



# ELEMENT WASHINGTON DC LLC

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## PART 27 MEASUREMENT REPORT

**Applicant Name:**  
Microsoft Corporation  
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Redmond, WA, 98052  
United States

**Date of Testing:**  
03/15/2022- 08/11/2022  
**Test Report Issue Date:**  
07/06/2022  
**Test Site/Location:**  
Element lab., Columbia, MD, USA  
**Test Report Serial No.:**  
1M2204040049-07-R1.C3K

<b>FCC ID:</b>	<b>C3K1997</b>
<b>Applicant Name:</b>	<b>Microsoft Corporation</b>

**Application Type:** Certification  
**Model:** 1997  
**EUT Type:** Portable Computing Device  
**FCC Classification:** PCS Licensed Transmitter (PCB)  
**FCC Rule Part:** 27  
**Test Procedure(s):** ANSI C63.26-2015, KDB 648474 D03 v01r04

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.

Note: This revised Test Report (S/N: 1M2204040049-07-R1.C3K) 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.

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	10 MHz	QPSK	2310.0	0.198	22.98	9M01G7D
		16QAM	2310.0	0.176	22.45	9M00W7D
	5 MHz	QPSK	2307.5 - 2312.5	0.196	22.92	4M53G7D
		16QAM	2307.5 - 2312.5	0.180	22.54	4M49W7D
LTE Band 7	20 MHz	QPSK	2510.0 - 2560.0	0.453	26.56	18M0G7D
		16QAM	2510.0 - 2560.0	0.390	25.91	18M0W7D
	15 MHz	QPSK	2507.5 - 2562.5	0.456	26.59	13M5G7D
		16QAM	2507.5 - 2562.5	0.407	26.10	13M5W7D
	10 MHz	QPSK	2505.0 - 2565.0	0.452	26.55	9M01G7D
		16QAM	2505.0 - 2565.0	0.402	26.05	9M01W7D
	5 MHz	QPSK	2502.5 - 2567.5	0.459	26.62	4M52G7D
		16QAM	2502.5 - 2567.5	0.405	26.08	4M52W7D
LTE Band 41(PC2)	20 MHz	QPSK	2506.0 - 2680.0	0.625	27.96	18M0G7D
		16QAM	2506.0 - 2680.0	0.551	27.41	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.639	28.05	13M5G7D
		16QAM	2503.5 - 2682.5	0.357	25.53	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.722	28.58	9M01G7D
		16QAM	2501.0 - 2685.0	0.353	25.48	8M98W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.636	28.03	4M51G7D
		16QAM	2498.5 - 2687.5	0.513	27.10	4M51W7D
LTE Band 41(PC3)/38	20 MHz	QPSK	2506.0 - 2680.0	0.385	25.85	18M0G7D
		16QAM	2506.0 - 2680.0	0.244	23.88	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.354	25.49	13M5G7D
		16QAM	2503.5 - 2682.5	0.240	23.80	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.359	25.55	8M99G7D
		16QAM	2501.0 - 2685.0	0.242	23.83	9M00W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.351	25.45	4M52G7D
		16QAM	2498.5 - 2687.5	0.234	23.70	4M51W7D
NR Band n41 (Ant 1)	100 MHz	$\pi/2$ BPSK	2546.0 - 2640.0	0.259	24.13	96M6G7D
		QPSK	2546.0 - 2640.0	0.244	23.88	96M5G7D
		16QAM	2546.0 - 2640.0	0.188	22.75	96M7W7D
	90 MHz	$\pi/2$ BPSK	2541.0 - 2645.0	0.258	24.11	87M2G7D
		QPSK	2541.0 - 2645.0	0.245	23.90	87M9G7D
		16QAM	2541.0 - 2645.0	0.193	22.85	87M7W7D
	80 MHz	$\pi/2$ BPSK	2536.0 - 2650.0	0.258	24.11	77M6G7D
		QPSK	2536.0 - 2650.0	0.244	23.87	77M7G7D
		16QAM	2536.0 - 2650.0	0.195	22.90	77M6W7D
	60 MHz	$\pi/2$ BPSK	2526.0 - 2660.0	0.261	24.16	58M2G7D
		QPSK	2526.0 - 2660.0	0.249	23.96	58M2G7D
		16QAM	2526.0 - 2660.0	0.197	22.94	58M2W7D
	50 MHz	$\pi/2$ BPSK	2521.0 - 2665.0	0.264	24.21	45M9G7D
		QPSK	2521.0 - 2665.0	0.253	24.03	47M6G7D
		16QAM	2521.0 - 2665.0	0.198	22.97	47M7W7D
	40 MHz	$\pi/2$ BPSK	2516.0 - 2670.0	0.252	24.02	35M8G7D
		QPSK	2516.0 - 2670.0	0.242	23.83	37M9G7D
		16QAM	2516.0 - 2670.0	0.207	23.16	38M0W7D
	30 MHz	$\pi/2$ BPSK	2511.0 - 2675.0	0.247	23.93	26M9G7D
		QPSK	2511.0 - 2675.0	0.232	23.66	28M0G7D
		16QAM	2511.0 - 2675.0	0.198	22.97	28M0W7D
	20 MHz	$\pi/2$ BPSK	2506.0 - 2680.0	0.262	24.19	17M9G7D
		QPSK	2506.0 - 2680.0	0.249	23.96	18M3G7D
		16QAM	2506.0 - 2680.0	0.200	23.02	18M3W7D

### EUT Overview (LTE/NR)

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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41 (Ant 4)	100 MHz	$\pi/2$ BPSK	2546.0 - 2640.0	0.225	23.52	96M5G7D
		QPSK	2546.0 - 2640.0	0.200	23.00	97M5G7D
		16QAM	2546.0 - 2640.0	0.196	22.91	97M7W7D
	90 MHz	$\pi/2$ BPSK	2541.0 - 2645.0	0.225	23.51	86M9G7D
		QPSK	2541.0 - 2645.0	0.190	22.79	87M7G7D
		16QAM	2541.0 - 2645.0	0.179	22.54	87M5W7D
	80 MHz	$\pi/2$ BPSK	2536.0 - 2650.0	0.228	23.57	77M3G7D
		QPSK	2536.0 - 2650.0	0.193	22.84	77M6G7D
		16QAM	2536.0 - 2650.0	0.183	22.61	77M7W7D
	60 MHz	$\pi/2$ BPSK	2526.0 - 2660.0	0.221	23.44	58M0G7D
		QPSK	2526.0 - 2660.0	0.193	22.85	58M0G7D
		16QAM	2526.0 - 2660.0	0.183	22.62	58M1W7D
	50 MHz	$\pi/2$ BPSK	2521.0 - 2665.0	0.221	23.45	46M2G7D
		QPSK	2521.0 - 2665.0	0.190	22.78	47M6G7D
		16QAM	2521.0 - 2665.0	0.186	22.70	47M7W7D
	40 MHz	$\pi/2$ BPSK	2516.0 - 2670.0	0.235	23.72	35M8G7D
		QPSK	2516.0 - 2670.0	0.208	23.17	37M9G7D
		16QAM	2516.0 - 2670.0	0.157	21.96	38M0W7D
	30 MHz	$\pi/2$ BPSK	2511.0 - 2675.0	0.221	23.43	27M1G7D
		QPSK	2511.0 - 2675.0	0.196	22.93	28M1G7D
		16QAM	2511.0 - 2675.0	0.147	21.66	27M9W7D
	20 MHz	$\pi/2$ BPSK	2506.0 - 2680.0	0.198	22.98	18M0G7D
		QPSK	2506.0 - 2680.0	0.175	22.42	18M3G7D
		16QAM	2506.0 - 2680.0	0.122	20.88	18M3W7D

### EUT Overview (NR)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41 (Ant 5)	100 MHz	$\pi/2$ BPSK	2546.0 - 2640.0	0.069	18.36	96M8G7D
		QPSK	2546.0 - 2640.0	0.066	18.19	97M8G7D
		16QAM	2546.0 - 2640.0	0.053	17.25	97M8W7D

### EUT Overview (NR)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41 (Ant 8)	100 MHz	$\pi/2$ BPSK	2546.0 - 2640.0	0.031	14.93	96M8G7D
		QPSK	2546.0 - 2640.0	0.031	14.90	98M6G7D
		16QAM	2546.0 - 2640.0	0.026	14.07	98M2W7D

### EUT Overview (NR)

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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 **Microsoft Corporation Portable Computing Device FCC ID: C3K1997**. 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.:** JP220, 5S220, JS220, JT220

### 2.2 Device Capabilities

This device contains the following capabilities:

850/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1 and FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5, 6GHz), Bluetooth (1x, EDR, LE)

### 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.

### 2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 1.930.0 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  $U_{\text{CISPR}}$  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
-	LTX1	Licensed Transmitter Cable Set	12/9/2021	Annual	12/9/2022	LTX1
-	LTX2	Licensed Transmitter Cable Set	12/19/2021	Annual	12/19/2022	LTX2
-	LTX3	Licensed Transmitter Cable Set	8/18/2021	Annual	8/18/2022	LTX3
-	LTX4	Licensed Transmitter Cable Set	12/19/2021	Annual	12/19/2022	LTX4
-	LTX5	Licensed Transmitter Cable Set	12/19/2021	Annual	12/19/2022	LTX5
Agilent	N9020A	MXA Signal Analyzer	3/4/2022	Annual	3/4/2023	US46470561
Agilent	N9038A	MXE EMI Receiver	1/21/2022	Annual	1/21/2023	MY51210133
Anritsu	MT8820C	Radio Communication Analyzer	N/A			6201300731
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201381794
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6200901190
Emco	3115	Horn Antenna (1-18GHz)	6/18/2020	Biennial	6/18/2022	9704-5182
Espec	ESX-2CA	Environmental Chamber	5/25/2022	Annual	5/25/2023	17620
Keysight Technologies	N9030A	PXA Signal Analyzer (3Hz-26.5GHz)	2/14/2022	Annual	2/14/2023	MY54490576
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2022	Annual	3/15/2023	MY54500644
Mini Circuits	TVA-11-422	RF Power Amp	N/A			QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11403100002
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			100976
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			102060
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	5/25/2021	Annual	5/25/2022	100348
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/25/2021	Annual	8/25/2022	103200
Sunol	DRH-118	Horn Antenna (1-18GHz)	2/14/2022	Biennial	2/14/2024	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	7/27/2020	Biennial	7/27/2022	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: Microsoft Corporation  
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 FCC Classification: PCS Licensed Transmitter (PCB)  
 Mode(s): LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
<b>CONDUCTED</b>	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	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 7, 38, 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
<b>RADIATED</b>	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 7, 38, 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 7, 38, 41; NR Band n41)	2.1053, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Section 7.7

#### 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 port 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 v1.0.

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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.

A-MPR is implemented in this device when operating at Power Class 2 in LTE Band 41 per the A-MPR specification in 3GPP TS 36.101. The conducted powers are shown herein to cover the different A-MPR levels specified in the standard. Measurement equipment was set up with triggering/gating on the spectrum analyzer such that powers were measured only during the on-time of the signal.

### Test Procedure Used

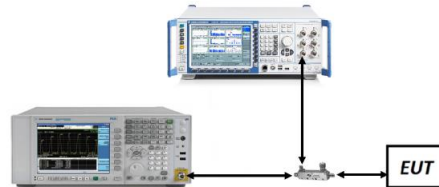
ANSI C63.26-2015 – Section 5.2

### 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. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
2. 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.
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]
20 MHz	QPSK	20850	2510.0	1 / 0	24.36
		21100	2535.0	1 / 99	24.45
		21350	2560.0	1 / 0	24.59
	16-QAM	21350	2560.0	1 / 0	23.87
15 MHz	QPSK	20825	2507.5	1 / 0	24.33
		21100	2535.0	1 / 74	24.51
		21375	2562.5	1 / 0	24.60
	16-QAM	21375	2562.5	1 / 0	24.06
10 MHz	QPSK	20800	2505.0	1 / 25	24.22
		21100	2535.0	1 / 49	24.48
		21400	2565.0	1 / 25	24.52
	16-QAM	21100	2535.0	1 / 49	23.81
5 MHz	QPSK	20775	2502.5	1 / 0	24.35
		21100	2535.0	1 / 24	24.53
		21425	2567.5	1 / 24	24.65
	16-QAM	21425	2567.5	1 / 24	24.04

Table 7-2. Conducted Power Data (LTE B7)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
10 MHz	QPSK	27710	2310.0	1 / 25	23.38
	16-QAM	27710	2310.0	1 / 25	22.65
5 MHz	QPSK	27685	2307.5	1 / 24	23.32
		27710	2310.0	1 / 12	23.11
		27735	2312.5	1 / 12	23.23
	16-QAM	27735	2312.5	1 / 12	22.75

Table 7-3. Conducted Power Data (LTE B30)

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	QPSK	39750	2506.0	1 / 50	27.27
		40620	2593.0	1 / 99	27.08
		41490	2680.0	1 / 50	26.93
	16-QAM	39750	2506.0	1 / 50	26.82
15 MHz	QPSK	39725	2503.5	1 / 74	27.36
		40620	2593.0	1 / 74	27.13
		41515	2682.5	1 / 74	27.73
	16-QAM	40620	2593.0	1 / 0	25.58
10 MHz	QPSK	39700	2501.0	1/49	27.64
		40620	2593.0	1/49	27.61
		41540	2685.0	1/49	27.66
	16-QAM	41540	2685.0	1/49	25.66
5 MHz	QPSK	39675	2498.5	1/0	27.34
		40620	2593.0	1/0	26.54
		41565	2687.5	1/0	26.60
	16-QAM	39675	2498.5	1/0	26.51

Table 7-4. Conducted Power Data (LTE B41(PC2))

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	QPSK	39750	2506.0	1 / 0	23.61
		40620	2593.0	1 / 0	23.88
		41490	2680.0	1 / 0	23.98
	16-QAM	39750	2506.0	1 / 0	23.00
		40620	2593.0	1 / 0	23.04
		41490	2680.0	1 / 0	23.03
15 MHz	QPSK	39725	2503.5	1 / 37	23.60
		40620	2593.0	1 / 74	23.52
		41515	2682.5	1 / 0	23.48
	16-QAM	39725	2503.5	1 / 37	22.65
		40620	2593.0	1 / 74	22.96
		41515	2682.5	1 / 0	22.92
10 MHz	QPSK	39700	2501.0	1 / 0	23.36
		40620	2593.0	1 / 0	23.58
		41540	2685.0	1 / 0	23.48
	16-QAM	39700	2501.0	1 / 0	22.77
		40620	2593.0	1 / 0	22.99
		41540	2685.0	1 / 0	23.14
5 MHz	QPSK	39675	2498.5	1 / 12	23.29
		40620	2593.0	1 / 12	23.48
		41565	2687.5	1 / 12	23.49
	16-QAM	39675	2498.5	1 / 12	22.97
		40620	2593.0	1 / 12	22.86
		41565	2687.5	1 / 12	23.25

Table 7-5. Conducted Power Data (LTE B41(PC3))

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.0	1 / 68	25.04
		518598	2593.0	1 / 68	25.11
		528000	2640.0	1 / 204	24.82
	QPSK	509202	2546.0	1 / 68	24.92
		518598	2593.0	1 / 68	25.03
		528000	2640.0	1 / 204	24.67
16-QAM	509202	2546.0	1 / 68	25.03	
90 MHz	π/2 BPSK	508200	2541.0	1 / 122	25.02
		518592	2593.0	1 / 183	25.06
		529002	2645.0	1 / 122	25.19
	QPSK	508200	2541.0	1 / 122	24.94
		518592	2593.0	1 / 183	24.88
		529002	2645.0	1 / 122	25.15
16-QAM	508200	2541.0	1 / 122	25.13	
80 MHz	π/2 BPSK	507204	2536.0	1 / 108	25.02
		518598	2593.0	1 / 54	25.15
		529998	2650.0	1 / 108	24.77
	QPSK	507204	2536.0	1 / 108	24.92
		518598	2593.0	1 / 54	25.07
		529998	2650.0	1 / 108	24.72
16-QAM	507204	2536.0	1 / 108	25.19	
60 MHz	π/2 BPSK	505200	2526.0	1 / 121	25.07
		518598	2593.0	1 / 121	25.04
		531996	2660.0	1 / 40	25.12
	QPSK	505200	2526.0	1 / 121	25.00
		518598	2593.0	1 / 121	24.95
		531996	2660.0	1 / 40	24.50
16-QAM	505200	2526.0	1 / 121	25.22	
50 MHz	π/2 BPSK	504204	2521.0	1 / 33	25.12
		518598	2593.0	1 / 33	25.01
		532998	2665.0	1 / 33	24.71
	QPSK	504204	2521.0	1 / 33	25.07
		518598	2593.0	1 / 33	25.08
		532998	2665.0	1 / 33	24.61
16-QAM	504204	2521.0	1 / 33	25.26	
40 MHz	π/2 BPSK	503202	2516.0	1 / 26	24.93
		518598	2593.0	1 / 26	24.85
		534000	2670.0	1 / 26	25.11
	QPSK	503202	2516.0	1 / 26	24.87
		518598	2593.0	1 / 26	24.79
		534000	2670.0	1 / 26	25.15
16-QAM	534000	2670.0	1 / 26	25.34	
30 MHz	π/2 BPSK	502203	2511.0	1 / 19	24.84
		518598	2593.0	1 / 19	24.82
		534999	2675.0	1 / 19	24.95
	QPSK	502203	2511.0	1 / 19	24.70
		518598	2593.0	1 / 19	24.92
		534999	2675.0	1 / 19	25.03
16-QAM	534999	2675.0	1 / 19	25.16	
20 MHz	π/2 BPSK	501204	2506.0	1 / 13	25.09
		518598	2593.0	1 / 13	25.15
		535998	2680.0	1 / 13	25.09
	QPSK	501204	2506.0	1 / 13	25.00
		518598	2593.0	1 / 13	25.20
		535998	2680.0	1 / 13	24.97
16-QAM	501204	2506.0	1 / 13	25.30	

Table 7-6. Conducted Power Data (NR Band n41 PC3)- ANT 1

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.0	1 / 204	24.50
		518598	2593.0	273 / 0	25.02
		528000	2640.0	1 / 204	24.75
	QPSK	509202	2546.0	1 / 204	24.43
		518598	2593.0	1 / 68	24.97
		528000	2640.0	1 / 204	24.73
16-QAM	528000	2640.0	1 / 204	25.08	
90 MHz	π/2 BPSK	508200	2541.0	1 / 122	24.55
		518592	2593.0	1 / 61	24.57
		529002	2645.0	1 / 61	24.75
	QPSK	508200	2541.0	1 / 122	24.42
		518592	2593.0	1 / 61	24.54
		529002	2645.0	1 / 61	24.52
16-QAM	529002	2645.0	1 / 61	24.70	
80 MHz	π/2 BPSK	507204	2536.0	1 / 162	24.53
		518598	2593.0	1 / 54	24.67
		529998	2650.0	1 / 162	24.81
	QPSK	507204	2536.0	1 / 162	24.48
		518598	2593.0	1 / 54	24.54
		529998	2650.0	1 / 162	24.58
16-QAM	529998	2650.0	1 / 162	24.78	
60 MHz	π/2 BPSK	505200	2526.0	1 / 40	24.45
		518598	2593.0	1 / 40	24.67
		531996	2660.0	1 / 40	24.67
	QPSK	505200	2526.0	1 / 40	24.47
		518598	2593.0	1 / 40	24.60
		531996	2660.0	1 / 40	24.58
16-QAM	531996	2660.0	1 / 40	24.78	
50 MHz	π/2 BPSK	504204	2521.0	1 / 99	24.53
		518598	2593.0	1 / 33	24.62
		532998	2665.0	1 / 33	24.68
	QPSK	504204	2521.0	1 / 99	24.45
		518598	2593.0	1 / 33	24.52
		532998	2665.0	1 / 33	24.51
16-QAM	532998	2665.0	1 / 33	24.86	
40 MHz	π/2 BPSK	503202	2516.0	1 / 26	24.80
		518598	2593.0	1 / 26	24.97
		534000	2670.0	1 / 26	24.95
	QPSK	503202	2516.0	1 / 26	24.85
		518598	2593.0	1 / 26	24.80
		534000	2670.0	1 / 26	24.90
16-QAM	534000	2670.0	1 / 26	24.12	
30 MHz	π/2 BPSK	502203	2511.0	1 / 19	24.61
		518598	2593.0	1 / 19	24.61
		534999	2675.0	1 / 19	24.67
	QPSK	502203	2511.0	1 / 19	24.47
		518598	2593.0	1 / 19	24.68
		534999	2675.0	1 / 19	24.66
16-QAM	534999	2675.0	1 / 19	23.83	
20 MHz	π/2 BPSK	501204	2506.0	1 / 13	24.24
		518598	2593.0	1 / 37	24.29
		535998	2680.0	1 / 13	24.21
	QPSK	501204	2506.0	1 / 13	24.18
		518598	2593.0	1 / 37	24.38
		535998	2680.0	1 / 13	24.16
16-QAM	535998	2680.0	1 / 13	23.04	

Table 7-7. Conducted Power Data (NR Band n41 PC3)- ANT 4

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	TT/2 BPSK	510000	2550.0	1 / 136	22.36
		518598	2593.0	1 / 68	22.25
		528000	2640.0	1 / 136	22.36
	QPSK	510000	2550.0	1 / 136	22.42
		518598	2593.0	1 / 68	22.41
		528000	2640.0	1 / 136	22.30
	16-QAM	510000	2550.0	1 / 136	22.36
		518598	2593.0	1 / 68	22.29
		528000	2640.0	1 / 136	22.21

Table 7-8. Conducted Power Data (NR Band n41 PC3)- ANT 5

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	TT/2 BPSK	510000	2550.0	1 / 68	22.11
		518598	2593.0	1 / 204	22.08
		528000	2640.0	1 / 136	22.20
	QPSK	510000	2550.0	1 / 68	22.15
		518598	2593.0	1 / 204	22.06
		528000	2640.0	1 / 136	22.20
	16-QAM	510000	2550.0	1 / 68	22.20
		518598	2593.0	1 / 204	22.21
		528000	2640.0	1 / 136	21.85

Table 7-9. Conducted Power Data (NR Band n41 PC3)- ANT 8

Power State	Band	Bandwidth (PCC + SCC)	PCC				SCC				ULCA Tx. Power [dBm]				
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency		UL # RB	UL RB Offset		
Max	LTE B41 (PC3)	20MHz + 20MHz	QPSK	39750	2506.0	1	99	QPSK	39948	2525.8	1	0	23.19		
				40620	2593.0	1	99		40818	2612.8	1	0	23.58		
				41490	2680.0	1	0		41292	2660.2	1	99	23.22		
			QPSK	40620	2593	100	0	QPSK	40818	2612.8	100	0	21.37		
				16-QAM	40620	2593	100		0	16-QAM	40818	2612.8	100	0	20.5
				64-QAM	40620	2593	100		0	64-QAM	40818	2612.8	100	0	19.84

Table 7-10. Conducted Power Data (ULCA LTE B41(PC3) – Ant1)

Power State	Band	Bandwidth (PCC + SCC)	PCC				SCC				ULCA Tx. Power [dBm]		
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency		UL # RB	UL RB Offset
Max	LTE B7	20MHz + 20MHz	QPSK	20850	2510.0	1	99	QPSK	21048	2529.8	1	0	23.45
				21000	2525.0	1	99		21198	2544.8	1	0	23.65
				21350	2560.0	1	0		21152	2540.2	1	99	23.98
			QPSK	21000	2525	100	0	QPSK	21198	2544.8	100	0	21.92
				16-QAM	21000	2525	100		0	16-QAM	21198	2544.8	100
			64-QAM	21000	2525	100	0	64-QAM	21198	2544.8	100	0	20.90

Table 7-11. Conducted Power Data (ULCA LTE B7 – Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR (SCS 30kHz)						LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
n41	100	Mid	2593	QPSK	270/0	B66	20	Mid	1745	QPSK	100/0	20.15	23.10	24.88
				QPSK	270/0					QPSK	1/50	19.50	23.20	24.74
				QPSK	1/136					QPSK	100/0	20.11	23.08	24.85
				QPSK	1/136					QPSK	1/50	19.75	23.06	24.72
				16Q	270/0					16Q	100/0	20.09	23.12	24.87

Table 7-12. EN-DC Max Conducted Power Data (n41-B66)

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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

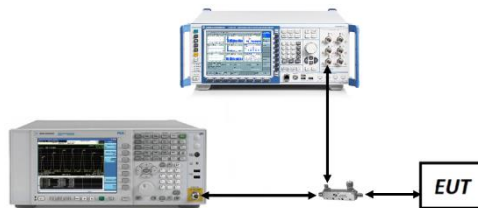
ANSI C63.26-2015 – Section 5.4.4

#### 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.



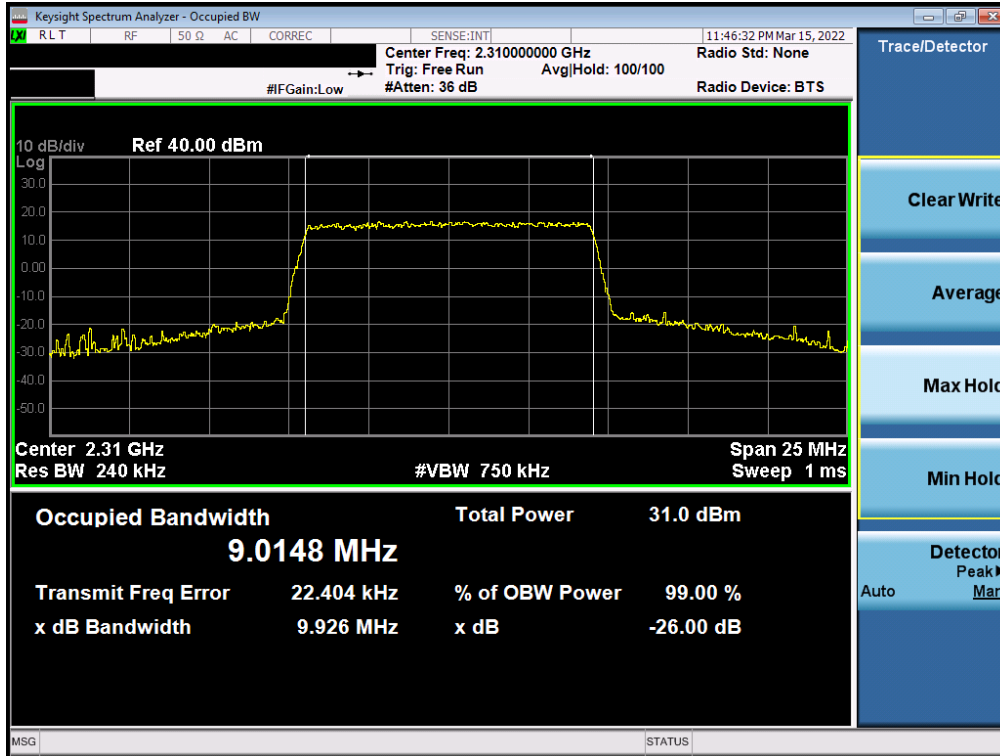
**Figure 7-2. Test Instrument & Measurement Setup**

#### Test Notes

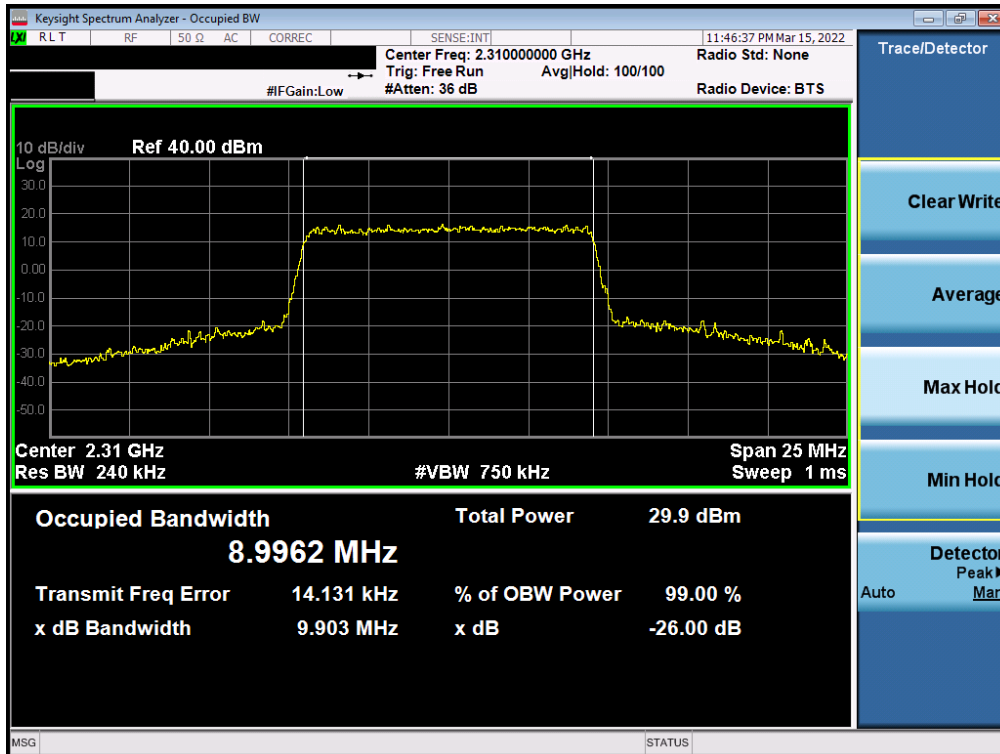
None.

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# LTE Band 30 – Ant1

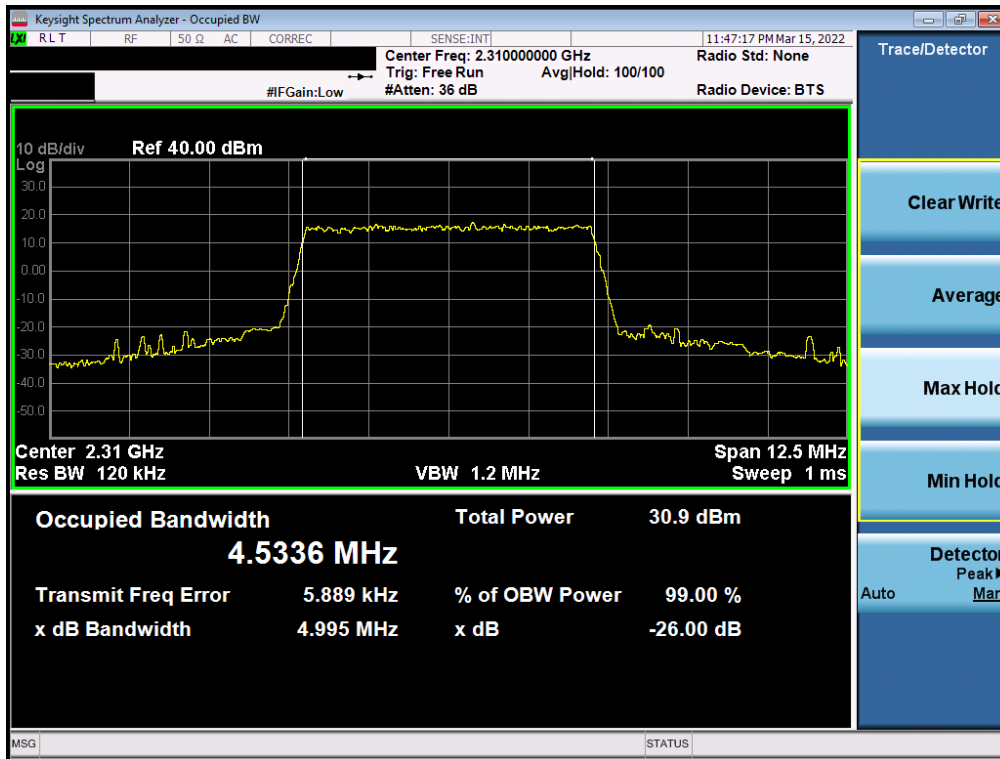


Plot 7-1. Occupied Bandwidth Plot (LTE Band 30 - 10MHz QPSK - Full RB - Ant1)

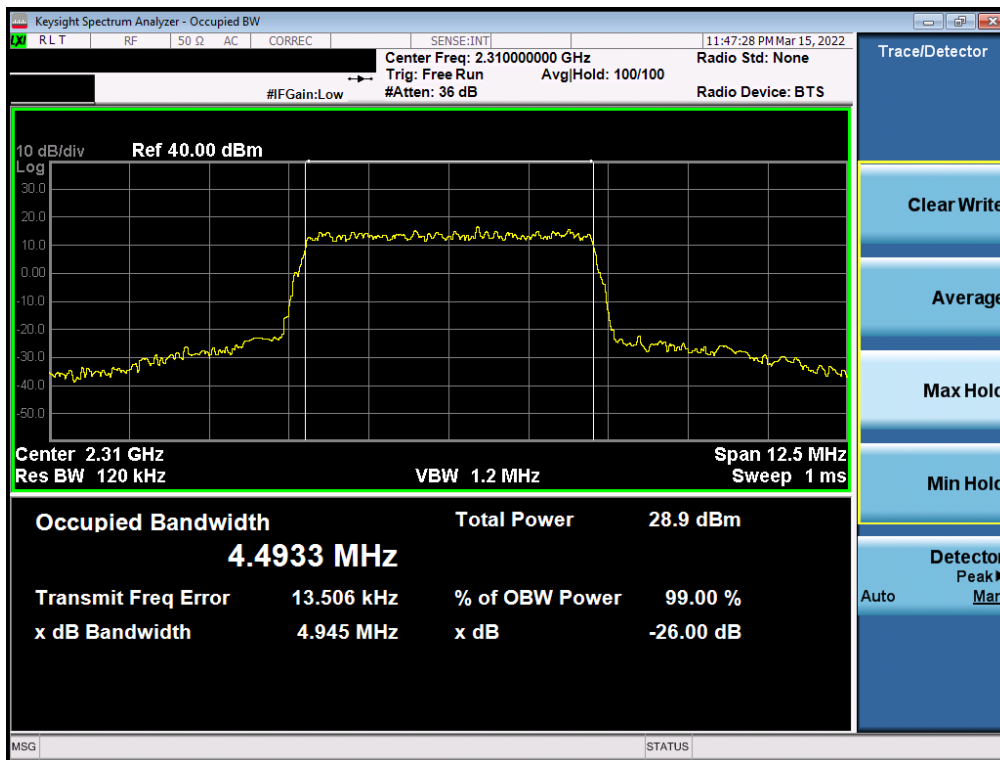


Plot 7-2. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 16-QAM - Full RB - Ant1)

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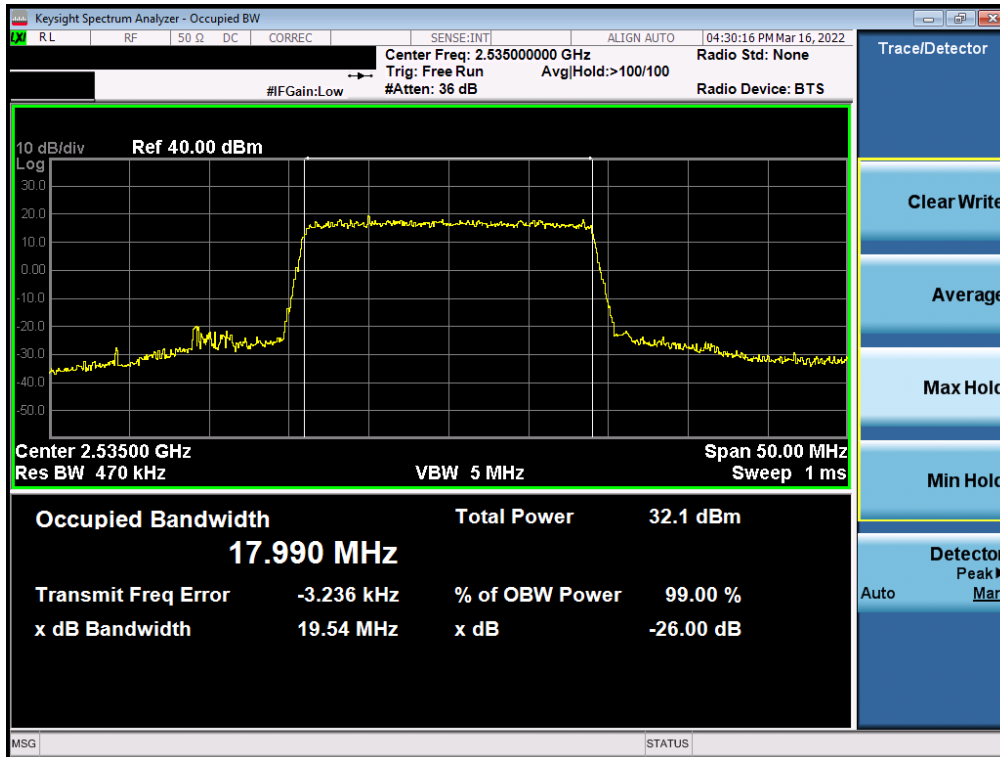
Plot 7-3. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB - Ant1)



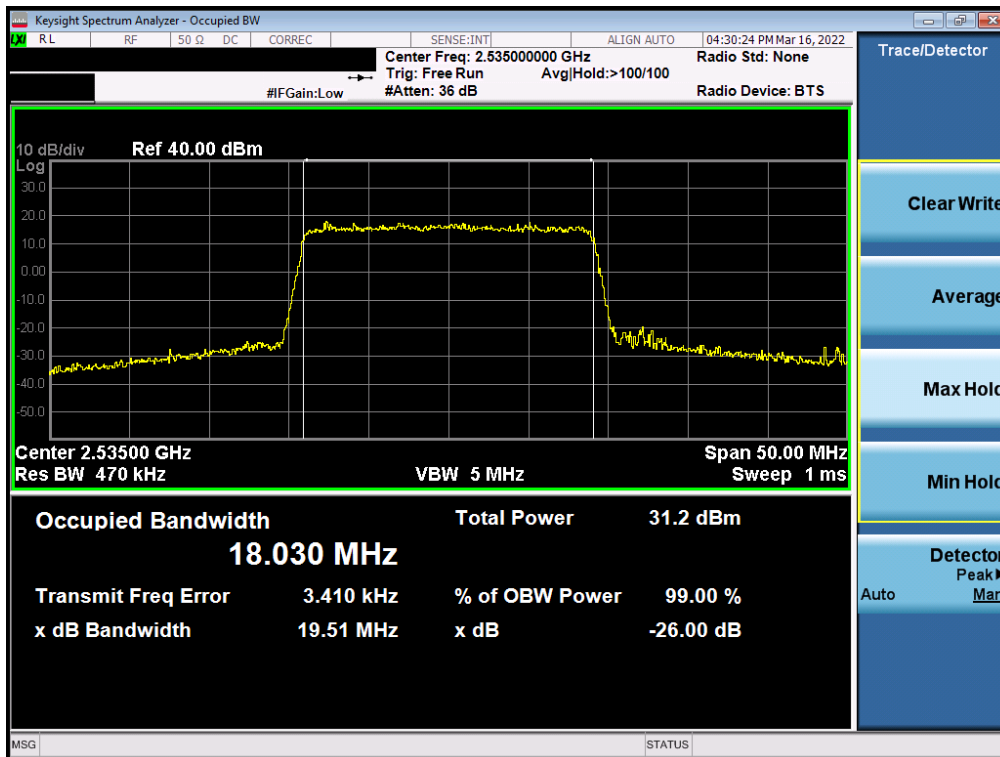
Plot 7-4. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## LTE Band 7 – Ant1

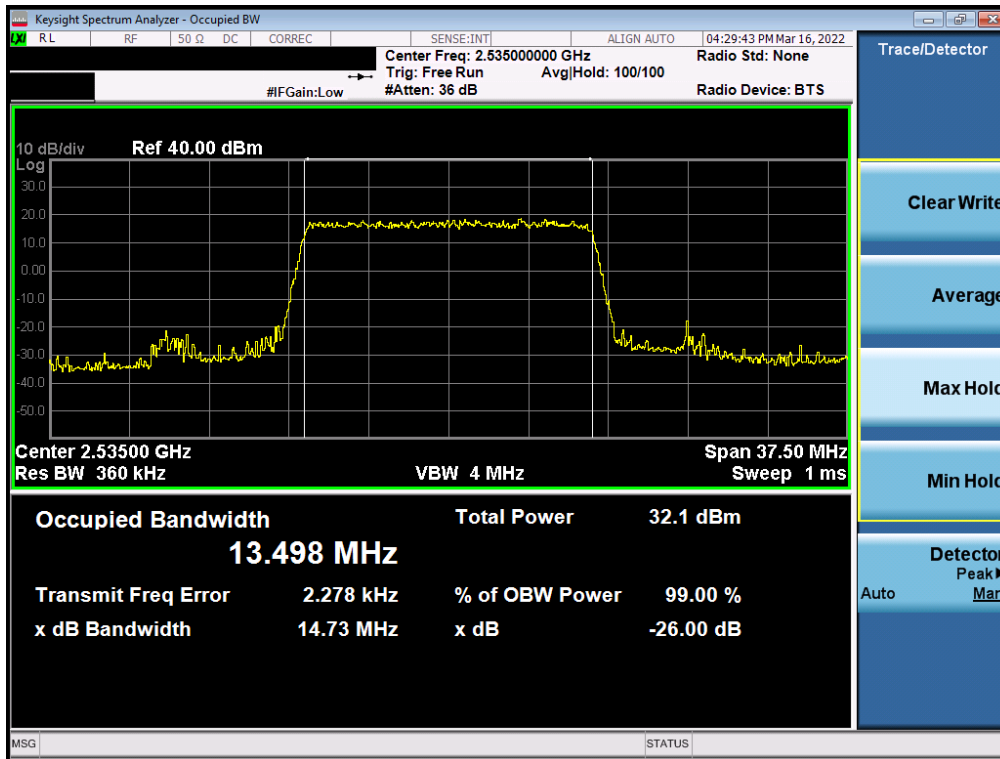


Plot 7-5. Occupied Bandwidth Plot (LTE Band 7 - 20MHz QPSK - Full RB - Ant1)

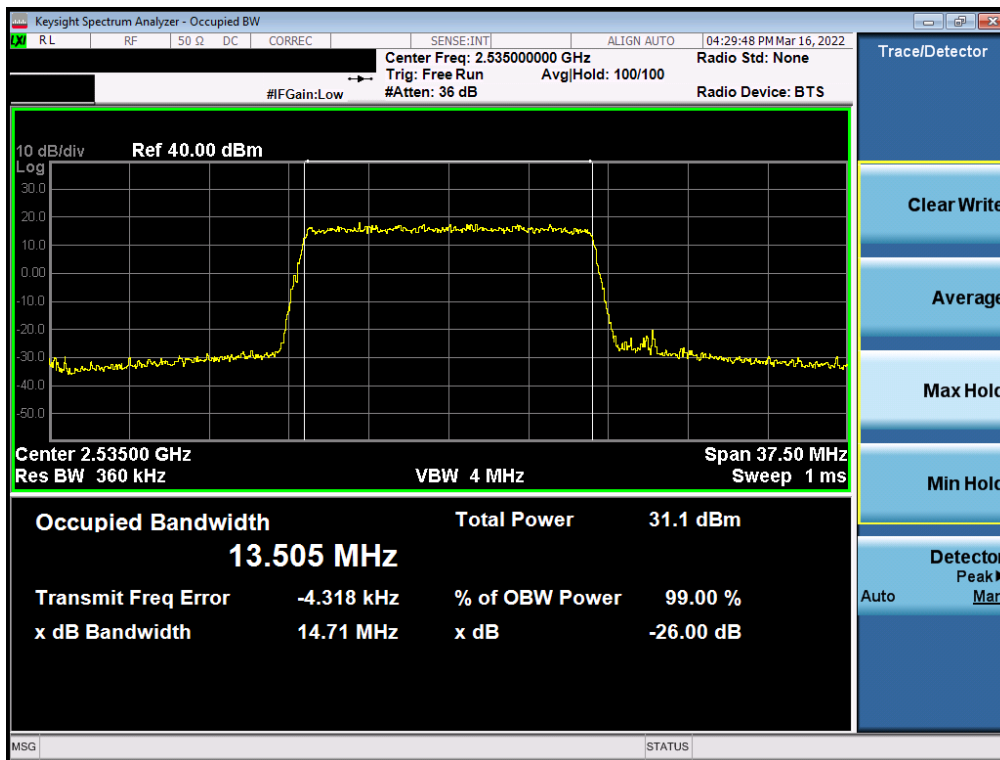


Plot 7-6. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-7. Occupied Bandwidth Plot (LTE Band 7 - 15MHz QPSK - Full RB - Ant1)



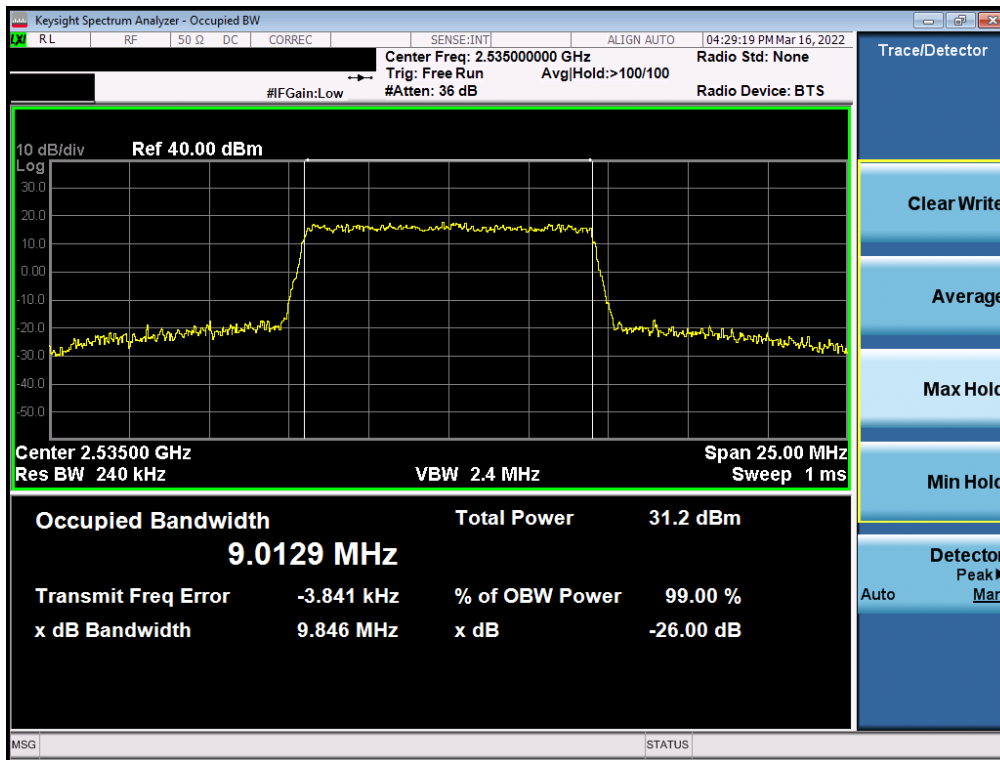
Plot 7-8. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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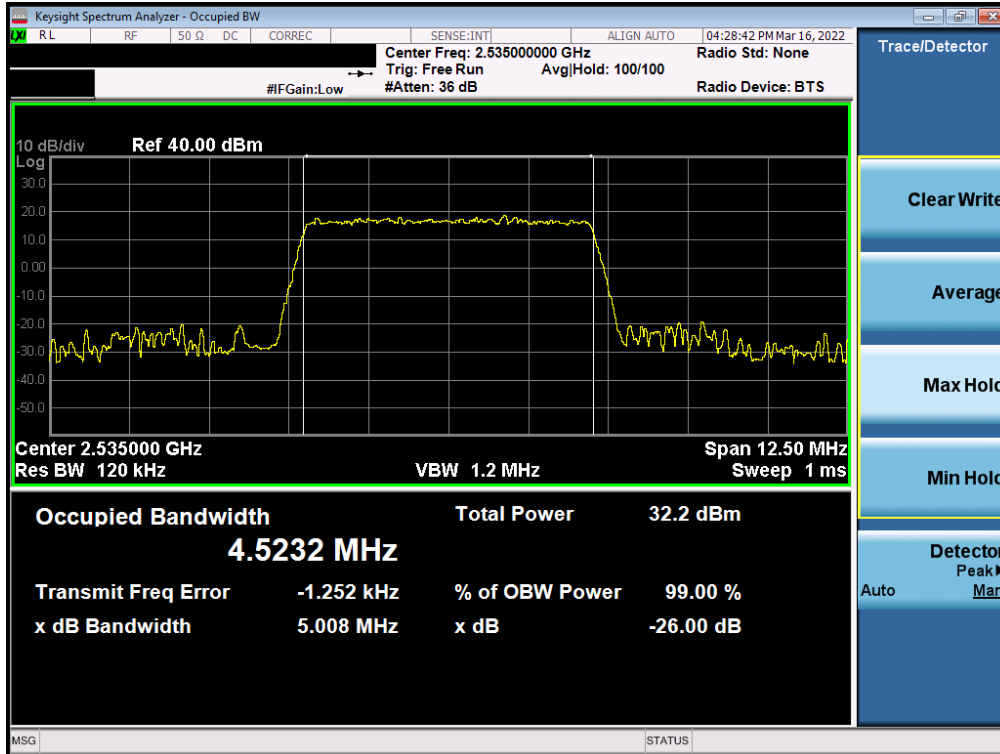


Plot 7-9. Occupied Bandwidth Plot (LTE Band 7 - 10MHz QPSK - Full RB - Ant1)

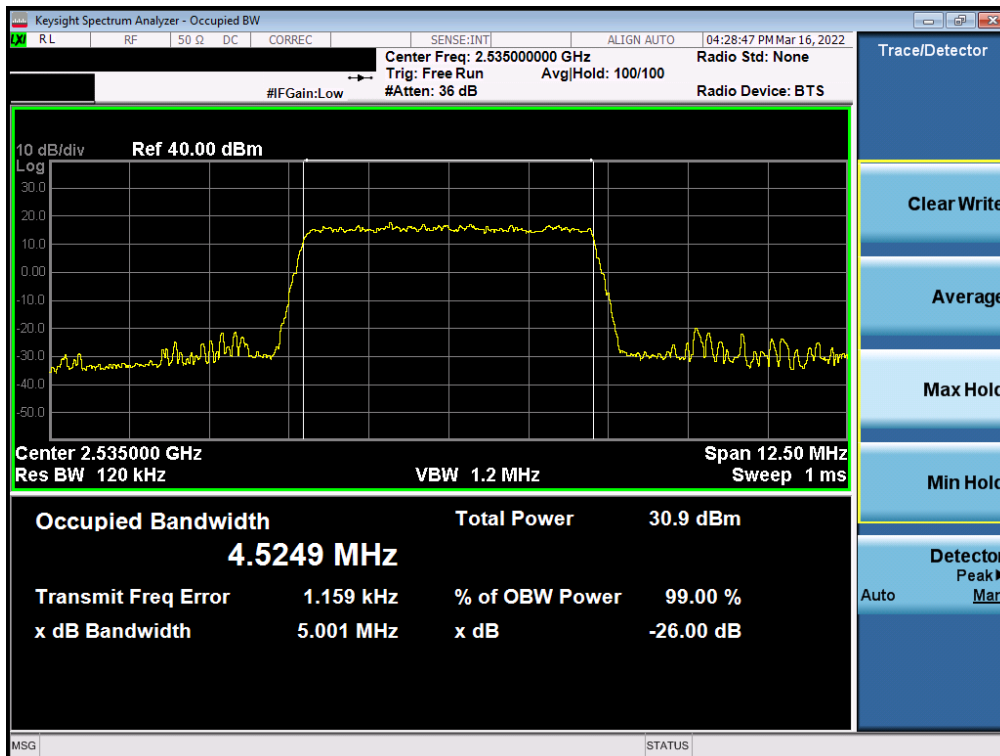


Plot 7-10. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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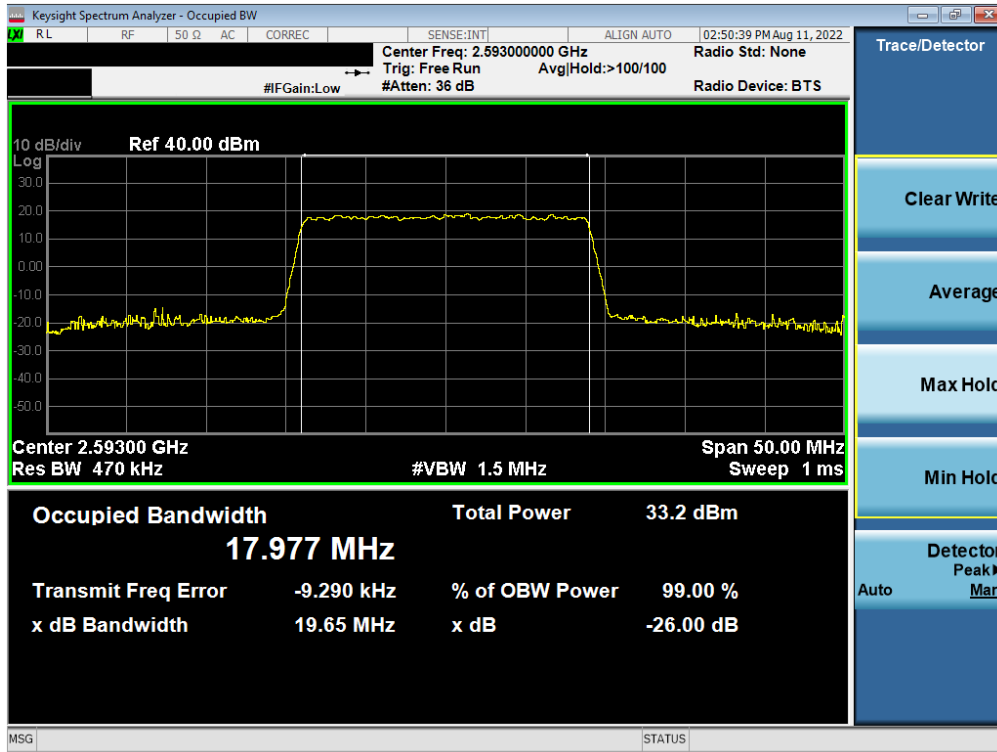
Plot 7-11. Occupied Bandwidth Plot (LTE Band 7 - 5MHz QPSK - Full RB - Ant1)



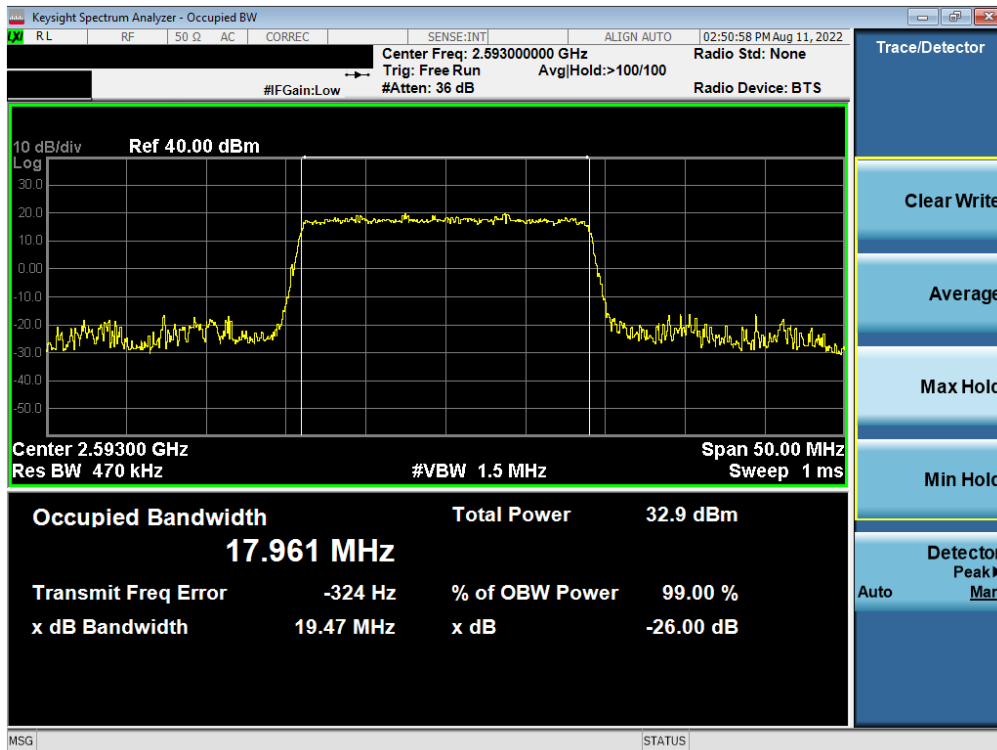
Plot 7-12. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## LTE Band 41(PC2) – Ant1

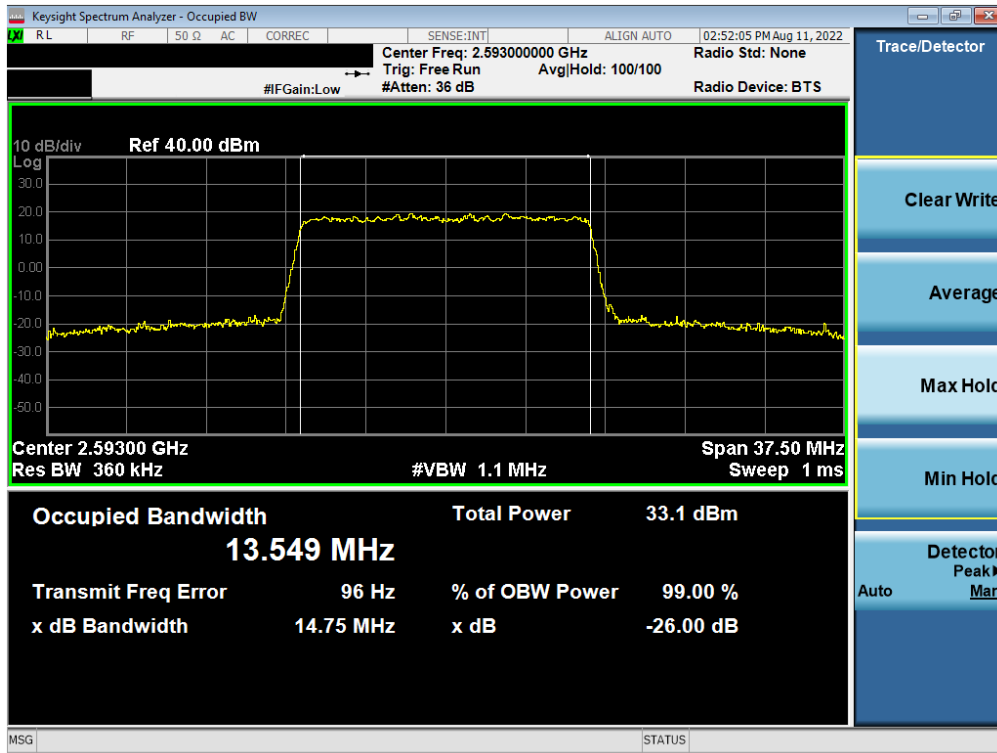


Plot 7-13. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz QPSK - Full RB - Ant1)

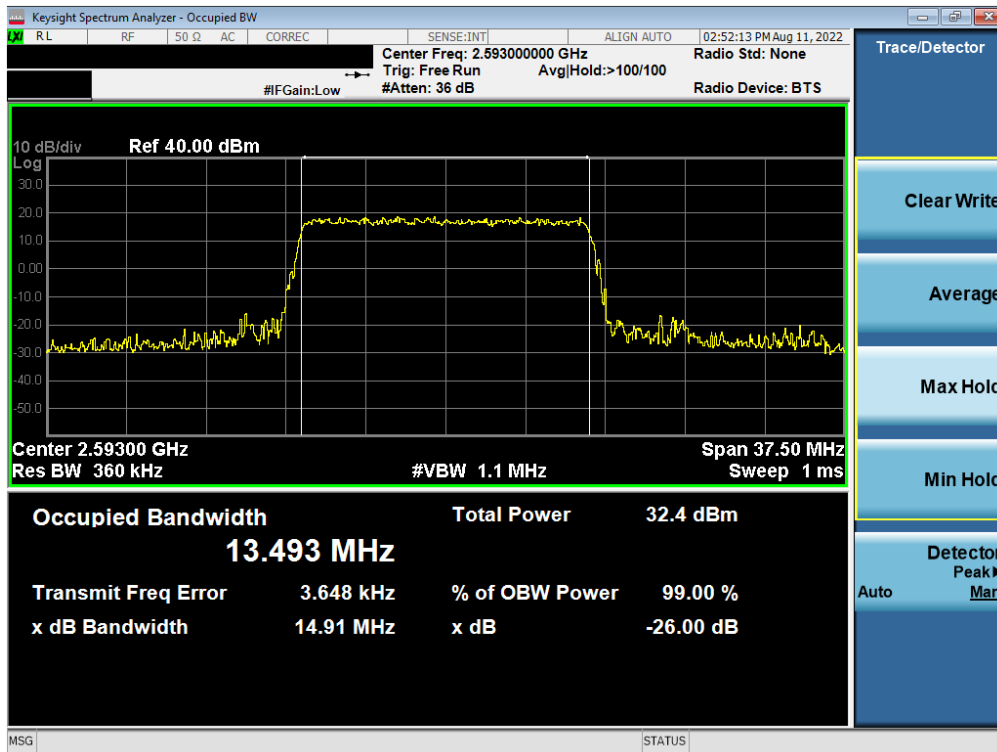


Plot 7-14. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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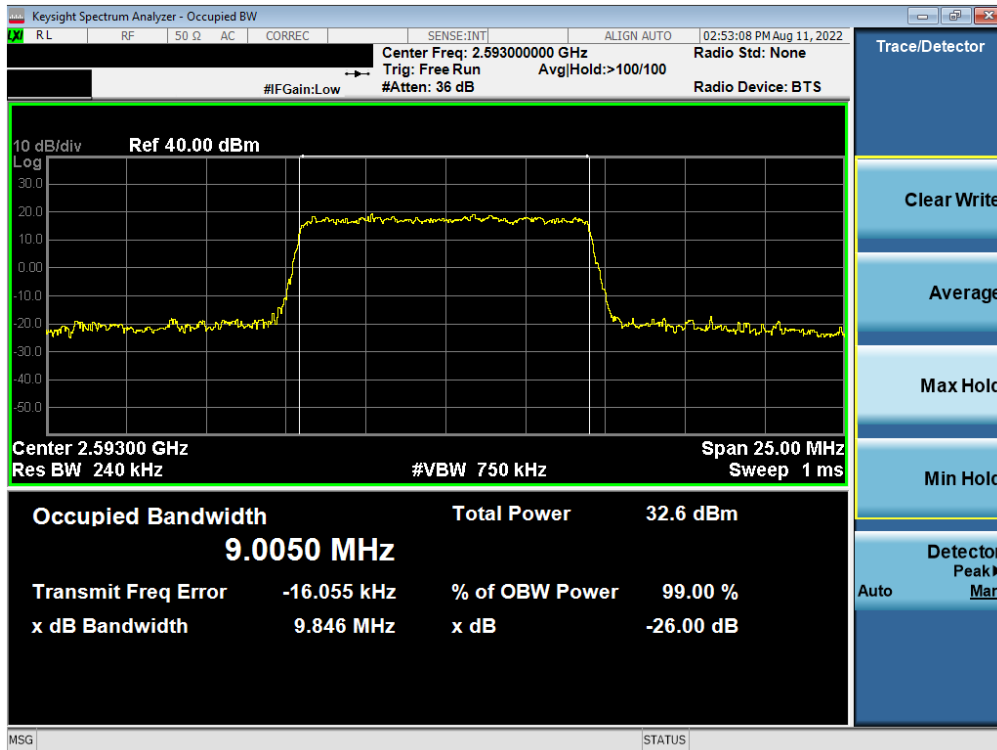


Plot 7-15. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz QPSK - Full RB - Ant1)

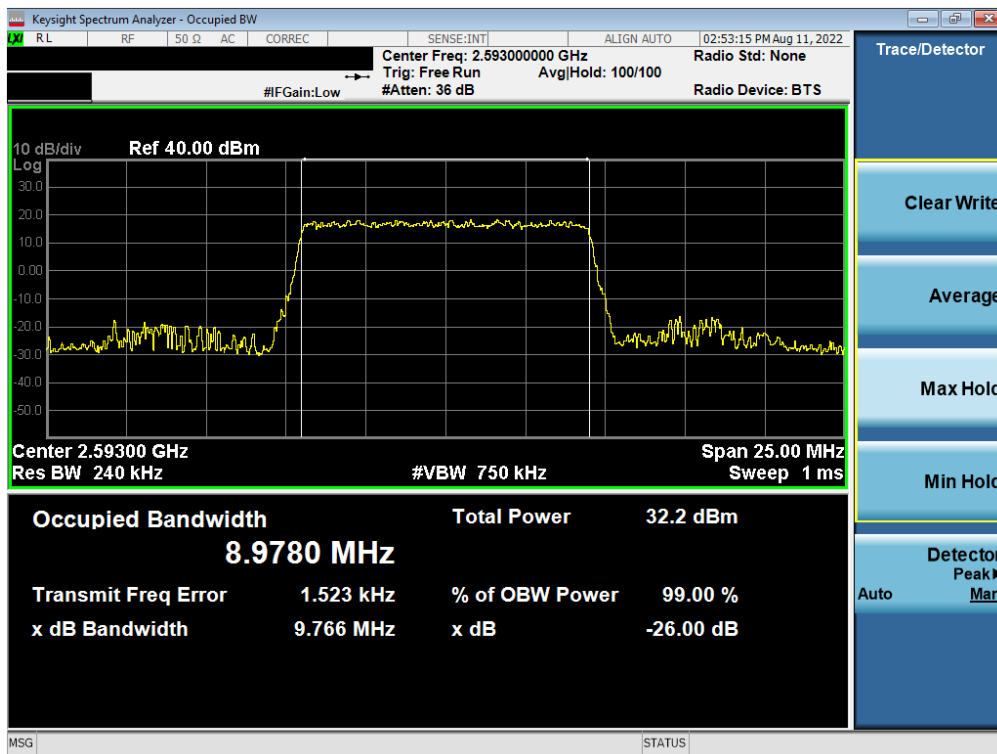


Plot 7-16. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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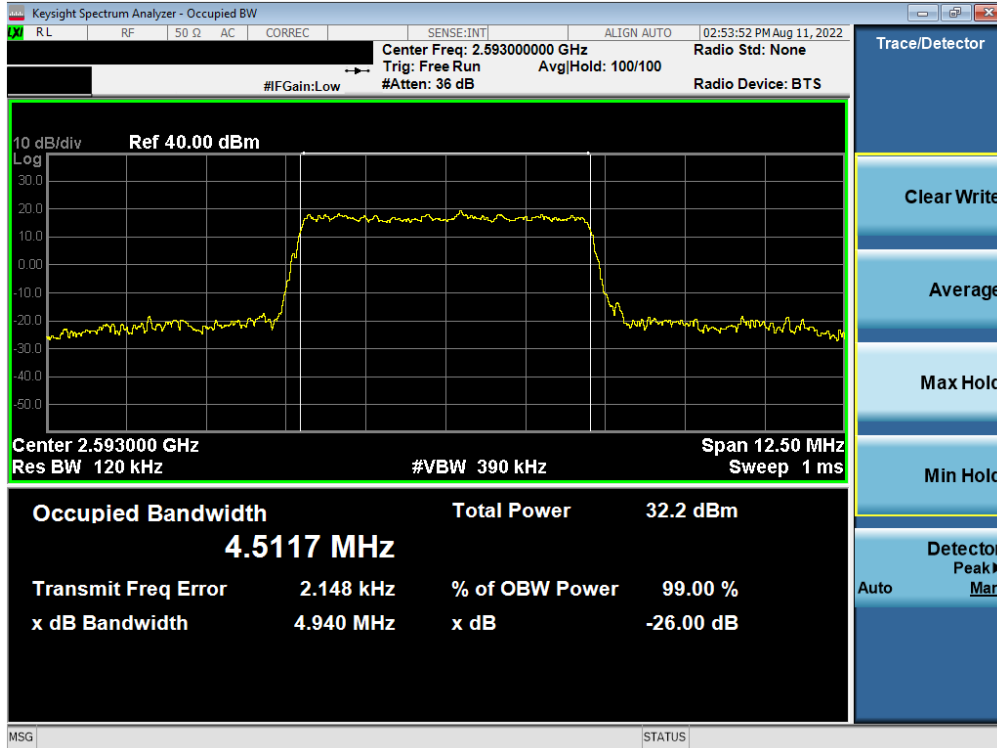


Plot 7-17. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz QPSK - Full RB - Ant1)

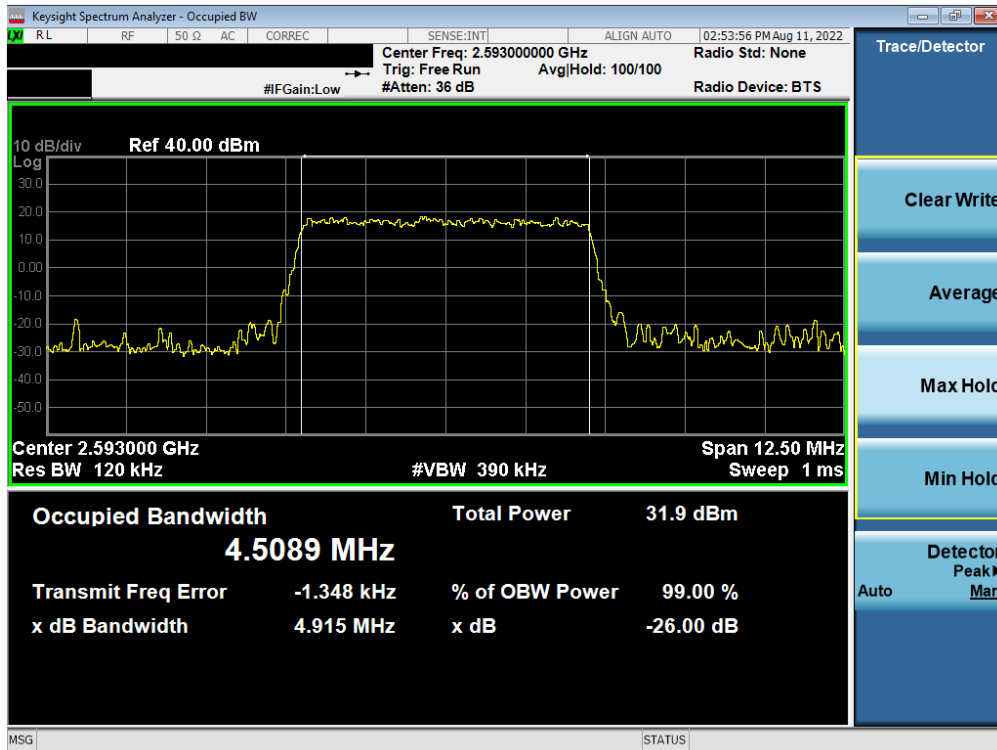


Plot 7-18. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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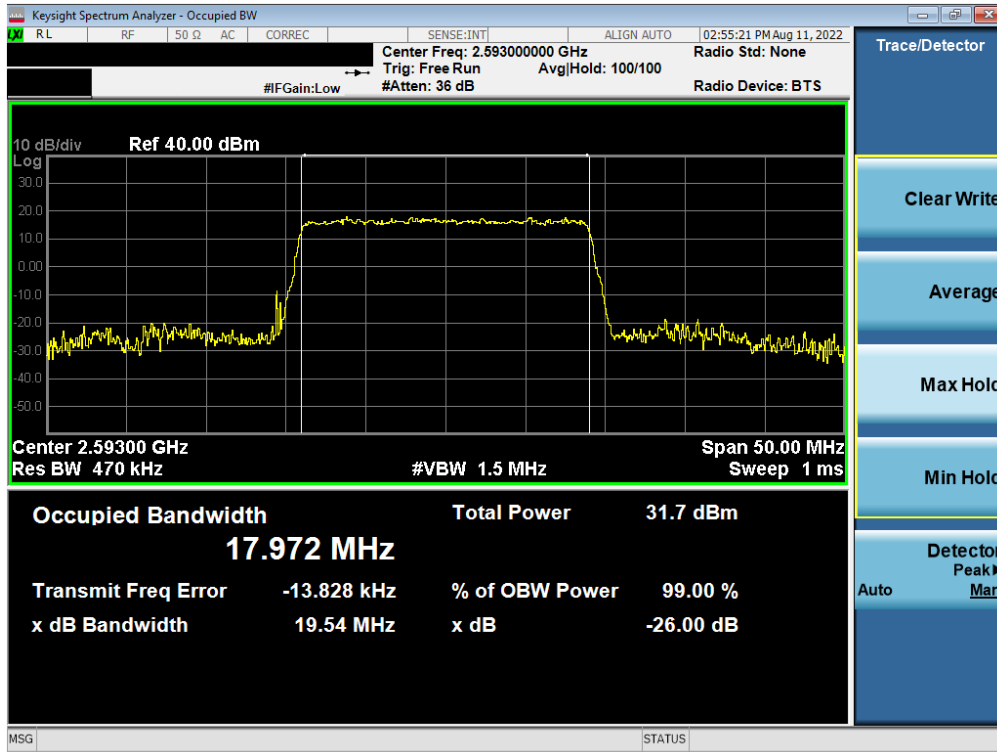
Plot 7-19. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz QPSK - Full RB - Ant1)



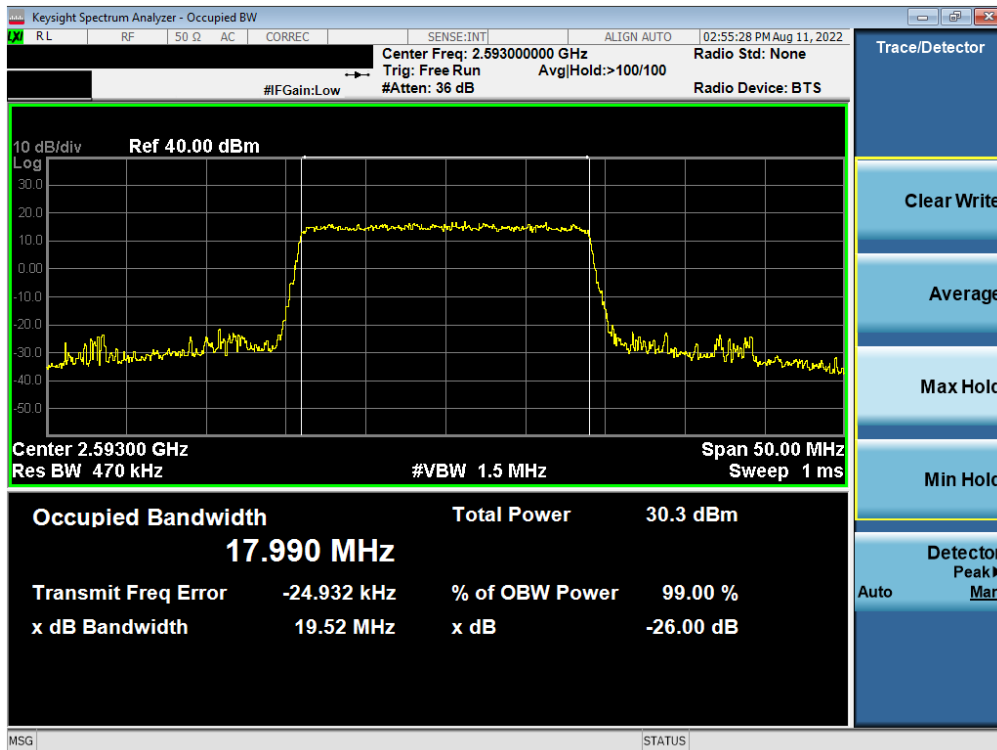
Plot 7-20. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# LTE Band 41(PC3) – Ant1

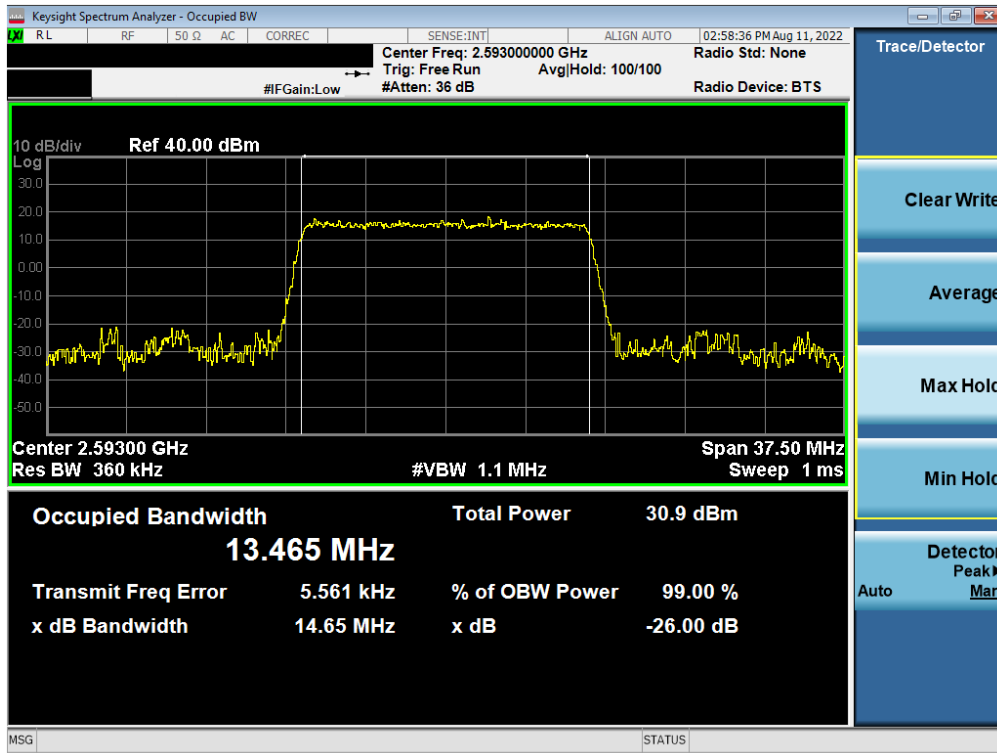


Plot 7-21. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz QPSK - Full RB - Ant1)

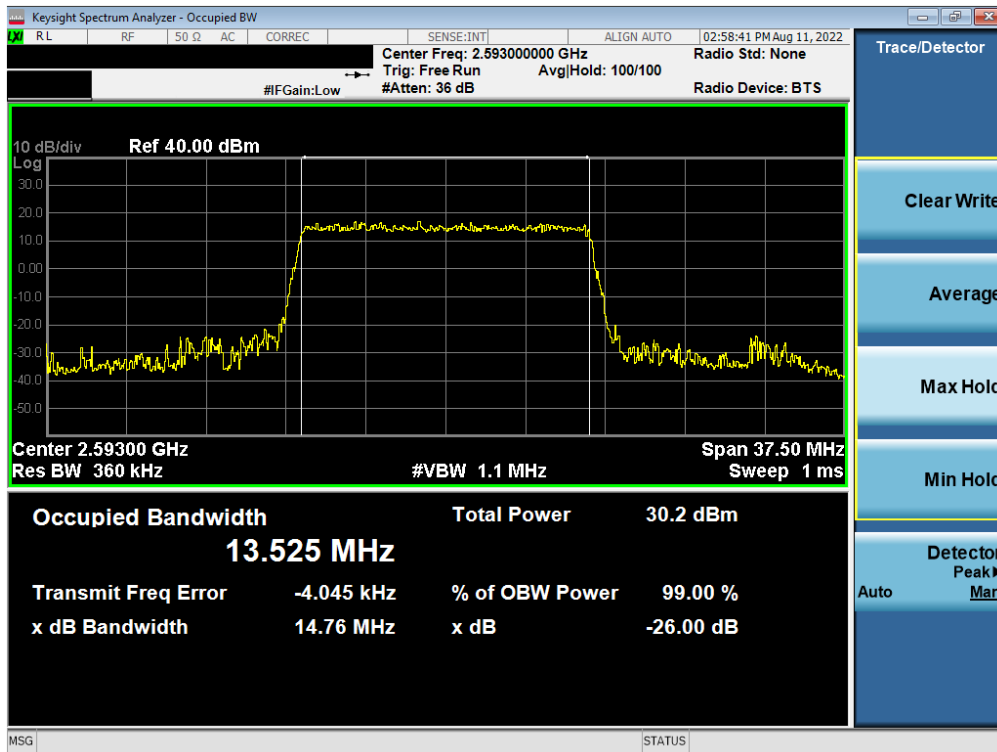


Plot 7-22. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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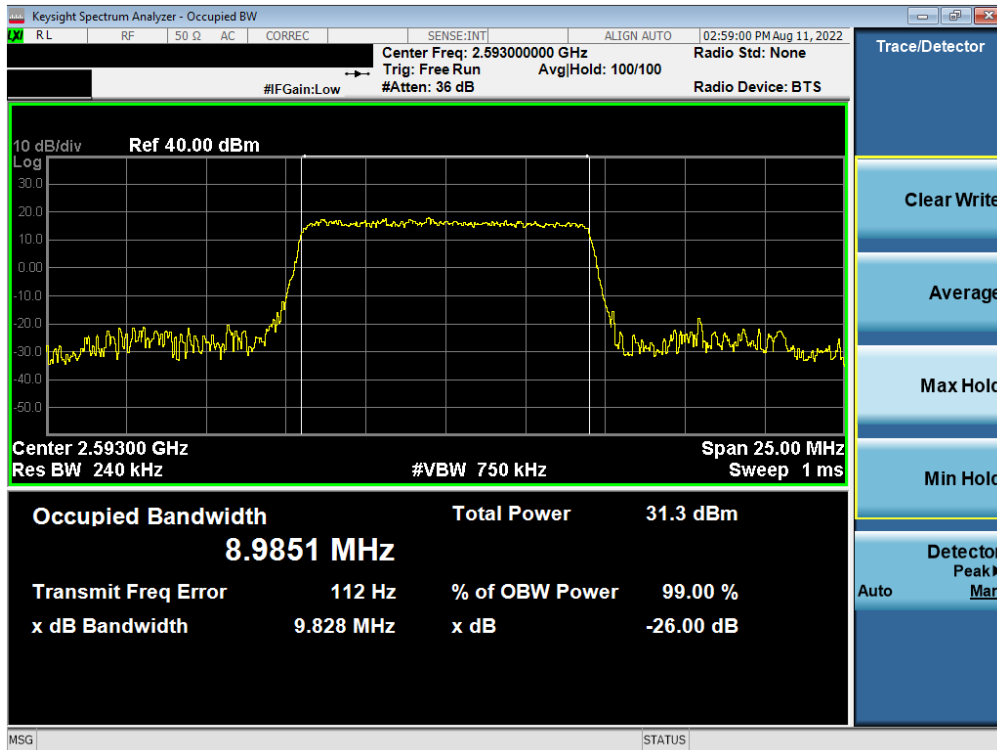
Plot 7-23. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz QPSK - Full RB - Ant1)



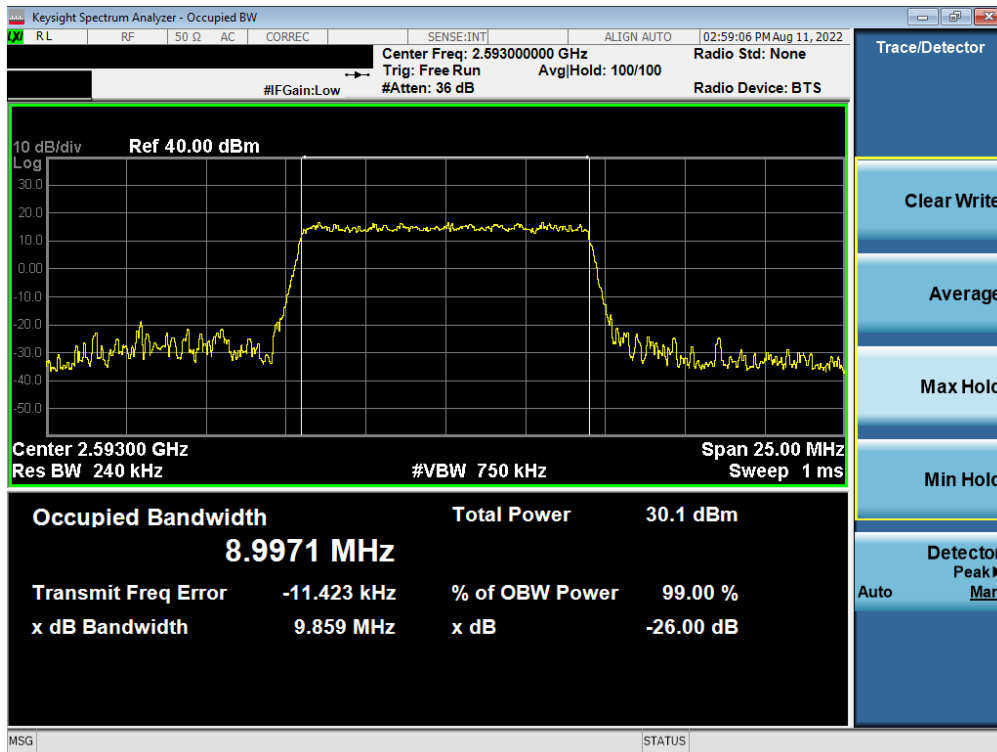
Plot 7-24. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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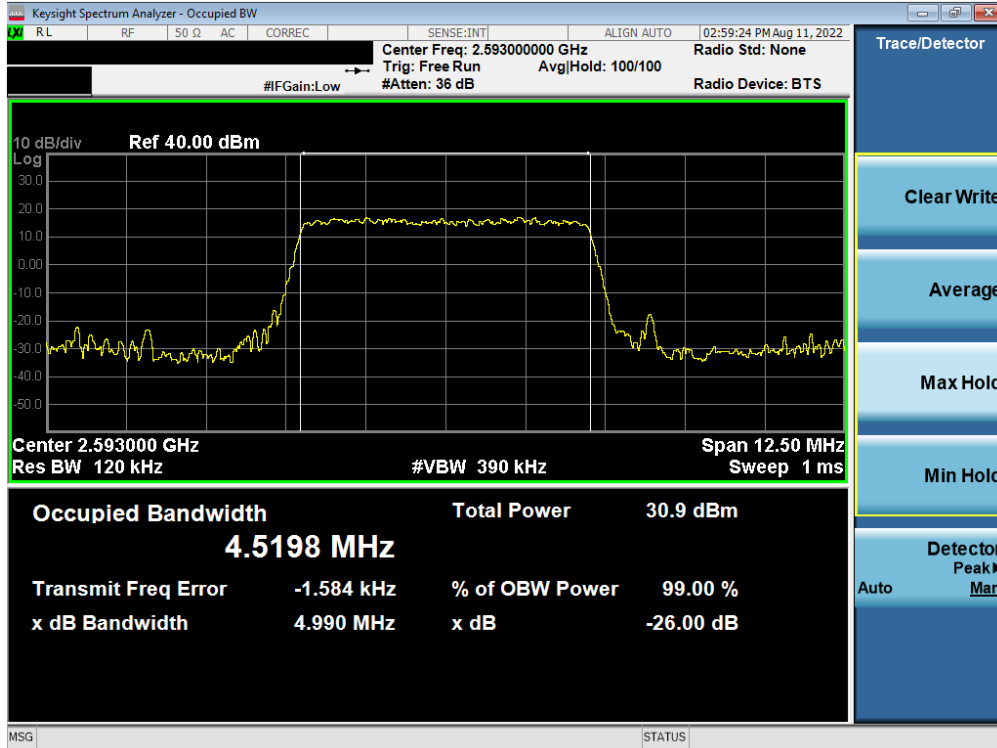


Plot 7-25. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz QPSK - Full RB - Ant1)

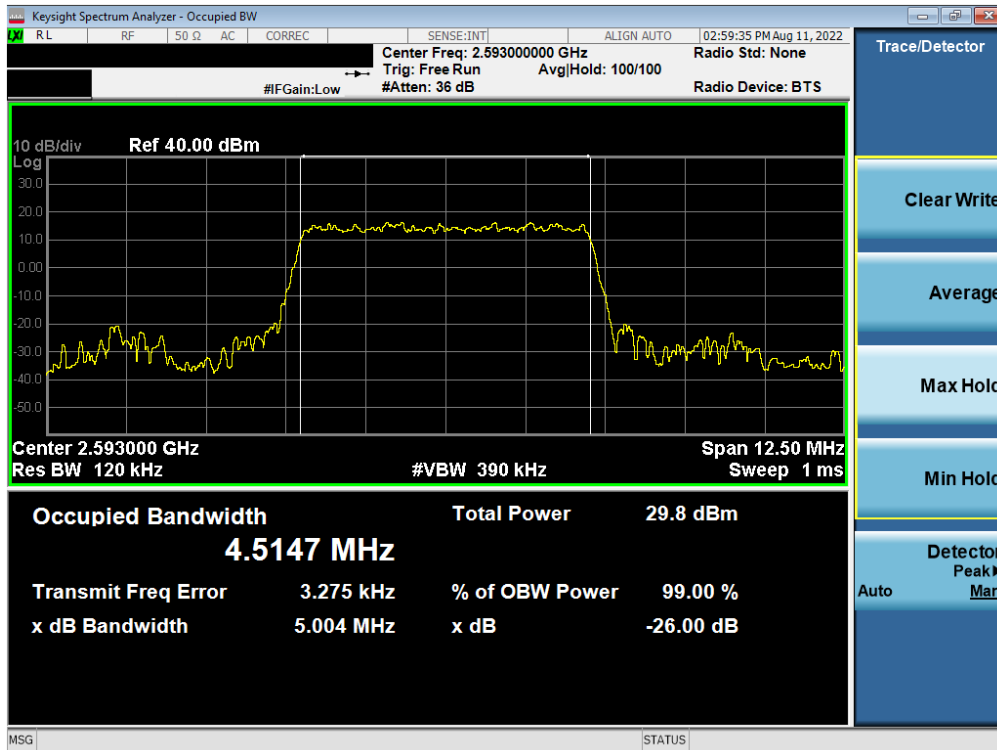


Plot 7-26. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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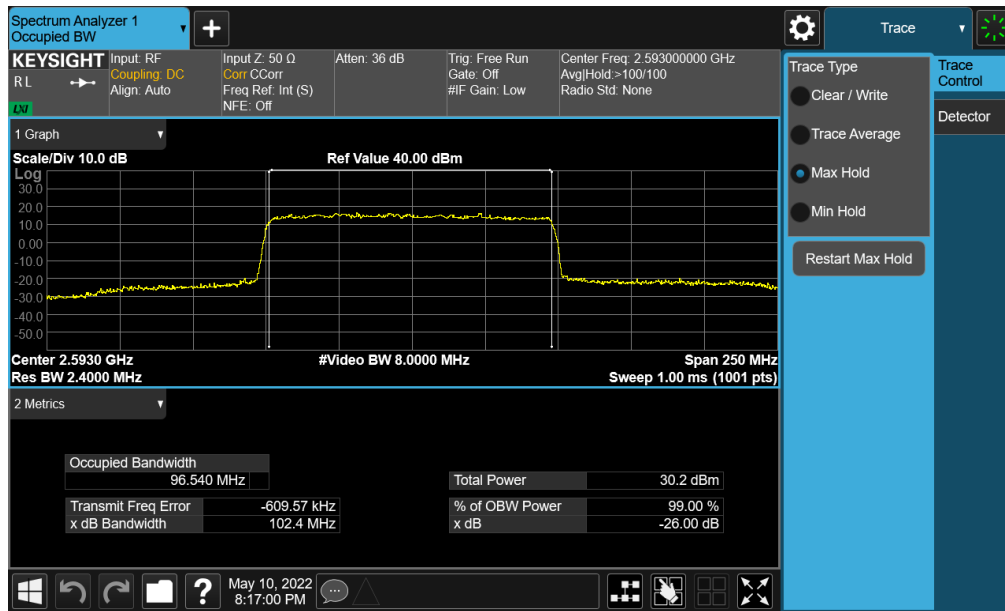
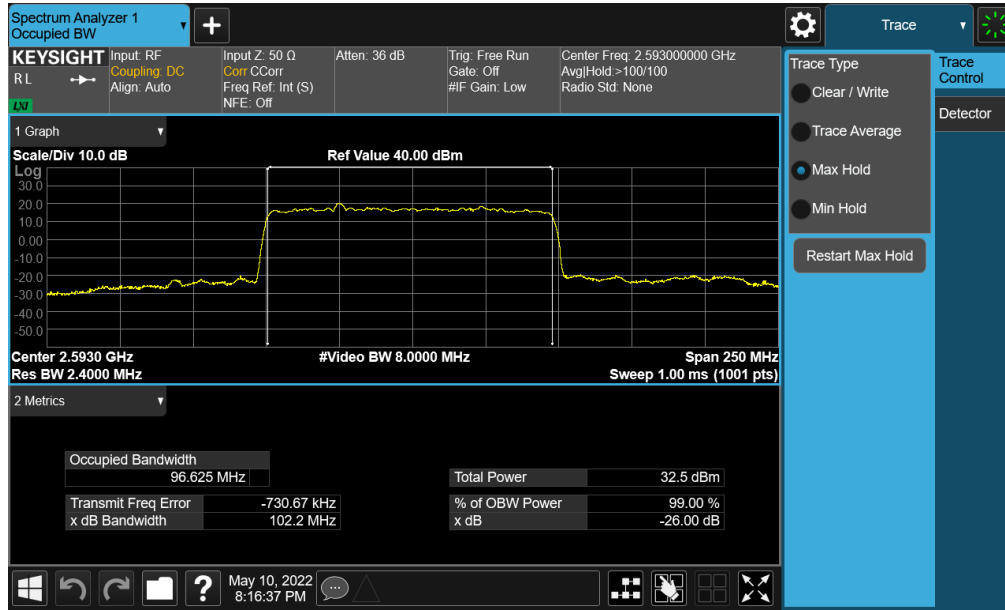
Plot 7-27. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz QPSK - Full RB - Ant1)



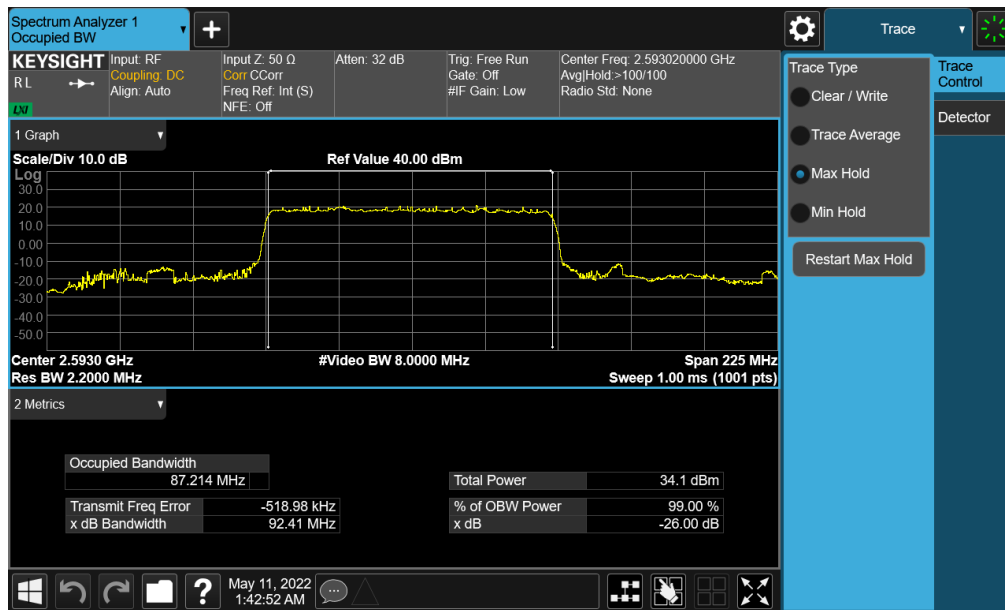
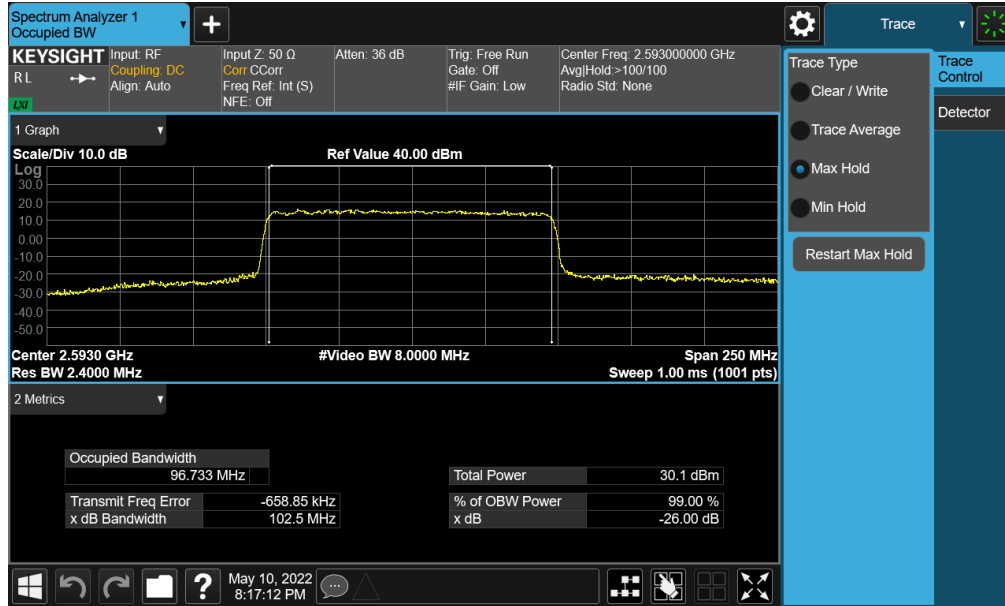
Plot 7-28. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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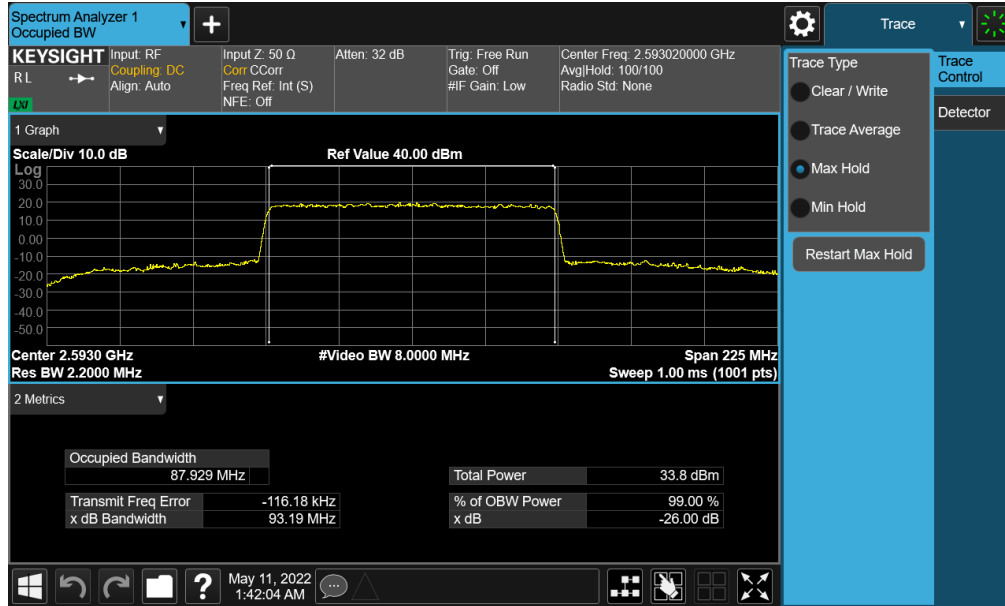
## NR Band n41 – Ant1



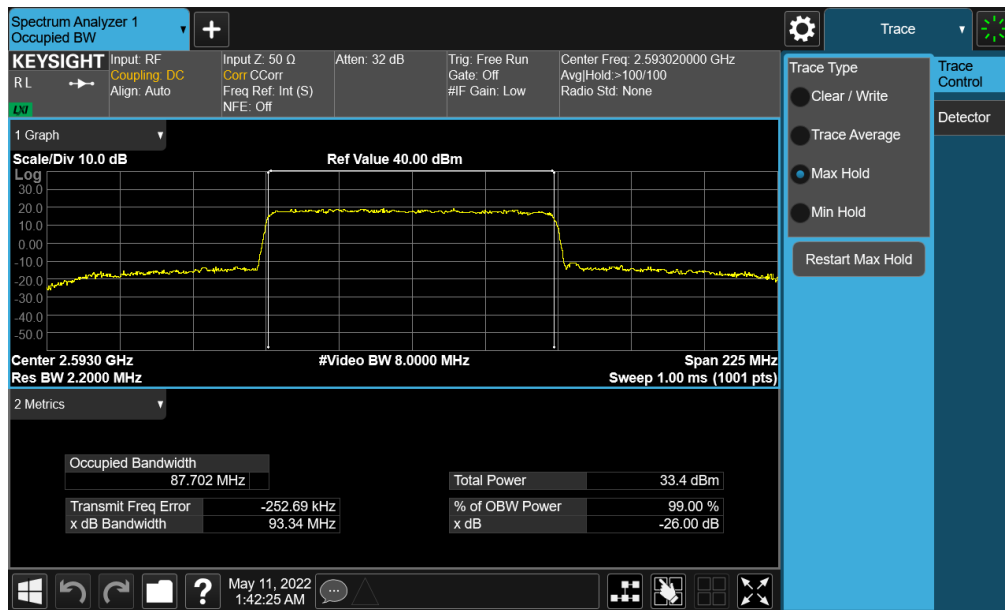
FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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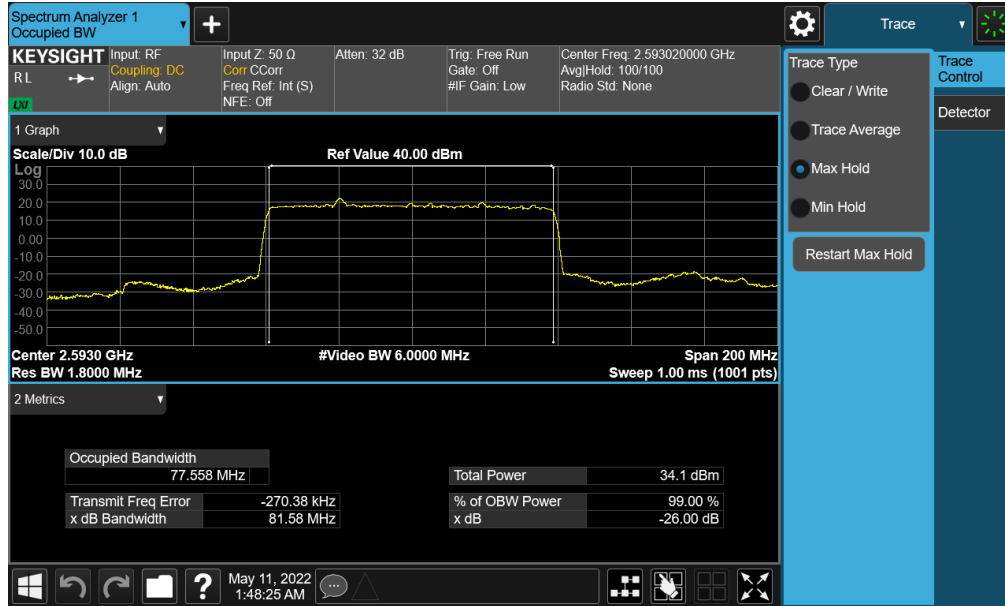


Plot 7-33. Occupied Bandwidth Plot (NR Band n41 - 90MHz QPSK - Full RB - Ant1)

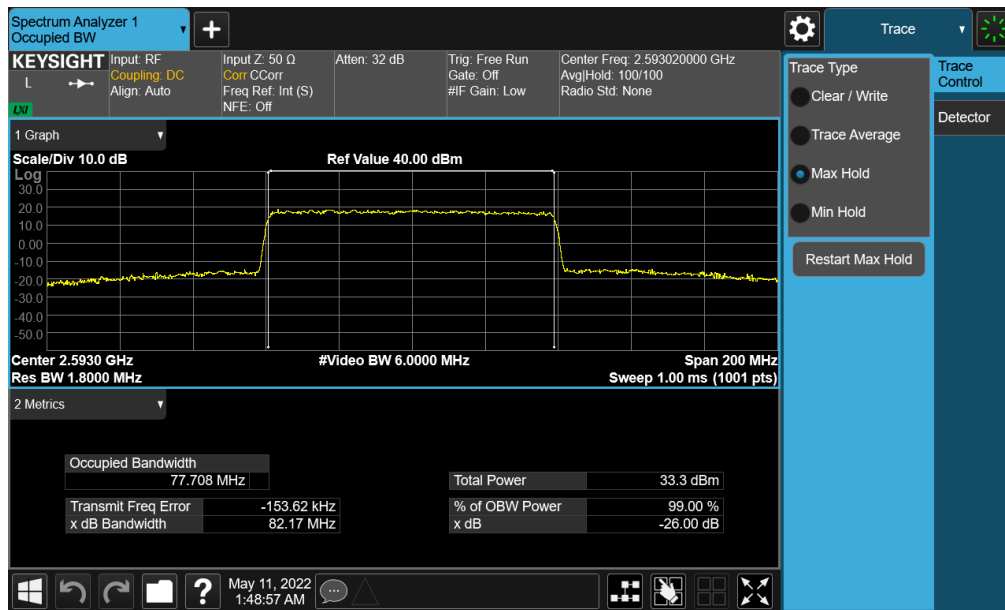


Plot 7-34. Occupied Bandwidth Plot (NR Band n41 - 90MHz 16-QAM - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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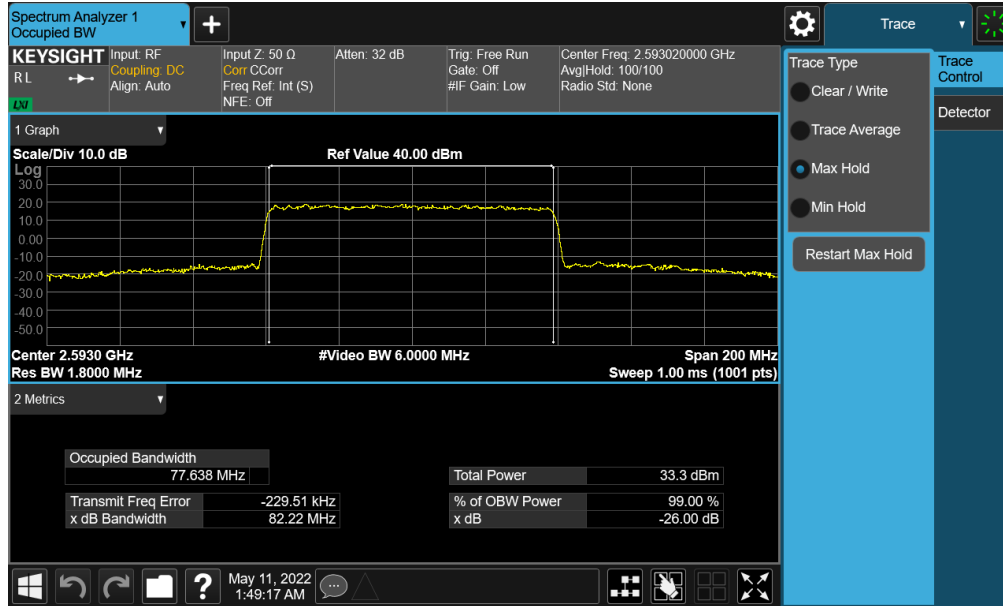


Plot 7-35. Occupied Bandwidth Plot (NR Band n41 - 80MHz  $\pi/2$  BPSK - Full RB - Ant1)

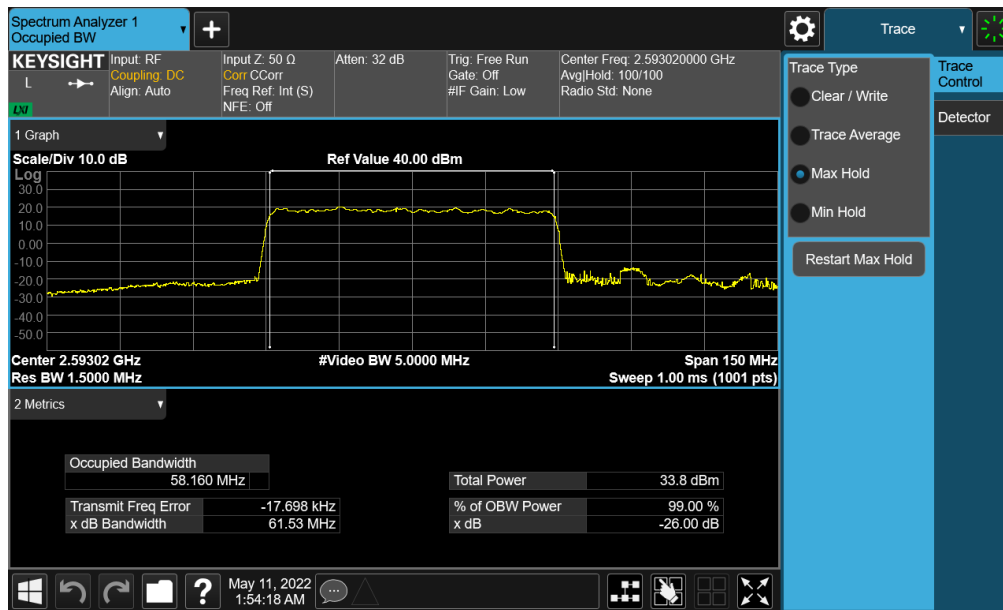


Plot 7-36. Occupied Bandwidth Plot (NR Band n41 - 80MHz QPSK - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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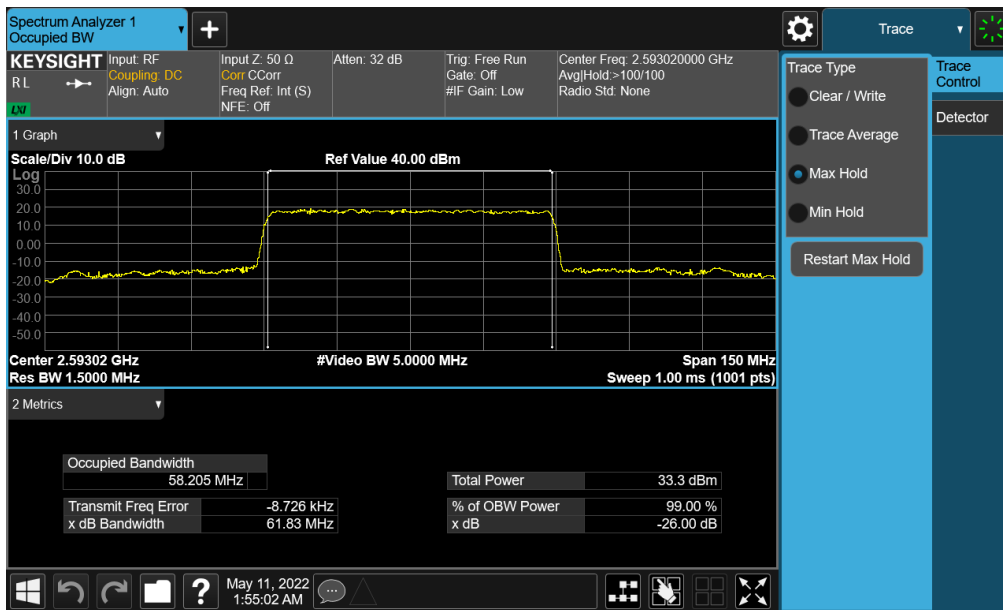
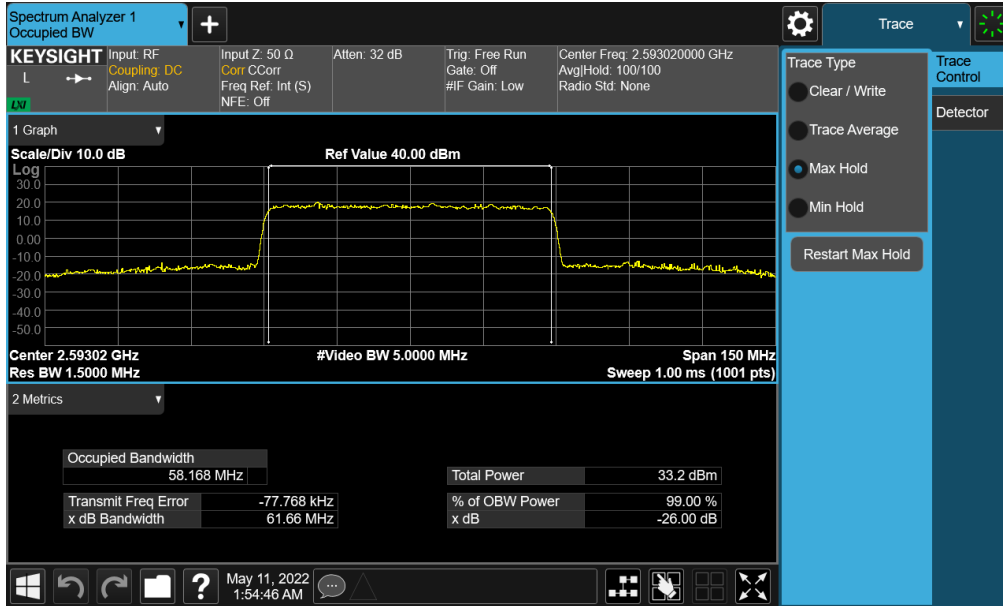


Plot 7-37. Occupied Bandwidth Plot (NR Band n41 - 80MHz 16-QAM - Full RB - Ant1)



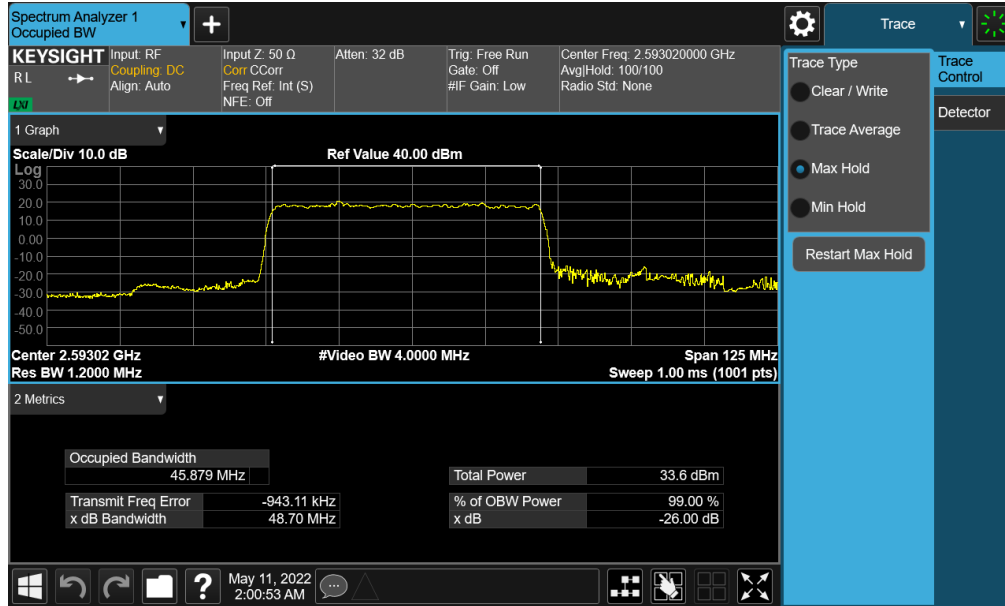
Plot 7-38. Occupied Bandwidth Plot (NR Band n41 - 60MHz  $\pi/2$  BPSK - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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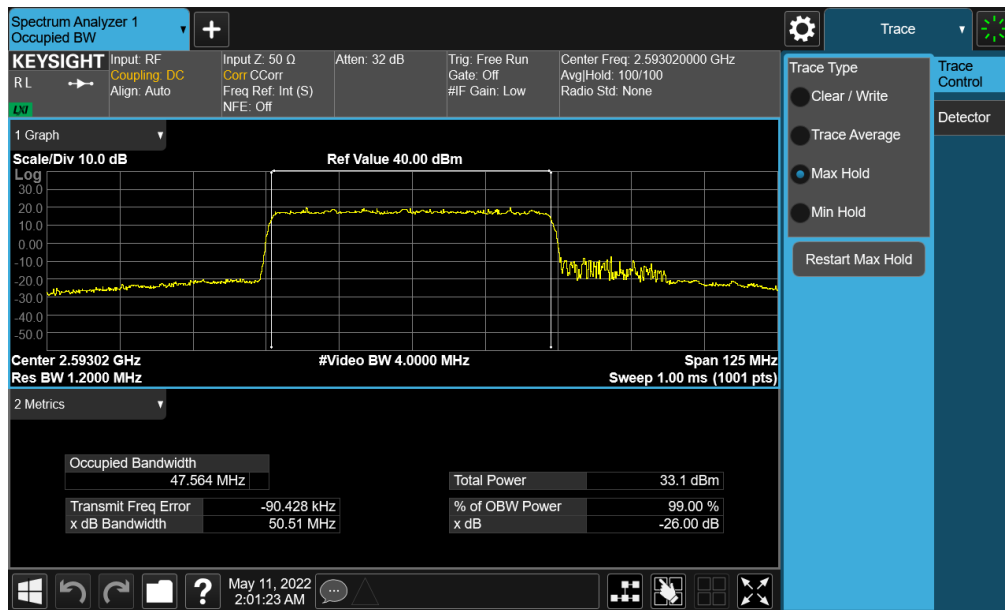


FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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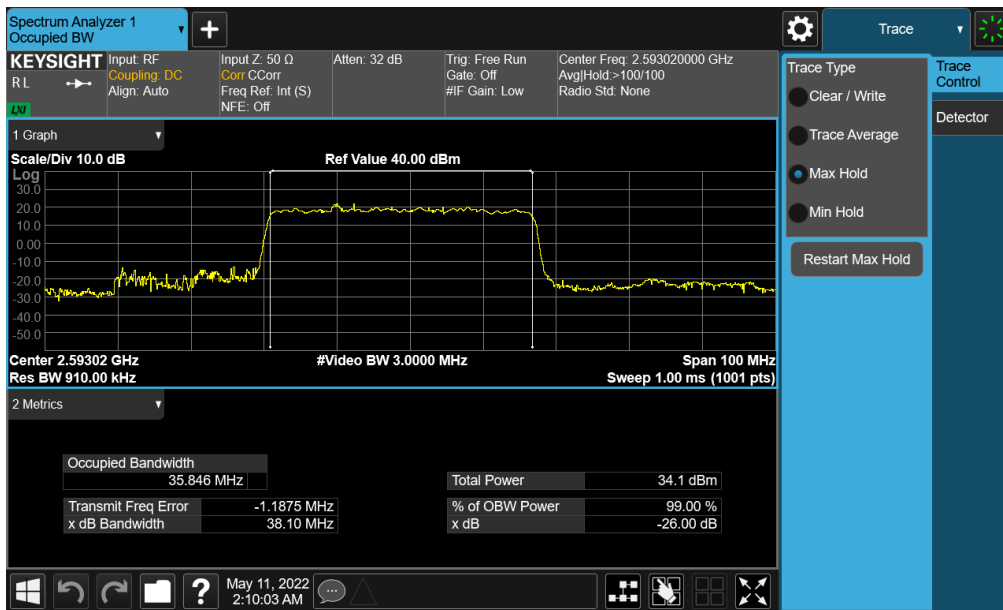
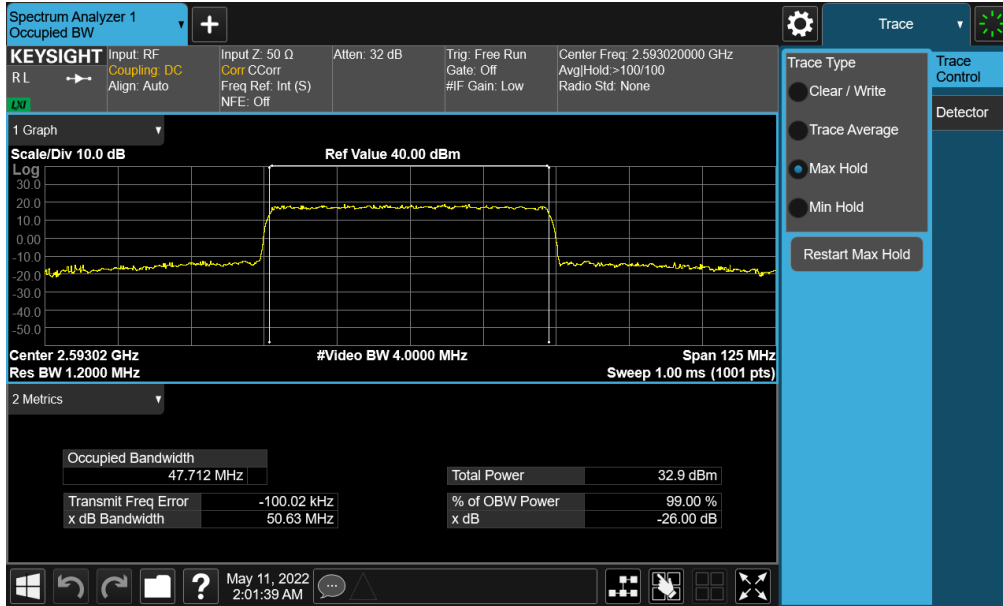


Plot 7-41. Occupied Bandwidth Plot (NR Band n41 - 50MHz  $\pi/2$  BPSK - Full RB - Ant1)

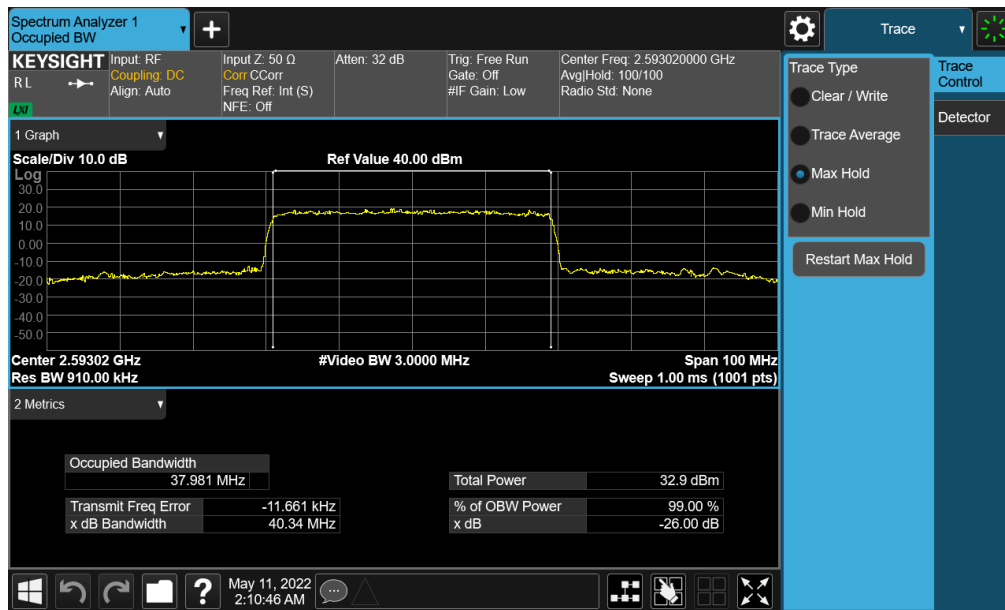
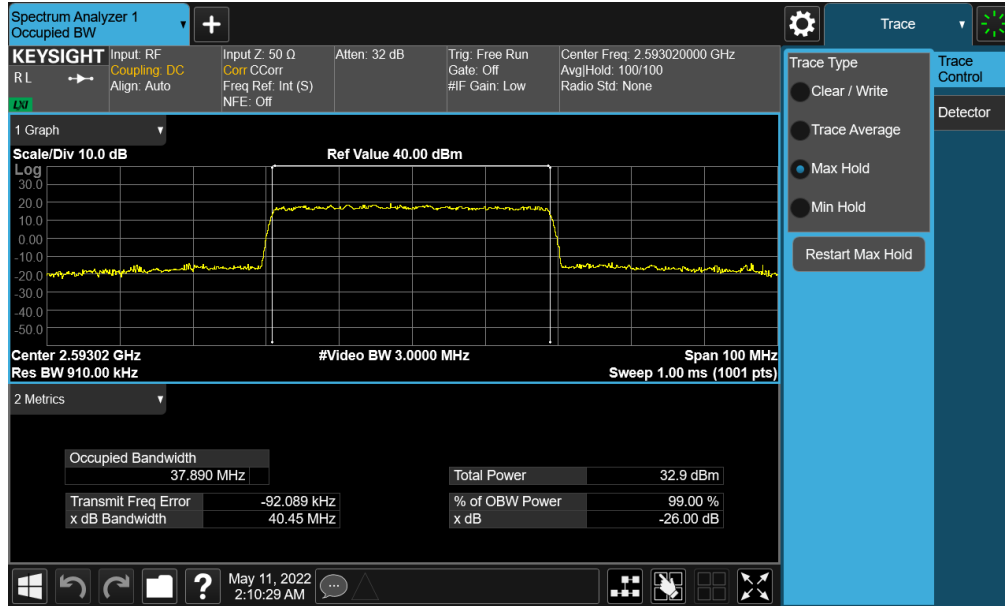


Plot 7-42. Occupied Bandwidth Plot (NR Band n41 - 50MHz QPSK - Full RB - Ant1)

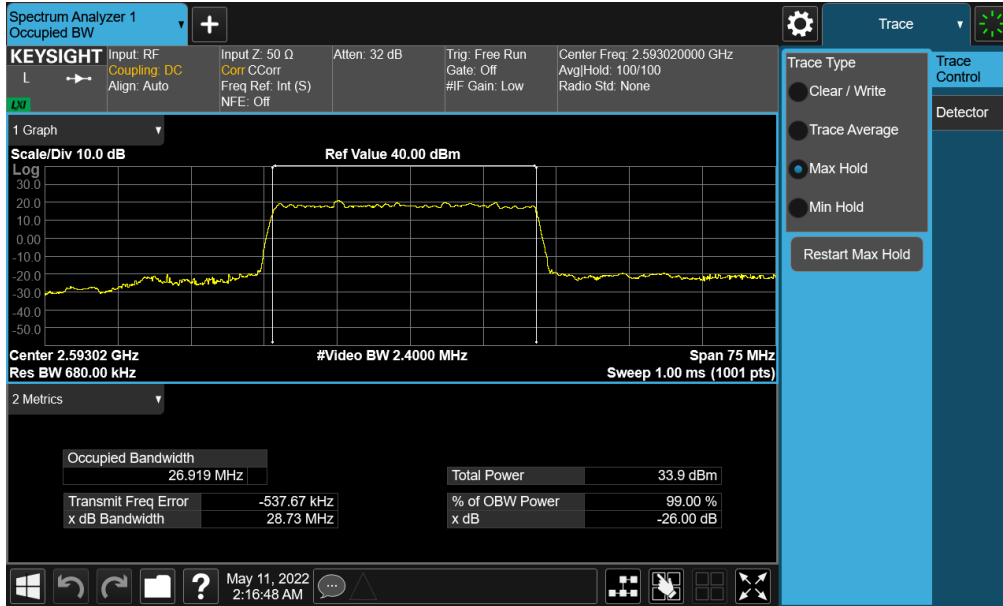
FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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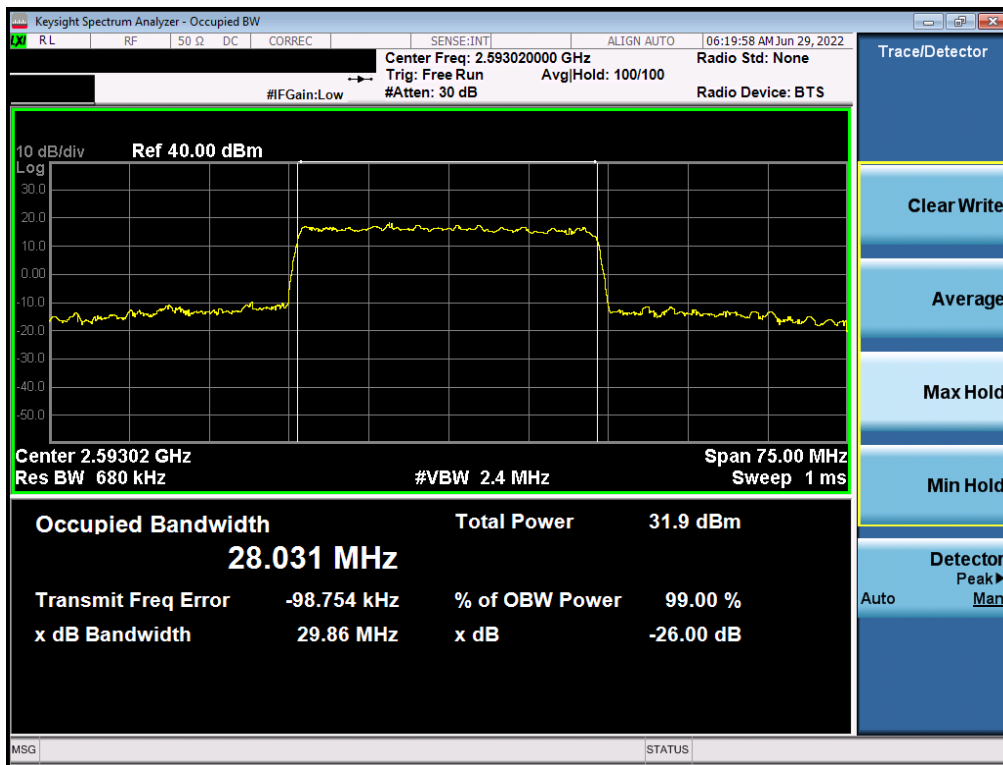
FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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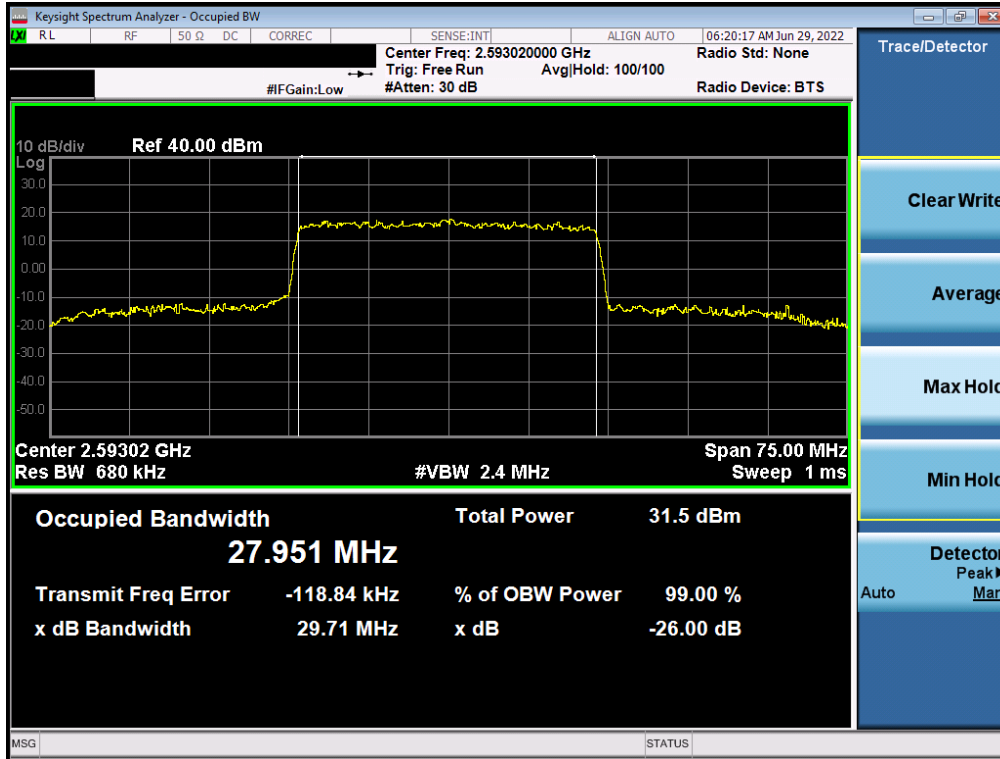


Plot 7-47. Occupied Bandwidth Plot (NR Band n41 - 30MHz  $\pi/2$  BPSK - Full RB - Ant1)

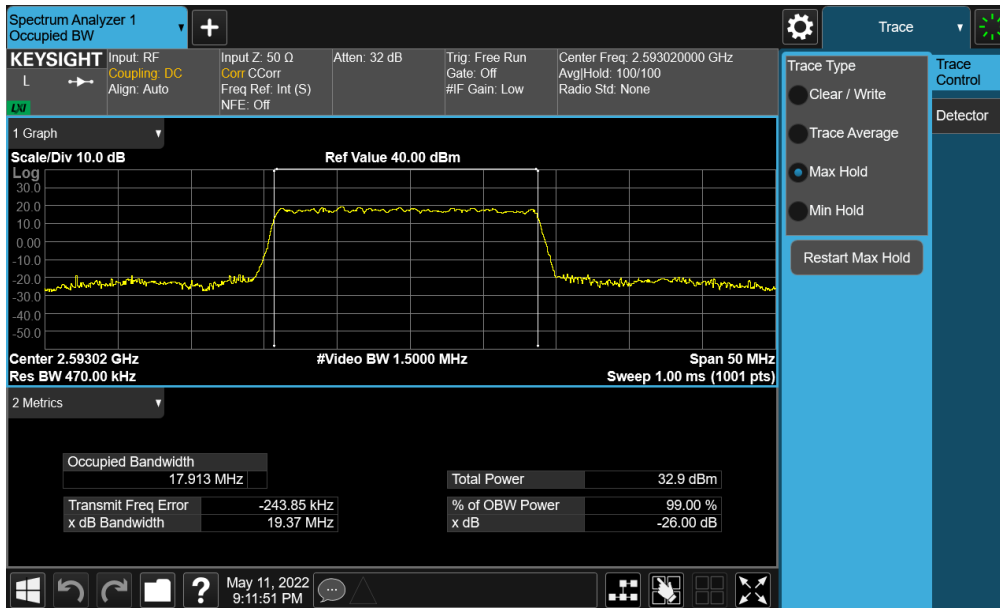


Plot 7-48. Occupied Bandwidth Plot (NR Band n41 - 30MHz QPSK - Full RB - Ant1)

FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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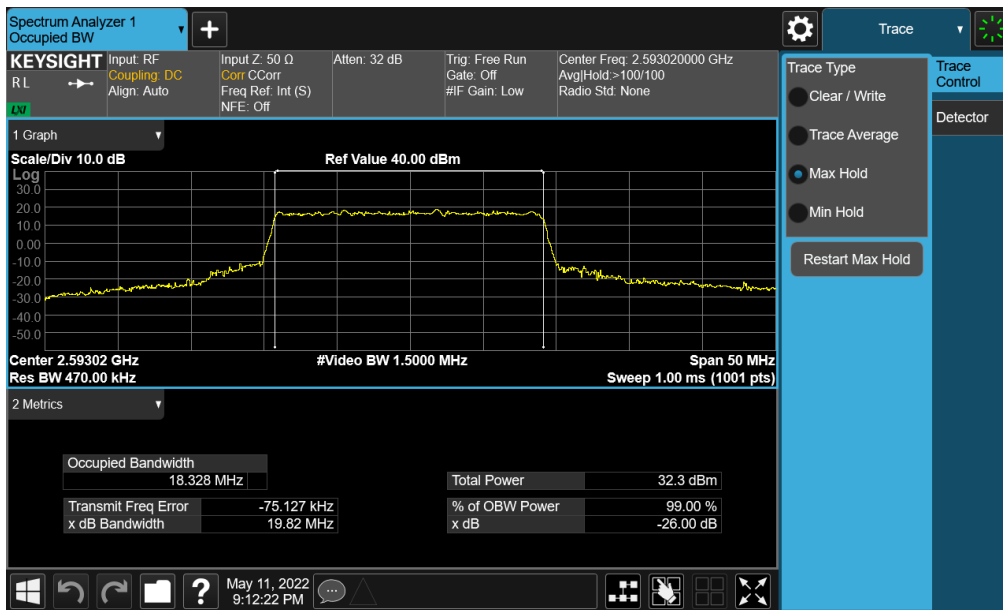
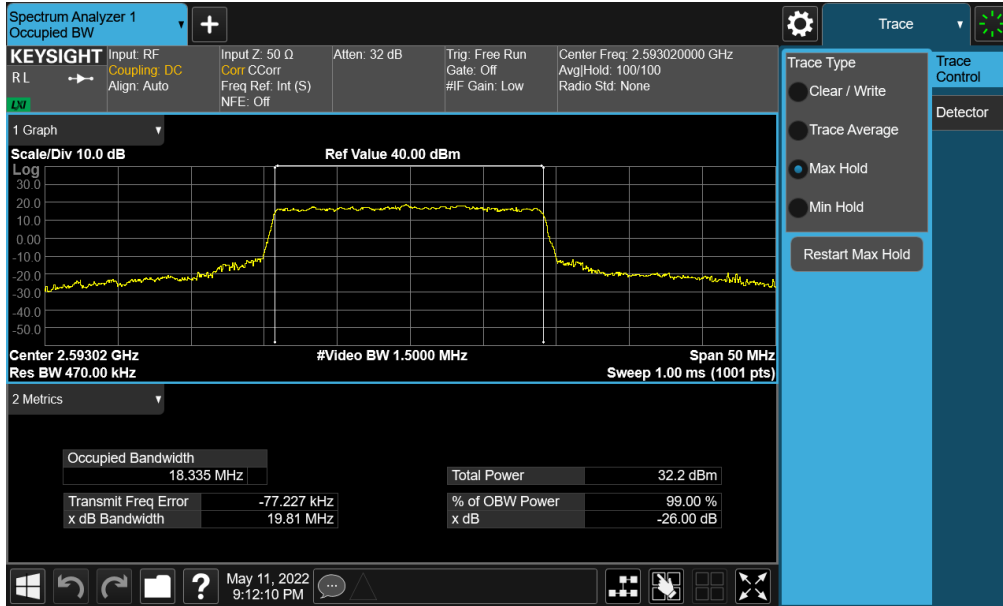


Plot 7-49. Occupied Bandwidth Plot (NR Band n41 - 30MHz 16-QAM - Full RB - Ant1)



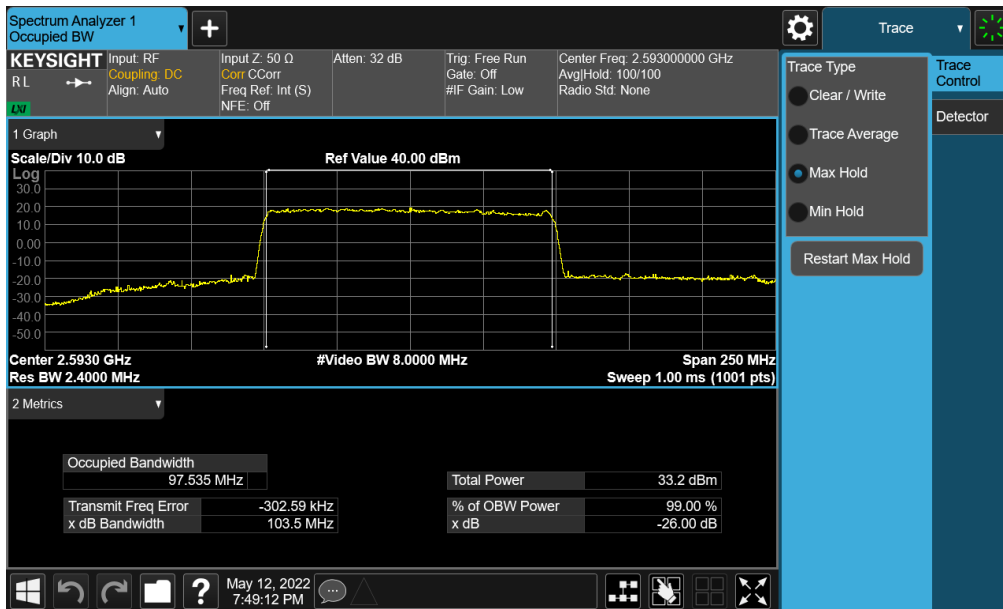
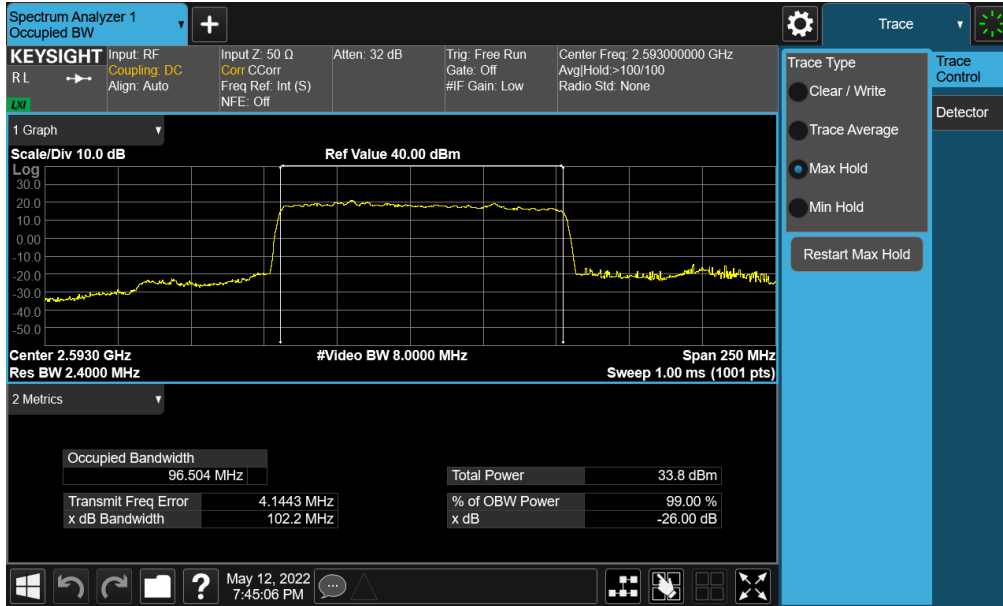
Plot 7-50. Occupied Bandwidth Plot (NR Band n41 - 20MHz  $\pi/2$  BPSK - Full RB - Ant1)

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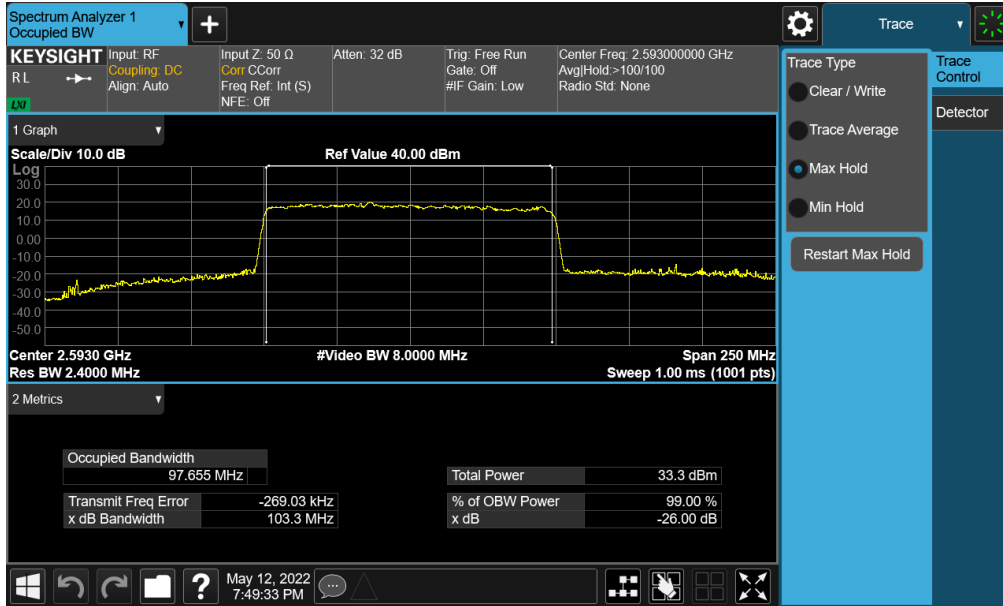


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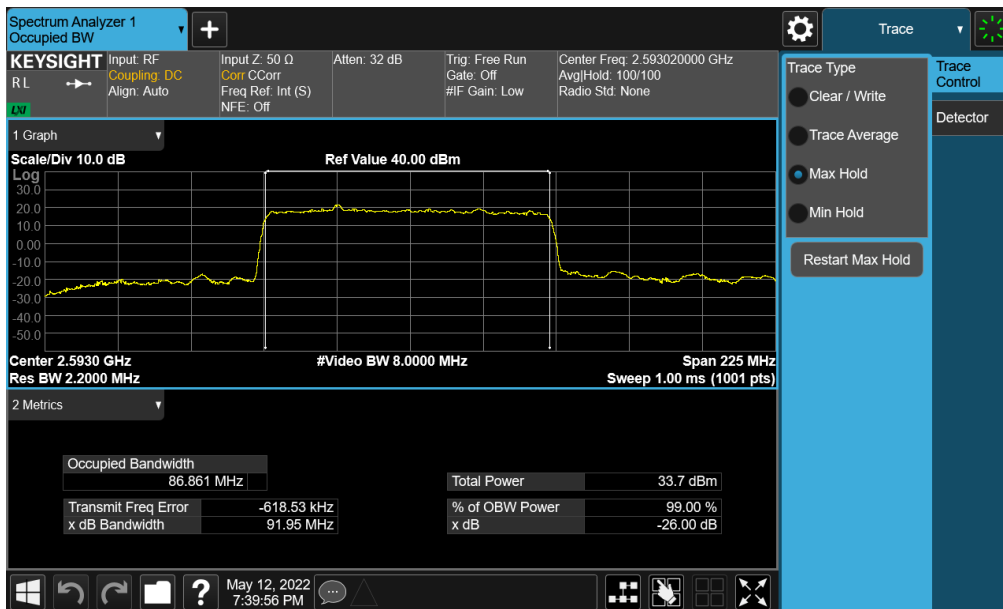
# NR Band n41 – Ant4



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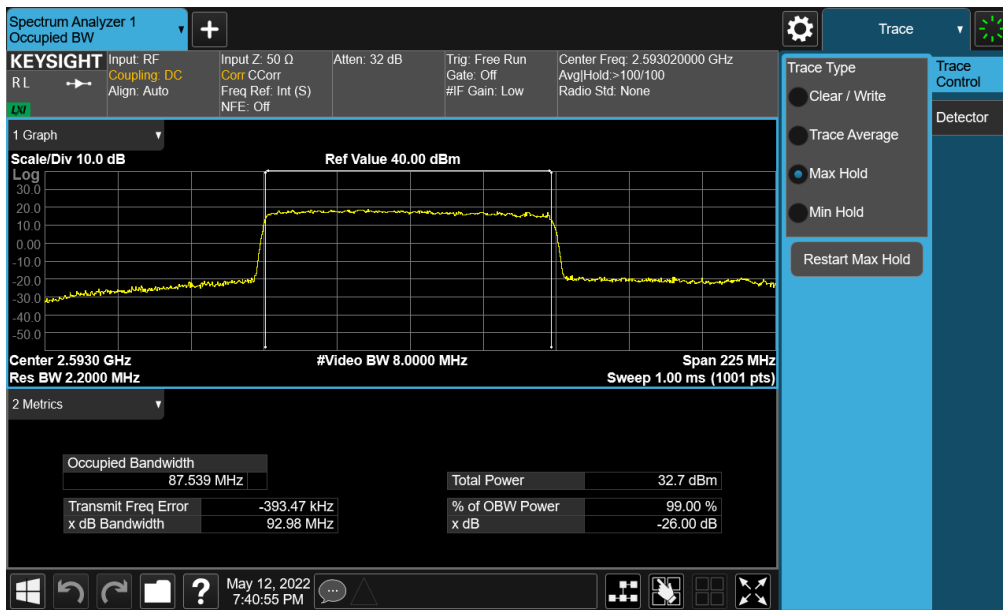
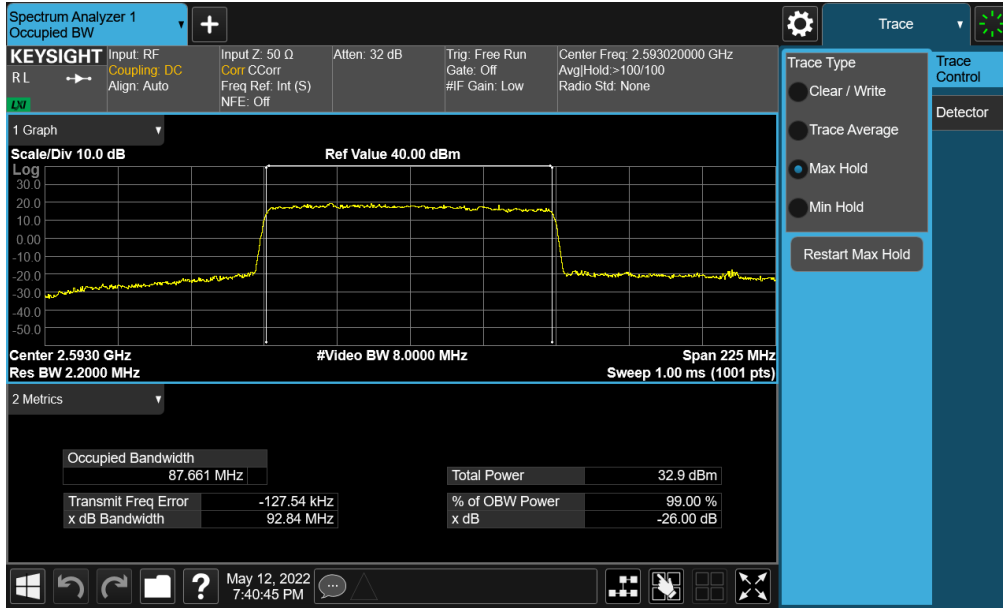
Plot 7-55. Occupied Bandwidth Plot (NR Band n41 - 100MHz 16-QAM - Full RB - Ant4)



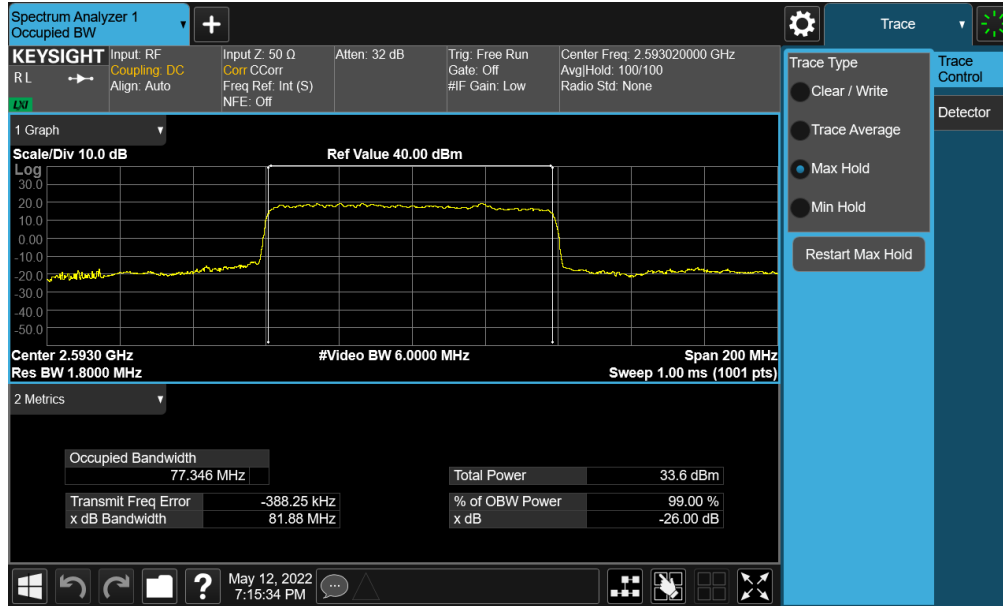
Plot 7-56. Occupied Bandwidth Plot (NR Band n41 - 90MHz  $\pi/2$  BPSK - Full RB - Ant4)

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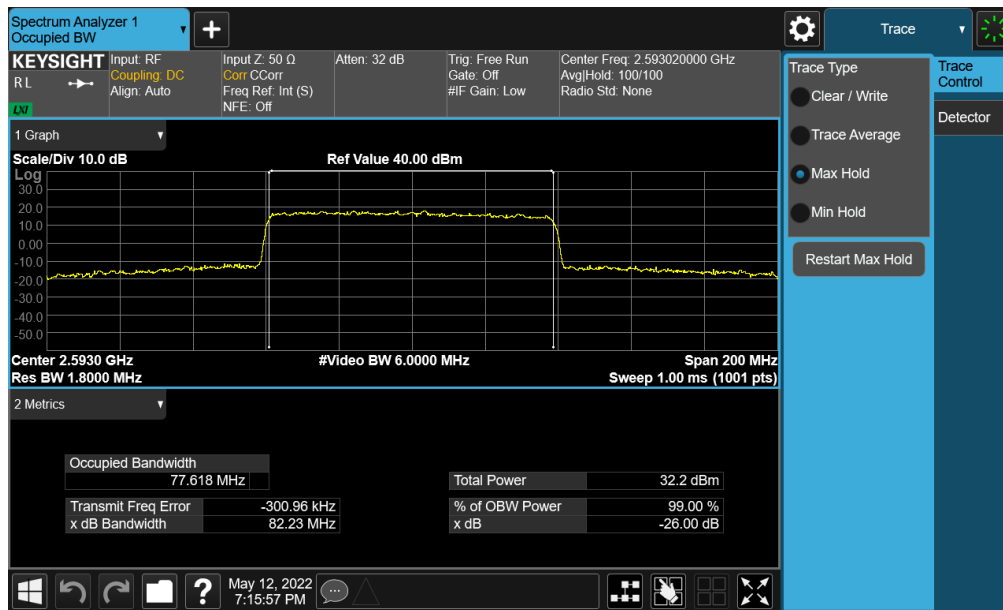




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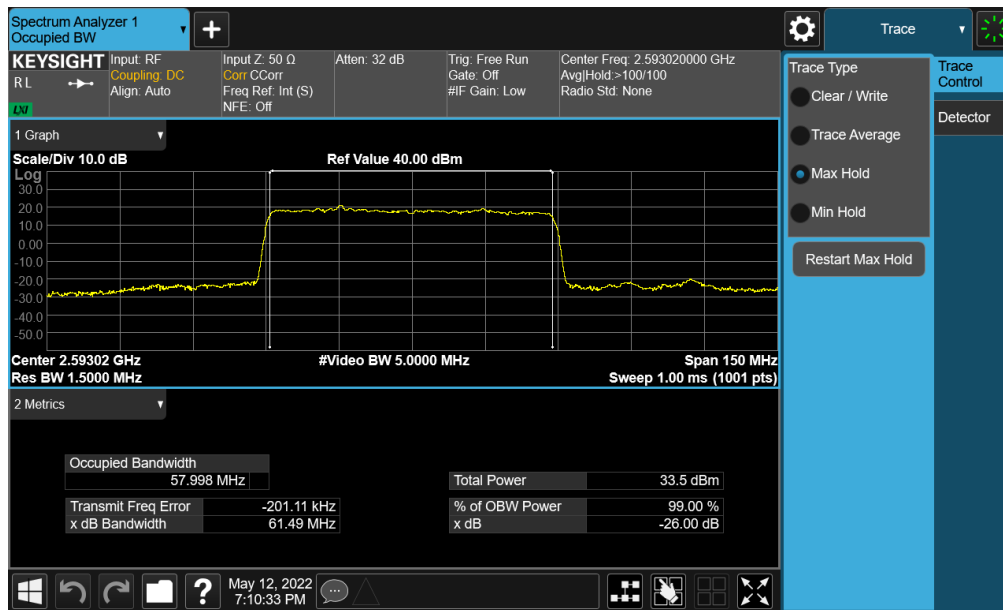
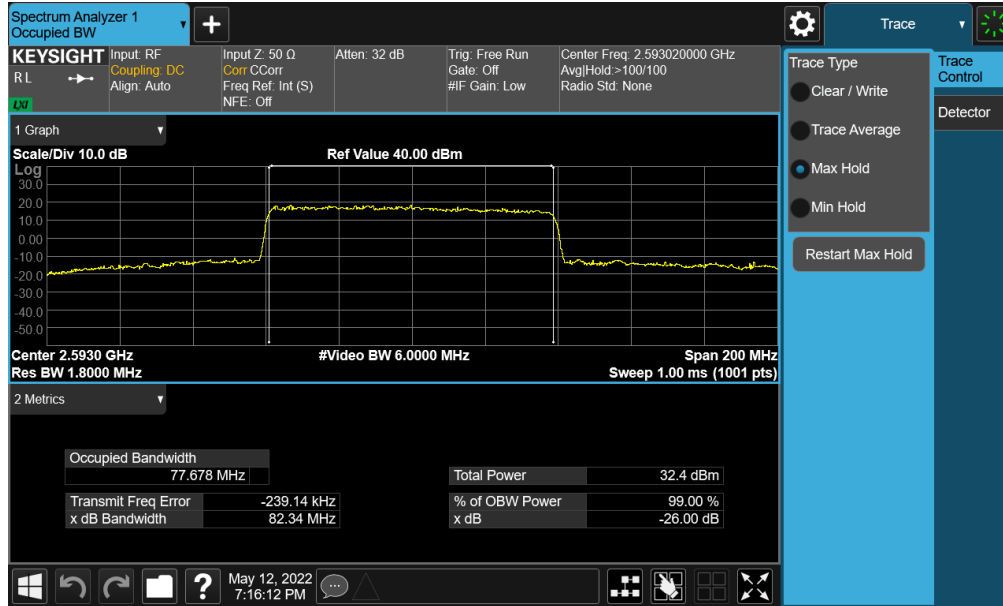


Plot 7-59. Occupied Bandwidth Plot (NR Band n41 - 80MHz  $\pi/2$  BPSK - Full RB - Ant4)

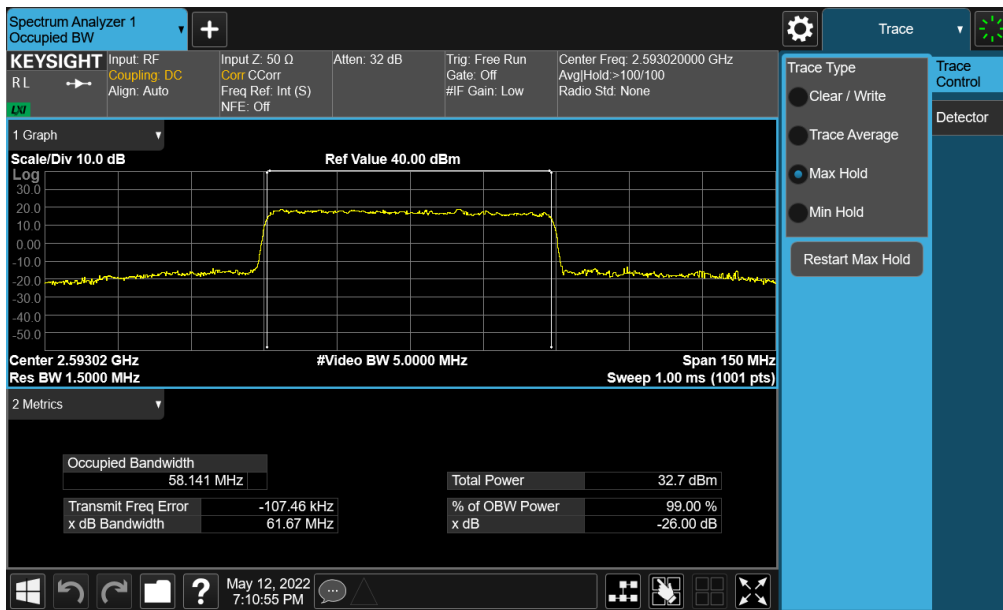
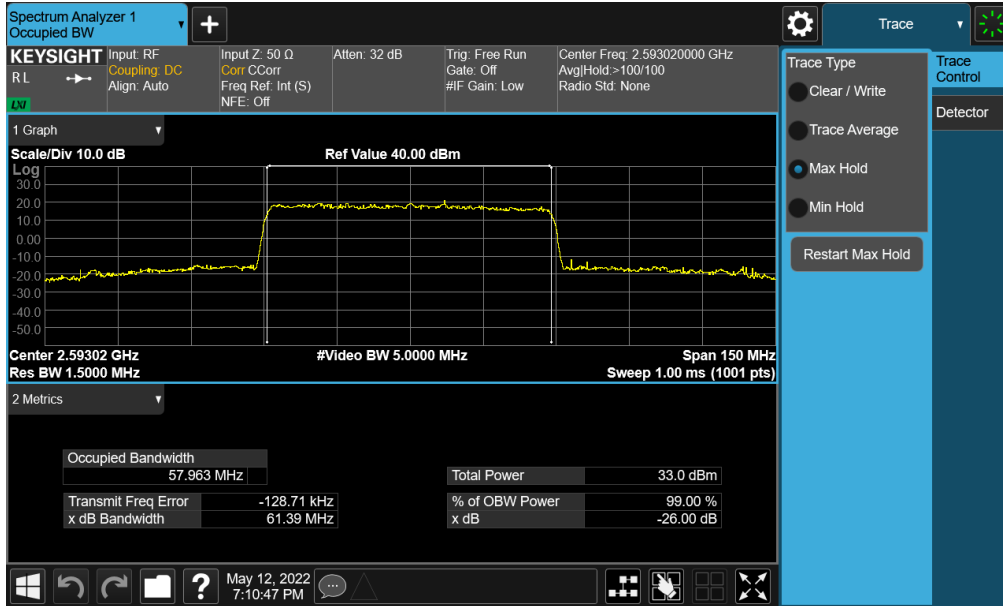


Plot 7-60. Occupied Bandwidth Plot (NR Band n41 - 80MHz QPSK - Full RB - Ant4)

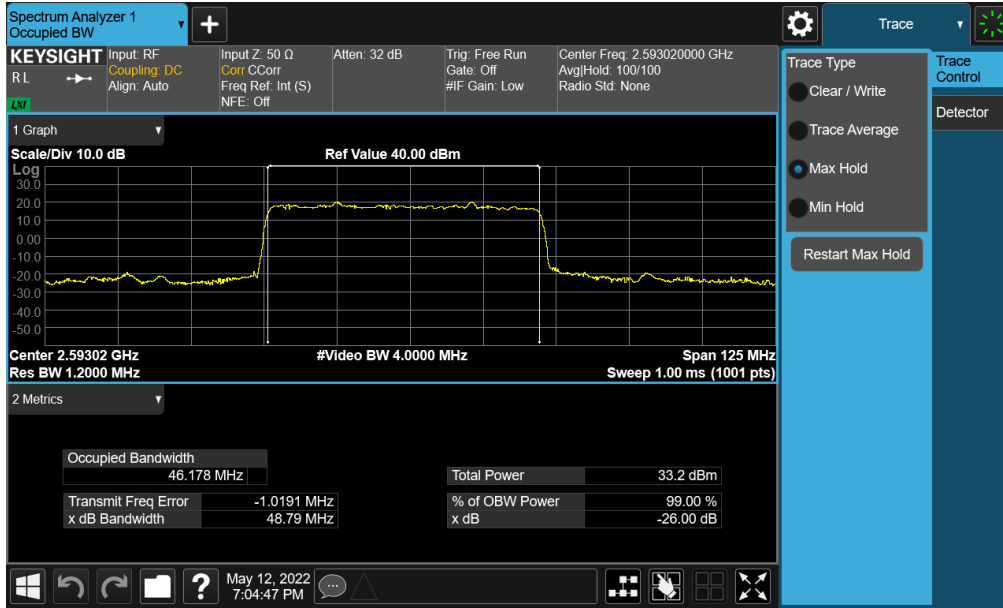
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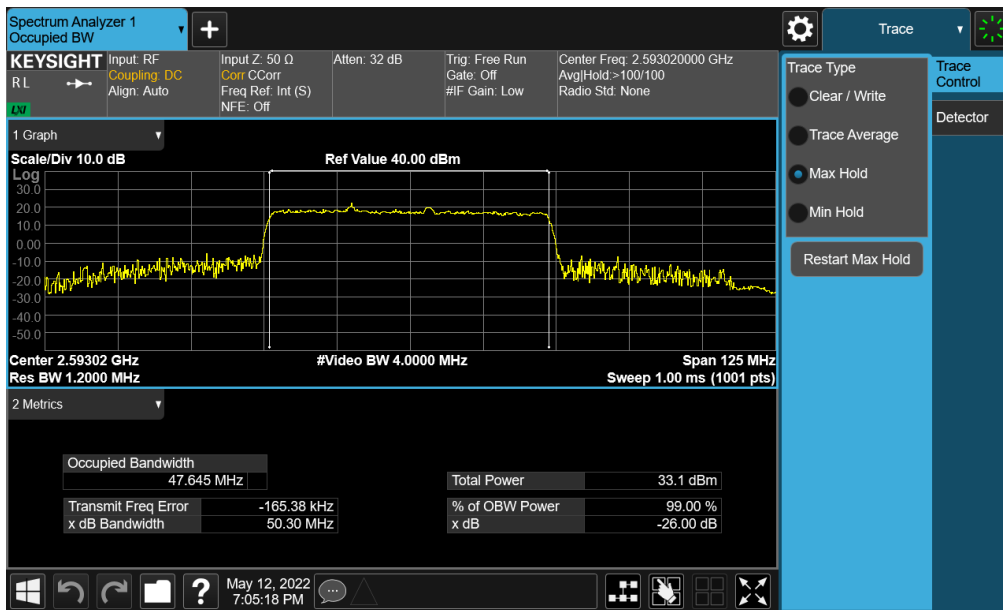
FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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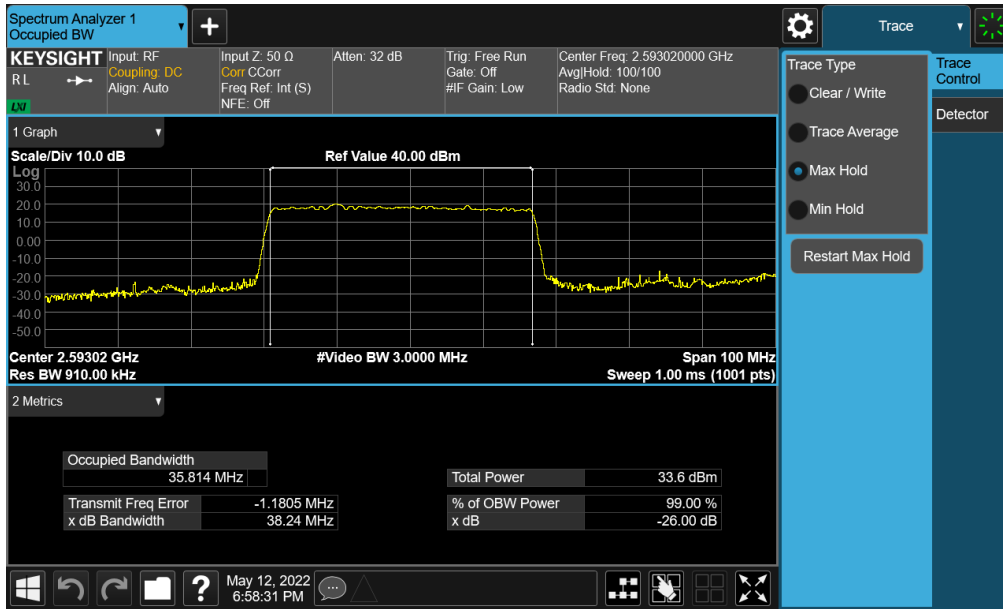
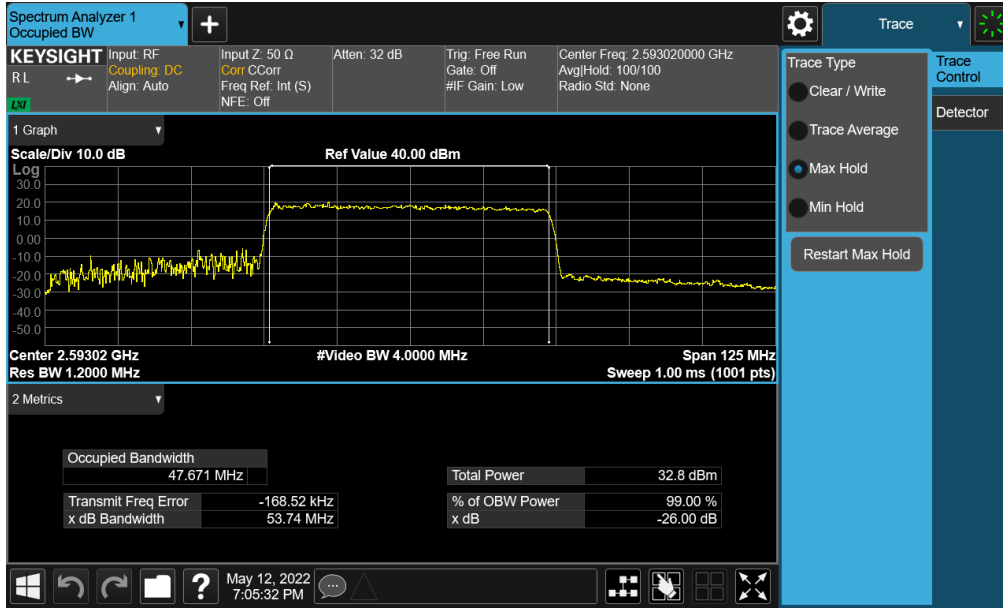


Plot 7-65. Occupied Bandwidth Plot (NR Band n41 - 50MHz  $\pi/2$  BPSK - Full RB - Ant4)

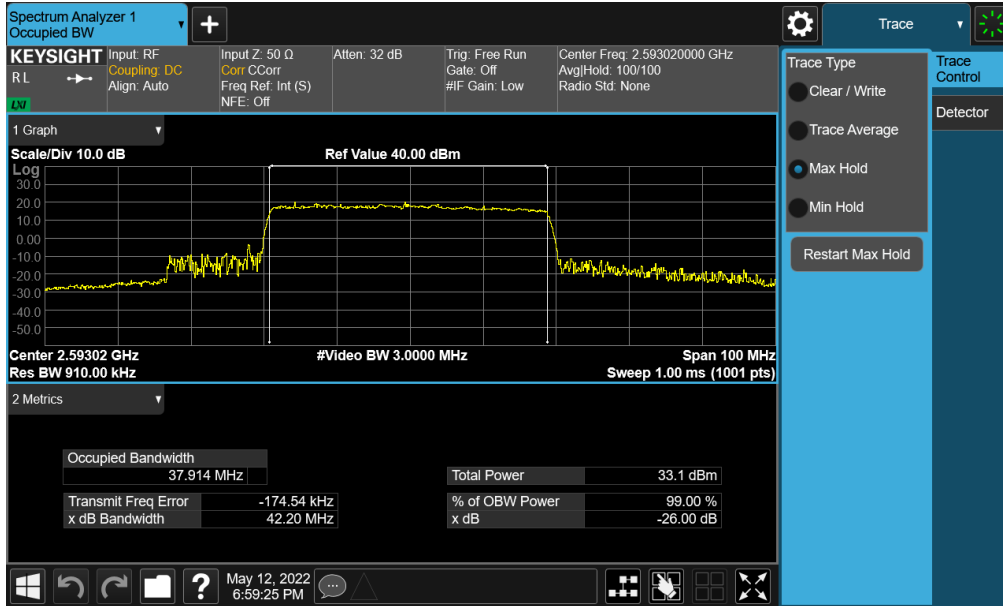


Plot 7-66. Occupied Bandwidth Plot (NR Band n41 - 50MHz QPSK - Full RB - Ant4)

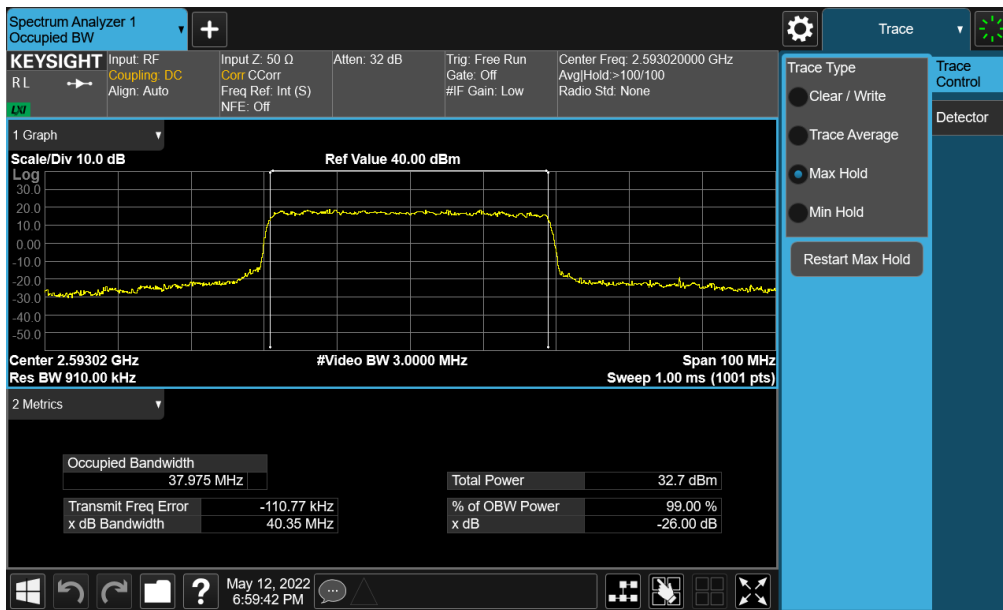
FCC ID: C3K1997	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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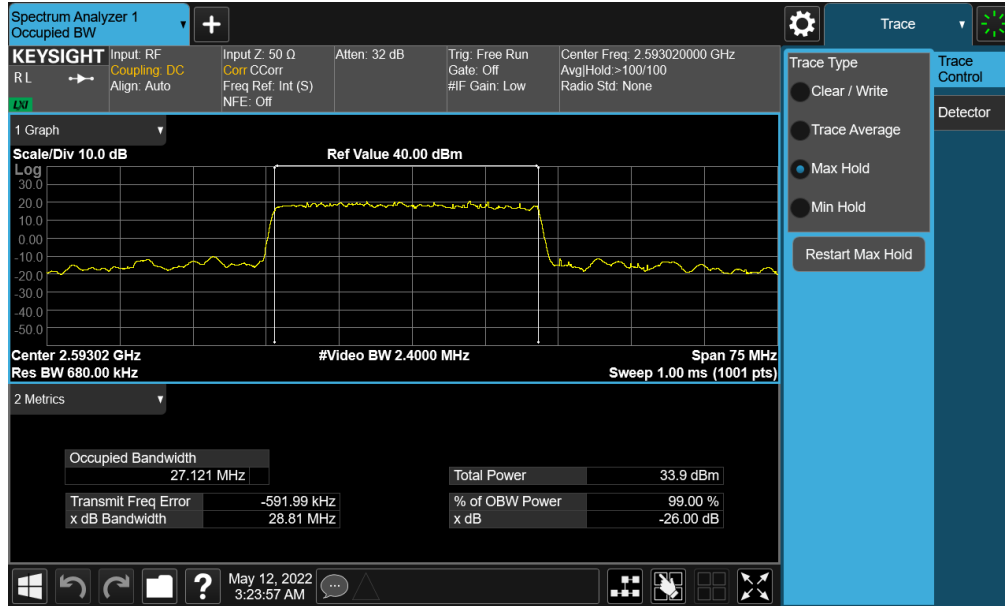


**Plot 7-69. Occupied Bandwidth Plot (NR Band n41 - 40MHz QPSK - Full RB - Ant4)**

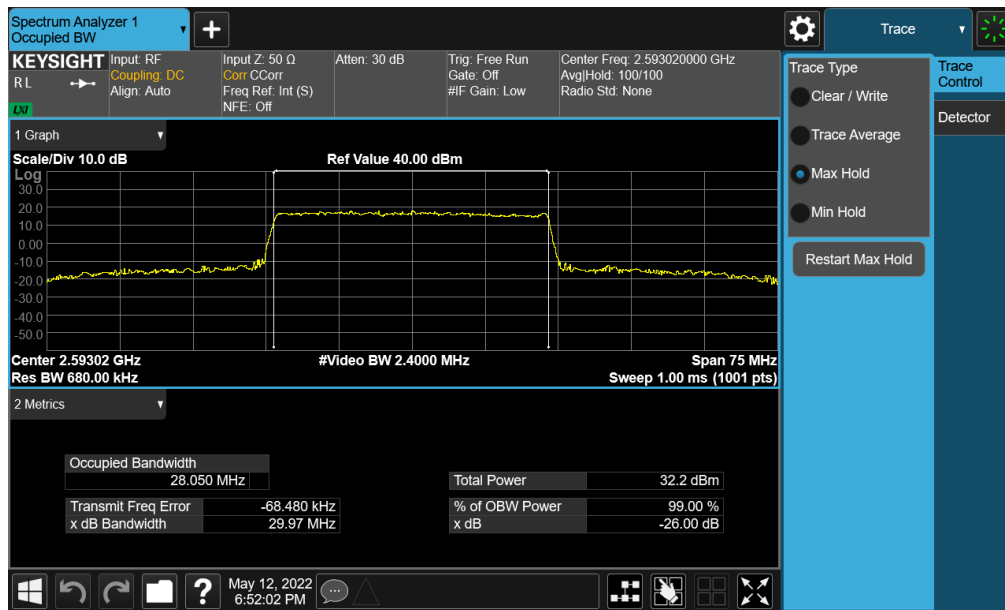


**Plot 7-70. Occupied Bandwidth Plot (NR Band n41 - 40MHz 16-QAM - Full RB - Ant4)**

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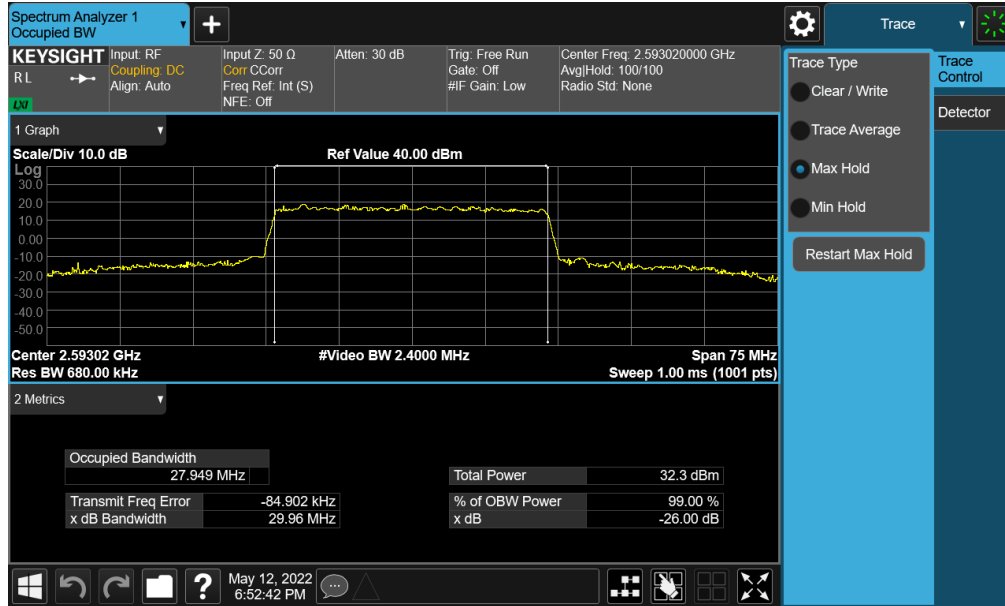
Plot 7-71. Occupied Bandwidth Plot (NR Band n41 - 30MHz  $\pi/2$  BPSK - Full RB - Ant4)



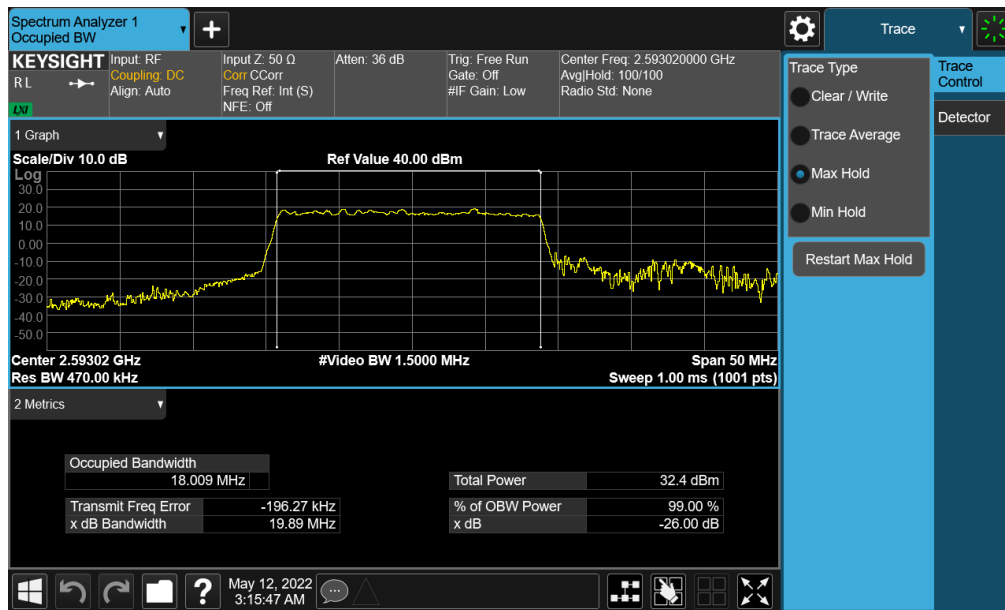
Plot 7-72. Occupied Bandwidth Plot (NR Band n41 - 30MHz QPSK - Full RB - Ant4)

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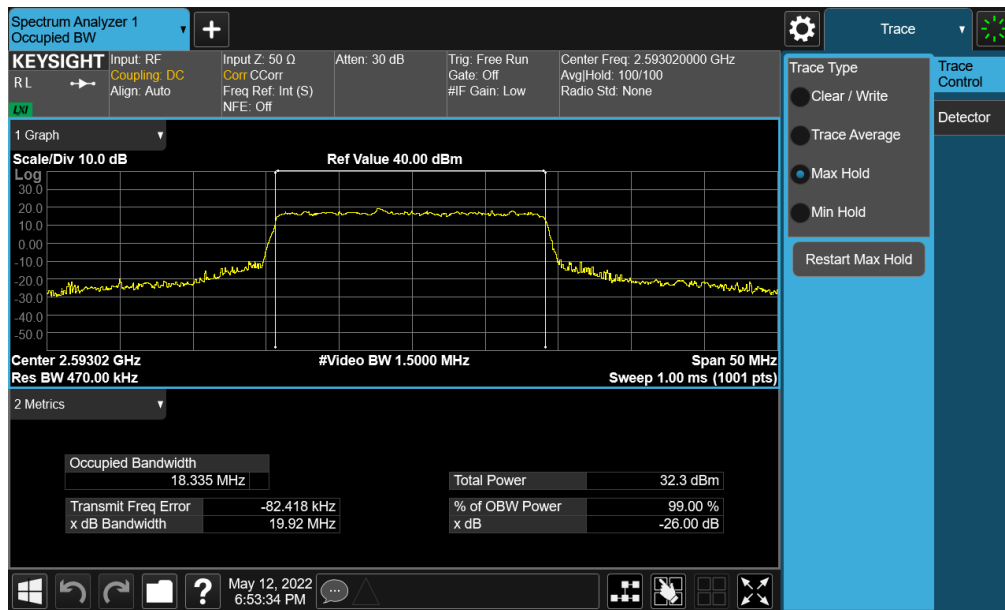


Plot 7-73. Occupied Bandwidth Plot (NR Band n41 - 30MHz 16-QAM - Full RB - Ant4)



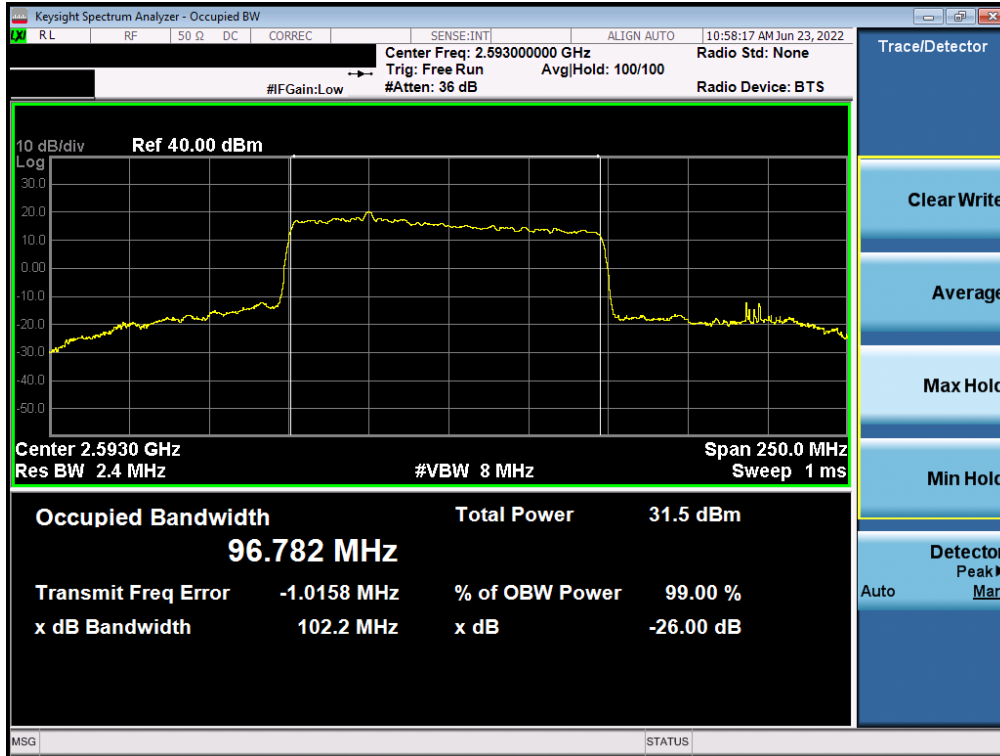
Plot 7-74. Occupied Bandwidth Plot (NR Band n41 - 20MHz  $\pi/2$  BPSK - Full RB - Ant4)

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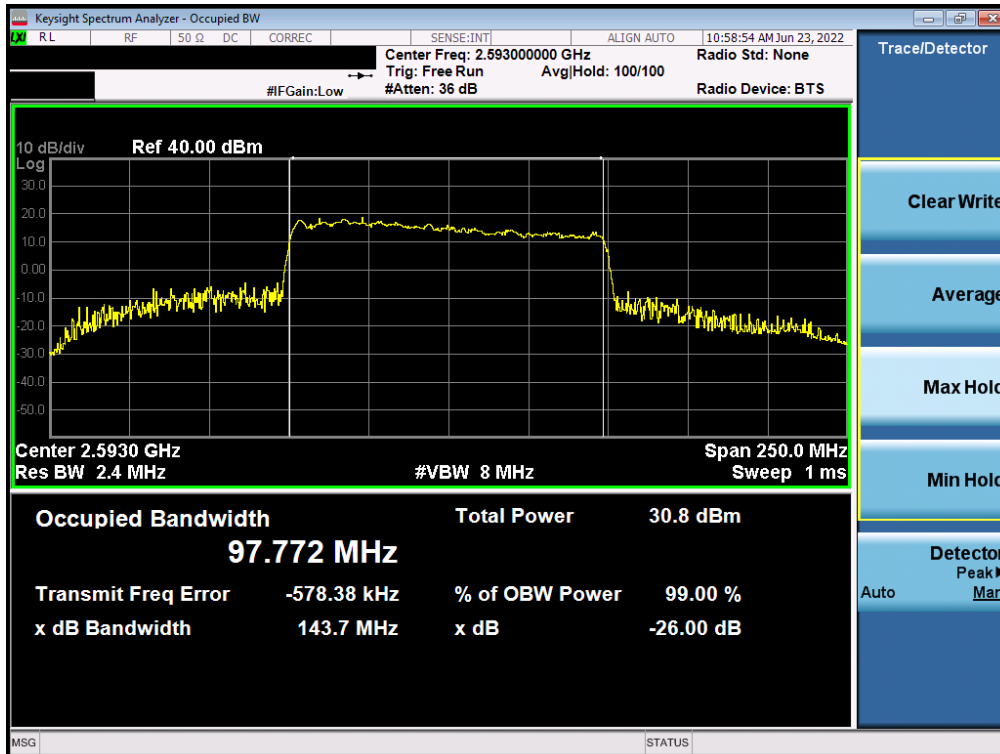


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# NR Band n41 – Ant5

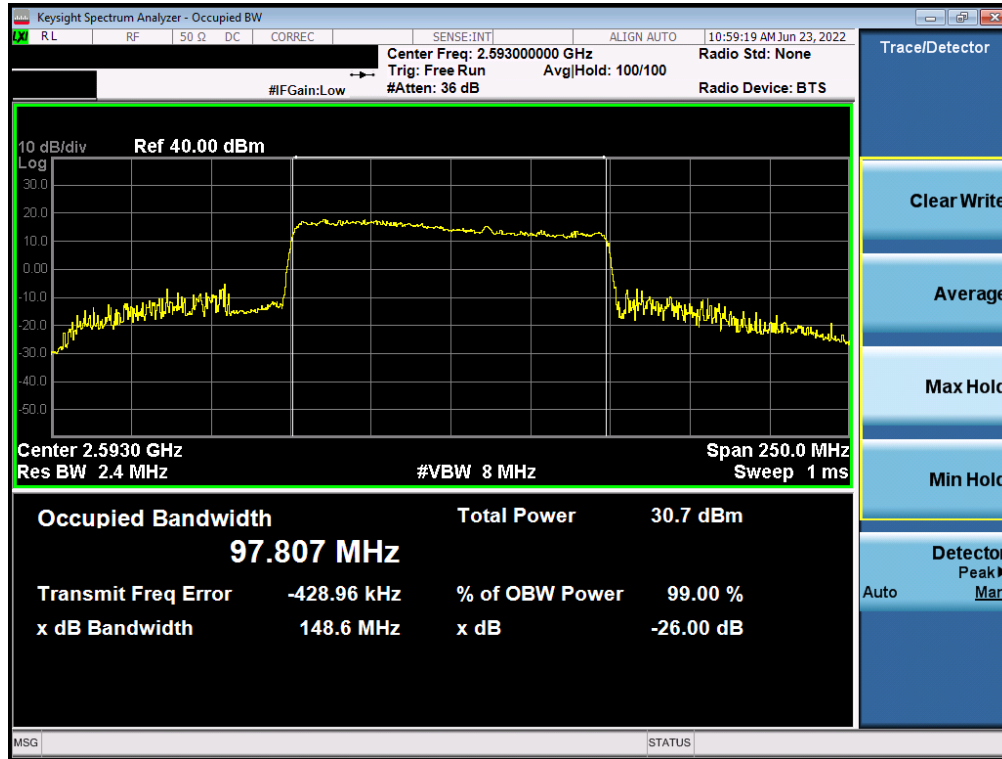


Plot 7-77. Occupied Bandwidth Plot (NR Band n41 - 100MHz  $\pi/2$  BPSK - Full RB – Ant5)



Plot 7-78. Occupied Bandwidth Plot (NR Band n41 - 100MHz QPSK - Full RB – Ant5)

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Plot 7-79. Occupied Bandwidth Plot (NR Band n41 - 100MHz 16-QAM - Full RB – Ant5)

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