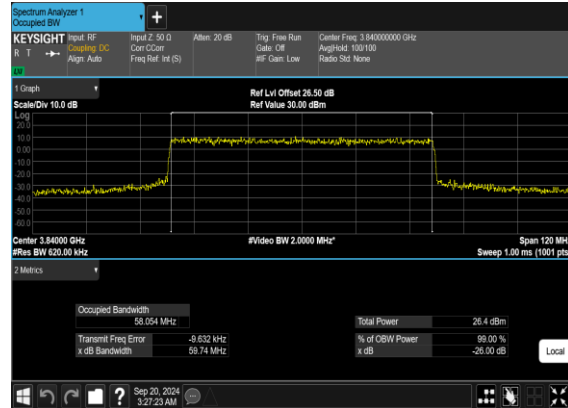




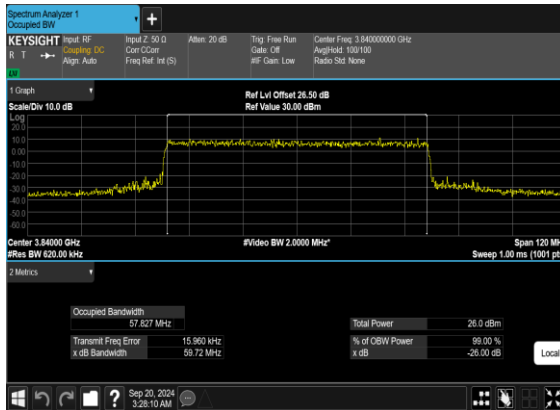
N77(60M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



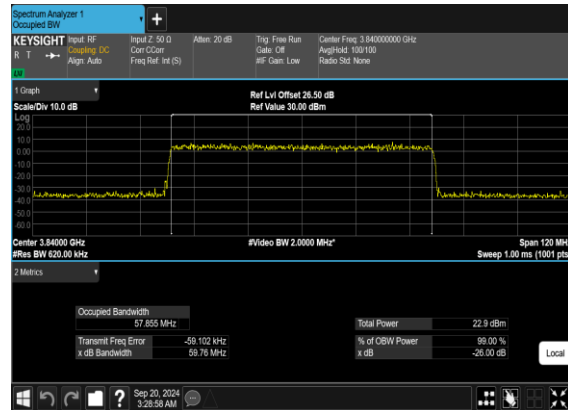
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QAM_Outer_Full_Mid_CH



N77(60M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

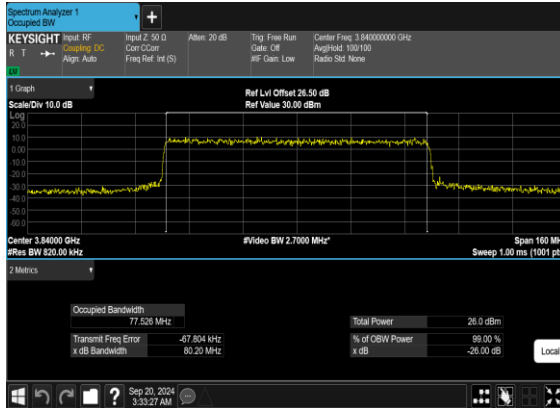


N77(60M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

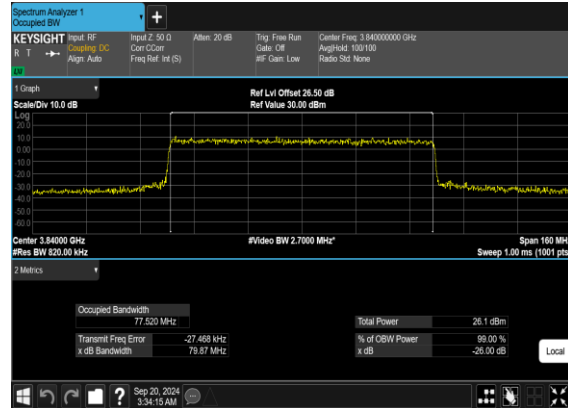




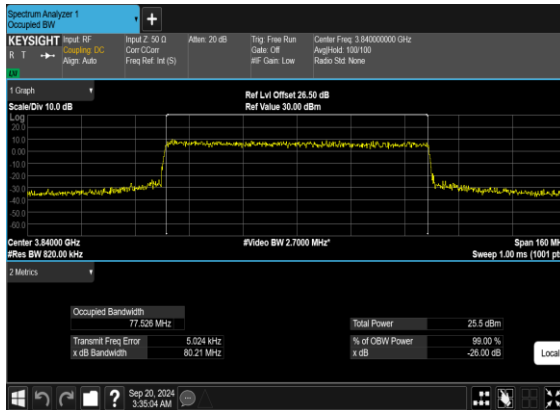
N77(80M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



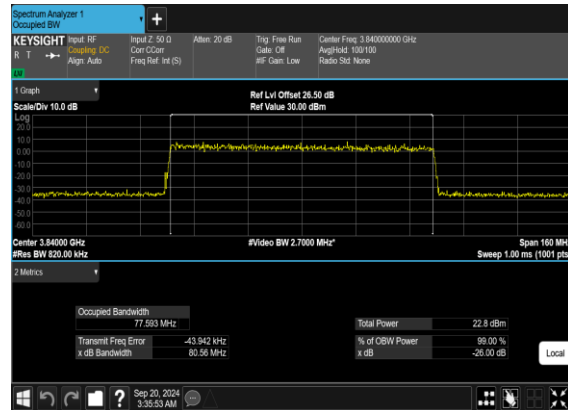
N77(80M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(80M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

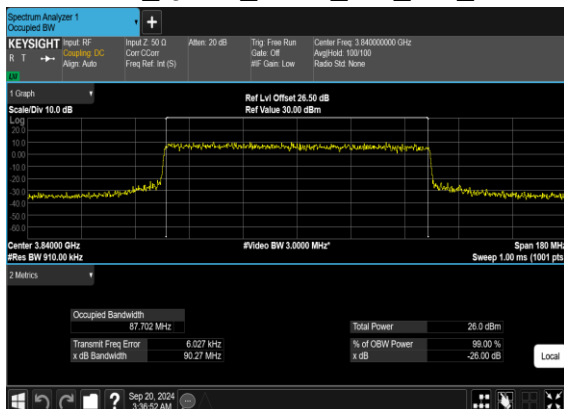


N77(80M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

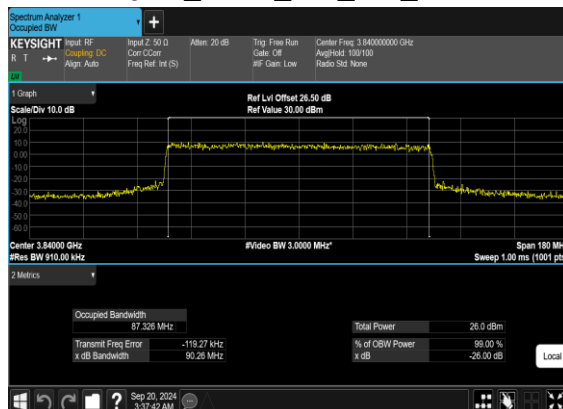




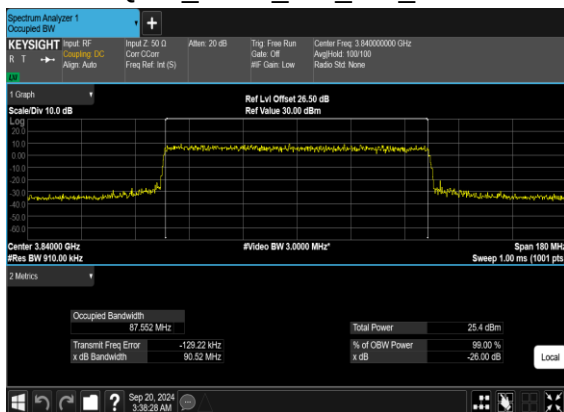
N77(90M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



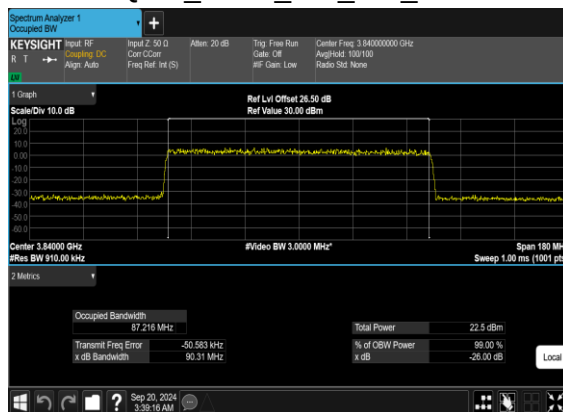
N77(90M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(90M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH

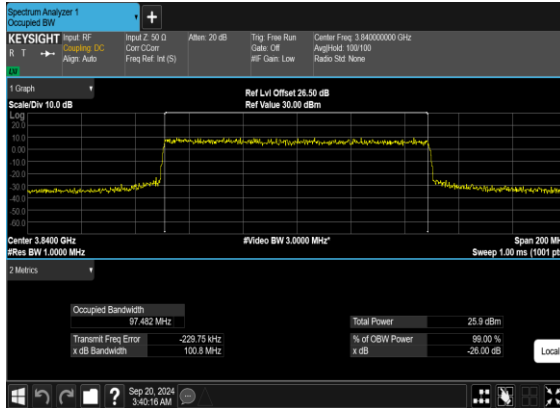


N77(90M)_CP-OFDM_256
QAM_Outer_Full_Mid_CH

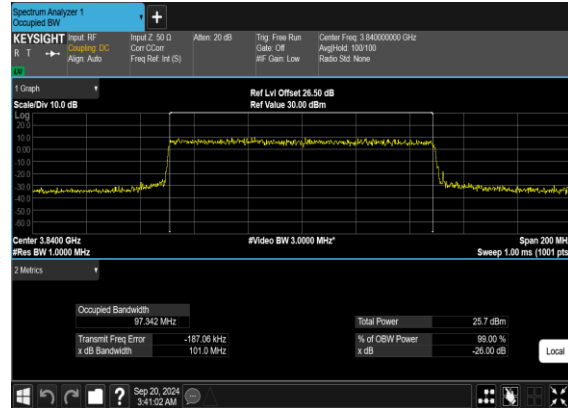




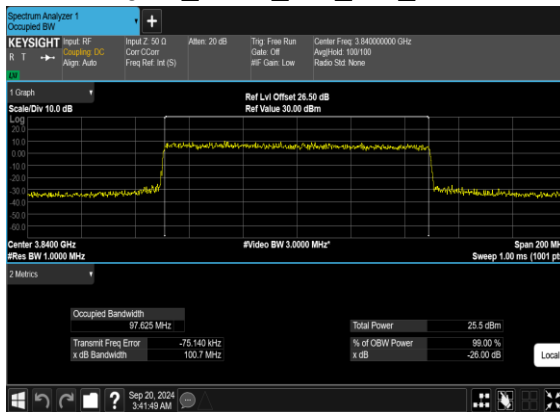
N77(100M)_CP-
OFDM_QPSK_Outer_Full_Mid_CH



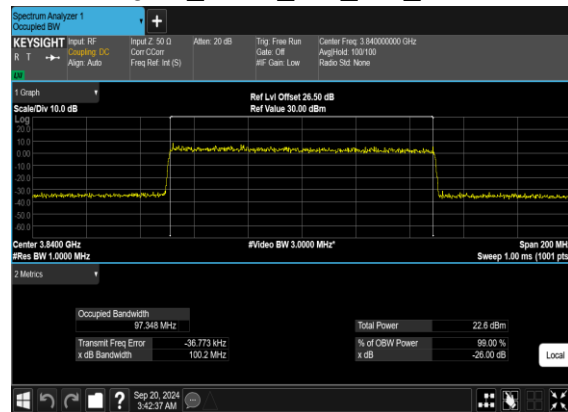
N77(100M)_CP-OFDM_16
QAM_Outer_Full_Mid_CH



N77(100M)_CP-OFDM_64
QAM_Outer_Full_Mid_CH



N77(100M)_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	30	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	647000	3705.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	10	647000	3705.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	10	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	665000	3975.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	10	665000	3975.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	PASS

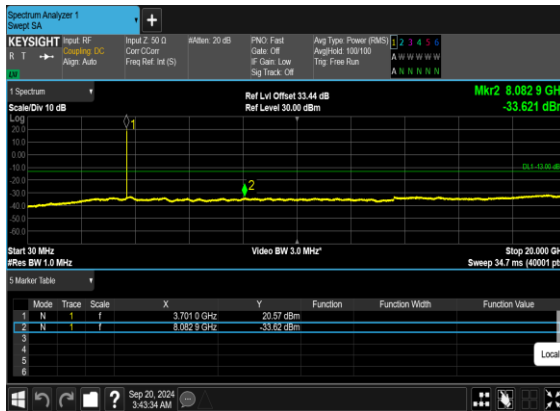


77	30	50	648334	3725.01	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	648334	3725.01	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	50	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	50	663666	3954.99	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	50	663666	3954.99	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	650000	3750.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	100	650000	3750.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	650000	3750.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	650000	3750.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	100	650000	3750.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	650000	3750.0	DFT-s-OFDM QPSK	1@0	see graph	PASS

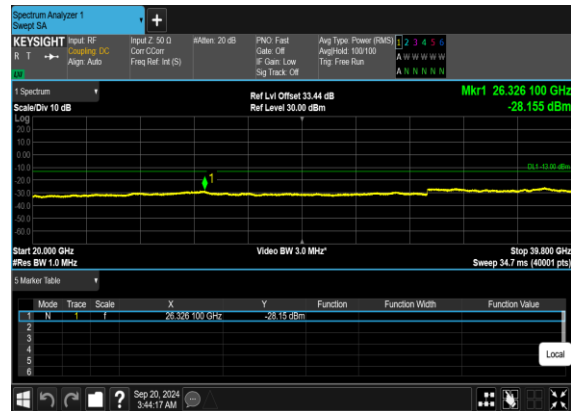
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77	30	100	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	656000	3840.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	100	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	656000	3840.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	662000	3930.0	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	100	662000	3930.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	662000	3930.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	662000	3930.0	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	100	662000	3930.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	662000	3930.0	DFT-s-OFDM QPSK	1@0	see graph	PASS



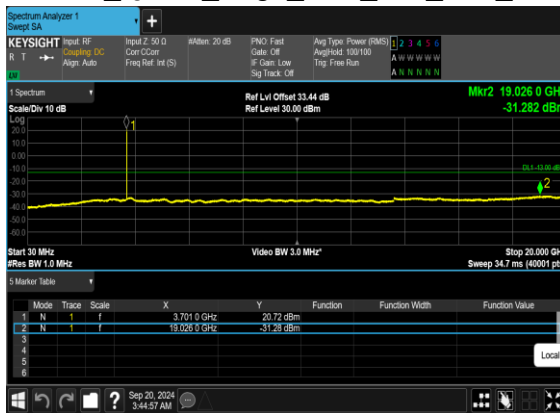
N77(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



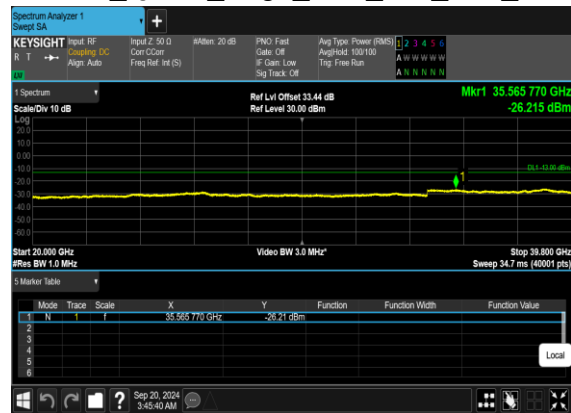
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OFDM_BPSK_Edge_1RB_Left_Low_CH



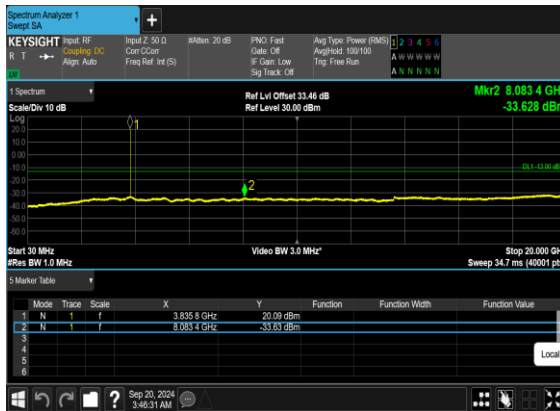
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OFDM_QPSK_Edge_1RB_Left_Low_CH



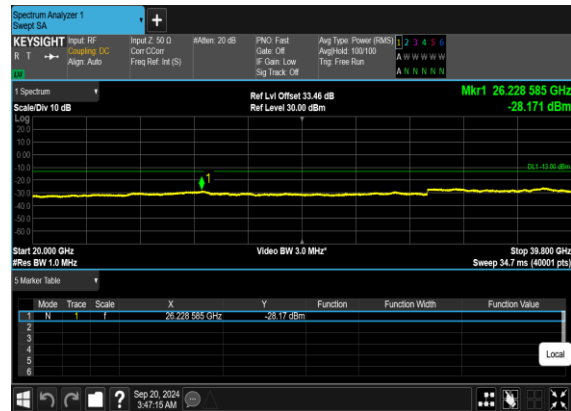
N77(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



N77(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH

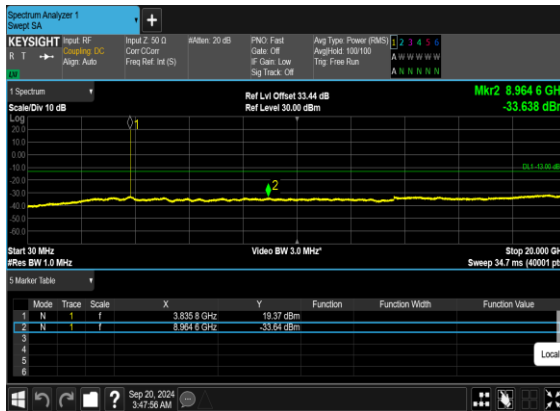


N77(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH

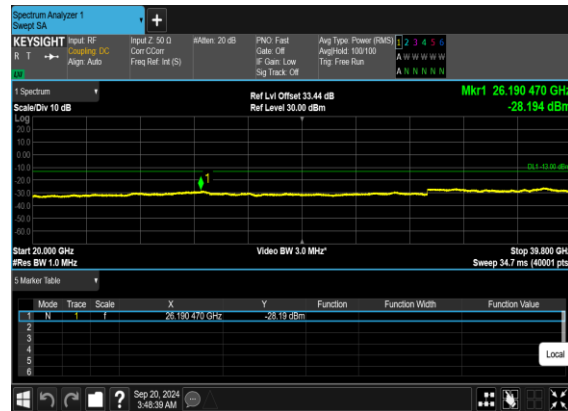




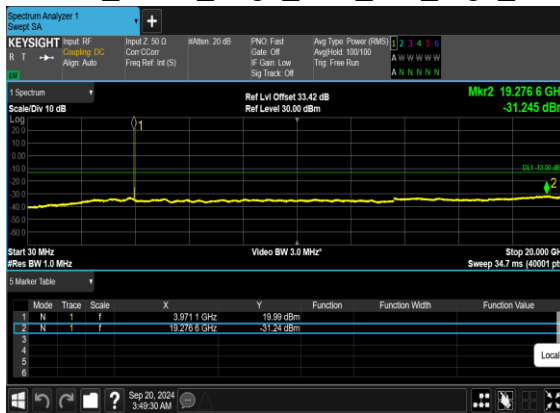
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OFDM_QPSK_Edge_1RB_Left_Mid_CH



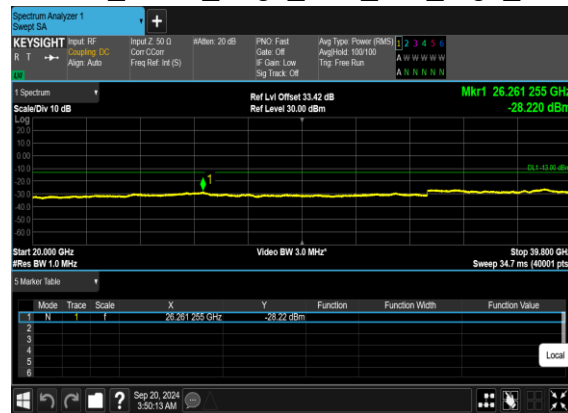
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OFDM_QPSK_Edge_1RB_Left_Mid_CH



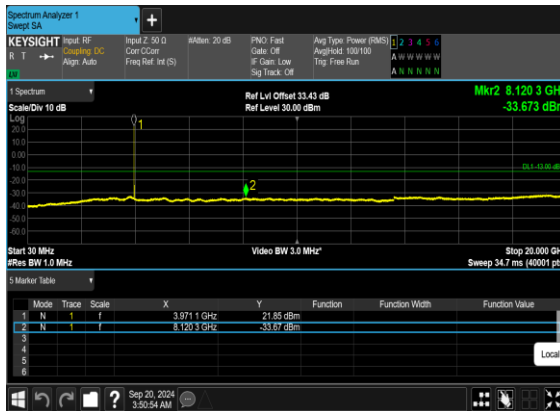
N77(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



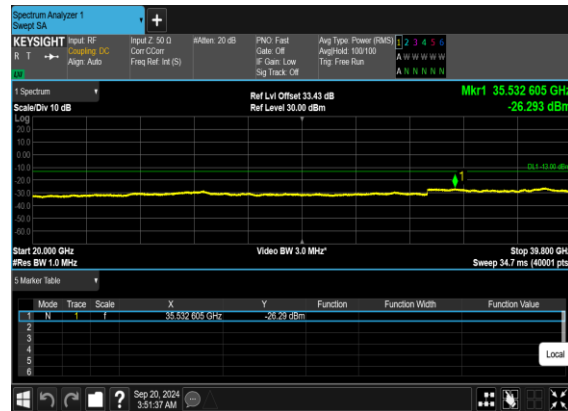
N77(10M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



N77(10M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH

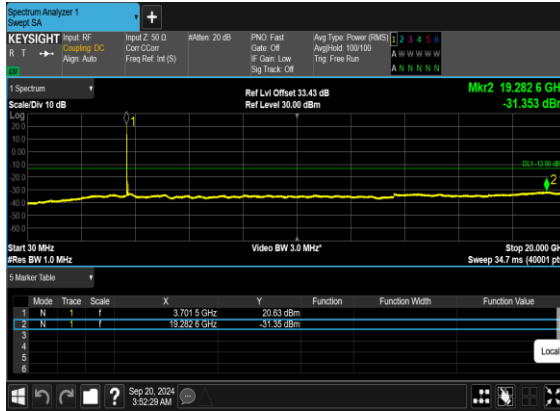


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OFDM_QPSK_Edge_1RB_Left_High_CH

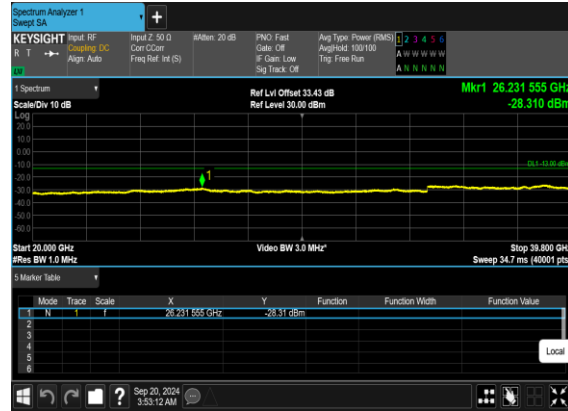




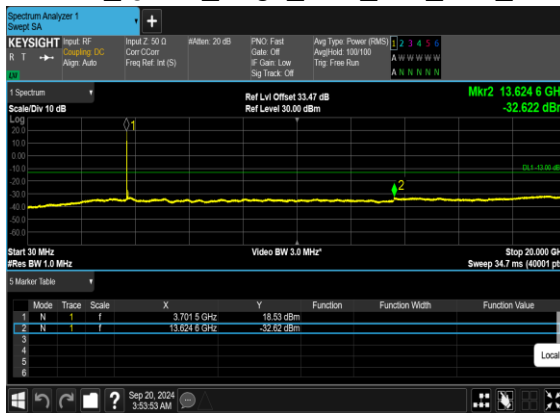
N77(50M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



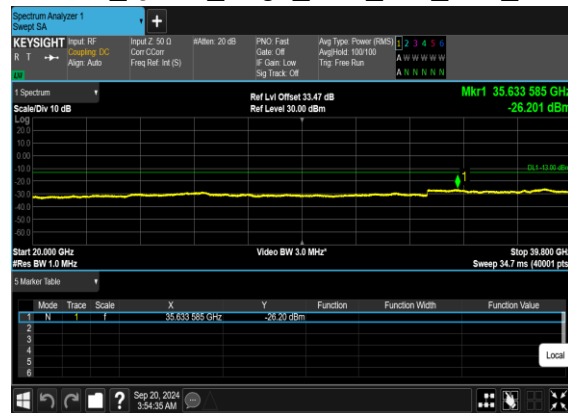
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OFDM_BPSK_Edge_1RB_Left_Low_CH



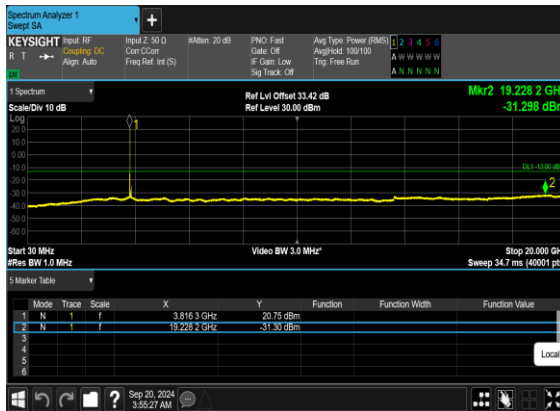
N77(50M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



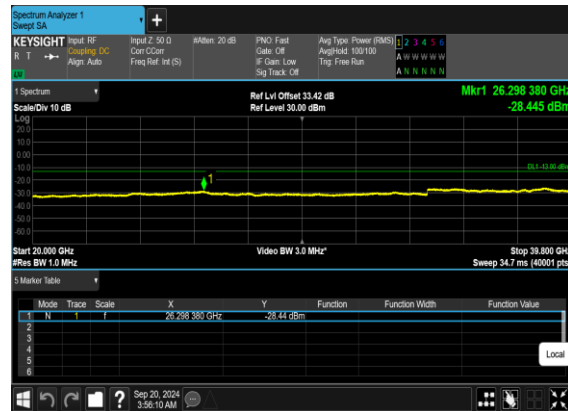
N77(50M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



N77(50M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH

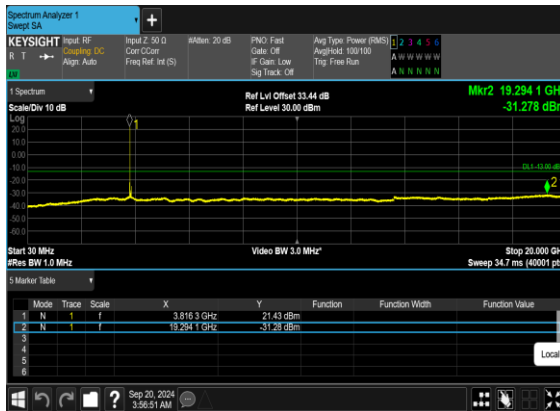


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OFDM_BPSK_Edge_1RB_Left_Mid_CH

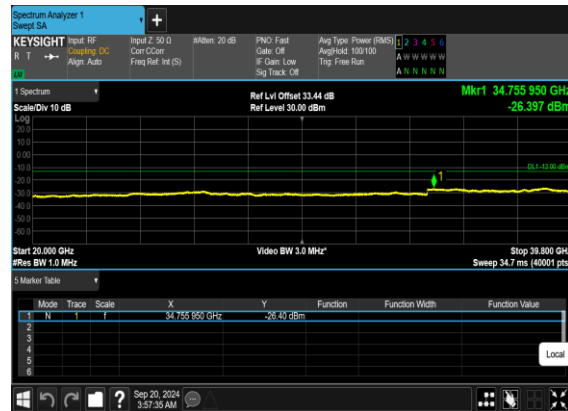




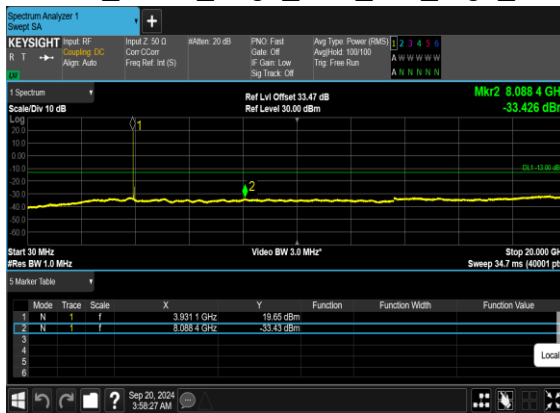
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OFDM_QPSK_Edge_1RB_Left_Mid_CH



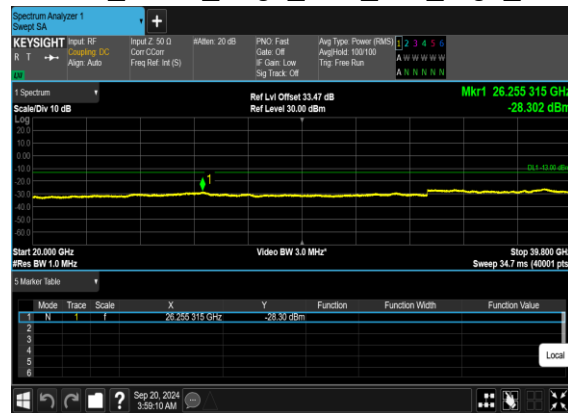
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OFDM_QPSK_Edge_1RB_Left_Mid_CH



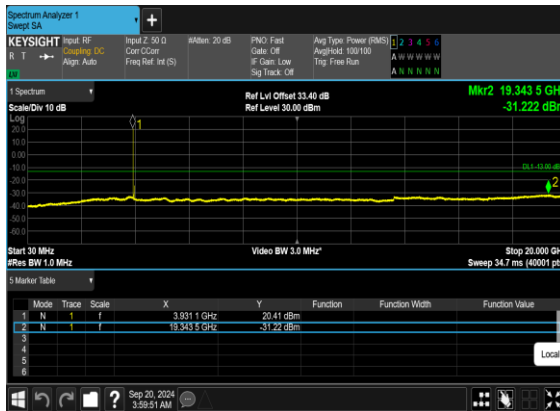
N77(50M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



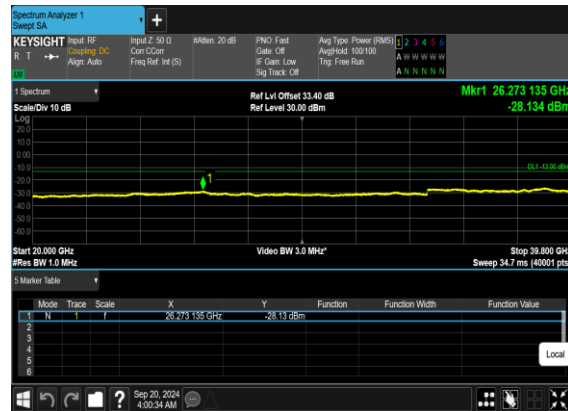
N77(50M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_High_CH



N77(50M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH

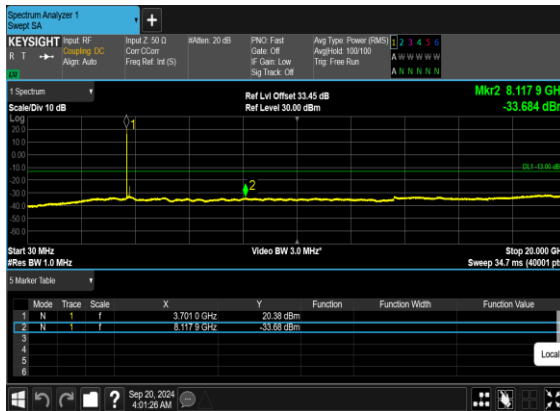


N77(50M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_High_CH

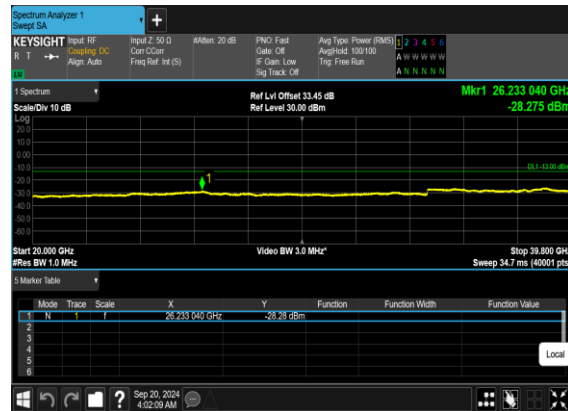




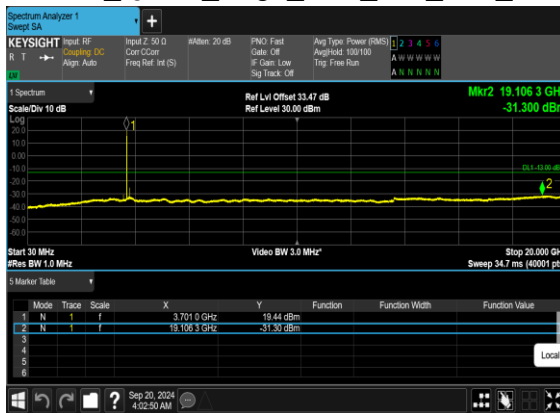
N77(100M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



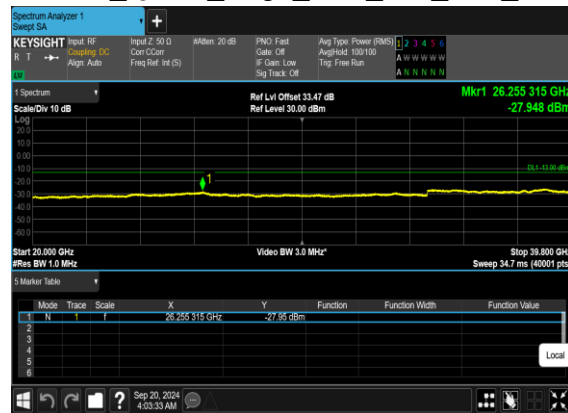
N77(100M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Low_CH



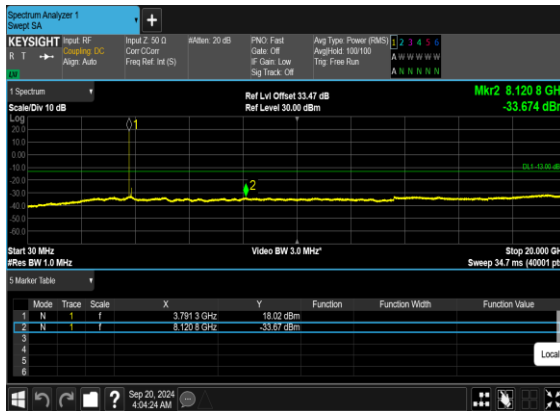
N77(100M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



N77(100M)_DFT-s-
OFDM_QPSK_Edge_1RB_Left_Low_CH



N77(100M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH



N77(100M)_DFT-s-
OFDM_BPSK_Edge_1RB_Left_Mid_CH

