

PART 24 MEASUREMENT REPORT

Applicant Name:

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

Date of Testing:

2/24/2025 – 05/09/2025

Test Report Issue Date:

5/9/2025

Test Site/Location:

Element Lab., Columbia, MD, USA
Element Lab., Yongin-Si, Gyeonggi-do, South Korea

Test Report Serial No.:

1M2502270019-02.A3L

FCC ID:

A3LSMF966B

APPLICANT:

Samsung Electronics Co., Ltd.

Application Type:

Certification

Model:

SM-F966B

Additional Model(s):

SM-F966B/DS

EUT Type:

Portable Handset

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part:

24

Test Procedure(s):

ANSI C63.26-2015, KDB 648474 D03 v01r04,
KDB 484596 D01 v03

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.



RJ Ortanez
Executive Vice President



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Antenna-B						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
GSM/GPRS	N/A	GMSK	1850.2 - 1909.8	0.511	27.09	243KGXW
EDGE	N/A	8-PSK	1850.2 - 1909.8	0.174	22.42	249KG7W
WCDMA	N/A	Spread Spectrum	1852.4 - 1907.6	0.156	21.93	4M17F9W
LTE Band 25/2	20 MHz	QPSK	1860 - 1905	0.139	21.43	18M0G7D
		16QAM	1860 - 1905	0.118	20.71	18M0W7D
	15 MHz	QPSK	1857.5 - 1907.5	0.141	21.49	13M5G7D
		16QAM	1857.5 - 1907.5	0.115	20.59	13M6W7D
	10 MHz	QPSK	1855 - 1910	0.138	21.40	9M04G7D
		16QAM	1855 - 1910	0.114	20.58	9M05W7D
	5 MHz	QPSK	1852.5 - 1912.5	0.139	21.44	4M54G7D
		16QAM	1852.5 - 1912.5	0.115	20.60	4M53W7D
	3 MHz	QPSK	1851.5 - 1913.5	0.135	21.30	2M72G7D
		16QAM	1851.5 - 1913.5	0.116	20.64	2M72W7D
	1.4 MHz	QPSK	1850.7 - 1914.3	0.128	21.09	1M11G7D
		16QAM	1850.7 - 1914.3	0.110	20.40	1M13W7D
NR Band n25/2	40 MHz	$\pi/2$ BPSK	1870 - 1895	0.138	21.41	38M9G7D
		QPSK	1870 - 1895	0.177	22.47	38M8G7D
		16QAM	1870 - 1895	0.139	21.43	38M8W7D
	35 MHz	$\pi/2$ BPSK	1867.5 - 1897.5	0.173	22.39	32M4G7D
		QPSK	1867.5 - 1897.5	0.177	22.47	33M8G7D
	30 MHz	16QAM	1867.5 - 1897.5	0.141	21.49	33M8W7D
		$\pi/2$ BPSK	1865 - 1900	0.172	22.35	28M8G7D
		QPSK	1865 - 1900	0.175	22.43	28M8G7D
	25 MHz	16QAM	1865 - 1900	0.142	21.53	28M8W7D
		$\pi/2$ BPSK	1862.5 - 1902.5	0.173	22.38	23M0G7D
		QPSK	1862.5 - 1902.5	0.176	22.45	24M0G7D
	20 MHz	16QAM	1862.5 - 1902.5	0.142	21.51	23M9W7D
		$\pi/2$ BPSK	1860 - 1905	0.168	22.25	18M0G7D
		QPSK	1860 - 1905	0.169	22.29	19M1G7D
	15 MHz	16QAM	1860 - 1905	0.136	21.34	19M1W7D
		$\pi/2$ BPSK	1857.5 - 1907.5	0.166	22.19	13M5G7D
		QPSK	1857.5 - 1907.5	0.169	22.29	14M2G7D
	10 MHz	16QAM	1857.5 - 1907.5	0.141	21.48	14M2W7D
		$\pi/2$ BPSK	1855 - 1910	0.164	22.16	9M06G7D
		QPSK	1855 - 1910	0.169	22.27	9M34G7D
	5 MHz	16QAM	1855 - 1910	0.140	21.47	9M37W7D
		$\pi/2$ BPSK	1852.5 - 1912.5	0.167	22.23	4M54G7D
		QPSK	1852.5 - 1912.5	0.173	22.39	4M53G7D
		16QAM	1852.5 - 1912.5	0.147	21.67	4M53W7D

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Antenna-G						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 25/2	20 MHz	QPSK	1860 - 1905	0.288	24.59	18M0G7D
		16QAM	1860 - 1905	0.237	23.75	18M0W7D
	15 MHz	QPSK	1857.5 - 1907.5	0.290	24.63	13M5G7D
		16QAM	1857.5 - 1907.5	0.214	23.31	13M5W7D
	10 MHz	QPSK	1855 - 1910	0.287	24.58	9M05G7D
		16QAM	1855 - 1910	0.230	23.63	9M01W7D
	5 MHz	QPSK	1852.5 - 1912.5	0.290	24.62	4M53G7D
		16QAM	1852.5 - 1912.5	0.236	23.72	4M52W7D
	3 MHz	QPSK	1851.5 - 1913.5	0.291	24.64	2M72G7D
		16QAM	1851.5 - 1913.5	0.235	23.70	2M71W7D
	1.4 MHz	QPSK	1850.7 - 1914.3	0.288	24.60	1M11G7D
		16QAM	1850.7 - 1914.3	0.219	23.40	1M10W7D
NR Band n25/2	40 MHz	TT/2 BPSK	1870 - 1895	0.198	22.97	38M8G7D
		QPSK	1870 - 1895	0.202	23.06	38M8G7D
		16QAM	1870 - 1895	0.164	22.14	38M8W7D
	35 MHz	TT/2 BPSK	1867.5 - 1897.5	0.242	23.83	32M4G7D
		QPSK	1867.5 - 1897.5	0.251	24.00	33M7G7D
		16QAM	1867.5 - 1897.5	0.191	22.82	33M7W7D
	30 MHz	TT/2 BPSK	1865 - 1900	0.248	23.95	28M7G7D
		QPSK	1865 - 1900	0.201	23.03	28M8G7D
		16QAM	1865 - 1900	0.203	23.08	28M7W7D
	25 MHz	TT/2 BPSK	1862.5 - 1902.5	0.249	23.96	23M0G7D
		QPSK	1862.5 - 1902.5	0.261	24.17	23M9G7D
		16QAM	1862.5 - 1902.5	0.201	23.03	23M9W7D
	20 MHz	TT/2 BPSK	1860 - 1905	0.245	23.90	17M9G7D
		QPSK	1860 - 1905	0.251	23.99	19M1G7D
		16QAM	1860 - 1905	0.197	22.94	19M1W7D
	15 MHz	TT/2 BPSK	1857.5 - 1907.5	0.250	23.98	13M5G7D
		QPSK	1857.5 - 1907.5	0.261	24.16	14M2G7D
		16QAM	1857.5 - 1907.5	0.206	23.13	14M2W7D
	10 MHz	TT/2 BPSK	1855 - 1910	0.245	23.90	9M01G7D
		QPSK	1855 - 1910	0.253	24.03	9M36G7D
		16QAM	1855 - 1910	0.202	23.06	9M35W7D
	5 MHz	TT/2 BPSK	1852.5 - 1912.5	0.250	23.98	4M50G7D
		QPSK	1852.5 - 1912.5	0.249	23.96	4M53G7D
		16QAM	1852.5 - 1912.5	0.192	22.83	4M51W7D

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A. ("MD")

- 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 ISSED Standards (RSS).
- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISSED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISSED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreements (MRAs).

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

- 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 ISSED: 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: A3LSMF966B**. 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 24.

The authorization for these models (SM-F966B and SM-F966B/DS) utilize data referencing from FCC ID: A3LSMF966U (Model SM-F966U) as permitted per KDB 484596 D01 v03. Data referencing data test results are included in Appendix A of this report. Data pertaining to the operation of NR Band n25/n2 was fully tested due to a target Output Power adjustment between the referenced and variant model. All the other data in this report was referenced for compliance.

Test Device Serial No.: 1930R, 0070M, 0176M, 1929R, 0173M, 0156M

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, 850/1900 GSM/GPRS/EDGE Multi-Band LTE, MultiBand 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, SCS

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-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.

This device supports three folder configurations: one is with folder fully open, one is where the folder is half open (90 degrees), and one is with folder closed. All configurations are tested, and the worst case radiated emissions data is shown in this report.

Band	Ant1	Ant2
GSM/GPRS	Ant B	Ant G
WCDMA	Ant B	Ant G
LTE Band 25/2	Ant B	Ant G

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NR Band n25/2	Ant B	Ant G
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Table 2-1. Antenna Naming Convention

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version FAV0_F966UFAU0AYB3 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

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

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

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

Deviation from Measurement Procedure.....None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

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

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

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

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

And

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

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

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

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4.0 MEASUREMENT UNCERTAINTY

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

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

Table 4-1. Measurement Uncertainty Budget – MD

Contribution	Expanded Uncertainty ($\pm$ dB)
Conducted Bench Top Measurements	1.95
Radiated Disturbance (<1GHz)	4.10
Radiated Disturbance (>1GHz)	4.82
Radiated Disturbance (>18GHz)	4.96

Table 4-2. Measurement Uncertainty Budget – KR

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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
-	AP2	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP2
-	AP1	EMC Cable and Switch System	2/25/2025	Annual	2/25/2026	AP1
-	ETS	EMC Cable and Switch System	12/11/2024	Annual	12/11/2026	ETS
-	LTx4	Licensed Transmitter Cable Set	2/25/2025	Annual	2/25/2026	LTx4
-	LTx5	Llensed Transmitter Cable Set	2/25/2025	Annual	2/25/2026	LTx5
Espec	ESX-2CA	Environmental Chamber	11/20/2024	Biennial	11/20/2026	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	5/3/2023	Biennial	5/3/2025	00125518
Keysight Technologies	N9020A	MXA Signal Analyzer	4/11/2024	Annual	4/11/2025	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	4/9/2024	Annual	4/9/2025	MY52350166
Keysight Technologies	N9038A	MXE EMI Receiver	9/16/2024	Annual	9/16/2025	MY51210133
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			100976
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	10/16/2024	Annual	10/16/2025	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	10/16/2024	Annual	10/16/2025	100348
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	9/11/2024	Biennial	9/11/2026	A051107

Table 5-1. Test Equipment Calibration Table – MD

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
ETS-Lindgren	3117	Double Ridged Guide Antenna (1-18 GHz)	4/9/2024	Annual	4/9/2025	218555
Rohde & Schwarz	TS-PR18	Pre-Amplifier (1GHz - 18GHz)	8/14/2024	Annual	8/14/2025	101648
Rohde & Schwarz	FSV40	Signal Analyzer (10Hz-40GHz)	5/29/2024	Annual	5/29/2025	101619
Rohde & Schwarz	ESW44	EMI Test Receiver	5/1/2024	Annual	5/1/2025	101867
Rohde & Schwarz	FSW67	Signal and Spectrum Analyzer (2Hz-67GHz)	7/5/2024	Annual	7/5/2025	101366
Rohde & Schwarz	TS-PR8	Pre-Amplifier (30MHz - 8GHz)	7/3/2024	Annual	7/3/2025	102356
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	12/10/2024	Annual	12/10/2025	161616
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	12/10/2024	Annual	12/10/2025	164715
Schwarzbeck	VULB 9162	Bilog Antenna (30MHz - 6GHz)	4/9/2024	Annual	4/9/2025	304

Table 5-2. Test Equipment Calibration Table – KR

Notes:

- For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
- Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE EMISSION DESIGNATORS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

EDGE BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

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7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSMF966B
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): GSM/GPRS/EDGE/WCDMA/LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference	Test Lab Location	Data Referencing
CONDUCTED	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	N/A	PASS	See RF Exposure Report	KR	Yes**
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.2	KR	Yes**
	Conducted Band Edge / Spurious Emissions	2.1051, 24.238(a)	> 43 + 10log10(P[Watts]) at Band Edge and for all out-of-band emissions	PASS	Sections 7.3, 7.4	KR	Yes**
	Peak-to-Average Ratio	24.232(d)	≤ 13 dB	PASS	Section 7.5	KR	Yes**
	Frequency Stability	2.1055, 24.235	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8	MD	Yes**
RADIATED	Equivalent Isotropic Radiated Power	24.232(c)	< 2 Watts max. EIRP	PASS	Section 7.6	MD	Yes**
	Radiated Spurious Emissions	2.1053, 24.238(a)	≥ 43 + 10 log (P[Watts]) dB of attenuation below transmitter power	PASS	Section 7.7	MD	Yes**

* 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**.

** Data pertaining to operation within the NR n25/n2 Band was fully tested for the A3LSMF966B (Model SM-F966B) due to a target adjustment between the referenced and variant model.

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 v2.3.0.
- 5) The authorization for these models (SM-F966B and SM-F966B/DS) utilize data referencing from FCC ID: A3LSMF966U (Model: SM-F966U) as permitted per KDB 484596 v03. Data referencing data test results are included in Section 9.0 - Appendix A of this report.

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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. Detector = RMS
2. Trace mode = trace average for continuous emissions, max hold for pulse emissions
3. Sweep time = auto couple
4. The trace was allowed to stabilize
5. 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.

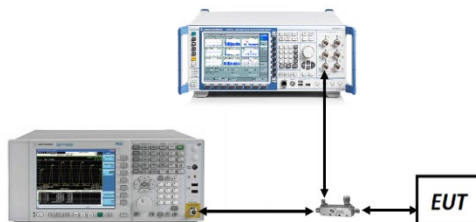


Figure 7-1. Test Instrument & Measurement Setup

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]
20 MHz	QPSK	26140	1860.0	1 / 50	24.97
		26365	1882.5	1 / 0	24.94
		26590	1905.0	1 / 99	24.73
	16-QAM	26365	1882.5	1 / 0	24.37
15 MHz	QPSK	26115	1857.5	1 / 74	24.93
		26365	1882.5	1 / 37	24.98
		26615	1907.5	1 / 74	24.87
	16-QAM	26115	1857.5	1 / 74	24.28
10 MHz	QPSK	26090	1855.0	1 / 25	24.93
		26365	1882.5	1 / 25	24.93
		26640	1910.0	1 / 25	24.98
	16-QAM	26365	1882.5	1 / 25	24.24
5 MHz	QPSK	26065	1852.5	1 / 12	24.95
		26365	1882.5	1 / 12	24.97
		26665	1912.5	1 / 12	24.93
	16-QAM	26065	1852.5	1 / 12	24.38
3 MHz	QPSK	26055	1851.5	1 / 7	24.98
		26365	1882.5	1 / 7	24.99
		26675	1913.5	1 / 7	24.99
	16-QAM	26055	1851.5	1 / 7	24.33
1.4 MHz	QPSK	26047	1850.7	1 / 5	24.86
		26365	1882.5	1 / 5	24.95
		26683	1914.3	1 / 5	24.81
	16-QAM	26683	1914.3	1 / 5	24.35

Table 7-2. LTE Conducted Power Results – LTE Band 25/2 – Ant2

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
40 MHz	$\pi/2$ BPSK	374000	1870.0	1 / 108	23.96
		376500	1882.5	1 / 108	23.96
		379000	1895.0	1 / 1	23.99
	QPSK	374000	1870.0	1 / 108	23.78
		376500	1882.5	1 / 108	23.86
		379000	1895.0	1 / 1	23.95
	16-QAM	376500	1882.5	1 / 108	22.88
35 MHz	$\pi/2$ BPSK	372000	1865.0	1 / 94	23.96
		376500	1882.5	1 / 94	23.81
		381000	1900.0	1 / 94	23.81
	QPSK	372000	1865.0	1 / 94	23.89
		376500	1882.5	1 / 94	23.79
		381000	1900.0	1 / 94	23.77
	16-QAM	372000	1865.0	1 / 94	22.89
30 MHz	$\pi/2$ BPSK	372000	1865.0	1 / 1	23.97
		376500	1882.5	1 / 158	23.93
		381000	1900.0	1 / 158	23.98
	QPSK	372000	1865.0	1 / 158	23.91
		376500	1882.5	1 / 158	23.83
		381000	1900.0	1 / 158	23.98
	16-QAM	376500	1882.5	1 / 158	23.08
25 MHz	$\pi/2$ BPSK	372000	1862.5	1 / 131	23.97
		376500	1882.5	1 / 131	23.95
		381000	1902.5	1 / 1	23.96
	QPSK	372000	1862.5	1 / 131	23.96
		376500	1882.5	1 / 131	23.96
		381000	1902.5	1 / 1	23.74
	16-QAM	376500	1882.5	1 / 131	22.76
20 MHz	$\pi/2$ BPSK	372000	1860.0	1 / 104	23.87
		376500	1882.5	1 / 104	23.84
		381000	1905.0	1 / 104	23.94
	QPSK	372000	1860.0	1 / 104	23.83
		376500	1882.5	1 / 104	23.78
		381000	1905.0	1 / 104	23.90
	16-QAM	376500	1882.5	1 / 104	22.71
15 MHz	$\pi/2$ BPSK	371500	1857.5	1 / 1	23.87
		376500	1882.5	1 / 1	23.97
		381500	1907.5	1 / 1	23.95
	QPSK	371500	1857.5	1 / 1	23.94
		376500	1882.5	1 / 1	23.95
		381500	1907.5	1 / 1	23.86
	16-QAM	376500	1882.5	1 / 1	22.85
10 MHz	$\pi/2$ BPSK	371000	1855.0	1 / 26	23.91
		376500	1882.5	1 / 1	23.88
		382000	1910.0	1 / 50	23.93
	QPSK	371000	1855.0	1 / 26	23.57
		376500	1882.5	1 / 1	23.82
		382000	1910.0	1 / 50	23.92
	16-QAM	382000	1910.0	1 / 50	22.97
5 MHz	$\pi/2$ BPSK	370500	1852.5	1 / 23	23.94
		376500	1882.5	1 / 23	23.97
		382500	1912.5	1 / 23	23.93
	QPSK	370500	1852.5	1 / 23	23.53
		376500	1882.5	1 / 23	23.75
		382500	1912.5	1 / 23	23.85
	16-QAM	376500	1882.5	1 / 23	23.18

Table 7-3. NR Conducted Power Results – NR Band n25/2 – Ant2

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7.3 Occupied Bandwidth

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst-case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

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

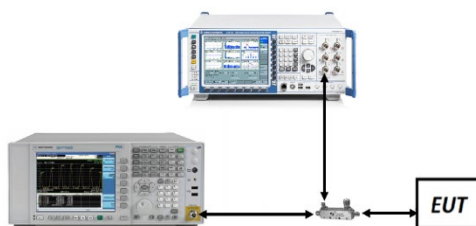


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

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Mode	Bandwidth	Modulation	OBW [MHz]
GSM-PCS	N/A	GMSK	0.243
GSM-PCS EDGE		8-PSK	0.249
WCDMA-PCS		Spread Spectrum	4.170
LTE-B25-2	20MHz	QPSK	18.01
		16QAM	18.03
	15MHz	QPSK	13.54
		16QAM	13.55
	10MHz	QPSK	9.04
		16QAM	9.05
	5MHz	QPSK	4.54
		16QAM	4.53
	3MHz	QPSK	2.72
		16QAM	2.72
	1.4MHz	QPSK	1.11
		16QAM	1.13

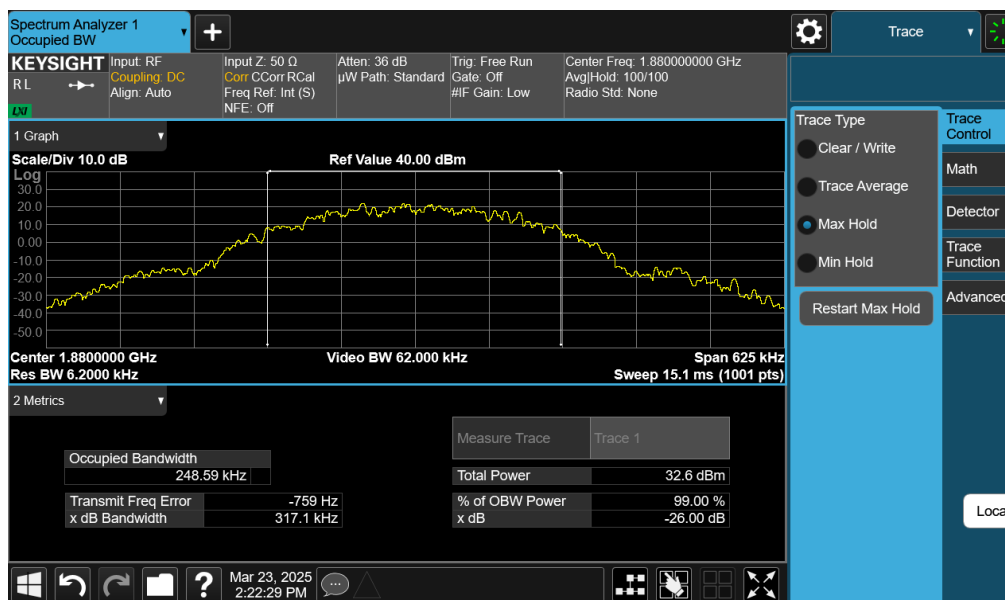
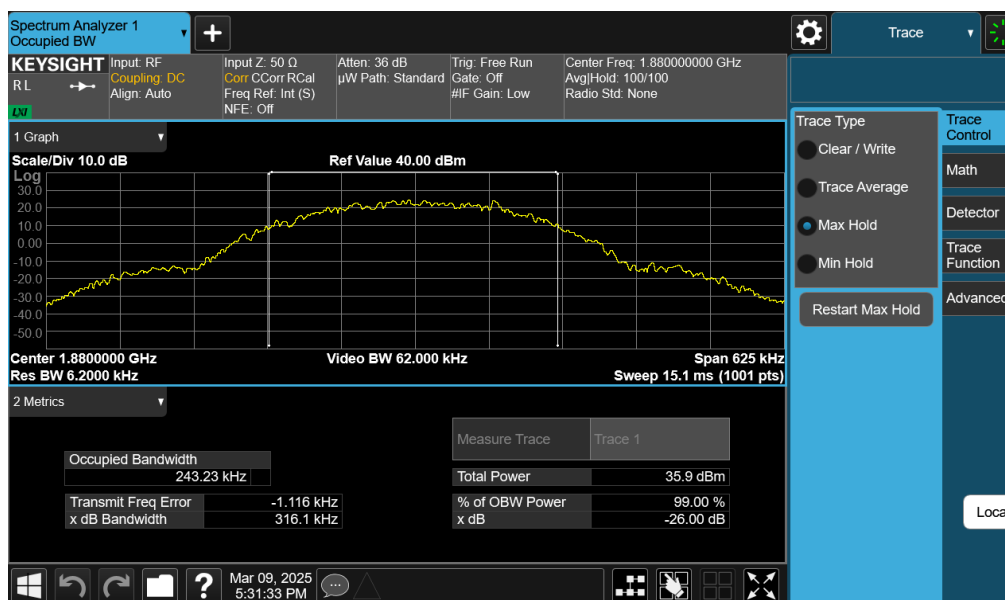
Table 7-4. Occupied Bandwidth Results – Ant1

Mode	Bandwidth	Modulation	OBW [MHz]
NR-n25-2	40MHz	BPSK	38.89
		QPSK	38.83
		16QAM	38.82
	35MHz	BPSK	32.44
		QPSK	33.79
		16QAM	33.78
	30MHz	BPSK	28.76
		QPSK	28.84
		16QAM	28.81
	25MHz	BPSK	23.03
		QPSK	23.96
		16QAM	23.93
	20MHz	BPSK	17.99
		QPSK	19.06
		16QAM	19.06
	15MHz	BPSK	13.50
		QPSK	14.20
		16QAM	14.21
	10MHz	BPSK	9.06
		QPSK	9.34
		16QAM	9.37
	5MHz	BPSK	4.54
		QPSK	4.53
		16QAM	4.53

Table 7-5. Occupied Bandwidth Results – Ant1

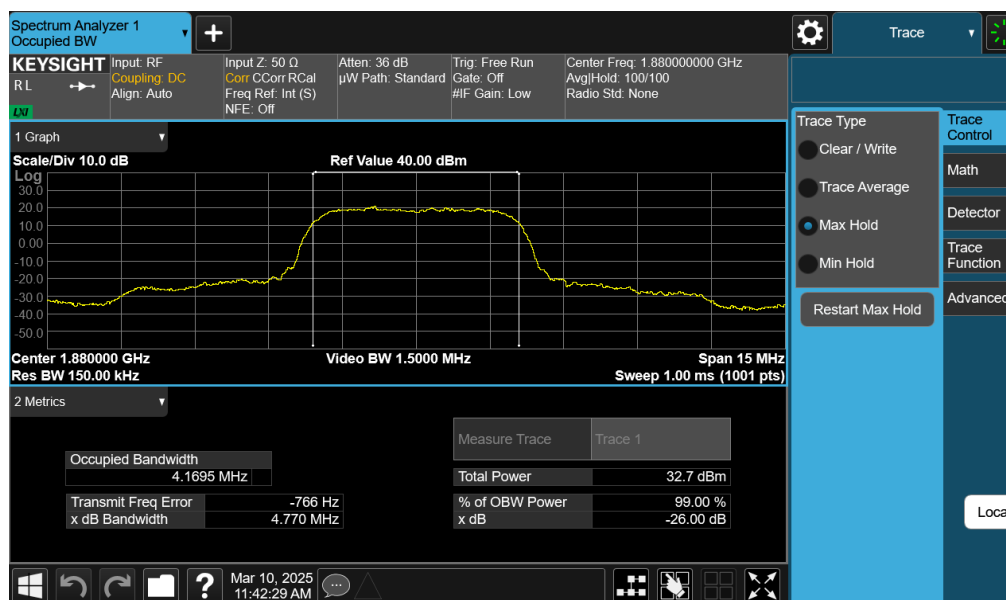
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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GSM/GPRS PCS – Ant1



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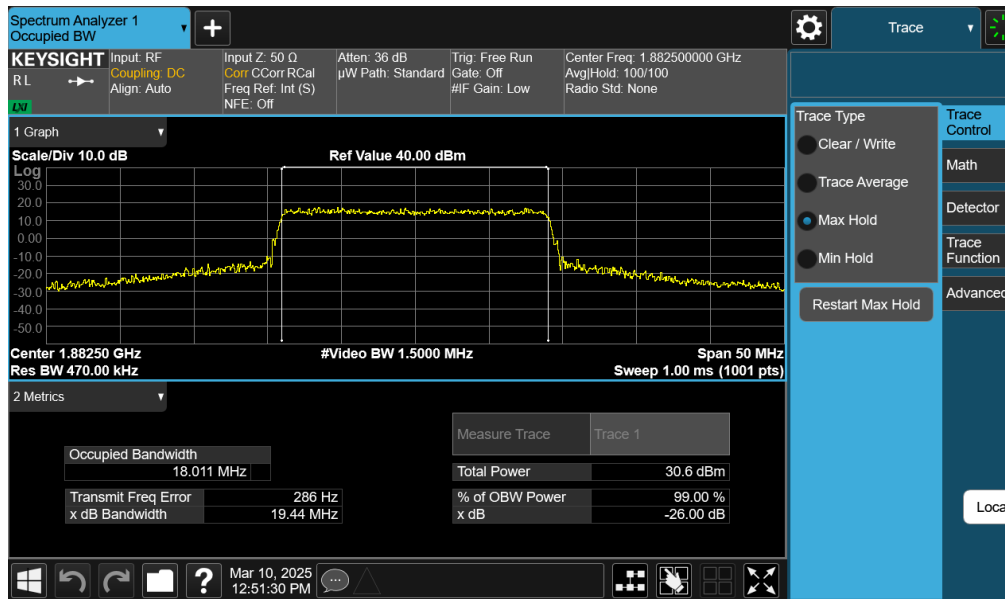
WCDMA PCS – Ant1



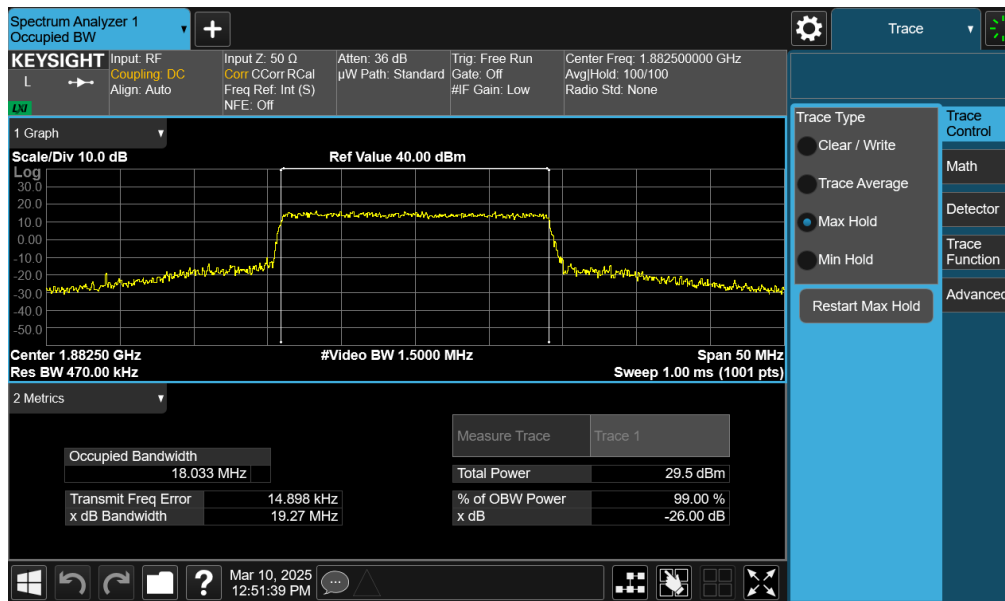
Plot 7-3. Occupied Bandwidth Plot (WCDMA, Ch. 9400 - Ant1)

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LTE Band 25/2 – Ant1

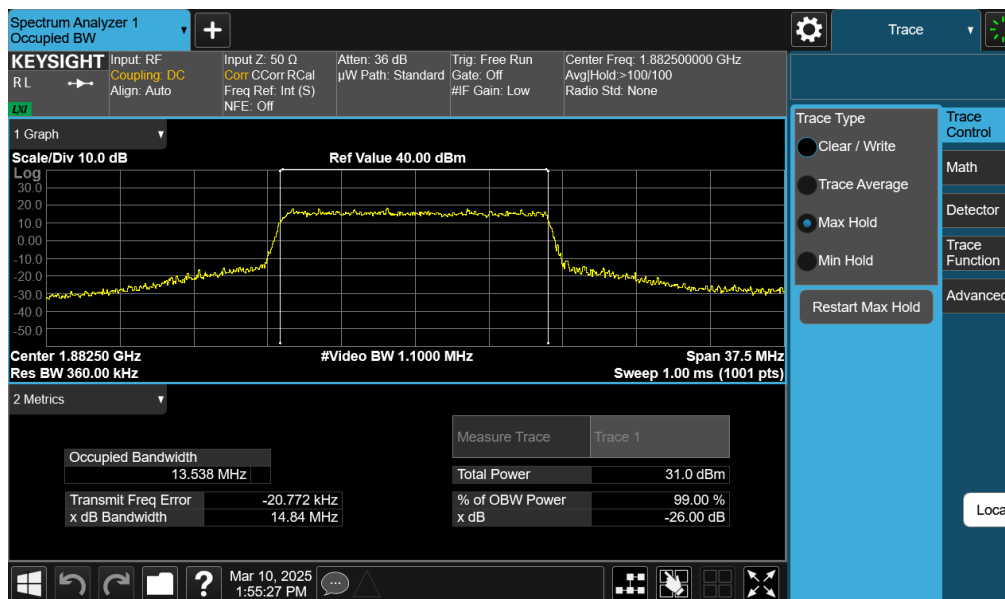


Plot 7-4. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant1)

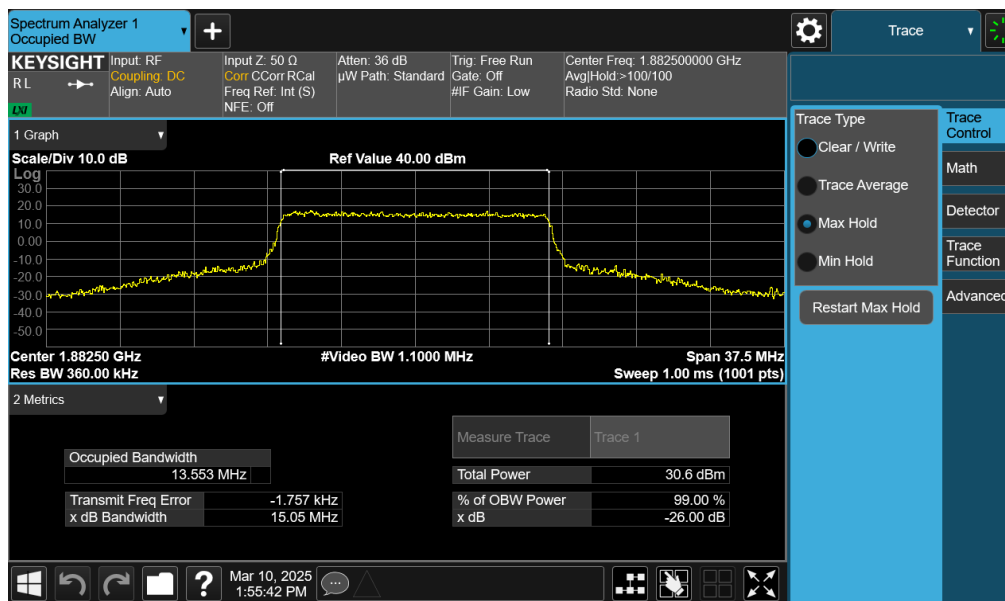


Plot 7-5. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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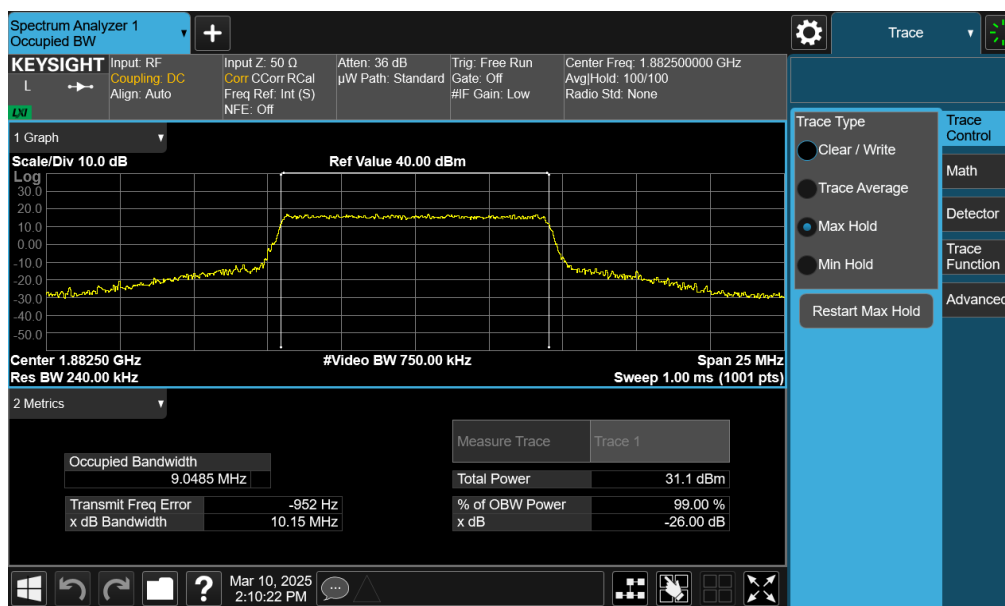
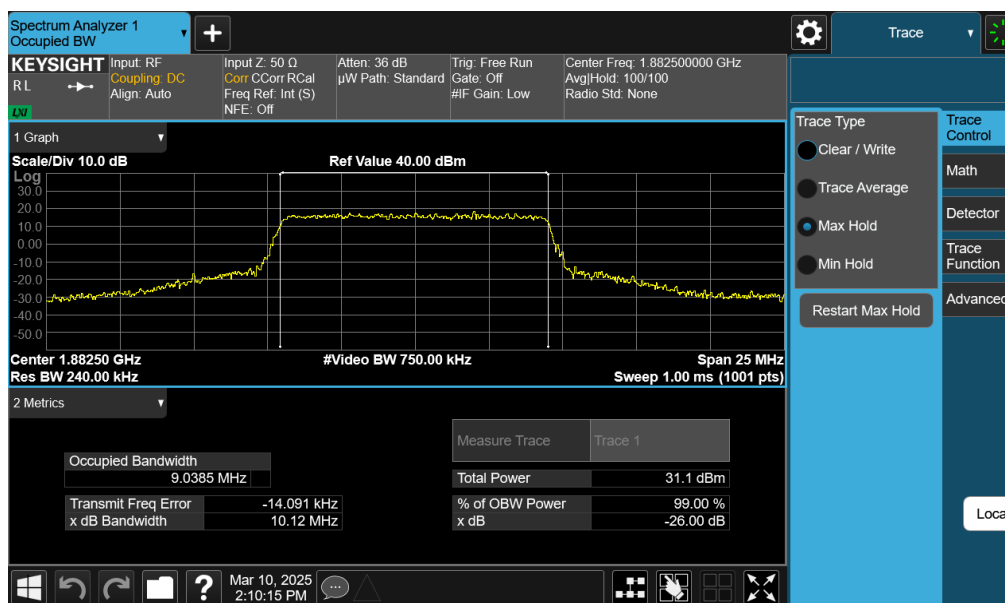


Plot 7-6. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz QPSK - Full RB - Ant1)

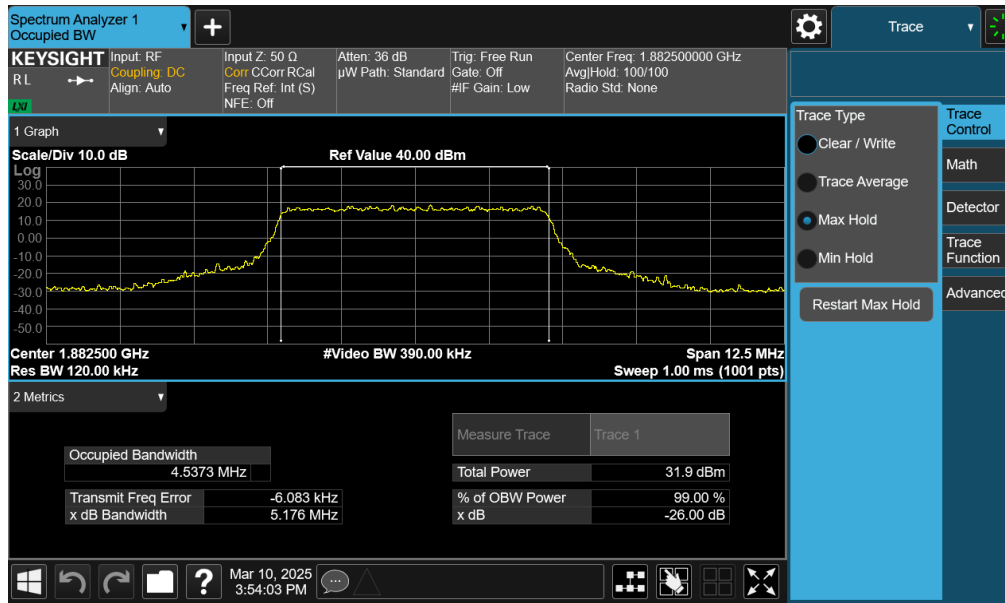


Plot 7-7. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB - Ant1)

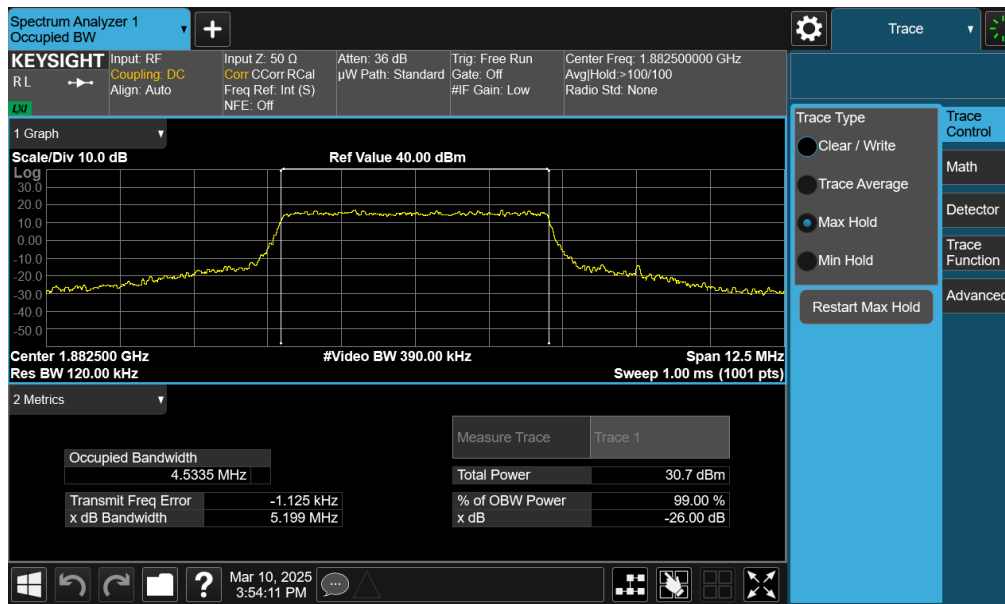
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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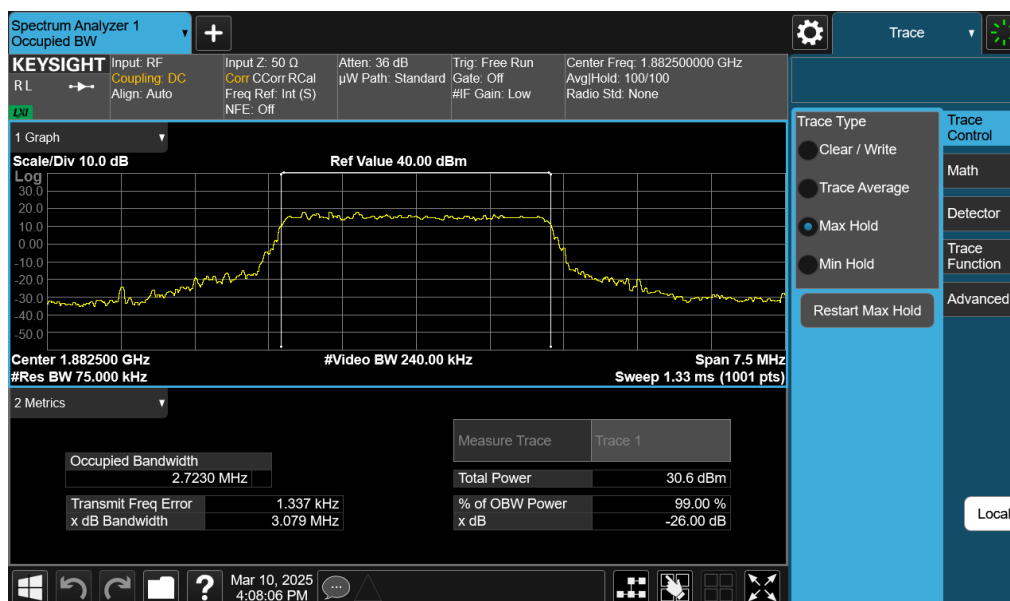


Plot 7-10. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz QPSK - Full RB - Ant1)

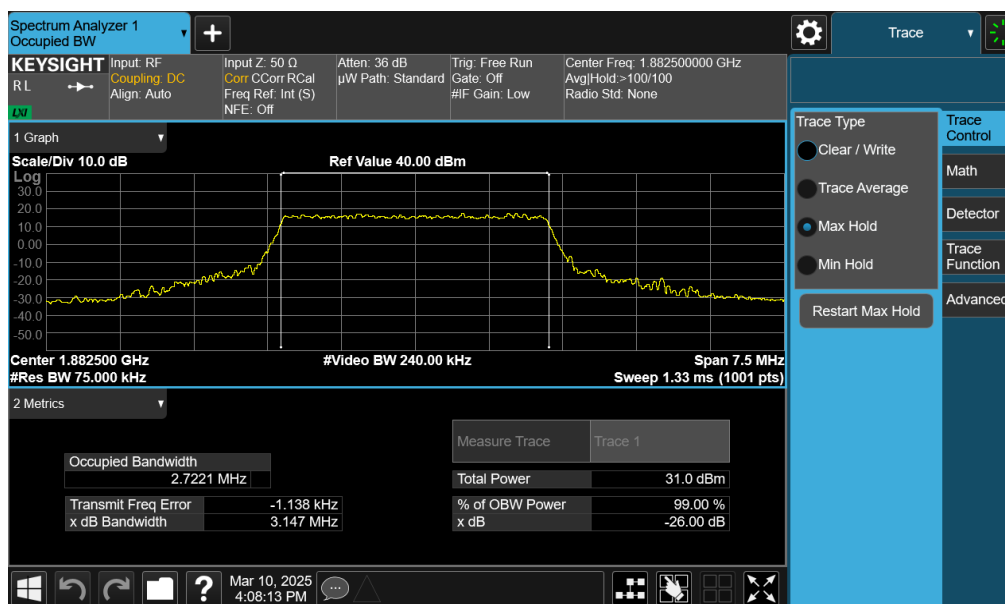


Plot 7-11. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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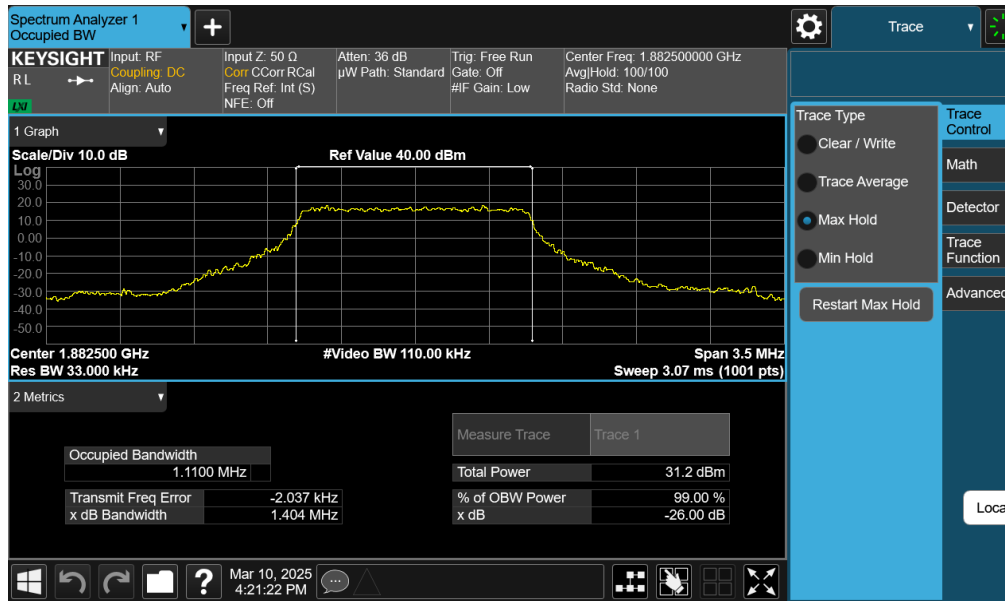


Plot 7-12. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz QPSK - Full RB - Ant1)



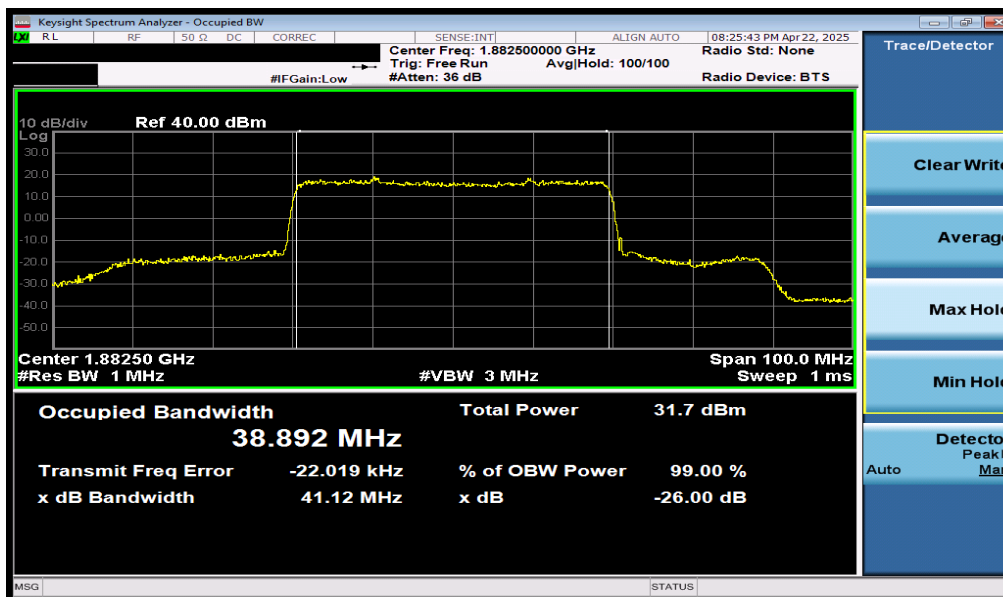
Plot 7-13. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB - Ant1)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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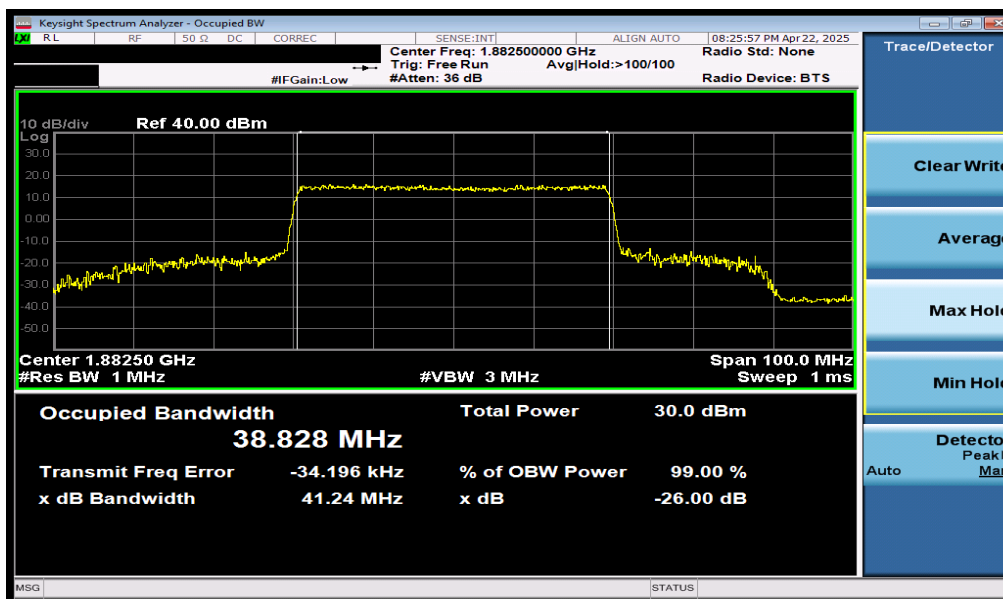


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NR Band n25/2 – Ant1

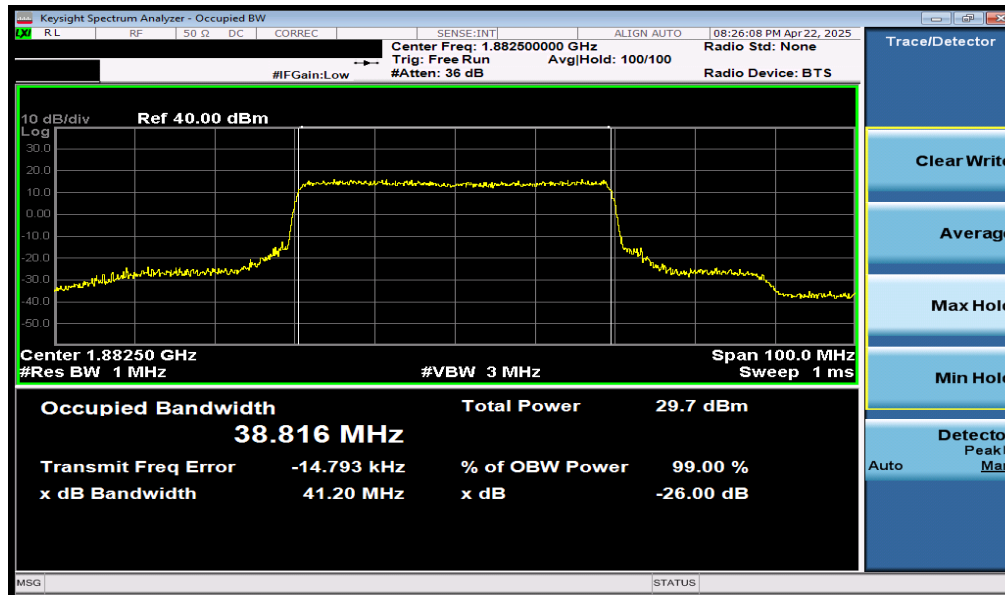


Plot 7-16. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz DFT-s-OFDM BPSK - Full RB - ANT1)

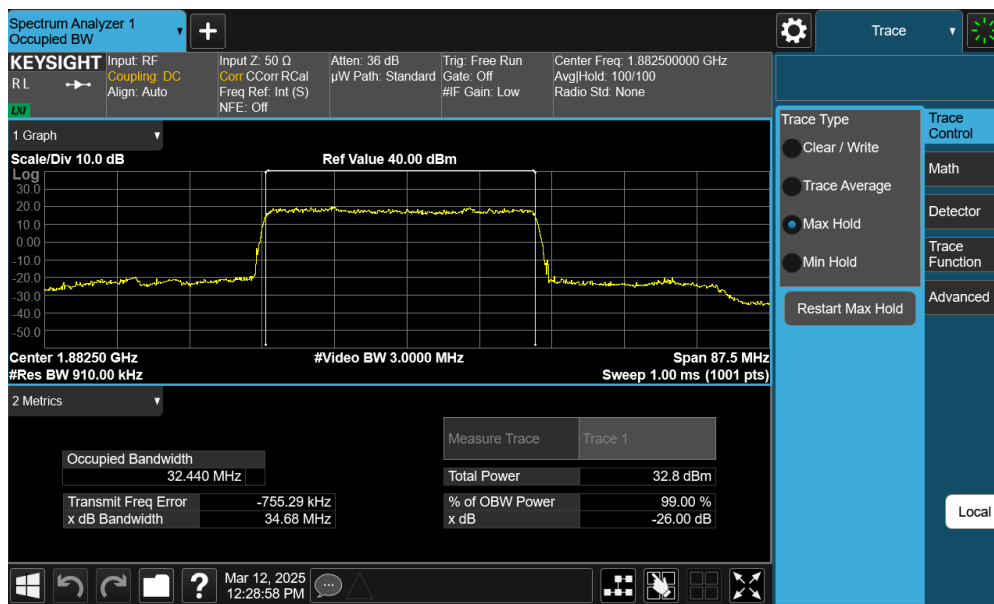


Plot 7-17. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM QPSK - Full RB - ANT1)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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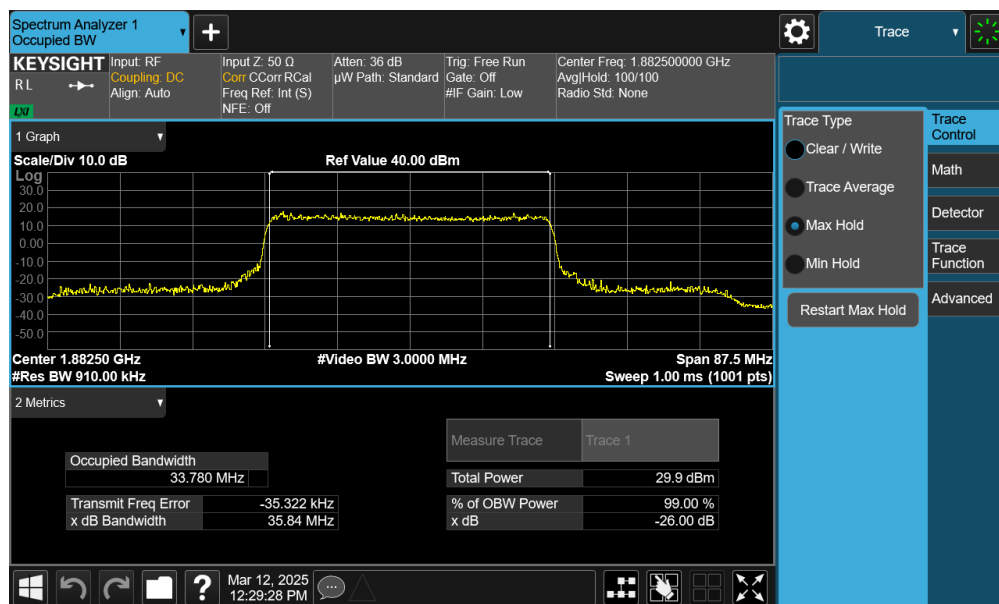
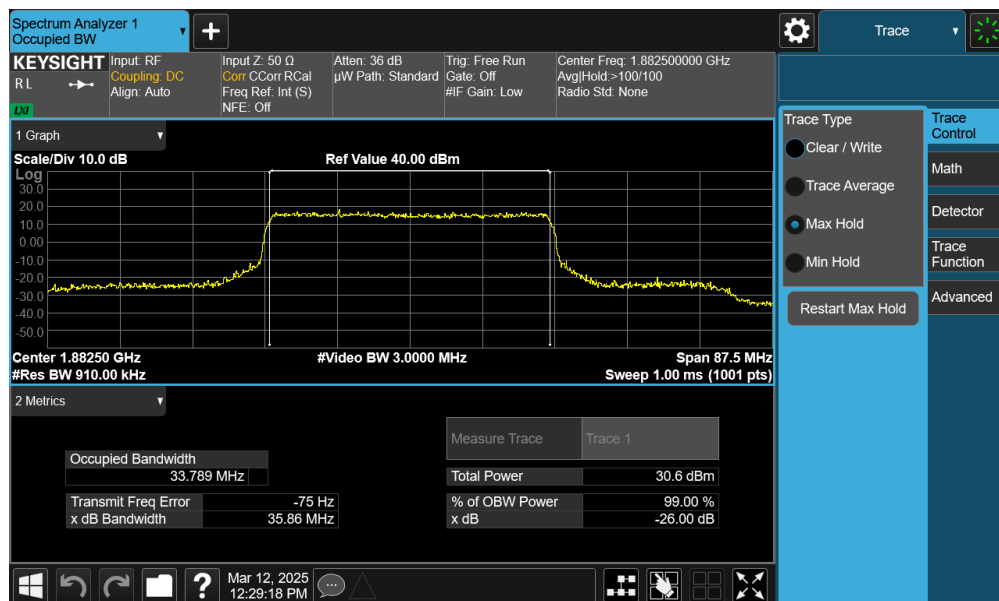


Plot 7-18. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM 16QAM - Full RB - ANT1)

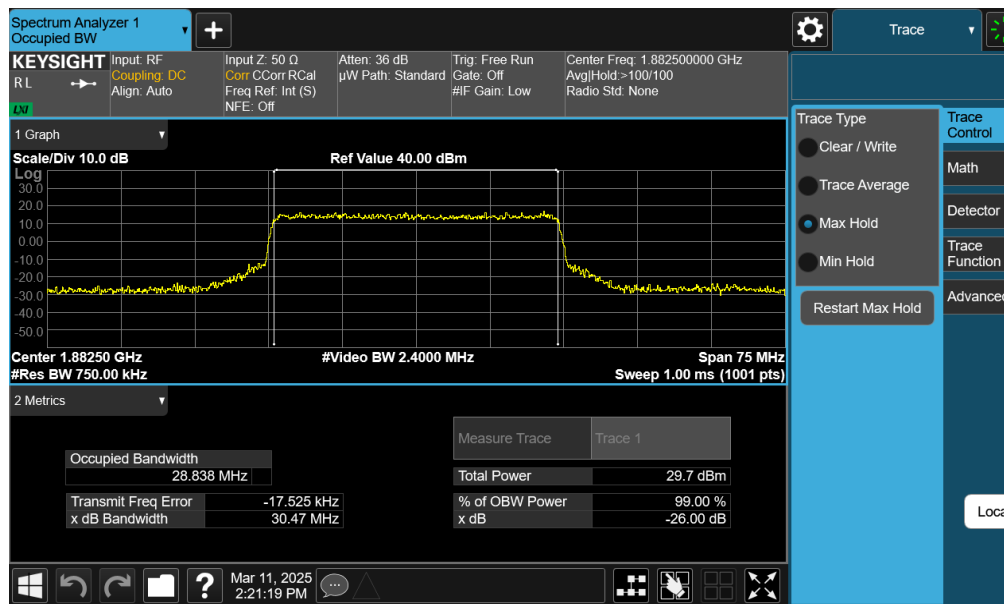
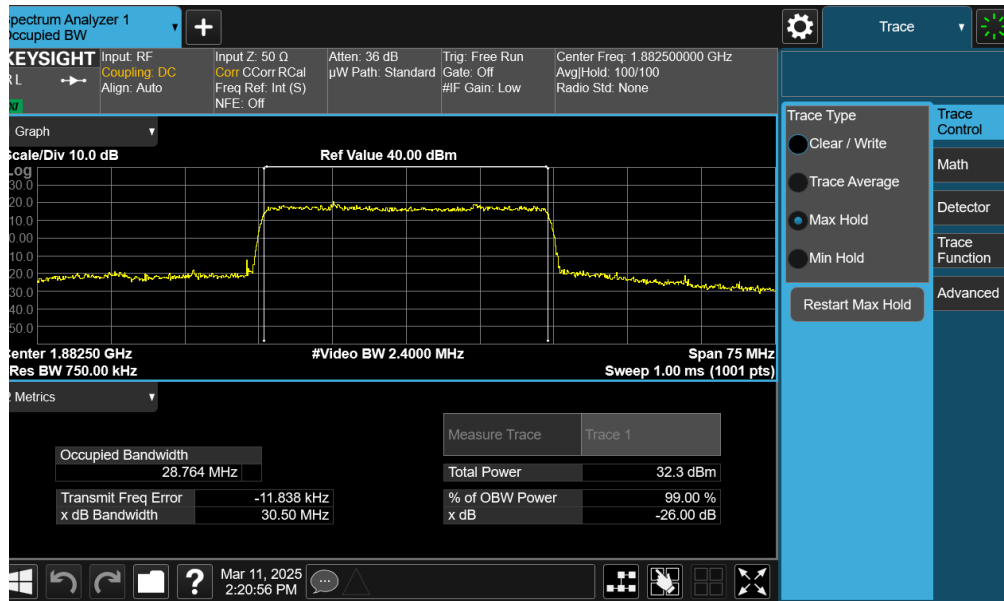


Plot 7-19. Occupied Bandwidth Plot (NR Band n25/2 - 35.0MHz DFT-s-OFDM BPSK - Full RB - ANT1)

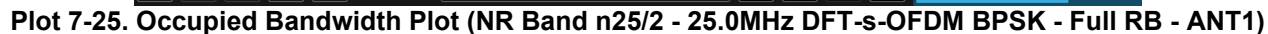
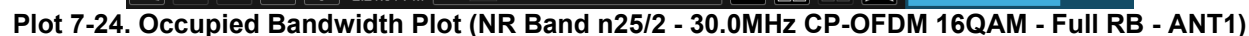
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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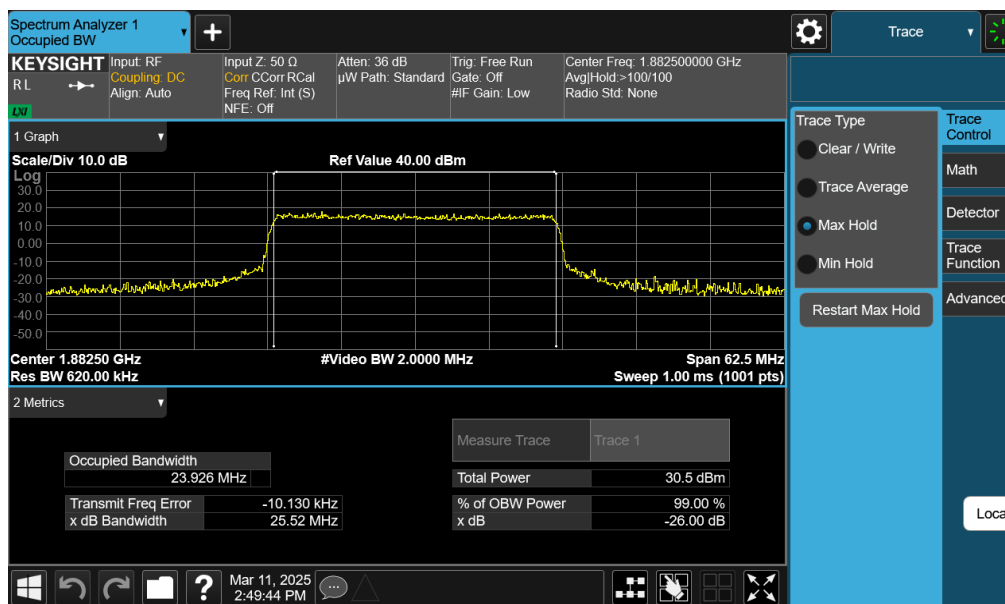
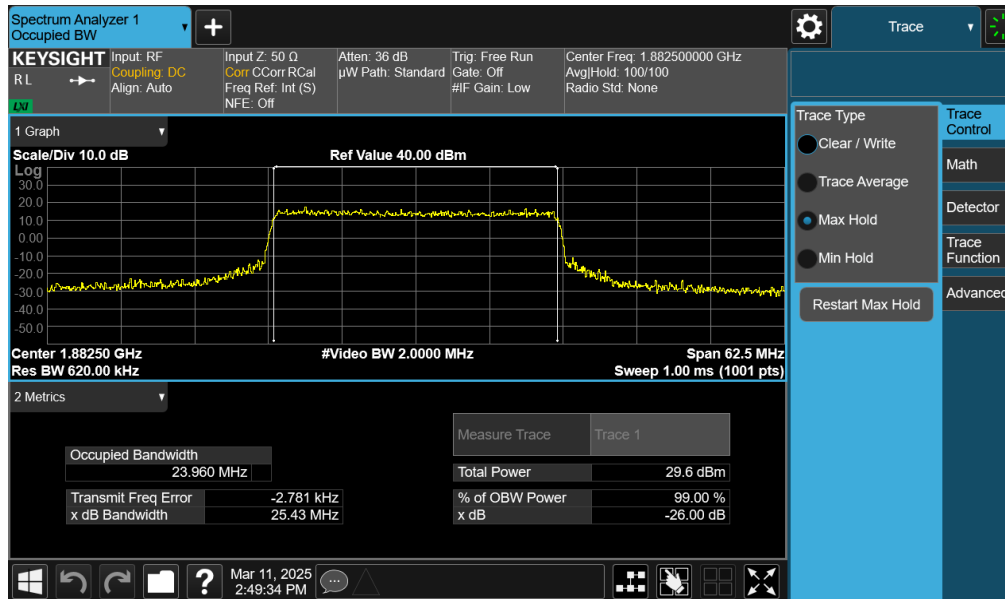
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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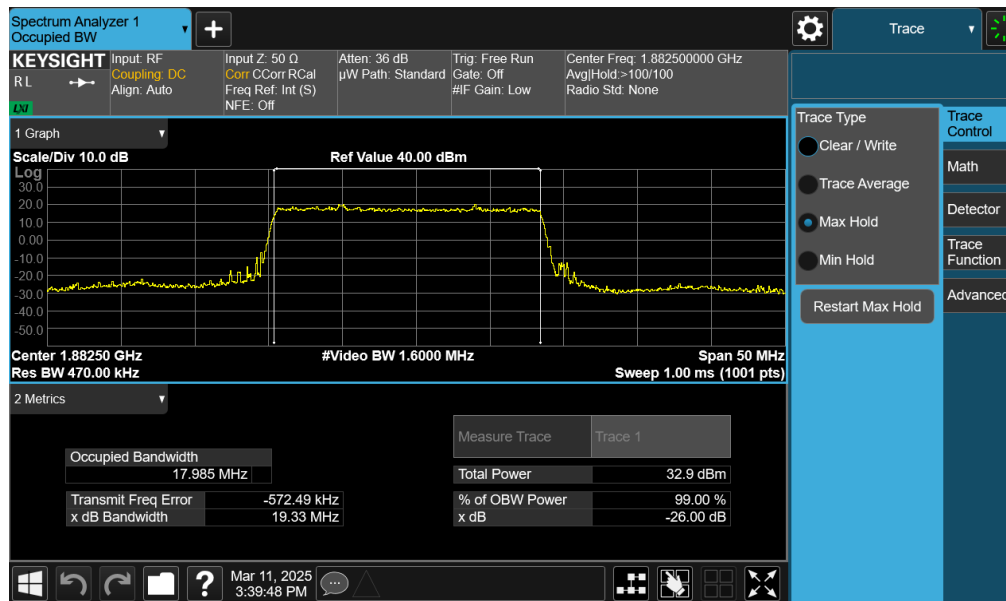
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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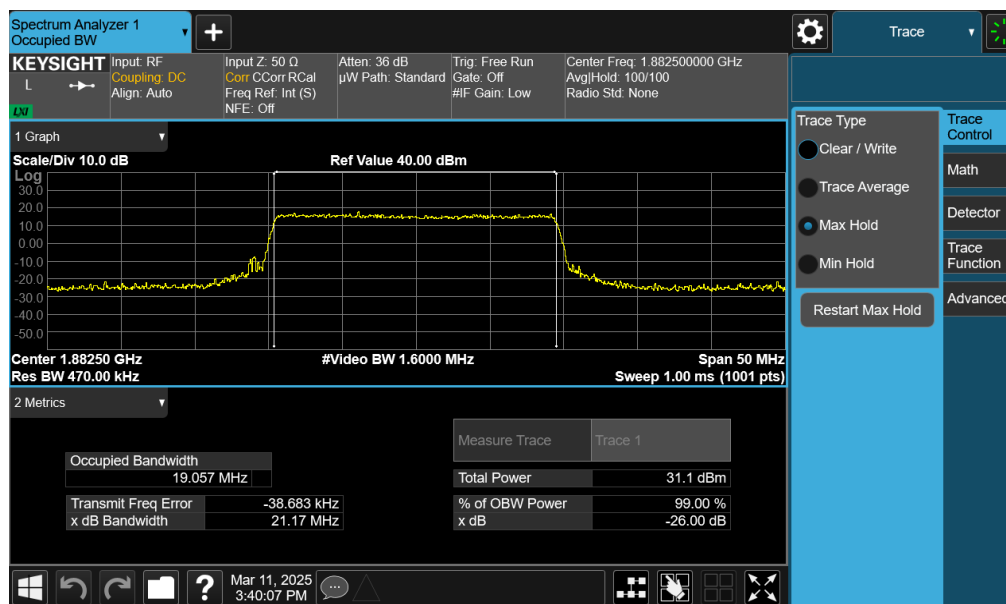
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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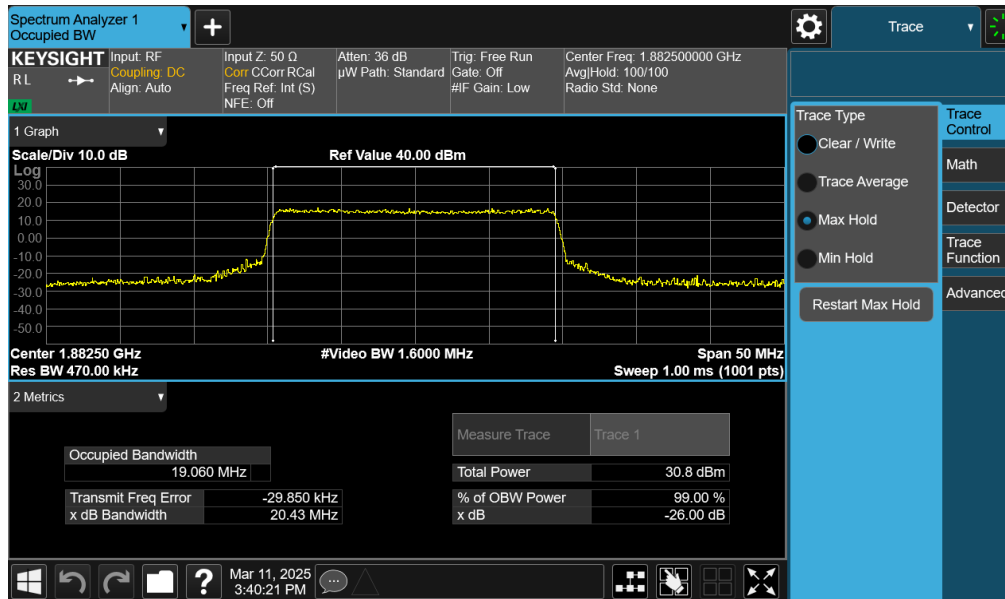


Plot 7-28. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - ANT1)

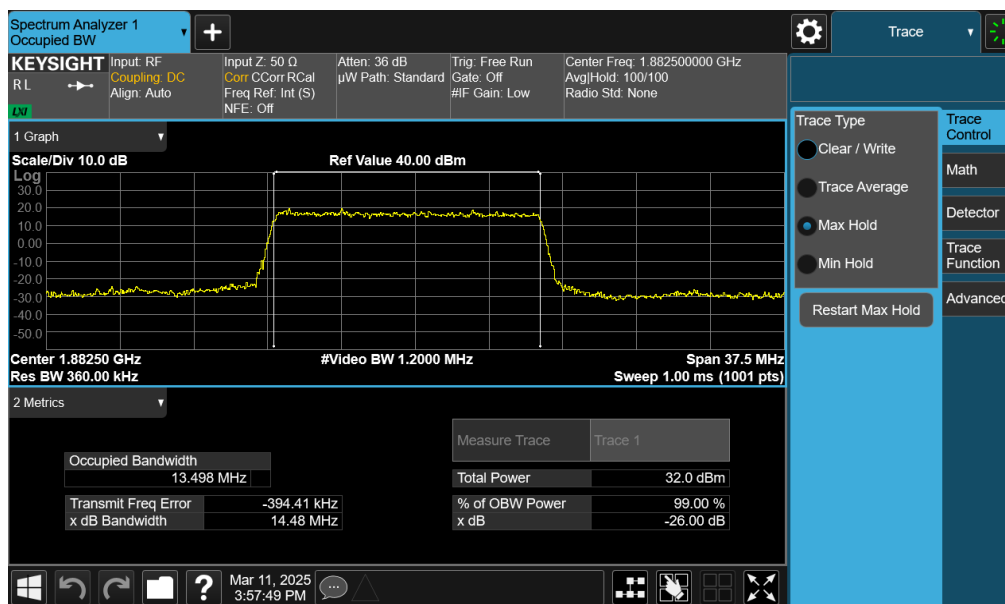


Plot 7-29. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB - ANT1)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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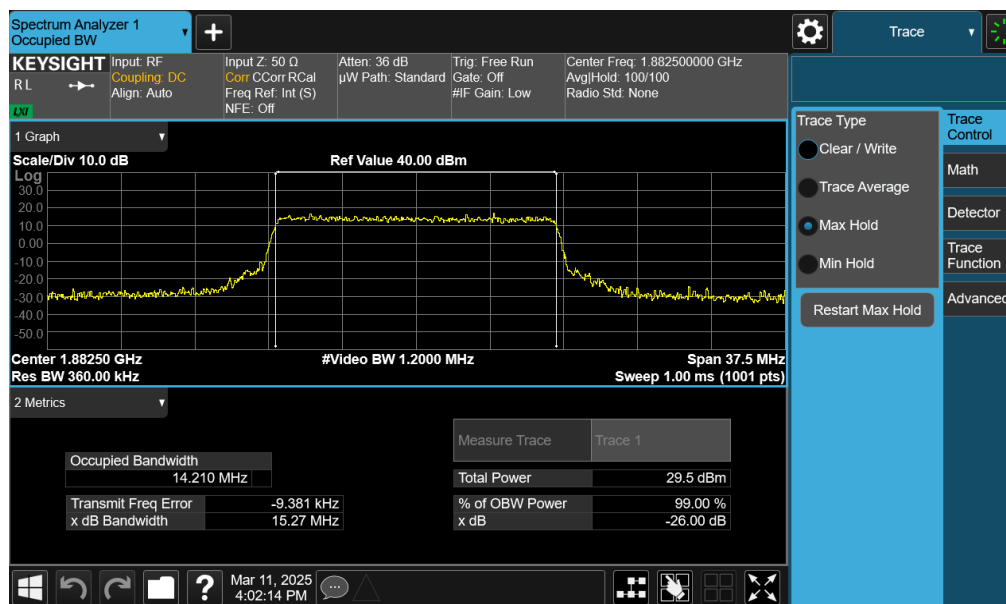
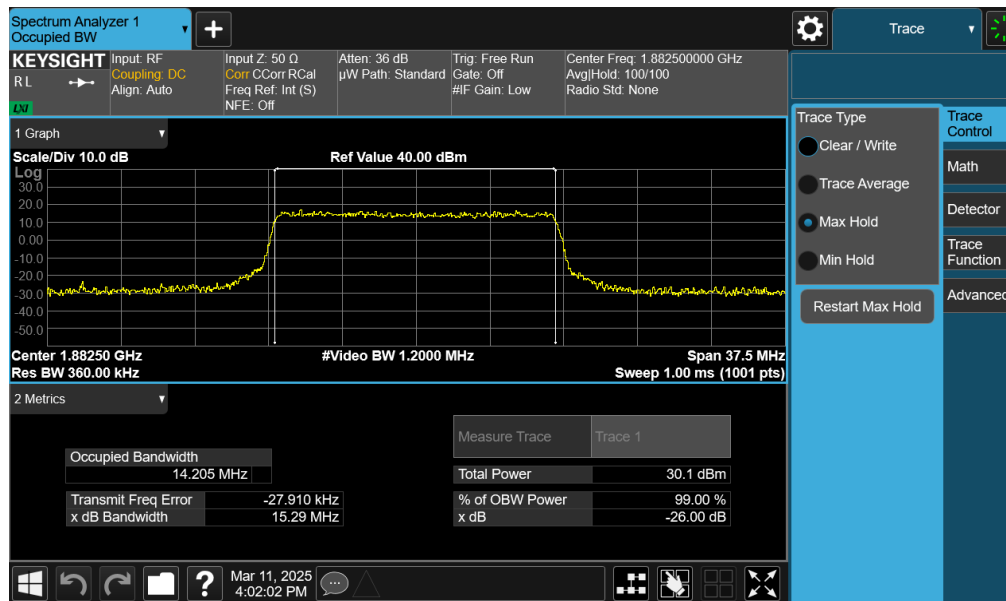


Plot 7-30. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM 16QAM - Full RB - ANT1)

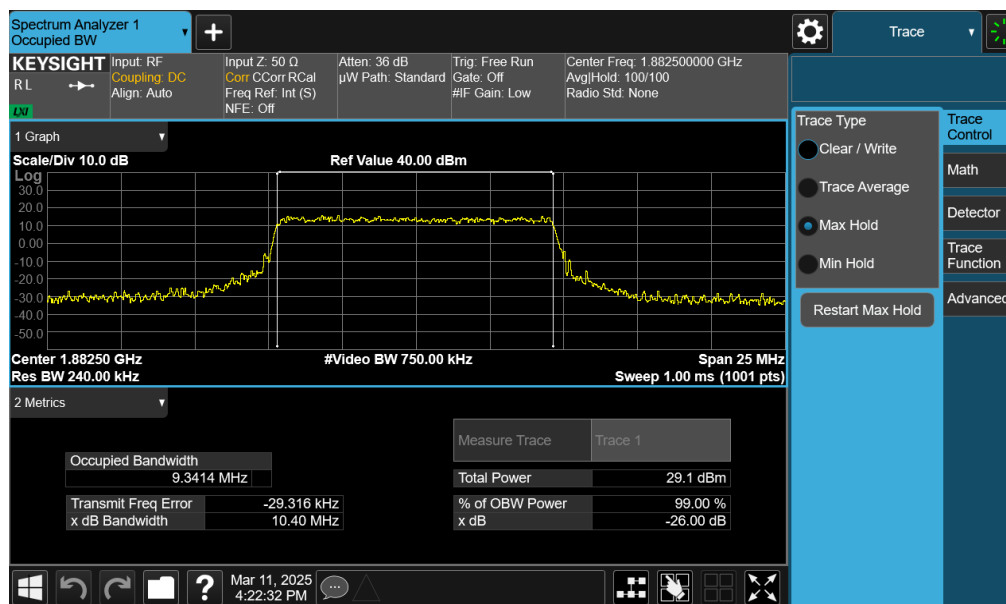
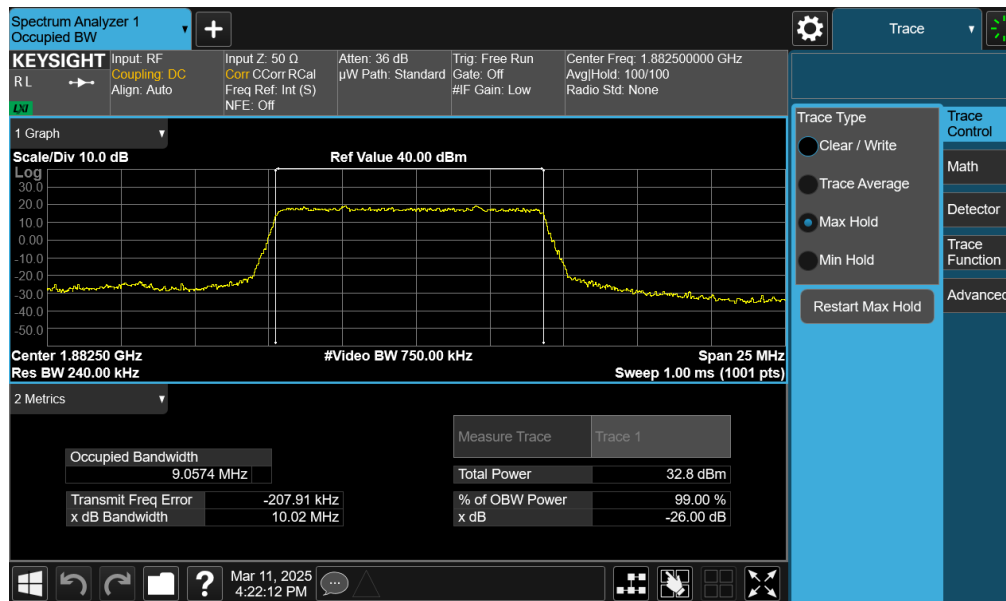


Plot 7-31. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB - ANT1)

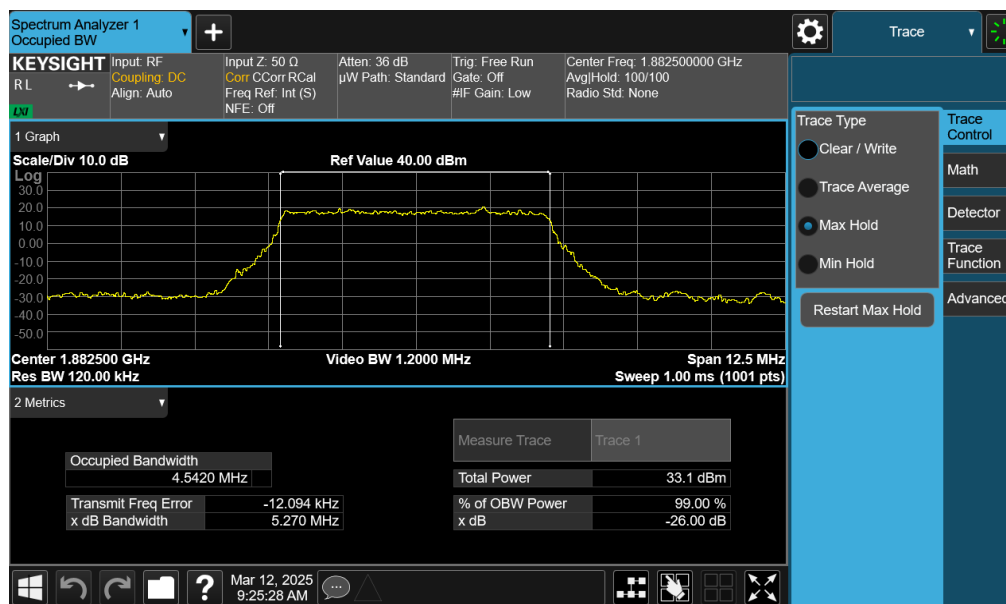
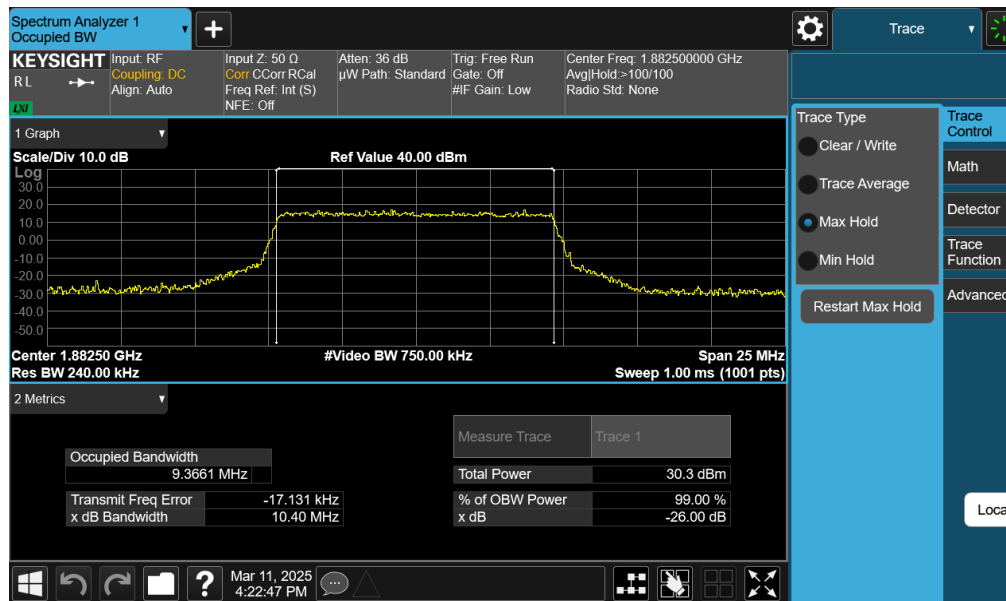
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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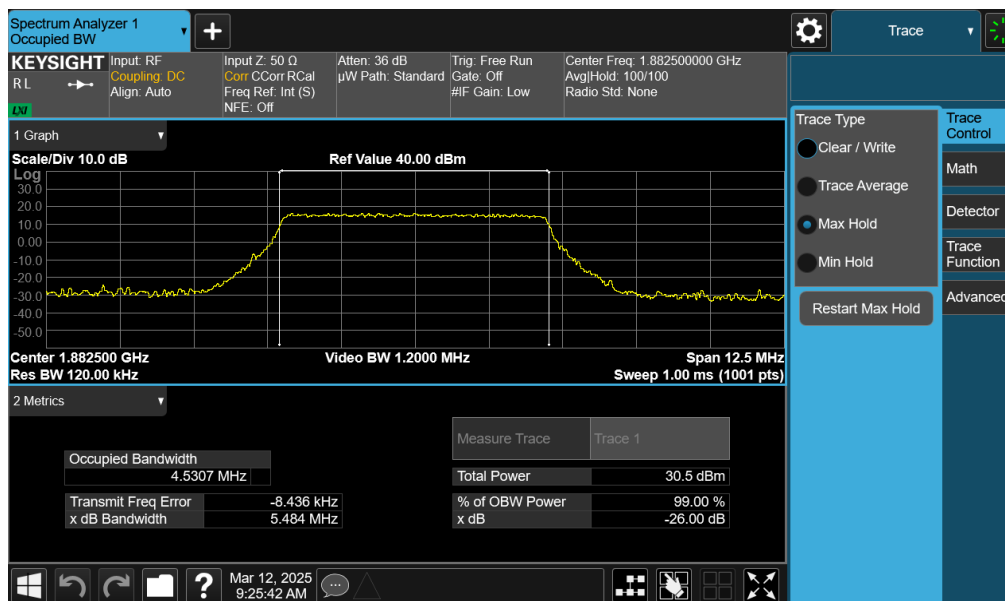
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2502270019-02.A3L	Test Dates: 2/24/2025 - 4/25/2025	EUT Type: Portable Handset	Page 34 of 149



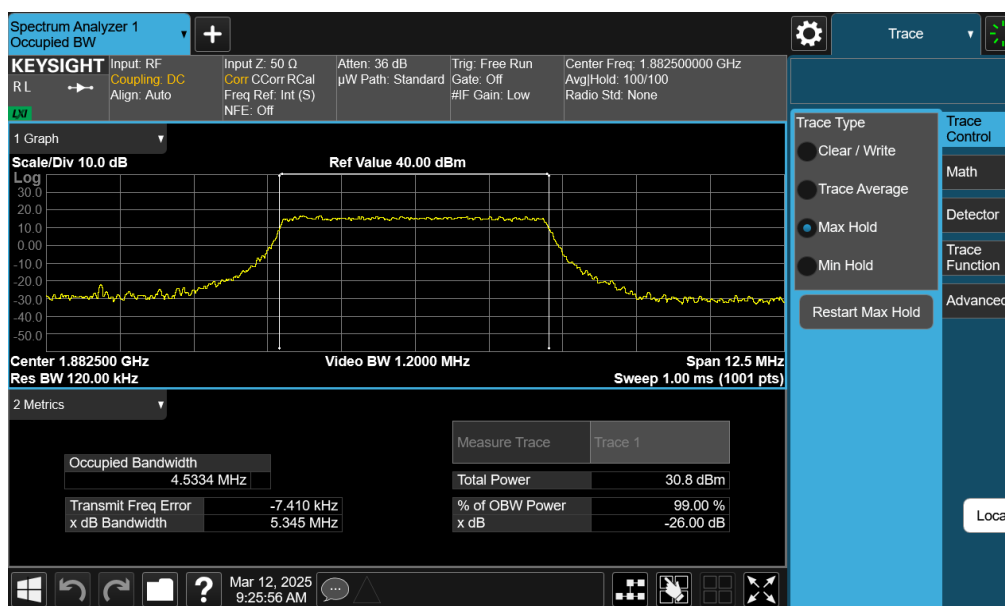
FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-38. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB - ANT1)



Plot 7-39. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM 16QAM - Full RB - ANT1)

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Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B25-2	20MHz	QPSK	18.05
		16QAM	18.04
	15MHz	QPSK	13.53
		16QAM	13.52
	10MHz	QPSK	9.05
		16QAM	9.01
	5MHz	QPSK	4.53
		16QAM	4.52
	3MHz	QPSK	2.72
		16QAM	2.71
	1.4MHz	QPSK	1.11
		16QAM	1.10

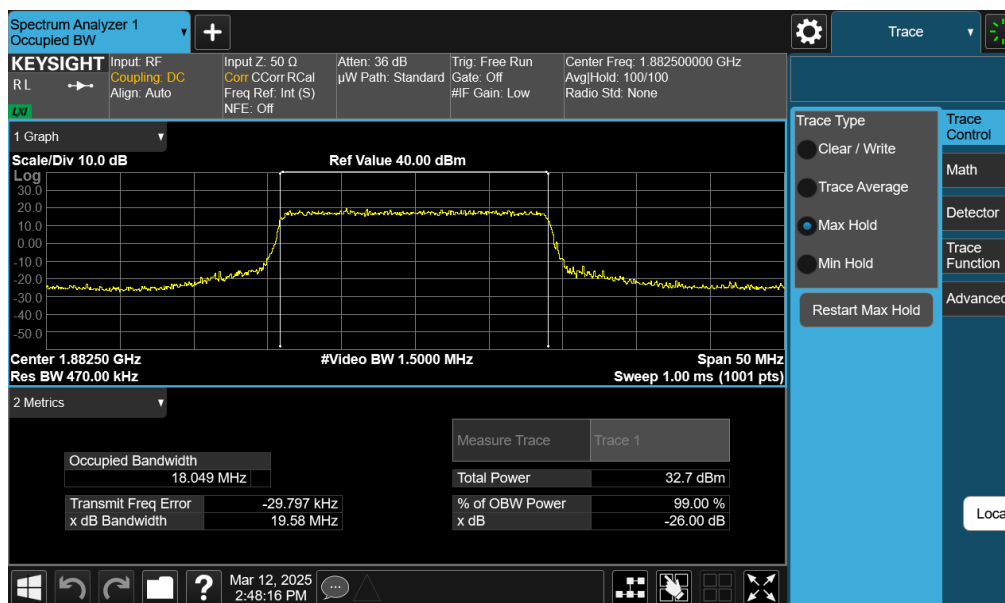
Table 7-6. Occupied Bandwidth Results – Ant2

Mode	Bandwidth	Modulation	OBW [MHz]
NR-n25-2	40MHz	BPSK	38.75
		QPSK	38.82
		16QAM	38.79
	35MHz	BPSK	32.37
		QPSK	33.74
		16QAM	33.74
	30MHz	BPSK	28.69
		QPSK	28.76
		16QAM	28.74
	25MHz	BPSK	22.98
		QPSK	23.88
		16QAM	23.94
	20MHz	BPSK	17.94
		QPSK	19.07
		16QAM	19.06
	15MHz	BPSK	13.53
		QPSK	14.17
		16QAM	14.21
	10MHz	BPSK	9.01
		QPSK	9.36
		16QAM	9.35
	5MHz	BPSK	4.50
		QPSK	4.53
		16QAM	4.51

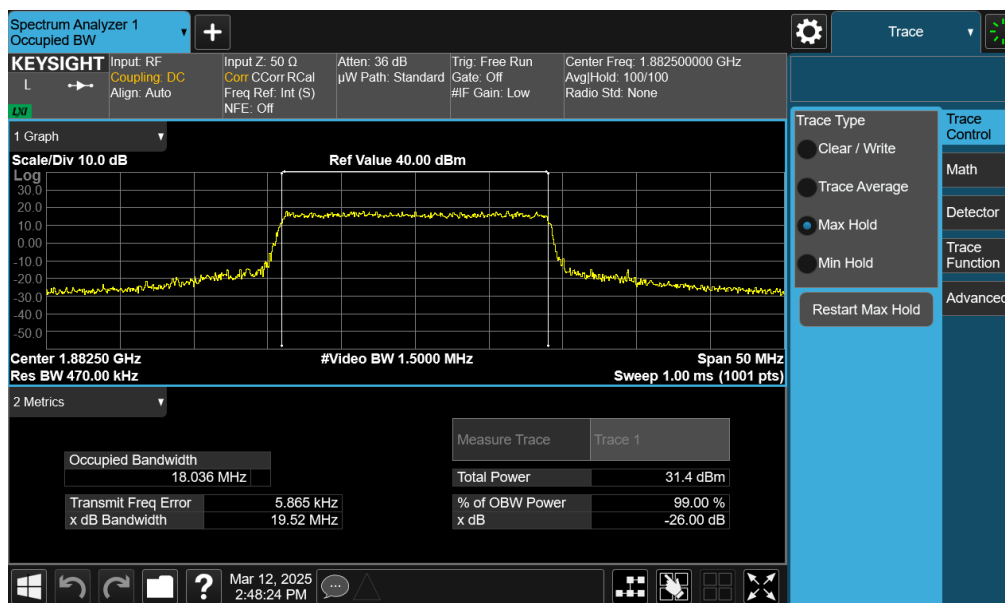
Table 7-7. Occupied Bandwidth Results – Ant2

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 25/2 – Ant2

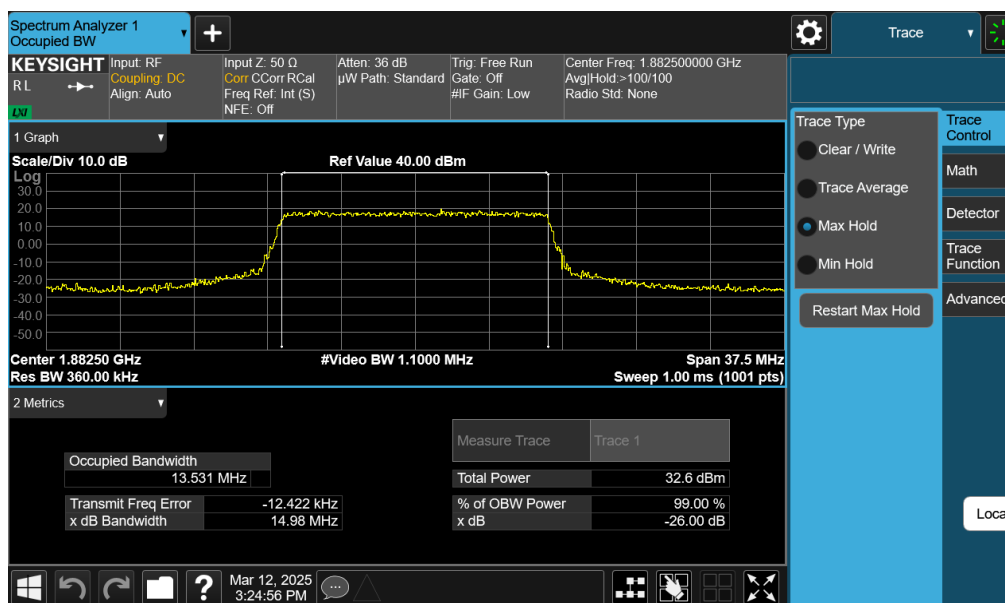


Plot 7-40. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant2)

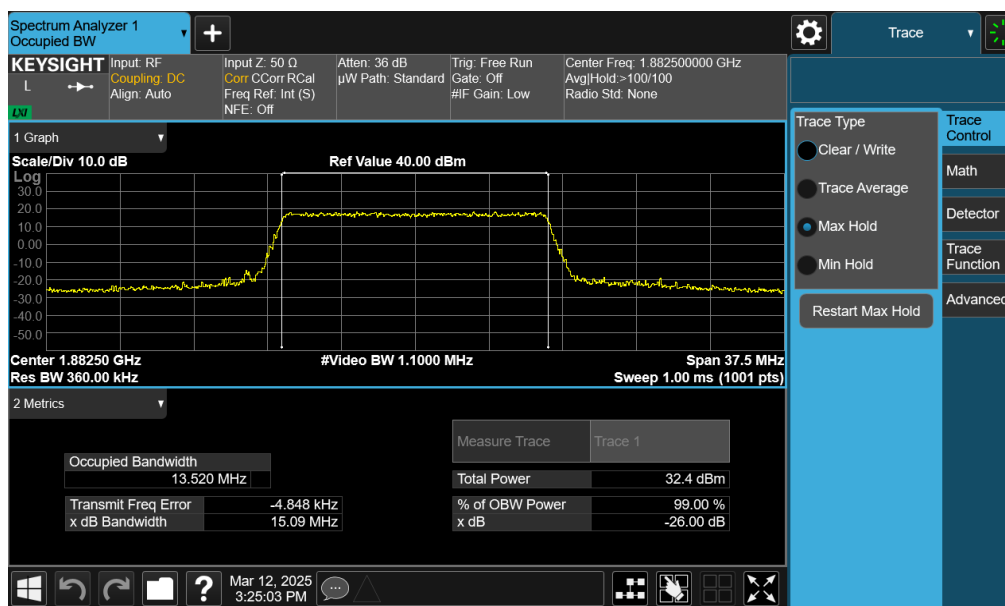


Plot 7-41. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB - Ant2)

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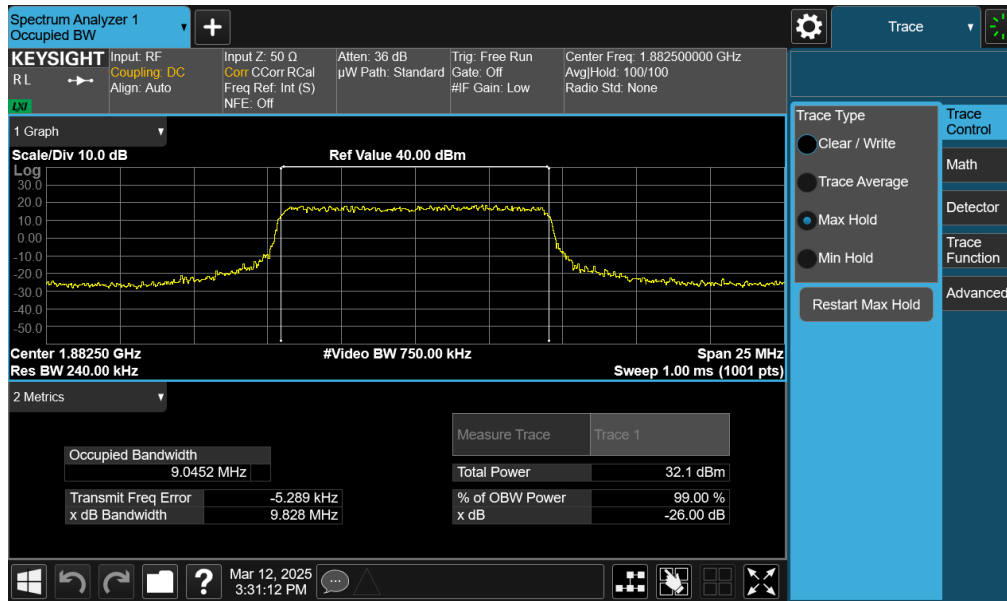


Plot 7-42. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz QPSK - Full RB - Ant2)

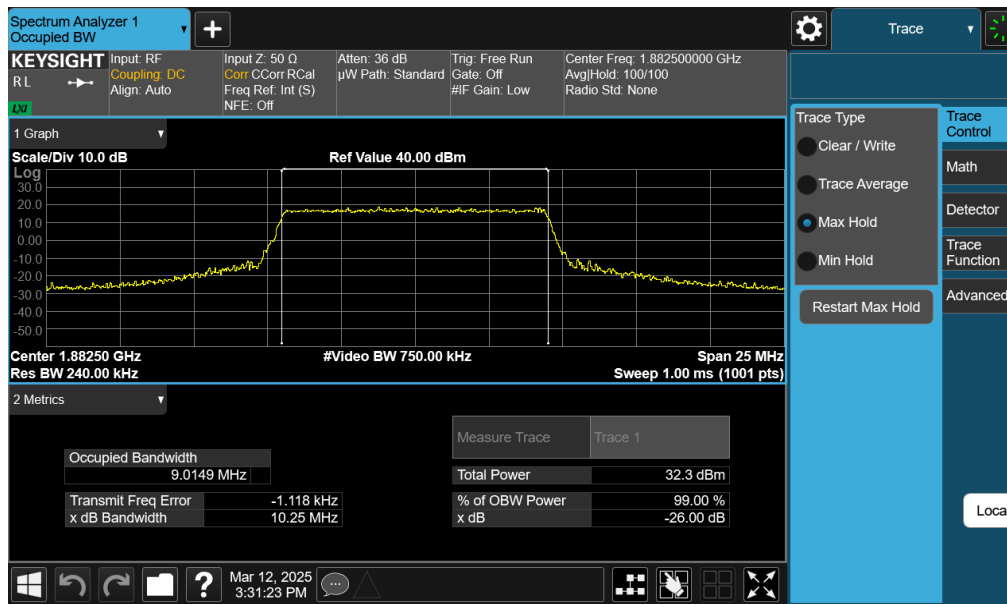


Plot 7-43. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-44. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz QPSK - Full RB - Ant2)



Plot 7-45. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB - Ant2)

FCC ID: A3LSMF966B	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
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