PCTEST
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
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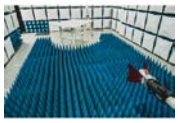

PART 27 MEASUREMENT REPORT

Applicant Name:
Samsung Electronics Co., Ltd.
129, Samsung-ro,
Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
09/15/2020 – 12/10/2020
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2009140143-21-R1.A3L

FCC ID:	**A3LSMG996U**
Applicant Name:	**Samsung Electronics Co., Ltd.**

Application Type:	Certification
Model:	SM-G996U
Additional Model(s):	SM-G996U1
EUT Type:	Portable Handset
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part:	27
Test Procedure(s):	ANSI C63.26-2015, ANSI/TIA-603-E-2016, KDB 971168 D01 v03r01, KDB 648474 D03 v01r04

Note: This revised Test Report (S/N: 1M2009140143-21-R1.A3L) 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.

Randy Ortanez
President

ACCREDITED
CERT #2041.01

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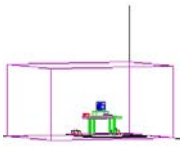
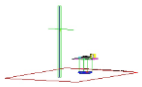


PART 27 MEASUREMENT REPORT



Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 30	10 MHz	QPSK	2310.0	0.192	22.84	8M99G7D
		16QAM	2310.0	0.128	21.08	8M96W7D
		64QAM	2310.0	0.101	20.03	8M97W7D
		256QAM	2310.0	0.058	17.66	8M98W7D
	5 MHz	QPSK	2307.5 - 2312.5	0.194	22.87	4M57G7D
		16QAM	2307.5 - 2312.5	0.127	21.04	4M52W7D
		64QAM	2307.5 - 2312.5	0.107	20.31	4M52W7D
		256QAM	2307.5 - 2312.5	0.060	17.76	4M53W7D
LTE Band 7	20 MHz	QPSK	2510.0 - 2560.0	0.148	21.71	18M0G7D
		16QAM	2510.0 - 2560.0	0.129	21.10	18M0W7D
		64QAM	2510.0 - 2560.0	0.100	19.98	18M0W7D
		256QAM	2510.0 - 2560.0	0.047	16.74	18M0W7D
	15 MHz	QPSK	2507.5 - 2562.5	0.146	21.64	13M5G7D
		16QAM	2507.5 - 2562.5	0.128	21.07	13M5W7D
		64QAM	2507.5 - 2562.5	0.099	19.97	13M5W7D
		256QAM	2507.5 - 2562.5	0.047	16.70	13M5W7D
	10 MHz	QPSK	2505.0 - 2565.0	0.149	21.74	9M01G7D
		16QAM	2505.0 - 2565.0	0.133	21.22	9M01W7D
		64QAM	2505.0 - 2565.0	0.100	20.00	9M01W7D
		256QAM	2505.0 - 2565.0	0.048	16.78	9M01W7D
	5 MHz	QPSK	2502.5 - 2567.5	0.150	21.77	4M54G7D
		16QAM	2502.5 - 2567.5	0.130	21.13	4M52W7D
		64QAM	2502.5 - 2567.5	0.101	20.04	4M53W7D
		256QAM	2502.5 - 2567.5	0.048	16.84	4M53W7D
LTE Band 41(PC2)	20 MHz	QPSK	2506.0 - 2680.0	0.320	25.05	18M0G7D
		16QAM	2506.0 - 2680.0	0.208	23.18	17M9W7D
		64QAM	2506.0 - 2680.0	0.187	22.71	17M9W7D
		256QAM	2506.0 - 2680.0	0.092	19.64	17M9W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.300	24.77	13M5G7D
		16QAM	2503.5 - 2682.5	0.214	23.30	13M5W7D
		64QAM	2503.5 - 2682.5	0.178	22.51	13M5W7D
		256QAM	2503.5 - 2682.5	0.091	19.60	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.303	24.81	9M04G7D
		16QAM	2501.0 - 2685.0	0.206	23.14	9M03W7D
		64QAM	2501.0 - 2685.0	0.192	22.84	9M00W7D
		256QAM	2501.0 - 2685.0	0.092	19.66	8M98W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.295	24.70	4M54G7D
		16QAM	2498.5 - 2687.5	0.192	22.84	4M53W7D
		64QAM	2498.5 - 2687.5	0.188	22.74	4M53W7D
		256QAM	2498.5 - 2687.5	0.094	19.75	4M53W7D
LTE Band 41(PC3)/38	20 MHz	QPSK	2506.0 - 2680.0	0.196	22.91	18M0G7D
		16QAM	2506.0 - 2680.0	0.127	21.04	18M0W7D
		64QAM	2506.0 - 2680.0	0.114	20.57	17M9W7D
		256QAM	2506.0 - 2680.0	0.056	17.50	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.183	22.63	13M6G7D
		16QAM	2503.5 - 2682.5	0.131	21.16	13M5W7D
		64QAM	2503.5 - 2682.5	0.109	20.37	13M5W7D
		256QAM	2503.5 - 2682.5	0.056	17.46	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.185	22.67	9M02G7D
		16QAM	2501.0 - 2685.0	0.126	21.00	9M00W7D
		64QAM	2501.0 - 2685.0	0.118	20.70	9M00W7D
		256QAM	2501.0 - 2685.0	0.057	17.52	8M99W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.180	22.56	4M51G7D
		16QAM	2498.5 - 2687.5	0.118	20.70	4M50W7D
		64QAM	2498.5 - 2687.5	0.115	20.60	4M52W7D
		256QAM	2498.5 - 2687.5	0.058	17.61	4M50W7D

Overview Table (>1GHz Bands)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n30	10 MHz	π/2 BPSK	2310.0	0.190	22.79	8M98G7D
		QPSK	2310.0	0.177	22.47	8M99G7D
		16QAM	2310.0	0.123	20.90	8M99W7D
		64QAM	2310.0	0.093	19.70	8M96W7D
		256QAM	2310.0	0.091	19.57	8M95W7D
	5 MHz	π/2 BPSK	2307.5 - 2312.5	0.202	23.05	4M49G7D
		QPSK	2307.5 - 2312.5	0.178	22.50	4M51G7D
		16QAM	2307.5 - 2312.5	0.122	20.86	4M50W7D
		64QAM	2307.5 - 2312.5	0.100	19.98	4M52W7D
		256QAM	2307.5 - 2312.5	0.093	19.67	4M48W7D
NR Band n41 (ANTB / ANTI)	100 MHz	π/2 BPSK	2546.01 - 2640.00	0.211	23.25	97M0G7D
		QPSK	2546.01 - 2640.00	0.205	23.12	97M7G7D
		16QAM	2546.01 - 2640.00	0.160	22.03	97M7W7D
		64QAM	2546.01 - 2640.00	0.111	20.47	98M0W7D
		256QAM	2546.01 - 2640.00	0.068	18.32	97M7W7D
	90 MHz	π/2 BPSK	2541.00 - 2644.98	0.224	23.51	87M0G7D
		QPSK	2541.00 - 2644.98	0.210	23.23	88M1G7D
		16QAM	2541.00 - 2644.98	0.146	21.65	87M7W7D
		64QAM	2541.00 - 2644.98	0.111	20.45	87M8W7D
		256QAM	2541.00 - 2644.98	0.068	18.35	88M0W7D
	80 MHz	π/2 BPSK	2536.02 - 2649.99	0.220	23.42	77M5G7D
		QPSK	2536.02 - 2649.99	0.207	23.15	77M6G7D
		16QAM	2536.02 - 2649.99	0.171	22.33	77M7W7D
		64QAM	2536.02 - 2649.99	0.111	20.44	77M8W7D
		256QAM	2536.02 - 2649.99	0.070	18.48	77M7W7D
	60 MHz	π/2 BPSK	2526.00 - 2659.98	0.215	23.32	58M3G7D
		QPSK	2526.00 - 2659.98	0.211	23.24	58M3G7D
		16QAM	2526.00 - 2659.98	0.161	22.06	58M2W7D
		64QAM	2526.00 - 2659.98	0.107	20.29	58M1W7D
		256QAM	2526.00 - 2659.98	0.072	18.60	58M0W7D
	50 MHz	π/2 BPSK	2521.02 - 2664.99	0.220	23.42	46M9G7D
		QPSK	2521.02 - 2664.99	0.216	23.35	47M7G7D
		16QAM	2521.02 - 2664.99	0.168	22.26	47M7W7D
		64QAM	2521.02 - 2664.99	0.110	20.43	47M6W7D
		256QAM	2521.02 - 2664.99	0.070	18.43	47M6W7D
	40 MHz	π/2 BPSK	2516.01 - 2670.00	0.233	23.68	37M1G7D
		QPSK	2516.01 - 2670.00	0.219	23.40	38M0G7D
		16QAM	2516.01 - 2670.00	0.181	22.57	38M0W7D
		64QAM	2516.01 - 2670.00	0.115	20.59	38M0W7D
		256QAM	2516.01 - 2670.00	0.074	18.67	37M9W7D
	30 MHz	π/2 BPSK	2511.00 - 2674.98	0.242	23.83	27M0G7D
		QPSK	2511.00 - 2674.98	0.234	23.70	27M9G7D
		16QAM	2511.00 - 2674.98	0.190	22.78	28M0W7D
		64QAM	2511.00 - 2674.98	0.125	20.97	28M0W7D
		256QAM	2511.00 - 2674.98	0.079	18.98	28M0W7D
	20 MHz	π/2 BPSK	2506.02 - 2679.99	0.219	23.41	18M3G7D
		QPSK	2506.02 - 2679.99	0.212	23.26	18M3G7D
		16QAM	2506.02 - 2679.99	0.168	22.25	18M3W7D
		64QAM	2506.02 - 2679.99	0.106	20.24	18M3W7D
		256QAM	2506.02 - 2679.99	0.073	18.61	18M3W7D

Overview Table (>1GHz Bands)

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n77	100 MHz	π/2 BPSK	3750.00 - 3930.00	0.111	20.45	97M1G7D
		QPSK	3750.00 - 3930.00	0.110	20.43	97M9G7D
		16QAM	3750.00 - 3930.00	0.086	19.34	97M6W7D
		64QAM	3750.00 - 3930.00	0.059	17.67	98M3W7D
		256QAM	3750.00 - 3930.00	0.040	15.97	97M9W7D
	90 MHz	π/2 BPSK	3745.02 - 3934.98	0.111	20.47	86M8G7D
		QPSK	3745.02 - 3934.98	0.112	20.49	87M7G7D
		16QAM	3745.02 - 3934.98	0.092	19.62	87M4W7D
		64QAM	3745.02 - 3934.98	0.059	17.71	87M5W7D
		256QAM	3745.02 - 3934.98	0.043	16.31	87M5W7D
	80 MHz	π/2 BPSK	3740.01 - 3939.99	0.115	20.60	77M1G7D
		QPSK	3740.01 - 3939.99	0.115	20.61	77M5G7D
		16QAM	3740.01 - 3939.99	0.093	19.67	77M8W7D
		64QAM	3740.01 - 3939.99	0.064	18.03	77M6W7D
		256QAM	3740.01 - 3939.99	0.044	16.41	77M6W7D
	70 MHz	π/2 BPSK	3735.00 - 3945.00	0.096	19.84	67M6G7D
		QPSK	3735.00 - 3945.00	0.075	18.77	67M5G7D
		16QAM	3735.00 - 3945.00	0.070	18.42	67M5W7D
		64QAM	3735.00 - 3945.00	0.036	15.60	67M5W7D
		256QAM	3735.00 - 3945.00	0.021	13.27	67M3W7D
	60 MHz	π/2 BPSK	3730.02 - 3949.98	0.113	20.51	58M2G7D
		QPSK	3730.02 - 3949.98	0.115	20.61	57M9G7D
		16QAM	3730.02 - 3949.98	0.090	19.56	57M9W7D
		64QAM	3730.02 - 3949.98	0.059	17.69	58M2W7D
		256QAM	3730.02 - 3949.98	0.043	16.38	58M0W7D
	50 MHz	π/2 BPSK	3725.01 - 3954.99	0.115	20.59	45M9G7D
		QPSK	3725.01 - 3954.99	0.116	20.63	47M9G7D
		16QAM	3725.01 - 3954.99	0.092	19.64	47M6W7D
		64QAM	3725.01 - 3954.99	0.065	18.15	47M8W7D
		256QAM	3725.01 - 3954.99	0.044	16.41	47M8W7D
	40 MHz	π/2 BPSK	3720.00 - 3960.00	0.115	20.59	35M5G7D
		QPSK	3720.00 - 3960.00	0.116	20.65	38M0G7D
		16QAM	3720.00 - 3960.00	0.096	19.81	37M9W7D
		64QAM	3720.00 - 3960.00	0.061	17.84	38M1W7D
		256QAM	3720.00 - 3960.00	0.046	16.64	37M9W7D
	30 MHz	π/2 BPSK	3715.02 - 3964.98	0.113	20.51	26M8G7D
		QPSK	3715.02 - 3964.98	0.113	20.53	27M9G7D
		16QAM	3715.02 - 3964.98	0.096	19.83	27M7W7D
		64QAM	3715.02 - 3964.98	0.065	18.11	27M9W7D
		256QAM	3715.02 - 3964.98	0.046	16.58	28M0W7D
	20 MHz	π/2 BPSK	3710.01 - 3969.99	0.113	20.54	17M8G7D
		QPSK	3710.01 - 3969.99	0.108	20.32	18M3G7D
		16QAM	3710.01 - 3969.99	0.095	19.78	18M1W7D
		64QAM	3710.01 - 3969.99	0.055	17.38	18M3W7D
		256QAM	3710.01 - 3969.99	0.040	16.01	18M4W7D

Overview Table (>1GHz Bands)

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 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility 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 PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST 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.

- PCTEST 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).

- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMG996U**. 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.: 0551M, 0564M, 0501M

2.2 Device Capabilities

This device contains the following capabilities:

800/850/1900 CDMA/EVDO Rev. 0/A (BC0, BC1, BC10), 850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, 5G NR (FR1/FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII, Bluetooth (1x, EDR, LE), NFC, UWB, Wireless Power Transfer

2.3 Test Configuration

The EUT was tested per the guidance of ANSI/TIA-603-E-2016 and KDB 971168 D01 v03r01. 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: EP-N5100 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 EMI Suppression Device(s)/Modifications

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

3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-E-2016) and "Measurement Guidance for Certification of Licensed Digital Transmitters" (KDB 971168 D01 v03r01) 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/TIA-603-E-2016. 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 $P_{g\ [dBm]}$ – cable loss $_{[dB]}$.

For radiated spurious emissions measurements and calculations, conversion method is used per the formulas in KDB 971168 Section 5.8.4. 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

$$EIRP_{[dBm]} = E_{[dB\mu V/m]} + 20\log D - 104.8;$$ where D 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 474788 D01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI/TIA-603-E-2016.

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 (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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
-	LTx2	Licensed Transmitter Cable Set	4/9/2020	Annual	4/9/2021	LTx2
-	LTx4	Licensed Transmitter Cable Set	7/9/2020	Annual	7/9/2021	LTx4
Agilent	N9020A	MXA Signal Analyzer	8/4/2020	Annual	8/4/2021	US46470561
Keysight Technologies	N9038A	MXE EMI Receiver	8/11/2020	Annual	8/11/2021	MY51210133
Keysight Technologies	N9030B	PXA Signal Analyzer	9/17/2020	Annual	9/17/2021	MY57141001
Agilent	N9030A	PXA Signal Analyzer (44GHz)	7/17/2020	Annual	7/17/2021	MY52350166
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201381794
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	10/10/2019	Biennial	10/10/2021	121034
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/12/2020	Biennial	3/12/2022	128337
Mini Circuits	TVA-11-422	RF Power Amp	N/A			QA1317001
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			102060
Rohde & Schwarz	TS-PR26	18-26.5 GHz Pre-Amplifier	11/1/2019	Annual	11/1/2020	100040
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	7/15/2020	Annual	7/15/2021	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/9/2020	Annual	9/9/2021	100348
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	2/21/2020	Annual	2/21/2021	102133
Sunol	DRH-118	Horn Antenna (1-18 GHz)	8/27/2019	Biennial	8/27/2021	A042511
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.

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.

7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSMG996U

FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)

Mode(s): WCDMA/LTE/NR/UL-CA

Test Condition	Test Description	FCC Part Section(s)	RSS Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Occupied Bandwidth	2.1049	RSS-139(2.3)	N/A	PASS	Section 7.2
	Conducted Band Edge / Spurious Emissions (LTE Band 30)	2.1051, 27.53(a)	RSS-195(5.6)	Undesirable emissions must meet the limits detailed in 27.53(a)	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 7)	2.1051, 27.53(m)	RSS-199(4.5)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 41)				PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (NR Band n41)				PASS	Sections 7.3, 7.4
	Conducted Band Edge / Spurious Emissions (LTE Band 38)				PASS	Sections 7.3, 7.4
	Transmitter Conducted Output Power	2.1046	RSS-199(4.4)	N/A	PASS	See RF Exposure Report
	Frequency Stability	2.1055, 27.54	RSS-199(4.3)	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
RADIATED	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 30)	27.50(a)(3)	RSS-195(5.5)	< 0.25 Watts max. EIRP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 7)	27.50(h)(2)	RSS-199(4.4)	< 2 Watts max. EIRP	PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 41)				PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n41)				PASS	Section 7.6
	Effective Radiated Power / Equivalent Isotropic Radiated Power (LTE Band 38)				PASS	Section 7.6
	Radiated Spurious Emissions (LTE Band 30)	2.1053, 27.53(a)	RSS-195(5.6)	> 70 + 10log10(P[Watts])	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 7)	2.1053, 27.53(m)	RSS-199(4.5)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 41)				PASS	Section 7.7
	Radiated Spurious Emissions (NR Band n41)				PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 38)				PASS	Section 7.7

Table 7-1. Summary of Test Results

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 PCTEST 2G/3G Automation Version 4.2.

7.2 Conducted Power Output Data

Test Overview

The EUT is set up to transmit at maximum power for LTE and NR channels. All power levels 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

KDB 971168 D01 v03r01 – Section 6.0

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

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	650000	3750.00	1/68	26.38
		656000	3840.00	1/68	26.35
		662000	3930.00	1/68	26.33
	QPSK	650000	3750.00	1/68	26.06
		656000	3840.00	1/68	26.22
		662000	3930.00	1/68	26.15
	16-QAM	662000	3930.00	1/68	25.33
	64-QAM	662000	3930.00	1/68	24.44
	256-QAM	662000	3930.00	1/68	22.93
90 MHz	π/2 BPSK	662332	3934.98	1/61	26.35
	QPSK	662332	3934.98	1/61	26.21
	16-QAM	662332	3934.98	1/61	25.61
	64-QAM	662332	3934.98	1/61	24.48
	256-QAM	662332	3934.98	1/61	23.27
80 MHz	π/2 BPSK	662666	3939.99	1/162	26.48
	QPSK	662666	3939.99	1/162	26.33
	16-QAM	662666	3939.99	1/162	25.66
	64-QAM	662666	3939.99	1/162	24.80
	256-QAM	662666	3939.99	1/162	23.37
70 MHz (CP-OFDM only)	π/2 BPSK	663000	3945.00	1/94	25.72
	QPSK	663000	3945.00	1/94	24.49
	16-QAM	663000	3945.00	1/94	24.41
	64-QAM	663000	3945.00	1/94	22.37
	256-QAM	663000	3945.00	1/94	20.23
60 MHz	π/2 BPSK	663332	3949.98	1/81	26.39
	QPSK	663332	3949.98	1/81	26.33
	16-QAM	663332	3949.98	1/81	25.55
	64-QAM	663332	3949.98	1/81	24.46
	256-QAM	656000	3840.00	1/81	23.90
50 MHz	π/2 BPSK	663666	3954.99	1/99	26.47
	QPSK	663666	3954.99	1/99	26.35
	16-QAM	663666	3954.99	1/99	25.63
	64-QAM	663666	3954.99	1/99	24.92
	256-QAM	663666	3954.99	1/99	23.37
40 MHz	π/2 BPSK	664000	3960.00	1/79	26.47
	QPSK	664000	3960.00	1/79	26.37
	16-QAM	664000	3960.00	1/79	25.80
	64-QAM	664000	3960.00	1/79	24.61
	256-QAM	664000	3960.00	1/79	23.60
30 MHz	π/2 BPSK	664332	3964.98	1/58	26.39
	QPSK	664332	3964.98	1/58	26.25
	16-QAM	664332	3964.98	1/58	25.82
	64-QAM	664332	3964.98	1/58	24.88
	256-QAM	664332	3964.98	1/58	23.54
20 MHz	π/2 BPSK	664666	3969.99	1/25	26.42
	QPSK	664666	3969.99	1/25	26.04
	16-QAM	664666	3969.99	1/25	25.77
	64-QAM	664666	3969.99	1/25	24.15
	256-QAM	664666	3969.99	1/25	22.97

Table 7-1. Conducted Power Data (NR Band n77)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 137	26.51
		518598	2592.99	1 / 137	26.40
		528000	2640.00	1 / 137	26.44
	QPSK	509202	2546.01	1 / 137	26.22
		518598	2592.99	1 / 137	26.18
		528000	2640.00	1 / 137	26.34
	16-QAM	518598	2592.99	1 / 137	25.74
	64-QAM	518598	2592.99	1 / 137	23.76
	256-QAM	518598	2592.99	1 / 137	21.88
90 MHz	π/2 BPSK	518598	2592.99	1 / 123	26.54
	QPSK	518598	2592.99	1 / 123	26.02
	16-QAM	518598	2592.99	1 / 123	25.61
	64-QAM	518598	2592.99	1 / 123	24.19
	256-QAM	518598	2592.99	1 / 123	21.90
80 MHz	π/2 BPSK	518598	2592.99	1 / 108	26.70
	QPSK	518598	2592.99	1 / 108	25.92
	16-QAM	518598	2592.99	1 / 108	24.64
	64-QAM	518598	2592.99	1 / 108	24.07
	256-QAM	518598	2592.99	1 / 108	23.46
60 MHz	π/2 BPSK	518598	2592.99	1 / 81	26.71
	QPSK	518598	2592.99	1 / 81	26.38
	16-QAM	518598	2592.99	1 / 81	25.59
	64-QAM	518598	2592.99	1 / 81	24.08
	256-QAM	518598	2592.99	1 / 81	21.86
50 MHz	π/2 BPSK	518598	2592.99	1 / 67	26.96
	QPSK	518598	2592.99	1 / 67	26.43
	16-QAM	518598	2592.99	1 / 67	25.19
	64-QAM	518598	2592.99	1 / 67	23.83
	256-QAM	518598	2592.99	1 / 67	21.96
40 MHz	π/2 BPSK	518598	2592.99	1 / 53	26.46
	QPSK	518598	2592.99	1 / 53	26.26
	16-QAM	518598	2592.99	1 / 53	25.29
	64-QAM	518598	2592.99	1 / 53	23.88
	256-QAM	518598	2592.99	1 / 53	22.81
30 MHz	π/2 BPSK	518598	2592.99	1 / 39	26.89
	QPSK	518598	2592.99	1 / 39	26.08
	16-QAM	518598	2592.99	1 / 39	25.76
	64-QAM	518598	2592.99	1 / 39	24.65
	256-QAM	518598	2592.99	1 / 39	22.95
20 MHz	π/2 BPSK	518598	2592.99	1 / 26	27.06
	QPSK	518598	2592.99	1 / 26	26.16
	16-QAM	518598	2592.99	1 / 26	25.95
	64-QAM	518598	2592.99	1 / 26	24.78
	256-QAM	518598	2592.99	1 / 26	23.81

Table 7-2. Conducted Power Data (LTE Band 41 (PC2)) -

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 271	25.44
		518598	2592.99	1 / 271	25.47
		528000	2640.00	1 / 271	25.15
	QPSK	509202	2546.01	1 / 271	25.40
		518598	2592.99	1 / 271	25.39
		528000	2640.00	1 / 271	25.24
	16-QAM	518598	2592.99	1 / 271	24.48
	64-QAM	518598	2592.99	1 / 271	22.85
	256-QAM	518598	2592.99	1 / 271	21.06
90 MHz	π/2 BPSK	528996	2644.98	1 / 243	25.41
	QPSK	528996	2644.98	1 / 243	25.38
	16-QAM	528996	2644.98	1 / 243	23.90
	64-QAM	528996	2644.98	1 / 243	22.75
	256-QAM	528996	2644.98	1 / 243	20.82
80 MHz	π/2 BPSK	529998	2649.99	1 / 215	25.32
	QPSK	529998	2649.99	1 / 215	25.30
	16-QAM	529998	2649.99	1 / 215	24.58
	64-QAM	529998	2649.99	1 / 215	22.74
	256-QAM	529998	2649.99	1 / 215	20.95
60 MHz	π/2 BPSK	531996	2659.98	1 / 160	25.22
	QPSK	531996	2659.98	1 / 160	25.39
	16-QAM	531996	2659.98	1 / 160	24.31
	64-QAM	531996	2659.98	1 / 160	22.59
	256-QAM	531996	2659.98	1 / 160	21.07
50 MHz	π/2 BPSK	532998	2664.99	1 / 131	25.32
	QPSK	532998	2664.99	1 / 131	25.50
	16-QAM	532998	2664.99	1 / 131	24.51
	64-QAM	532998	2664.99	1 / 131	22.73
	256-QAM	532998	2664.99	1 / 131	20.90
40 MHz	π/2 BPSK	534000	2670.00	1 / 104	25.58
	QPSK	534000	2670.00	1 / 104	25.55
	16-QAM	534000	2670.00	1 / 104	24.82
	64-QAM	534000	2670.00	1 / 104	22.89
	256-QAM	534000	2670.00	1 / 104	21.14
30 MHz	π/2 BPSK	534996	2674.98	1 / 76	25.73
	QPSK	534996	2674.98	1 / 76	25.85
	16-QAM	534996	2674.98	1 / 76	25.03
	64-QAM	534996	2674.98	1 / 76	23.27
	256-QAM	534996	2674.98	1 / 76	21.45
20 MHz	π/2 BPSK	535998	2679.99	1 / 50	25.31
	QPSK	535998	2679.99	1 / 50	25.41
	16-QAM	535998	2679.99	1 / 50	24.50
	64-QAM	535998	2679.99	1 / 50	22.54
	256-QAM	535998	2679.99	1 / 50	21.01

Table 7-2. Conducted Power Data (LTE Band 41 (PC3)) – ANTB

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

KDB 971168 D01 v03r01 – Section 4.2

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 ≥ 3 x 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.

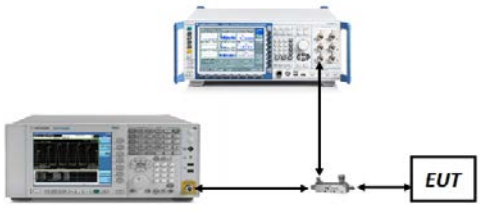
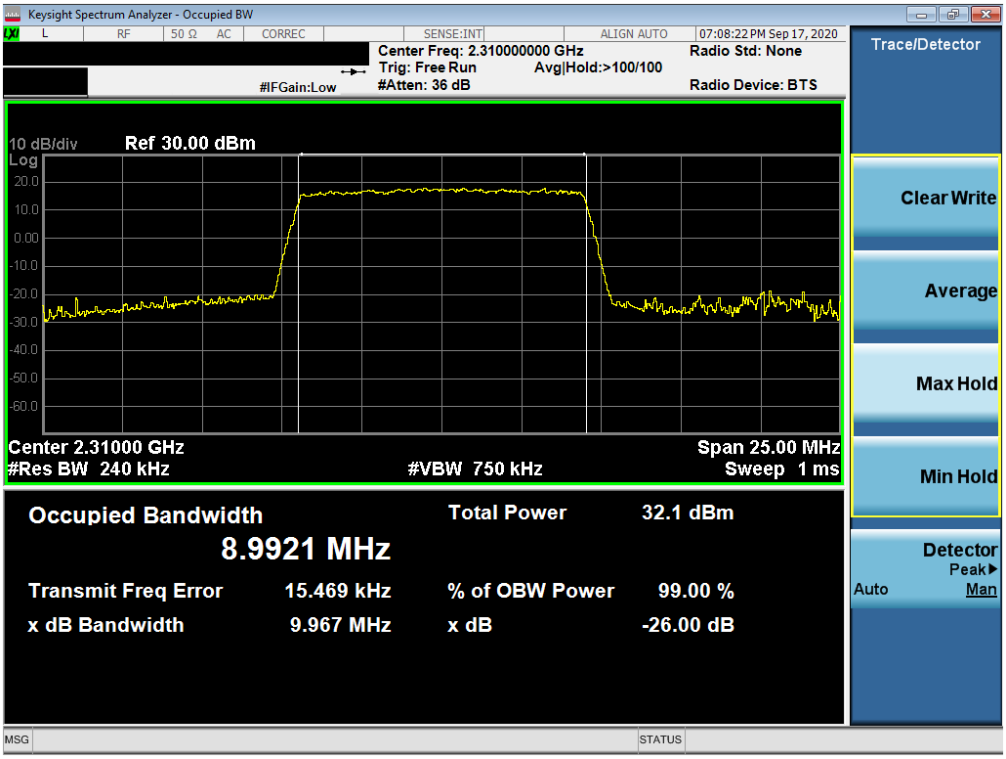


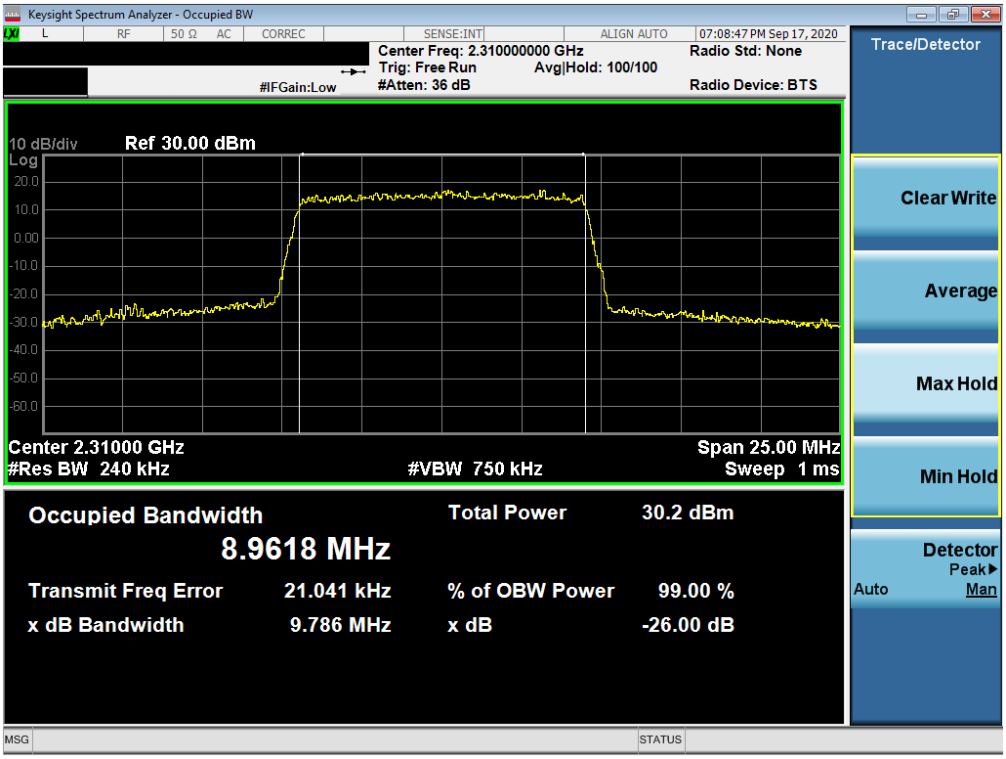
Figure 7-2. Test Instrument & Measurement Setup

Test Notes

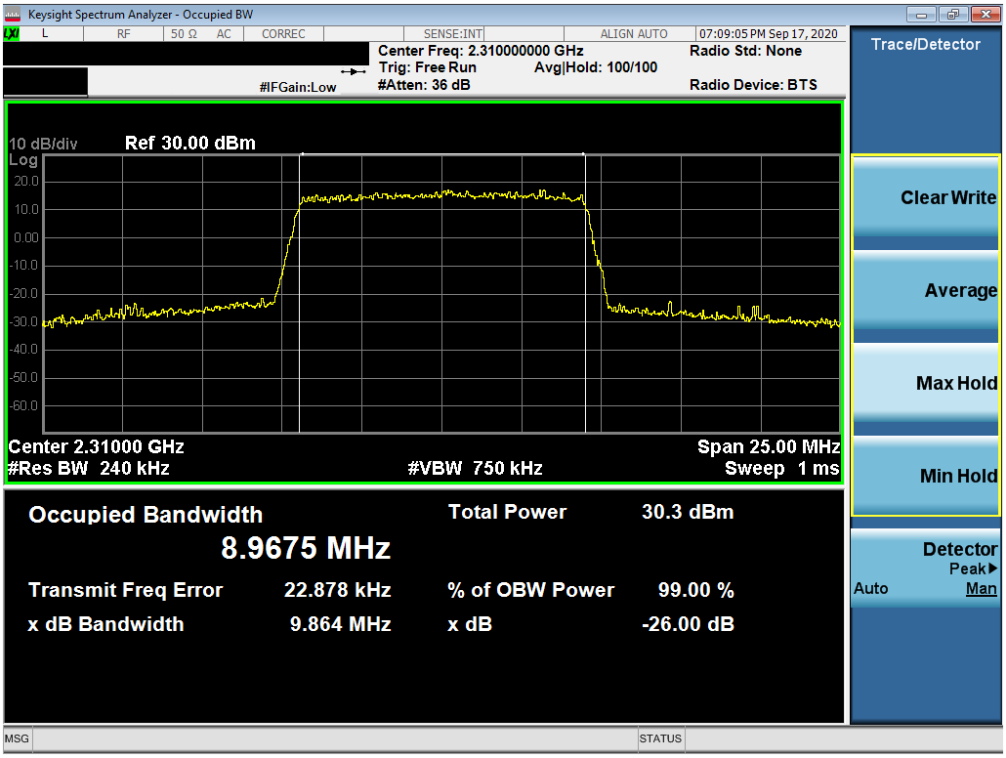
None.



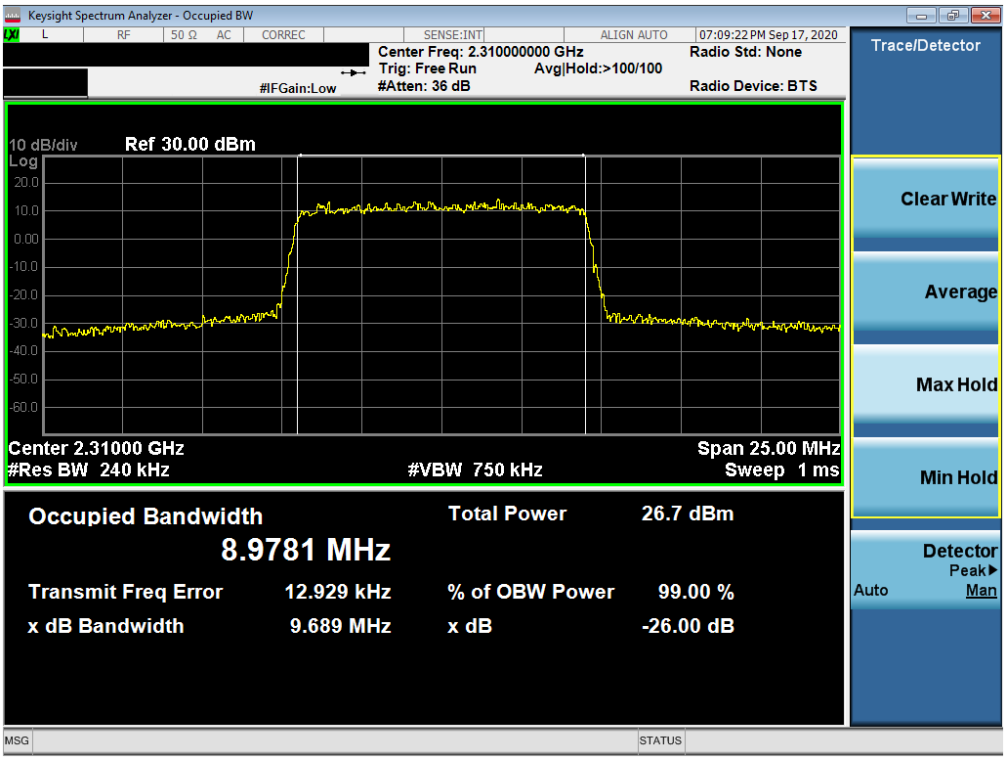
Plot 7-2. Occupied Bandwidth Plot (LTE Band 30 - 10MHz QPSK - Full RB Configuration)



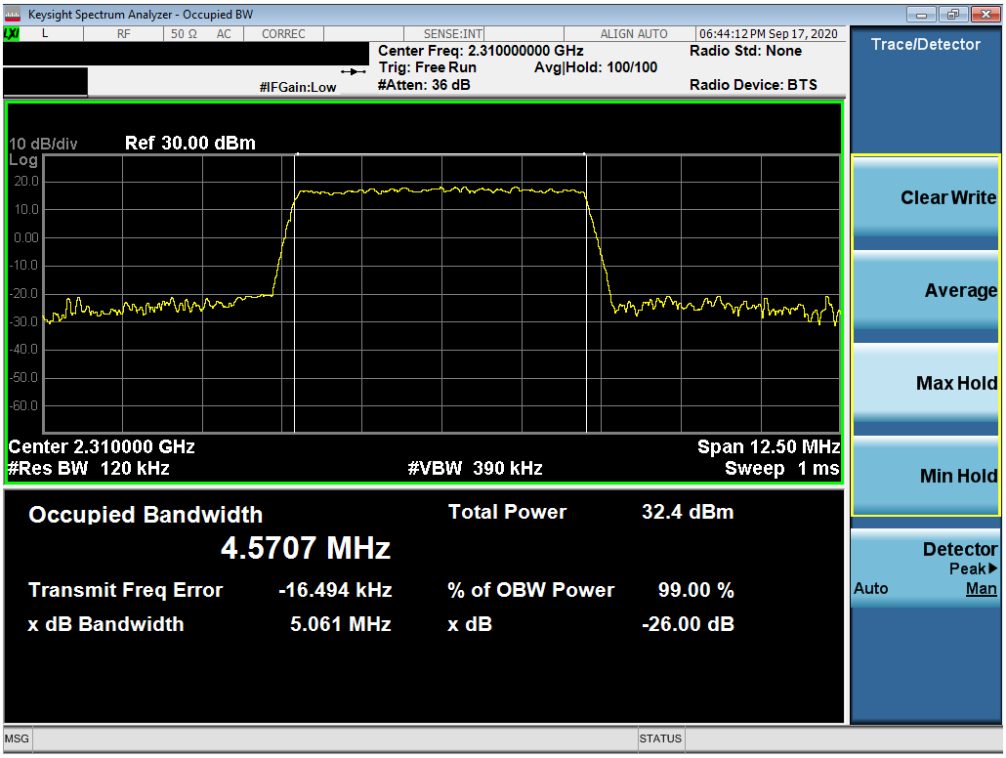
Plot 7-3. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 16-QAM - Full RB Configuration)



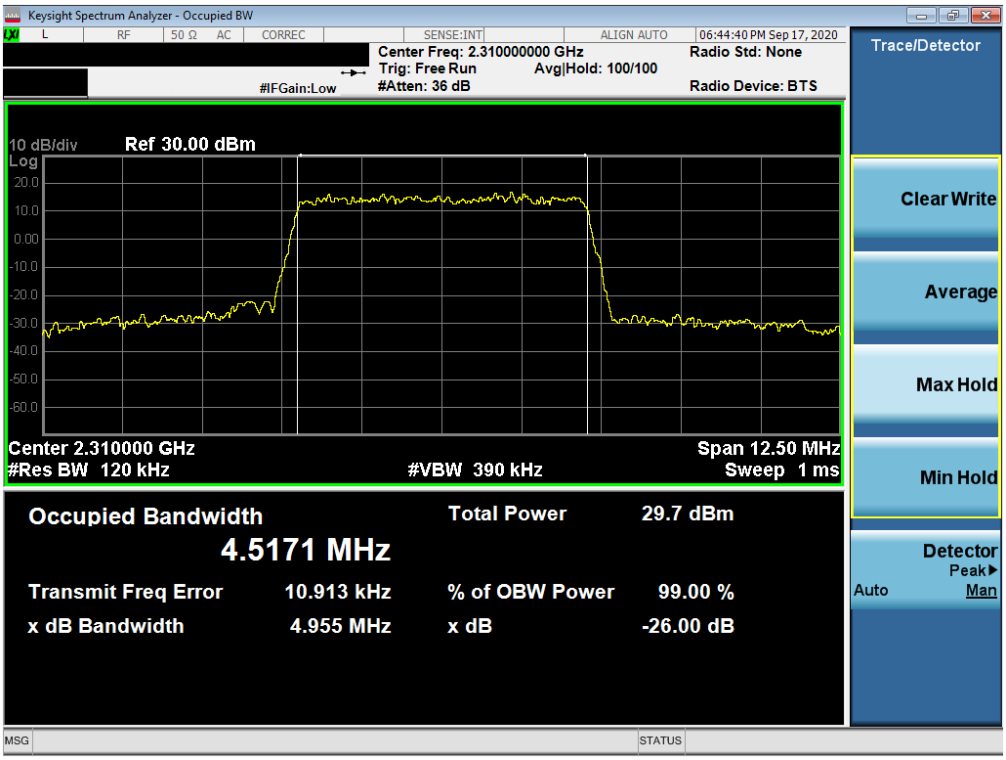
Plot 7-4. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 64-QAM - Full RB Configuration)



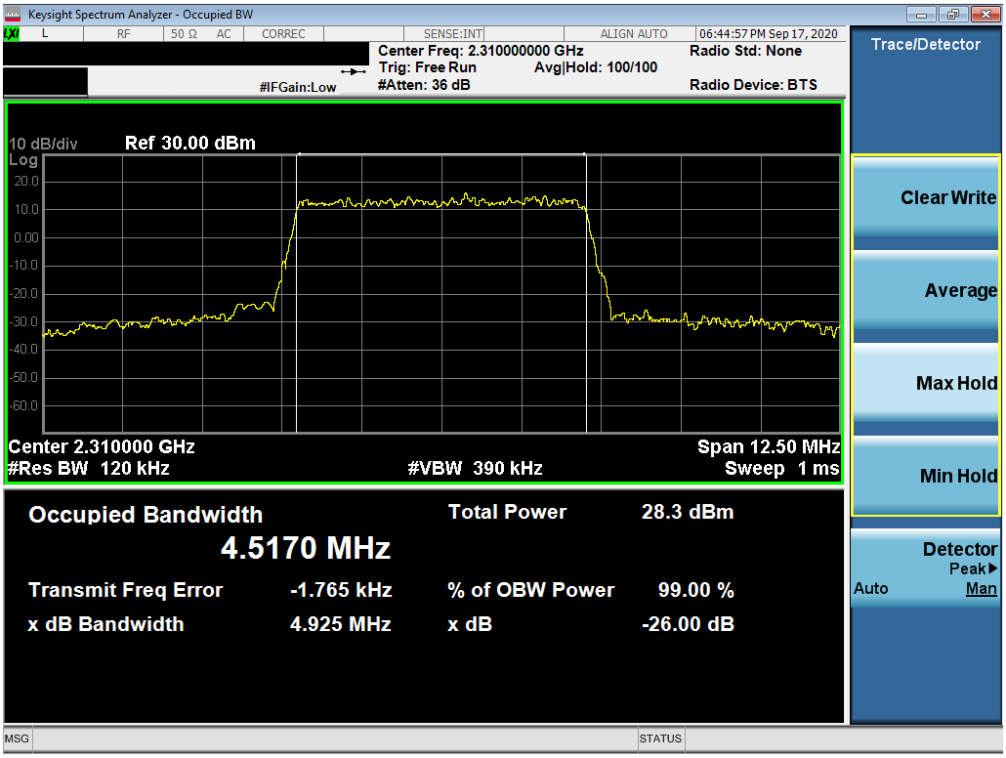
Plot 7-5. Occupied Bandwidth Plot (LTE Band 30 - 10MHz 256-QAM - Full RB Configuration)



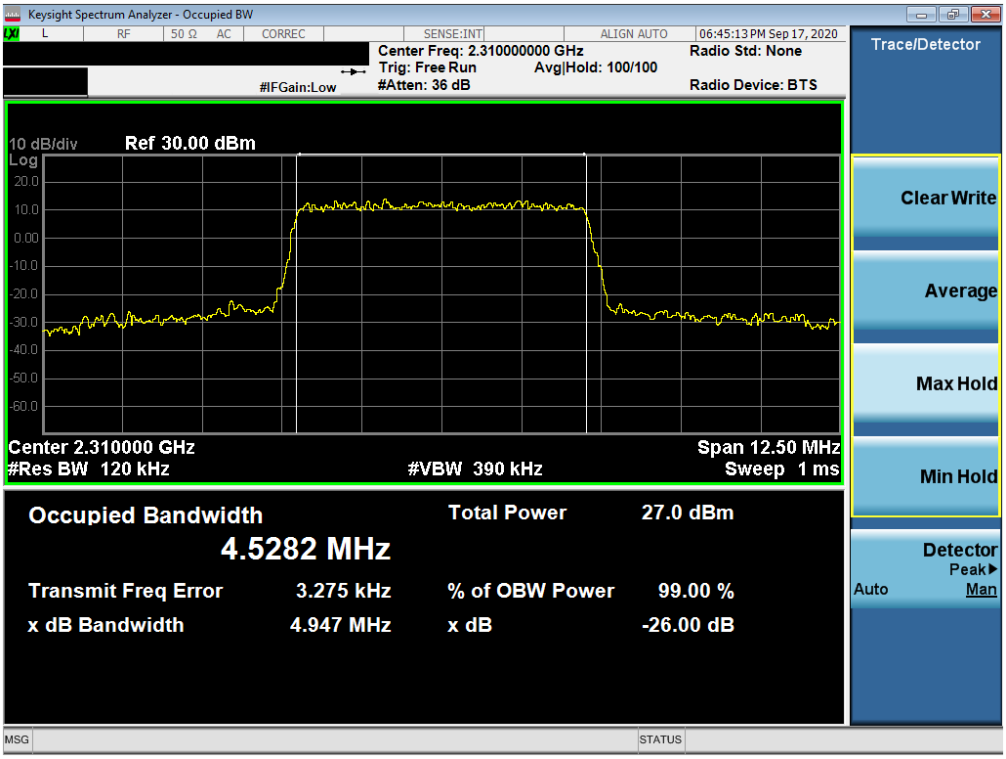
Plot 7-6. Occupied Bandwidth Plot (LTE Band 30 - 5MHz QPSK - Full RB Configuration)



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

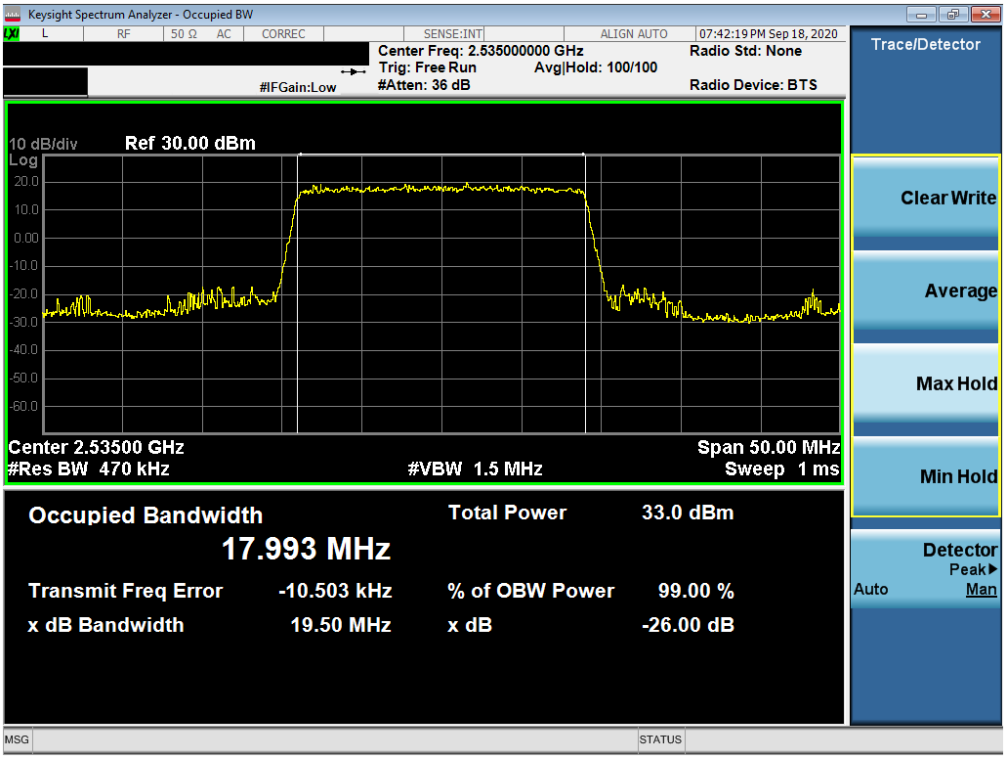


Plot 7-8. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 64-QAM - Full RB Configuration)

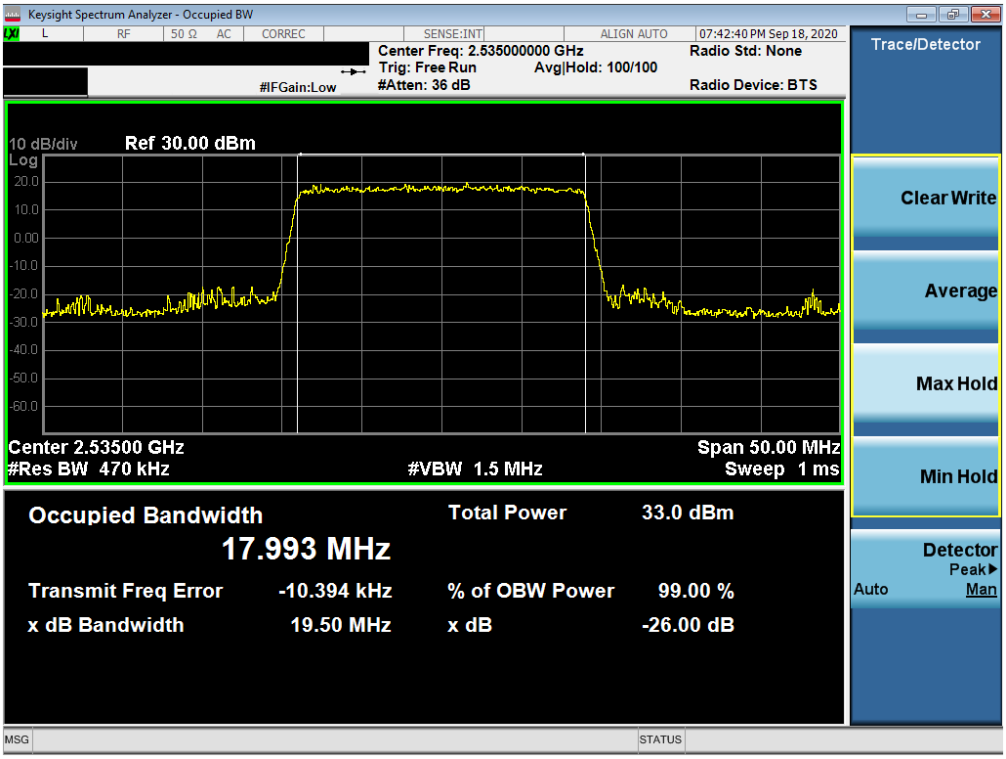


Plot 7-9. Occupied Bandwidth Plot (LTE Band 30 - 5MHz 256-QAM - Full RB Configuration)

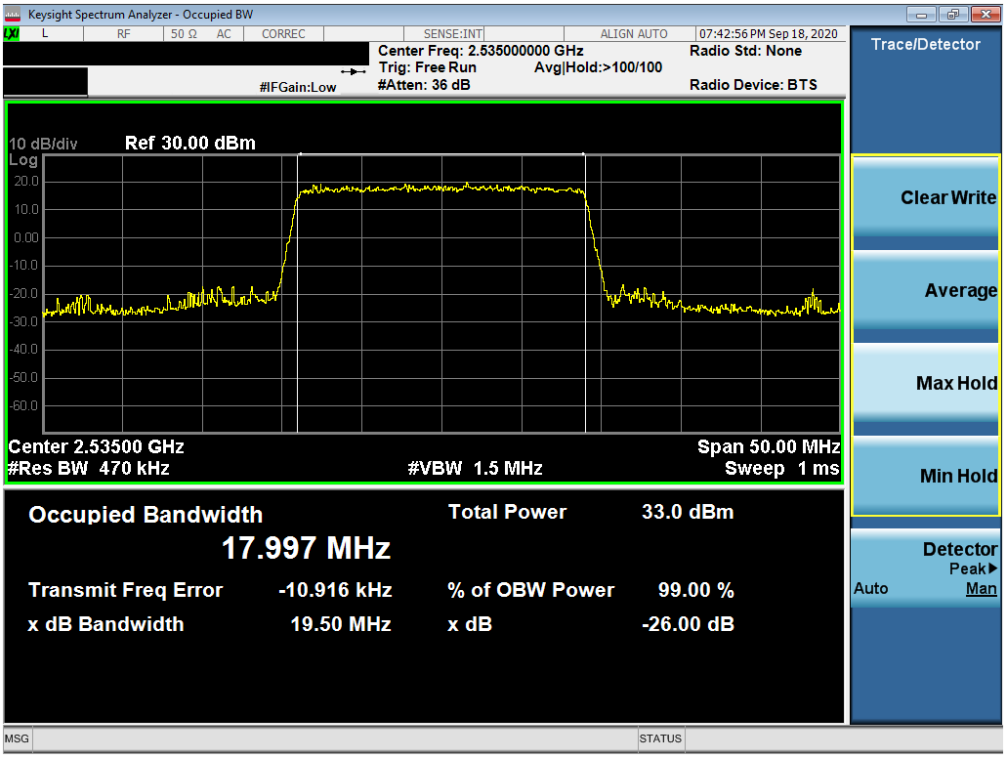
LTE Band 7



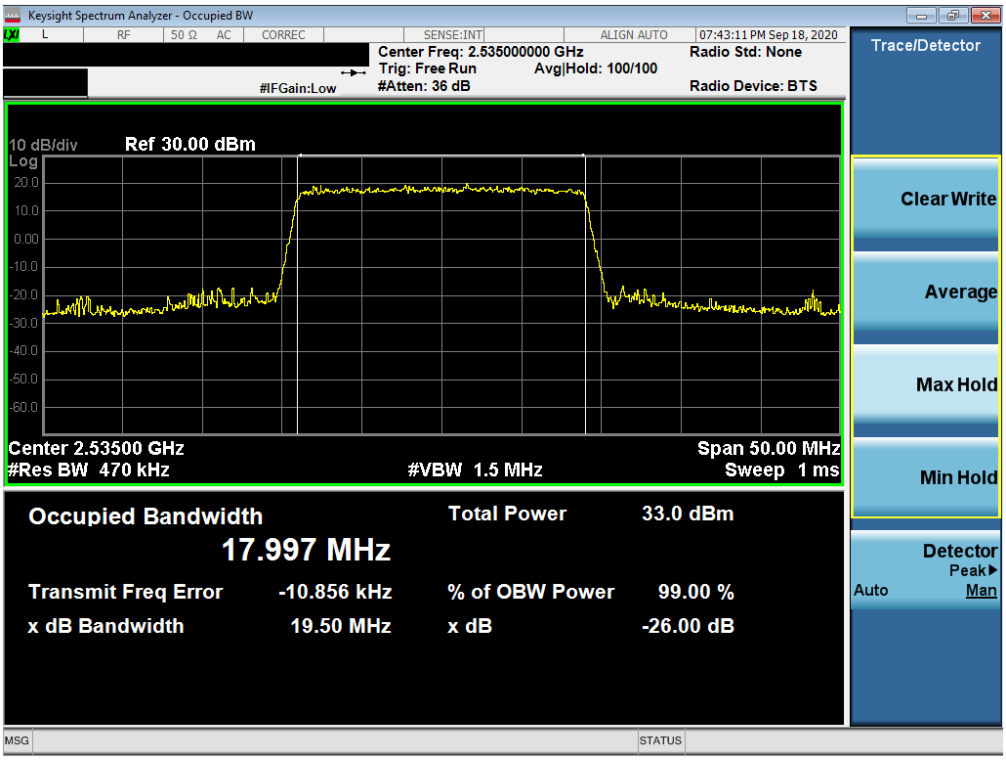
Plot 7-10. Occupied Bandwidth Plot (LTE Band 7 - 20MHz QPSK - Full RB Configuration)



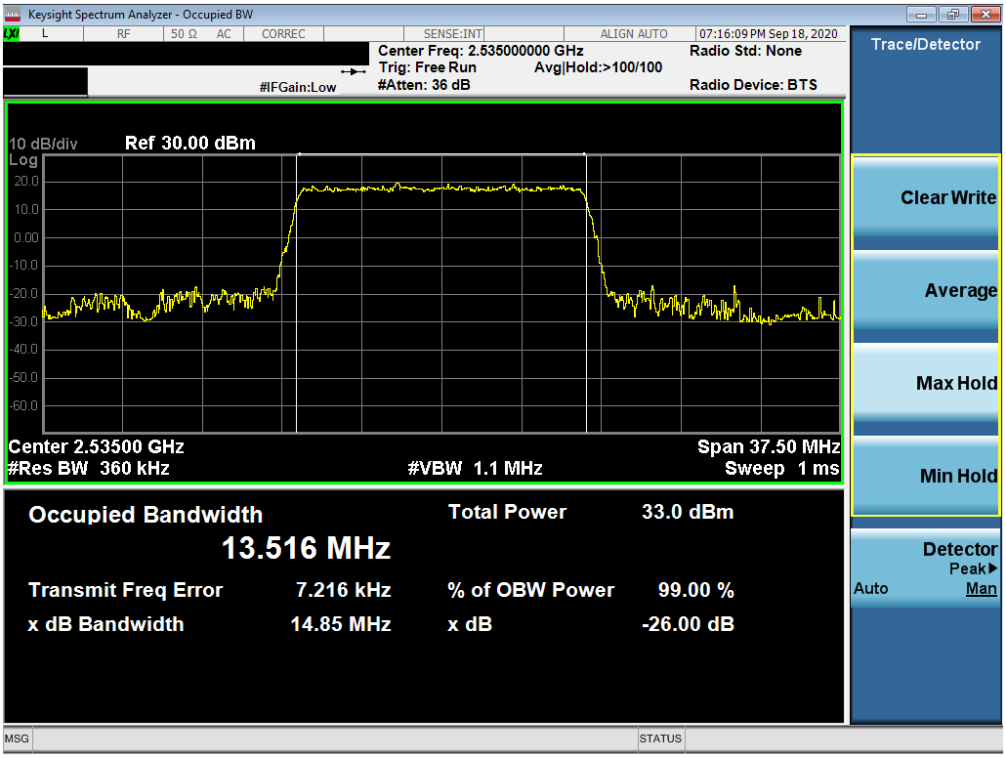
Plot 7-11. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 16-QAM - Full RB Configuration)



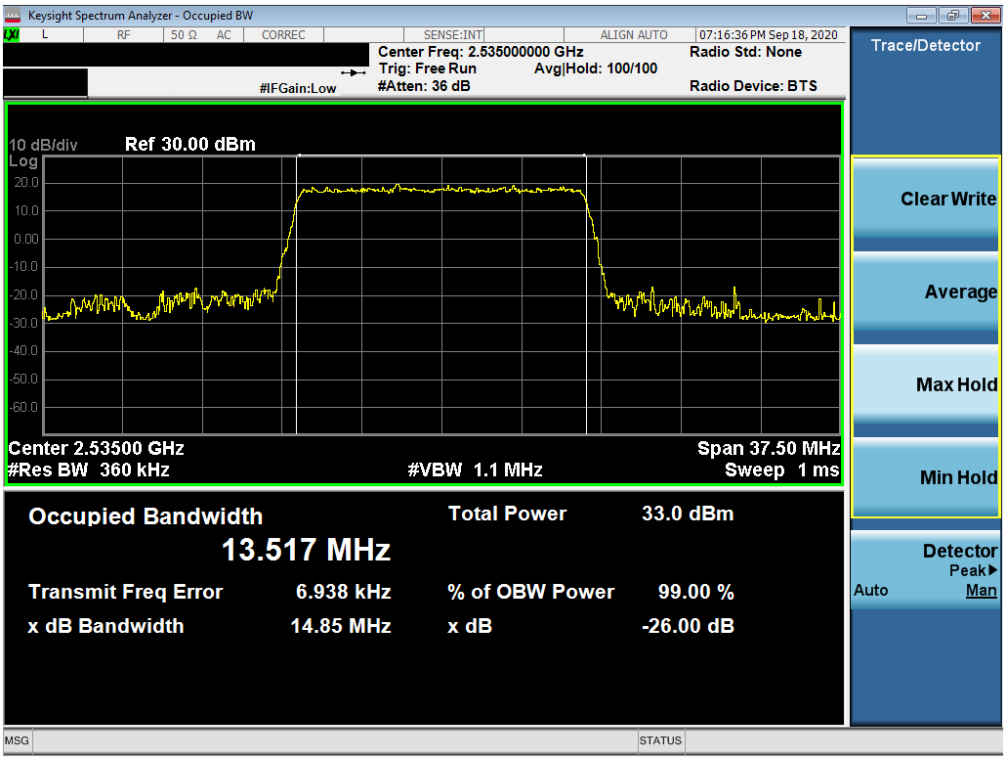
Plot 7-12. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 64-QAM - Full RB Configuration)



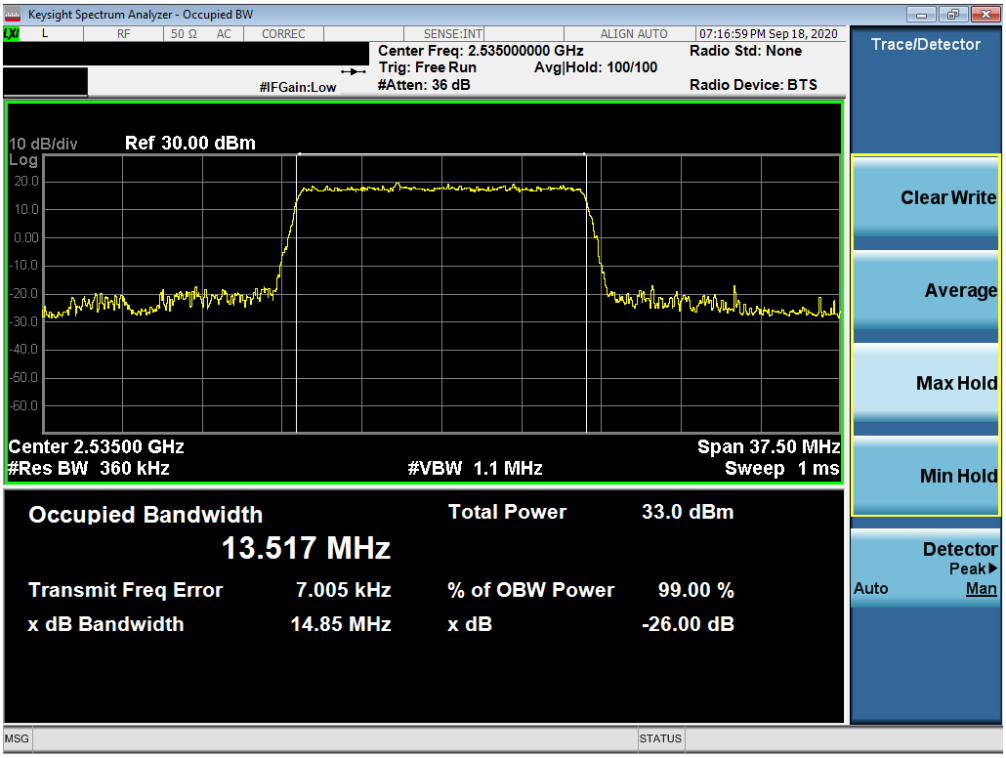
Plot 7-13. Occupied Bandwidth Plot (LTE Band 7 - 20MHz 256-QAM - Full RB Configuration)



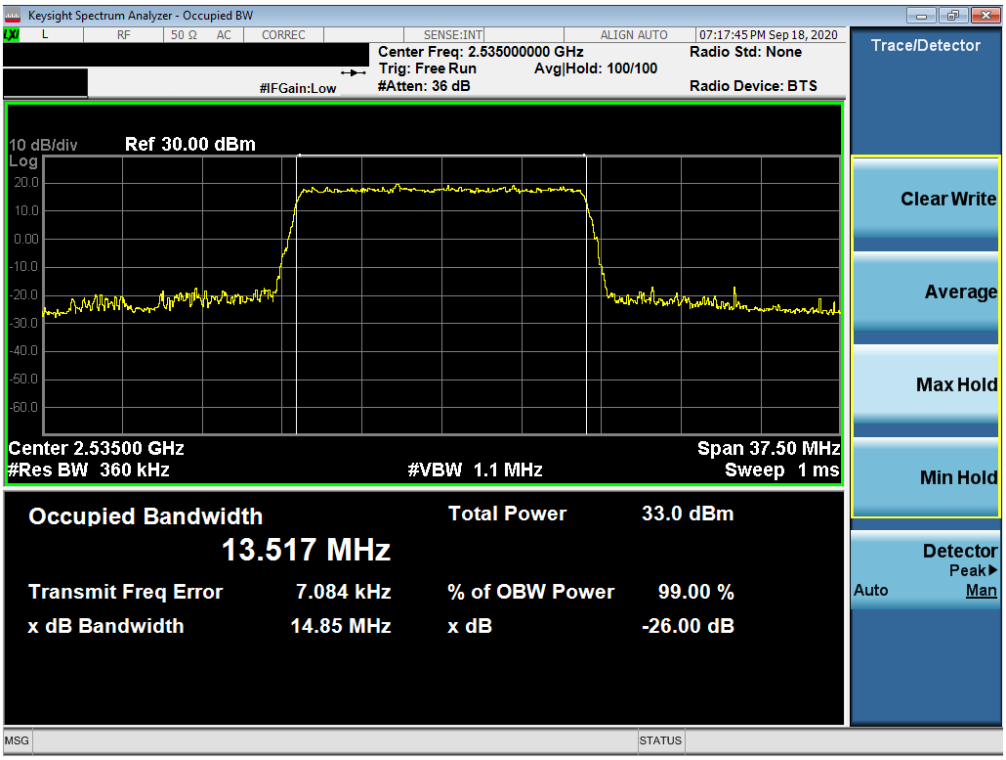
Plot 7-14. Occupied Bandwidth Plot (LTE Band 7 - 15MHz QPSK - Full RB Configuration)



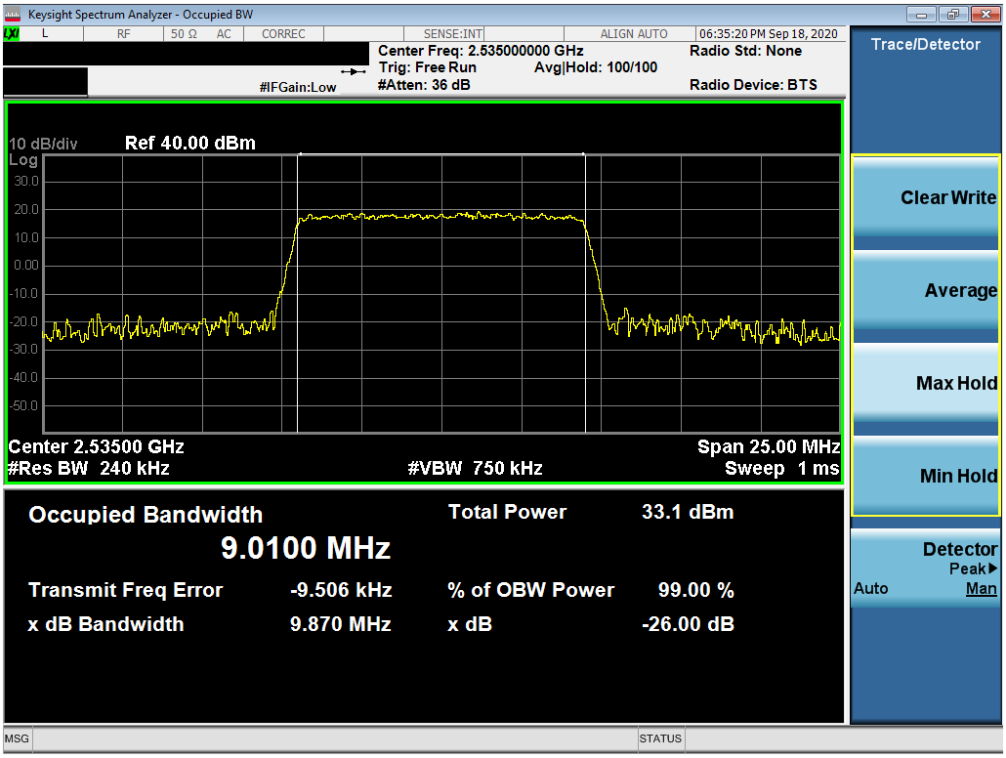
Plot 7-15. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 16-QAM - Full RB Configuration)



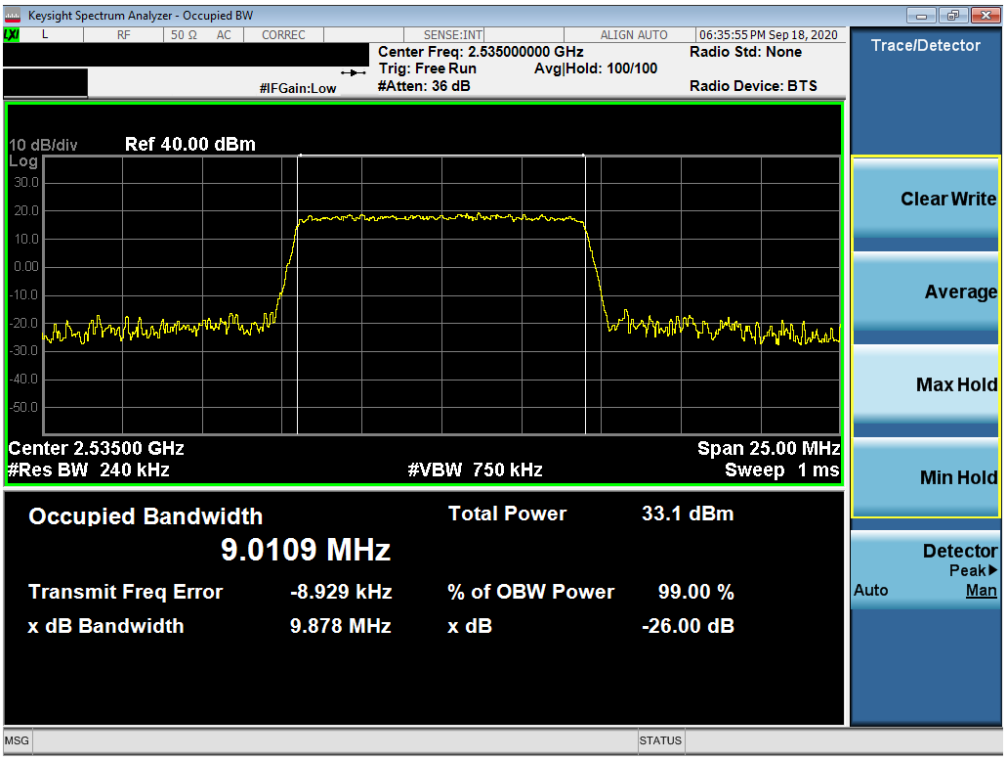
Plot 7-16. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 64-QAM - Full RB Configuration)



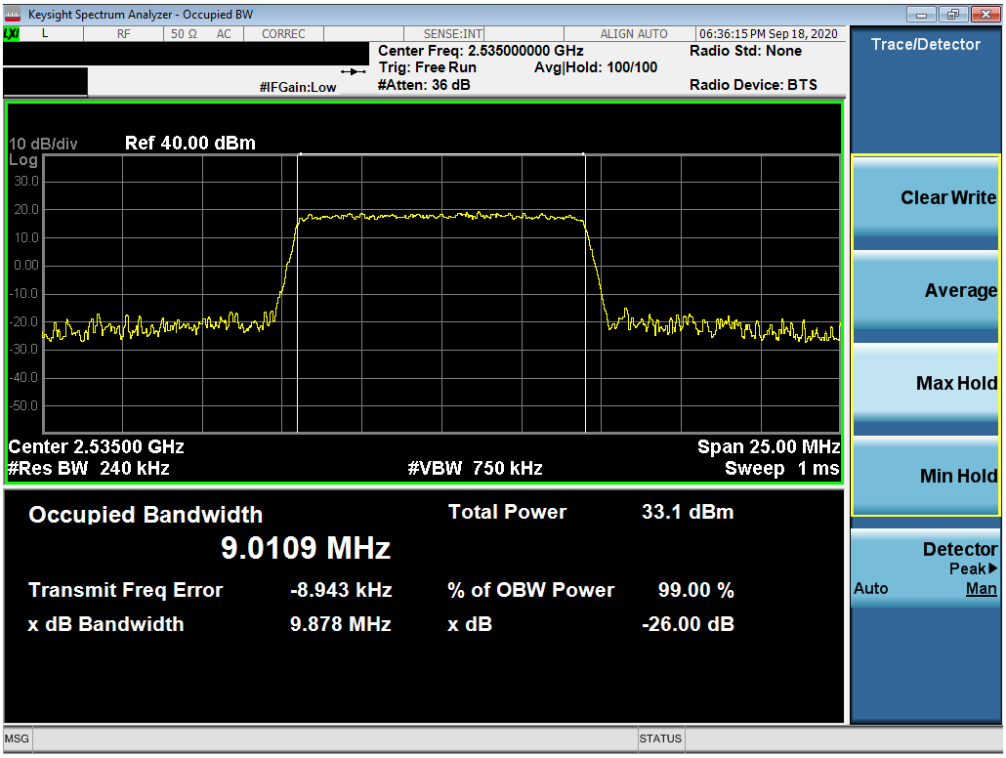
Plot 7-17. Occupied Bandwidth Plot (LTE Band 7 - 15MHz 256-QAM - Full RB Configuration)



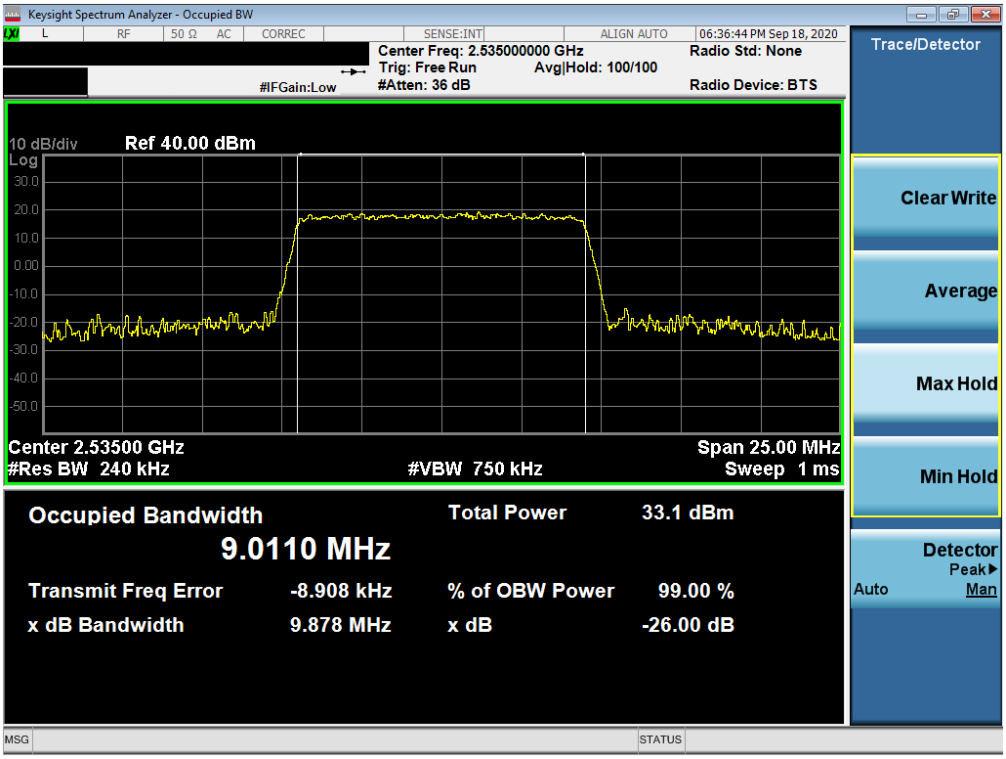
Plot 7-18. Occupied Bandwidth Plot (LTE Band 7 - 10MHz QPSK - Full RB Configuration)



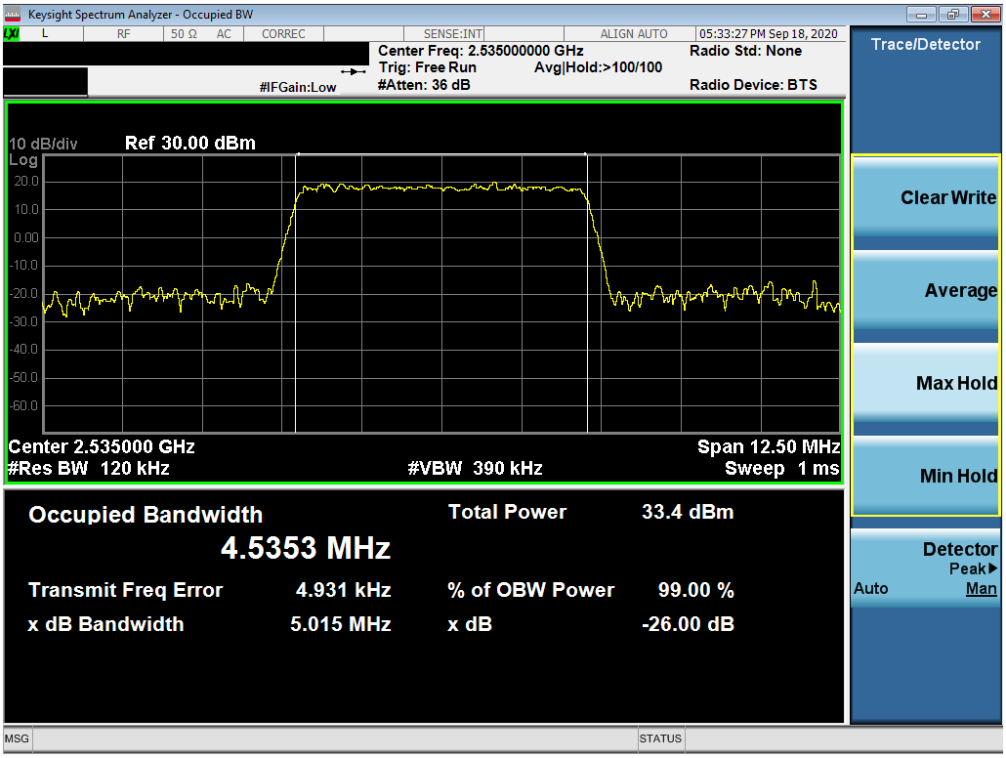
Plot 7-19. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 16-QAM - Full RB Configuration)



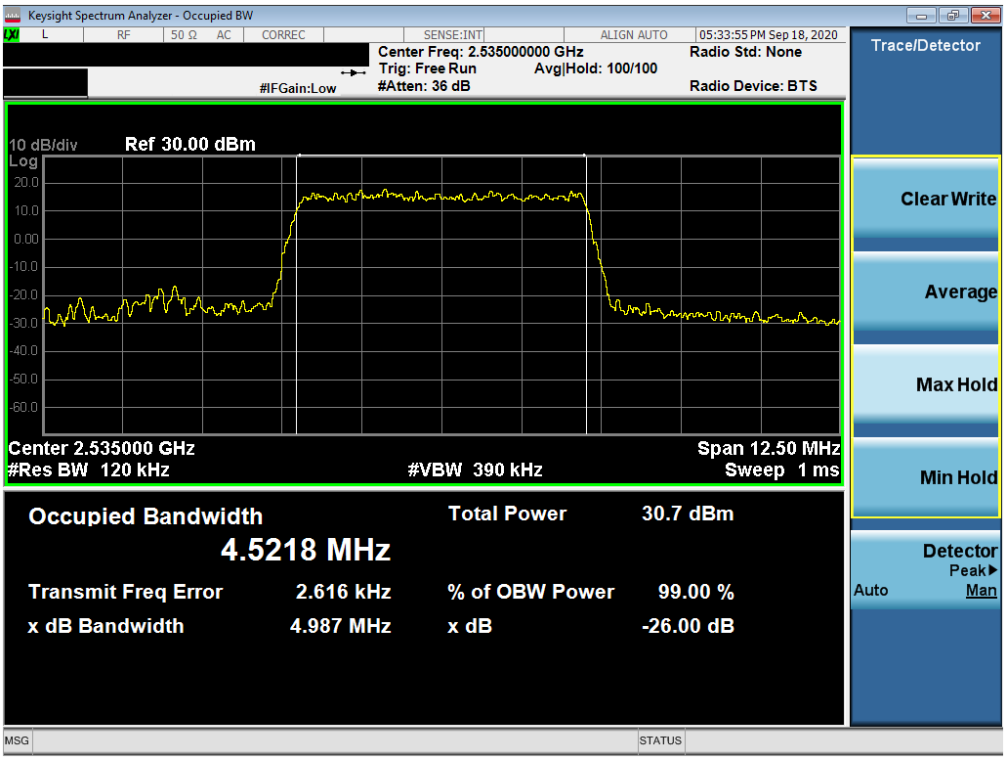
Plot 7-20. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 64-QAM - Full RB Configuration)



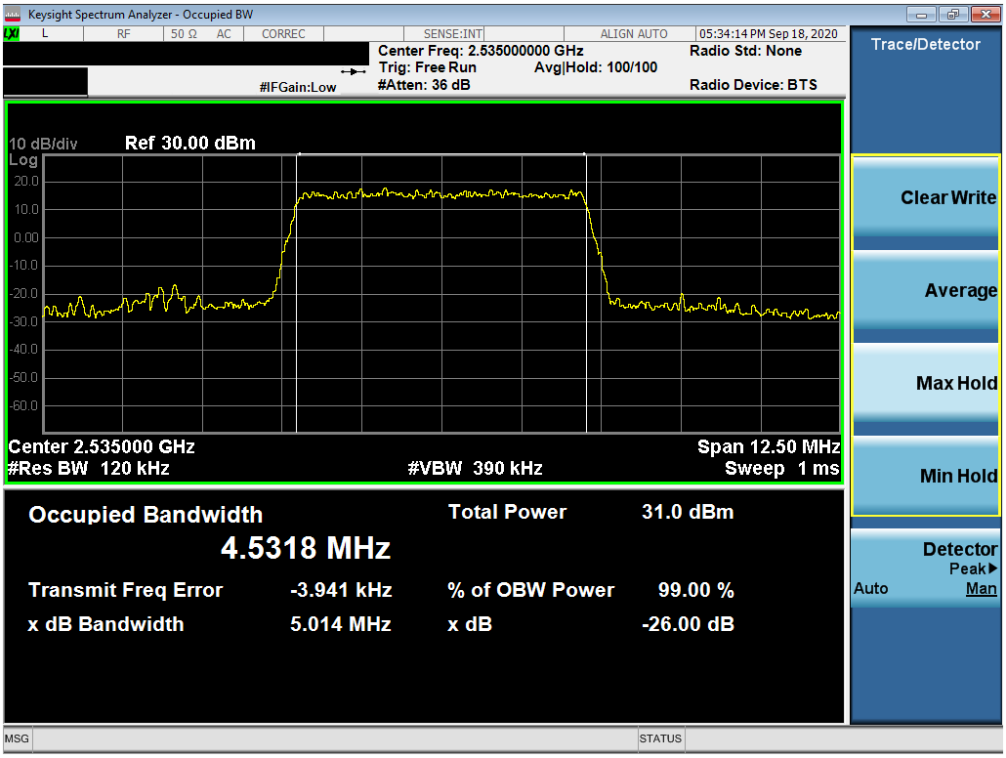
Plot 7-21. Occupied Bandwidth Plot (LTE Band 7 - 10MHz 256-QAM - Full RB Configuration)



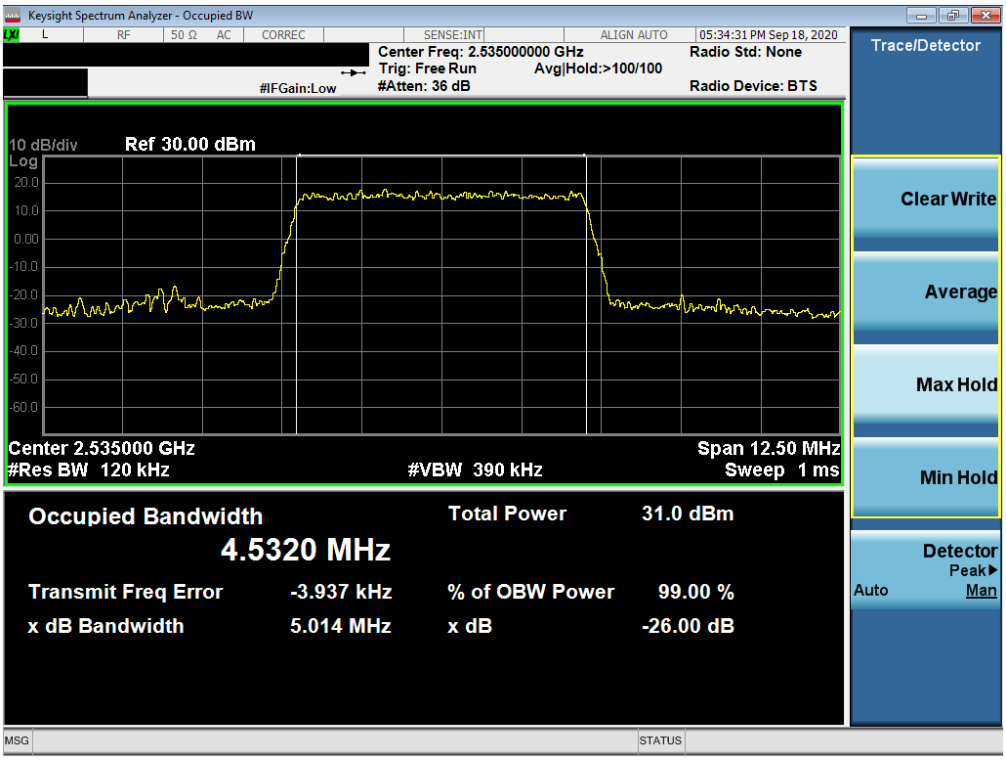
Plot 7-22. Occupied Bandwidth Plot (LTE Band 7 - 5MHz QPSK - Full RB Configuration)



Plot 7-23. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 16-QAM - Full RB Configuration)

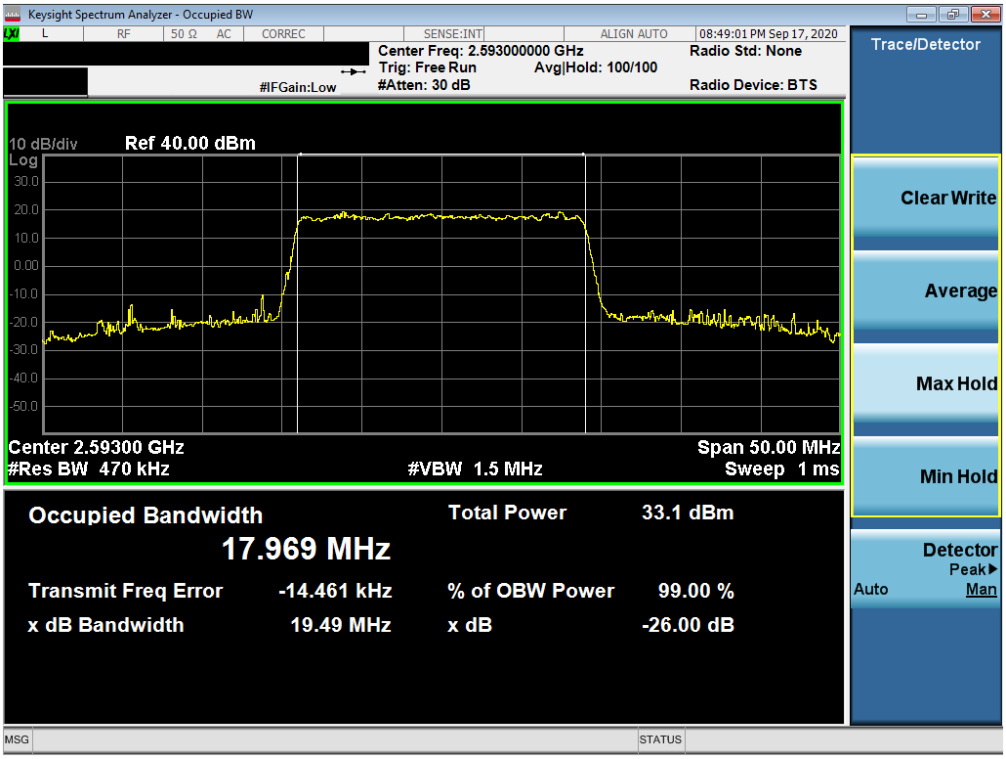


Plot 7-24. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 64-QAM - Full RB Configuration)

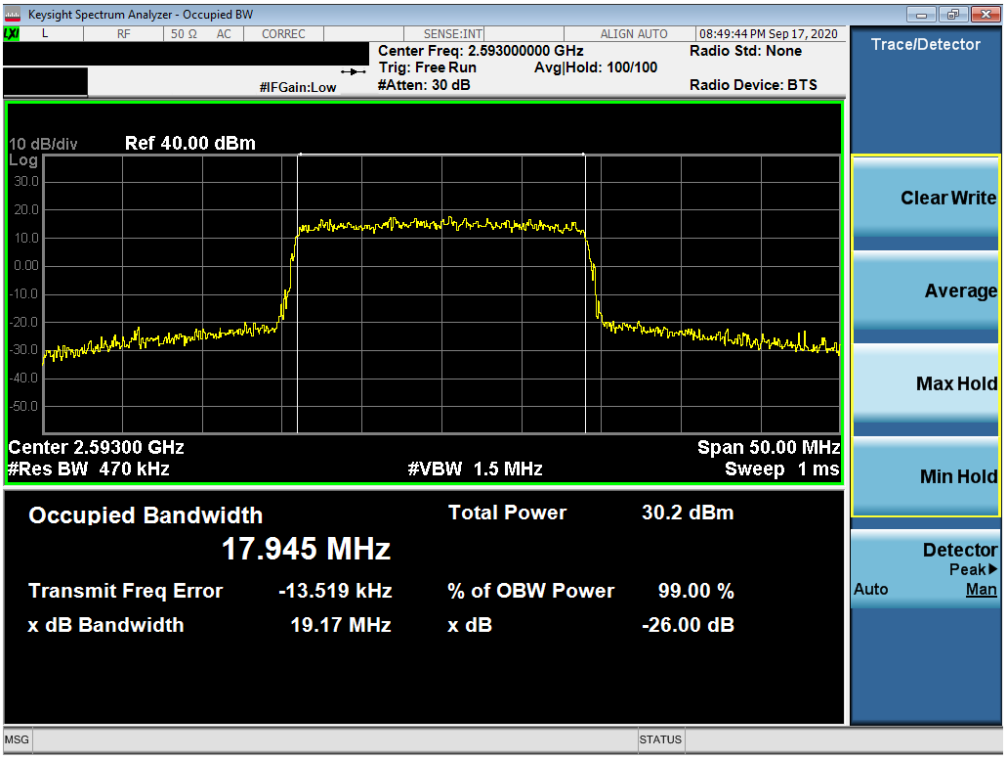


Plot 7-25. Occupied Bandwidth Plot (LTE Band 7 - 5MHz 256-QAM - Full RB Configuration)

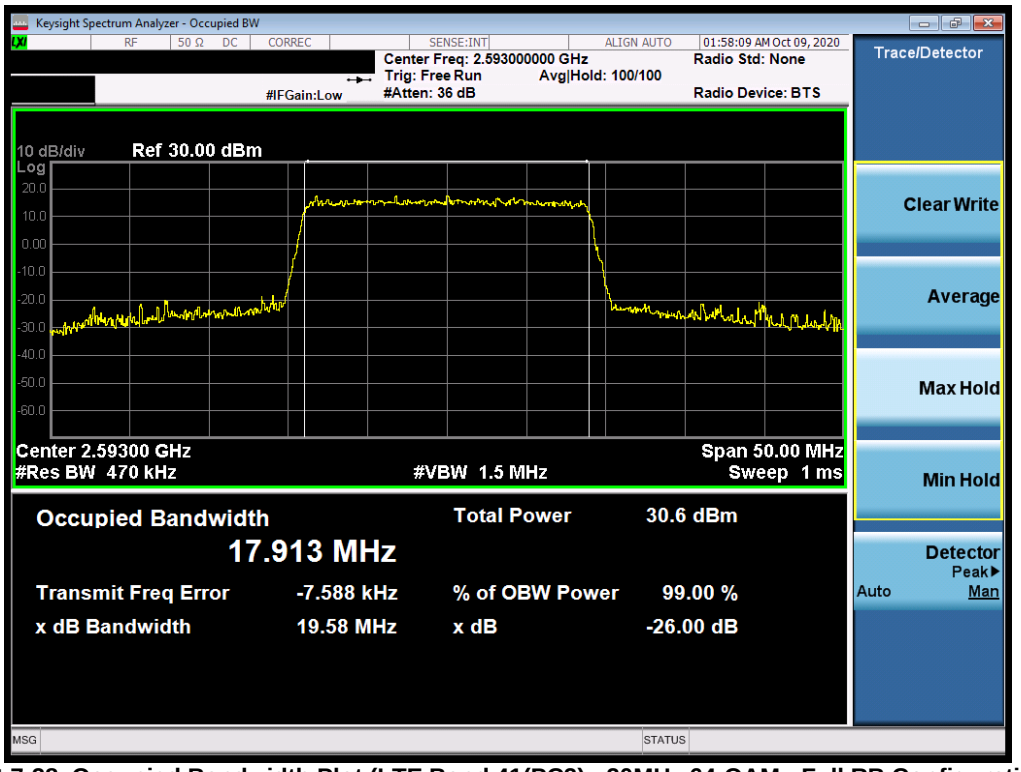
LTE Band 41(PC2)



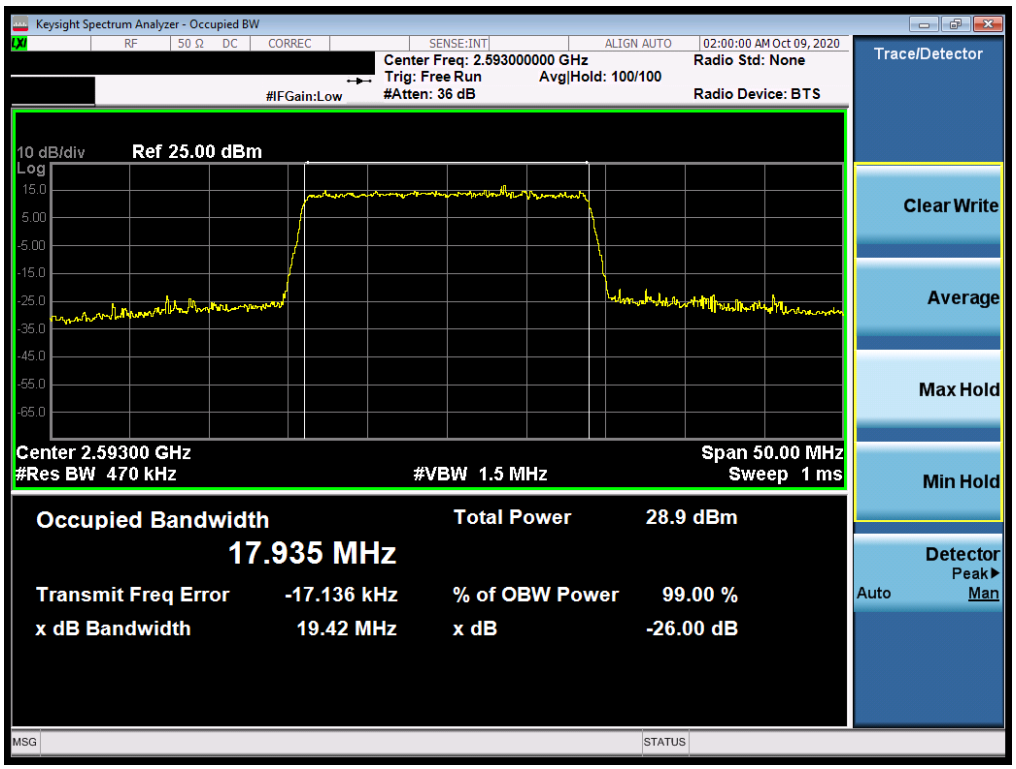
Plot 7-26. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz QPSK - Full RB Configuration)



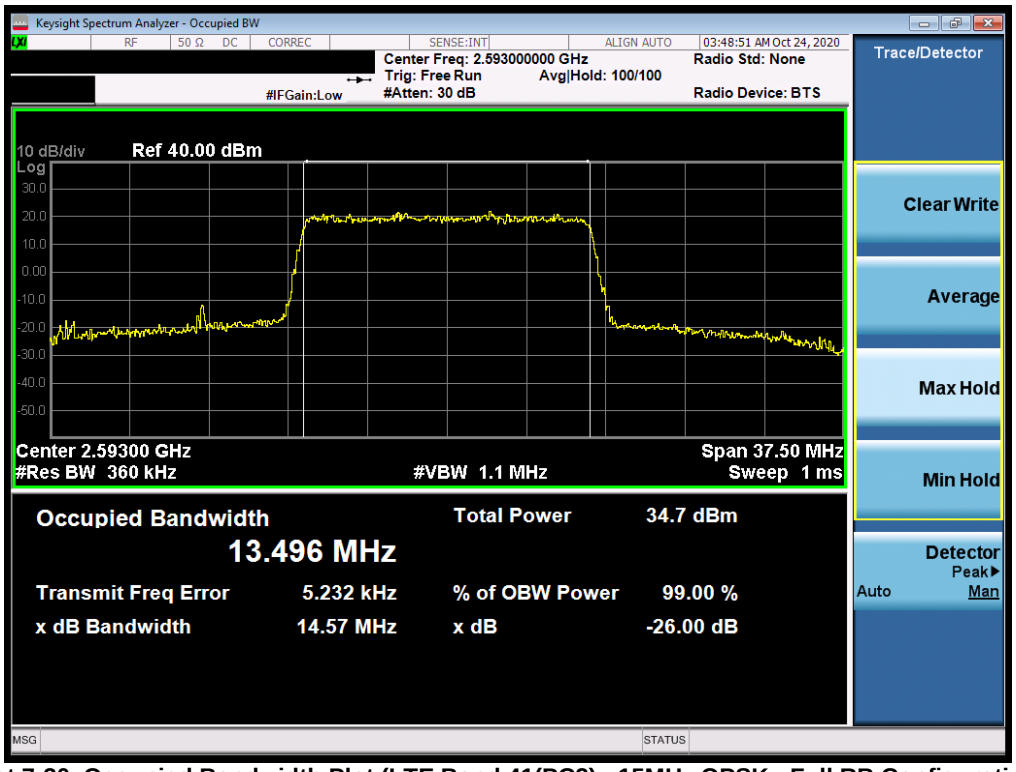
Plot 7-27. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz 16-QAM - Full RB Configuration)



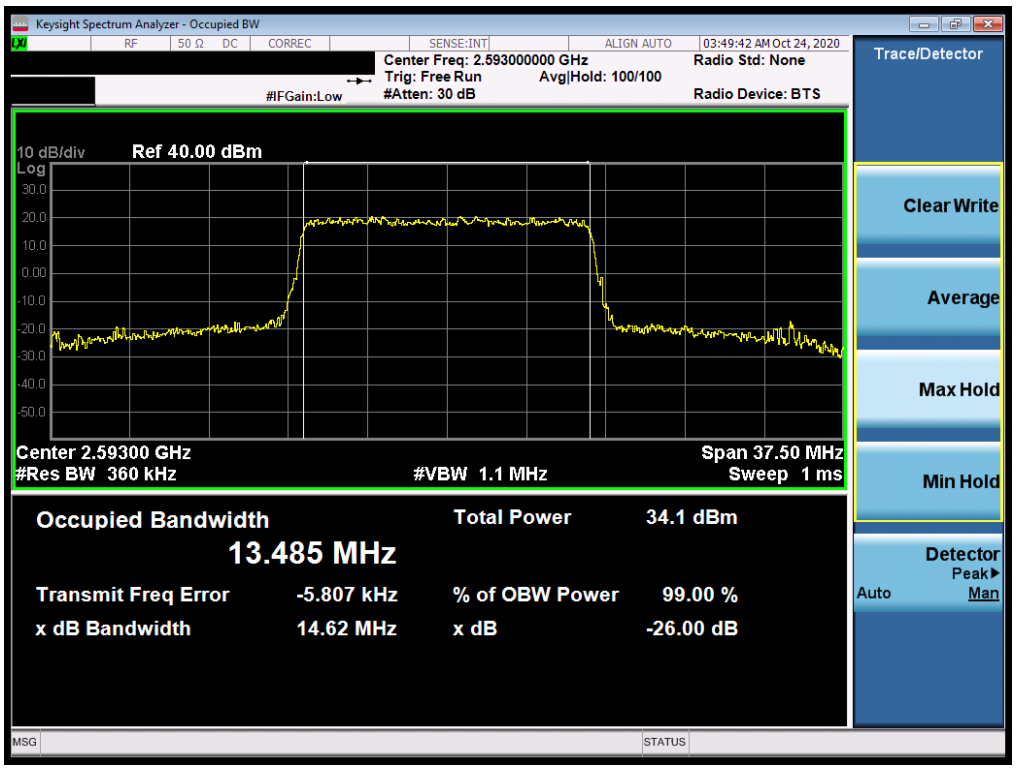
Plot 7-28. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz 64-QAM - Full RB Configuration)



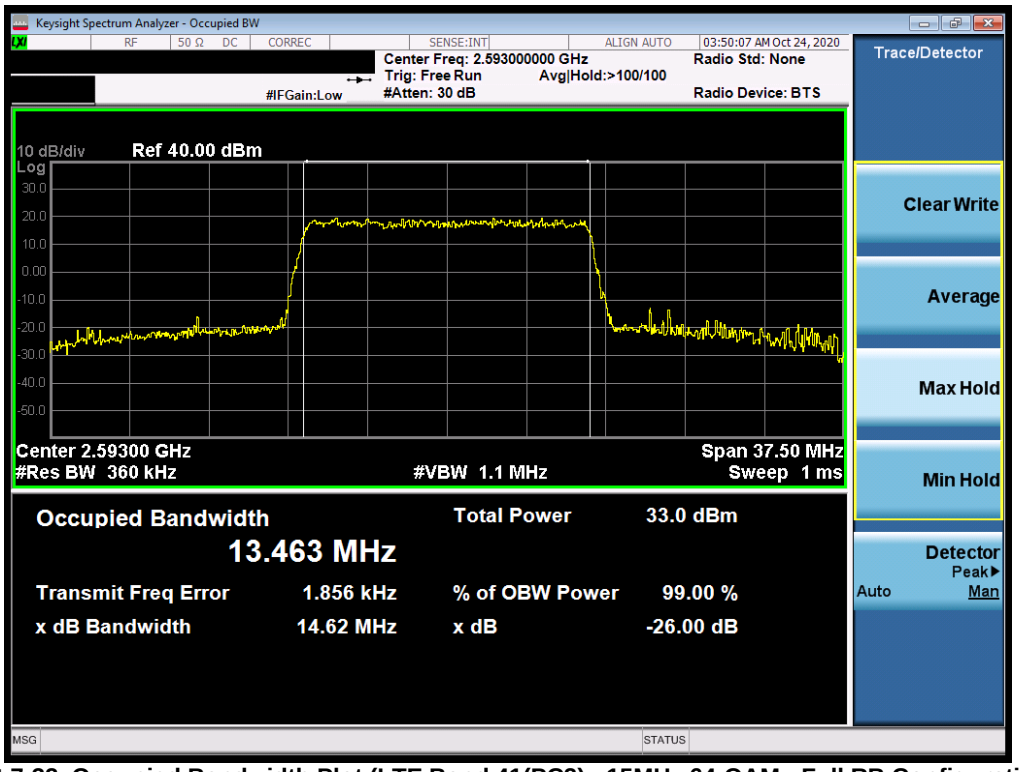
Plot 7-29. Occupied Bandwidth Plot (LTE Band 41(PC2) - 20MHz 256-QAM - Full RB Configuration)



Plot 7-30. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz QPSK - Full RB Configuration)

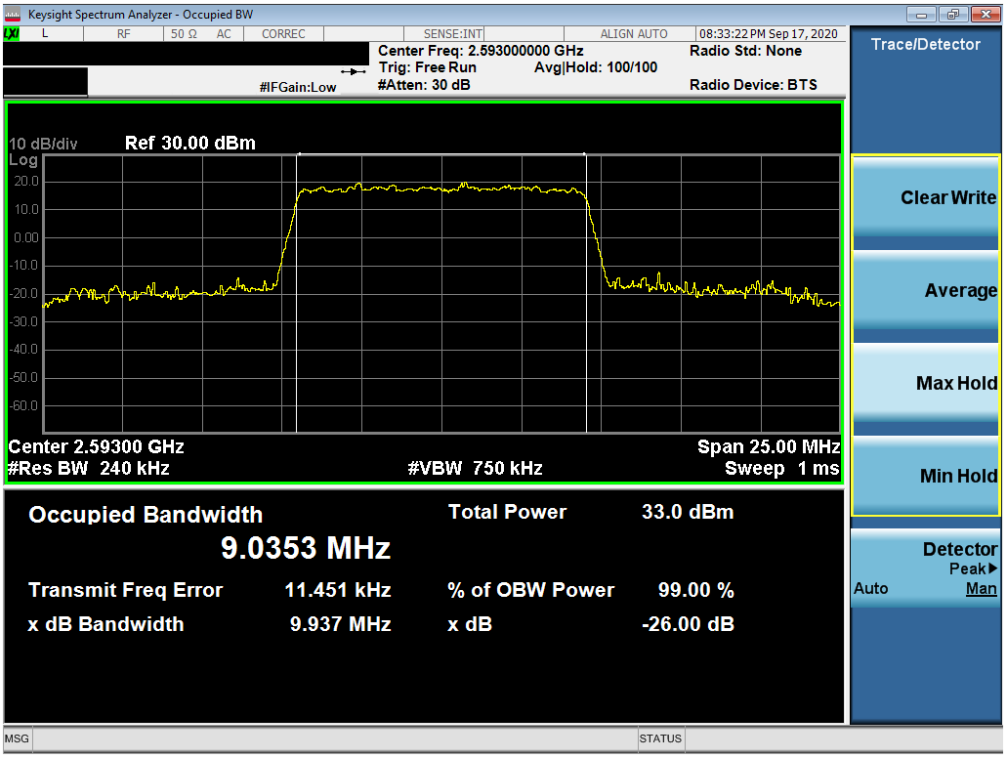


Plot 7-31. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz 16-QAM - Full RB Configuration)

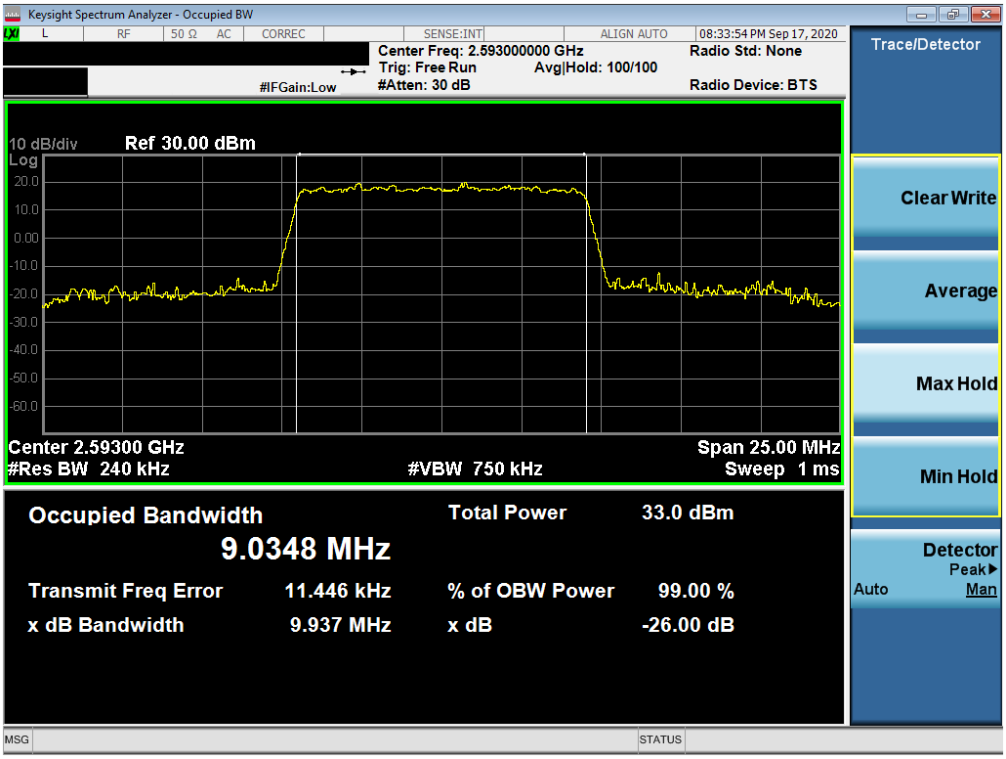


Plot 7-32. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz 64-QAM - Full RB Configuration)

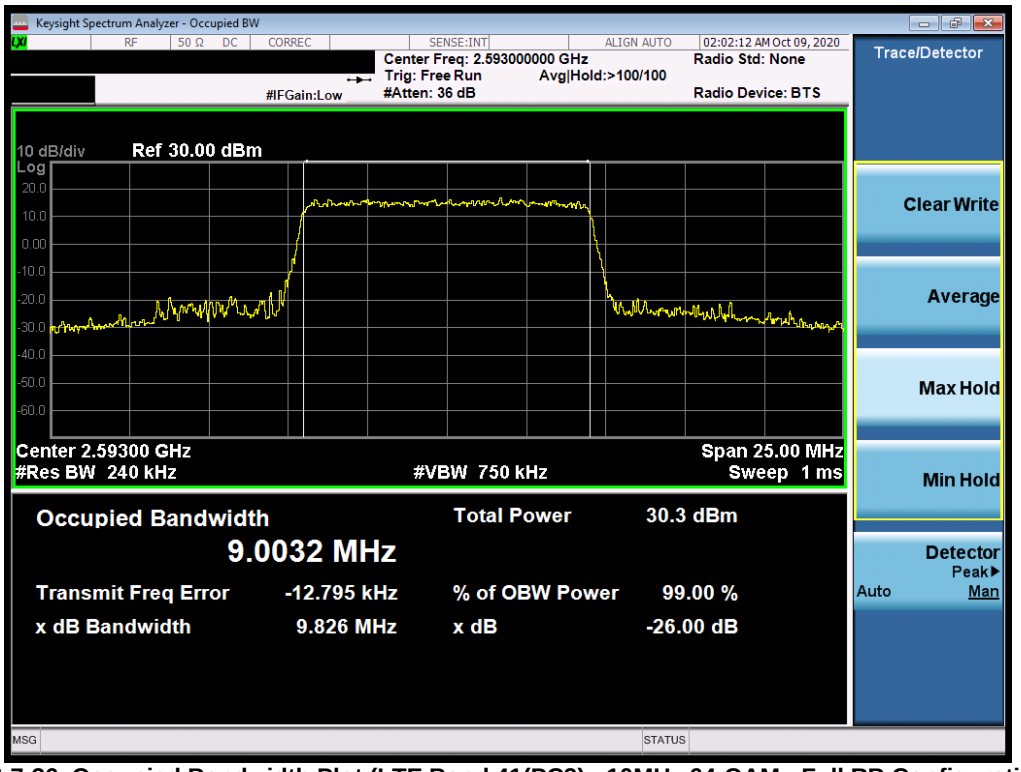
Plot 7-33. Occupied Bandwidth Plot (LTE Band 41(PC2) - 15MHz 256-QAM - Full RB Configuration)



Plot 7-34. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz QPSK - Full RB Configuration)

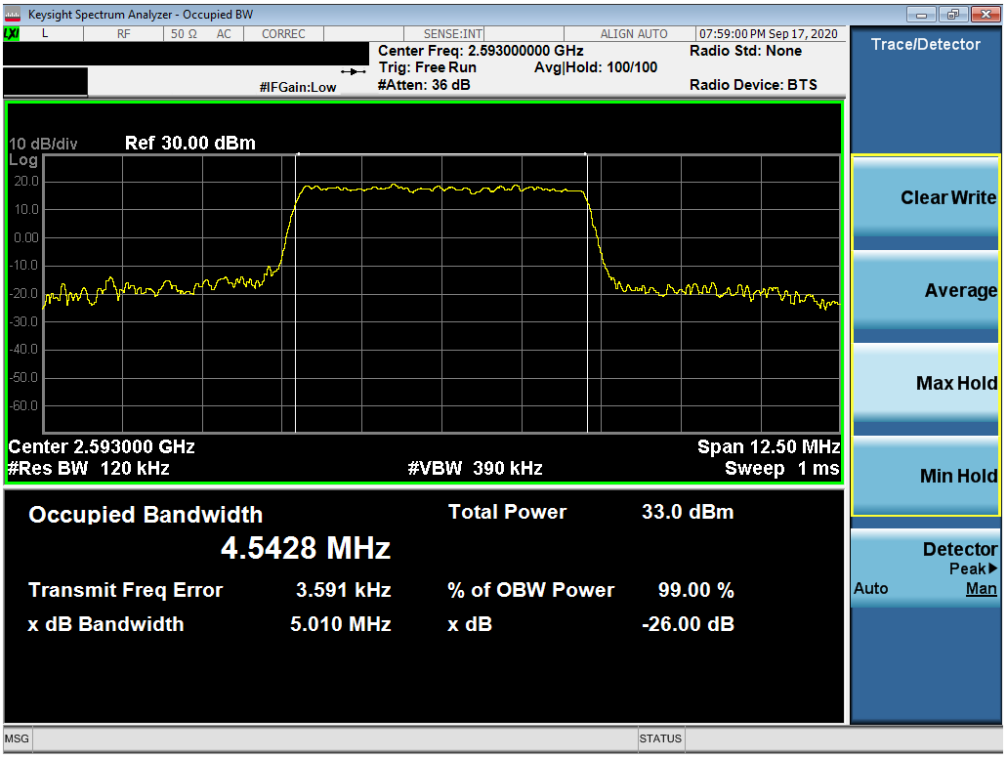


Plot 7-35. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz 16-QAM - Full RB Configuration)

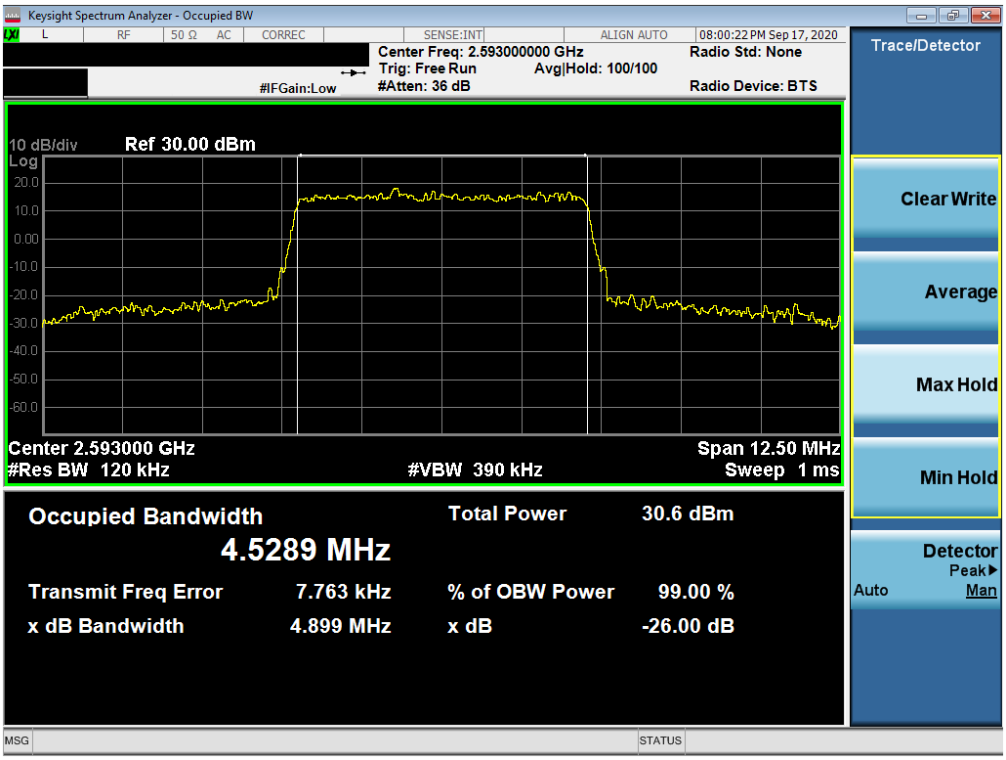


Plot 7-36. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz 64-QAM - Full RB Configuration)

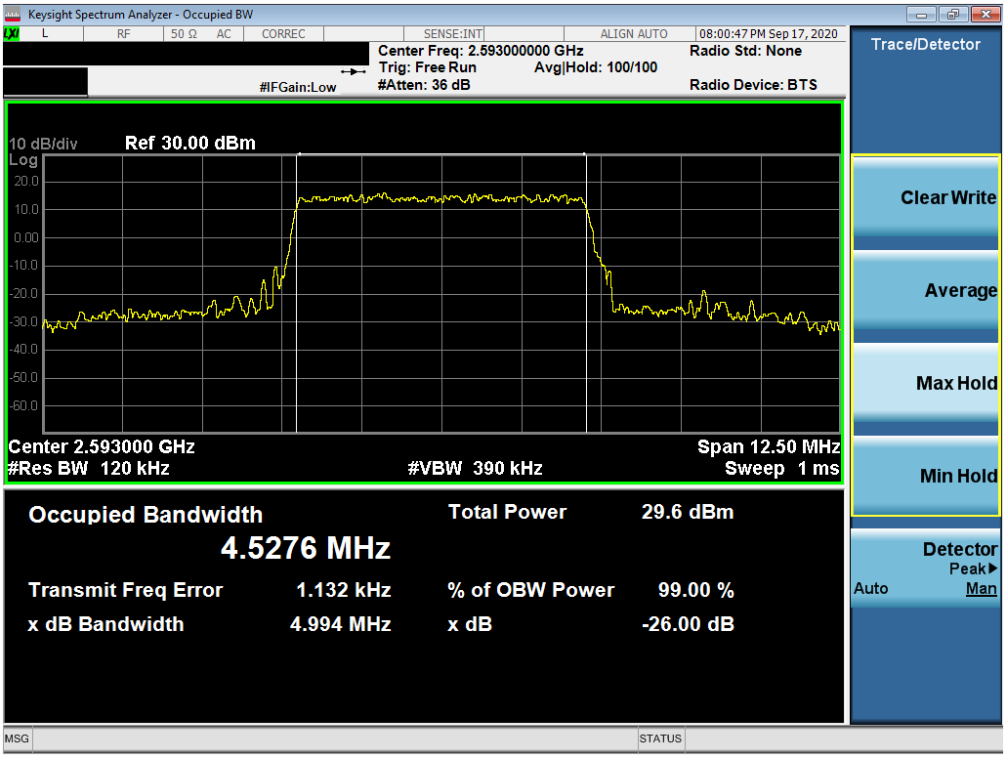
Plot 7-37. Occupied Bandwidth Plot (LTE Band 41(PC2) - 10MHz 256-QAM - Full RB Configuration)



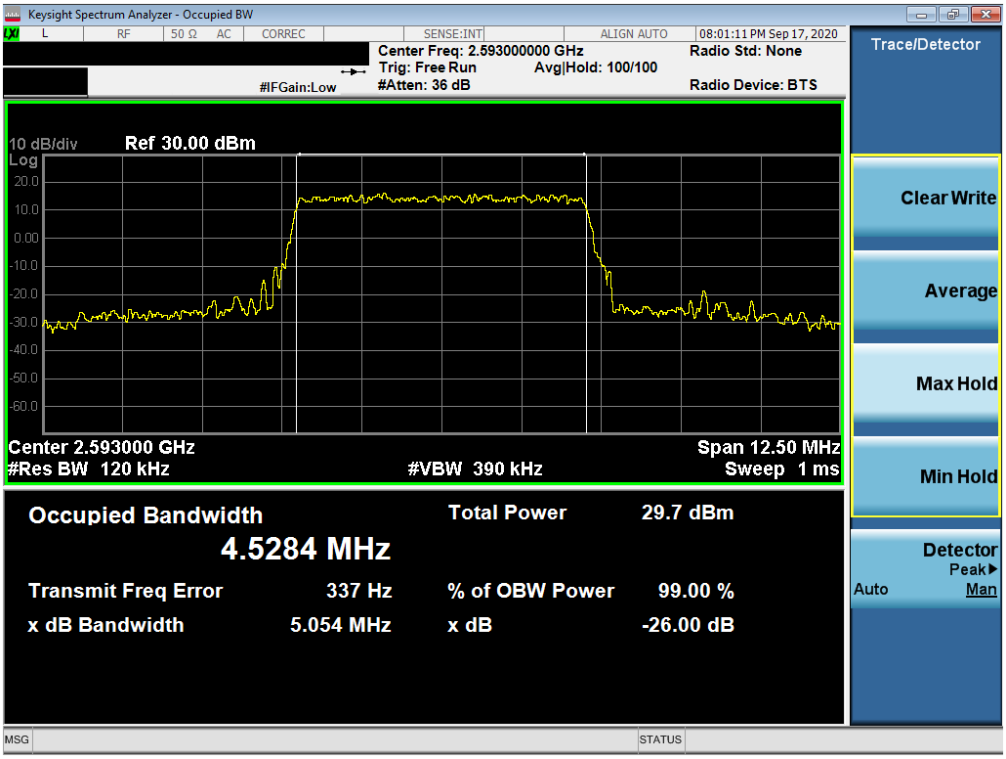
Plot 7-38. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz QPSK - Full RB Configuration)



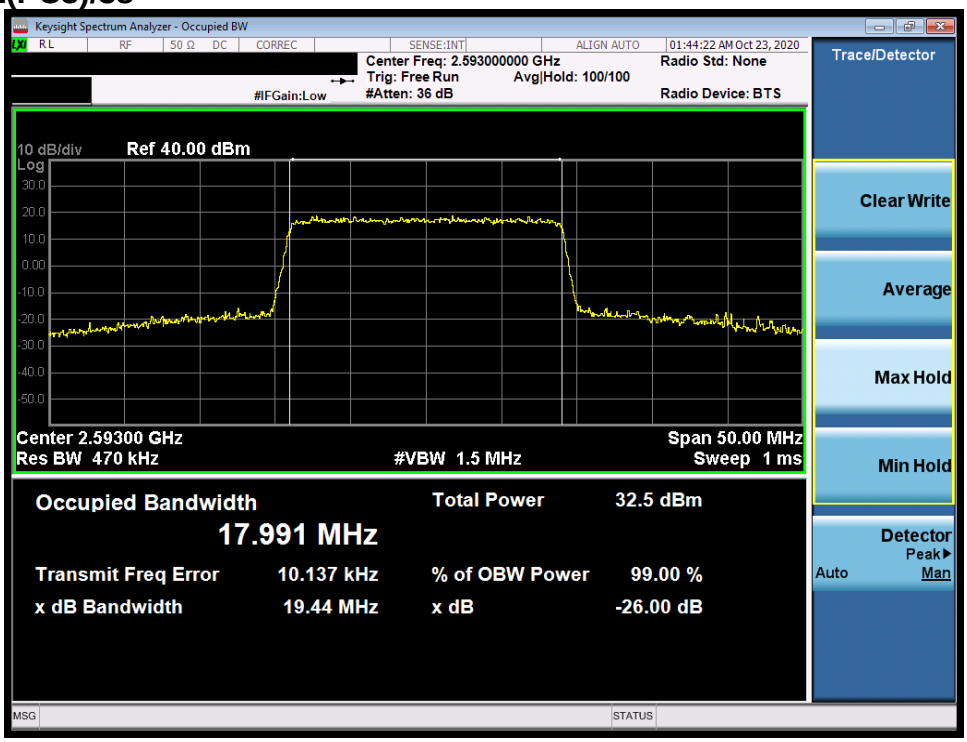
Plot 7-39. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz 16-QAM - Full RB Configuration)



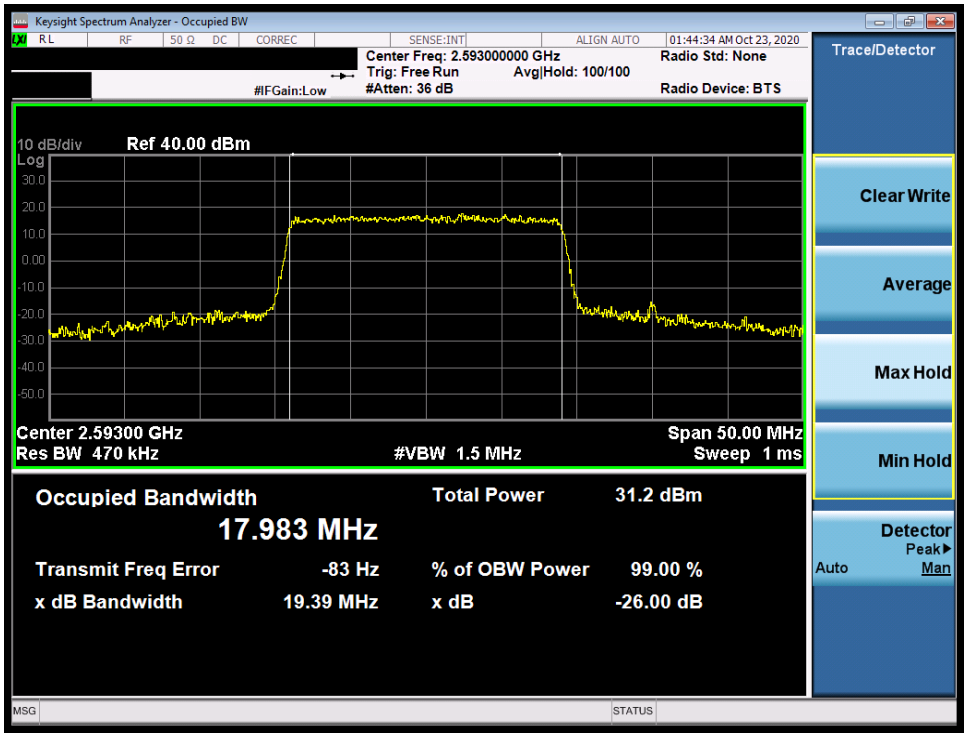
Plot 7-40. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz 64-QAM - Full RB Configuration)



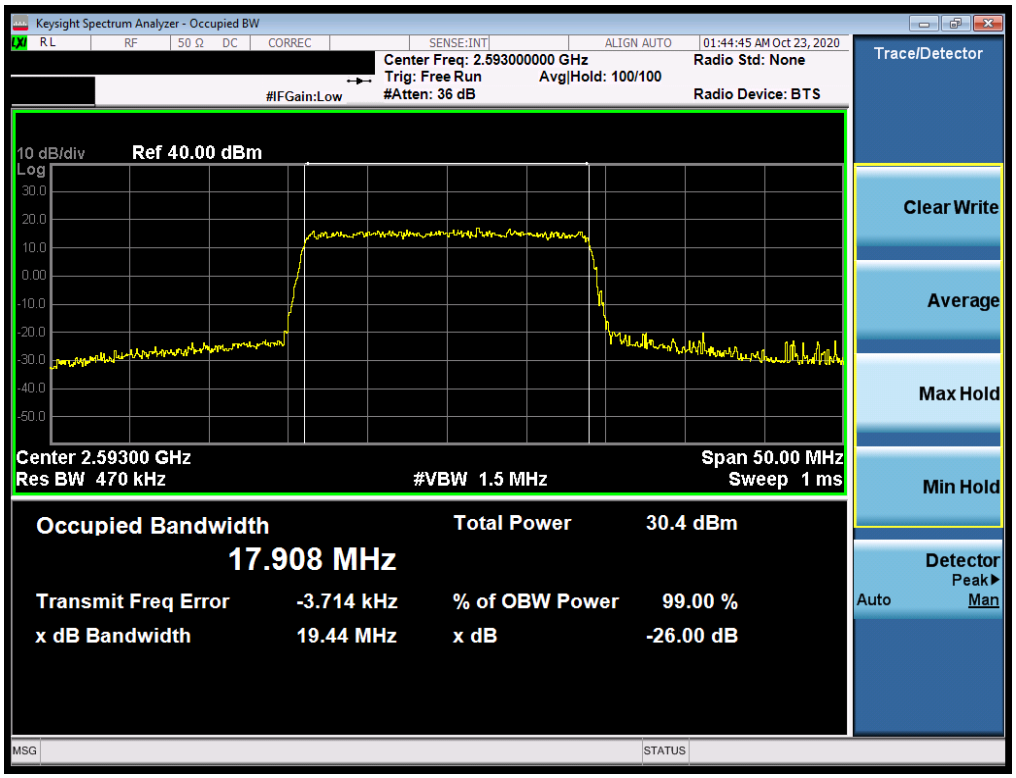
Plot 7-41. Occupied Bandwidth Plot (LTE Band 41(PC2) - 5MHz 256-QAM - Full RB Configuration)



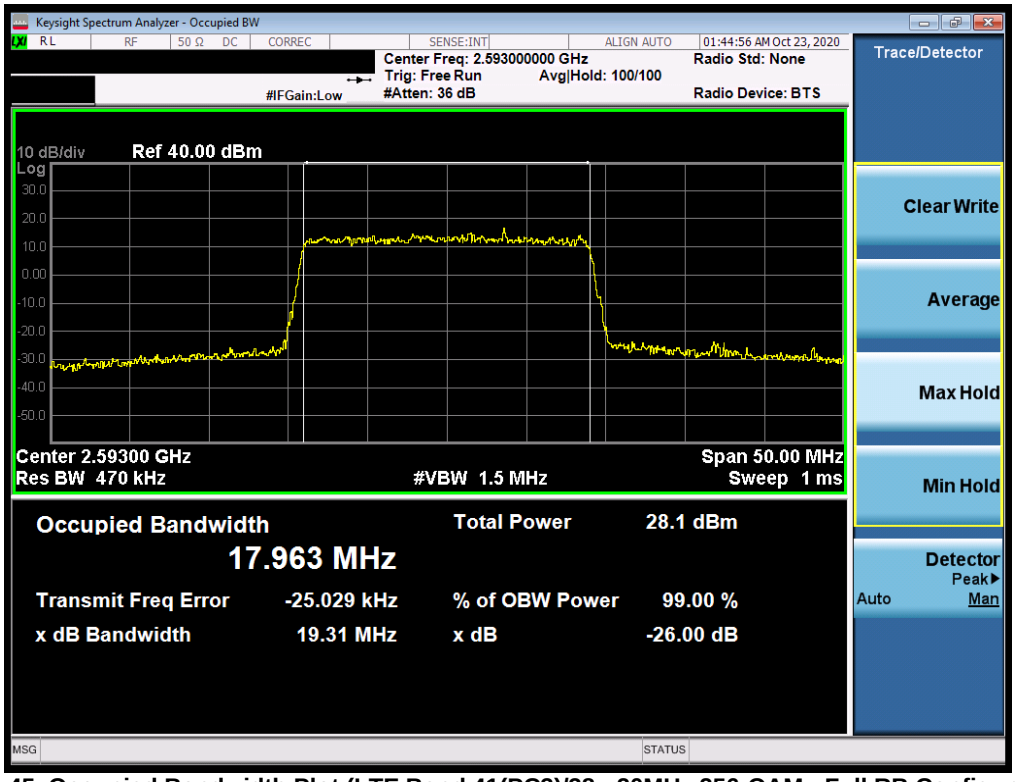
Plot 7-42. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 20MHz QPSK - Full RB Configuration)



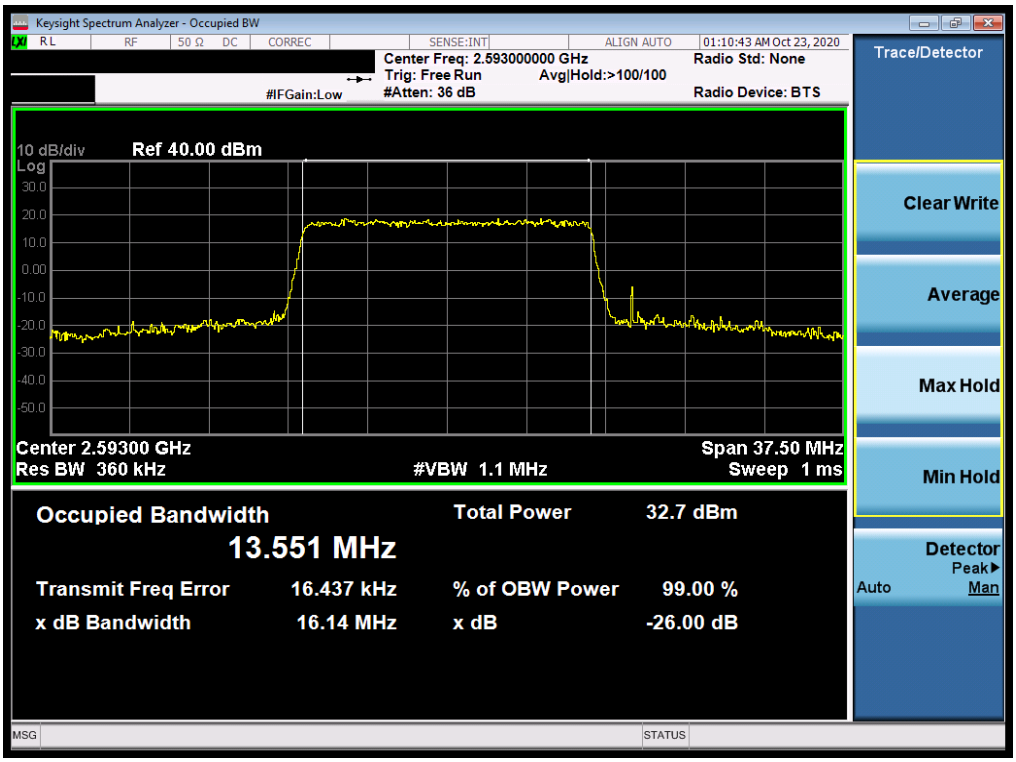
Plot 7-43. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 20MHz 16-QAM - Full RB Configuration)



Plot 7-44. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 20MHz 64-QAM - Full RB Configuration)

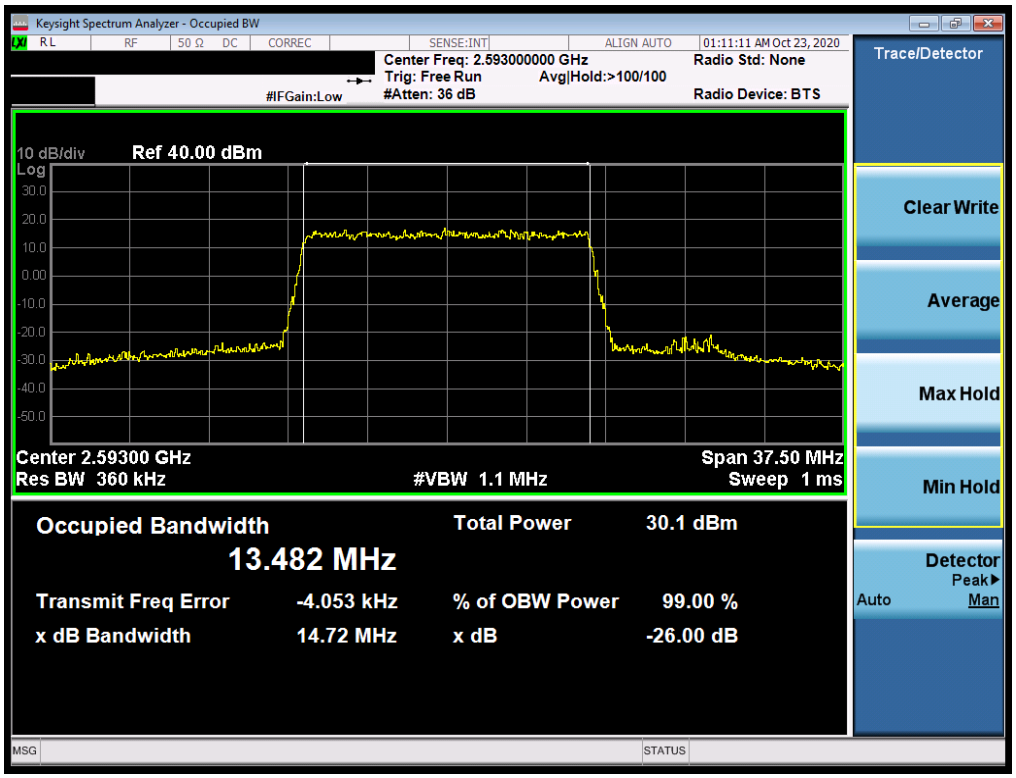


Plot 7-45. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 20MHz 256-QAM - Full RB Configuration)

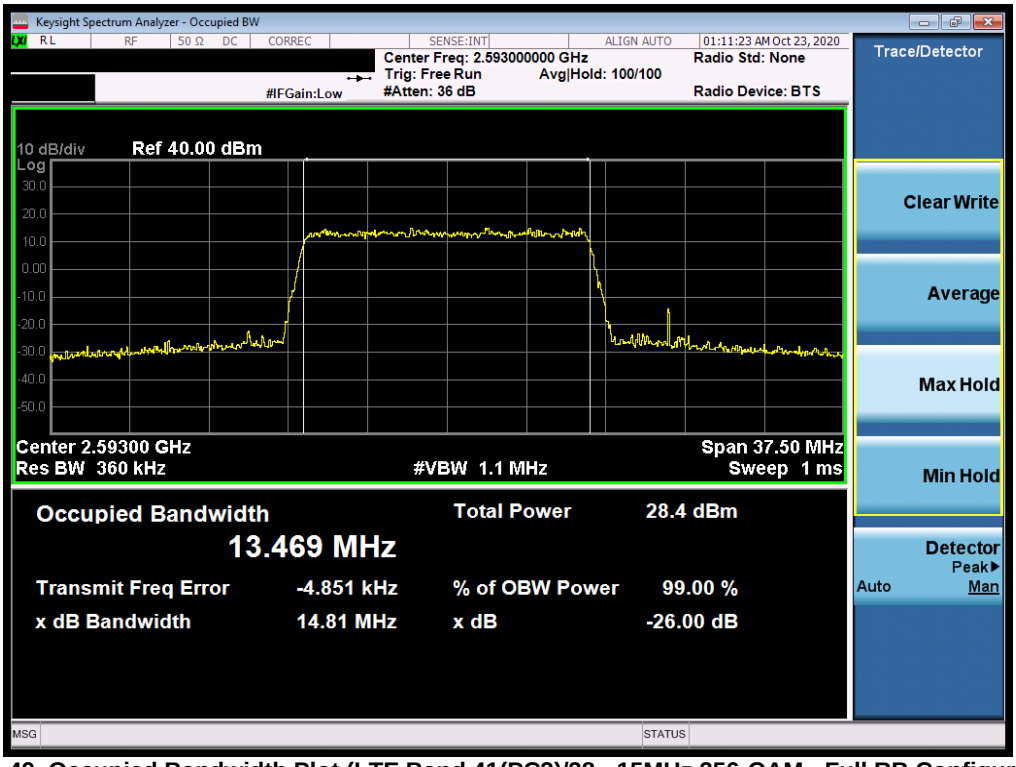


Plot 7-46. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 15MHz QPSK - Full RB Configuration)

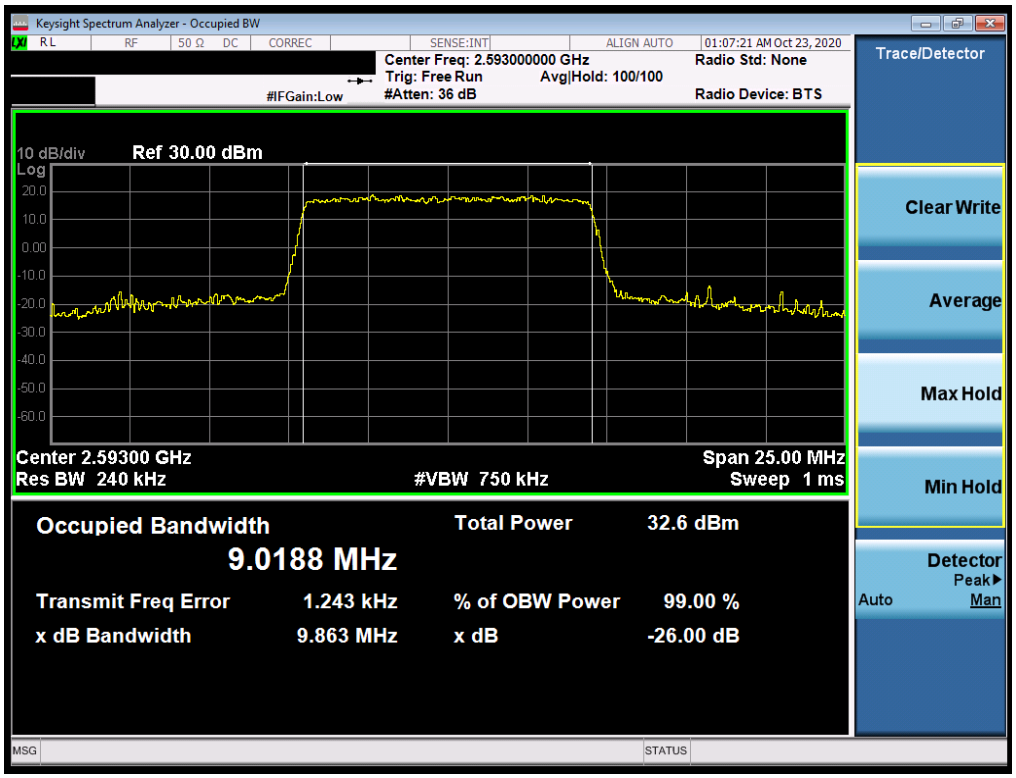
Plot 7-47. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 15MHz 16-QAM - Full RB Configuration)



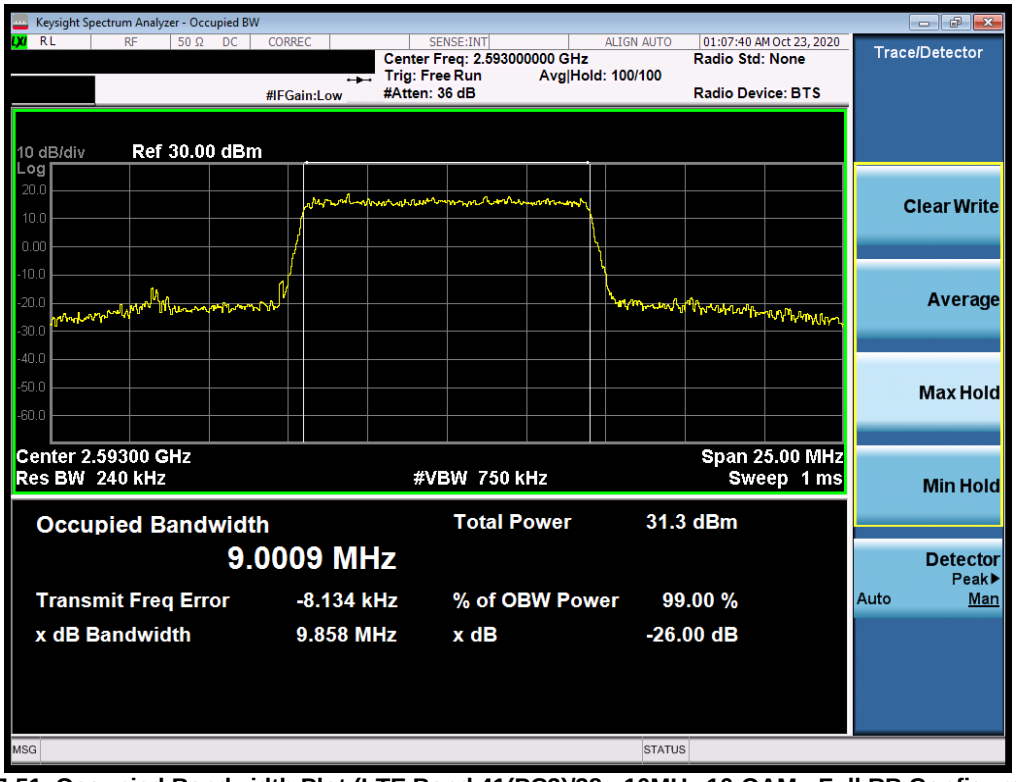
Plot 7-48. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 15MHz 64-QAM - Full RB Configuration)



Plot 7-49. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 15MHz 256-QAM - Full RB Configuration)



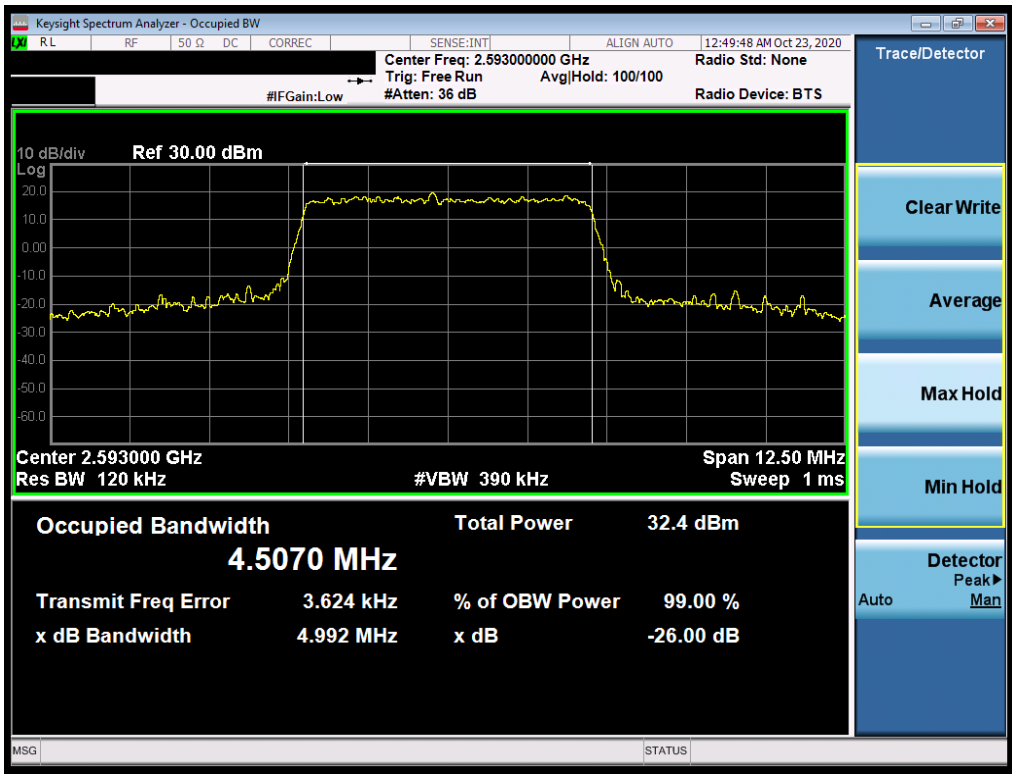
Plot 7-50. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 10MHz QPSK - Full RB Configuration)



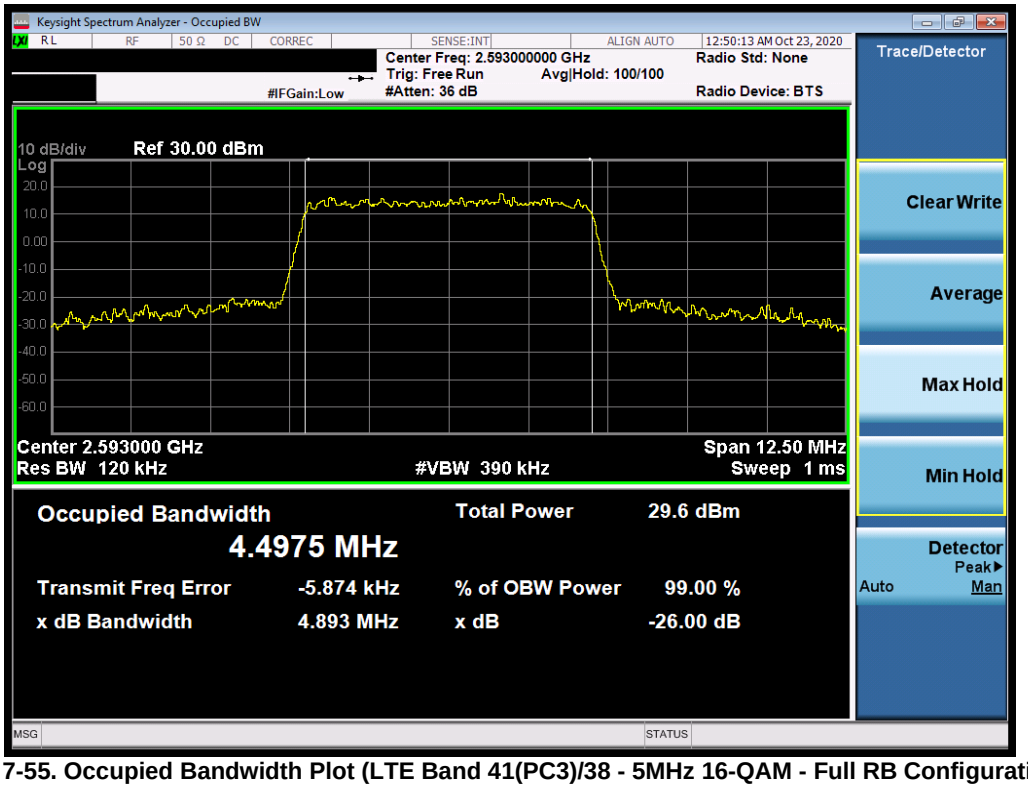
Plot 7-51. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 10MHz 16-QAM - Full RB Configuration)

Plot 7-52. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 10MHz 64-QAM - Full RB Configuration)

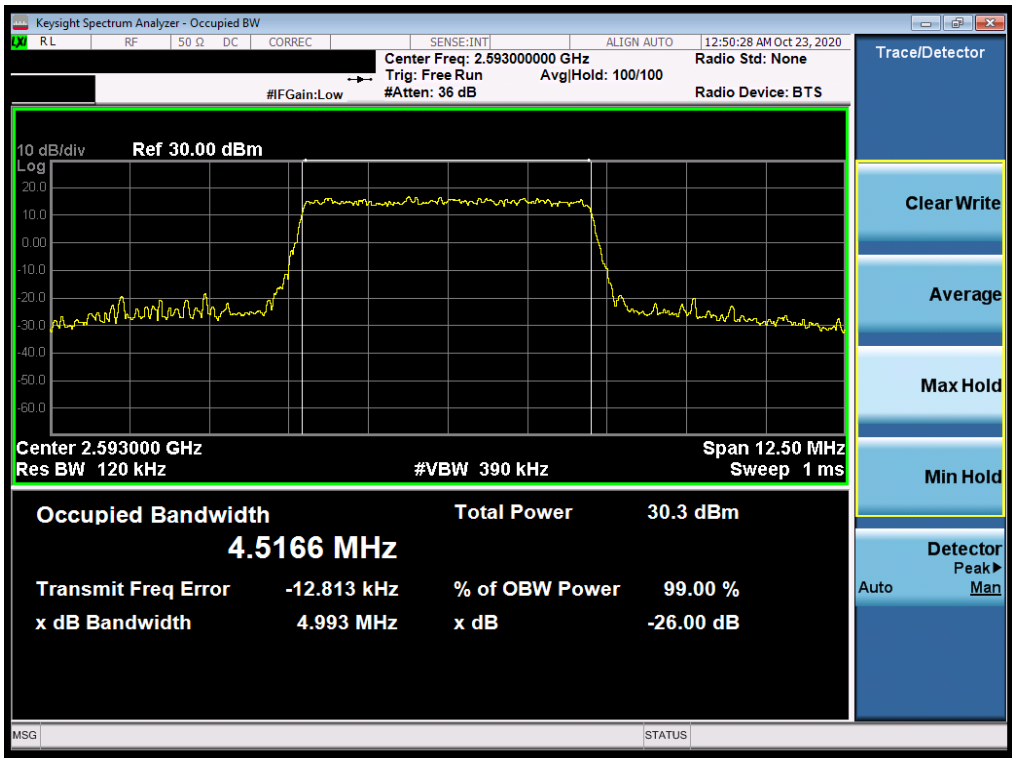
Plot 7-53. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 10MHz 256-QAM - Full RB Configuration)



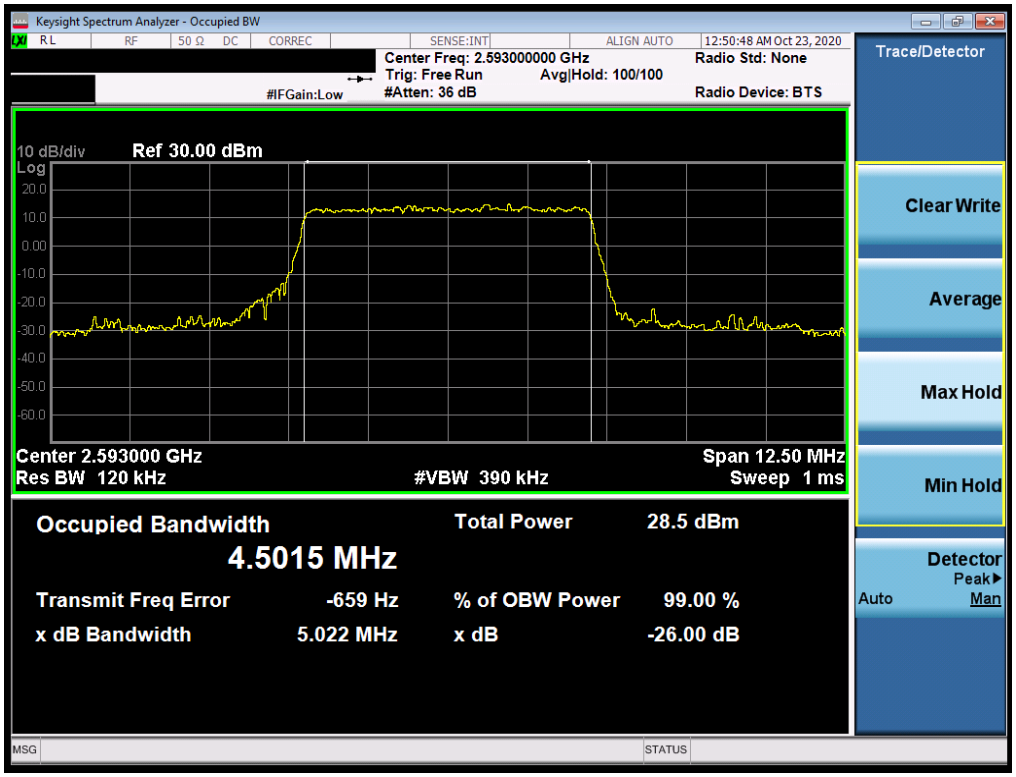
Plot 7-54. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 5MHz QPSK - Full RB Configuration)



Plot 7-55. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 5MHz 16-QAM - Full RB Configuration)

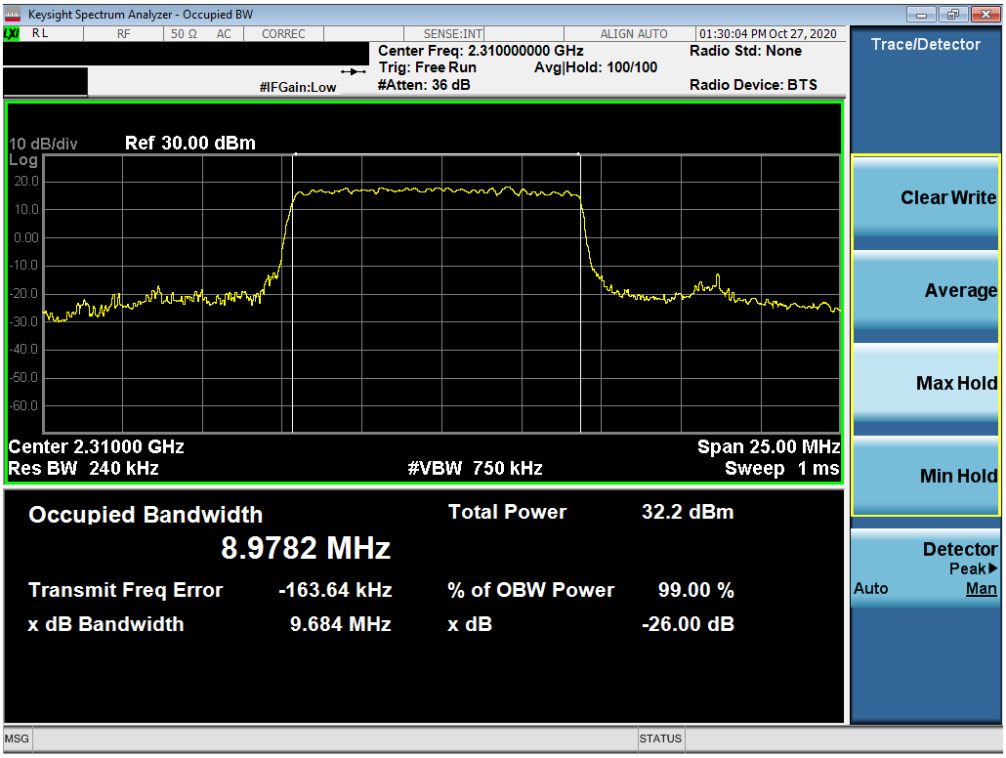


Plot 7-56. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 5MHz 64-QAM - Full RB Configuration)

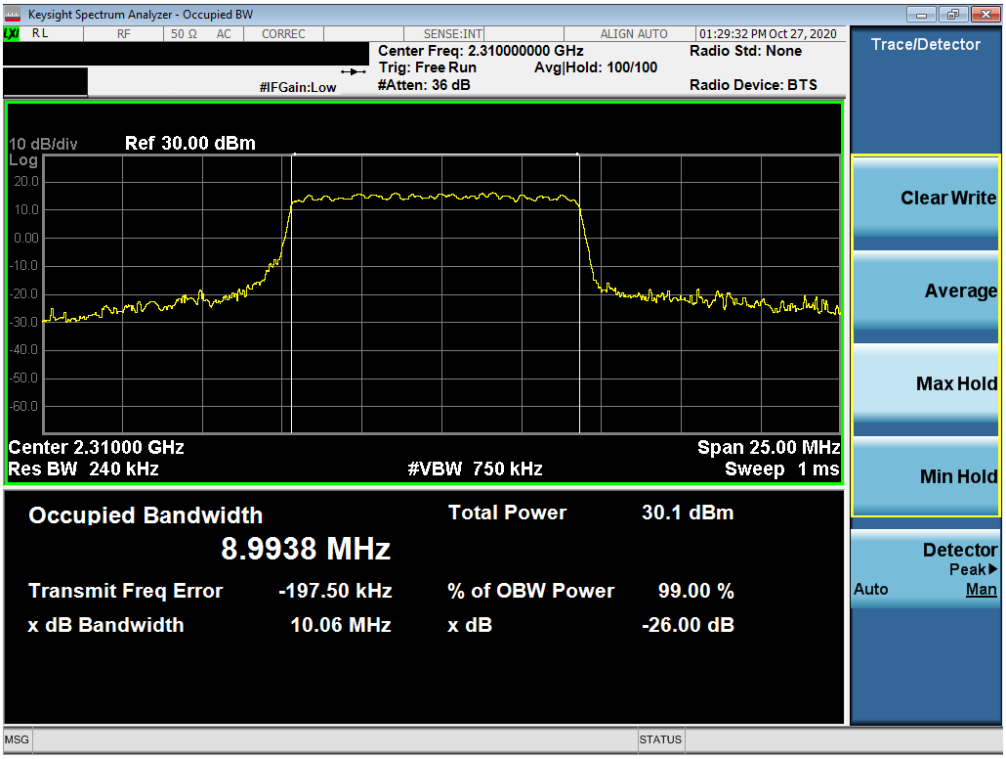


Plot 7-57. Occupied Bandwidth Plot (LTE Band 41(PC3)/38 - 5MHz 256-QAM - Full RB Configuration)

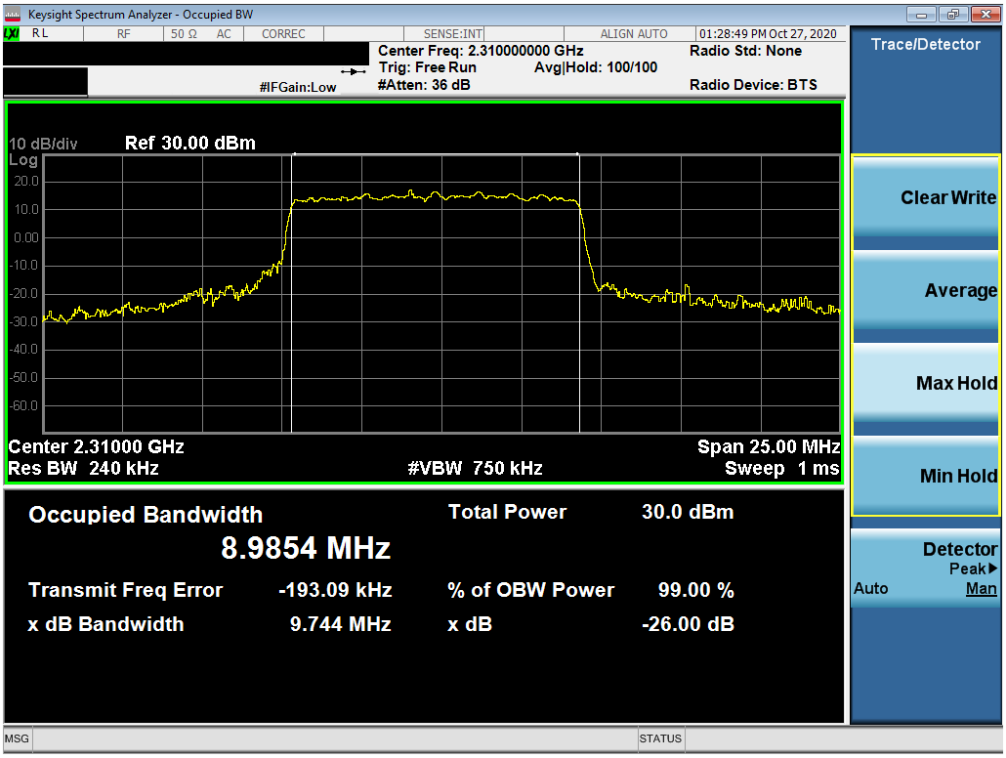
NR Band n30



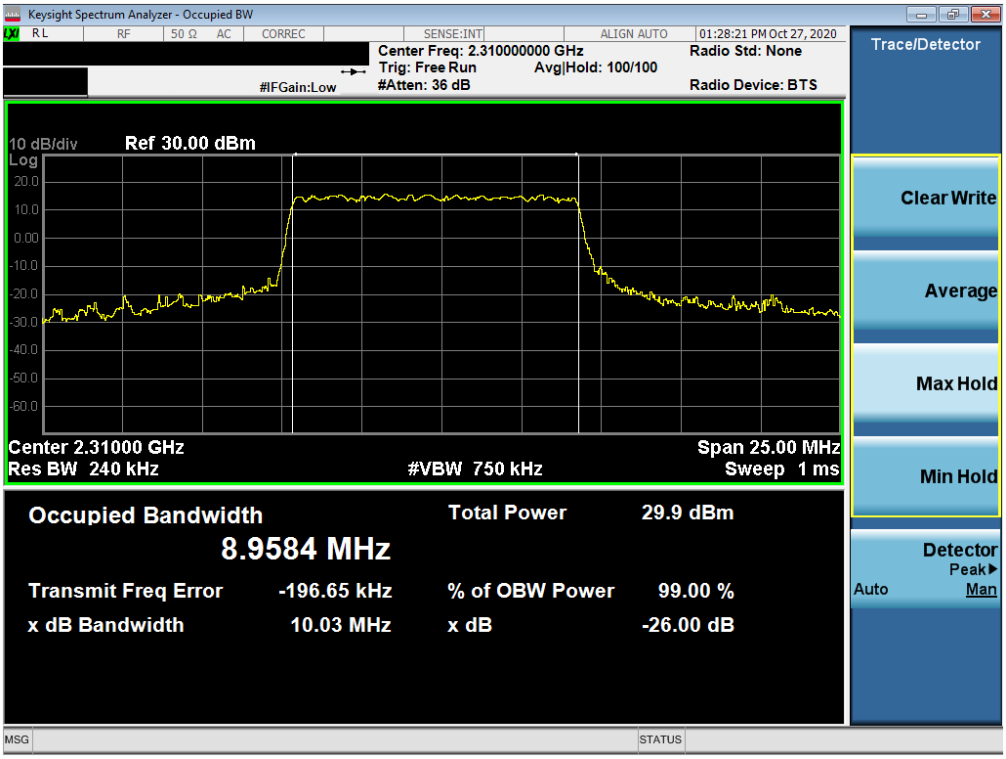
Plot 7-58. Occupied Bandwidth Plot (NR Band n30 - 10MHz π/2 BPSK - Full RB Configuration)



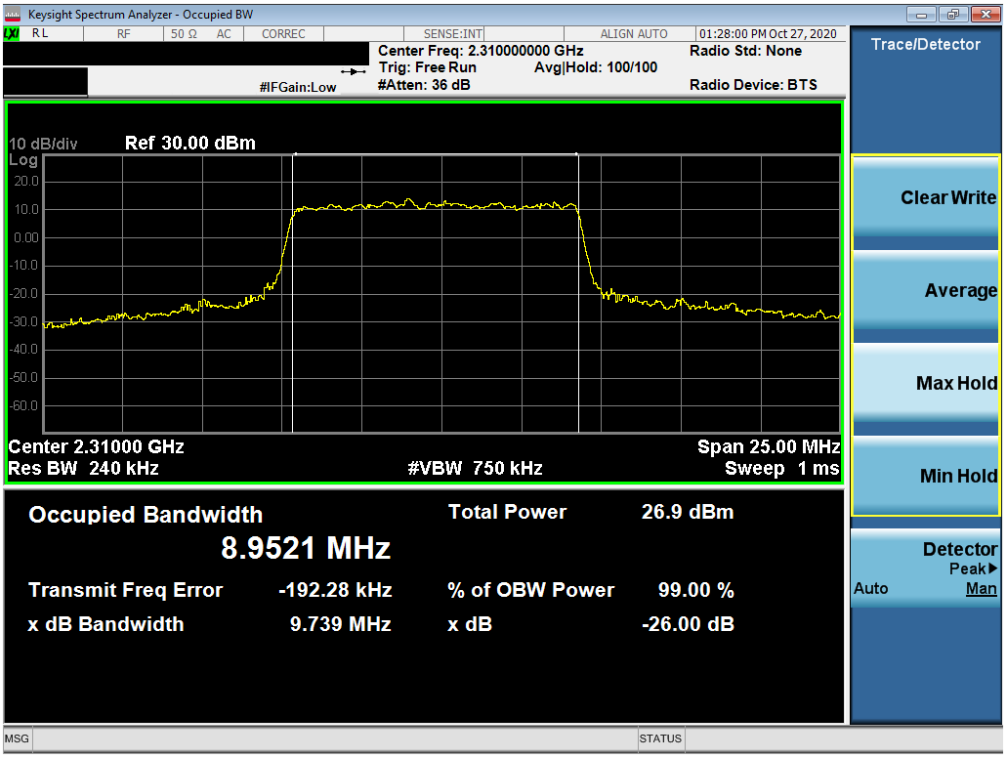
Plot 7-59. Occupied Bandwidth Plot (NR Band n30 - 10MHz QPSK - Full RB Configuration)



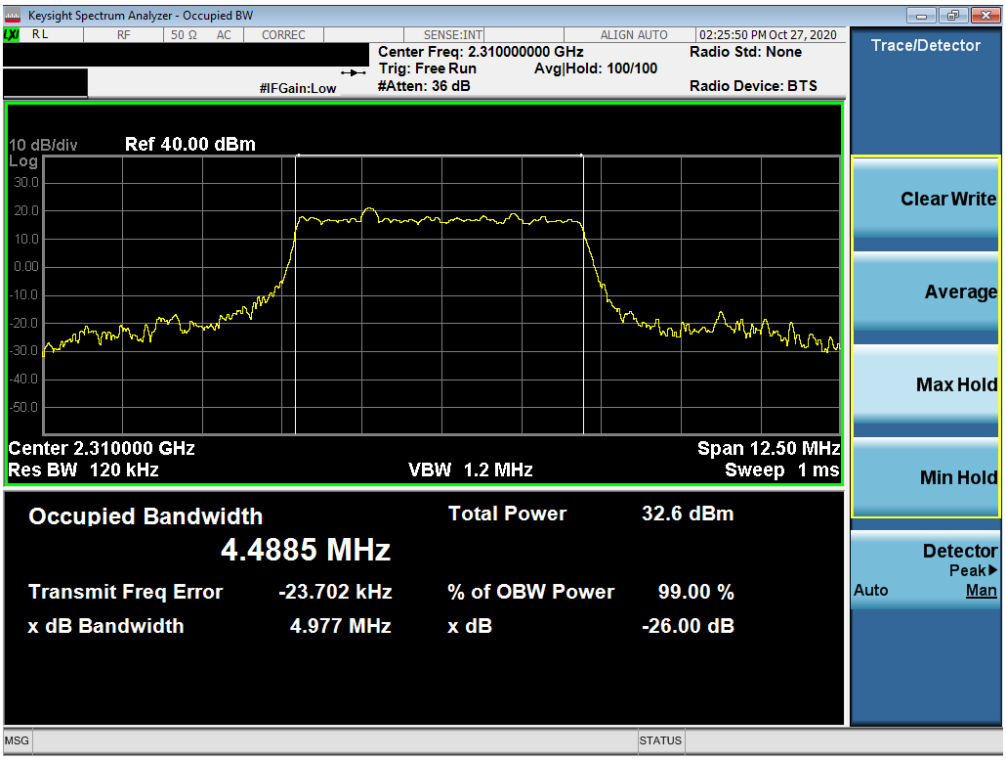
Plot 7-60. Occupied Bandwidth Plot (NR Band n30 - 10MHz 16-QAM - Full RB Configuration)



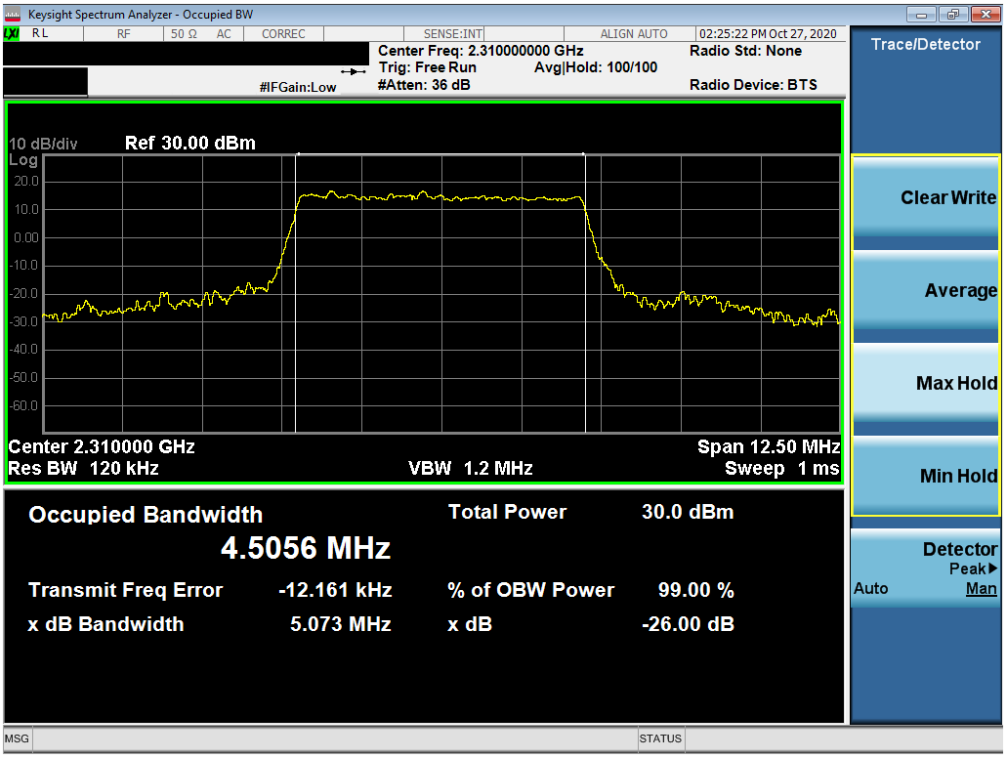
Plot 7-61. Occupied Bandwidth Plot (NR Band n30 - 10MHz 64-QAM - Full RB Configuration)



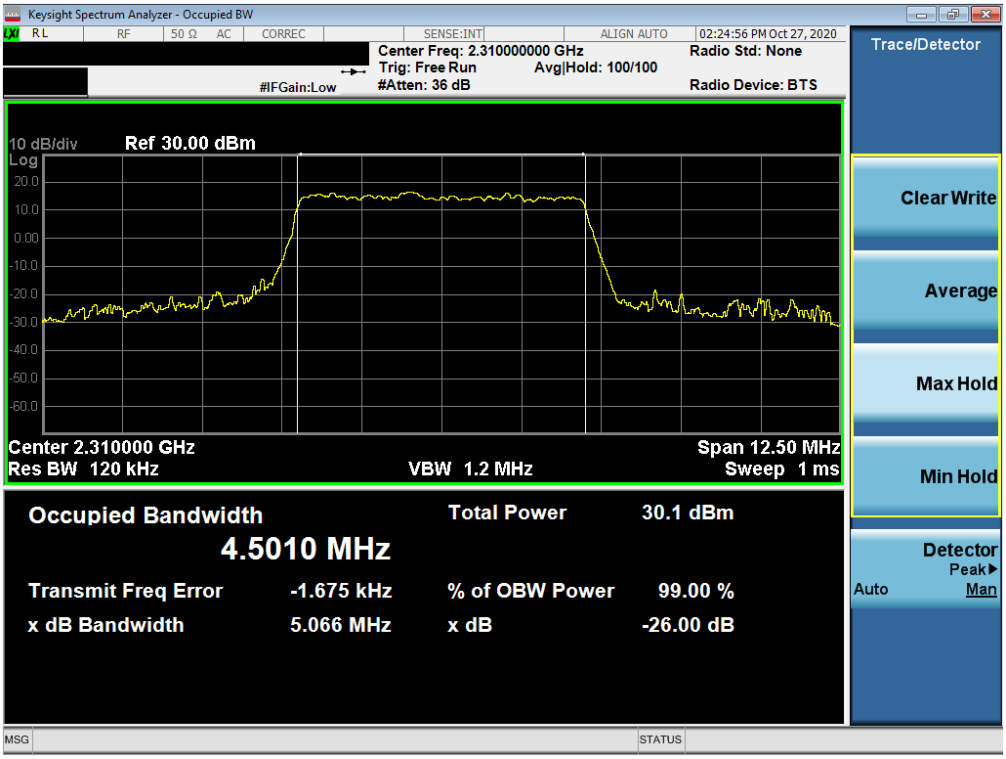
Plot 7-62. Occupied Bandwidth Plot (NR Band n30 - 10MHz 256-QAM - Full RB Configuration)



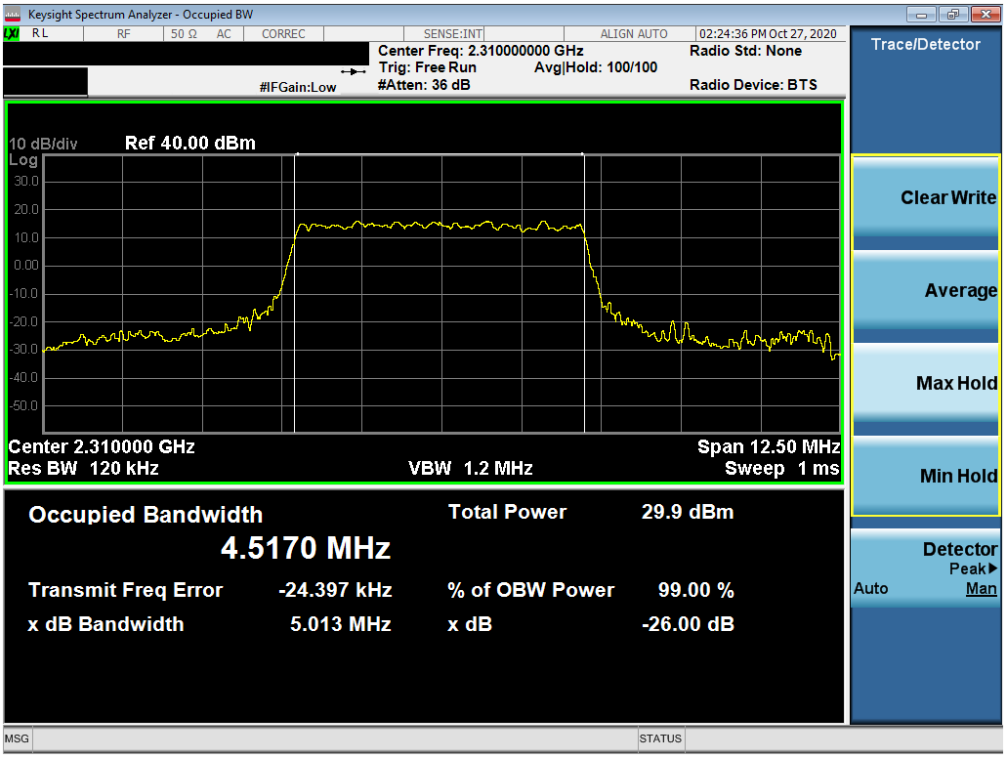
Plot 7-63. Occupied Bandwidth Plot (NR Band n30 - 5MHz π/2 BPSK - Full RB Configuration)



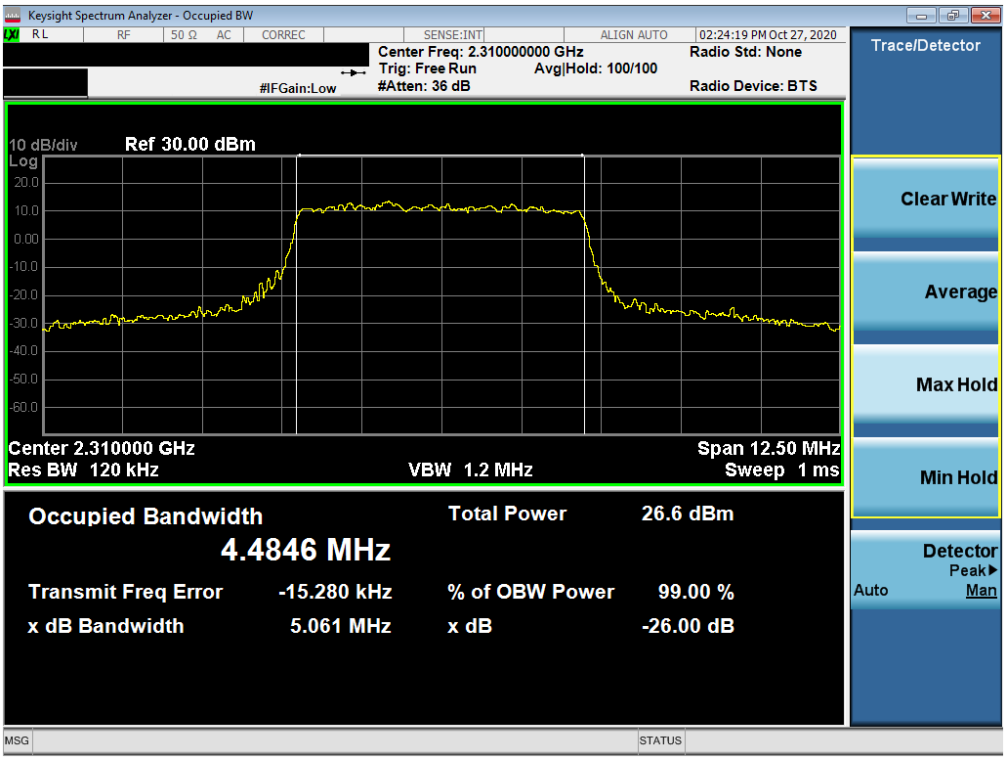
Plot 7-64. Occupied Bandwidth Plot (NR Band n30 - 5MHz QPSK - Full RB Configuration)



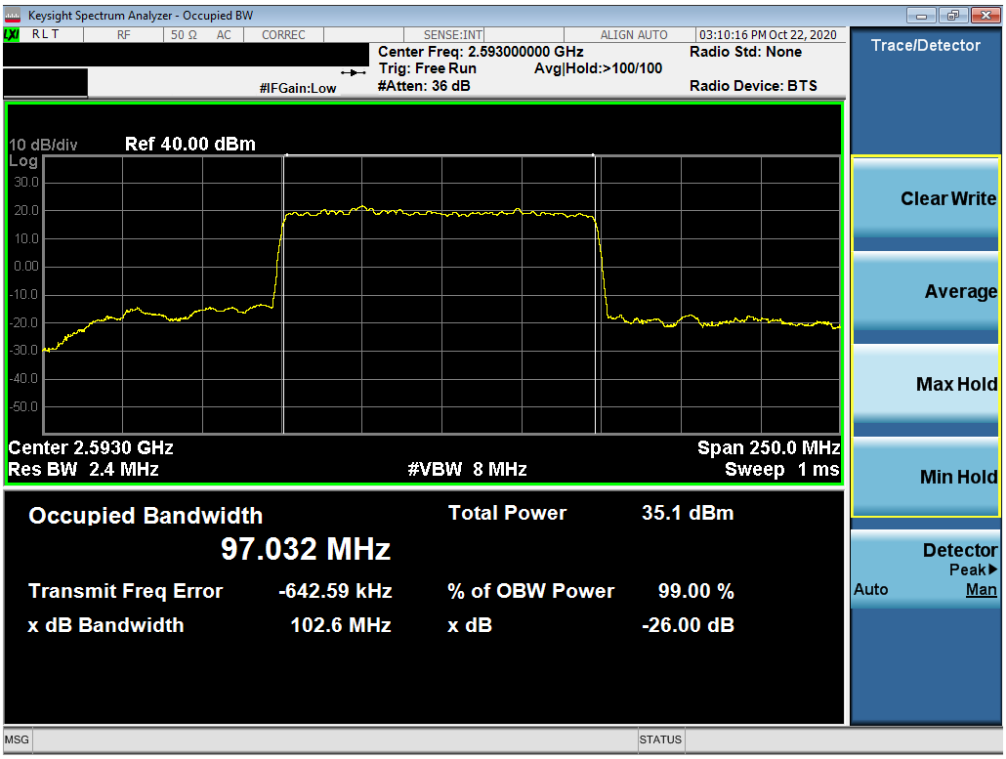
Plot 7-65. Occupied Bandwidth Plot (NR Band n30 - 5MHz 16-QAM - Full RB Configuration)



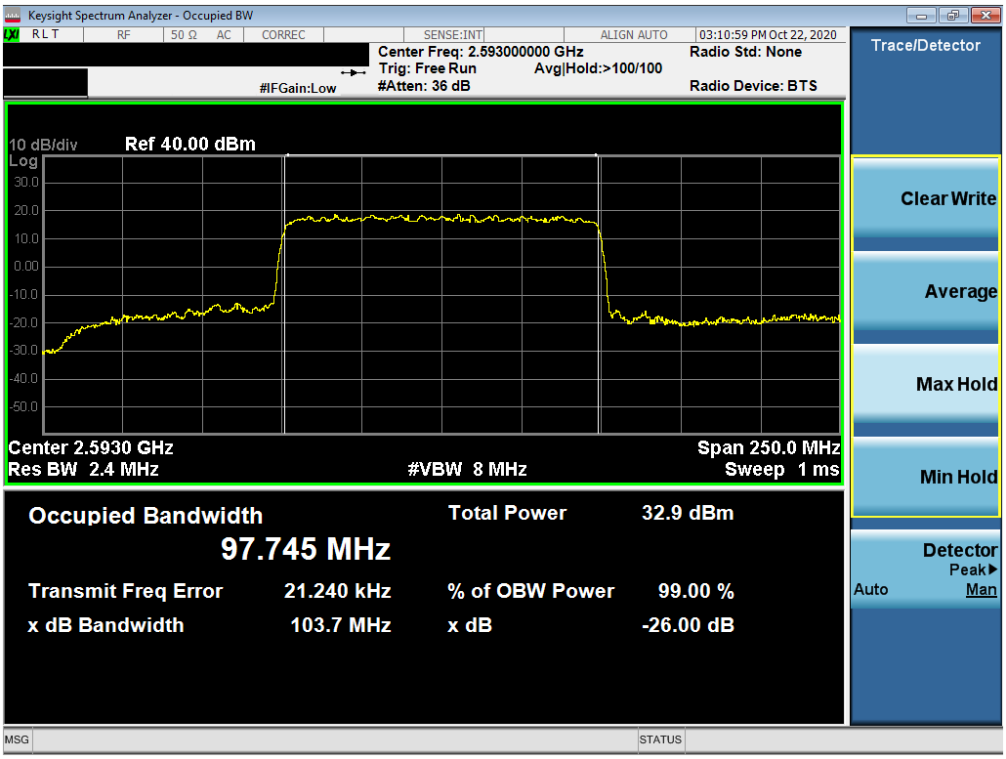
Plot 7-66. Occupied Bandwidth Plot (NR Band n30 - 5MHz 64-QAM - Full RB Configuration)



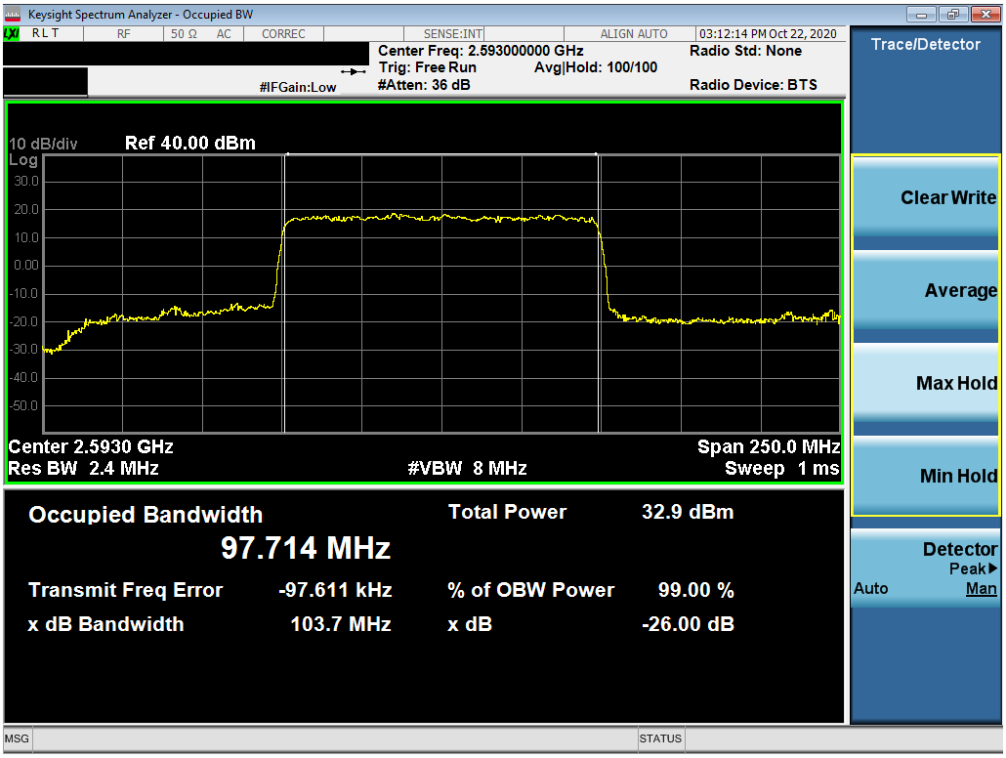
Plot 7-67. Occupied Bandwidth Plot (NR Band n30 - 5MHz 256-QAM - Full RB Configuration)



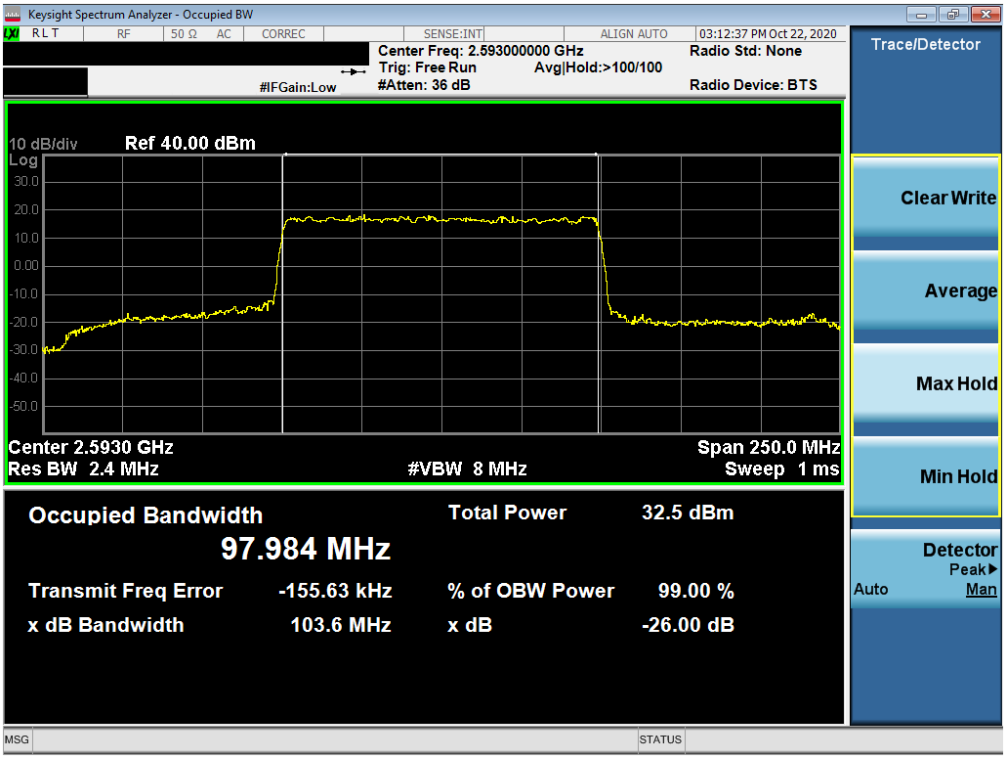
Plot 7-68. Occupied Bandwidth Plot (NR Band n41 - 100MHz π/2 BPSK - Full RB Configuration)



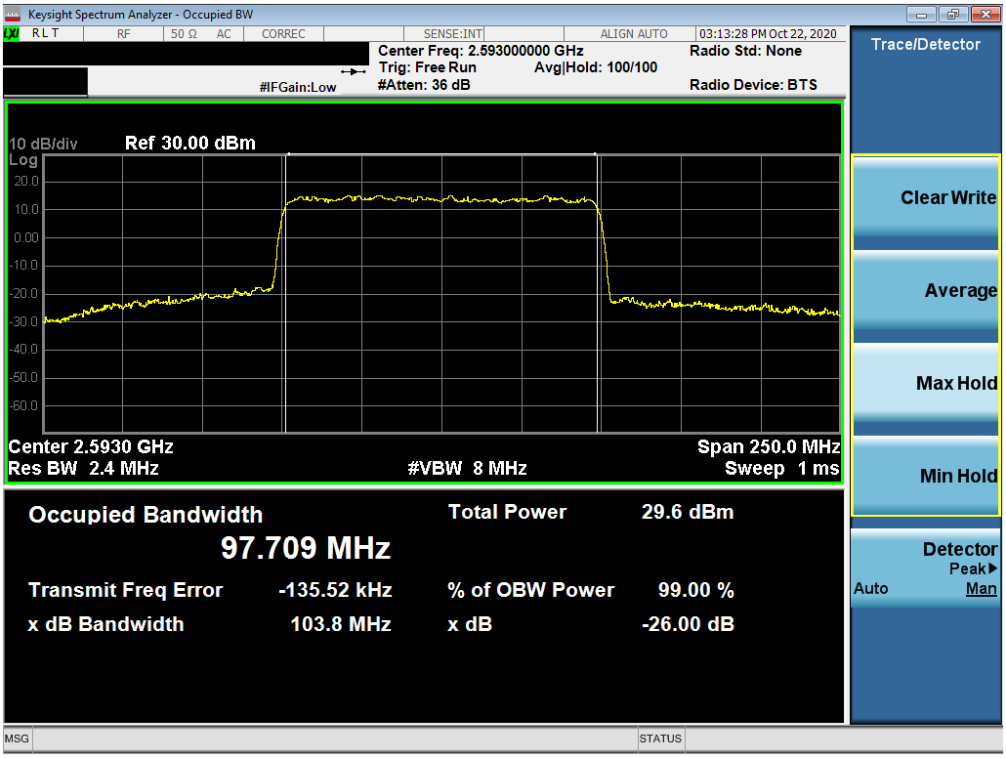
Plot 7-69. Occupied Bandwidth Plot (NR Band n41 - 100MHz QPSK - Full RB Configuration)



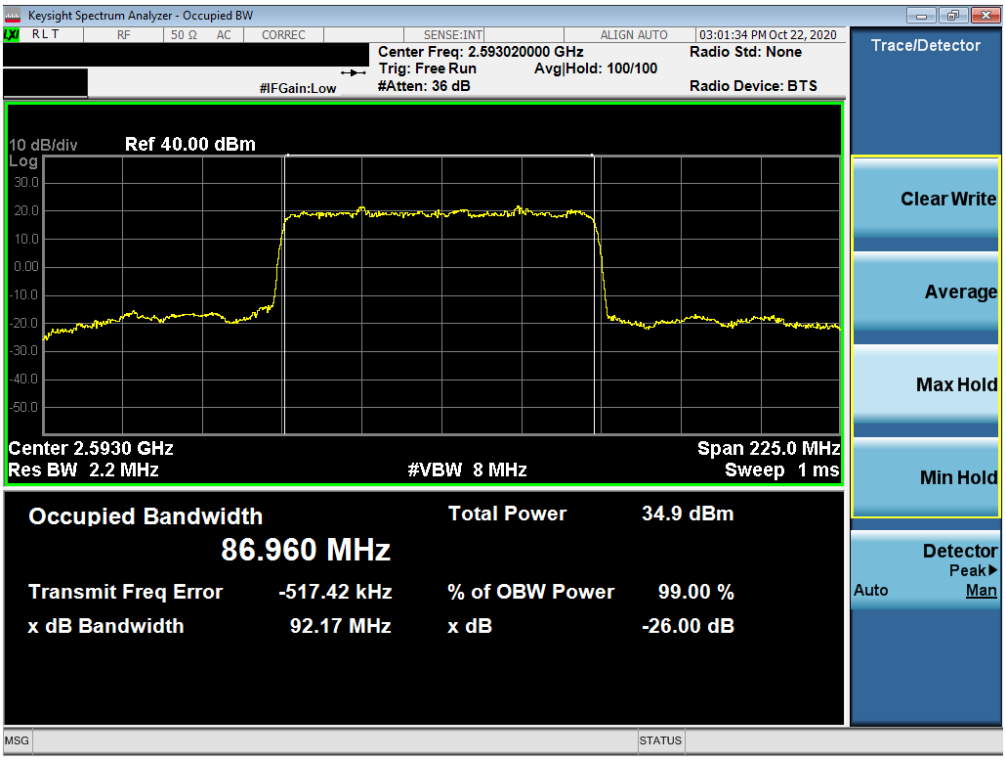
Plot 7-70. Occupied Bandwidth Plot (NR Band n41 - 100MHz 16-QAM - Full RB Configuration)



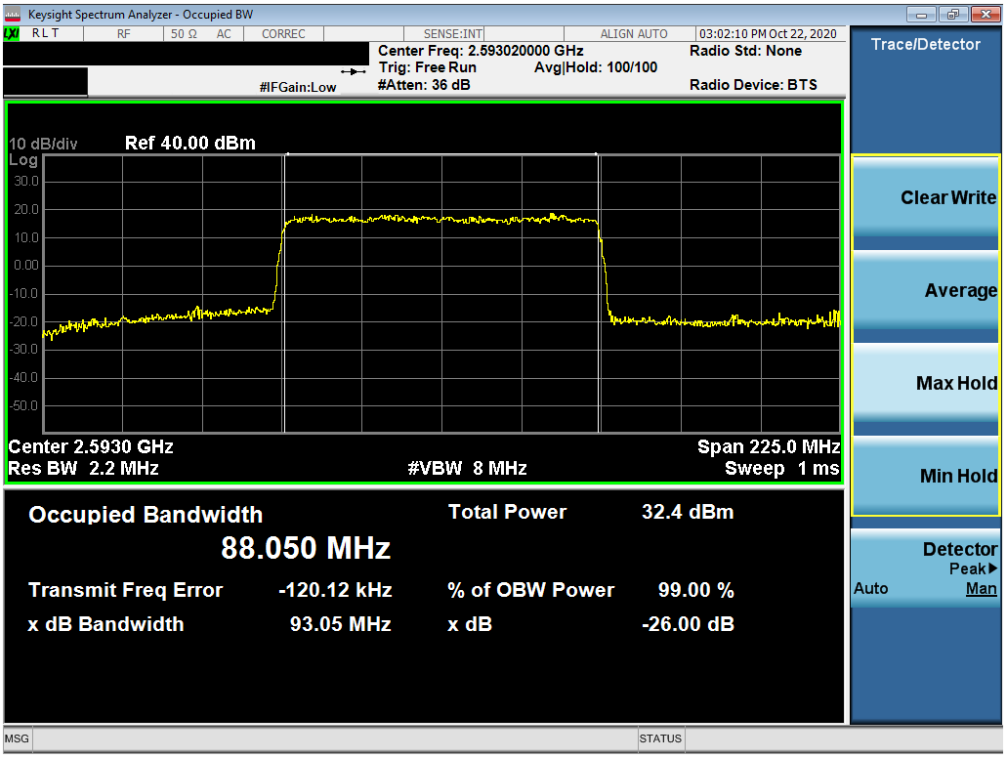
Plot 7-71. Occupied Bandwidth Plot (NR Band n41 - 100MHz 64-QAM - Full RB Configuration)



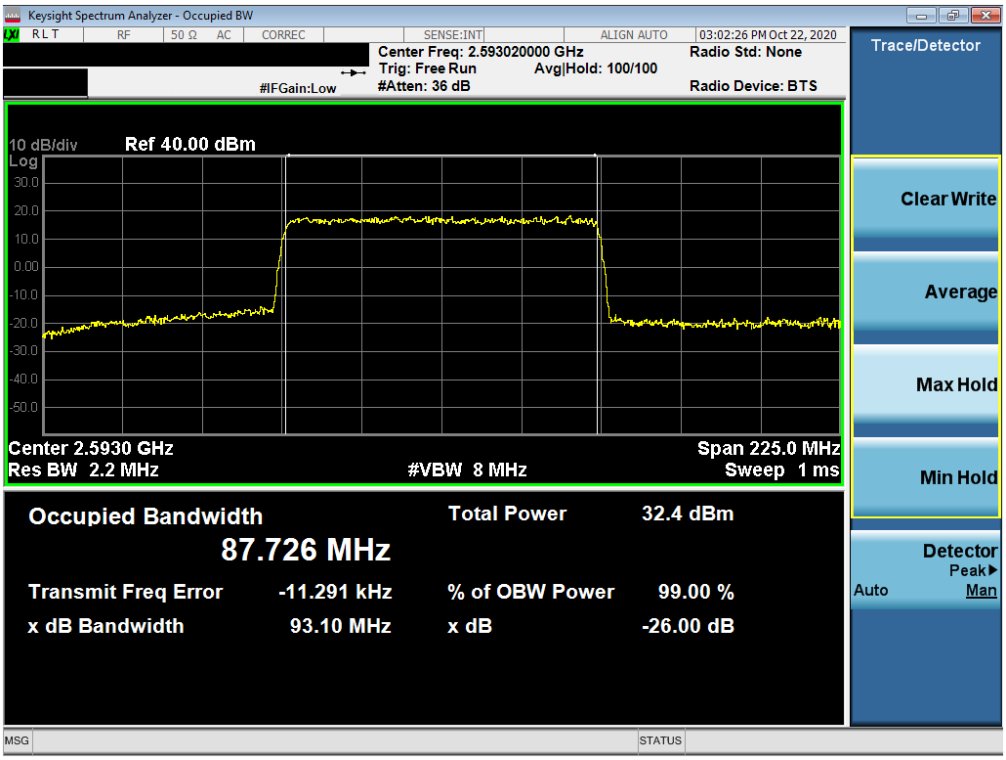
Plot 7-72. Occupied Bandwidth Plot (NR Band n41 - 100MHz 256-QAM - Full RB Configuration)



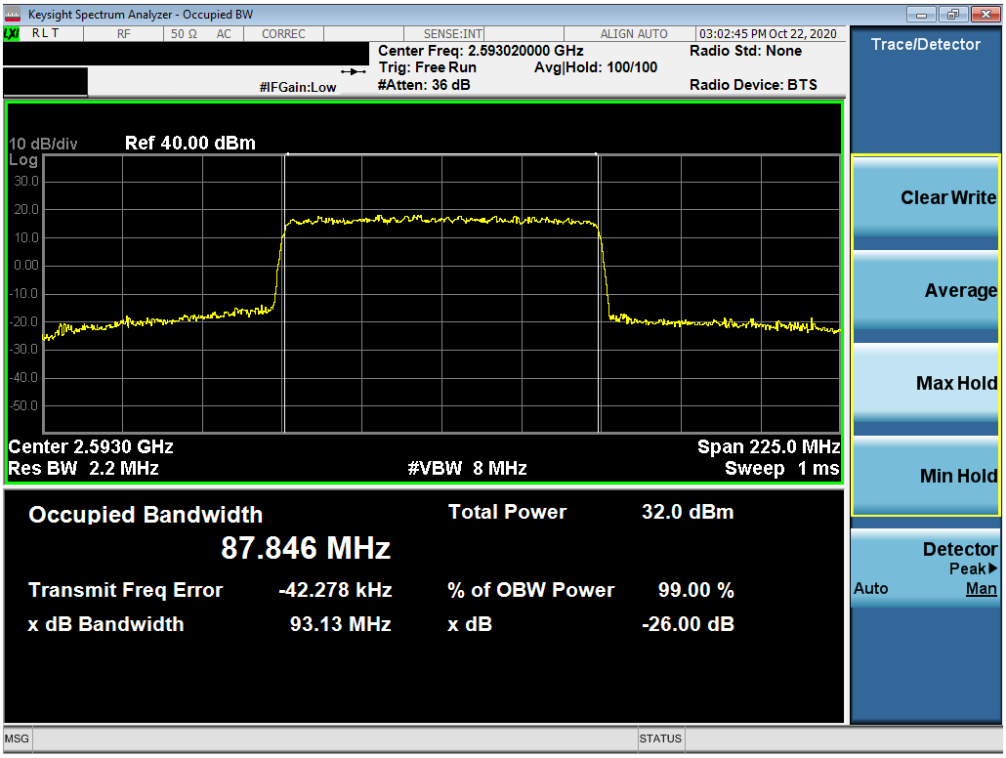
Plot 7-73. Occupied Bandwidth Plot (NR Band n41 - 90MHz π/2 BPSK - Full RB Configuration)



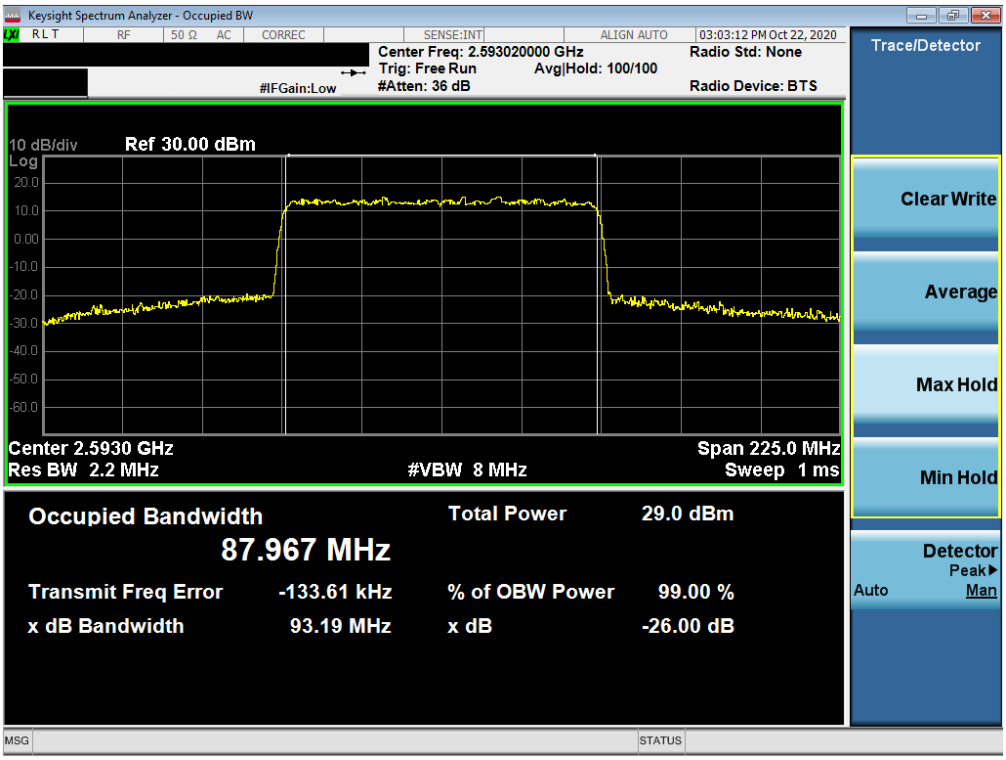
Plot 7-74. Occupied Bandwidth Plot (NR Band n41 - 90MHz QPSK - Full RB Configuration)



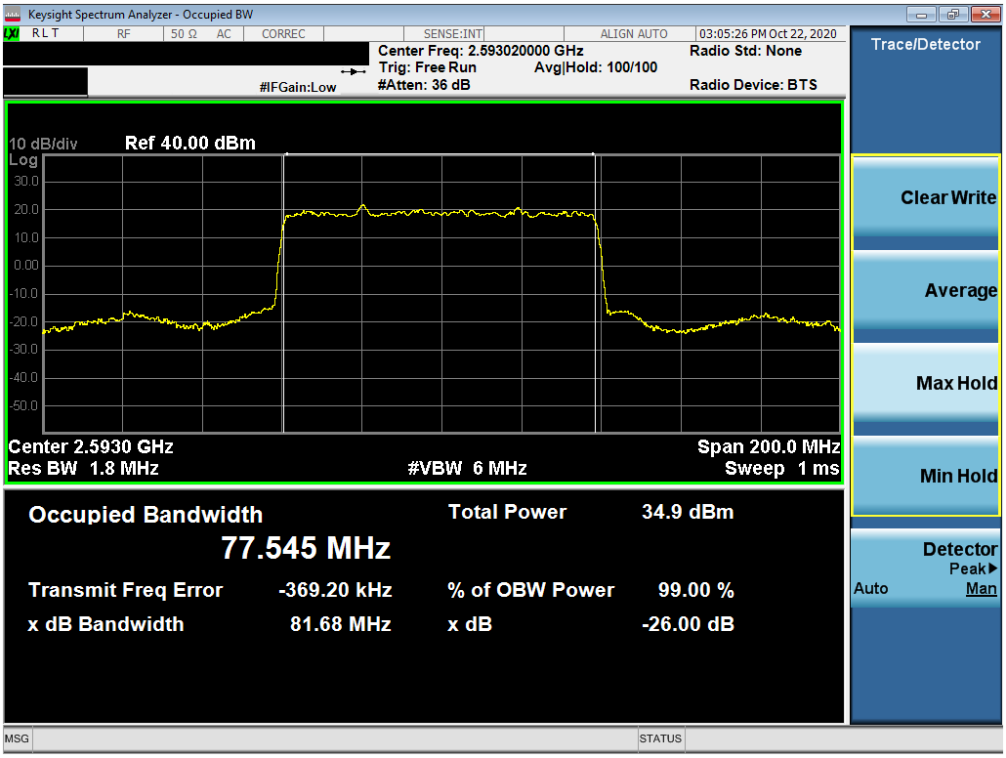
Plot 7-75. Occupied Bandwidth Plot (NR Band n41 - 90MHz 16-QAM - Full RB Configuration)



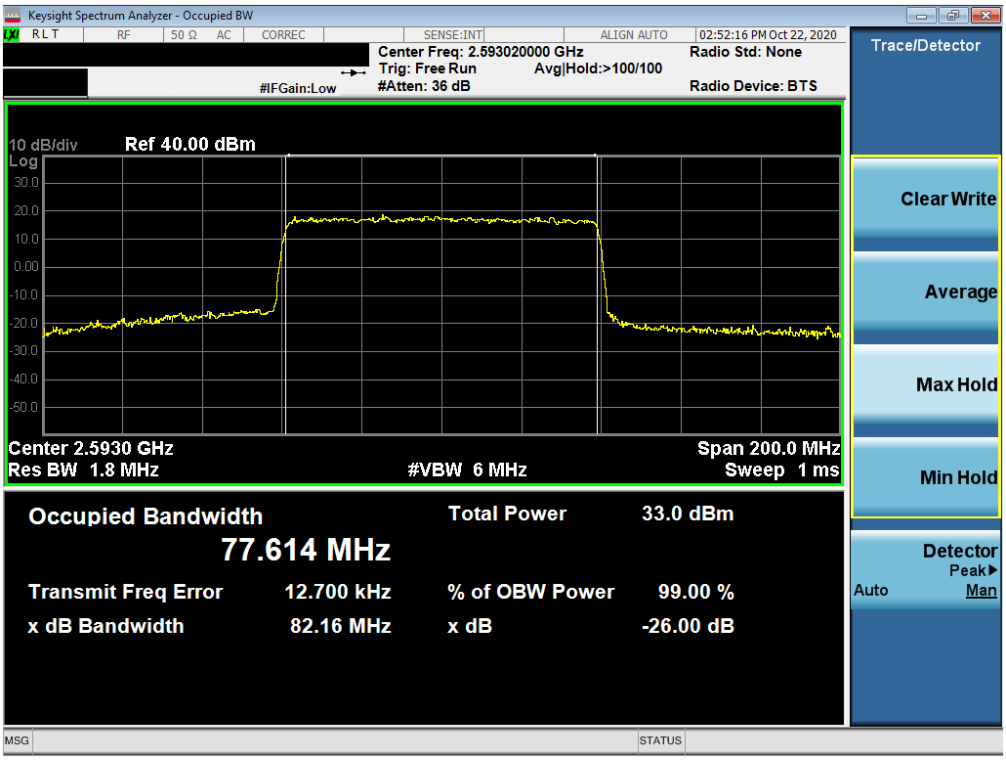
Plot 7-76. Occupied Bandwidth Plot (NR Band n41 - 90MHz 64-QAM - Full RB Configuration)



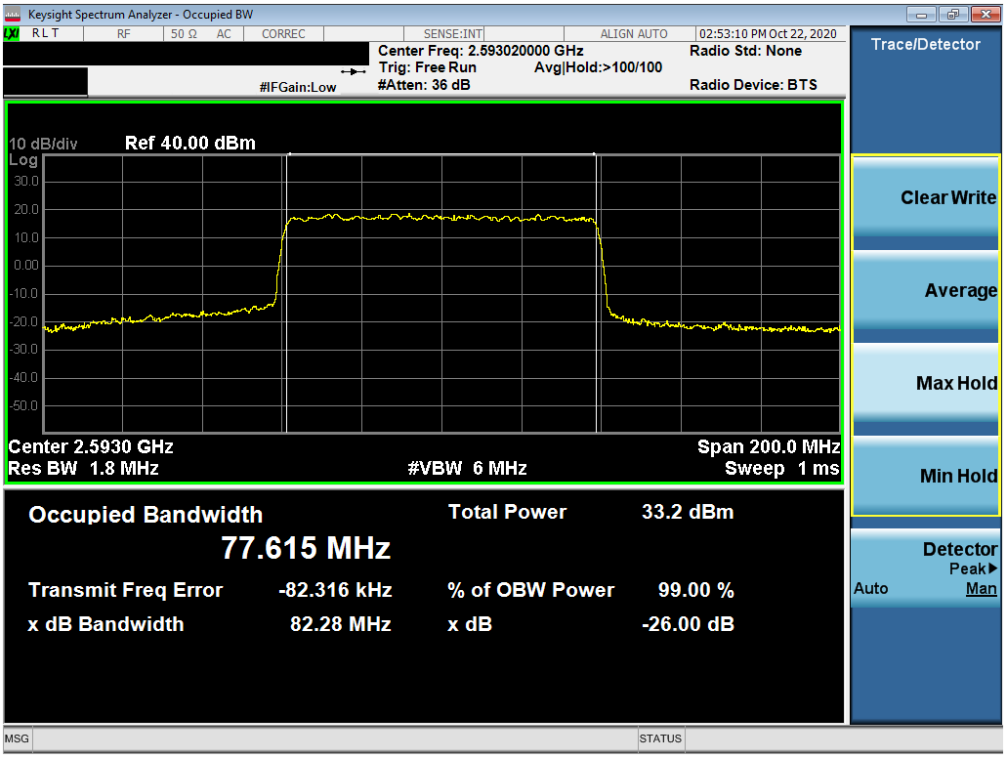
Plot 7-77. Occupied Bandwidth Plot (NR Band n41 - 90MHz 256-QAM - Full RB Configuration)



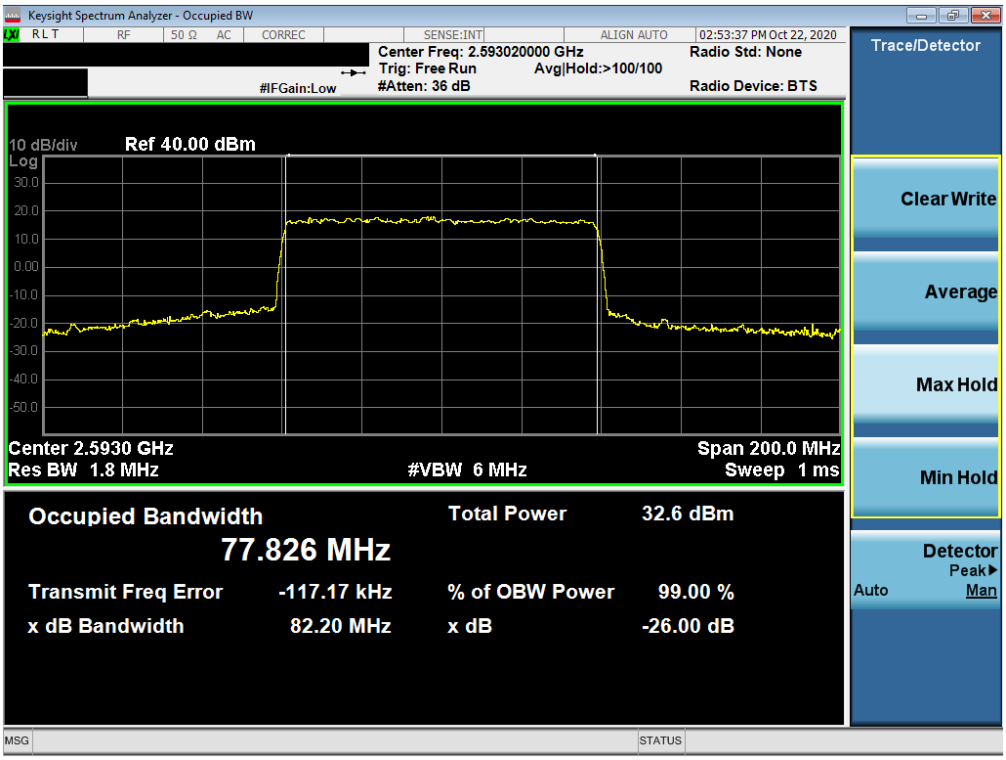
Plot 7-78. Occupied Bandwidth Plot (NR Band n41 - 80MHz π/2 BPSK - Full RB Configuration)



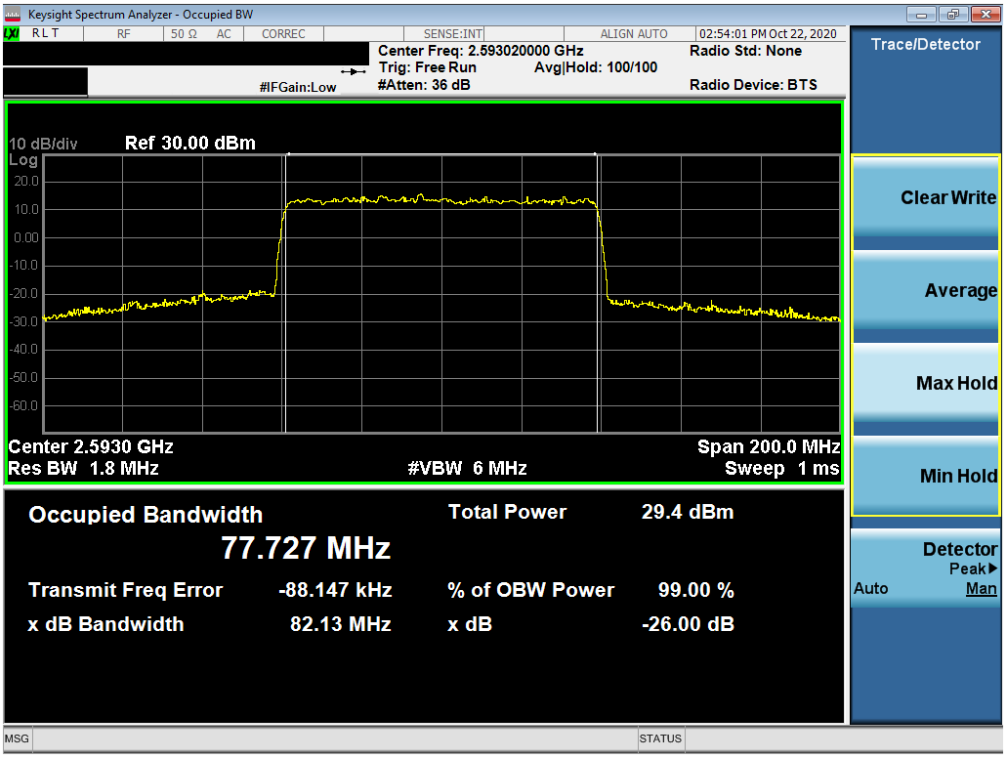
Plot 7-79. Occupied Bandwidth Plot (NR Band n41 - 80MHz QPSK - Full RB Configuration)



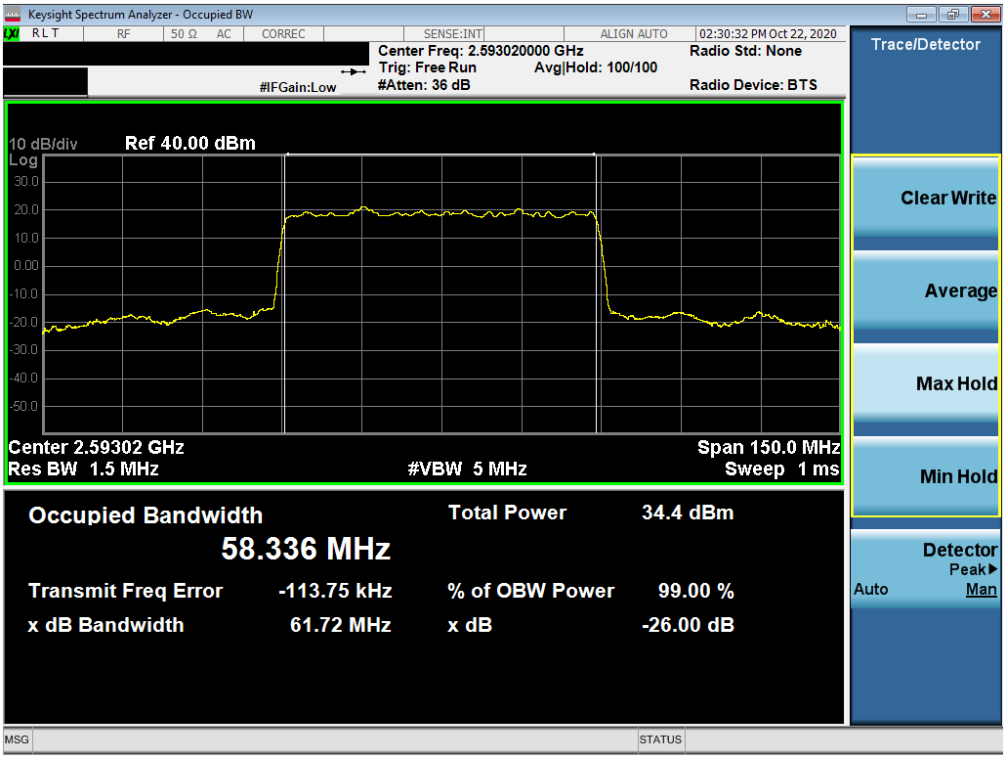
Plot 7-80. Occupied Bandwidth Plot (NR Band n41 - 80MHz 16-QAM - Full RB Configuration)



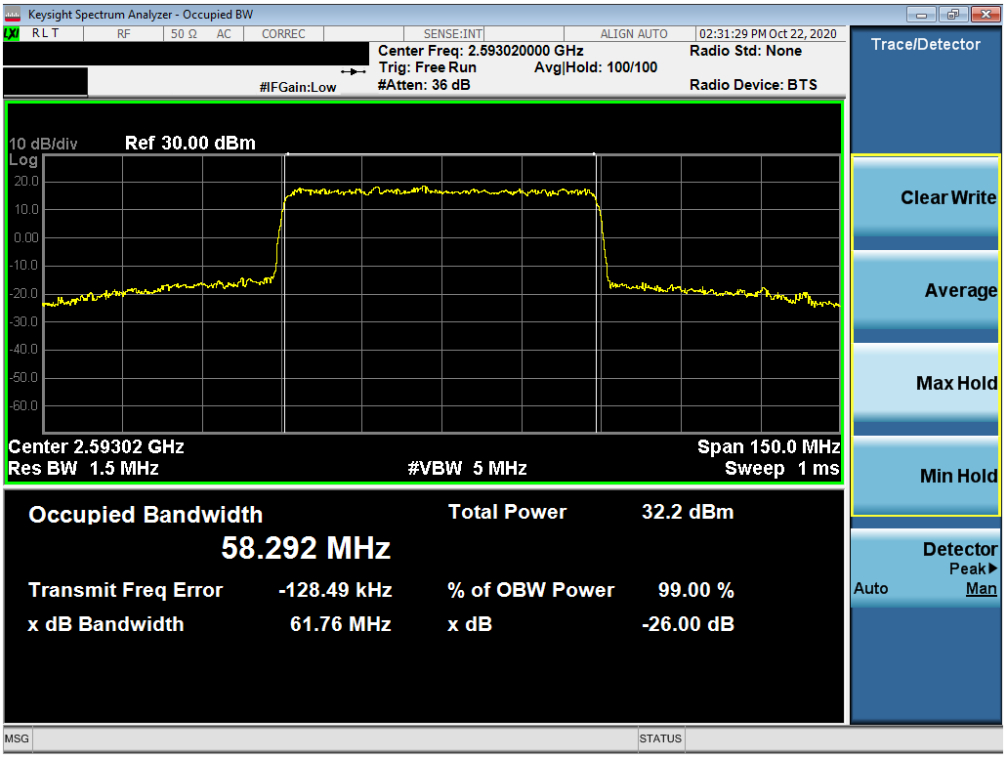
Plot 7-81. Occupied Bandwidth Plot (NR Band n41 - 80MHz 64-QAM - Full RB Configuration)



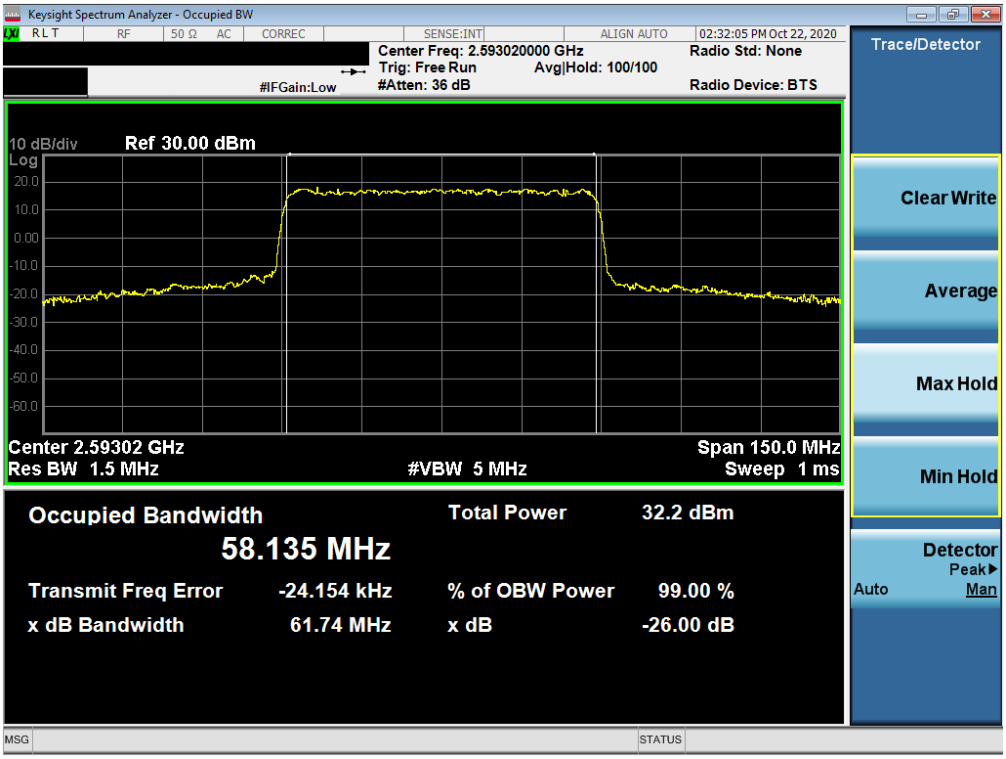
Plot 7-82. Occupied Bandwidth Plot (NR Band n41 - 80MHz 256-QAM - Full RB Configuration)



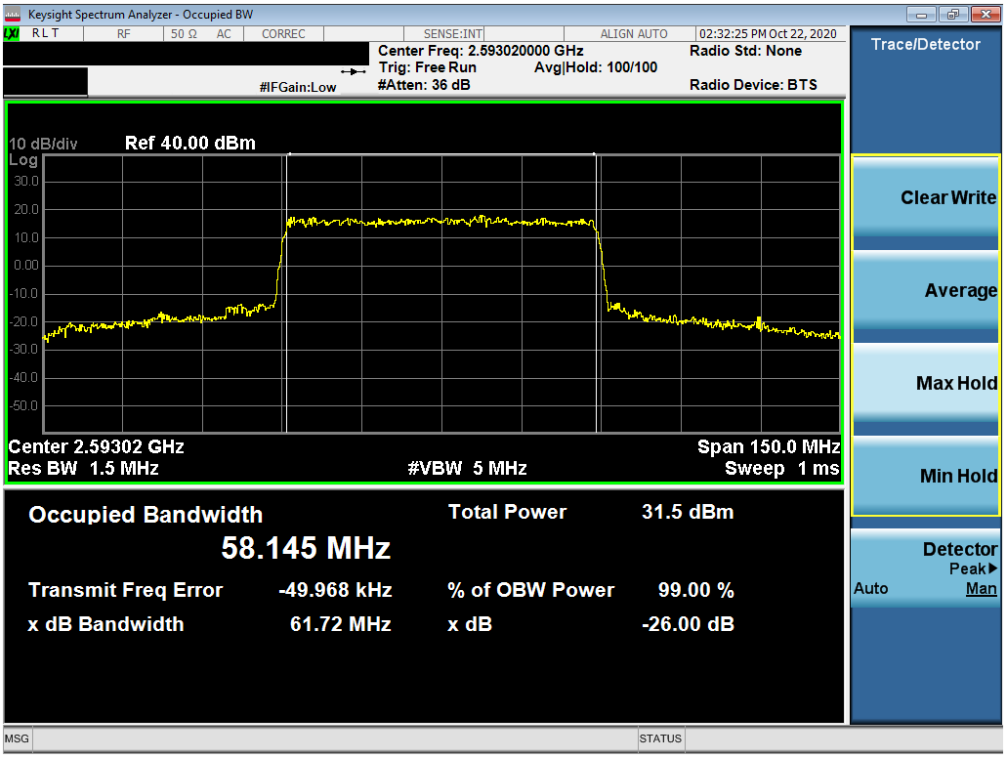
Plot 7-83. Occupied Bandwidth Plot (NR Band n41 - 60MHz π/2 BPSK - Full RB Configuration)



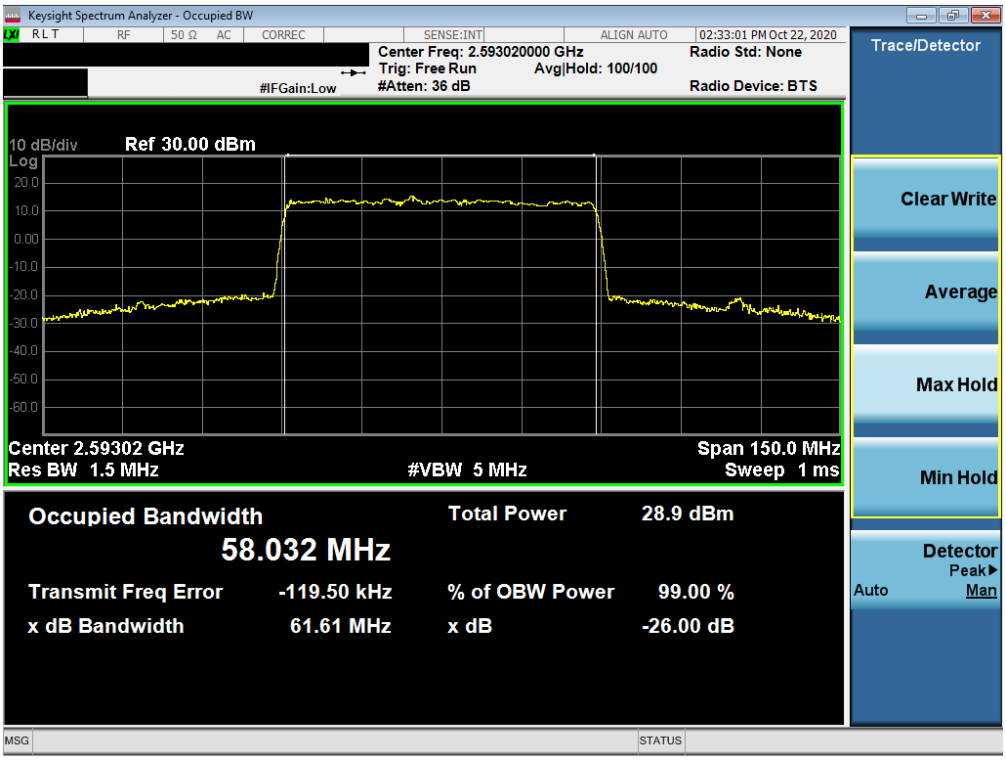
Plot 7-84. Occupied Bandwidth Plot (NR Band n41 - 60MHz QPSK - Full RB Configuration)



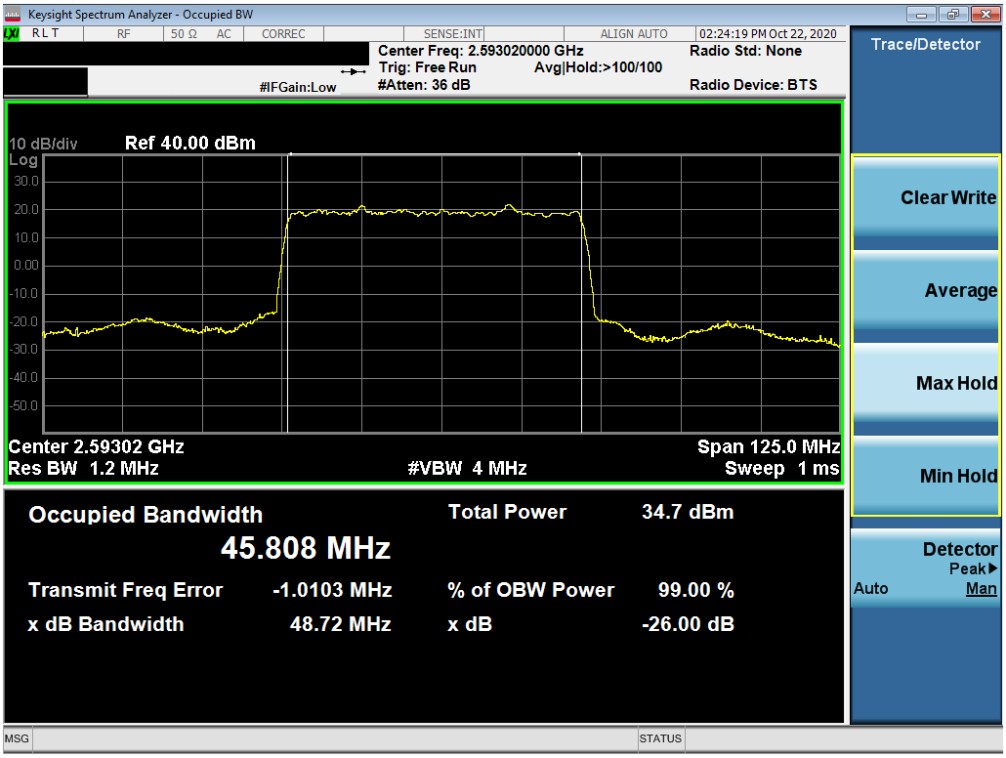
Plot 7-85. Occupied Bandwidth Plot (NR Band n41 - 60MHz 16-QAM - Full RB Configuration)



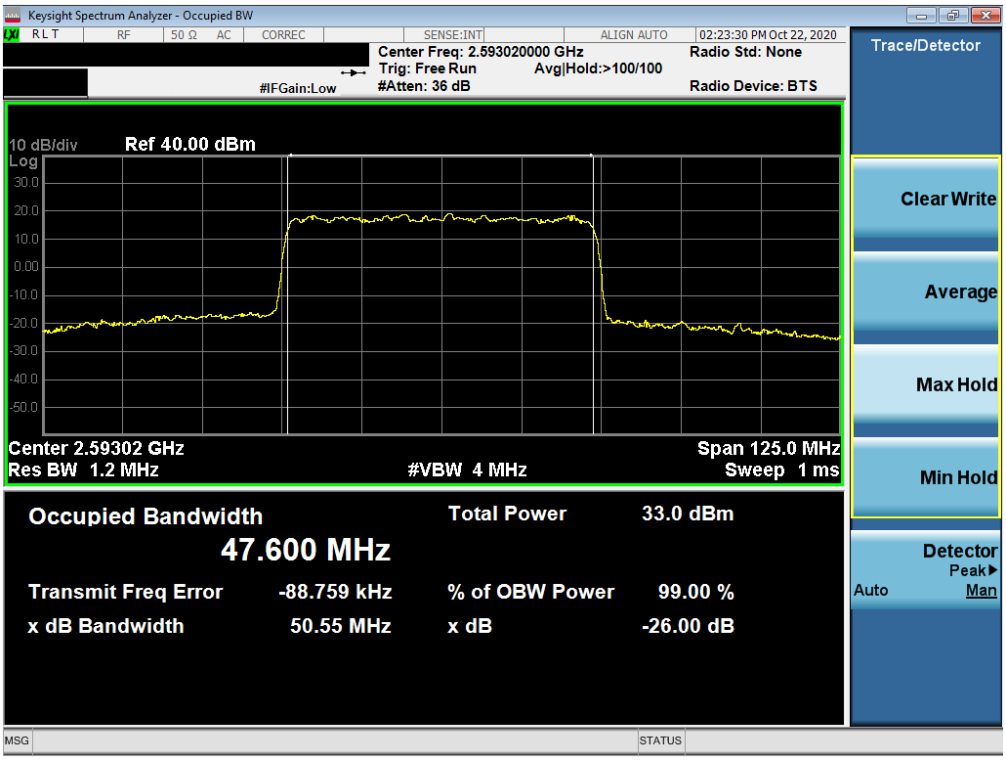
Plot 7-86. Occupied Bandwidth Plot (NR Band n41 - 60MHz 64-QAM - Full RB Configuration)



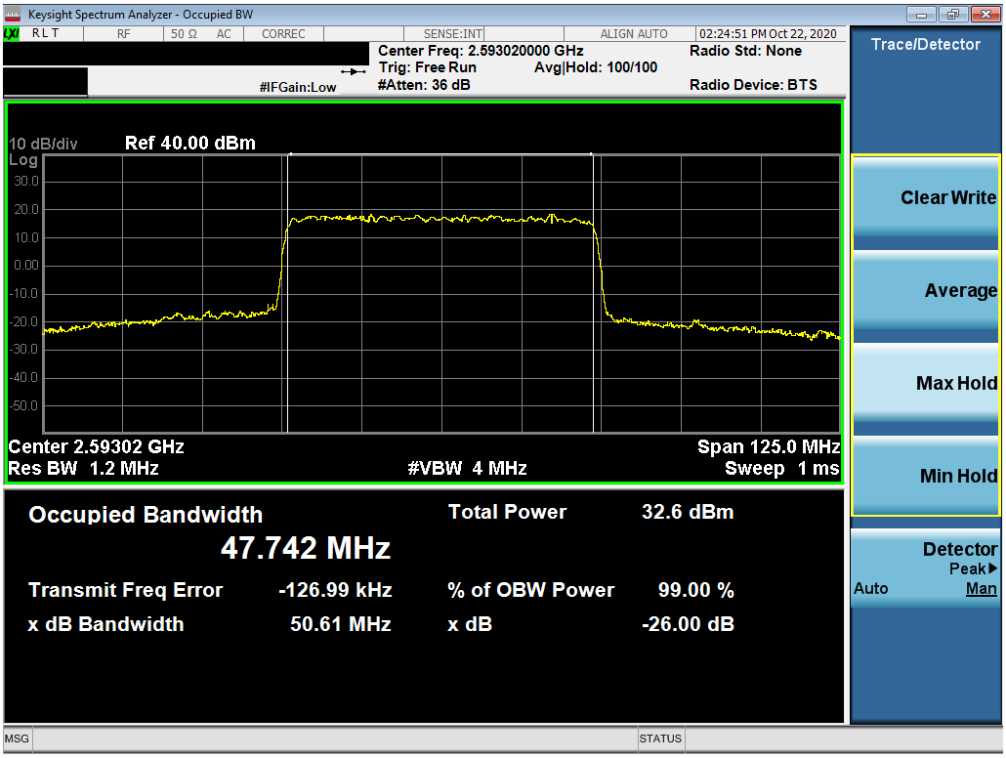
Plot 7-87. Occupied Bandwidth Plot (NR Band n41 - 60MHz 256-QAM - Full RB Configuration)



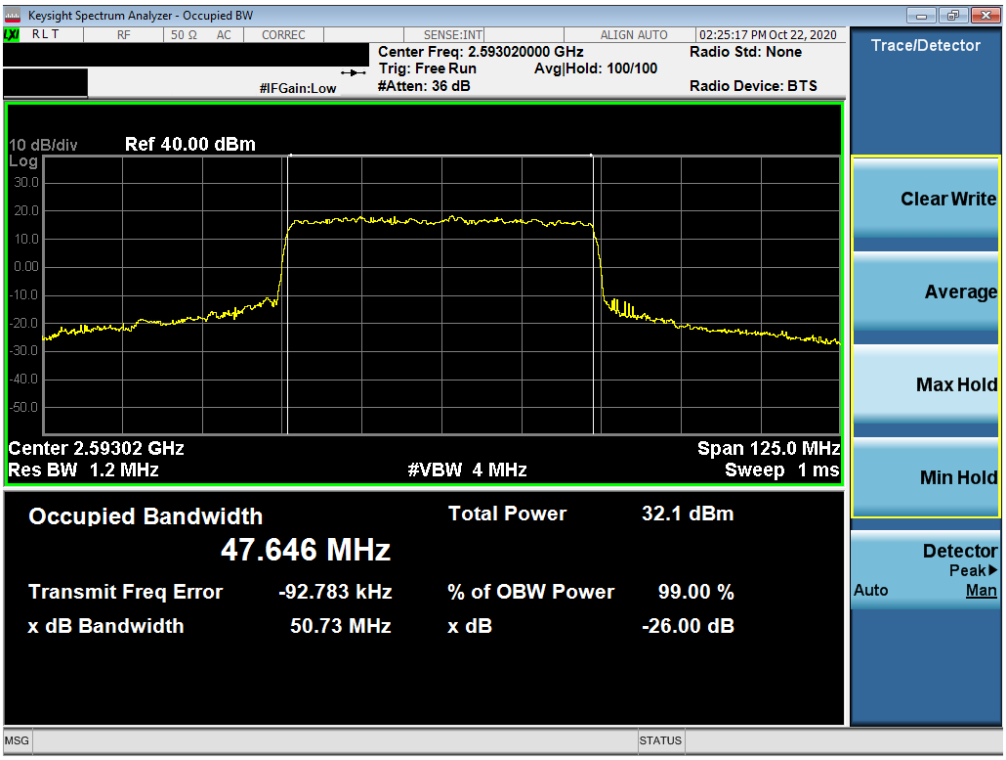
Plot 7-88. Occupied Bandwidth Plot (NR Band n41 - 50MHz π/2 BPSK - Full RB Configuration)



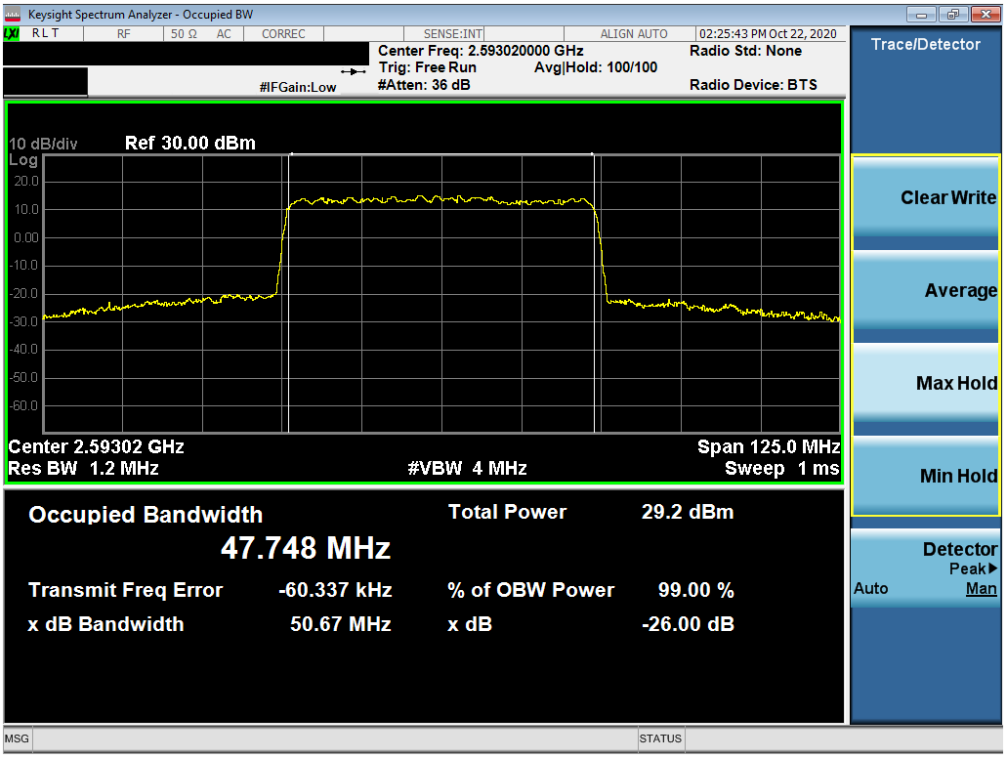
Plot 7-89. Occupied Bandwidth Plot (NR Band n41 - 50MHz QPSK - Full RB Configuration)



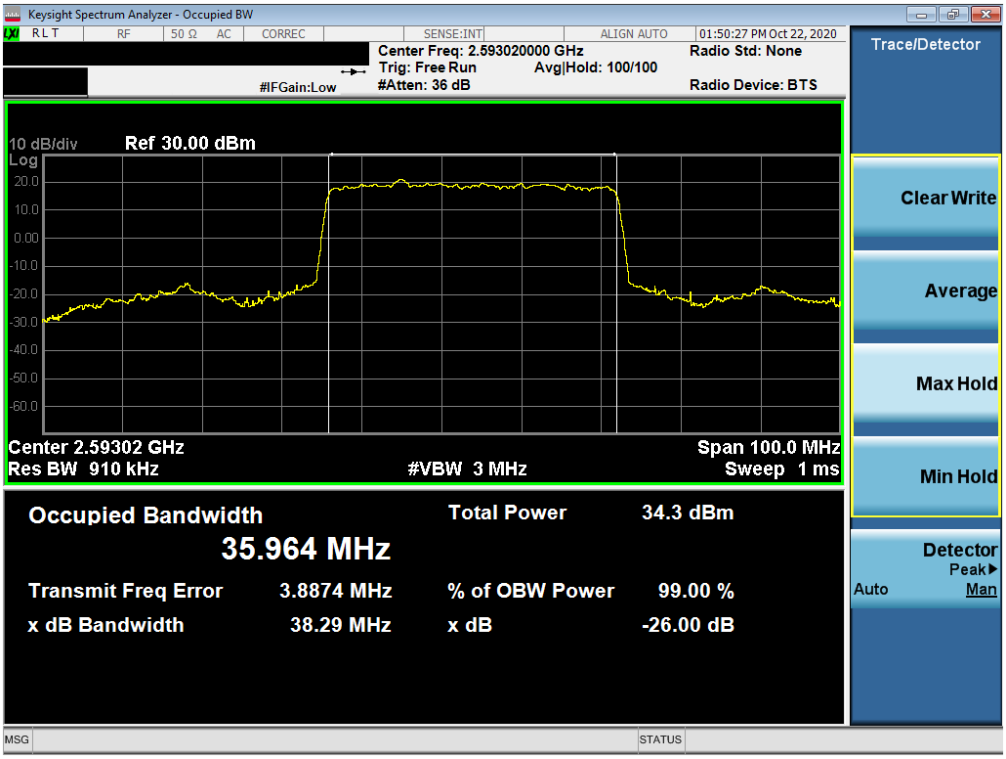
Plot 7-90. Occupied Bandwidth Plot (NR Band n41 - 50MHz 16-QAM - Full RB Configuration)



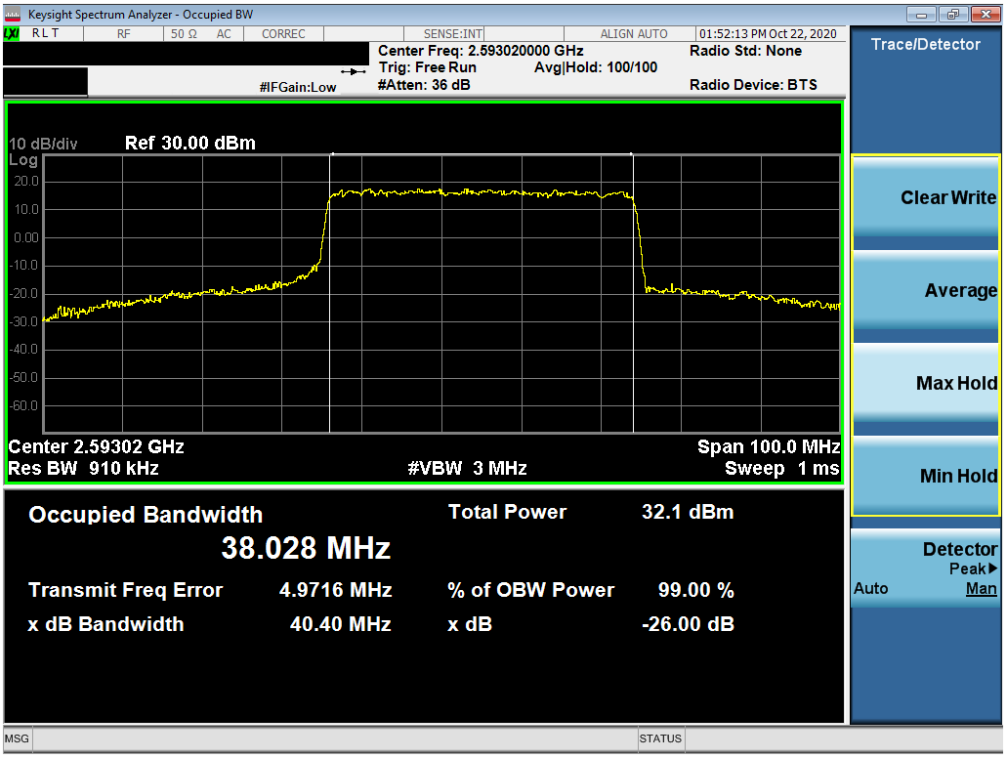
Plot 7-91. Occupied Bandwidth Plot (NR Band n41 - 50MHz 64-QAM - Full RB Configuration)



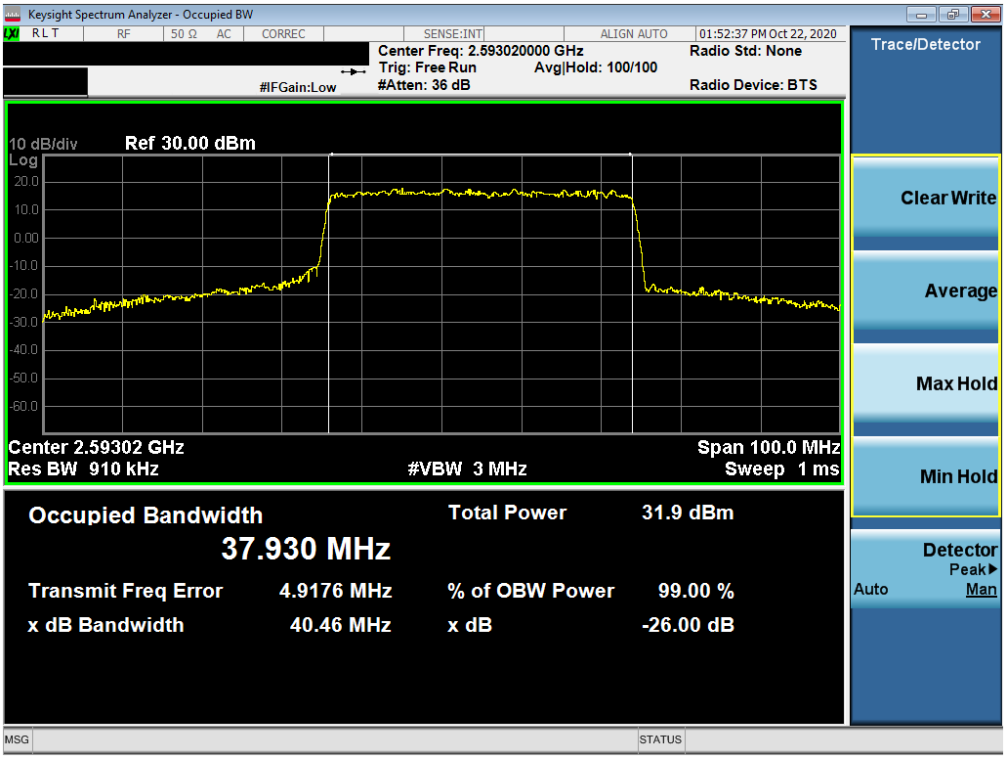
Plot 7-92. Occupied Bandwidth Plot (NR Band n41 - 50MHz 256-QAM - Full RB Configuration)



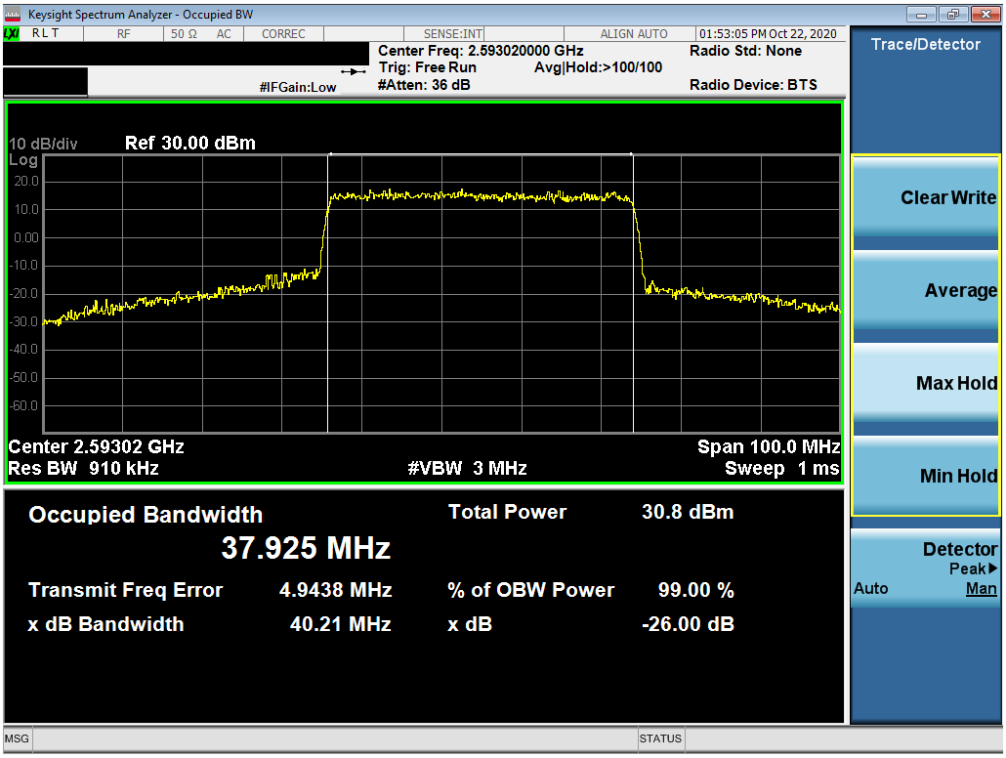
Plot 7-93. Occupied Bandwidth Plot (NR Band n41 - 40MHz π/2 BPSK - Full RB Configuration)



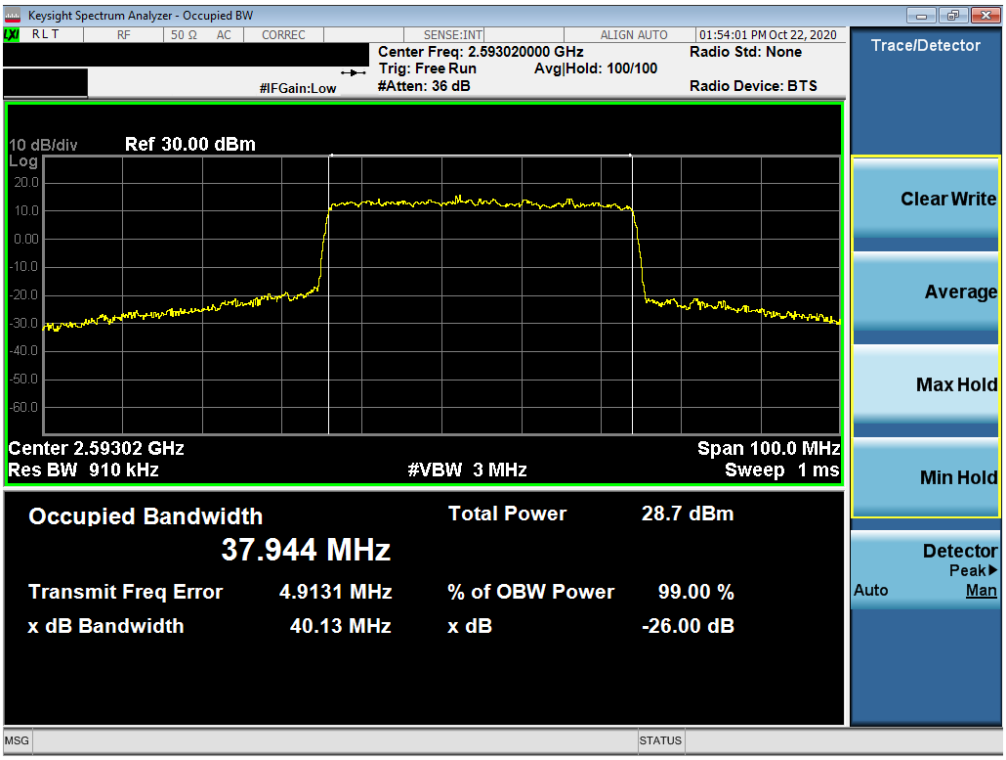
Plot 7-94. Occupied Bandwidth Plot (NR Band n41 - 40MHz QPSK - Full RB Configuration)



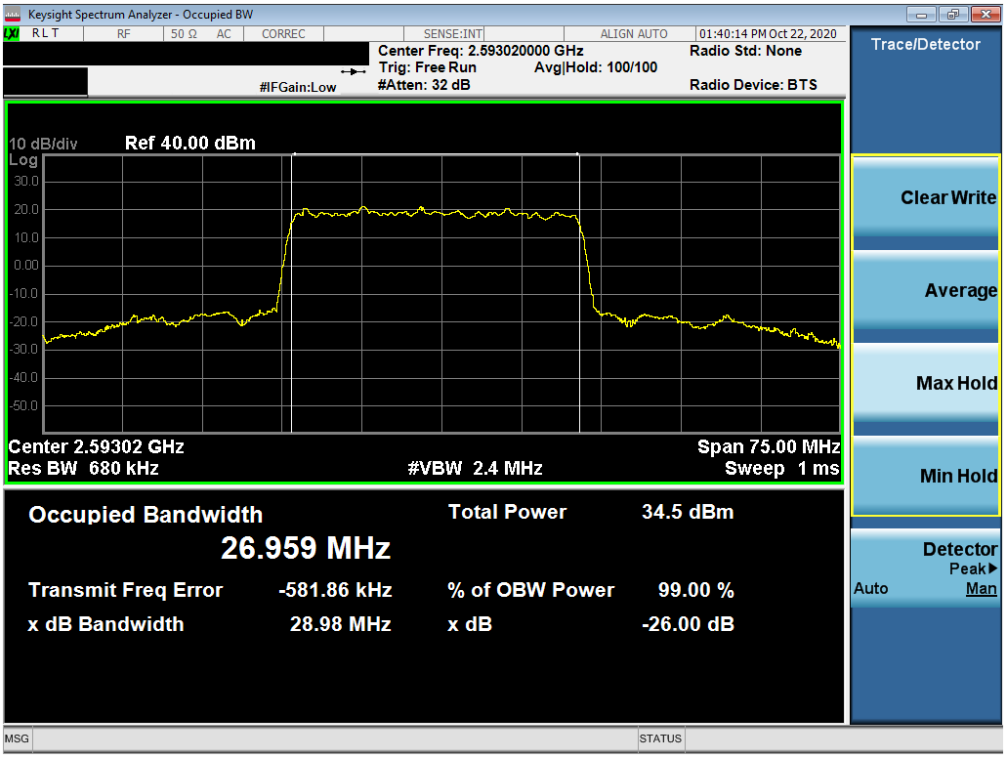
Plot 7-95. Occupied Bandwidth Plot (NR Band n41 - 40MHz 16-QAM - Full RB Configuration)



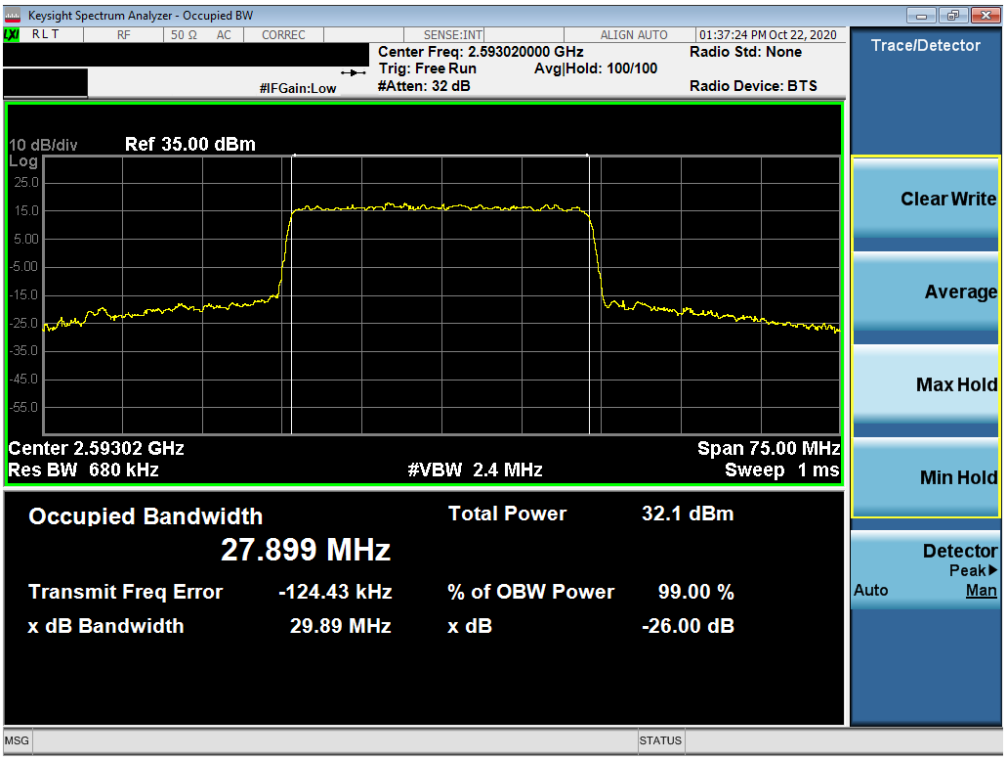
Plot 7-96. Occupied Bandwidth Plot (NR Band n41 - 40MHz 64-QAM - Full RB Configuration)



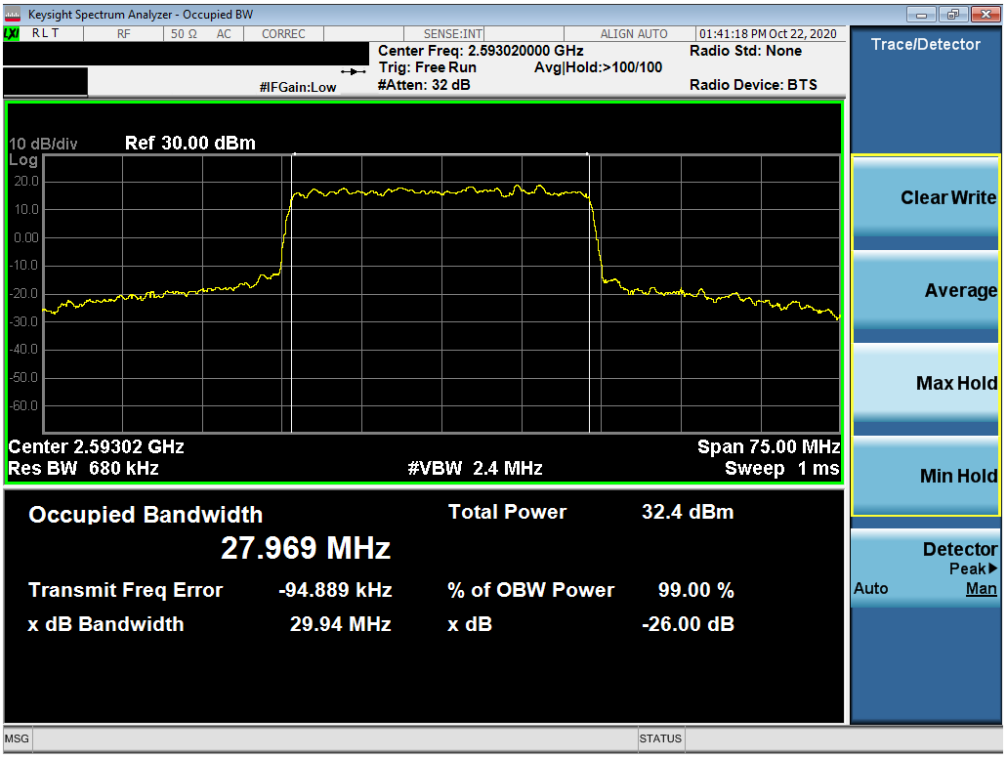
Plot 7-97. Occupied Bandwidth Plot (NR Band n41 - 40MHz 256-QAM - Full RB Configuration)



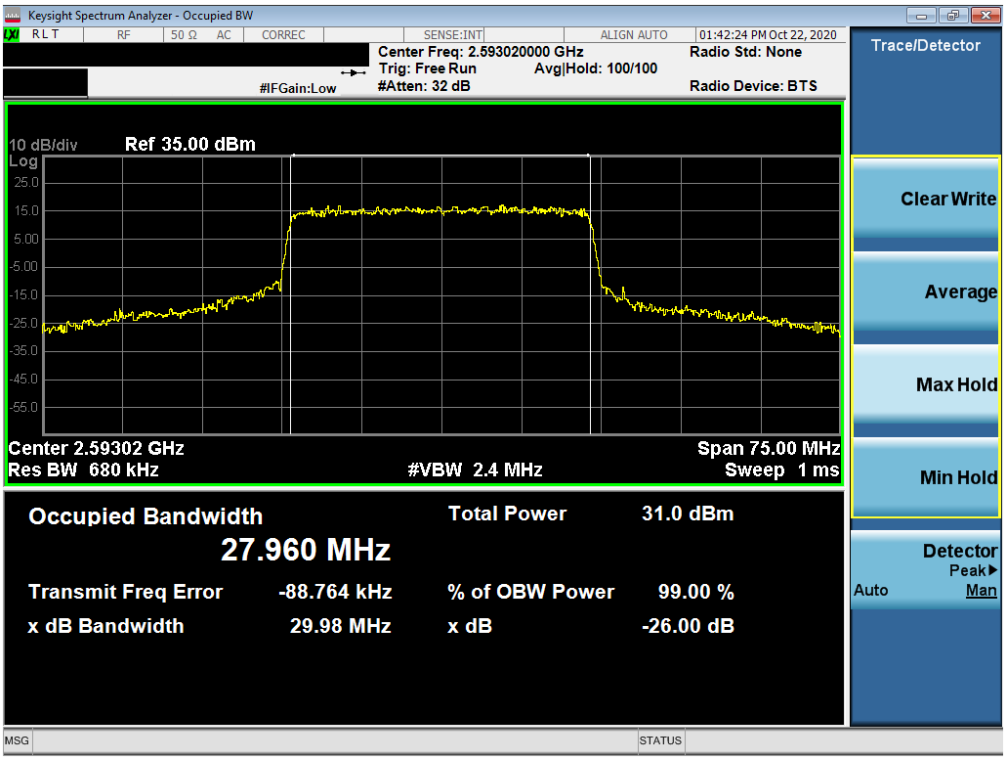
Plot 7-98. Occupied Bandwidth Plot (NR Band n41 - 30MHz π/2 BPSK - Full RB Configuration)



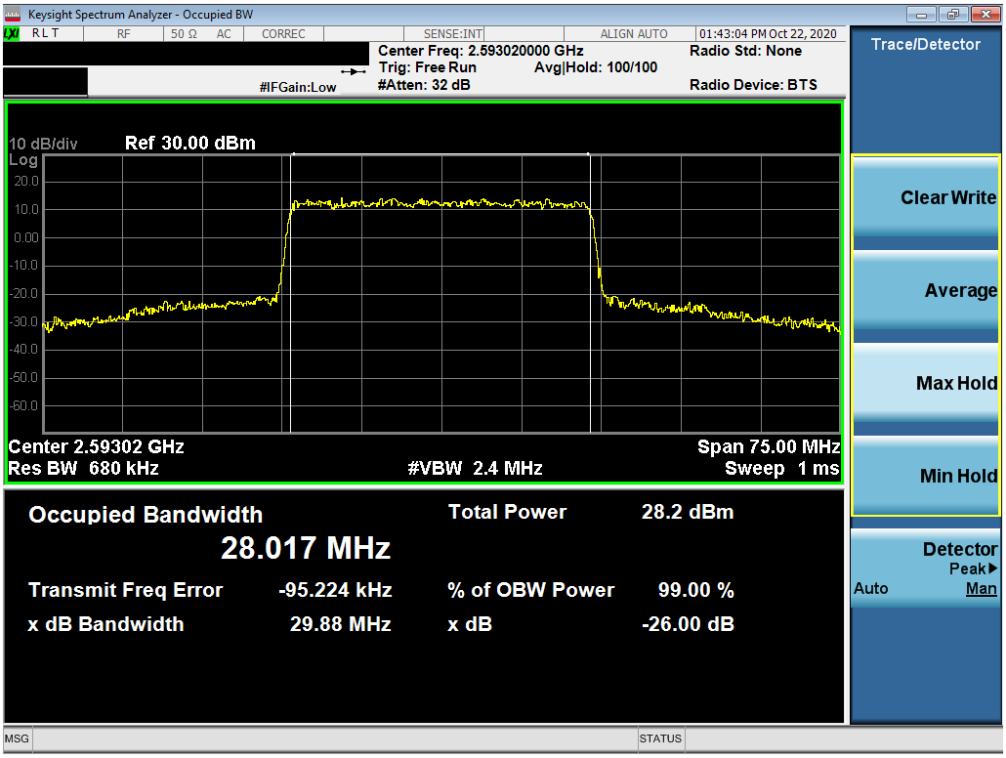
Plot 7-99. Occupied Bandwidth Plot (NR Band n41 - 30MHz QPSK - Full RB Configuration)



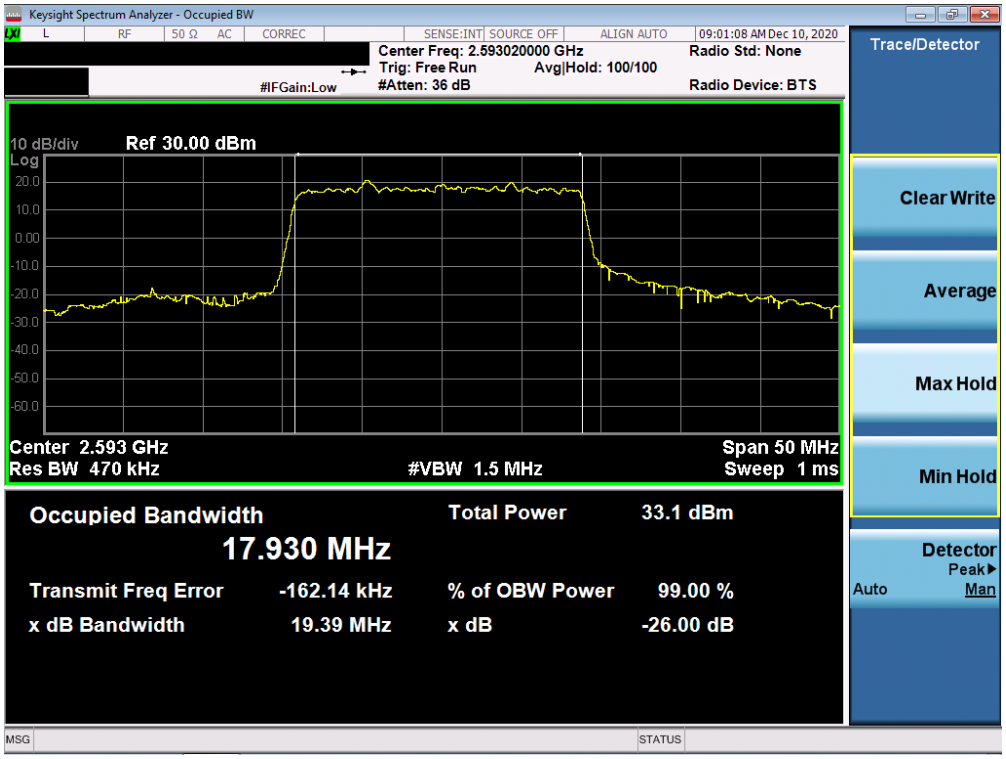
Plot 7-100. Occupied Bandwidth Plot (NR Band n41 - 30MHz 16-QAM - Full RB Configuration)



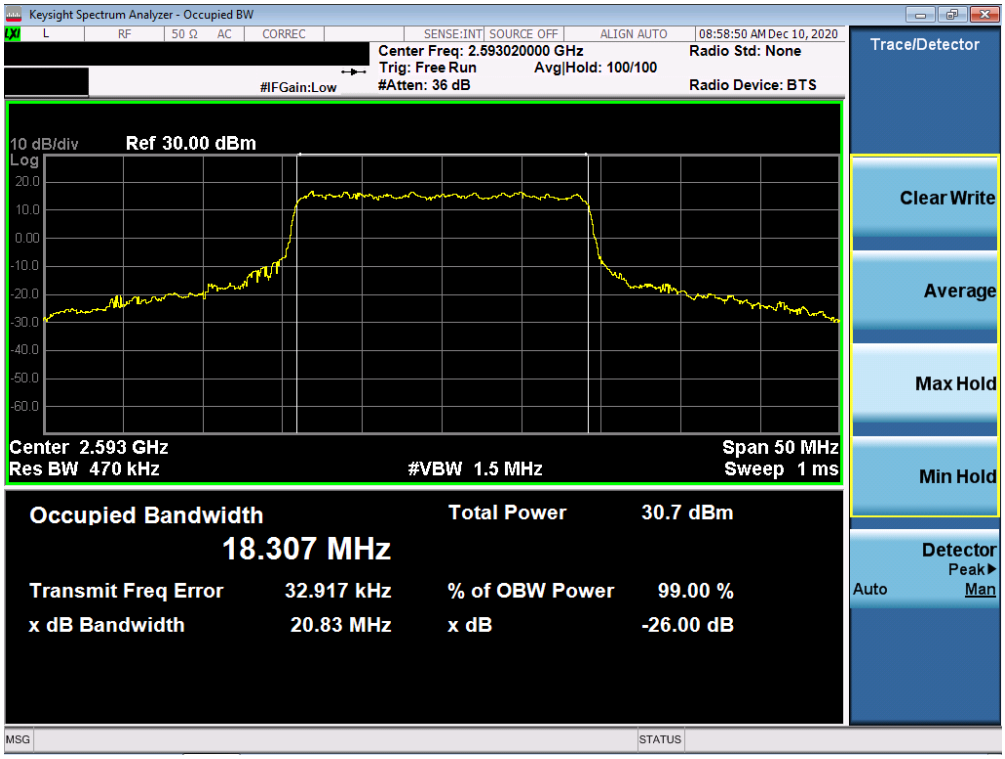
Plot 7-101. Occupied Bandwidth Plot (NR Band n41 - 30MHz 64-QAM - Full RB Configuration)



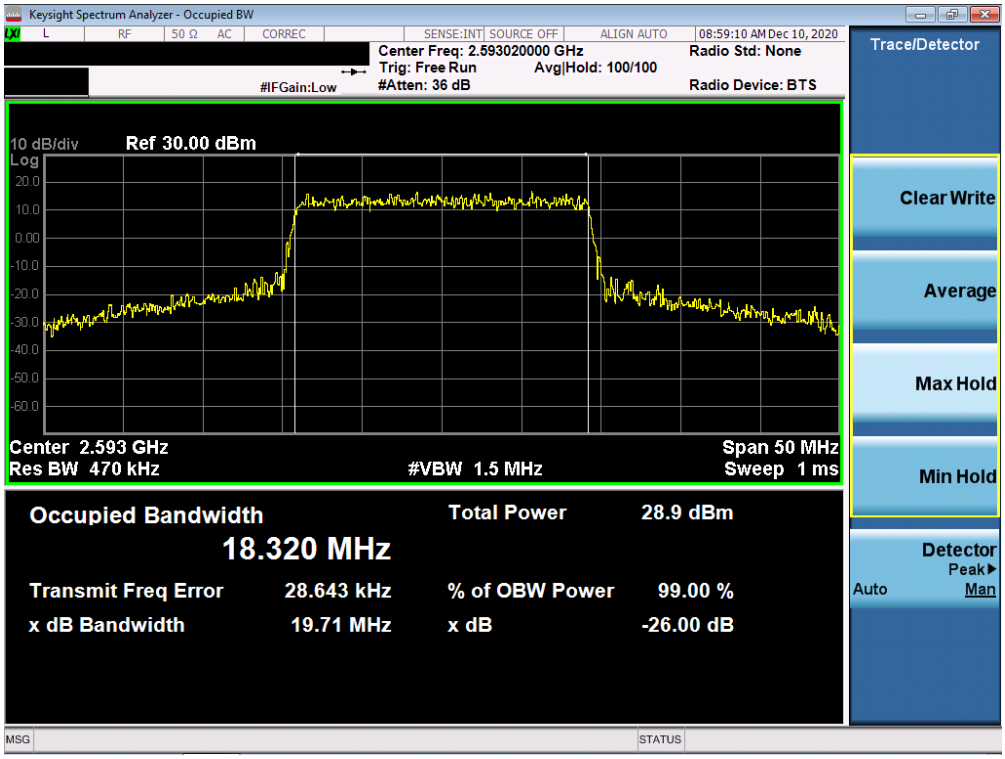
Plot 7-102. Occupied Bandwidth Plot (NR Band n41 - 30MHz 256-QAM - Full RB Configuration)



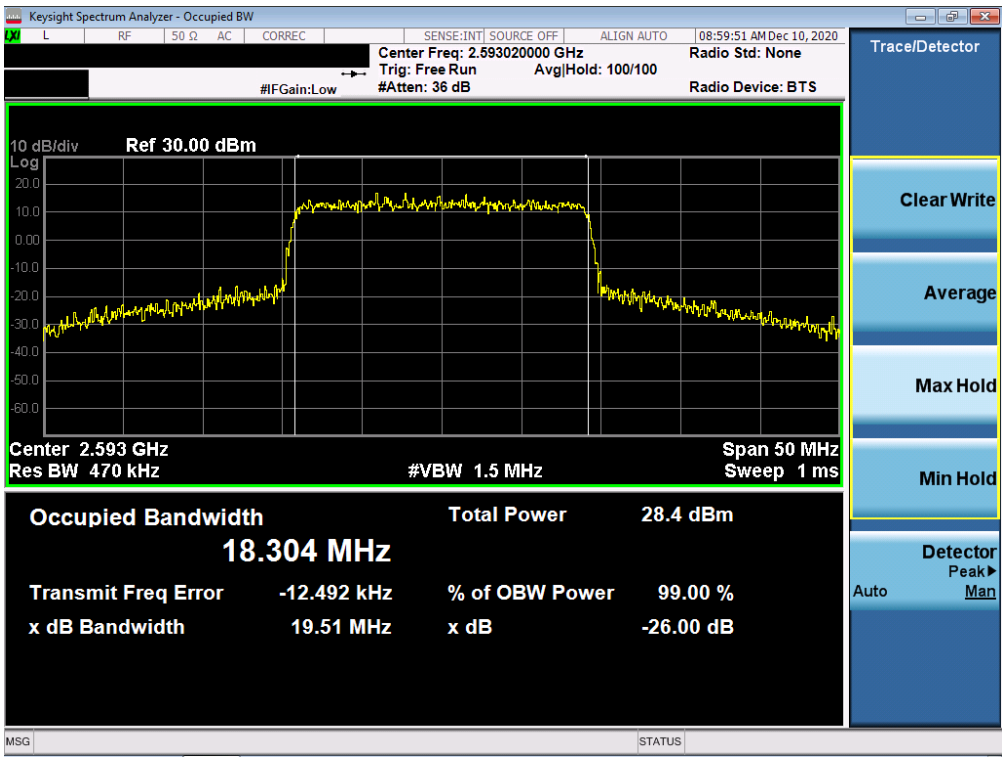
Plot 7-103. Occupied Bandwidth Plot (NR Band n41 - 20MHz π/2 BPSK - Full RB Configuration)



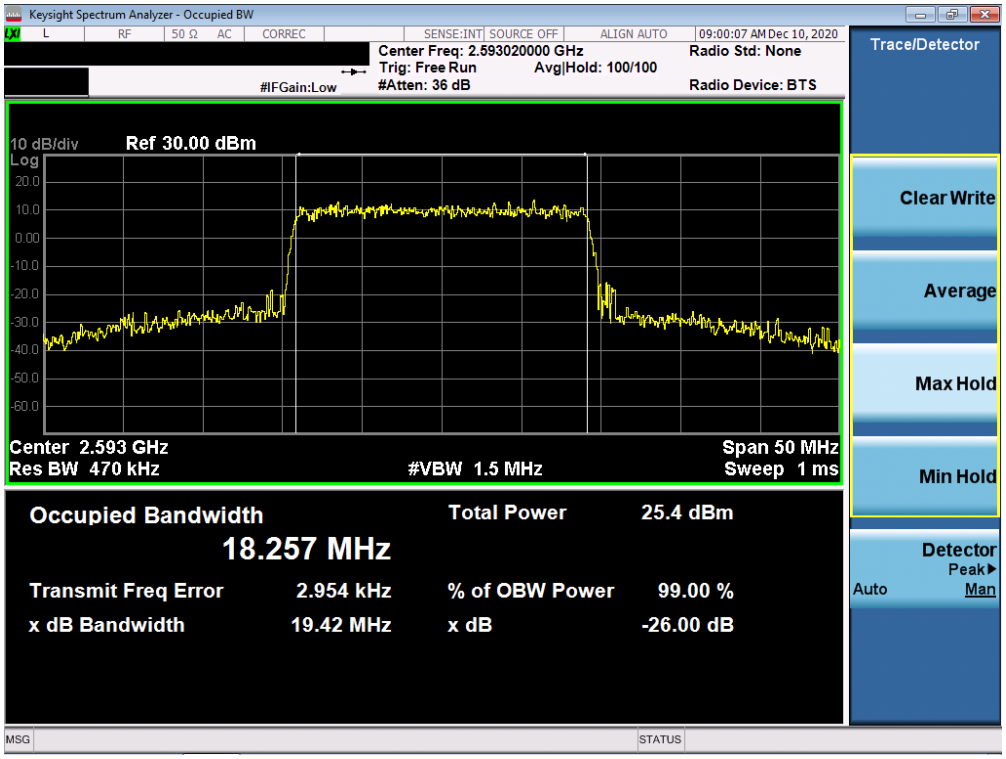
Plot 7-104. Occupied Bandwidth Plot (NR Band n41 - 20MHz QPSK - Full RB Configuration)



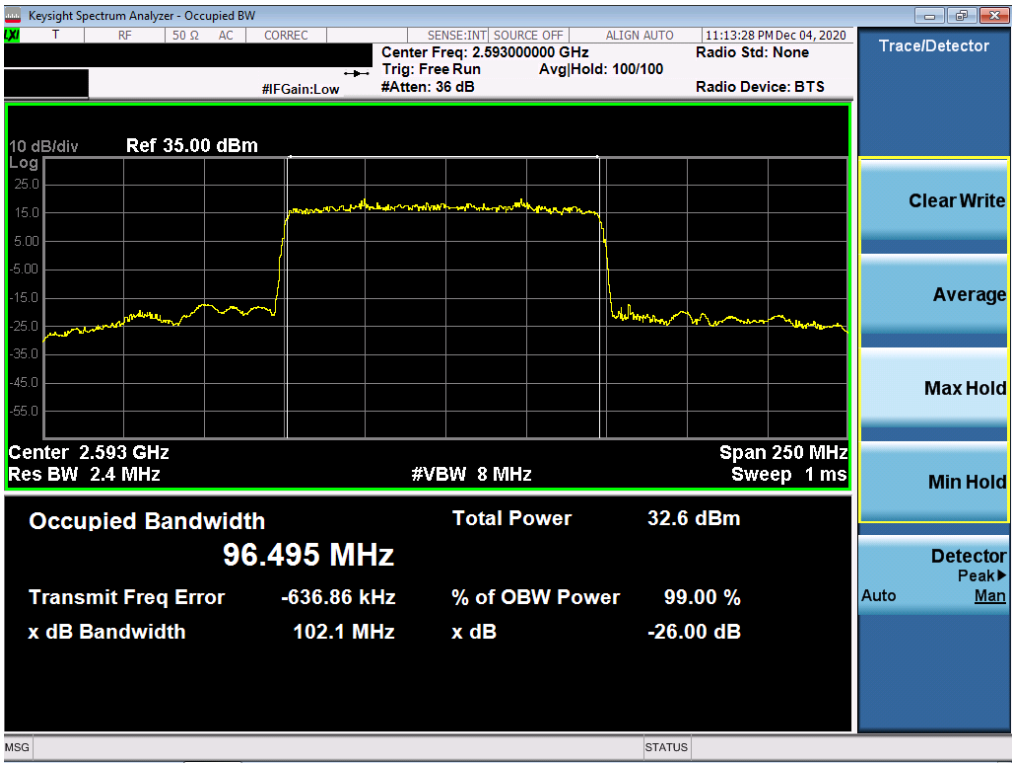
Plot 7-105. Occupied Bandwidth Plot (NR Band n41 - 20MHz 16-QAM - Full RB Configuration)



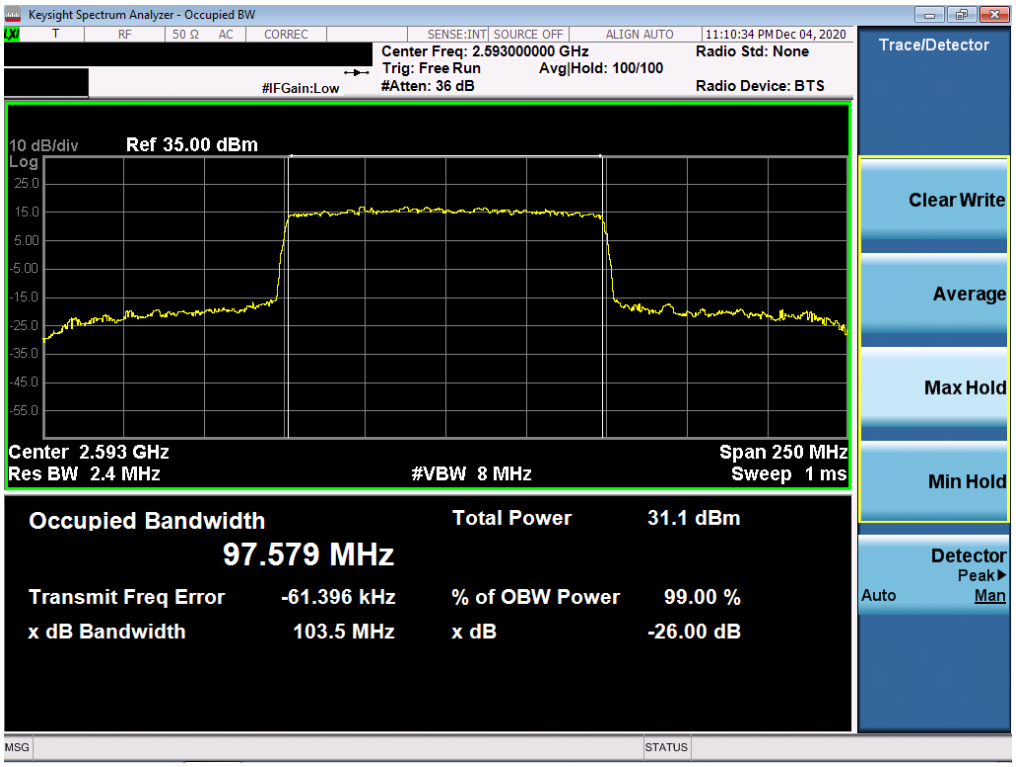
Plot 7-106. Occupied Bandwidth Plot (NR Band n41 - 20MHz 64-QAM - Full RB Configuration)



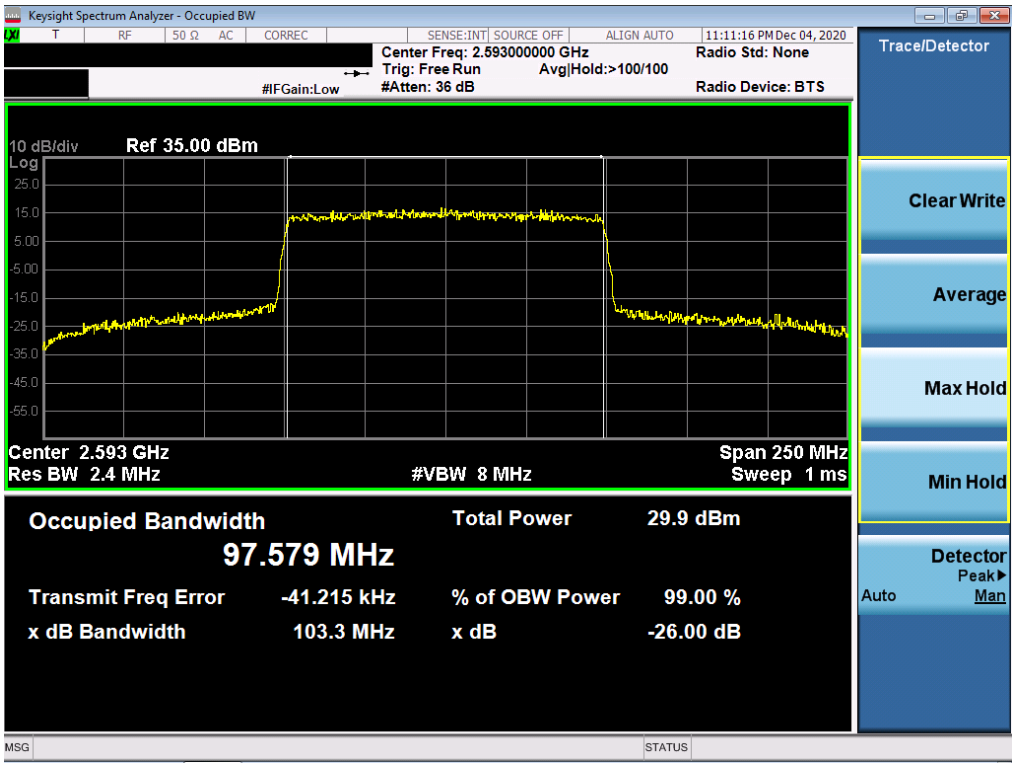
Plot 7-107. Occupied Bandwidth Plot (NR Band n41 - 20MHz 256-QAM - Full RB Configuration)



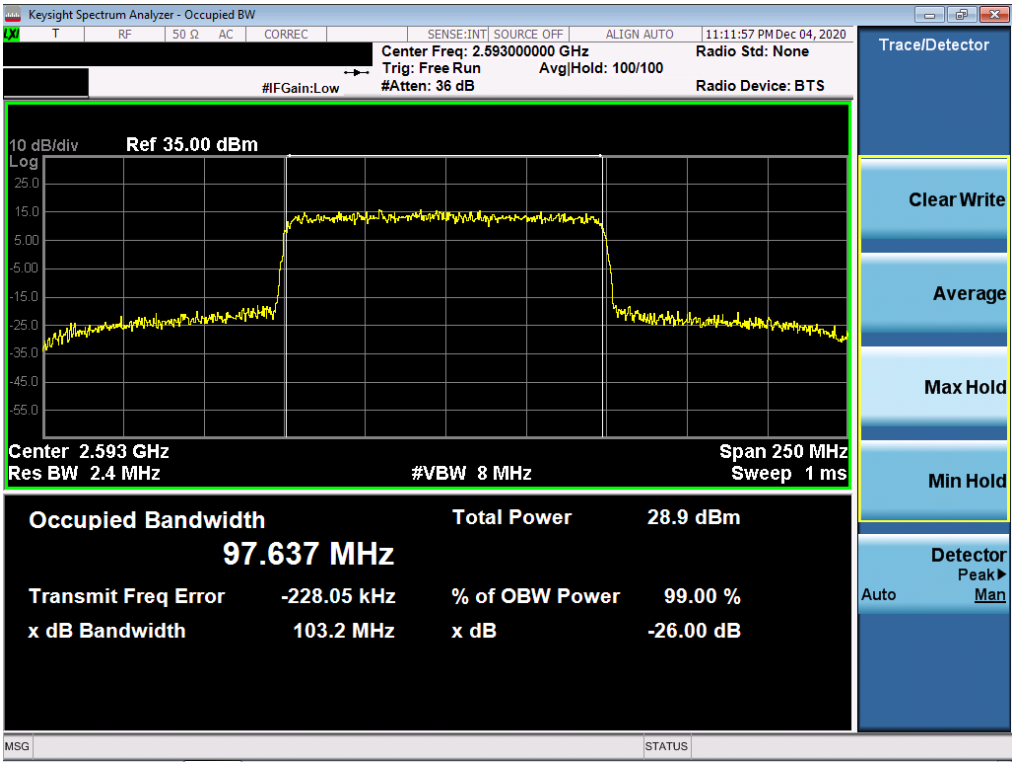
Plot 7-108. Occupied Bandwidth Plot (NR Band n41 PC3 – Antenna B - 100MHz π/2 BPSK - Full RB Configuration)



Plot 7-109. Occupied Bandwidth Plot (NR Band n41 PC3 – Antenna B - 100MHz QPSK - Full RB Configuration)



Plot 7-110. Occupied Bandwidth Plot (NR Band n41 PC3 – Antenna B - 100MHz 16-QAM - Full RB Configuration)



Plot 7-111. Occupied Bandwidth Plot (NR Band n41 PC3 – Antenna B - 100MHz 64-QAM - Full RB Configuration)