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PART 27 MEASUREMENT REPORT

Applicant Name:

Samsung Electronics Co., Ltd.
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Gyeonggi-do, 16677, Korea

Date of Testing:

11/12/25 - 12/19/2025

Test Report Issue Date:

1/12/2026

Test Site/Location:

Element Lab., Columbia, MD, USA

Test Report Serial No.:

1M2508270083-08-R1.A3L

FCC ID:

A3LSMS947B

APPLICANT:

Samsung Electronics Co., Ltd.

Application Type:

Certification

Model:

SM-S947B/DS

Additional Model(s):

SM-S947B

EUT Type:

Portable Handset

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part:

27

Test Procedure(s):

ANSI C63.26-2015, KBD 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.

This revised Test Report (S/N: 1M2508270083-08-R1.A3L) supersedes and replaces the previously issued test report (S/N: 1M2508270083-08.A3L) on the same subject device for the same type of testing as indicated. Please discard or destroy 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.



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TEST REPORT REVISION HISTORY

Rev. No.	Description	Issue Date	Revised By
-	Initial Release	1/7/2026	WKR0000005811
1	Addressed comments made by TCB reviewer	1/12/2026	WKR0000023296

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Antenna-1						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 41(PC2)	20 MHz	QPSK	2506.0 - 2680.0	0.358	25.54	18M0G7D
		16QAM	2506.0 - 2680.0	0.358	25.53	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.358	25.53	13M4G7D
		16QAM	2503.5 - 2682.5	0.356	25.51	13M4W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.358	25.53	9M03G7D
		16QAM	2501.0 - 2685.0	0.357	25.52	9M03W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.362	25.58	4M55G7D
		16QAM	2498.5 - 2687.5	0.358	25.53	4M53W7D
LTE Band 41(PC3)	20 MHz	QPSK	2506.0 - 2680.0	0.160	22.05	18M0G7D
		16QAM	2506.0 - 2680.0	0.122	20.87	17M9W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.160	22.03	13M5G7D
		16QAM	2503.5 - 2682.5	0.122	20.87	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.160	22.04	9M05G7D
		16QAM	2501.0 - 2685.0	0.122	20.86	9M02W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.162	22.10	4M53G7D
		16QAM	2498.5 - 2687.5	0.125	20.98	4M51W7D

Overview Table LTE Band Ant 1

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Antenna-1						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41(PC3)	100 MHz	TT/2 BPSK	2546.0 - 2640.0	0.196	22.93	96M5G7D
		QPSK	2546.0 - 2640.0	0.180	22.56	97M8G7D
		16QAM	2546.0 - 2640.0	0.178	22.49	97M7W7D
	90 MHz	TT/2 BPSK	2541.0 - 2645.0	0.197	22.95	86M9G7D
		QPSK	2541.0 - 2645.0	0.183	22.62	87M6G7D
		16QAM	2541.0 - 2645.0	0.179	22.52	87M7W7D
	80 MHz	TT/2 BPSK	2536.0 - 2650.0	0.199	22.98	77M7G7D
		QPSK	2536.0 - 2650.0	0.183	22.61	77M5G7D
		16QAM	2536.0 - 2650.0	0.183	22.63	77M7W7D
	70 MHz	TT/2 BPSK	2531.0 - 2655.0	0.191	22.81	64M5G7D
		QPSK	2531.0 - 2655.0	0.176	22.44	67M7G7D
		16QAM	2531.0 - 2655.0	0.175	22.42	67M5W7D
	60 MHz	TT/2 BPSK	2526.0 - 2660.0	0.188	22.75	58M2G7D
		QPSK	2526.0 - 2660.0	0.176	22.44	58M1G7D
		16QAM	2526.0 - 2660.0	0.174	22.41	58M0W7D
	50 MHz	TT/2 BPSK	2521.0 - 2665.0	0.189	22.77	46M0G7D
		QPSK	2521.0 - 2665.0	0.175	22.43	47M7G7D
		16QAM	2521.0 - 2665.0	0.172	22.35	47M5W7D
	40 MHz	TT/2 BPSK	2516.0 - 2670.0	0.188	22.75	36M0G7D
		QPSK	2516.0 - 2670.0	0.173	22.38	38M1G7D
		16QAM	2516.0 - 2670.0	0.172	22.36	38M0W7D
	30 MHz	TT/2 BPSK	2511.0 - 2675.0	0.190	22.79	27M1G7D
		QPSK	2511.0 - 2675.0	0.176	22.46	28M0G7D
		16QAM	2511.0 - 2675.0	0.176	22.44	28M1W7D
	20 MHz	TT/2 BPSK	2506.0 - 2680.0	0.189	22.77	18M1G7D
		QPSK	2506.0 - 2680.0	0.172	22.34	18M3G7D
		16QAM	2506.0 - 2680.0	0.172	22.36	18M4W7D
	15 MHz	TT/2 BPSK	2503.5 - 2682.5	0.187	22.72	12M9G7D
		QPSK	2503.5 - 2682.5	0.174	22.41	13M6G7D
		16QAM	2503.5 - 2682.5	0.171	22.32	13M7W7D
	10 MHz	TT/2 BPSK	2501.0 - 2685.0	0.184	22.65	8M65G7D
		QPSK	2501.0 - 2685.0	0.168	22.24	8M66G7D
		16QAM	2501.0 - 2685.0	0.166	22.20	8M65W7D

Overview Table NR Band Ant 1

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Antenna-2						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 41(PC2)	20 MHz	QPSK	2506.0 - 2680.0	0.219	23.41	18M0G7D
		16QAM	2506.0 - 2680.0	0.217	23.37	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.218	23.39	13M4G7D
		16QAM	2503.5 - 2682.5	0.216	23.35	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.218	23.39	9M02G7D
		16QAM	2501.0 - 2685.0	0.214	23.30	9M00W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.217	23.37	4M56G7D
		16QAM	2498.5 - 2687.5	0.215	23.32	4M55W7D
LTE Band 41(PC3)	20 MHz	QPSK	2506.0 - 2680.0	0.135	21.30	18M0G7D
		16QAM	2506.0 - 2680.0	0.106	20.26	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.135	21.30	13M6G7D
		16QAM	2503.5 - 2682.5	0.107	20.27	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.135	21.29	9M02G7D
		16QAM	2501.0 - 2685.0	0.107	20.28	8M95W7D
	5 MHz	QPSK	2498.5 - 2687.5	0.135	21.29	4M55G7D
		16QAM	2498.5 - 2687.5	0.109	20.36	4M52W7D

Overview Table LTE Band Ant 2

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Antenna-2						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n41(PC3)	100 MHz	TT/2 BPSK	2546.0 - 2640.0	0.221	23.45	97M0G7D
		QPSK	2546.0 - 2640.0	0.207	23.15	97M6G7D
		16QAM	2546.0 - 2640.0	0.204	23.10	97M6W7D
	90 MHz	TT/2 BPSK	2541.0 - 2645.0	0.232	23.66	87M2G7D
		QPSK	2541.0 - 2645.0	0.214	23.31	87M8G7D
		16QAM	2541.0 - 2645.0	0.215	23.32	87M6W7D
	80 MHz	TT/2 BPSK	2536.0 - 2650.0	0.225	23.52	77M3G7D
		QPSK	2536.0 - 2650.0	0.208	23.18	77M6G7D
		16QAM	2536.0 - 2650.0	0.209	23.19	77M8W7D
	70 MHz	TT/2 BPSK	2531.0 - 2655.0	0.219	23.40	64M2G7D
		QPSK	2531.0 - 2655.0	0.203	23.08	67M5G7D
		16QAM	2531.0 - 2655.0	0.202	23.06	67M5W7D
	60 MHz	TT/2 BPSK	2526.0 - 2660.0	0.220	23.42	58M1G7D
		QPSK	2526.0 - 2660.0	0.203	23.08	58M1G7D
		16QAM	2526.0 - 2660.0	0.205	23.12	58M2W7D
	50 MHz	TT/2 BPSK	2521.0 - 2665.0	0.221	23.45	46M0G7D
		QPSK	2521.0 - 2665.0	0.205	23.11	47M8G7D
		16QAM	2521.0 - 2665.0	0.205	23.11	47M6W7D
	40 MHz	TT/2 BPSK	2516.0 - 2670.0	0.217	23.36	36M0G7D
		QPSK	2516.0 - 2670.0	0.201	23.03	37M9G7D
		16QAM	2516.0 - 2670.0	0.201	23.02	38M0W7D
	30 MHz	TT/2 BPSK	2511.0 - 2675.0	0.219	23.41	27M0G7D
		QPSK	2511.0 - 2675.0	0.203	23.08	28M0G7D
		16QAM	2511.0 - 2675.0	0.205	23.12	28M0W7D
	20 MHz	TT/2 BPSK	2506.0 - 2680.0	0.218	23.38	18M0G7D
		QPSK	2506.0 - 2680.0	0.198	22.97	18M3G7D
		16QAM	2506.0 - 2680.0	0.199	22.99	18M3W7D
	15 MHz	TT/2 BPSK	2503.5 - 2682.5	0.219	23.41	12M9G7D
		QPSK	2503.5 - 2682.5	0.202	23.04	13M7G7D
		16QAM	2503.5 - 2682.5	0.204	23.09	13M6W7D
	10 MHz	TT/2 BPSK	2501.0 - 2685.0	0.218	23.39	8M62G7D
		QPSK	2501.0 - 2685.0	0.199	22.99	8M68G7D
		16QAM	2501.0 - 2685.0	0.200	23.01	8M67W7D

Overview Table NR Band Ant 2

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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

Measurements were conducted at the Element laboratory(ies) indicated in Section 1.3 below. All measurement facilities are compliant with the test site requirements specified in ANSI C63.4:2014 and KDB 414788 D01 v01r01.

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 test laboratory with the site description on file with ISED (Wireless Test Lab number 2451B) and FCC (Designation Number US1113).
- 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 Agreements (MRAs).

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS947B**. 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.: 0289M, 0302M, 0745M, 0268M, 0293M, 0765M

2.2 Device Capabilities

This device contains the following capabilities:

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

This device supports Tx Device Hopping (ANT Switching) for the multiple 5G NR Bands and can operate on two distinct paths. The paths are labeled as either Main or Switching paths. Testing was done on both paths and is included in this report.

This device can transmit in the 5G NR Band n41 band over three separate antennas labelled SRS-1, SRS-2, and SRS-3. SRS operation can occur on either the main or switching path. With SRS operations, any of these three antennas can transmit an SRS signal to check the channel quality for transmission in the n41 Band. However, these antennas cannot simultaneously transmit and only the SRS-1 antenna is capable of data transmission. The test data is marked to indicate the specific antenna transmitting in the n41 band.

Band	Ant1	Ant2
LTE Band 41 PC2	Ant F	Ant B
NR Band n41	Ant F	Ant B

Table 2-1. Antenna Report Naming Convention

Antenna SRS-Label	Alternate Label
NR Band n41 – Default – SRS-1	Ant B
NR Band n41 – Default – SRS-2	Ant E
NR Band n41 – Default – SRS-3	Ant D
NR Band n41 – Switch – SRS-1	Ant F
NR Band n41 – Switch – SRS-2	Ant D
NR Band n41 – Switch – SRS-3	Ant E

Table 2-2. Antenna Labelling Scheme Correlation

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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 Duty Cycle Information

For all 5G NR and LTE operations in FDD mode, the EUT duty cycle was set to 100%.

For LTE TDD operation, a call box was used to force maximum transmission for each band. For LTE TDD bands, the maximum duty cycle is 63.3% for PC3 and 43.3% for PC2.

2.5 Software and Firmware

Testing was performed on device(s) using software/firmware version S947BXXU0AYKQ installed on the EUT.

2.6 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:

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

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 $P_g \text{ [dBm]} - \text{cable loss [dB]}$.

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:

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

And

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

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

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

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4.0 MEASUREMENT UNCERTAINTY

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

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

Table 4-1. Measurement Uncertainty Budget

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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
-	MD 1M 40	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	MD 1M 40
-	AP1-002	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP1-002
-	AP2-001	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP2-001
-	AP2-002	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP2-002
-	ETS-001	EMC Cable and Switch System	12/11/2024	Annual	2/25/2026	ETS-001
-	ETS-002	EMC Cable and Switch System	12/11/2024	Annual	2/25/2026	ETS-002
-	LTx1	Licensed Transmitter Cable Set	2/25/2025	Annual	2/25/2026	LTx1
-	LTx6-40	Licensed Transmitter Cable Set	2/25/2025	Annual	2/25/2026	LTx6-40
-	WL40-1	Conducted Cable Set (40GHz)	2/25/2025	Annual	2/25/2026	WL40-1
-	WL40-2	Conducted Cable Set (40GHz)	2/25/2025	Annual	2/25/2026	WL40-2
-	WL40-3	Conducted Cable Set (40GHz)	2/25/2025	Annual	2/25/2026	WL40-3
Agilent	N9038A	MXE EMI Receiver	11/10/2025	Annual	11/10/2026	MY51210133
Anritsu	MT8000A	Radio Communication Test Station	6/4/2025	Annual	6/4/2026	6261914237
Anritsu	MT8000A	Radio Communication Test Station	3/11/2025	Annual	3/11/2026	6272337439
Anritsu	MT8821C	Radio Communication Analyze	9/15/2025	Annual	9/15/2026	6201381794
Anritsu	MT8821C	Radio Communication Analyze	3/14/2025	Annual	3/14/2026	6262044715
EMCO	3115	Horn Antenna (1-18GHz)	9/6/2024	Biennial	9/6/2026	9704-5182
Espec	ESX-2CA	Environmental Chamber	11/20/2024	Biennial	11/20/2026	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	6/4/2025	Biennial	6/4/2027	125518
ETS-Lindgren	3116C	DRG Horn Antenna	4/22/2025	Biennial	4/22/2027	218893
Keysight Technologies	N9030A	3Hz-44GHz PXA Signal Analyzer	9/15/2025	Annual	9/15/2026	MY49430494
Keysight Technologies	N9020A	MXA Signal Analyzer	5/7/2025	Annual	5/7/2026	US46470561
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	6/6/2025	Annual	6/6/2026	MY52350166
Keysight Technologies	N9020A	MXA Signal Analyzer	6/4/2025	Annual	6/4/2026	MY54500644
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	5/12/2025	Annual	5/12/2026	103200
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/25/2025	Annual	3/25/2026	101716
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	6/18/2025	Annual	6/18/2026	140148
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	9/11/2024	Biennial	9/11/2026	A051107
Sunol Sciences	DRH-118	Horn (Small)	2/13/2024	Biennial	2/13/2026	A042511

Table 5-1. Test Equipment Calibration Table

Notes:

- 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.
- Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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Component	Serial Number
MegaPhase Cable, Model: TM40-K1K1-36	18160102 001
MCL 10dB Attenuator, Model: BW-K10 2W44+	1902

Table 5-2. WL40-1 Conducted Cable Set Components

Component	Serial Number
MegaPhase Cable, Model: TM40-K1K1-30	18165902 001
MCL 10dB Attenuator, Model: BW-K10 2W44+	2108

Table 5-3. WL40-2 Conducted Cable Set Components

Component	Serial Number
MegaPhase Cable, Model: TM40-K1K1-30	20335602 001
MCL 10dB Attenuator, Model: BW-K10 2W44+	2108

Table 5-4. WL40-3 Conducted Cable Set Components

Component	Serial Number
Keysight Directional Coupler, Model: 87300C	55300398
Mini Circuits 6dB Attenuator, BW S6 2W263+	2105
MegaPhase Cable, Model: TM26-S1S1-30	20233001 004

Table 5-5. LTx1 Licensed Transmitter Cable Set

Component	Serial Number
Fairview Microwave Directional Coupler, FM2CP1122-10	2122
MCL 6dB Attenuator, Model: BW-K6 2W44+	2013
MegaPhase Cable, Model: TM40-K1K1-30	20233002 003

Table 5-6. LTx6-40 Conducted Cable Set Components

Component	Serial Number
Pasternack Cable RG214/U	111815
MegaPhase (CAGE 1GVT4) Cable GR18-N5N5-24	14042714 001

Table 5-7. ETS-001 EMC Cable and Switch System Components

Component	Serial Number
MegaPhase (CAGE 1GVT4) Cable GR18-N5N5-24	14042714 001
MegaPhase (CAGE 1GVT4) Cable NC29-N1N1-324	20502201 001
Rohde & Schwarz SF Unit	102134
Minicircuits Cable CBL=0.5M-NMNM+	15440

Table 5-8. ETS-002 EMC Cable and Switch System Components

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Component	Serial Number
Sucoflex 106A Cable	501992
MegaPhase Cable N29-N1N1-324	20335606 001
Rohde & Schwarz SF Unit	102133
MiniCircuits Cable CBL-2FT-SMSM+	77745
MegaPhase Cable 10511-1	15034701 001
MiniCircuits Switch RC 2SPDT-A18	11703270 041
Sucoflex 104 Cable	320259/4
Sucoflex 104 Cable	321999/4
Sucoflex 104 Cable	321995/4

Table 5-9. AP1-002 EMC Cable and Switch System Components

Component	Serial Number
Flex Cable	P2A-0001
Micro-Coax Utilflex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-003
Chamber Passthrough	CP4/X12
Micro-Coax Utilflex Cable UFB311A-1-0629-50U50U MFR 64639	231986-003
Micro-Coax Utilflex Cable UFB142A-0-0629-5GU200 MFR 6463	232069-001
Rohde & Schwarz TS-PR8 Pre-Amplifier	102335
Rohde & Schwarz OSP130 Open Switch and Control Unit	101181

Table 5-10. AP2-001 EMC Cable and Switch System Components

Component	Serial Number
MiniCircuits Cable CBL-0.5M-SMNM+	47261
Micro-Coax Utilflex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-001
Micro-Coax Utilflex Cable UFB311A-1-0629-50U50U MFR 64639	231986-002
MegaPhase (CAGE 1GVT4) Cable NC29-N1N1-324	19046401 001
Megaphase (CAGE 1GVT4) Flex Cable 10511-1	15044701-006
Micro-Coax Utilflex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-002
Micro-Coax Utilflex Cable UFB311A-1-0629-50U50U MFR 64639	231986-004
Micro-Coax Utilflex Cable UFB142A-0-0629-5GU200 MFR 64639	232069-001
Rohde & Schwarz SF Unit	102138
Rohde & Schwarz OSP130 Open Switch and Control Unit	101181
Micro-Coax Utilflex Cable UFB311A-Q-3346-50U50U MFR 64639	231978-003
Micro-Coax Utilflex Cable UFB311A-1-0629-50U50U MFR 64639	231986-003
Rohde & Schwarz TS-PR8 Pre-Amplifier	102335

Table 5-11. AP2-002 EMC Cable and Switch System Components

Component	Serial Number
MegaPhase Cable TM40-K1K1-30	20233002-004
UTIPLEX Cable, 64639	232063-001
Rohde & Schwarz Pre-amp TS-PR1840 18G-40G	9037.7670.02

Table 5-12. MD 1M 18-40 EMC Cable and Switch System Components

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6.0 SAMPLE EMISSION DESIGNATORS

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

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7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSMS947B
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): LTE/NR

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

* The only transmitter output conducted powers included in this report are those where the Pmax value, per the tune-up document, is higher than any of the DSI power levels. For the remaining conducted power measurements, see the **RF Exposure Report**.

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 EMC Software Tool v2.4.0.

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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.

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.

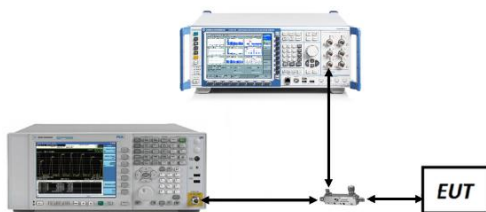


Figure 7-1. Test Instrument & Measurement Setup – Online Mode

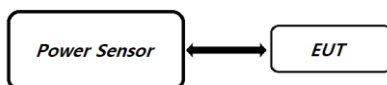


Figure 7-2. Test Instrument & Measurement Setup – FTM Mode

Test Notes

1. Conducted power measurements were evaluated using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
2. All other conducted power measurements are contained in the RF exposure report for this filing.
3. Conducted power was found to reduce for the higher order QAM modulations when compared to 16QAM. Due to this trend, only the worst-case QAM (16QAM) powers are included in this section.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	QPSK	39750	2506.0	1 / 50	24.71
		40620	2593.0	1 / 0	24.76
		41490	2680.0	1 / 50	24.82
	16-QAM	39750	2506.0	1 / 50	24.87
		40620	2593.0	1 / 0	24.97
		41490	2680.0	1 / 50	24.98
15 MHz	QPSK	39725	2503.5	75 / 0	24.68
		40620	2593.0	75 / 0	24.75
		41515	2682.5	75 / 0	24.78
	16-QAM	39725	2503.5	1 / 0	24.83
		40620	2593.0	1 / 0	24.95
		41515	2682.5	1 / 0	24.93
10 MHz	QPSK	39700	2501.0	50 / 0	24.69
		40620	2593.0	1 / 25	24.75
		41540	2685.0	50 / 0	24.76
	16-QAM	39700	2501.0	1 / 25	24.84
		40620	2593.0	1 / 25	24.96
		41540	2685.0	1 / 25	24.92
5 MHz	QPSK	39675	2498.5	1 / 12	24.75
		40620	2593.0	1 / 12	24.80
		41565	2687.5	1 / 12	24.80
	16-QAM	39675	2498.5	1 / 12	24.91
		40620	2593.0	1 / 12	24.97
		41565	2687.5	1 / 12	24.93

Table 7-2. Conducted Power Results – LTE Band 41 (PC2) – Ant1

FCC ID: A3LSMS947B	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 / 50	23.25
		40620	2593.0	1 / 50	23.44
		41490	2680.0	1 / 50	23.24
	16-QAM	39750	2506.0	1 / 50	22.69
15 MHz	QPSK	39725	2503.5	1 / 74	23.23
		40620	2593.0	1 / 0	23.41
		41515	2682.5	1 / 0	23.20
	16-QAM	39725	2503.5	1 / 0	22.69
10 MHz	QPSK	39700	2501.0	1 / 25	23.24
		40620	2593.0	1 / 25	23.44
		41540	2685.0	1 / 25	23.30
	16-QAM	39700	2501.0	1 / 0	22.68
5 MHz	QPSK	39675	2498.5	1 / 12	23.30
		40620	2593.0	1 / 12	23.47
		41565	2687.5	1 / 12	23.31
	16-QAM	39675	2498.5	1 / 12	22.80

Table 7-3. Conducted Power Results – LTE Band 41 (PC3) – Ant1

FCC ID: A3LSMS947B	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	100 / 0	25.19
		40620	2593.0	100 / 0	24.92
		41490	2680.0	100 / 0	24.87
	16-QAM	39750	2506.0	1 / 99	25.22
		40620	2593.0	1 / 0	25.08
		41490	2680.0	1 / 0	24.84
15 MHz	QPSK	39725	2503.5	75 / 0	25.11
		40620	2593.0	75 / 0	24.90
		41515	2682.5	75 / 0	24.84
	16-QAM	39725	2503.5	1 / 74	25.23
		40620	2593.0	1 / 0	25.06
		41515	2682.5	1 / 0	24.82
10 MHz	QPSK	39700	2501.0	50 / 0	25.15
		40620	2593.0	50 / 0	24.90
		41540	2685.0	50 / 0	24.85
	16-QAM	39700	2501.0	1 / 49	25.14
		40620	2593.0	1 / 0	25.01
		41540	2685.0	1 / 0	24.82
5 MHz	QPSK	39675	2498.5	25 / 0	25.09
		40620	2593.0	25 / 0	24.88
		41565	2687.5	25 / 0	24.81
	16-QAM	39675	2498.5	1 / 24	25.18
		40620	2593.0	1 / 0	25.03
		41565	2687.5	1 / 0	24.84

Table 7-4. Conducted Power Results – LTE Band 41 (PC2) – Ant2

FCC ID: A3LSMS947B	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 / 99	24.49
		40620	2593.0	1 / 0	24.39
		41490	2680.0	1 / 0	24.19
	16-QAM	39750	2506.0	1 / 99	23.53
15 MHz	QPSK	39725	2503.5	1 / 74	24.49
		40620	2593.0	1 / 0	24.36
		41515	2682.5	1 / 0	24.16
	16-QAM	39725	2503.5	1 / 74	23.54
10 MHz	QPSK	39700	2501.0	1 / 49	24.48
		40620	2593.0	1 / 0	24.35
		41540	2685.0	1 / 0	24.18
	16-QAM	39700	2501.0	1 / 49	23.55
5 MHz	QPSK	39675	2498.5	1 / 12	24.48
		40620	2593.0	1 / 12	24.34
		41565	2687.5	1 / 12	24.16
	16-QAM	39675	2498.5	1 / 12	23.63

Table 7-5. Conducted Power Results – LTE Band 41 (PC3) – Ant2

FCC ID: A3LSMS947B	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	$\pi/2$ BPSK	509202	2546.01	1 / 271	23.74
		518598	2592.99	1 / 136	23.66
		528000	2640.00	1 / 271	23.79
	QPSK	509202	2546.01	1 / 271	23.73
		518598	2592.99	1 / 136	23.69
		528000	2640.00	1 / 271	23.74
90 MHz	$\pi/2$ BPSK	508200	2541.00	1 / 243	23.77
		518598	2592.99	1 / 243	23.72
		528996	2644.98	1 / 243	23.81
	QPSK	508200	2541.00	1 / 243	23.77
		518598	2592.99	1 / 243	23.66
		528996	2644.98	1 / 243	23.80
80 MHz	$\pi/2$ BPSK	507204	2536.02	1 / 1	23.64
		518598	2592.99	1 / 108	23.64
		529998	2649.99	1 / 215	23.84
	QPSK	507204	2536.02	1 / 1	23.64
		518598	2592.99	1 / 108	23.58
		529998	2649.99	1 / 215	23.79
70 MHz	$\pi/2$ BPSK	506202	2531.01	1 / 1	23.83
		518598	2592.99	1 / 94	23.60
		531000	2655.00	1 / 187	23.67
	QPSK	506202	2531.01	1 / 1	23.77
		518598	2592.99	1 / 1	23.57
		531000	2655.00	1 / 187	23.62
60 MHz	$\pi/2$ BPSK	505200	2526.00	1 / 1	23.74
		518598	2592.99	1 / 81	23.59
		531996	2659.98	1 / 160	23.61
	QPSK	505200	2526.00	1 / 1	23.71
		518598	2592.99	1 / 81	23.60
		531996	2659.98	1 / 160	23.62
50 MHz	$\pi/2$ BPSK	504204	2521.02	1 / 1	23.78
		518598	2592.99	1 / 66	23.59
		532998	2664.99	1 / 1	23.63
	QPSK	504204	2521.02	1 / 1	23.76
		518598	2592.99	1 / 66	23.55
		532998	2664.99	1 / 131	23.61
40 MHz	$\pi/2$ BPSK	503202	2516.01	1 / 1	23.68
		518598	2592.99	1 / 53	23.59
		534000	2670.00	1 / 104	23.61
	QPSK	503202	2516.01	1 / 1	23.64
		518598	2592.99	1 / 53	23.57
		534000	2670.00	1 / 104	23.56
30 MHz	$\pi/2$ BPSK	502200	2511.00	1 / 1	23.73
		518598	2592.99	1 / 39	23.61
		534996	2674.98	1 / 1	23.65
	QPSK	502200	2511.00	1 / 1	23.71
		518598	2592.99	1 / 39	23.57
		534996	2674.98	1 / 39	23.64
20 MHz	$\pi/2$ BPSK	501204	2506.02	1 / 1	23.63
		518598	2592.99	1 / 49	23.59
		535998	2679.99	1 / 25	23.63
	QPSK	501204	2506.02	1 / 25	23.58
		518598	2592.99	1 / 49	23.55
		535998	2679.99	1 / 25	23.52
15 MHz	$\pi/2$ BPSK	500706	2503.50	1 / 1	23.74
		518598	2592.99	1 / 36	23.61
		536449	2682.50	1 / 19	23.58
	QPSK	500706	2503.50	1 / 1	23.73
		518598	2592.99	1 / 36	23.59
		536449	2682.50	1 / 19	23.59
10 MHz	$\pi/2$ BPSK	500208	2501.00	1 / 12	23.71
		518598	2592.99	1 / 22	23.60
		537000	2685.00	1 / 12	23.51
	QPSK	500208	2501.00	1 / 12	23.72
		518598	2592.99	1 / 22	23.57
		537000	2685.00	1 / 1	23.42

Table 7-6. Conducted Power Results – NR Band n41 (PC3) – Ant1

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	$\pi/2$ BPSK	509202	2546.01	1 / 136	24.02
		518598	2592.99	1 / 1	23.91
		528000	2640.00	1 / 1	23.76
	QPSK	509202	2546.01	1 / 136	23.93
		518598	2592.99	1 / 1	23.88
		528000	2640.00	1 / 1	23.75
90 MHz	$\pi/2$ BPSK	508200	2541.00	1 / 122	24.09
		518598	2592.99	1 / 1	23.94
		528996	2644.98	1 / 243	23.97
	QPSK	508200	2541.00	1 / 243	24.06
		518598	2592.99	1 / 1	23.89
		528996	2644.98	1 / 243	23.91
80 MHz	$\pi/2$ BPSK	507204	2536.02	1 / 1	24.00
		518598	2592.99	1 / 1	23.94
		529998	2649.99	1 / 215	23.83
	QPSK	507204	2536.02	1 / 1	23.95
		518598	2592.99	1 / 1	23.91
		529998	2649.99	1 / 215	23.78
70 MHz	$\pi/2$ BPSK	506202	2531.01	1 / 1	24.06
		518598	2592.99	1 / 1	24.01
		531000	2655.00	1 / 1	23.71
	QPSK	506202	2531.01	1 / 1	24.01
		518598	2592.99	1 / 1	24.00
		531000	2655.00	1 / 1	23.68
60 MHz	$\pi/2$ BPSK	505200	2526.00	1 / 1	24.06
		518598	2592.99	1 / 1	23.92
		531996	2659.98	1 / 160	23.73
	QPSK	505200	2526.00	1 / 1	23.99
		518598	2592.99	1 / 1	23.87
		531996	2659.98	1 / 160	23.68
50 MHz	$\pi/2$ BPSK	504204	2521.02	1 / 131	24.01
		518598	2592.99	1 / 66	23.83
		532998	2664.99	1 / 131	23.76
	QPSK	504204	2521.02	1 / 131	24.01
		518598	2592.99	1 / 66	23.79
		532998	2664.99	1 / 131	23.71
40 MHz	$\pi/2$ BPSK	503202	2516.01	1 / 1	23.94
		518598	2592.99	1 / 53	23.84
		534000	2670.00	1 / 1	23.67
	QPSK	503202	2516.01	1 / 1	23.87
		518598	2592.99	1 / 53	23.81
		534000	2670.00	1 / 1	23.63
30 MHz	$\pi/2$ BPSK	502200	2511.00	1 / 1	23.91
		518598	2592.99	1 / 39	23.83
		534996	2674.98	1 / 76	23.72
	QPSK	502200	2511.00	1 / 1	23.85
		518598	2592.99	1 / 39	23.81
		534996	2674.98	1 / 76	23.68
20 MHz	$\pi/2$ BPSK	501204	2506.02	1 / 25	23.92
		518598	2592.99	1 / 25	23.82
		535998	2679.99	1 / 25	23.69
	QPSK	501204	2506.02	1 / 25	23.87
		518598	2592.99	1 / 1	23.78
		535998	2679.99	1 / 49	23.57
15 MHz	$\pi/2$ BPSK	500706	2503.50	1 / 36	23.91
		518598	2592.99	1 / 19	23.81
		536449	2682.50	1 / 19	23.72
	QPSK	500706	2503.50	1 / 19	23.90
		518598	2592.99	1 / 19	23.78
		536449	2682.50	1 / 36	23.64
10 MHz	$\pi/2$ BPSK	500208	2501.00	1 / 12	23.99
		518598	2592.99	1 / 22	23.88
		537000	2685.00	1 / 12	23.70
	QPSK	500208	2501.00	1 / 12	23.94
		518598	2592.99	1 / 12	23.86
		537000	2685.00	1 / 1	23.59
	16-QAM	537000	2685.00	1 / 1	22.61

Table 7-7. Conducted Power Results – NR Band n41 (PC3) – Ant2

FCC ID: A3LSMS947B	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	2546.01	1/271	21.55
		518598	2592.99	1/271	22.61
		528000	2640.00	270/0	22.99
	QPSK	509202	2546.01	1/271	21.70
		518598	2592.99	1/271	22.83
		528000	2640.00	270/0	22.86
	16-QAM	509202	2546.01	1/271	21.11
		518598	2592.99	1/271	22.38
		528000	2640.00	270/0	22.94
	64-QAM	509202	2546.01	1/271	20.81
		518598	2592.99	1/271	22.24
		528000	2640.00	270/0	22.41
	256-QAM	509202	2546.01	1/271	19.03
		518598	2592.99	1/271	20.53
		528000	2640.00	270/0	20.53

Table 7-8. Conducted Power Results – NR Band n41 – Default Ant B

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	270/0	22.91
		518598	2592.99	270/0	22.53
		528000	2640.00	1/1	21.78
	QPSK	509202	2546.01	270/0	22.77
		518598	2592.99	270/0	22.43
		528000	2640.00	1/1	21.85
	16-QAM	509202	2546.01	270/0	21.80
		518598	2592.99	270/0	21.44
		528000	2640.00	1/1	22.49
	64-QAM	509202	2546.01	270/0	21.33
		518598	2592.99	270/0	20.92
		528000	2640.00	1/1	20.11
	256-QAM	509202	2546.01	270/0	19.44
		518598	2592.99	270/0	18.94
		528000	2640.00	1/1	17.15

Table 7-9. Conducted Power Results – NR Band n41 – Switching Ant F

FCC ID: A3LSMS947B	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	$\pi/2$ BPSK	509202	2546.01	1/136	22.18
		518598	2592.99	1/136	22.82
		528000	2640.00	1/1	22.96
	QPSK	509202	2546.01	1/136	22.60
		518598	2592.99	1/136	22.60
		528000	2640.00	1/1	22.86
	16-QAM	509202	2546.01	1/136	21.80
		518598	2592.99	1/136	21.85
		528000	2640.00	1/1	22.79
	64-QAM	509202	2546.01	1/136	21.16
		518598	2592.99	1/136	21.59
		528000	2640.00	1/1	22.84
	256-QAM	509202	2546.01	1/136	20.73
		518598	2592.99	1/136	20.01
		528000	2640.00	1/1	20.15

Table 7-10. Conducted Power Results – NR Band n41 – Default Ant E

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	$\pi/2$ BPSK	509202	2546.01	270/0	22.82
		518598	2592.99	1/1	22.19
		528000	2640.00	270/0	21.05
	QPSK	509202	2546.01	270/0	22.81
		518598	2592.99	1/1	21.99
		528000	2640.00	270/0	21.15
	16-QAM	509202	2546.01	270/0	22.78
		518598	2592.99	1/1	22.71
		528000	2640.00	270/0	21.03
	64-QAM	509202	2546.01	270/0	22.25
		518598	2592.99	1/1	21.25
		528000	2640.00	270/0	20.62
	256-QAM	509202	2546.01	270/0	20.34
		518598	2592.99	1/1	18.83
		528000	2640.00	270/0	18.67

Table 7-11. Conducted Power Results – NR Band n41 – Switching Ant D

FCC ID: A3LSMS947B	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	2546.01	270/0	22.93
		518598	2592.99	1/1	22.44
		528000	2640.00	270/0	22.98
	QPSK	509202	2546.01	270/0	22.88
		518598	2592.99	1/1	22.60
		528000	2640.00	270/0	22.83
	16-QAM	509202	2546.01	270/0	22.90
		518598	2592.99	1/1	22.72
		528000	2640.00	270/0	22.71
	64-QAM	509202	2546.01	270/0	22.99
		518598	2592.99	1/1	22.79
		528000	2640.00	270/0	22.90
	256-QAM	509202	2546.01	270/0	22.30
		518598	2592.99	1/1	21.75
		528000	2640.00	270/0	21.30

Table 7-12. Conducted Power Results – NR Band n41 – Default Ant D

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1/136	22.53
		518598	2592.99	270/0	22.89
		528000	2640.00	1/136	22.92
	QPSK	509202	2546.01	1/136	22.20
		518598	2592.99	270/0	22.95
		528000	2640.00	1/136	22.71
	16-QAM	509202	2546.01	1/136	22.07
		518598	2592.99	270/0	22.86
		528000	2640.00	1/136	21.89
	64-QAM	509202	2546.01	1/136	22.53
		518598	2592.99	270/0	22.41
		528000	2640.00	1/136	22.66
	256-QAM	509202	2546.01	1/136	17.82
		518598	2592.99	270/0	20.47
		528000	2640.00	1/136	19.52

Table 7-13. Conducted Power Results – NR Band n41 – Switching Ant E

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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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.

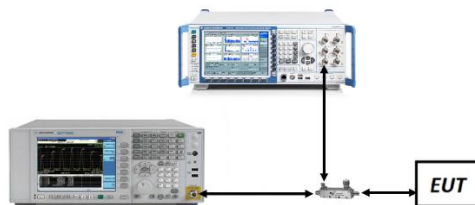


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

Only the highest target power SRS-1 antenna for n41 default (Antenna B) are reported for the overall n41 SRS worst case.

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B41PC2	20MHz	QPSK	18.02
		16QAM	17.97
	15MHz	QPSK	13.44
		16QAM	13.42
	10MHz	QPSK	9.03
		16QAM	9.03
	5MHz	QPSK	4.55
		16QAM	4.53
LTE-B41PC3	20MHz	QPSK	18.02
		16QAM	17.93
	15MHz	QPSK	13.47
		16QAM	13.49
	10MHz	QPSK	9.05
		16QAM	9.02
	5MHz	QPSK	4.53
		16QAM	4.51

Table 7-14. Occupied Bandwidth Test Results – LTE – Ant 1

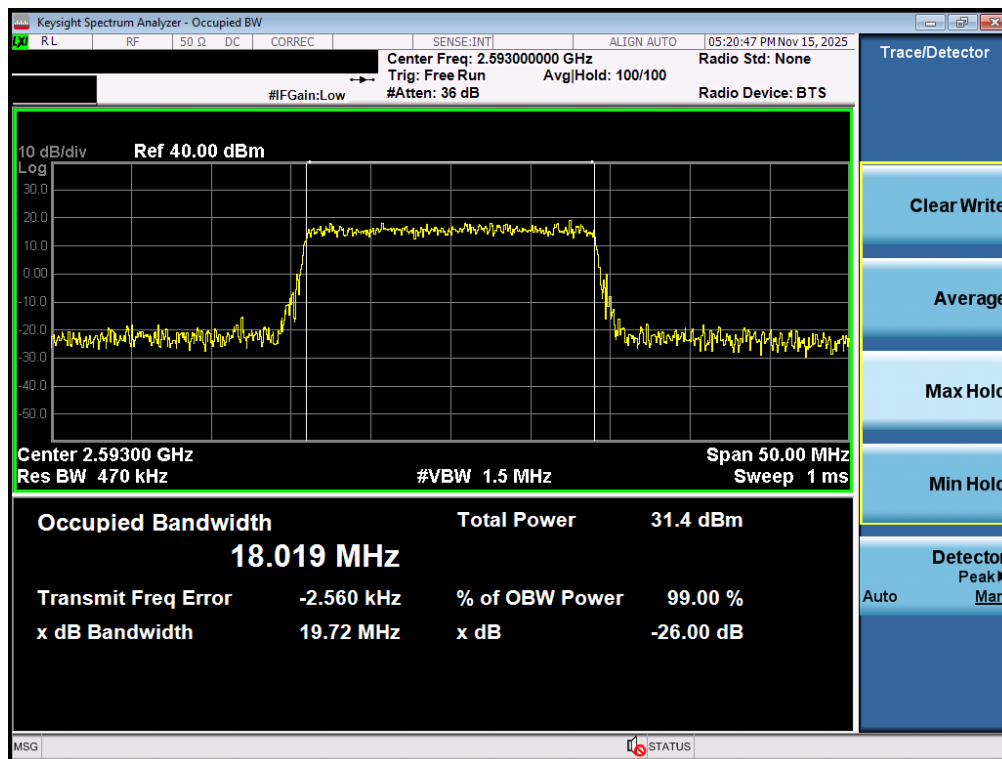
FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
NR-n41PC3	100MHz	$\pi/2$ BPSK	96.54
		QPSK	97.76
		16QAM	97.68
	90MHz	$\pi/2$ BPSK	86.90
		QPSK	87.61
		16QAM	87.69
	80MHz	$\pi/2$ BPSK	77.72
		QPSK	77.50
		16QAM	77.68
	70MHz	$\pi/2$ BPSK	64.52
		QPSK	67.75
		16QAM	67.50
	60MHz	$\pi/2$ BPSK	58.21
		QPSK	58.07
		16QAM	57.98
	50MHz	$\pi/2$ BPSK	45.95
		QPSK	47.74
		16QAM	47.49
	40MHz	$\pi/2$ BPSK	35.97
		QPSK	38.10
		16QAM	38.01
	30MHz	$\pi/2$ BPSK	27.07
		QPSK	28.03
		16QAM	28.10
	20MHz	$\pi/2$ BPSK	18.09
		QPSK	18.33
		16QAM	18.37
	15MHz	$\pi/2$ BPSK	12.92
		QPSK	13.65
		16QAM	13.71
	10MHz	$\pi/2$ BPSK	8.65
		QPSK	8.66
		16QAM	8.65

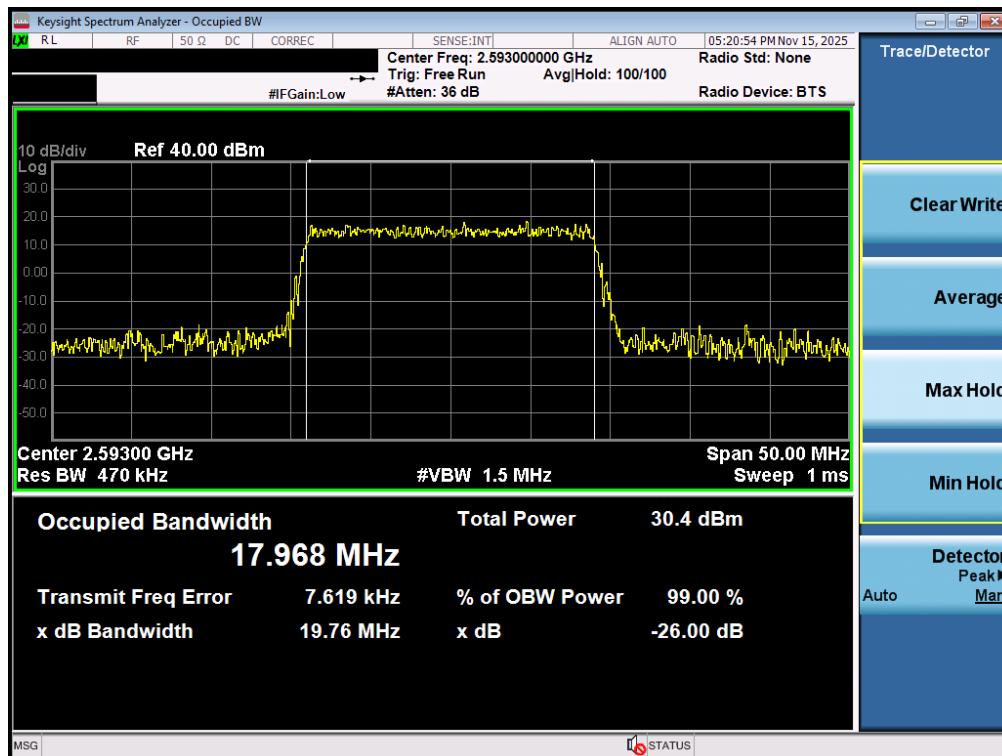
Table 7-15. Occupied Bandwidth Test Results – NR – Ant 1

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 41(PC2)– Ant1

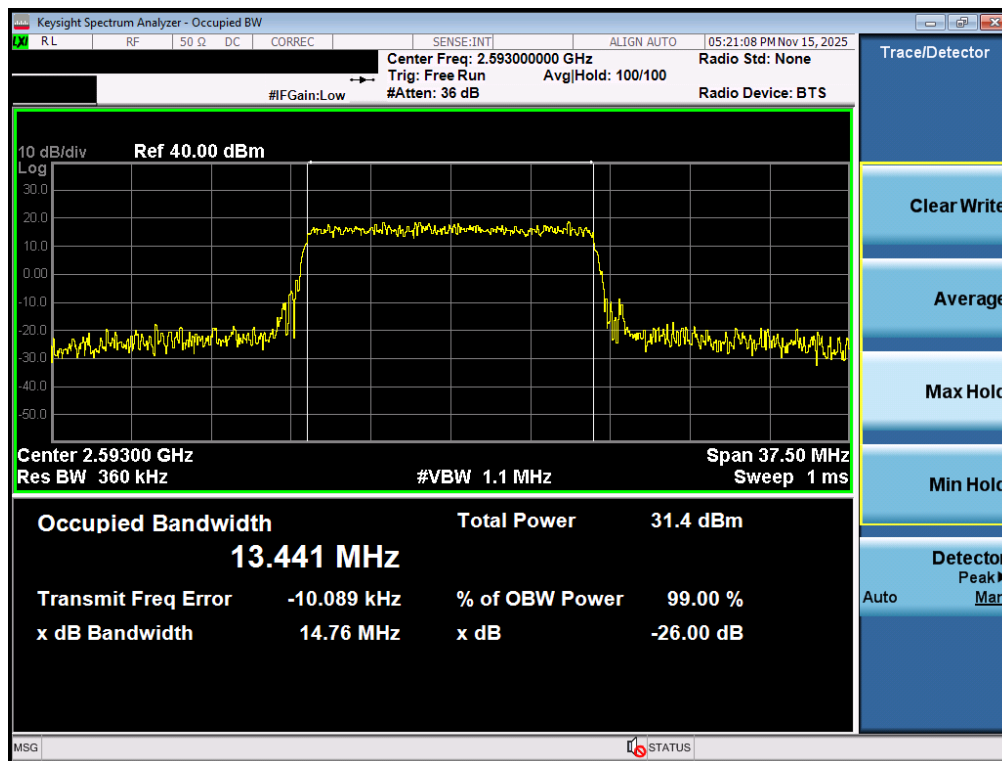


Plot 7-1. Occupied Bandwidth Plot (LTE Band 41(PC2)- 20MHz QPSK - Full RB - Ant1)

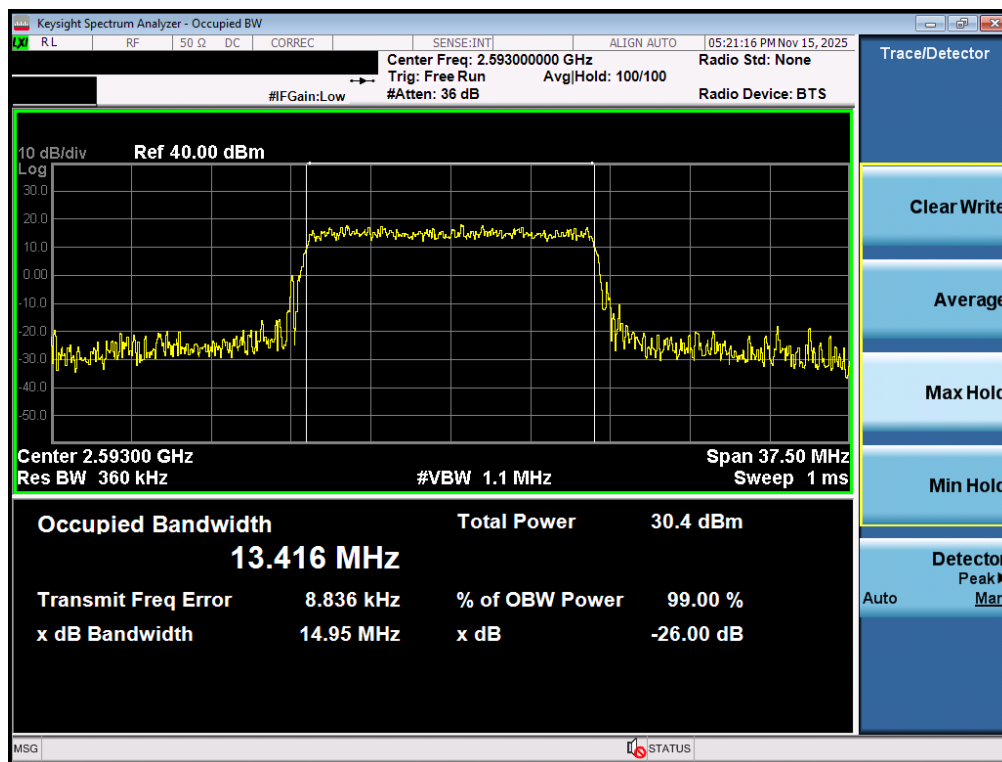


Plot 7-2. Occupied Bandwidth Plot (LTE Band 41(PC2)- 20MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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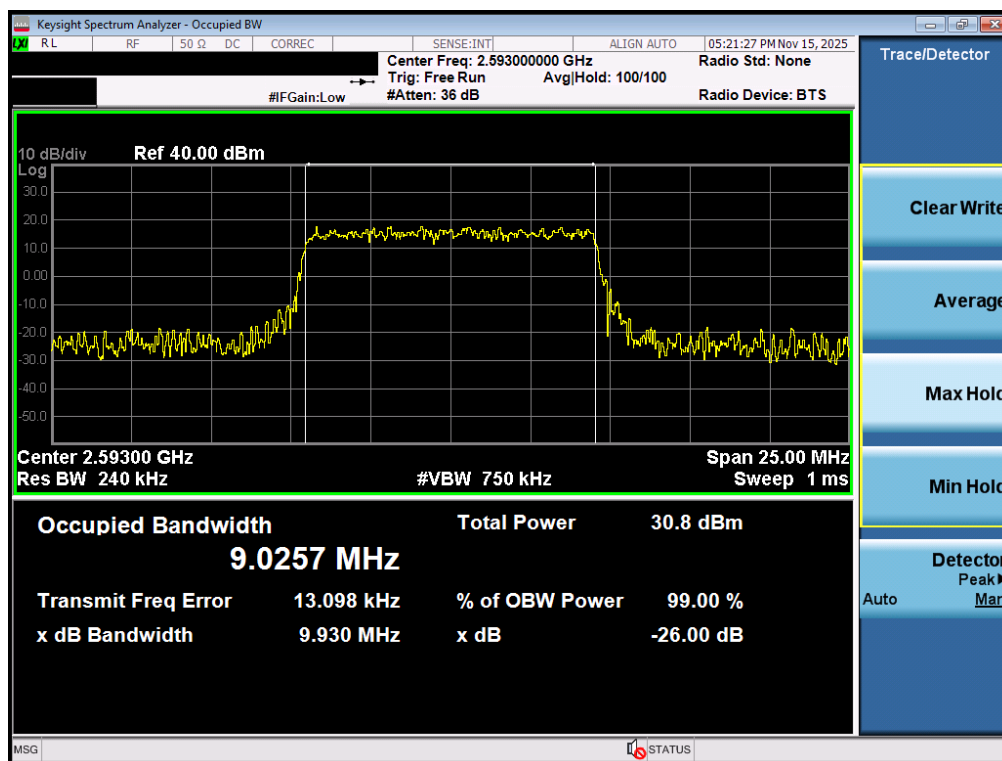


Plot 7-3. Occupied Bandwidth Plot (LTE Band 41(PC2)- 15MHz QPSK - Full RB - Ant1)

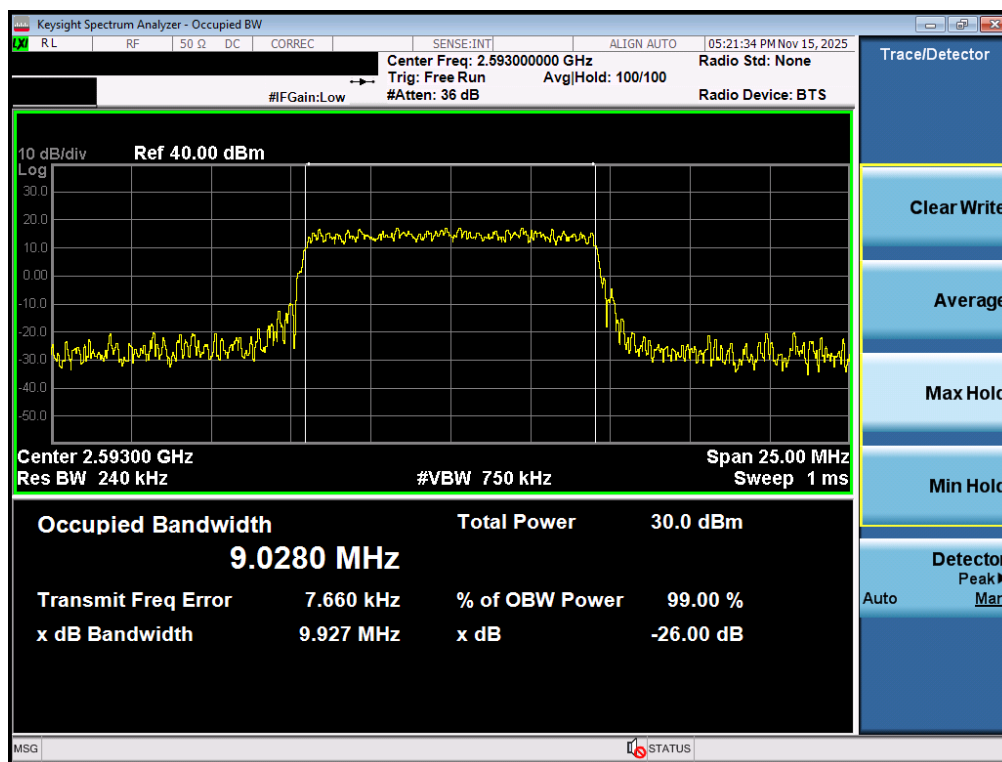


Plot 7-4. Occupied Bandwidth Plot (LTE Band 41(PC2)- 15MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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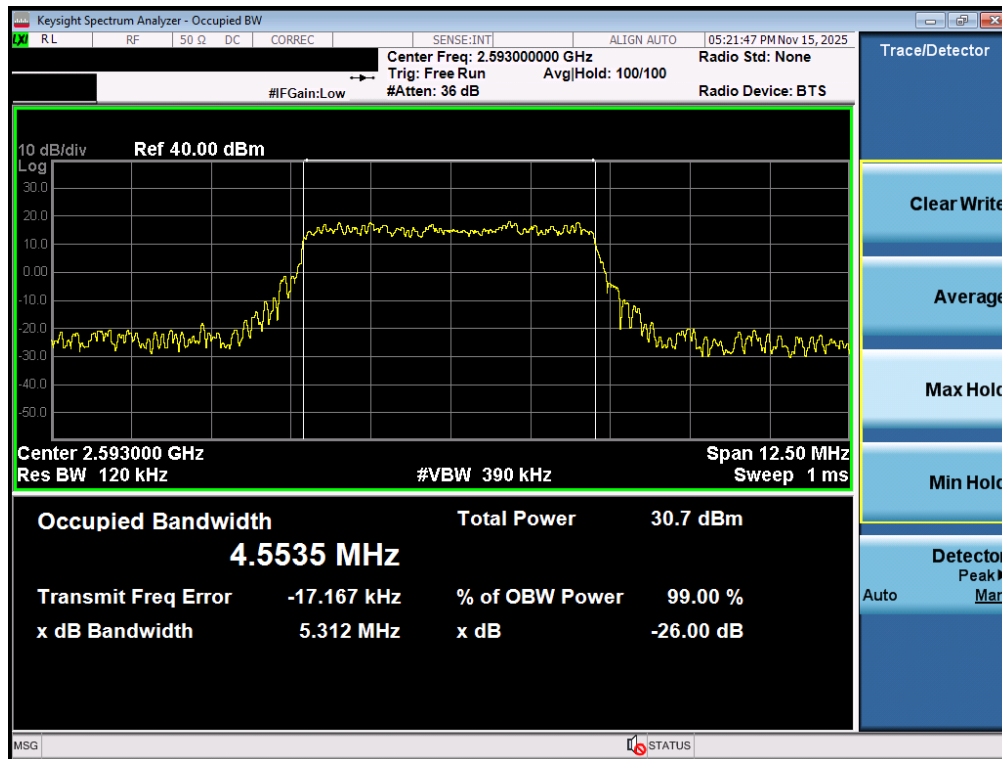


Plot 7-5. Occupied Bandwidth Plot (LTE Band 41(PC2)- 10MHz QPSK - Full RB - Ant1)

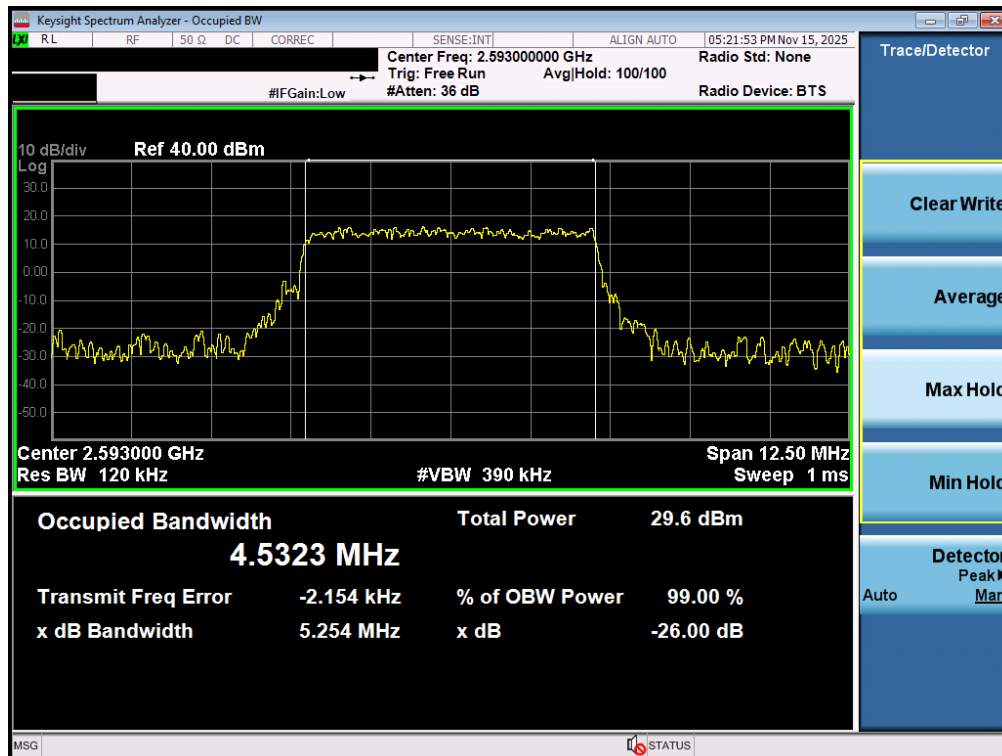


Plot 7-6. Occupied Bandwidth Plot (LTE Band 41(PC2)- 10MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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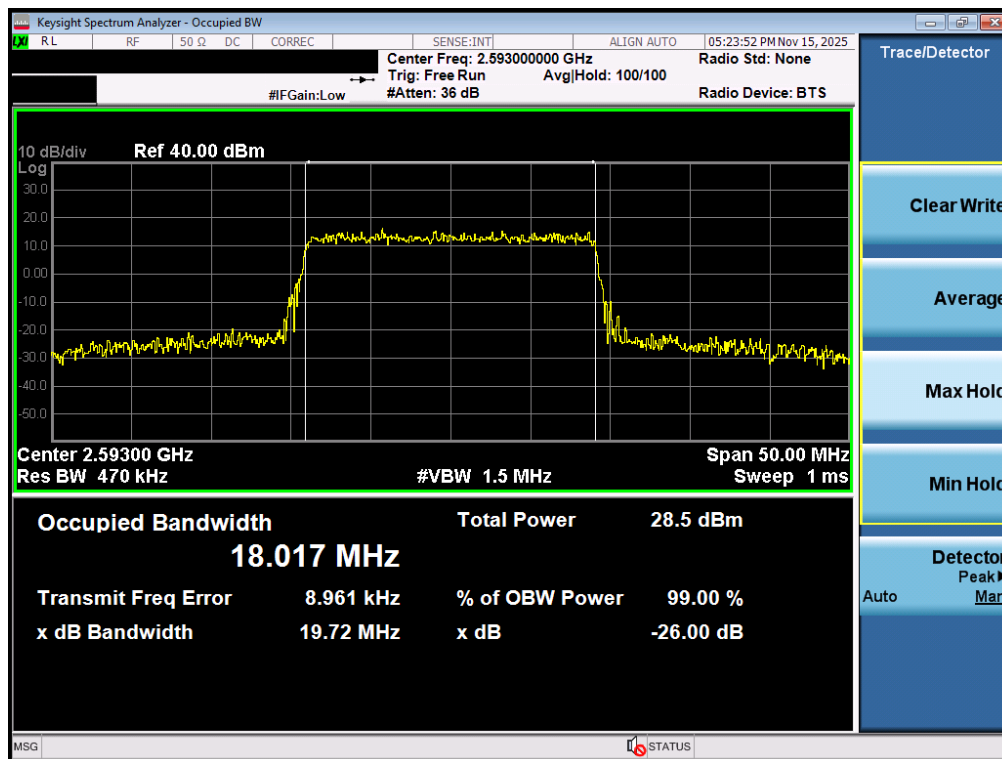
Plot 7-7. Occupied Bandwidth Plot (LTE Band 41(PC2)- 5MHz QPSK - Full RB - Ant1)



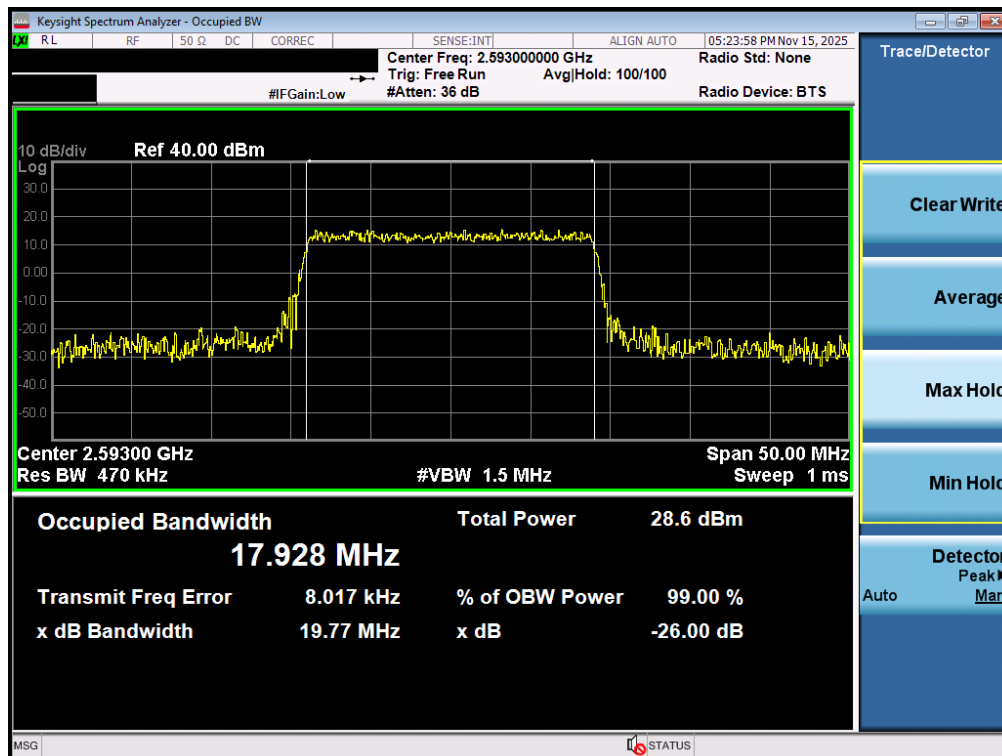
Plot 7-8. Occupied Bandwidth Plot (LTE Band 41(PC2)- 5MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 41(PC3)– Ant1

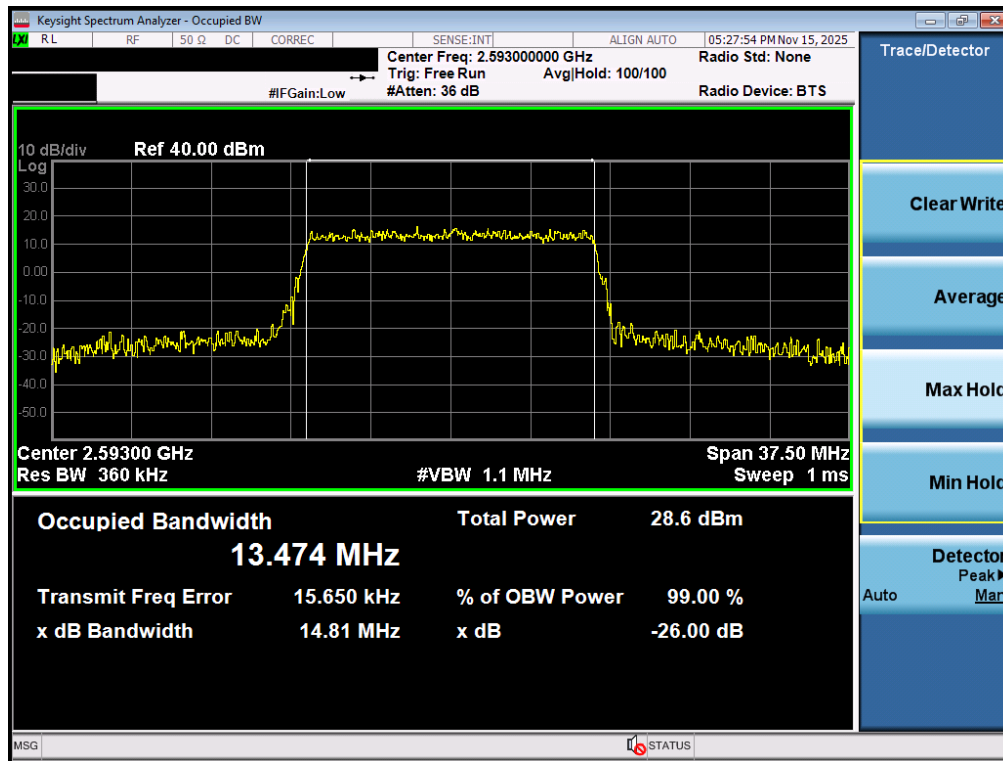


Plot 7-9. Occupied Bandwidth Plot (LTE Band 41(PC3)- 20MHz QPSK - Full RB - Ant1)

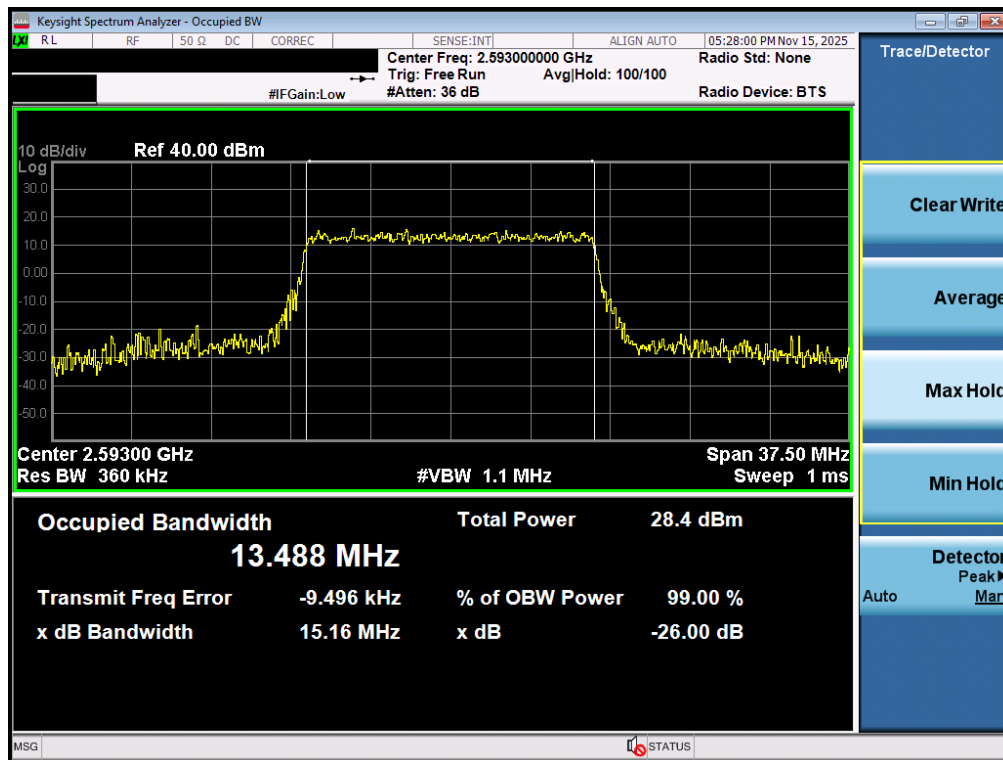


Plot 7-10. Occupied Bandwidth Plot (LTE Band 41(PC3)- 20MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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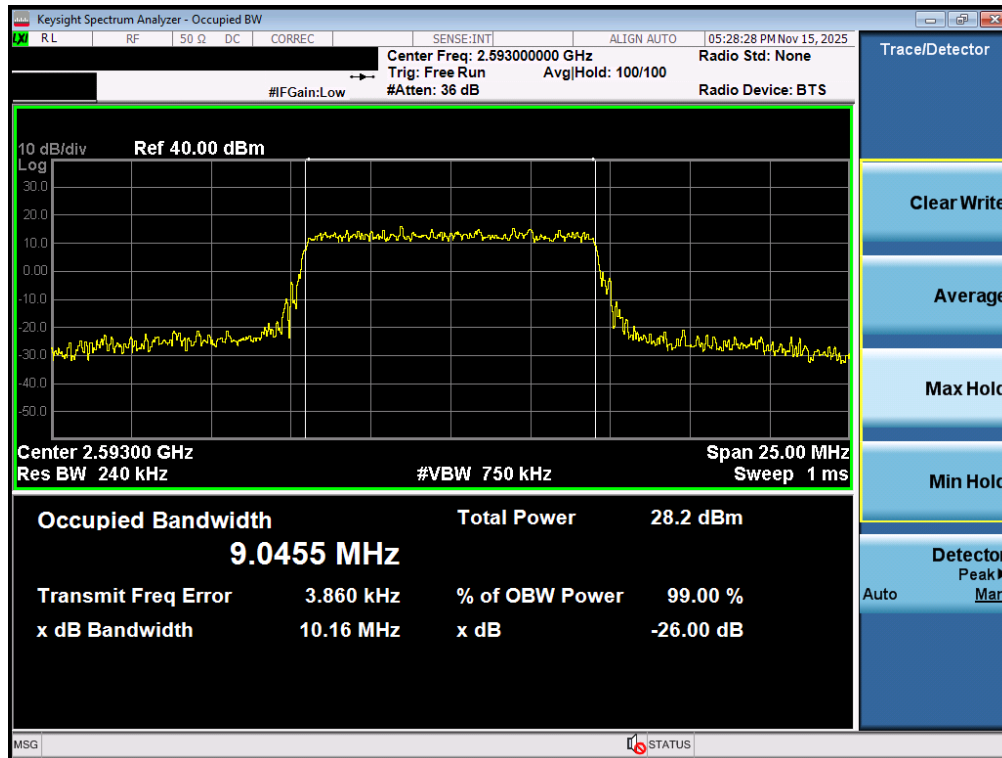


Plot 7-11. Occupied Bandwidth Plot (LTE Band 41(PC3)- 15MHz QPSK - Full RB - Ant1)

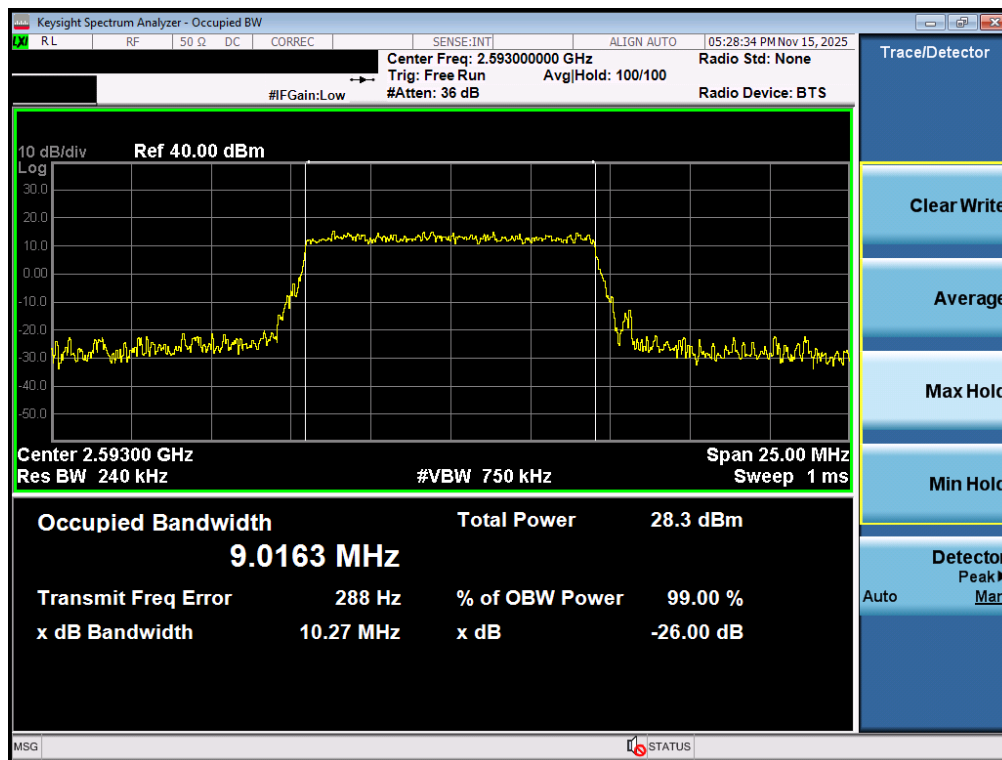


Plot 7-12. Occupied Bandwidth Plot (LTE Band 41(PC3)- 15MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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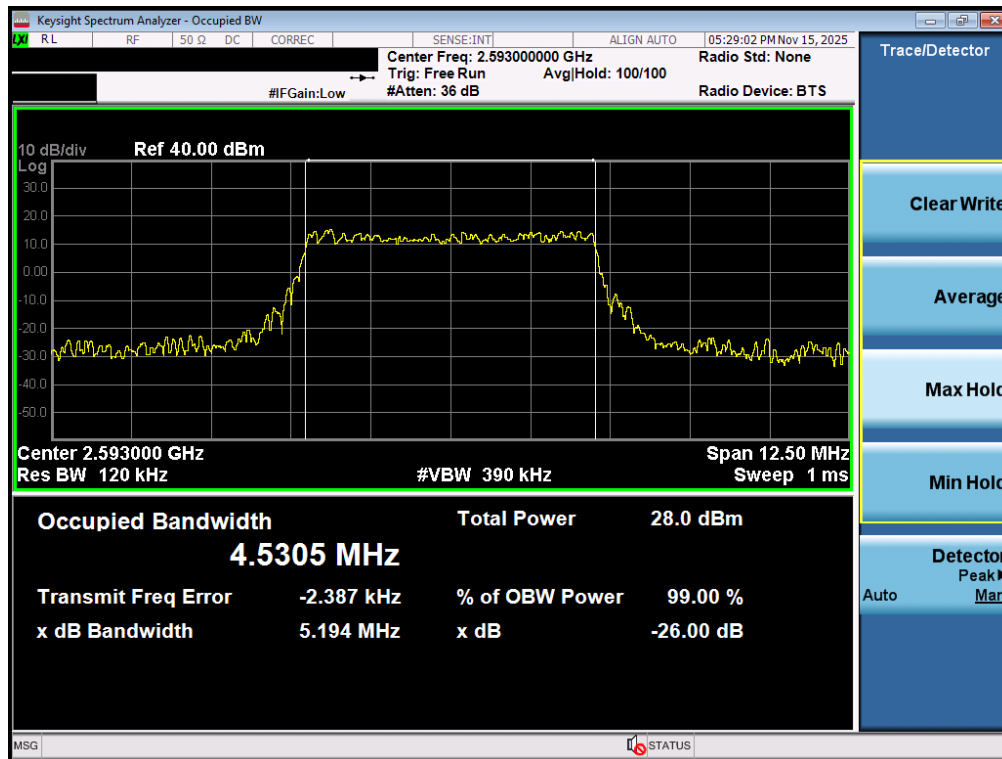


Plot 7-13. Occupied Bandwidth Plot (LTE Band 41(PC3)- 10MHz QPSK - Full RB - Ant1)

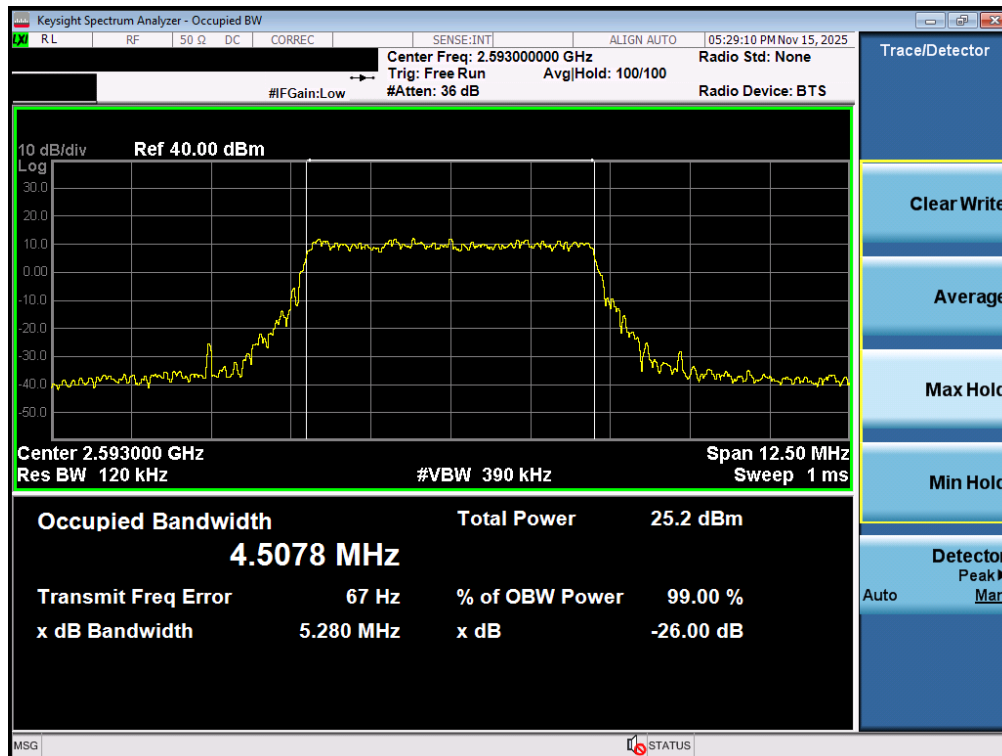


Plot 7-14. Occupied Bandwidth Plot (LTE Band 41(PC3)- 10MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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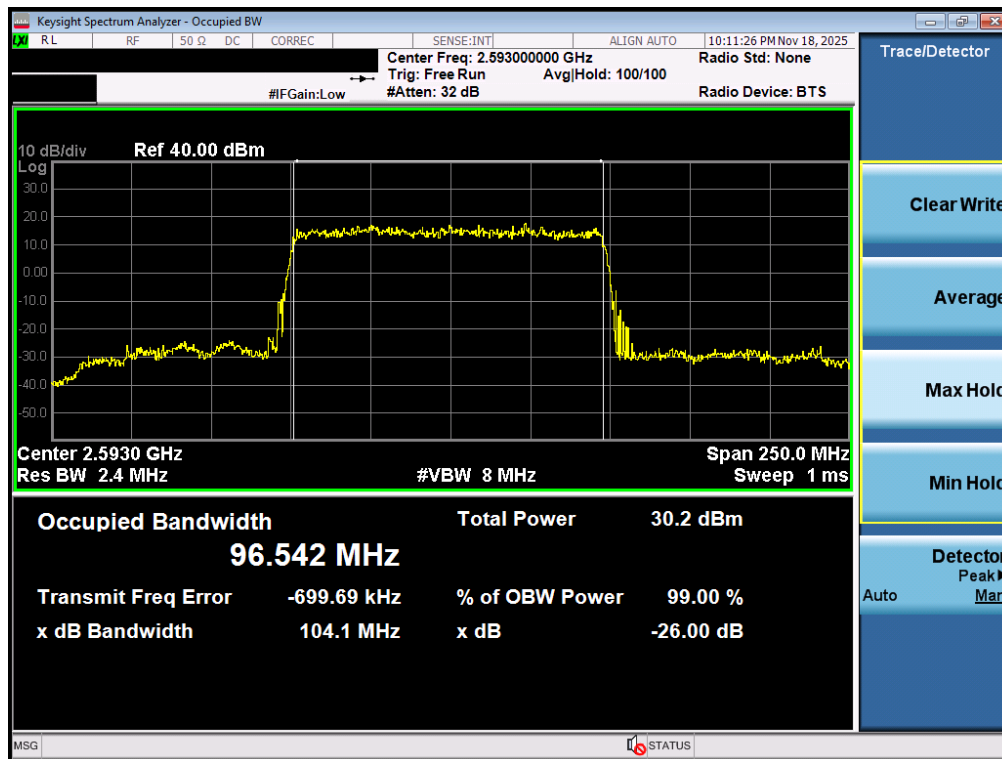
Plot 7-15. Occupied Bandwidth Plot (LTE Band 41(PC3)- 5MHz QPSK - Full RB - Ant1)



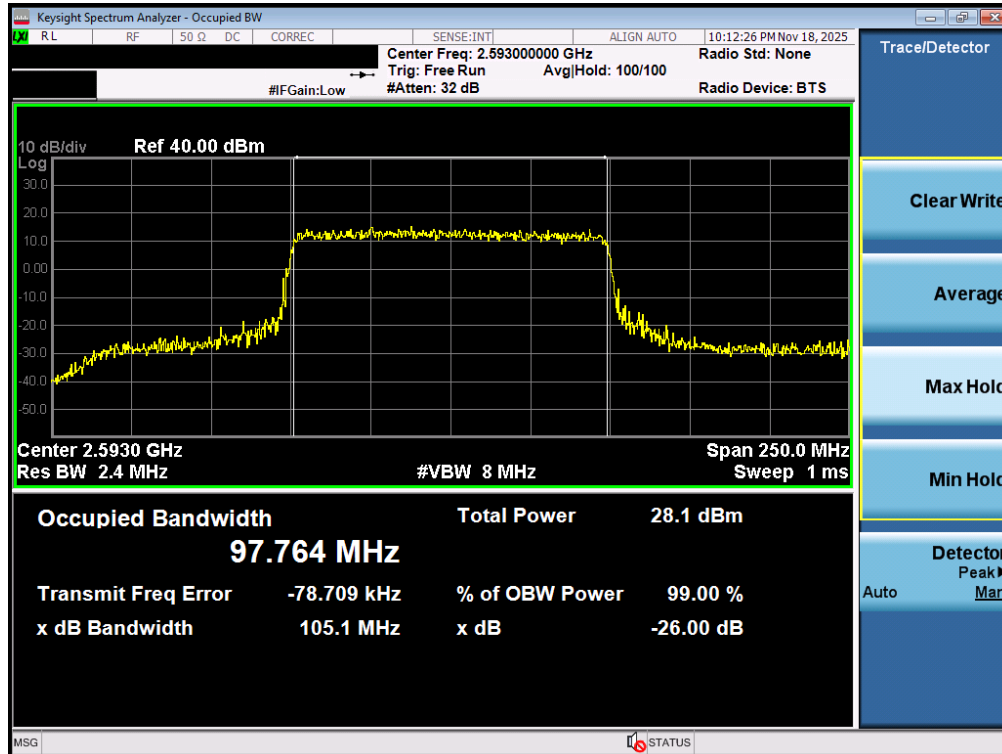
Plot 7-16. Occupied Bandwidth Plot (LTE Band 41(PC3)- 5MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n41 PC3 – Ant1

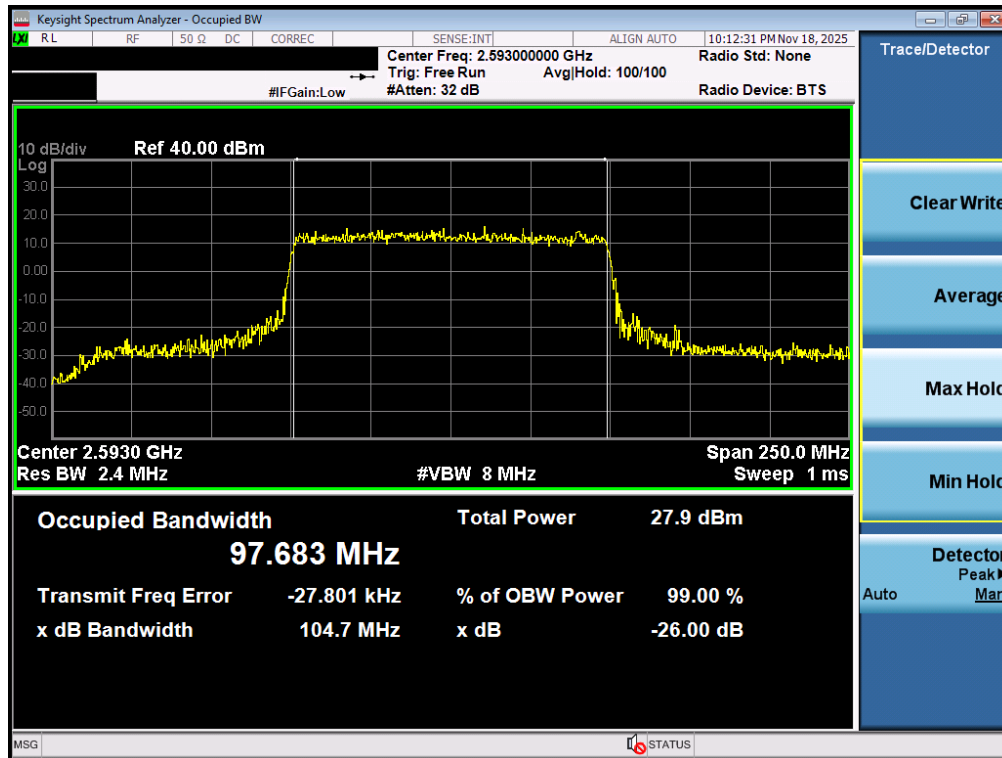


Plot 7-17. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz $\pi/2$ BPSK – Full RB – Ant1)

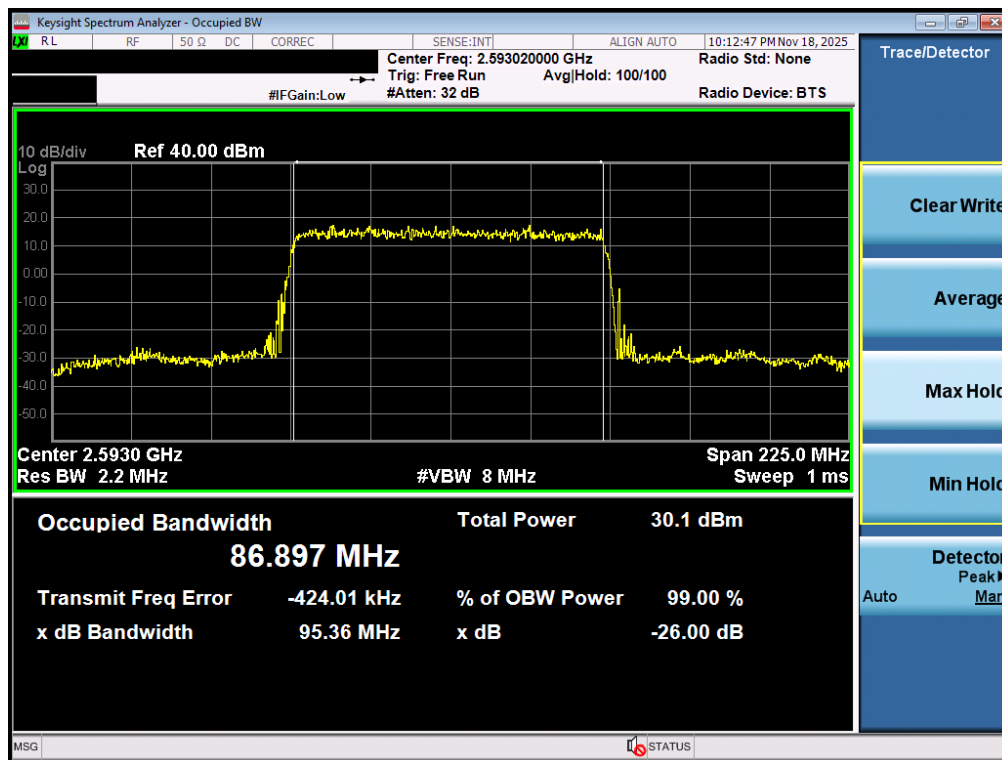


Plot 7-18. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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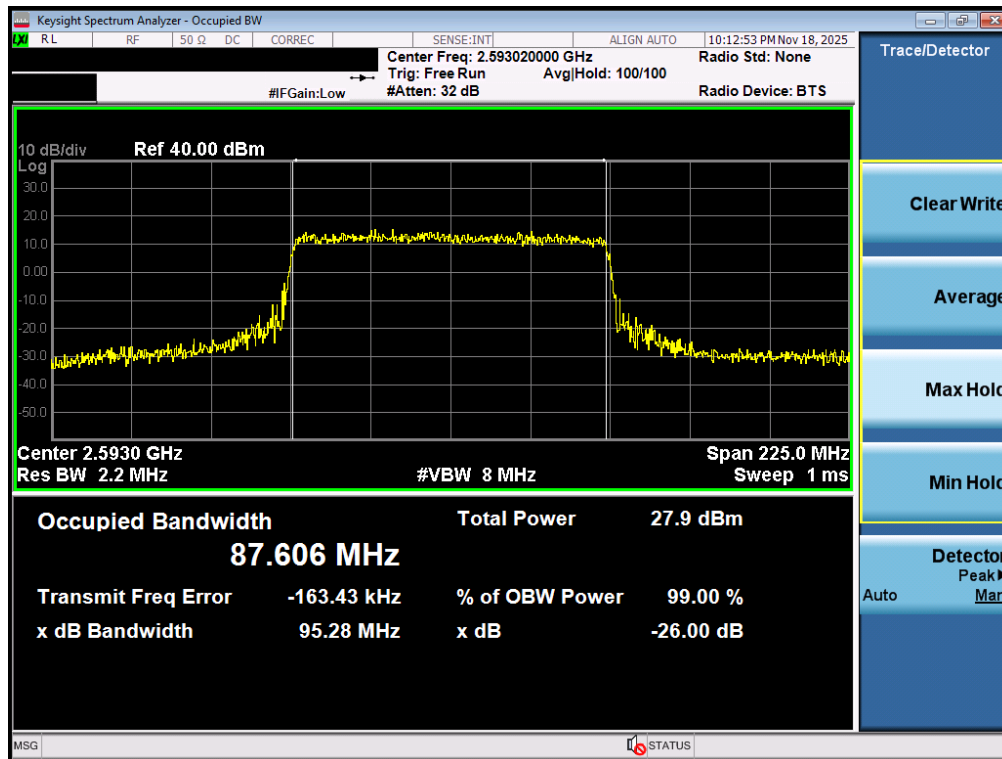


Plot 7-19. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz 16-QAM – Full RB – Ant1)

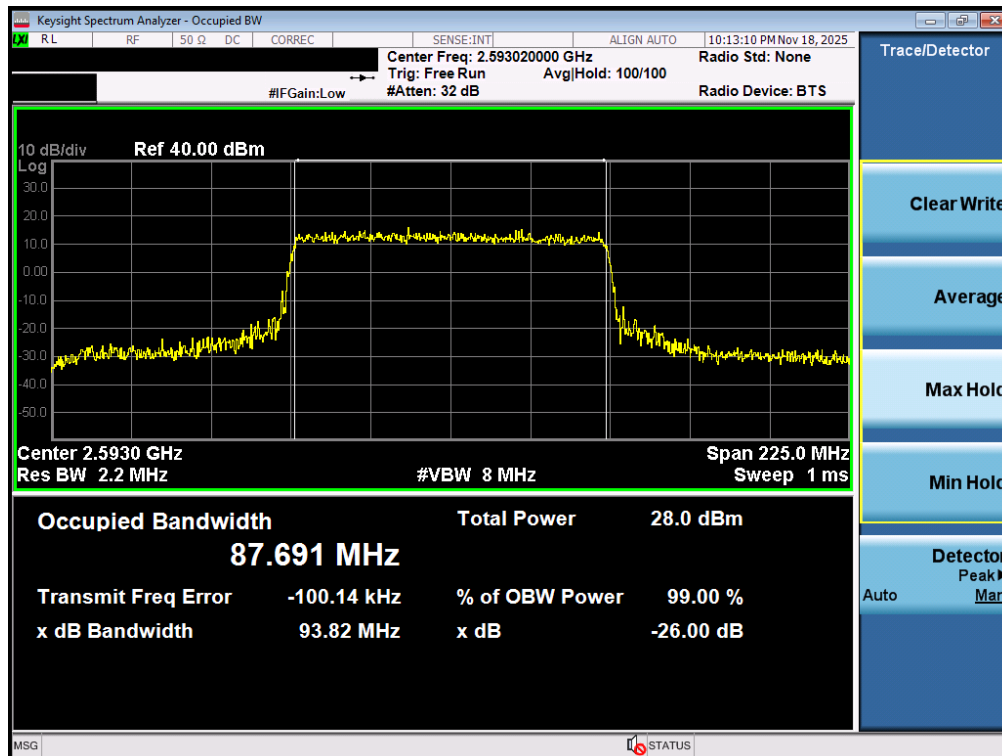


Plot 7-20. Occupied Bandwidth Plot (NR Band n41 PC3 – 90MHz $\pi/2$ BPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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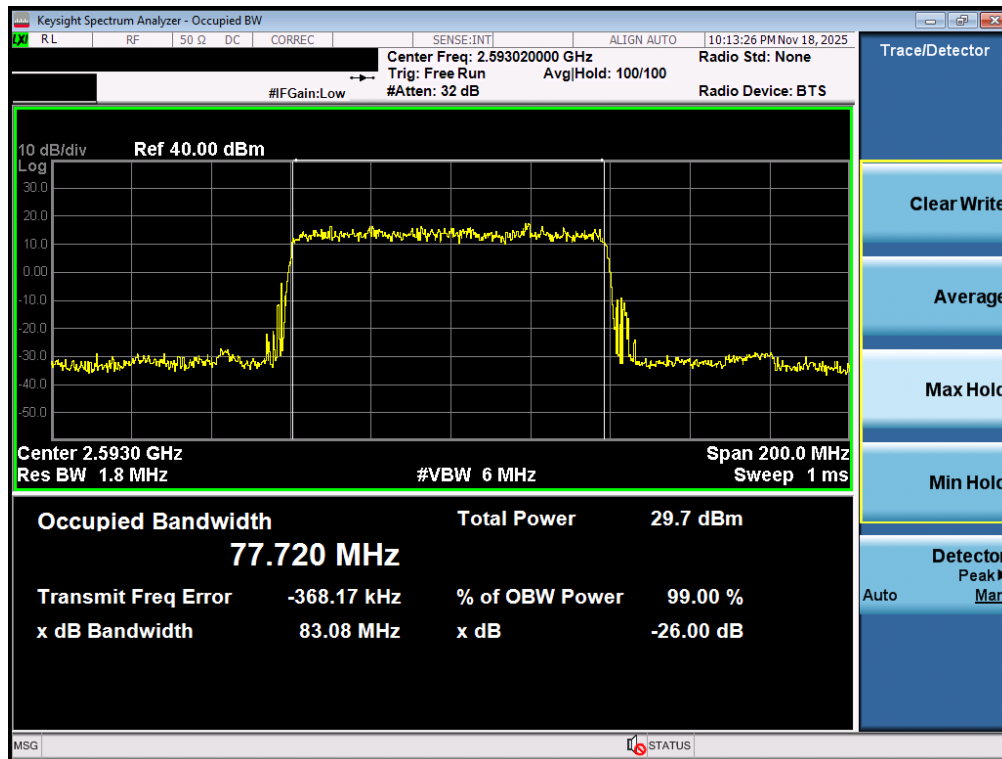


Plot 7-21. Occupied Bandwidth Plot (NR Band n41 PC3 - 90MHz QPSK - Full RB - Ant1)

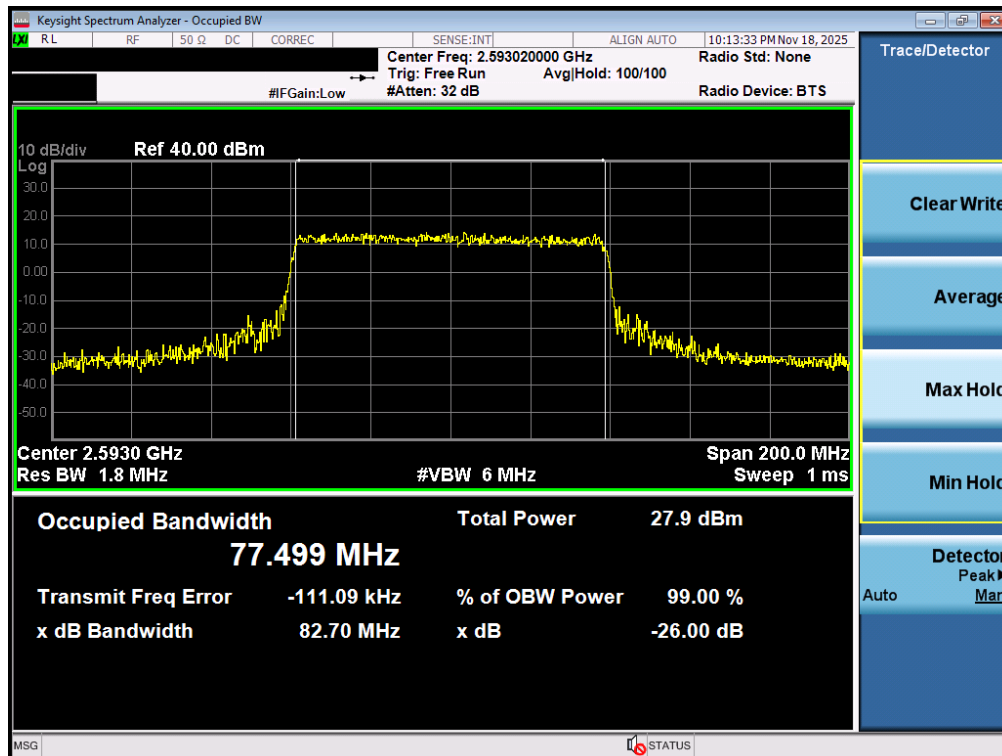


Plot 7-22. Occupied Bandwidth Plot (NR Band n41 PC3 - 90MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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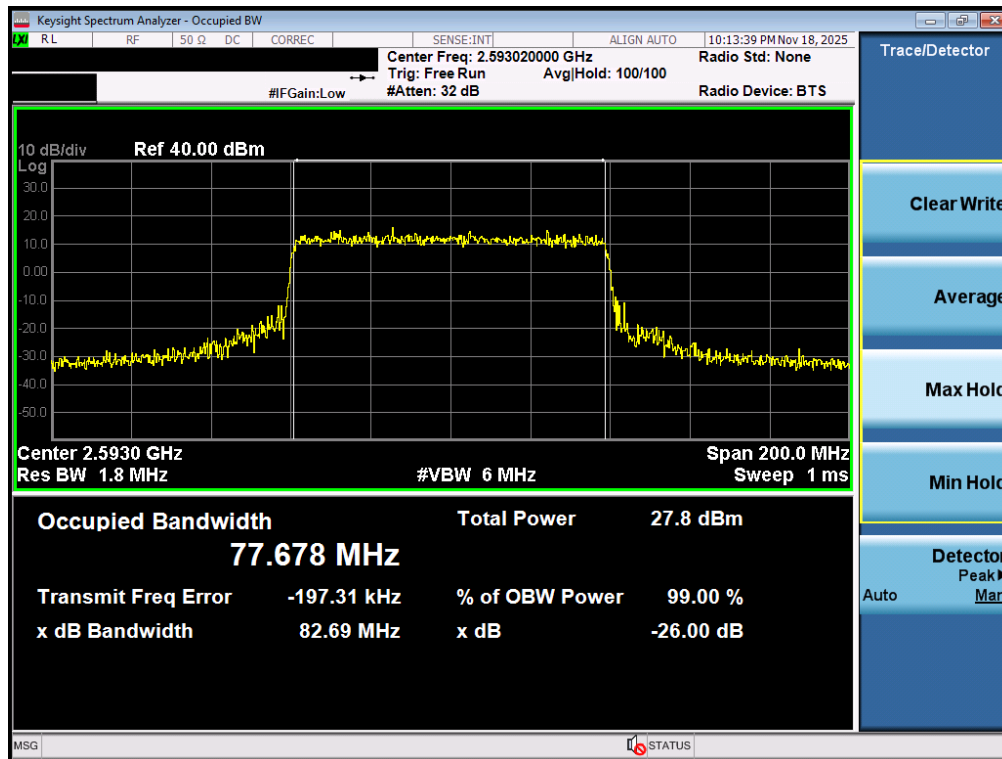


Plot 7-23. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz $\pi/2$ BPSK – Full RB – Ant1)

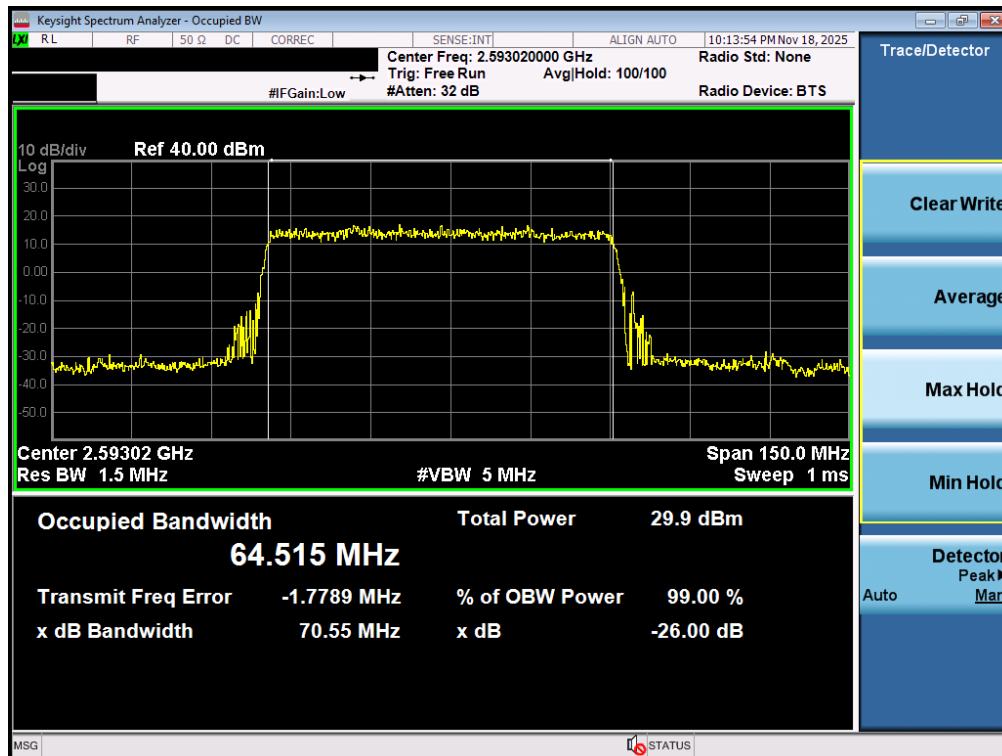


Plot 7-24. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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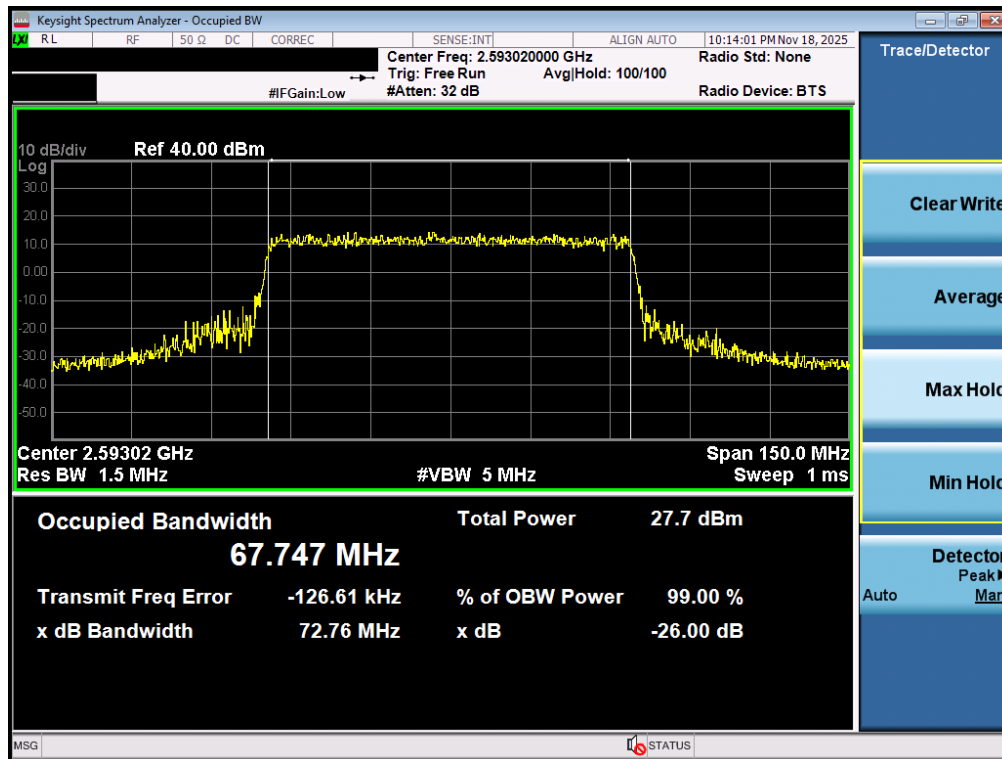


Plot 7-25. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz 16-QAM – Full RB – Ant1)

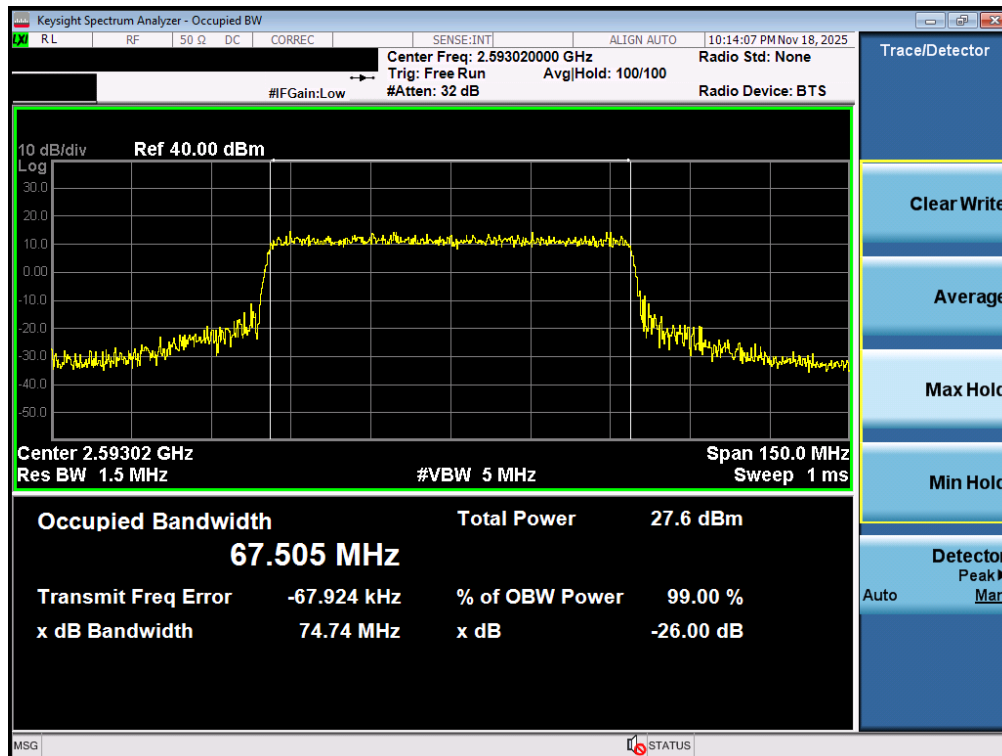


Plot 7-26. Occupied Bandwidth Plot (NR Band n41 PC3 – 70MHz $\pi/2$ BPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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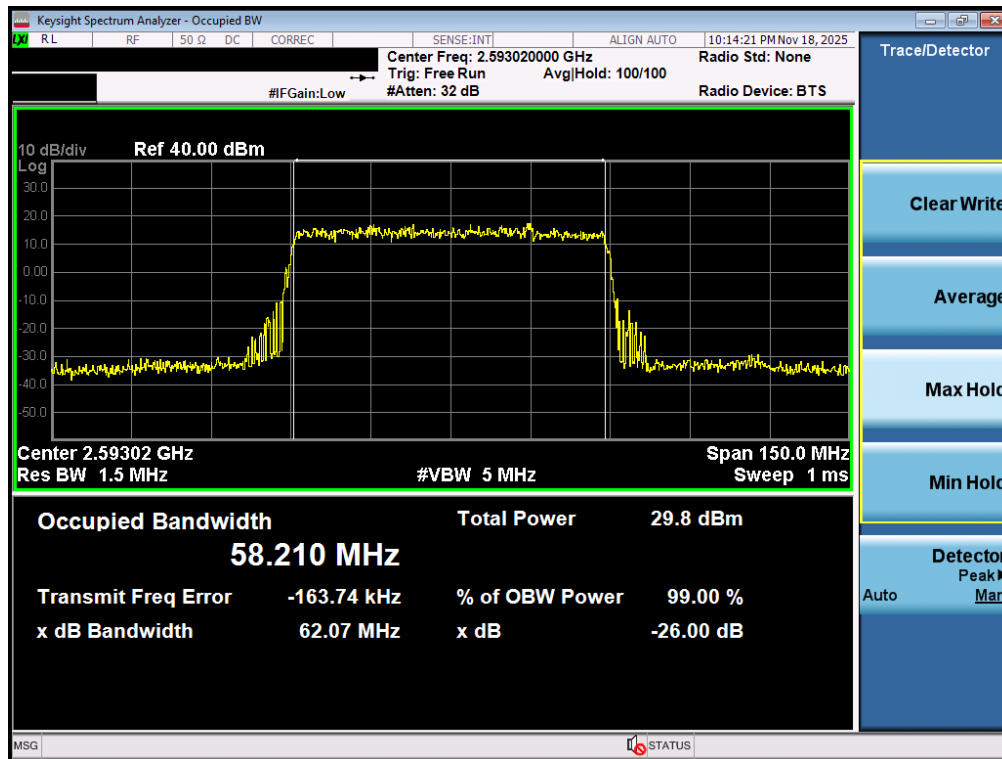


Plot 7-27. Occupied Bandwidth Plot (NR Band n41 PC3 - 70MHz QPSK - Full RB - Ant1)



Plot 7-28. Occupied Bandwidth Plot (NR Band n41 PC3 - 70MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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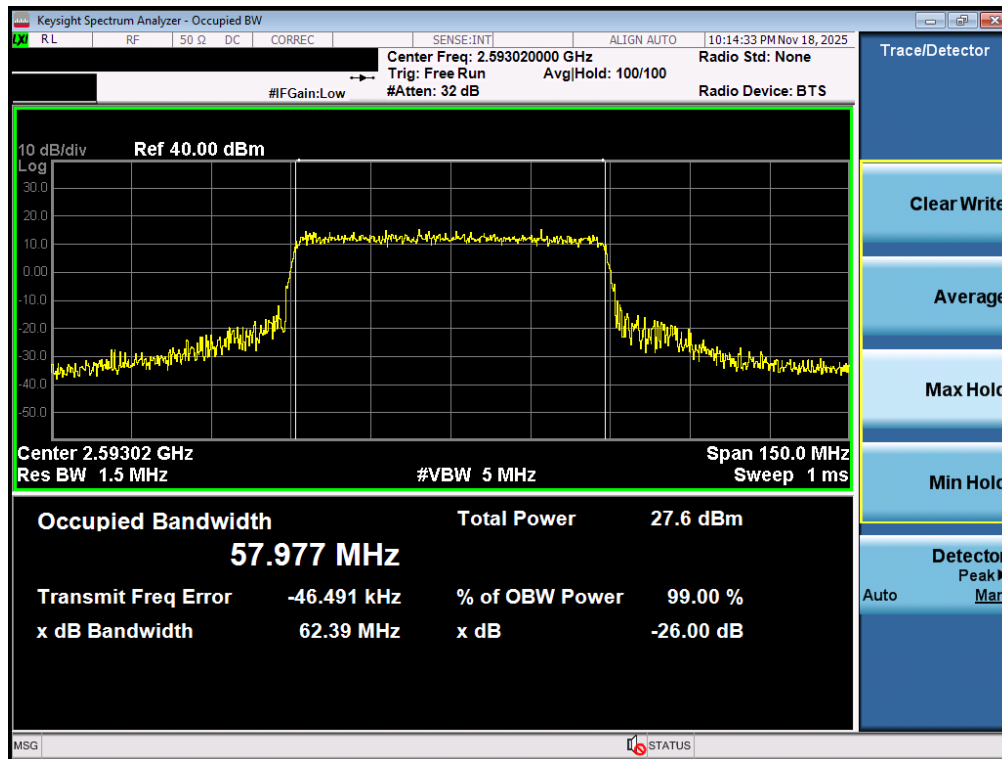


Plot 7-29. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz $\pi/2$ BPSK – Full RB – Ant1)

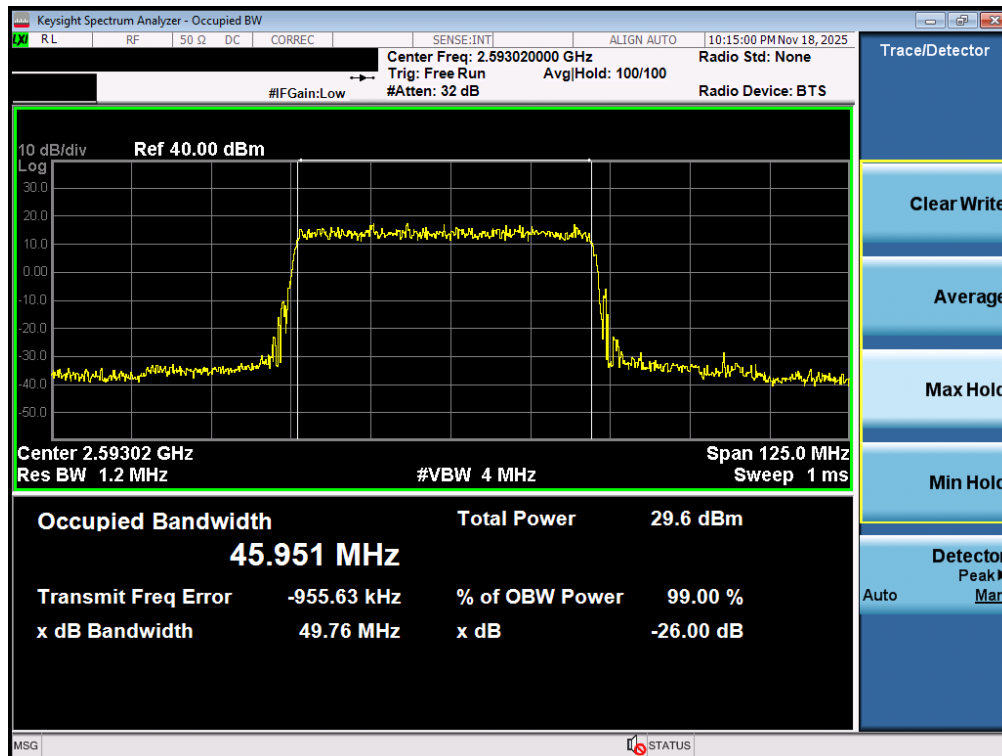


Plot 7-30. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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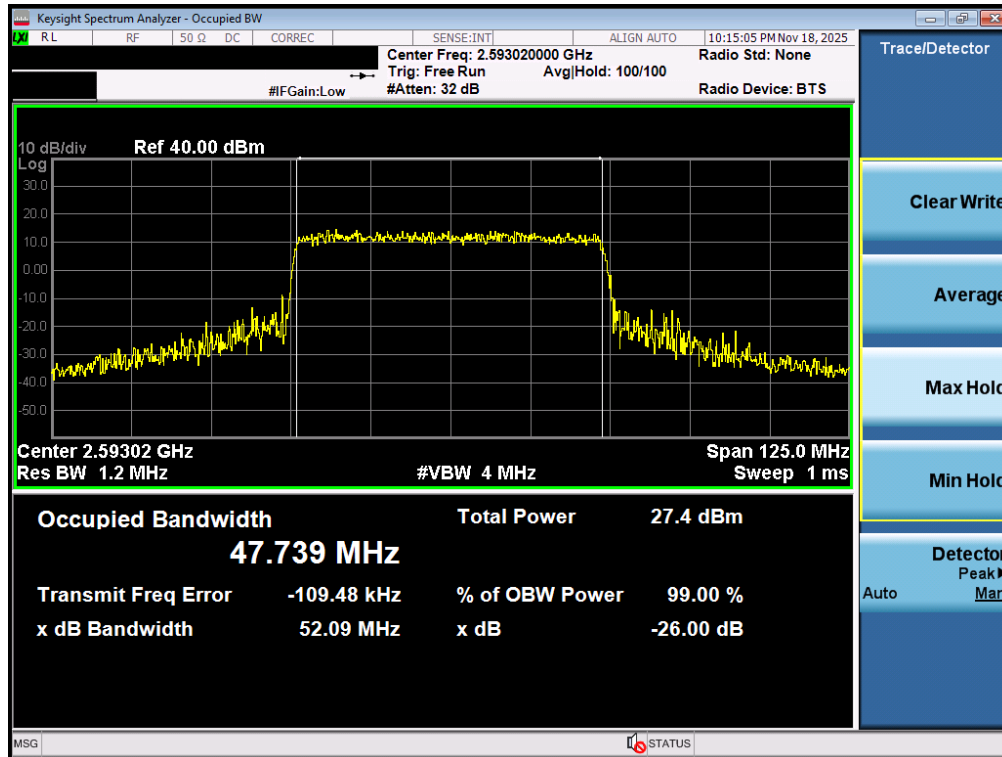


Plot 7-31. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz 16-QAM – Full RB – Ant1)

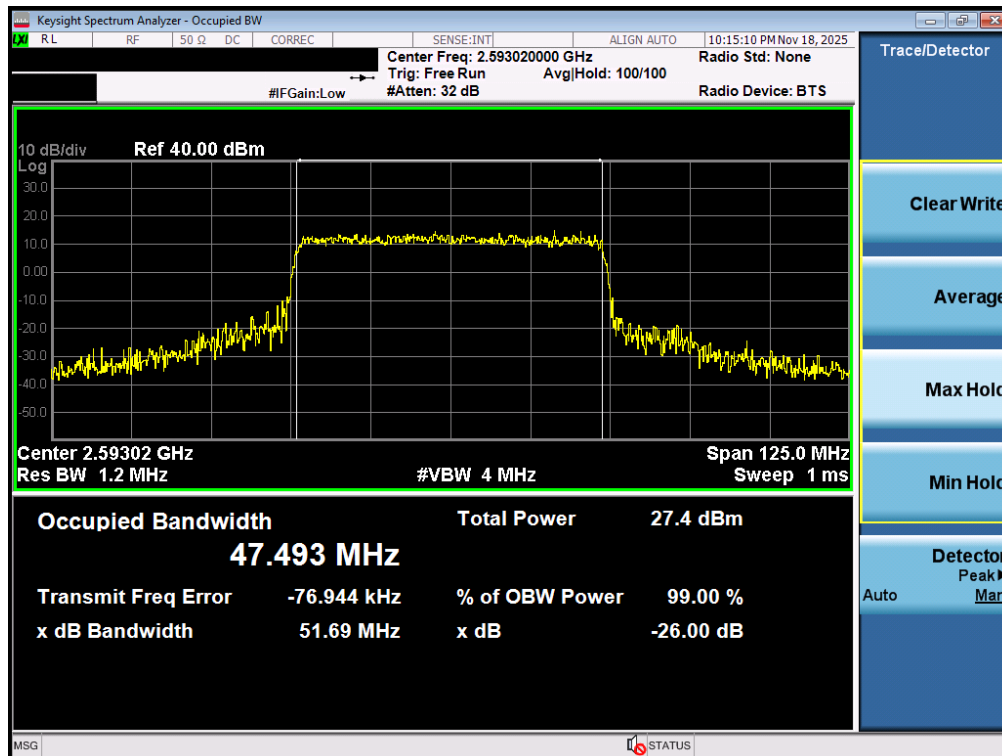


Plot 7-32. Occupied Bandwidth Plot (NR Band n41 PC3 – 50MHz $\pi/2$ BPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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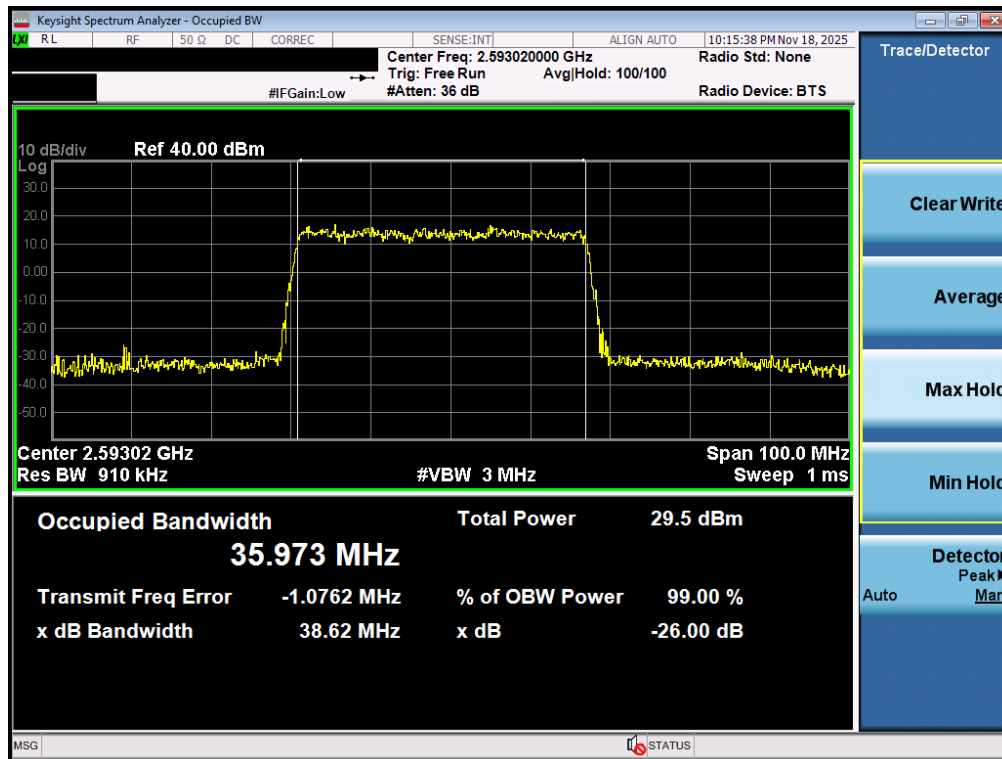


Plot 7-33. Occupied Bandwidth Plot (NR Band n41 PC3 - 50MHz QPSK - Full RB - Ant1)

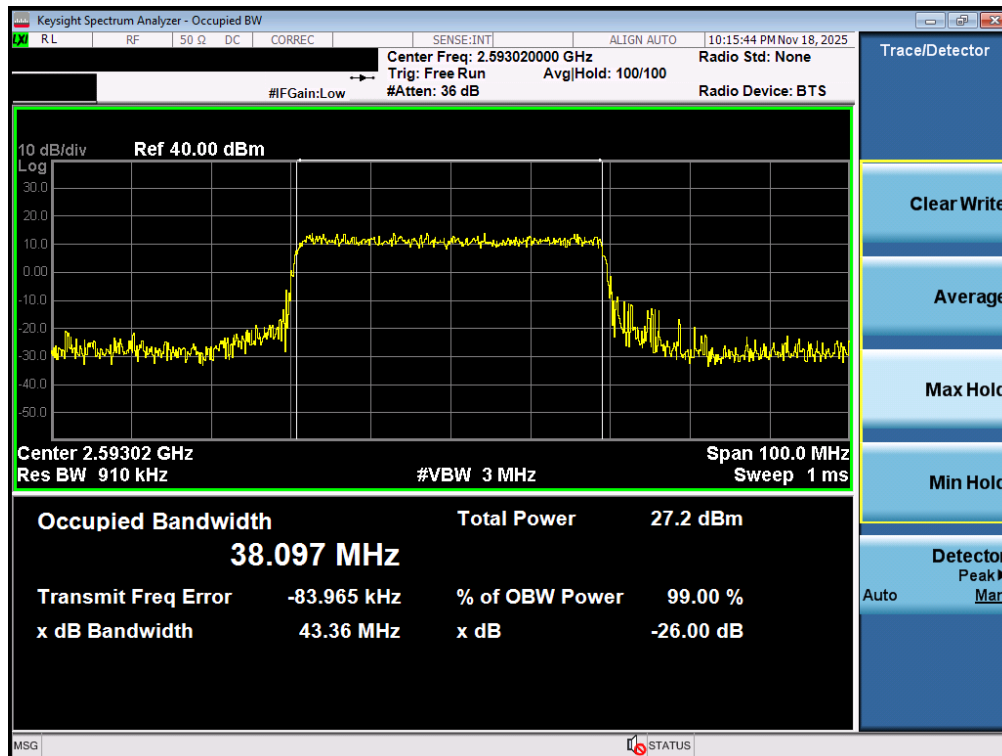


Plot 7-34. Occupied Bandwidth Plot (NR Band n41 PC3 - 50MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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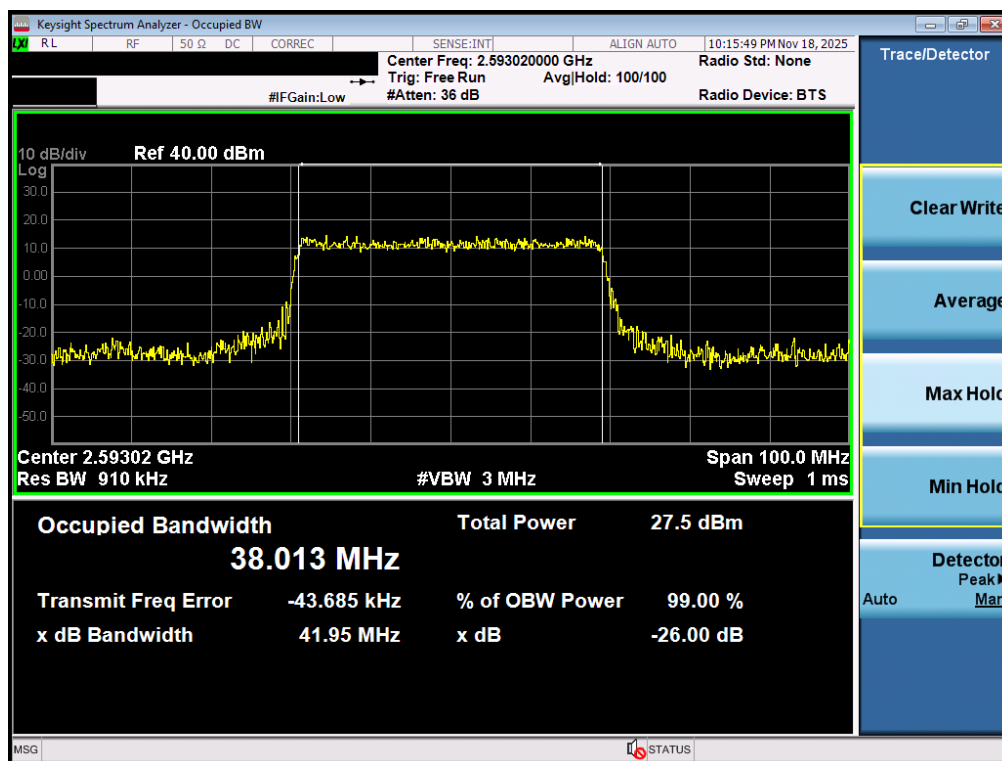


Plot 7-35. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz $\pi/2$ BPSK – Full RB – Ant1)

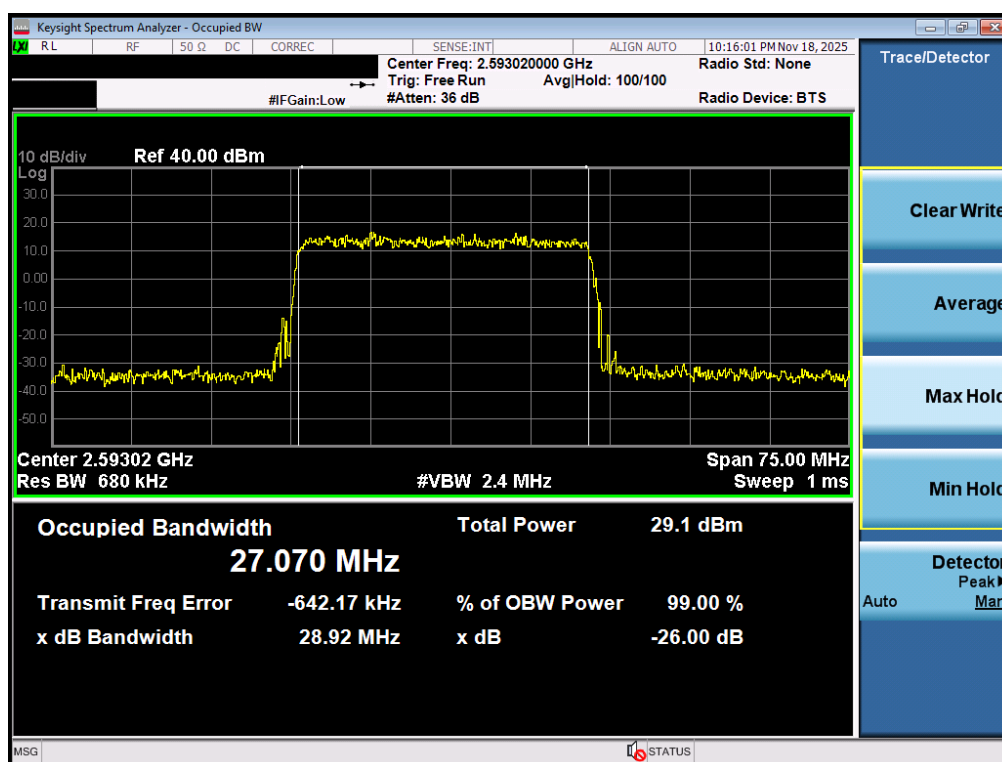


Plot 7-36. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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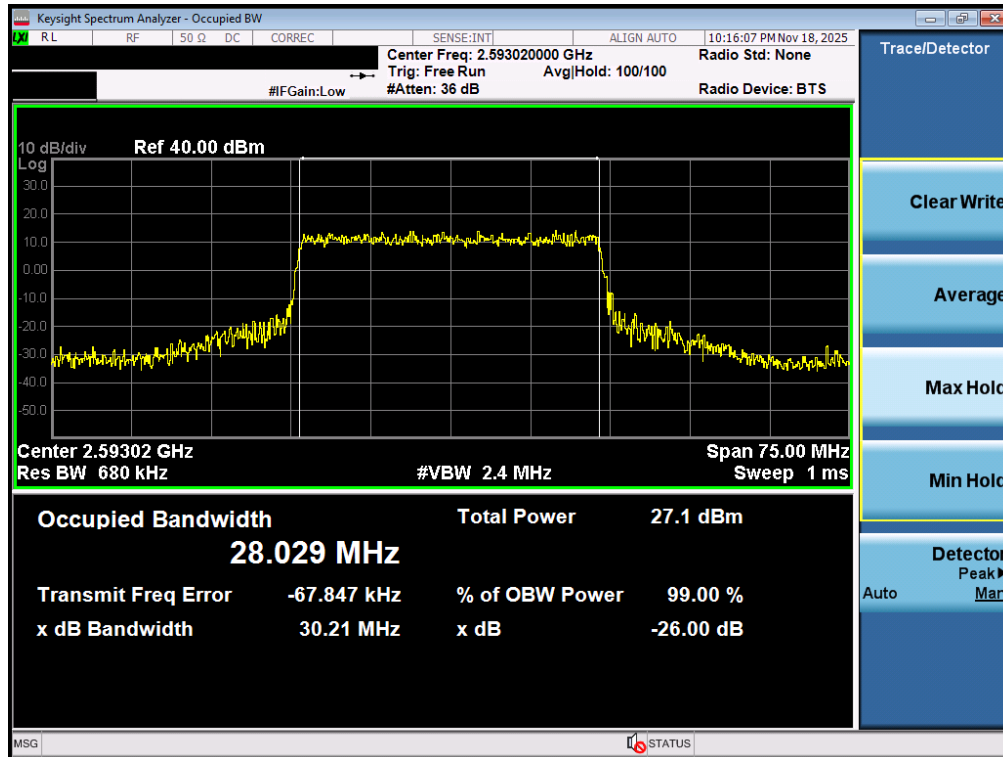


Plot 7-37. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz 16-QAM – Full RB – Ant1)

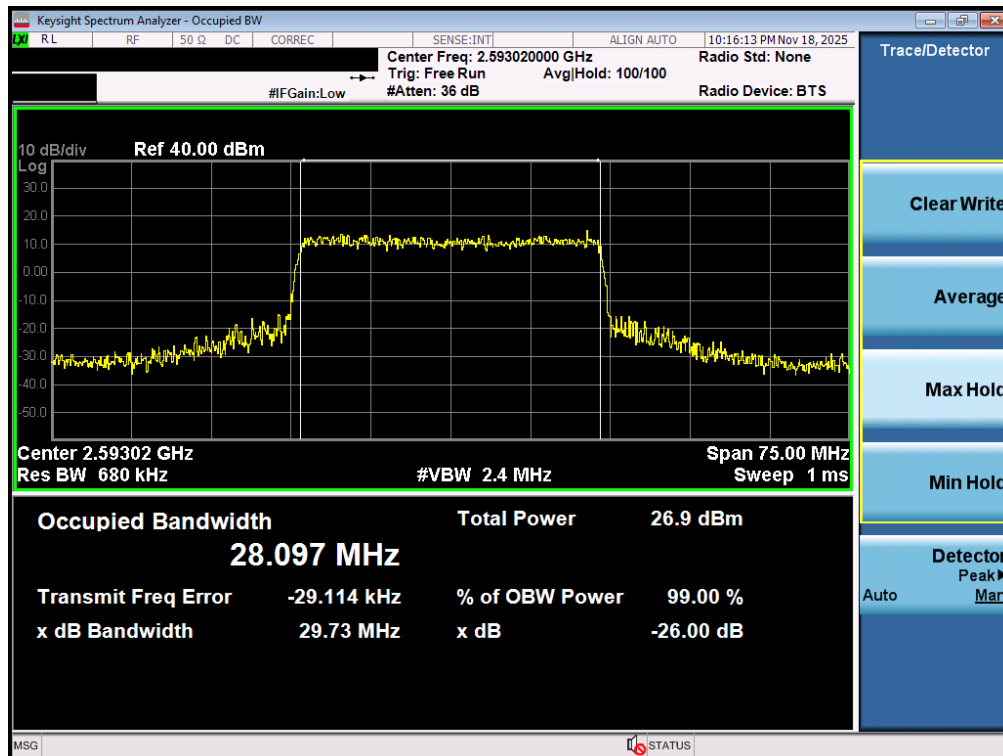


Plot 7-38. Occupied Bandwidth Plot (NR Band n41 PC3 – 30MHz $\pi/2$ BPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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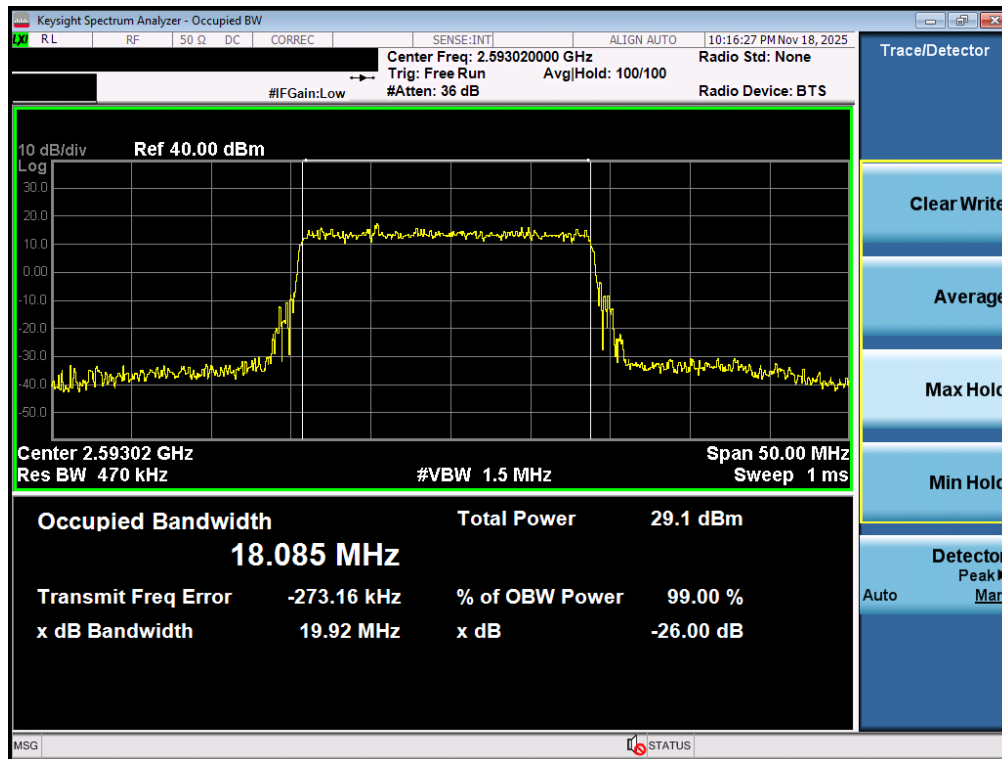


Plot 7-39. Occupied Bandwidth Plot (NR Band n41 PC3 - 30MHz QPSK - Full RB - Ant1)

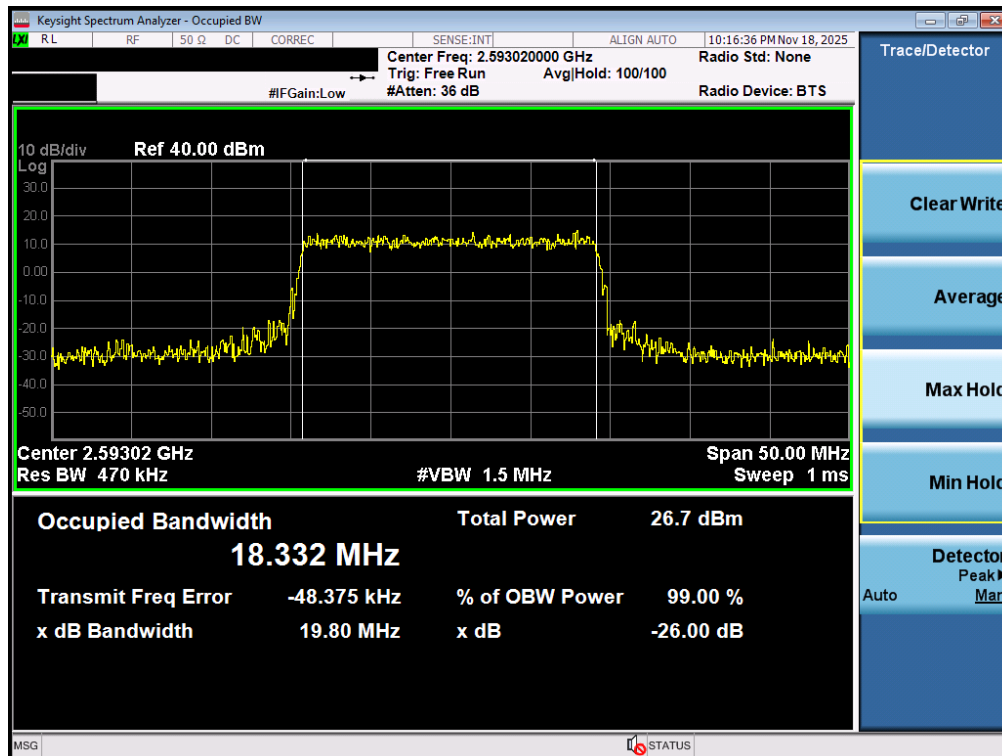


Plot 7-40. Occupied Bandwidth Plot (NR Band n41 PC3 - 30MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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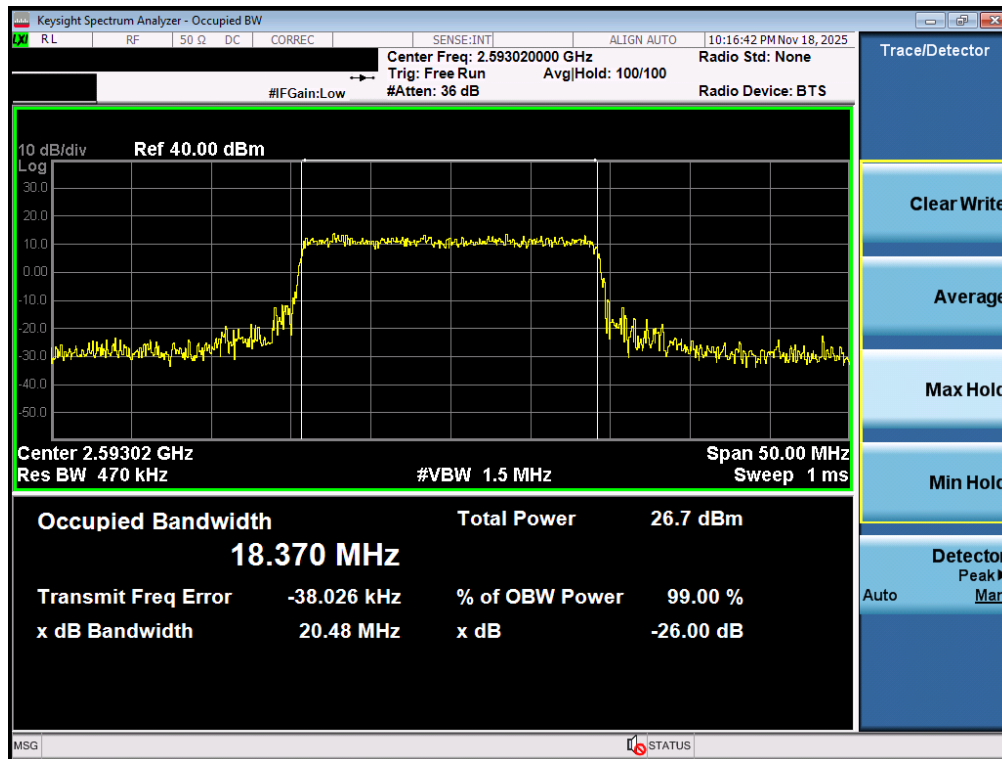


Plot 7-41. Occupied Bandwidth Plot (NR Band n41 PC3 – 20MHz $\pi/2$ BPSK – Full RB – Ant1)

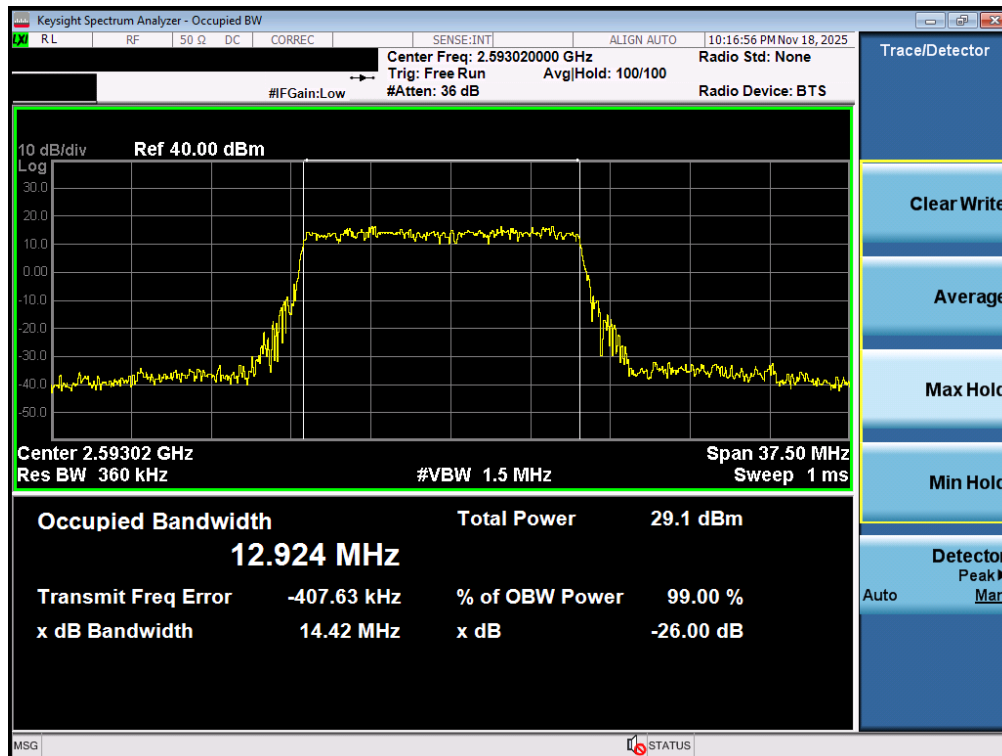


Plot 7-42. Occupied Bandwidth Plot (NR Band n41 PC3 – 20MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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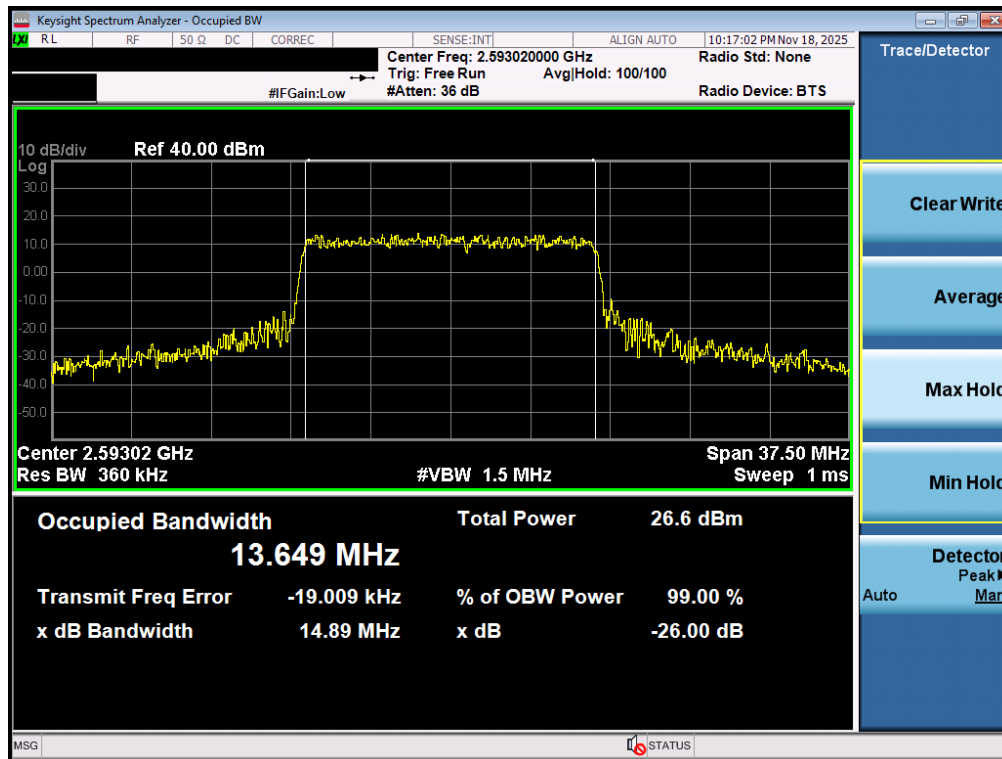


Plot 7-43. Occupied Bandwidth Plot (NR Band n41 PC3 - 20MHz 16-QAM - Full RB - Ant1)

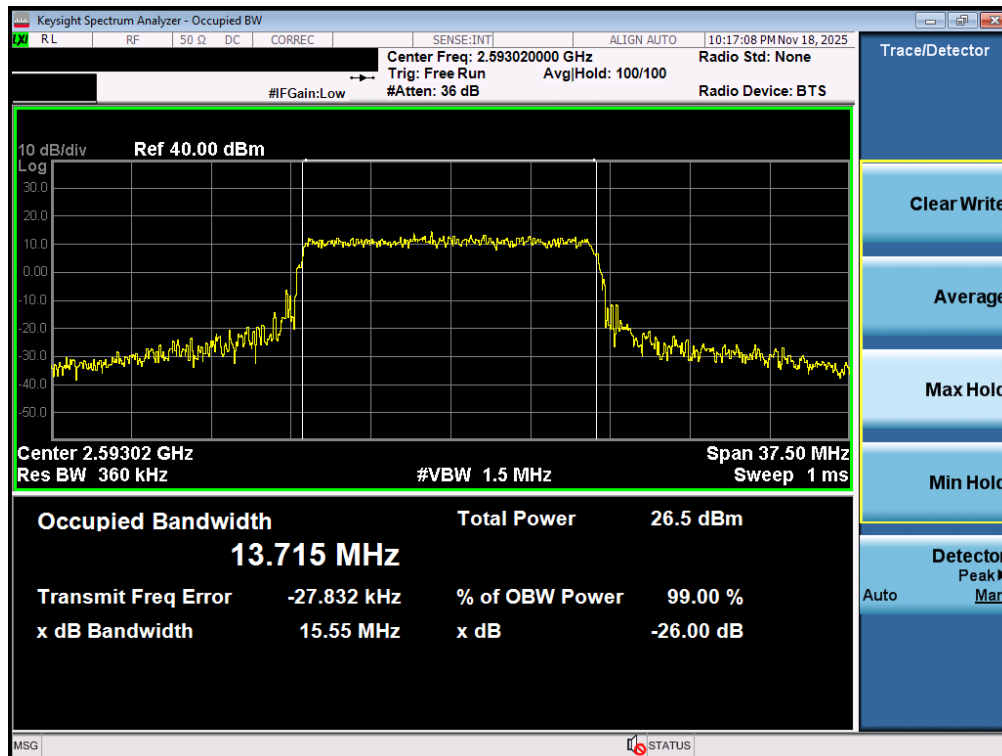


Plot 7-44. Occupied Bandwidth Plot (NR Band n41 PC3 - 15MHz $\pi/2$ BPSK - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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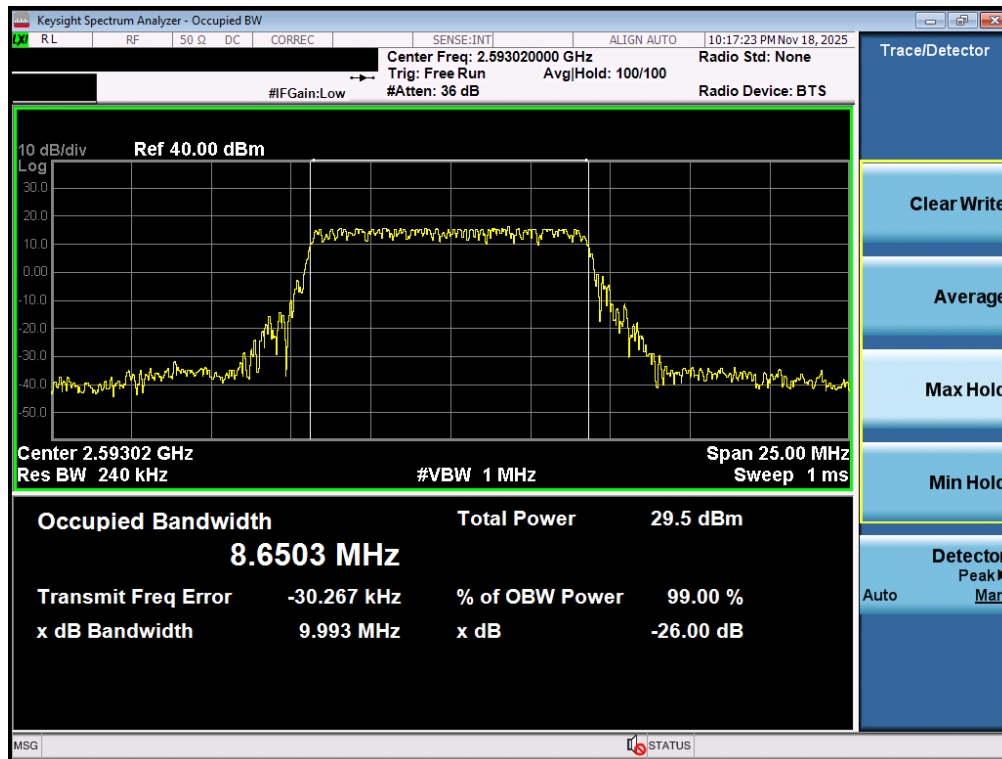


Plot 7-45. Occupied Bandwidth Plot (NR Band n41 PC3 - 15MHz QPSK - Full RB - Ant1)

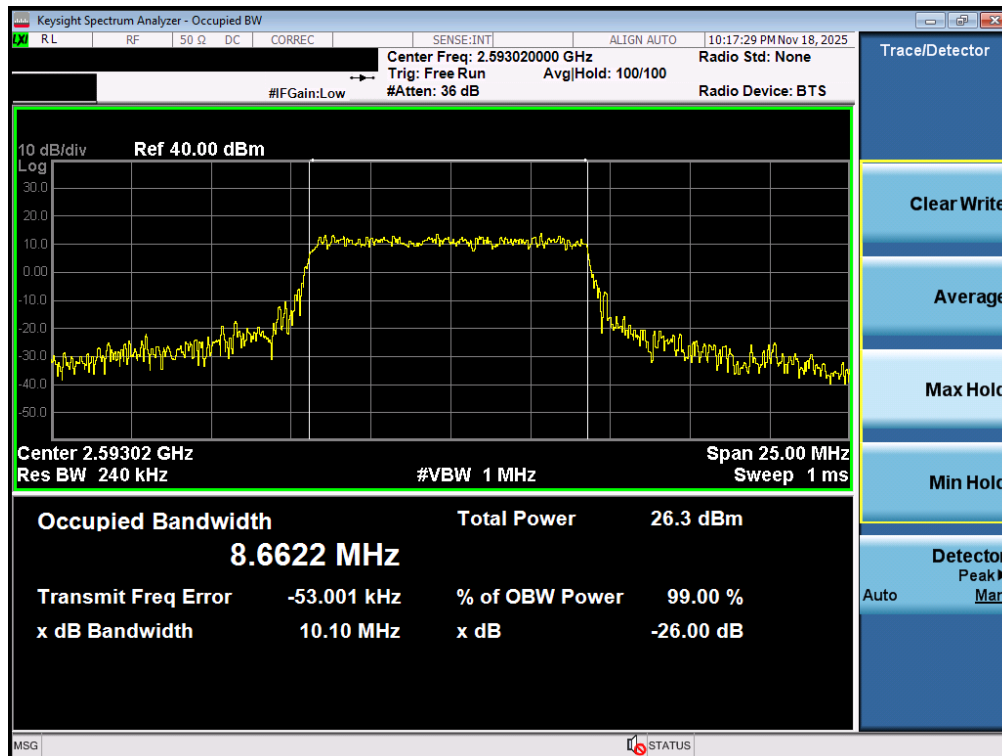


Plot 7-46. Occupied Bandwidth Plot (NR Band n41 PC3 - 15MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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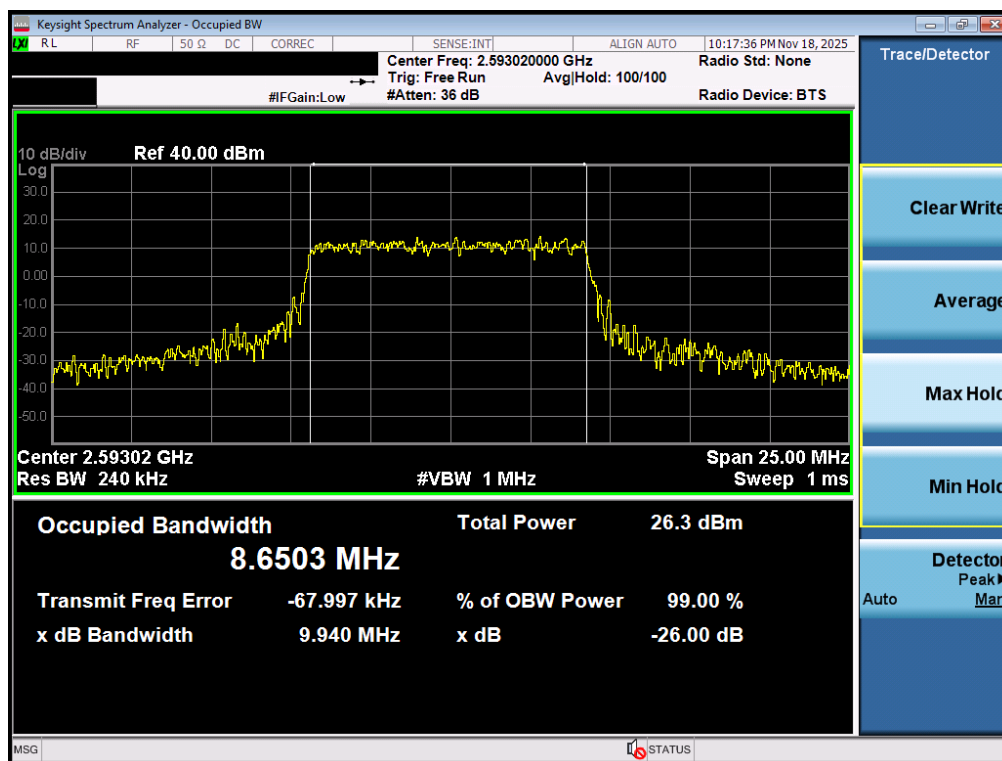


Plot 7-47. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz $\pi/2$ BPSK – Full RB – Ant1)



Plot 7-48. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz QPSK – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-49. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz 16-QAM – Full RB – Ant1)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B41PC2	20MHz	QPSK	18.02
		16QAM	17.97
	15MHz	QPSK	13.41
		16QAM	13.46
	10MHz	QPSK	9.02
		16QAM	9.00
	5MHz	QPSK	4.56
		16QAM	4.55
LTE-B41PC3	20MHz	QPSK	18.01
		16QAM	17.96
	15MHz	QPSK	13.60
		16QAM	13.52
	10MHz	QPSK	9.02
		16QAM	8.95
	5MHz	QPSK	4.55
		16QAM	4.52

Table 7-16. Occupied Bandwidth Test Results – LTE – Ant 2

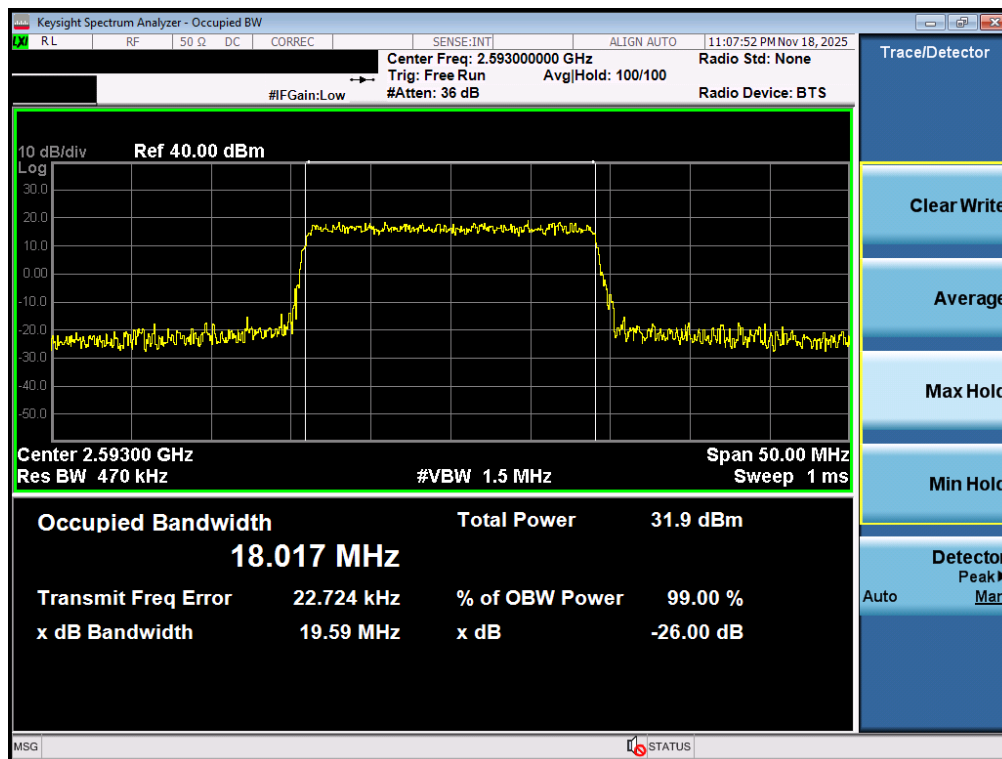
FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
NR-n41PC3	100MHz	$\pi/2$ BPSK	96.98
		QPSK	97.63
		16QAM	97.56
	90MHz	$\pi/2$ BPSK	87.15
		QPSK	87.81
		16QAM	87.63
	80MHz	$\pi/2$ BPSK	77.32
		QPSK	77.65
		16QAM	77.80
	70MHz	$\pi/2$ BPSK	64.24
		QPSK	67.54
		16QAM	67.50
	60MHz	$\pi/2$ BPSK	58.09
		QPSK	58.09
		16QAM	58.16
	50MHz	$\pi/2$ BPSK	46.02
		QPSK	47.80
		16QAM	47.59
	40MHz	$\pi/2$ BPSK	35.98
		QPSK	37.93
		16QAM	37.99
	30MHz	$\pi/2$ BPSK	27.02
		QPSK	28.01
		16QAM	27.96
	20MHz	$\pi/2$ BPSK	18.03
		QPSK	18.33
		16QAM	18.33
	15MHz	$\pi/2$ BPSK	12.92
		QPSK	13.65
		16QAM	13.63
	10MHz	$\pi/2$ BPSK	8.62
		QPSK	8.68
		16QAM	8.67

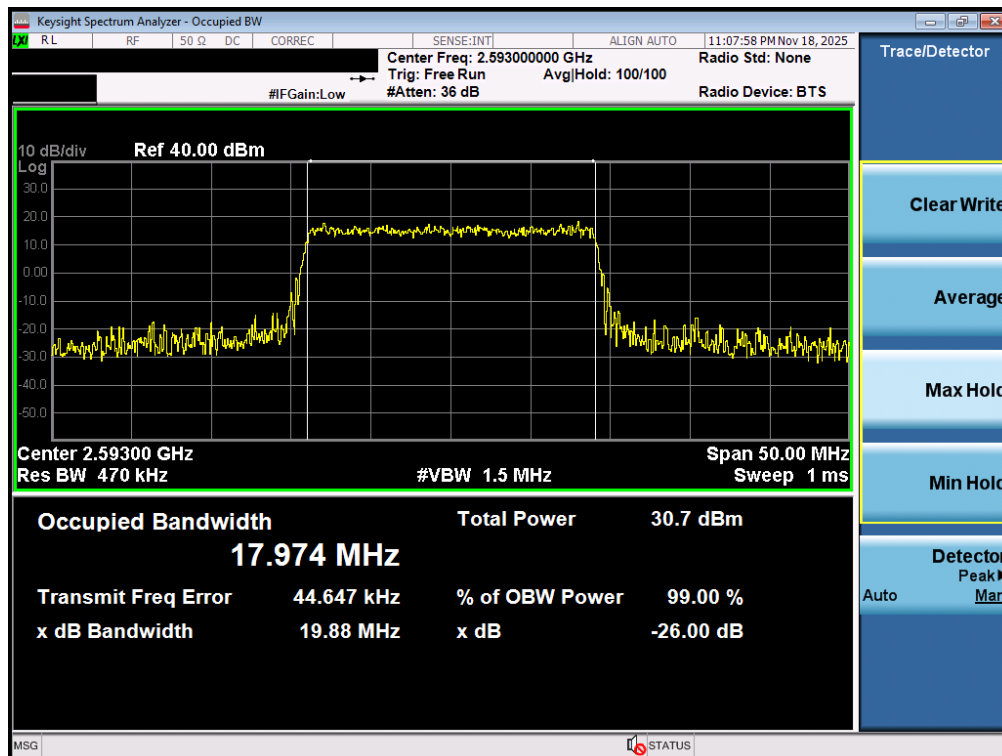
Table 7-17. Occupied Bandwidth Test Results – NR– Ant 2

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 41(PC2) – Ant2

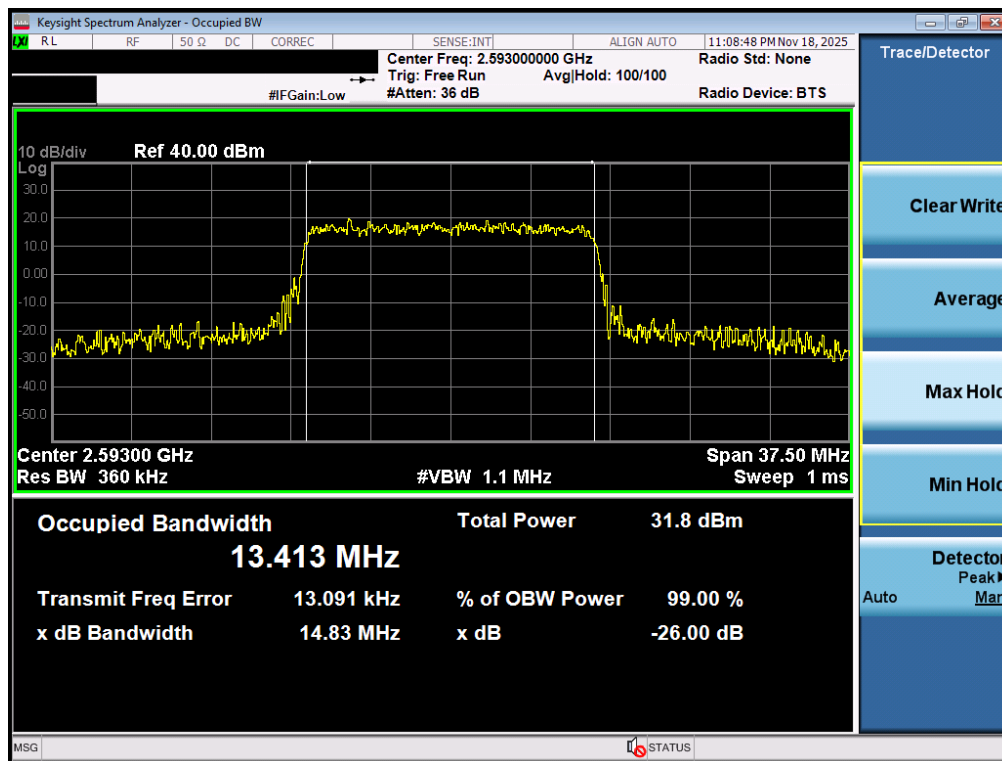


Plot 7-50. Occupied Bandwidth Plot (LTE Band 41(PC2)- 20MHz QPSK - Full RB - Ant2)

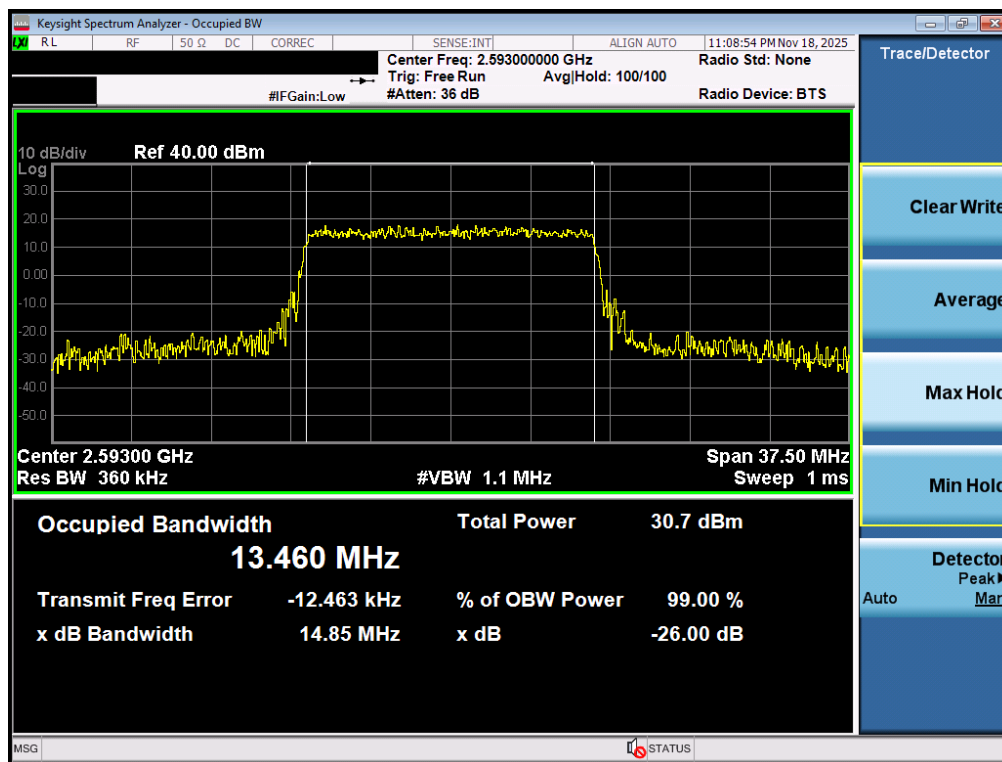


Plot 7-51. Occupied Bandwidth Plot (LTE Band 41(PC2)- 20MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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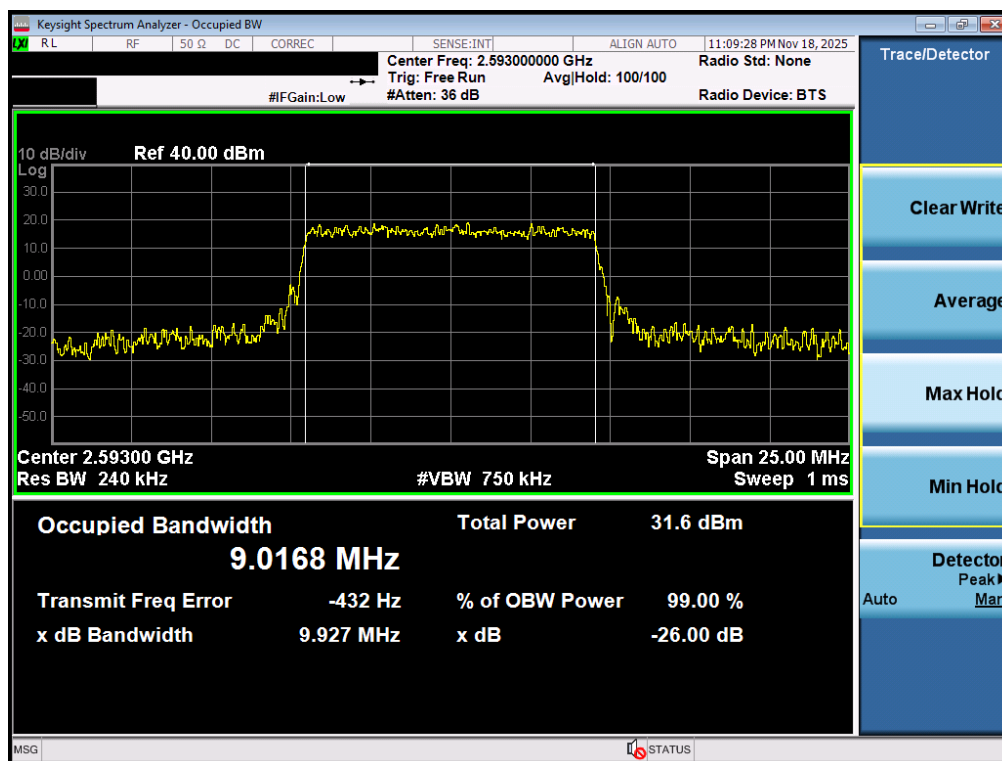


Plot 7-52. Occupied Bandwidth Plot (LTE Band 41(PC2)- 15MHz QPSK - Full RB - Ant2)

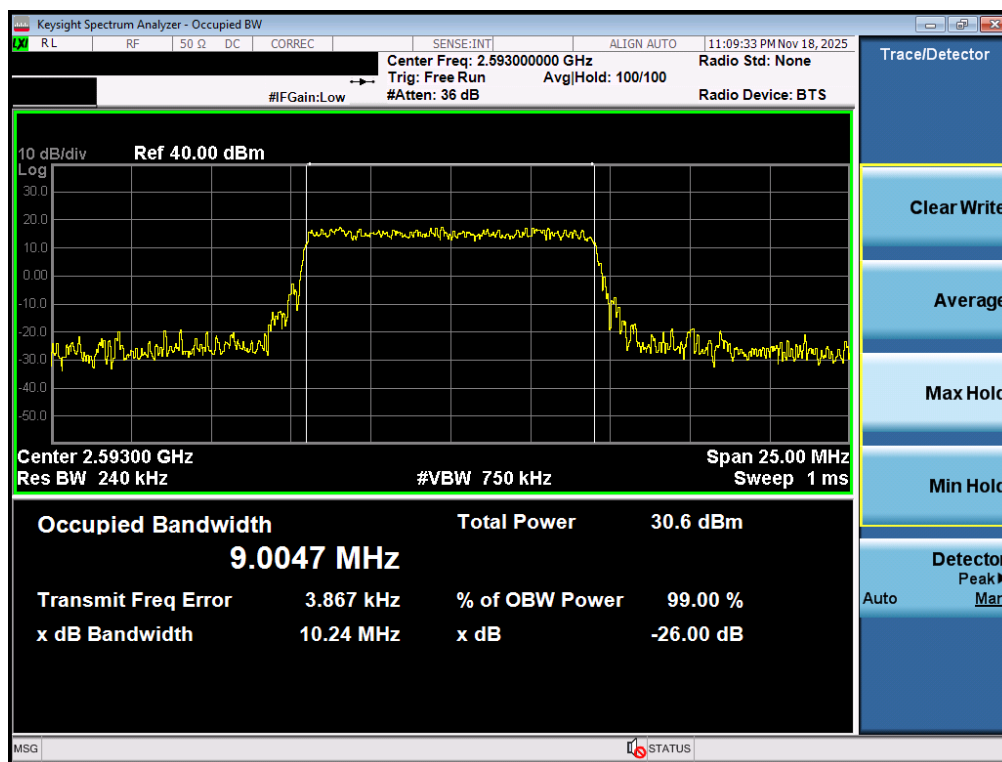


Plot 7-53. Occupied Bandwidth Plot (LTE Band 41(PC2)- 15MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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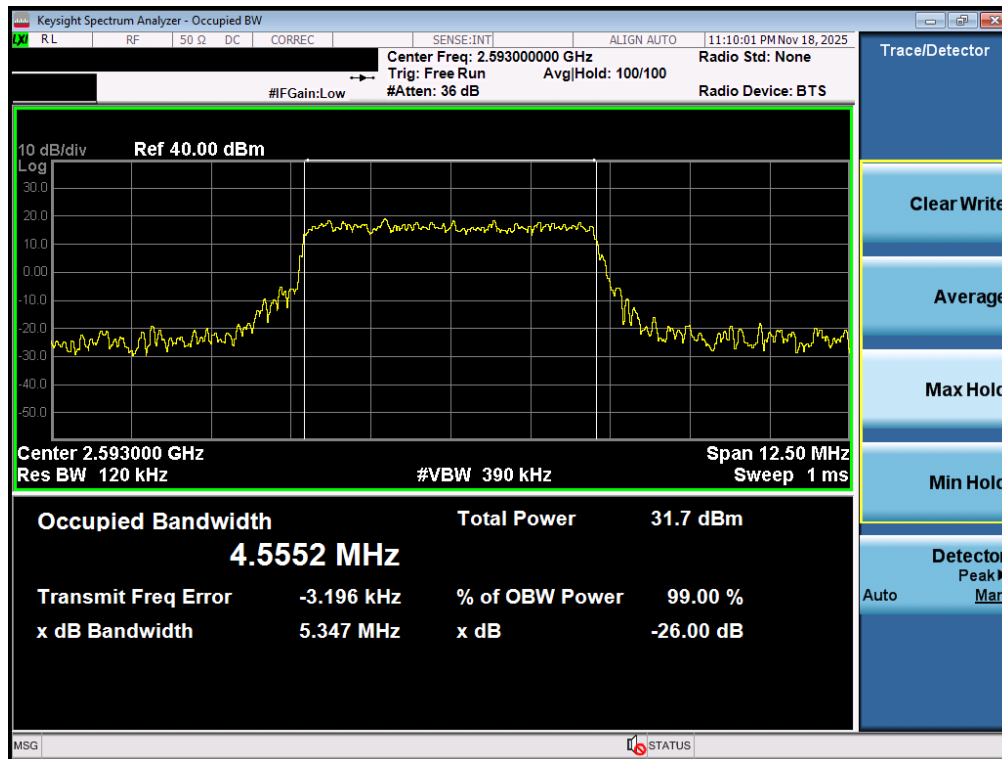


Plot 7-54. Occupied Bandwidth Plot (LTE Band 41(PC2)- 10MHz QPSK - Full RB - Ant2)

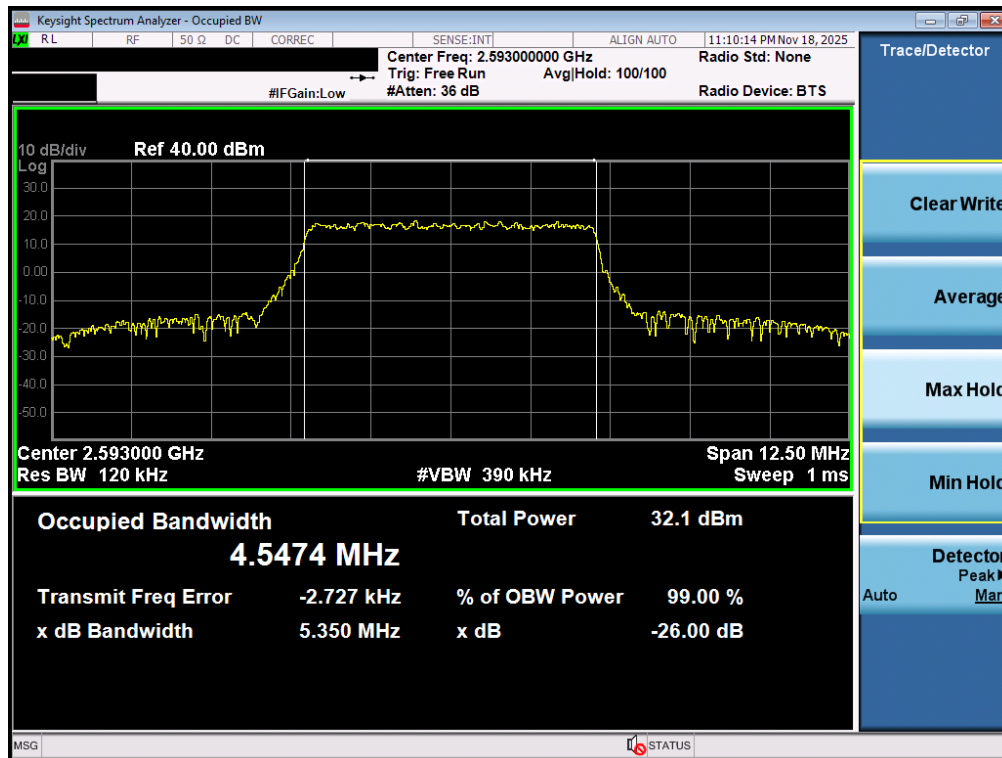


Plot 7-55. Occupied Bandwidth Plot (LTE Band 41(PC2)- 10MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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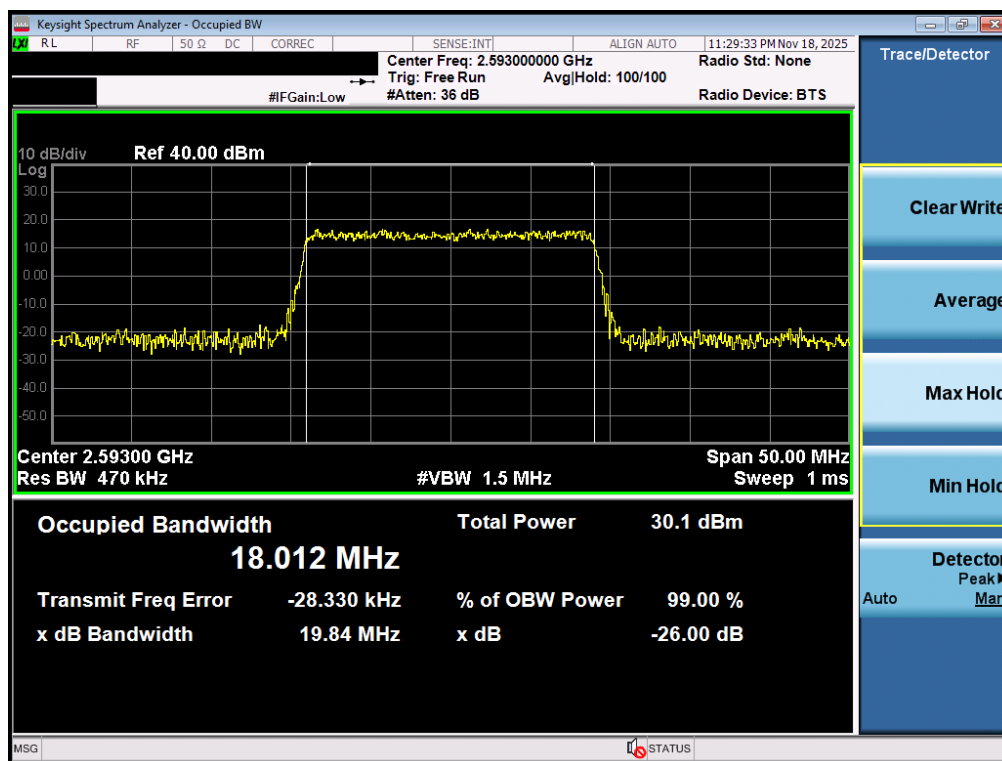
Plot 7-56. Occupied Bandwidth Plot (LTE Band 41(PC2)- 5MHz QPSK - Full RB - Ant2)



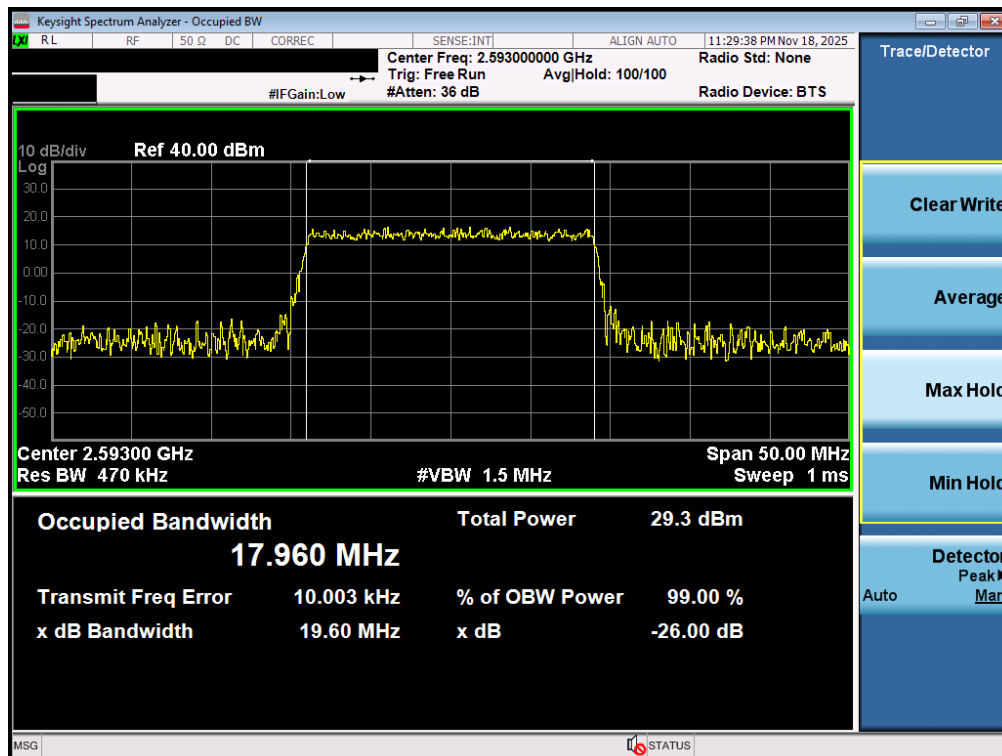
Plot 7-57. Occupied Bandwidth Plot (LTE Band 41(PC2)- 5MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 41(PC3) – Ant2

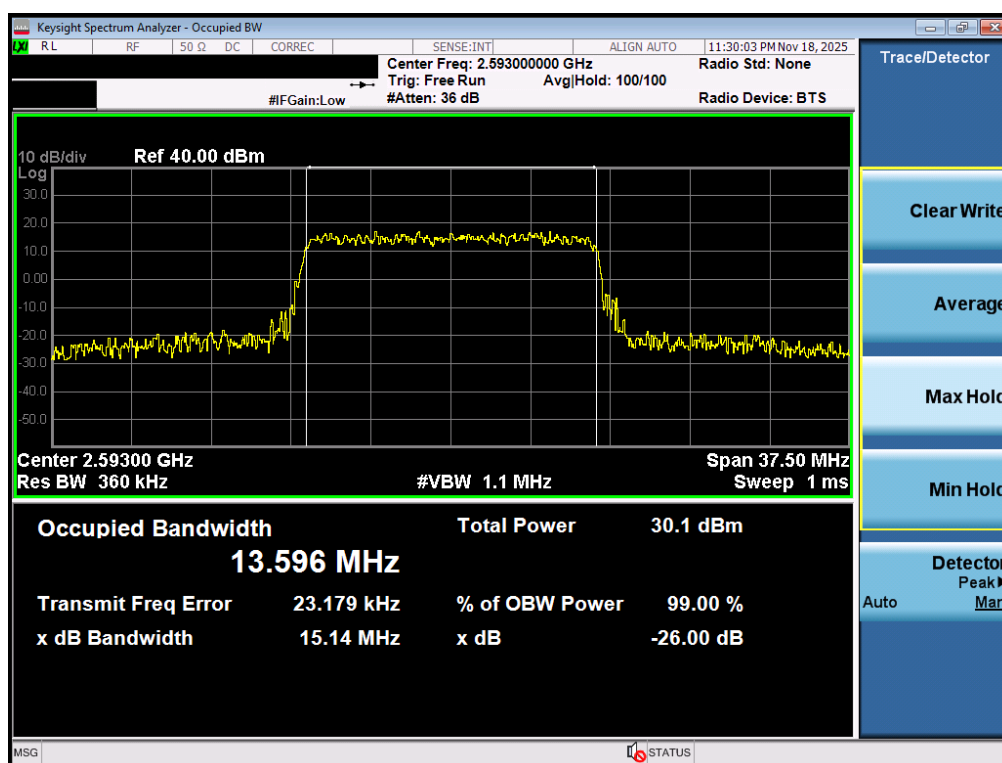


Plot 7-58. Occupied Bandwidth Plot (LTE Band 41(PC3)- 20MHz QPSK - Full RB - Ant2)

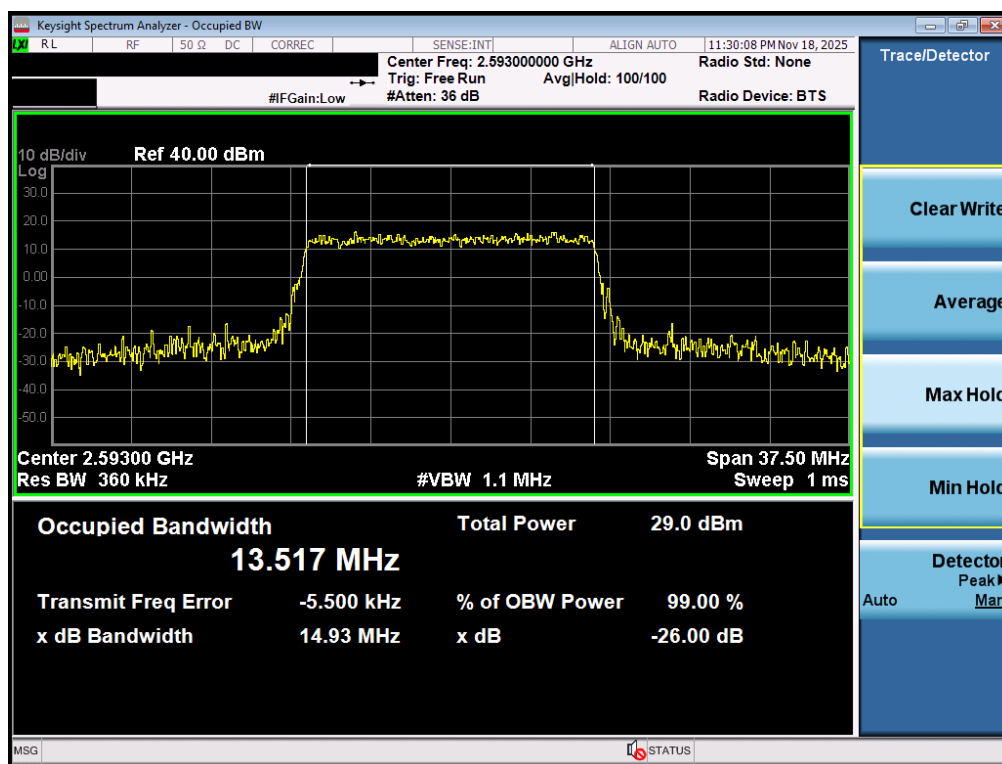


Plot 7-59. Occupied Bandwidth Plot (LTE Band 41(PC3)- 20MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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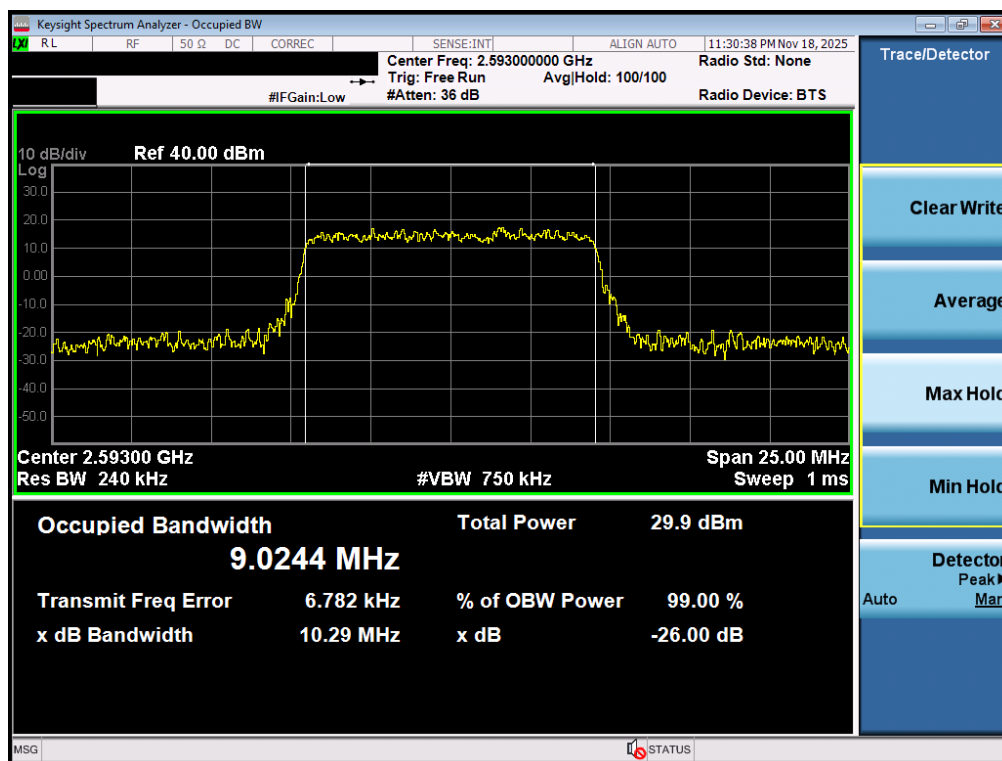


Plot 7-60. Occupied Bandwidth Plot (LTE Band 41(PC3)- 15MHz QPSK - Full RB - Ant2)

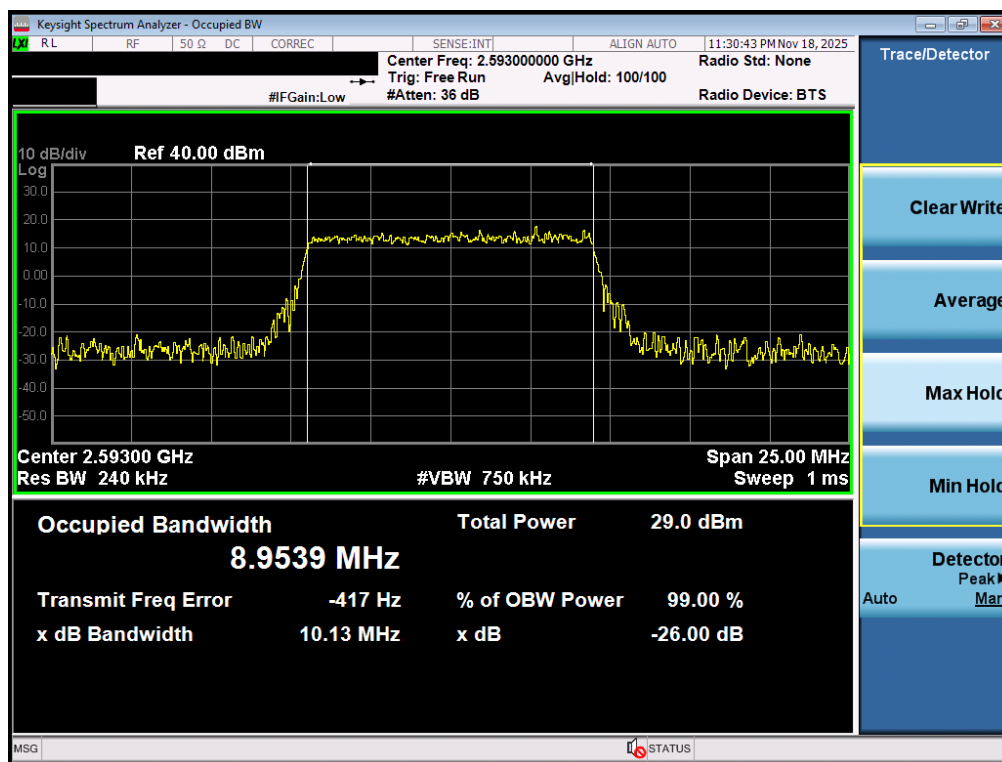


Plot 7-61. Occupied Bandwidth Plot (LTE Band 41(PC3)- 15MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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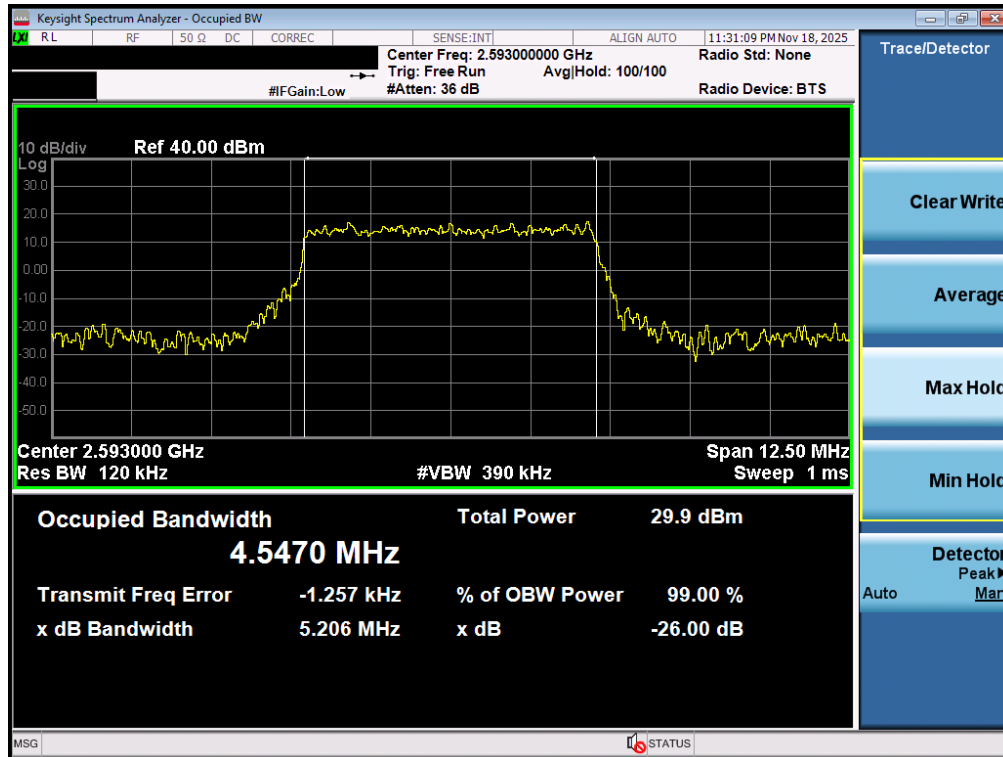


Plot 7-62. Occupied Bandwidth Plot (LTE Band 41(PC3)- 10MHz QPSK - Full RB - Ant2)

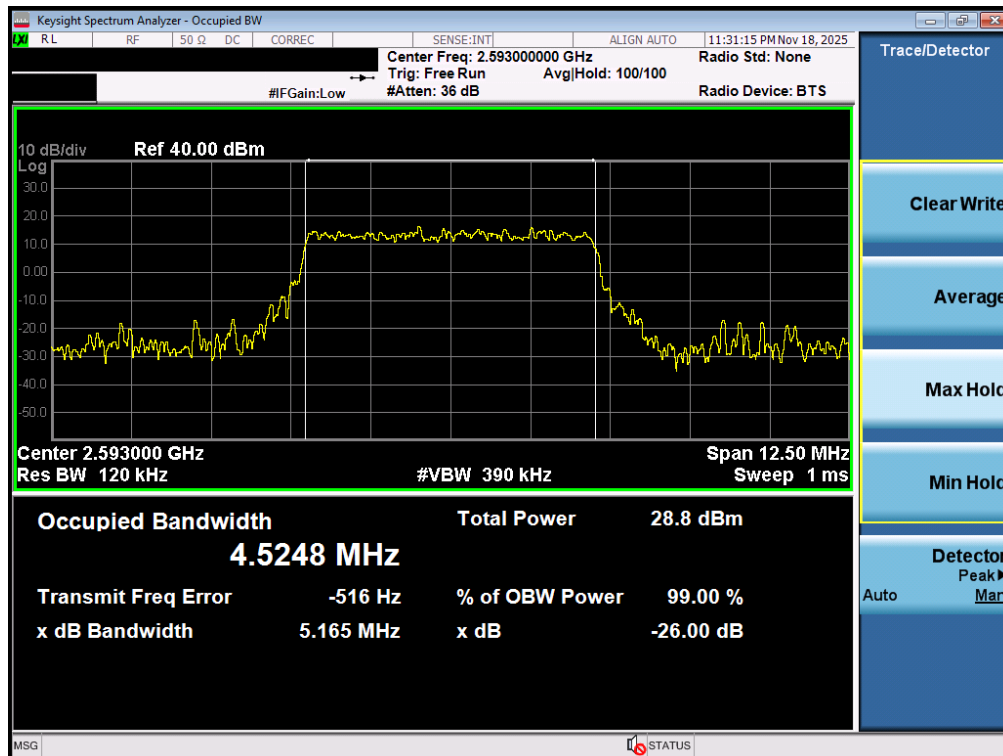


Plot 7-63. Occupied Bandwidth Plot (LTE Band 41(PC3)- 10MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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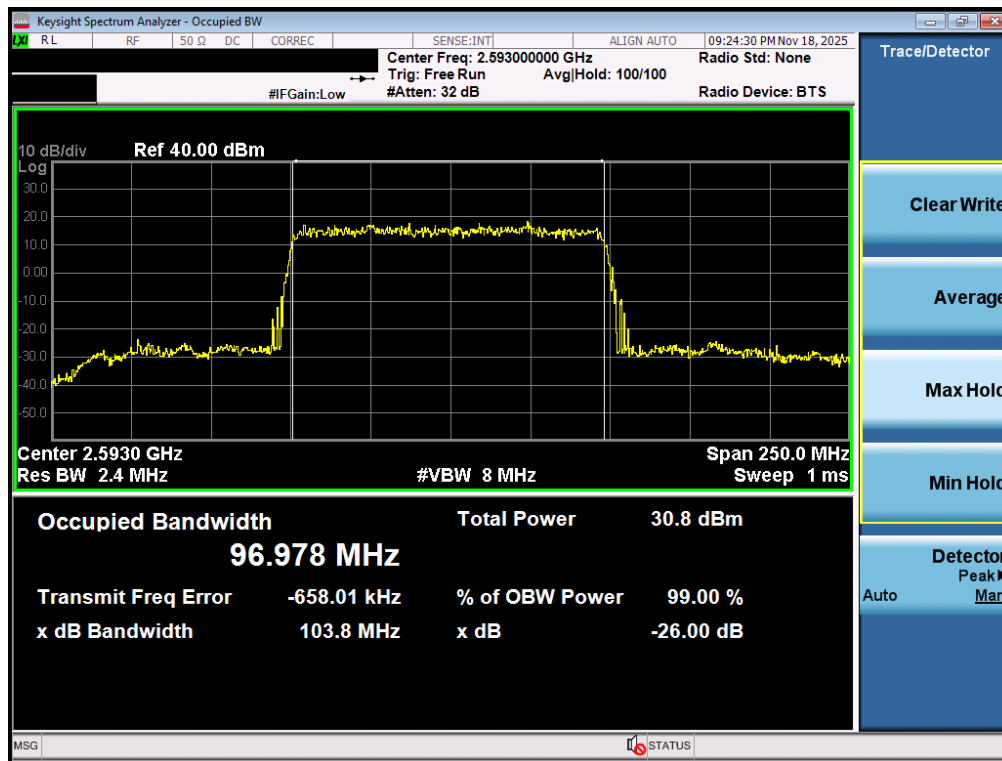
Plot 7-64. Occupied Bandwidth Plot (LTE Band 41(PC3)- 5MHz QPSK - Full RB - Ant2)



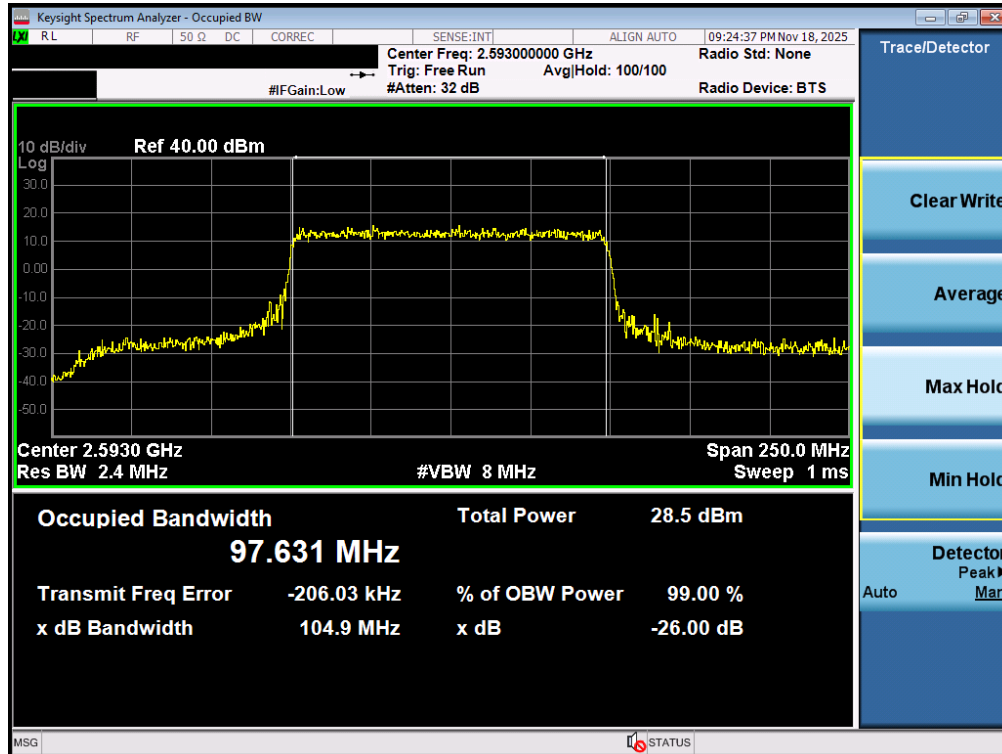
Plot 7-65. Occupied Bandwidth Plot (LTE Band 41(PC3)- 5MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n41 PC3 – Ant2

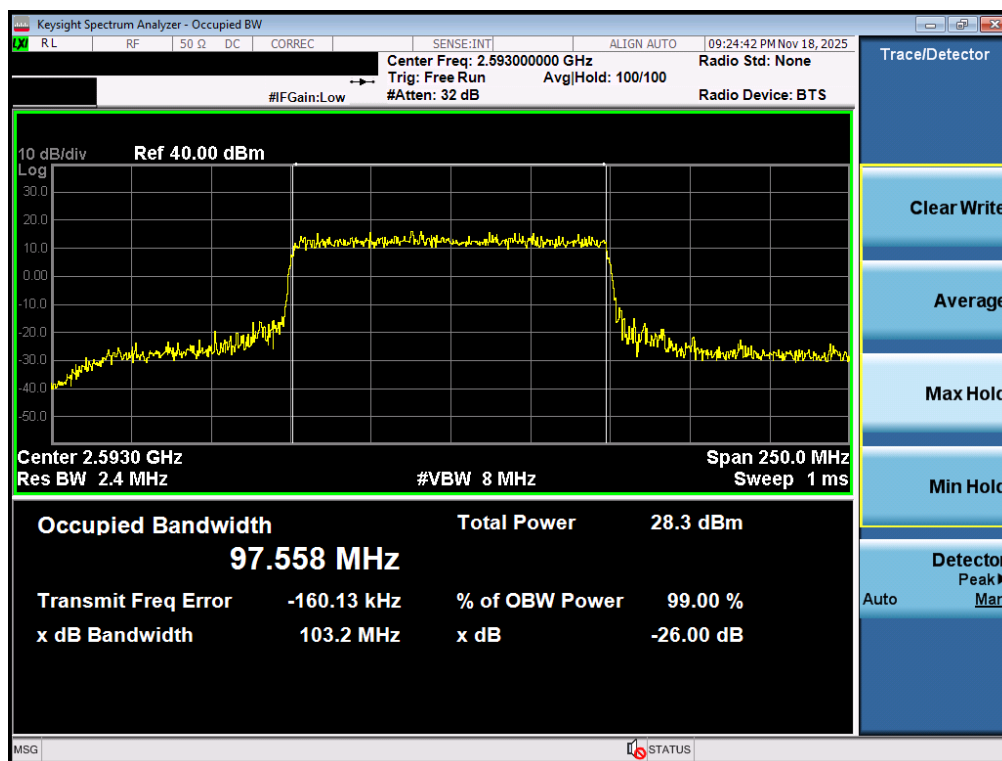


Plot 7-66. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz $\pi/2$ BPSK – Full RB – Ant2)

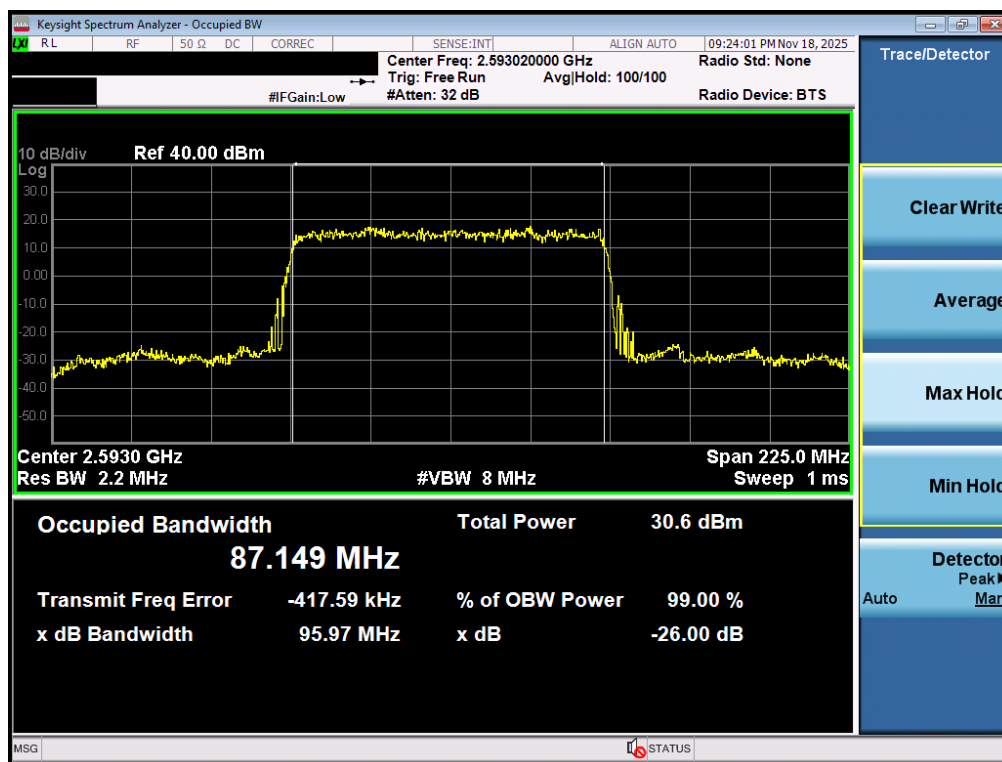


Plot 7-67. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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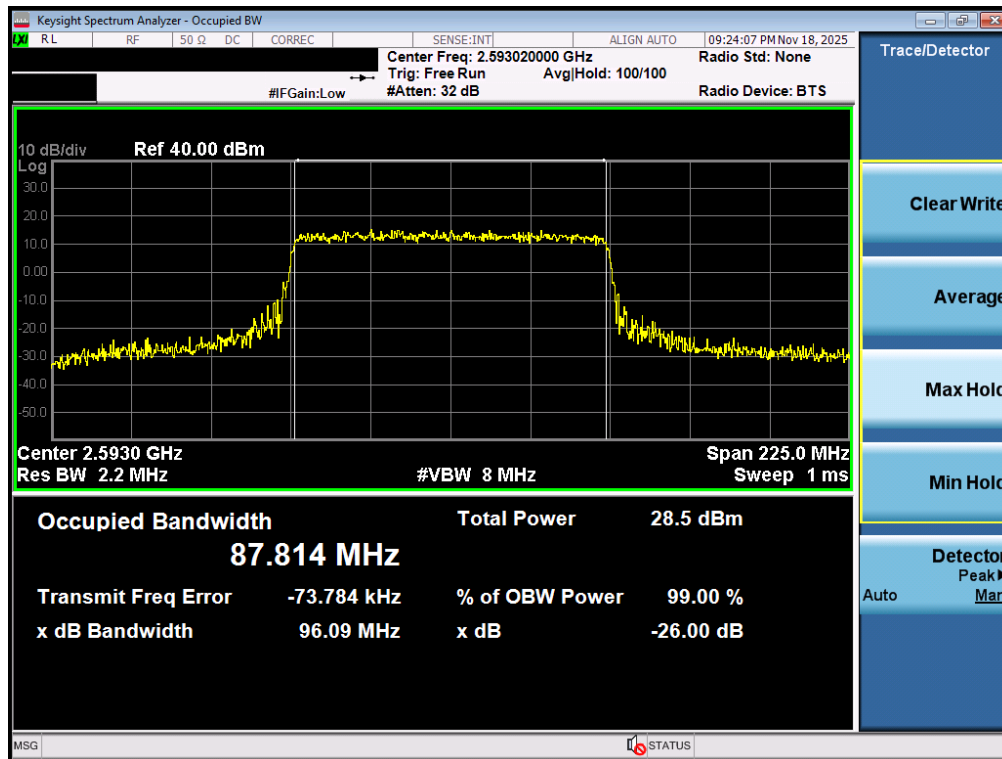


Plot 7-68. Occupied Bandwidth Plot (NR Band n41 PC3 – 100MHz 16-QAM – Full RB – Ant2)

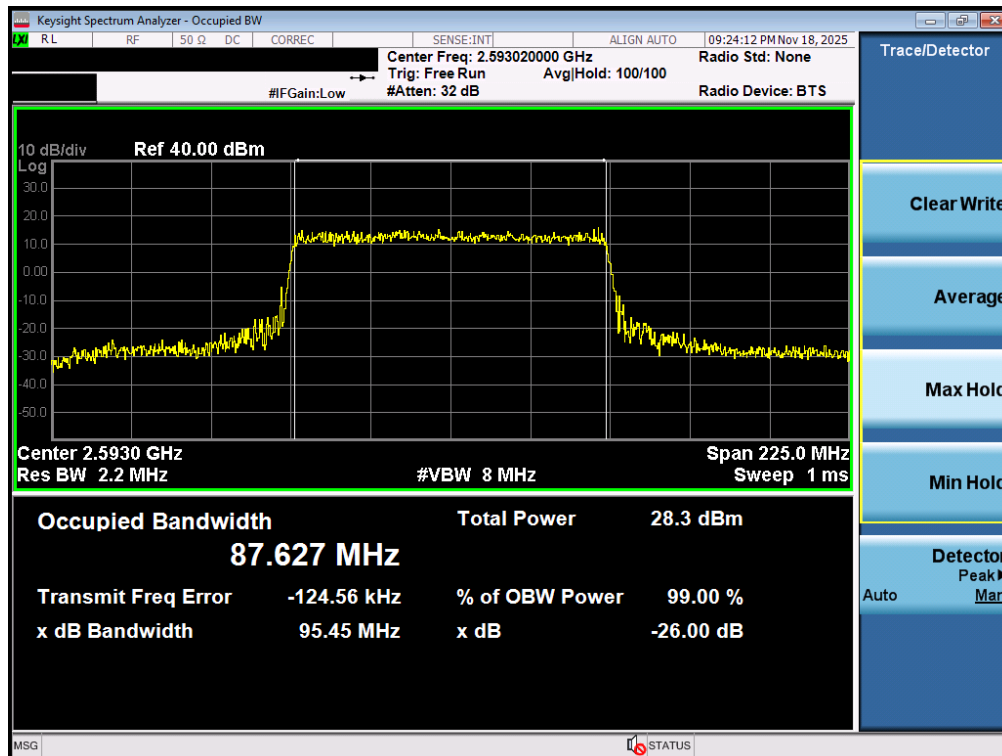


Plot 7-69. Occupied Bandwidth Plot (NR Band n41 PC3 – 90MHz $\pi/2$ BPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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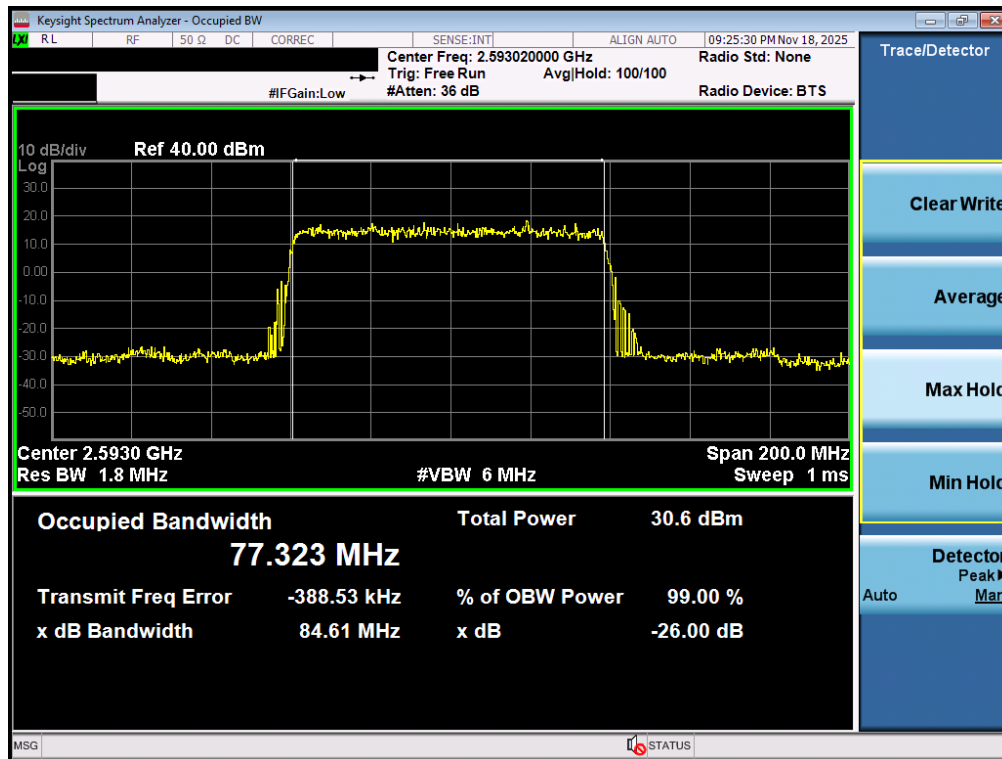


Plot 7-70. Occupied Bandwidth Plot (NR Band n41 PC3 - 90MHz QPSK - Full RB - Ant2)

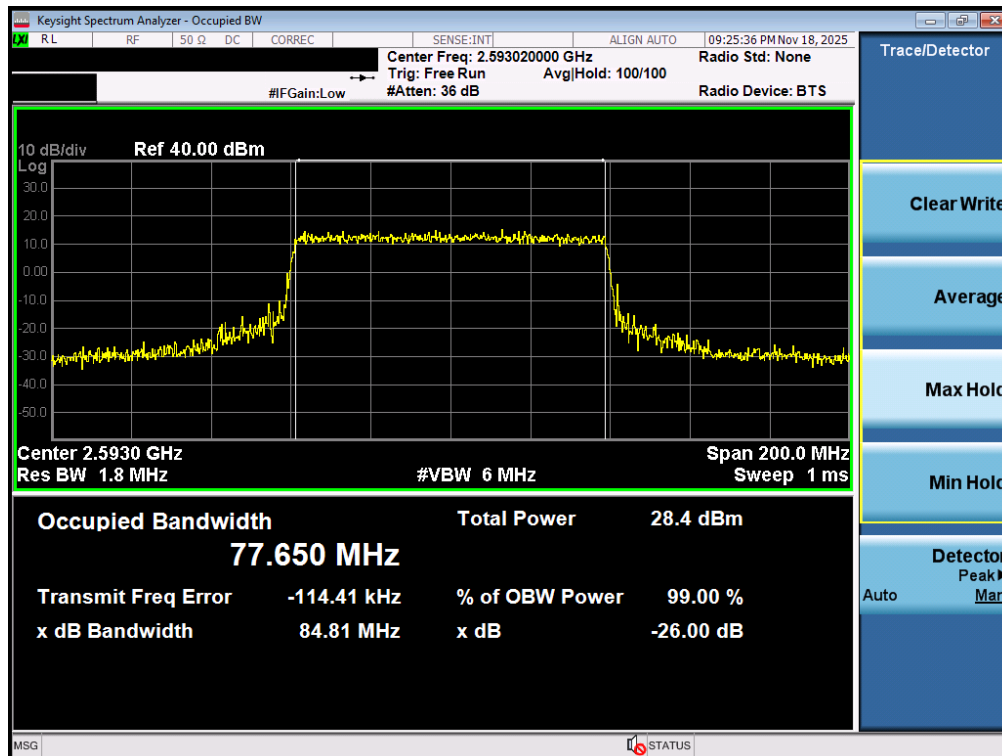


Plot 7-71. Occupied Bandwidth Plot (NR Band n41 PC3 - 90MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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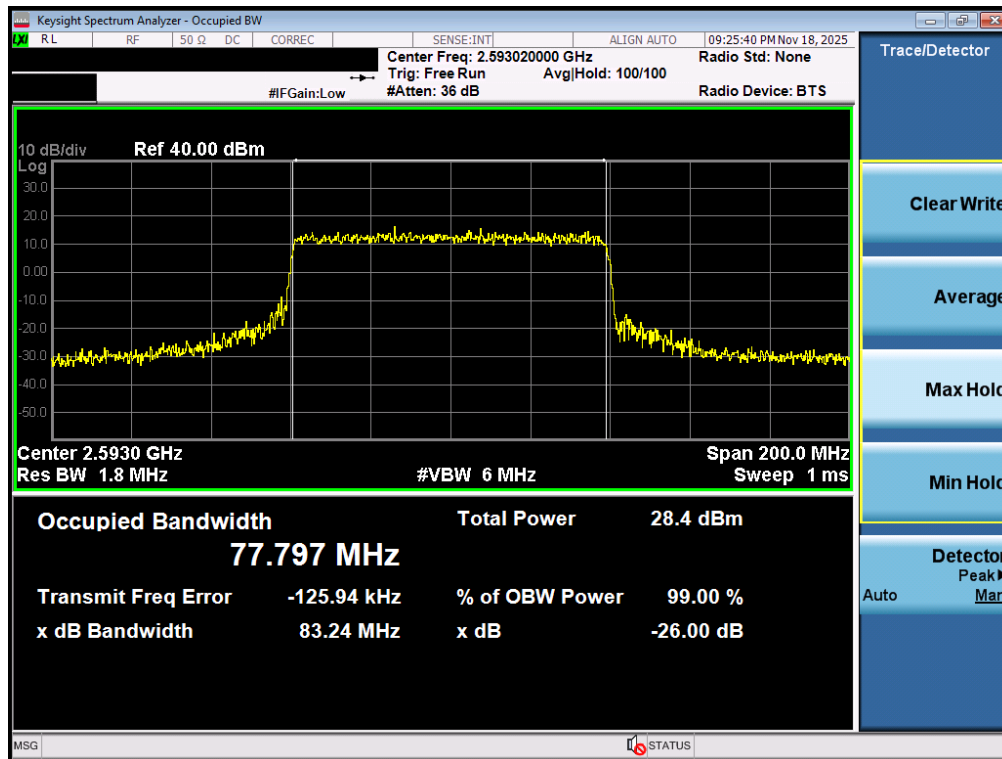


Plot 7-72. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz $\pi/2$ BPSK – Full RB – Ant2)

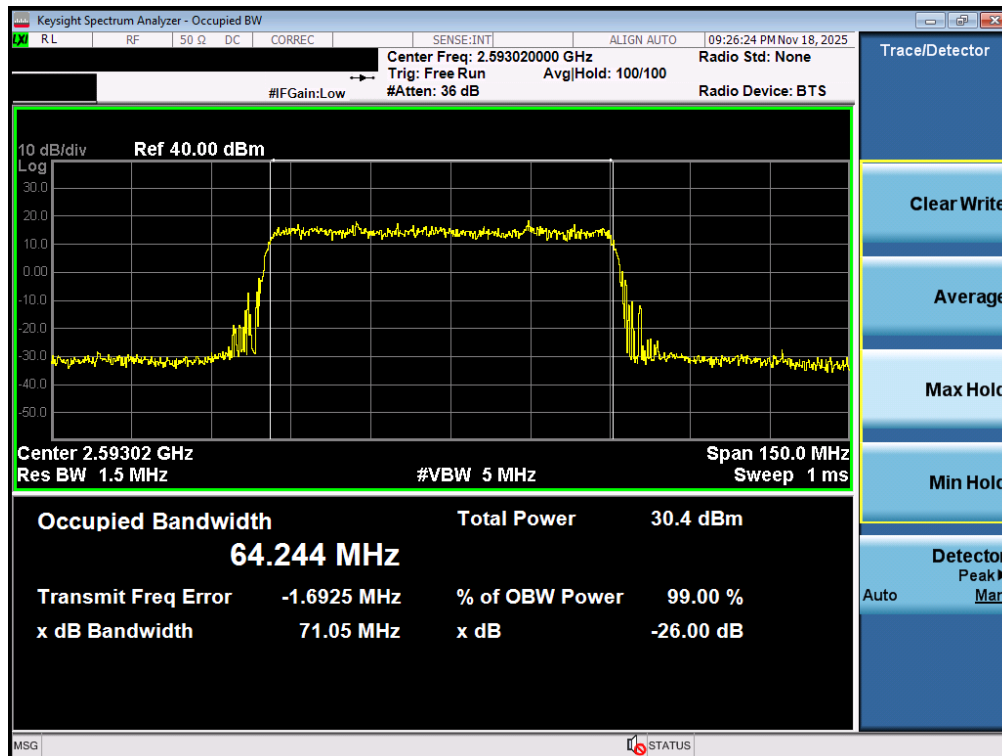


Plot 7-73. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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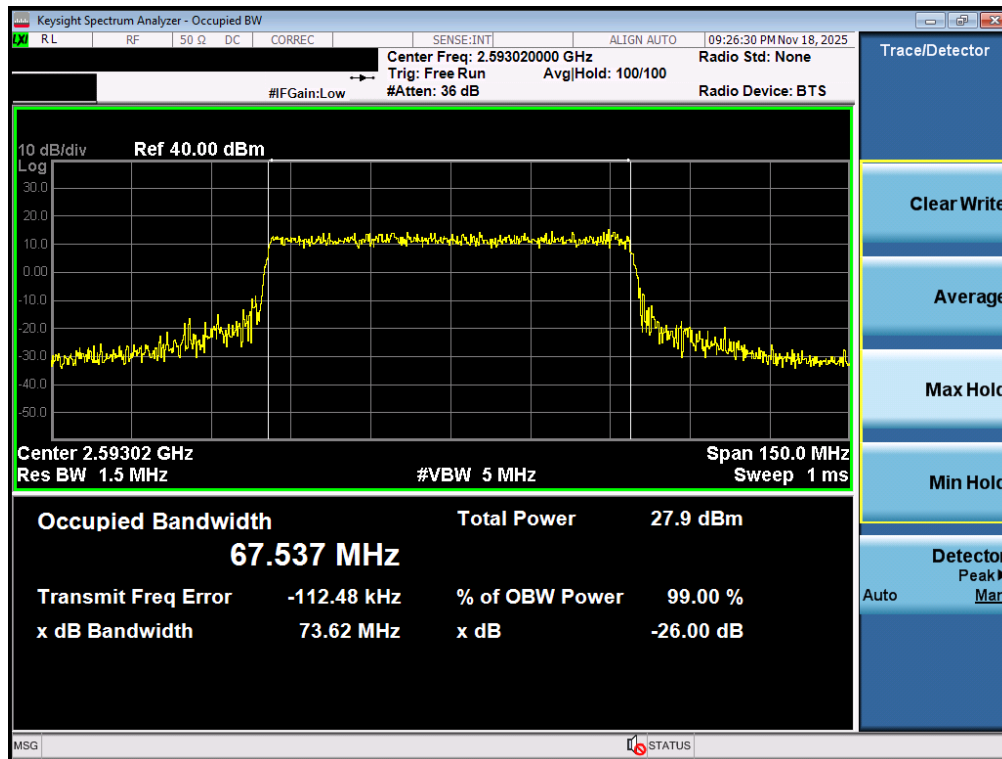


Plot 7-74. Occupied Bandwidth Plot (NR Band n41 PC3 – 80MHz 16-QAM – Full RB – Ant2)

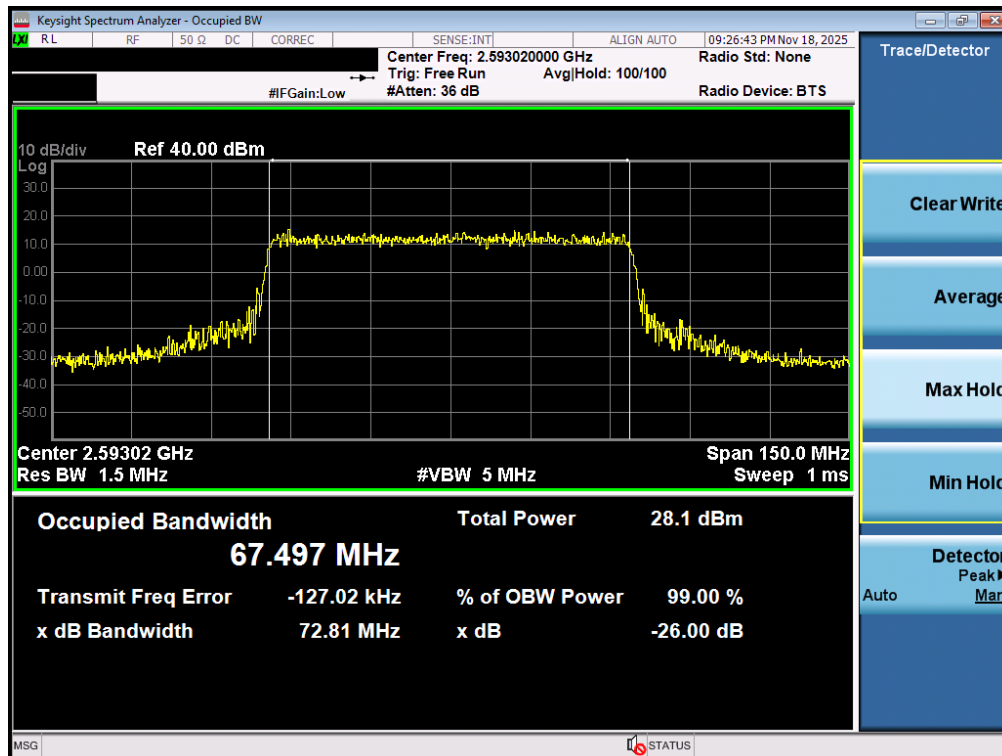


Plot 7-75. Occupied Bandwidth Plot (NR Band n41 PC3 – 70MHz $\pi/2$ BPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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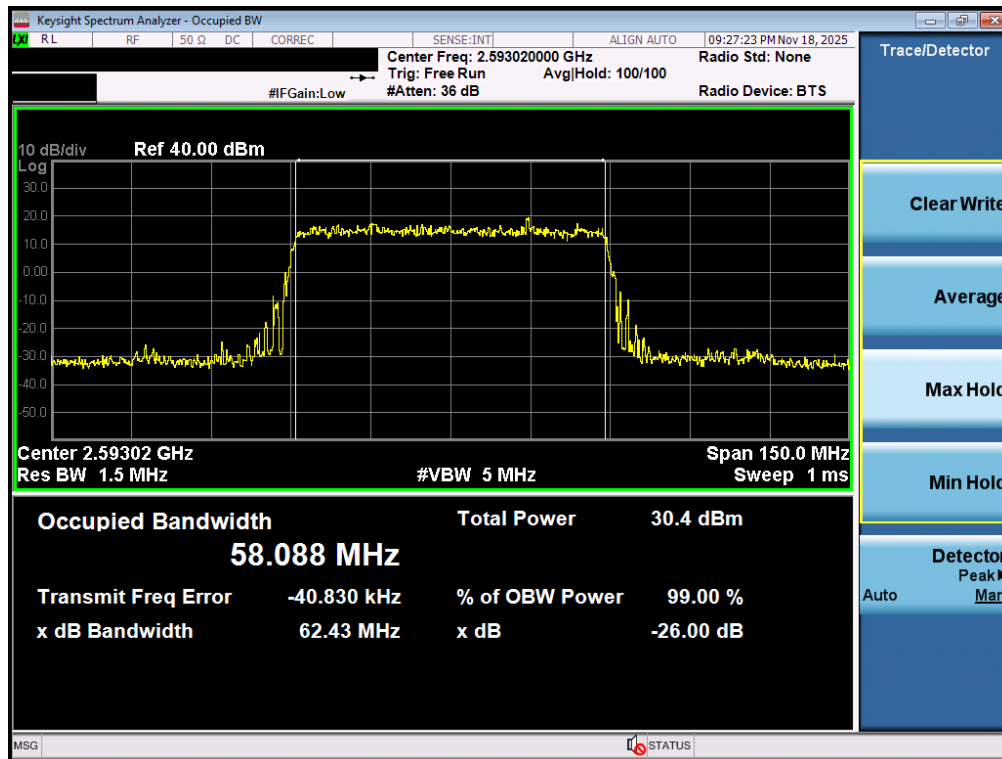


Plot 7-76. Occupied Bandwidth Plot (NR Band n41 PC3 - 70MHz QPSK - Full RB - Ant2)

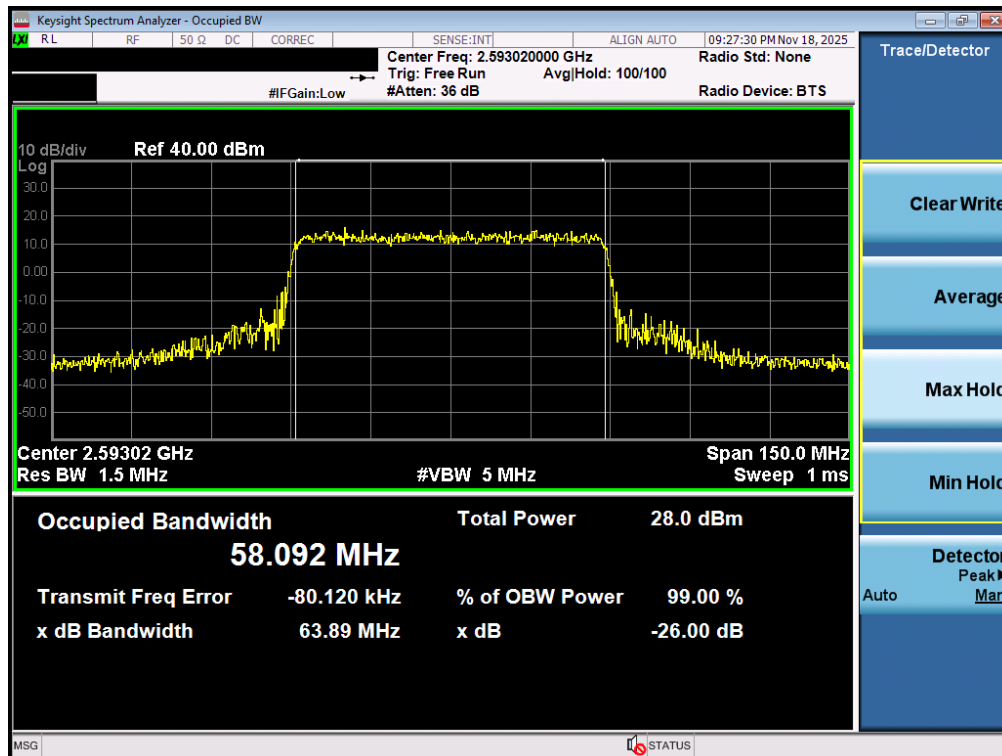


Plot 7-77. Occupied Bandwidth Plot (NR Band n41 PC3 - 70MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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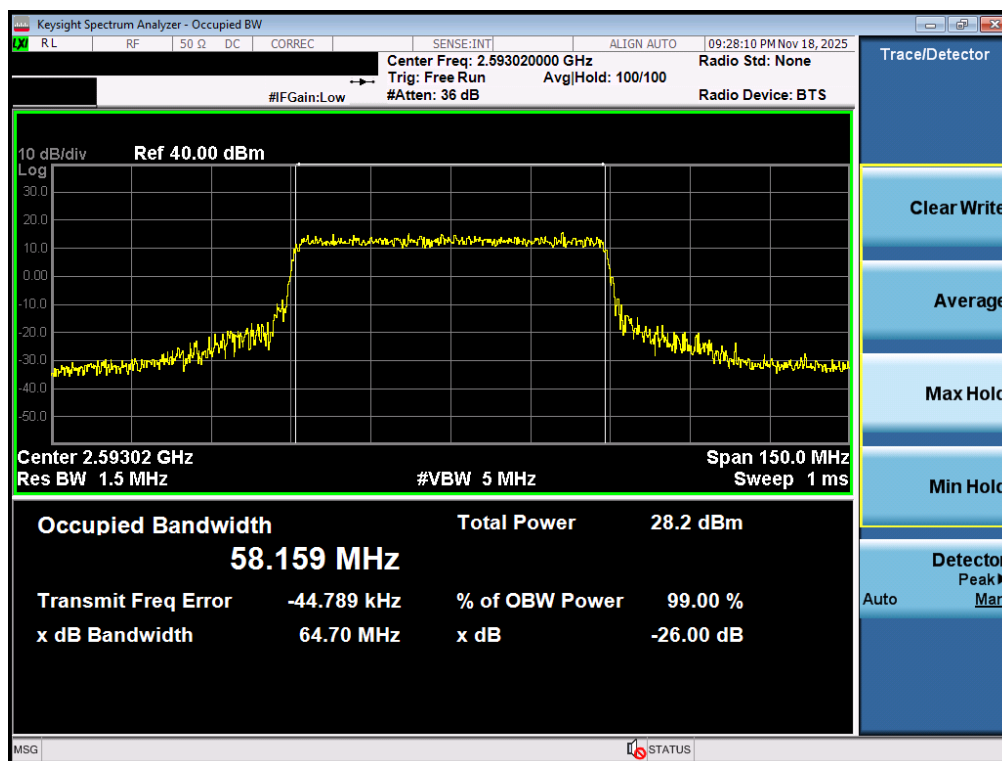


Plot 7-78. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz $\pi/2$ BPSK – Full RB – Ant2)

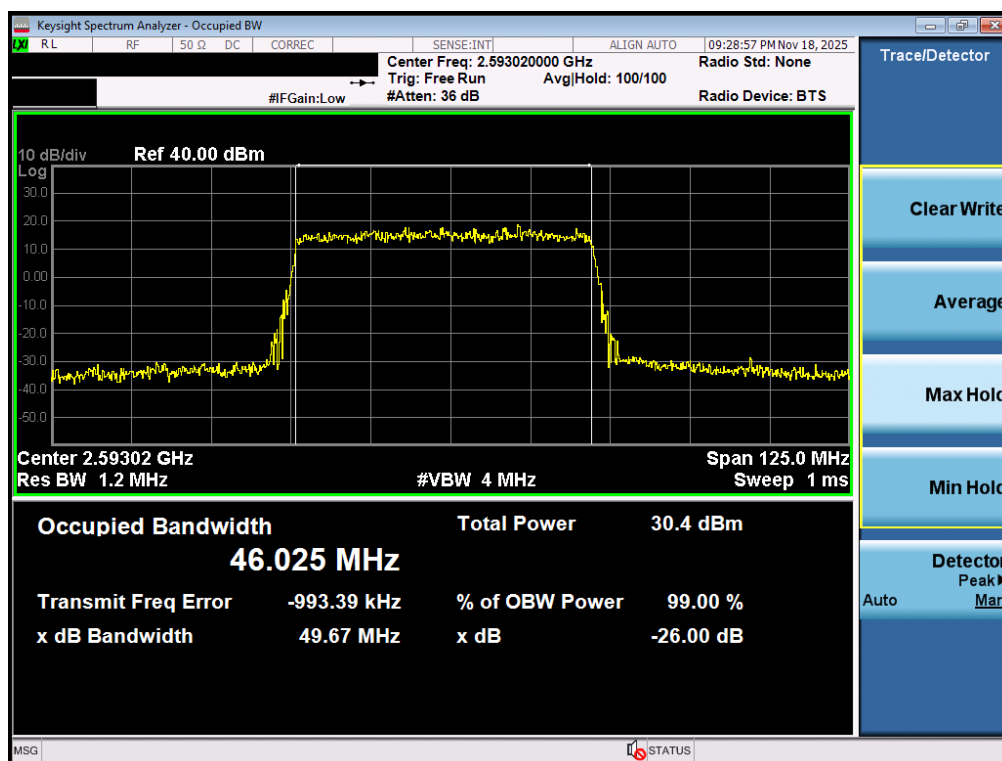


Plot 7-79. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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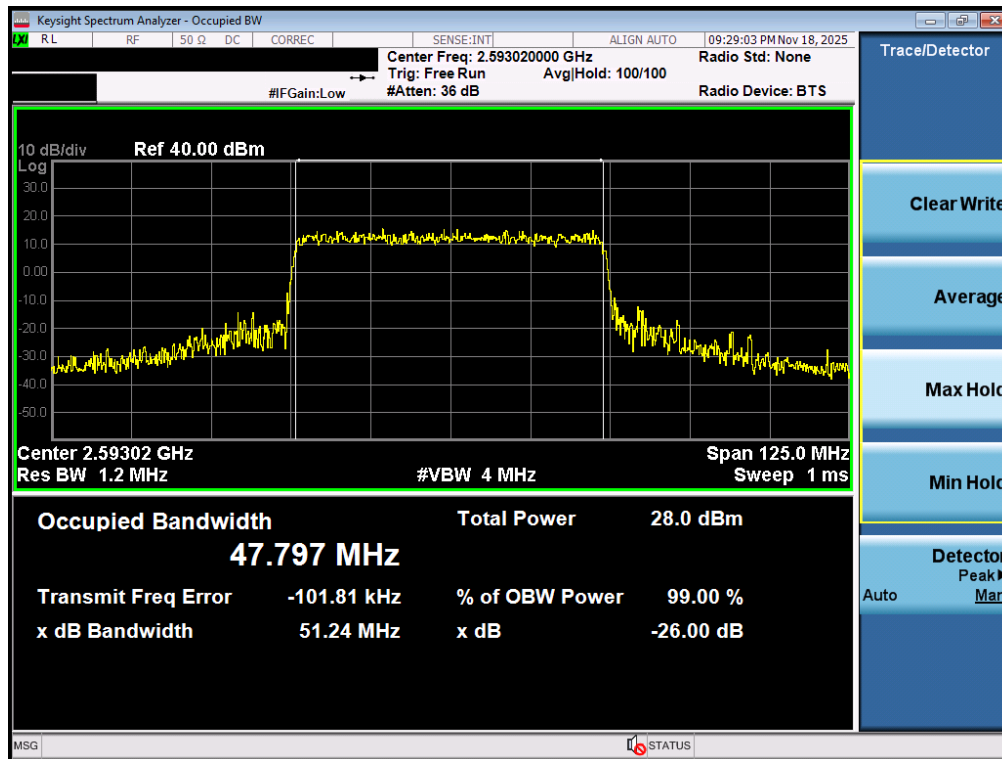


Plot 7-80. Occupied Bandwidth Plot (NR Band n41 PC3 – 60MHz 16-QAM – Full RB – Ant2)

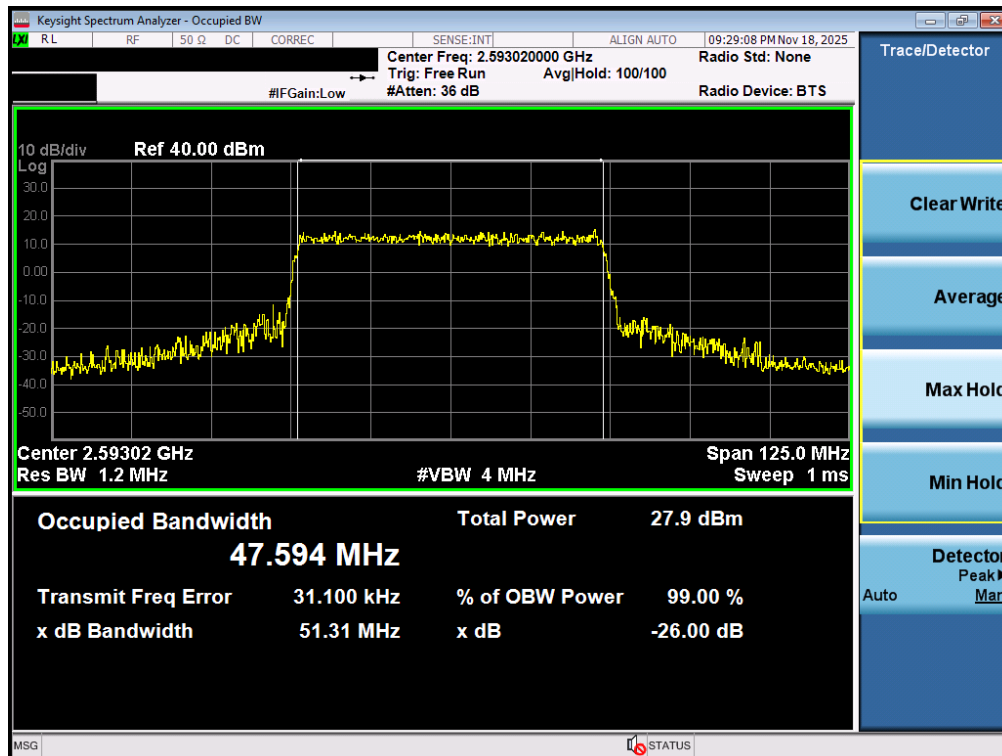


Plot 7-81. Occupied Bandwidth Plot (NR Band n41 PC3 – 50MHz $\pi/2$ BPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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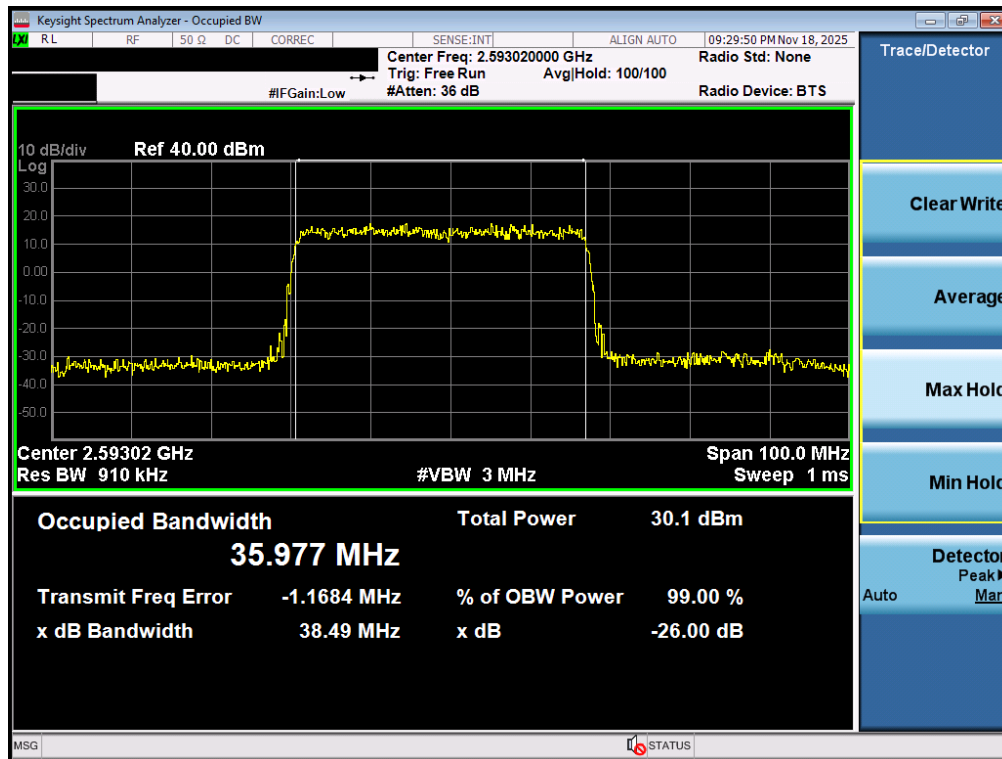


Plot 7-82. Occupied Bandwidth Plot (NR Band n41 PC3 – 50MHz QPSK – Full RB – Ant2)

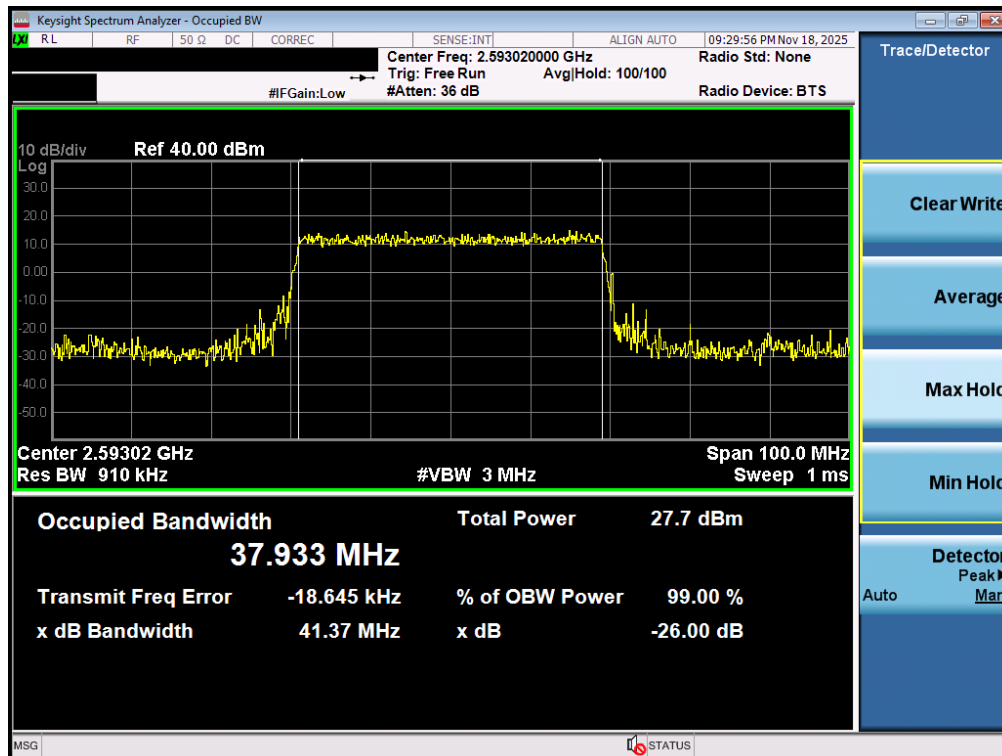


Plot 7-83. Occupied Bandwidth Plot (NR Band n41 PC3 – 50MHz 16-QAM – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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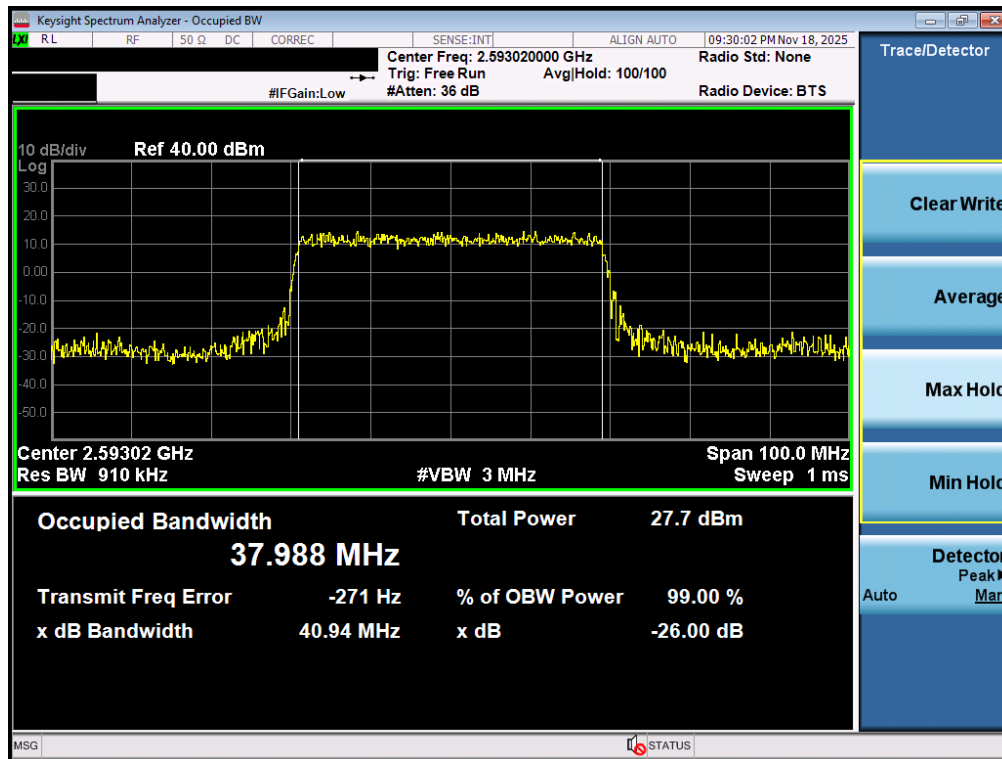


Plot 7-84. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz $\pi/2$ BPSK – Full RB – Ant2)

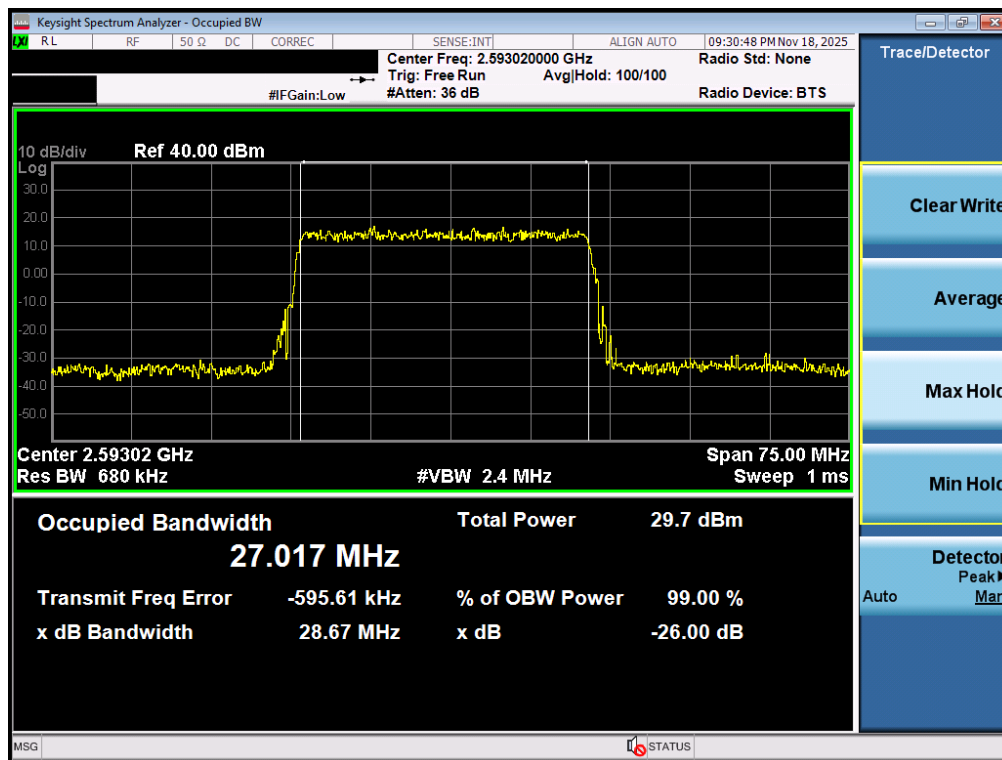


Plot 7-85. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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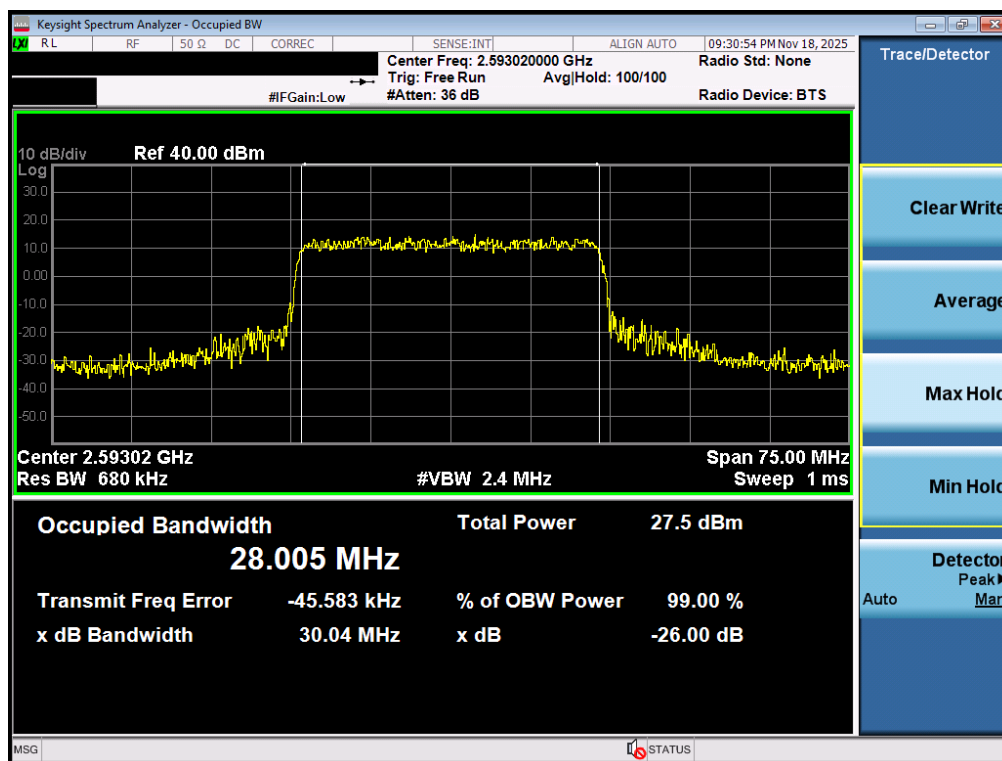


Plot 7-86. Occupied Bandwidth Plot (NR Band n41 PC3 – 40MHz 16-QAM – Full RB – Ant2)

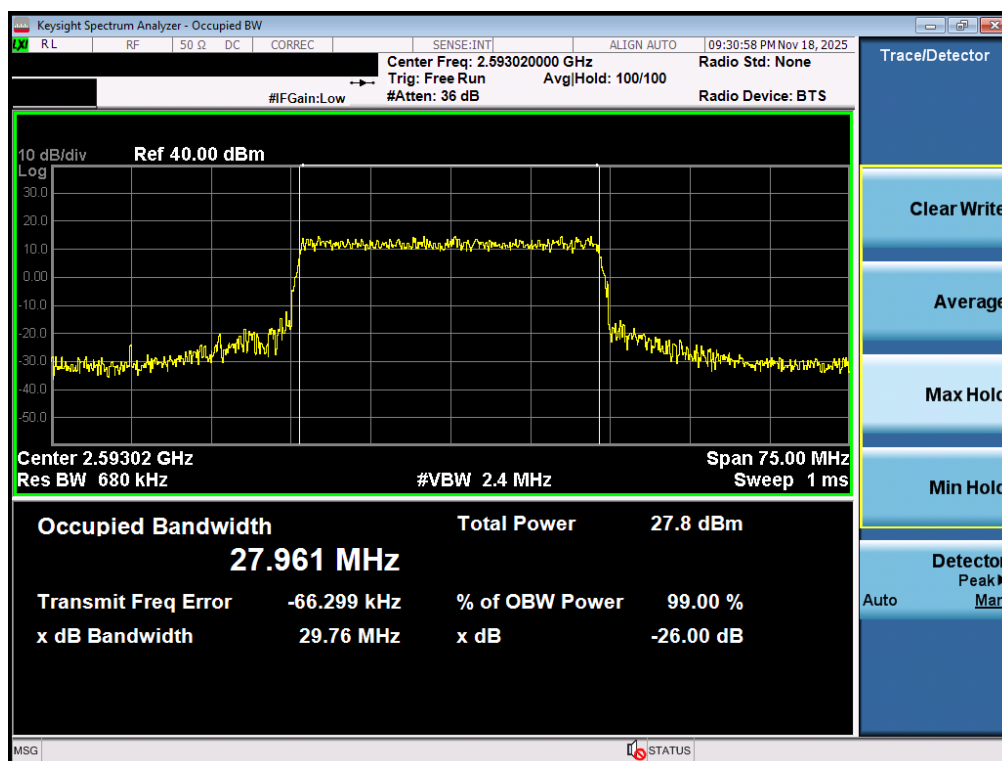


Plot 7-87. Occupied Bandwidth Plot (NR Band n41 PC3 – 30MHz $\pi/2$ BPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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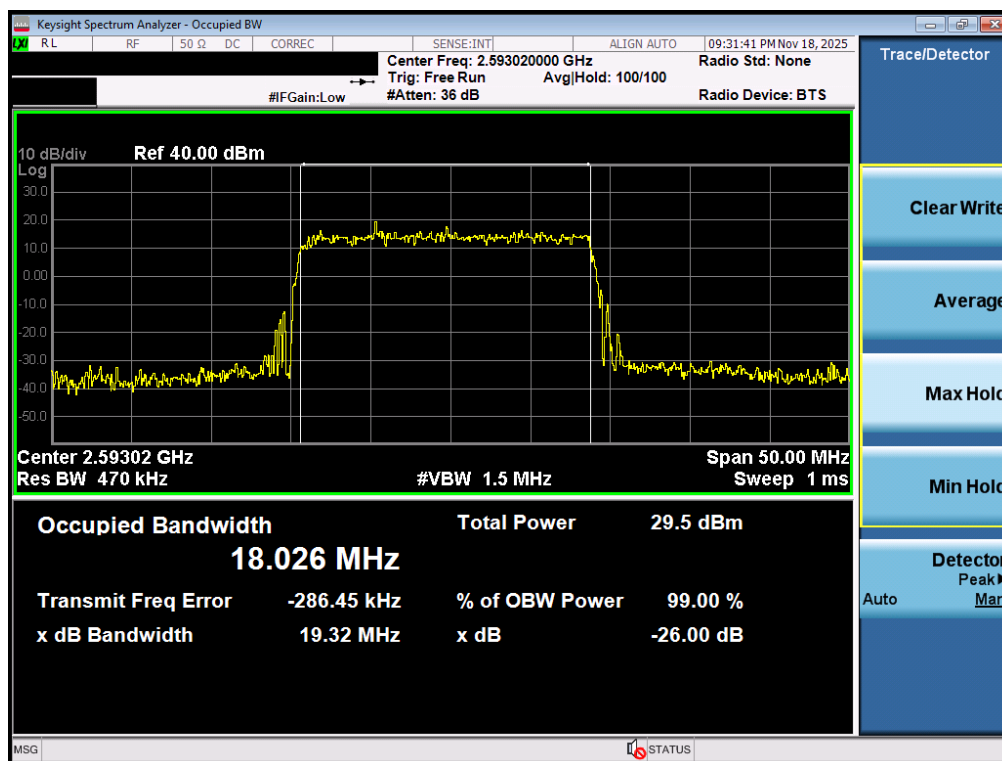


Plot 7-88. Occupied Bandwidth Plot (NR Band n41 PC3 - 30MHz QPSK - Full RB - Ant2)

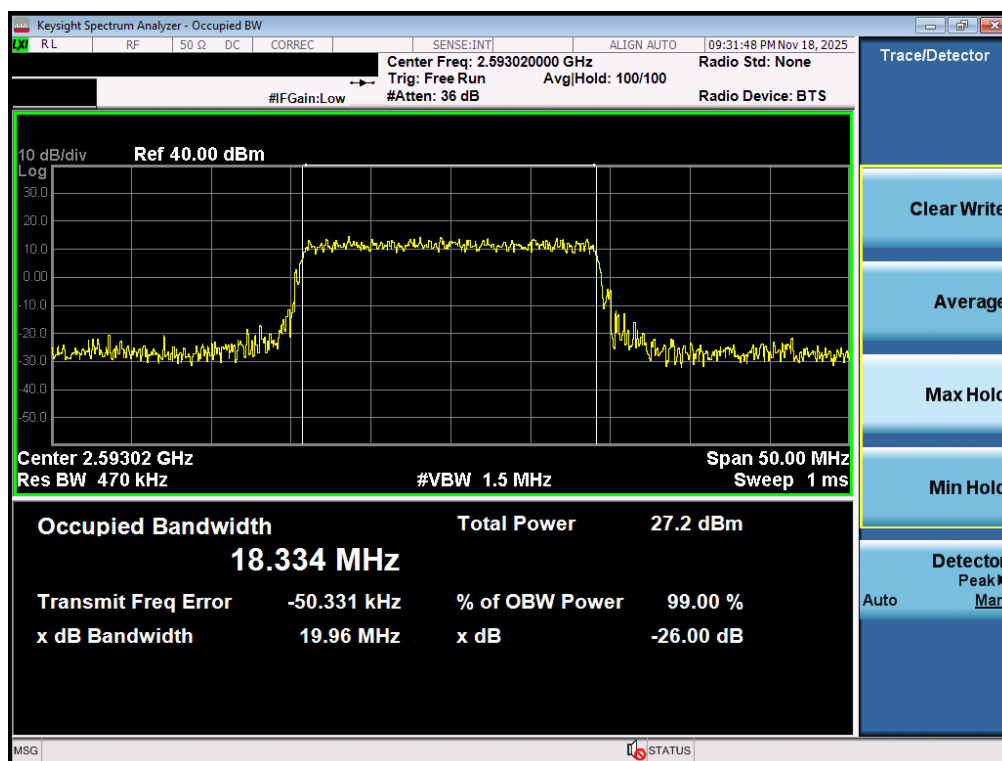


Plot 7-89. Occupied Bandwidth Plot (NR Band n41 PC3 - 30MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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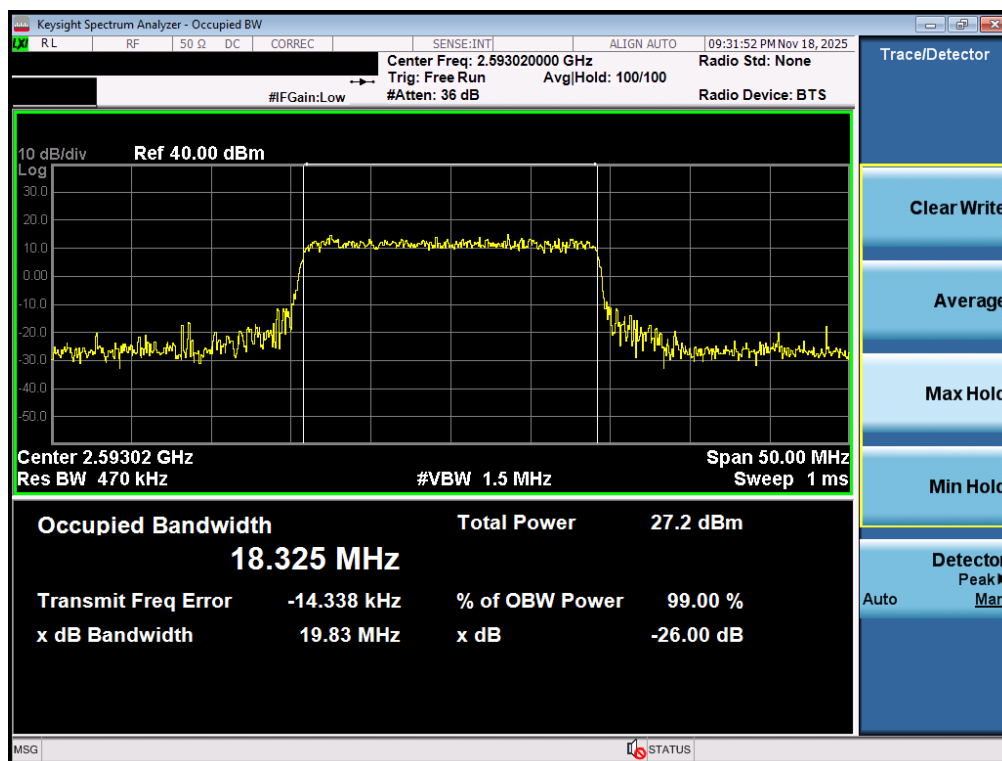


Plot 7-90. Occupied Bandwidth Plot (NR Band n41 PC3 – 20MHz $\pi/2$ BPSK – Full RB – Ant2)

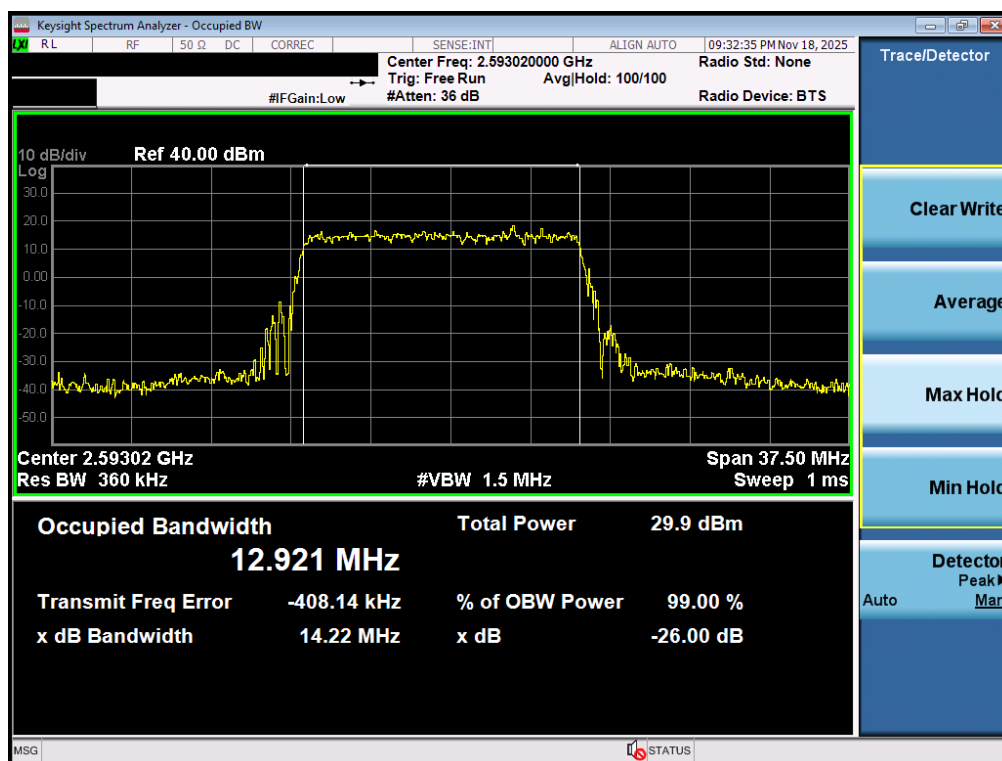


Plot 7-91. Occupied Bandwidth Plot (NR Band n41 PC3 – 20MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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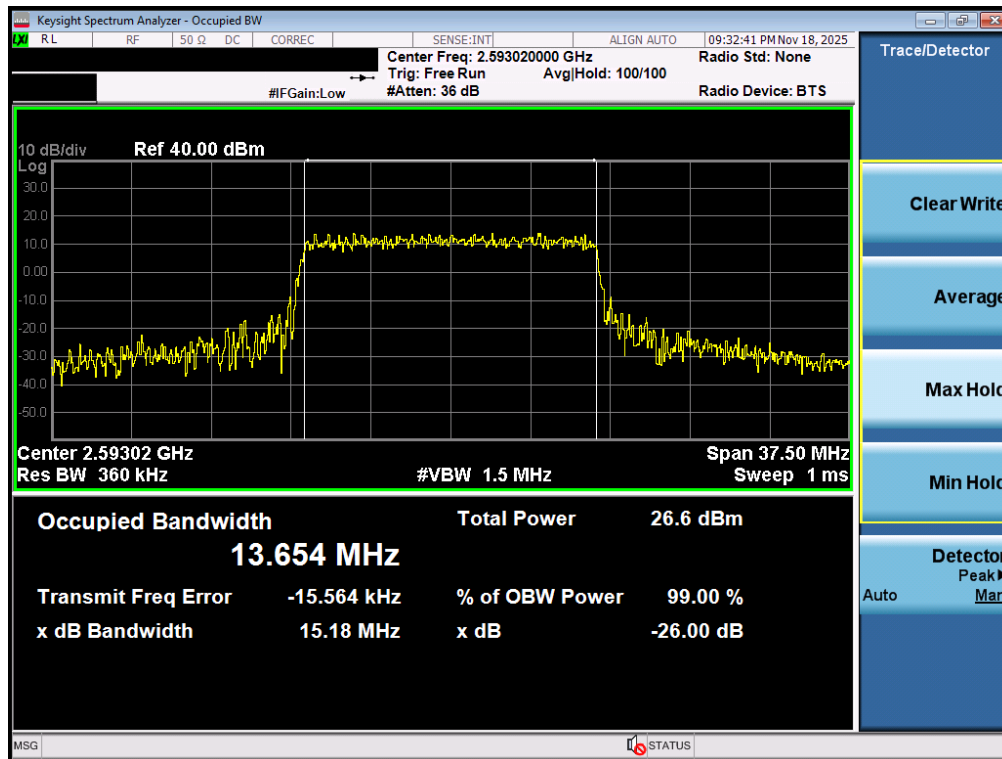


Plot 7-92. Occupied Bandwidth Plot (NR Band n41 PC3 – 20MHz 16-QAM – Full RB – Ant2)

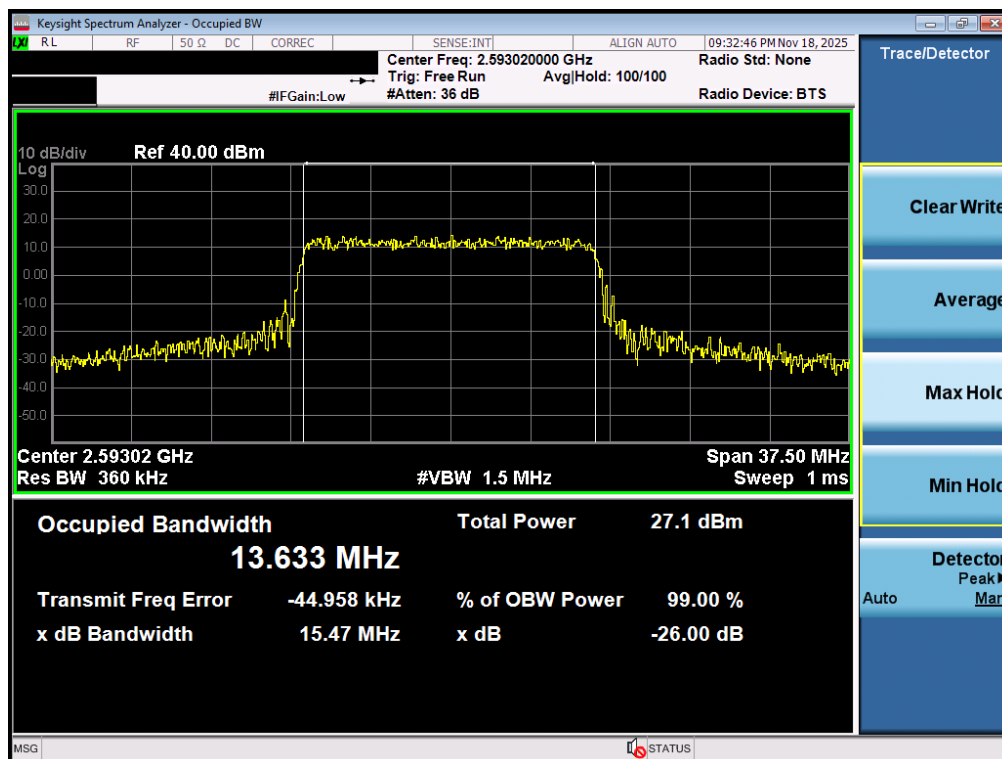


Plot 7-93. Occupied Bandwidth Plot (NR Band n41 PC3 – 15MHz $\pi/2$ BPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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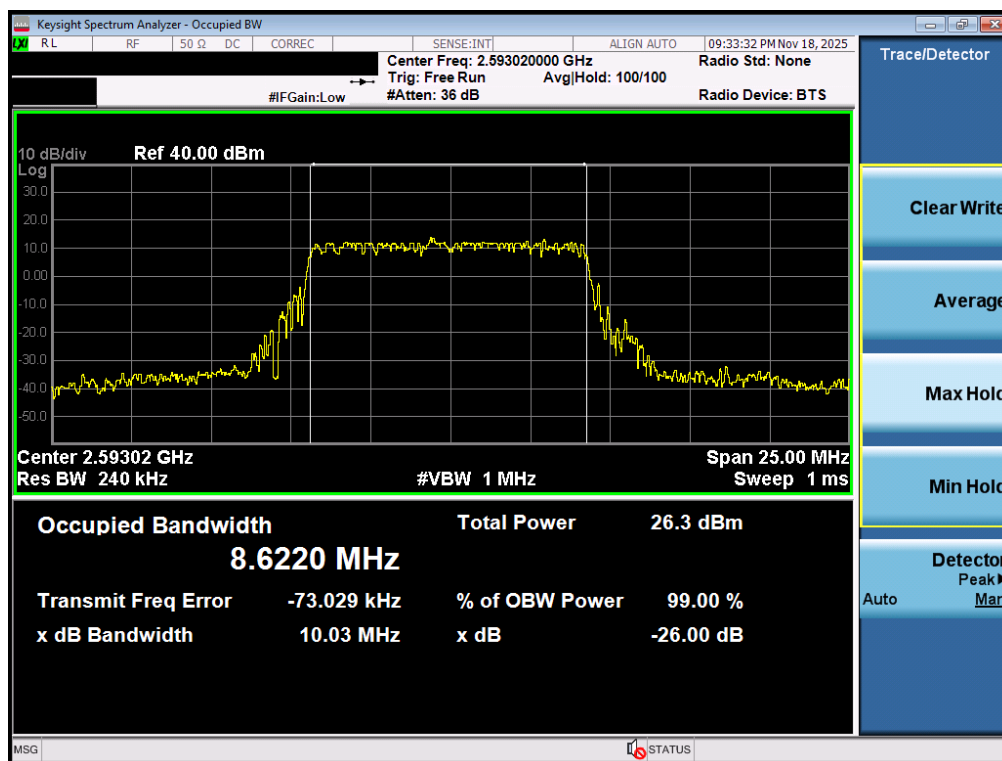


Plot 7-94. Occupied Bandwidth Plot (NR Band n41 PC3 - 15MHz QPSK - Full RB - Ant2)

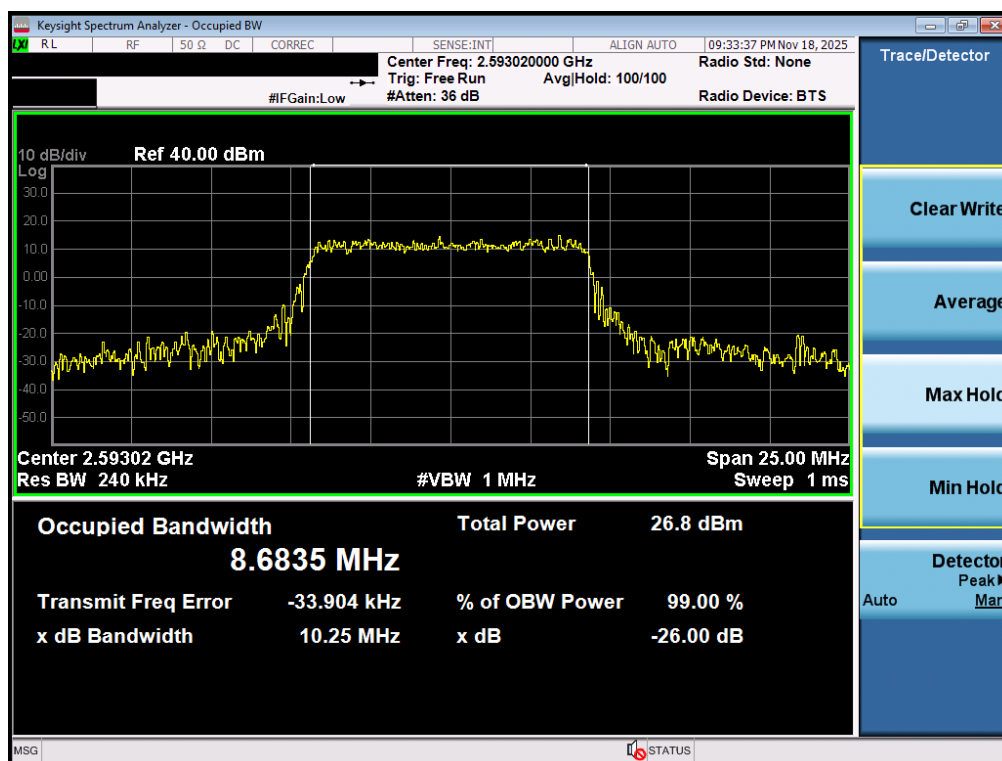


Plot 7-95. Occupied Bandwidth Plot (NR Band n41 PC3 - 15MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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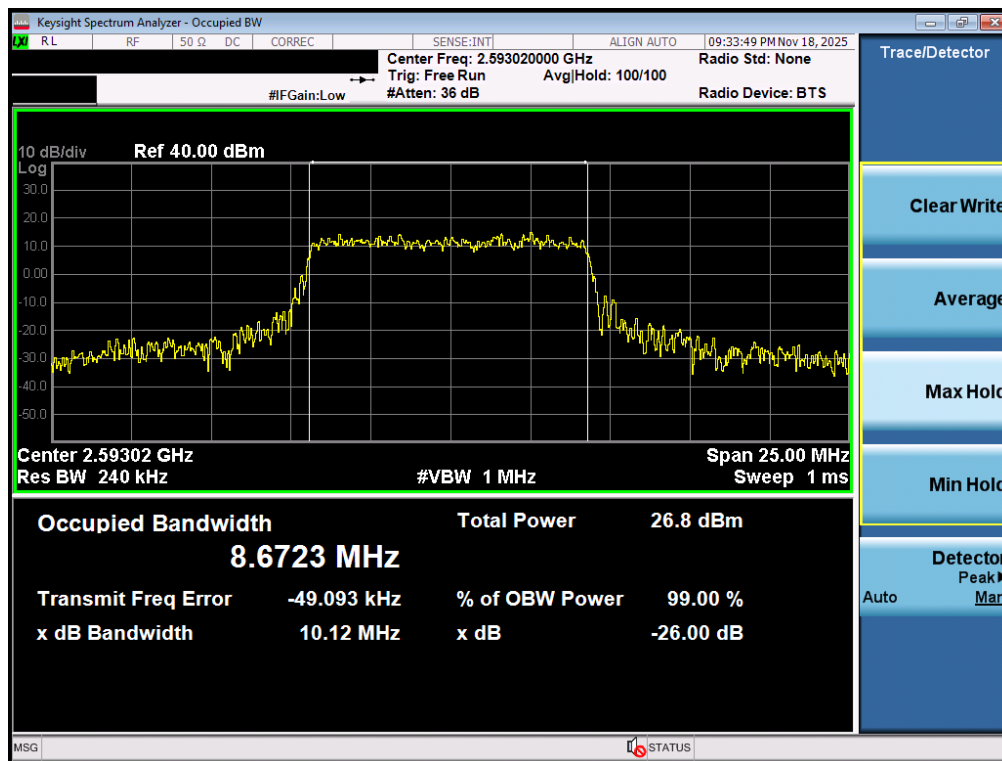


Plot 7-96. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz $\pi/2$ BPSK – Full RB – Ant2)



Plot 7-97. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz QPSK – Full RB – Ant2)

FCC ID: A3LSMS947B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-98. Occupied Bandwidth Plot (NR Band n41 PC3 – 10MHz 16-QAM – Full RB – Ant2)

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7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

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

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

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

Test Procedure Used

ANSI C63.26:2015 – Section 5.7.4

Test Settings

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

Test Setup

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

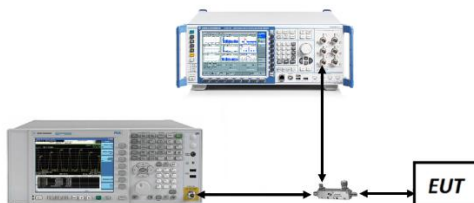


Figure 7-4. Test Instrument & Measurement Setup

Test Notes

1. Per Part 27, RSS-195 and RSS-199, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.
3. Only the highest target power SRS-1 antenna for n41 default (Antenna B) are reported for the overall n41 SRS worst case.

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Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B41PC2	20MHz	Low	30.0 - 2475.0	-43.25	-25	-18.25
		Low	2690.0 - 15000.0	-37.20	-25	-12.20
		Low	15000.0 - 27000.0	-50.07	-25	-25.07
		Mid	30.0 - 2500.0	-43.32	-25	-18.32
		Mid	2690.0 - 15000.0	-36.02	-25	-11.02
		Mid	15000.0 - 27000.0	-50.58	-25	-25.58
		High	30.0 - 2500.0	-43.62	-25	-18.62
		High	2690.0 - 15000.0	-36.86	-25	-11.86
		High	15000.0 - 27000.0	-50.29	-25	-25.29
LTE-B41PC3	20MHz	Low	30.0 - 2288.0	-43.40	-25	-18.40
		Low	2365.0 - 15000.0	-37.18	-25	-12.18
		Low	15000.0 - 27000.0	-49.52	-25	-24.52
		Mid	30.0 - 2288.0	-42.98	-25	-17.98
		Mid	2570.0 - 15000.0	-36.95	-25	-11.95
		Mid	15000.0 - 27000.0	-49.38	-25	-24.38
		High	30.0 - 2288.0	-42.73	-25	-17.73
		High	2570.0 - 15000.0	-36.31	-25	-11.31
		High	15000.0 - 27000.0	-49.94	-25	-24.94

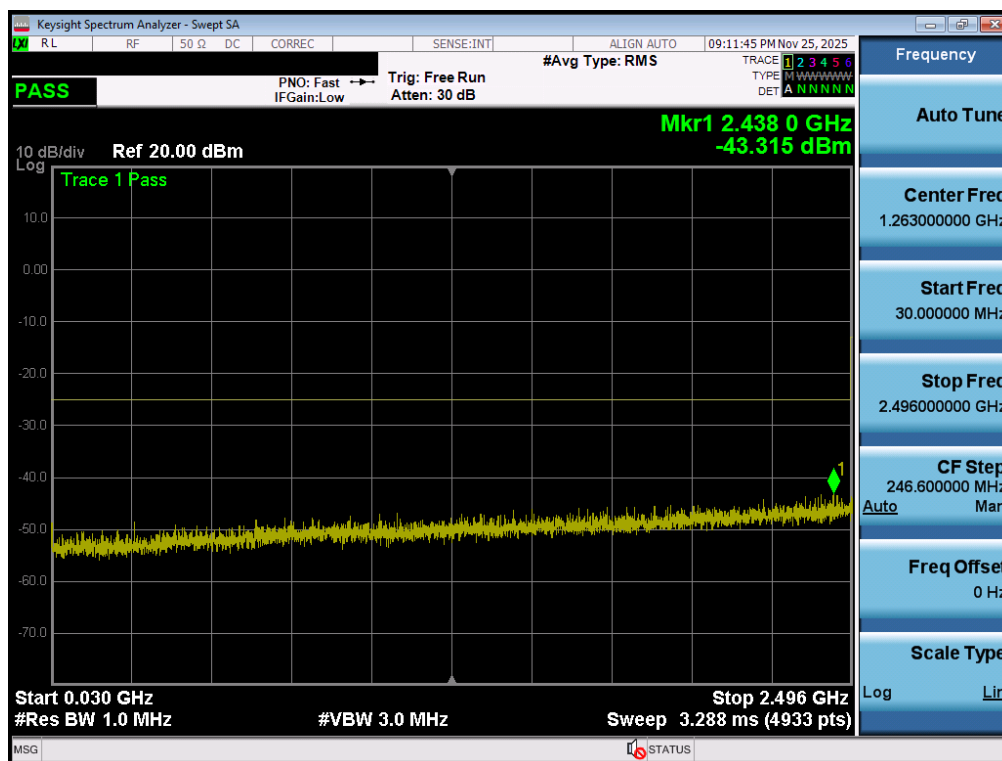
Table 7-18. Conducted Emission Test Results – LTE – Ant 1

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n41PC3	100MHz	Low	30.0 - 2470.0	-43.64	-25	-18.64
		Low	2690.0 - 15000.0	-35.49	-25	-10.49
		Low	15000.0 - 27000.0	-50.11	-25	-25.11
		Mid	30.0 - 2470.0	-41.65	-25	-16.65
		Mid	2690.0 - 15000.0	-36.99	-25	-11.99
		Mid	15000.0 - 27000.0	-50.18	-25	-25.18
		High	30.0 - 2470.0	-43.38	-25	-18.38
		High	2690.0 - 15000.0	-36.63	-25	-11.63
		High	15000.0 - 27000.0	-49.62	-25	-24.62

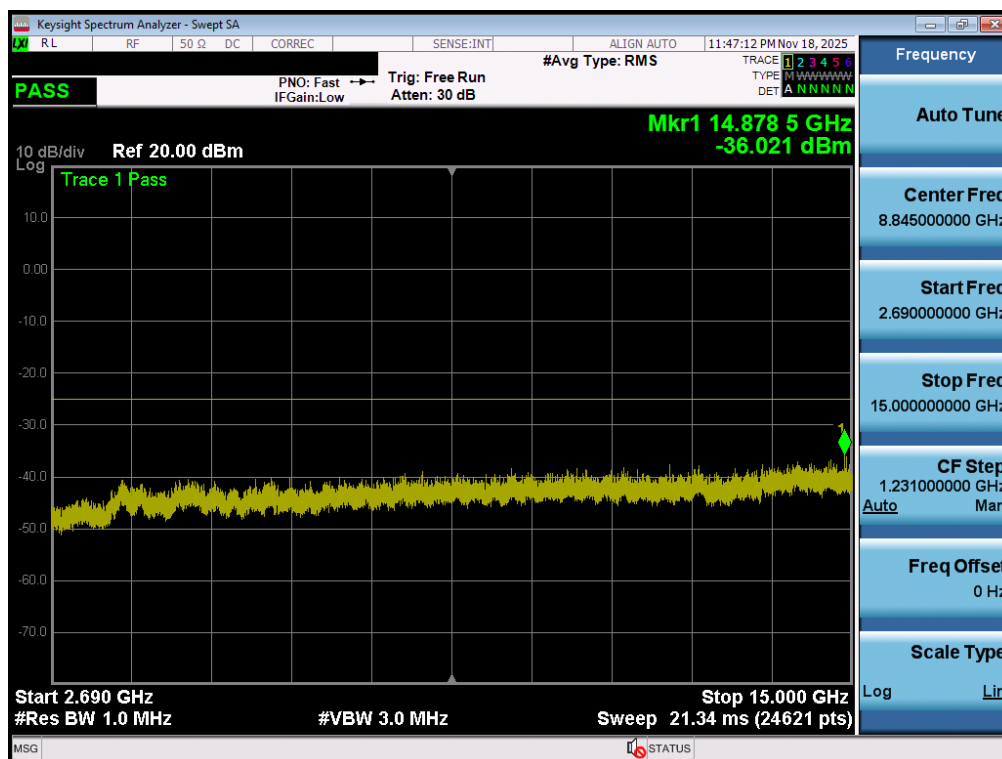
Table 7-19. Conducted Emission Test Results – NR – Ant 1

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LTE Band 41(PC2) – Ant1



Plot 7-99. Conducted Spurious Plot (LTE Band 41(PC2)- 20MHz QPSK - RB Size 1, RB Offset 50 - Mid Channel - Ant1)



Plot 7-100. Conducted Spurious Plot (LTE Band 41(PC2)- 20MHz QPSK - RB Size 1, RB Offset 50 - Mid Channel - Ant1)

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