FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2153-1
FCC ID	: IHDT56ZW2
STANDARD	: 47 CFR Part 2, Part 27 Subpart Q
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Jun. 03, 2021 ~ Jun. 22, 2021

We, Sporton International (ShenZhen) Inc., 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Derreck Chen / Supervisor

Approved by: Eric Shih / Manager

ACCREDITED Cert #5145.01

Sporton International (ShenZhen) Inc.

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG151407F	Rev. 01	Initial issue of report	Jun. 29, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
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	Reporting Only	PASS	-
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 32.85 dB at 2109.00 MHz

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

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

1.2 Manufacturer

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

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2153-1
FCC ID	IHDT56ZW2
EUT supports Radios application	GSM/WCDMA/LTE/5G NR WLAN 2.4GHz 802.11b/g/n/ac/ax HT20/VHT20/HE20 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 WLAN 5GHz 802.11ax HE20/HE40/HE80 Bluetooth BR/EDR/LE NFC and GNSS
IMEI Code	Conducted: 356368690016812/356368690016820 Radiation: 356368690018156/356368690018164
HW Version	DVT2
SW Version	RRA31.43
EUT Stage	Identical Prototype

1.4 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 : 100MHz 5G NR n78 : 20MHz / 40MHz / 50MHz / 60MHz / 80MHz / 90MHz / 100MHz
SCS	30kHz
Maximum Output Power to Antenna	5G NR n77 : 21.34 dBm 5G NR n78 : 22.18 dBm
Antenna Gain	5G NR n77: -1.5 dBi 5G NR n78: -1.5 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

1.5 Modification of EUT

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

1.6 Maximum EIRP Power and Emission Designator

5G NR n77 (EN DC_12A-n77A)		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)
100	3500.01 ~ 3500.01	0.0964	97M4G7D	0.0935	97M5W7D

5G NR n78 (EN DC_5A-n78A)		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
20	3460.02 ~ 3540.00	0.1122	18M2G7D	0.1114	18M3W7D
40	3470.01 ~ 3530.01	0.1169	37M8G7D	0.1143	37M9W7D
50	3475.02 ~ 3525.00	0.1062	47M4G7D	0.1054	47M5W7D
60	3480.00 ~ 3520.02	0.1005	58M0G7D	0.0998	57M9W7D
80	3490.02 ~ 3510.00	0.1033	77M5G7D	0.1007	77M5W7D
90	3495.00 ~ 3505.02	0.1016	87M6G7D	0.1009	87M5W7D
100	3500.01 ~ 3500.01	0.1016	97M5G7D	0.0989	97M5W7D

1.7 Testing Site

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

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

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH01-SZ	CN1256	421272

1.8 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

1.9 Applied 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.

1.10 Specification of Accessory

Specification of Accessory				
AC Adapter 1(US)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-301
AC Adapter 1(EU)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-302
AC Adapter 1(UK)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-303
AC Adapter 1(IN)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-304
AC Adapter 1(AU)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-305
AC Adapter 1(AR)	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-306
AC Adapter 2(US)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-301
AC Adapter 2(EU)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-302
AC Adapter 2(UK)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-303
AC Adapter 2(AU)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-305
AC Adapter 2(AR)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-306
AC Adapter 2(BR)	**Brand Name**	Motorola (Salom)	**Model Name**	MC-307
AC Adapter 2(BR)	**Brand Name**	Motorola (flex)	**Model Name**	MC-307
Battery	**Brand Name**	Motorola (ATL)	**Model Name**	MT45
Earphone	**Brand Name**	Motorola (Lyand)	**Model Name**	MD211(SH38D20195)
USB Cable 1	**Brand Name**	Motorola (Luxshare)	**Model Name**	SC18D13217
USB Cable 2	**Brand Name**	Motorola (Saibao)	**Model Name**	SC18D13215
USB Cable 3	**Brand Name**	Motorola (Cabletech)	**Model Name**	SC18D13216
HDMI Cable	**Brand Name**	Motorola (Linxee)	**Model Name**	SC18D02146

2 Test Configuration of Equipment Under Test

2.1 Test Mode

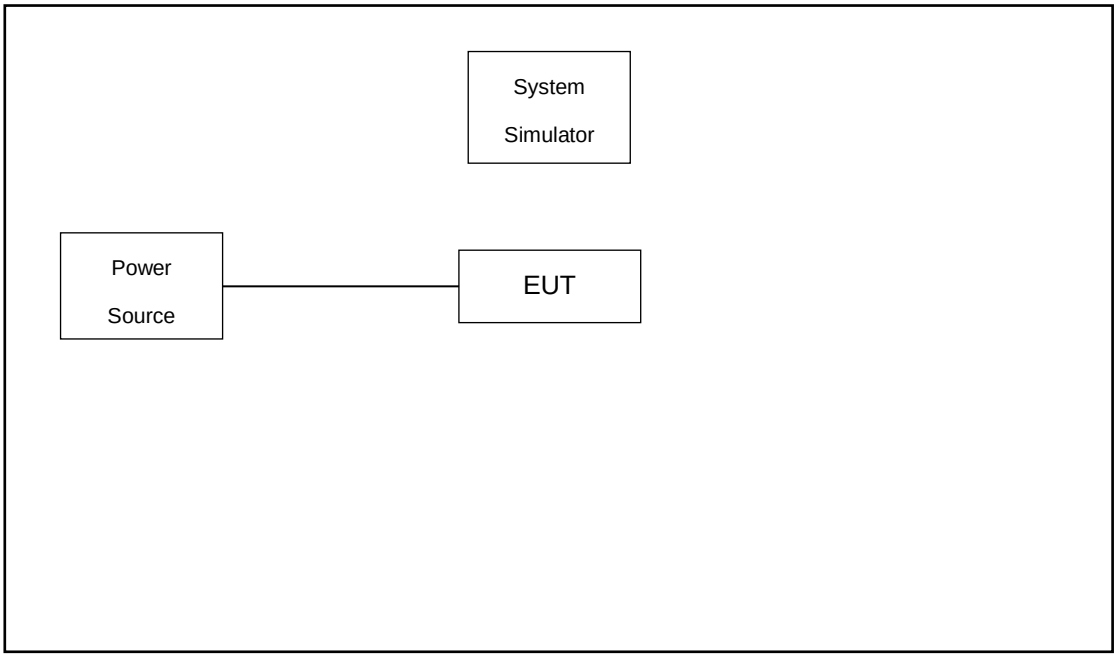
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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

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

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

2.4 Measurement Results Explanation Example

For all conducted test items:

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

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 1.77 dB and 10dB attenuator.

Example :

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

= 1.77 + 10 = 11.77 (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	-

5G n78 Channel and Frequency List				
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
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
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540

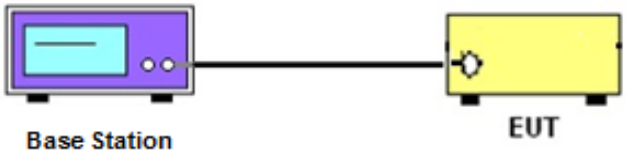
3 Conducted Test Items

3.1 Measuring Instruments

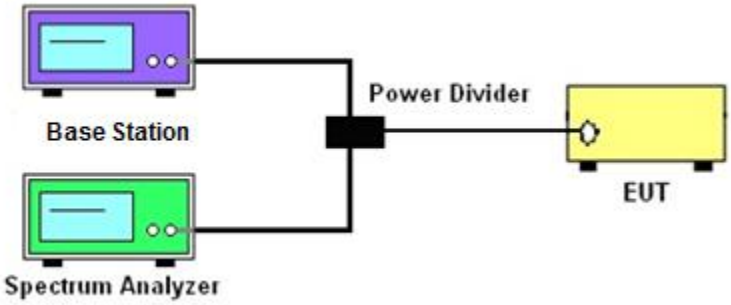
See list of measuring instruments of this test report.

3.2 Test Setup

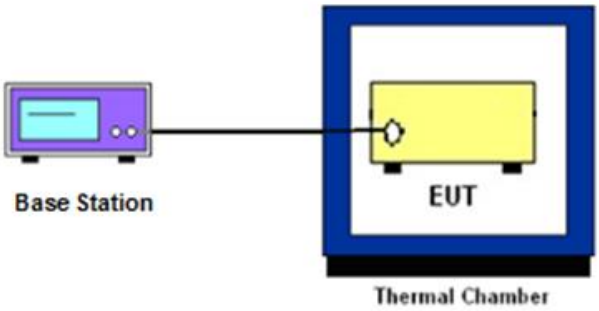
3.2.1 Conducted Output Power



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.

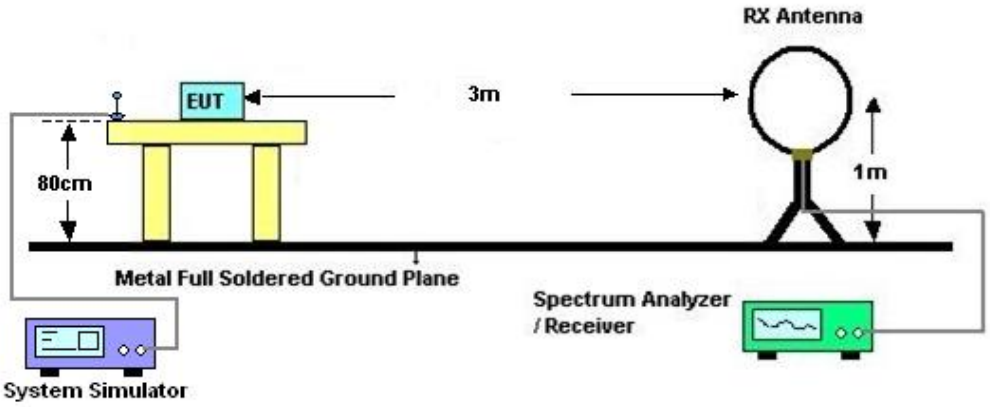
4 Radiated Test Items

4.1 Measuring Instruments

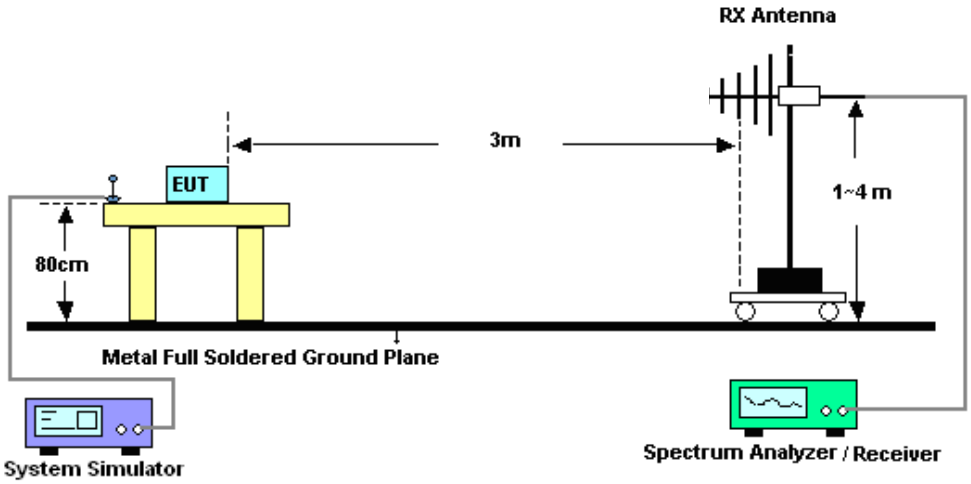
See list of measuring instruments of this test report.

4.2 Test Setup

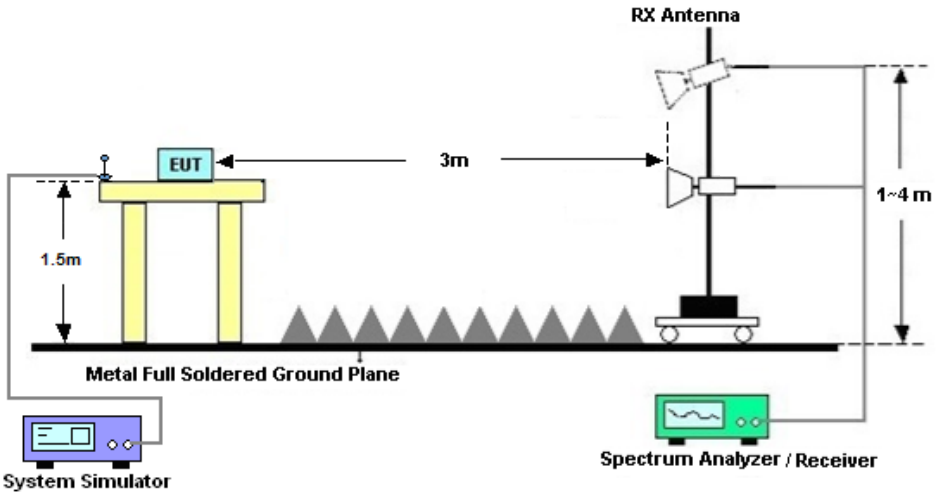
4.2.1 For radiated test below 30MHz



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
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 08, 2021	Jun. 03, 2021~ Jun. 04, 2021	Apr. 07, 2022	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 22, 2020	Jun. 03, 2021~ Jun. 04, 2021	Jul. 21, 2021	Conducted (TH01-SZ)
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Jul. 21, 2020	Jun. 22, 2021	Jul. 20, 2021	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 21, 2020	Jun. 22, 2021	Jul. 20, 2021	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 22, 2020	Jun. 22, 2021	Jul. 21, 2022	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 16, 2020	Jun. 22, 2021	Oct. 15, 2021	Radiation (03CH01-SZ
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Jul. 15, 2020	Jun. 22, 2021	Jul. 14, 2021	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 25, 2020	Jun. 22, 2021	Jul. 24, 2021	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 23, 2021	Jun. 22, 2021	Apr. 22, 2022	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 18, 2021	Jun. 22, 2021	Apr. 17, 2022	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 17, 2020	Jun. 22, 2021	Oct. 16, 2021	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 21, 2020	Jun. 22, 2021	Jul. 20, 2021	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Jun. 22, 2021	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Jun. 22, 2021	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Jun. 22, 2021	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.48dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.53dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.02dB**

Appendix A. Test Results of Conducted Test

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Transmitter Conducted Output Power And ERP/EIRP, (G_T - L_C)=-1.5dB

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	21.25	19.75	0.0944
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.22	19.72	0.0938
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	21.19	19.69	0.0931
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	21.21	19.71	0.0935
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.28	19.78	0.0951
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	21.34	19.84	0.0964
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	21.21	19.71	0.0935
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.18	19.68	0.0929
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	21.01	19.51	0.0893
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	20.28	18.78	0.0755
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	20.02	18.52	0.0711
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	19.49	17.99	0.063
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	17.81	16.31	0.0428
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	17.62	16.12	0.0409
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	17.72	16.22	0.0419
77	30	100	633334	3500.01	CP-OFDM QPSK	137@68	20.67	19.17	0.0826
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	20.54	19.04	0.0802
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	20.71	19.21	0.0834

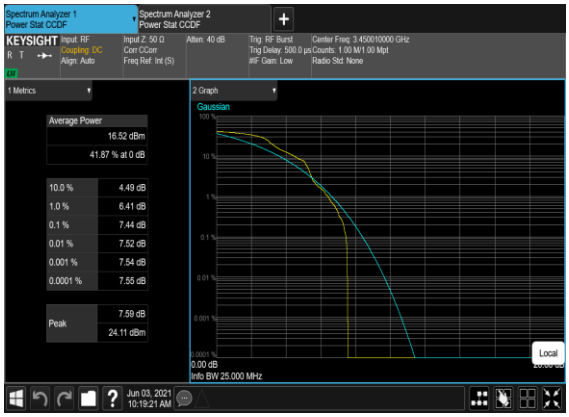
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00657	PASS	NV
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00521	PASS	LV
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00351	PASS	HV
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00631	PASS	-30℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00655	PASS	-20℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00632	PASS	-10℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00432	PASS	0℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00593	PASS	10℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00565	PASS	20℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00721	PASS	30℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00659	PASS	40℃
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00651	PASS	50℃

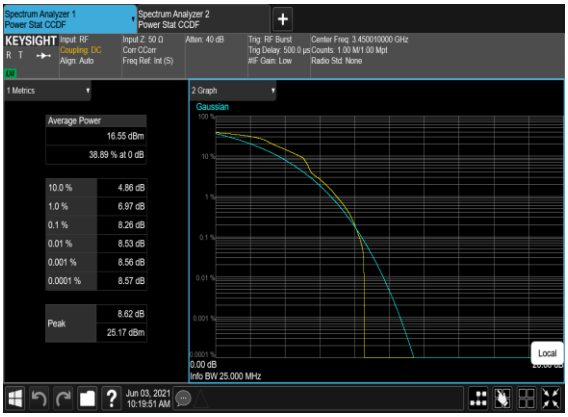
Peak to Average Radio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@0	7.44	13	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	8.26	13	PASS

B12_N77(100M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



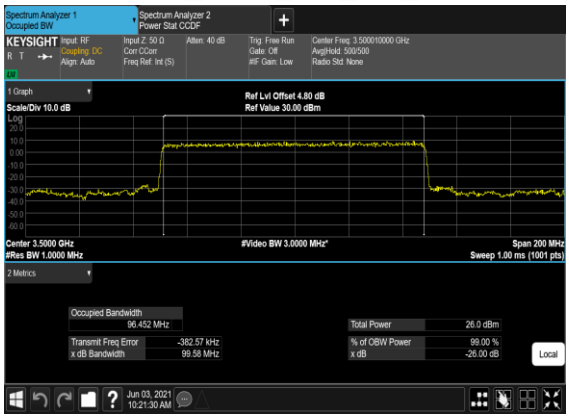
B12_N77(100M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



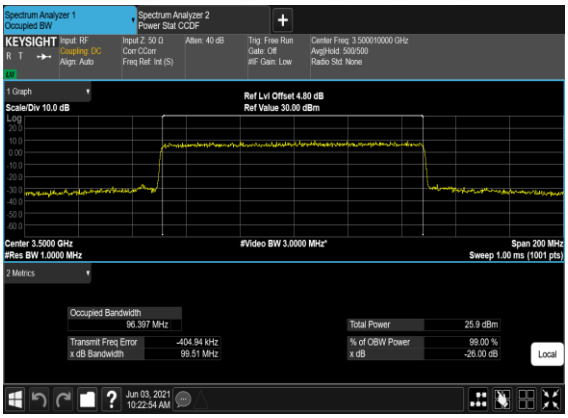
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	270@0	96.452	99.58
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	96.397	99.51
77	30	100	633334	3500.01	CP-OFDM QPSK	273@0	97.38	100.6
77	30	100	633334	3500.01	CP-OFDM 16 QAM	273@0	97.492	100.6
77	30	100	633334	3500.01	CP-OFDM 64 QAM	273@0	97.419	100.6
77	30	100	633334	3500.01	CP-OFDM 256 QAM	273@0	97.426	100.6

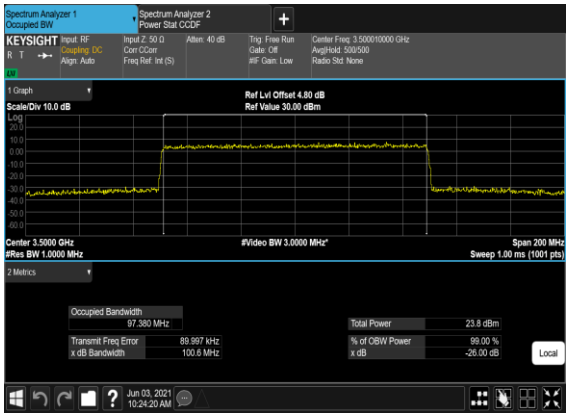
B12_N77(100M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



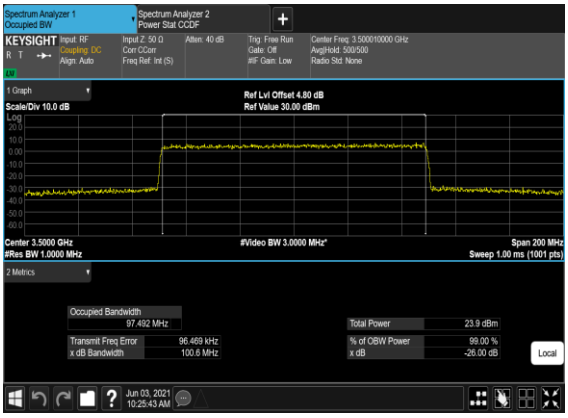
B12_N77(100M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



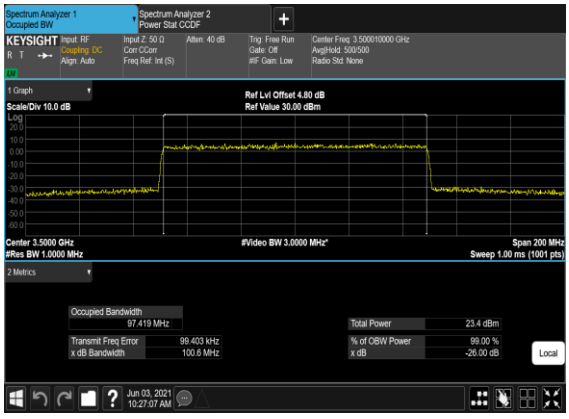
B12_N77(100M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B12_N77(100M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B12_N77(100M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



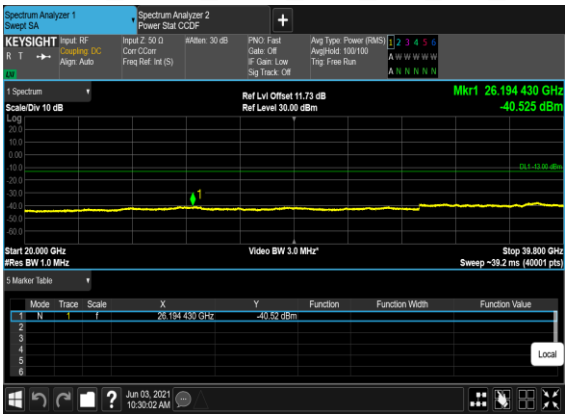
B12_N77(100M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

Conducted Spurious Emissions

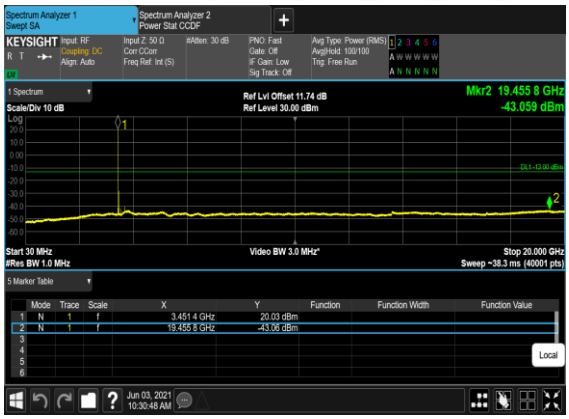
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	---
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	---
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	PASS

B12_N77(100M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH

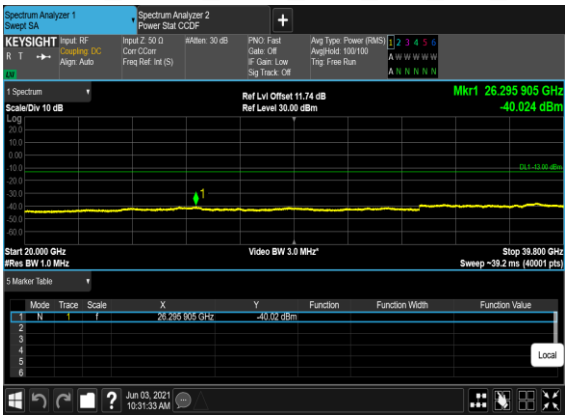
B12_N77(100M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



B12_N77(100M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



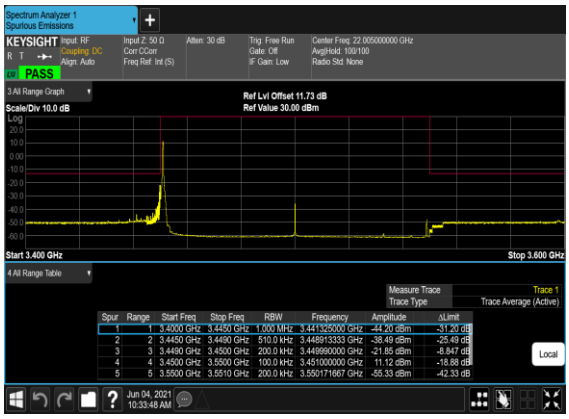
B12_N77(100M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



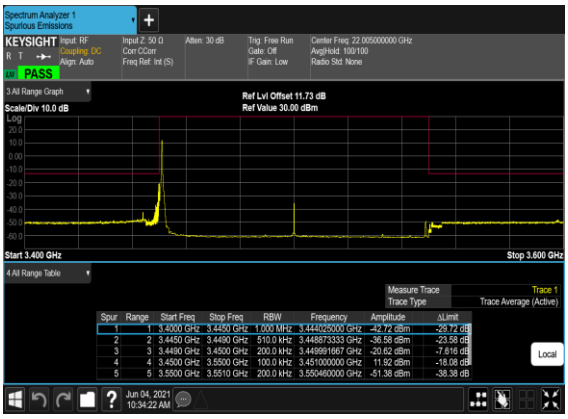
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	1@272	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@272	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM BPSK	270@0	see graph	PASS
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	see graph	PASS

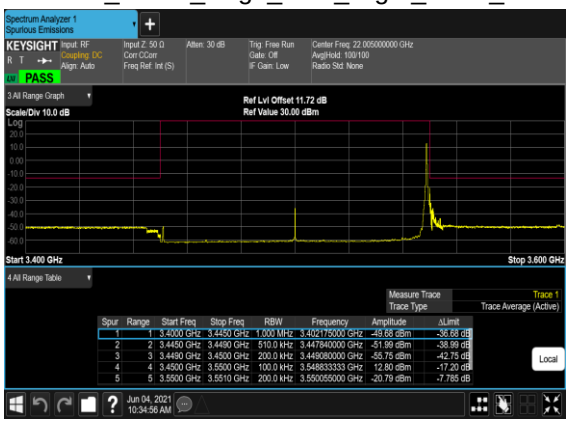
B12_N77(100M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_ Mid _CH



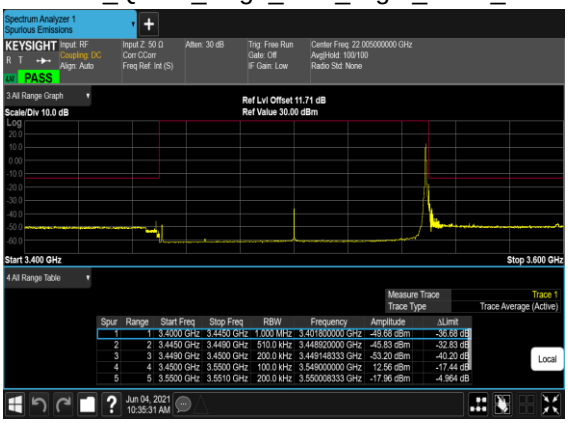
B12_N77(100M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_ Mid _CH



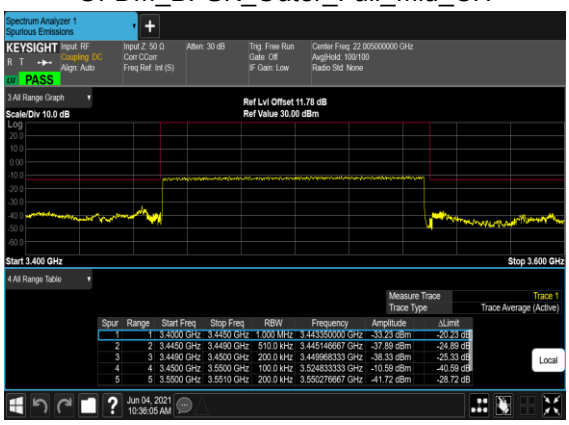
B12_N77(100M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_ Mid _CH



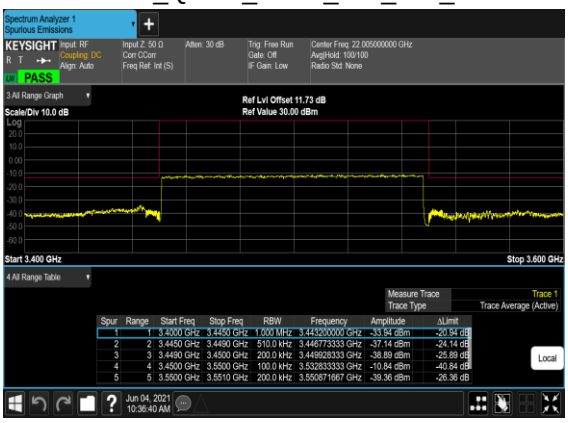
B12_N77(100M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_ Mid _CH



B12_N77(100M)_DFT-s-OFDM_BPSK_Outer_Full_Mid_CH



B12_N77(100M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



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Transmitter Conducted Output Power And ERP/EIRP, (G_T - L_C)=-1.5dB

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 PI/2 BPSK	25@12	21.76	20.26	0.1062
78	30	20	630668	3460.02	DFT-s-OFDM PI/2 BPSK	1@1	21.56	20.06	0.1014
78	30	20	630668	3460.02	DFT-s-OFDM PI/2 BPSK	1@49	21.7	20.2	0.1047
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	25@12	21.72	20.22	0.1052
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@1	21.64	20.14	0.1033
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@49	21.7	20.2	0.1047
78	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	25@12	21.77	20.27	0.1064
78	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@1	21.74	20.24	0.1057
78	30	20	630668	3460.02	DFT-s-OFDM 16 QAM	1@49	21.73	20.23	0.1054
78	30	20	630668	3460.02	DFT-s-OFDM 64 QAM	25@12	20.17	18.67	0.0736
78	30	20	630668	3460.02	DFT-s-OFDM 64 QAM	1@1	20.07	18.57	0.0719
78	30	20	630668	3460.02	DFT-s-OFDM 64 QAM	1@49	20.11	18.61	0.0726
78	30	20	630668	3460.02	DFT-s-OFDM 256 QAM	25@12	18.28	16.78	0.0476
78	30	20	630668	3460.02	DFT-s-OFDM 256 QAM	1@1	18.35	16.85	0.0484
78	30	20	630668	3460.02	DFT-s-OFDM 256 QAM	1@49	18.31	16.81	0.048
78	30	20	630668	3460.02	CP-OFDM QPSK	25@121	19.65	18.15	0.0653
78	30	20	630668	3460.02	CP-OFDM QPSK	1@1	21.12	19.62	0.0916
78	30	20	630668	3460.02	CP-OFDM QPSK	1@49	21.16	19.66	0.0925
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	25@12	21.65	20.15	0.1035
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.77	20.27	0.1064
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@49	21.71	20.21	0.105

78	30	20	633334	3500.01	DFT-s-OFDM QPSK	25@12	21.54	20.04	0.1009
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.74	20.24	0.1057
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@49	21.76	20.26	0.1062
78	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	25@12	21.68	20.18	0.1042
78	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.84	20.34	0.1081
78	30	20	633334	3500.01	DFT-s-OFDM 16 QAM	1@49	21.7	20.2	0.1047
78	30	20	633334	3500.01	DFT-s-OFDM 64 QAM	25@12	20.3	18.8	0.0759
78	30	20	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	20.08	18.58	0.0721
78	30	20	633334	3500.01	DFT-s-OFDM 64 QAM	1@49	19.97	18.47	0.0703
78	30	20	633334	3500.01	DFT-s-OFDM 256 QAM	25@12	18.3	16.8	0.0479
78	30	20	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	18.24	16.74	0.0472
78	30	20	633334	3500.01	DFT-s-OFDM 256 QAM	1@49	18.39	16.89	0.0489
78	30	20	633334	3500.01	CP-OFDM QPSK	25@121	19.79	18.29	0.0675
78	30	20	633334	3500.01	CP-OFDM QPSK	1@1	21.16	19.66	0.0925
78	30	20	633334	3500.01	CP-OFDM QPSK	1@49	21.36	19.86	0.0968
78	30	20	636000	3540	DFT-s-OFDM PI/2 BPSK	25@12	21.69	20.19	0.1045
78	30	20	636000	3540	DFT-s-OFDM PI/2 BPSK	1@1	21.79	20.29	0.1069
78	30	20	636000	3540	DFT-s-OFDM PI/2 BPSK	1@49	21.77	20.27	0.1064
78	30	20	636000	3540	DFT-s-OFDM QPSK	25@12	21.77	20.27	0.1064
78	30	20	636000	3540	DFT-s-OFDM QPSK	1@1	22.0	20.5	0.1122
78	30	20	636000	3540	DFT-s-OFDM QPSK	1@49	21.81	20.31	0.1074
78	30	20	636000	3540	DFT-s-OFDM 16 QAM	25@12	21.77	20.27	0.1064
78	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@1	21.97	20.47	0.1114
78	30	20	636000	3540	DFT-s-OFDM 16 QAM	1@49	21.89	20.39	0.1094

78	30	20	636000	3540	DFT-s-OFDM 64 QAM	25@12	20.25	18.75	0.075
78	30	20	636000	3540	DFT-s-OFDM 64 QAM	1@1	20.38	18.88	0.0773
78	30	20	636000	3540	DFT-s-OFDM 64 QAM	1@49	20.39	18.89	0.0774
78	30	20	636000	3540	DFT-s-OFDM 256 QAM	25@12	18.39	16.89	0.0489
78	30	20	636000	3540	DFT-s-OFDM 256 QAM	1@1	18.36	16.86	0.0485
78	30	20	636000	3540	DFT-s-OFDM 256 QAM	1@49	18.45	16.95	0.0495
78	30	20	636000	3540	CP-OFDM QPSK	25@121	19.83	18.33	0.0681
78	30	20	636000	3540	CP-OFDM QPSK	1@1	21.26	19.76	0.0946
78	30	20	636000	3540	CP-OFDM QPSK	1@49	21.12	19.62	0.0916
78	30	40	631334	3470.01	DFT-s-OFDM PI/2 BPSK	50@25	21.89	20.39	0.1094
78	30	40	631334	3470.01	DFT-s-OFDM PI/2 BPSK	1@1	21.76	20.26	0.1062
78	30	40	631334	3470.01	DFT-s-OFDM PI/2 BPSK	1@104	21.87	20.37	0.1089
78	30	40	631334	3470.01	DFT-s-OFDM QPSK	50@25	21.99	20.49	0.1119
78	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@1	21.84	20.34	0.1081
78	30	40	631334	3470.01	DFT-s-OFDM QPSK	1@104	21.99	20.49	0.1119
78	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	50@25	21.87	20.37	0.1089
78	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@1	21.9	20.4	0.1096
78	30	40	631334	3470.01	DFT-s-OFDM 16 QAM	1@104	21.89	20.39	0.1094
78	30	40	631334	3470.01	DFT-s-OFDM 64 QAM	50@25	20.43	18.93	0.0782
78	30	40	631334	3470.01	DFT-s-OFDM 64 QAM	1@1	20.46	18.96	0.0787
78	30	40	631334	3470.01	DFT-s-OFDM 64 QAM	1@104	20.32	18.82	0.0762
78	30	40	631334	3470.01	DFT-s-OFDM 256 QAM	50@25	18.51	17.01	0.0502
78	30	40	631334	3470.01	DFT-s-OFDM 256 QAM	1@1	18.54	17.04	0.0506
78	30	40	631334	3470.01	DFT-s-OFDM 256 QAM	1@104	18.39	16.89	0.0489

78	30	40	631334	3470.01	CP-OFDM QPSK	53@26	21.37	19.87	0.0971
78	30	40	631334	3470.01	CP-OFDM QPSK	1@1	21.32	19.82	0.0959
78	30	40	631334	3470.01	CP-OFDM QPSK	1@104	21.37	19.87	0.0971
78	30	40	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@25	21.94	20.44	0.1107
78	30	40	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.99	20.49	0.1119
78	30	40	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@104	22.01	20.51	0.1125
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	50@25	21.86	20.36	0.1086
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@1	22.03	20.53	0.113
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	1@104	22.07	20.57	0.114
78	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	50@25	21.78	20.28	0.1067
78	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.88	20.38	0.1091
78	30	40	633334	3500.01	DFT-s-OFDM 16 QAM	1@104	21.78	20.28	0.1067
78	30	40	633334	3500.01	DFT-s-OFDM 64 QAM	50@25	20.31	18.81	0.076
78	30	40	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	20.19	18.69	0.074
78	30	40	633334	3500.01	DFT-s-OFDM 64 QAM	1@104	20.42	18.92	0.078
78	30	40	633334	3500.01	DFT-s-OFDM 256 QAM	50@25	18.5	17.0	0.0501
78	30	40	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	18.44	16.94	0.0494
78	30	40	633334	3500.01	DFT-s-OFDM 256 QAM	1@104	18.77	17.27	0.0533
78	30	40	633334	3500.01	CP-OFDM QPSK	53@26	21.26	19.76	0.0946
78	30	40	633334	3500.01	CP-OFDM QPSK	1@1	21.38	19.88	0.0973
78	30	40	633334	3500.01	CP-OFDM QPSK	1@104	21.47	19.97	0.0993
78	30	40	635332	3529.98	DFT-s-OFDM PI/2 BPSK	50@25	22.18	20.68	0.1169
78	30	40	635332	3529.98	DFT-s-OFDM PI/2 BPSK	1@1	21.95	20.45	0.1109
78	30	40	635332	3529.98	DFT-s-OFDM PI/2 BPSK	1@104	22.01	20.51	0.1125

78	30	40	635332	3529.98	DFT-s-OFDM QPSK	50@25	22.1	20.6	0.1148
78	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@1	22.17	20.67	0.1167
78	30	40	635332	3529.98	DFT-s-OFDM QPSK	1@104	22.14	20.64	0.1159
78	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	50@25	22.05	20.55	0.1135
78	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@1	22.08	20.58	0.1143
78	30	40	635332	3529.98	DFT-s-OFDM 16 QAM	1@104	21.86	20.36	0.1086
78	30	40	635332	3529.98	DFT-s-OFDM 64 QAM	50@25	20.65	19.15	0.0822
78	30	40	635332	3529.98	DFT-s-OFDM 64 QAM	1@1	20.46	18.96	0.0787
78	30	40	635332	3529.98	DFT-s-OFDM 64 QAM	1@104	20.54	19.04	0.0802
78	30	40	635332	3529.98	DFT-s-OFDM 256 QAM	50@25	18.62	17.12	0.0515
78	30	40	635332	3529.98	DFT-s-OFDM 256 QAM	1@1	18.6	17.1	0.0513
78	30	40	635332	3529.98	DFT-s-OFDM 256 QAM	1@104	18.64	17.14	0.0518
78	30	40	635332	3529.98	CP-OFDM QPSK	53@26	21.61	20.11	0.1026
78	30	40	635332	3529.98	CP-OFDM QPSK	1@1	21.51	20.01	0.1002
78	30	40	635332	3529.98	CP-OFDM QPSK	1@104	21.66	20.16	0.1038
78	30	50	631668	3475.02	DFT-s-OFDM PI/2 BPSK	64@32	21.63	20.13	0.103
78	30	50	631668	3475.02	DFT-s-OFDM PI/2 BPSK	1@1	21.58	20.08	0.1019
78	30	50	631668	3475.02	DFT-s-OFDM PI/2 BPSK	1@131	21.44	19.94	0.0986
78	30	50	631668	3475.02	DFT-s-OFDM QPSK	64@32	21.48	19.98	0.0995
78	30	50	631668	3475.02	DFT-s-OFDM QPSK	1@1	21.72	20.22	0.1052
78	30	50	631668	3475.02	DFT-s-OFDM QPSK	1@131	21.47	19.97	0.0993
78	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	64@32	21.62	20.12	0.1028
78	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	1@1	21.66	20.16	0.1038
78	30	50	631668	3475.02	DFT-s-OFDM 16 QAM	1@131	21.58	20.08	0.1019

78	30	50	631668	3475.02	DFT-s-OFDM 64 QAM	64@32	20.17	18.67	0.0736
78	30	50	631668	3475.02	DFT-s-OFDM 64 QAM	1@1	20.03	18.53	0.0713
78	30	50	631668	3475.02	DFT-s-OFDM 64 QAM	1@131	19.81	18.31	0.0678
78	30	50	631668	3475.02	DFT-s-OFDM 256 QAM	64@32	18.15	16.65	0.0462
78	30	50	631668	3475.02	DFT-s-OFDM 256 QAM	1@1	18.22	16.72	0.047
78	30	50	631668	3475.02	DFT-s-OFDM 256 QAM	1@131	18.08	16.58	0.0455
78	30	50	631668	3475.02	CP-OFDM QPSK	67@33	21.14	19.64	0.092
78	30	50	631668	3475.02	CP-OFDM QPSK	1@1	21.09	19.59	0.091
78	30	50	631668	3475.02	CP-OFDM QPSK	1@131	20.89	19.39	0.0869
78	30	50	633334	3500.01	DFT-s-OFDM PI/2 BPSK	64@32	21.65	20.15	0.1035
78	30	50	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.56	20.06	0.1014
78	30	50	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@131	21.6	20.1	0.1023
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	64@32	21.67	20.17	0.104
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.59	20.09	0.1021
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	1@131	21.66	20.16	0.1038
78	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	64@32	21.62	20.12	0.1028
78	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.73	20.23	0.1054
78	30	50	633334	3500.01	DFT-s-OFDM 16 QAM	1@131	21.53	20.03	0.1007
78	30	50	633334	3500.01	DFT-s-OFDM 64 QAM	64@32	20.15	18.65	0.0733
78	30	50	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	19.91	18.41	0.0693
78	30	50	633334	3500.01	DFT-s-OFDM 64 QAM	1@131	20.07	18.57	0.0719
78	30	50	633334	3500.01	DFT-s-OFDM 256 QAM	64@32	18.13	16.63	0.046
78	30	50	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	18.05	16.55	0.0452
78	30	50	633334	3500.01	DFT-s-OFDM 256 QAM	1@131	18.21	16.71	0.0469

78	30	50	633334	3500.01	CP-OFDM QPSK	67@33	21.15	19.65	0.0923
78	30	50	633334	3500.01	CP-OFDM QPSK	1@1	21.03	19.53	0.0897
78	30	50	633334	3500.01	CP-OFDM QPSK	1@131	21.26	19.76	0.0946
78	30	50	635000	3525	DFT-s-OFDM PI/2 BPSK	64@32	21.71	20.21	0.105
78	30	50	635000	3525	DFT-s-OFDM PI/2 BPSK	1@1	21.58	20.08	0.1019
78	30	50	635000	3525	DFT-s-OFDM PI/2 BPSK	1@131	21.62	20.12	0.1028
78	30	50	635000	3525	DFT-s-OFDM QPSK	64@32	21.76	20.26	0.1062
78	30	50	635000	3525	DFT-s-OFDM QPSK	1@1	21.71	20.21	0.105
78	30	50	635000	3525	DFT-s-OFDM QPSK	1@131	21.76	20.26	0.1062
78	30	50	635000	3525	DFT-s-OFDM 16 QAM	64@32	21.72	20.22	0.1052
78	30	50	635000	3525	DFT-s-OFDM 16 QAM	1@1	21.69	20.19	0.1045
78	30	50	635000	3525	DFT-s-OFDM 16 QAM	1@131	21.72	20.22	0.1052
78	30	50	635000	3525	DFT-s-OFDM 64 QAM	64@32	20.23	18.73	0.0746
78	30	50	635000	3525	DFT-s-OFDM 64 QAM	1@1	19.87	18.37	0.0687
78	30	50	635000	3525	DFT-s-OFDM 64 QAM	1@131	20.23	18.73	0.0746
78	30	50	635000	3525	DFT-s-OFDM 256 QAM	64@32	18.17	16.67	0.0465
78	30	50	635000	3525	DFT-s-OFDM 256 QAM	1@1	18.1	16.6	0.0457
78	30	50	635000	3525	DFT-s-OFDM 256 QAM	1@131	18.27	16.77	0.0475
78	30	50	635000	3525	CP-OFDM QPSK	67@33	21.28	19.78	0.0951
78	30	50	635000	3525	CP-OFDM QPSK	1@1	21.02	19.52	0.0895
78	30	50	635000	3525	CP-OFDM QPSK	1@131	21.18	19.68	0.0929
78	30	60	632000	3480	DFT-s-OFDM PI/2 BPSK	81@40	21.44	19.94	0.0986
78	30	60	632000	3480	DFT-s-OFDM PI/2 BPSK	1@1	21.27	19.77	0.0948
78	30	60	632000	3480	DFT-s-OFDM PI/2 BPSK	1@160	21.21	19.71	0.0935

78	30	60	632000	3480	DFT-s-OFDM QPSK	81@40	21.42	19.92	0.0982
78	30	60	632000	3480	DFT-s-OFDM QPSK	1@1	21.39	19.89	0.0975
78	30	60	632000	3480	DFT-s-OFDM QPSK	1@160	21.34	19.84	0.0964
78	30	60	632000	3480	DFT-s-OFDM 16 QAM	81@40	21.46	19.96	0.0991
78	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@1	21.36	19.86	0.0968
78	30	60	632000	3480	DFT-s-OFDM 16 QAM	1@160	21.36	19.86	0.0968
78	30	60	632000	3480	DFT-s-OFDM 64 QAM	81@40	19.97	18.47	0.0703
78	30	60	632000	3480	DFT-s-OFDM 64 QAM	1@1	19.63	18.13	0.065
78	30	60	632000	3480	DFT-s-OFDM 64 QAM	1@160	19.67	18.17	0.0656
78	30	60	632000	3480	DFT-s-OFDM 256 QAM	81@40	17.86	16.36	0.0433
78	30	60	632000	3480	DFT-s-OFDM 256 QAM	1@1	17.75	16.25	0.0422
78	30	60	632000	3480	DFT-s-OFDM 256 QAM	1@160	17.84	16.34	0.0431
78	30	60	632000	3480	CP-OFDM QPSK	81@40	20.84	19.34	0.0859
78	30	60	632000	3480	CP-OFDM QPSK	1@1	20.99	19.49	0.0889
78	30	60	632000	3480	CP-OFDM QPSK	1@160	20.86	19.36	0.0863
78	30	60	633334	3500.01	DFT-s-OFDM PI/2 BPSK	81@40	21.52	20.02	0.1005
78	30	60	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.36	19.86	0.0968
78	30	60	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@160	21.35	19.85	0.0966
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	81@40	21.46	19.96	0.0991
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.35	19.85	0.0966
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	1@160	21.5	20.0	0.1
78	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	81@40	21.4	19.9	0.0977
78	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.24	19.74	0.0942
78	30	60	633334	3500.01	DFT-s-OFDM 16 QAM	1@160	21.49	19.99	0.0998

78	30	60	633334	3500.01	DFT-s-OFDM 64 QAM	81@40	19.9	18.4	0.0692
78	30	60	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	19.7	18.2	0.0661
78	30	60	633334	3500.01	DFT-s-OFDM 64 QAM	1@160	19.87	18.37	0.0687
78	30	60	633334	3500.01	DFT-s-OFDM 256 QAM	81@40	17.92	16.42	0.0439
78	30	60	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	17.8	16.3	0.0427
78	30	60	633334	3500.01	DFT-s-OFDM 256 QAM	1@160	18.11	16.61	0.0458
78	30	60	633334	3500.01	CP-OFDM QPSK	81@40	20.9	19.4	0.0871
78	30	60	633334	3500.01	CP-OFDM QPSK	1@1	20.99	19.49	0.0889
78	30	60	633334	3500.01	CP-OFDM QPSK	1@160	20.83	19.33	0.0857
78	30	60	634666	3519.99	DFT-s-OFDM PI/2 BPSK	81@40	21.46	19.96	0.0991
78	30	60	634666	3519.99	DFT-s-OFDM PI/2 BPSK	1@1	21.31	19.81	0.0957
78	30	60	634666	3519.99	DFT-s-OFDM PI/2 BPSK	1@160	21.42	19.92	0.0982
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	81@40	21.43	19.93	0.0984
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@1	21.3	19.8	0.0955
78	30	60	634666	3519.99	DFT-s-OFDM QPSK	1@160	21.45	19.95	0.0989
78	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	81@40	21.46	19.96	0.0991
78	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@1	21.31	19.81	0.0957
78	30	60	634666	3519.99	DFT-s-OFDM 16 QAM	1@160	21.48	19.98	0.0995
78	30	60	634666	3519.99	DFT-s-OFDM 64 QAM	81@40	19.86	18.36	0.0685
78	30	60	634666	3519.99	DFT-s-OFDM 64 QAM	1@1	19.75	18.25	0.0668
78	30	60	634666	3519.99	DFT-s-OFDM 64 QAM	1@160	19.84	18.34	0.0682
78	30	60	634666	3519.99	DFT-s-OFDM 256 QAM	81@40	17.97	16.47	0.0444
78	30	60	634666	3519.99	DFT-s-OFDM 256 QAM	1@1	17.93	16.43	0.044
78	30	60	634666	3519.99	DFT-s-OFDM 256 QAM	1@160	18.04	16.54	0.0451

78	30	60	634666	3519.99	CP-OFDM QPSK	81@40	21.0	19.5	0.0891
78	30	60	634666	3519.99	CP-OFDM QPSK	1@1	20.86	19.36	0.0863
78	30	60	634666	3519.99	CP-OFDM QPSK	1@160	20.95	19.45	0.0881
78	30	80	632668	3490.02	DFT-s-OFDM PI/2 BPSK	108@54	21.41	19.91	0.0979
78	30	80	632668	3490.02	DFT-s-OFDM PI/2 BPSK	1@1	21.39	19.89	0.0975
78	30	80	632668	3490.02	DFT-s-OFDM PI/2 BPSK	1@215	21.34	19.84	0.0964
78	30	80	632668	3490.02	DFT-s-OFDM QPSK	108@54	21.35	19.85	0.0966
78	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@1	21.34	19.84	0.0964
78	30	80	632668	3490.02	DFT-s-OFDM QPSK	1@215	21.46	19.96	0.0991
78	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	108@54	21.26	19.76	0.0946
78	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@1	21.33	19.83	0.0962
78	30	80	632668	3490.02	DFT-s-OFDM 16 QAM	1@215	21.42	19.92	0.0982
78	30	80	632668	3490.02	DFT-s-OFDM 64 QAM	108@54	19.9	18.4	0.0692
78	30	80	632668	3490.02	DFT-s-OFDM 64 QAM	1@1	19.7	18.2	0.0661
78	30	80	632668	3490.02	DFT-s-OFDM 64 QAM	1@215	19.87	18.37	0.0687
78	30	80	632668	3490.02	DFT-s-OFDM 256 QAM	108@54	17.93	16.43	0.044
78	30	80	632668	3490.02	DFT-s-OFDM 256 QAM	1@1	17.5	16.0	0.0398
78	30	80	632668	3490.02	DFT-s-OFDM 256 QAM	1@215	17.89	16.39	0.0436
78	30	80	632668	3490.02	CP-OFDM QPSK	109@54	20.8	19.3	0.0851
78	30	80	632668	3490.02	CP-OFDM QPSK	1@1	20.96	19.46	0.0883
78	30	80	632668	3490.02	CP-OFDM QPSK	1@215	20.95	19.45	0.0881
78	30	80	633334	3500.01	DFT-s-OFDM PI/2 BPSK	108@54	21.39	19.89	0.0975
78	30	80	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.49	19.99	0.0998
78	30	80	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@215	21.33	19.83	0.0962

78	30	80	633334	3500.01	DFT-s-OFDM QPSK	108@54	21.45	19.95	0.0989
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.53	20.03	0.1007
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	1@215	21.48	19.98	0.0995
78	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	108@54	21.43	19.93	0.0984
78	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.53	20.03	0.1007
78	30	80	633334	3500.01	DFT-s-OFDM 16 QAM	1@215	21.43	19.93	0.0984
78	30	80	633334	3500.01	DFT-s-OFDM 64 QAM	108@54	19.99	18.49	0.0706
78	30	80	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	19.92	18.42	0.0695
78	30	80	633334	3500.01	DFT-s-OFDM 64 QAM	1@215	20.0	18.5	0.0708
78	30	80	633334	3500.01	DFT-s-OFDM 256 QAM	108@54	17.93	16.43	0.044
78	30	80	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	17.72	16.22	0.0419
78	30	80	633334	3500.01	DFT-s-OFDM 256 QAM	1@215	17.79	16.29	0.0426
78	30	80	633334	3500.01	CP-OFDM QPSK	109@54	20.9	19.4	0.0871
78	30	80	633334	3500.01	CP-OFDM QPSK	1@1	20.88	19.38	0.0867
78	30	80	633334	3500.01	CP-OFDM QPSK	1@215	20.88	19.38	0.0867
78	30	80	634000	3510	DFT-s-OFDM PI/2 BPSK	108@54	21.47	19.97	0.0993
78	30	80	634000	3510	DFT-s-OFDM PI/2 BPSK	1@1	21.35	19.85	0.0966
78	30	80	634000	3510	DFT-s-OFDM PI/2 BPSK	1@215	21.49	19.99	0.0998
78	30	80	634000	3510	DFT-s-OFDM QPSK	108@54	21.43	19.93	0.0984
78	30	80	634000	3510	DFT-s-OFDM QPSK	1@1	21.54	20.04	0.1009
78	30	80	634000	3510	DFT-s-OFDM QPSK	1@215	21.64	20.14	0.1033
78	30	80	634000	3510	DFT-s-OFDM 16 QAM	108@54	21.47	19.97	0.0993
78	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@1	21.43	19.93	0.0984
78	30	80	634000	3510	DFT-s-OFDM 16 QAM	1@215	21.48	19.98	0.0995

78	30	80	634000	3510	DFT-s-OFDM 64 QAM	108@54	20.04	18.54	0.0714
78	30	80	634000	3510	DFT-s-OFDM 64 QAM	1@1	19.71	18.21	0.0662
78	30	80	634000	3510	DFT-s-OFDM 64 QAM	1@215	19.96	18.46	0.0701
78	30	80	634000	3510	DFT-s-OFDM 256 QAM	108@54	18.03	16.53	0.045
78	30	80	634000	3510	DFT-s-OFDM 256 QAM	1@1	17.82	16.32	0.0429
78	30	80	634000	3510	DFT-s-OFDM 256 QAM	1@215	18.03	16.53	0.045
78	30	80	634000	3510	CP-OFDM QPSK	109@54	20.99	19.49	0.0889
78	30	80	634000	3510	CP-OFDM QPSK	1@1	21.01	19.51	0.0893
78	30	80	634000	3510	CP-OFDM QPSK	1@215	20.97	19.47	0.0885
78	30	90	633000	3495	DFT-s-OFDM PI/2 BPSK	120@60	21.25	19.75	0.0944
78	30	90	633000	3495	DFT-s-OFDM PI/2 BPSK	1@1	21.4	19.9	0.0977
78	30	90	633000	3495	DFT-s-OFDM PI/2 BPSK	1@243	21.31	19.81	0.0957
78	30	90	633000	3495	DFT-s-OFDM QPSK	120@60	21.29	19.79	0.0953
78	30	90	633000	3495	DFT-s-OFDM QPSK	1@1	21.4	19.9	0.0977
78	30	90	633000	3495	DFT-s-OFDM QPSK	1@243	21.35	19.85	0.0966
78	30	90	633000	3495	DFT-s-OFDM 16 QAM	120@60	21.43	19.93	0.0984
78	30	90	633000	3495	DFT-s-OFDM 16 QAM	1@1	21.45	19.95	0.0989
78	30	90	633000	3495	DFT-s-OFDM 16 QAM	1@243	21.4	19.9	0.0977
78	30	90	633000	3495	DFT-s-OFDM 64 QAM	120@60	19.97	18.47	0.0703
78	30	90	633000	3495	DFT-s-OFDM 64 QAM	1@1	19.86	18.36	0.0685
78	30	90	633000	3495	DFT-s-OFDM 64 QAM	1@243	19.93	18.43	0.0697
78	30	90	633000	3495	DFT-s-OFDM 256 QAM	120@60	17.95	16.45	0.0442
78	30	90	633000	3495	DFT-s-OFDM 256 QAM	1@1	17.76	16.26	0.0423
78	30	90	633000	3495	DFT-s-OFDM 256 QAM	1@243	17.95	16.45	0.0442

78	30	90	633000	3495	CP-OFDM QPSK	123@61	20.75	19.25	0.0841
78	30	90	633000	3495	CP-OFDM QPSK	1@1	20.83	19.33	0.0857
78	30	90	633000	3495	CP-OFDM QPSK	1@243	20.8	19.3	0.0851
78	30	90	633334	3500.01	DFT-s-OFDM PI/2 BPSK	120@60	21.39	19.89	0.0975
78	30	90	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.48	19.98	0.0995
78	30	90	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@243	21.37	19.87	0.0971
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	120@60	21.45	19.95	0.0989
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.51	20.01	0.1002
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	1@243	21.57	20.07	0.1016
78	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	120@60	21.49	19.99	0.0998
78	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.24	19.74	0.0942
78	30	90	633334	3500.01	DFT-s-OFDM 16 QAM	1@243	21.54	20.04	0.1009
78	30	90	633334	3500.01	DFT-s-OFDM 64 QAM	120@60	20.01	18.51	0.071
78	30	90	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	19.62	18.12	0.0649
78	30	90	633334	3500.01	DFT-s-OFDM 64 QAM	1@243	19.62	18.12	0.0649
78	30	90	633334	3500.01	DFT-s-OFDM 256 QAM	120@60	18.0	16.5	0.0447
78	30	90	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	17.85	16.35	0.0432
78	30	90	633334	3500.01	DFT-s-OFDM 256 QAM	1@243	18.02	16.52	0.0449
78	30	90	633334	3500.01	CP-OFDM QPSK	123@61	20.88	19.38	0.0867
78	30	90	633334	3500.01	CP-OFDM QPSK	1@1	21.09	19.59	0.091
78	30	90	633334	3500.01	CP-OFDM QPSK	1@243	20.84	19.34	0.0859
78	30	90	633666	3504.99	DFT-s-OFDM PI/2 BPSK	120@60	21.42	19.92	0.0982
78	30	90	633666	3504.99	DFT-s-OFDM PI/2 BPSK	1@1	21.48	19.98	0.0995
78	30	90	633666	3504.99	DFT-s-OFDM PI/2 BPSK	1@243	21.4	19.9	0.0977

78	30	90	633666	3504.99	DFT-s-OFDM QPSK	120@60	21.34	19.84	0.0964
78	30	90	633666	3504.99	DFT-s-OFDM QPSK	1@1	21.52	20.02	0.1005
78	30	90	633666	3504.99	DFT-s-OFDM QPSK	1@243	21.42	19.92	0.0982
78	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	120@60	21.39	19.89	0.0975
78	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	1@1	21.45	19.95	0.0989
78	30	90	633666	3504.99	DFT-s-OFDM 16 QAM	1@243	21.42	19.92	0.0982
78	30	90	633666	3504.99	DFT-s-OFDM 64 QAM	120@60	19.9	18.4	0.0692
78	30	90	633666	3504.99	DFT-s-OFDM 64 QAM	1@1	19.86	18.36	0.0685
78	30	90	633666	3504.99	DFT-s-OFDM 64 QAM	1@243	19.8	18.3	0.0676
78	30	90	633666	3504.99	DFT-s-OFDM 256 QAM	120@60	17.99	16.49	0.0446
78	30	90	633666	3504.99	DFT-s-OFDM 256 QAM	1@1	17.89	16.39	0.0436
78	30	90	633666	3504.99	DFT-s-OFDM 256 QAM	1@243	17.91	16.41	0.0438
78	30	90	633666	3504.99	CP-OFDM QPSK	123@61	20.86	19.36	0.0863
78	30	90	633666	3504.99	CP-OFDM QPSK	1@1	20.89	19.39	0.0869
78	30	90	633666	3504.99	CP-OFDM QPSK	1@243	20.92	19.42	0.0875
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	21.38	19.88	0.0973
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	21.37	19.87	0.0971
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	21.37	19.87	0.0971
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	21.41	19.91	0.0979
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	21.57	20.07	0.1016
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	21.51	20.01	0.1002
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	21.45	19.95	0.0989
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	21.2	19.7	0.0933
78	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	21.22	19.72	0.0938

78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	19.76	18.26	0.067
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	19.79	18.29	0.0675
78	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	19.72	18.22	0.0664
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	18.01	16.51	0.0448
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	17.76	16.26	0.0423
78	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	17.99	16.49	0.0446
78	30	100	633334	3500.01	CP-OFDM QPSK	137@68	20.88	19.38	0.0867
78	30	100	633334	3500.01	CP-OFDM QPSK	1@1	20.99	19.49	0.0889
78	30	100	633334	3500.01	CP-OFDM QPSK	1@271	20.98	19.48	0.0887

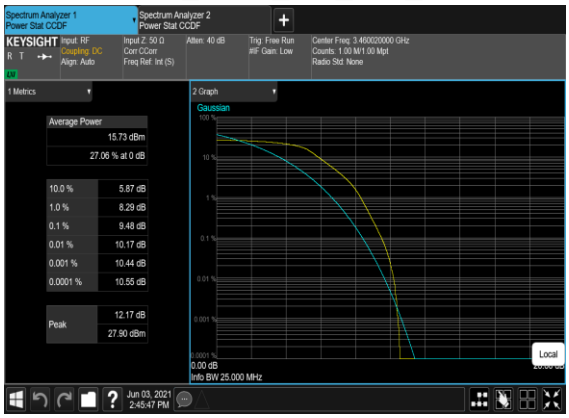
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00846	PASS	NV
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00657	PASS	LV
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00753	PASS	HV
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00425	PASS	-30℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00442	PASS	-20℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00754	PASS	-10℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00695	PASS	0℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00583	PASS	10℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00824	PASS	20℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00582	PASS	30℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00584	PASS	40℃
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	-0.00682	PASS	50℃

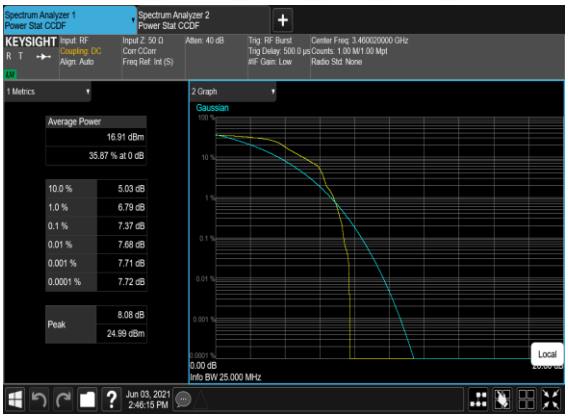
Peak to Average Radio

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	9.48	13	PASS
78	30	20	630668	3460.02	DFT-s-OFDM PI/2 BPSK	1@0	7.37	13	PASS
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	50@0	7.74	13	PASS
78	30	20	630668	3460.02	DFT-s-OFDM QPSK	1@0	7.39	13	PASS
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@0	7.18	13	PASS
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@0	6.97	13	PASS
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	7.84	13	PASS
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	1@0	7.76	13	PASS
78	30	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	50@0	7.05	13	PASS
78	30	20	636000	3540.0	DFT-s-OFDM PI/2 BPSK	1@0	6.42	13	PASS
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	50@0	7.62	13	PASS
78	30	20	636000	3540.0	DFT-s-OFDM QPSK	1@0	7.05	13	PASS

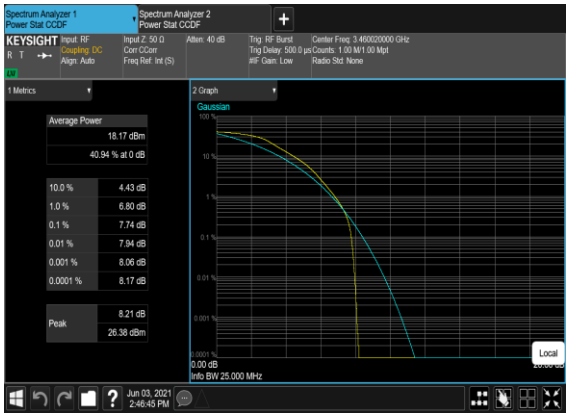
B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Low_CH



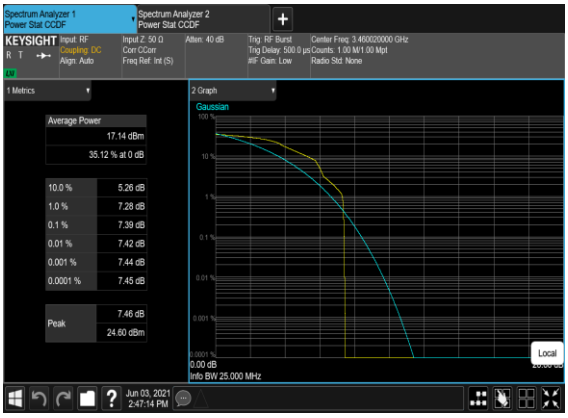
B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Low_CH



B5_N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



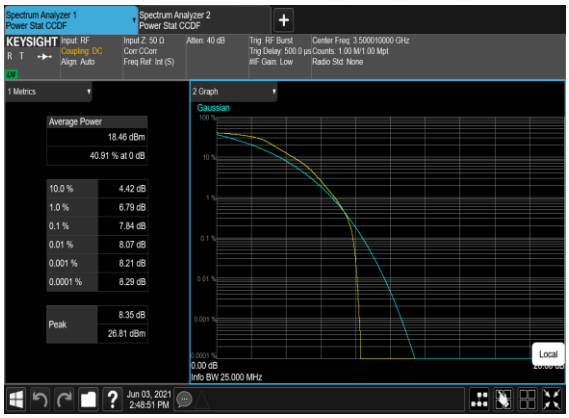
B5_N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



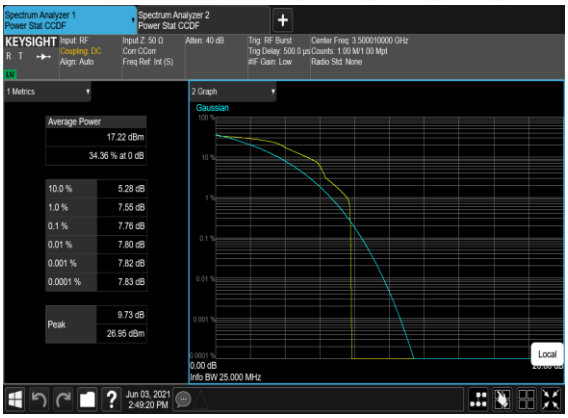
B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH

B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH

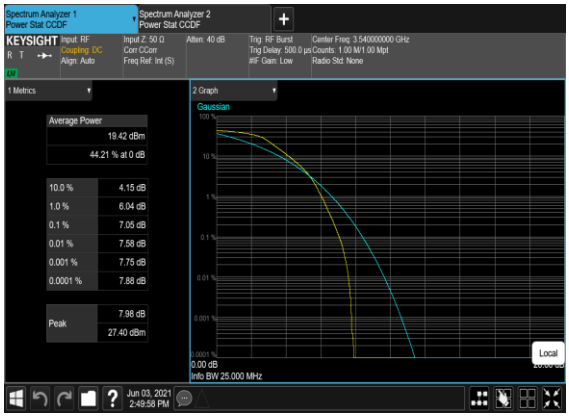
B5_N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



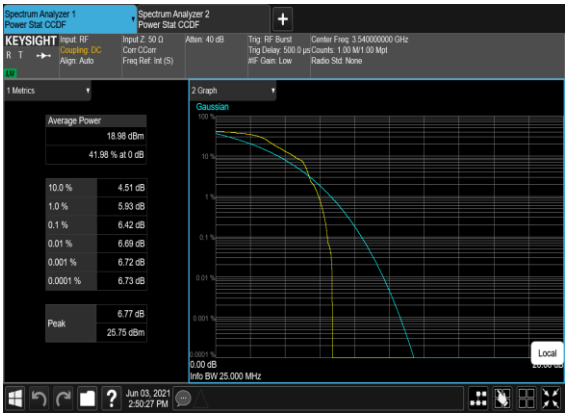
B5_N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_High_CH

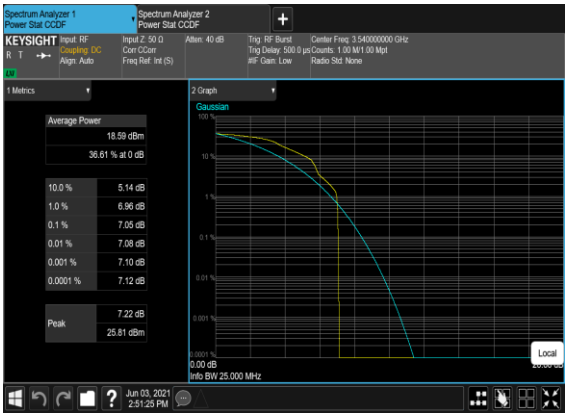


B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_High_CH



B5_N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

B5_N78(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH

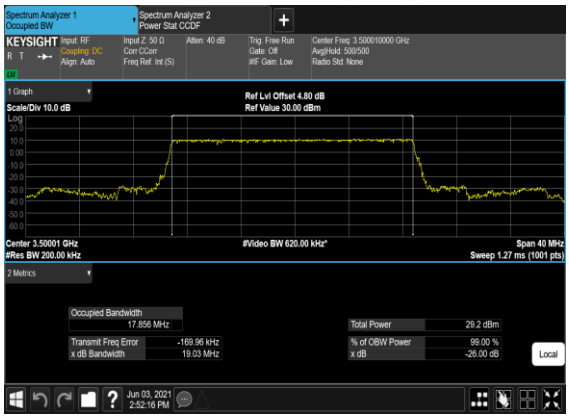


Occupied Bandwidth

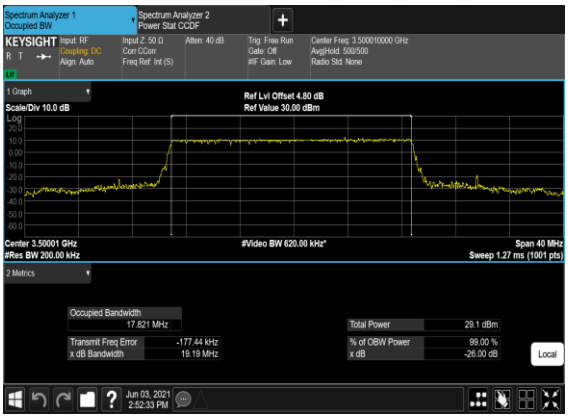
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB OBW (MHz)
78	30	20	633334	3500.01	DFT-s-OFDM PI/2 BPSK	50@0	17.856	19.03
78	30	20	633334	3500.01	DFT-s-OFDM QPSK	50@0	17.821	19.19
78	30	20	633334	3500.01	CP-OFDM QPSK	51@0	18.213	19.47
78	30	20	633334	3500.01	CP-OFDM 16 QAM	51@0	18.254	19.26
78	30	20	633334	3500.01	CP-OFDM 64 QAM	51@0	18.208	19.17
78	30	20	633334	3500.01	CP-OFDM 256 QAM	51@0	18.201	19.45
78	30	40	633334	3500.01	DFT-s-OFDM PI/2 BPSK	100@0	35.709	37.16
78	30	40	633334	3500.01	DFT-s-OFDM QPSK	100@0	35.715	37.29
78	30	40	633334	3500.01	CP-OFDM QPSK	106@0	37.799	39.33
78	30	40	633334	3500.01	CP-OFDM 16 QAM	106@0	37.858	39.39
78	30	40	633334	3500.01	CP-OFDM 64 QAM	106@0	37.845	39.38
78	30	40	633334	3500.01	CP-OFDM 256 QAM	106@0	37.841	39.21
78	30	50	633334	3500.01	DFT-s-OFDM PI/2 BPSK	128@0	45.717	47.4
78	30	50	633334	3500.01	DFT-s-OFDM QPSK	128@0	45.819	47.42
78	30	50	633334	3500.01	CP-OFDM QPSK	133@0	47.434	49.27
78	30	50	633334	3500.01	CP-OFDM 16 QAM	133@0	47.489	49.44
78	30	50	633334	3500.01	CP-OFDM 64 QAM	133@0	47.469	49.39
78	30	50	633334	3500.01	CP-OFDM 256 QAM	133@0	47.458	49.05
78	30	60	633334	3500.01	DFT-s-OFDM PI/2 BPSK	162@0	57.88	60.08
78	30	60	633334	3500.01	DFT-s-OFDM QPSK	162@0	57.991	60.0
78	30	60	633334	3500.01	CP-OFDM QPSK	162@0	57.813	59.79
78	30	60	633334	3500.01	CP-OFDM 16 QAM	162@0	57.849	59.72
78	30	60	633334	3500.01	CP-OFDM 64 QAM	162@0	57.791	59.91
78	30	60	633334	3500.01	CP-OFDM 256 QAM	162@0	57.88	59.75

78	30	80	633334	3500.01	DFT-s-OFDM PI/2 BPSK	216@0	77.125	79.65
78	30	80	633334	3500.01	DFT-s-OFDM QPSK	216@0	77.139	79.7
78	30	80	633334	3500.01	CP-OFDM QPSK	217@0	77.524	79.96
78	30	80	633334	3500.01	CP-OFDM 16 QAM	217@0	77.423	80.22
78	30	80	633334	3500.01	CP-OFDM 64 QAM	217@0	77.461	80.02
78	30	80	633334	3500.01	CP-OFDM 256 QAM	217@0	77.431	80.16
78	30	90	633334	3500.01	DFT-s-OFDM PI/2 BPSK	240@0	85.765	88.49
78	30	90	633334	3500.01	DFT-s-OFDM QPSK	240@0	85.635	88.57
78	30	90	633334	3500.01	CP-OFDM QPSK	245@0	87.622	90.44
78	30	90	633334	3500.01	CP-OFDM 16 QAM	245@0	87.513	90.29
78	30	90	633334	3500.01	CP-OFDM 64 QAM	245@0	87.432	90.42
78	30	90	633334	3500.01	CP-OFDM 256 QAM	245@0	87.402	90.36
78	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	270@0	96.441	99.5
78	30	100	633334	3500.01	DFT-s-OFDM QPSK	270@0	96.356	99.58
78	30	100	633334	3500.01	CP-OFDM QPSK	273@0	97.522	100.7
78	30	100	633334	3500.01	CP-OFDM 16 QAM	273@0	97.351	100.5
78	30	100	633334	3500.01	CP-OFDM 64 QAM	273@0	97.414	100.6
78	30	100	633334	3500.01	CP-OFDM 256 QAM	273@0	97.47	100.6

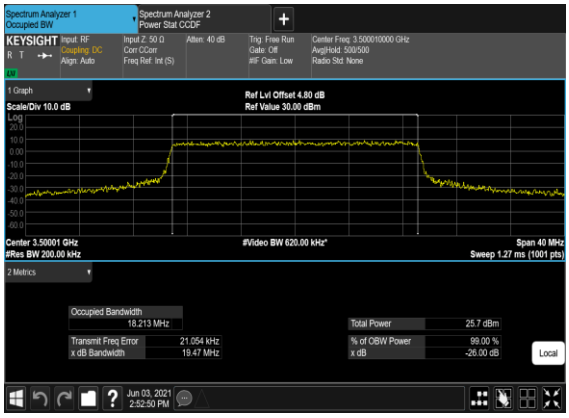
B5_N78(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



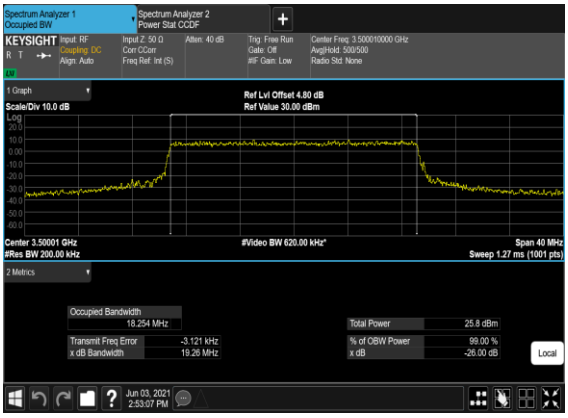
B5_N78(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



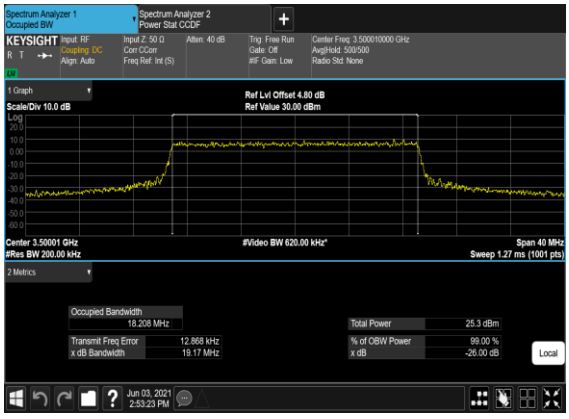
B5_N78(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N78(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

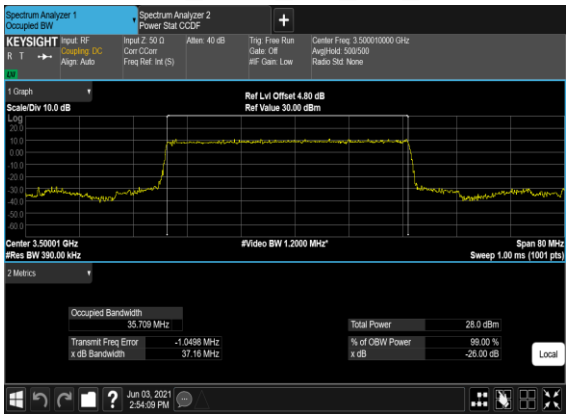


B5_N78(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

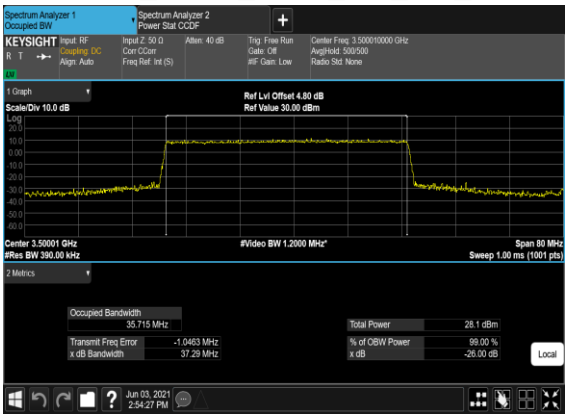


B5_N78(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

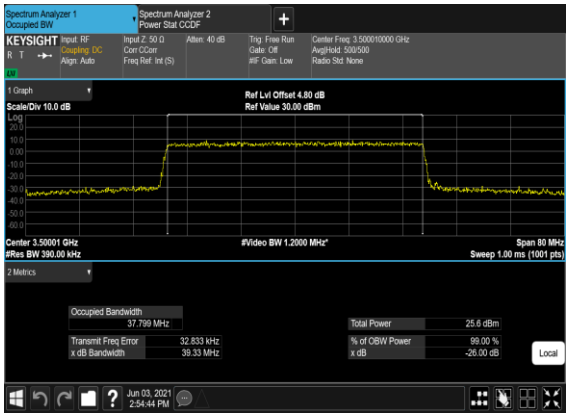
B5_N78(40M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



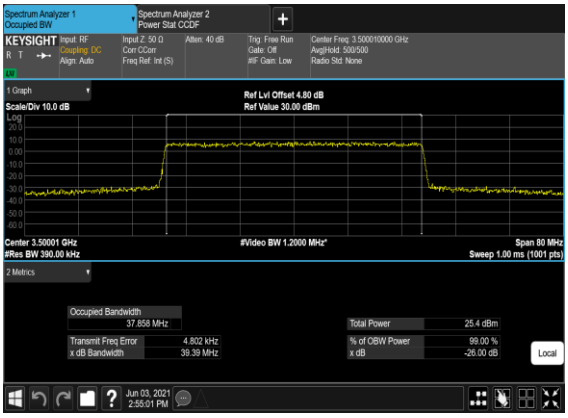
B5_N78(40M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



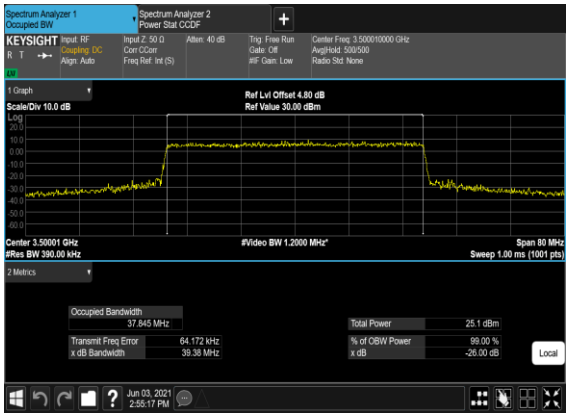
B5_N78(40M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N78(40M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

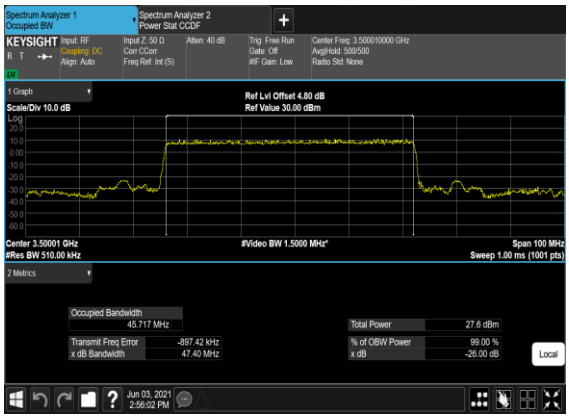


B5_N78(40M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

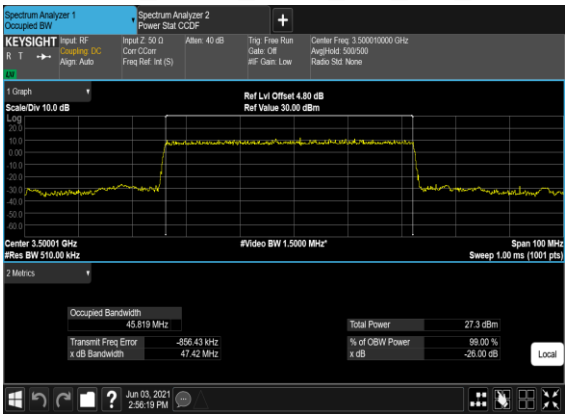


B5_N78(40M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

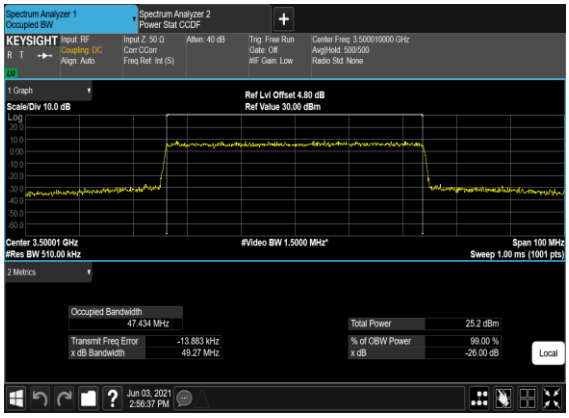
B5_N78(50M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



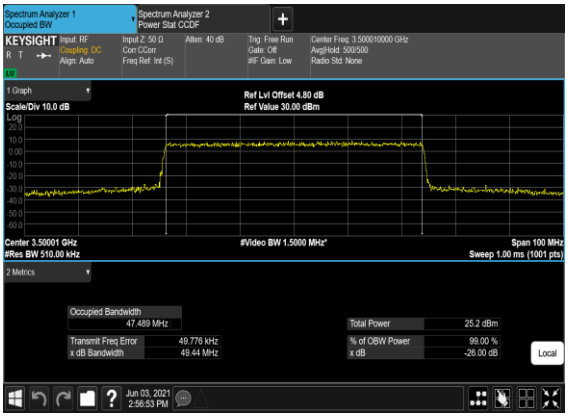
B5_N78(50M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



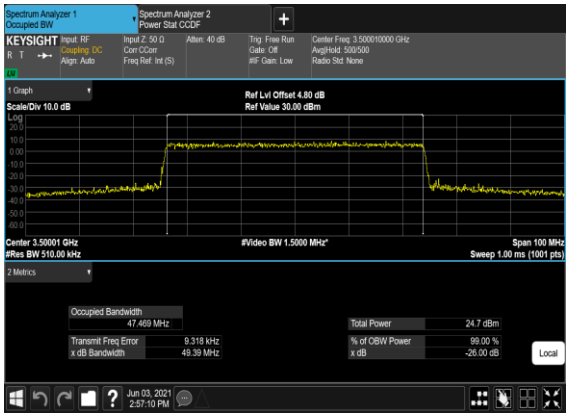
B5_N78(50M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



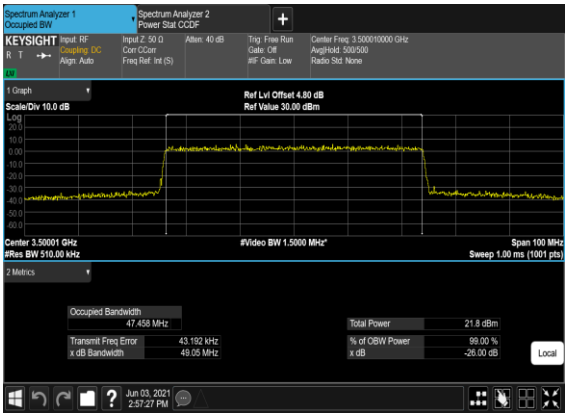
B5_N78(50M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



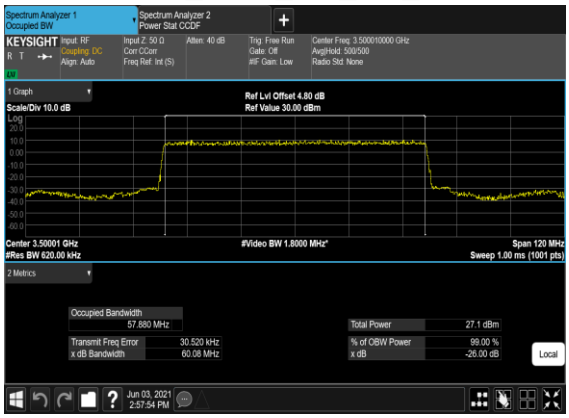
B5_N78(50M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



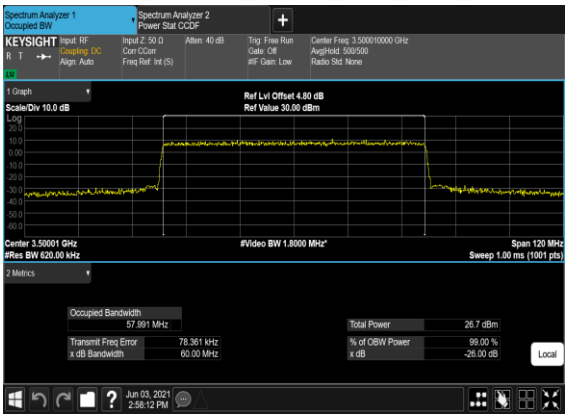
B5_N78(50M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



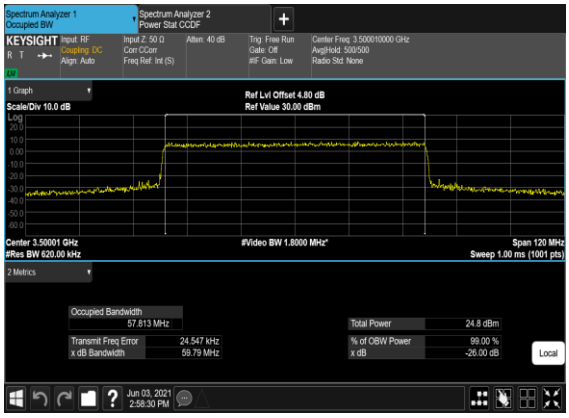
B5_N78(60M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



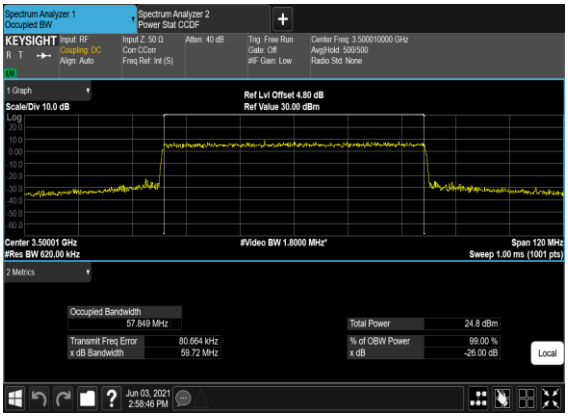
B5_N78(60M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



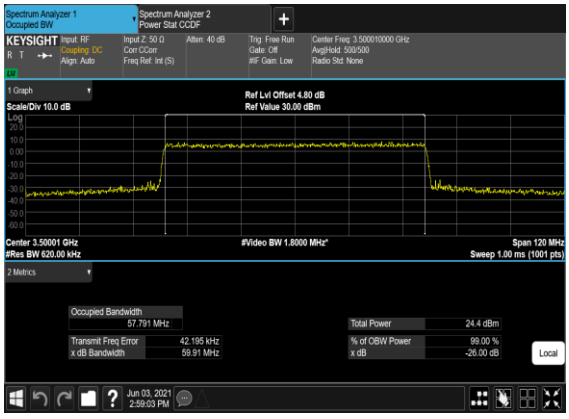
B5_N78(60M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N78(60M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH

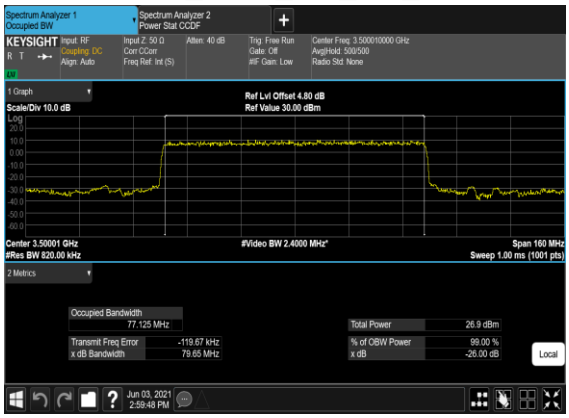


B5_N78(60M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH

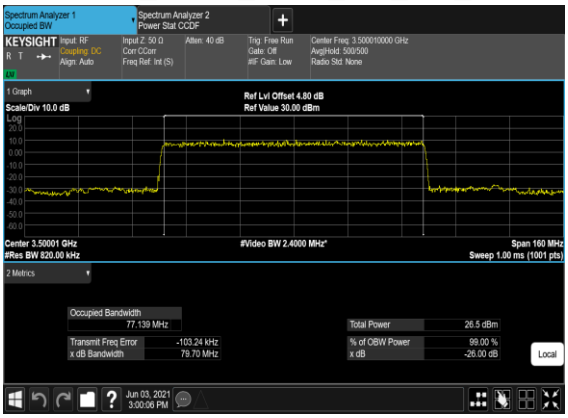


B5_N78(60M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

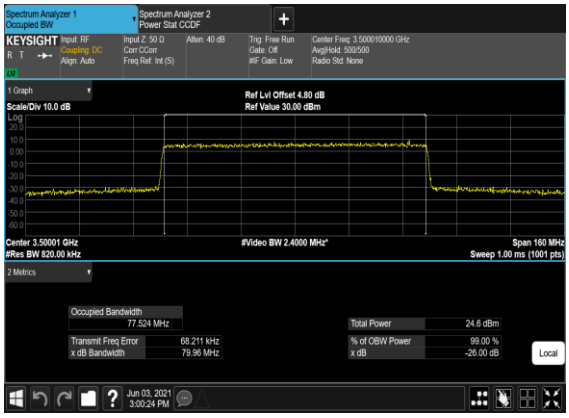
B5_N78(80M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



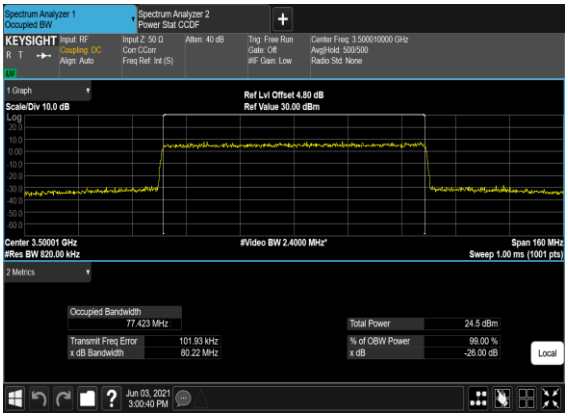
B5_N78(80M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH



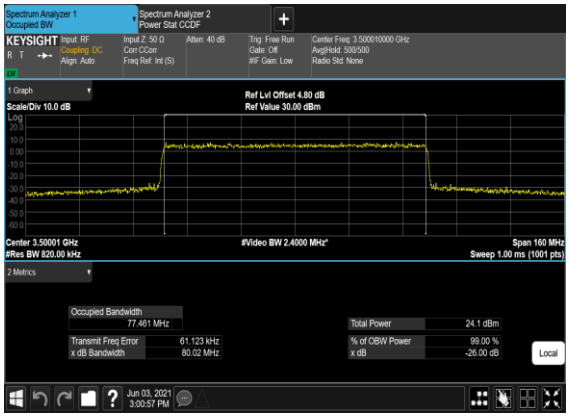
B5_N78(80M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



B5_N78(80M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



B5_N78(80M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



B5_N78(80M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH