ELEMENT MATERIALS TECHNOLOGY,
Columbia MD
(formerly PCTEST)
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.element.com

PART 27 MEASUREMENT REPORT

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

Date of Testing:
11/18/2025 - 12/24/2025
Test Report Issue Date:
1/12/2026
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M2508270083-09-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, KDB 648474 D03 v01r04

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

This revised Test Report (S/N: 1M2508270083-09-R1.A3L) supersedes and replaces the previously issued test report (S/N: 1M2508270083-09.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.

RJ Ortanez
Executive Vice President

ACCREDITED
CERT #2041.01

TEST REPORT REVISION HISTORY

Rev. No.	Description	Issue Date	Revised By
-	Initial Release	1/9/2026	WKR0000023296
1	Addressed comments made by TCB reviewer	1/12/2026	WKR0000023296

TABLE OF CONTENTS

PART 27 MEASUREMENT REPORT

Antenna-1 Main						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n77 PC2 (3450 - 3550MHz)	100 MHz	π/2 BPSK	3500.0	0.241	23.81	96M9G7D
		QPSK	3500.0	0.249	23.96	97M8G7D
		16QAM	3500.0	0.206	23.13	97M5W7D
	90 MHz	π/2 BPSK	3495.0 - 3505.0	0.241	23.82	87M3G7D
		QPSK	3495.0 - 3505.0	0.250	23.97	87M9G7D
		16QAM	3495.0 - 3505.0	0.173	22.38	87M8W7D
	80 MHz	π/2 BPSK	3490.0 - 3510.0	0.245	23.88	77M6G7D
		QPSK	3490.0 - 3510.0	0.254	24.04	77M8G7D
		16QAM	3490.0 - 3510.0	0.178	22.49	77M7W7D
	70 MHz	π/2 BPSK	3485.0 - 3515.0	0.253	24.03	64M7G7D
		QPSK	3485.0 - 3515.0	0.264	24.21	67M9G7D
		16QAM	3485.0 - 3515.0	0.184	22.64	67M9W7D
	60 MHz	π/2 BPSK	3480.0 - 3520.0	0.247	23.92	58M3G7D
		QPSK	3480.0 - 3520.0	0.256	24.08	58M2G7D
		16QAM	3480.0 - 3520.0	0.179	22.53	58M1W7D
	50 MHz	π/2 BPSK	3475.0 - 3525.0	0.246	23.91	46M2G7D
		QPSK	3475.0 - 3525.0	0.255	24.06	47M8G7D
		16QAM	3475.0 - 3525.0	0.178	22.49	47M8W7D
	40 MHz	π/2 BPSK	3470.0 - 3530.0	0.242	23.84	36M1G7D
		QPSK	3470.0 - 3530.0	0.252	24.01	38M1G7D
		16QAM	3470.0 - 3530.0	0.176	22.44	38M0W7D
	30 MHz	π/2 BPSK	3465.0 - 3535.0	0.242	23.83	27M1G7D
		QPSK	3465.0 - 3535.0	0.251	23.99	28M0G7D
		16QAM	3465.0 - 3535.0	0.176	22.44	28M2W7D
	20 MHz	π/2 BPSK	3460.0 - 3540.0	0.235	23.71	18M2G7D
		QPSK	3460.0 - 3540.0	0.245	23.88	18M5G7D
		16QAM	3460.0 - 3540.0	0.171	22.32	18M4W7D
	15 MHz	π/2 BPSK	3457.5 - 3542.5	0.235	23.70	13M1G7D
		QPSK	3457.5 - 3542.5	0.243	23.86	13M7G7D
		16QAM	3457.5 - 3542.5	0.171	22.33	13M8W7D
	10 MHz	π/2 BPSK	3455.0 - 3545.0	0.233	23.67	8M79G7D
		QPSK	3455.0 - 3545.0	0.243	23.86	8M74G7D
		16QAM	3455.0 - 3545.0	0.168	22.26	8M70W7D

Antenna-1 Main						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n77 PC2 (3700 - 3980MHz)	100 MHz	π/2 BPSK	3750.0 - 3930.0	0.318	25.02	96M8G7D
		QPSK	3750.0 - 3930.0	0.323	25.09	97M5G7D
		16QAM	3750.0 - 3930.0	0.250	23.97	97M5W7D
	90 MHz	π/2 BPSK	3745.0 - 3935.0	0.334	25.23	87M2G7D
		QPSK	3745.0 - 3935.0	0.339	25.30	87M7G7D
		16QAM	3745.0 - 3935.0	0.262	24.18	87M7W7D
	80 MHz	π/2 BPSK	3740.0 - 3940.0	0.332	25.21	77M3G7D
		QPSK	3740.0 - 3940.0	0.340	25.31	77M5G7D
		16QAM	3740.0 - 3940.0	0.260	24.15	77M6W7D
	70 MHz	π/2 BPSK	3735.0 - 3945.0	0.332	25.21	64M7G7D
		QPSK	3735.0 - 3945.0	0.339	25.30	67M8G7D
		16QAM	3735.0 - 3945.0	0.257	24.09	67M6W7D
	60 MHz	π/2 BPSK	3730.0 - 3950.0	0.330	25.18	58M0G7D
		QPSK	3730.0 - 3950.0	0.337	25.27	58M0G7D
		16QAM	3730.0 - 3950.0	0.255	24.06	58M0W7D
	50 MHz	π/2 BPSK	3725.0 - 3955.0	0.322	25.08	46M0G7D
		QPSK	3725.0 - 3955.0	0.329	25.17	47M7G7D
		16QAM	3725.0 - 3955.0	0.253	24.02	47M6W7D
	40 MHz	π/2 BPSK	3720.0 - 3960.0	0.316	25.00	36M0G7D
		QPSK	3720.0 - 3960.0	0.323	25.09	37M9G7D
		16QAM	3720.0 - 3960.0	0.250	23.97	38M0W7D
	30 MHz	π/2 BPSK	3715.0 - 3965.0	0.315	24.98	27M0G7D
		QPSK	3715.0 - 3965.0	0.320	25.05	27M9G7D
		16QAM	3715.0 - 3965.0	0.246	23.91	28M0W7D
	20 MHz	π/2 BPSK	3710.0 - 3970.0	0.304	24.83	18M1G7D
		QPSK	3710.0 - 3970.0	0.312	24.94	18M3G7D
		16QAM	3710.0 - 3970.0	0.241	23.82	18M3W7D
	15 MHz	π/2 BPSK	3707.5 - 3972.5	0.309	24.89	13M0G7D
		QPSK	3707.5 - 3972.5	0.311	24.93	13M7G7D
		16QAM	3707.5 - 3972.5	0.234	23.69	13M7W7D
	10 MHz	π/2 BPSK	3705.0 - 3975.0	0.309	24.89	8M71G7D
		QPSK	3705.0 - 3975.0	0.309	24.90	8M69G7D
		16QAM	3705.0 - 3975.0	0.236	23.73	8M68W7D

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).

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.: 0204M, 0289M, 0760M, 2965M, 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 can transmit in the 5G NR Band n77 band over three separate antennas labelled SRS-1, SRS-2, and SRS-3. With SRS operations, any of these three antennas can transmit an SRS signal to check the channel quality for transmission in the n77 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 n77 band.

Antenna SRS-Label	Alternate Label
NR Band n77 – Main – SRS-1	Ant C
NR Band n77 – Main – SRS-2	Ant H
NR Band n77 – Main – SRS-3	Ant D

Table 2-1. Antenna Labelling Scheme Correlation

Band	Ant1	Ant2	Ant3	Ant4
NR Band n77 - Main	Ant F	Ant C	Ant H	Ant D

Table 2-2. Antenna Report Naming Convention

2.3 Test Configuration

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

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: EP-2400 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 Duty Cycle Information

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

For 5G NR operations, the EUT was set to transmit either via a Factory Test Mode (FTM) software provided by the manufacturer or in an online mode. The EUT duty cycle was set to 100% in all cases during FTM operation. During online operation the EUT duty cycle was set to an operational max using a callbox, where the max duty cycle was determined to be 20.0%. Gated and triggered measurement settings were used in this case. SRS operations were conducted using FTM while all other cases were conducted in an online mode.

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.

3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

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

Deviation from Measurement Procedure……..……None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

$$P_{d\ [dBm]} = P_{g\ [dBm]} - \text{cable loss}_{\ [dB]} + \text{antenna gain}_{\ [dBd/dBi]};$$

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

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

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

And

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

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

Table 4-1. Measurement Uncertainty Budget

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
-	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
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	N9030B	PXA Signal Analyzer, Multi-touch	11/10/2025	Annual	11/10/2026	MY57141001
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	ESU26	EMI Test Receiver (26.5GHz)	12/19/2025	Annual	12/19/2026	100342
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/25/2025	Annual	3/25/2026	101716
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:

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.

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 5-2. 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 5-3. LTx6-40 Conducted Cable Set 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 5-4. MD 1M 18-40 EMC Cable and Switch Components

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 5-5. AP1-002 EMC Cable and Switch Components

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

Table 5-6. ETS-001 EMC Cable and Switch 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 5-7. ETS-002 EMC Cable and Switch Components

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

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): 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 (NR Band n77)	2.1051, 27.53(l), 27.53(n)	≤ -13 dBm / MHz	PASS	Sections 7.4, 7.5
	Peak-to-Average Ratio (NR Band n77)	27.50(j)(4), 27.50(k)(4)	≤ 13 dB	PASS	Section 7.6
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block.	PASS	Section 7.9
RADIATED	Equivalent Isotropic Radiated Power (NR Band n77)	27.50(j)(3), 27.50(k)(3)	≤ 1 Watt EIRP	PASS	Section 7.7
	Radiated Spurious Emissions (NR Band n77)	2.1053, 27.53(l), 27.53(n)	≤ -13 dBm / MHz	PASS	Section 7.8

* 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.

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.

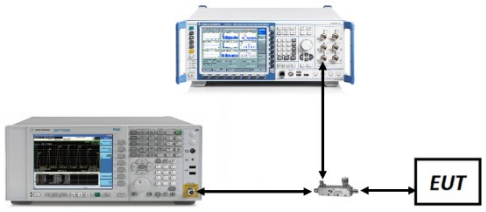


Figure 7-1. Test Instrument & Measurement Setup – Online Mode

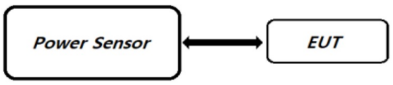


Figure 7-2. Test Instrument & Measurement Setup – FTM Mode

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.

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	633334	3500.01	1 / 1	26.08
	QPSK	633334	3500.01	1 / 1	26.07
	16-QAM	633334	3500.01	1 / 271	25.93
90 MHz	π/2 BPSK	633000	3495.00	1 / 1	26.09
		633334	3500.01	1 / 243	26.02
		633666	3504.99	1 / 243	26.06
	QPSK	633000	3495.00	1 / 1	26.08
		633334	3500.01	1 / 243	26.03
		633666	3504.99	1 / 243	26.08
	16-QAM	633000	3495.00	1 / 1	25.18
		633334	3500.01	1 / 243	25.10
		633666	3504.99	1 / 243	25.15
80 MHz	π/2 BPSK	632668	3490.02	1 / 1	26.15
		633334	3500.01	1 / 1	26.01
		634000	3510.00	1 / 215	25.91
	QPSK	632668	3490.02	1 / 1	26.15
		633334	3500.01	1 / 1	26.02
		634000	3510.00	1 / 215	25.93
	16-QAM	632668	3490.02	1 / 1	25.29
		633334	3500.01	1 / 1	25.13
		634000	3510.00	1 / 215	25.04
70 MHz	π/2 BPSK	632334	3485.01	1 / 1	26.30
		633334	3500.01	1 / 1	26.01
		634332	3514.98	1 / 187	25.96
	QPSK	632334	3485.01	1 / 1	26.32
		633334	3500.01	1 / 1	26.02
		634332	3514.98	1 / 187	25.96
	16-QAM	632334	3485.01	1 / 1	25.44
		633334	3500.01	1 / 1	25.13
		634332	3514.98	1 / 187	25.09
60 MHz	π/2 BPSK	632000	3480.00	1 / 1	26.19
		633334	3500.01	1 / 1	25.83
		634666	3519.99	1 / 160	25.82
	QPSK	632000	3480.00	1 / 1	26.19
		633334	3500.01	1 / 1	25.83
		634666	3519.99	1 / 160	25.83
	16-QAM	632000	3480.00	1 / 1	25.33
		633334	3500.01	1 / 1	24.98
		634666	3519.99	1 / 160	24.95
50 MHz	π/2 BPSK	631668	3475.02	1 / 1	26.18
		633334	3500.01	1 / 1	25.70
		635000	3525.00	1 / 131	25.71
	QPSK	631668	3475.02	1 / 1	26.17
		633334	3500.01	1 / 131	25.71
		635000	3525.00	1 / 131	25.73
	16-QAM	631668	3475.02	1 / 1	25.29
		633334	3500.01	1 / 1	24.78
		635000	3525.00	1 / 131	24.79
40 MHz	π/2 BPSK	631334	3470.01	1 / 1	26.11
		633334	3500.01	1 / 104	25.64
		635332	3529.98	1 / 104	25.74
	QPSK	631334	3470.01	1 / 1	26.12
		633334	3500.01	1 / 104	25.64
		635332	3529.98	1 / 104	25.75
	16-QAM	631334	3470.01	1 / 1	25.24
		633334	3500.01	1 / 104	24.77
		635332	3529.98	1 / 104	24.87
30 MHz	π/2 BPSK	631000	3465.00	1 / 1	26.10
		633334	3500.01	1 / 76	25.59
		635666	3534.99	1 / 76	25.78
	QPSK	631000	3465.00	1 / 1	26.10
		633334	3500.01	1 / 76	25.59
		635666	3534.99	1 / 76	25.78
	16-QAM	631000	3465.00	1 / 1	25.24
		633334	3500.01	1 / 1	24.73
		635666	3534.99	1 / 76	24.92
20 MHz	π/2 BPSK	630668	3460.02	1 / 1	25.98
		633334	3500.01	1 / 1	25.49
		636000	3540.00	1 / 25	25.62
	QPSK	630668	3460.02	1 / 1	25.99
		633334	3500.01	1 / 1	25.46
		636000	3540.00	1 / 25	25.65
	16-QAM	630668	3460.02	1 / 1	25.12
		633334	3500.01	1 / 1	24.58
		636000	3540.00	1 / 1	24.71
15 MHz	π/2 BPSK	630500	3457.50	1 / 1	25.97
		633334	3500.01	1 / 1	25.44
		636166	3542.49	1 / 1	25.63
	QPSK	630500	3457.50	1 / 1	25.97
		633334	3500.01	1 / 36	25.43
		636166	3542.49	1 / 19	25.63
	16-QAM	630500	3457.50	1 / 19	25.13
		633334	3500.01	1 / 1	24.58
		636166	3542.49	1 / 19	24.80
10 MHz	π/2 BPSK	630334	3455.01	1 / 1	25.94
		633334	3500.01	1 / 22	25.41
		636332	3544.98	1 / 12	25.68
	QPSK	630334	3455.01	1 / 1	25.97
		633334	3500.01	1 / 22	25.44
		636332	3544.98	1 / 1	25.67
	16-QAM	630334	3455.01	1 / 12	25.06
		633334	3500.01	1 / 22	24.56
		636332	3544.98	1 / 12	24.86

Table 7-2. Conducted Power Results – n77 – Ant1 – DoD Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	633334	3500.01	1 / 1	22.96
	QPSK	633334	3500.01	1 / 1	22.97
	16-QAM	633334	3500.01	1 / 1	22.80

Table 7-3. Conducted Power Results – n77 – Ant2 – DoD Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	633334	3500.01	1 / 136	22.63
	QPSK	633334	3500.01	1 / 136	22.69
	16-QAM	633334	3500.01	1 / 136	22.39

Table 7-4. Conducted Power Results – n77 – Ant3 – DoD Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	633334	3500.01	1 / 271	21.87
	QPSK	633334	3500.01	1 / 271	21.91
	16-QAM	633334	3500.01	1 / 271	21.74

Table 7-5. Conducted Power Results – n77 – Ant4 – DoD Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	650000	3750.00	1 / 136	25.70
		656000	3840.00	1 / 271	25.69
		662000	3930.00	1 / 1	25.60
	QPSK	650000	3750.00	1 / 136	25.82
		656000	3840.00	1 / 271	25.68
		662000	3930.00	1 / 1	25.61
	16-QAM	650000	3750.00	1 / 136	24.82
		656000	3840.00	1 / 271	24.83
		662000	3930.00	1 / 1	24.75
90 MHz	π/2 BPSK	649668	3745.02	1 / 122	25.76
		656000	3840.00	1 / 243	25.90
		662332	3934.98	1 / 1	25.37
	QPSK	649668	3745.02	1 / 122	25.70
		656000	3840.00	1 / 243	25.89
		662332	3934.98	1 / 1	25.38
	16-QAM	649668	3745.02	1 / 122	24.78
		656000	3840.00	1 / 243	25.04
		662332	3934.98	1 / 1	24.53
80 MHz	π/2 BPSK	649334	3740.01	1 / 108	25.85
		656000	3840.00	1 / 215	25.88
		662666	3939.99	1 / 1	25.54
	QPSK	649334	3740.01	1 / 108	25.81
		656000	3840.00	1 / 215	25.90
		662666	3939.99	1 / 1	25.54
	16-QAM	649334	3740.01	1 / 108	24.87
		656000	3840.00	1 / 215	25.01
		662666	3939.99	1 / 1	24.68
70 MHz	π/2 BPSK	649000	3735.00	1 / 94	25.70
		656000	3840.00	1 / 187	25.88
		663000	3945.00	1 / 1	25.67
	QPSK	649000	3735.00	1 / 94	25.73
		656000	3840.00	1 / 187	25.89
		663000	3945.00	1 / 1	25.67
	16-QAM	649000	3735.00	1 / 94	24.82
		656000	3840.00	1 / 187	24.95
		663000	3945.00	1 / 1	24.84
60 MHz	π/2 BPSK	648668	3730.02	1 / 81	25.75
		656000	3840.00	1 / 160	25.85
		663332	3949.98	1 / 1	25.48
	QPSK	648668	3730.02	1 / 81	25.75
		656000	3840.00	1 / 160	25.86
		663332	3949.98	1 / 1	25.50
	16-QAM	648668	3730.02	1 / 81	24.90
		656000	3840.00	1 / 160	24.92
		663332	3949.98	1 / 1	24.59
50 MHz	π/2 BPSK	648334	3725.01	1 / 131	25.74
		656000	3840.00	1 / 131	25.75
		663666	3954.99	1 / 66	25.36
	QPSK	648334	3725.01	1 / 131	25.75
		656000	3840.00	1 / 131	25.76
		663666	3954.99	1 / 1	25.34
	16-QAM	648334	3725.01	1 / 131	24.89
		656000	3840.00	1 / 131	24.88
		663666	3954.99	1 / 1	24.46
40 MHz	π/2 BPSK	648000	3720.00	1 / 104	25.81
		656000	3840.00	1 / 104	25.67
		664000	3960.00	1 / 1	25.30
	QPSK	648000	3720.00	1 / 104	25.81
		656000	3840.00	1 / 104	25.68
		664000	3960.00	1 / 1	25.30
	16-QAM	648000	3720.00	1 / 104	24.90
		656000	3840.00	1 / 104	24.83
		664000	3960.00	1 / 1	24.44
30 MHz	π/2 BPSK	647668	3715.02	1 / 76	25.62
		656000	3840.00	1 / 39	25.65
		664332	3964.98	1 / 1	25.34
	QPSK	647668	3715.02	1 / 76	25.62
		656000	3840.00	1 / 76	25.64
		664332	3964.98	1 / 1	25.36
	16-QAM	647668	3715.02	1 / 76	24.77
		656000	3840.00	1 / 76	24.77
		664332	3964.98	1 / 1	24.42
20 MHz	π/2 BPSK	647334	3710.01	1 / 25	25.44
		656000	3840.00	1 / 49	25.50
		664666	3969.99	1 / 1	25.16
	QPSK	647334	3710.01	1 / 49	25.44
		656000	3840.00	1 / 25	25.53
		664666	3969.99	1 / 1	25.16
	16-QAM	647334	3710.01	1 / 49	24.53
		656000	3840.00	1 / 49	24.68
		664666	3969.99	1 / 1	24.28
15 MHz	π/2 BPSK	647168	3707.52	1 / 19	25.36
		656000	3840.00	1 / 19	25.56
		664832	3972.48	1 / 1	25.07
	QPSK	647168	3707.52	1 / 36	25.33
		656000	3840.00	1 / 36	25.52
		664832	3972.48	1 / 1	25.08
	16-QAM	647168	3707.52	1 / 19	24.51
		656000	3840.00	1 / 36	24.55
		664832	3972.48	1 / 1	24.21
10 MHz	π/2 BPSK	647000	3705.00	1 / 12	25.28
		656000	3840.00	1 / 12	25.56
		664332	3975.00	1 / 1	24.90
	QPSK	647000	3705.00	1 / 1	25.26
		656000	3840.00	1 / 12	25.49
		664332	3975.00	1 / 1	24.92
	16-QAM	647000	3705.00	1 / 12	24.38
		656000	3840.00	1 / 12	24.59
		664332	3975.00	1 / 1	24.04

Table 7-6. Conducted Power Results – n77 – Ant1 – C-Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	650000	3750.00	1 / 136	22.93
		656000	3840.00	1 / 136	22.91
		662000	3930.00	1 / 136	22.94
	QPSK	650000	3750.00	1 / 136	22.80
		656000	3840.00	1 / 136	22.74
		662000	3930.00	1 / 136	21.81
	16-QAM	650000	3750.00	1 / 136	22.66
		656000	3840.00	1 / 136	22.25
		662000	3930.00	1 / 136	21.89

Table 7-7. Conducted Power Results – n77 – Ant2 – C-Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	650000	3750.00	1 / 136	22.49
		656000	3840.00	1 / 136	22.35
		662000	3930.00	1 / 136	22.74
	QPSK	650000	3750.00	1 / 136	22.60
		656000	3840.00	1 / 136	22.73
		662000	3930.00	1 / 136	22.93
	16-QAM	650000	3750.00	1 / 136	22.21
		656000	3840.00	1 / 136	22.16
		662000	3930.00	1 / 136	22.92

Table 7-8. Conducted Power Results – n77 – Ant3 – C-Band – Main

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	650000	3750.00	1 / 136	21.09
		656000	3840.00	1 / 136	21.25
		662000	3930.00	1 / 1	21.97
	QPSK	650000	3750.00	1 / 136	21.20
		656000	3840.00	1 / 136	21.48
		662000	3930.00	1 / 1	21.76
	16-QAM	650000	3750.00	1 / 136	20.79
		656000	3840.00	1 / 136	21.05
		662000	3930.00	1 / 1	21.77

Table 7-9. Conducted Power Results – n77 – Ant4 – C-Band – Main

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 ≥ 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.

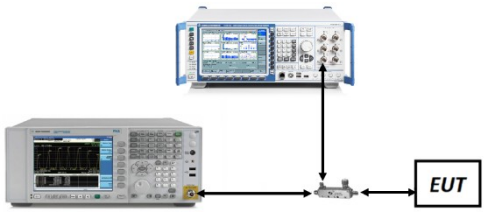


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

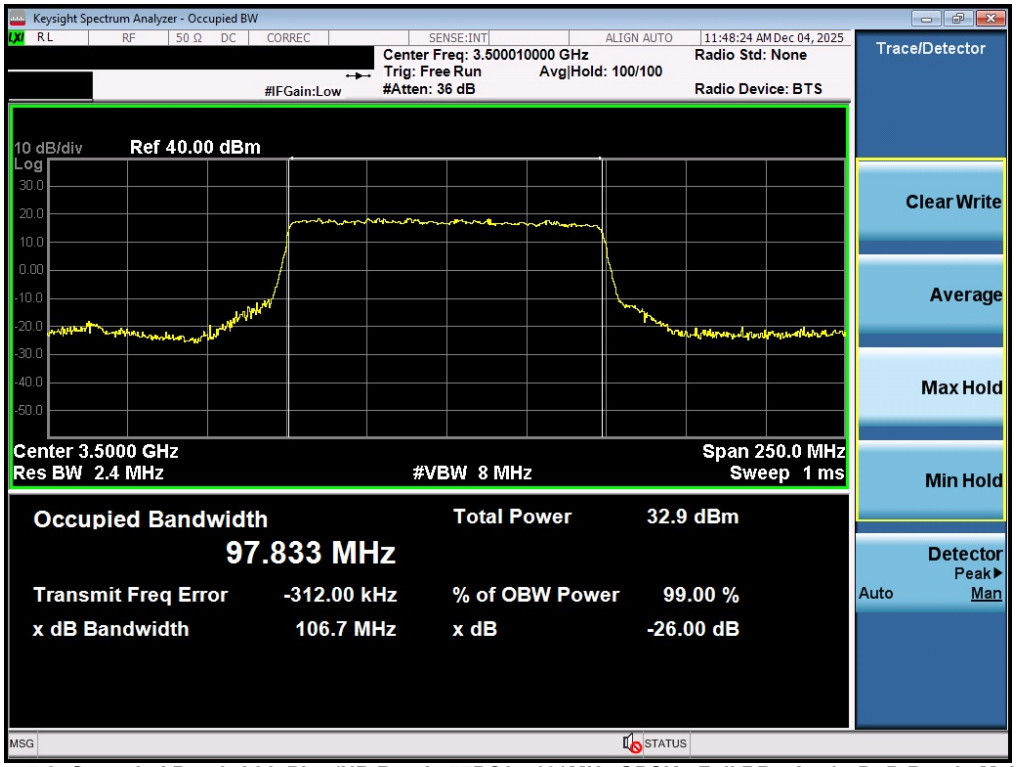
None.

Mode	Bandwidth	Modulation	OBW [MHz]
NR-n77PC2 DoD Band	100MHz	π/2 BPSK	96.892
		QPSK	97.833
		16QAM	97.518
	90MHz	π/2 BPSK	87.309
		QPSK	87.949
		16QAM	87.795
	80MHz	π/2 BPSK	77.617
		QPSK	77.832
		16QAM	77.738
	70MHz	π/2 BPSK	64.749
		QPSK	67.948
		16QAM	67.857
	60MHz	π/2 BPSK	58.294
		QPSK	58.224
		16QAM	58.141
	50MHz	π/2 BPSK	46.172
		QPSK	47.833
		16QAM	47.815
	40MHz	π/2 BPSK	36.133
		QPSK	38.092
		16QAM	38.045
	30MHz	π/2 BPSK	27.121
		QPSK	27.986
		16QAM	28.191
	20MHz	π/2 BPSK	18.161
		QPSK	18.472
		16QAM	18.427
	15MHz	π/2 BPSK	13.132
		QPSK	13.729
		16QAM	13.751
	10MHz	π/2 BPSK	8.786
		QPSK	8.742
		16QAM	8.701

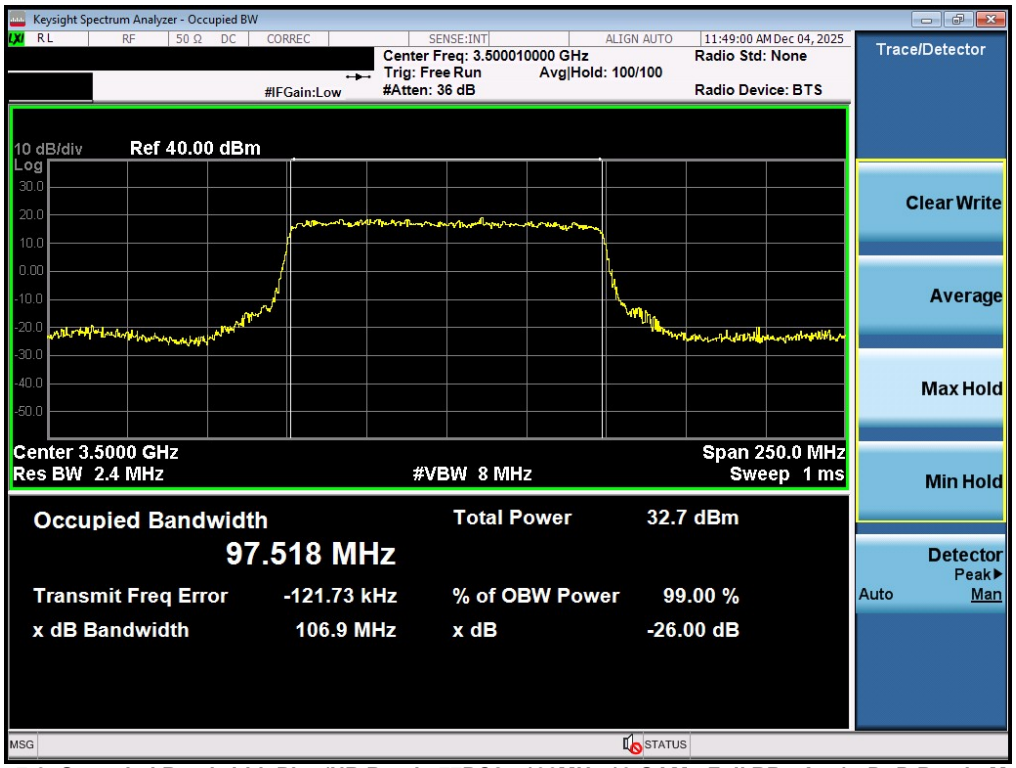
Table 7-10. Occupied Bandwidth Results - Ant1 - DoD Band – Main

NR Band n77PC2 - Ant1 - DoD Band - Main

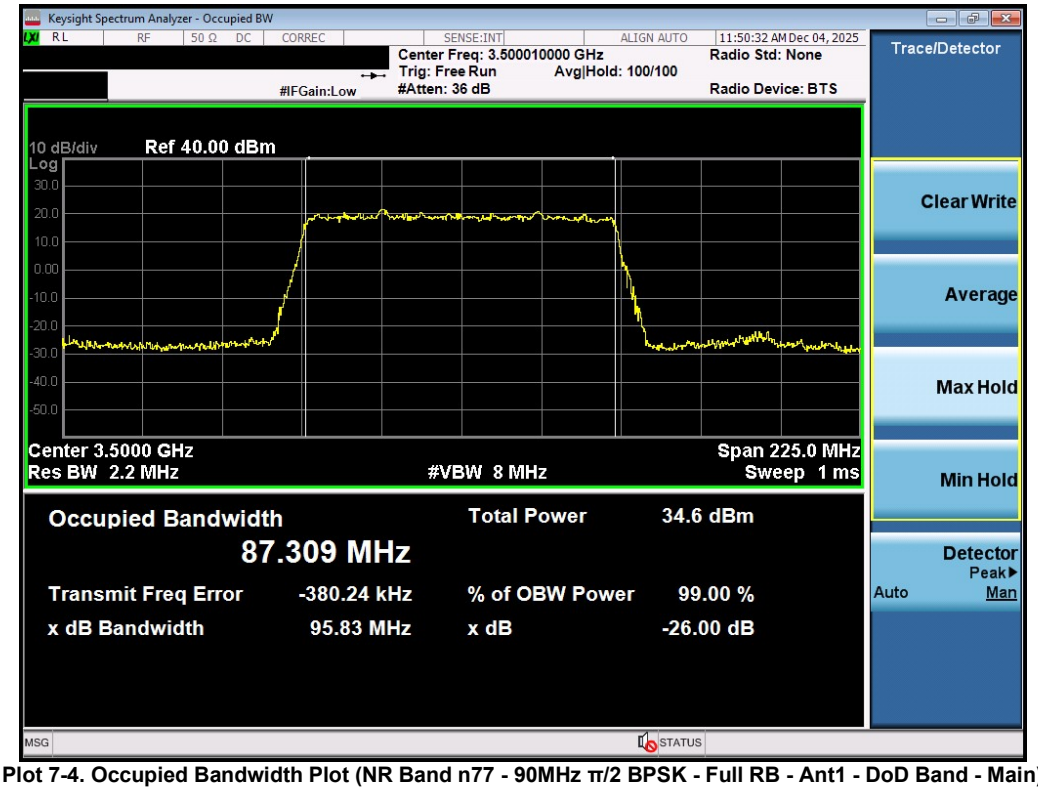
Plot 7-1. Occupied Bandwidth Plot (NR Band n77PC2 - 100MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



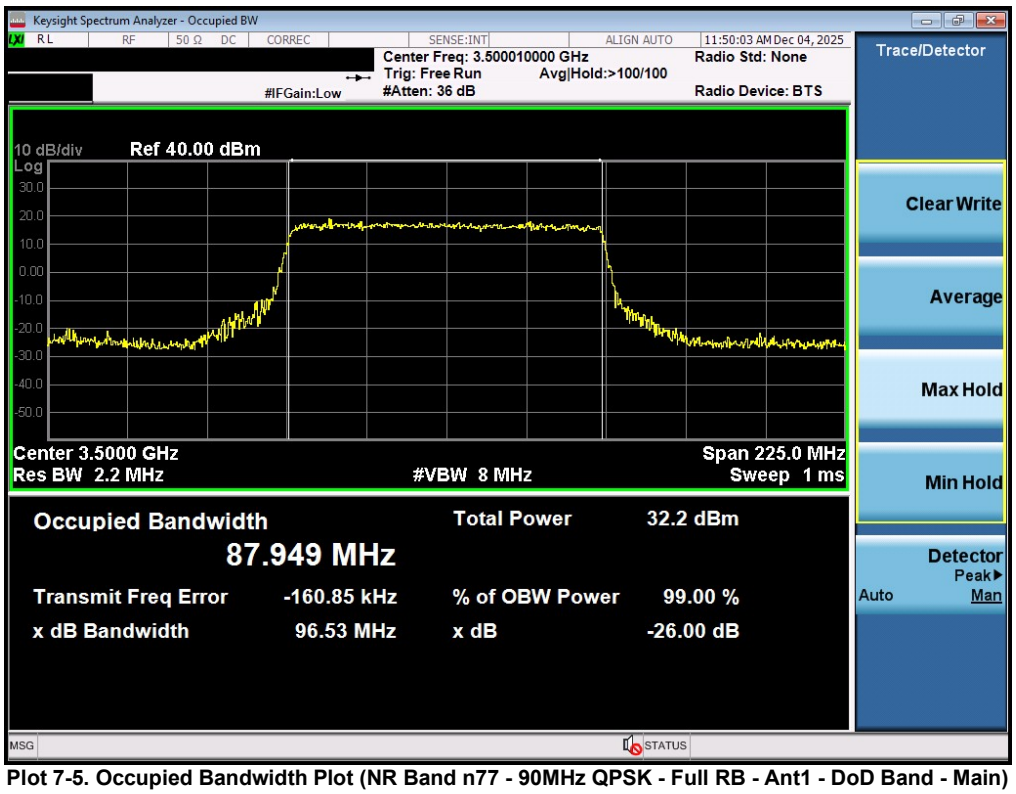
Plot 7-2. Occupied Bandwidth Plot (NR Band n77PC2 - 100MHz QPSK - Full RB - Ant1 - DoD Band - Main)



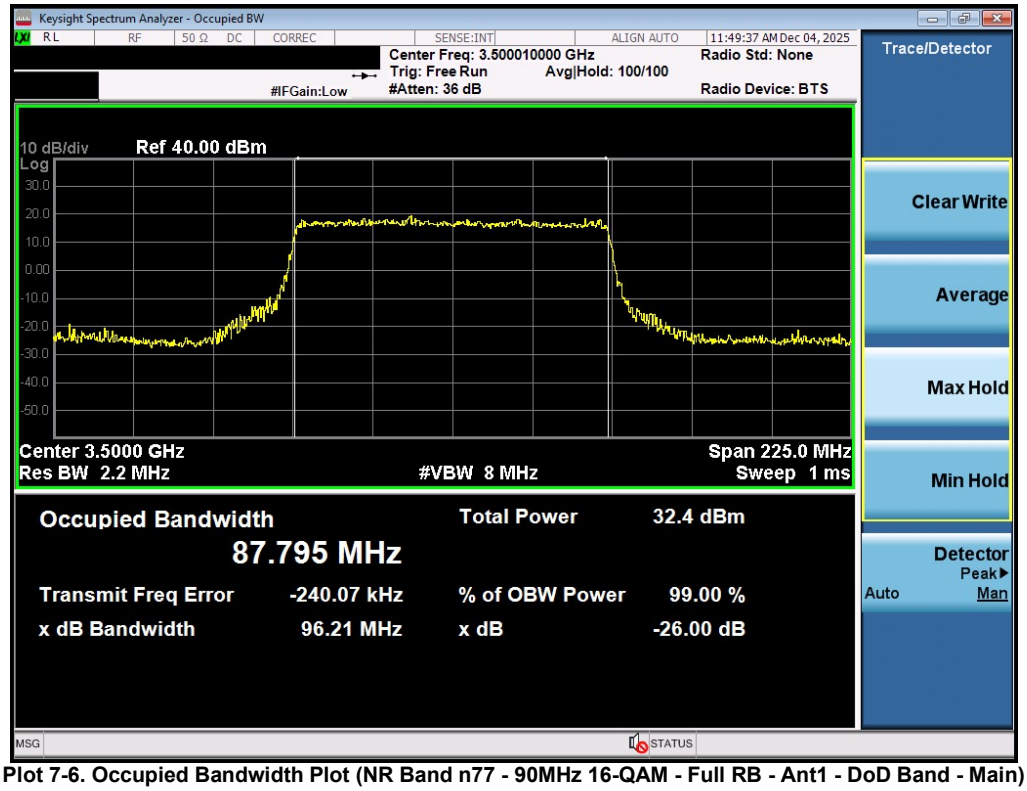
Plot 7-3. Occupied Bandwidth Plot (NR Band n77PC2 - 100MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



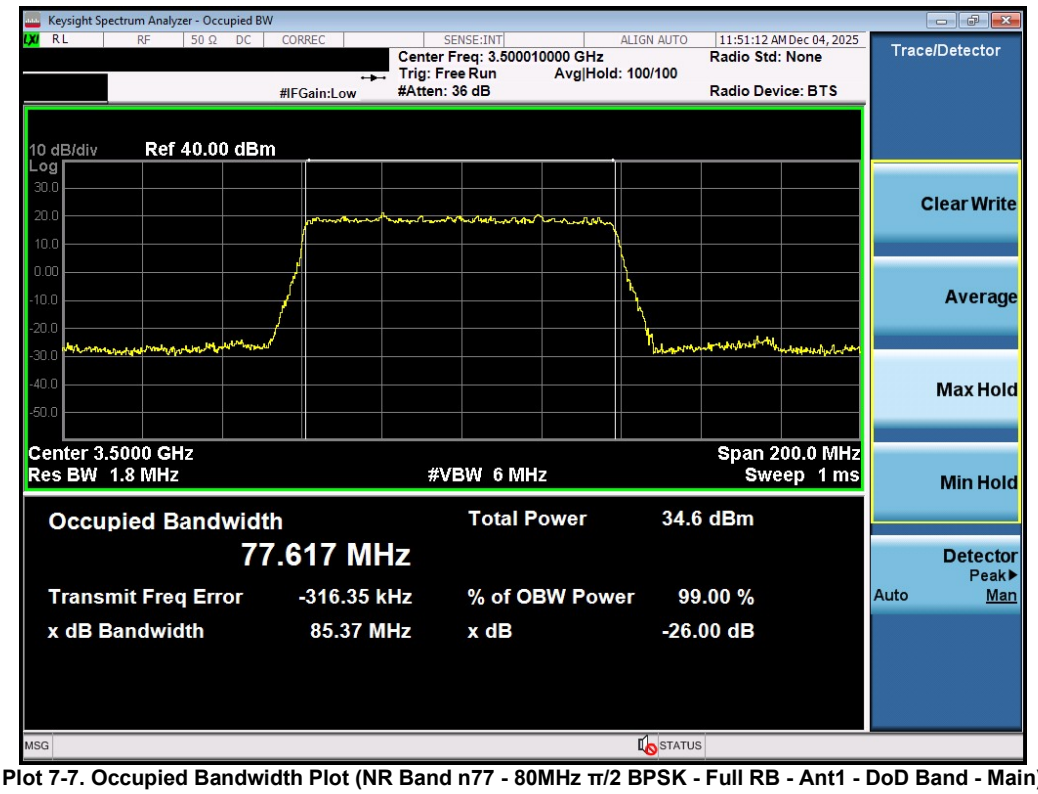
Plot 7-4. Occupied Bandwidth Plot (NR Band n77 - 90MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



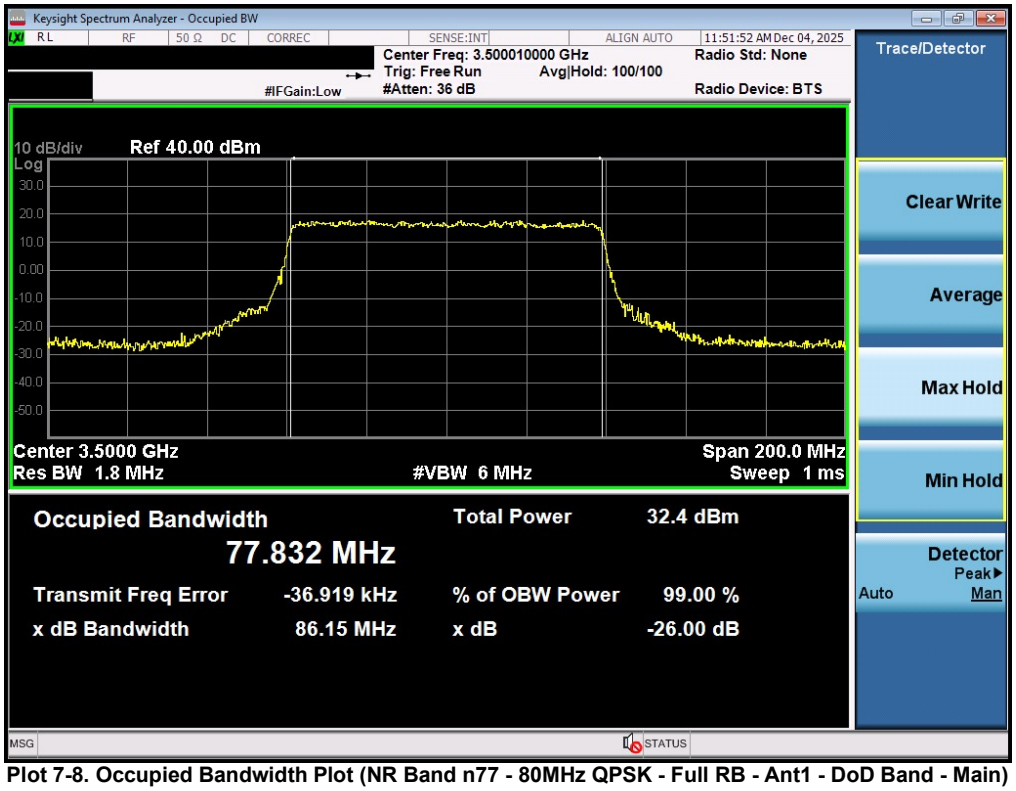
Plot 7-5. Occupied Bandwidth Plot (NR Band n77 - 90MHz QPSK - Full RB - Ant1 - DoD Band - Main)



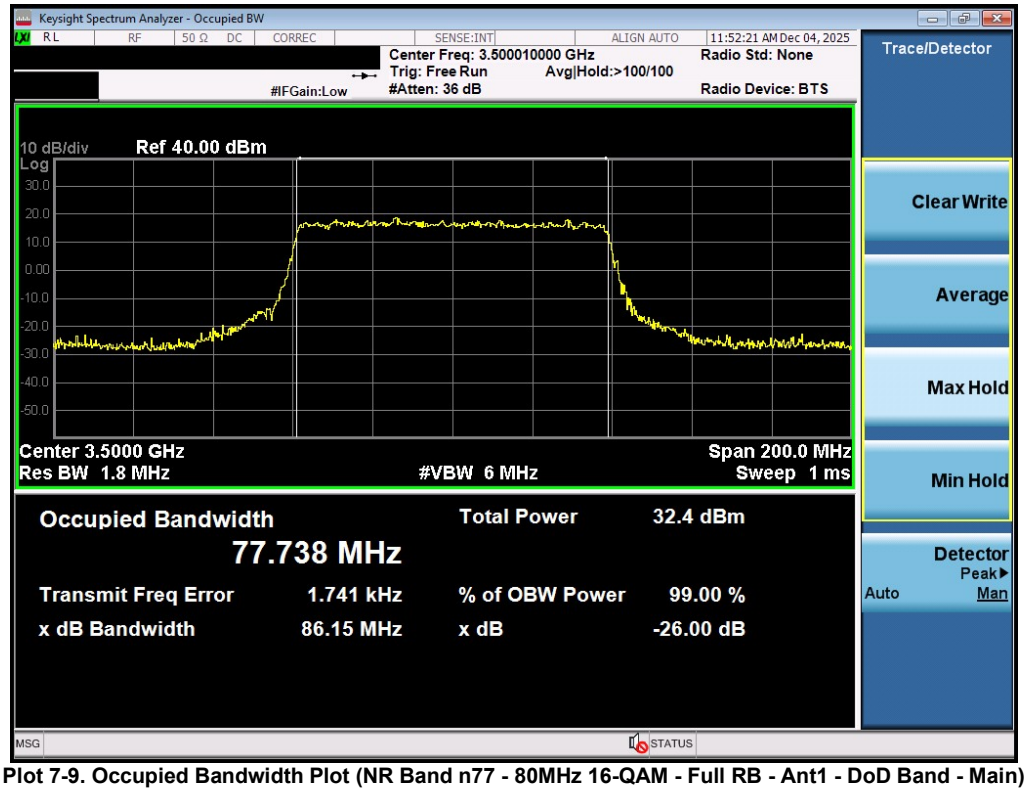
Plot 7-6. Occupied Bandwidth Plot (NR Band n77 - 90MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



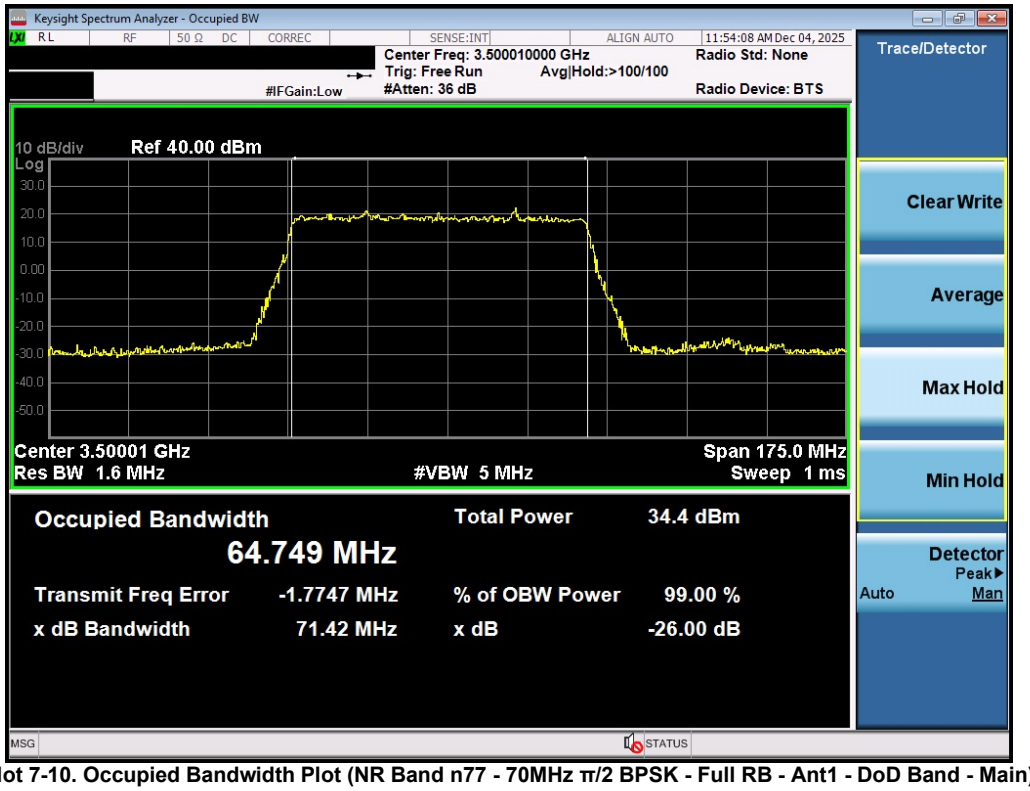
Plot 7-7. Occupied Bandwidth Plot (NR Band n77 - 80MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



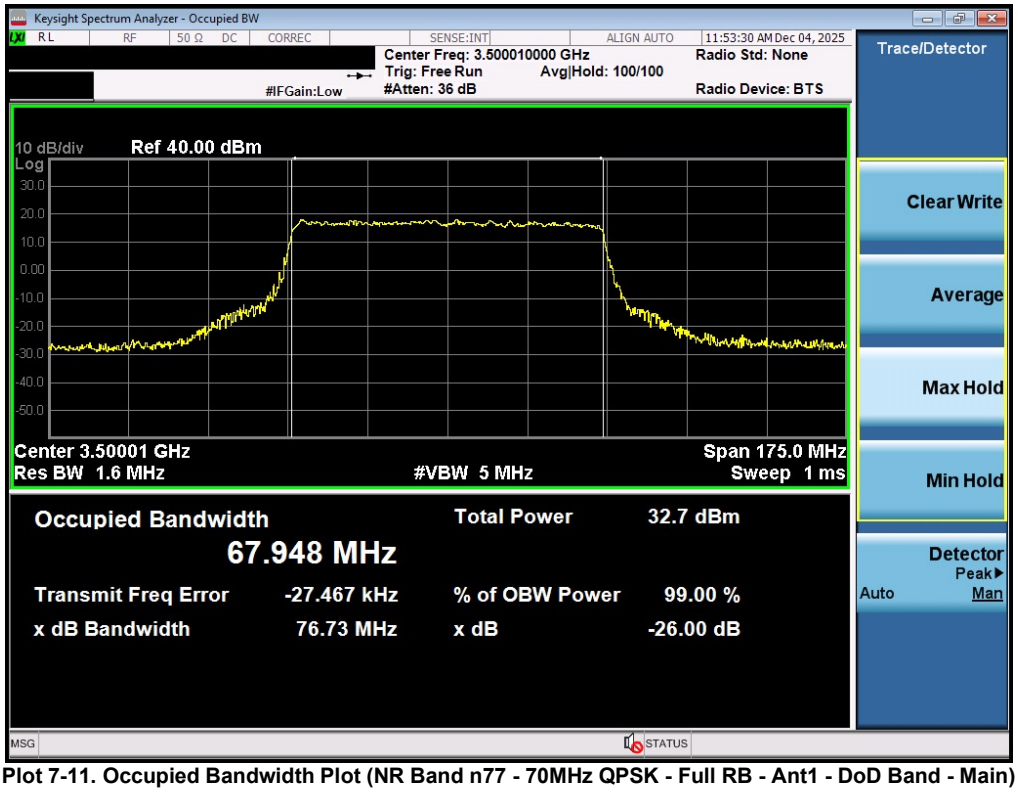
Plot 7-8. Occupied Bandwidth Plot (NR Band n77 - 80MHz QPSK - Full RB - Ant1 - DoD Band - Main)



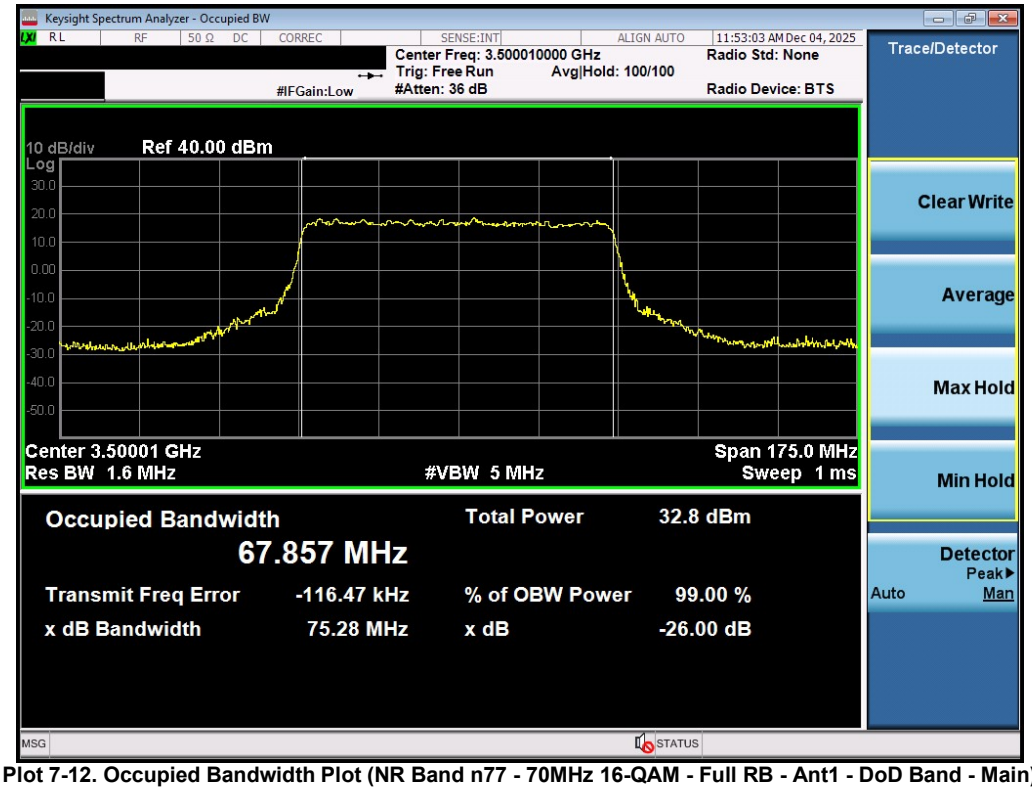
Plot 7-9. Occupied Bandwidth Plot (NR Band n77 - 80MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



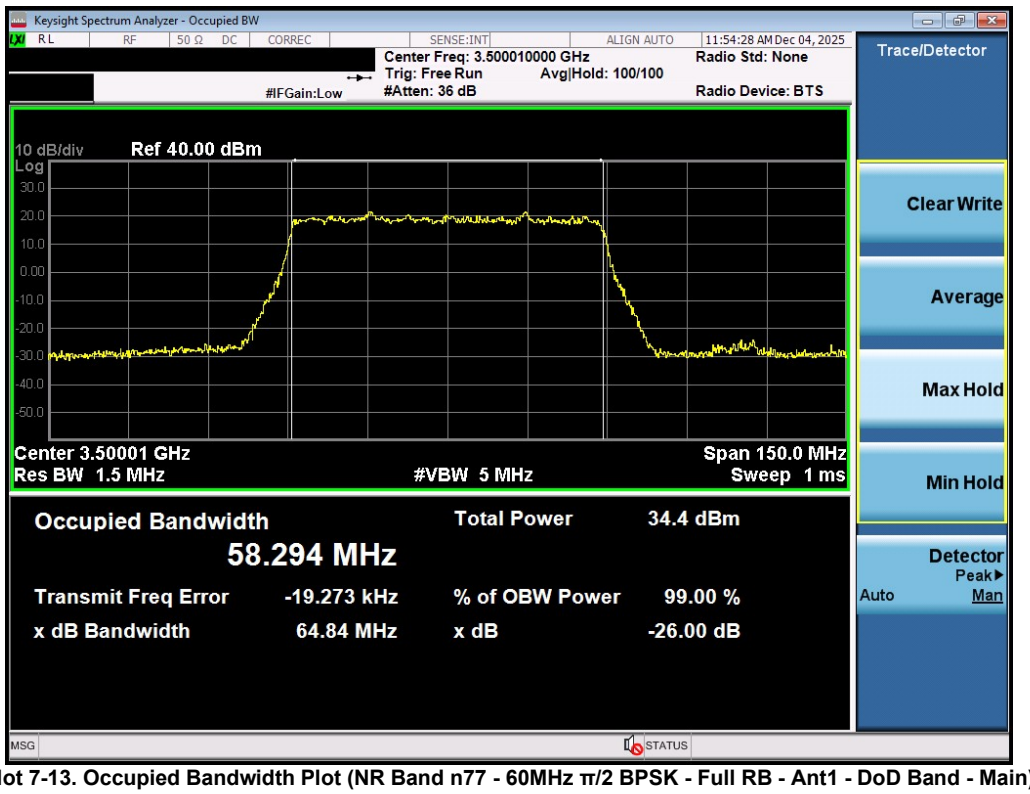
Plot 7-10. Occupied Bandwidth Plot (NR Band n77 - 70MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



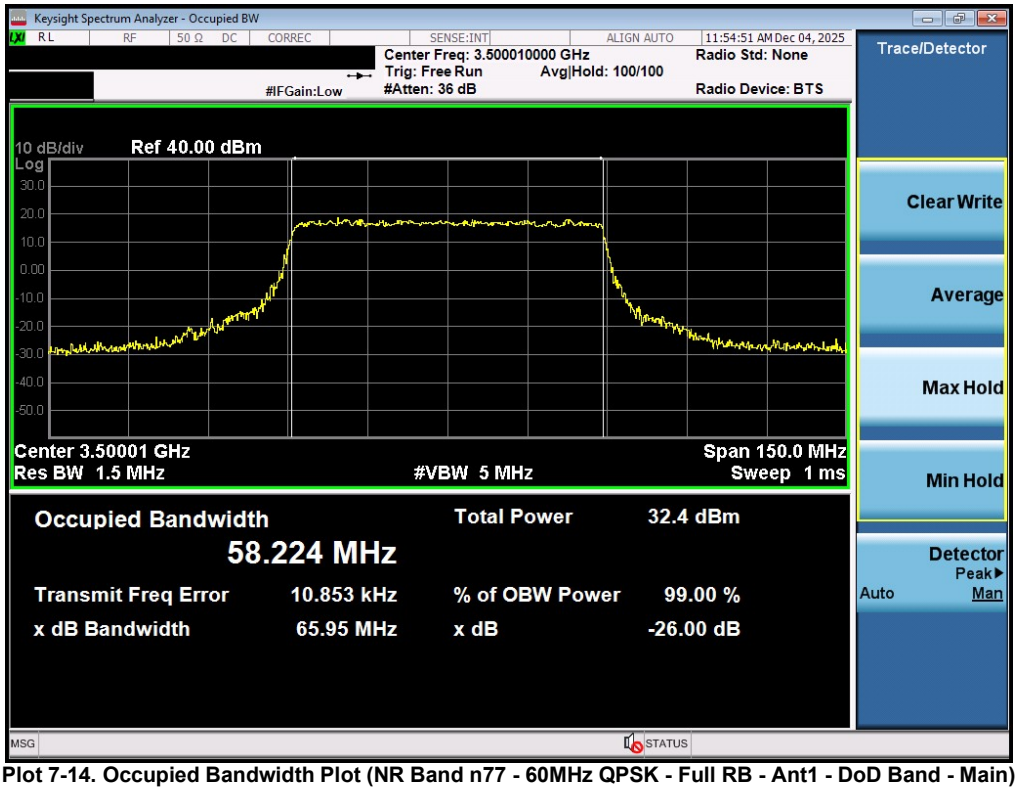
Plot 7-11. Occupied Bandwidth Plot (NR Band n77 - 70MHz QPSK - Full RB - Ant1 - DoD Band - Main)



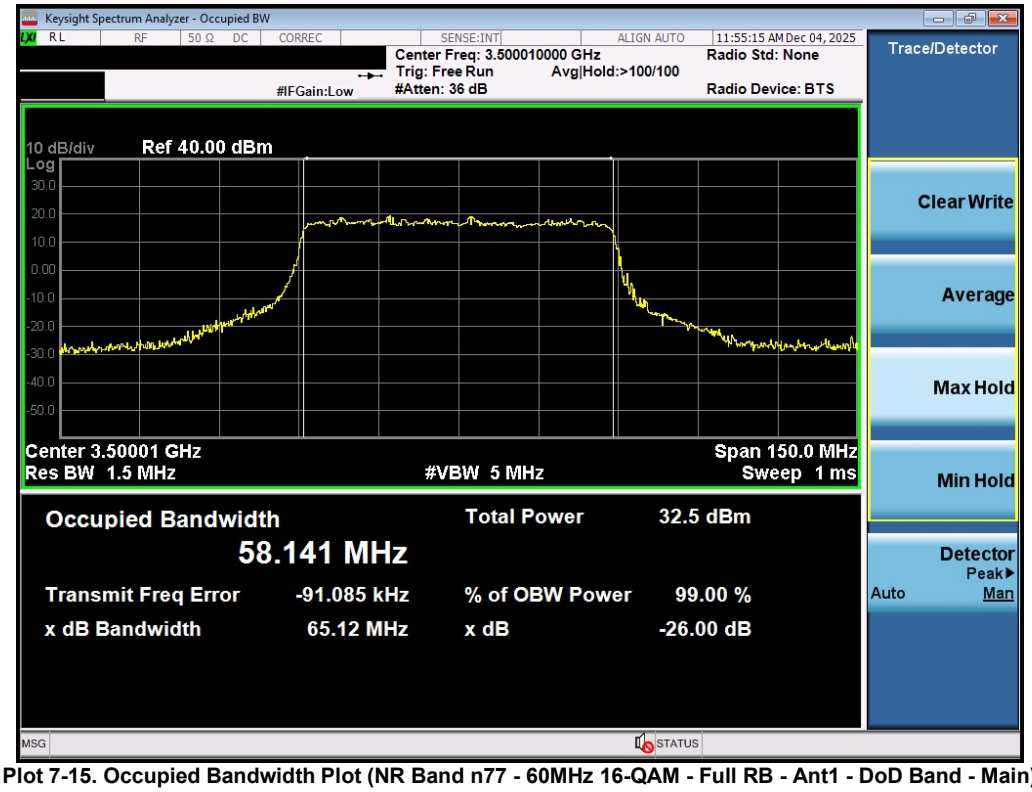
Plot 7-12. Occupied Bandwidth Plot (NR Band n77 - 70MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



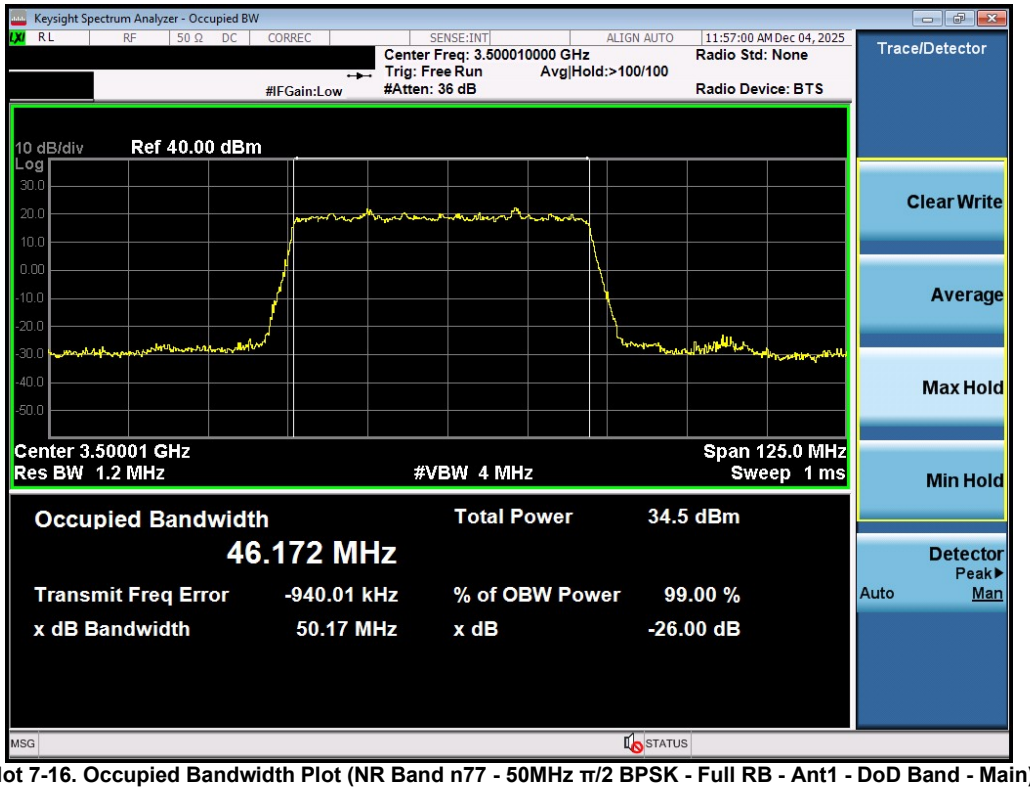
Plot 7-13. Occupied Bandwidth Plot (NR Band n77 - 60MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



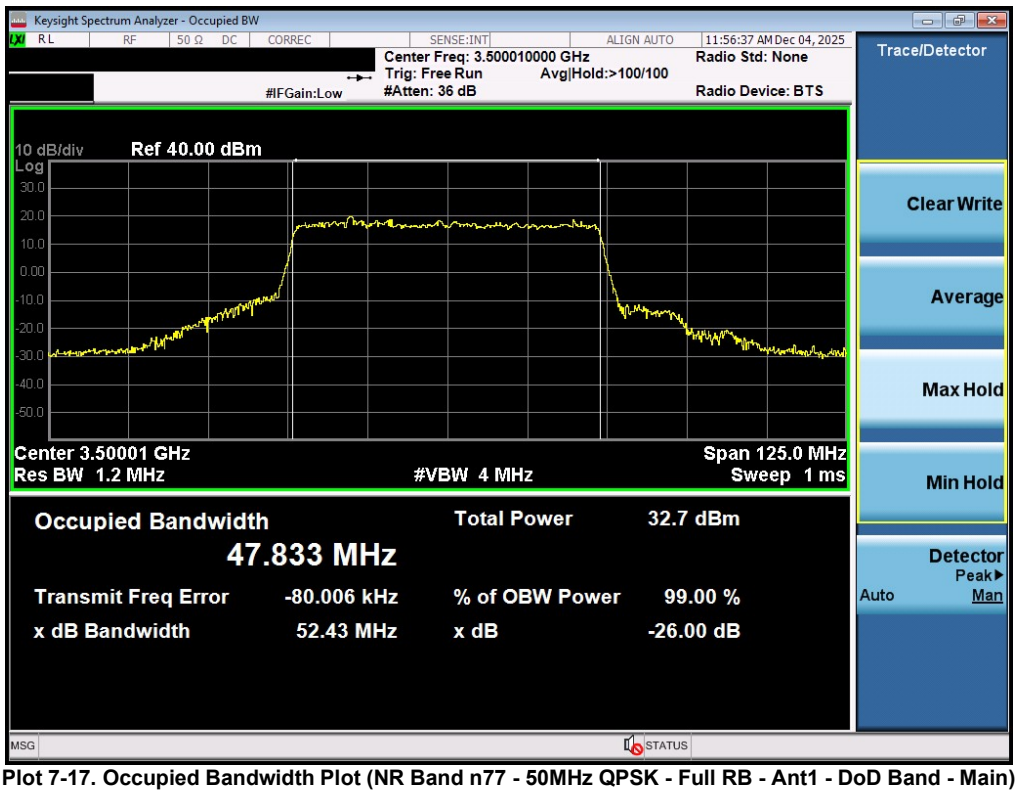
Plot 7-14. Occupied Bandwidth Plot (NR Band n77 - 60MHz QPSK - Full RB - Ant1 - DoD Band - Main)



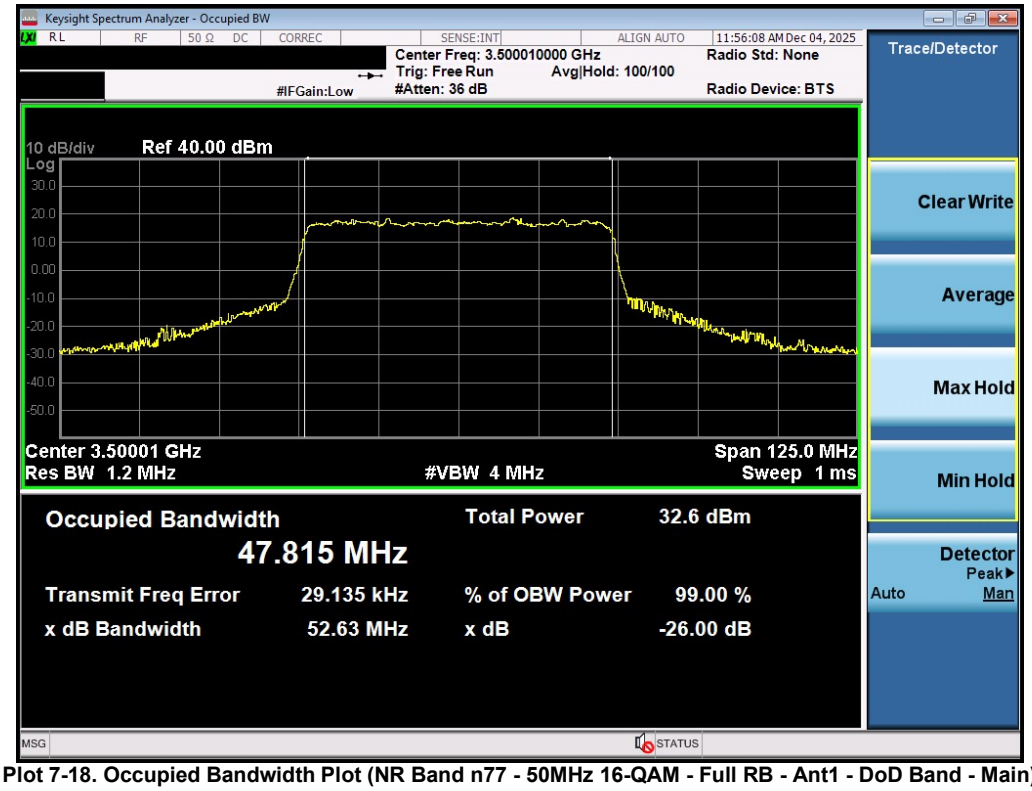
Plot 7-15. Occupied Bandwidth Plot (NR Band n77 - 60MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



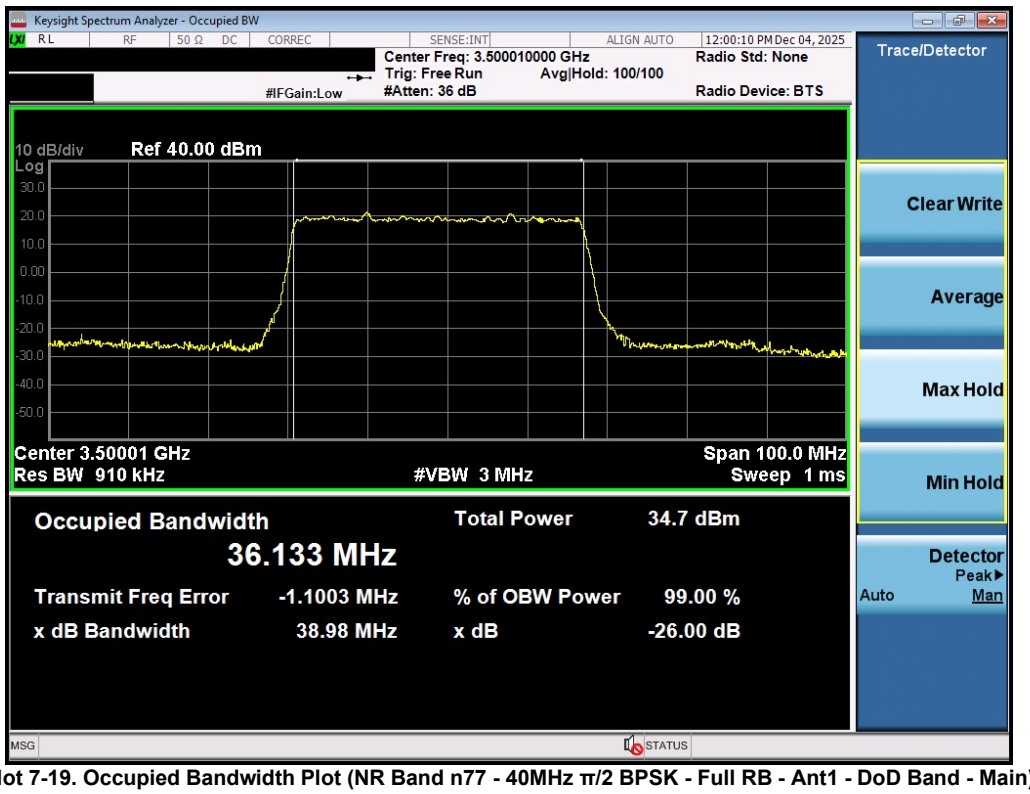
Plot 7-16. Occupied Bandwidth Plot (NR Band n77 - 50MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



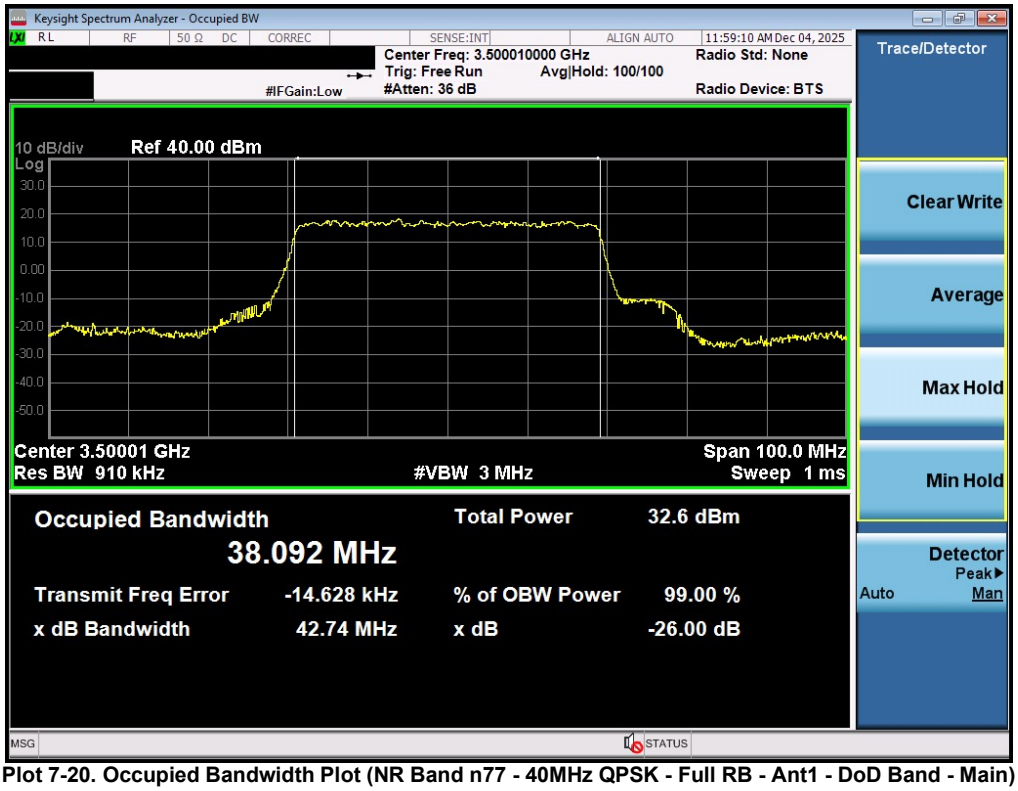
Plot 7-17. Occupied Bandwidth Plot (NR Band n77 - 50MHz QPSK - Full RB - Ant1 - DoD Band - Main)



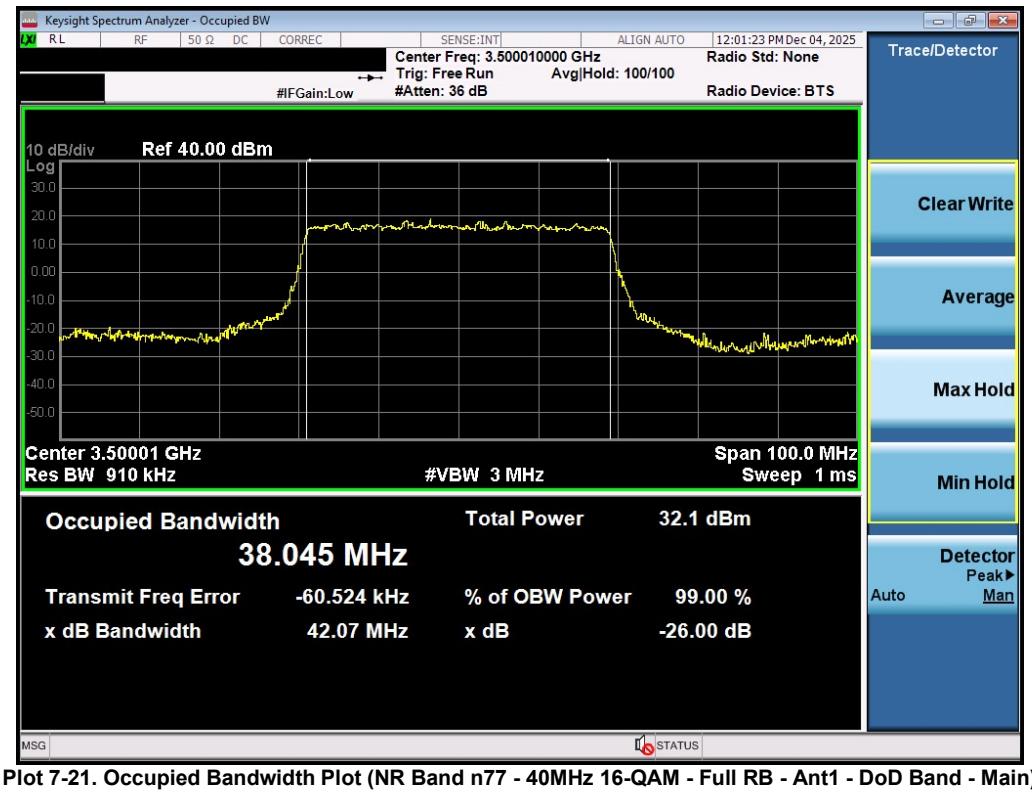
Plot 7-18. Occupied Bandwidth Plot (NR Band n77 - 50MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



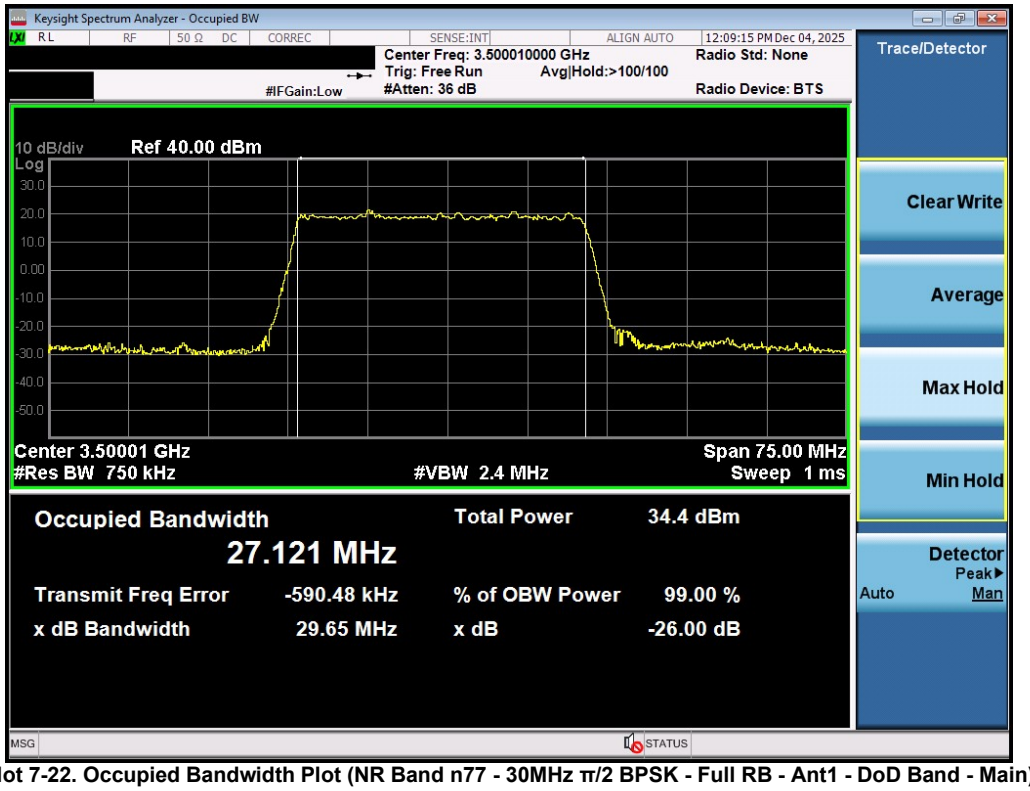
Plot 7-19. Occupied Bandwidth Plot (NR Band n77 - 40MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)



Plot 7-20. Occupied Bandwidth Plot (NR Band n77 - 40MHz QPSK - Full RB - Ant1 - DoD Band - Main)



Plot 7-21. Occupied Bandwidth Plot (NR Band n77 - 40MHz 16-QAM - Full RB - Ant1 - DoD Band - Main)



Plot 7-22. Occupied Bandwidth Plot (NR Band n77 - 30MHz π/2 BPSK - Full RB - Ant1 - DoD Band - Main)