



ELEMENT WASHINGTON DC LLC

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PART 27 MEASUREMENT REPORT

Applicant Name:

Sony Corporation
1-7-1 Konan Minato-ku
Tokyo, 108-0075
Japan

Date of Testing:

02/16/2023 - 04/06/2023

Test Report Issue Date:

04/17/2023

Test Site/Location:

Element lab., Columbia, MD, USA

Test Report Serial No.:

1M2302060006-04-R1.PY7

FCC ID:

PY7-84558E

Applicant Name:

Sony Corporation

Application Type:

Certification

EUT Type:

Portable Handset

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part:

27

Test Procedure(s):

ANSI C63.26-2015, KDB 648474 D03 v01r04

Note: This revised Test Report (S/N: 1M2302060006-04-R1.PY7) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortanez
Executive Vice President



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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 30 Main2	10 MHz	QPSK	2310.0	0.088	19.46	9M02G7D
		16QAM	2310.0	0.065	18.11	9M05W7D
	5 MHz	QPSK	2307.5 - 2312.5	0.088	19.46	4M53G7D
		16QAM	2307.5 - 2312.5	0.062	17.89	4M54W7D
LTE Band 41(PC3) Main2	20 MHz	QPSK	2506.0 - 2680.0	0.121	20.84	18M0G7D
		16QAM	2506.0 - 2680.0	0.109	20.38	18M1W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.120	20.79	13M6G7D
		16QAM	2503.5 - 2682.5	0.109	20.38	13M6W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.129	21.09	9M06G7D
		16QAM	2501.0 - 2685.0	0.115	20.59	9M07W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.130	21.13	4M55G7D
		16QAM	2498.5 - 2687.5	0.115	20.61	4M55W7D
NR Band n30 Main2	10 MHz	π/2 BPSK	2310.0	0.083	19.18	8M97G7D
		QPSK	2310.0	0.080	19.06	9M34G7D
		16QAM	2310.0	0.066	18.20	9M39W7D
	5 MHz	π/2 BPSK	2307.5 - 2312.5	0.097	19.88	4M54G7D
		QPSK	2307.5 - 2312.5	0.100	20.02	4M52G7D
		16QAM	2307.5 - 2312.5	0.067	18.29	4M55W7D
NR Band n41(PC2) Main2	100 MHz	π/2 BPSK	2546.0 - 2640.0	0.178	22.50	96M9G7D
		QPSK	2546.0 - 2640.0	0.160	22.03	98M0G7D
		16QAM	2546.0 - 2640.0	0.168	22.25	97M9W7D
	90 MHz	π/2 BPSK	2541.0 - 2645.0	0.179	22.52	87M1G7D
		QPSK	2541.0 - 2645.0	0.169	22.28	87M9G7D
		16QAM	2541.0 - 2645.0	0.158	21.97	87M9W7D
	80 MHz	π/2 BPSK	2536.0 - 2650.0	0.179	22.53	77M4G7D
		QPSK	2536.0 - 2650.0	0.179	22.53	78M1G7D
		16QAM	2536.0 - 2650.0	0.151	21.80	77M7W7D
	60 MHz	π/2 BPSK	2526.0 - 2660.0	0.190	22.78	58M3G7D
		QPSK	2526.0 - 2660.0	0.167	22.23	58M2G7D
		16QAM	2526.0 - 2660.0	0.141	21.51	58M1W7D
	50 MHz	π/2 BPSK	2521.0 - 2665.0	0.179	22.52	46M0G7D
		QPSK	2521.0 - 2665.0	0.181	22.57	47M7G7D
		16QAM	2521.0 - 2665.0	0.153	21.85	47M8W7D
	40 MHz	π/2 BPSK	2516.0 - 2670.0	0.184	22.66	36M0G7D
		QPSK	2516.0 - 2670.0	0.182	22.60	38M1G7D
		16QAM	2516.0 - 2670.0	0.159	22.02	38M2W7D
	30 MHz	π/2 BPSK	2511.0 - 2675.0	0.189	22.77	27M0G7D
		QPSK	2511.0 - 2675.0	0.192	22.84	28M0G7D
		16QAM	2511.0 - 2675.0	0.168	22.25	28M0W7D
	20 MHz	π/2 BPSK	2506.0 - 2680.0	0.183	22.63	18M1G7D
		QPSK	2506.0 - 2680.0	0.182	22.61	18M3G7D
		16QAM	2506.0 - 2680.0	0.157	21.97	18M3W7D

Overview Table (LTE/NR Main2)

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 30 Sub	10 MHz	QPSK	2310.0	0.110	20.43	9M04G7D
		16QAM	2310.0	0.085	19.29	9M12W7D
	5 MHz	QPSK	2307.5 - 2312.5	0.107	20.31	4M52G7D
		16QAM	2307.5 - 2312.5	0.085	19.30	4M53W7D

Overview Table (LTE Sub)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP	
				Max. Power [W]	Max. Power [dBm]
NR Band n41(PC3) UL-MIMO	100 MHz	QPSK	2546.0 - 2640.0	0.090	19.54
		16QAM	2546.0 - 2640.0	0.097	19.89
		64QAM	2546.0 - 2640.0	0.091	19.58
		256QAM	2546.0 - 2640.0	0.085	19.29
	90 MHz	QPSK	2541.0 - 2645.0	0.093	19.69
		16QAM	2541.0 - 2645.0	0.099	19.94
		64QAM	2541.0 - 2645.0	0.114	20.59
		256QAM	2541.0 - 2645.0	0.067	18.27
	80 MHz	QPSK	2536.0 - 2650.0	0.095	19.76
		16QAM	2536.0 - 2650.0	0.078	18.94
		64QAM	2536.0 - 2650.0	0.114	20.58
		256QAM	2536.0 - 2650.0	0.067	18.27
	60 MHz	QPSK	2526.0 - 2660.0	0.093	19.70
		16QAM	2526.0 - 2660.0	0.100	20.00
		64QAM	2526.0 - 2660.0	0.114	20.55
		256QAM	2526.0 - 2660.0	0.090	19.53
	50 MHz	QPSK	2521.0 - 2665.0	0.094	19.75
		16QAM	2521.0 - 2665.0	0.099	19.97
		64QAM	2521.0 - 2665.0	0.106	20.24
		256QAM	2521.0 - 2665.0	0.067	18.24
	40 MHz	QPSK	2516.0 - 2670.0	0.091	19.61
		16QAM	2516.0 - 2670.0	0.098	19.93
		64QAM	2516.0 - 2670.0	0.114	20.58
		256QAM	2516.0 - 2670.0	0.102	20.10
	30 MHz	QPSK	2511.0 - 2675.0	0.082	19.13
		16QAM	2511.0 - 2675.0	0.097	19.89
		64QAM	2511.0 - 2675.0	0.111	20.44
		256QAM	2511.0 - 2675.0	0.079	18.96
	20 MHz	QPSK	2506.0 - 2680.0	0.094	19.73
		16QAM	2506.0 - 2680.0	0.096	19.83
		64QAM	2506.0 - 2680.0	0.115	20.59
		256QAM	2506.0 - 2680.0	0.084	19.27

Overview Table (UL-MIMO)

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 Element Test Location

These measurement tests were conducted at the Element laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreement.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Sony Portable Handset FCC ID: PY7-84558E**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

Test Device Serial No.: 01443, 02904, 02227

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR FR1, 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5 and 6 GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power Transfer

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: Belkin F7U050 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 0.621 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added, and no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the “American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services” (ANSI C63.26-2015) were used in the measurement of the EUT.

Deviation from Measurement Procedure.....None

3.2 Radiated Power and Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3-meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1- and 4-meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

For radiated power measurements, substitution method is used per the guidance of ANSI C63.26-2015. For emissions below 1GHz, a half-wave dipole is substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_d [dBm] = P_g [dBm] - \text{cable loss} [dB] + \text{antenna gain} [dBd/dBi];$$

where P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_g [dBm] - \text{cable loss} [dB]$.

For radiated spurious emissions measurements, the field strength conversion method is used per the formulas in Section 5.2.7 of ANSI C63.26-2015. Field Strength (EIRP) is calculated using the following formulas:

$$E_{[dB\mu V/m]} = \text{Measured amplitude level}_{[dBm]} + 107 + \text{Cable Loss}_{[dB]} + \text{Antenna Factor}_{[dB/m]}$$

And

$$\text{EIRP}_{[dBm]} = E_{[dB\mu V/m]} + 20\log D - 104.8; \text{ where } D \text{ is the measurement distance in meters.}$$

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 414788 D01 v01r01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015.

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (\pm dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	AP1-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP1-001
	ETS-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-001
-	ETS-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-002
-	LTx1	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTx1
-	LTx2	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTx2
-	LTx3	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTx3
-	LTx4	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTx4
-	LTx5	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTx5
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201525694
Emco	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2023	9704-5182
Espec	SCP-220	Environmental Chamber	5/25/2022	Annual	5/25/2023	OCPS5H0612K05
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2022	Biennial	4/20/2023	00125518
ETS Lindgren	3164-10	Quad Ridge Horn 400MHz - 10000MHz	5/10/2021	Biennial	5/10/2023	00166283
Keysight Technologies	N9030A	PXA Signal Analyzer	9/6/2022	Annual	9/6/2023	MY54490576
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	8/25/2022	Annual	8/25/2023	100348
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	11/6/2022	Annual	11/6/2023	103187
Sunol Sciences	JB5	Bi-Log Antenna (30M - 5GHz)	8/30/2022	Biennial	8/30/2024	A051107

Table 5-1. Test Equipment

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE CALCULATIONS

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was -81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3700.40 MHz. So 6.1 dB is added to the signal generator reading of -30.9 dBm yielding -24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm $- (-24.80) = 50.3$ dBc.

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7.0 TEST RESULTS

7.1 Summary

Company Name: Sony Corporation
 FCC ID: PY7-84558E
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	NA	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	NA	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions (LTE Band 30; NR Band n30)	2.1051, 27.53(a)(4)	Undesirable emissions must meet the limits detailed in 27.53(a)(4)	PASS	Sections 7.4, 7.5
	Conducted Band Edge / Spurious Emissions (LTE Band 41; NR Band n41)	2.1051, 27.53(m)(4)	Undesirable emissions must meet the limits detailed in 27.53(m)(4)	PASS	Sections 7.4, 7.5
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
RADIATED	Equivalent Isotropic Radiated Power (LTE Band 30; NR Band n30)	27.50(a)(3)	≤ 250mW / 5MHz max. EIRP	PASS	Section 7.6
	Equivalent Isotropic Radiated Power (LTE Band 41; NR Band n41)	27.50(h)(2)	≤ 2 Watts max. EIRP	PASS	Section 7.6
	Radiated Spurious Emissions (LTE Band 30; NR Band n30)	2.1053, 27.53(a)(4)	Undesirable emissions must meet the limits detailed in 27.53(a)(4)	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 41; NR Band n41)	2.1053, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Section 7.7

Table 7-1. Summary of Test Results (FCC)

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst-case emissions.
- 2) The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna ports conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- 4) All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v1.1.

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7.2 Conducted Output Power Data

Test Overview

All emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2

Test Settings

1. Span = 2 x OBW to 3 x OBW
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize.
6. Please see test notes below for RBW and VBW settings

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

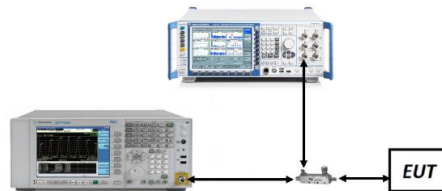


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

1. Conducted power measurements were evaluated using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
2. Higher order modulations (e.g., 64QAM and 256QAM) have been confirmed to be lower than 16QAM in Tables 7-2 through 7-6.
3. All other conducted power measurements are contained in the RF exposure report for this filing.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
10 MHz	QPSK	27710	2310.0	1 / 25	22.63
	16-QAM	27710	2310.0	1 / 25	22.04
5 MHz	QPSK	27685	2307.5	1 / 12	22.28
		27710	2310.0	1 / 12	22.37
		27735	2312.5	1 / 12	22.51
	16-QAM	27710	2310.0	1 / 12	22.05

Table 7-2. Conducted Power Output Data (LTE Band 30 Sub)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	$\pi/2$ BPSK	509202	2546.01	1 / 136	25.86
		518598	2592.99	1 / 136	26.19
		528000	2640.00	1 / 136	26.20
	QPSK	528000	2640.00	1 / 136	25.85
	16-QAM	528000	2640.00	1 / 136	25.21
90 MHz	$\pi/2$ BPSK	508200	2541.00	1 / 122	25.86
		518598	2592.99	1 / 183	26.13
		528996	2644.98	1 / 122	26.22
	QPSK	528996	2644.98	1 / 122	26.09
16-QAM	528996	2644.98	1 / 122	25.41	
80 MHz	$\pi/2$ BPSK	507204	2536.02	1 / 108	26.22
		518598	2592.99	1 / 108	26.26
		529998	2649.99	1 / 108	26.23
	QPSK	529998	2649.99	1 / 108	26.35
16-QAM	529998	2649.99	1 / 108	25.23	
60 MHz	$\pi/2$ BPSK	505200	2526.00	1 / 81	26.40
		518598	2592.99	1 / 81	26.08
		531996	2659.98	1 / 81	26.48
	QPSK	531996	2659.98	1 / 81	26.05
16-QAM	518598	2592.99	1 / 81	25.21	
50 MHz	$\pi/2$ BPSK	504204	2521.02	1/1	26.63
		518598	2592.99	1 / 99	26.54
		532998	2664.99	1 / 99	26.17
	QPSK	532998	2664.99	1 / 99	26.38
16-QAM	532998	2664.99	1 / 99	25.29	
40 MHz	$\pi/2$ BPSK	503202	2516.01	1 / 79	26.38
		518598	2592.99	1 / 79	26.46
		534000	2670.00	1 / 53	26.35
	QPSK	534000	2670.00	1 / 53	26.41
16-QAM	534000	2670.00	1 / 53	25.46	
30 MHz	$\pi/2$ BPSK	502200	2511.00	1 / 58	26.51
		518598	2592.99	1 / 58	26.62
		534996	2674.98	1 / 58	26.47
	QPSK	534996	2674.98	1 / 58	26.66
16-QAM	534996	2674.98	1 / 58	25.69	
20 MHz	$\pi/2$ BPSK	501204	2506.02	1/1	26.35
		518598	2592.99	1/1	26.33
		535998	2679.99	1/1	26.33
	QPSK	535998	2679.99	1/1	26.43
16-QAM	535998	2679.99	1/1	25.41	

Table 7-3. Conducted Power Output Data (NR Band n41 PC2 Main2)

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 136	22.05
		518598	2592.99	1 / 204	22.29
		528000	2640.00	1 / 136	22.47
	QPSK	528000	2640.00	1 / 136	22.27
	16-QAM	528000	2640.00	1 / 136	21.89

Table 7-4. Conducted Power Output Data (SRS 1T4R NR Band n41 PC2 Sub)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 136	22.21
		518598	2592.99	1 / 136	22.41
		528000	2640.00	1 / 136	22.36
	QPSK	528000	2640.00	1 / 136	22.35
	16-QAM	528000	2640.00	1 / 136	21.49

Table 7-5. Conducted Power Output Data (SRS 1T4R NR Band n41 PC2 3rd-LMHB)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 136	23.98
		518598	2592.99	1 / 136	23.82
		528000	2640.00	1 / 136	23.64
	QPSK	509202	2546.01	1 / 136	23.98
	16-QAM	509202	2546.01	1 / 136	22.81

Table 7-6. Conducted Power Output Data (SRS 1T4R NR Band n41 PC2 4th-MHB)

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Bandwidth	Modulation	Channel	Frequency [MHz]	Main2 RB Size/Offset	Main2 Conducted Power [dBm]	Sub RB Size/Offset	Sub Conducted Power [dBm]	UL-MIMO Conducted Power [dBm]
100 MHz	QPSK	509202	2546.01	1 / 136	20.27	1 / 136	19.69	23.00
		518598	2592.99	1 / 204	20.50	273 / 0	20.06	23.30
		528000	2640.00	1 / 204	20.50	1 / 136	19.93	23.23
	16-QAM	509202	2546.01	1 / 136	20.38	1 / 136	20.05	23.23
		518598	2592.99	1 / 136	20.42	273 / 0	20.03	23.24
		528000	2640.00	1 / 136	20.49	1 / 204	20.25	23.38
	64-QAM	509202	2546.01	273 / 0	19.47	273 / 0	19.81	22.65
		518598	2592.99	273 / 0	19.39	273 / 0	20.04	22.74
		528000	2640.00	273 / 0	20.00	1 / 136	19.67	22.95
	256-QAM	509202	2546.01	1 / 204	18.90	1 / 136	19.91	22.45
		518598	2592.99	1 / 204	17.92	273 / 0	19.98	22.08
		528000	2640.00	1 / 204	18.00	273 / 0	19.86	22.04
80 MHz	QPSK	507204	2536.02	1 / 162	20.49	1 / 108	19.93	23.23
		518598	2592.99	1 / 108	20.48	1 / 162	20.18	23.34
		529998	2649.99	217 / 0	20.10	1 / 108	20.39	23.26
	16-QAM	507204	2536.02	217 / 0	19.43	1 / 108	20.21	22.85
		518598	2592.99	217 / 0	20.49	1 / 162	20.55	23.53
		529998	2649.99	1 / 1	20.45	1 / 108	20.11	23.30
	64-QAM	507204	2536.02	1 / 108	20.48	1 / 108	19.99	23.25
		518598	2592.99	1 / 108	20.49	1 / 54	20.00	23.26
		529998	2649.99	1 / 108	20.48	1 / 108	19.91	23.22
	256-QAM	507204	2536.02	217 / 0	17.88	1 / 108	19.90	22.02
		518598	2592.99	217 / 0	17.64	1 / 54	20.03	22.01
		529998	2649.99	1 / 1	17.68	217 / 0	19.98	21.99
60 MHz	QPSK	505200	2526.00	1 / 121	20.43	1 / 81	20.09	23.27
		518598	2592.99	162 / 0	20.45	1 / 40	20.38	23.43
		531996	2659.98	1 / 1	20.50	162 / 0	20.14	23.33
	16-QAM	505200	2526.00	1 / 121	20.49	1 / 81	20.47	23.49
		518598	2592.99	1 / 1	20.42	1 / 81	20.47	23.45
		531996	2659.98	162 / 0	20.49	1 / 81	20.26	23.38
	64-QAM	505200	2526.00	162 / 0	20.44	162 / 0	20.00	23.24
		518598	2592.99	162 / 0	20.44	162 / 0	20.12	23.29
		531996	2659.98	1 / 81	20.44	162 / 0	20.18	23.32
	256-QAM	505200	2526.00	1 / 121	19.15	162 / 0	19.95	22.58
		518598	2592.99	1 / 81	18.70	162 / 0	20.12	22.48
		531996	2659.98	1 / 81	19.59	162 / 0	20.18	22.91
50 MHz	QPSK	504204	2521.02	133 / 0	20.48	1 / 66	20.07	23.29
		518598	2592.99	133 / 0	20.44	1 / 33	20.50	23.48
		532998	2664.99	133 / 0	20.40	1 / 66	20.17	23.30
	16-QAM	504204	2521.02	1 / 66	20.46	133 / 0	20.01	23.25
		518598	2592.99	133 / 0	20.48	1 / 33	20.42	23.46
		532998	2664.99	1 / 66	20.50	1 / 66	20.21	23.37
	64-QAM	504204	2521.02	1 / 99	20.13	1 / 66	20.23	23.19
		518598	2592.99	133 / 0	20.45	1 / 33	20.12	23.30
		532998	2664.99	1 / 99	20.49	133 / 0	20.09	23.31
	256-QAM	504204	2521.02	1 / 99	17.82	133 / 0	20.00	22.06
		518598	2592.99	133 / 0	18.56	133 / 0	20.12	22.42
		532998	2664.99	1 / 99	17.94	1 / 66	20.17	22.21
40 MHz	QPSK	503202	2516.01	1 / 79	20.34	106 / 0	20.15	23.26
		518598	2592.99	1 / 79	20.50	1 / 26	20.49	23.51
		534000	2670.00	1 / 1	20.42	1 / 53	20.18	23.31
	16-QAM	503202	2516.01	1 / 79	20.42	1 / 53	20.38	23.41
		518598	2592.99	106 / 0	20.41	1 / 26	20.45	23.44
		534000	2670.00	1 / 79	20.48	106 / 0	20.09	23.30
	64-QAM	503202	2516.01	1 / 79	20.47	1 / 53	20.24	23.37
		518598	2592.99	1 / 79	20.48	1 / 26	20.34	23.42
		534000	2670.00	1 / 79	20.49	1 / 53	20.15	23.33
	256-QAM	503202	2516.01	1 / 79	19.72	106 / 0	20.14	22.95
		518598	2592.99	1 / 79	18.21	1 / 26	20.28	22.38
		534000	2670.00	106 / 0	17.94	106 / 0	20.16	22.20
30 MHz	QPSK	502200	2511.00	78 / 0	19.86	1 / 39	20.02	22.95
		518598	2592.99	78 / 0	20.39	1 / 58	20.27	23.34
		534996	2674.98	1 / 39	20.43	1 / 39	20.19	23.32
	16-QAM	502200	2511.00	1 / 1	20.38	1 / 39	20.37	23.39
		518598	2592.99	1 / 39	20.43	1 / 58	20.42	23.44
		534996	2674.98	78 / 0	20.50	1 / 39	20.37	23.44
	64-QAM	502200	2511.00	78 / 0	20.34	1 / 39	20.48	23.42
		518598	2592.99	78 / 0	20.40	1 / 19	20.26	23.34
		534996	2674.98	78 / 0	20.49	78 / 0	20.17	23.34
	256-QAM	502200	2511.00	1 / 1	18.58	78 / 0	19.95	22.33
		518598	2592.99	1 / 39	19.04	78 / 0	20.08	22.60
		534996	2674.98	78 / 0	18.35	78 / 0	20.19	22.38
20 MHz	QPSK	501204	2506.02	1 / 37	20.46	51 / 0	20.11	23.30
		518598	2592.99	1 / 37	20.38	51 / 0	20.08	23.24
		535998	2679.99	51 / 0	20.28	1 / 25	20.28	23.29
	16-QAM	501204	2506.02	1 / 25	20.33	1 / 25	20.46	23.40
		518598	2592.99	1 / 25	20.34	1 / 25	20.50	23.43
		535998	2679.99	51 / 0	20.29	1 / 25	20.22	23.27
	64-QAM	501204	2506.02	1 / 37	20.49	1 / 25	20.21	23.36
		518598	2592.99	1 / 37	20.47	1 / 37	20.42	23.45
		535998	2679.99	1 / 37	20.45	1 / 25	20.12	23.30
	256-QAM	501204	2506.02	1 / 25	18.88	1 / 25	20.12	22.55
		518598	2592.99	1 / 37	18.97	51 / 0	20.01	22.53
		535998	2679.99	51 / 0	18.28	51 / 0	20.13	22.31

Table 7-7. Conducted Power Output Data (UL-MIMO NR Band n41 PC3; Main2+Sub)

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Bandwidth	Modulation	Channel	Frequency [MHz]	3rd-LMHB RB Size/Offset	3rd-LMHB Conducted Power [dBm]	4th MHB RB Size/Offset	4th MHB Conducted Power [dBm]	SRS 2T4R Conducted Power [dBm]
100 MHz	QPSK	509202	2546.01	1 / 136	15.48	1 / 136	16.24	18.89
		518598	2592.99	1 / 136	15.58	1 / 136	16.99	19.35
		528000	2640.00	1 / 136	15.74	1 / 136	17.18	19.53
	16-QAM	509202	2546.01	273 / 0	15.26	1 / 68	16.67	19.03
		518598	2592.99	1 / 136	15.72	1 / 136	16.78	19.29
		528000	2640.00	1 / 136	15.56	1 / 136	17.09	19.40
	64-QAM	509202	2546.01	273 / 0	15.32	1 / 136	17.25	19.40
		518598	2592.99	1 / 136	15.43	273 / 0	16.84	19.20
		528000	2640.00	1 / 136	15.56	273 / 0	16.47	19.05
	256-QAM	509202	2546.01	273 / 0	15.28	1 / 68	16.39	18.88
		518598	2592.99	273 / 0	15.38	273 / 0	16.47	18.97
		528000	2640.00	273 / 0	15.36	1 / 136	16.58	19.02

Table 7-8. Conducted Power Output Data (SRS 2T4R NR Band n41 PC3; 3rd LMHB+4th MHB)

NR							LTE							NR Conducted Power [dBm]	LTE Conducted Power [dBm]	EN-DC Total Tx. Power [dBm]
NR Band	Antenna	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	Antenna	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset			
n30	Main2	10	462000	2310	QPSK	50/0	5	Main1	10	20525	836.5	QPSK	50/0	15.77	21.96	22.90
					QPSK	50/0						15.79	21.95	22.89		
					QPSK	1/26						15.85	21.95	22.90		
					QPSK	1/26						15.87	21.97	22.92		
					16QAM	1/26						15.94	22.15	23.08		

Table 7-9. Conducted Power Output Data (EN-DC: NR Band n30)

NR							LTE							NR Conducted Power [dBm]	LTE Conducted Power [dBm]	EN-DC Total Tx. Power [dBm]
NR Band	Antenna	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	Antenna	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset			
n41	Main2	100	518598	2593	QPSK	270/0	2	Sub	20	18900	1880	QPSK	100/0	18.56	22.16	23.73
					QPSK	270/0						16.04	23.05	23.84		
					QPSK	1/136						18.37	22.18	23.69		
					QPSK	1/136						15.86	23.02	23.78		
					16QAM	270/0						18.41	22.41	23.87		
n41	Main2	100	518598	2593	QPSK	270/0	12	Main1	10	23095	707.5	QPSK	50/0	18.22	22.82	24.11
					QPSK	270/0						17.18	23.11	24.10		
					QPSK	1/136						18.17	22.83	24.11		
					QPSK	1/136						17.15	23.17	24.14		
					16QAM	1/136						18.01	23.19	24.34		
n41	Main2	100	518598	2593	QPSK	270/0	12	Sub	10	23095	707.5	QPSK	50/0	16.35	22.31	23.29
					QPSK	270/0						16.39	22.34	23.32		
					QPSK	1/136						16.35	22.37	23.34		
					QPSK	1/136						16.43	22.37	23.36		
					16QAM	1/136						16.26	22.69	23.58		

Table 7-10. Conducted Power Output Data (EN-DC: NR Band n41)

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7.3 Occupied Bandwidth

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

Test Settings

1. The signal analyzer’s automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

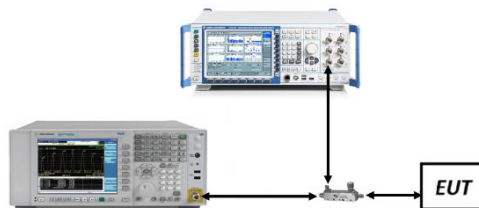


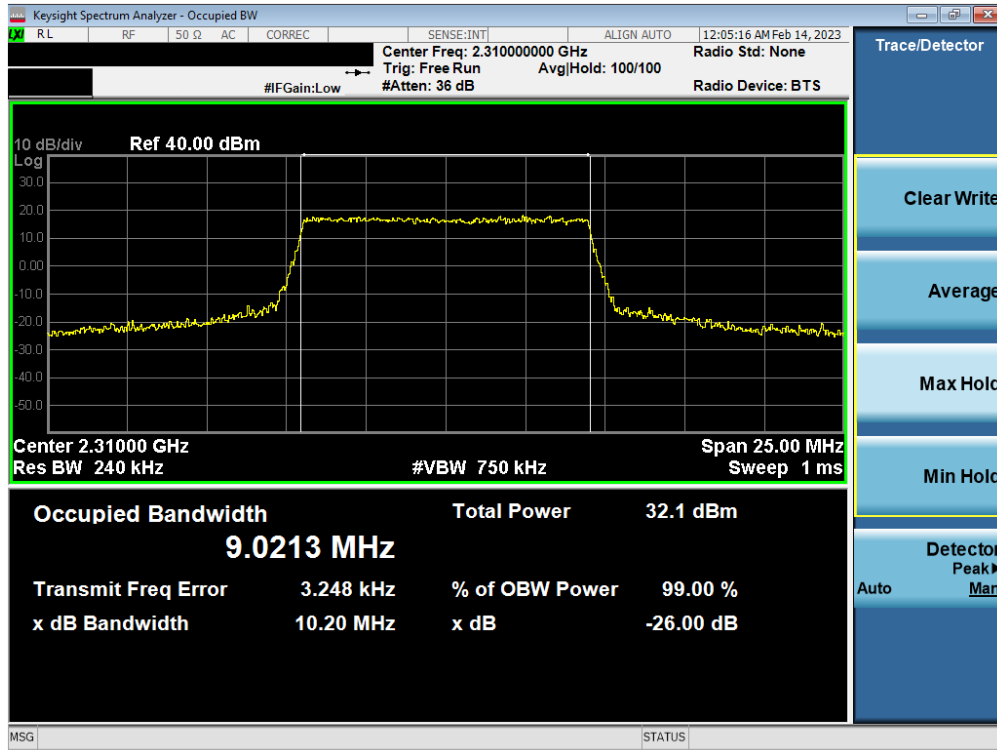
Figure 7-2. Test Instrument & Measurement Setup

Test Notes

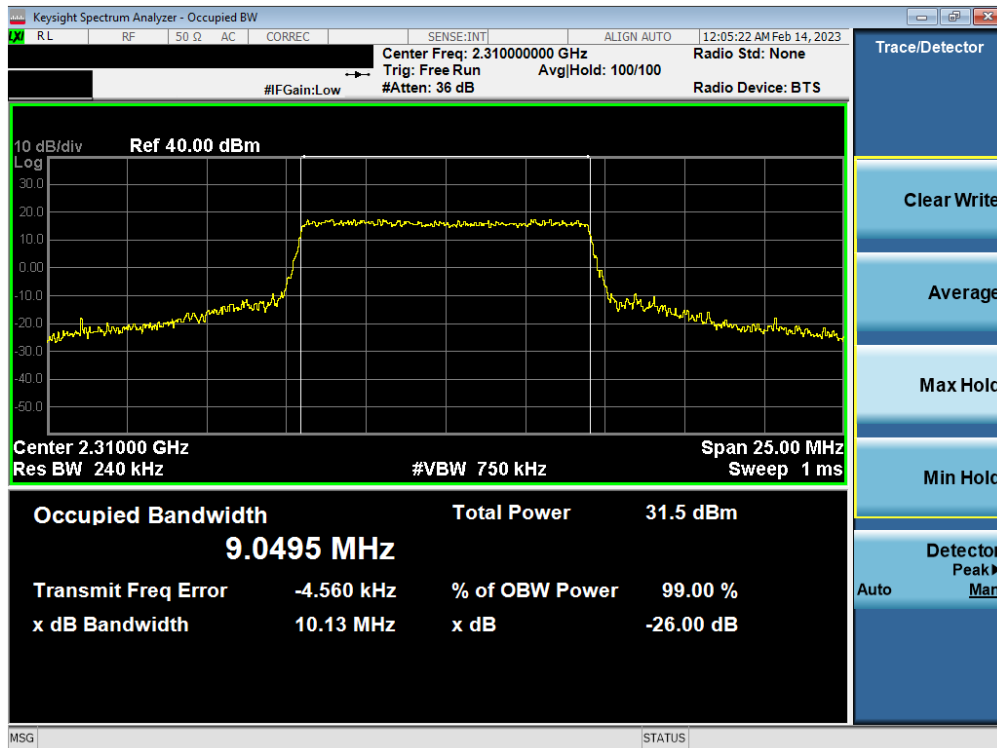
None.

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LTE Band 30 – Main2

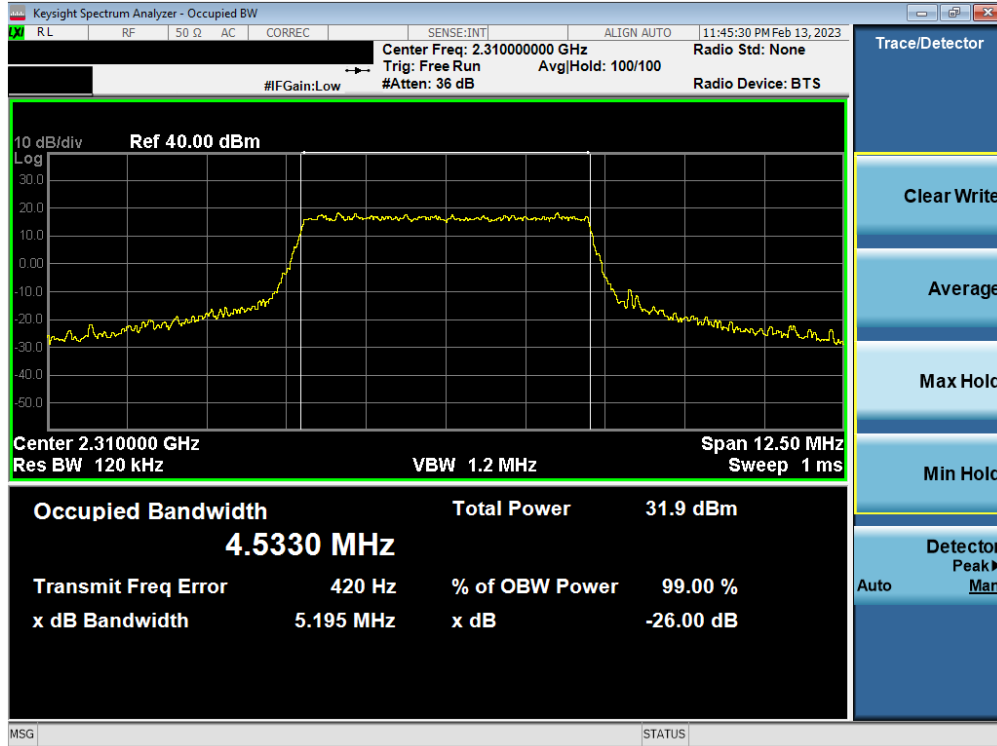


Plot 7-1. Occupied Bandwidth Plot (LTE Band 30 - 10MHz QPSK - Full RB - Main2)

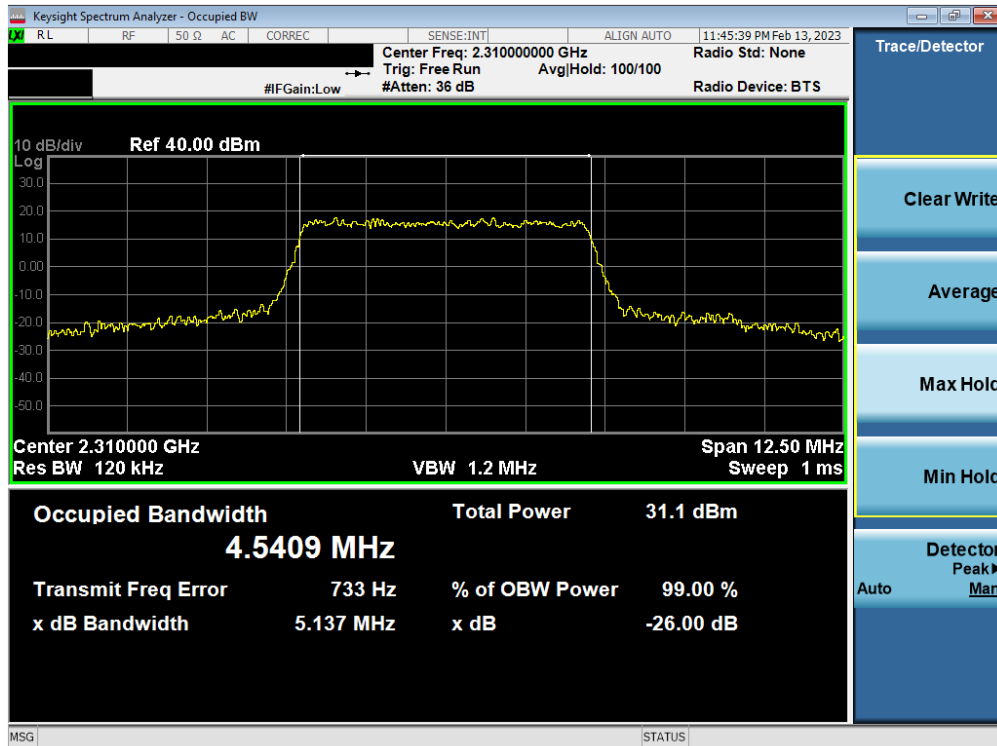


Plot 7-2. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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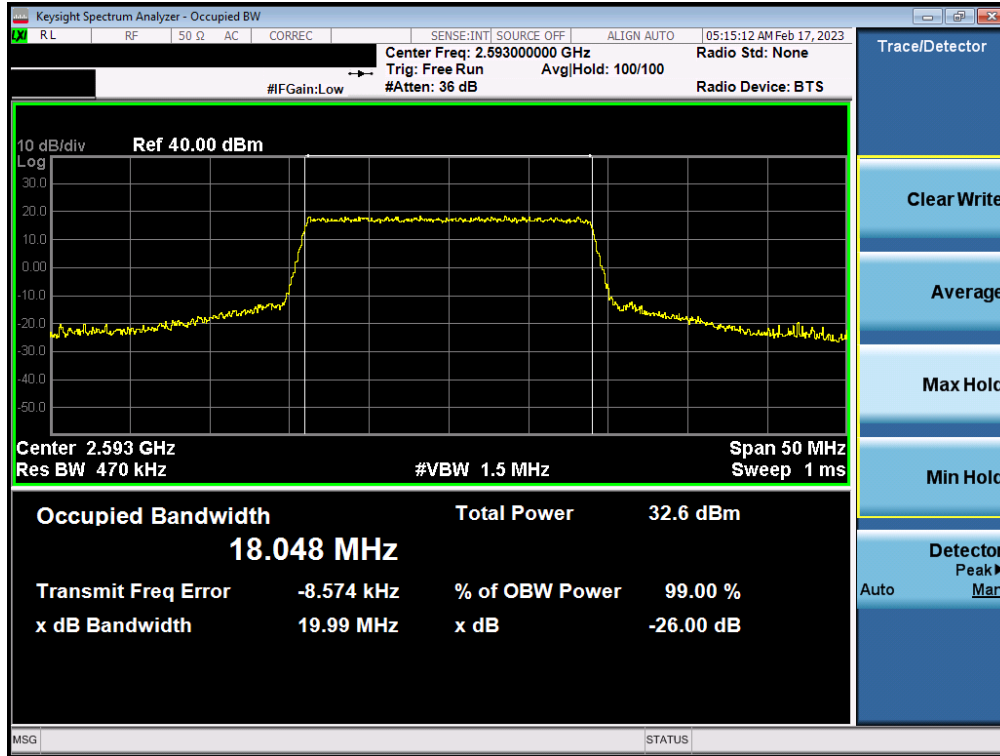
Plot 7-3. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB - Main2)



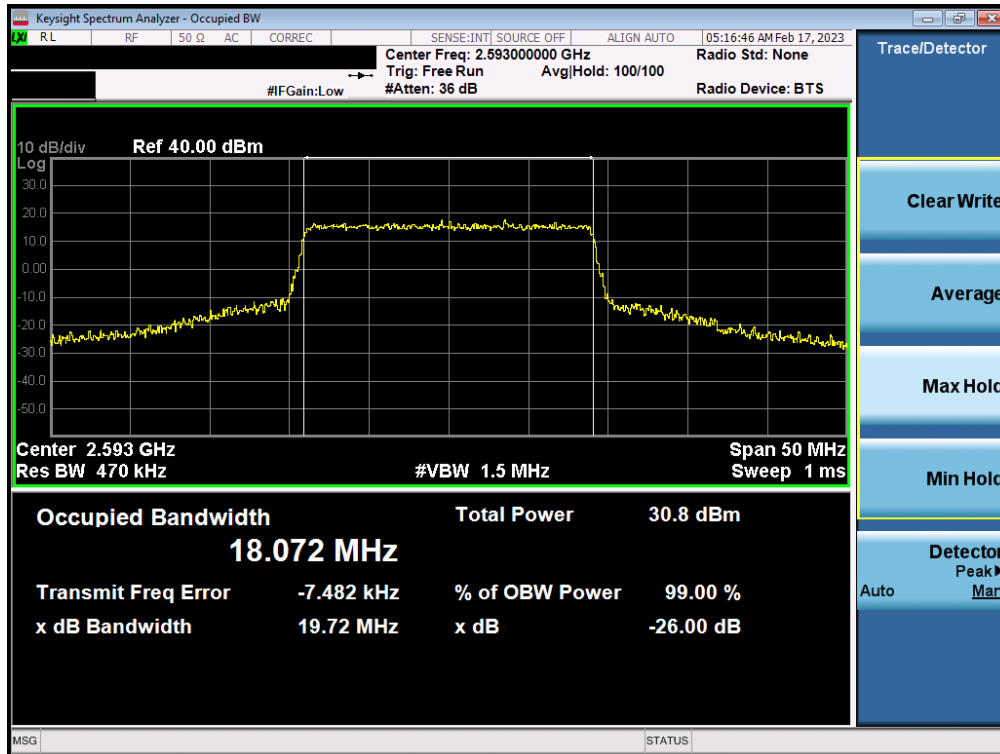
Plot 7-4. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 16-QAM - Full RB - Main2)

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LTE Band 41(PC3) – Main2

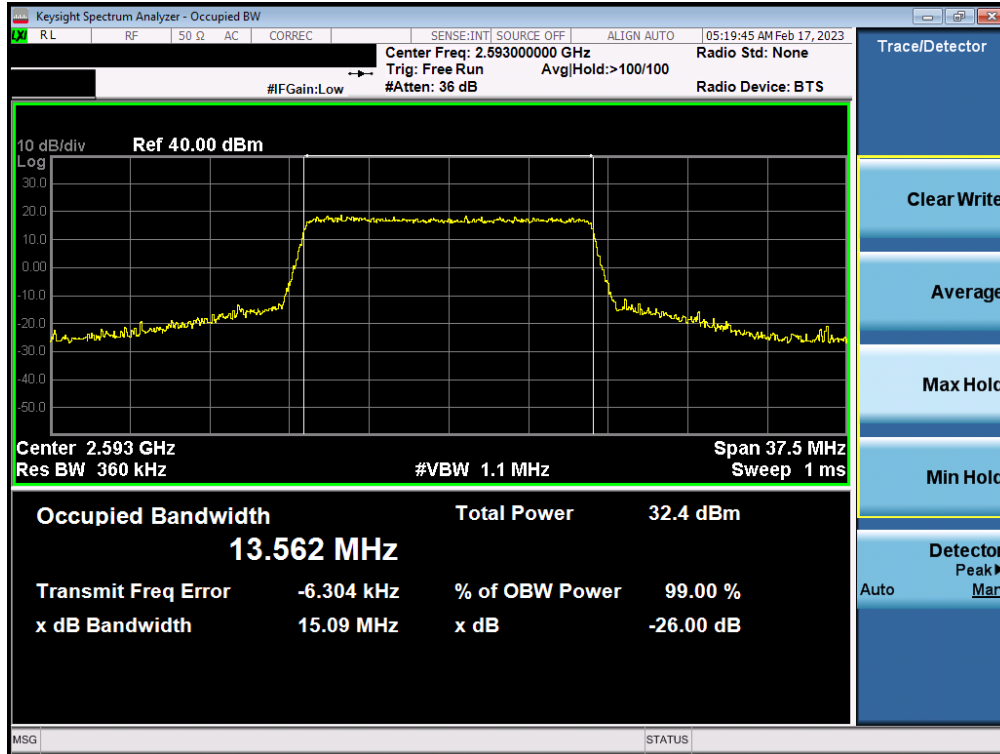


Plot 7-5. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz QPSK - Full RB - Main2)

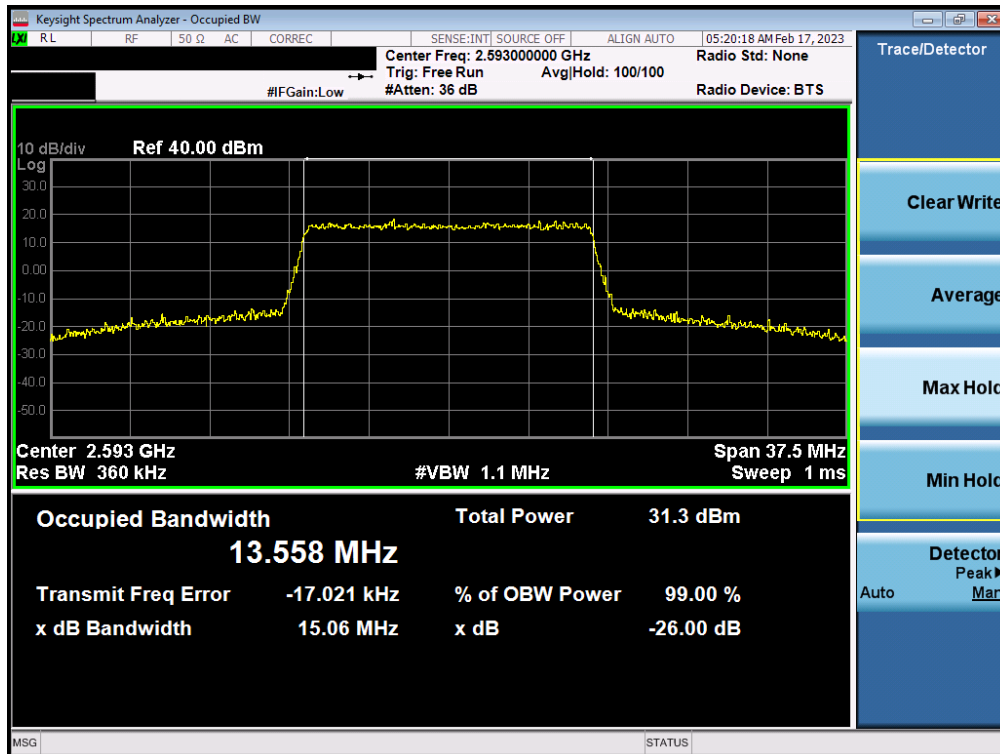


Plot 7-6. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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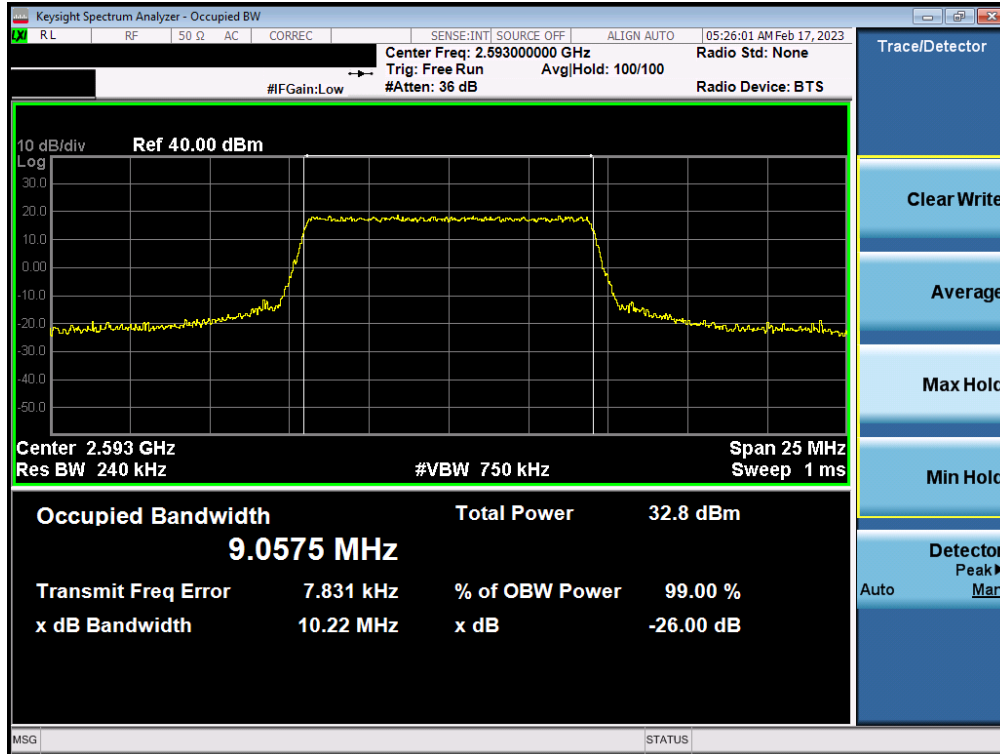


Plot 7-7. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz QPSK - Full RB - Main2)

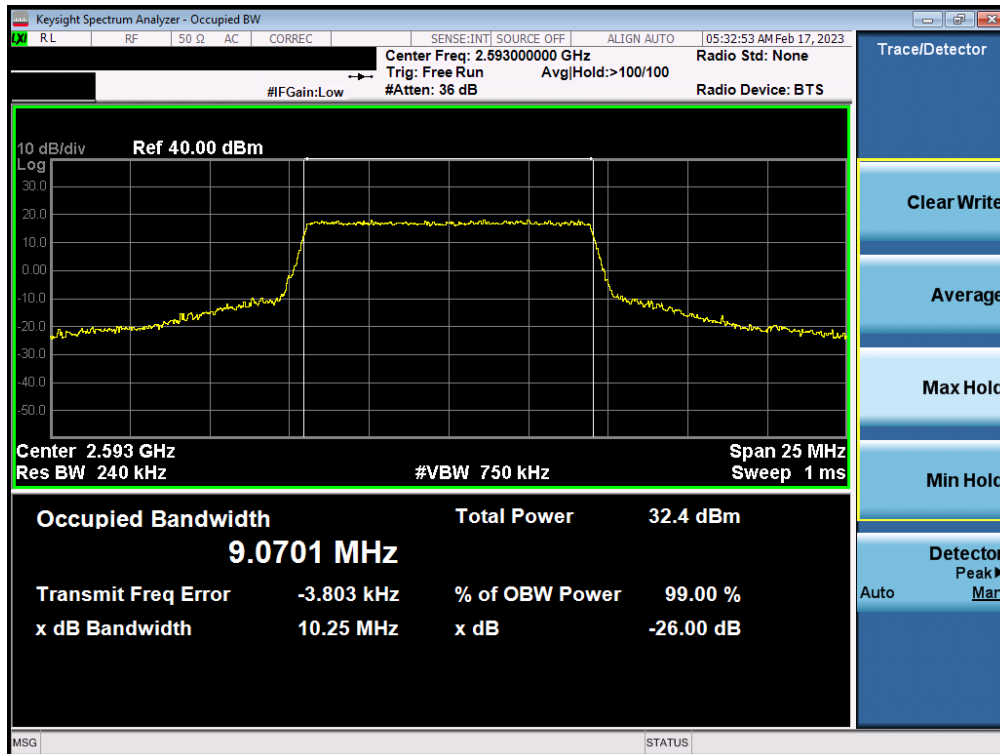


Plot 7-8. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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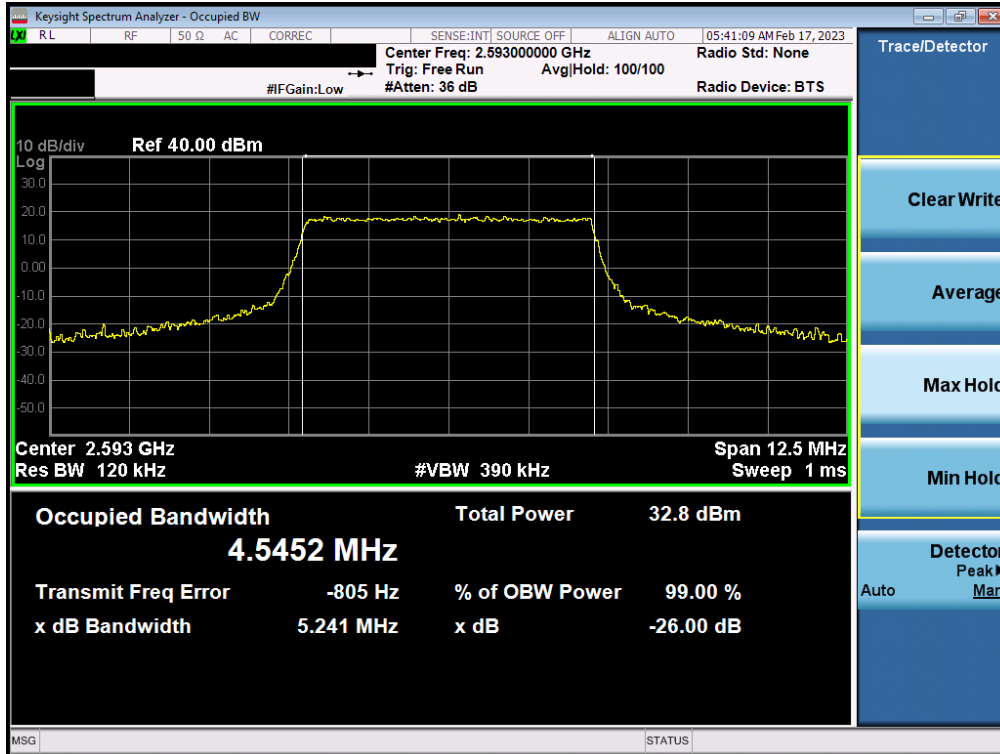


Plot 7-9. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz QPSK - Full RB - Main2)

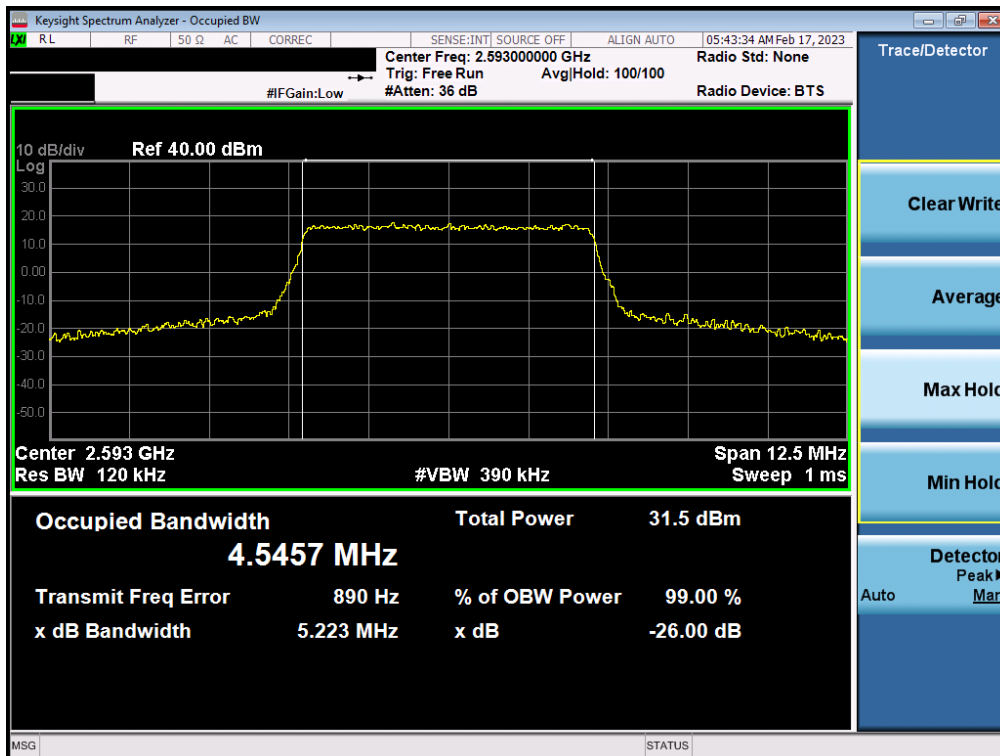


Plot 7-10. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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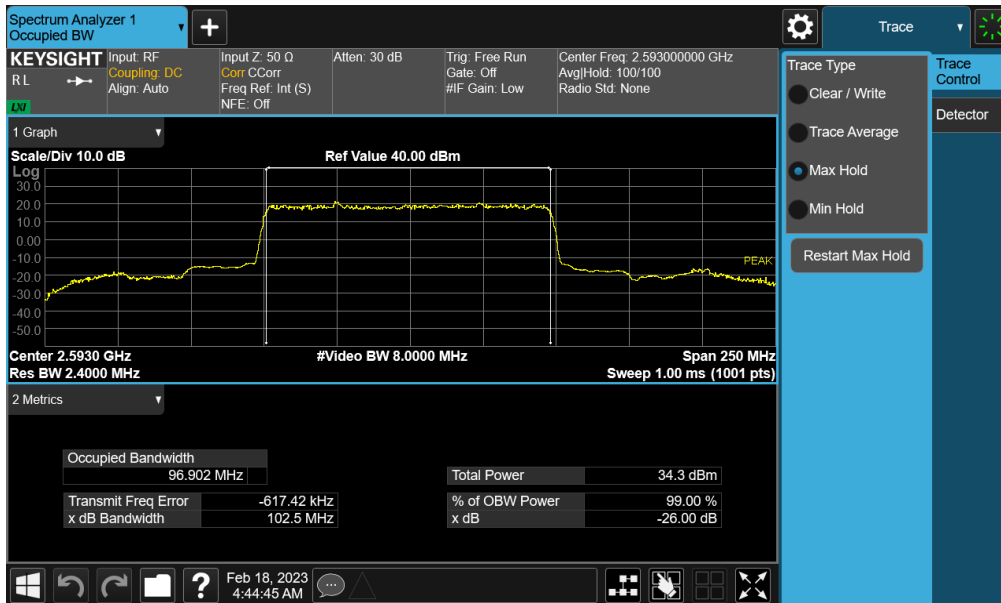
Plot 7-11. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz QPSK - Full RB - Main2)



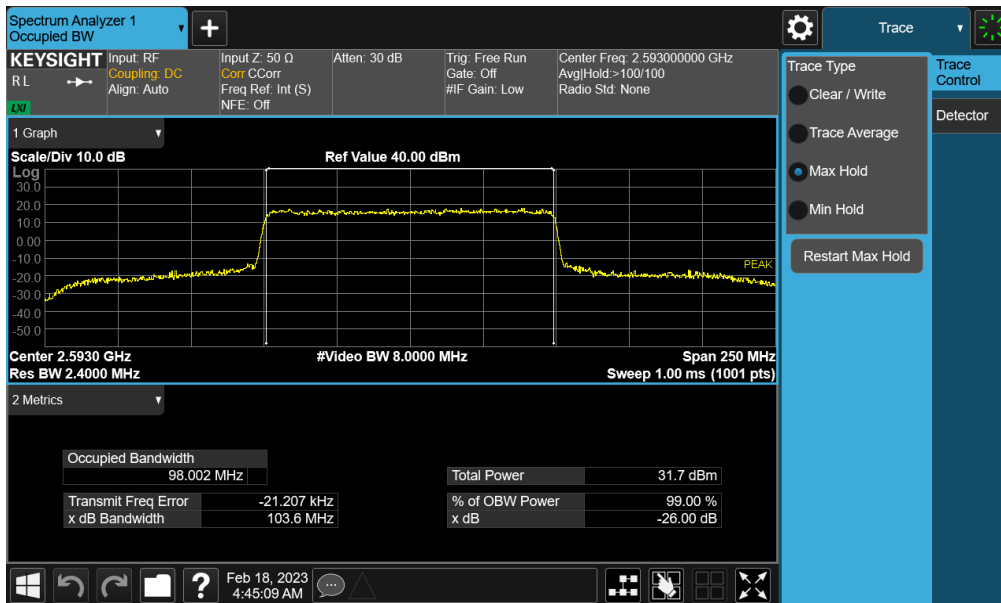
Plot 7-12. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n41 – Main2

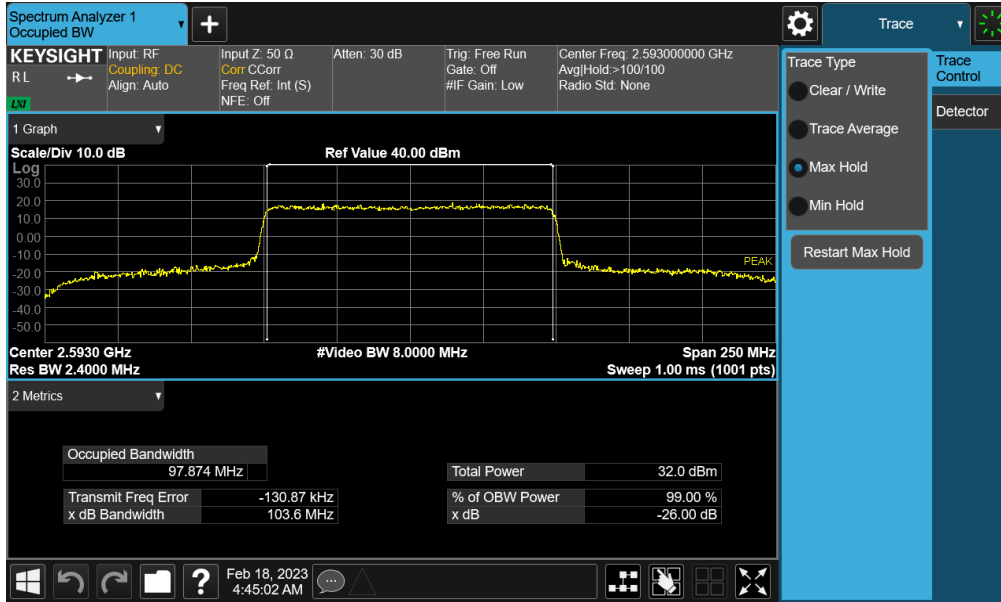


Plot 7-13. Occupied Bandwidth Plot (NR Band n41 - 100MHz $\pi/2$ BPSK - Full RB - Main2)

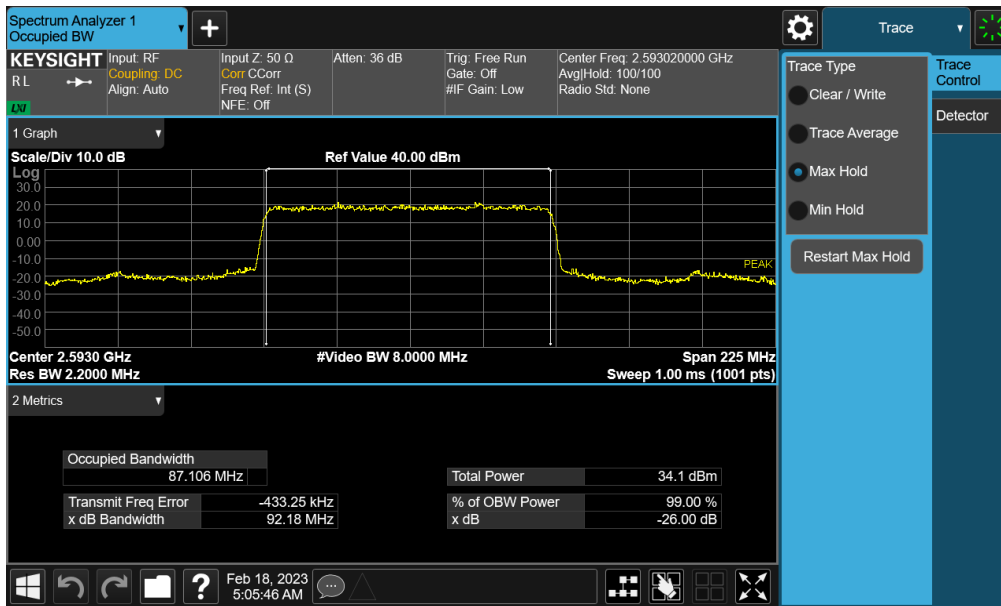


Plot 7-14. Occupied Bandwidth Plot (NR Band n41 - 100MHz QPSK - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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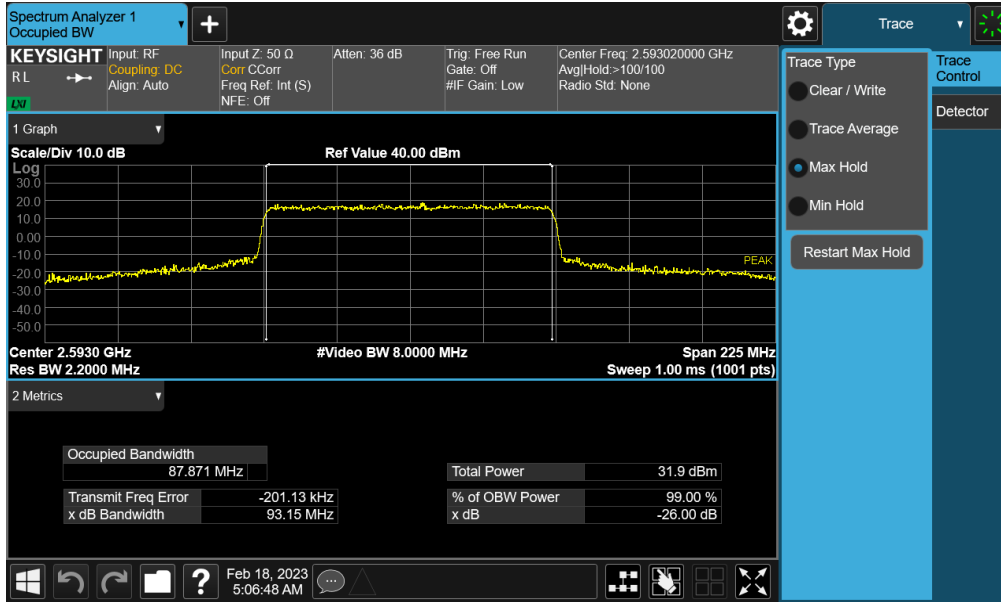


Plot 7-15. Occupied Bandwidth Plot (NR Band n41 - 100MHz 16-QAM - Full RB - Main2)

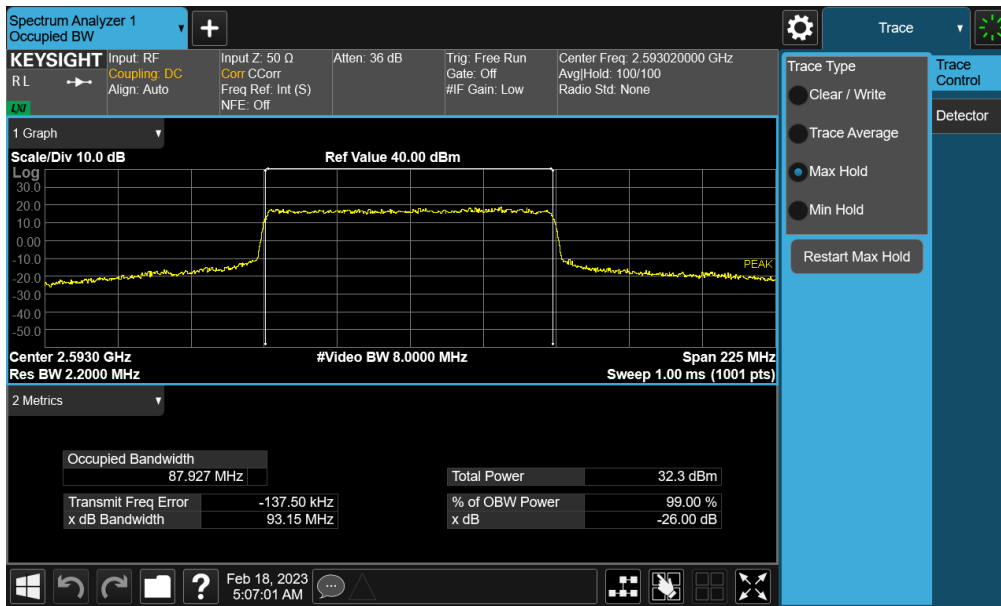


Plot 7-16. Occupied Bandwidth Plot (NR Band n41 - 90MHz $\pi/2$ BPSK - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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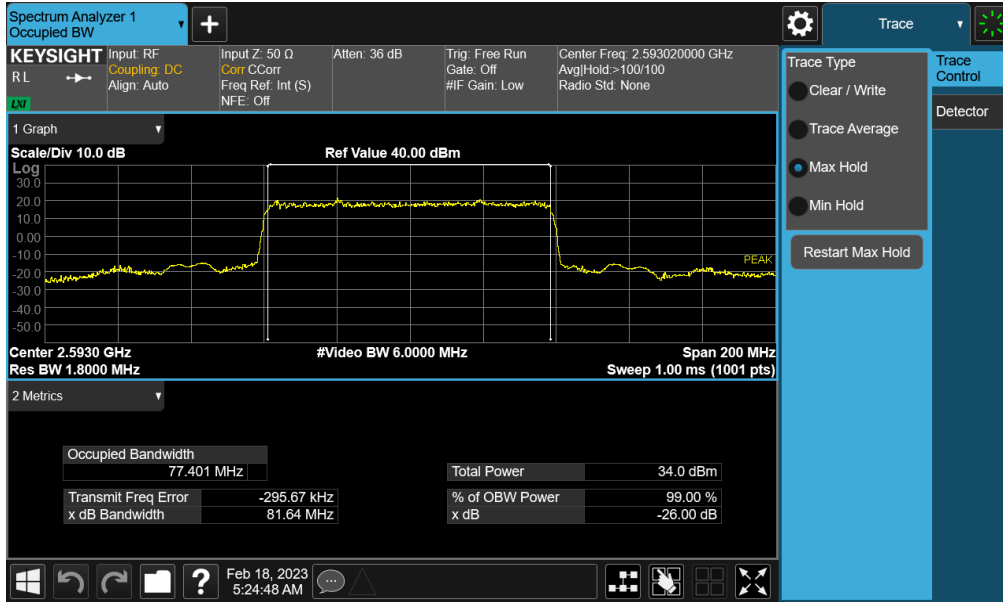


Plot 7-17. Occupied Bandwidth Plot (NR Band n41 - 90MHz QPSK - Full RB - Main2)

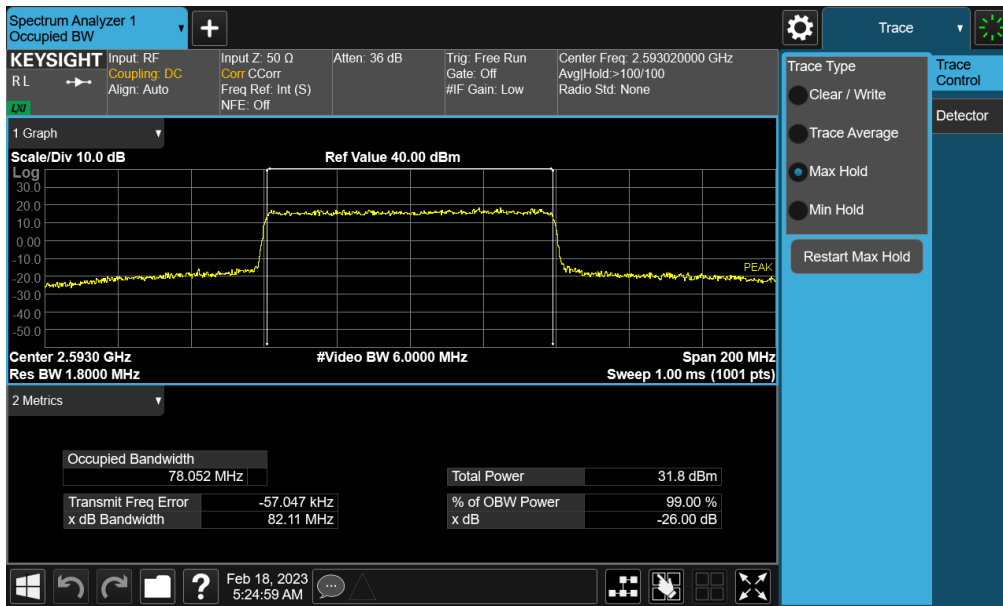


Plot 7-18. Occupied Bandwidth Plot (NR Band n41 - 90MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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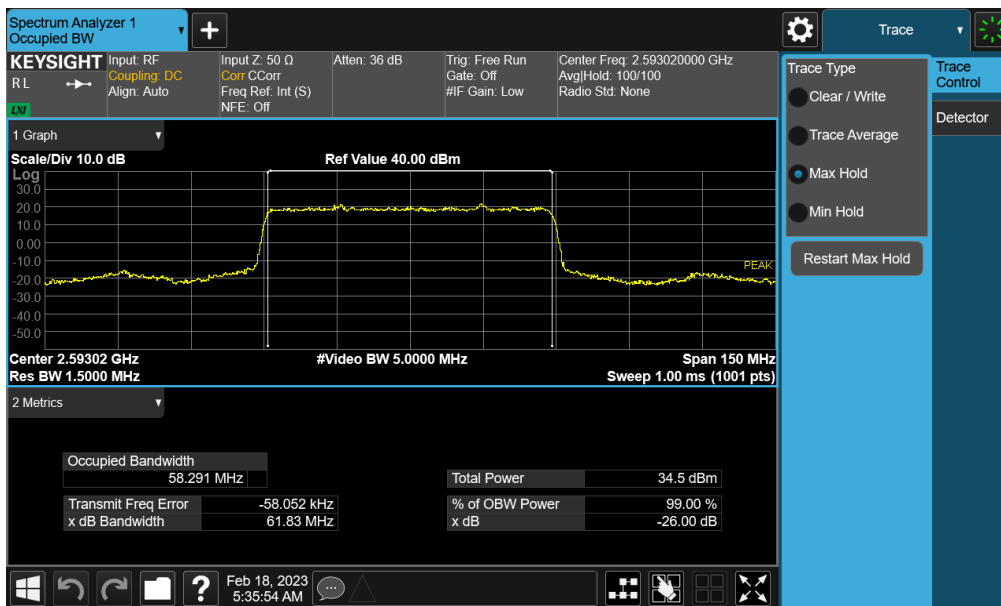
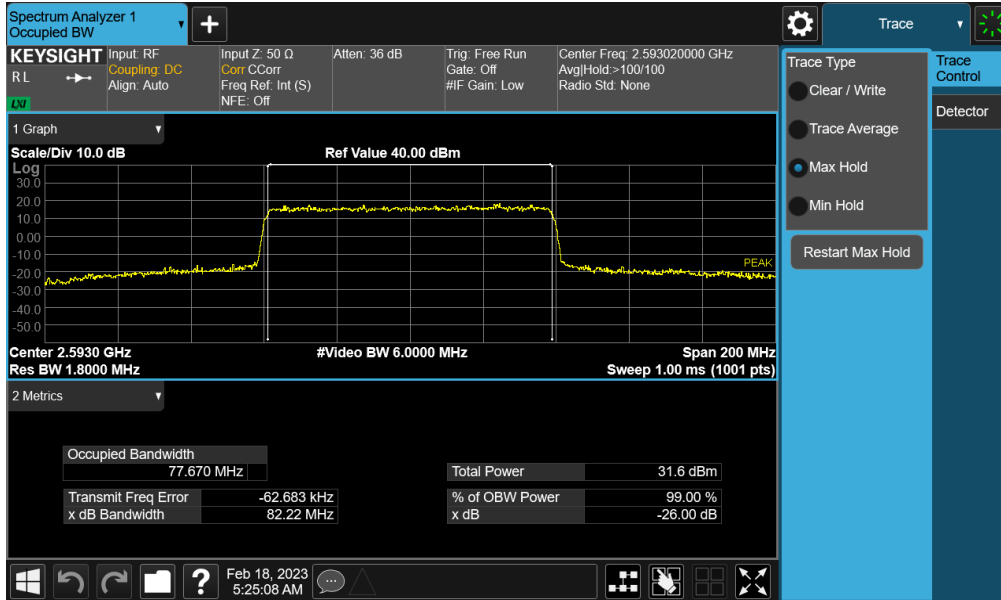


Plot 7-19. Occupied Bandwidth Plot (NR Band n41 - 80MHz $\pi/2$ BPSK - Full RB - Main2)

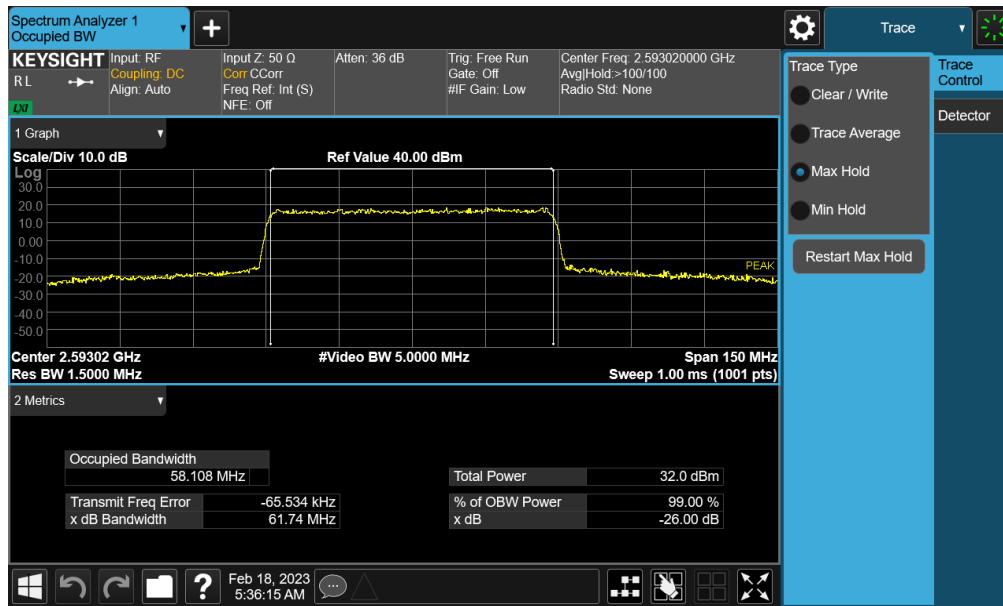
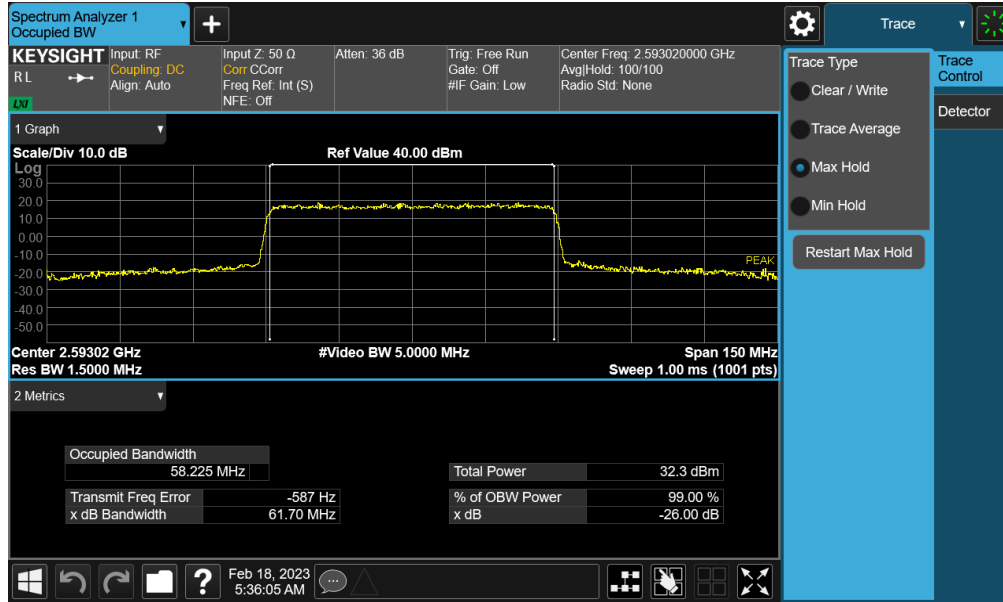


Plot 7-20. Occupied Bandwidth Plot (NR Band n41 - 80MHz QPSK - Full RB - Main2)

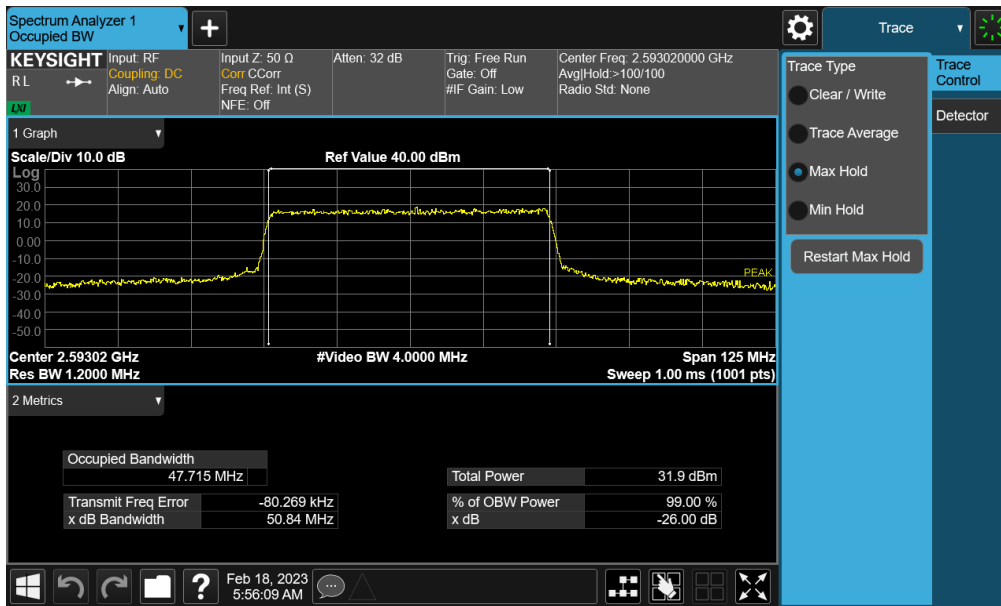
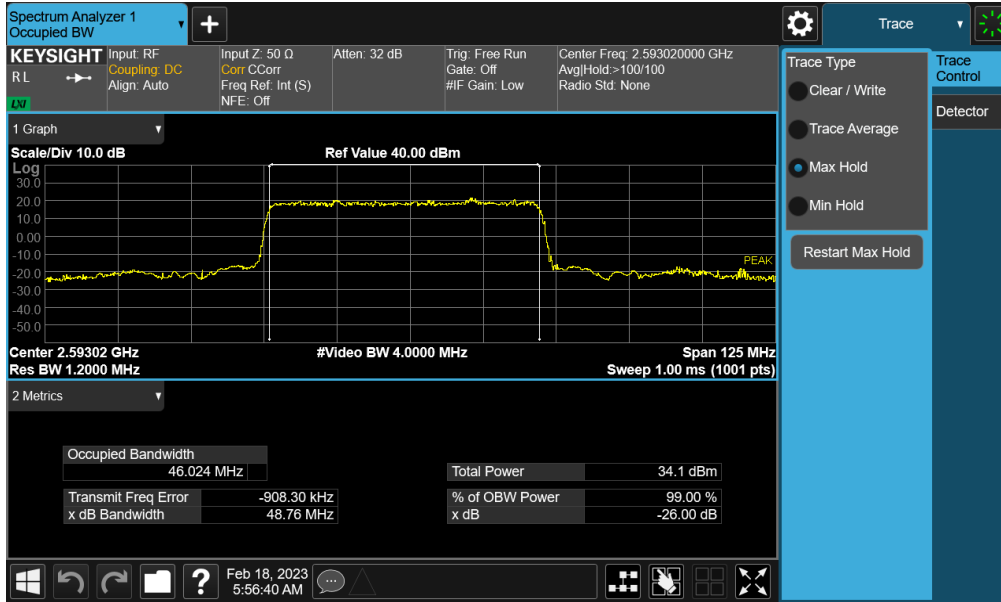
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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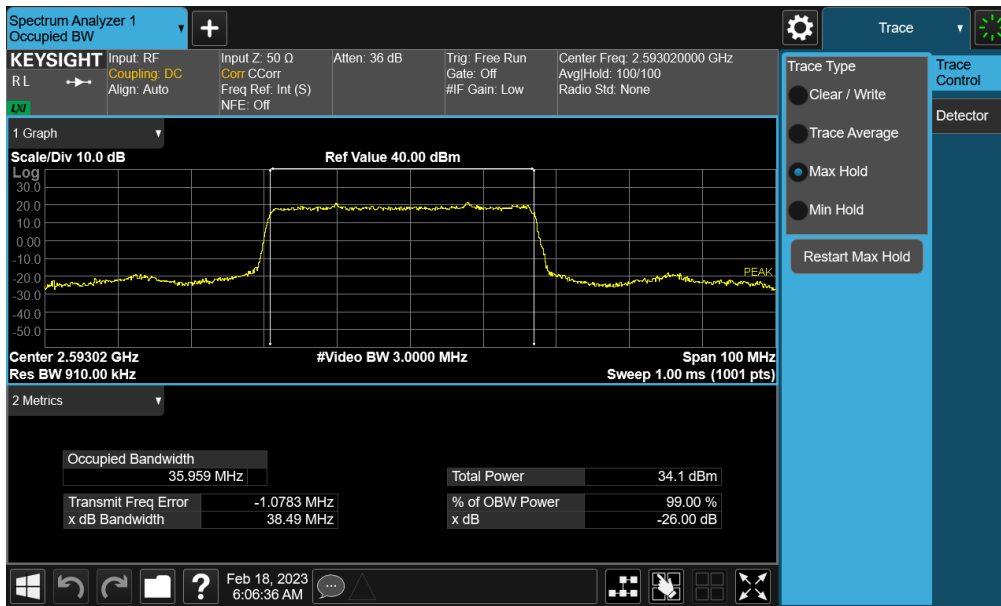
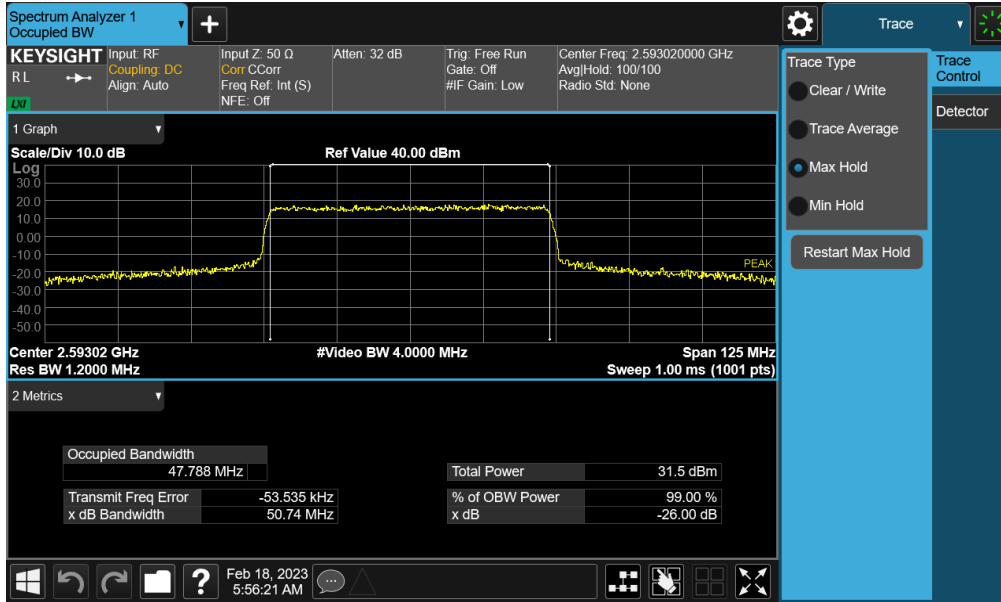
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2302060006-04-R1.PY7	Test Dates: 02/16/2023 - 04/06/2023	EUT Type: Portable Handset	Page 28 of 171



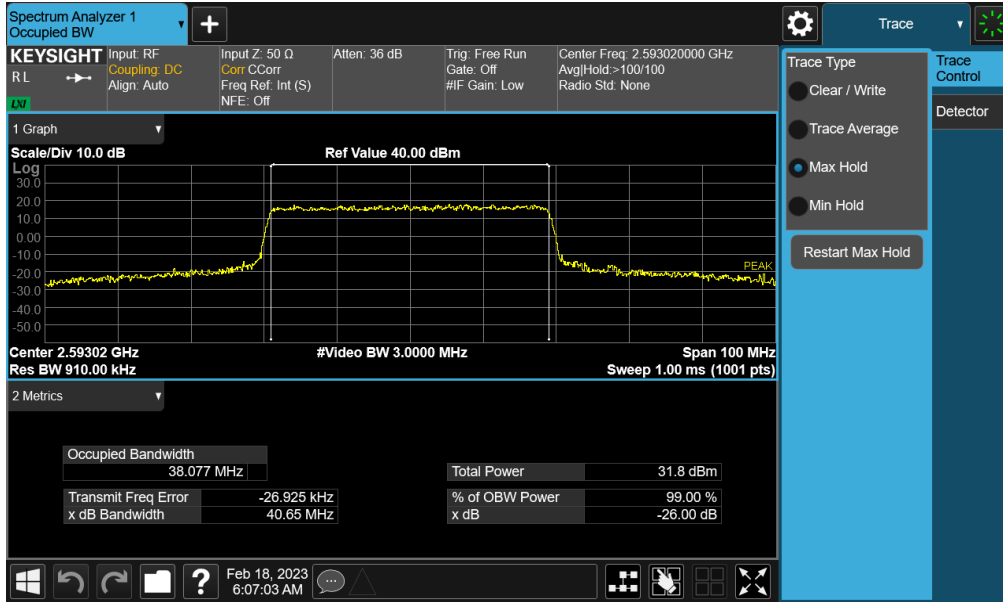
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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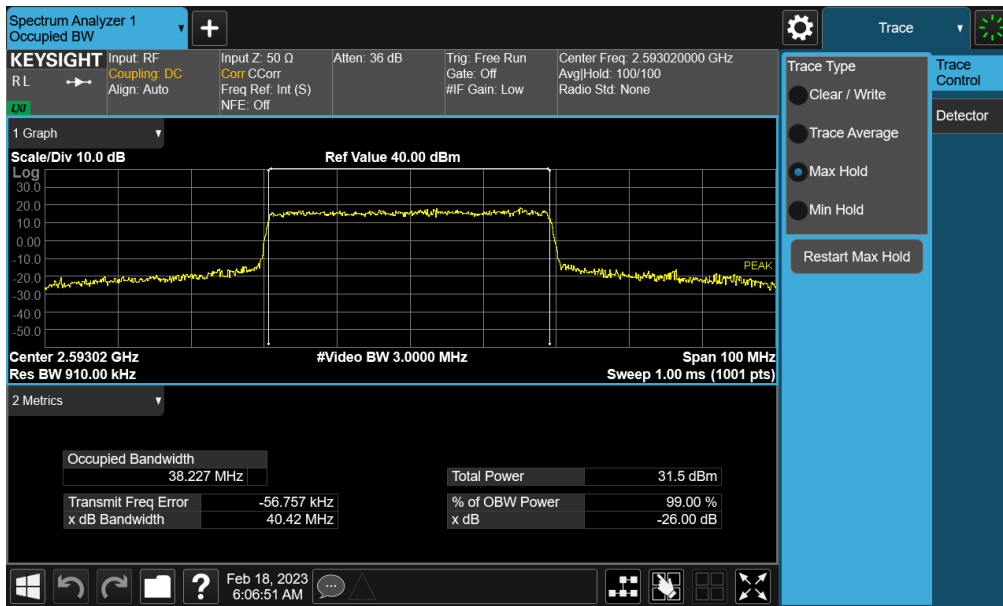
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2302060006-04-R1.PY7	Test Dates: 02/16/2023 - 04/06/2023	EUT Type: Portable Handset	Page 30 of 171



FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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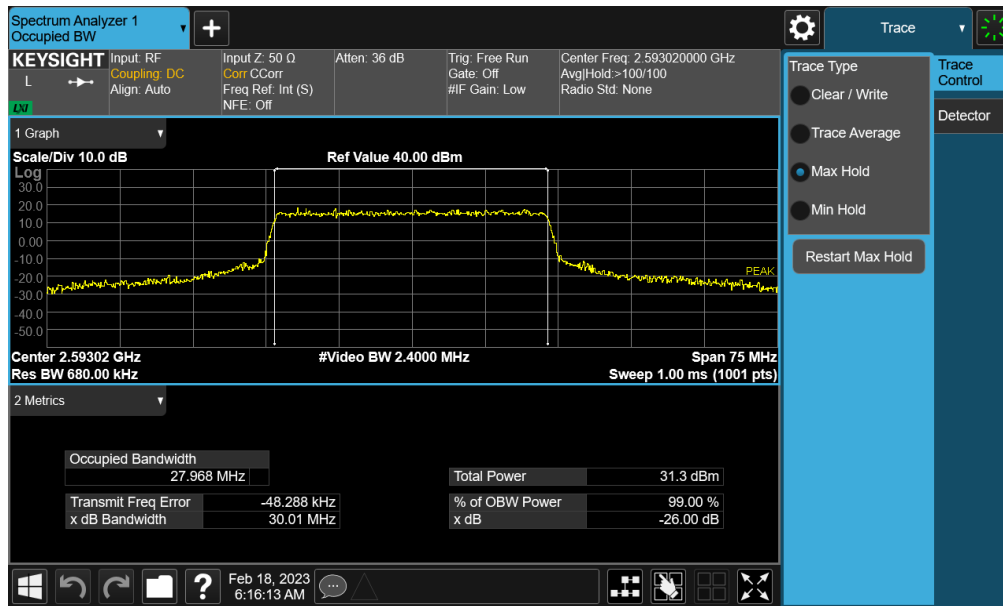
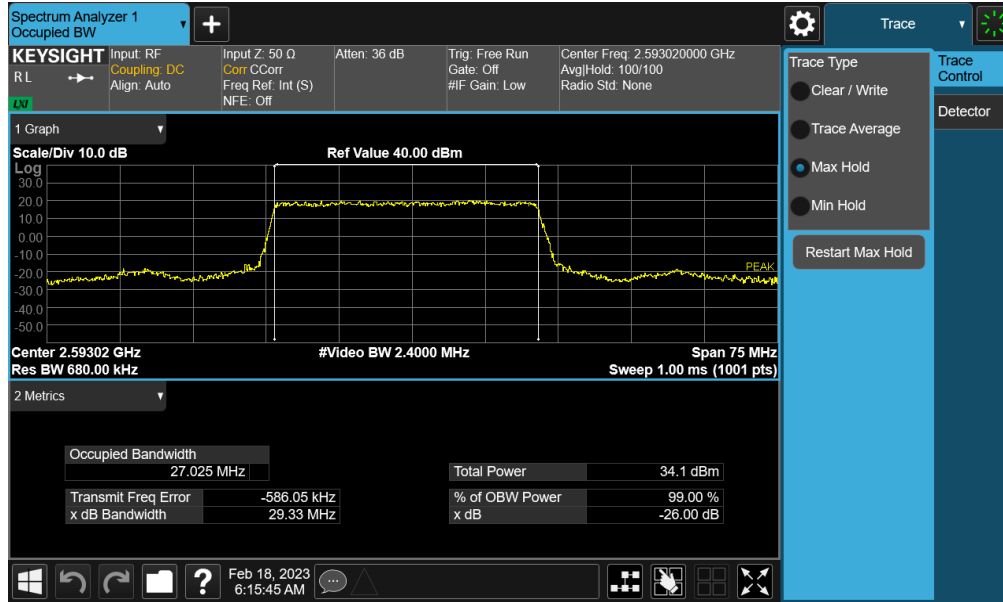


Plot 7-29. Occupied Bandwidth Plot (NR Band n41 - 40MHz QPSK - Full RB - Main2)

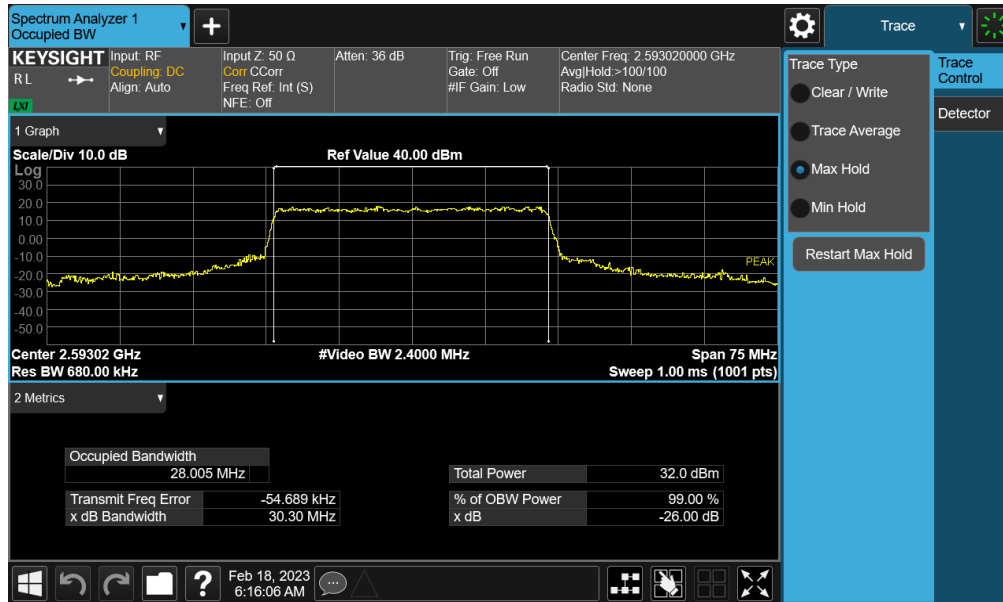


Plot 7-30. Occupied Bandwidth Plot (NR Band n41 - 40MHz 16-QAM - Full RB - Main2)

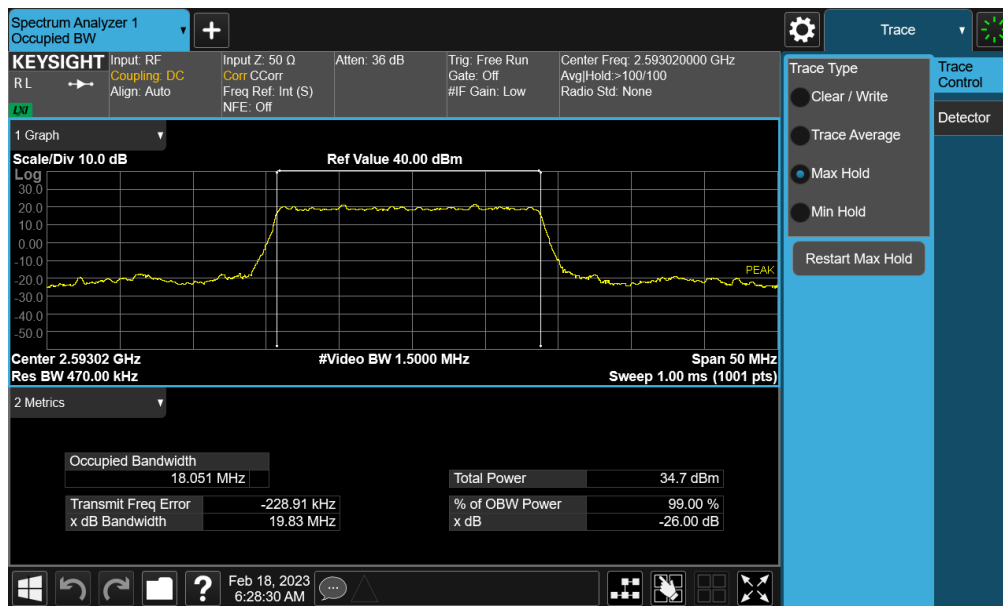
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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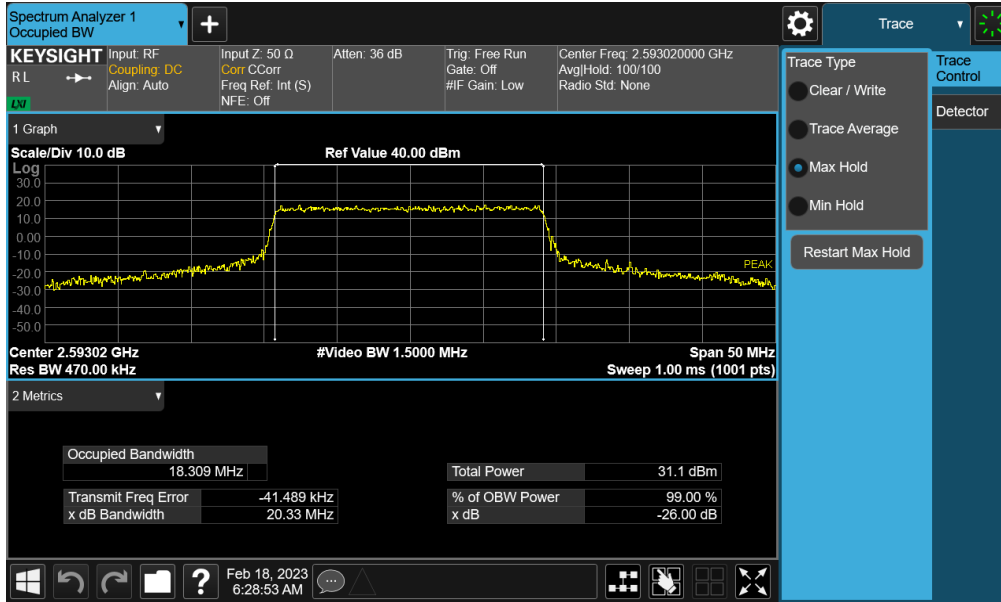


Plot 7-33. Occupied Bandwidth Plot (NR Band n41 - 30MHz 16-QAM - Full RB - Main2)

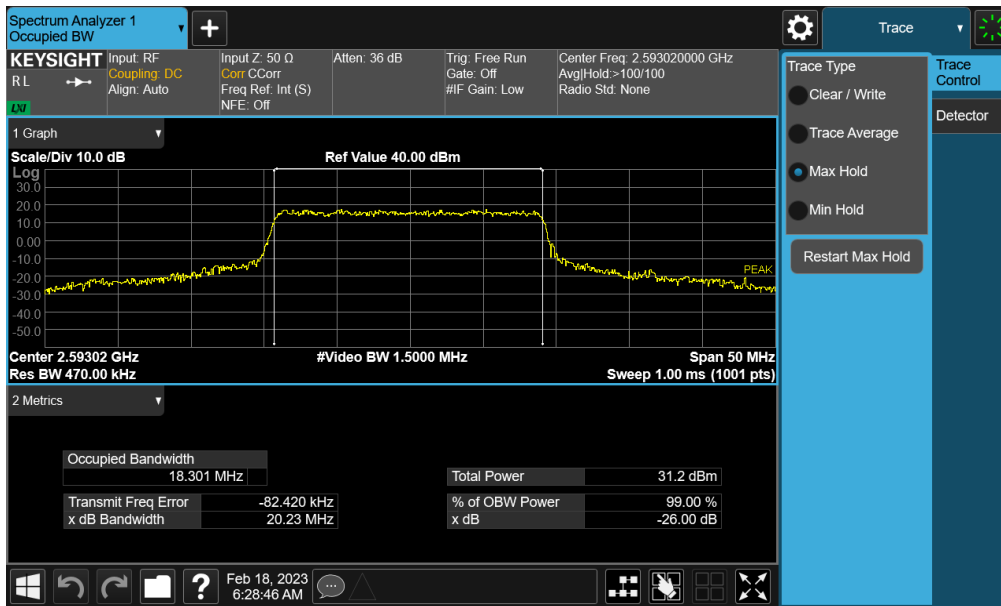


Plot 7-34. Occupied Bandwidth Plot (NR Band n41 - 20MHz $\pi/2$ BPSK - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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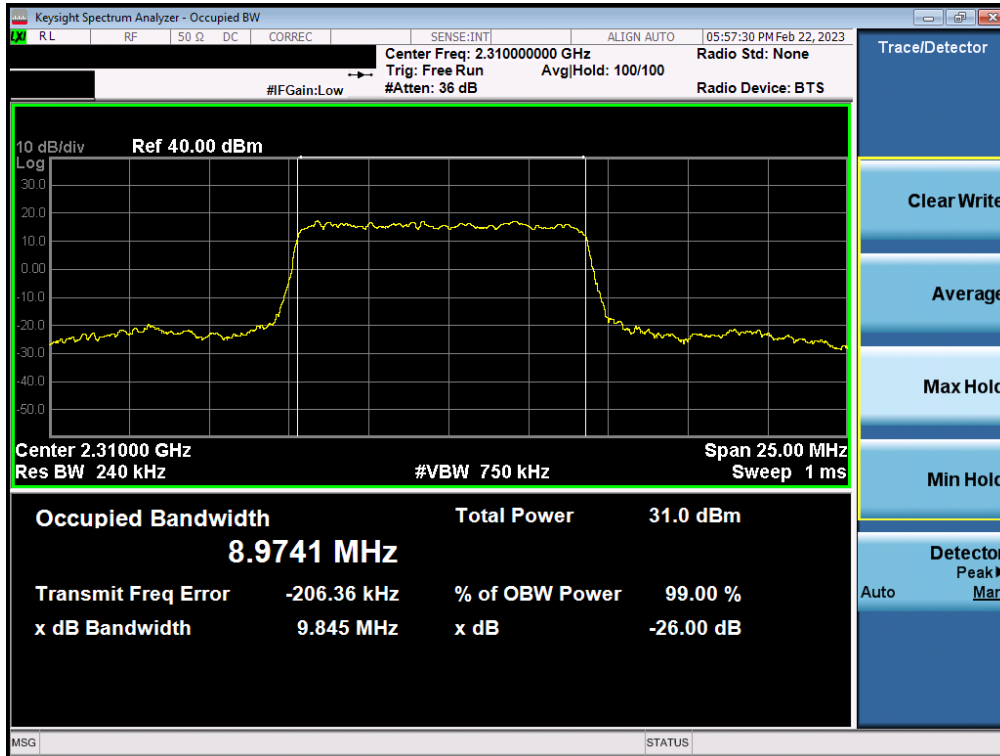
Plot 7-35. Occupied Bandwidth Plot (NR Band n41 - 20MHz QPSK - Full RB - Main2)



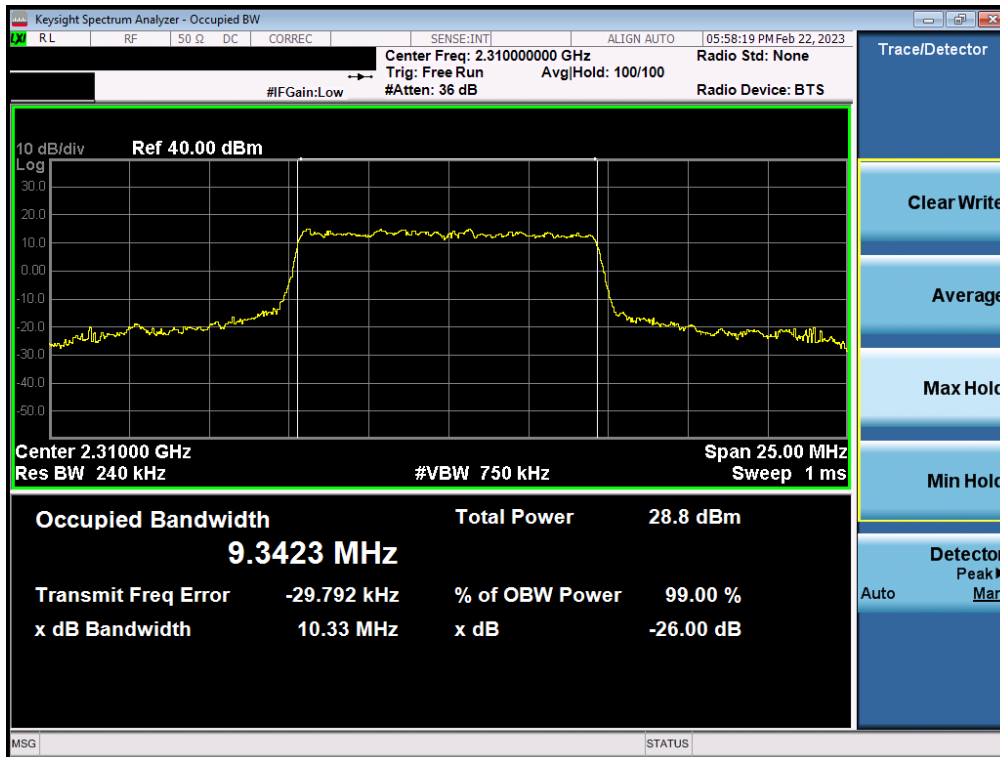
Plot 7-36. Occupied Bandwidth Plot (NR Band n41 - 20MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n30 – Main2

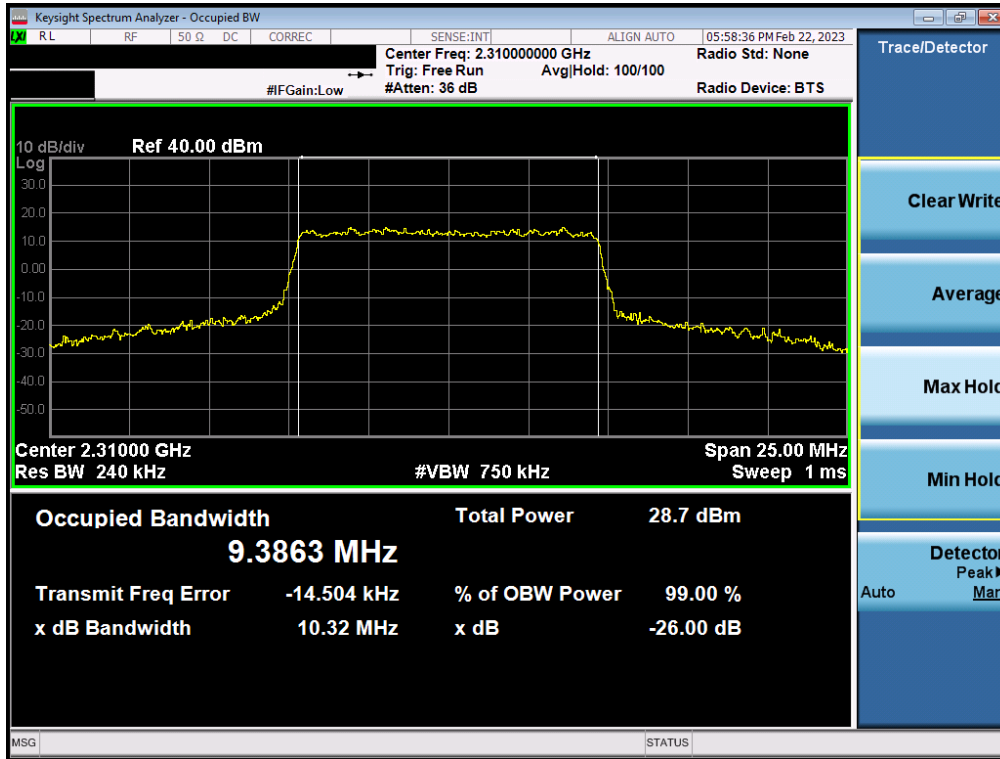


Plot 7-37. Occupied Bandwidth Plot (NR Band n30 - 10MHz $\pi/2$ BPSK - Full RB - Main2)

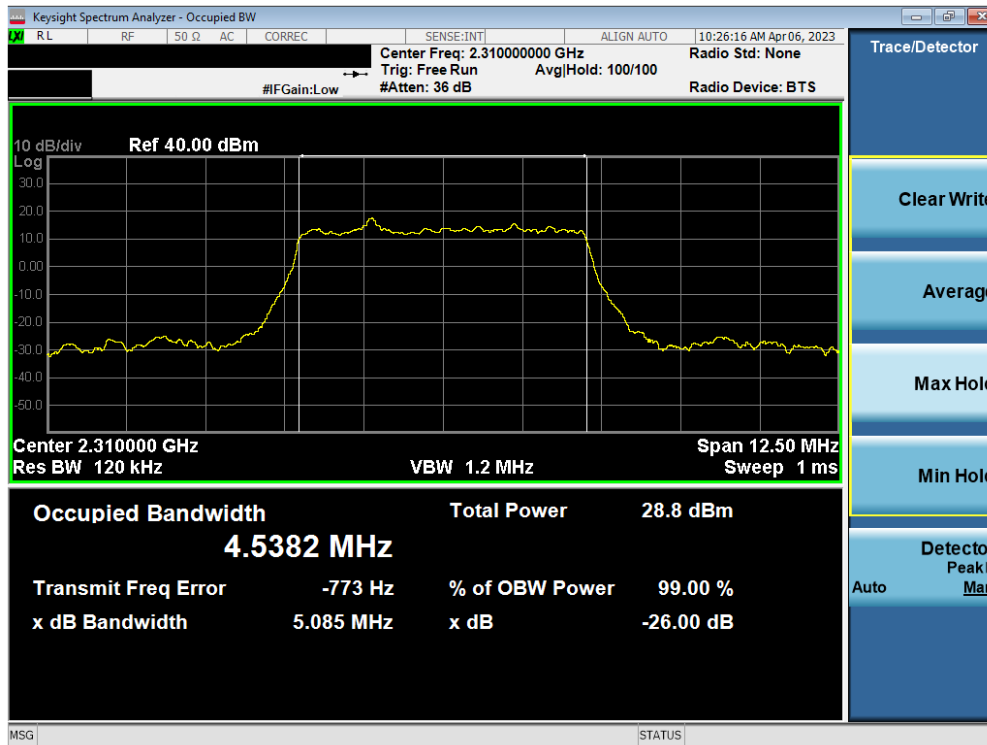


Plot 7-38. Occupied Bandwidth Plot (NR Band n30 - 10MHz QPSK - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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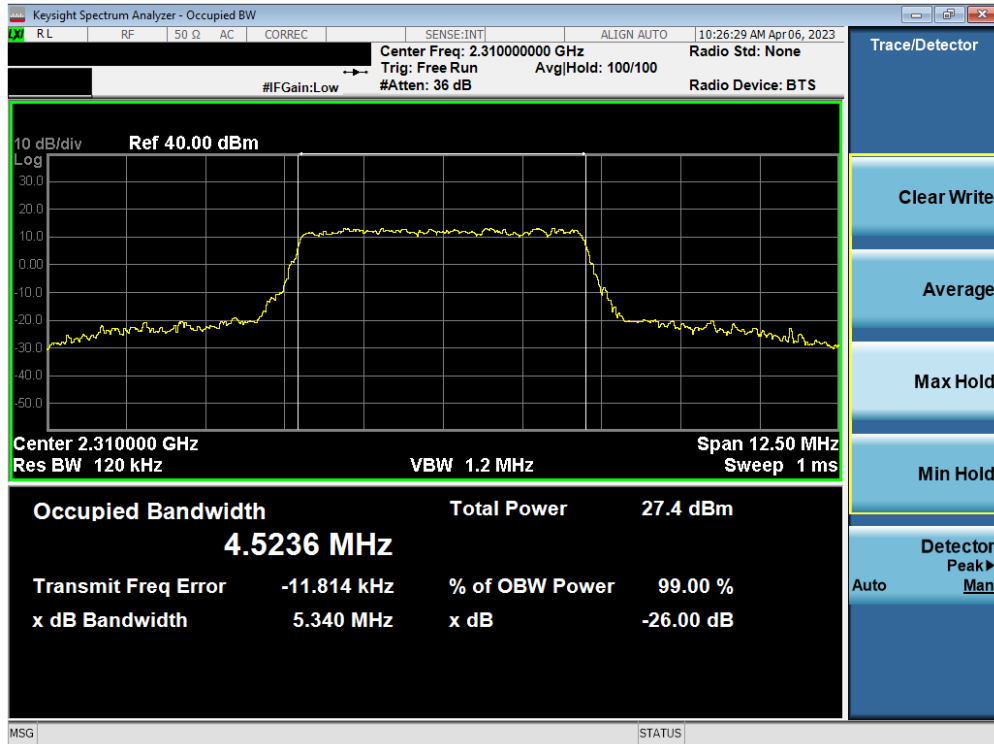


Plot 7-39. Occupied Bandwidth Plot (NR Band n30 - 10MHz 16-QAM - Full RB - Main2)

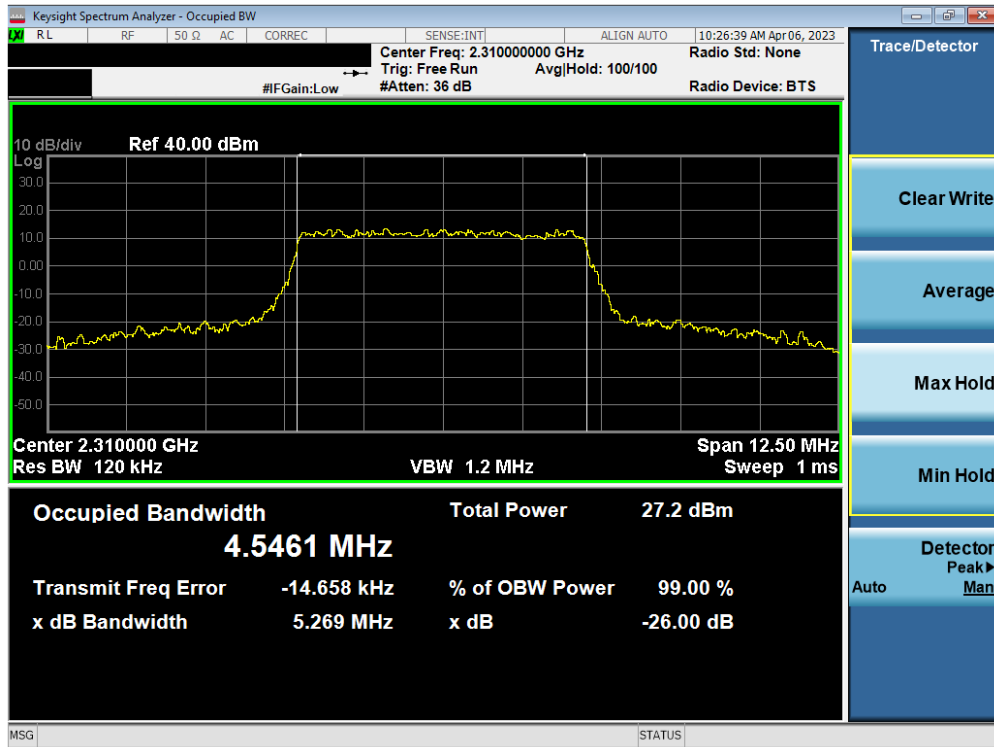


Plot 7-40. Occupied Bandwidth Plot (NR Band n30 - 5MHz $\pi/2$ BPSK - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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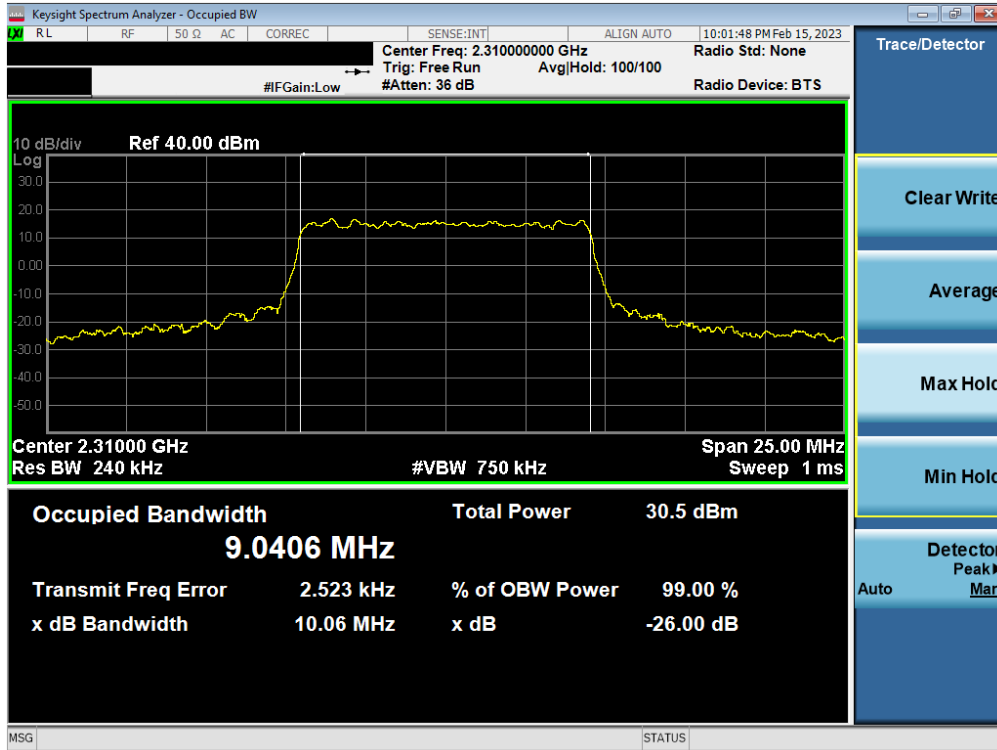
Plot 7-41. Occupied Bandwidth Plot (NR Band n30 - 5MHz QPSK - Full RB - Main2)



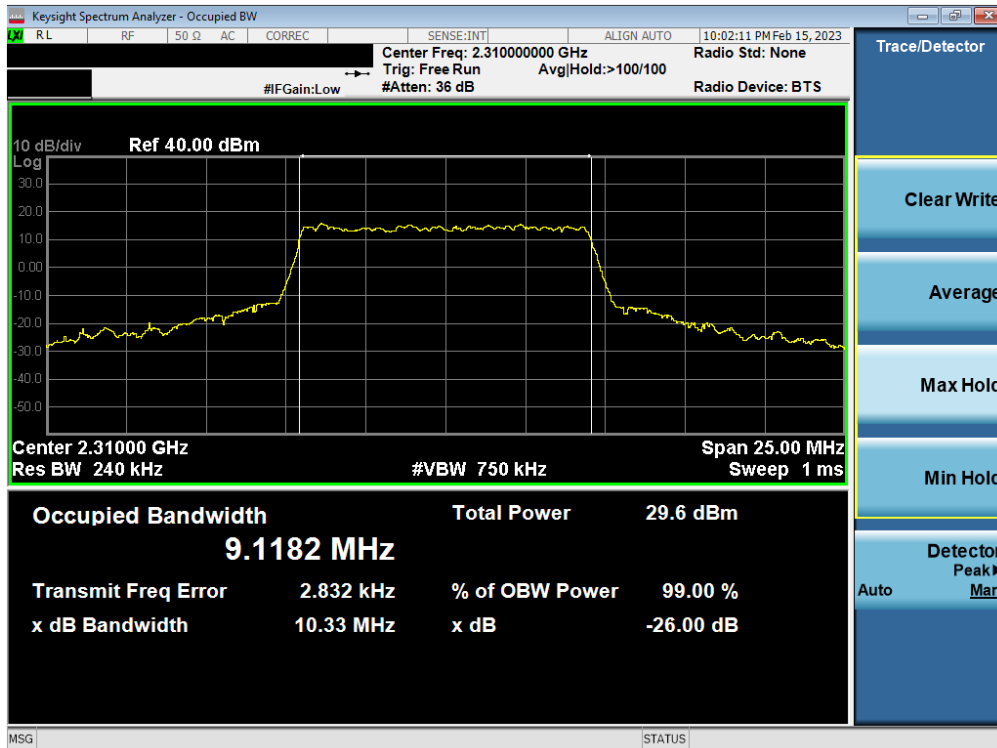
Plot 7-42. Occupied Bandwidth Plot (NR Band n30 - 5MHz 16-QAM - Full RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 30 – Sub

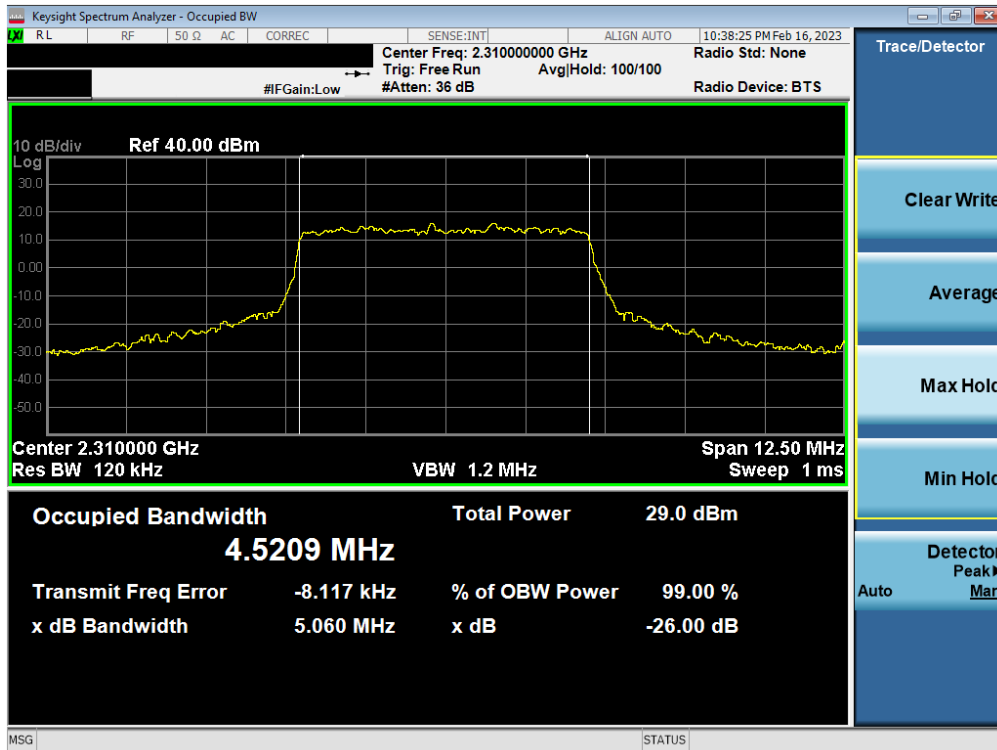


Plot 7-43. Occupied Bandwidth Plot (LTE Band 30 - 10MHz QPSK - Full RB - Sub)

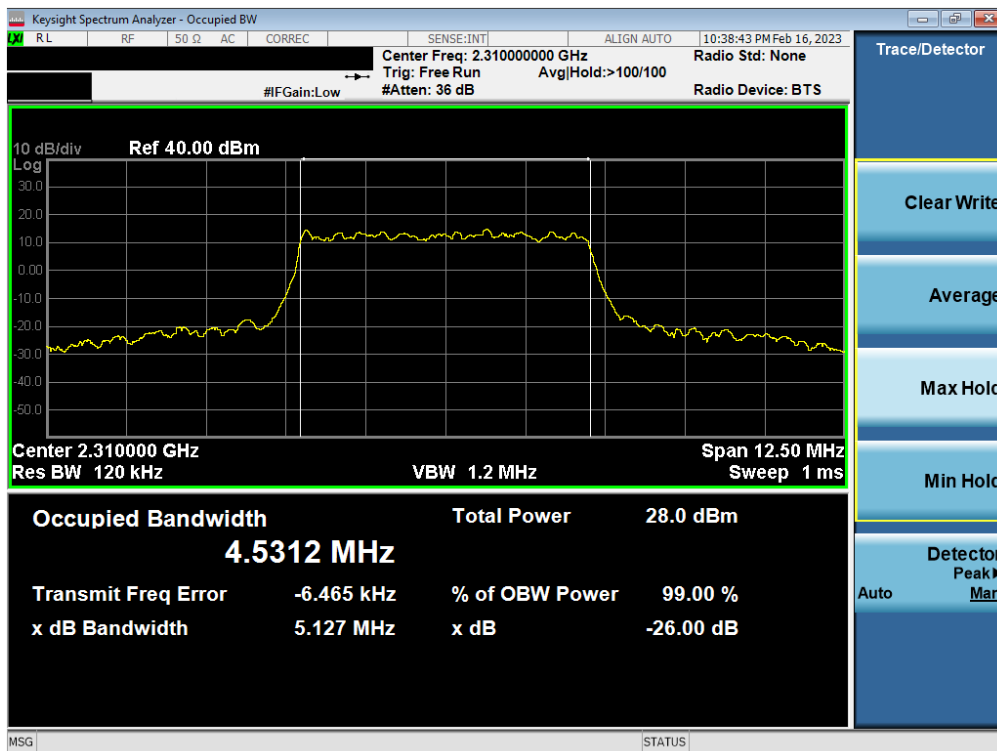


Plot 7-44. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 16-QAM - Full RB - Sub)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-45. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB - Sub)



Plot 7-46. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 16-QAM - Full RB - Sub)

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7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated, and the worst-case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

For Band 30, the minimum permissible attenuation level of any spurious emission <2288MHz and >2365MHz is $70 + 10 \log_{10}(P_{[Watts]})$.

For Band 41, the minimum permissible attenuation level of any spurious emission is $55 + 10 \log_{10}(P_{[Watts]})$.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 10GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize.
6. Please see test notes below for RBW and VBW settings

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

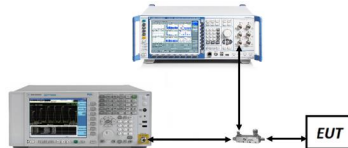


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 27, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g., CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated, and the worst-case configuration results are reported in this section.
3. In this section, the UL-MIMO NR band n41 (Main2+Sub) and SRS 2T4R NR band n41 (3rd-LMHB+4th-MHB) plots have a 3dB correction applied to the individual plots to address the MIMO requirements in ANSI C63.26.

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LTE Band 30 – Main2



Plot 7-47. Conducted Spurious Plot (LTE Band 30 - 10MHz QPSK - 1RB - Main2)



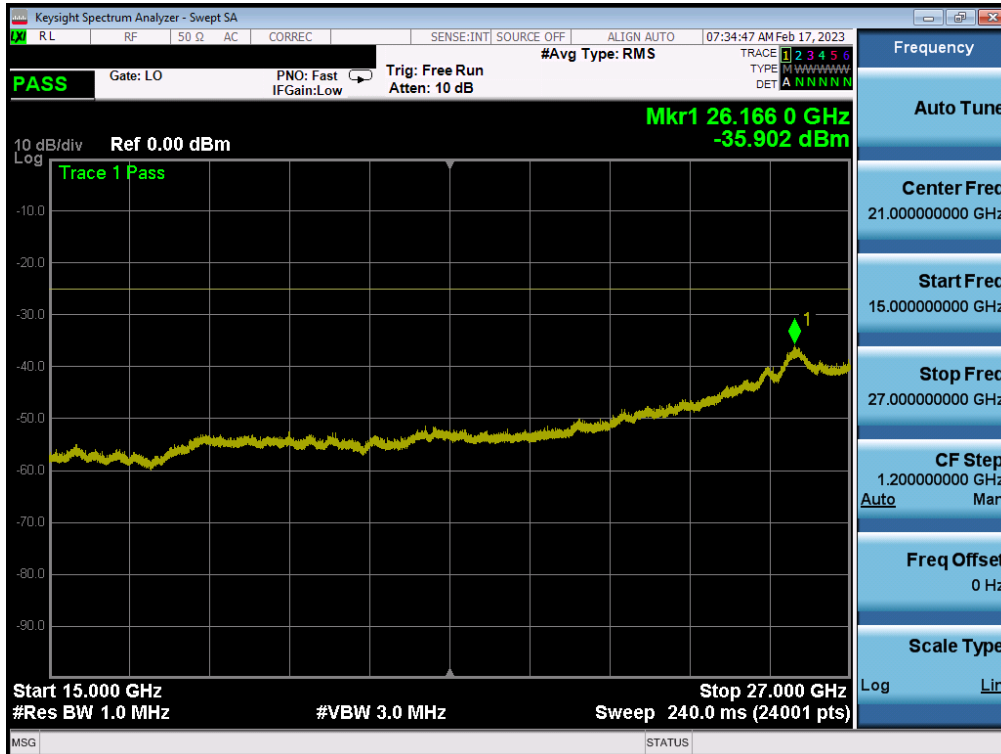
Plot 7-48. Conducted Spurious Plot (LTE Band 30 - 10MHz QPSK - 1RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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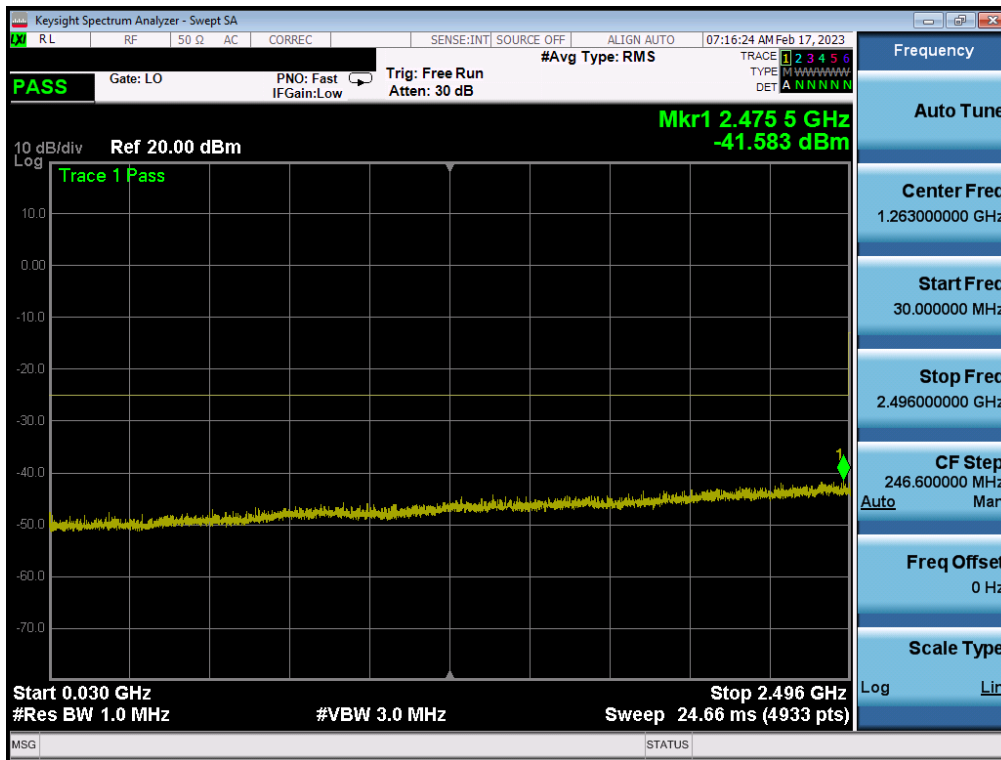


Plot 7-49. Conducted Spurious Plot (LTE Band 30 - 10MHz QPSK - 1RB - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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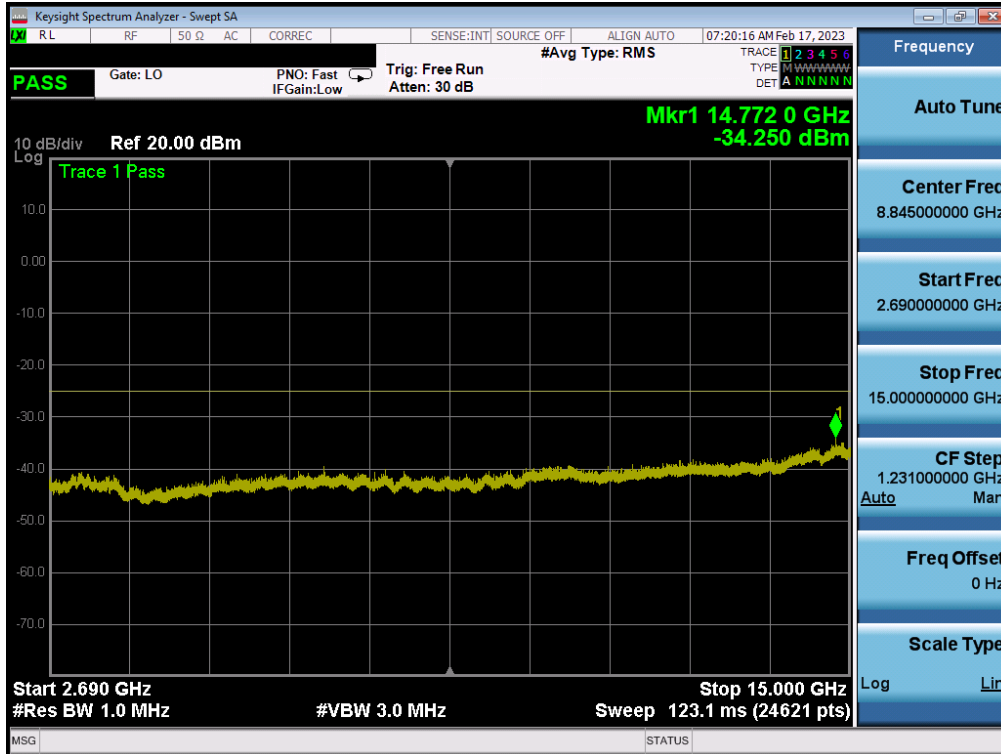


Plot 7-52. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - Low Channel - Main2)



Plot 7-53. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - Mid Channel - Main2)

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Plot 7-54. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - Mid Channel - Main2)

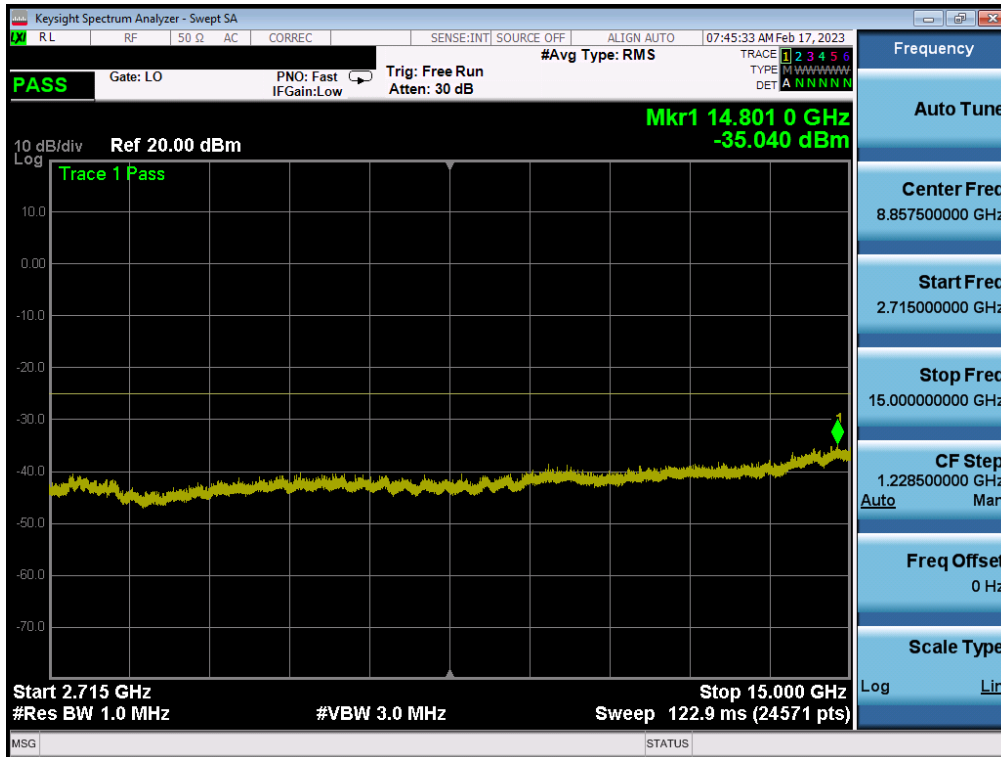


Plot 7-55. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - Mid Channel - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-56. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - High Channel - Main2)



Plot 7-57. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - High Channel - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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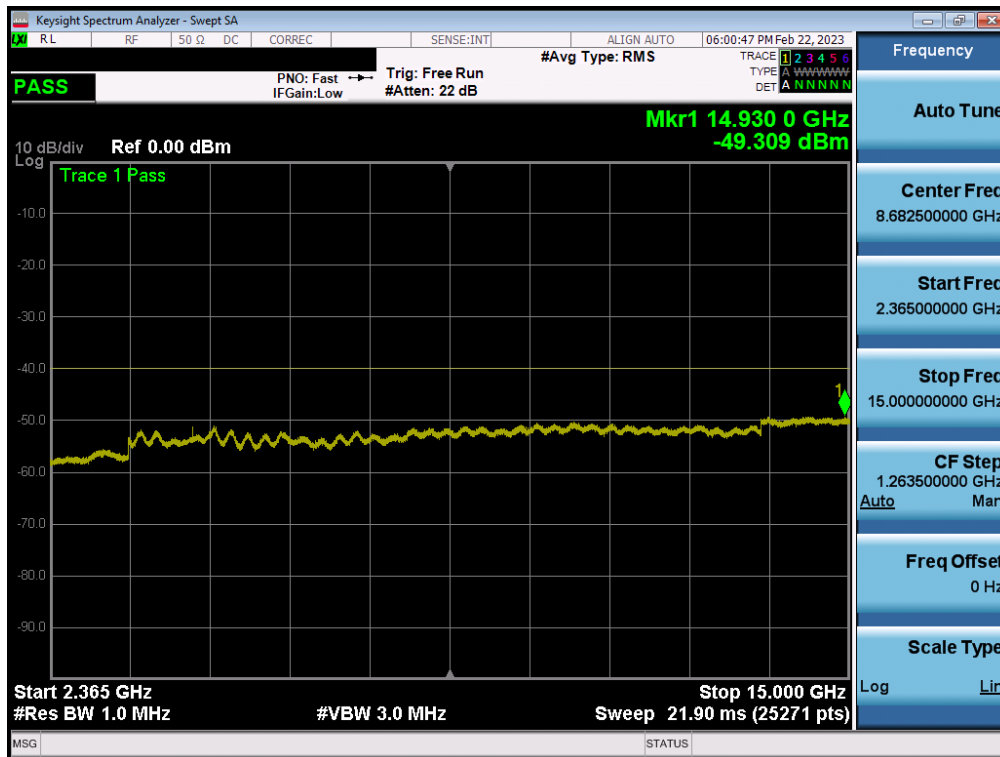
Plot 7-58. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - 1RB - High Channel - Main2)

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n30 – Main2



Plot 7-59. Conducted Spurious Plot (NR Band n30 - 10MHz QPSK - 1RB – Main2)



Plot 7-60. Conducted Spurious Plot (NR Band n30 - 10MHz QPSK - 1RB – Main2)

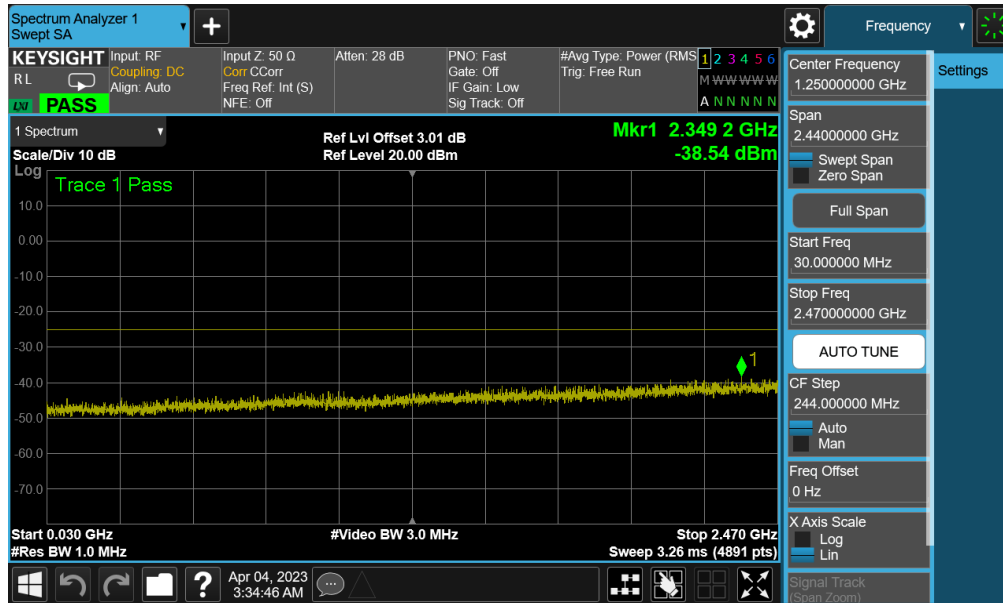
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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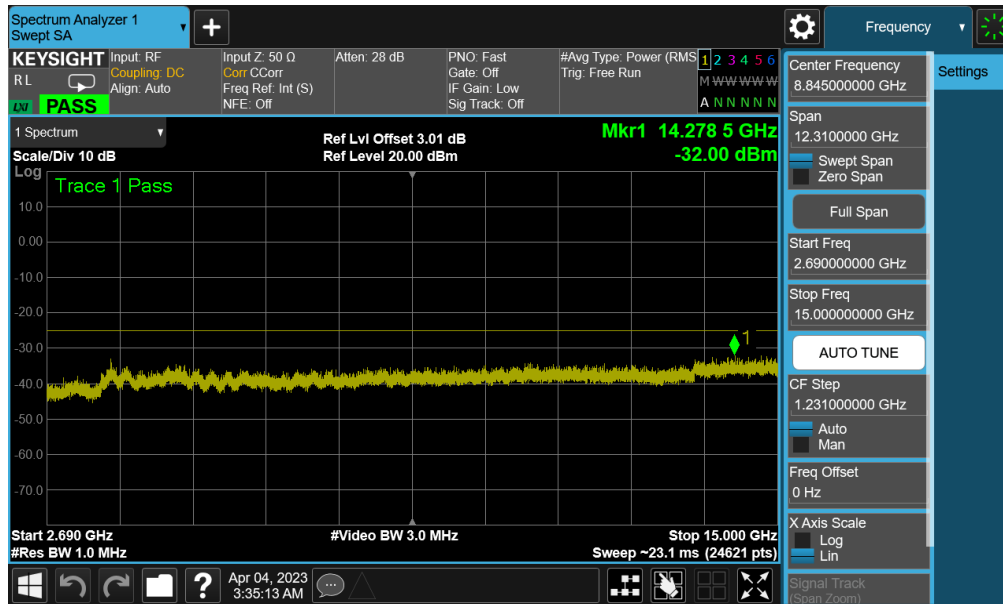
Plot 7-61. Conducted Spurious Plot (NR Band n30 - 10MHz QPSK - RB Size 1 – Main2)

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NR Band n41 PC3 – Main2 (UL-MIMO)

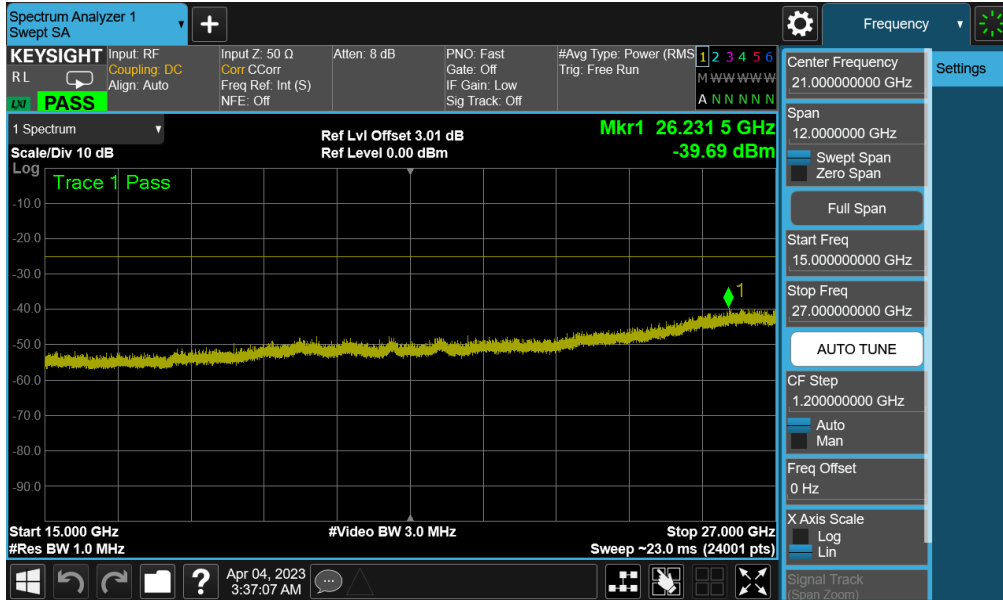


Plot 7-62. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Main2 (UL-MIMO))

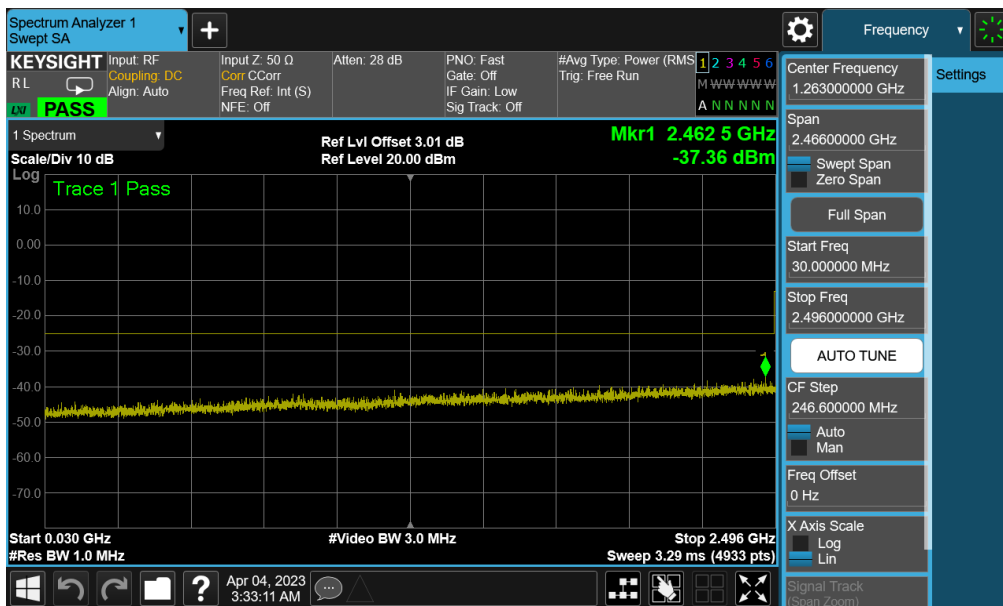


Plot 7-63. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Main2 (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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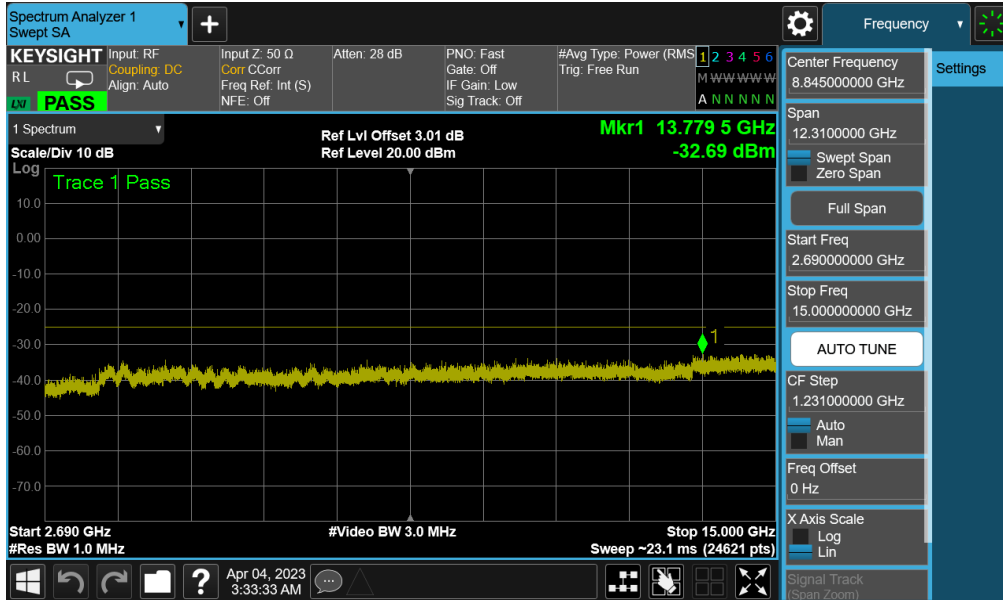


Plot 7-64. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Main2 (UL-MIMO))

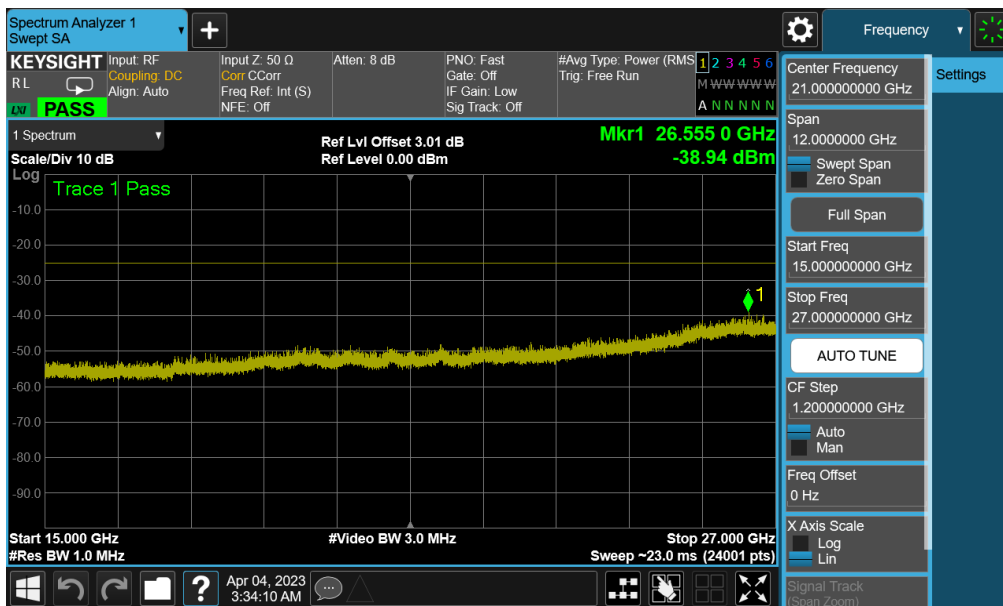


Plot 7-65. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Main2 (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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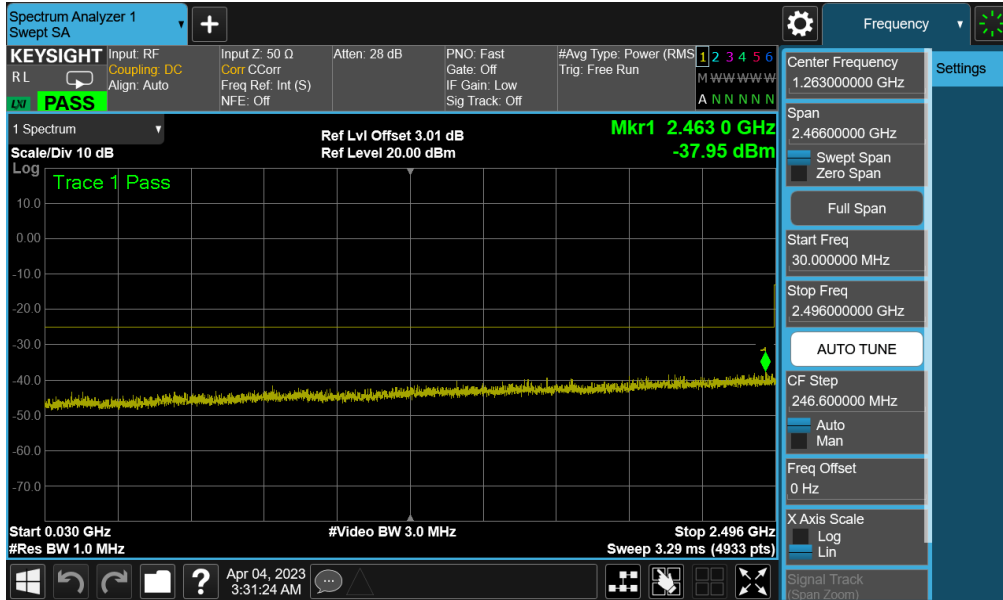


Plot 7-66. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Main2 (UL-MIMO))

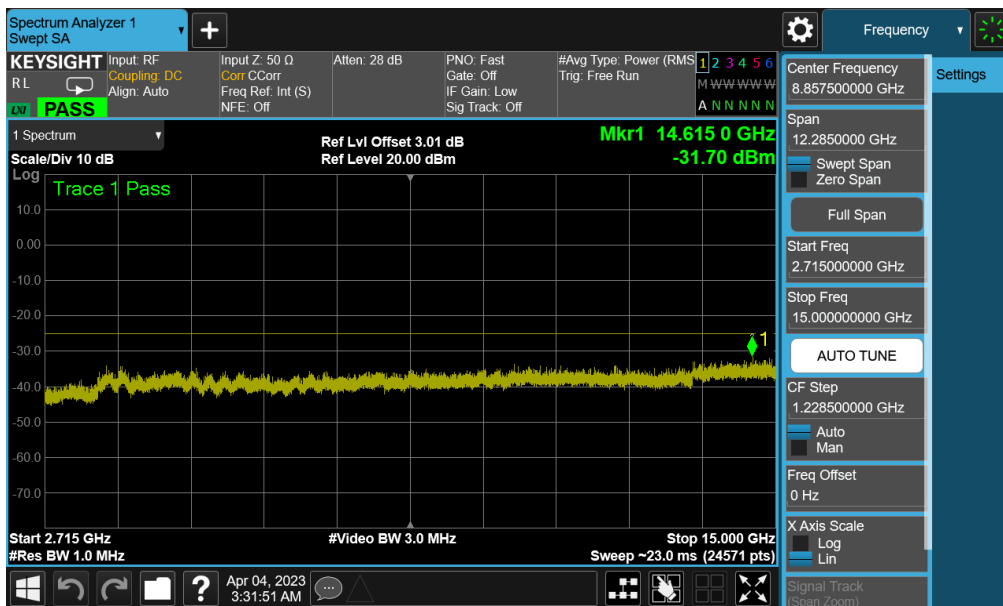


Plot 7-67. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Main2 (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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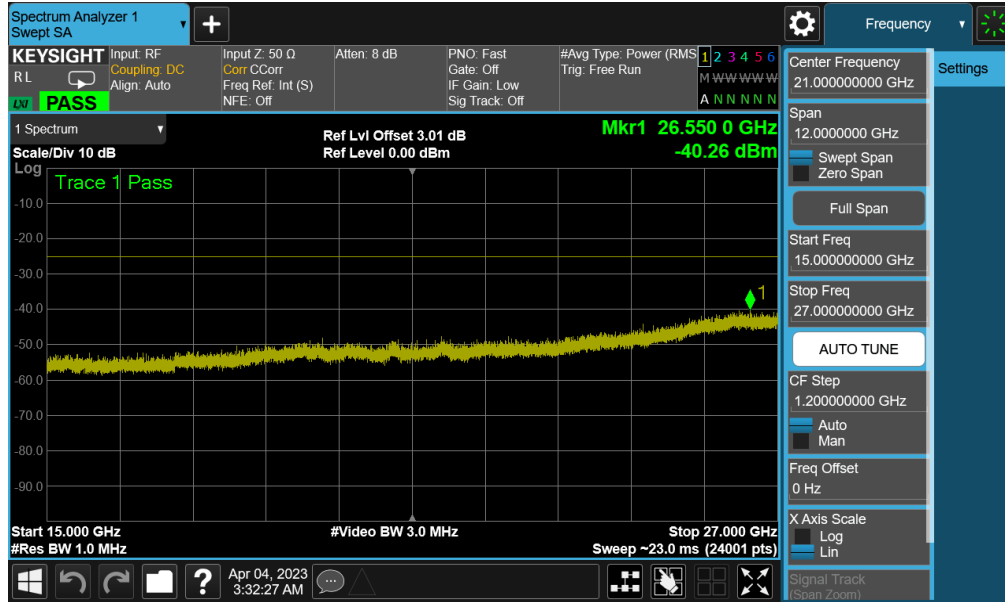


Plot 7-68. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Main2 (UL-MIMO))



Plot 7-69. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Main2 (UL-MIMO))

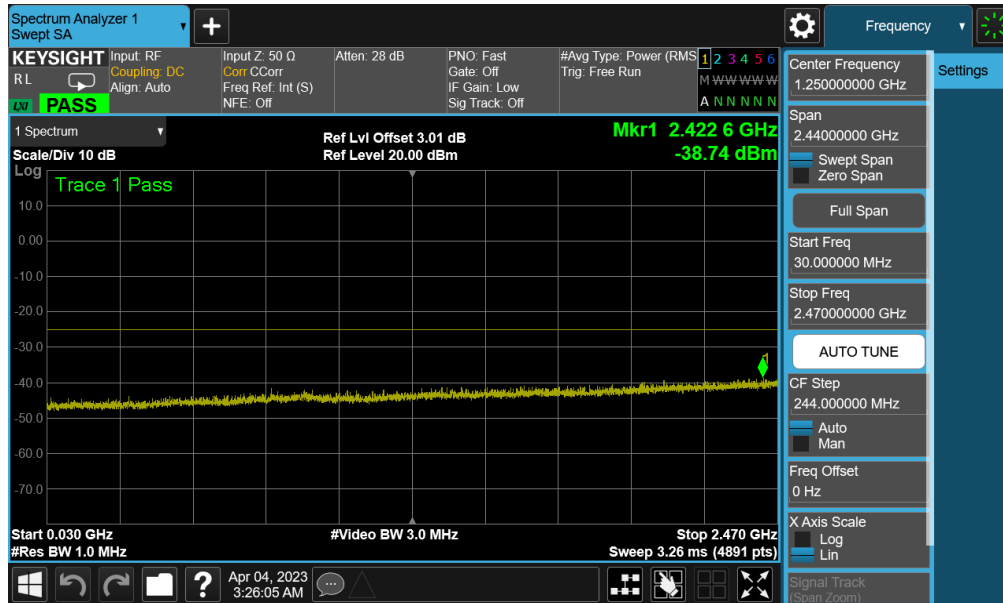
FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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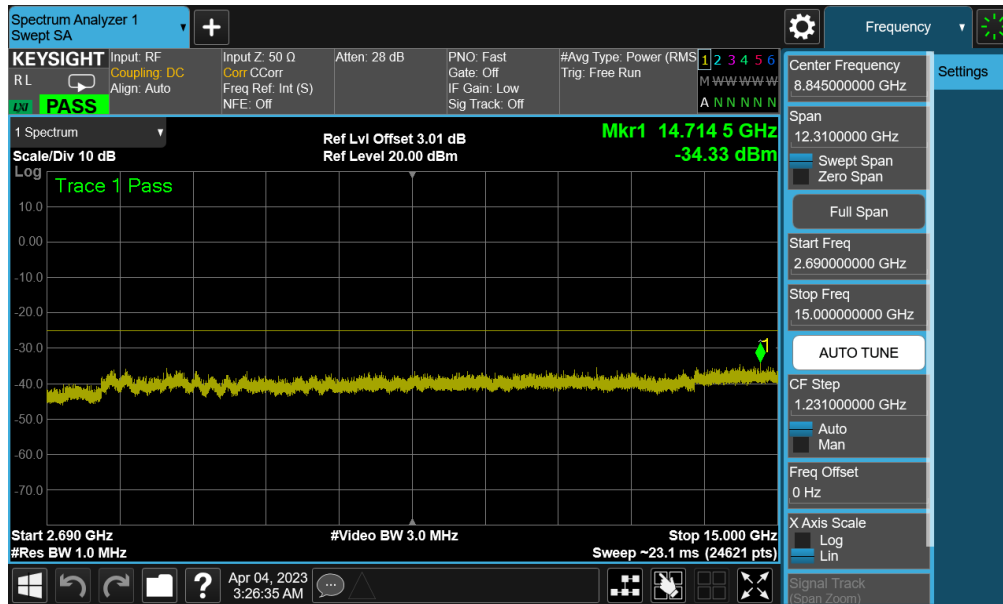
Plot 7-70. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Main2 (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n41 PC3 – Sub (UL-MIMO)

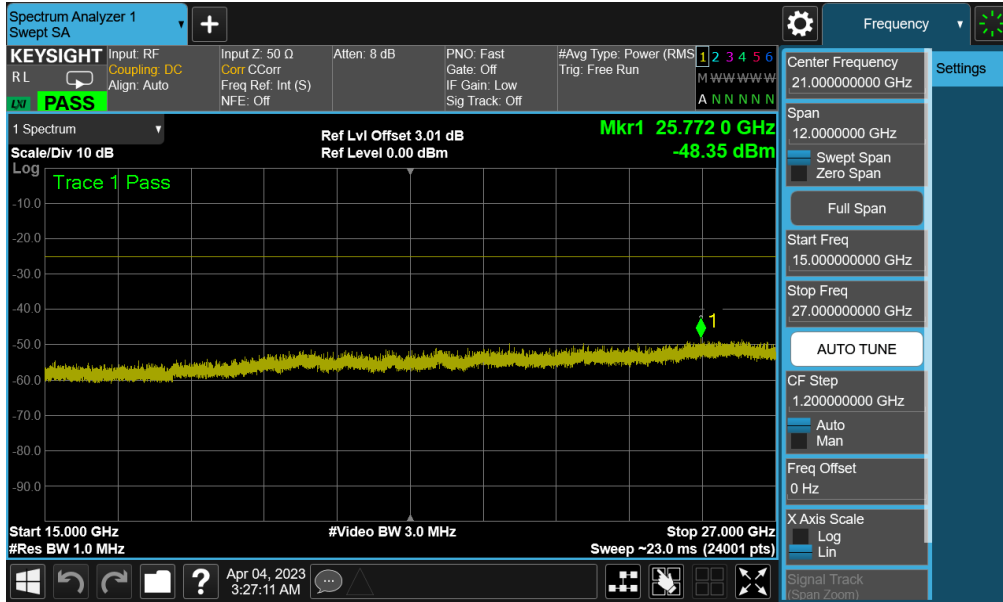


Plot 7-71. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Sub (UL-MIMO))

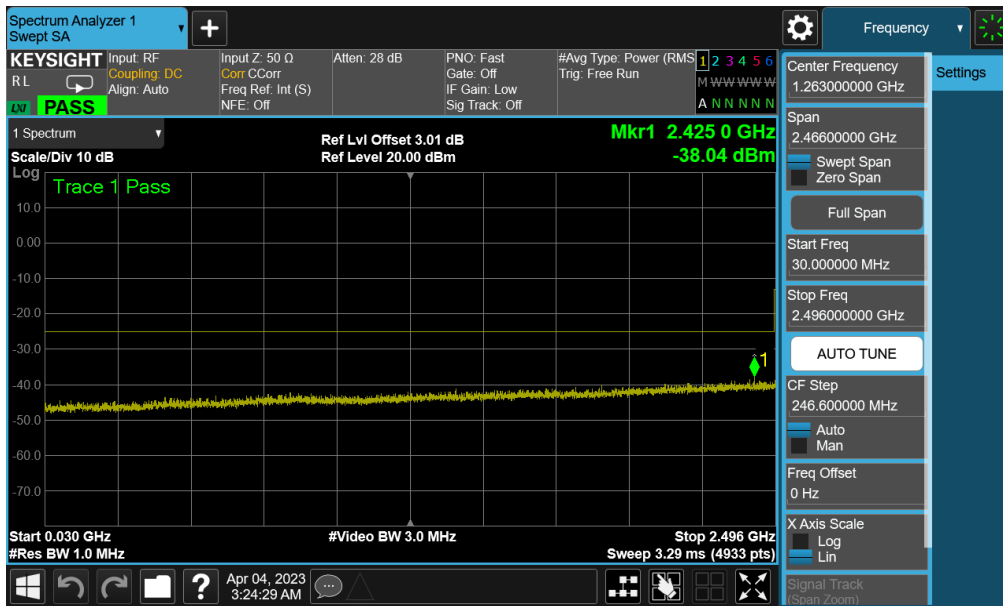


Plot 7-72. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Sub (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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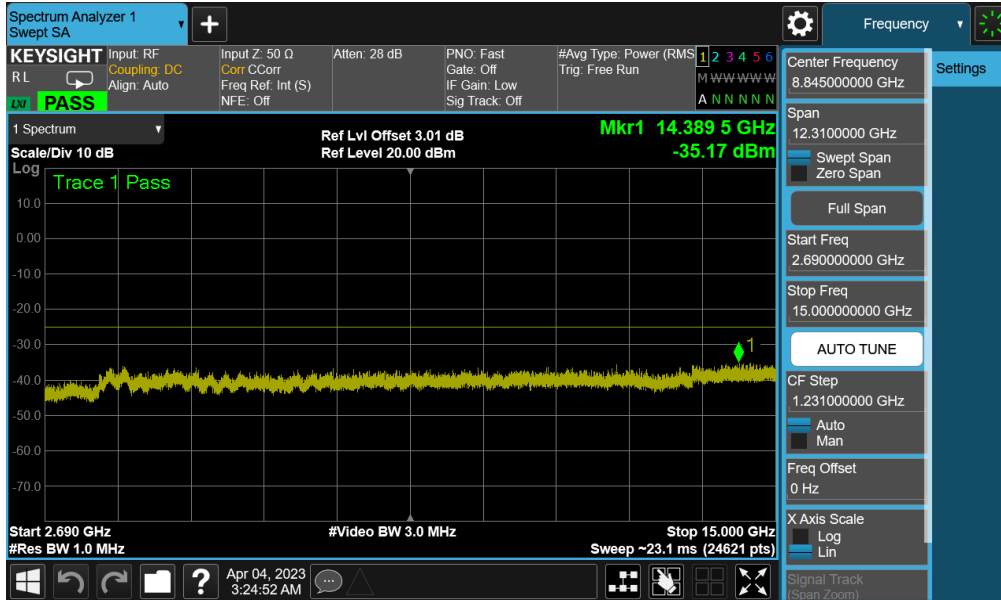


Plot 7-73. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Low Channel – Sub (UL-MIMO))

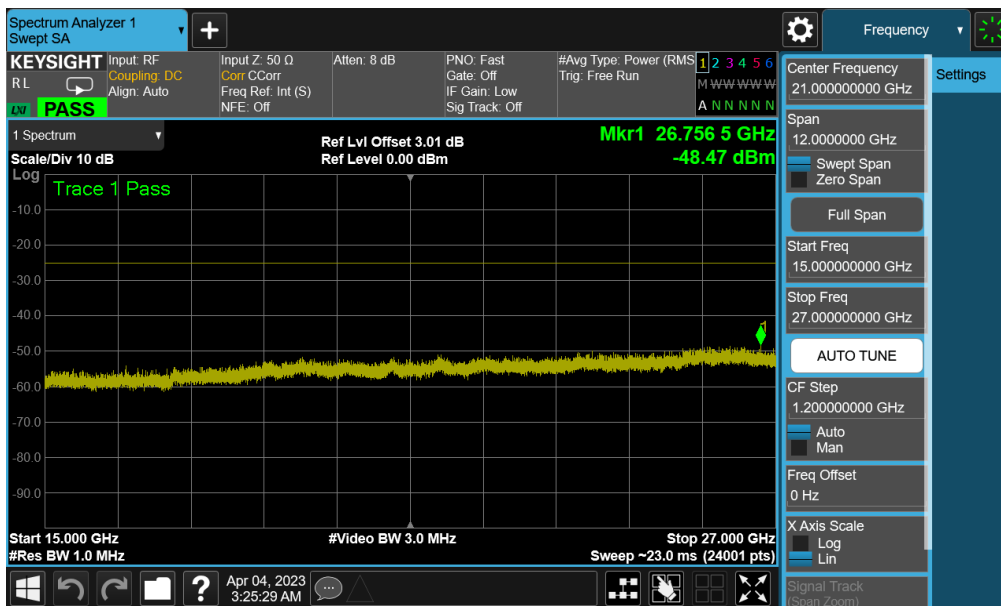


Plot 7-74. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Sub (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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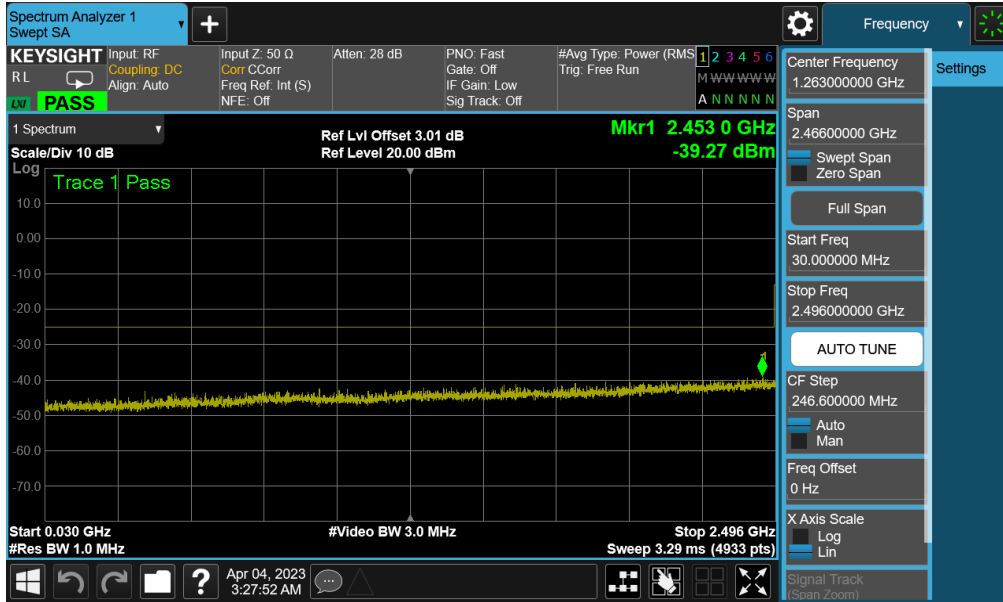


Plot 7-75. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Sub (UL-MIMO))

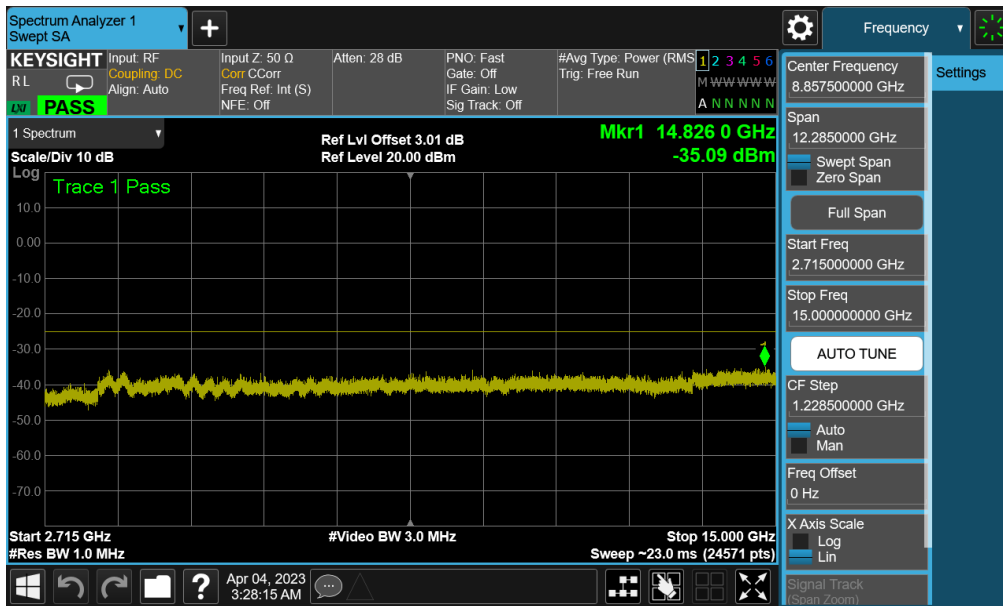


Plot 7-76. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - Mid Channel – Sub (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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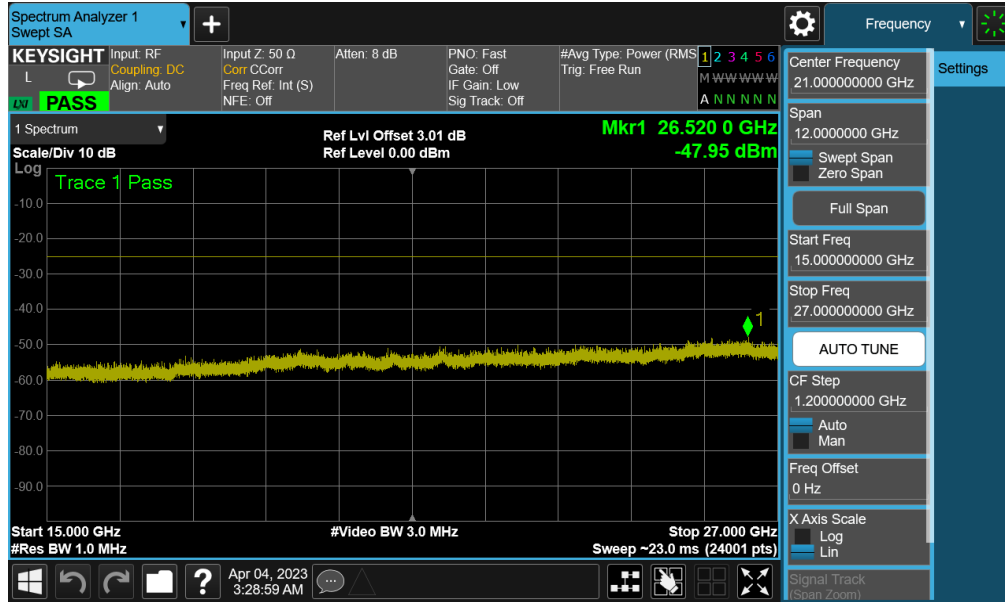


Plot 7-77. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Sub (UL-MIMO))



Plot 7-78. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Sub (UL-MIMO))

FCC ID: PY7-84558E	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-79. Conducted Spurious Plot (NR Band n41 PC3 - 100MHz QPSK - 1RB - High Channel – Sub (UL-MIMO))

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