FCC RF Test Report

FCC ID	:	**UZ7ET45CA**
Equipment	:	**Tablet**
Brand Name	:	**Zebra**
Model Name	:	**ET45CA**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**47 CFR Part 2, Part 27 Subpart Q**
Classification	:	**PCS Licensed Transmitter (PCB)**
Test Date(s)	:	**Jun. 12, 2022 ~ Jun. 23, 2022**

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

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

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

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

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

TABLE OF CONTENTS

History of this test report

Report No.	Version	Description	Issued Date
FG230412G	01	Initial issue of report	Aug. 16, 2022

Summary of Test Result

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	—	Report Only	-
3.5	§27.50 (k)(4)	Peak-to-Average Ratio	<13dB	PASS	
3.6	§27.50 (k)(3)	EIRP	EIRP < 1W (30dBm)	PASS	-
3.7	§2.1049	Occupied Bandwidth	—	Report Only	-
3.8	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement	-13dBm/MHz	PASS	-
3.9	§2.1051 §27.53 (n)(2)	Conducted Spurious Emission	-13dBm/MHz	PASS	-
3.10	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within the band	PASS	-
4.4	§2.1053 §27.53 (n)(2)	Radiated Spurious Emission	-13dBm/MHz	PASS	Under limit 34.04 dB at 6900.000 MHz

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

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Tablet
Brand Name	Zebra
Model Name	ET45CA
FCC ID	UZ7ET45CA
HW Version	EV2-2
SW Version	ET45-userdebug 11 11-10-12.00-RG-U00-PRD-GSE MXJ release-keys
MFD	10MAY22
EUT Stage	Identical Prototype

Specification of Accessory				
Battery	**Brand Name**	Zebra	**Model Number**	BT-000455

Supported Unit Used in Test Configuration and System				
AC Adapter	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Earphone 1	**Brand Name**	Zebra	**Part Number**	HDST-35MM-PTVP-01
Earphone 2	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
USB Cable (Type C to Type A)	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
Type C-Audio Cable (Type C to 3.5mm)	**Brand Name**	Zebra	**Part Number**	ADP-USBC-35MM1-01

1.2 Product Specification of Equipment Under Test

Product Feature	
Tx/Rx Frequency	5G NR n77: 3450 MHz ~ 3550 MHz 5G NR n78: 3450 MHz ~ 3550 MHz
Bandwidth	5G NR n77: 20MHz / 30MHz / 40MHz / 60MHz / 80MHz / 100MHz 5G NR n78: 20MHz / 30MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz
SCS	30kHz
Antenna Type	IFA Antenna
Antenna Gain	**<Ant. 1>** 5G NR n77 : -1.0 dBi 5G NR n78 : -1.0 dBi **<Ant. 3>** 5G NR n77 : 0.3 dBi 5G NR n78 : 0.3 dBi **<Ant. 4>** 5G NR n77 : 0.4 dBi 5G NR n78 : 0.4 dBi **<Ant. 5>** 5G NR n77 : 0.2 dBi 5G NR n78 : 0.2 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 3.
2. 5G NR n77/n78 support SA and NSA mode. The whole testing has assessed SA mode for n78 by referring to the higher conducted power for conducted test items.
3. The device supports HPUE mode for 5G NR n77/78.
4. The EN-DC mode combination: DC_7A_n77A, DC_7A_n78A, DC_2A_n78A, DC_5A_n78A, DC_7A_n78A, DC_38A_n78A.
5. The device supports n77/n78(1T4R) SRS resources on ant.1/3/4/5, only the test data of worst ant.3 is showed in the report according to the maximum power.

1.3 Modification of EUT

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

1.4 Maximum EIRP Power 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)
20	3460.02 ~ 3540.00	0.4217	18M2G7D	0.3492	18M2W7D
30	3465.00 ~ 3534.99	0.4178	27M8G7D	0.3846	27M9W7D
40	3470.01 ~ 3529.98	0.4178	37M8G7D	0.3776	37M8W7D
60	3480.00 ~ 3519.99	0.4046	57M9G7D	0.3396	57M9W7D
80	3490.02 ~ 3510.00	0.3936	77M4G7D	0.3258	77M5W7D
100	3500.01 ~ 3500.01	0.4236	97M3G7D	0.3304	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)
20	3460.02 ~ 3540.00	0.4198	18M2G7D	0.3556	18M2W7D
30	3465.00 ~ 3534.99	0.4217	27M8G7D	0.3776	27M9W7D
40	3470.01 ~ 3529.98	0.4217	37M8G7D	0.3802	37M8W7D
50	3475.02 ~ 3525.00	0.4055	47M4G7D	0.3436	47M5W7D
60	3480.00 ~ 3519.99	0.4140	57M9G7D	0.3491	57M9W7D
70	3485.01 ~ 3514.98	0.4140	67M4G7D	0.3491	67M6W7D
80	3490.02 ~ 3510.00	0.4064	77M4G7D	0.3451	77M5W7D
90	3495.00 ~ 3504.99	0.4018	87M4G7D	0.3373	87M6W7D
100	3500.01 ~ 3500.01	0.4256	97M3G7D	0.3273	97M6W7D

Note:

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

1.5 Testing Location

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

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

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

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

Test data subcontracted: conducted test items in section 3.4~3.10 of this report.

1.6 Applicable Standards

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

- 47 CFR Part 2, Part 27 Subpart Q
- ANSI C63.26-2015
- FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- 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.

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.

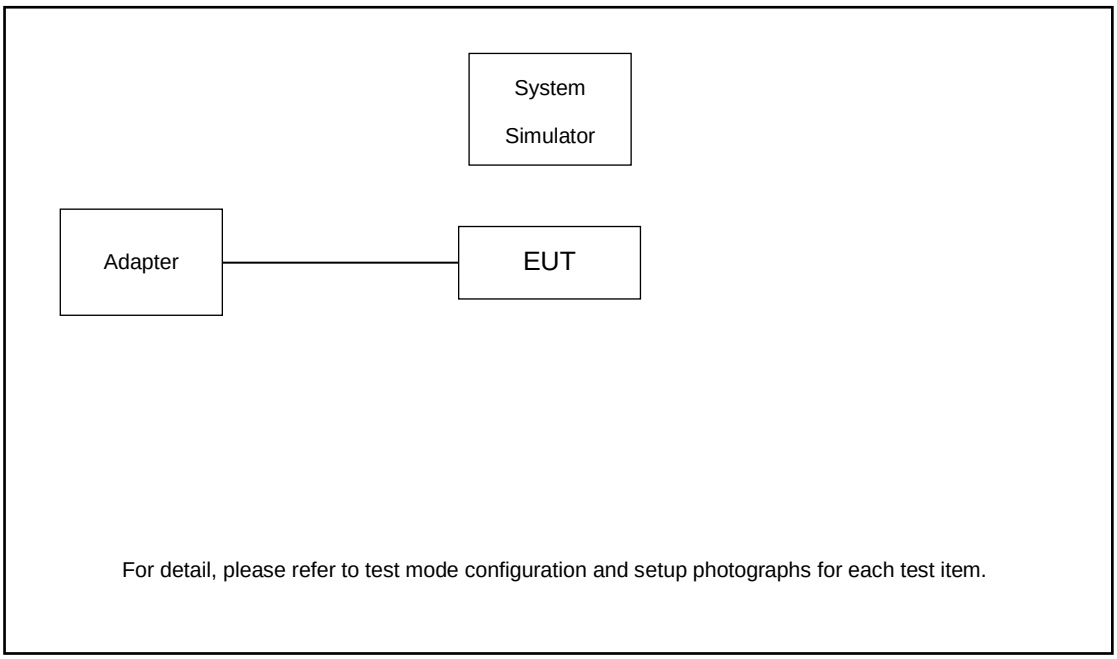
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z and accessory configurations. The worst-cases (Y Plane with adapter) were recorded in this report.

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

Note

1. The mark "**v** " means that this configuration is chosen for testing
2. The mark "-" means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.
4. 5G NR n78 overlaps the entire frequency range of n77, Therefore, the test results provided in this report covers n78 as well as n77.
5. Frequency Stability：Normal Voltage = 3.87V ；Low Voltage =3.55V.；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,1.8m
2.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 8 dB.

Example :

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

= 8 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G n77 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	-	633334	-
	Frequency	-	3500.01	-
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510
60	Channel	632000	633334	634666
	Frequency	3480	3500.01	3519.99
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540

5G n77/n78 Channel and Frequency List-30kHz				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	-	633334	-
	Frequency	-	3500.01	-
90	Channel	633000	633334	633666
	Frequency	3495	3500.01	3504.99
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510
70	Channel	632334	633334	634332
	Frequency	3485.01	3500.01	3514.98
60	Channel	632000	633334	634666
	Frequency	3480	3500.01	3519.99
50	Channel	631668	633334	635000
	Frequency	3475.02	3500.01	3525
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540

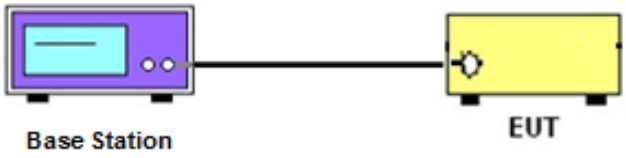
3 Conducted Test Items

3.1 Measuring Instruments

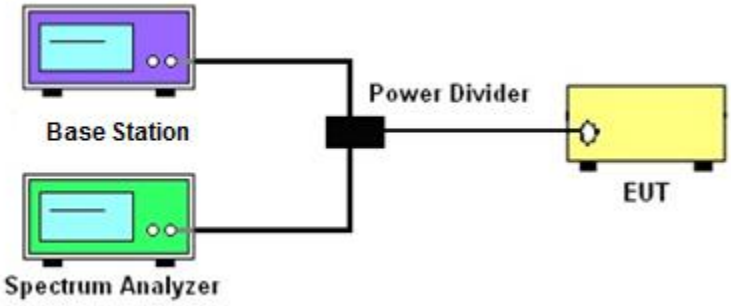
See list of measuring instruments of this test report.

3.2 Test Setup

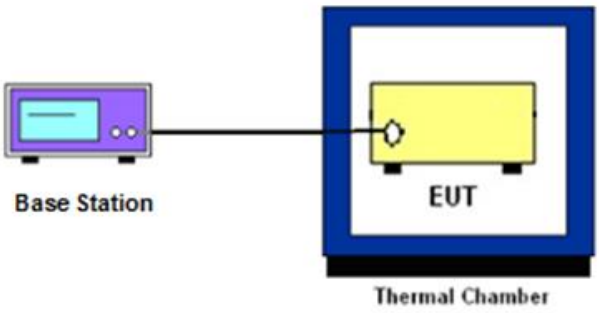
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied / 26dB Bandwidth ,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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

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

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 EIRP

3.6.1 Description of EIRP Limit

§ 27.50 (k)(3)

Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications

3.6.2 Test Procedures

1. According to KDB 412172 D01 Power Approach,
2. 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

3.7 Occupied Bandwidth

3.7.1 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.

3.7.2 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.

3.8 Conducted Band Edge Measurement

3.8.1 Description of Conducted Band Edge Measurement

§ 27.53 (n)(2)

For mobile operations in the 3450-3550 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, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 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.

3.8.2 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 band edges of low and high channels for the highest RF powers were measured.
4. Set RBW ≥ 1% EBW but limited to a maximum of 200 kHz in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz and 5 MHz removed from the band edge, set RBW ≥ 500KHz.
6. Beyond the 5 MHz removed from the band edge, set RBW = 1MHz.
7. Set spectrum analyzer with RMS detector.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. Checked that all the results comply with the emission limit line.

3.9 Conducted Spurious Emission Measurement

3.9.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges shall not exceed −13 dBm/MHz.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 kHz up to a frequency including its 10^{th} harmonic.

3.9.2 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. Checked that all the results comply with the emission limit line.

3.10 Frequency Stability Measurement

3.10.1 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.

3.10.2 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.

3.10.3 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.

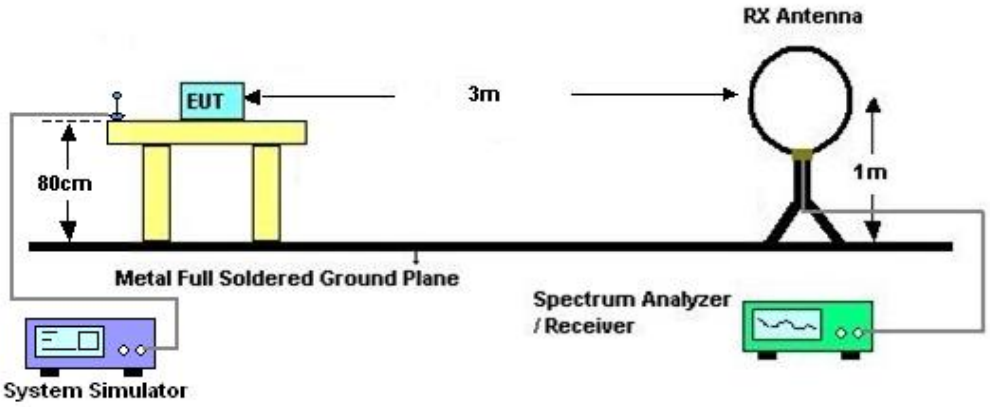
4 Radiated Test Items

4.1 Measuring Instruments

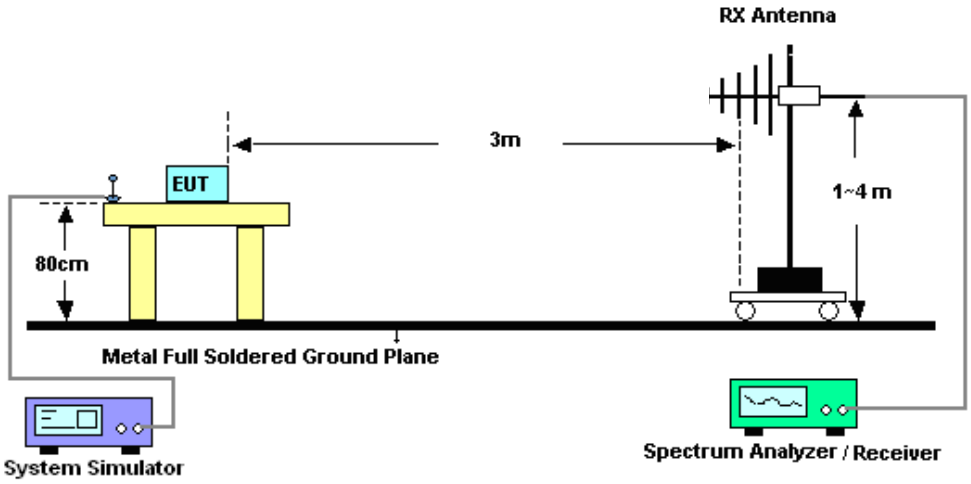
See list of measuring instruments of this test report.

4.2 Test Setup

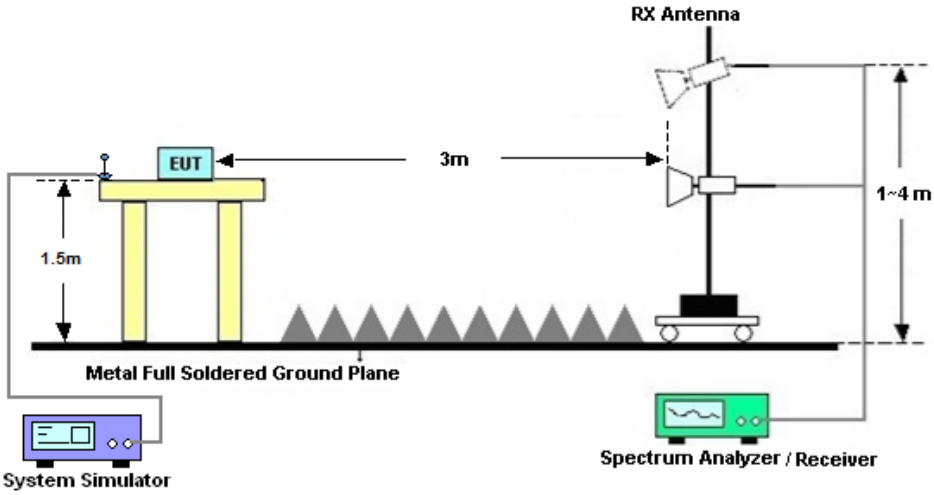
4.2.1 For radiated test below 30MHz



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 Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E.

The power of any emission outside of the authorized operating frequency ranges shall not exceed −13 dBm/MHz.

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.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = EIRP - 2.15
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Signal Analyzer	KEYSIGHT	N9010B	MY60240803	10Hz~44GHz	Apr. 03, 2021	Jun. 12, 2022~ Jun. 15, 2022	Apr. 02, 2022	Conducted (TH01-SZ)
Power divider	STI	STI08-0055	-	0.5~40GHz	Aug. 26, 2021	Jun. 12, 2022~ Jun. 15, 2022	Aug. 25, 2022	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 14, 2021	Jun. 12, 2022~ Jun. 15, 2022	Jul. 13, 2022	Conducted (TH01-SZ)
EXA Spectrum Analyzer	Keysight	N9010B	MY57541079	10Hz-44G,MAX 30dB	Oct. 14, 2022	Jun. 24, 2022	Oct. 13, 2023	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Jun. 24, 2022	Oct. 29, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 24, 2022	Jun. 24, 2022	May 23, 2023	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1284	1GHz~18GHz	Jan. 05, 2022	Jun. 24, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2022	Jun. 24, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 05, 2022	Jun. 24, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 05, 2022	Jun. 24, 2022	Jan. 04, 2023	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060839	1Ghz-18Ghz	Oct. 14, 2021	Jun. 24, 2022	Oct. 13, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Jun. 24, 2022	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Jun. 24, 2022	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Jun. 24, 2022	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Jun. 24, 2022	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

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

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

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

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

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

Appendix A. Test Results of Conducted Test

Test Engineer :	Jung Kuo	**Temperature :**	21~23℃
		Relative Humidity :	45~51%

Software Version: 22.02.012503

FR1 N77

Transmitter Conducted Output Power And EIRP, (G_T - L_C) =0.3dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	EIRP (dBm)	EIRP (W)
77	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@1	25.81	26.11	0.4083
77	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@1	25.08	25.38	0.3451
77	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.95	26.25	0.4217
77	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.21	25.51	0.3556
77	30	20	636000	3540	DFT-s-OFDM QPSK	1@1	25.86	26.16	0.4130
77	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@1	25.1	25.4	0.3467
77	30	30	631000	3465	DFT-s-OFDM QPSK	1@1	25.91	26.21	0.4178
77	30	30	631000	3465	DFT-s-OFDM 16 QAM	1@1	25.16	25.46	0.3516
77	30	30	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.96	26.26	0.4227
77	30	30	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.17	25.47	0.3524
77	30	30	635666	3534.99	DFT-s-OFDM QPSK	1@1	25.96	26.26	0.4227
77	30	30	635666	3534.99	DFT-s-OFDM 16 QAM	1@1	25.55	25.85	0.3846
77	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@1	25.91	26.21	0.4178
77	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@1	25.2	25.5	0.3548
77	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.91	26.21	0.4178
77	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.95	25.25	0.3350
77	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@1	25.81	26.11	0.4083
77	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@1	25.47	25.77	0.3776
77	30	60	632000	3480	DFT-s-OFDM QPSK	1@1	25.7	26	0.3981
77	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@1	24.98	25.28	0.3373
77	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.77	26.07	0.4046
77	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.01	25.31	0.3396
77	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@1	25.77	26.07	0.4046
77	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@1	25.01	25.31	0.3396
77	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@1	25.48	25.78	0.3784
77	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@1	24.83	25.13	0.3258
77	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.52	25.82	0.3819
77	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.81	25.11	0.3243
77	30	80	634000	3510	DFT-s-OFDM QPSK	1@1	25.65	25.95	0.3936
77	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@1	24.66	24.96	0.3133

77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	25.85	26.15	0.4121
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	25.71	26.01	0.3990
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	25.7	26	0.3981
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	25.97	26.27	0.4236
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.82	26.12	0.4093
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	25.66	25.96	0.3945
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	24.72	25.02	0.3177
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.89	25.19	0.3304
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	24.69	24.99	0.3155
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	23.2	23.5	0.2239
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	22.98	23.28	0.2128
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	22.92	23.22	0.2099
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	21.47	21.77	0.1503
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	21.11	21.41	0.1384
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	21.06	21.36	0.1368
77	30	100	633334	3500.01	CP-OFDM QPSK	137@68	24.31	24.61	0.2891
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	24.18	24.48	0.2805
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	24.14	24.44	0.2780

Software Version: 22.05.231801

FR1 N78

Transmitter Conducted Output Power And EIRP, (G_T - L_C) =0.3dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power (dBm)	EIRP (dBm)	EIRP (W)
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@1	25.9	26.2	0.4169
78	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@1	25.21	25.51	0.3556
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.88	26.18	0.4150
78	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.99	25.29	0.3381
78	30	20	636000	3540	DFT-s-OFDM QPSK	1@1	25.93	26.23	0.4198
78	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@1	25.21	25.51	0.3556
78	30	30	631000	3465	DFT-s-OFDM QPSK	1@1	25.9	26.2	0.4169
78	30	30	631000	3465	DFT-s-OFDM 16 QAM	1@1	25.3	25.6	0.3631
78	30	30	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.95	26.25	0.4217
78	30	30	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.47	25.77	0.3776
78	30	30	635666	3534.99	DFT-s-OFDM QPSK	1@1	25.93	26.23	0.4198
78	30	30	635666	3534.99	DFT-s-OFDM 16 QAM	1@1	25.4	25.7	0.3715
78	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@1	25.93	26.23	0.4198
78	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@1	25.31	25.61	0.3639
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.95	26.25	0.4217
78	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.5	25.8	0.3802
78	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@1	25.9	26.2	0.4169
78	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@1	25.41	25.71	0.3724
78	30	50	631668	3475.02	DFT-s-OFDM QPSK	1@1	25.7	26	0.3981
78	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	1@1	24.98	25.28	0.3373
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.78	26.08	0.4055
78	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.05	25.35	0.3428
78	30	50	635000	3525	DFT-s-OFDM QPSK	1@1	25.73	26.03	0.4009
78	30	50	635000	3525	DFT-s-OFDM 16 QAM	1@1	25.06	25.36	0.3436
78	30	60	632000	3480	DFT-s-OFDM QPSK	1@1	25.77	26.07	0.4046
78	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@1	25.05	25.35	0.3428
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.87	26.17	0.4140
78	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	25.13	25.43	0.3491
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@1	25.85	26.15	0.4121
78	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@1	25.09	25.39	0.3459

78	30	70	632334	3485.01	DFT-s-OFDM QPSK	1@1	25.63	25.93	0.3917
78	30	70	632334	3485.01	DFT-s-OFDM 16 QAM	1@1	24.92	25.22	0.3327
78	30	70	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.84	26.14	0.4111
78	30	70	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.99	25.29	0.3381
78	30	70	634332	3514.98	DFT-s-OFDM QPSK	1@1	25.87	26.17	0.4140
78	30	70	634332	3514.98	DFT-s-OFDM 16 QAM	1@1	25.13	25.43	0.3491
78	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@1	25.6	25.9	0.3890
78	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@1	24.96	25.26	0.3357
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.73	26.03	0.4009
78	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.89	25.19	0.3304
78	30	80	634000	3510	DFT-s-OFDM QPSK	1@1	25.79	26.09	0.4064
78	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@1	25.08	25.38	0.3451
78	30	90	633000	3495	DFT-s-OFDM QPSK	1@1	25.57	25.87	0.3864
78	30	90	633000	3495	DFT-s-OFDM 16 QAM	1@1	24.83	25.13	0.3258
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.74	26.04	0.4018
78	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.8	25.1	0.3236
78	30	90	633666	3504.99	DFT-s-OFDM QPSK	1@1	25.67	25.97	0.3954
78	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	1@1	24.98	25.28	0.3373
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	25.86	26.16	0.4130
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	25.66	25.96	0.3945
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	25.6	25.9	0.3890
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	25.99	26.29	0.4256
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	25.71	26.01	0.3990
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	25.56	25.86	0.3855
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	24.81	25.11	0.3243
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	24.85	25.15	0.3273
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	24.76	25.06	0.3206
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	23.27	23.57	0.2275
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	23.12	23.42	0.2198
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	23.09	23.39	0.2183
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	21.01	21.31	0.1352
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	20.81	21.11	0.1291
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	20.74	21.04	0.1271
78	30	100	633334	3500.01	CP-OFDM QPSK	137@68	24.3	24.6	0.2884
78	30	100	633334	3500.01	CP-OFDM QPSK	1@1	24.11	24.41	0.2761
78	30	100	633334	3500.01	CP-OFDM QPSK	1@271	24.07	24.37	0.2735

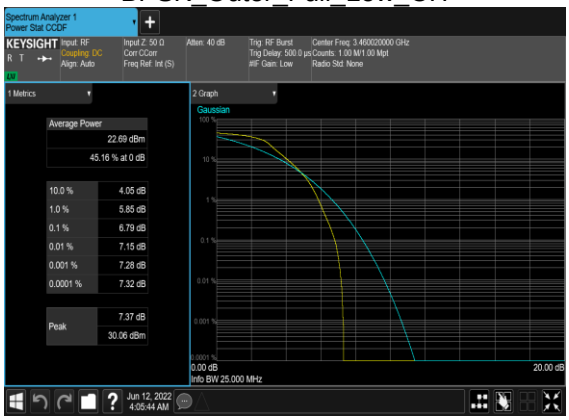
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00621	**PASS**	NV
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00312	**PASS**	LV
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00513	**PASS**	HV
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00628	**PASS**	-30℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00163	**PASS**	-20℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00624	**PASS**	-10℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00502	**PASS**	0℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00254	**PASS**	10℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00813	**PASS**	20℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00686	**PASS**	30℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00312	**PASS**	40℃
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	0.00331	**PASS**	50℃

Peak to Average Radio

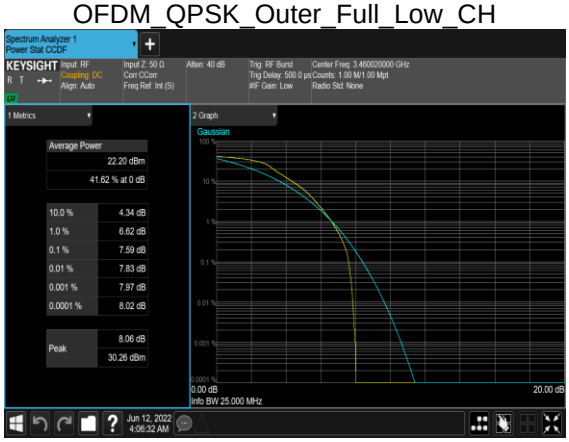
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
78	30	20	630668	3460.02	DFT-s-OFDM PI/2 BPSK	50@0	6.79	13	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM PI/2 BPSK	1@0	7.2	13	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	50@0	7.59	13	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@0	6.93	13	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@0	6.79	13	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@0	7.39	13	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	7.58	13	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	8.02	13	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	50@0	6.85	13	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	1@0	7.33	13	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	50@0	7.75	13	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	8.06	13	**PASS**

N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH

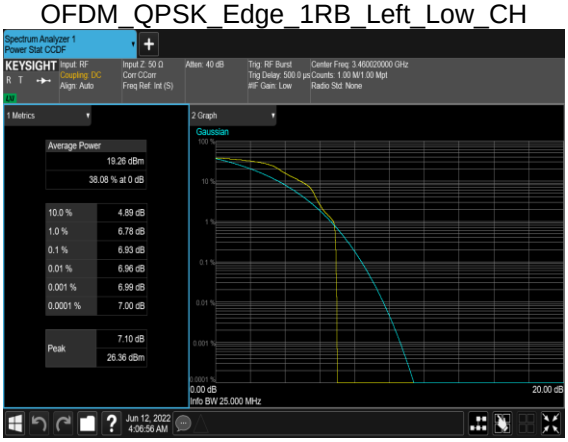


N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH

N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH

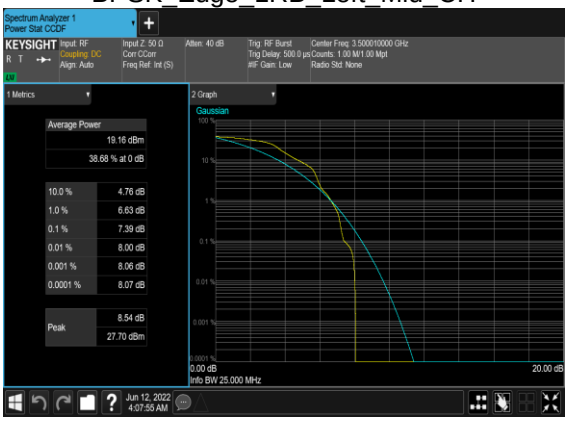


N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH

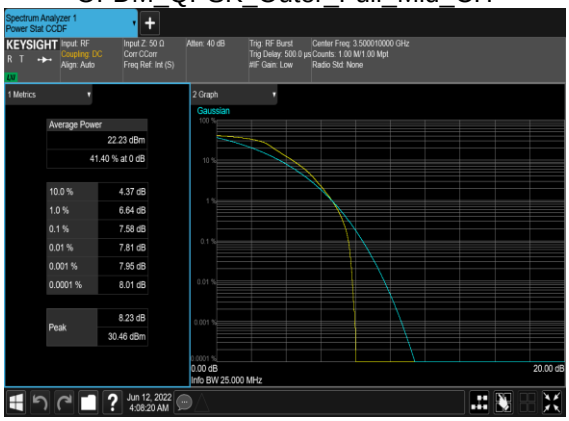


N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

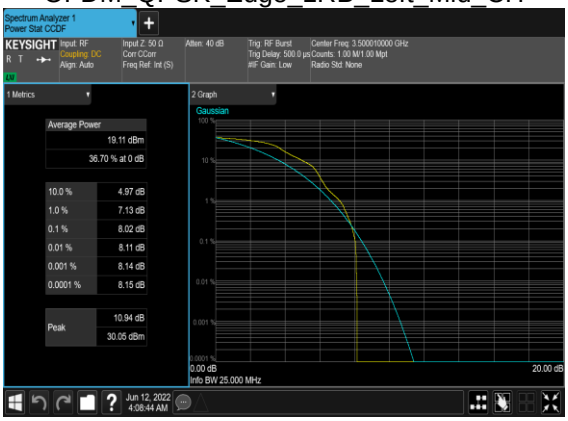
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



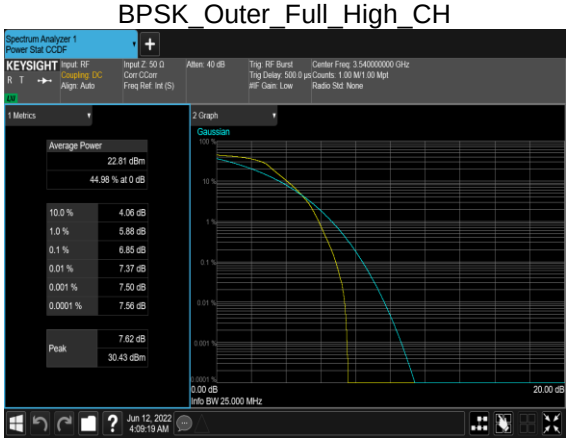
N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



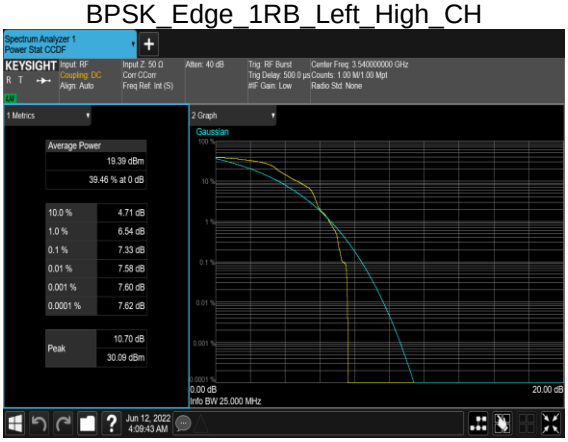
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



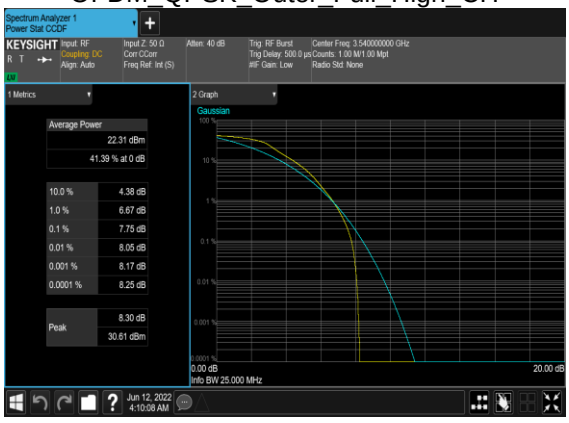
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH



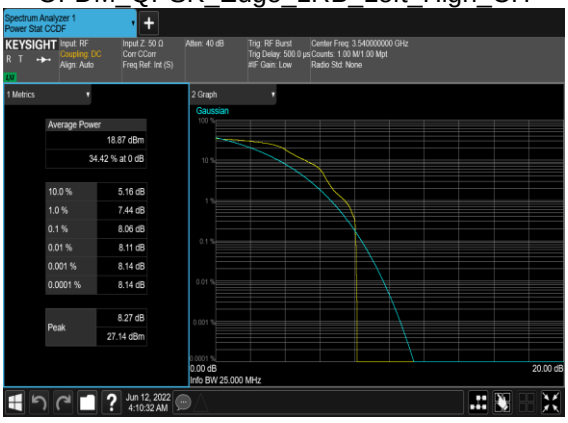
N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



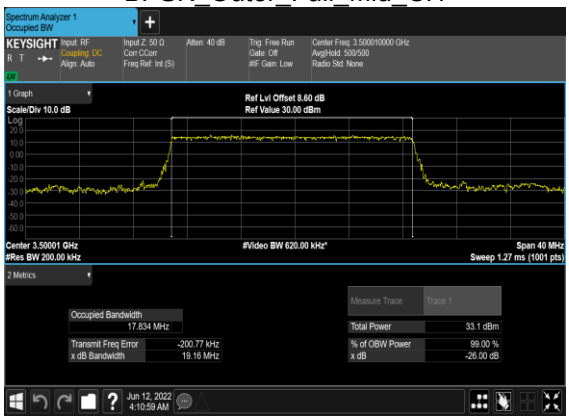
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@0	17.834	19.16
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	17.821	18.9
78	30	20	633334	3500.01	CP-OFDM QPSK	51@0	18.204	19.74
78	30	20	633334	3500.01	CP-OFDM 16 QAM	51@0	18.224	19.56
78	30	20	633334	3500.01	CP-OFDM 64 QAM	51@0	18.223	19.54
78	30	20	633334	3500.01	CP-OFDM 256 QAM	51@0	18.172	19.44
78	30	30	633334	3500.01	DFT-s-OFDM PI/2 BPSK	75@0	26.707	28.29
78	30	30	633334	3500.01	DFT-s-OFDM QPSK	75@0	26.738	28.28
78	30	30	633334	3500.01	CP-OFDM QPSK	78@0	27.845	29.36
78	30	30	633334	3500.01	CP-OFDM 16 QAM	78@0	27.894	29.21
78	30	30	633334	3500.01	CP-OFDM 64 QAM	78@0	27.861	29.35
78	30	30	633334	3500.01	CP-OFDM 256 QAM	78@0	27.85	29.5
78	30	40	633334	3500.01	DFT-s-OFDM PI/2 BPSK	100@0	35.708	37.27
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	100@0	35.712	37.43
78	30	40	633334	3500.01	CP-OFDM QPSK	106@0	37.828	39.6
78	30	40	633334	3500.01	CP-OFDM 16 QAM	106@0	37.828	39.36
78	30	40	633334	3500.01	CP-OFDM 64 QAM	106@0	37.763	39.48
78	30	40	633334	3500.01	CP-OFDM 256 QAM	106@0	37.847	39.51
78	30	50	633334	3500.01	DFT-s-OFDM PI/2 BPSK	128@0	45.682	47.32
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	128@0	45.697	47.34
78	30	50	633334	3500.01	CP-OFDM QPSK	133@0	47.431	49.28
78	30	50	633334	3500.01	CP-OFDM 16 QAM	133@0	47.471	49.4
78	30	50	633334	3500.01	CP-OFDM 64 QAM	133@0	47.499	49.27
78	30	50	633334	3500.01	CP-OFDM 256 QAM	133@0	47.503	49.28
78	30	60	633334	3500.01	DFT-s-OFDM PI/2 BPSK	162@0	57.896	59.88

78	30	60	633334	3500.01	DFT-s-OFDM QPSK	162@0	57.81	59.85
78	30	60	633334	3500.01	CP-OFDM QPSK	162@0	57.735	59.86
78	30	60	633334	3500.01	CP-OFDM 16 QAM	162@0	57.879	60.1
78	30	60	633334	3500.01	CP-OFDM 64 QAM	162@0	57.824	59.81
78	30	60	633334	3500.01	CP-OFDM 256 QAM	162@0	57.775	59.89
78	30	70	633334	3500.01	DFT-s-OFDM PI/2 BPSK	180@0	64.391	66.44
78	30	70	633334	3500.01	DFT-s-OFDM QPSK	180@0	64.288	66.38
78	30	70	633334	3500.01	CP-OFDM QPSK	189@0	67.425	69.88
78	30	70	633334	3500.01	CP-OFDM 16 QAM	189@0	67.53	69.67
78	30	70	633334	3500.01	CP-OFDM 64 QAM	189@0	67.564	69.81
78	30	70	633334	3500.01	CP-OFDM 256 QAM	189@0	67.494	69.78
78	30	80	633334	3500.01	DFT-s-OFDM PI/2 BPSK	216@0	77.204	79.66
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	216@0	77.136	79.93
78	30	80	633334	3500.01	CP-OFDM QPSK	217@0	77.391	80.08
78	30	80	633334	3500.01	CP-OFDM 16 QAM	217@0	77.451	80.14
78	30	80	633334	3500.01	CP-OFDM 64 QAM	217@0	77.523	80.12
78	30	80	633334	3500.01	CP-OFDM 256 QAM	217@0	77.402	80.02
78	30	90	633334	3500.01	DFT-s-OFDM PI/2 BPSK	240@0	85.635	88.55
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	240@0	85.826	88.59
78	30	90	633334	3500.01	CP-OFDM QPSK	245@0	87.389	90.21
78	30	90	633334	3500.01	CP-OFDM 16 QAM	245@0	87.361	90.25
78	30	90	633334	3500.01	CP-OFDM 64 QAM	245@0	87.411	90.25
78	30	90	633334	3500.01	CP-OFDM 256 QAM	245@0	87.579	90.32
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	270@0	96.441	99.48
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	96.372	99.54
78	30	100	633334	3500.01	CP-OFDM QPSK	273@0	97.278	100.5
78	30	100	633334	3500.01	CP-OFDM 16 QAM	273@0	97.597	100.6

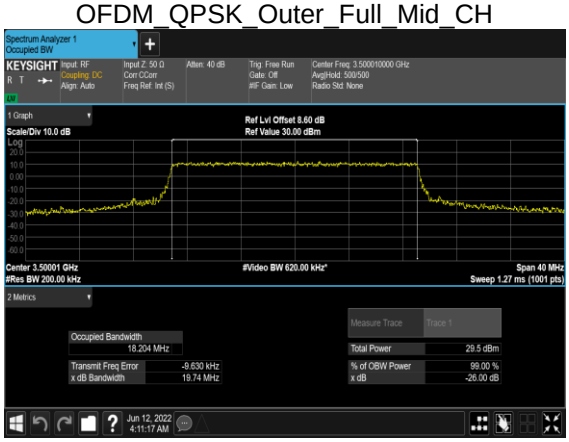
78	30	100	633334	3500.01	CP-OFDM 64 QAM	273@0	97.367	100.6
78	30	100	633334	3500.01	CP-OFDM 256 QAM	273@0	97.552	100.5

N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

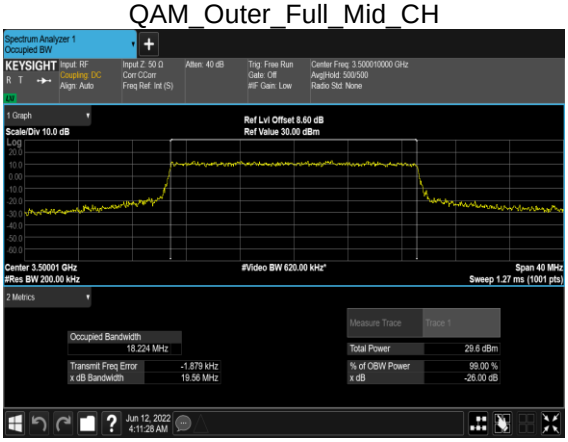


N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N78(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

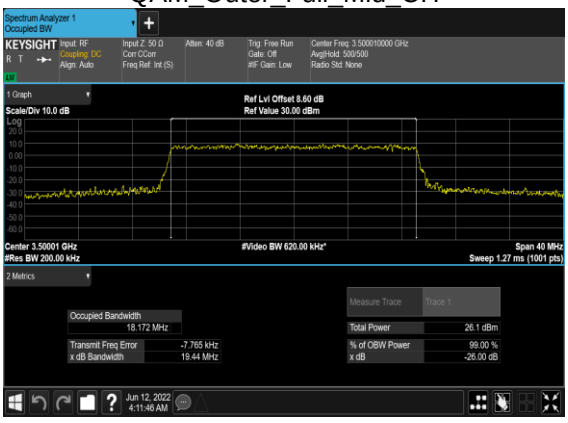


N78(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



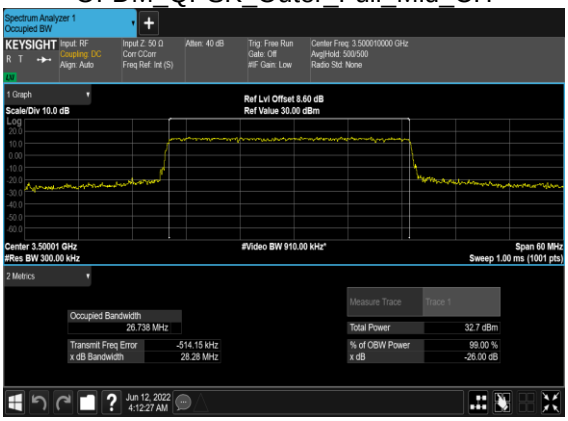
N78(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

N78(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

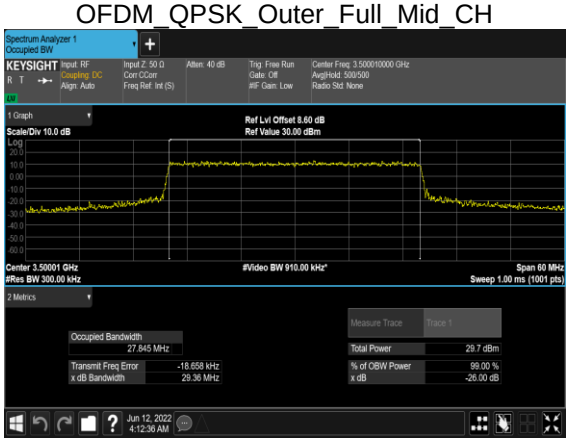


N78(30M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

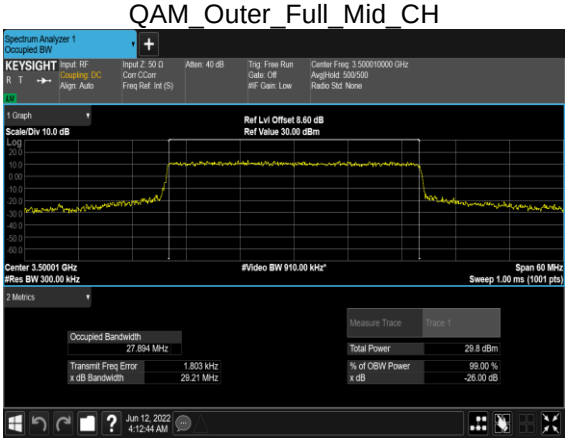
N78(30M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



N78(30M)_CP-OFDM_QPSK_Outer_Full_Mid_CH

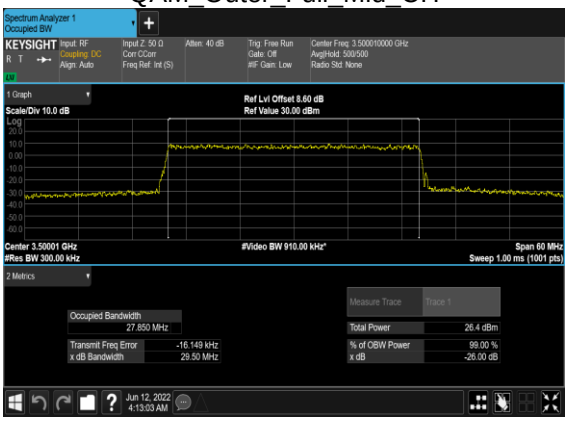


N78(30M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

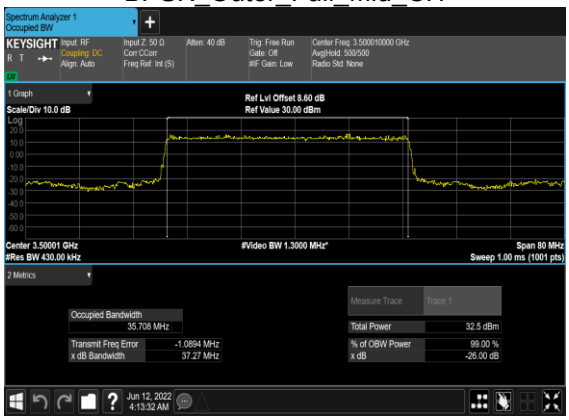


N78(30M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

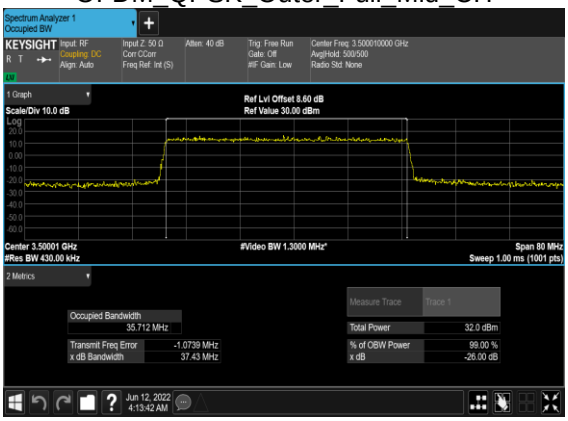
N78(30M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



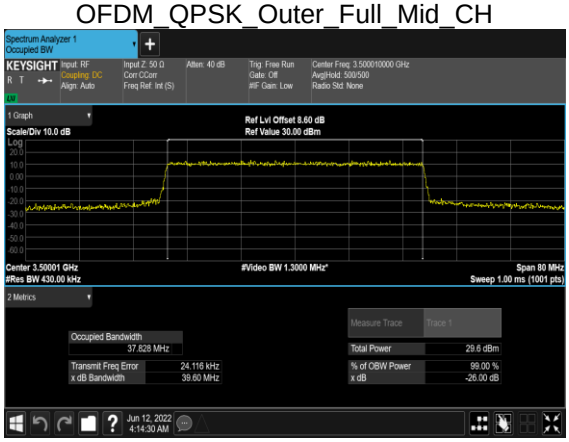
N78(40M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



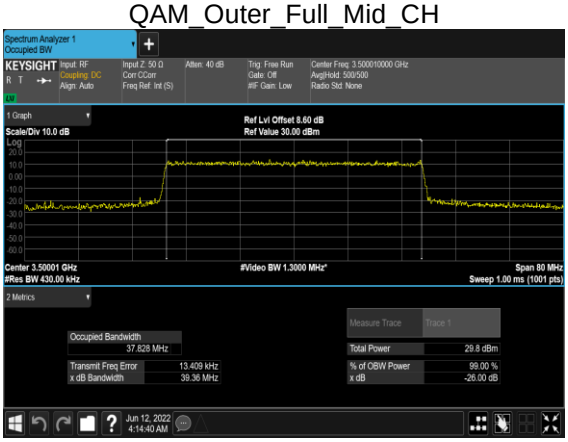
N78(40M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



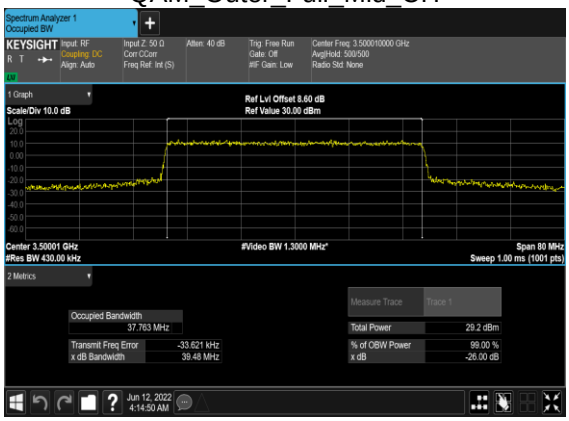
N78(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



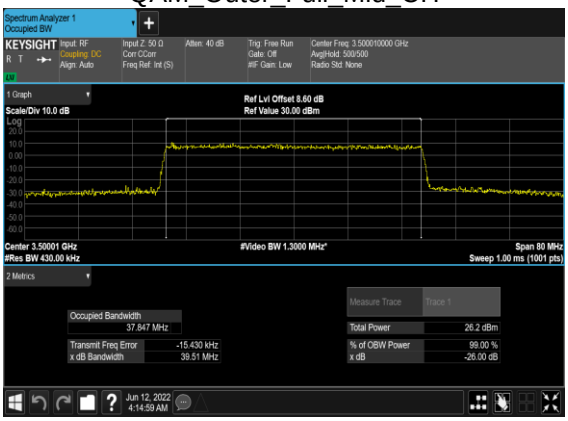
N78(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



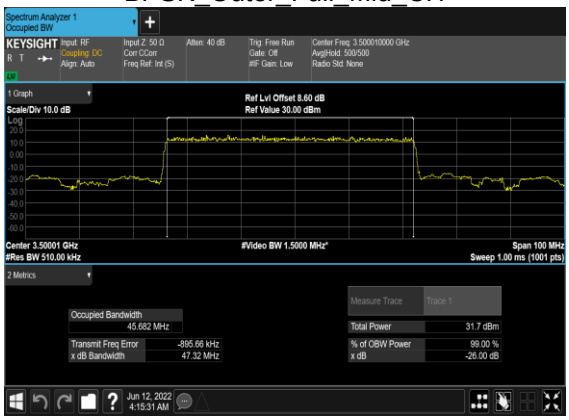
N78(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



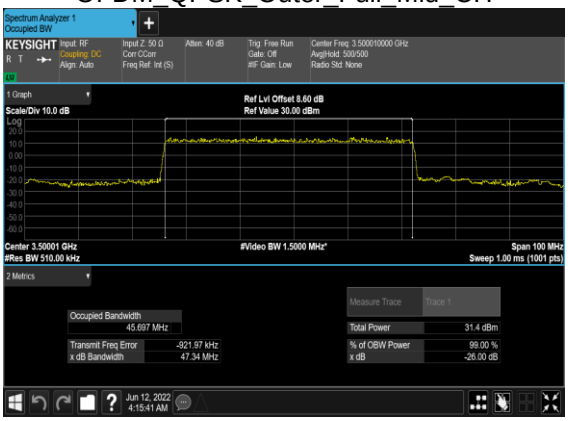
N78(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



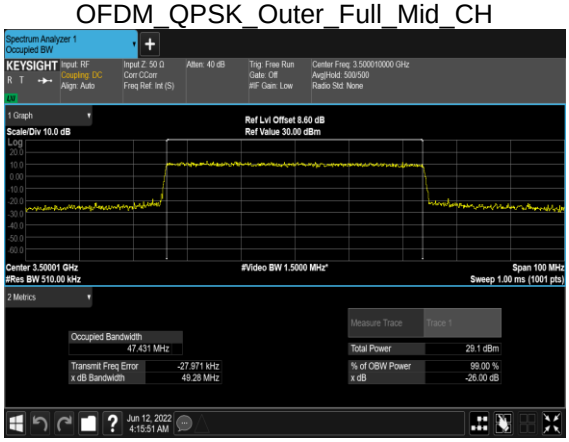
N78(50M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



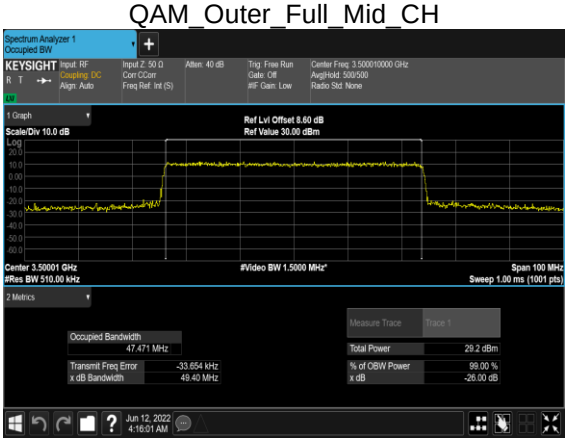
N78(50M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



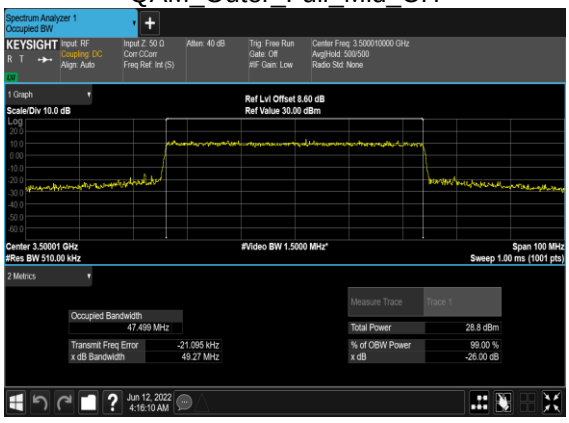
N78(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



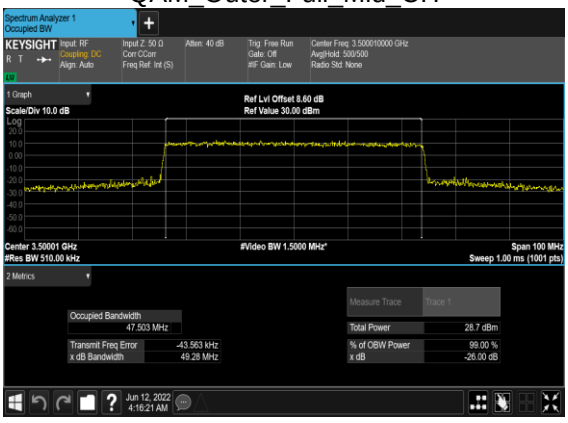
N78(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N78(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



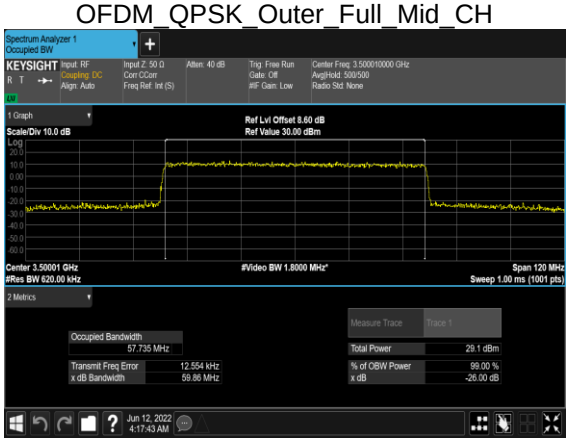
N78(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



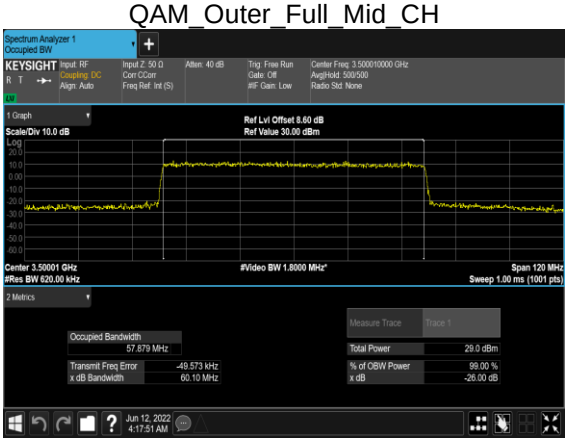
N78(60M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N78(60M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

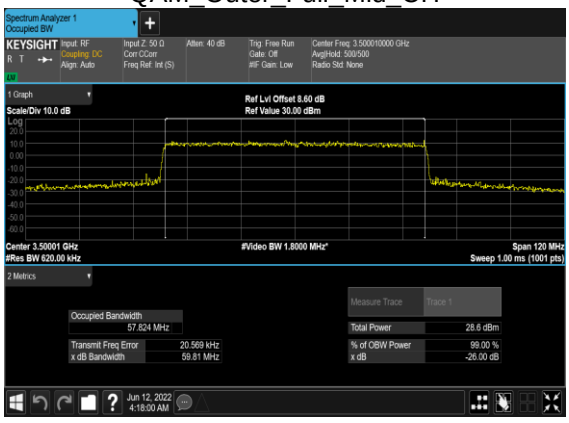
N78(60M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



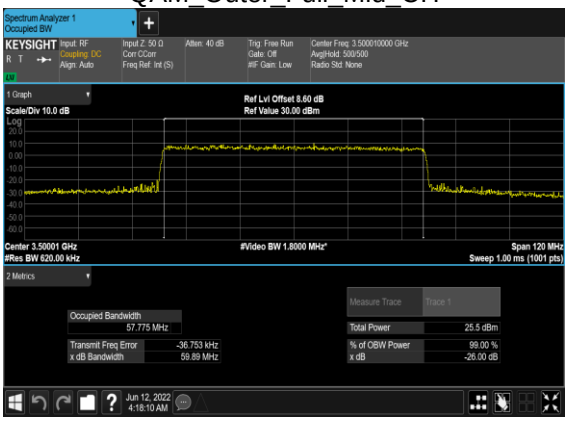
N78(60M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



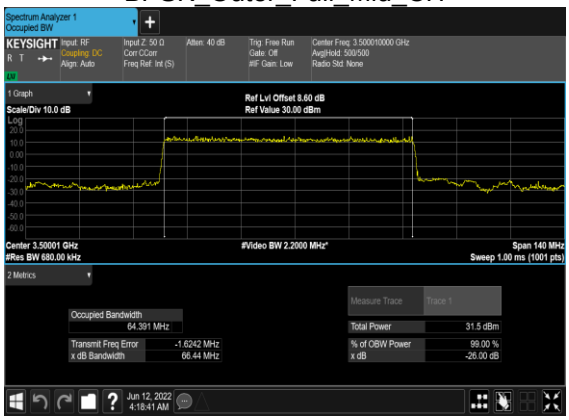
N78(60M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



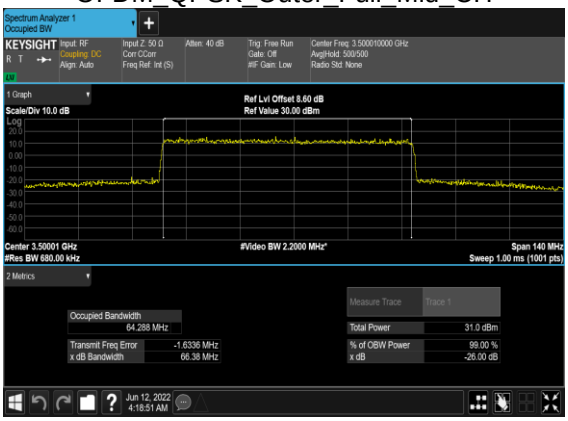
N78(60M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



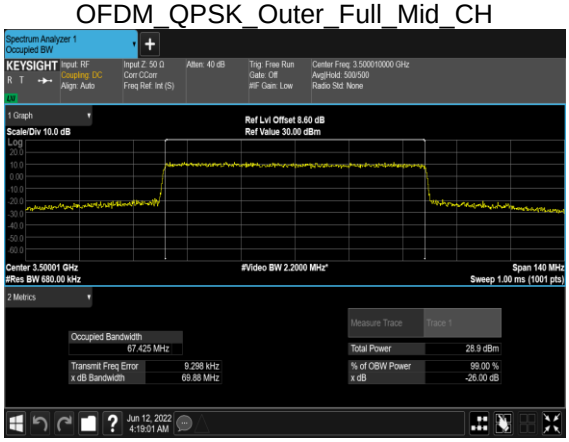
N78(70M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



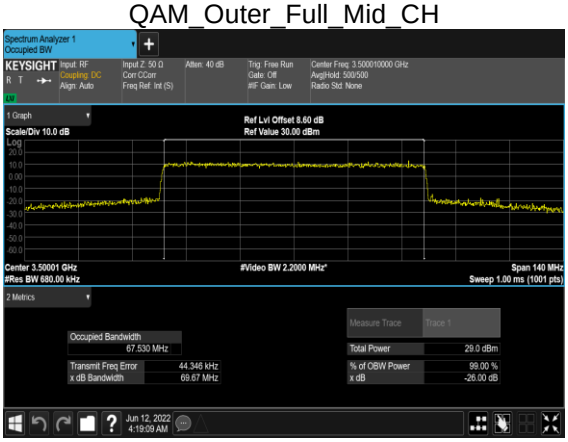
N78(70M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



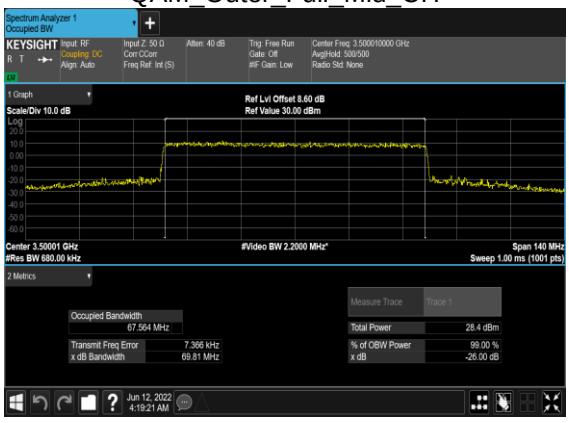
N78(70M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



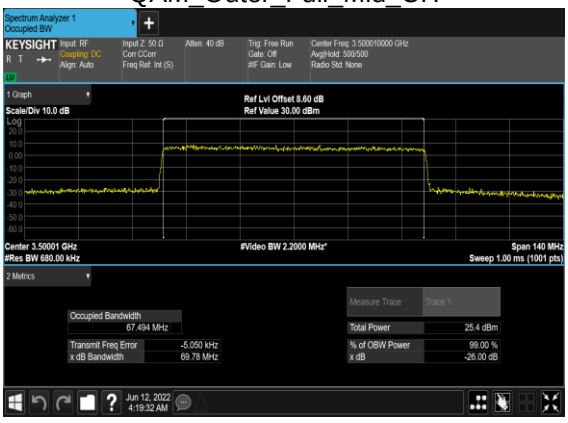
N78(70M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N78(70M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



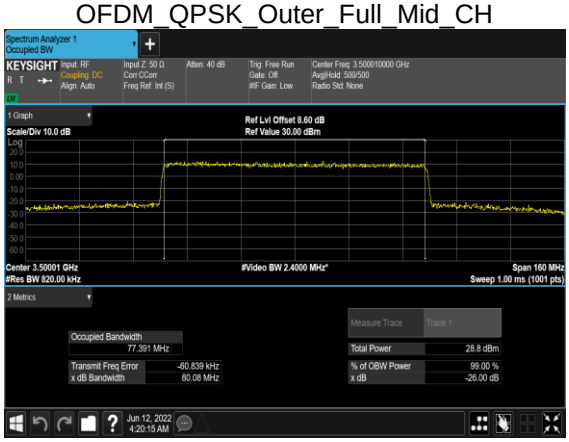
N78(70M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



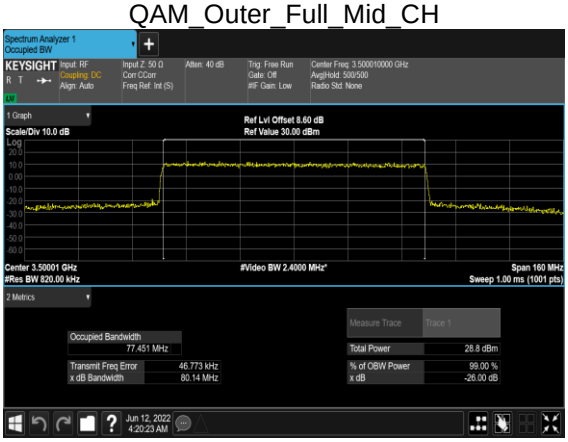
N78(80M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

N78(80M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

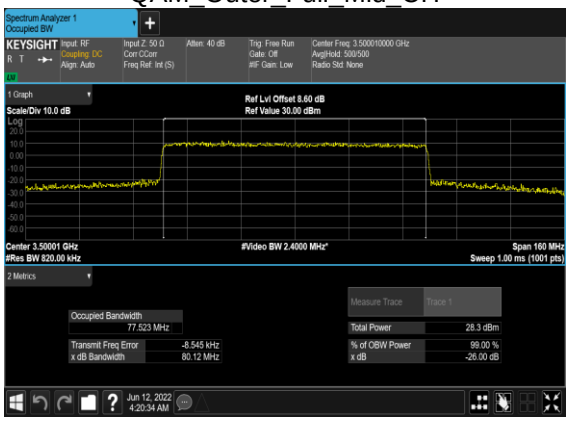
N78(80M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



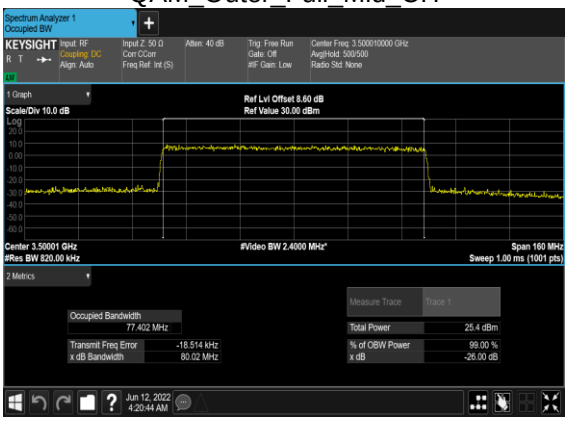
N78(80M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



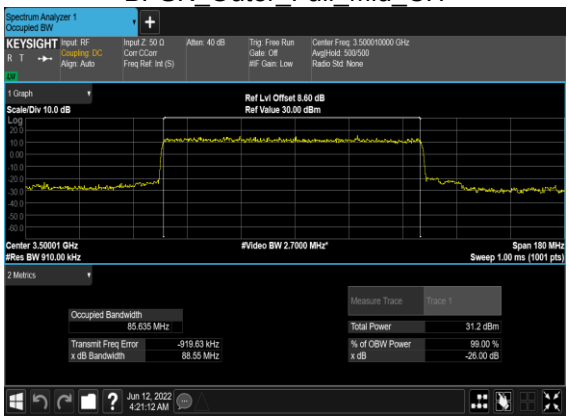
N78(80M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



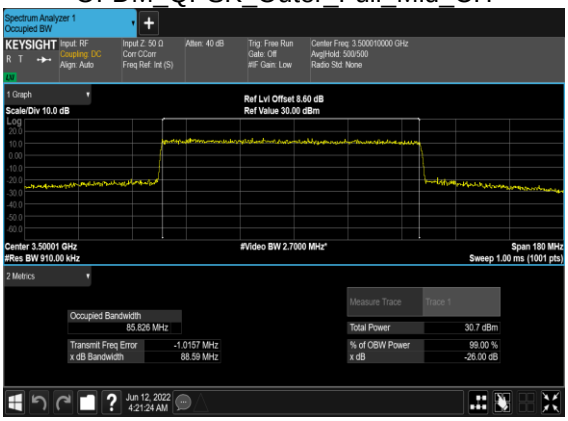
N78(80M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



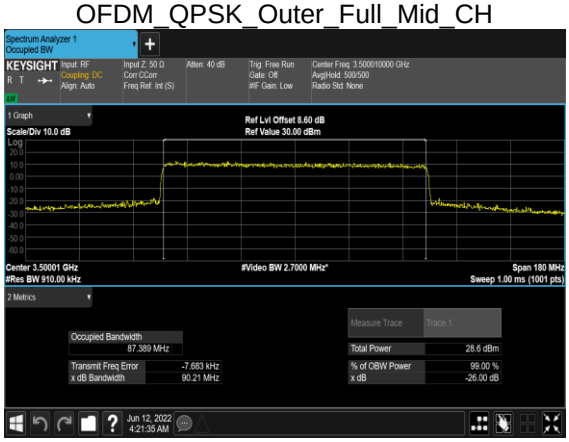
N78(90M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



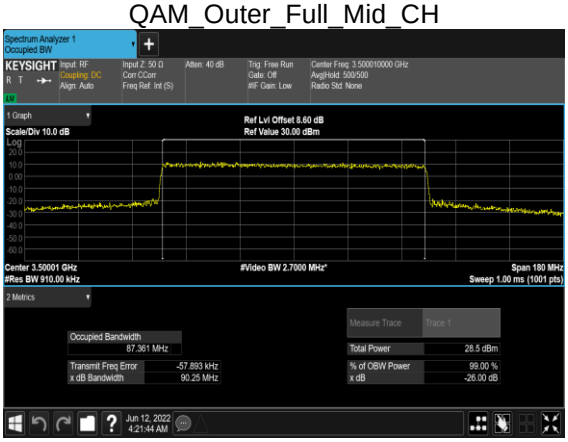
N78(90M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



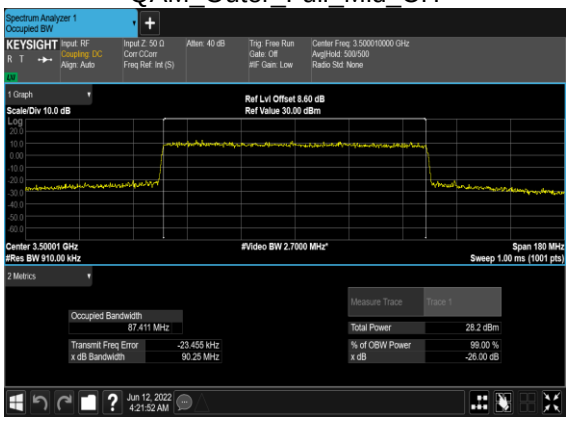
N78(90M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



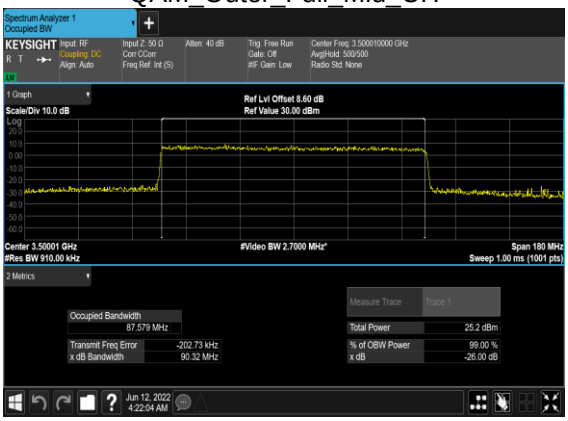
N78(90M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



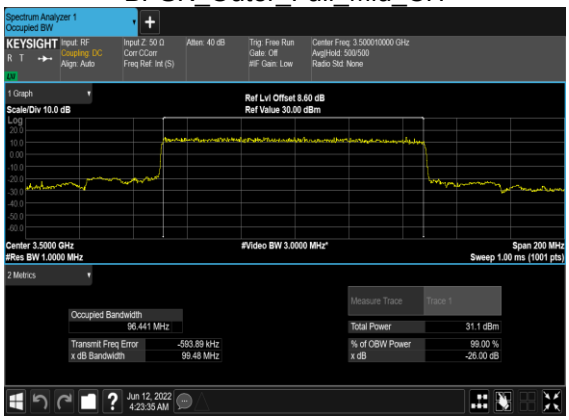
N78(90M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



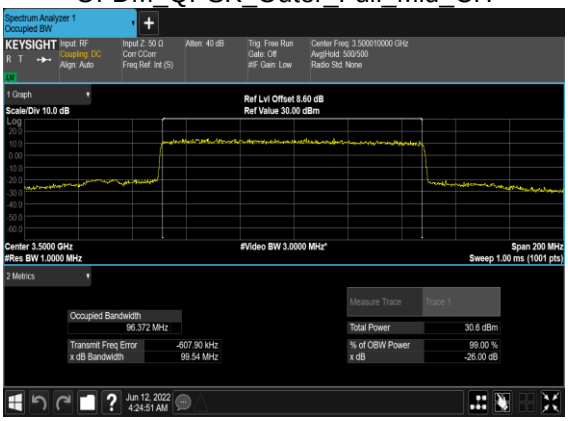
N78(90M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



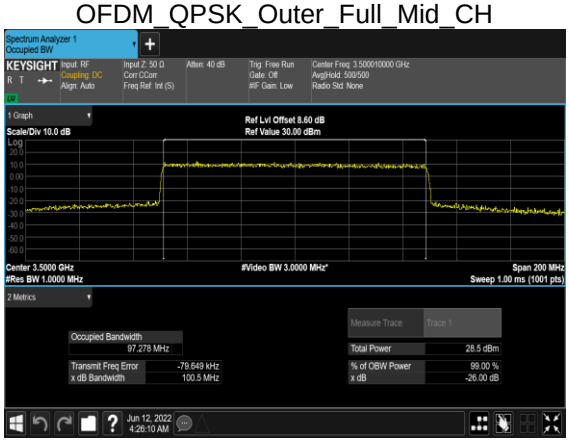
N78(100M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



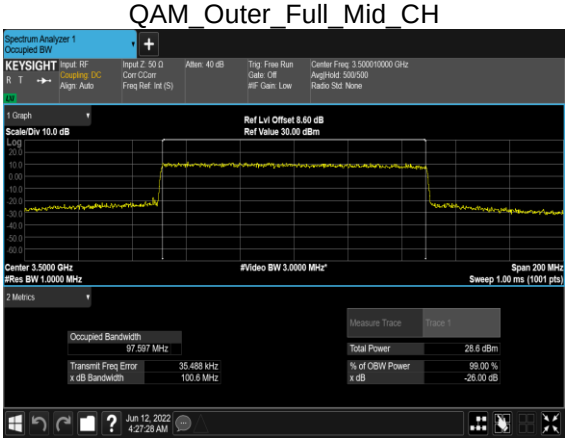
N78(100M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



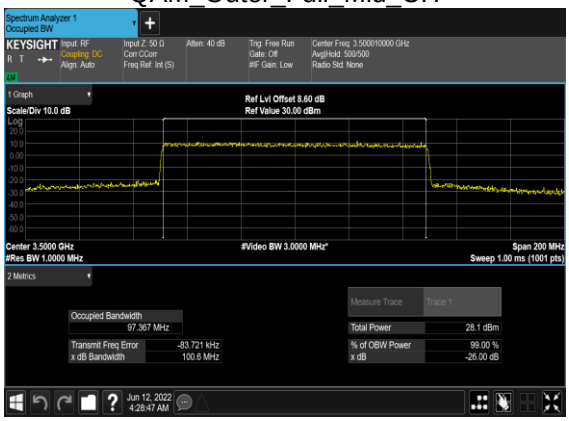
N78(100M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



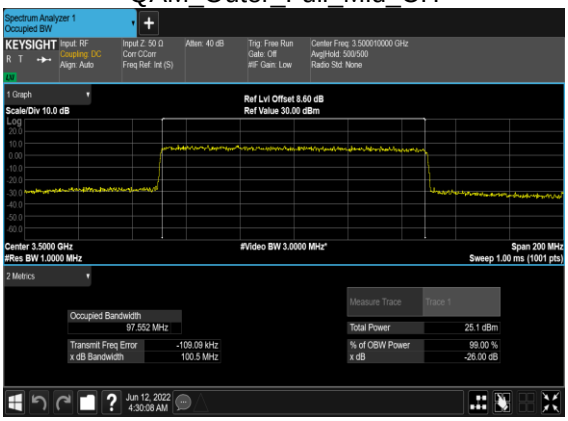
N78(100M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N78(100M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N78(100M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

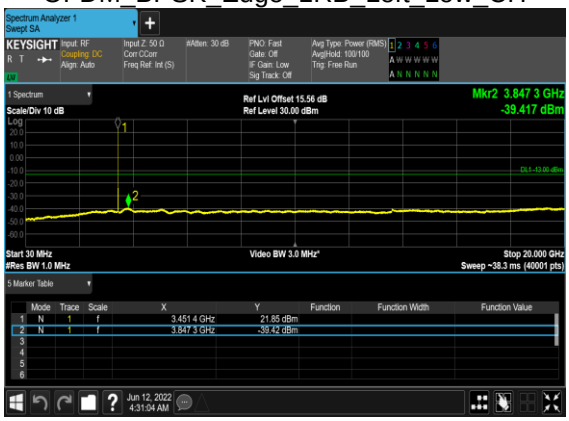


Conducted Spurious Emissions

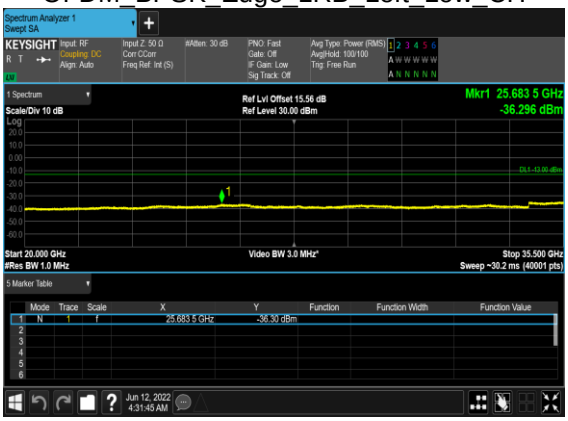
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
78	30	20	630668	3460.02	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	20	630668	3460.02	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	20	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	20	636000	3540.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	632000	3480.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	60	632000	3480.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	632000	3480.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	632000	3480.0	DFT-s-OFDM QPSK	1@0	see graph	**---**

78	30	60	632000	3480.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	632000	3480.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	60	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	634666	3519.99	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	60	634666	3519.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	634666	3519.99	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**---**
78	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**---**
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

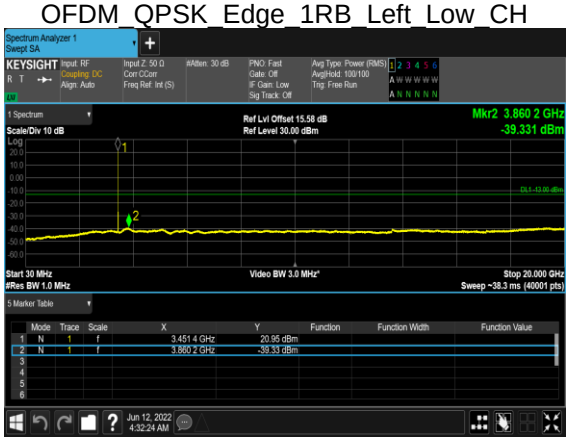
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



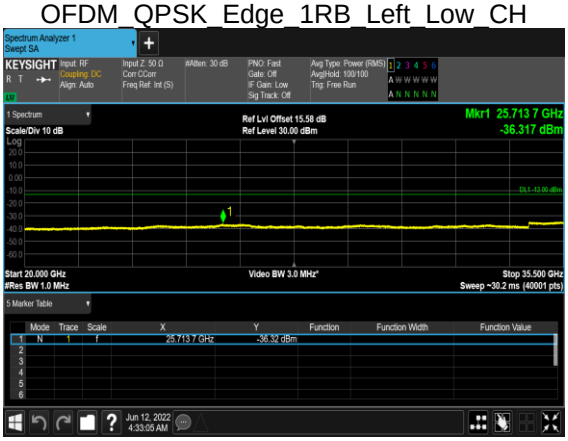
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



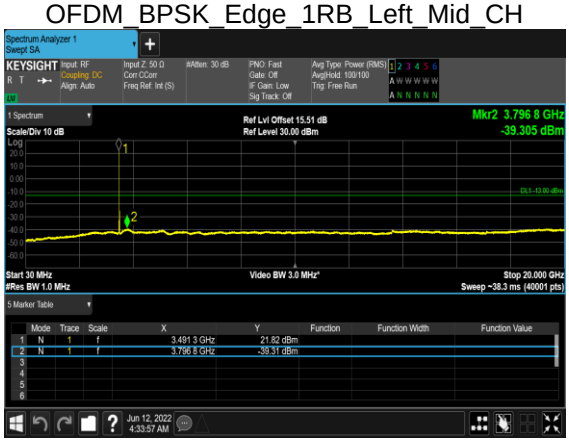
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



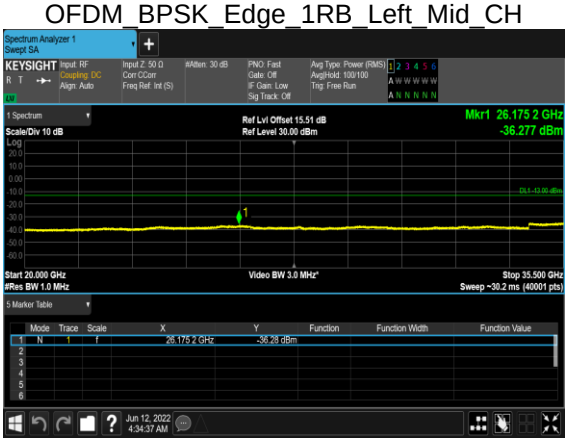
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



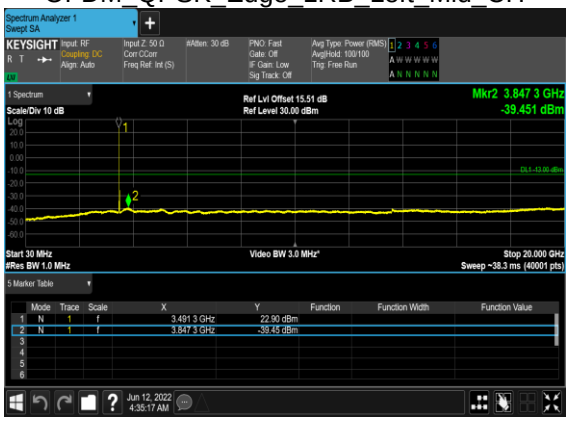
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



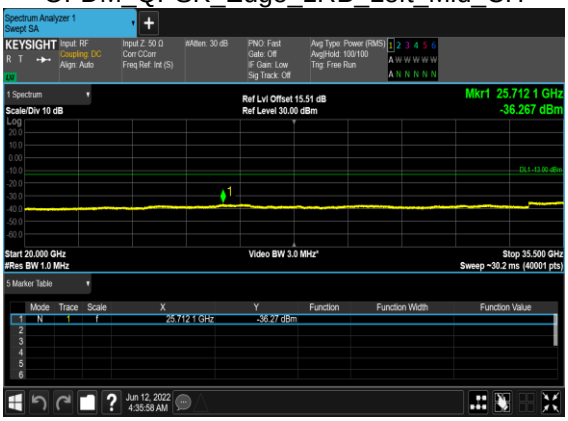
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



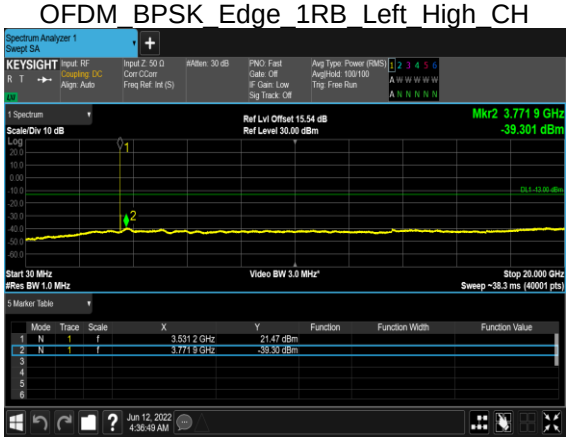
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



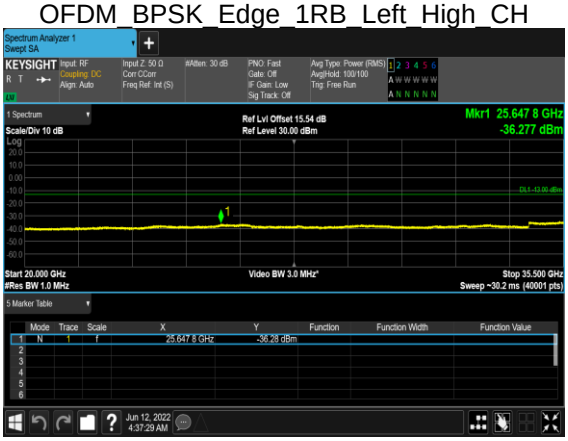
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



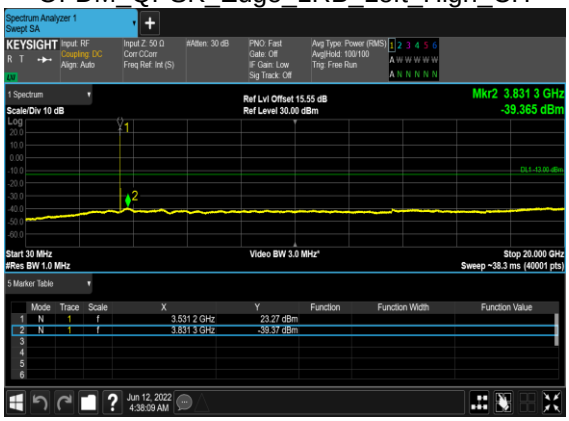
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



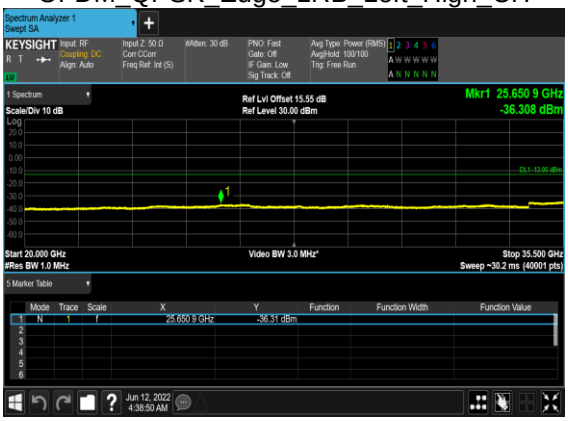
N78(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



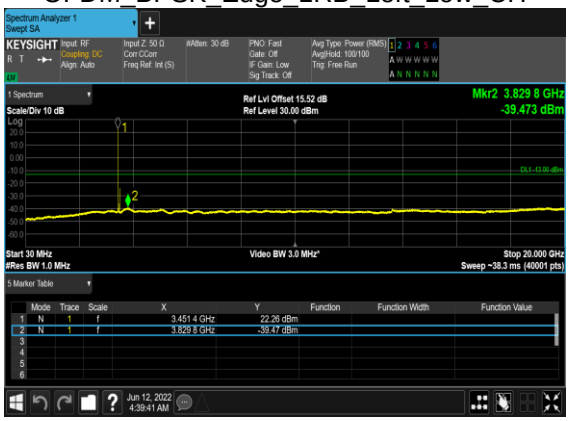
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



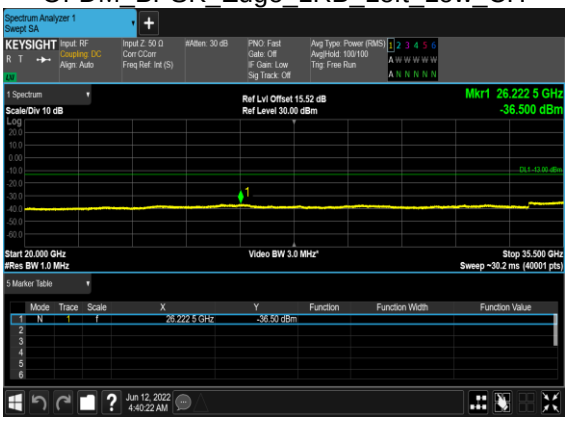
N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



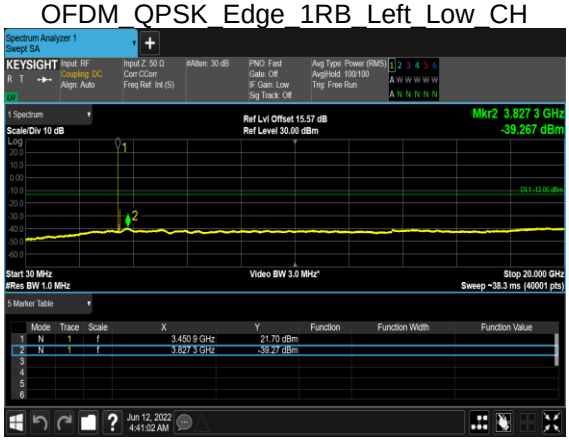
N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



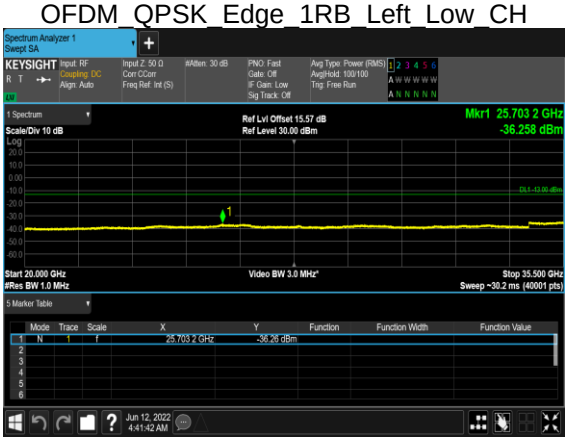
N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



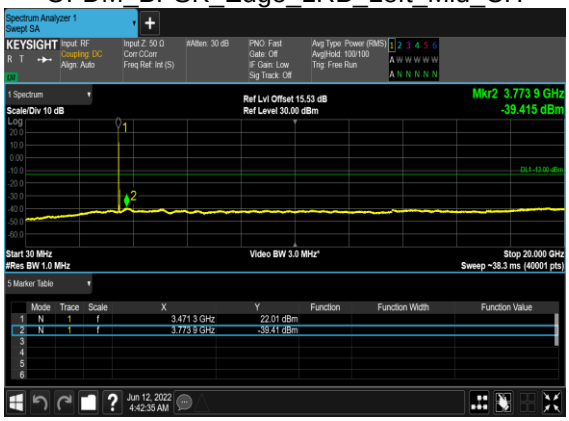
N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



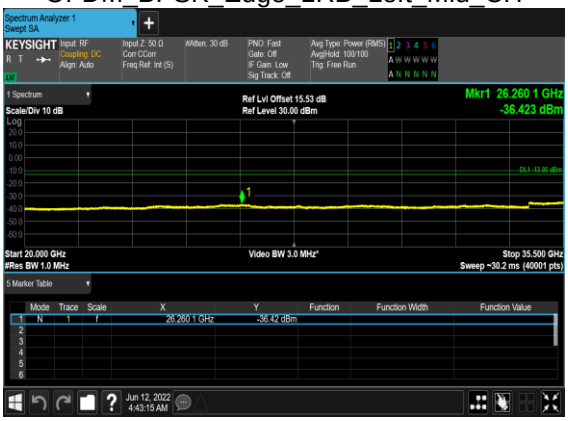
N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

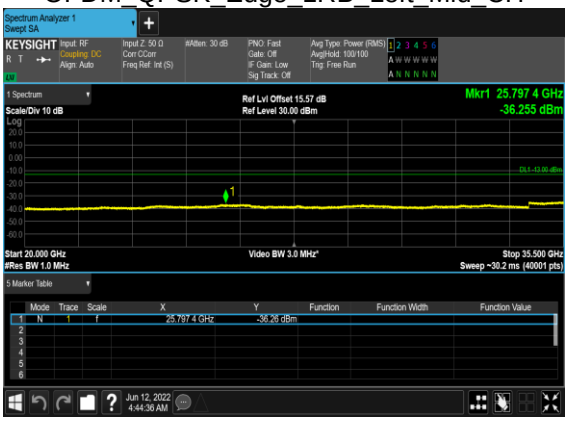


N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

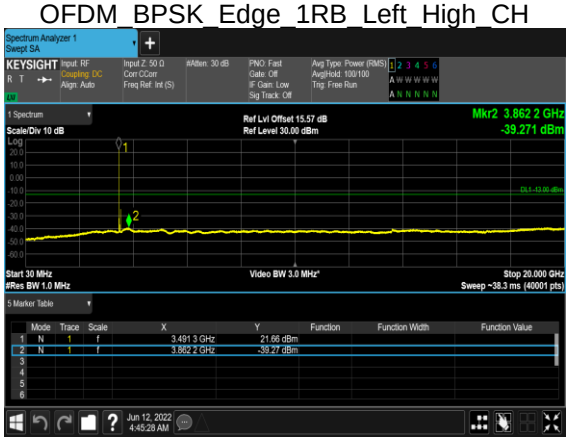


N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

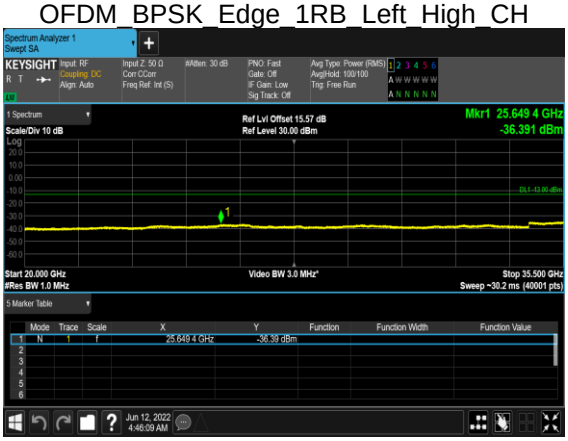
N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



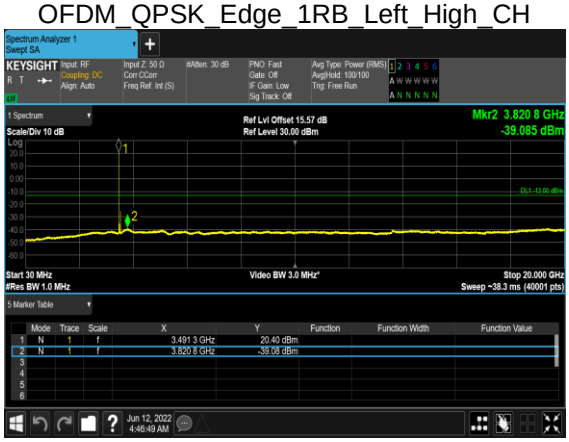
N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N78(60M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



N78(60M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH