

### **ELEMENT SUWON**

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## PART 27 MEASUREMENT REPORT

#### **Applicant Name:**

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea Date of Testing: 09/03/2024 - 11/05/2024 Test Report Issue Date: 11/12/2024 Test Site/Location: Element Lab. Yongin-Si, Gyeonggi-do, South Korea Test Report Serial No.: 1M2408260069-08.A3L

# FCC ID:

### A3LSMS938B

#### Samsung Electronics Co., Ltd.

Application Type: Model: Additional Model: EUT Type: FCC Classification: FCC Rule Part: Test Procedure(s):

Applicant Name:

Certification SM-S938B/DS SM-S938B Portable Handset PCS Licensed Transmitter Held to Ear (PCE) 27 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.

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.

R

Prepared by

Reviewed by

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	Antenna-F						
				Ell	RP		
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator	
		π/2 BPSK	3500.0	0.338	25.29	96M9G7D	
	100 MHz	QPSK	3500.0	0.337	25.27	98M1G7D	
		16QAM	3500.0	0.264	24.21	98M0W7D	
		π/2 BPSK	3495.0 - 3505.0	0.343	25.35	87M3G7D	
	90 MHz	QPSK	3495.0 - 3505.0	0.351	25.45	88M0G7D	
		16QAM	3495.0 - 3505.0	0.274	24.38	88M1W7D	
		π/2 BPSK	3490.0 - 3510.0	0.341	25.33	77M4G7D	
	80 MHz	QPSK	3490.0 - 3510.0	0.354	25.48	77M8G7D	
		16QAM	3490.0 - 3510.0	0.278	24.45	77M9W7D	
		π/2 BPSK	3485.0 - 3515.0	0.343	25.35	64M8G7D	
	70 MHz	QPSK	3485.0 - 3515.0	0.354	25.48	67M8G7D	
		16QAM	3485.0 - 3515.0	0.280	24.46	67M7W7D	
		π/2 BPSK	3480.0 - 3520.0	0.336	25.27	58M2G7D	
	60 MHz	QPSK	3480.0 - 3520.0	0.349	25.42	58M1G7D	
		16QAM	3480.0 - 3520.0	0.272	24.35	58M2W7D	
		π/2 BPSK	3475.0 - 3525.0	0.342	25.34	45M9G7D	
	50 MHz	QPSK	3475.0 - 3525.0	0.351	25.45	47M7G7D	
NR Band n77 PC2		16QAM	3475.0 - 3525.0	0.276	24.42	47M8W7D	
(3450 - 3550MHz)		π/2 BPSK	3470.0 - 3530.0	0.343	25.35	35M9G7D	
	40 MHz	QPSK	3470.0 - 3530.0	0.354	25.49	38M1G7D	
		16QAM	3470.0 - 3530.0	0.272	24.34	38M0W7D	
		π/2 BPSK	3465.0 - 3535.0	0.340	25.32	27M0G7D	
	30 MHz	QPSK	3465.0 - 3535.0	0.354	25.49	28M0G7D	
		16QAM	3465.0 - 3535.0	0.274	24.37	28M1W7D	
		π/2 BPSK	3462.5 - 3537.5	0.317	25.01	23M0G7D	
	25 MHz	QPSK	3462.5 - 3537.5	0.307	24.87	23M3G7D	
		16QAM	3462.5 - 3537.5	0.254	24.04	23M3W7D	
		π/2 BPSK	3460.0 - 3540.0	0.341	25.33	18M0G7D	
201	20 MHz	QPSK	3460.0 - 3540.0	0.350	25.44	18M3G7D	
		16QAM	3460.0 - 3540.0	0.256	24.08	18M3W7D	
		π/2 BPSK	3457.5 - 3542.5	0.341	25.33	13M0G7D	
	15 MHz	QPSK	3457.5 - 3542.5	0.352	25.47	13M7G7D	
		16QAM	3457.5 - 3542.5	0.298	24.74	13M7W7D	
		π/2 BPSK	3455.0 - 3545.0	0.341	25.33	8M71G7D	
	10 MHz	QPSK	3455.0 - 3545.0	0.353	25.47	8M70G7D	
		16QAM	3455.0 - 3545.0	0.333	24.42	8M67W7D	

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Antenna-F						
				EII	RP	
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max.Power [dBm]	Emission Designator
		π/2 BPSK	3750.0 - 3930.0	0.432	26.35	96M8G7D
	100 MHz	QPSK	3750.0 - 3930.0	0.433	26.36	97M9G7D
		16QAM	3750.0 - 3930.0	0.333	25.22	97M8W7D
		π/2 BPSK	3745.0 - 3935.0	0.414	26.17	87M3G7D
	90 MHz	QPSK	3745.0 - 3935.0	0.401	26.03	87M9G7D
		16QAM	3745.0 - 3935.0	0.307	24.87	87M9W7D
		π/2 BPSK	3740.0 - 3940.0	0.457	26.60	77M5G7D
	80 MHz	QPSK	3740.0 - 3940.0	0.461	26.64	77M7G7D
		16QAM	3740.0 - 3940.0	0.361	25.57	77M8W7D
		π/2 BPSK	3735.0 - 3945.0	0.255	24.07	64M8G7D
	70 MHz	QPSK	3735.0 - 3945.0	0.461	26.64	67M8G7D
		16QAM	3735.0 - 3945.0	0.459	26.62	67M6W7D
		π/2 BPSK	3730.0 - 3950.0	0.459	26.62	58M1G7D
	60 MHz	QPSK	3730.0 - 3950.0	0.454	26.57	58M1G7D
		16QAM	3730.0 - 3950.0	0.341	25.32	58M2W7D
		π/2 BPSK	3725.0 - 3955.0	0.477	26.79	46M0G7D
	50 MHz	QPSK	3725.0 - 3955.0	0.505	27.04	47M7G7D
NR Band n77 PC2		16QAM	3725.0 - 3955.0	0.385	25.85	47M7W7D
(3700 - 3980MHz)		π/2 BPSK	3720.0 - 3960.0	0.449	26.52	36M0G7D
	40 MHz	QPSK	3720.0 - 3960.0	0.451	26.54	38M0G7D
		16QAM	3720.0 - 3960.0	0.337	25.27	38M1W7D
		π/2 BPSK	3715.0 - 3965.0	0.470	26.72	27M1G7D
	30 MHz	QPSK	3715.0 - 3965.0	0.455	26.58	28M1G7D
		16QAM	3715.0 - 3965.0	0.347	25.40	28M1W7D
		π/2 BPSK	3712.5 - 3967.5	0.429	26.33	22M9G7D
	25 MHz	QPSK	3712.5 - 3967.5	0.419	26.22	23M3G7D
		16QAM	3712.5 - 3967.5	0.323	25.09	23M3W7D
		π/2 BPSK	3710.0 - 3970.0	0.452	26.55	18M0G7D
	20 MHz	QPSK	3710.0 - 3970.0	0.429	26.33	18M4G7D
		16QAM	3710.0 - 3970.0	0.337	25.27	18M4W7D
		π/2 BPSK	3707.5 - 3972.5	0.464	26.67	12M9G7D
	15 MHz	QPSK	3707.5 - 3972.5	0.432	26.36	13M7G7D
		16QAM	3707.5 - 3972.5	0.327	25.15	13M7W7D
		π/2 BPSK	3705.0 - 3975.0	0.438	26.41	8M68G7D
	10 MHz	QPSK	3705.0 - 3975.0	0.431	26.35	8M72G7D
		16QAM	3705.0 - 3975.0	0.329	25.17	8M69W7D

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Antenna-C						
				El	RP	
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
NR Band n77 PC2		π/2 BPSK	3500.0	0.169	22.28	96M9G7D
	100 MHz	QPSK	3500.0	0.177	22.48	97M8G7D
(3450 - 3550MHz)		16QAM	3500.0	0.130	21.15	98M0W7D
NR Band n77 PC2 (3700 - 3980MHz)		π/2 BPSK	3750.0 - 3930.0	0.280	24.48	97M0G7D
	100 MHz	QPSK	3750.0 - 3930.0	0.279	24.46	98M0G7D
(3700 - 3900MIZ)		16QAM	3750.0 - 3930.0	0.216	23.35	97M9W7D

### Antenna-I

				EIRP		
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
ND Dand n77 DC2		π/2 BPSK	3500.0	0.171	22.33	97M2G7D
NR Band n77 PC2	100 MHz	QPSK	3500.0	0.169	22.29	98M1G7D
(3450 - 3550MHz)		16QAM	3500.0	0.165	22.17	98M0W7D
NB Bond p77 DC2		π/2 BPSK	3750.0 - 3930.0	0.380	25.80	97M0G7D
NR Band n77 PC2 (3700 - 3980MHz) 100 MHz	100 MHz	QPSK	3750.0 - 3930.0	0.380	25.79	98M0G7D
		16QAM	3750.0 - 3930.0	0.371	25.69	98M0W7D

Antenna-D						
				Ell	RP	
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Max. Power [W]	Max. Power [dBm]	Emission Designator
ND Dand n77 DC2		π/2 BPSK	3500.0	0.060	17.76	97M1G7D
NR Band n77 PC2	100 MHz	QPSK	3500.0	0.060	17.75	98M1G7D
(3450 - 3550MHz)		16QAM	3500.0	0.059	17.68	98M1W7D
NR Band n77 PC2		π/2 BPSK	3750.0 - 3930.0	0.076	18.82	97M0G7D
	100 MHz	QPSK	3750.0 - 3930.0	0.075	18.78	97M0G7D
(3700 - 3980MHz)		16QAM	3750.0 - 3930.0	0.074	18.72	97M9W7D

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## **1.0 INTRODUCTION**

### 1.1 Scope

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

### **1.2 Element Test Location**

These measurement tests were conducted at the Element Suwon Laboratory located at 13, Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do, 16954, South Korea. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

#### 1.3 Test Facility / Accreditations

Measurements were performed at Element Materials Technology Suwon, Ltd. located in Yongin-si, Gyeonggi-do, 16954, South Korea.

- Element Materials Technology Suwon, Ltd. is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation(A2LA) with Certificate number 2041.04 for Specific Absorption Rate (SAR), and Electromagnetic Compatibility (EMC) & Telecommunications testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Materials Technology Suwon, Ltd. facility is accredited, designated, and recognized in accordance with the provision of Radio Wave Act and International Standard ISO/IEC 17025:2017 under the National Radio Research Agency.
  - Designation Number / CABID: KR0169
  - Test Firm Registration Number of FCC: 417945
  - Test Firm Registration Number of ISED: 26168

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID:A3LSMS938B**. 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.: 0699R, 0685R, 0812M, 0814M

### 2.2 Device Capabilities

This device contains the following capabilities:

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

This device uses a tuner circuit that dynamically updates the antenna impedance parameters to optimize antenna performance for certain bands and modes of operation. The tuner for this device was set to simulate a "free space" condition where the transmit antenna is matched to the medium into which it is transmitting and, thus, the power is at its maximum level.

### 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-N5100 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

### 2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version S938BXXU0AXHN installed on the EUT.

### 2.5 EMI Suppression Device(s)/Modifications

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

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## 3.0 DESCRIPTION OF TESTS

### 3.1 Evaluation Procedure

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

Deviation from Measurement Procedure......None

### 3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

Pd [dBm] = Pg [dBm] - cable loss [dB] + 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  $P_{g \text{ [dBm]}}$  – 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:

$$\begin{split} E_{[dB\mu V/m]} &= Measured \ amplitude \ level_{[dBm]} + 107 + Cable \ Loss_{[dB]} + Antenna \ Factor_{[dB/m]} \\ And \\ EIRP_{[dBm]} &= E_{[dB\mu V/m]} + 20logD - 104.8; \ where \ D \ is the measurement \ distance \ in \ meters. \end{split}$$

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 (±dB)
Conducted Bench Top Measurements	1.95
Radiated Disturbance (<1GHz)	4.10
Radiated Disturbance (>1GHz)	4.82
Radiated Disturbance (>18GHz)	4.96

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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
Agilent	N9030A	PXA Signal Analyzer	2024-07-08	Annual	2025-07-08	
Anritsu	\$820E	Cable and Antenna Analyzer	2024-07-09	Annual	2025-07-08	1839097
Anritsu	MA24106A	USB Power Sensor	2024-07-09	Annual	2025-07-08	1244512
Anritsu	MT8000A	Radio Communication Test Station	2024-09-05	Annual	2025-09-04	6272337405
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	2024-10-07	Biennial	2026-10-06	10160045
Espec	SH-242	Environmental Chamber	2024-07-09	Annual	2025-07-08	93011064
Fairview Microwave	FM2CP1122-10	2.92mm Directional Coupler	2024-07-09	Annual	2025-07-08	1946
Keysight Technologies	N9030B	PXA Signal Analyzer	2024-07-08	Annual	2025-07-08	MY57143278
Mini-Circuits	BW-N10W5+	Attenuator	2024-04-08	Annual	2025-04-07	TEMPNO.01-151
Mini-Circuits	BW-N10W5+	Attenuator	2024-04-08	Annual	2025-04-07	TEMPNO.01-150
NARDA	180-442A-KF	Horn Antenna (small)	2024-01-16	Annual	2025-01-15	T058701-03
Rohde & Schwarz	SMB100A03	Signal Generator	2024-01-11	Annual	2025-01-10	182487
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2024-01-11	Annual	2025-01-10	171075
Rohde & Schwarz	FSW43	Signal and Spectrum Analyzer	2024-01-11	Annual	2025-01-10	101955
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	2024-01-11	Annual	2025-01-10	102131
Schwarzbeck	VULB9162	Broadband TRILOG Antenna	2023-06-01	Biennial	2025-05-31	9162-217
Sunol	DRH-118	Horn Antenna	2023-01-26	Biennial	2025-01-25	A060215

Table 5-1. Test Equipment

#### 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.

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## 6.0 SAMPLE CALCULATIONS

### **QPSK Modulation**

### Emission Designator = 8M62G7D

LTE BW = 8.62 MHz G = Phase Modulation 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

### **QAM Modulation**

#### Emission Designator = 8M45W7D LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

### **Spurious Radiated Emission**

#### Example: Spurious emission at 3700.40 MHz

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

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## 7.0 TEST RESULTS

### 7.1 Summary

Company Name:	Samsung Electronics Co., Ltd.
FCC ID:	A3LSMS938B
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
	Transmitter Conducted Output Power	2.1048(a), 2.1048(c)	N/A	PASS	Section 7.2
B	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
CONDUCTED	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
CO	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	Effective Radiated Power / Equivalent Isotropic Radiated Power (NR Band n77)	27.50(j)(3), 27.50(k)(3)	≤ 1 Watt EIRP	PASS	Section 7.7
RADI	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.
- All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v1.2.2.

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

#### Test Setup

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



Figure 7-1. Test Instrument & Measurement Setup

#### Test Notes

- 1. Conducted power measurements were evaluated using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
- 2. 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]
	π/2 BPSK	633334	3500.01	1/271	25.58
100 MHz	QPSK	633334	3500.01	1/271	25.55
	16-QAM	633334	3500.01	1/271	25.04
	π/2 BPSK	633000 633334	3495.00 3500.01	1/243	25.81 25.73
	II/2 DF 3K	633666	3504.99	1/243	25.63
90 MHz		633000	3495.00	1/243	25.82
	QPSK	633334	3500.01	1/243	25.68
		633666	3504.99	1 / 243	25.72
	16-QAM	633000	3495.00	1 / 243	25.12
	π/2 BPSK	632668 633334	3490.02 3500.01	1/215	25.64
	II/2 DPSK	634000	3510.00	1 / 215 1 / 215	25.75 25.74
80 MHz		632668	3490.02	1/215	25.57
	QPSK	633334	3500.01	1/215	25.71
		634000	3510.00	1 / 215	25.75
	16-QAM	633334	3500.01	1 / 215	25.14
		632334	3485.01	1 / 187	25.48
	π/2 BPSK	633334	3500.01	1 / 187	25.76
70 MHz		634332 632334	3514.98 3485.01	1 / 187 1 / 94	25.64
	QPSK	632334	3405.01	1/94	25.47 25.69
	Se on	634332	3514.98	1 / 187	25.69
	16-QAM	633334	3500.01	1 / 187	25.01
		632000	3480.00	1 / 81	25.52
	π/2 BPSK	633334	3500.01	162 / 0	25.49
		634666	3519.99	1 / 160	25.68
60 MHz		632000	3480.00	1 / 160	25.32
	QPSK	633334 634666	3500.01 3519.99	1/160	25.53 25.51
	16-QAM	634666	3519.99	1 / 160	25.51
	10-02-001	631668	3475.02	1/66	25.67
	π/2 BPSK	633334	3500.01	1/1	25.72
		635000	3525.00	1/131	25.79
50 MHz		631668	3475.02	1 / 131	25.61
	QPSK	633334	3500.01	1 / 131	25.78
		635000	3525.00	1/131	25.84
	16-QAM	635000 631334	3525.00 3470.01	1 / 131	25.31 25.63
	π/2 BPSK	633334	3500.01	1/1	25.63
	In 2 Dr Ort	635332	3529.98	1/104	25.71
40 MHz		631334	3470.01	1 / 104	25.61
	QPSK	633334	3500.01	1/1	25.80
		635332	3529.98	1 / 104	25.74
	16-QAM	635332	3529.98	1 / 104	25.15
	π/2 BPSK	631000 633334	3465.00 3500.01	1/76	25.69
	II/2 DPSK	635666	3534.99	1/1 1/76	25.89 25.96
30 MHz		631000	3465.00	1/76	25.80
	QPSK	633334	3500.01	1/1	25.69
		635666	3534.99	1 / 76	25.84
	16-QAM	635666	3534.99	1 / 76	25.13
		630834	3462.51	1/63	25.85
	π/2 BPSK	633334 635832	3500.01	1/1	25.84
25 MHz		635832 630834	3537.48 3462.51	1 / 32 1 / 63	25.97 25.71
20 1112	QPSK	633334	3500.01	1/03	25.71
		635832	3537.48	1/32	25.89
	16-QAM	635832	3537.48	1 / 32	25.15
		630668	3460.02	1/49	25.56
	π/2 BPSK	633334	3500.01	1/1	25.69
00 1411-		636000	3540.00	1/1	25.62
20 MHz	QPSK	630668 633334	3460.02 3500.01	1/49	25.54
	QF3K	636000	3540.00	1/49	25.67 25.64
	16-QAM	633334	3500.01	1/45	25.04
		630500	3457.50	1/36	25.43
	π/2 BPSK	633334	3500.01	1/1	25.55
		636166	3542.49	1 / 19	25.79
15 MHz	OPOW	630500	3457.50	1/36	25.43
	QPSK	633334	3500.01 3542.49	1/1	25.59
	16-QAM	636166 636166	3542.49	1 / 36 1 / 19	25.74 25.05
	TO GRAIN	630334	3455.01	1/1	25.05
	π/2 BPSK	633334	3500.01	1/1	25.56
		636332	3544.98	1/22	25.77
10 MHz		630334	3455.01	1 / 22	25.46
	QPSK	633334	3500.01	1/1	25.58
	16-QAM	636332 636332	3544.98 3544.98	1/22	25.75 25.05
	nductod	1			

Table 7-1. Conducted Power Data (NR Band n77 DoD – Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager	
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm
		650000	3750.00	1 / 136	25.94
100 MHz	π/2 BPSK	656000	3840.00	1/1	25.98
		662000	3930.00	1 / 271	25.64
		650000	3750.00	1 / 136	25.83
	QPSK	656000	3840.00	1/1	25.73
		662000	3930.00	1 / 271	24.75
	16-QAM	656000	3840.00	1/1	25.12
		649668	3745.02	1 / 122	25.98
	π/2 BPSK	656000	3840.00	1/1	25.97
		662332	3934.98	1 / 122	25.99
90 MHz		649668	3745.02	1 / 122	25.89
	QPSK	656000	3840.00	1/1	25.92
		662332	3934.98	1 / 122	25.96
	16-QAM	656000	3840.00	1/1	25.48
		649334	3740.01	1 / 108	25.83
	π/2 BPSK	656000	3840.00	1/1	25.91
		662666	3939.99	1 / 215	25.95
80 MHz		649334	3740.01	1 / 108	25.58
	QPSK	656000	3840.00	1/1	25.92
		662666	3939.99	1 / 215	25.80
	16-QAM	649334	3740.01	1 / 108	25.55
		649000	3735.00	1 / 94	25.95
	π/2 BPSK	656000	3840.00	1/1	25.98
		663000	3945.00	1 / 187	25.93
70 MHz		649000	3735.00	1 / 94	25.92
	QPSK	656000	3840.00	1/1	25.94
		663000	3945.00	1 / 187	25.50
	16-QAM	656000	3840.00	1/1	25.68
		648668	3730.02	1 / 81	25.99
	π/2 BPSK	656000	3840.00	1/1	25.92
		663332	3949.98	1 / 160	25.79
60 MHz		648668	3730.02	1 / 81	25.98
	QPSK	656000	3840.00	1/1	25.85
		663332	3949.98	1 / 160	25.60
	16-QAM	656000	3840.00	1/1	25.52
		648334	3725.01	1 / 131	25.79
	π/2 BPSK	656000	3840.00	1/1	25.95
		663666	3954.99	1 / 131	25.90
50 MHz		648334	3725.01	1 / 131	25.84
	QPSK	656000	3840.00	1/1	25.92
		663666	3954.99	1 / 131	25.84
	16-QAM	656000	3840.00	1/1	25.45
		648000	3720.00	1 / 104	25.94
	π/2 BPSK	656000	3840.00	1/1	25.70
		664000	3960.00	1 / 104	25.74
40 MHz		648000	3720.00	1 / 53	25.98
	QPSK	656000	3840.00	1/1	25.56
		664000	3960.00	1 / 53	25.67
	16-QAM	664000	3960.00	1 / 104	25.34
		647668	3715.02	1 / 76	25.98
	π/2 BPSK	656000	3840.00	1/1	25.88
		664332	3964.98	1 / 76	25.94
30 MHz		647668	3715.02	1/1	25.91
	QPSK	656000	3840.00	1/1	25.79
		664332	3964.98	1/1	25.98
	16-QAM	664332	3964.98	1/1	25.47
		647500	3712.50	1 / 76	25.96
	π/2 BPSK	656000	3840.00	1/1	25.83
		004500	3967.50	1 / 76	25.95
		664500			
25 MHz		647500	3712.50	1 / 76	25.89
25 MHz	QPSK	047500	0740.50	4 / 70	25.89 25.89
25 MHz	QPSK	647500	3712.50	1 / 76 1 / 1	20.00
25 MHz	QPSK 16-QAM	647500 656000	3712.50 3840.00	1 / 76	25.89
25 MHz		647500 656000 664500	3712.50 3840.00 3967.50	1 / 76 1 / 1 1 / 76	25.89 25.92
25 MHz		647500 656000 664500 647500	3712.50 3840.00 3967.50 3712.50	1 / 76 1 / 1 1 / 76 1 / 76	25.92 25.44
25 MHz	16-QAM	647500 656000 664500 647500 647334	3712.50 3840.00 3967.50 3712.50 3710.01	1 / 76 1 / 1 1 / 76 1 / 76 1 / 49	25.89 25.92 25.44 25.89
25 MHz 20 MHz	16-QAM	647500 656000 664500 647500 647334 656000	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00	1 / 76 1 / 1 1 / 76 1 / 76 1 / 49 1 / 25	25.89 25.92 25.44 25.89 25.72
	16-QAM	647500 656000 664500 647500 647334 656000 664666	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01	1 / 76 1 / 1 1 / 76 1 / 76 1 / 49 1 / 25 1 / 49	25.89 25.92 25.44 25.89 25.72 25.94 25.94 25.88
	16-QAM π/2 BPSK	647500 656000 664500 647500 647334 656000 664666 647334	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99	1 / 76 1 / 1 1 / 76 1 / 76 1 / 49 1 / 25 1 / 49 1 / 25	25.89 25.92 25.44 25.89 25.72 25.72 25.94
	16-QAM π/2 BPSK	647500 656000 664500 647500 647334 656000 664666 647334 656000	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00	1 / 76 1 / 1 1 / 76 1 / 76 1 / 49 1 / 25 1 / 49 1 / 25 1 / 1	25.89 25.92 25.44 25.89 25.72 25.94 25.88 25.76
	16-QAM π/2 BPSK QPSK	647500 656000 664500 647500 647334 656000 664666 647334 656000 664666	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99	1/76 1/1 1/76 1/49 1/25 1/49 1/25 1/1 1/49	25.89 25.92 25.44 25.89 25.72 25.94 25.76 25.88 25.76 25.83 25.34
	16-QAM π/2 BPSK QPSK	647500 656000 664500 647500 647334 656000 664666 647334 656000 664666 664666	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3969.99	1/76 1/1 1/76 1/76 1/49 1/25 1/49 1/25 1/1 1/49 1/49 1/49	25.89 25.92 25.44 25.89 25.72 25.94 25.88 25.76 25.83
	16-QAM π/2 BPSK QPSK 16-QAM	647500 656000 664500 647500 647334 656000 664666 647334 656000 664666 664666 647168	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3969.99 3969.99	1/76 1/1 1/76 1/76 1/25 1/49 1/25 1/1 1/25 1/1 1/49 1/49 1/49	25.89 25.92 25.44 25.89 25.72 25.94 25.76 25.88 25.76 25.83 25.34 25.88
	16-QAM π/2 BPSK QPSK 16-QAM	647500 656000 644500 647500 647334 656000 664666 647334 656000 664666 664666 6647168 656000 664832	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 369.99 3707.52 3840.00 3977.52	1/76 1/1 1/76 1/76 1/49 1/25 1/49 1/25 1/1 1/49 1/49 1/49 1/1 1/1	25.89 25.92 25.44 25.89 25.72 25.94 25.88 25.76 25.83 25.34 25.34 25.88 25.47 25.88
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM	647500 656000 664500 647500 647334 656000 664666 647334 656000 664666 664666 647168 656000	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3977.52 3840.00 3972.48	1/76 1/1 1/76 1/76 1/25 1/49 1/25 1/49 1/25 1/49 1/49 1/49 1/1 1/1 1/1	25.89 25.92 25.92 25.94 25.94 25.94 25.88 25.76 25.83 25.34 25.83 25.34 25.88 25.47 25.75 25.79
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK	647500 656000 664500 647500 647500 647500 664666 647334 656000 664666 64466 6466 646 6466 646 6466 6466 6466 646	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 369.99 3707.52 3840.00 3977.52	1/76 1/1 1/76 1/76 1/76 1/76 1/49 1/25 1/1 1/49 1/49 1/1 1/1 1/1 1/1 1/1 1/19	25.89 25.92 25.94 25.94 25.72 25.94 25.88 25.76 25.88 25.34 25.88 25.47 25.79 25.79 25.79
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK	647500 656000 644500 647334 656000 664666 647334 656000 664666 664666 664666 6647168 656000 664832 64686 647168	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3972.48 3707.52 3840.00	1/76 1/1 1/76 1/76 1/25 1/49 1/25 1/49 1/25 1/49 1/49 1/49 1/1 1/1 1/1	25.89 25.92 25.92 25.94 25.94 25.94 25.88 25.76 25.83 25.34 25.83 25.34 25.88 25.47 25.75 25.79
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK	647500 665000 664500 647500 647500 647334 656000 664666 647334 656000 664666 664666 664666 664666 664832	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3972.48 3707.52 3840.00 3972.48	1/76 1/1 1/76 1/76 1/79 1/25 1/49 1/25 1/1 1/49 1/49 1/49 1/1 1/1 1/1 1/19 1/1	25.89 25.92 25.44 25.89 25.72 25.94 25.88 25.76 25.83 25.76 25.83 25.34 25.84 25.84 25.87 25.75 25.79 25.47 25.67 25.67 25.67 25.69
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK	647500 665000 664500 647500 647500 647534 656000 664666 647334 656000 664666 647188 656000 664666 647168 656000 664832 647168	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3972.48 3707.52	1/76 1/1 1/76 1/76 1/76 1/76 1/49 1/25 1/1 1/49 1/49 1/49 1/1 1/1 1/1 1/1 1/19 1/1 1/19 1/1 1/19	25.89 25.92 25.44 25.99 25.72 25.94 25.89 25.76 25.83 25.76 25.83 25.34 25.88 25.47 25.75 25.77 25.47 25.65 25.27
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK 16-QAM	647500 664500 644500 647500 647500 647334 656000 664666 647334 656000 664666 644666 644666 644666 644666 644666 644832 6470168 656000 664832	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3669.99 3710.01 3869.99 3969.99 3707.52 3840.00 3972.48 3707.52 3840.00 3972.48 3707.52 3840.00	1/76 1/1 1/76 1/76 1/76 1/25 1/25 1/25 1/25 1/25 1/25 1/25 1/25	25.89 25.92 25.44 25.99 25.72 25.94 25.89 25.72 25.94 25.83 25.84 25.88 25.47 25.88 25.47 25.75 25.79 25.47 25.65 25.65 25.65 25.65 25.27 25.12
20 MHz 15 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK 16-QAM	647500 665000 664500 647500 647334 656000 664666 647334 656000 664666 647334 656000 664666 647168 654666 647168 656000 664832 647168 656000	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3972.48 3707.52 3840.00 3972.48 3707.52 3705.00	1/76 1/1 1/76 1/76 1/76 1/25 1/49 1/25 1/1 1/25 1/1 1/49 1/49 1/49 1/1 1/1 1/1 1/19 1/1 1/19 1/11 1/19	25.89 25.92 25.44 25.92 25.72 25.94 25.88 25.76 25.83 25.88 25.76 25.83 25.88 25.47 25.79 25.47 25.79 25.47 25.66 25.06 25.27 25.12 25.64
20 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK	647500 664500 644500 644500 664500 664666 664666 664666 664666 664666 664666 664666 664666 664832 6647168 656000 664332 647168 647000	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3669.99 3669.99 3669.99 3669.99 369.99 3707.52 3840.00 3972.48 3707.52 3840.00 3972.48 3707.52 3705.00 3705.00	1/76 1/1 1/76 1/76 1/76 1/76 1/25 1/149 1/25 1/1 1/49 1/49 1/49 1/1 1/1 1/1 1/19 1/1 1/19 1/1 1/19 1/1 1/1	25.89 25.92 25.44 25.89 25.72 25.94 25.88 25.76 25.88 25.76 25.88 25.47 25.88 25.47 25.79 25.47 25.66 25.27 25.12 25.66 25.27 25.12 25.64 25.29
20 MHz 15 MHz	16-QAM π/2 BPSK QPSK 16-QAM π/2 BPSK QPSK 16-QAM	647500 665000 64500 647500 647500 647334 656000 664666 647334 656000 664666 647334 656000 664832 647168 656000 664832 647168 656000 664832 647168	3712.50 3840.00 3967.50 3712.50 3710.01 3840.00 3969.99 3710.01 3840.00 3969.99 3707.52 3840.00 3972.48 3707.52 3840.00 3972.48 3707.52 3705.00	1/76 1/1 1/76 1/76 1/76 1/25 1/49 1/25 1/1 1/25 1/1 1/49 1/49 1/49 1/1 1/1 1/1 1/19 1/1 1/19 1/11 1/19	25.89 25.92 25.44 25.69 25.72 25.94 25.84 25.76 25.83 25.34 25.88 25.76 25.83 25.34 25.88 25.77 25.75 25.79 25.47 25.66 25.06 25.27 25.54

Table 7-2. Conducted Power Data (NR Band n77 C-band – Ant F)

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
	π/2 BPSK	633334	3500.01	1 / 123	19.91
100 MHz	QPSK	633334	3500.01	1 / 271	19.79
	16-QAM	633334	3500.01	1 / 123	18.54

Table 7-3. Conducted Power Data (NR Band n77 DoD – Ant C)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		650000	3750.00	1 / 271	19.63
	π/2 BPSK	656000	3840.00	1/1	19.86
		662000	3930.00	1/1	18.52
100 MHz	QPSK	650000	3750.00	1 / 271	19.23
		656000	3840.00	1/1	19.02
		662000	3930.00	1/1	17.51
	16-QAM	650000	3750.00	1 / 271	18.19

Table 7-4. Conducted Power Data (NR Band n77 C-band – Ant C)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	633334	3500.01	273 / 0	24.28
	QPSK	633334	3500.01	273 / 0	24.27
	16-QAM	633334	3500.01	1 / 271	24.25

Table 7-5. Conducted Power Data (NR Band n77 DoD - Ant I)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		650000	3750.00	1 / 123	24.59
100 MHz	π/2 BPSK	656000	3840.00	1/1	24.47
		662000	3930.00	1 / 271	24.94
	QPSK	650000	3750.00	1 / 123	24.63
		656000	3840.00	1/1	24.50
		662000	3930.00	1 / 271	24.92
	16-QAM	662000	3930.00	1 / 271	24.81

Table 7-6. Conducted Power Data (NR Band n77 C-band – Ant I)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
	π/2 BPSK	633334	3500.01	1 / 271	19.56
100 MHz	QPSK	633334	3500.01	1 / 271	19.49
	16-QAM	633334	3500.01	1 / 271	19.55

Table 7-7. Conducted Power Data (NR Band n77 DoD – Ant D)

FCC ID: A3LSMS938B		PART 27 MEASUREMENT REPORT	
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		650000	3750.00	1 / 123	19.99
	π/2 BPSK	656000	3840.00	1/1	19.83
		662000	3930.00	273 / 0	18.51
100 MHz		650000	3750.00	1 / 123	19.77
	QPSK	656000	3840.00	1/1	19.76
		662000	3930.00	1 / 271	18.02
	16-QAM	650000	3750.00	1 / 123	19.67

Table 7-8. Conducted Power Data (NR Band n77 C-band – Ant D)

FCC ID: A3LSMS938B	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 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
  - 1-5% of the 99% occupied bandwidth observed in Step 7

#### Test Setup

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



Figure 7-2. Test Instrument & Measurement Setup

#### Test Notes

None.

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Mode	Bandwidth	Modulation	OBW [MHz]
		π/2 BPSK	96.94
	100MHz	QPSK	98.08
		16QAM	98.02
		π/2 BPSK	87.30
	90MHz	QPSK	87.97
		16QAM	88.10
		π/2 BPSK	77.40
	80MHz	QPSK	77.83
		16QAM	77.87
NR-n77PC2-R1		π/2 BPSK	64.78
	70MHz	QPSK	67.83
		16QAM	67.74
		π/2 BPSK	58.16
	60MHz	QPSK	58.09
		16QAM	58.20
		π/2 BPSK	45.93
	50MHz	QPSK	47.74
		16QAM	47.75
	40MHz	π/2 BPSK	35.94
		QPSK	38.07
		16QAM	37.98
		π/2 BPSK	26.98
	30MHz	QPSK	28.01
		16QAM	28.09
		π/2 BPSK	22.95
	25MHz	QPSK	23.30
		16QAM	23.30
		π/2 BPSK	18.02
	20MHz	QPSK	18.33
		16QAM	18.34
		π/2 BPSK	13.04
	15MHz	QPSK	13.74
		16QAM	13.71
		π/2 BPSK	8.71
	10MHz	QPSK	8.70
		16QAM	8.67

Table 7-2. Occupied Bandwidth Test Results – NR Band n77 DoD – Ant F

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Mode	Bandwidth	Modulation	OBW [MHz]
mouo	Banawiaan	modulation	0.511 [11112]
		π/2 BPSK	96.83
	100MHz	QPSK	97.91
		16QAM	97.75
		π/2 BPSK	87.28
	90MHz	QPSK	87.85
		16QAM	87.86
		π/2 BPSK	77.50
	80MHz	QPSK	77.75
		16QAM	77.79
		π/2 BPSK	64.80
	70MHz	QPSK	67.83
		16QAM	67.64
		π/2 BPSK	58.12
	60MHz	QPSK	58.14
		16QAM	58.20
NR-n77PC2	50MHz	π/2 BPSK	46.05
		QPSK	47.73
		16QAM	47.73
	40MHz	π/2 BPSK	35.97
		QPSK	38.02
		16QAM	38.10
		π/2 BPSK	27.06
	30MHz	QPSK	28.11
		16QAM	28.11
		π/2 BPSK	22.95
	25MHz	QPSK	23.30
		16QAM	23.30
		π/2 BPSK	17.99
	20MHz	QPSK	18.36
		16QAM	18.38
		π/2 BPSK	12.92
	15MHz	QPSK	13.72
		16QAM	13.72
		π/2 BPSK	8.68
	10MHz	QPSK	8.72
		16QAM	8.69

Table 7-3. Occupied Bandwidth Test Results - NR Band n77 C-Band - Ant F

FCC ID: A3LSMS938B		Approved by: Technical Manager	
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## NR Band n77 DoD – Ant F

🔤 Keysight Spectrum Analyzer - Occupied BW					
<b>LX RE</b> 50 Ω AC	Ti taka	SENSE:INT enter Freq: 3.500010000 GH rig: Free Run Avg H Atten: 32 dB	ALIGN AUTO z old: 100/100	09:59:32 AM Sep 26 Radio Std: None Radio Device: BT	Trace/Detector
10 dB/div Ref 40.00 dBm					
20.0	มใปหมสหมระต่องระ <sup>64</sup> ไปจูญ	w.p.e.stprestprestation.	***		Clear Writ
0.00 -10.0 -20.0				Amarkan	مريمير ۳. المريمين Averaç
-30.0					Max Ho
Center 3.5000 GHz Res BW 2.4 MHz		#VBW 8 MHz Total Power	24.0	Span 250.0 I Sweep 1	
	.938 MHz				Detecto Peak
Transmit Freq Error x dB Bandwidth	-154.27 kHz 102.5 MHz			0.00 % 00 dB	Auto <u>Ma</u>
MSG				3	

Plot 7-9. Occupied Bandwidth Plot (NR Band n77 DoD - 100MHz π/2 BPSK - Full RB - Ant F)



Plot 7-10. Occupied Bandwidth Plot (NR Band n77 DoD - 100MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		PART 27 MEASUREMENT REPORT			
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Keysight Spectrum Analyzer - Occupied E	W				- d <b>-</b>
(X/RL RF 50Ω AC	CORREC	SENSE:INT nter Freg: 3.500010000 GHz	ALIGN AUTO 10:00:06 Radio St	AM Sep 26, 2024	Trace/Detector
	Tri	g: Free Run Avg Hol	d: 100/100		
	#IFGain:Low #At	tten: 32 dB	Radio D	evice: BTS	
10 dB/div Ref 40.00 dB	m				
Log 30.0					
20.0					Clear Write
	performation	en Allanson and a strategy and a start	^		
10.0					
0.00					_
-10.0			Kan , as well at home still beit		Average
-20.0 portane la approximation	loshur		hally and word the hall the set of the set	antral design of the state	
-30.0					
-40.0					Max Hold
-50.0					
Center 3.5000 GHz Res BW 2.4 MHz		#VBW 8 MHz		250.0 MHz veep 1 ms	
			37	veep rins	Min Hold
Occupied Bandwid	th	Total Power	32.5 dBm		
	8.021 MHz				Detector
3					Peak►
Transmit Freq Error	353.12 kHz	% of OBW Pov	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	103.4 MHz	x dB	-26.00 dB		
	100.4 11112	X UD	-20.00 dB		
			~		
MSG			<b>I</b> STATUS		

Plot 7-11. Occupied Bandwidth Plot (NR Band n77 DoD - 100MHz 16-QAM - Full RB - Ant F)



Plot 7-12. Occupied Bandwidth Plot (NR Band n77 DoD - 90MHz π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied BW	V						- 0
LXI RL RF 50Ω AC	CORREC	SENSE:INT Center Freg: 3.50001	ALIGN AUT	01:59:37 P Radio Std	M Sep 26, 2024	Trace	/Detector
		Trig: Free Run	Avg Hold: 100/100				
	#IFGain:Low	#Atten: 32 dB		Radio Dev	vice: BTS		
10 dB/div Ref 40.00 dBn	n						
30.0							
20.0						C	lear Write
10.0	industry	and the second	munitier with the				
0.00							
-10.0							Average
-20.0 - when the source of the post of the half have	a A d		<b>4</b>				
-30.0	1. **		. Martin	entral la como	ana wa wati Minimilika		
-40.0							
							Max Hold
-50.0							_
Center 3.5000 GHz				Span 2	25.0 MHz		
Res BW 2.2 MHz		#VBW 8 MH	z	Swe	eep 1ms		Min Hold
		Total P	owor 22	.4 dBm			
Occupied Bandwidt			0wei 52	.4 UDIII			
87	7.972 MH	Ζ					Detector
Transmit Freq Error	-42.010 k	Hz % of O	3W Power	99.00 %		Auto	Peak▶ <u>Man</u>
x dB Bandwidth	92.95 M	Hz xdB	-2	6.00 dB			
	02100 111		_				
MSG			<b>I</b> STA	THE			
Mog				105			

Plot 7-13. Occupied Bandwidth Plot (NR Band n77 DoD - 90MHz QPSK - Full RB - Ant F)



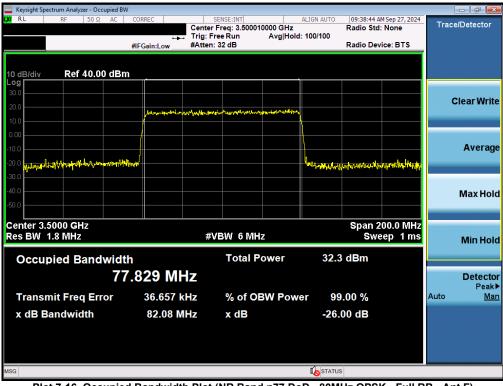
Plot 7-14. Occupied Bandwidth Plot (NR Band n77 DoD - 90MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager	
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Keysight Spectrum Analyzer - Occupied	d BW				- d <b>-</b>
<b>LXI R L</b> RF 50 Ω AC	C 		3Hz Rac   Hold: 100/100	:38:27 AM Sep 27, 2024 dio Std: None	Trace/Detector
	#IFGain:Low #/	Atten: 32 dB	Rad	dio Device: BTS	
10 dB/div Ref 40.00 dl	Bm				
30.0					
20.0	munuput	weeken war an and a star and a star and a star	hulling		Clear Write
10.0					
0.00	<b> </b>				
-10.0					Average
-20.0 Browner Munited Ware and a strain of the standard strain of th			Life water the country	month a strange hand the	
-30.0					
-50.0					Max Hold
Center 3.5000 GHz Res BW 1.8 MHz		#VBW 6 MHz	S	pan 200.0 MHz Sweep 1 ms	Min Hold
Occupied Bandwi	dth	Total Powe	r 34.5 dB	ßm	
	77.402 MHz				Detector Peak▶
Transmit Freq Error	-187.24 kHz	% of OBW F	Power 99.00	%	Auto <u>Man</u>
x dB Bandwidth	81.59 MHz	x dB	-26.00 0	dB	
MSG					

Plot 7-15. Occupied Bandwidth Plot (NR Band n77 DoD - 80MHz  $\pi/2$  BPSK - Full RB - Ant F)



Plot 7-16. Occupied Bandwidth Plot (NR Band n77 DoD - 80MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager	
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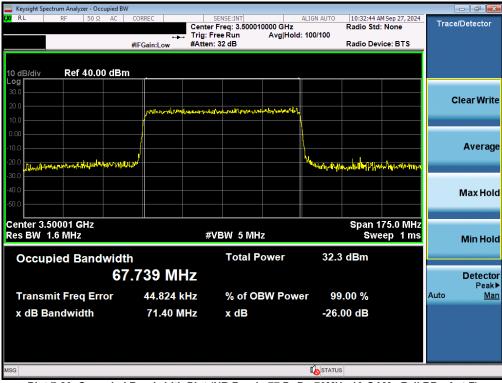
Plot 7-18. Occupied Bandwidth Plot (NR Band n77 DoD - 70MHz 7π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager		
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Keysight Spectrum Analyzer - Occupied BW								- 7 💌
🗶 RL RF 50Ω AC CO	RREC	SENSE:INT nter Freq: 3.50001	0000 CH-	ALIGN AUTO	10:32:38 A	M Sep 27, 2024	Trace	e/Detector
		g: Free Run	Avg Hold	: 100/100	Radio Stu.	None		
#IF		ten: 32 dB	-		Radio Dev	ice: BTS		
10 dB/div Ref 40.00 dBm								
30.0								
20.0							C	Clear Write
10.0	w for a long me and	<sub>าส</sub> ะไปไปใหญ่เสียงการเสียงใส่งาสารก	and the second					
0.00								
-10.0				}				Average
-20.0 - M. Martin mart and a station of the state of the				Walk aller		1.414		
-30.0				Manual II MIMON	www.willuting	hallet (terministration		
-40.0								Max Hold
-50.0								
Center 3.50001 GHz					On on 4	75 O MILI-		
Res BW 1.6 MHz		#VBW 5 MH				75.0 MHz ep 1 ms		
Res BW 1.0 WINZ			2		SWE	ep mis		Min Hold
Occupied Bandwidth		Total P	ower	32.2	dBm			
		Foturr		52.2				
67.8	27 MHz							Detector
								Peak▶
Transmit Freq Error	81.812 kHz	% of OE	SW Pow	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	71.51 MHz	x dB		-26.	00 dB			
MSG								

Plot 7-19. Occupied Bandwidth Plot (NR Band n77 DoD - 70MHz QPSK - Full RB - Ant F)



Plot 7-20. Occupied Bandwidth Plot (NR Band n77 DoD - 70MHz 16-QAM - Full RB - Ant F)

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Keysight Spectrum Analyzer - Occupied BW								- 7 💌
	Tri	SENSE:INT nter Freq: 3.50001 g: Free Run tten: 32 dB		LIGN AUTO	Radio Std:		Trac	e/Detector
#I	FGain:Low #A	tten: 32 dB			Radio Dev	ICE: BIS		
10 dB/div Ref 40.00 dBm								
30.0								
20.0	Annon market Married	الارميدية الأخر المعاسمة من المحمود المراجع	buchtermoury				C	Clear Write
10.0			<u> </u>					
0.00	∦							
-10.0	/							Average
-20.0				Wynaw ar winner	www.	mak the man		
-30.0					all all and the s	on alla.		
-40.0								Max Hold
-50.0								
Center 3.50001 GHz		40 (BM) 5 MIL				50.0 MHz		
Res BW 1.5 MHz		#VBW 5 MH	Z		Swe	ep 1 ms		Min Hold
Occupied Bandwidth		Total P	ower	34.3	dBm			
58.	160 MHz							Detector
	46.285 kHz	% of O	3W Powe	- 00	.00 %		Auto	Peak▶ Man
Transmit Freq Error			SVV FOWE				Auto	Iviali
x dB Bandwidth	61.79 MHz	x dB		-26.0	)0 dB			
MSG				STATUS				

Plot 7-21. Occupied Bandwidth Plot (NR Band n77 DoD - 60MHz π/2 BPSK - Full RB - Ant F)



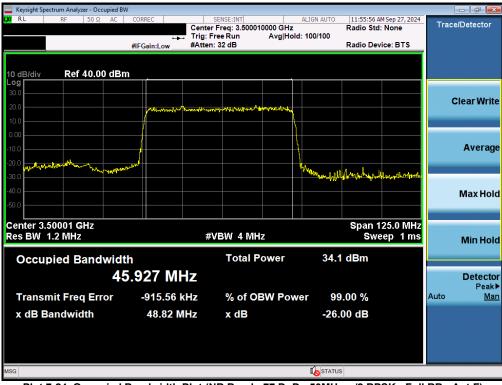
Plot 7-22. Occupied Bandwidth Plot (NR Band n77 DoD - 60MHz QPSK - Full RB - Ant F)

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Keysight Spectrum Analyzer - Occupied BW								
LXX RL RF 50Ω AC CO		SENSE:INT Center Freq: 3.50001		LIGN AUTO	11:33:23 Al Radio Std:	<sup>4</sup> Sep 27, 2024 None	Trac	e/Detector
#10		Trig: Free Run #Atten: 32 dB	Avg Hold: 1	100/100	Radio Dev	ice: BTS		
711	Gallinow	Atten of ab			Ruaro E C.	ice. Dito		
10 dB/div Ref 40.00 dBm								
Log 30.0								
20.0							(	Clear Write
10.0	www.ahundered	นในและบางสุของกละปลางปาลจุ	dread and the second					
0.00								
-10.0								Average
-20.0				<b>Nellese Mile</b>	-	to a star of		
-30.0					MONTAN AND AND AND A	han the states and a		
-40.0								Max Hold
-50.0								Maxitora
					0			
Center 3.50001 GHz Res BW 1.5 MHz		#VBW 5 MH;	2			50.0 MHz ep 1 ms		Min Llold
								Min Hold
Occupied Bandwidth		Total P	ower	32.1	dBm			
58.2	201 MHz	Ζ						Detector
Transmit Freq Error	20.454 kH	z % of OE	SW Power	r 99	.00 %		Auto	Peak▶ <u>Man</u>
x dB Bandwidth	61.76 MH	z x dB		-26.0	00 dB			
	011101111			201				
MSG				<b>I</b> STATUS	;			

Plot 7-23. Occupied Bandwidth Plot (NR Band n77 DoD - 60MHz 16-QAM - Full RB - Ant F)



Plot 7-24. Occupied Bandwidth Plot (NR Band n77 DoD - 50MHz π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dega 29 of 154	
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🔤 Keysight Spectrum Analyzer - Occupied B	W				
🗶 RL RF 50Ω AC	CORREC	SENSE:INT Freq: 3.500010000 GHz	ALIGN AUTO 11:56:05 Radio Sto	AM Sep 27, 2024	Trace/Detector
			d: 100/100		
	#IFGain:Low #Atter	n: 32 dB	Radio De	vice: BTS	
10 dB/div Ref 40.00 dB	m				
30.0					Clear Write
20.0	mound	hand work and the second and the second			
10.0					
0.00					
-10.0					Average
-20.0	My at		N <sub>4</sub>		
-30.0 Aduly try Illy a grant of a			" haben muldpress happen	Markel all and the latest	
-40.0					Max Hold
-50.0					Μαλησια
Center 3.50001 GHz				125.0 MHz	
Res BW 1.2 MHz	#	¢VBW 4 MHz	SW	eep 1ms	Min Hold
Occupied Bandwid	th	Total Power	31.9 dBm		
		Total Tomor			
4	7.741 MHz				Detector Peak▶
Transmit Freq Error	42.416 kHz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	50.49 MHz	x dB	-26.00 dB		
			STATUS		
MSG			STATUS		

Plot 7-25. Occupied Bandwidth Plot (NR Band n77 DoD - 50MHz QPSK - Full RB - Ant F)

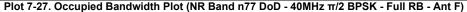


Plot 7-26. Occupied Bandwidth Plot (NR Band n77 DoD - 50MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dega 20 of 154	
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Plot 7-28. Occupied Bandwidth Plot (NR Band n77 DoD - 40MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dega 20 of 154	
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Plot 7-30. Occupied Bandwidth Plot (NR Band n77 DoD - 30MHz π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Daga 21 of 154
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Plot 7-31. Occupied Bandwidth Plot (NR Band n77 DoD - 30MHz QPSK - Full RB - Ant F)



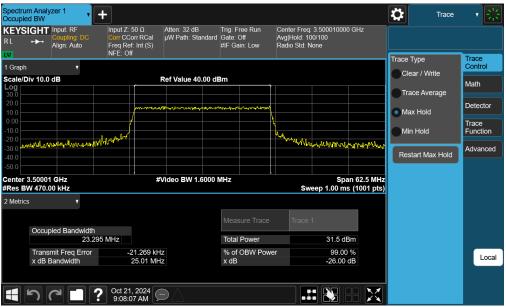
Plot 7-32. Occupied Bandwidth Plot (NR Band n77 DoD - 30MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of 154	
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Spectrur Occupied	d BW (		•	+											\$	Trace	• <del>*</del>
RL	GHT ·≁·	Input: RF Coupling Align: Au		Input 2 Corr C Freq F NFE: 0	Corr I Ref: In	RCal	Atten: 32 dB IW Path: Star		Gate:	iree Run Off ain: Low		Center Freq: Avg Hold: 10 Radio Std: N	0/100	00 GHz			
1 Graph	_		•												Trace Type Clear /		Trace Control
Scale/D	iv 10.0	dB				R	ef Value 40.	00 de	3m						Trace A		Math
20.0 10.0					ſ	wynyn ar well	<sup>n</sup> avintenti	wala, na	normal (h	ᢦ᠂ᡗ᠇ᢦᡨ᠕ᡃ᠆᠆᠆	Į				<ul> <li>Max Ho</li> </ul>		Detector
0.00 -10.0 -20.0					/						١				Min Ho	ld	Trace Function
-30.0	~~~~	and the second	and the second sec	mannonal								Knewyern	an a	artegna Breefmansheri	Restart	Max Hold	Advanced
-50.0 Center 3	50001	GH7				#Vi	deo BW 1.6	000	<b>/H</b> 7					pan 62.5 MHz			
#Res BV								0001	1112			Sw		ns (1001 pts)			
2 Metrics		,	T														
	Occur	oied Band	dwidth	•					Meas								
	Occup			953 MHz					Total	Power			34.0	dBm			
		mit Freq 3andwidt				).09 kHz .76 MHz			% of x dB	OBW Pov	ve	1	99.0 -26.0	00 % 0 dB			
	<b>ر</b> ا			<b>?</b> Oct 2 9:07	21, 20 ':49 A	024 AM											

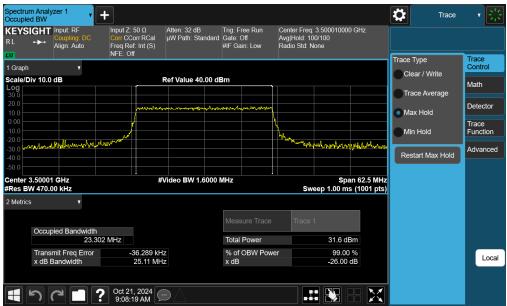
Plot 7-33. Occupied Bandwidth Plot (NR Band n77 DoD - 25MHz π/2 BPSK - Full RB - Ant F)



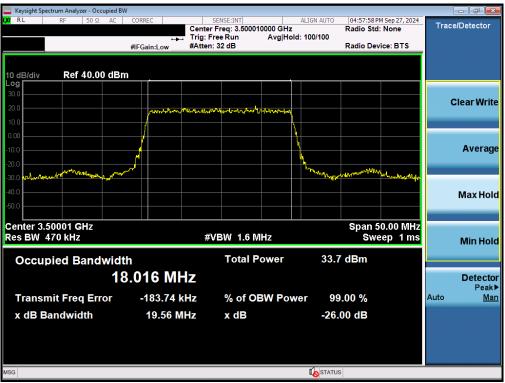
Plot 7-34. Occupied Bandwidth Plot (NR Band n77 DoD - 25MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager				
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Plot 7-35. Occupied Bandwidth Plot (NR Band n77 DoD - 25MHz 16-QAM - Full RB - Ant F)



Plot 7-36. Occupied Bandwidth Plot (NR Band n77 DoD - 20MHz π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager				
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Keysight Spectrum Analyzer - Occupied BW						
<b>LX/</b> RL RF 50Ω AC C	CORREC	SENSE:INT enter Freq: 3.50001		AUTO 04:58:06 PM Radio Std:	Sep 27, 2024	Trace/Detector
	tipe Tr	ig: Free Run tten: 32 dB	Avg Hold: 100/	100 Radio Devi	oo: BTS	
#	IFGain:Low #A	itten. 32 dB		Radio Devi	ce. B13	
10 dB/div Ref 40.00 dBm						
30.0						Clear Writ
20.0	Marrie and the ball	Marcolar way	anna Alana			Clear Writ
10.0			vr			
0.00						
-10.0	1					Averag
-20.0	<u> </u>		<u></u>	hay after with the way and the		
-30.0 Report Martin Martin Martin Martin					har an	
-40.0						Max Hol
-50.0						
Center 3.50001 GHz				Span 5	0.00 MHz	
Res BW 470 kHz		#VBW 1.6 M	Hz		ep 1 ms	Min Hol
		T-4-1 D		24.4 JD::::		
Occupied Bandwidth		Total P	ower	31.4 dBm		
18.	332 MHz					Detecto
Transmit Freq Error	-663 Hz	% of O	3W Power	99.00 %		Peak Auto <u>Ma</u>
x dB Bandwidth	20.25 MHz	x dB		-26.00 dB		
MSG			Ú.	STATUS		

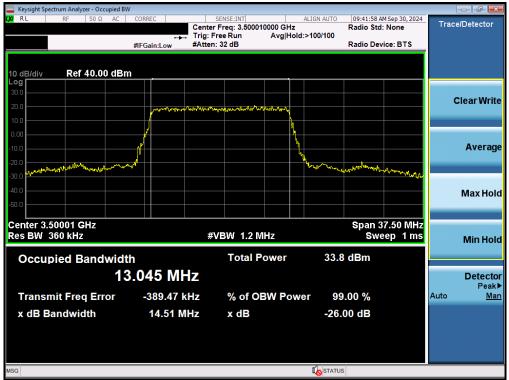
Plot 7-37. Occupied Bandwidth Plot (NR Band n77 DoD - 20MHz QPSK - Full RB - Ant F)



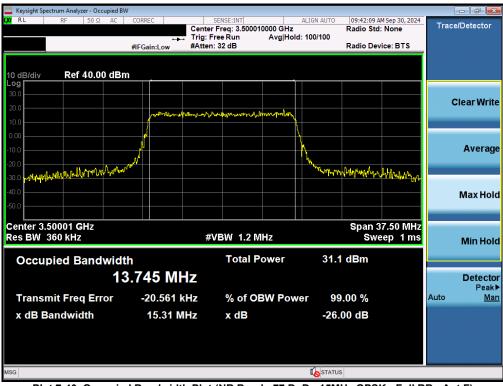
Plot 7-38. Occupied Bandwidth Plot (NR Band n77 DoD - 20MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager					
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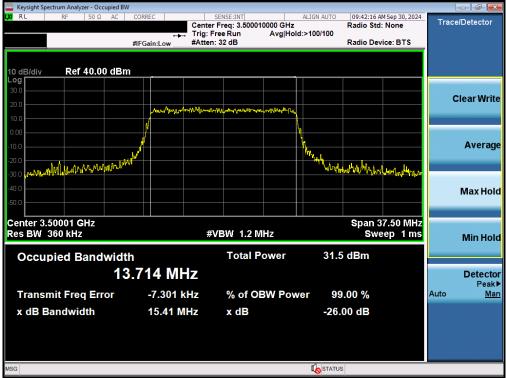
Plot 7-39. Occupied Bandwidth Plot (NR Band n77 DoD - 15MHz π/2 BPSK - Full RB - Ant F)



Plot 7-40. Occupied Bandwidth Plot (NR Band n77 DoD - 15MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		Approved by: Technical Manager				
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Plot 7-42. Occupied Bandwidth Plot (NR Band n77 DoD - 10MHz π/2 BPSK - Full RB - Ant F)

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Plot 7-43. Occupied Bandwidth Plot (NR Band n77 DoD - 10MHz QPSK - Full RB - Ant F)



Plot 7-44. Occupied Bandwidth Plot (NR Band n77 DoD - 10MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## NR Band n77 C-band – Ant F

Keysight Spectrum Analyzer - Occupied B\	V				
<b>ΙΧ΄ RL</b> RF 50Ω AC	Trig:	SENSE:INT er Freq: 3.840000000 GHz Free Run Avg Holo n: 26 dB	ALIGN AUTO	10:07:45 AM Sep 26, 2024 Radio Std: None Radio Device: BTS	Trace/Detector
10 dB/div Ref 40.00 dBr	n				
30.0 20.0 10.0	manuthanthomation	where was wither was	v.		Clear Write
10.0 .000 .10.0 .20.0				and when the second second	Average
-30.0					Max Hold
Center 3.8400 GHz Res BW 2.4 MHz	3	≇VBW 8 MHz		Span 250.0 MHz Sweep 1 ms	
Occupied Bandwidt	<sup>h</sup> 5.834 MHz	Total Power	33.1	dBm	Detector Peak
Transmit Freq Error x dB Bandwidth	-576.86 kHz 102.2 MHz	% of OBW Pow x dB		.00 % 00 dB	Auto <u>Mar</u>
MSG			STATUS		

Plot 7-45. Occupied Bandwidth Plot (NR Band n77 C-band - 100MHz  $\pi/2$  BPSK - Full RB - Ant F)



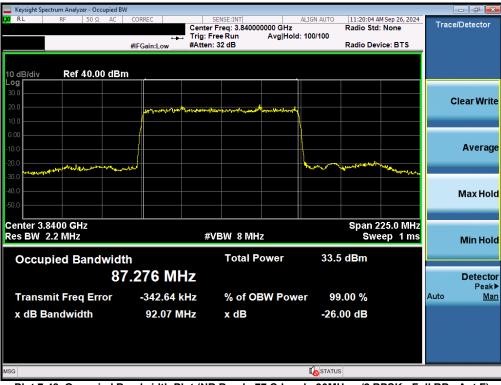
Plot 7-46. Occupied Bandwidth Plot (NR Band n77 C-band - 100MHz QPSK - Full RB - Ant F)

FCC ID: A3LSMS938B		PART 27 MEASUREMENT REPORT	
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Keysight Spectrum Analyzer - Occupied BW					- d <b>-</b>
<b>μχί R L</b> RF 50 Ω AC	🛶 Trig		Iz Radio Iold: 100/100	08 AM Sep 26, 2024 Std: None	Trace/Detector
10 dB/div Ref 40.00 dBm	#IFGain:Low #At	ten: 26 dB	Radio	Device: BTS	
20.0 10.0	يوميلاوران ومدين ماريني يوميلاوران ومدين ماريني	Romanal programming and the second			Clear Write
0.00 -10.0 -20.0 Jonificant Sciences	,		- Cr-Makakaka	handalary standardara	Average
-40.0					Max Hold
Center 3.8400 GHz Res BW 2.4 MHz Occupied Bandwidth	<u>,                                     </u>	#VBW 8 MHz Total Power		n 250.0 MHz Sweep 1 ms	Min Hold
97	.753 MHz				Detector Peak▶
Transmit Freq Error x dB Bandwidth	14.515 kHz 103.5 MHz	% of OBW Pc x dB	ower 99.00 % -26.00 dB		Auto <u>Man</u>
MSG			STATUS		

Plot 7-47. Occupied Bandwidth Plot (NR Band n77 C-band - 100MHz 16-QAM - Full RB - Ant F)



Plot 7-48. Occupied Bandwidth Plot (NR Band n77 C-band - 90MHz π/2 BPSK - Full RB - Ant F)

FCC ID: A3LSMS938B	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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🧫 Keysight Spectrum Analyzer - Occupied BW	/						x
KL RF 50Ω AC	CORREC	SENSE:INT Center Freg: 3.84000		UTO 11:20:43 AI Radio Std:	4 Sep 26, 2024	Trace/Detector	-
		Trig: Free Run	Avg Hold: 100/10		None		
,	#IFGain:Low	#Atten: 32 dB		Radio Devi	ice: BTS		
10 dB/div Ref 40.00 dBm	า						
Log 30.0							
						Clear Wri	ite
20.0	wynalawa	hand the stand of the grant of the stand	summer and				
10.0	i						
0.00			<u> </u>				
-10.0						Avera	ge
-20.0 กระสุนาณะ เชิงกระกิจาริการกระการ	ural			mproundurated	Junan Wandus		
-30.0							
-40.0						Max Ho	JId
-50.0						Maxine	
Center 3.8400 GHz					25.0 MHz		
Res BW 2.2 MHz		#VBW 8 MH	Z	Swe	ep 1 ms	Min Ho	old
Occupied Bandwidt	b	Total P	ower 3	31.5 dBm			
8/	.852 MH	Z				Detect Pea	
Transmit Freq Error	2.413 k⊦	z % of OE	<b>BW Power</b>	99.00 %			lan
x dB Bandwidth	93.02 MF	z xdB		-26.00 dB			
MSG			u 🔊 s	TATUS			

Plot 7-49. Occupied Bandwidth Plot (NR Band n77 C-band - 90MHz QPSK - Full RB - Ant F)



Plot 7-50. Occupied Bandwidth Plot (NR Band n77 C-band - 90MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS938B		PART 27 MEASUREMENT REPORT	
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Keysight Spectrum Analyzer - Occupied BW	1				- d <b>-</b>
LXX RL RF 50Ω AC	Trig:		Radio Sto Id: 100/100		Trace/Detector
	#IFGain:Low #Atte	en: 32 dB	Radio De	vice: BTS	
10 dB/div Ref 40.00 dBn	1				
30.0					
20.0	Natara	www.	~		Clear Write
10.0					
0.00					
-10.0					Average
-20.0	wand		- Lougona allowing to all	had makes been and	
-30.0			- Martine -		
-40.0					Max Hold
-50.0					
Center 3.8400 GHz				200.0 MHz	
Res BW 1.8 MHz	-	#VBW 6 MHz	Sw	eep 1 ms	Min Hold
Occupied Bandwidt	h	Total Power	33.8 dBm		
77	.497 MHz				Detector Peak▶
Transmit Freq Error	-245.73 kHz	% of OBW Pov	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	81.69 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-51. Occupied Bandwidth Plot (NR Band n77 C-band - 80MHz π/2 BPSK - Full RB - Ant F)



Plot 7-52. Occupied Bandwidth Plot (NR Band n77 C-band - 80MHz QPSK - Full RB - Ant F)

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Keysight Spectrum Analyzer - Occupied	BW				- d <b>-</b>
<b>LXU RL RF 50 Ω AC</b>	ter Tri	SENSE:INT nter Freq: 3.840000000 GH ig: Free Run Avg H tten: 32 dB	z Radio St old: 100/100	AM Sep 27, 2024 d: None	Trace/Detector
10 dB/div Ref 40.00 dB	#I Gam.Low	tten: 32 αΒ	Radio De	evice: BTS	
Log 30.0 20.0		ารรับการที่เป็นหน้ายอาการการการการการการการการการการการการการ			Clear Write
10.0		and the second se			
0.00					Average
-20.0 <mark>สุระรุ่งเว<sub>ลา</sub>โดยส์ (ปี</mark> เสรีสุระบานสีระบานสีระบาน			milynumalitydamuw	an a	
-40.0					Max Hold
Center 3.8400 GHz Res BW 1.8 MHz		#VBW 6 MHz		200.0 MHz veep 1 ms	Min Hold
Occupied Bandwid	lth	Total Power	31.6 dBm		
	7.790 MHz				Detector Peak▶
Transmit Freq Error	-155.70 kHz	% of OBW Po	wer 99.00 %		Auto <u>Man</u>
x dB Bandwidth	81.98 MHz	x dB	-26.00 dB		
MSG					

Plot 7-53. Occupied Bandwidth Plot (NR Band n77 C-band - 80MHz 16-QAM - Full RB - Ant F)



Plot 7-54. Occupied Bandwidth Plot (NR Band n77 C-band - 70MHz 7π/2 BPSK - Full RB - Ant F)

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🔤 Keysight Spectrum Analyzer - Occupied BW	1				- F	×
XX RL RF 50Ω AC	CORREC	SENSE:INT er Freg: 3.840000000 GHz		3 AM Sep 27, 2024 td: None	Trace/Detecto	or
	Trig:	Free Run Avg Hol	d: 100/100			
	#IFGain:Low #Atte	en: 32 dB	Radio D	evice: BTS		
10 dB/div Ref 40.00 dBm	h					
20.0						
					Clear Wi	rite
20.0	home parameters	www.www.whenhawamp	1			
10.0						
0.00						
-10.0					Avera	age
-20.0 July Ward may Mary Have and which have	dw -		Human Helpontering the second	Mal Mathematics		_
-30.0			contract for the state of the	and the solution of the		
-40.0					Max H	hlo
-50.0					Maxin	oid
Center 3.84000 GHz				175.0 MHz		
Res BW 1.6 MHz		#VBW 5 MHz	51	veep 1ms	Min H	old
Occupied Bandwidt	h	Total Power	31.9 dBm			_
		rotari onor				
67	67.834 MHz					ctor ak▶
Transmit Freq Error	-41.971 kHz	% of OBW Pow	ver 99.00 %			Man
x dB Bandwidth	71.62 MHz	x dB	-26.00 dB			
			20100 42			
			r en me			
MSG			STATUS			

Plot 7-55. Occupied Bandwidth Plot (NR Band n77 C-band - 70MHz QPSK - Full RB - Ant F)



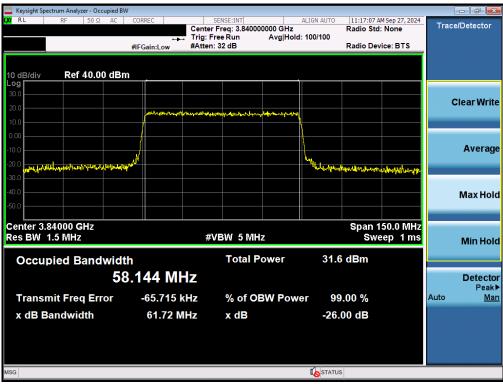
Plot 7-56. Occupied Bandwidth Plot (NR Band n77 C-band - 70MHz 16-QAM - Full RB - Ant F)

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					-	- 7 💌
CORREC	SENSE:INT	ALIGN AUTO			Trace	/Detector
Trig:	Free Run Avg		Raulo Stu	. None		
#IFGain:Low #Atte	n: 32 dB		Radio Dev	rice: BTS		
					_	
					<u>د</u>	lear Write
What are when the straige	white many water	structure .			Ľ	
		<u>\</u>				
						Average
		}				
* <sup>4</sup>		"Henry	All and a second second	With all about the set		
						Max Hold
			Onon 4	EO O MUL		
4	WRW 5 MHz					
7	FOR JINITZ		SWG	sep This		Min Hold
n	Total Powe	r 33.8	3 dBm			
.116 MHZ						Detector Peak▶
-79.213 kHz	% of OBW	Power 99	.00 %		Auto	Peak⊯ <u>Man</u>
61./1 MHz	x dB	-26.	00 dB			
			5			
	#IFGain:Low Frig: #Atte	Center Freq: 3.84000000 0 Trig: Free Run Avg #Atten: 32 dB #WBW 5 MHz Total Powe .116 MHz -79.213 kHz % of OBW F	Center Freq: 3.84000000 GHz Trig: Free Run Avg Hold: 100/100 #Atten: 32 dB #VBW 5 MHz Total Power 33.6 .116 MHz -79.213 kHz % of OBW Power 99 61.71 MHz x dB -26.	Center Freq: 3.84000000 GHz Trig: Free Run Avg Hold: 100/100 #Atten: 32 dB Radio Dev Radio Dev	#IFGain:Low       Center Freq: 3.84000000 GHz Trig: Freq Run       Avg Hold: 100/100       Radio Device: BTS         #IFGain:Low       #Atten: 32 dB       Avg Hold: 100/100       Radio Device: BTS         #IFGain:Low       #Atten: 32 dB       Span 150.0 MHz         Span 150.0 MHz       Syseep 1 ms         Total Power       33.8 dBm         .116 MHz       % of OBW Power       99.00 %         .79.213 kHz       % of OBW Power       99.00 %         61.71 MHz       x dB       -26.00 dB	CORREC         SENSE:INT         ALIGN AUTO         [11:17:00 AMSep 27, 2024]         Trace           #IFGain:Low         Center Free; 3.840000000 GHz         Avg Hold: 100/100         Radio Std: None         Radio Device: BTS         Control in the second

Plot 7-57. Occupied Bandwidth Plot (NR Band n77 C-band - 60MHz π/2 BPSK - Full RB - Ant F)



Plot 7-58. Occupied Bandwidth Plot (NR Band n77 C-band - 60MHz QPSK - Full RB - Ant F)

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Plot 7-59. Occupied Bandwidth Plot (NR Band n77 C-band - 60MHz 16-QAM - Full RB - Ant F)

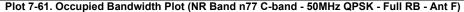


Plot 7-60. Occupied Bandwidth Plot (NR Band n77 C-band - 50MHz π/2 BPSK - Full RB - Ant F)

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Plot 7-62. Occupied Bandwidth Plot (NR Band n77 C-band - 50MHz 16-QAM - Full RB - Ant F)

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Center 3.84000 GHz Res BW 910 kHz Cocupied Bandwidth 38.27 MHz x dB Bandwidth 38.27 MHz Center Free: 3.84000000 GHz Trig: Free Run Avg Hold: 100/100 Radio Std: None Radio Device: BTS Radio Dev	Keysight Spectrum Analyzer - Occupied					
Image: Second control of the second	🗶 RL RF 50Ω AC	CORREC	SENSE:INT er Freg: 3.840000000 GHz			Trace/Detector
0 dB/div       Ref 40.00 dBm         0 dB/div       Ref 40.00 dBm         0 dB/div       Image: Clear Write         0 dB/div <td< th=""><th></th><th> Trig:</th><th>Free Run Avg Hold</th><th></th><th></th><th></th></td<>		Trig:	Free Run Avg Hold			
Org       Image: Clear Write         Occupied Bandwidth       Total Power       33.4 dBm         Occupied Bandwidth       Total Power       99.00 %         x dB Bandwidth       38.27 MHz       x dB       -26.00 dB		#IFGain:Low #Atte	en: 32 dB	Rad	lo Device: BTS	
Org       Image: Clear Write         Occupied Bandwidth       Total Power       33.4 dBm         Occupied Bandwidth       Total Power       99.00 %         x dB Bandwidth       38.27 MHz       x dB       -26.00 dB						
300       300       4	10 dB/div Ref 40.00 dB					
200 200 200 200 200 200 200 200	30.0					
100       1	20.0	10 Mary rest Charles Balancer 10	maret march			Clear Write
Average Average Average Average Average Average Max Hold Center 3.84000 GHz Res BW 910 kHz Transmit Freq Error -1.1237 MHz x dB Bandwidth 38.27 MHz x dB -26.00 dB Average Average Average Max Hold Detector Peak Auto Mar	10.0					
200 where the second se	0.00					
300       Max you whether a grant whet	-10.0					Average
Image: Content 3.84000 GHz       Image: Content 3.84000 GHz       Span 100.0 MHz         Center 3.84000 GHz       #VBW 3 MHz       Span 100.0 MHz         Coccupied Bandwidth       Total Power       33.4 dBm         35.972 MHz       % of OBW Power       99.00 %         x dB Bandwidth       38.27 MHz       x dB       -26.00 dB	-20.0			10-0		
Center 3.84000 GHz Res BW 910 kHz #VBW 3 MHz Span 100.0 MHz BOCCupied Bandwidth Total Power 33.4 dBm 35.972 MHz Transmit Freq Error -1.1237 MHz % of OBW Power 99.00 % x dB Bandwidth 38.27 MHz x dB -26.00 dB	-30.0 porth and marked where the state	and the second				
Center 3.84000 GHz       Span 100.0 MHz         Res BW 910 kHz       #VBW 3 MHz       Span 100.0 MHz         Occupied Bandwidth       Total Power       33.4 dBm         35.972 MHz       Detector         Transmit Freq Error       -1.1237 MHz       % of OBW Power       99.00 %         x dB Bandwidth       38.27 MHz       x dB       -26.00 dB	-40.0					May Hold
Res BW     910 kHz     #VBW 3 MHz     Sweep 1 ms       Occupied Bandwidth     Total Power     33.4 dBm       35.972 MHz     35.972 MHz       Transmit Freq Error     -1.1237 MHz     % of OBW Power     99.00 %       x dB Bandwidth     38.27 MHz     x dB     -26.00 dB	-50.0					Maxilola
Res BW     910 kHz     #VBW 3 MHz     Sweep 1 ms       Occupied Bandwidth     Total Power     33.4 dBm       35.972 MHz     35.972 MHz       Transmit Freq Error     -1.1237 MHz     % of OBW Power     99.00 %       x dB Bandwidth     38.27 MHz     x dB     -26.00 dB						
Occupied Bandwidth     Total Power     33.4 dBm       35.972 MHz     Detector       Transmit Freq Error     -1.1237 MHz     % of OBW Power     99.00 %       x dB Bandwidth     38.27 MHz     x dB     -26.00 dB				Sp		
35.972 MHz Transmit Freq Error -1.1237 MHz % of OBW Power 99.00 % x dB Bandwidth 38.27 MHz x dB -26.00 dB	Kes BW 910 KH2				sweep mis	Min Hold
35.972 MHz Transmit Freq Error -1.1237 MHz % of OBW Power 99.00 % x dB Bandwidth 38.27 MHz x dB -26.00 dB	Occupied Bandwid	lth	Total Power	33.4 dB	m	
Transmit Freq Error       -1.1237 MHz       % of OBW Power       99.00 %       Auto       Mar         x dB Bandwidth       38.27 MHz       x dB       -26.00 dB						Detector
x dB Bandwidth 38.27 MHz x dB -26.00 dB						Peak►
	Transmit Freq Error	-1.1237 MHz	% of OBW Powe	er 99.00	%	Auto <u>Man</u>
	x dB Bandwidth	38.27 MHz	x dB	-26.00 d	В	
SG International Internationae	MSG			STATUS		

Plot 7-63. Occupied Bandwidth Plot (NR Band n77 C-band - 40MHz π/2 BPSK - Full RB - Ant F)



Plot 7-64. Occupied Bandwidth Plot (NR Band n77 C-band - 40MHz QPSK - Full RB - Ant F)

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Keysight Spectrum Analyzer - Occupied BV	V				
<b>ιχ RL</b> RF 50Ω AC	Trig:	SENSE:INT er Freq: 3.840000000 GHz Free Run Avg Ho n: 32 dB	Radio S Id: 100/100	2 PM Sep 27, 2024 td: None evice: BTS	Trace/Detector
10 dB/div Ref 40.00 dBr	in dum.cow				
20.0	relefaltrationshiltrationshiltration	hander wordt with with the state of the stat			Clear Write
10.0		and here and the scheme of the second			
-10.0	- Arrah		hile a		Average
-20.0 wallway with water all parameters to the	ht.		Walannow	When the days	
-40.0					Max Hold
Center 3.84000 GHz Res BW 910 kHz	#	¢VBW 3 MHz		100.0 MHz veep 1 ms	Min Hold
Occupied Bandwidt	h	Total Power	31.3 dBm		
38	3.103 MHz				Detector Peak▶
Transmit Freq Error	-62.358 kHz	% of OBW Pov	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	40.37 MHz	x dB	-26.00 dB		
MSG					

Plot 7-65. Occupied Bandwidth Plot (NR Band n77 C-band - 40MHz 16-QAM - Full RB - Ant F)

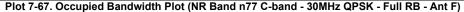


Plot 7-66. Occupied Bandwidth Plot (NR Band n77 C-band - 30MHz π/2 BPSK - Full RB - Ant F)

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Plot 7-68. Occupied Bandwidth Plot (NR Band n77 C-band - 30MHz 16-QAM - Full RB - Ant F)

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Plot 7-69. Occupied Bandwidth Plot (NR Band n77 C-band - 25MHz π/2 BPSK - Full RB - Ant F)



Plot 7-70. Occupied Bandwidth Plot (NR Band n77 C-band - 25MHz QPSK - Full RB - Ant F)

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