



ELEMENT WASHINGTON DC LLC

7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
<http://www.element.com>

PART 24 MEASUREMENT REPORT

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

Date of Testing:
5/24/2023 - 7/31/2023
Test Report Issue Date:
8/1/2023
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M230426006-06.A3L

FCC ID:	A3LSMS711U
Applicant Name:	Samsung Electronics Co., Ltd.

Application Type:	Certification
Model:	SM-S711U
Additional Model(s):	SM-S711U1
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

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



FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 1 of 130

TABLE OF CONTENTS

1.0	INTRODUCTION	5
1.1	Scope	5
1.2	Element Test Location.....	5
1.3	Test Facility / Accreditations.....	5
2.0	PRODUCT INFORMATION.....	6
2.1	Equipment Description	6
2.2	Device Capabilities.....	6
2.3	Test Configuration	6
2.4	Software and Firmware	6
2.5	EMI Suppression Device(s)/Modifications	6
3.0	DESCRIPTION OF TESTS	7
3.1	Evaluation Procedure	7
3.2	Radiated Power and Radiated Spurious Emissions	7
4.0	MEASUREMENT UNCERTAINTY	8
5.0	TEST EQUIPMENT CALIBRATION DATA	9
6.0	SAMPLE CALCULATIONS	10
7.0	TEST RESULTS	11
7.1	Summary.....	11
7.2	Conducted Output Power Data	12
7.3	Occupied Bandwidth	15
7.4	Spurious and Harmonic Emissions at Antenna Terminal	54
7.5	Band Edge Emissions at Antenna Terminal	69
7.6	Peak-Average Ratio	93
7.7	Radiated Power (EIRP).....	104
7.8	Radiated Spurious Emissions Measurements.....	110
7.9	Frequency Stability / Temperature Variation	125
8.0	CONCLUSION.....	130

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 2 of 130

PART 24 MEASUREMENT REPORT

Antenna A						
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	0.609	27.85	246KGXW
EDGE	N/A	8-PSK	1850.2 - 1909.8	0.230	23.62	244KG7W
WCDMA	N/A	Spread Spectrum	1852.4 - 1907.6	0.193	22.85	4M17F9W
LTE Band 25/2	20 MHz	QPSK	1860 - 1905	0.208	23.19	18M1G7D
		16QAM	1860 - 1905	0.169	22.28	18M0W7D
	15 MHz	QPSK	1857.5 - 1907.5	0.211	23.24	13M6G7D
		16QAM	1857.5 - 1907.5	0.164	22.14	13M6W7D
	10 MHz	QPSK	1855 - 1910	0.210	23.23	9M04G7D
		16QAM	1855 - 1910	0.172	22.36	9M05W7D
	5 MHz	QPSK	1852.5 - 1912.5	0.210	23.23	4M55G7D
		16QAM	1852.5 - 1912.5	0.175	22.43	4M55W7D
	3 MHz	QPSK	1851.5 - 1913.5	0.207	23.15	2M72G7D
		16QAM	1851.5 - 1913.5	0.169	22.28	2M73W7D
1.4 MHz	QPSK	1850.7 - 1914.3	0.211	23.24	1M11G7D	
	16QAM	1850.7 - 1914.3	0.170	22.30	1M12W7D	
NR Band n25	40 MHz	$\pi/2$ BPSK	1870 - 1895	0.179	22.54	38M7G7D
		QPSK	1870 - 1895	0.180	22.55	38M7G7D
		16QAM	1870 - 1895	0.146	21.65	38M7W7D
	30 MHz	$\pi/2$ BPSK	1865 - 1900	0.183	22.62	28M8G7D
		QPSK	1865 - 1900	0.181	22.56	28M7G7D
		16QAM	1865 - 1900	0.151	21.78	28M7W7D
	25 MHz	$\pi/2$ BPSK	1862.5 - 1902.5	0.176	22.45	23M0G7D
		QPSK	1862.5 - 1902.5	0.171	22.33	23M9G7D
		16QAM	1862.5 - 1902.5	0.141	21.50	23M9W7D
NR Band n25/2	20 MHz	$\pi/2$ BPSK	1860 - 1905	0.175	22.43	17M9G7D
		QPSK	1860 - 1905	0.175	22.44	19M0G7D
		16QAM	1860 - 1905	0.144	21.58	19M0W7D
	15 MHz	$\pi/2$ BPSK	1857.5 - 1907.5	0.176	22.46	13M5G7D
		QPSK	1857.5 - 1907.5	0.179	22.54	14M2G7D
		16QAM	1857.5 - 1907.5	0.146	21.64	14M2W7D
	10 MHz	$\pi/2$ BPSK	1855 - 1910	0.174	22.41	9M01G7D
		QPSK	1855 - 1910	0.169	22.29	9M37G7D
		16QAM	1855 - 1910	0.143	21.54	9M34W7D
	5 MHz	$\pi/2$ BPSK	1852.5 - 1912.5	0.180	22.56	4M53G7D
		QPSK	1852.5 - 1912.5	0.174	22.40	4M52G7D
		16QAM	1852.5 - 1912.5	0.150	21.76	4M52W7D

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 3 of 130

Antenna F						
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	0.122	20.87	18M0G7D
		16QAM	1860 - 1905	0.099	19.97	18M1W7D
	15 MHz	QPSK	1857.5 - 1907.5	0.125	20.98	13M5G7D
		16QAM	1857.5 - 1907.5	0.100	20.00	13M5W7D
	10 MHz	QPSK	1855 - 1910	0.125	20.96	9M06G7D
		16QAM	1855 - 1910	0.111	20.45	9M07W7D
	5 MHz	QPSK	1852.5 - 1912.5	0.127	21.03	4M52G7D
		16QAM	1852.5 - 1912.5	0.112	20.48	4M54W7D
	3 MHz	QPSK	1851.5 - 1913.5	0.124	20.93	2M71G7D
		16QAM	1851.5 - 1913.5	0.104	20.19	2M72W7D
	1.4 MHz	QPSK	1850.7 - 1914.3	0.124	20.92	1M11G7D
		16QAM	1850.7 - 1914.3	0.104	20.16	1M11W7D
NR Band n25	40 MHz	$\pi/2$ BPSK	1870 - 1895	0.126	21.01	38M8G7D
		QPSK	1870 - 1895	0.126	21.00	38M8G7D
		16QAM	1870 - 1895	0.101	20.04	38M7W7D
	30 MHz	$\pi/2$ BPSK	1865 - 1900	0.128	21.06	28M7G7D
		QPSK	1865 - 1900	0.127	21.05	28M7G7D
		16QAM	1865 - 1900	0.102	20.08	28M9W7D
	25 MHz	$\pi/2$ BPSK	1862.5 - 1902.5	0.128	21.06	23M0G7D
		QPSK	1862.5 - 1902.5	0.128	21.07	23M9G7D
		16QAM	1862.5 - 1902.5	0.103	20.11	23M9W7D
NR Band n25/2	20 MHz	$\pi/2$ BPSK	1860 - 1905	0.126	21.00	18M0G7D
		QPSK	1860 - 1905	0.126	20.99	19M0G7D
		16QAM	1860 - 1905	0.105	20.20	19M1W7D
	15 MHz	$\pi/2$ BPSK	1857.5 - 1907.5	0.126	21.00	13M5G7D
		QPSK	1857.5 - 1907.5	0.124	20.93	14M2G7D
		16QAM	1857.5 - 1907.5	0.097	19.86	14M2W7D
	10 MHz	$\pi/2$ BPSK	1855 - 1910	0.120	20.80	9M01G7D
		QPSK	1855 - 1910	0.114	20.57	9M38G7D
		16QAM	1855 - 1910	0.098	19.89	9M35W7D
	5 MHz	$\pi/2$ BPSK	1852.5 - 1912.5	0.120	20.79	4M52G7D
		QPSK	1852.5 - 1912.5	0.119	20.76	4M52G7D
		16QAM	1852.5 - 1912.5	0.097	19.88	4M54W7D

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 4 of 130

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 Laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at Element Lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreement.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 5 of 130

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS711U**. 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 and RSS-133.

Test Device Serial No.: 0325M, 0602M, 0588M, 0182M, 0594M, 0640M, 0597M, 1200M, 0660M, 0590M, 0754M

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 and FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power

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 S711USQU0AWG7 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.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 6 of 130

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.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 7 of 130

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

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 8 of 130

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
-	AP2-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP2-001
-	AP2-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP2-002
-	ETS-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-001
-	ETS-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-002
-	LTX1	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTX1
-	LTX2	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTX2
-	LTX3	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTX3
-	LTX4	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTX4
-	LTX5	Licensed Transmitter Cable Set	1/12/2023	Annual	1/12/2024	LTX5
Anritsu	MT8821C	Radio Communication Analyzer	N/A			620152694
EMCO	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9704-5182
EMCO	3116	Horn Antenna (18-40GHz)	7/20/2021	Biennial	8/30/2023	9203-2178
Keysight Technologies	N9030A	PXA Signal Analyzer (3Hz-26.5GHz)	9/6/2022	Annual	9/6/2023	MY54490576
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	3/15/2023	Annual	3/15/2024	MY52350166
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	TC-TA18	Cross Polarized Vivaldi Test Antenna	9/28/2022	Biennial	9/28/2024	101058
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/29/2022	Annual	8/29/2023	100342
Rohde & Schwarz	ESW44	EMI Test Receiver (2Hz-44GHz)	3/1/2023	Annual	3/1/2024	101716
Rohde & Schwarz	VULB9162	Bi-Log Antenna	2/21/2023	Biennial	2/21/2025	00301
Sunol	J85	Bi-Log Antenna (30M - 5GHz)	8/30/2022	Biennial	8/30/2024	A051107

Table 5-1. Test Equipment

Notes:

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

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 9 of 130

6.0 SAMPLE CALCULATIONS

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

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.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 10 of 130

7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSMS711U
 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)	RSS Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	RSS-Gen(6.12)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	RSS-Gen(6.7)	N/A	PASS	Section 7.2
	Conducted Band Edge / Spurious Emissions	2.1051, 24.238(a)	RSS-Gen(6.13), RSS-133(6.5)	> 43 + 10log ₁₀ (P[Watts]) at Band Edge and for all out-of-band emissions	PASS	Sections 7.3, 7.4
	Peak-to-Average Ratio	24.232(d)	RSS-133(6.4)	≤ 13 dB	PASS	Section 7.5
	Frequency Stability	2.1055, 24.235	RSS-Gen(6.11), RSS-133(6.3)	Fundamental emissions stay within authorized frequency block **Carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm	PASS	Section 7.8
RADIATED	Equivalent Isotropic Radiated Power	24.232(c)	RSS-Gen(6.12), RSS-133(6.4)	< 2 Watts max. EIRP	PASS	Section 7.6
	Radiated Spurious Emissions	2.1053, 24.238(a)	RSS-Gen(6.13), RSS-133(6.5)	≥ 43 + 10 log (P[Watts]) dB of attenuation below transmitter power **Spurious emissions from receivers shall not exceed the limits detailed in RSS-Gen(7.3)	PASS	Section 7.7

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

** Test limit applies to ISED

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 v1.0.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 11 of 130

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.

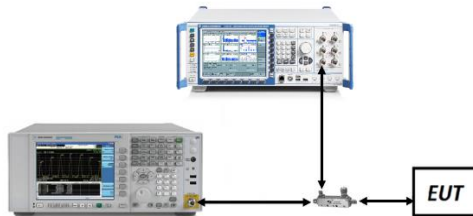


Figure 7-1. Test Instrument & Measurement Setup

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.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 12 of 130

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	QPSK	26140	1860.0	1 / 50	21.80
		26365	1882.5	1 / 0	22.10
		26590	1905.0	1 / 99	21.92
	16-QAM	26140	1860.0	1 / 50	21.09
	64-QAM	26140	1860.0	1 / 99	20.01
	256-QAM	26140	1860.0	1 / 99	17.08
15 MHz	QPSK	26115	1857.5	1 / 74	21.82
		26365	1882.5	1 / 0	22.26
		26615	1907.5	1 / 74	21.80
	16-QAM	26115	1857.5	1 / 74	21.12
	64-QAM	26115	1857.5	1 / 74	19.96
	256-QAM	26615	1907.5	1 / 74	17.10
10 MHz	QPSK	26090	1855.0	1 / 49	21.89
		26365	1882.5	1 / 25	22.07
		26640	1910.0	1 / 49	22.01
	16-QAM	26365	1882.5	1 / 0	21.57
	64-QAM	26090	1855.0	1 / 49	20.14
	64-QAM	26365	1882.5	1 / 0	20.14
	256-QAM	26365	1882.5	1 / 25	17.16
5 MHz	QPSK	26065	1852.5	1 / 12	21.96
		26365	1882.5	1 / 12	22.12
		26665	1912.5	1 / 12	22.03
	16-QAM	26365	1882.5	1 / 12	21.60
	64-QAM	26665	1912.5	1 / 12	20.26
	256-QAM	26365	1882.5	1 / 12	17.22
3 MHz	QPSK	26055	1851.5	1 / 7	21.86
		26365	1882.5	1 / 7	22.06
		26675	1913.5	1 / 7	22.06
	16-QAM	26365	1882.5	1 / 7	21.31
	64-QAM	26675	1913.5	1 / 7	20.15
	256-QAM	26365	1882.5	1 / 7	17.32
1.4 MHz	QPSK	26047	1850.7	1 / 5	21.85
		26365	1882.5	1 / 3	22.02
		26683	1914.3	1 / 3	22.03
	64-QAM	26365	1882.5	1 / 5	20.19
	256-QAM	26365	1882.5	1 / 3	17.12

Table 7-2. Conducted Powers (LTE Band 25/2 – Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 13 of 130



Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
40 MHz	π/2 BPSK	374000	1870.0	1 / 108	23.43
		376500	1882.5	1 / 108	23.46
		379000	1895.0	1 / 54	23.40
	QPSK	374000	1870.0	1 / 108	23.41
		376500	1882.5	1 / 108	23.48
		379000	1895.0	1 / 54	23.49
	16-QAM	376500	1882.5	1 / 108	22.66
	64-QAM	376500	1882.5	1 / 108	21.32
256-QAM	376500	1882.5	1 / 108	18.83	
30 MHz	π/2 BPSK	372000	1865.0	1 / 119	23.49
		376500	1882.5	1 / 80	23.47
		381000	1900.0	1 / 40	23.44
	QPSK	372000	1865.0	1 / 119	23.46
		376500	1882.5	1 / 80	23.48
		381000	1900.0	1 / 40	23.49
	16-QAM	381000	1900.0	1 / 40	22.63
	64-QAM	372000	1865.0	1 / 119	21.31
256-QAM	381000	1900.0	1 / 40	18.75	
25 MHz	π/2 BPSK	372000	1862.5	1 / 99	23.48
		376500	1882.5	1 / 66	23.45
		381000	1902.5	1 / 33	23.25
	QPSK	372000	1862.5	1 / 99	23.48
		376500	1882.5	1 / 66	23.45
		381000	1902.5	1 / 33	23.24
	16-QAM	372000	1862.5	1 / 99	22.49
	64-QAM	372000	1862.5	1 / 99	21.27
256-QAM	372000	1862.5	1 / 99	18.85	
20 MHz	π/2 BPSK	372000	1860.0	1 / 53	23.42
		376500	1882.5	1 / 26	23.43
		381000	1905.0	1 / 79	23.08
	QPSK	372000	1860.0	1 / 53	23.40
		376500	1882.5	1 / 26	23.36
		381000	1905.0	1 / 79	23.05
	16-QAM	372000	1860.0	1 / 53	22.58
	64-QAM	372000	1860.0	1 / 53	21.00
256-QAM	376500	1882.5	1 / 26	18.49	
15 MHz	π/2 BPSK	371500	1857.5	1 / 58	23.42
		376500	1882.5	1 / 20	23.47
		381500	1907.5	1 / 58	23.10
	QPSK	371500	1857.5	1 / 58	23.34
		376500	1882.5	1 / 20	23.44
		381500	1907.5	1 / 58	23.01
	16-QAM	376500	1882.5	1 / 20	22.44
	64-QAM	371500	1857.5	1 / 58	21.15
256-QAM	371500	1857.5	1 / 58	18.52	
10 MHz	π/2 BPSK	371000	1855.0	1 / 38	23.07
		376500	1882.5	1 / 26	23.34
		382000	1910.0	1 / 38	22.98
	QPSK	371000	1855.0	1 / 38	22.90
		376500	1882.5	1 / 26	23.12
		382000	1910.0	1 / 38	22.99
	16-QAM	376500	1882.5	1 / 26	22.28
	64-QAM	376500	1882.5	1 / 26	20.94
256-QAM	371000	1855.0	1 / 38	18.40	
5 MHz	π/2 BPSK	370500	1852.5	1 / 6	23.16
		376500	1882.5	1 / 6	23.32
		382500	1912.5	1 / 18	23.11
	QPSK	370500	1852.5	1 / 6	23.16
		376500	1882.5	1 / 6	23.31
		382500	1912.5	1 / 18	22.90
	16-QAM	376500	1882.5	1 / 6	22.44
	64-QAM	370500	1852.5	1 / 6	21.07
256-QAM	376500	1882.5	1 / 6	18.59	

Table 7-3. Conducted Powers (NR Band n25/2 – Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 14 of 130

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.

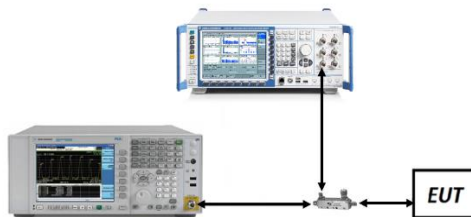


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 15 of 130

Mode	Bandwidth	Modulation	OBW [MHz]	
GSM1900	N/A	GMSK	0.246	
EDGE1900	N/A	8-PSK	0.244	
WCDMA1900	N/A	Spread Spectrum	4.166	
LTE Band 25/2	20 MHz	QPSK	18.067	
		16QAM	18.044	
	15 MHz	QPSK	13.564	
		16QAM	13.571	
	10 MHz	QPSK	9.038	
		16QAM	9.046	
	5 MHz	QPSK	4.553	
		16QAM	4.550	
	3 MHz	QPSK	2.723	
		16QAM	2.731	
	1.4 MHz	QPSK	1.109	
		16QAM	1.115	
	NR Band n25	40 MHz	$\pi/2$ BPSK	38.652
			QPSK	38.663
16QAM			38.675	
30 MHz		$\pi/2$ BPSK	28.763	
		QPSK	28.672	
		16QAM	28.657	
25 MHz		$\pi/2$ BPSK	23.033	
		QPSK	23.875	
		16QAM	23.850	
NR Band n25/2	20 MHz	$\pi/2$ BPSK	17.937	
		QPSK	18.954	
		16QAM	19.005	
	15 MHz	$\pi/2$ BPSK	13.505	
		QPSK	14.157	
		16QAM	14.198	
	10 MHz	$\pi/2$ BPSK	9.008	
		QPSK	9.365	
		16QAM	9.338	
	5 MHz	$\pi/2$ BPSK	4.529	
		QPSK	4.522	
		16QAM	4.515	

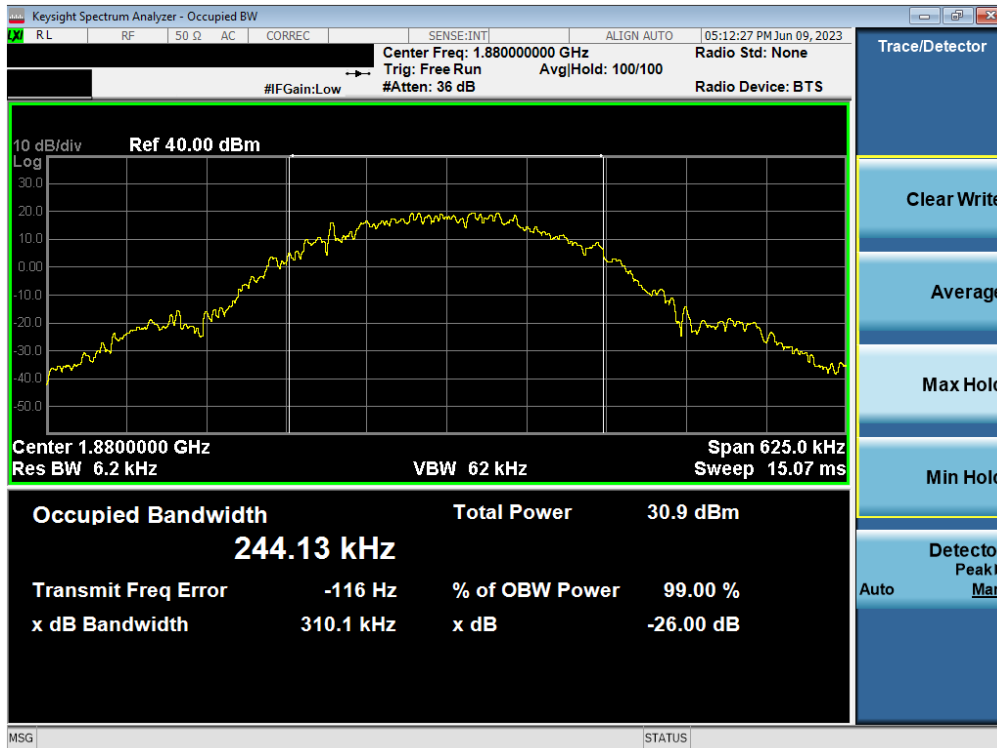
Table 7-4. Occupied Bandwidth Test Results – Ant A

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 16 of 130

GSM/GPRS PCS – Ant A



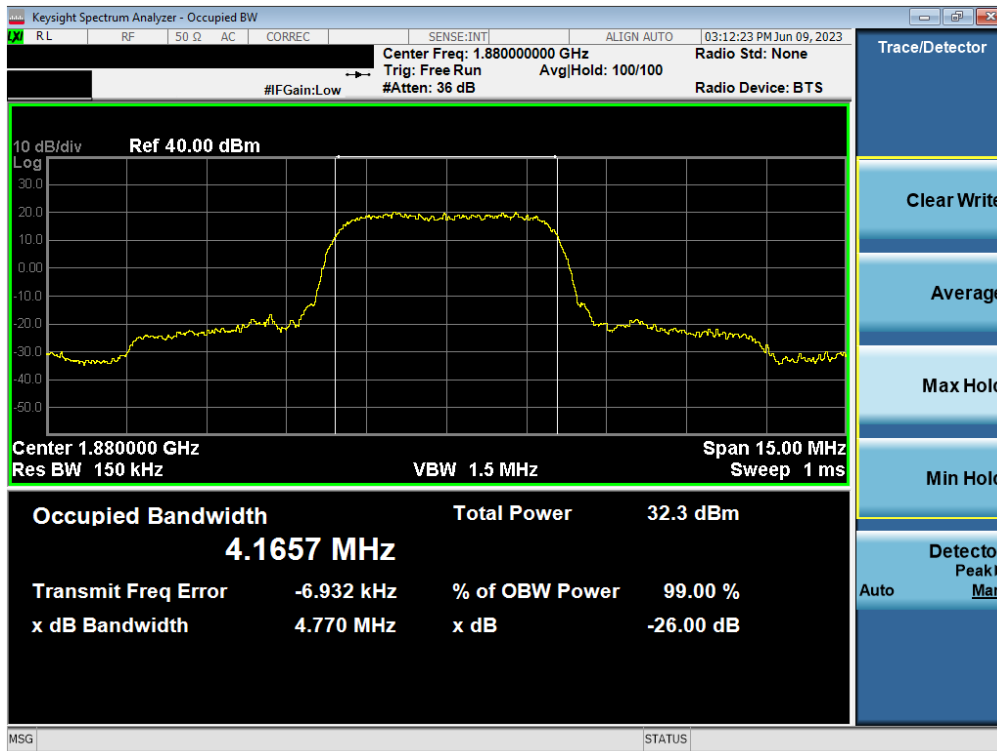
Plot 7-1. Occupied Bandwidth Plot (GPRS, Ch. 661 - Ant A)



Plot 7-2. Occupied Bandwidth Plot (EDGE, Ch. 661 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 17 of 130

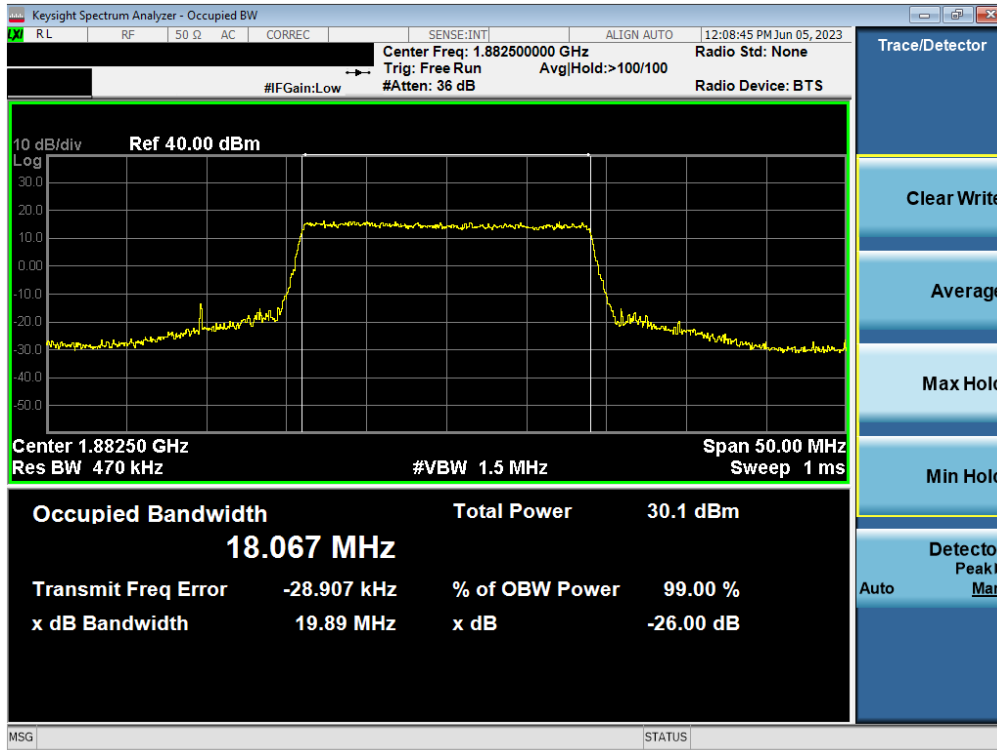
WCDMA PCS – Ant A



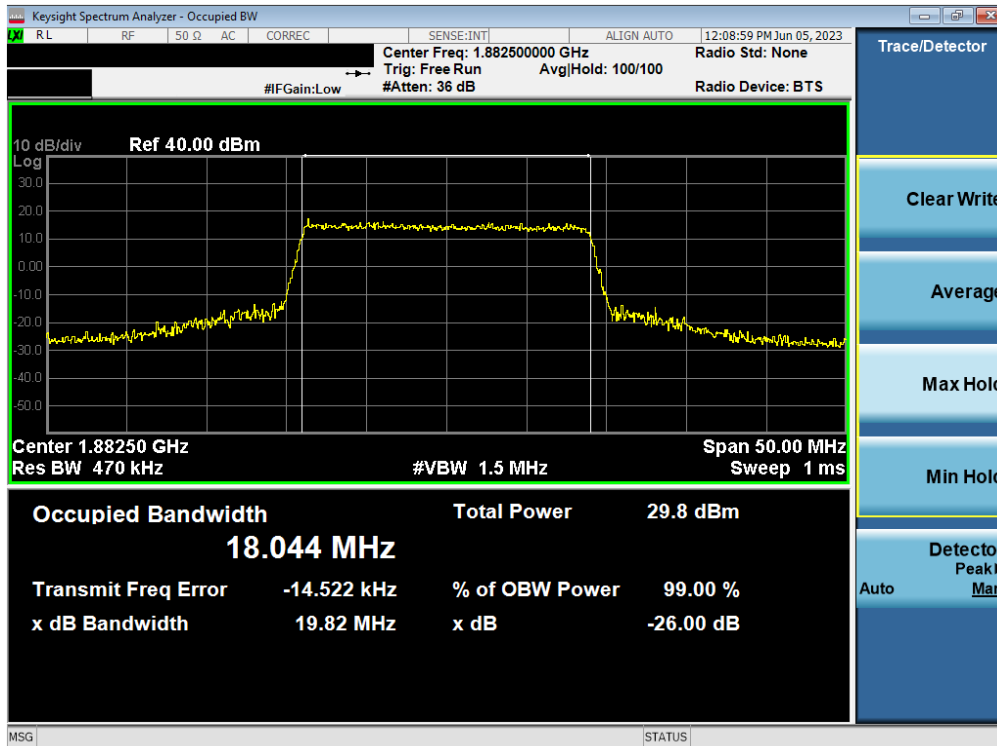
Plot 7-3. Occupied Bandwidth Plot (WCDMA, Ch. 9400 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 18 of 130

LTE Band 25/2 – Ant A

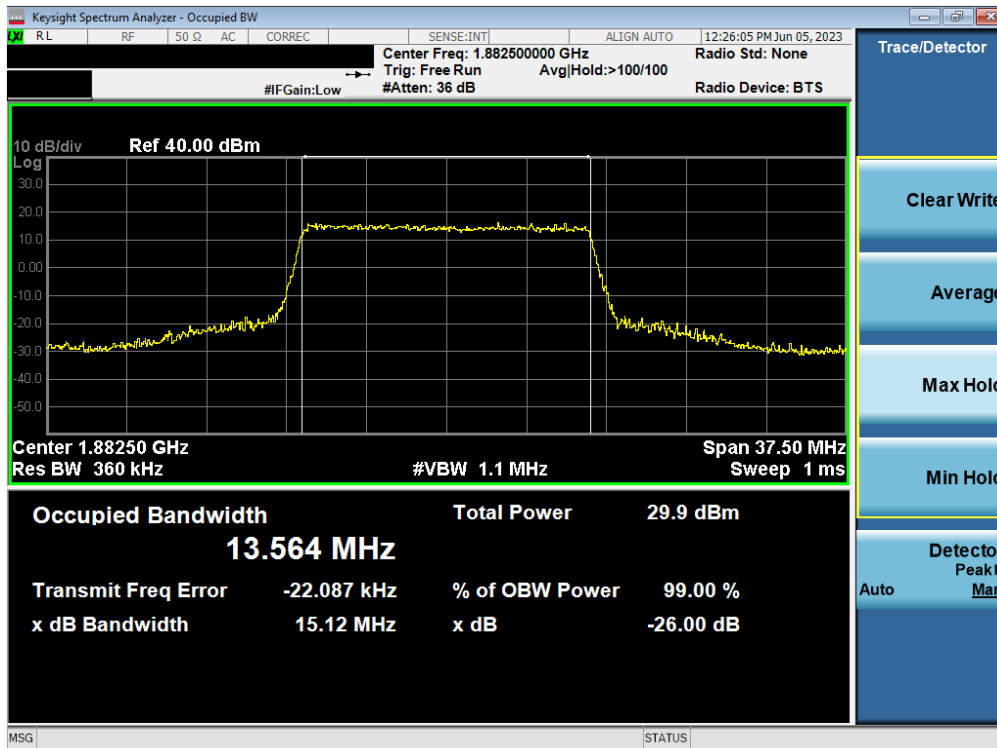


Plot 7-4. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant A)

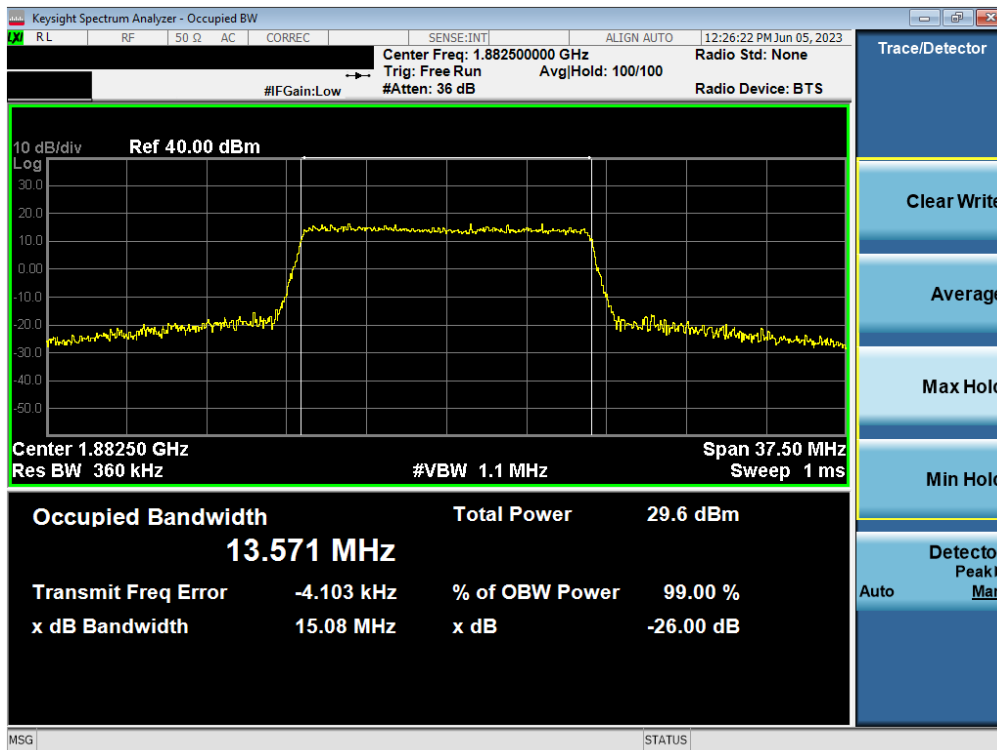


Plot 7-5. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 19 of 130

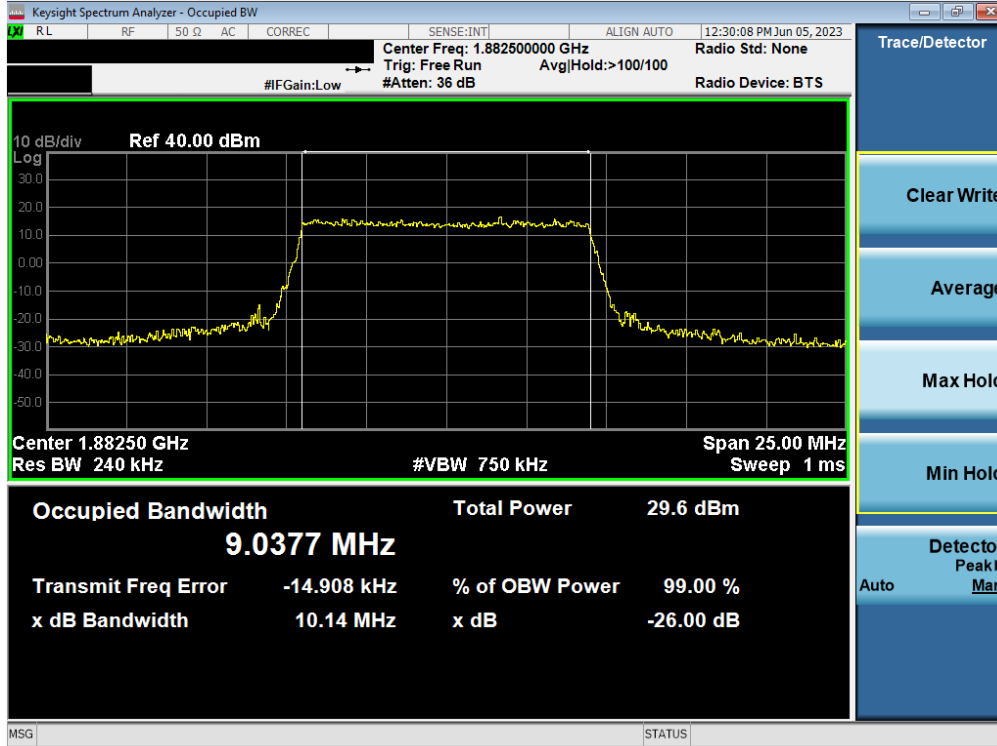


Plot 7-6. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz QPSK - Full RB - Ant A)

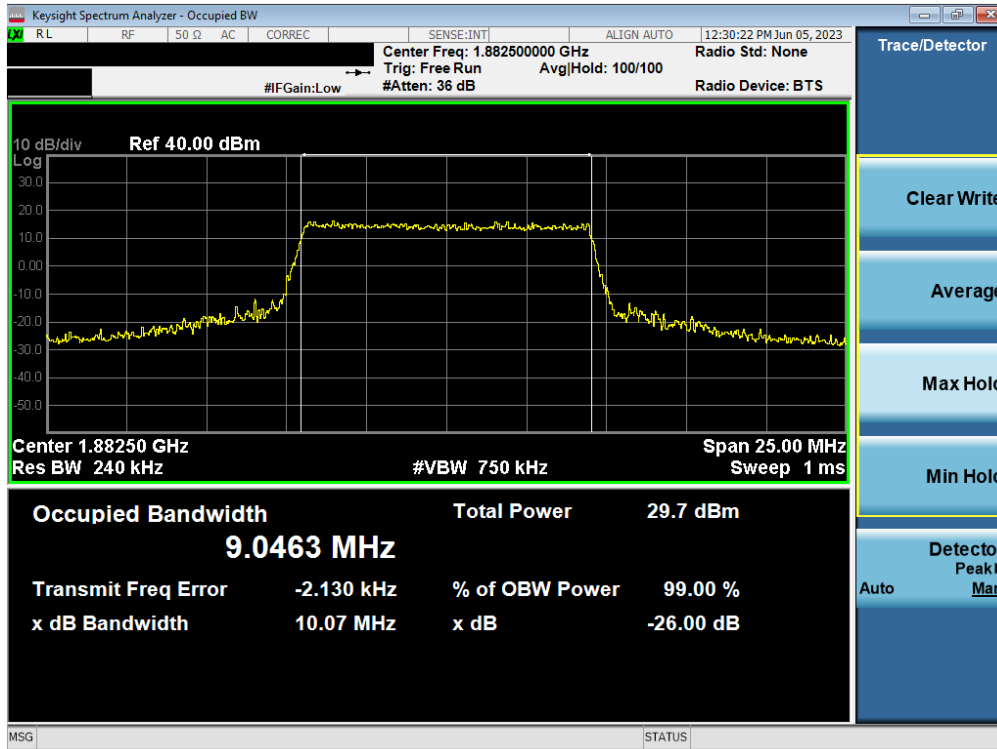


Plot 7-7. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 20 of 130

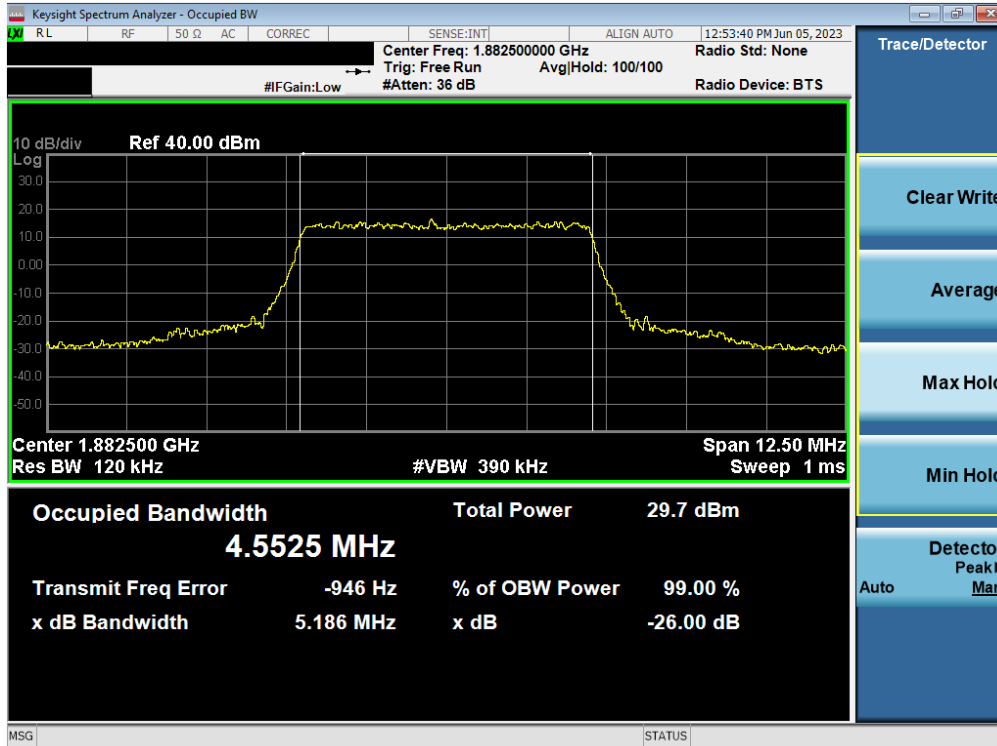


Plot 7-8. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz QPSK - Full RB - Ant A)



Plot 7-9. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 21 of 130

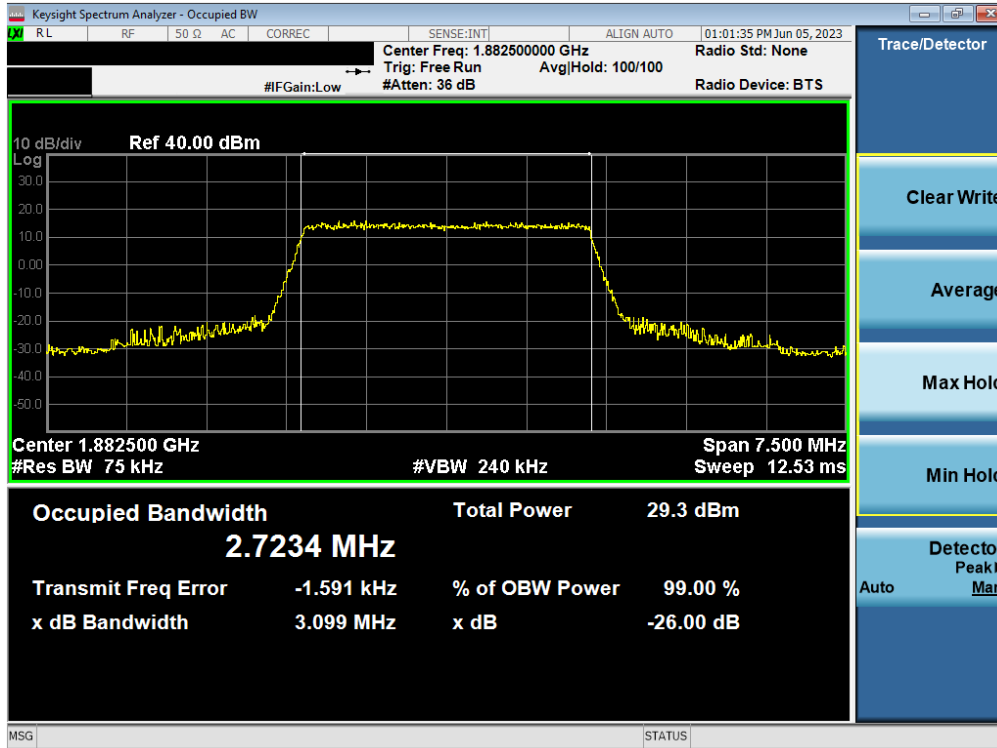


Plot 7-10. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz QPSK - Full RB - Ant A)

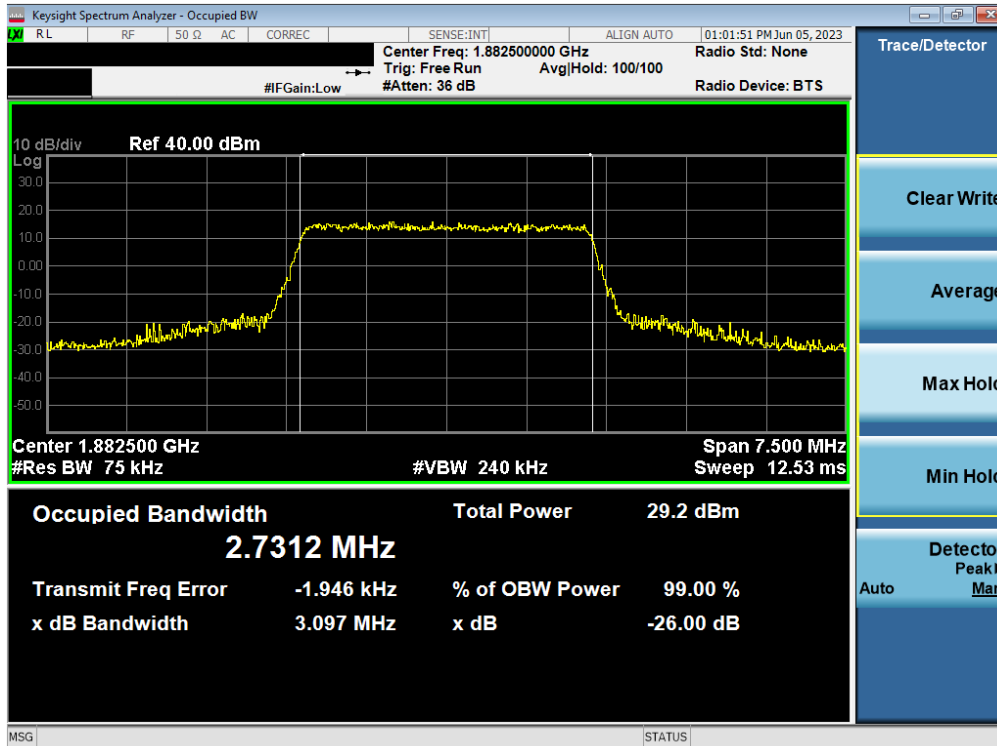


Plot 7-11. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 22 of 130

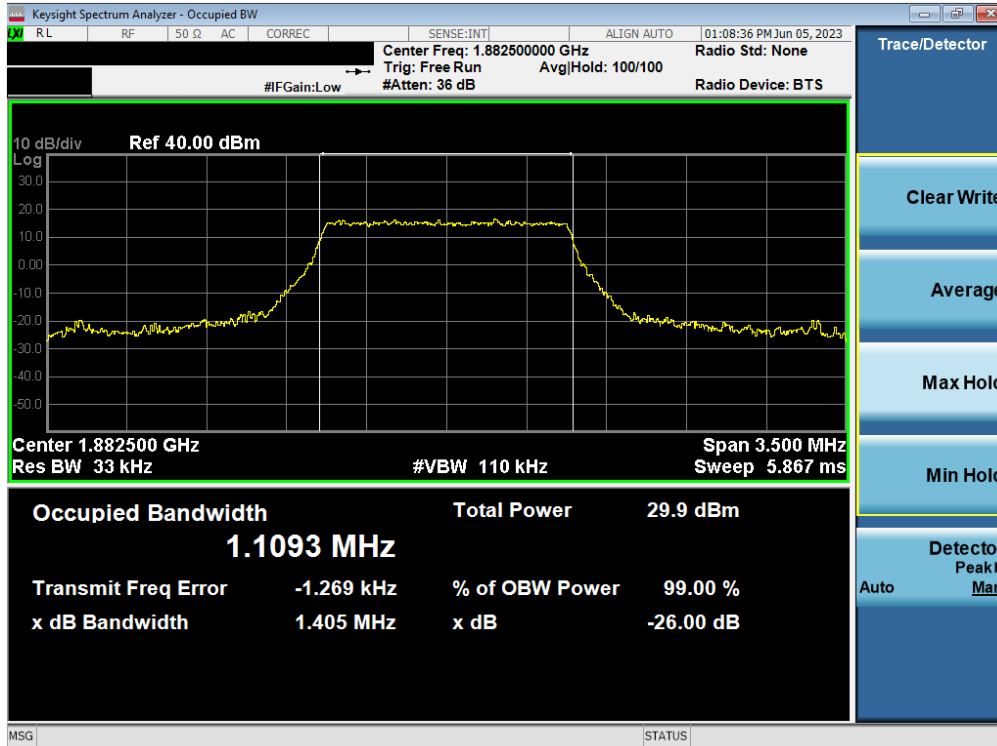


Plot 7-12. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz QPSK - Full RB - Ant A)

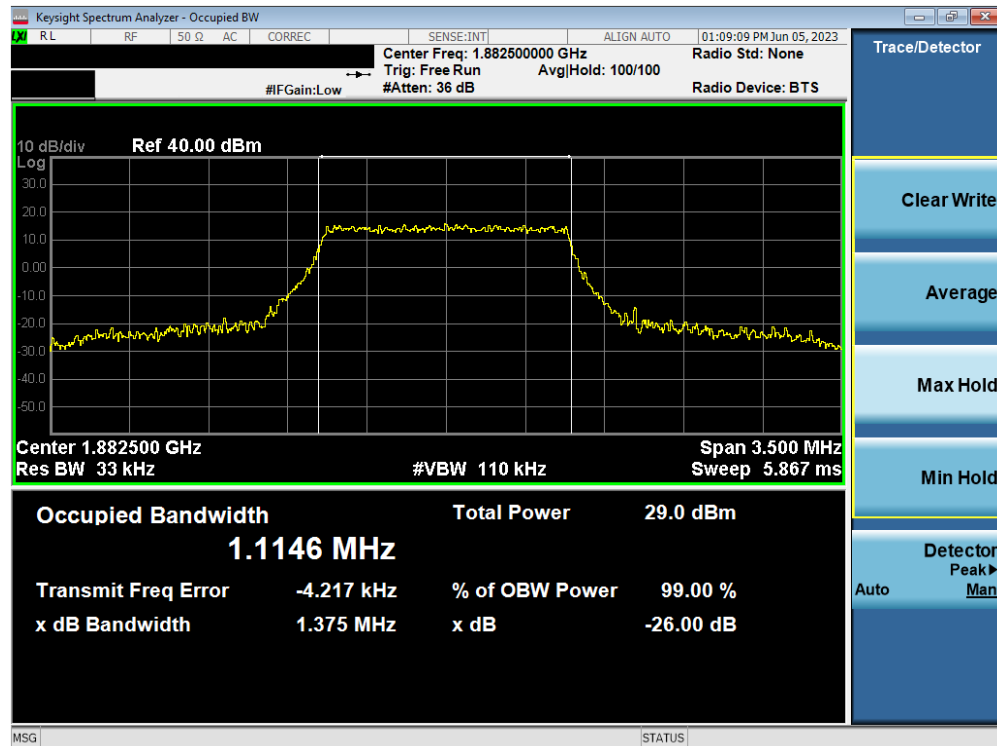


Plot 7-13. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 23 of 130



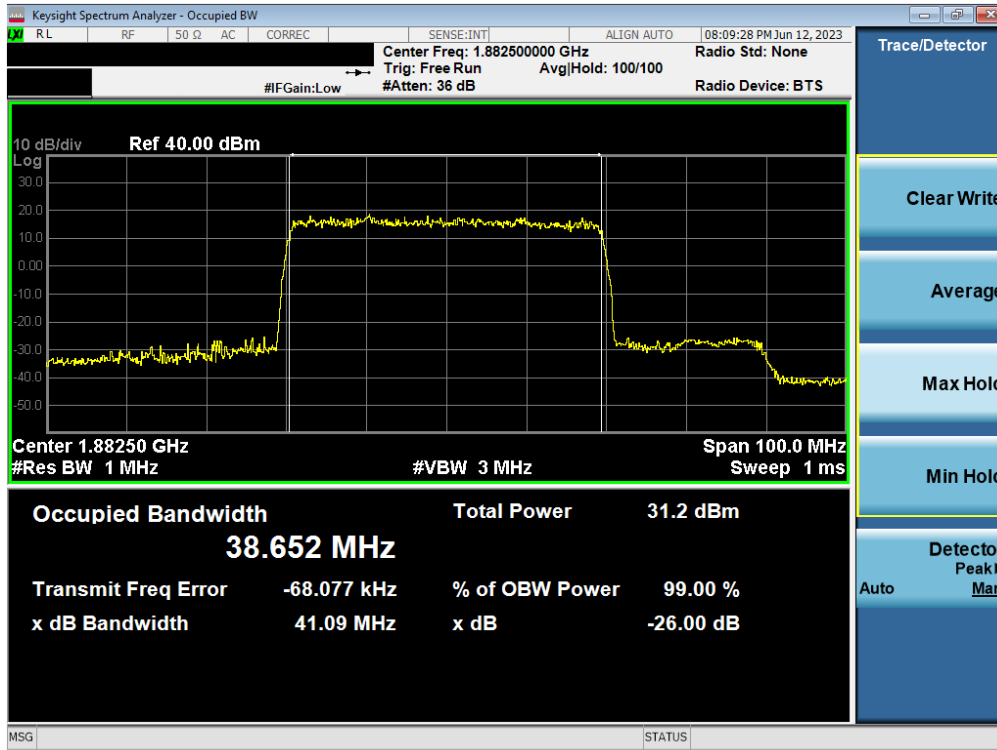
Plot 7-14. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB - Ant A)



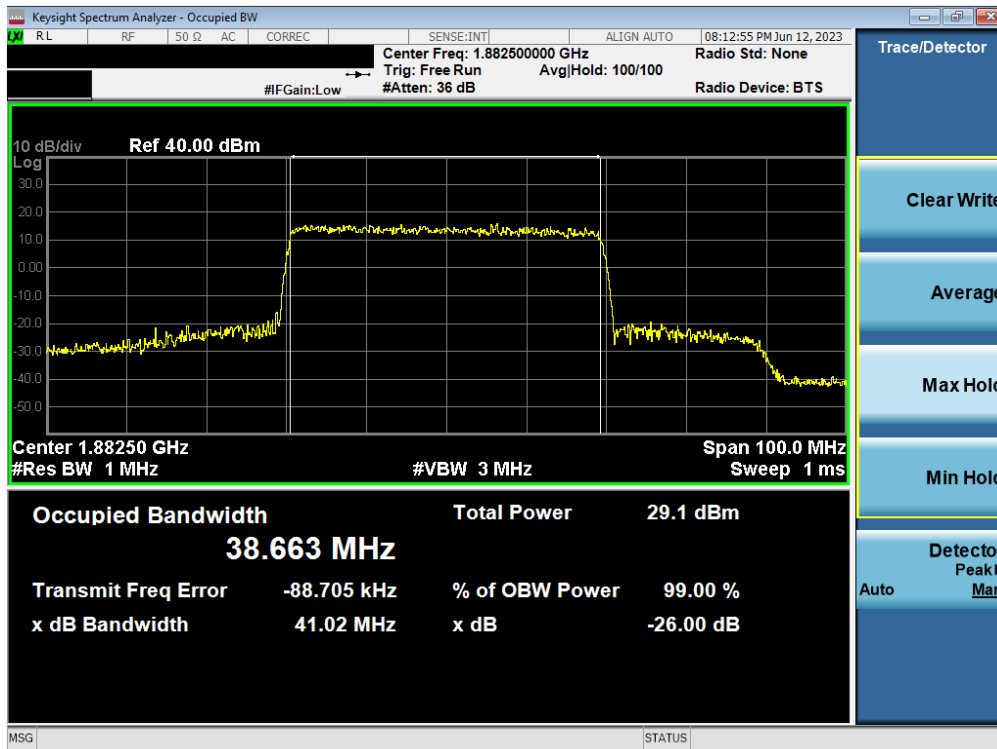
Plot 7-15. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 24 of 130

NR Band n25/2 – Ant A

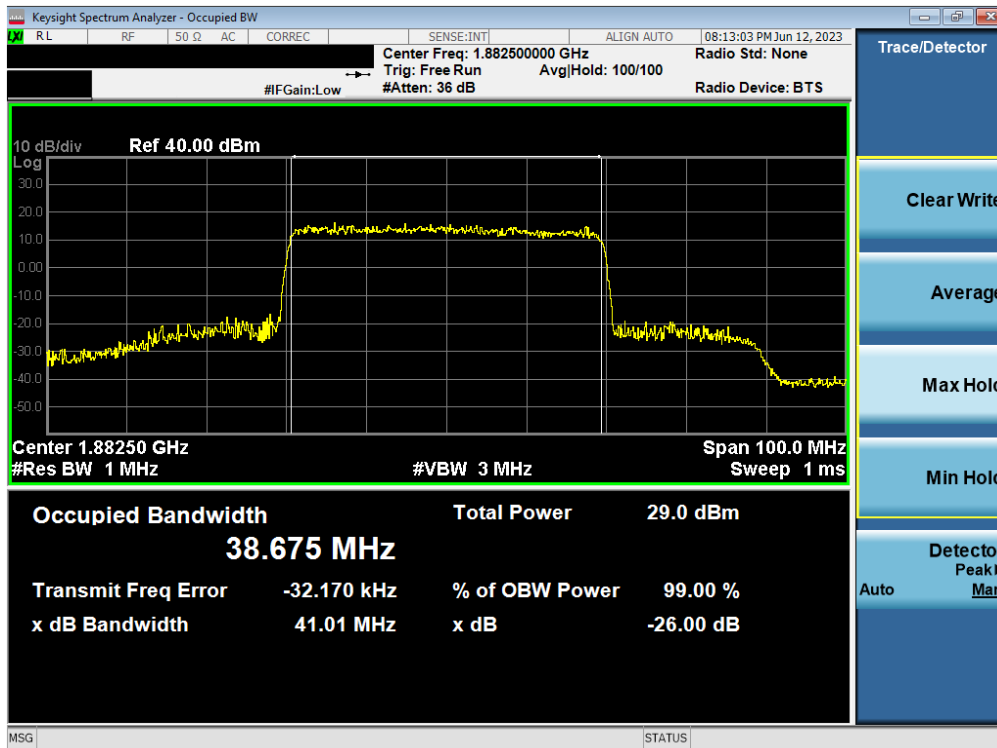


Plot 7-16. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

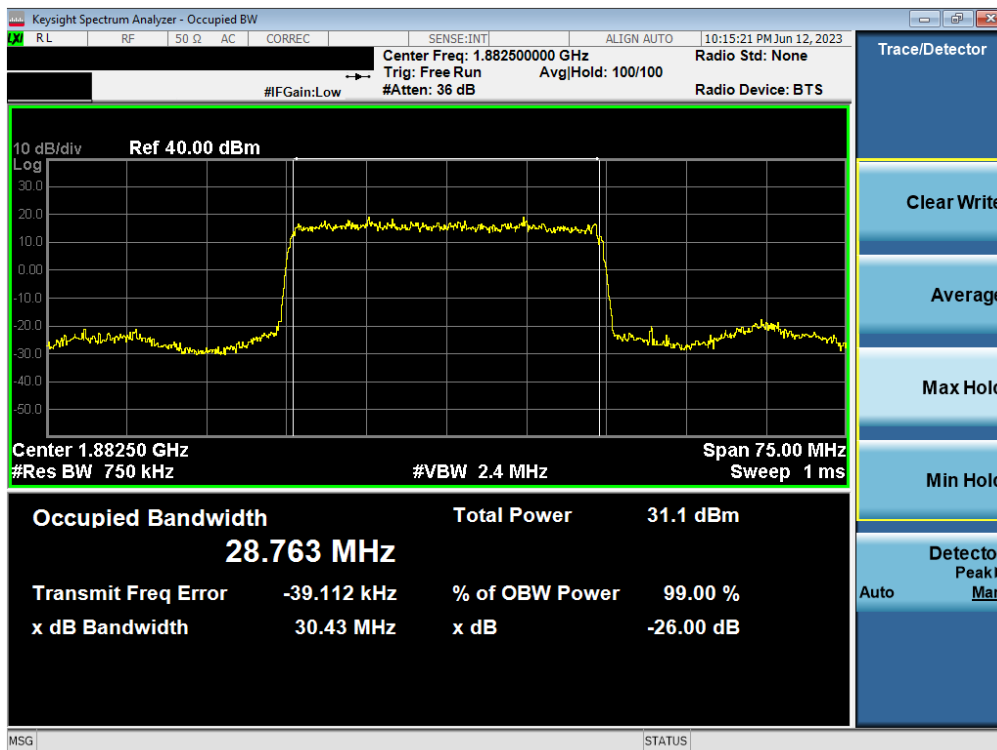


Plot 7-17. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM QPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 25 of 130

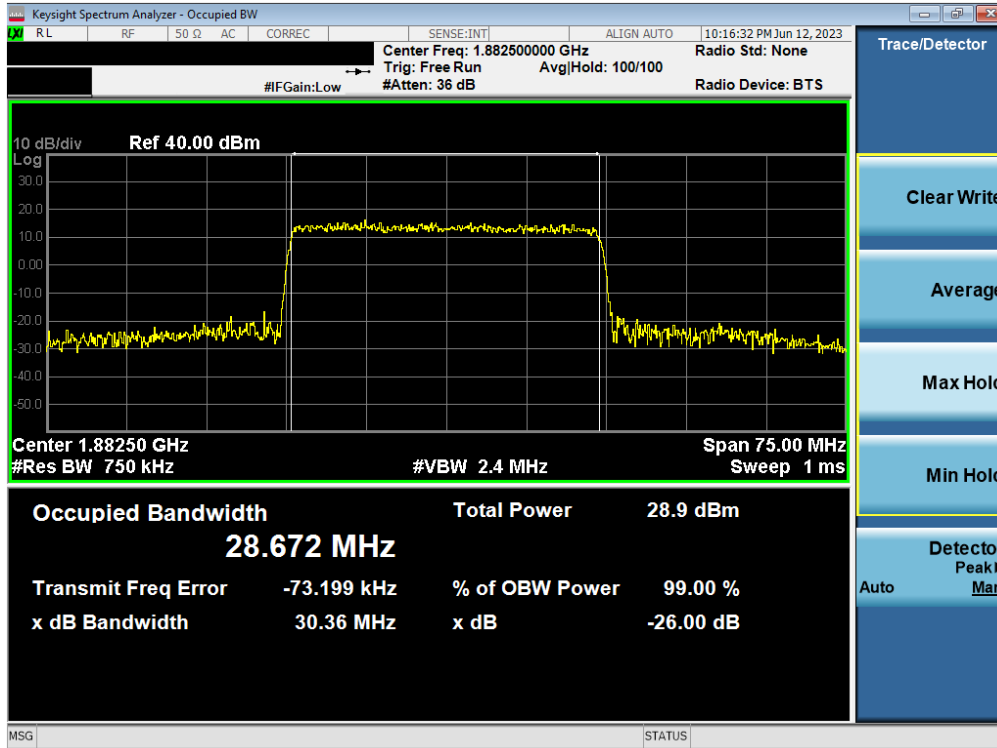


Plot 7-18. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM 16QAM - Full RB - ANT A)

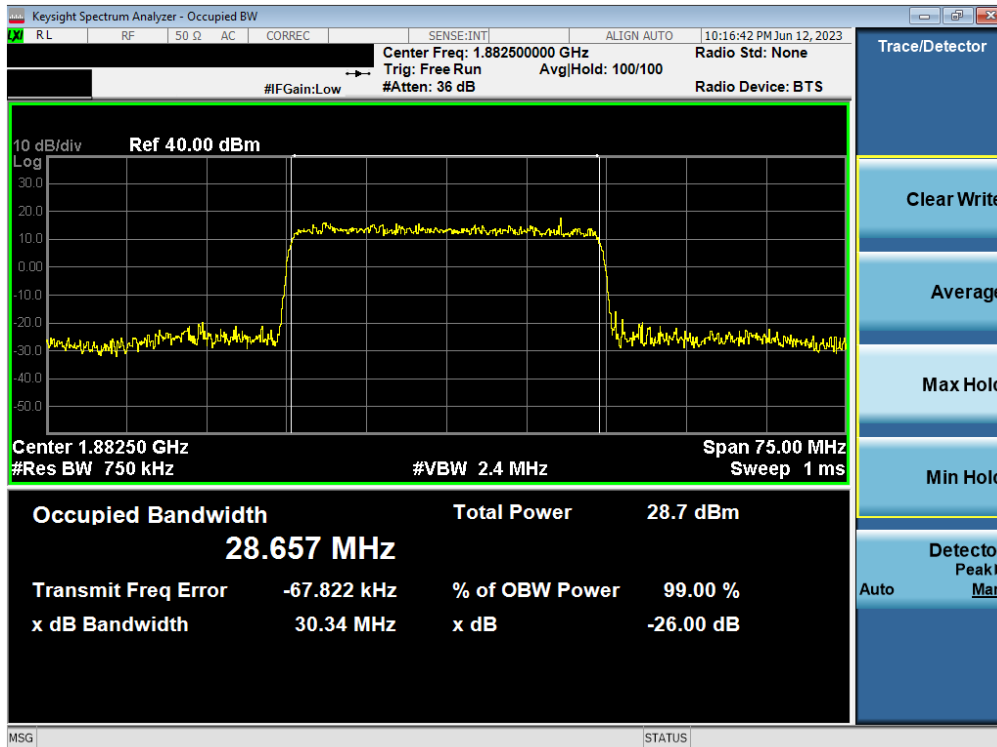


Plot 7-19. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 26 of 130

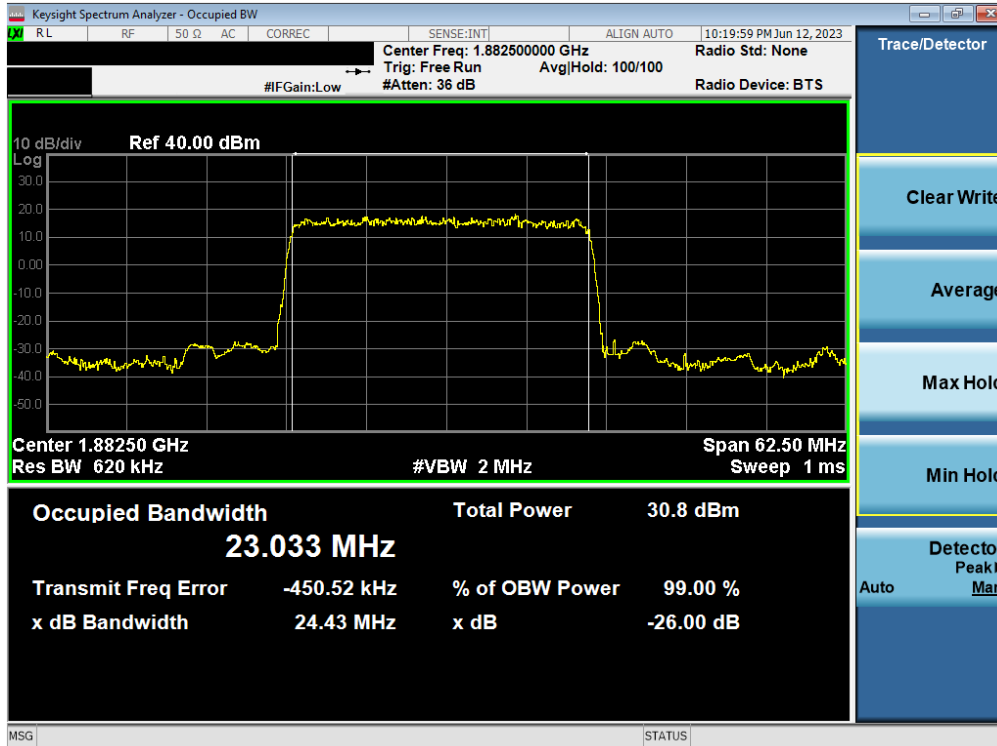


Plot 7-20. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM QPSK - Full RB - ANT A)

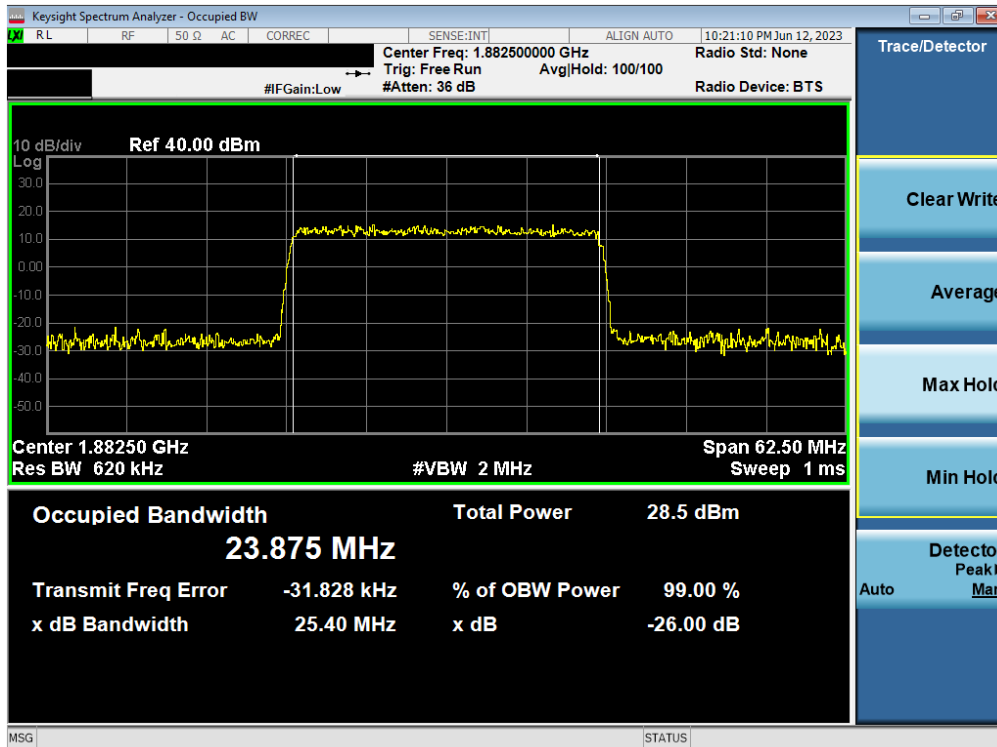


Plot 7-21. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM 16QAM - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 27 of 130

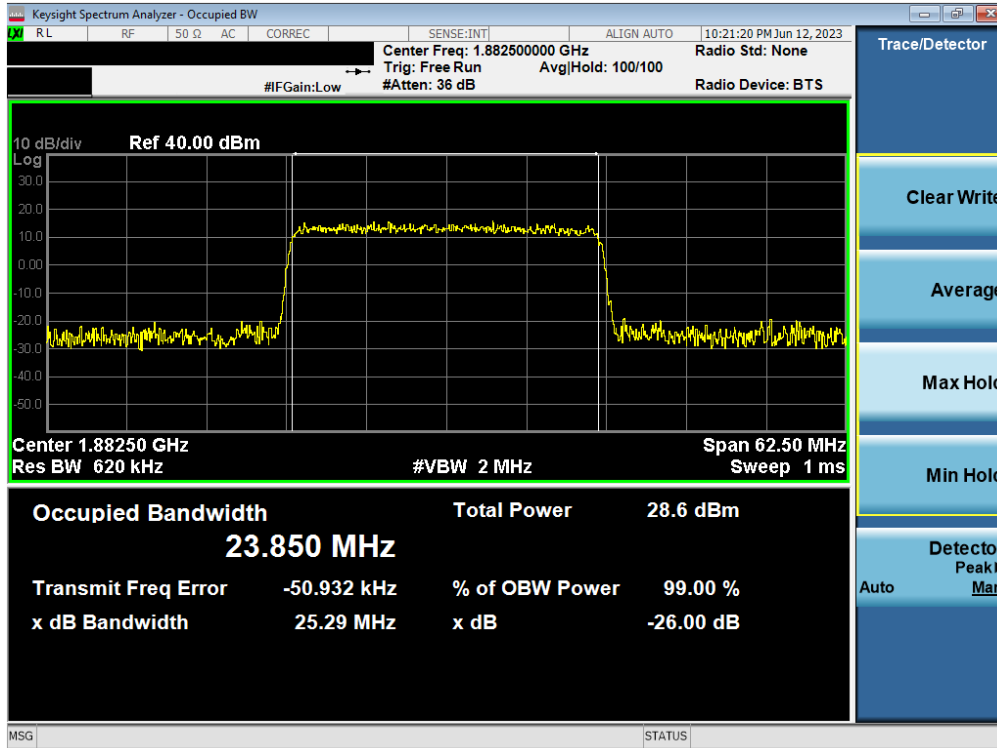


Plot 7-22. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

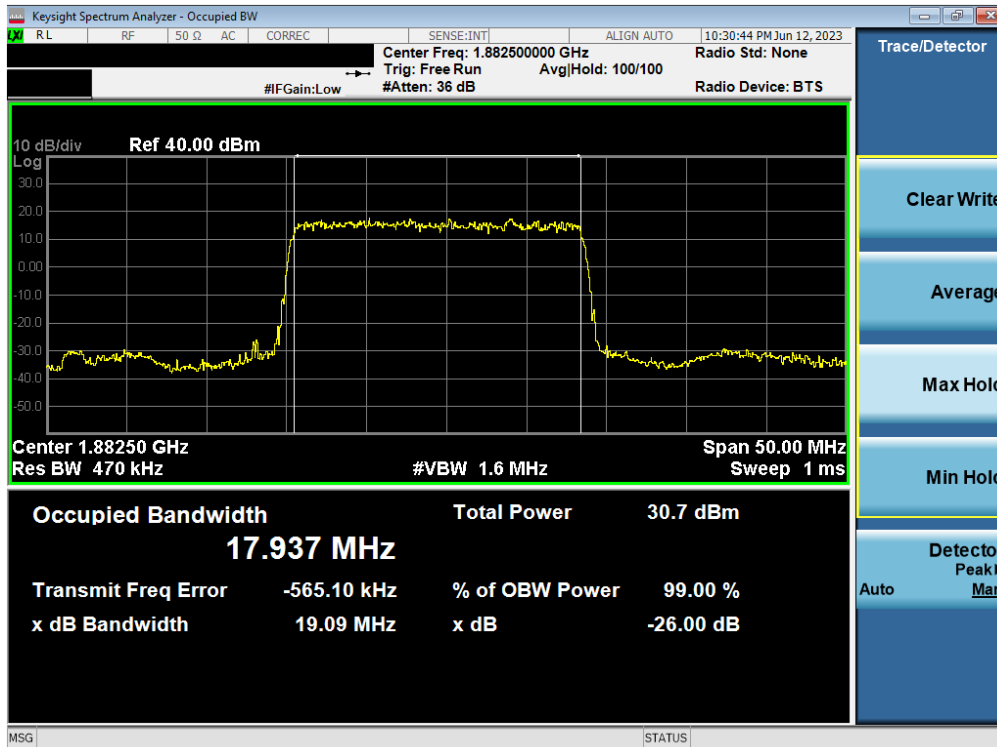


Plot 7-23. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM QPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 28 of 130

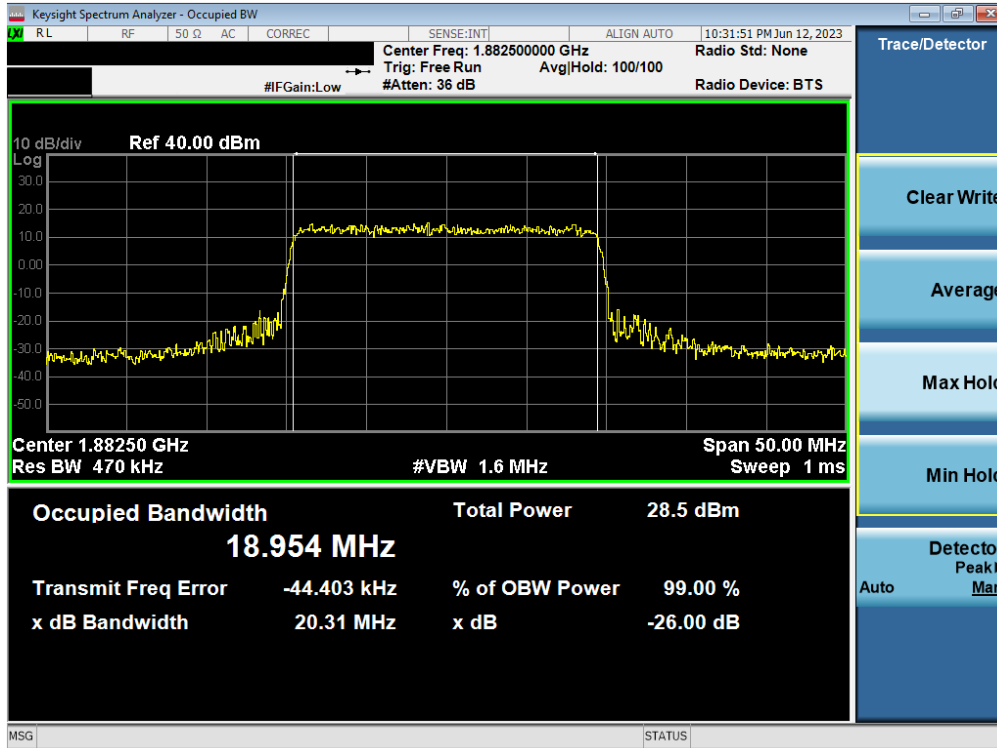


Plot 7-24. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM 16QAM - Full RB - ANT A)

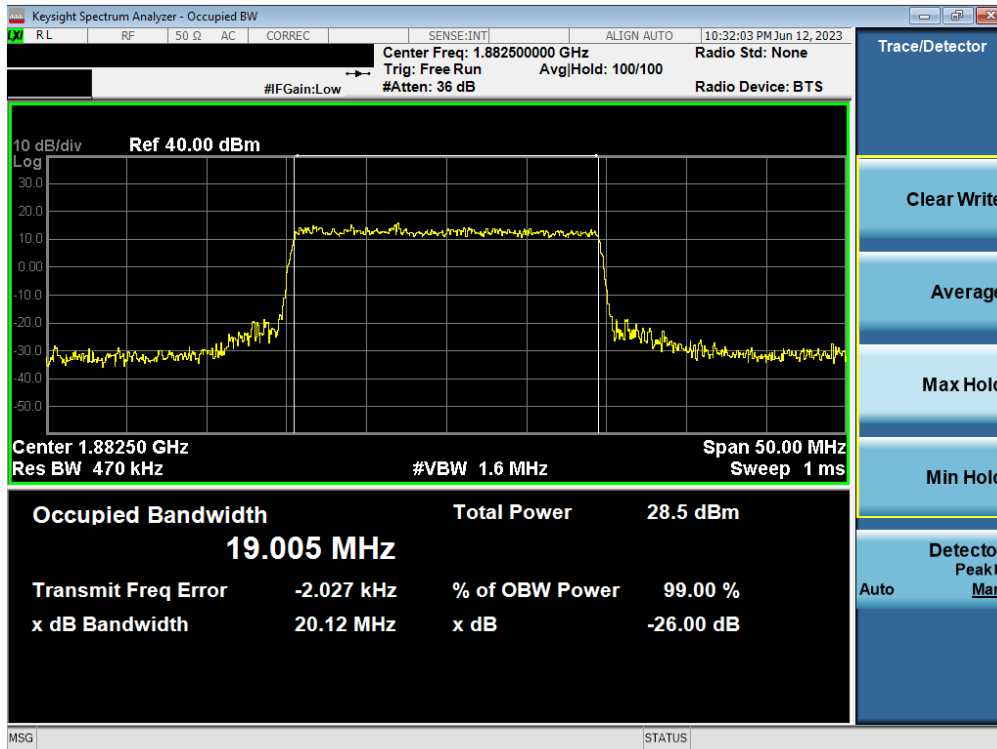


Plot 7-25. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 29 of 130

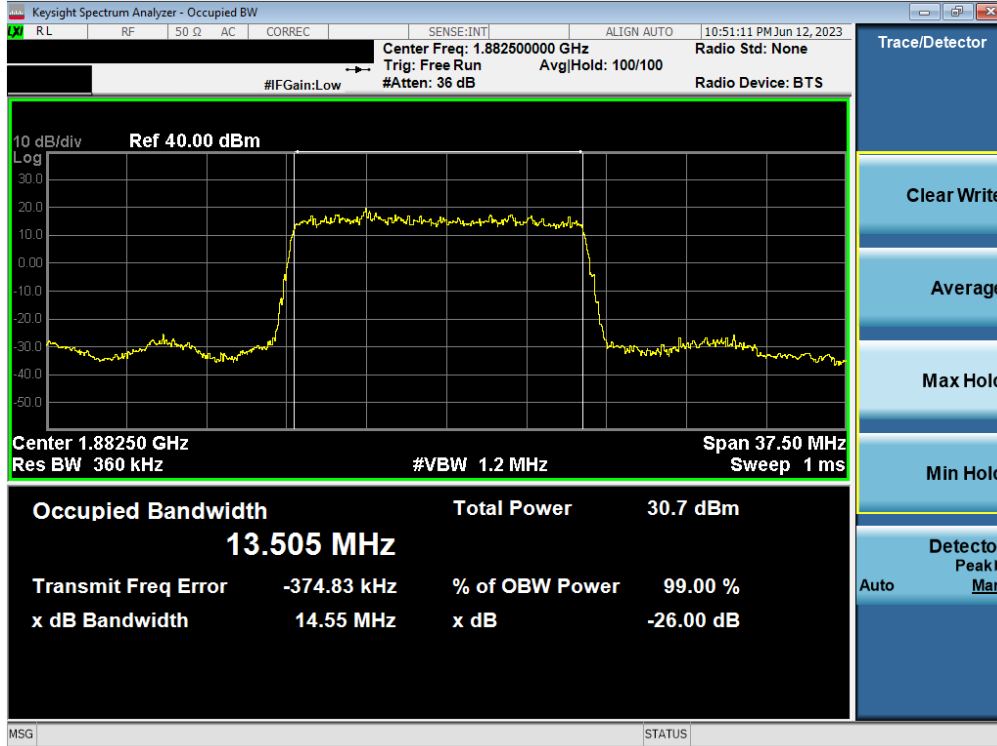


Plot 7-26. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB - ANT A)

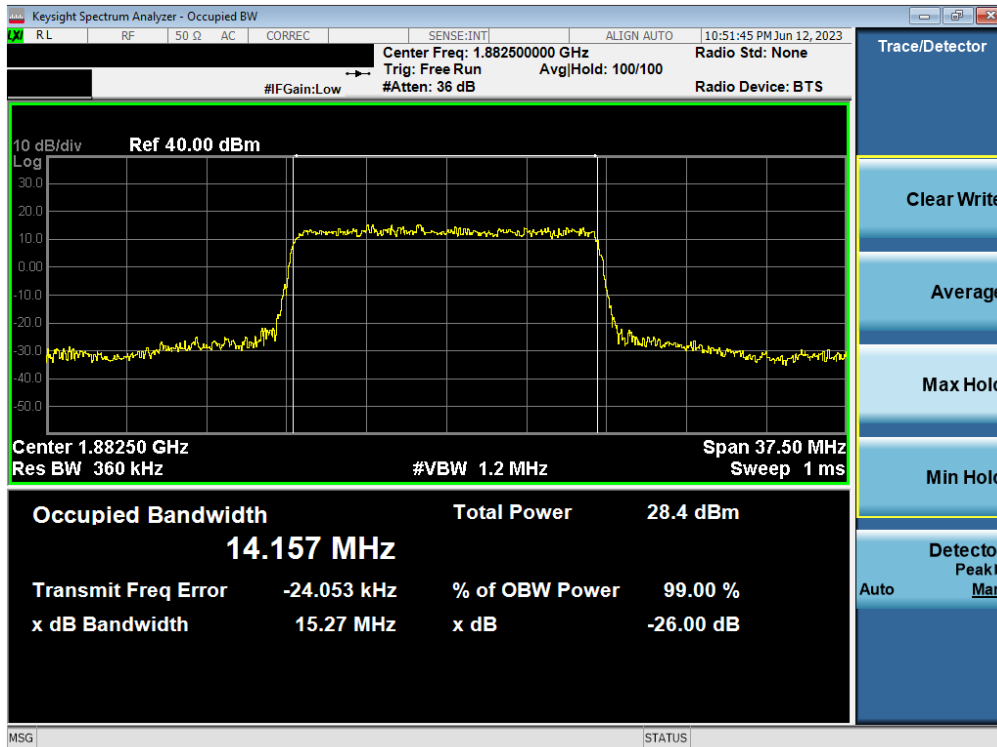


Plot 7-27. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM 16QAM - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 30 of 130

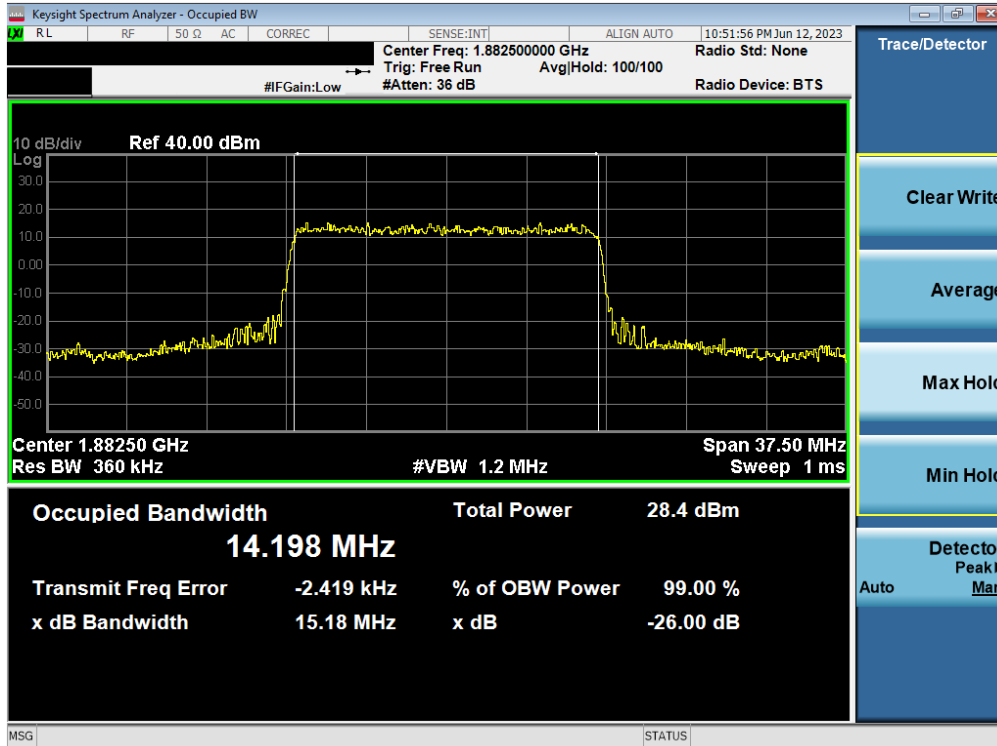


Plot 7-28. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

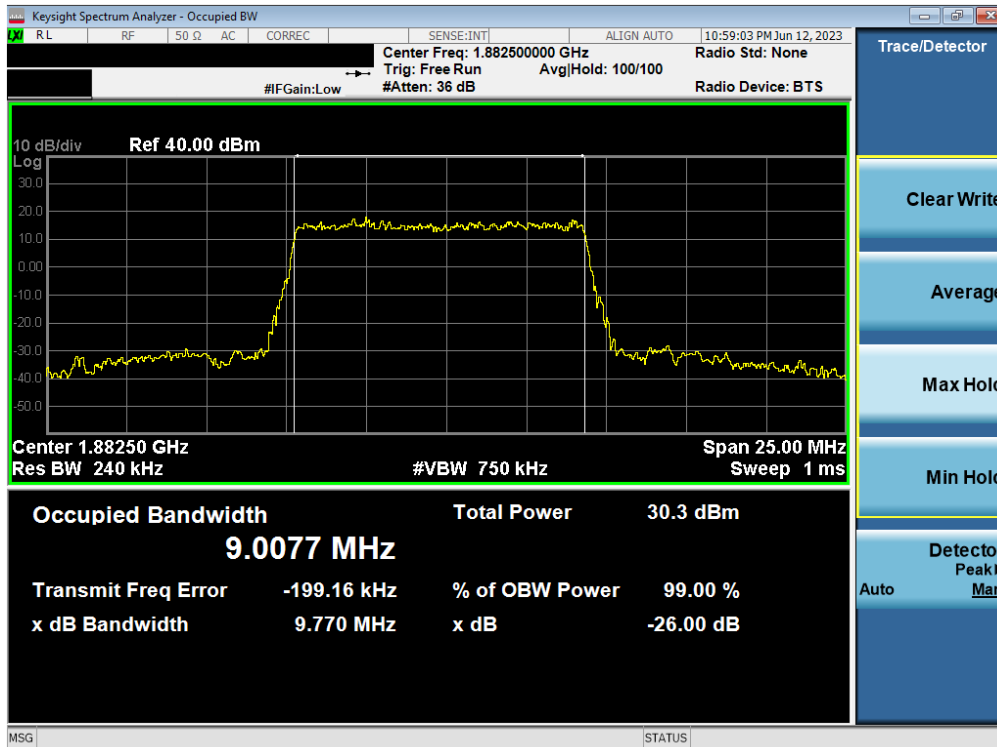


Plot 7-29. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 31 of 130

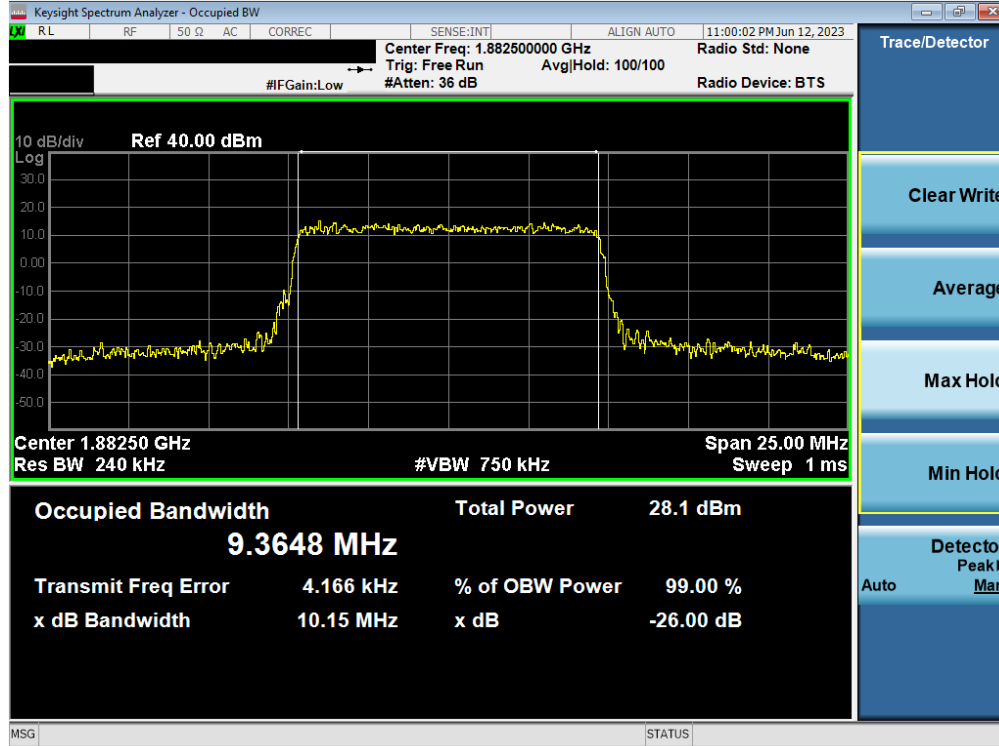


Plot 7-30. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM 16QAM - Full RB - ANT A)

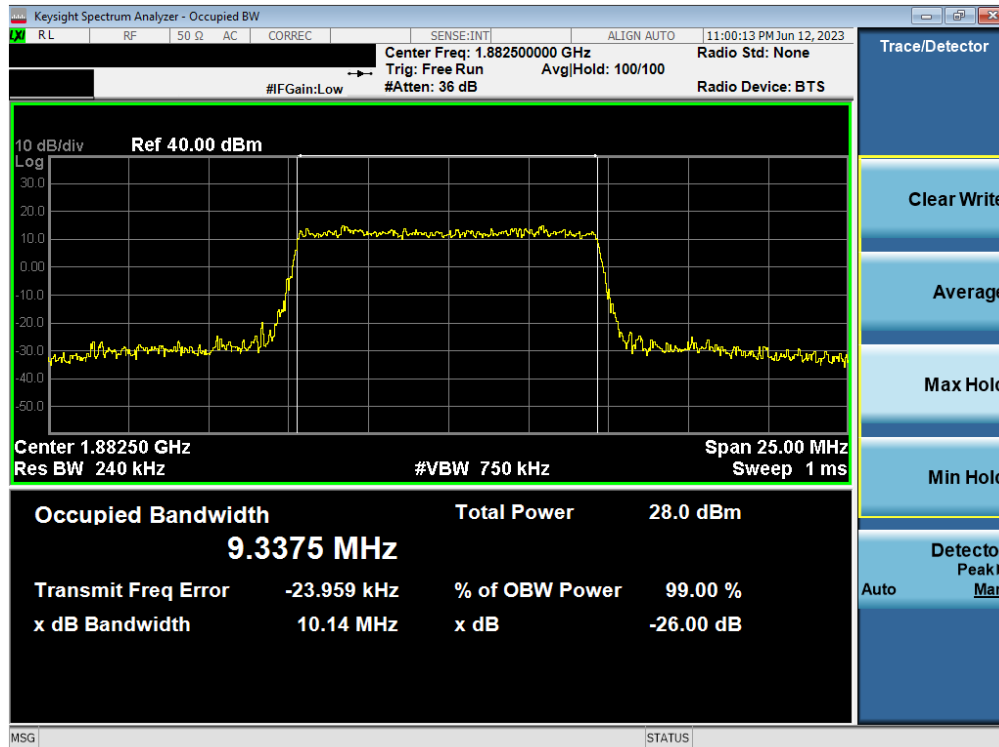


Plot 7-31. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 32 of 130

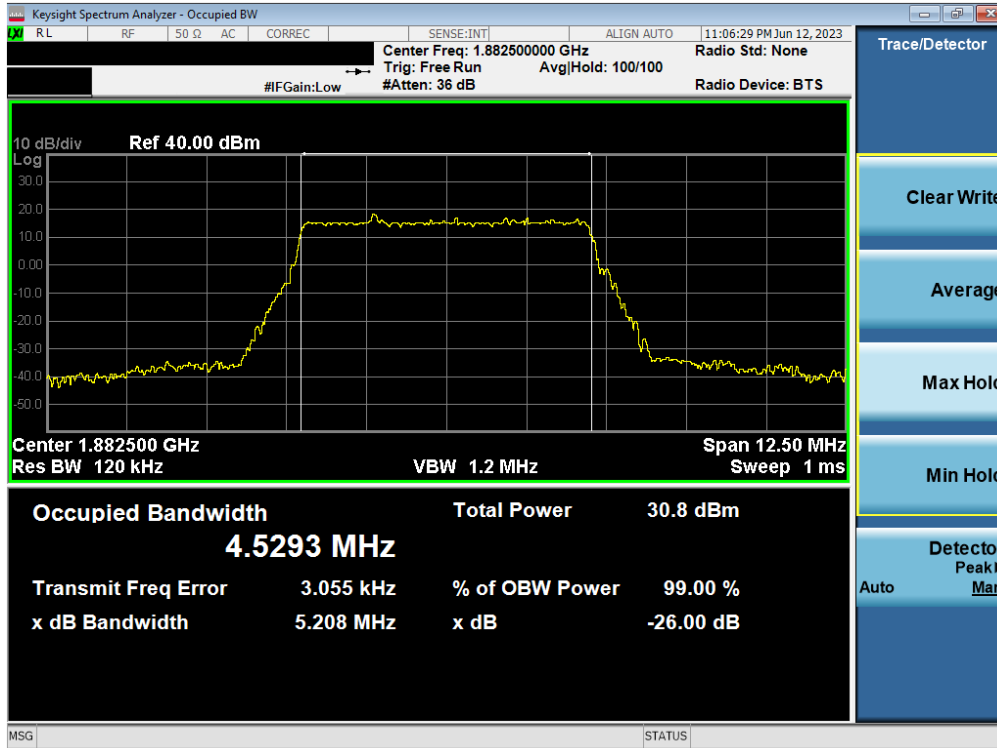


Plot 7-32. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB - ANT A)

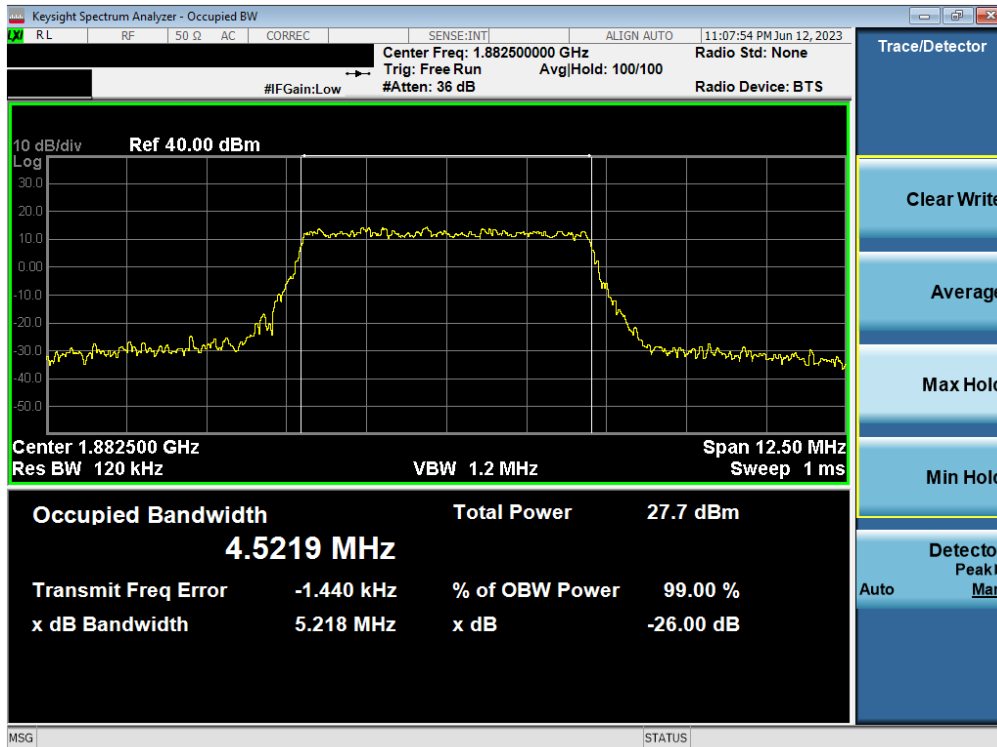


Plot 7-33. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM 16QAM - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 33 of 130

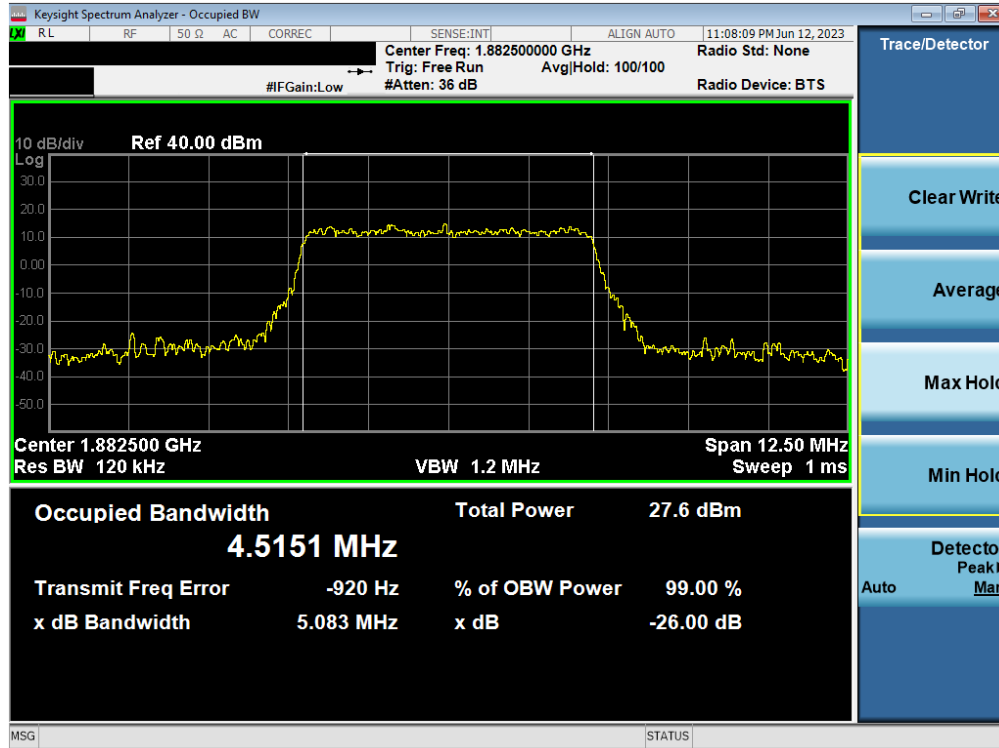


Plot 7-34. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB - ANT A)



Plot 7-35. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB - ANT A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 34 of 130



Plot 7-36. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM 16QAM - Full RB - ANT A)

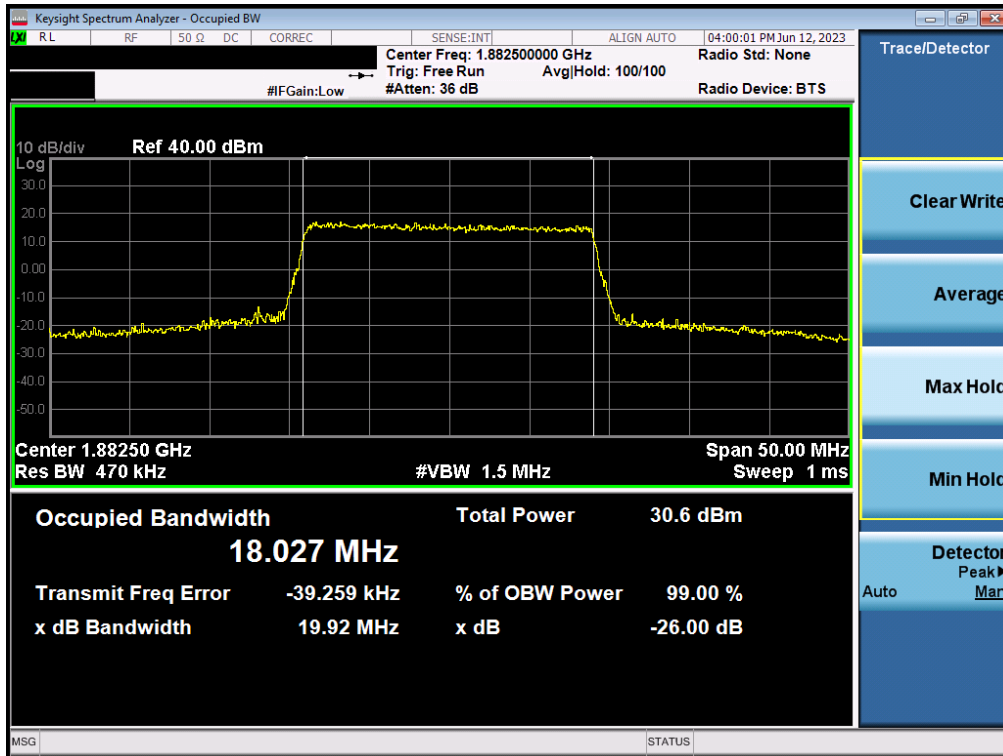
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 35 of 130

Mode	Bandwidth	Modulation	OBW [MHz]
LTE Band 25/2	20 MHz	QPSK	18.027
		16QAM	18.074
	15 MHz	QPSK	13.524
		16QAM	13.499
	10 MHz	QPSK	9.055
		16QAM	9.072
	5 MHz	QPSK	4.523
		16QAM	4.540
	3 MHz	QPSK	2.710
		16QAM	2.724
	1.4 MHz	QPSK	1.105
		16QAM	1.107
NR Band n25	40 MHz	$\pi/2$ BPSK	38.769
		QPSK	38.842
		16QAM	38.735
	30 MHz	$\pi/2$ BPSK	28.749
		QPSK	28.739
		16QAM	28.860
	25 MHz	$\pi/2$ BPSK	23.025
		QPSK	23.851
		16QAM	23.887
NR Band n25/2	20 MHz	$\pi/2$ BPSK	17.989
		QPSK	19.016
		16QAM	19.068
	15 MHz	$\pi/2$ BPSK	13.539
		QPSK	14.175
		16QAM	14.156
	10 MHz	$\pi/2$ BPSK	9.012
		QPSK	9.385
		16QAM	9.350
	5 MHz	$\pi/2$ BPSK	4.523
		QPSK	4.520
		16QAM	4.537

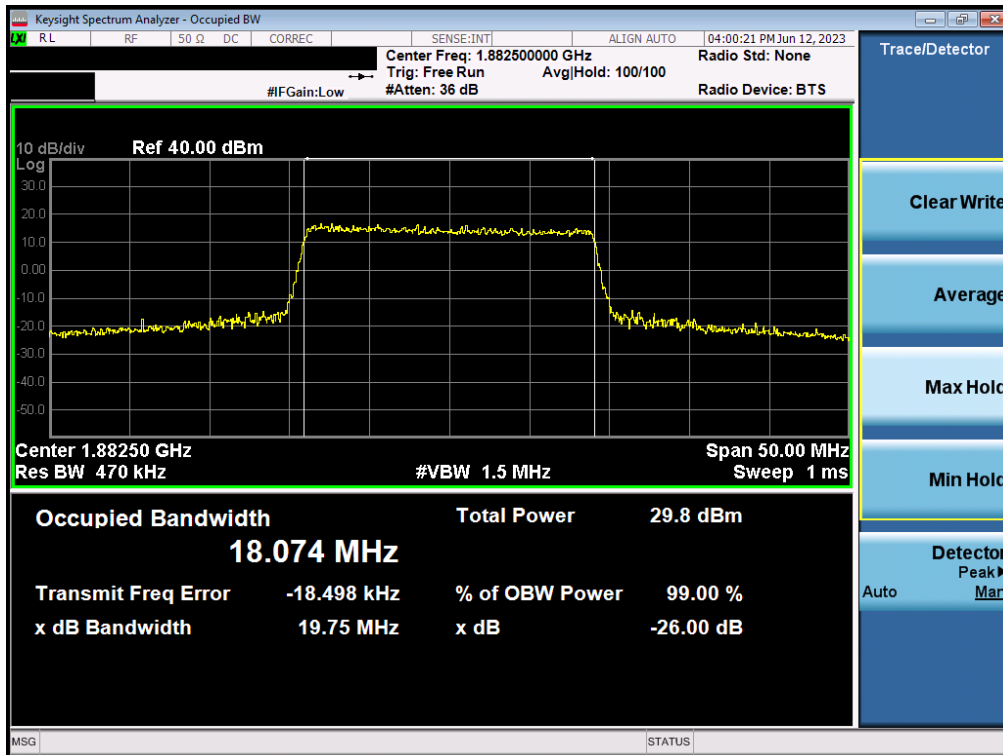
Table 7-5. Occupied Bandwidth Test Results – Ant F

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 36 of 130

LTE Band 25/2 – Ant F



Plot 7-37. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant F)

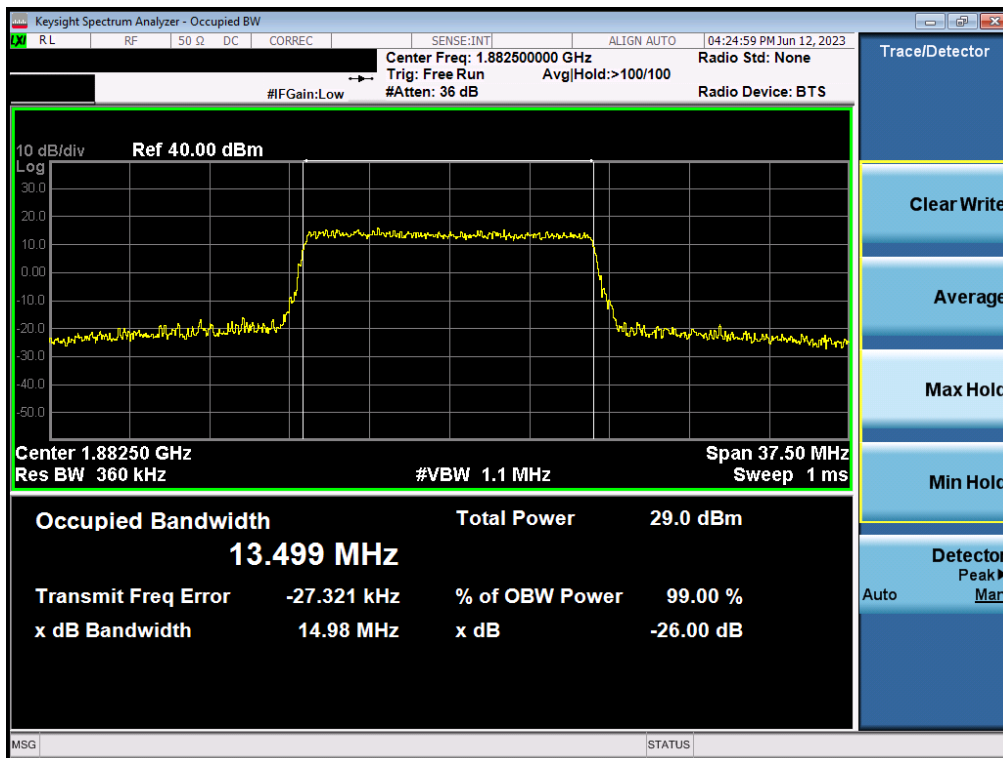


Plot 7-38. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 37 of 130

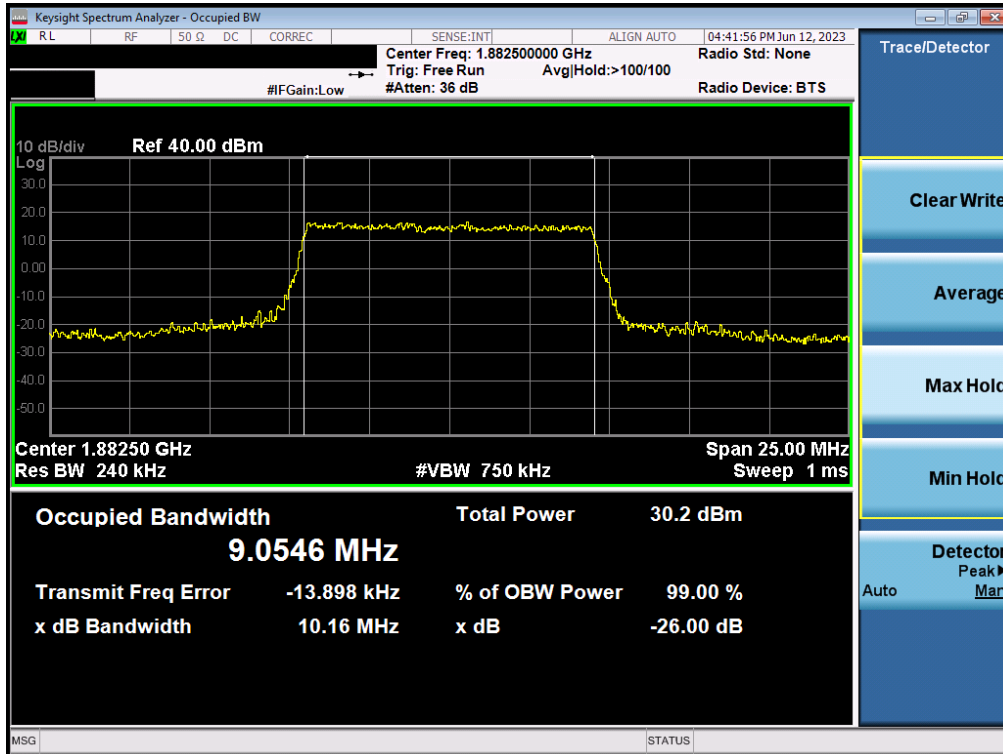


Plot 7-39. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz QPSK - Full RB - Ant F)

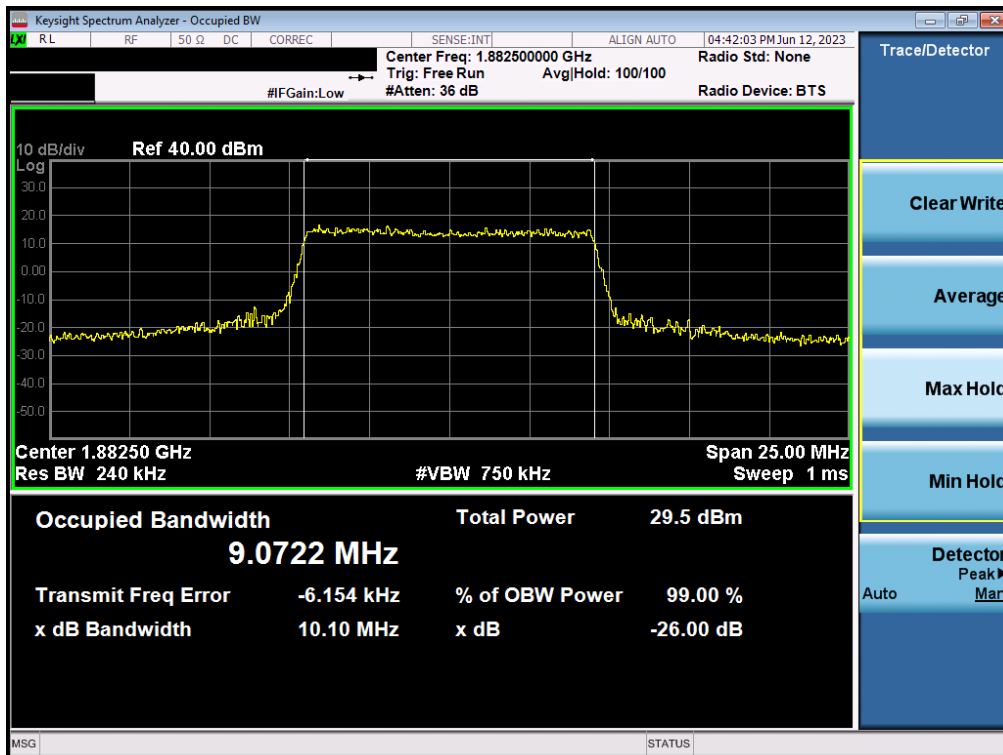


Plot 7-40. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 38 of 130

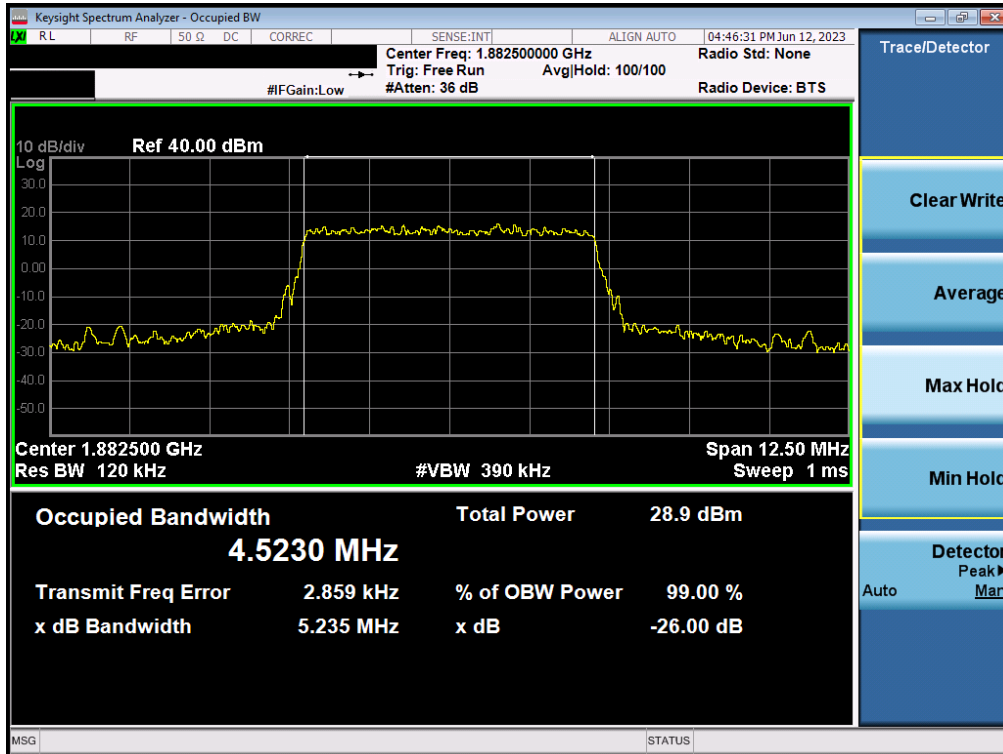


Plot 7-41. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz QPSK - Full RB - Ant F)

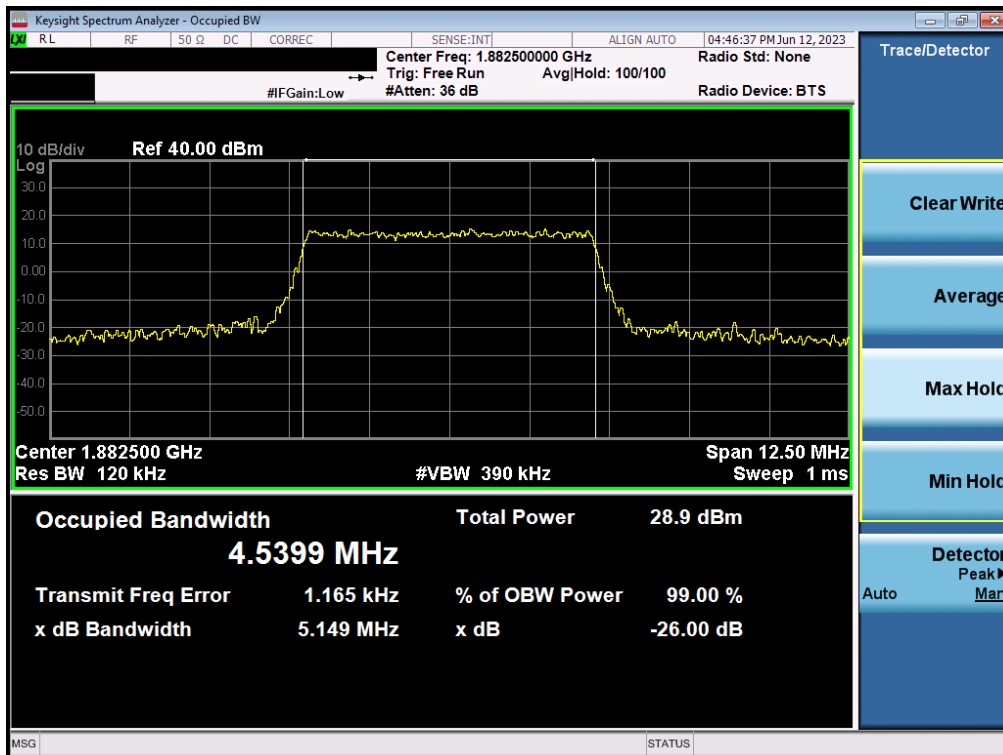


Plot 7-42. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 39 of 130

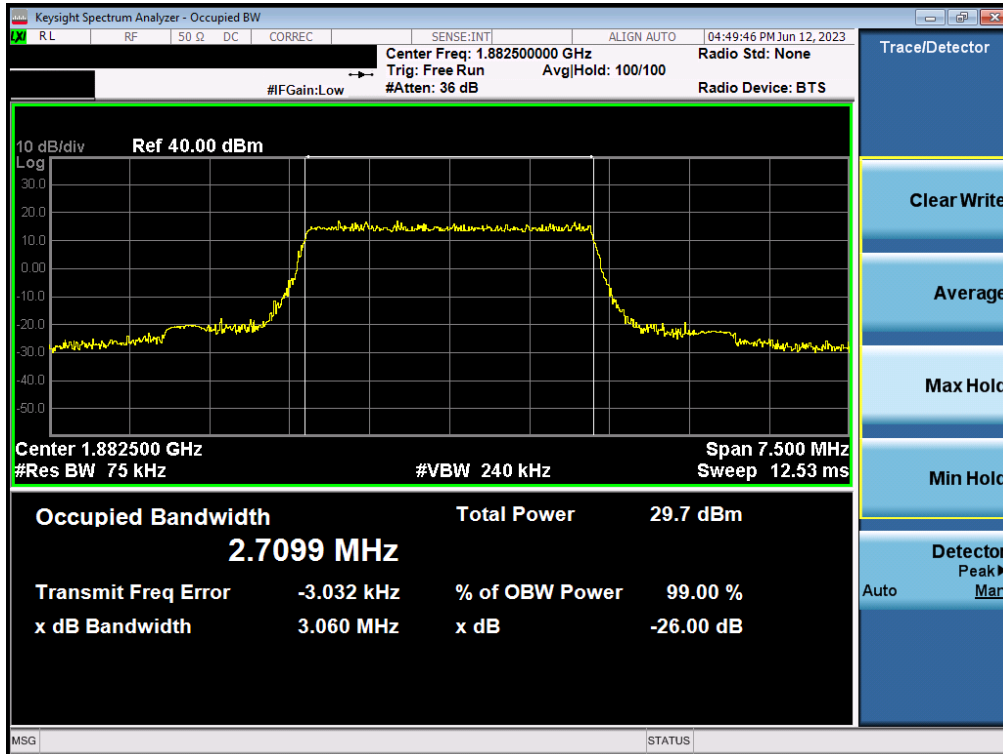


Plot 7-43. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz QPSK - Full RB - Ant F)

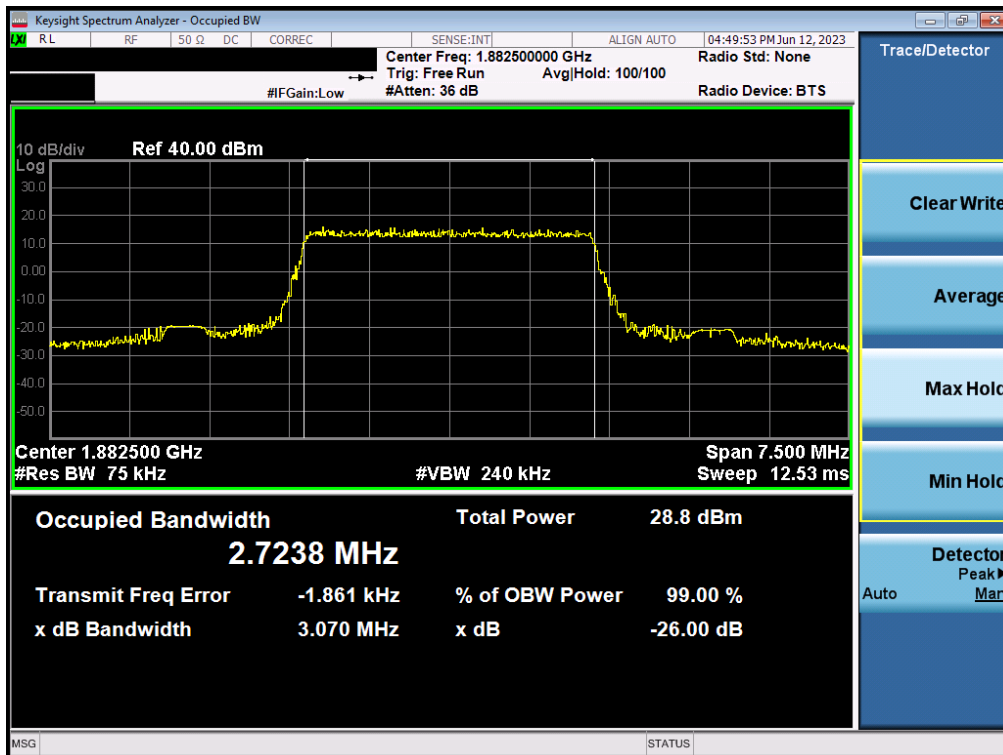


Plot 7-44. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 40 of 130

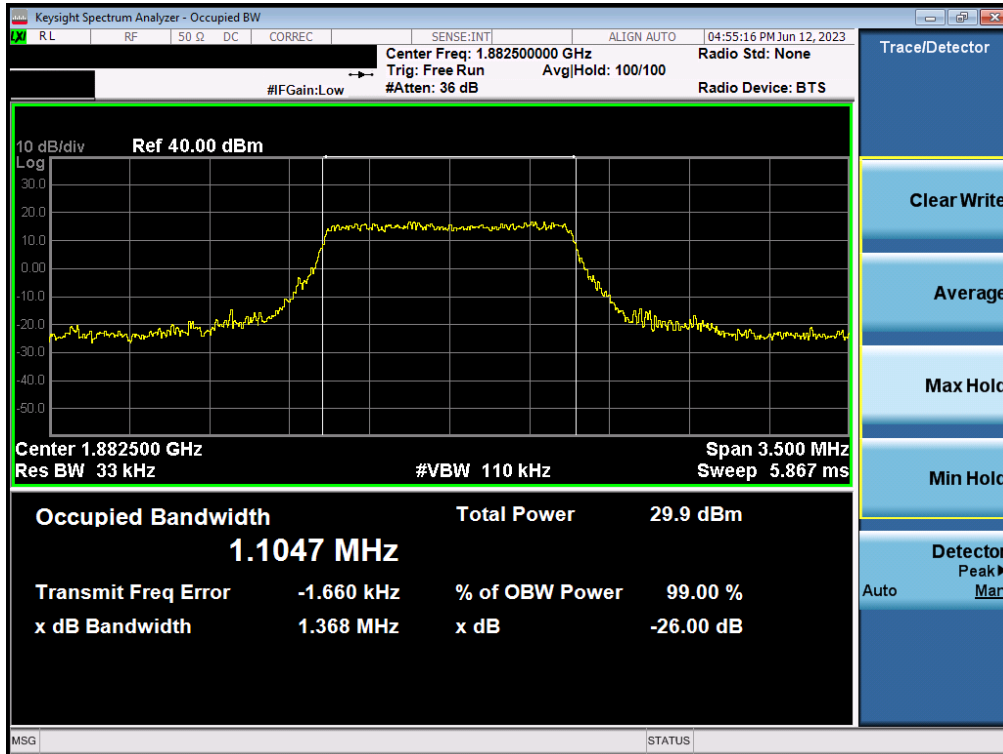


Plot 7-45. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz QPSK - Full RB - Ant F)

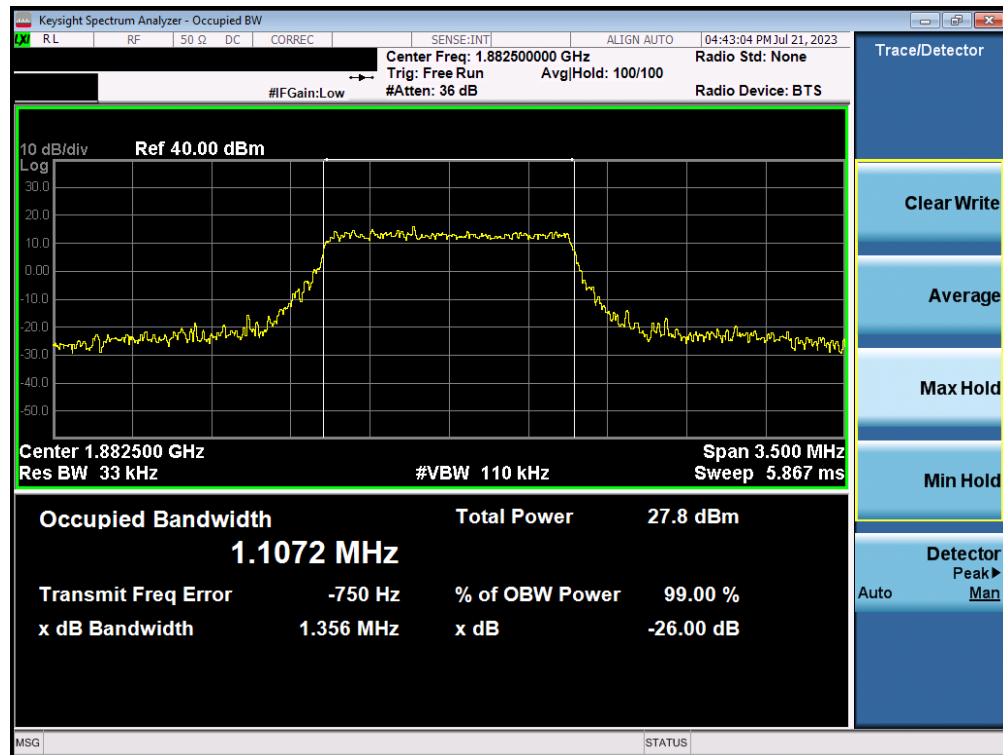


Plot 7-46. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 41 of 130



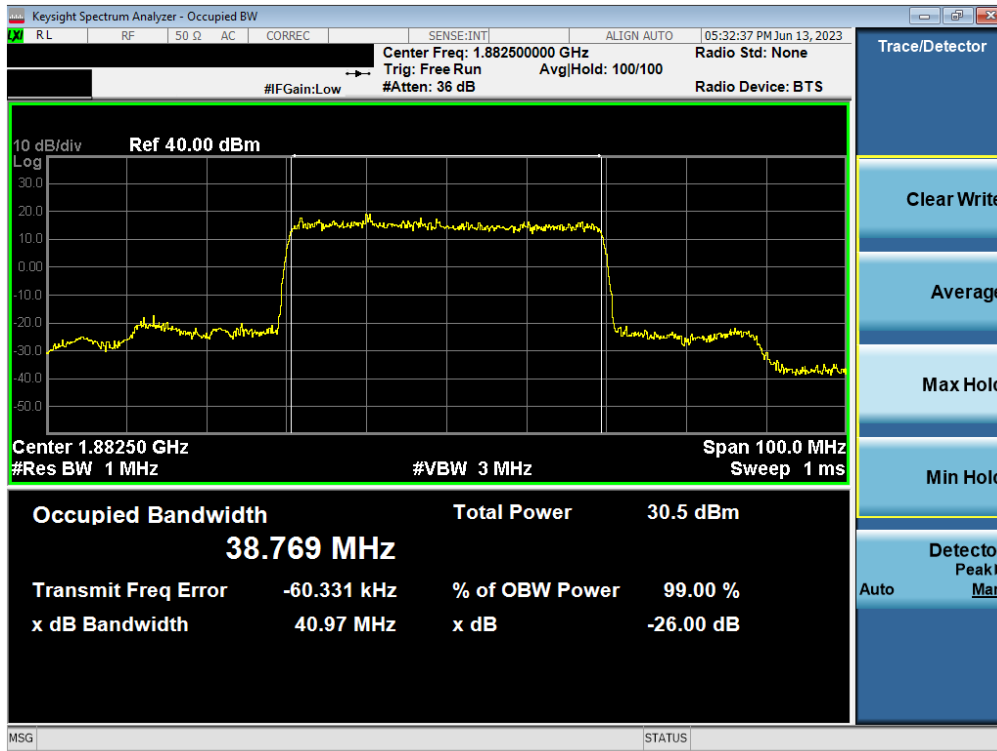
Plot 7-47. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB - Ant F)



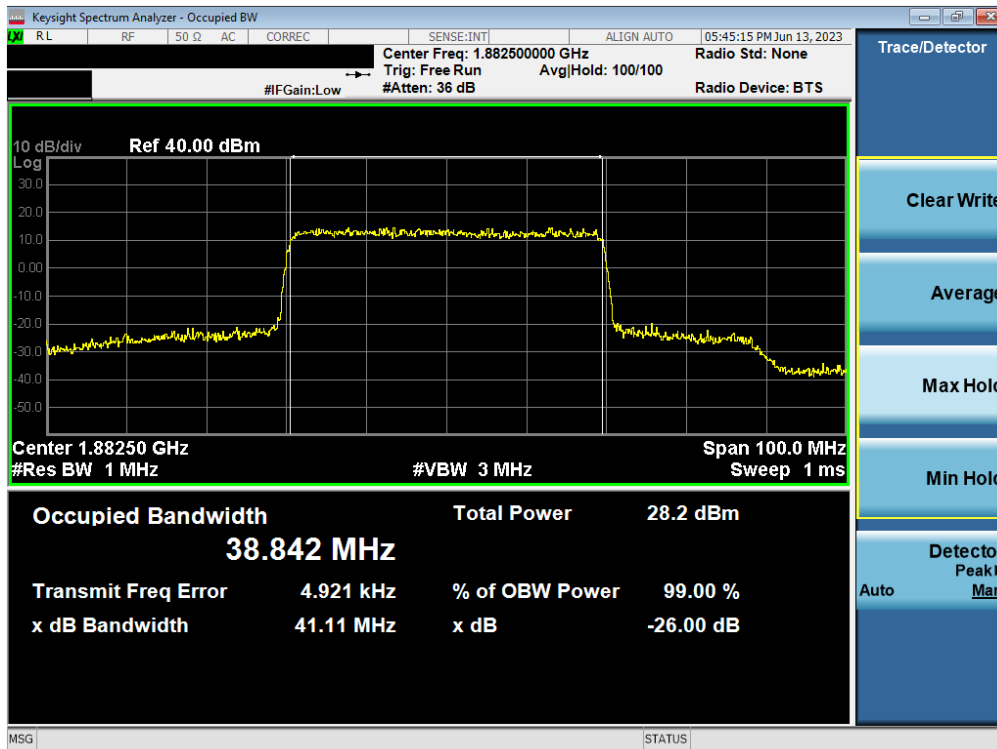
Plot 7-48. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 42 of 130

NR Band n25/2 – Ant F

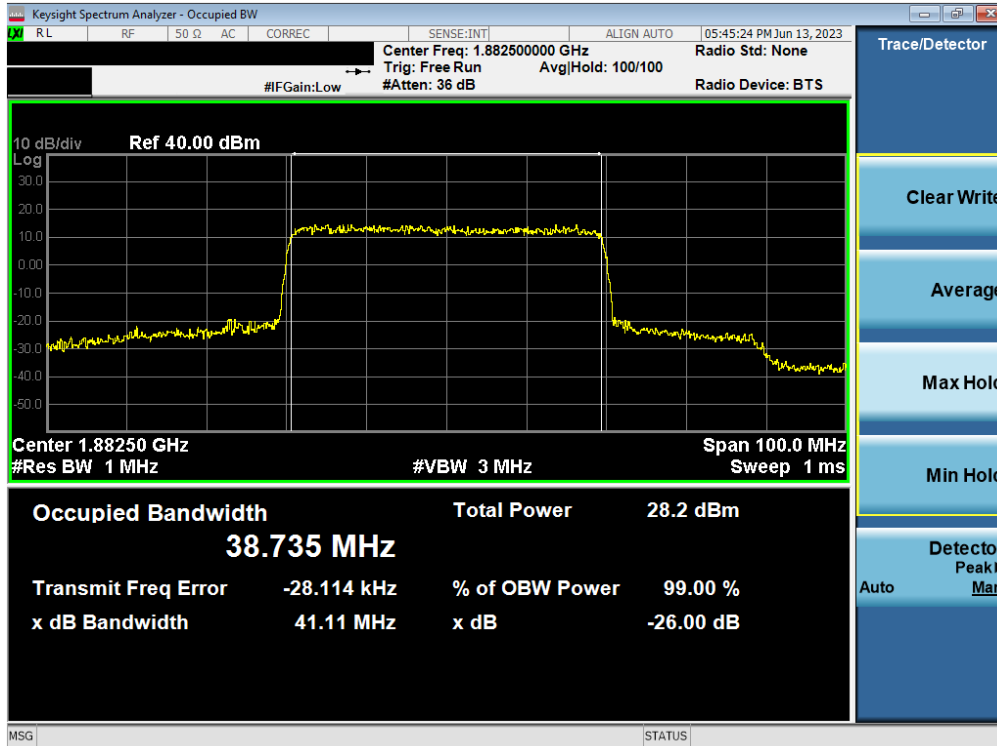


Plot 7-49. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)

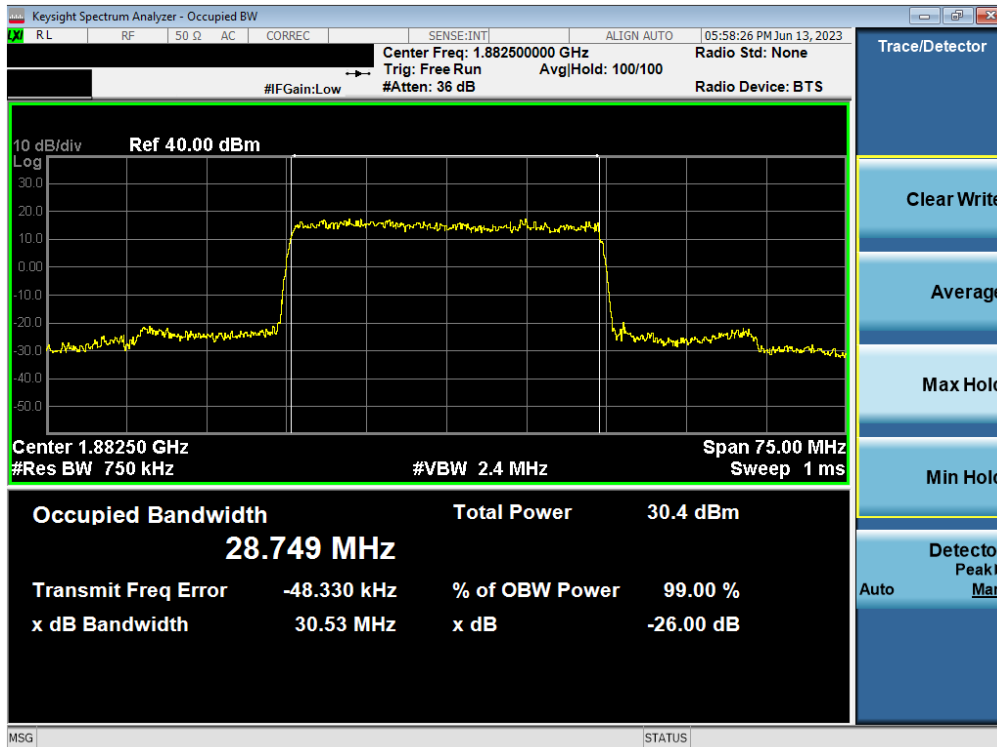


Plot 7-50. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM QPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 43 of 130

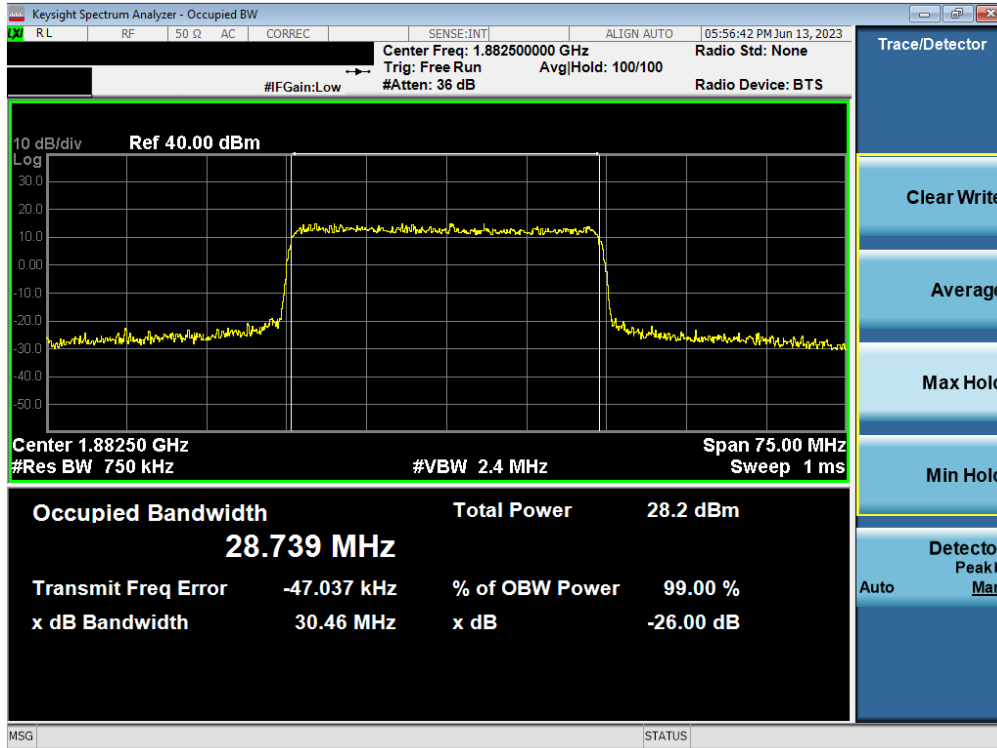


Plot 7-51. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM 16QAM - Full RB - ANT F)

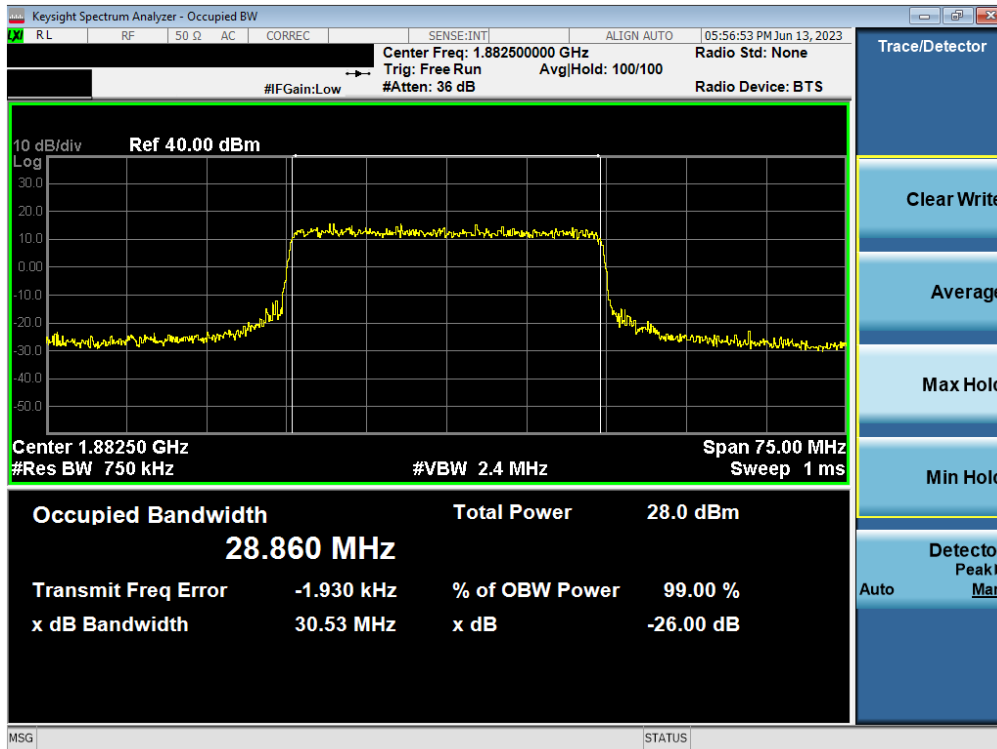


Plot 7-52. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 44 of 130

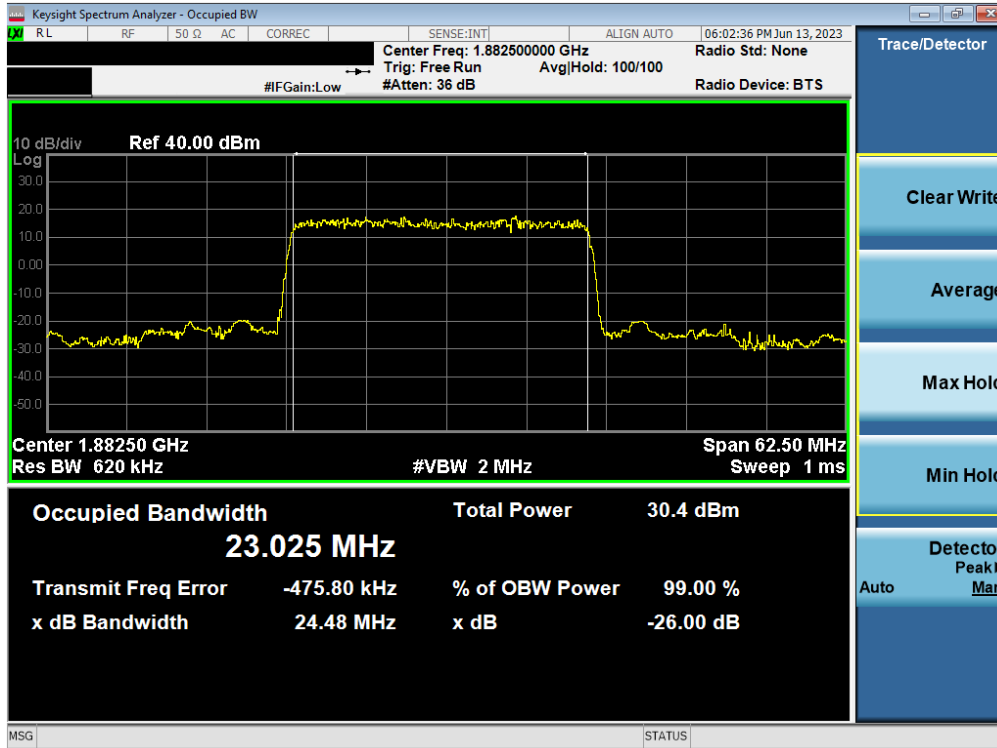


Plot 7-53. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM QPSK - Full RB - ANT F)

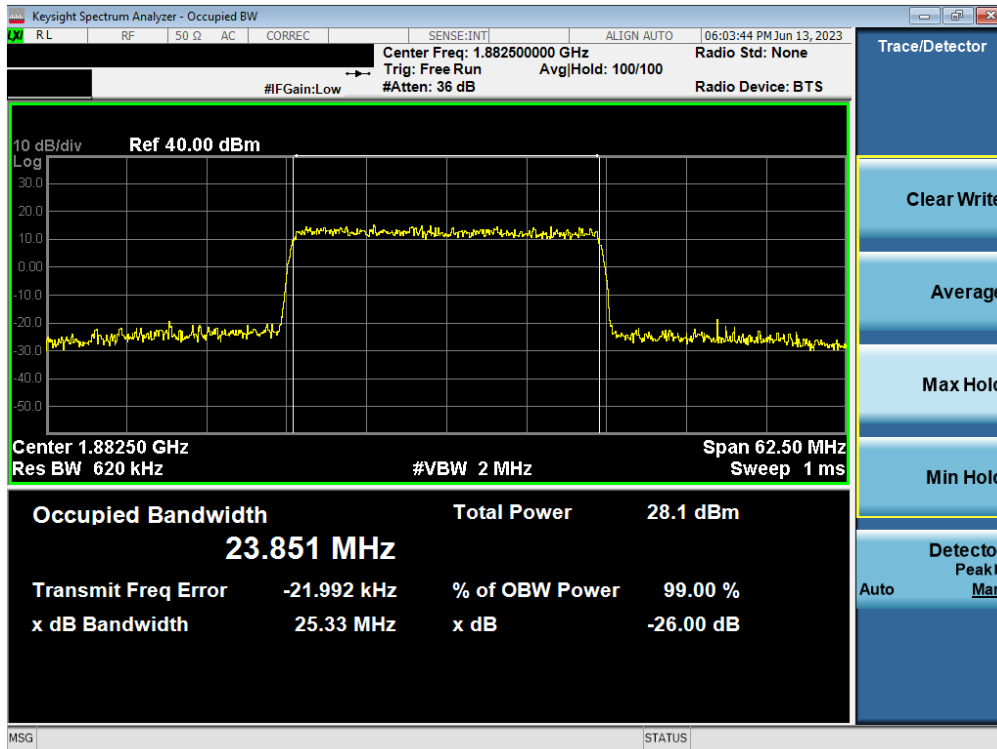


Plot 7-54. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM 16QAM - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 45 of 130

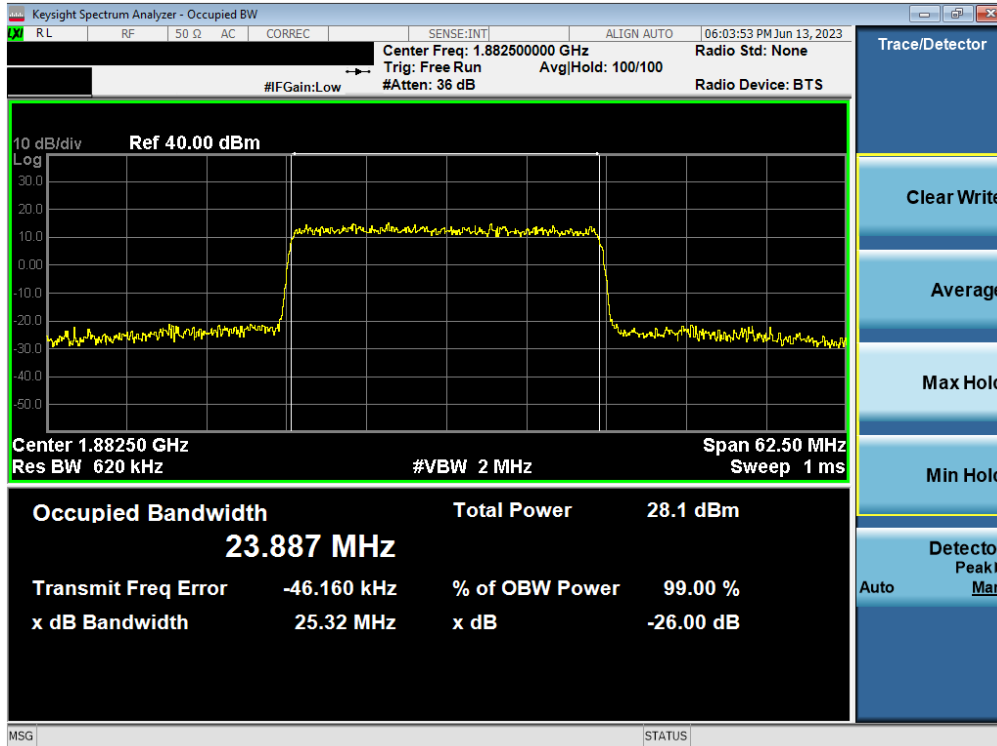


Plot 7-55. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)



Plot 7-56. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM QPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 46 of 130

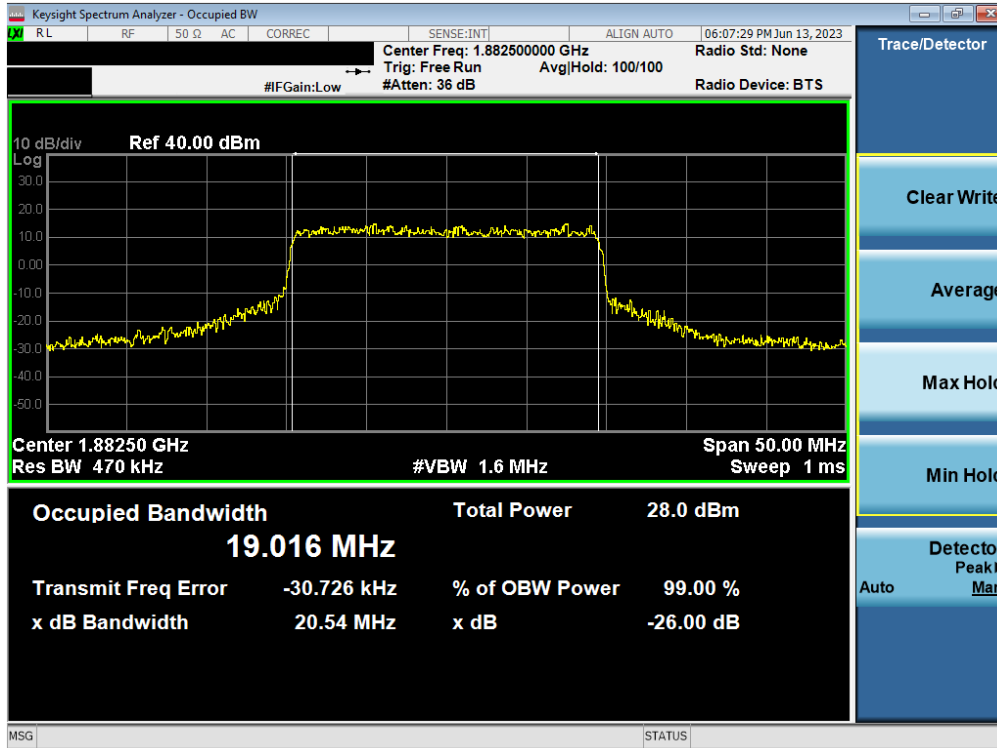


Plot 7-57. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM 16QAM - Full RB - ANT F)

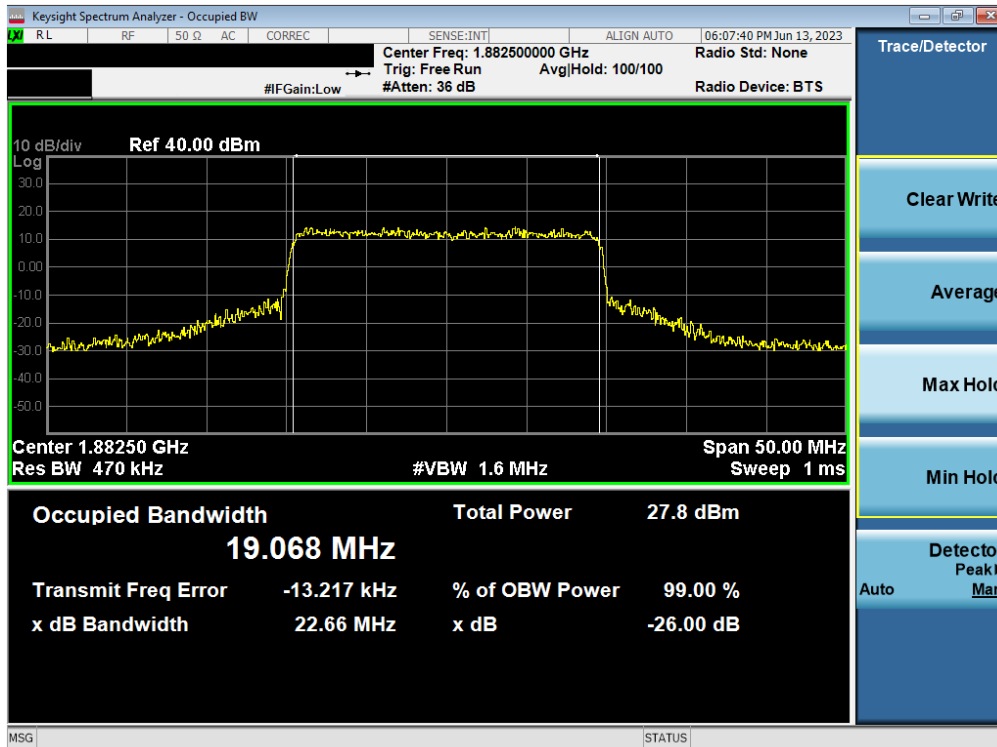


Plot 7-58. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 47 of 130

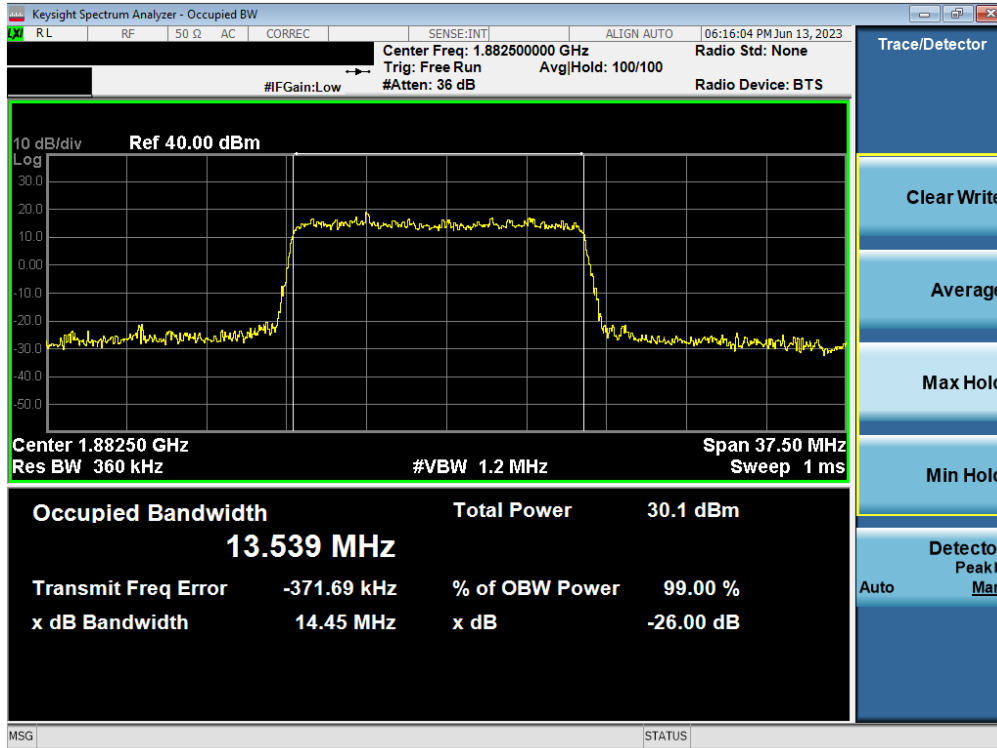


Plot 7-59. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB - ANT F)

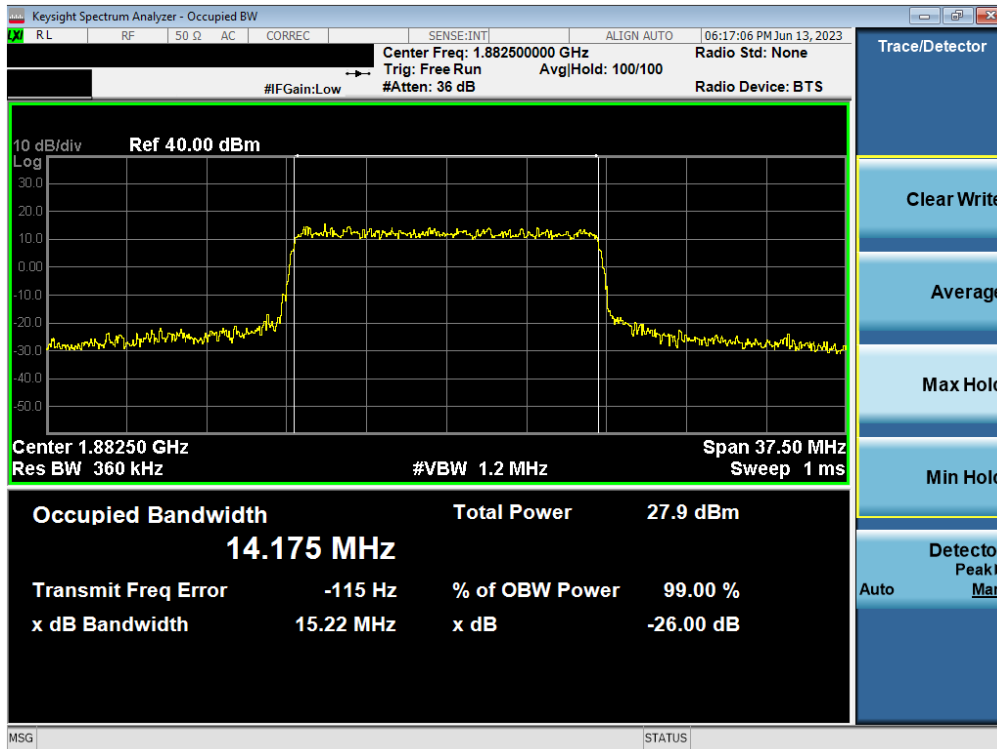


Plot 7-60. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM 16QAM - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 48 of 130

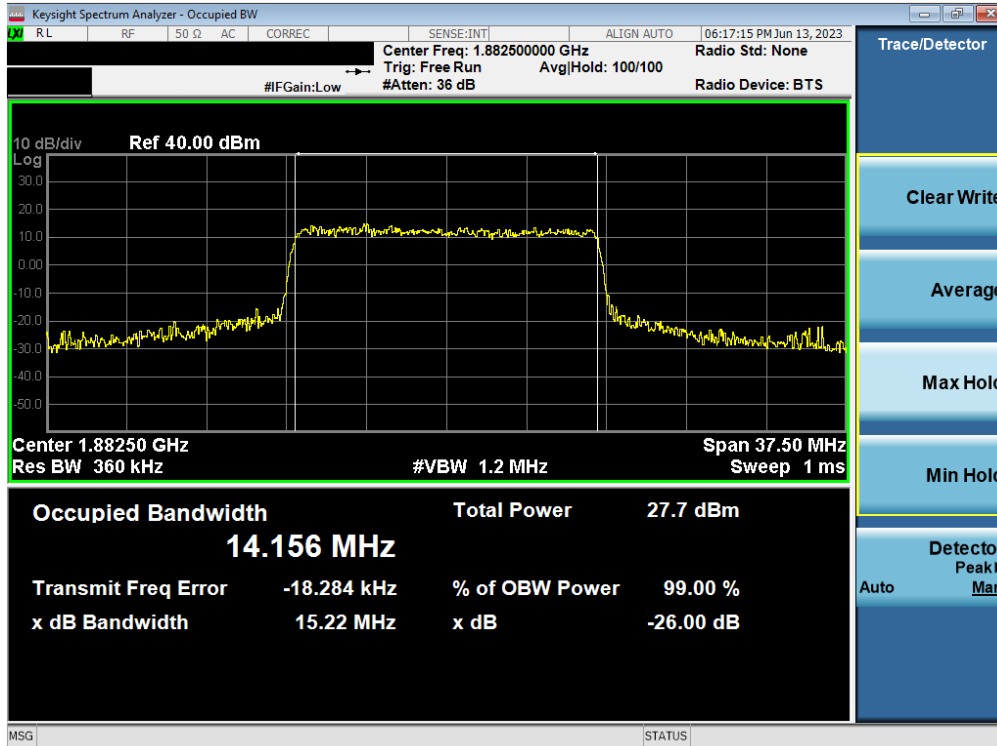


Plot 7-61. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)

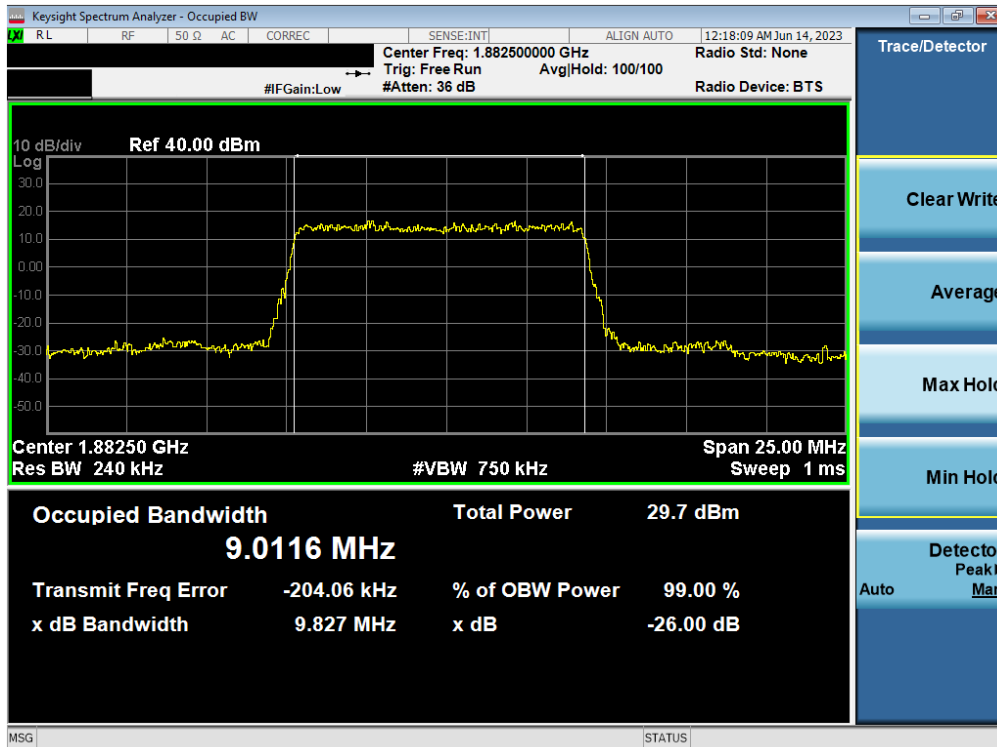


Plot 7-62. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 49 of 130

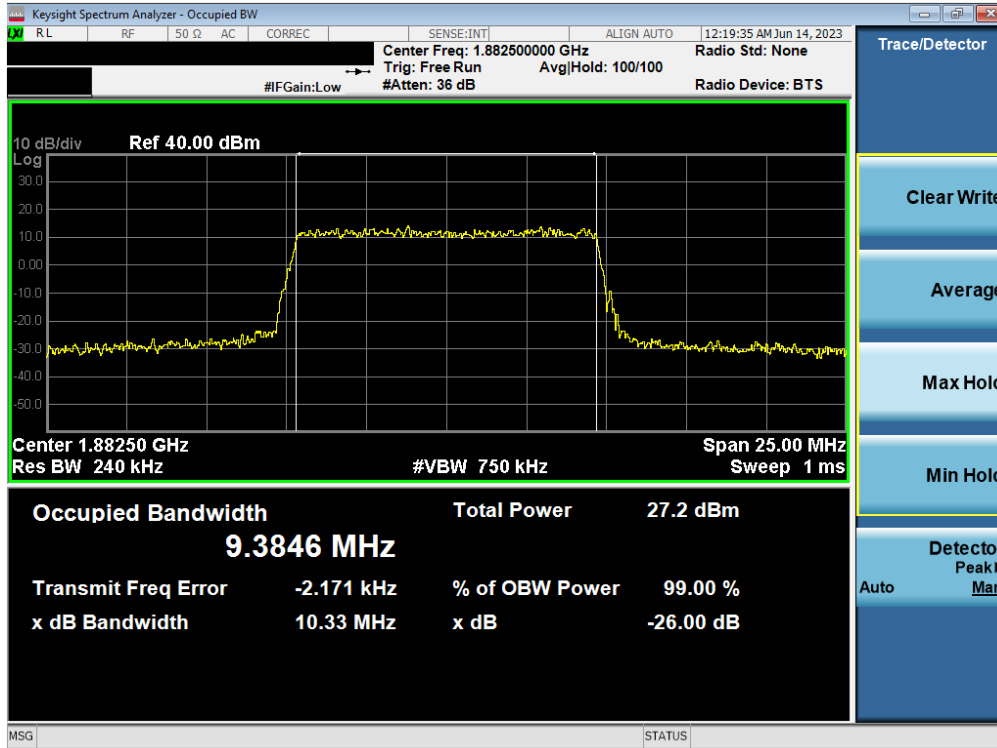


Plot 7-63. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM 16QAM - Full RB - ANT F)

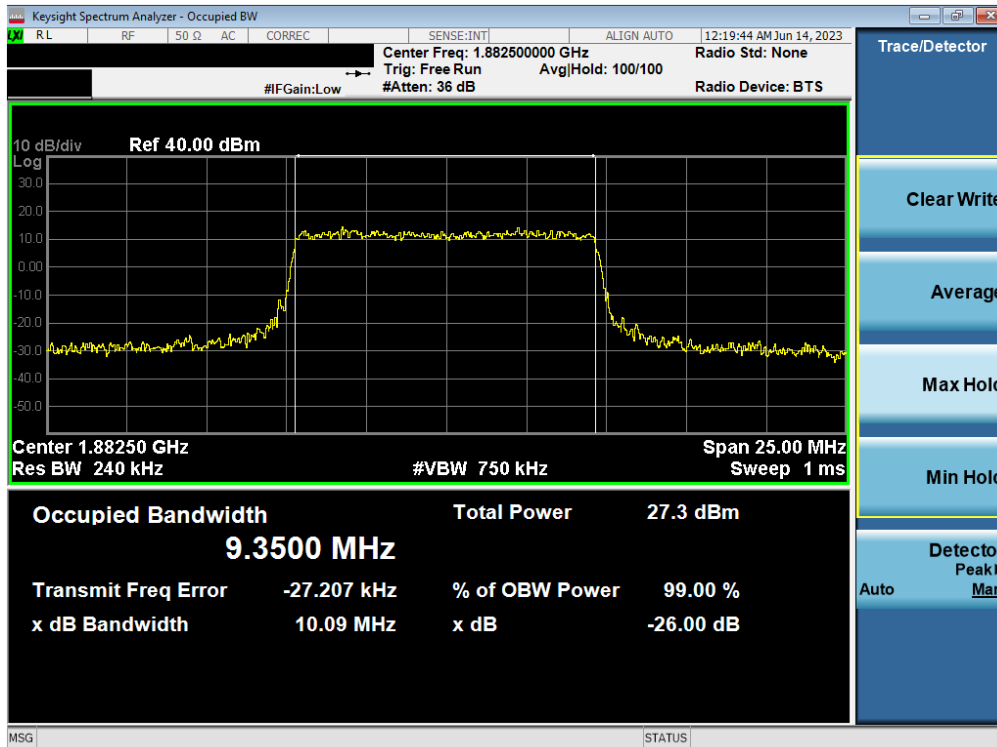


Plot 7-64. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 50 of 130

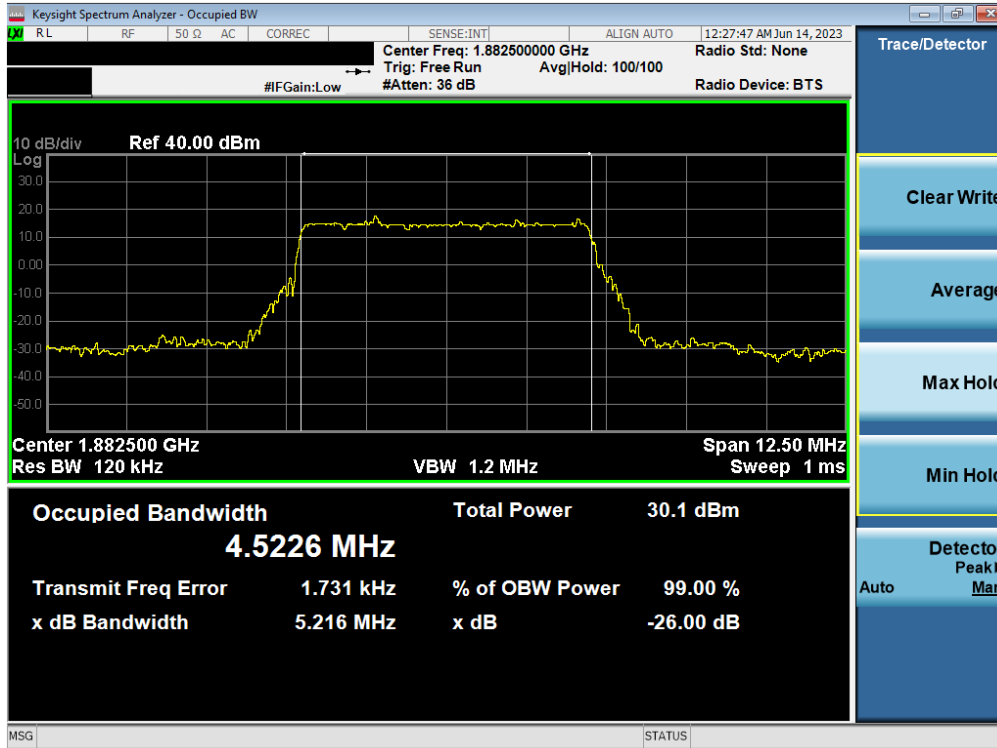


Plot 7-65. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB - ANT F)

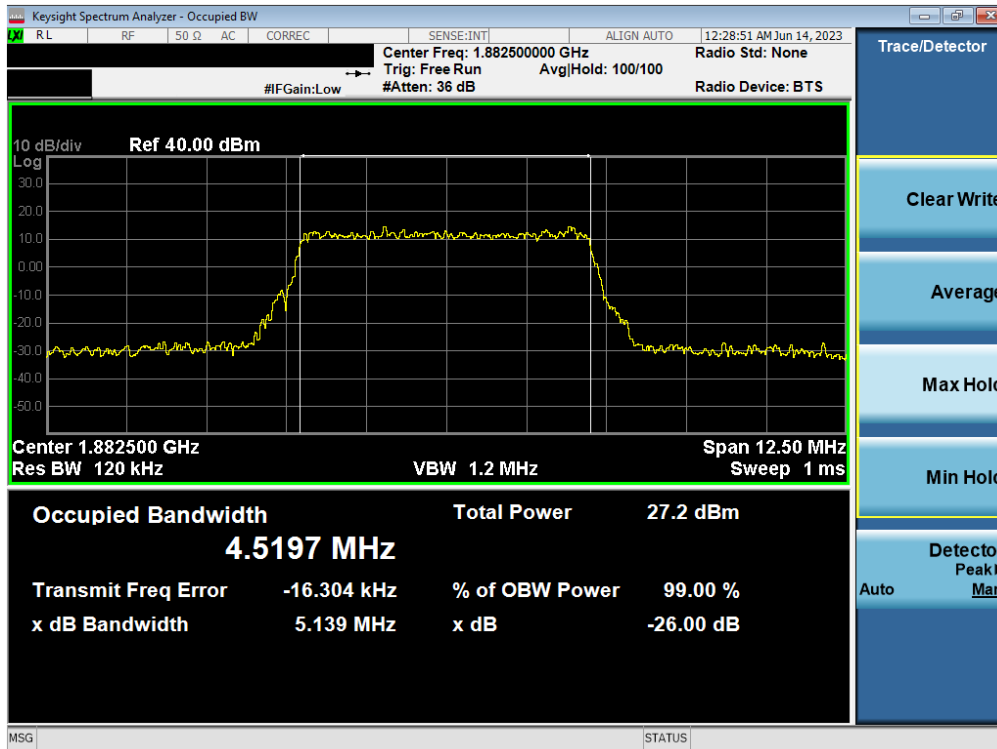


Plot 7-66. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM 16QAM - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 51 of 130

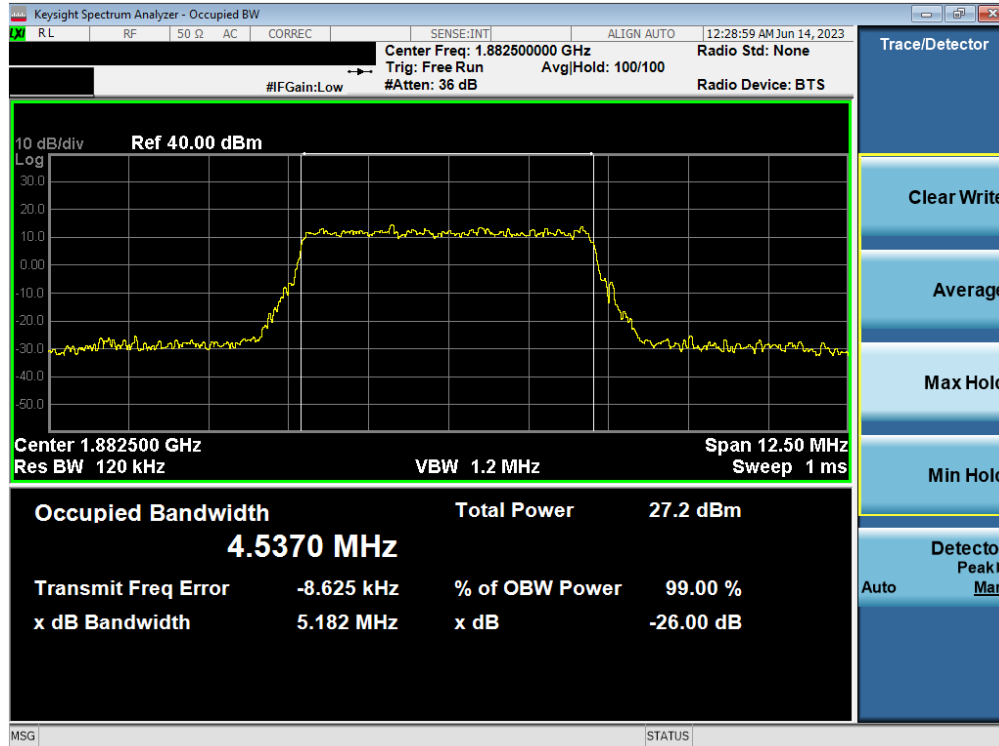


Plot 7-67. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB - ANT F)



Plot 7-68. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 52 of 130



Plot 7-69. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM 16QAM - Full RB - ANT F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 53 of 130

7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

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

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 20GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

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

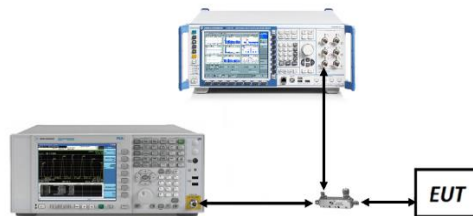


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 24 and RSS-133, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

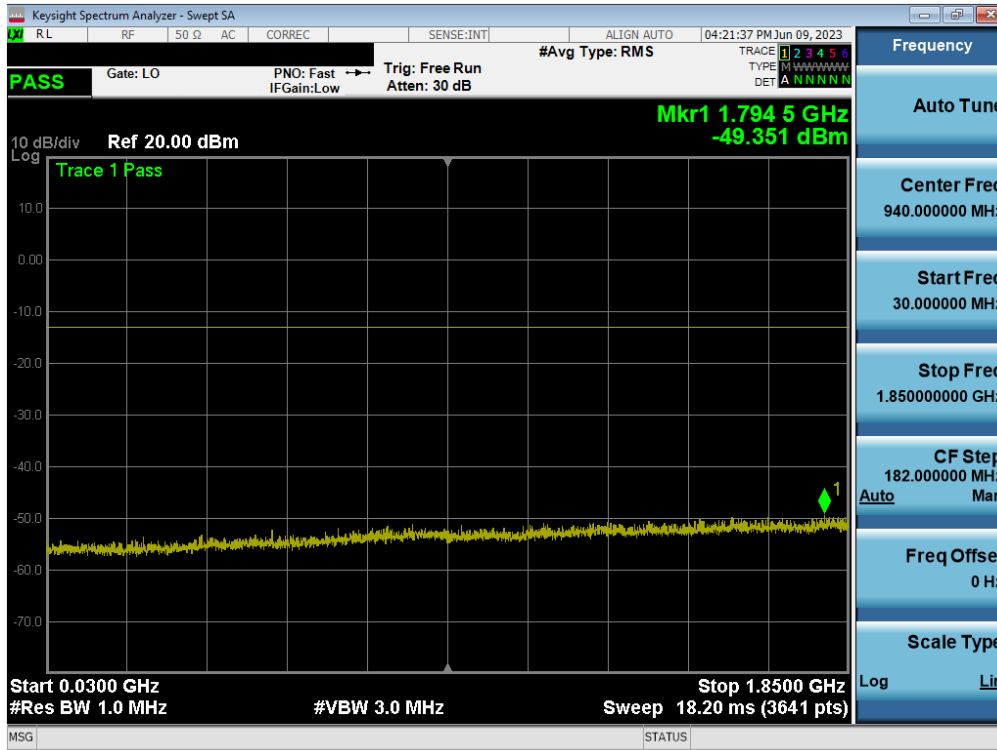
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 54 of 130

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
GSM 1900	250kHz	Low	30 - 1845	-49.42	-13	-36.42
		Low	1910 - 10000	-44.24	-13	-31.24
		Low	10000 - 20000	-54.83	-13	-41.83
		Mid	30 - 1850	-49.35	-13	-36.35
		Mid	1910 - 10000	-43.88	-13	-30.88
		Mid	10000 - 20000	-44.67	-13	-31.67
		High	30 - 1850	-49.72	-13	-36.72
		High	1910 - 10000	-45.07	-13	-32.07
		High	10000 - 20000	-54.99	-13	-41.99
WCDMA 1900	5MHz	Low	30 - 1845	-34.36	-13	-21.36
		Low	1910 - 10000	-49.81	-13	-36.81
		Low	10000 - 20000	-60.87	-13	-47.87
		Mid	30 - 1850	-53.39	-13	-40.39
		Mid	1910 - 10000	-49.74	-13	-36.74
		Mid	10000 - 20000	-61.21	-13	-48.21
		High	30 - 1850	-54.10	-13	-41.10
		High	1910 - 10000	-34.29	-13	-21.29
		High	10000 - 20000	-61.06	-13	-48.06
LTE Band 25/2	20MHz	Low	30 - 1849	-53.39	-13	-40.38
		Low	1915 - 10000	-49.89	-13	-36.89
		Low	10000 - 20000	-62.04	-13	-49.04
		Mid	30 - 1850	-54.07	-13	-41.07
		Mid	1915 - 10000	-49.71	-13	-36.71
		Mid	10000 - 20000	-61.92	-13	-48.92
		High	30 - 1850	-53.98	-13	-40.98
		High	1915 - 10000	-49.98	-13	-36.98
		High	10000 - 20000	-61.98	-13	-48.98
NR Band n25/2	20MHz	Low	30 - 1850	-35.79	-13	-22.79
		Low	1915 - 10000	-48.25	-13	-35.25
		Low	10000 - 20000	-64.72	-13	-51.72
		Mid	30 - 1850	-53.96	-13	-40.96
		Mid	1915 - 10000	-48.24	-13	-35.24
		Mid	10000 - 20000	-64.38	-13	-51.38
		High	30 - 1850	-54.29	-13	-41.29
		High	1915 - 10000	-48.09	-13	-35.09
		High	10000 - 20000	-64.18	-13	-51.18

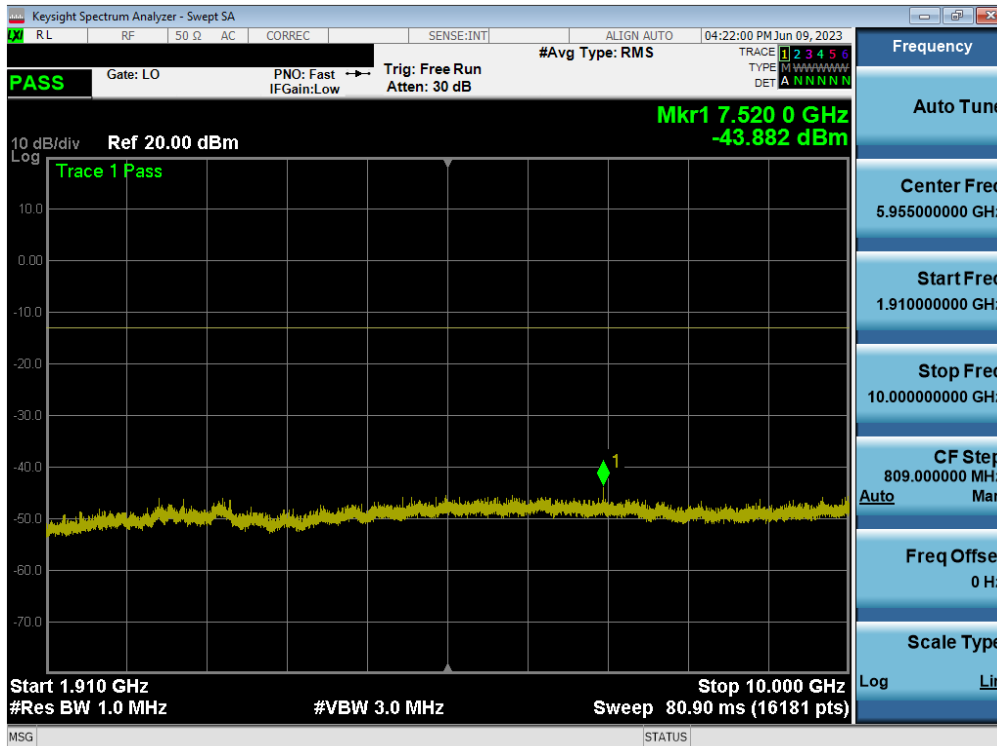
Table 7-6. Conducted Spurious Emission Results – Ant A

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 55 of 130

GSM/GPRS PCS – Ant A

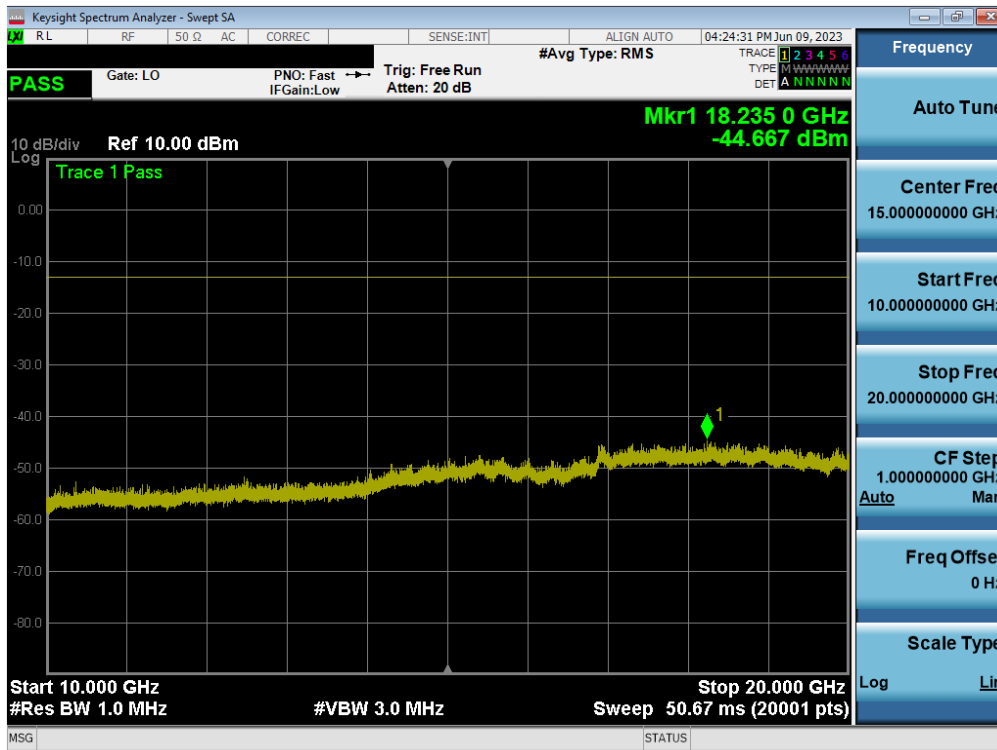


Plot 7-70. Conducted Spurious Plot (GPRS Ch. 661 - Ant A)



Plot 7-71. Conducted Spurious Plot (GPRS Ch. 661 - Ant A)

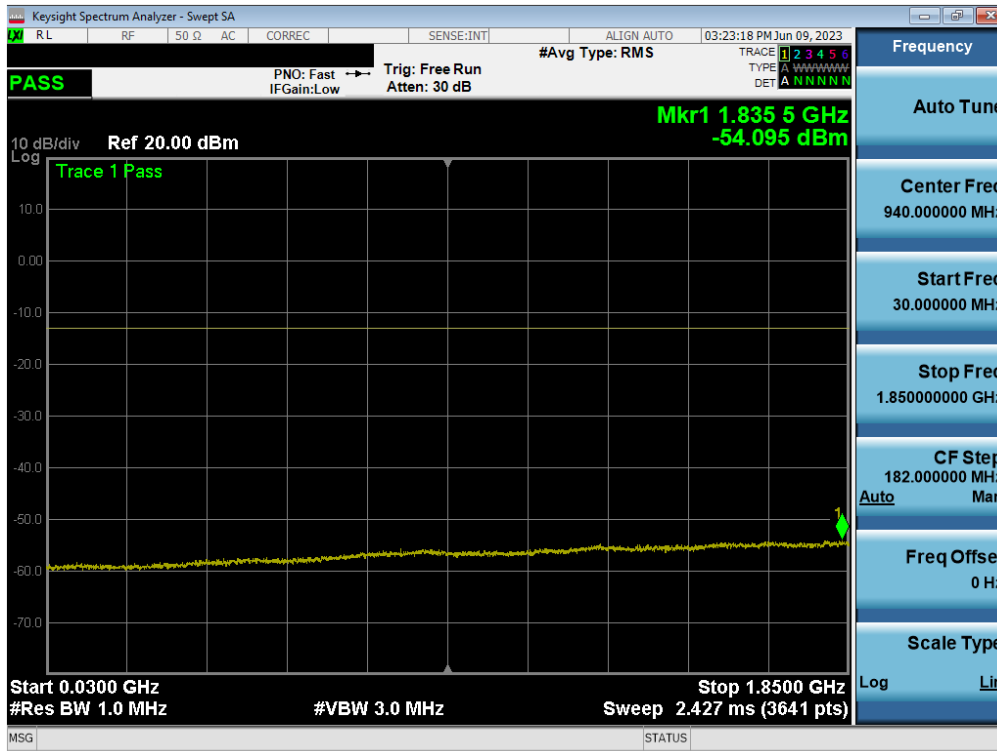
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 56 of 130



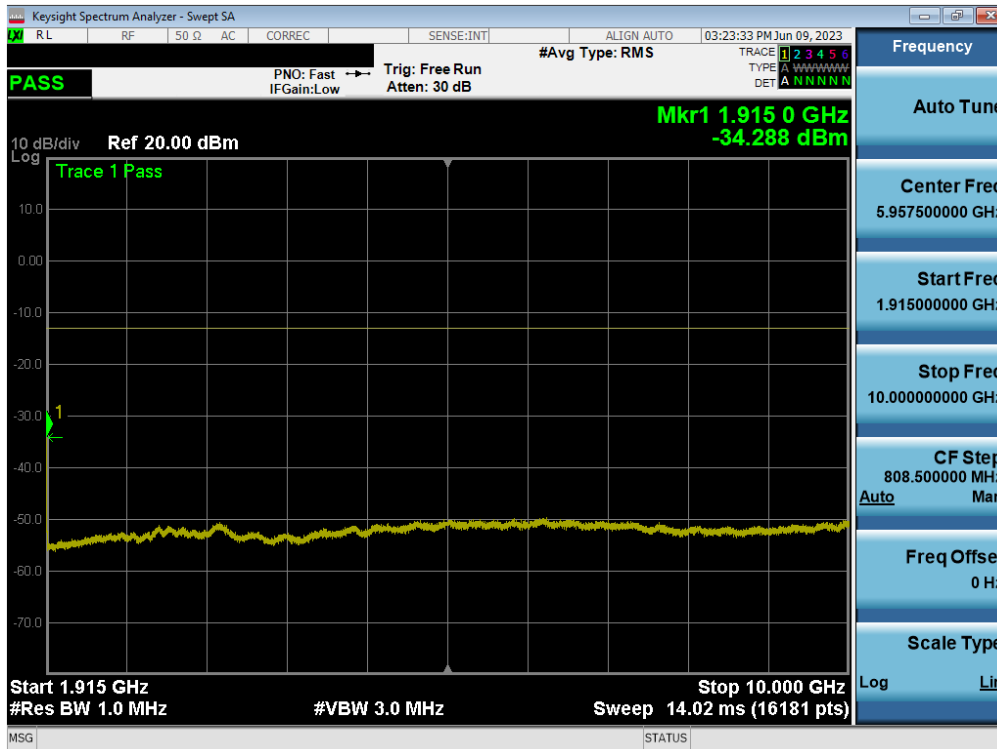
Plot 7-72. Conducted Spurious Plot (GPRS Ch. 661 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 57 of 130

WCDMA PCS – Ant A

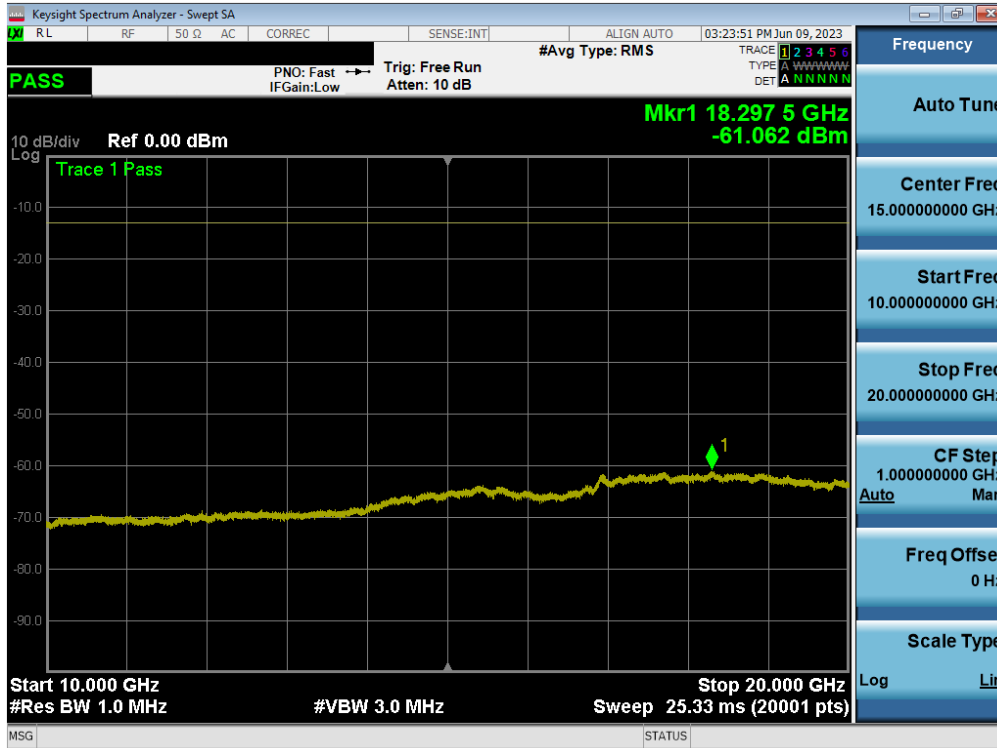


Plot 7-73. Conducted Spurious Plot (WCDMA Ch. 9538 - Ant A)



Plot 7-74. Conducted Spurious Plot (WCDMA Ch. 9538 - Ant A)

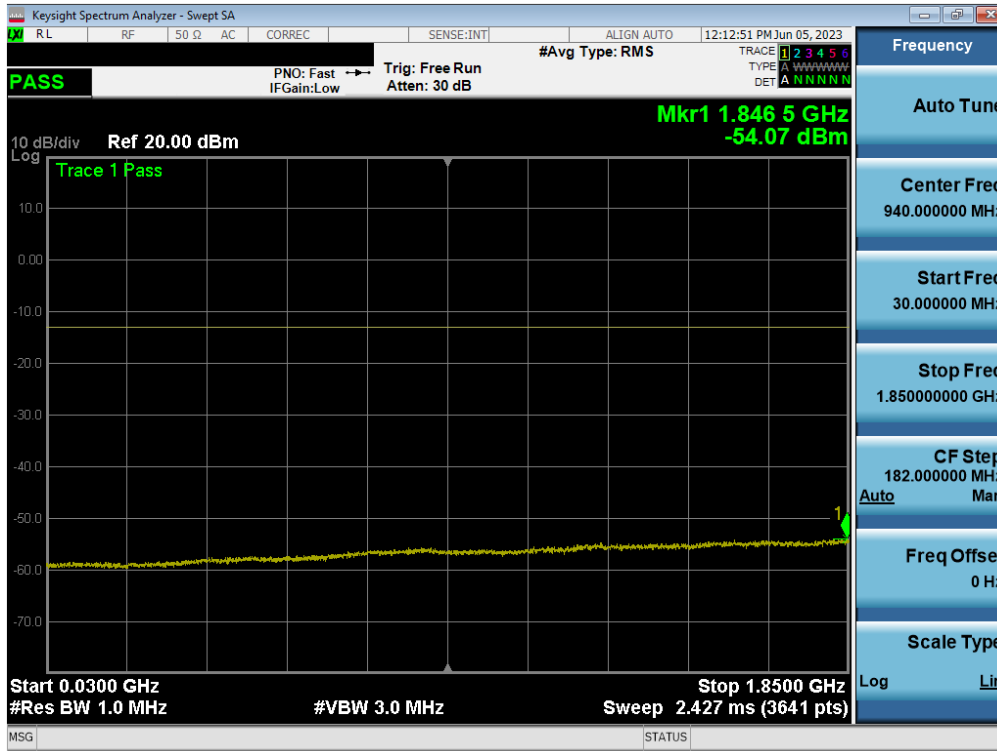
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 58 of 130



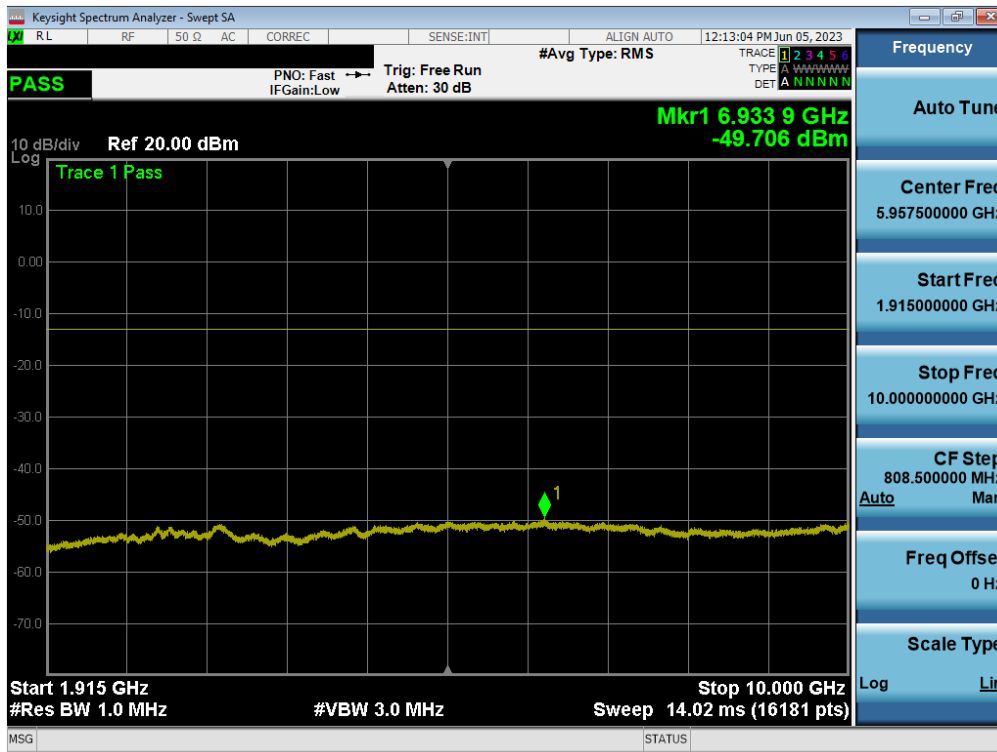
Plot 7-75. Conducted Spurious Plot (WCDMA Ch. 9538 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 59 of 130

LTE Band 25/2 – Ant A

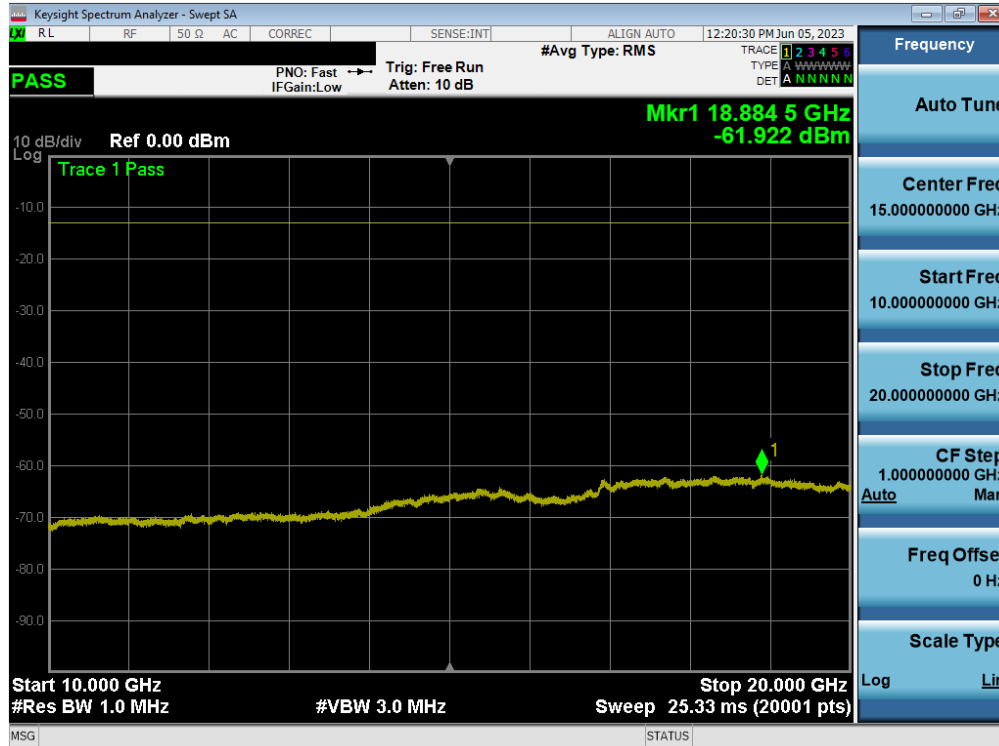


Plot 7-76. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)



Plot 7-77. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)

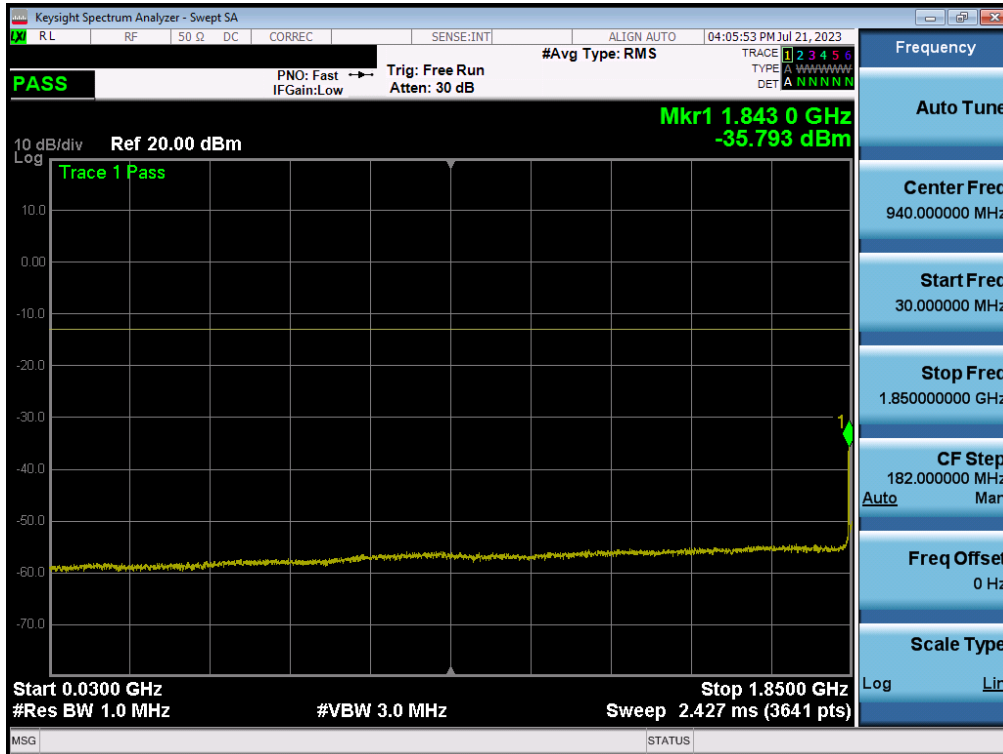
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 60 of 130



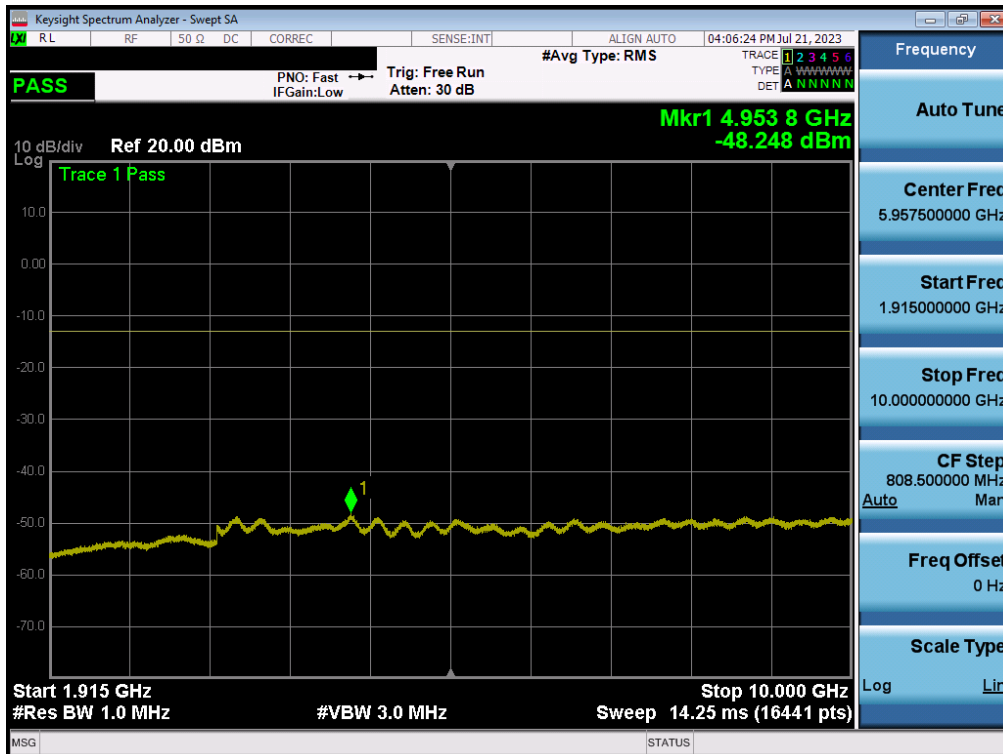
Plot 7-78. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 61 of 130

NR Band n25/2 – Ant A

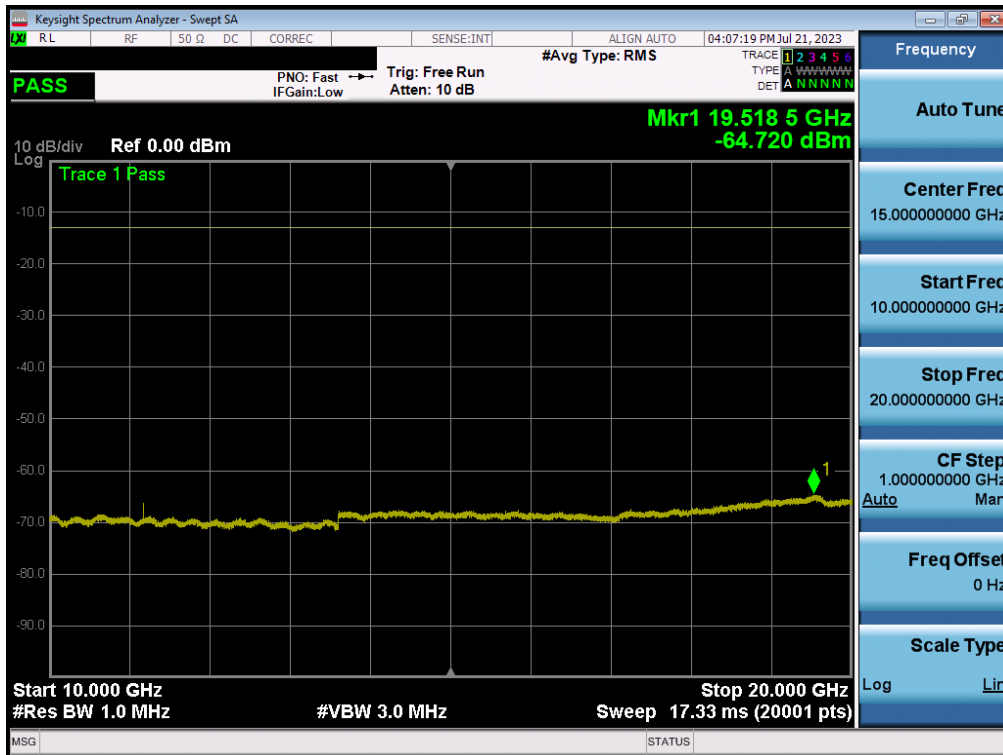


Plot 7-79. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant A)



Plot 7-80. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 62 of 130



Plot 7-81. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant A)

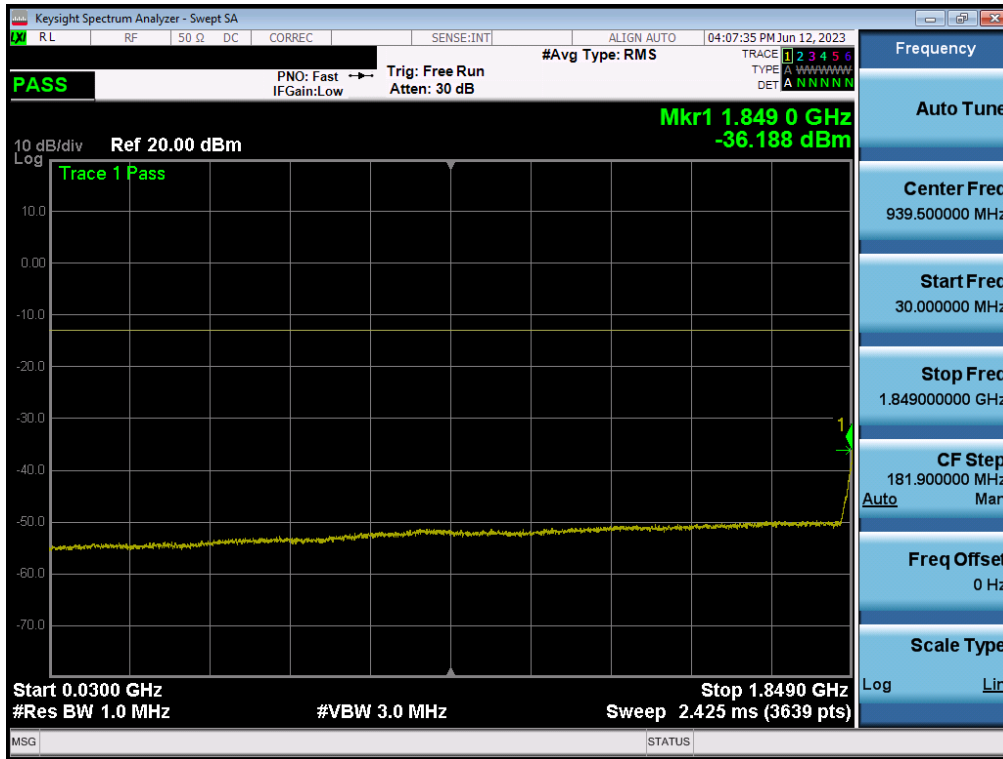
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 63 of 130

de	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 25/2	20MHz	Low	30 - 1849	-36.19	-13	-23.19
		Low	1915 - 10000	-42.75	-13	-29.75
		Low	10000 - 20000	-58.29	-13	-45.29
		Mid	30 - 1850	-49.44	-13	-36.44
		Mid	1915 - 10000	-42.86	-13	-29.86
		Mid	10000 - 20000	-58.38	-13	-45.38
		High	30 - 1850	-49.66	-13	-36.66
		High	1915 - 10000	-42.89	-13	-29.89
		High	10000 - 20000	-58.33	-13	-45.33
NR Band n25/2	20MHz	Low	30 - 1850	-42.78	-13	-29.78
		Low	1915 - 10000	-47.95	-13	-34.95
		Low	10000 - 20000	-64.29	-13	-51.29
		Mid	30 - 1850	-54.12	-13	-41.12
		Mid	1915 - 10000	-47.95	-13	-34.95
		Mid	10000 - 20000	-64.38	-13	-51.38
		High	30 - 1850	-54.33	-13	-41.33
		High	1915 - 10000	-47.64	-13	-34.64
		High	10000 - 20000	-64.15	-13	-51.15

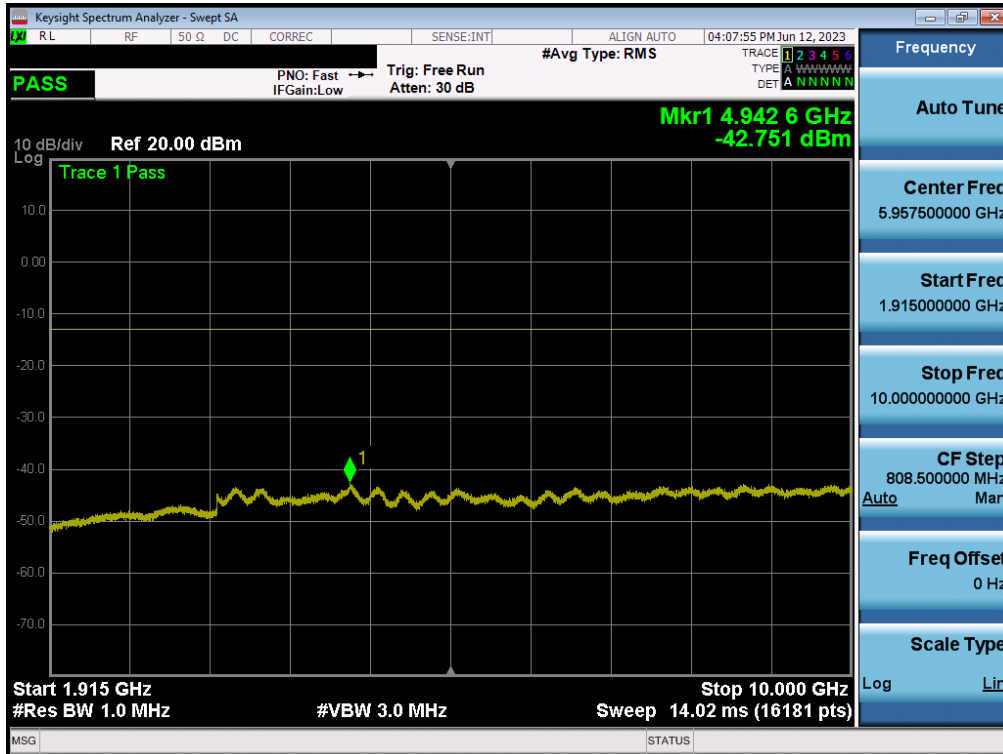
Table 7-7. Conducted Spurious Emission Results – Ant F

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 64 of 130

LTE Band 25/2 – Ant F

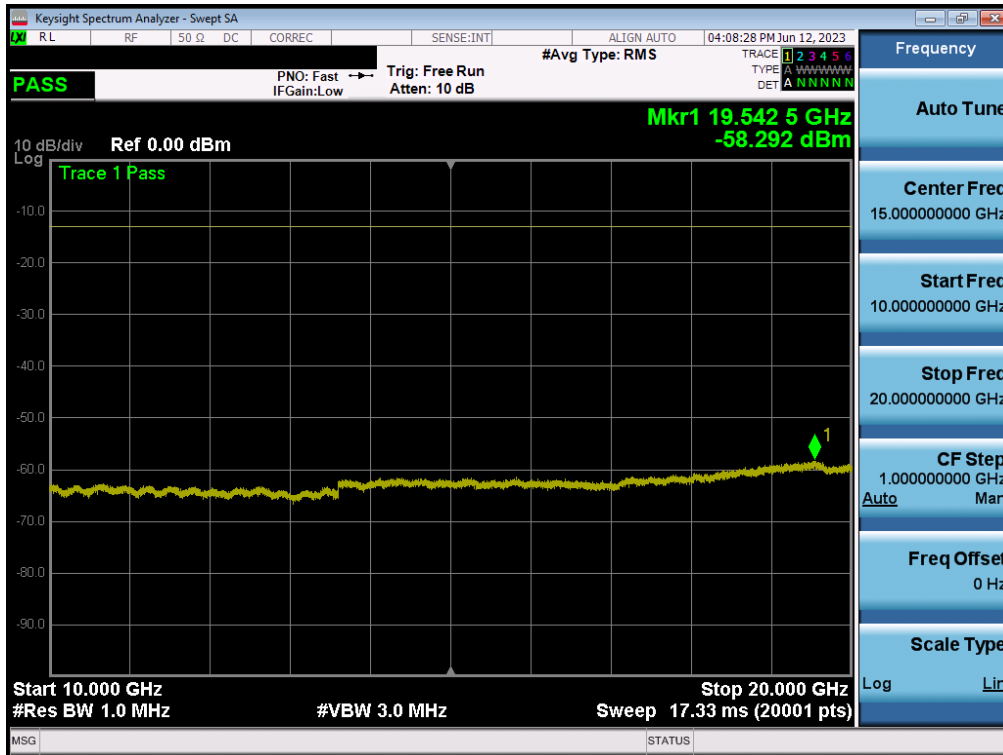


Plot 7-82. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)



Plot 7-83. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)

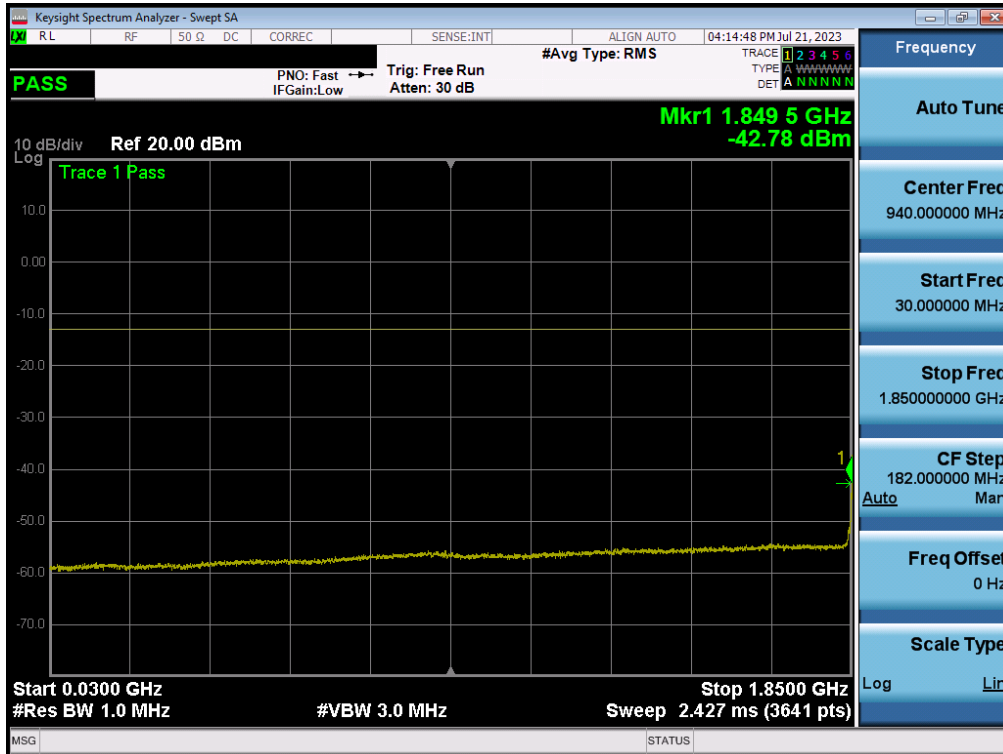
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 65 of 130



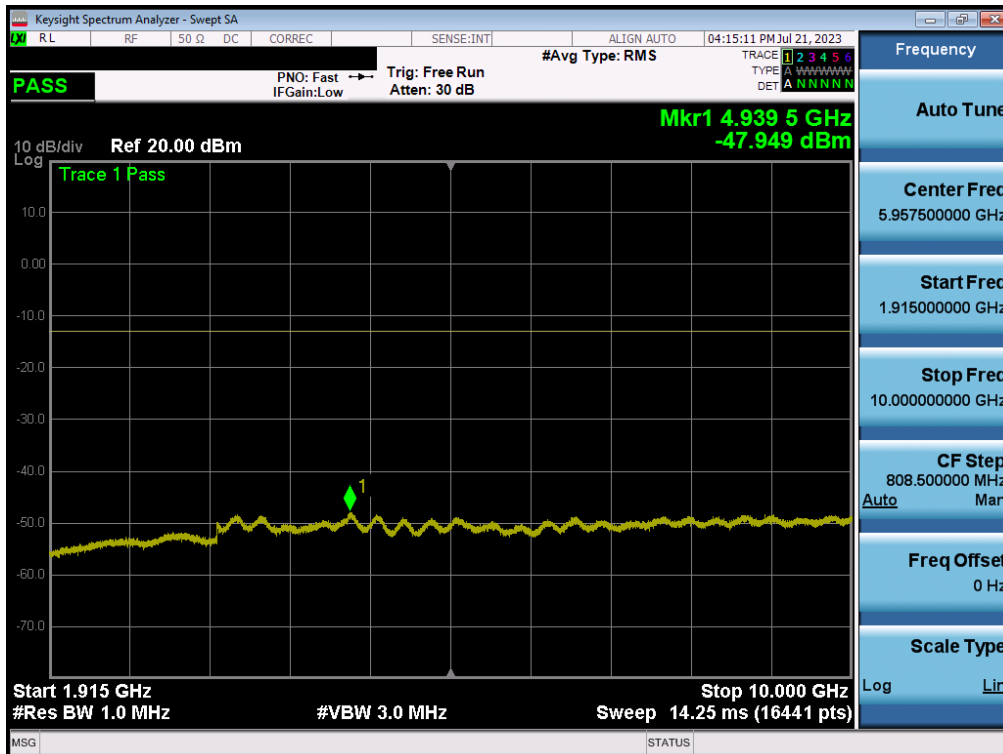
Plot 7-84. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 66 of 130

NR Band n25/2 – Ant F

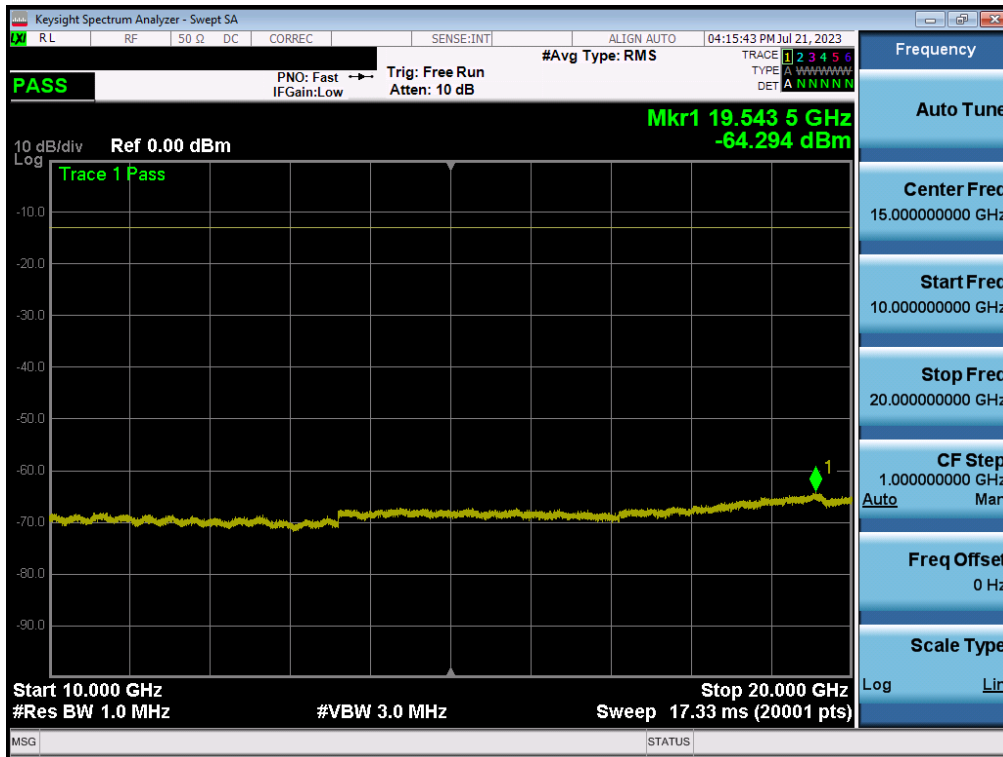


Plot 7-85. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant F)



Plot 7-86. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 67 of 130



Plot 7-87. Conducted Spurious Plot (NR Band n25 - 20.0MHz - 1RB - Low Channel - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 68 of 130

7.5 Band Edge Emissions at Antenna Terminal

Test Overview

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW \geq 1% of the emission bandwidth
4. VBW \geq 3 x RBW
5. Detector = RMS
6. Number of sweep points \geq 2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

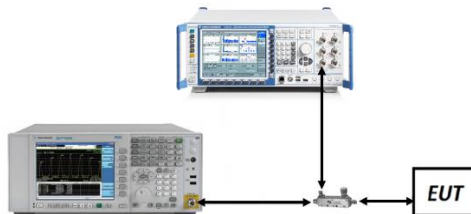


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 69 of 130

Test Notes

1. Per 24.238(b) and RSS-133(6.5), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

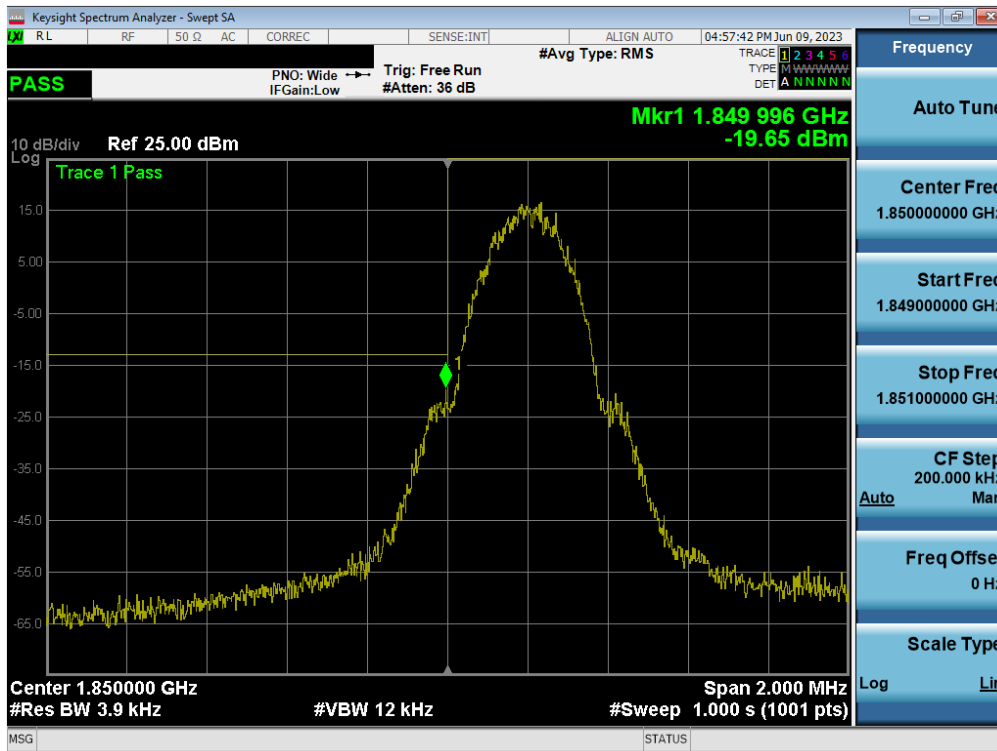
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 70 of 130

GSM/GPRS PCS – Ant A

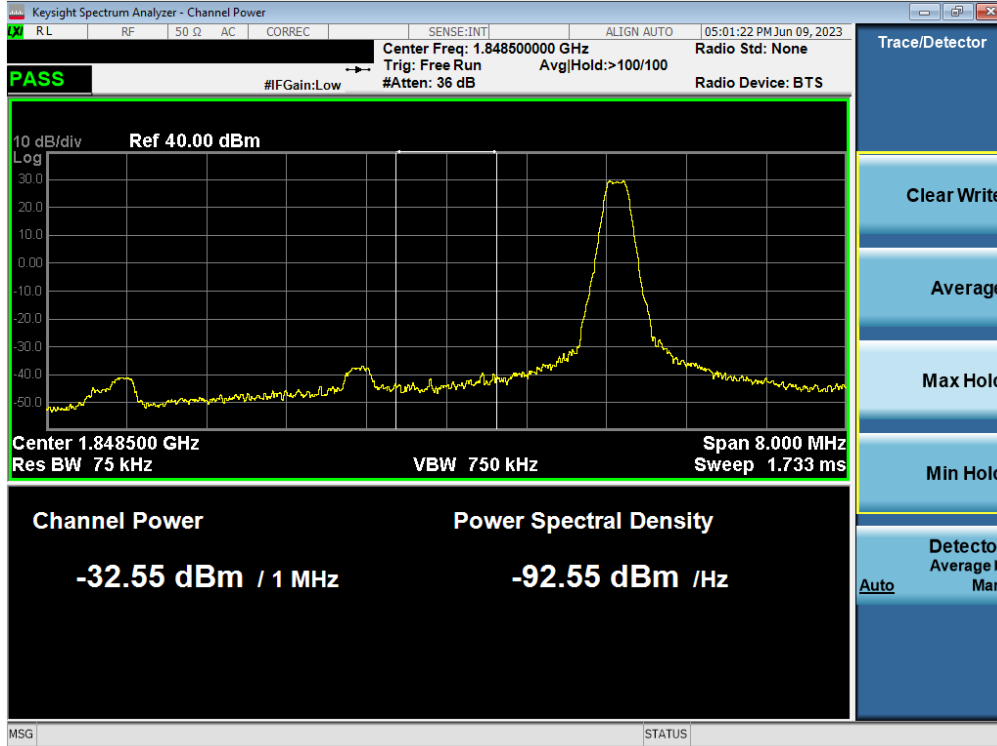
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
GSM 1900	250kHz	Lower	Band Edge	-19.65	-13	-6.65
		Lower	Extended	-32.55	-13	-19.55
		Upper	Band Edge	-20.23	-13	-7.23
		Upper	Extended	-32.61	-13	-19.61

Table 7-8. Band Edge Test Results– Ant A

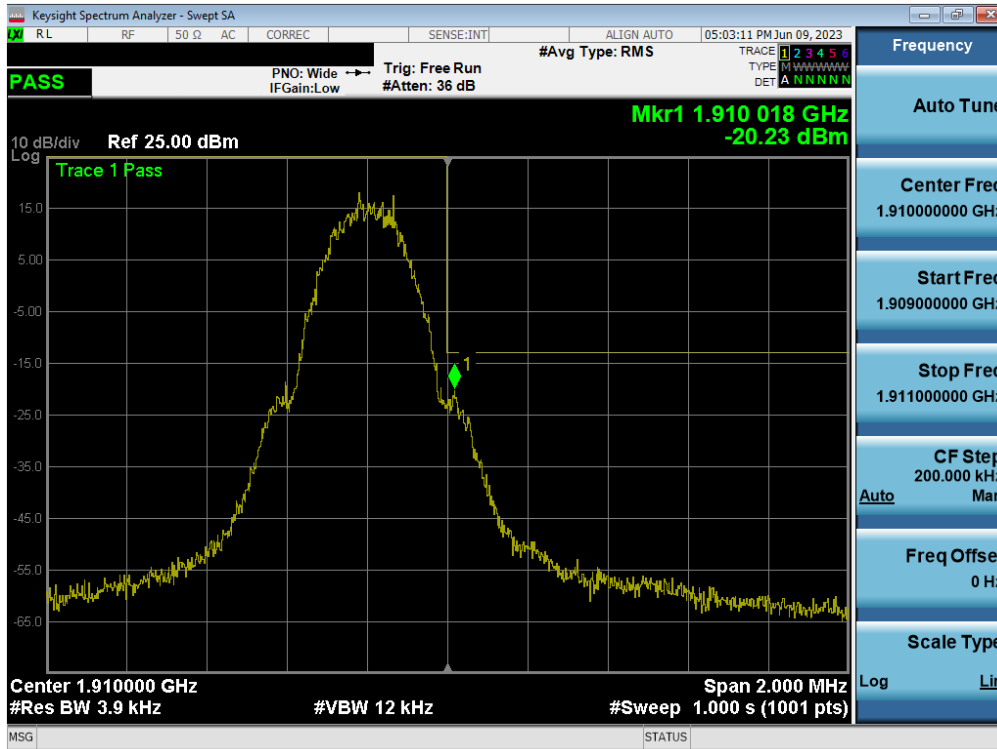


Plot 7-88. Lower Band Edge Plot (GPRS PCS – Ch. 512 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 71 of 130

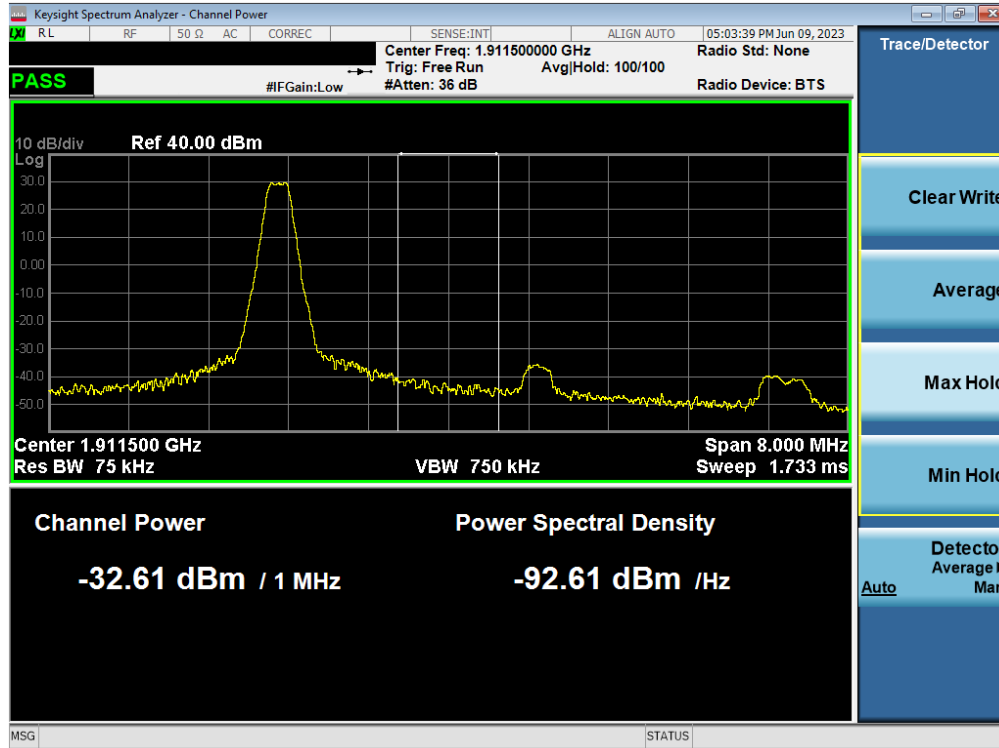


Plot 7-89. Extended Lower Band Edge Plot (GPRS PCS – Ch. 512 - Ant A)



Plot 7-90. Upper Band Edge Plot (GPRS PCS – Ch. 810 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 72 of 130



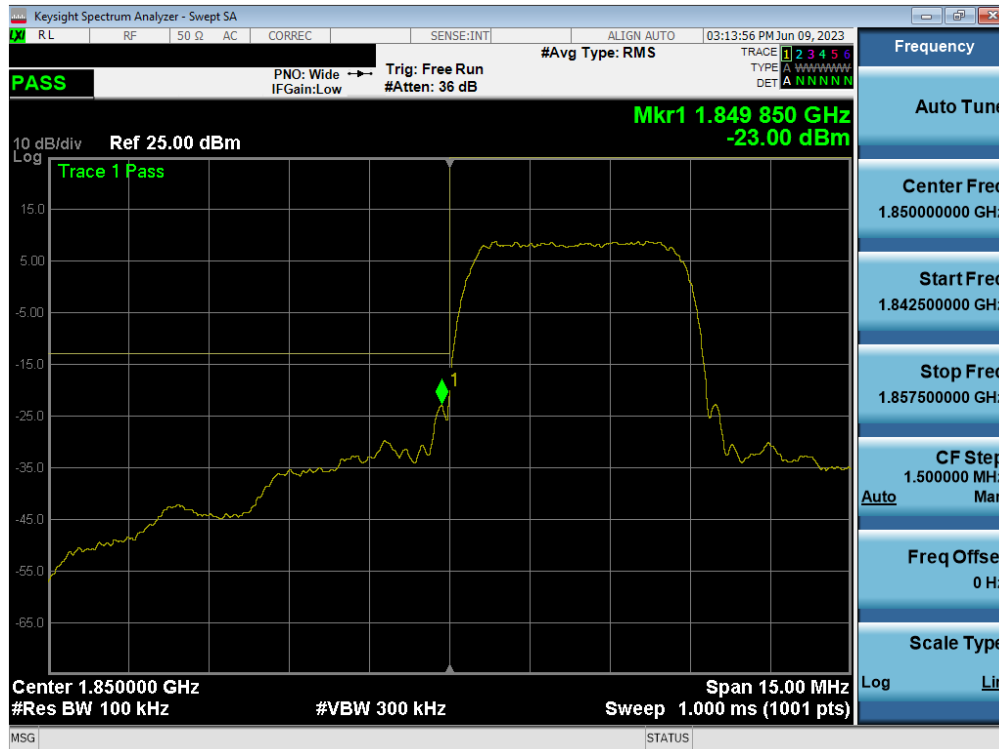
Plot 7-91. Extended Upper Band Edge Plot (GPRS PCS – Ch. 810 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 73 of 130

WCDMA PCS – Ant A

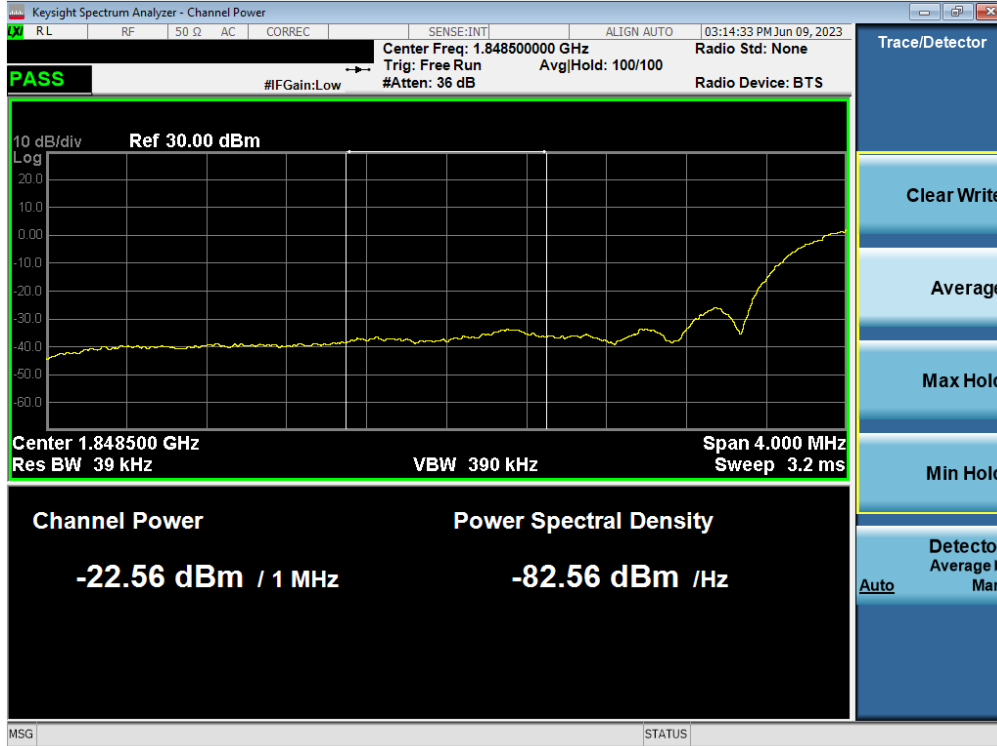
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
WCDMA 1900	5MHz	Lower	Band Edge	-23.00	-13	-10.00
		Lower	Extended	-22.56	-13	-9.56
		Upper	Band Edge	-22.44	-13	-9.44
		Upper	Extended	-23.25	-13	-10.25

Table 7-9. Band Edge Test Results– Ant A



Plot 7-92. Lower Band Edge Plot (WCDMA PCS – Ch. 9262 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 74 of 130

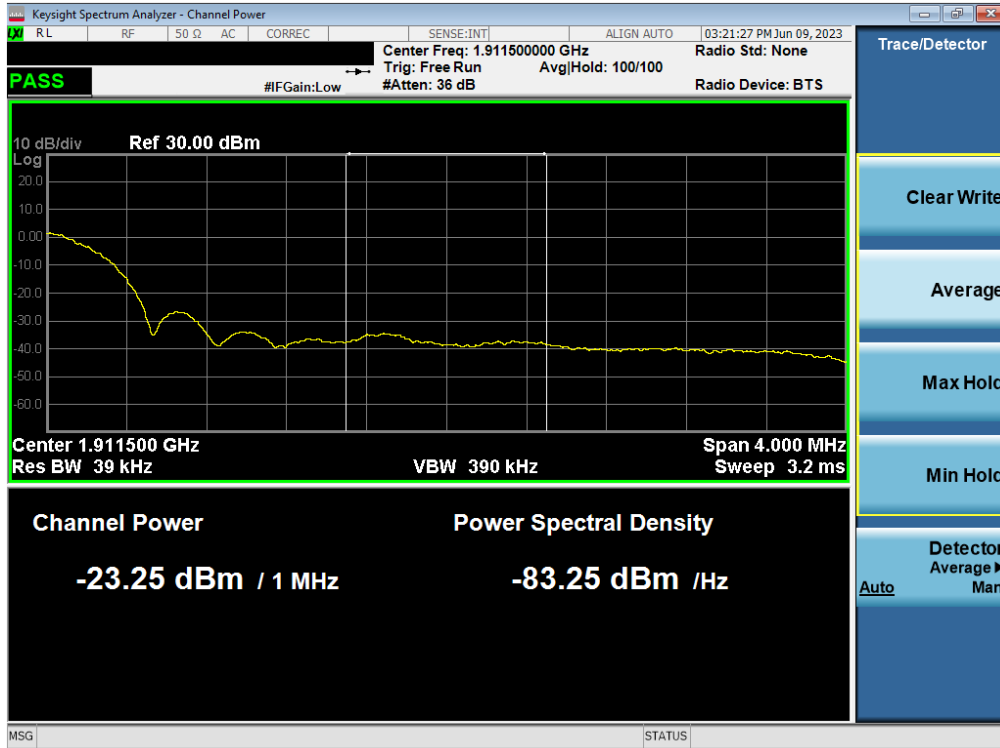


Plot 7-93. Extended Lower Band Edge Plot (WCDMA PCS – Ch. 9262 - Ant A)



Plot 7-94. Upper Band Edge Plot (WCDMA PCS – Ch. 9538 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 75 of 130



Plot 7-95. Extended Upper Band Edge Plot (WCDMA PCS – Ch. 9538 - Ant A)

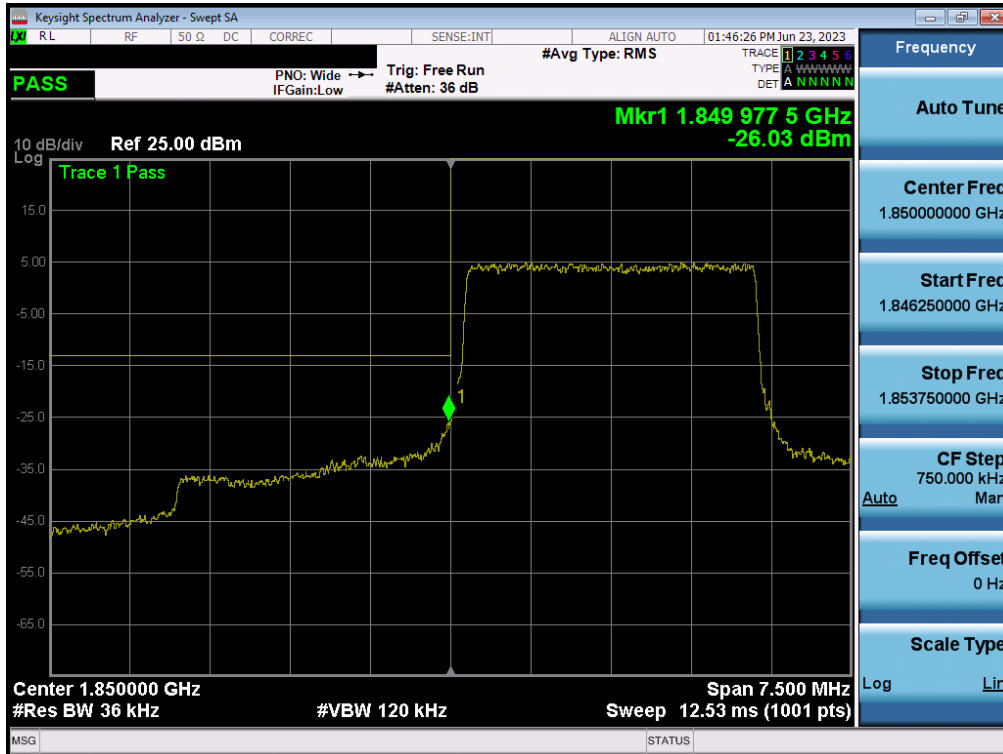
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 76 of 130

LTE Band 25/2 – Ant A

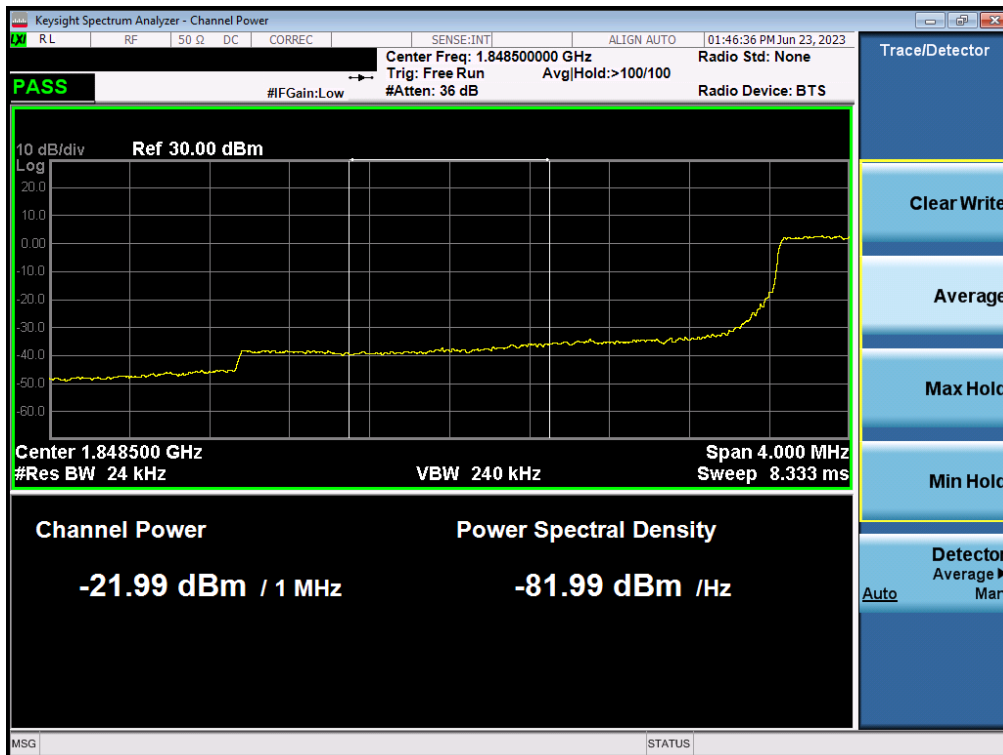
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 25/2	20MHz	Lower	Band Edge	-29.72	-13	-16.72
		Lower	Extended	-26.62	-13	-13.62
LTE Band 2		Upper	Band Edge	-31.26	-13	-18.26
		Upper	Extended	-27.29	-13	-14.29
LTE Band 25		Upper	Band Edge	-30.29	-13	-17.29
		Upper	Extended	-27.38	-13	-14.38
LTE Band 25/2	15MHz	Lower	Band Edge	-28.47	-13	-15.47
		Lower	Extended	-23.59	-13	-10.59
LTE Band 2		Upper	Band Edge	-29.14	-13	-16.14
		Upper	Extended	-24.75	-13	-11.75
LTE Band 25		Upper	Band Edge	-28.42	-13	-15.42
		Upper	Extended	-24.05	-13	-11.05
LTE Band 25/2	10MHz	Lower	Band Edge	-30.68	-13	-17.68
		Lower	Extended	-23.73	-13	-10.73
LTE Band 2		Upper	Band Edge	-29.35	-13	-16.35
		Upper	Extended	-24.62	-13	-11.62
LTE Band 25		Upper	Band Edge	-28.47	-13	-15.47
		Upper	Extended	-23.41	-13	-10.41
LTE Band 25/2	5MHz	Lower	Band Edge	-27.88	-13	-14.88
		Lower	Extended	-22.30	-13	-9.30
LTE Band 2		Upper	Band Edge	-25.92	-13	-12.92
		Upper	Extended	-22.35	-13	-9.35
LTE Band 25		Upper	Band Edge	-24.39	-13	-11.38
		Upper	Extended	-20.91	-13	-7.91
LTE Band 25/2	3MHz	Lower	Band Edge	-26.03	-13	-13.03
		Lower	Extended	-21.99	-13	-8.99
LTE Band 2		Upper	Band Edge	-24.73	-13	-11.73
		Upper	Extended	-21.41	-13	-8.41
LTE Band 25		Upper	Band Edge	-25.11	-13	-12.11
		Upper	Extended	-20.91	-13	-7.91
LTE Band 25/2	1.4MHz	Lower	Band Edge	-25.91	-13	-12.91
		Lower	Extended	-29.04	-13	-16.04
LTE Band 2		Upper	Band Edge	-24.18	-13	-11.18
		Upper	Extended	-29.51	-13	-16.51
LTE Band 25		Upper	Band Edge	-24.96	-13	-11.95
		Upper	Extended	-30.26	-13	-17.26

Table 7-10. Band Edge Test Results– Ant A

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 77 of 130



Plot 7-96. Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB - Ant A)

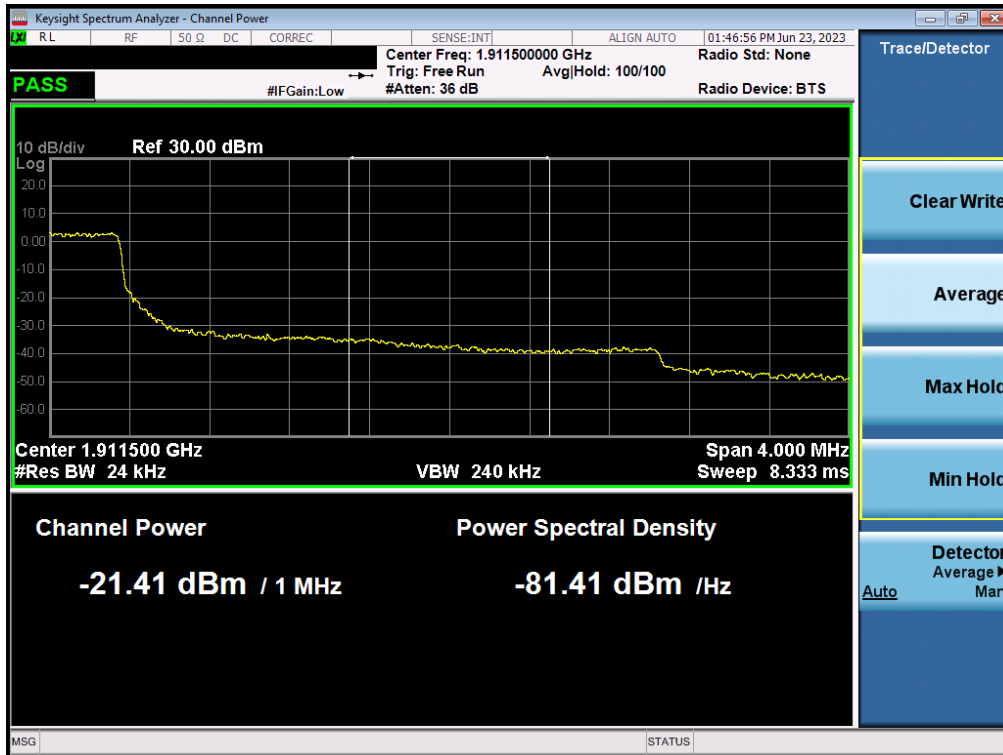


Plot 7-97. Extended Lower Band Edge Plot (LTE Band 25/2 - 3MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 78 of 130



Plot 7-98. Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB - Ant A)

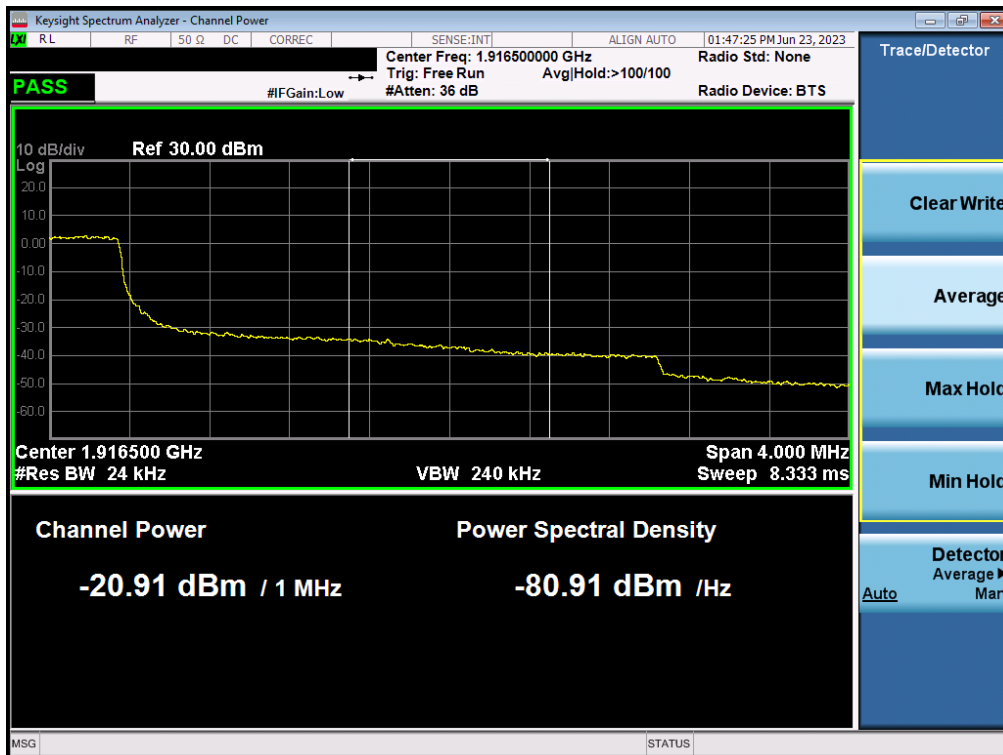


Plot 7-99. Extended Upper Band Edge Plot (LTE Band 2 - 3MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 79 of 130



Plot 7-100. Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB - Ant A)



Plot 7-101. Extended Upper Band Edge Plot (LTE Band 25 - 3MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 80 of 130

NR Band n25/2 – Ant A

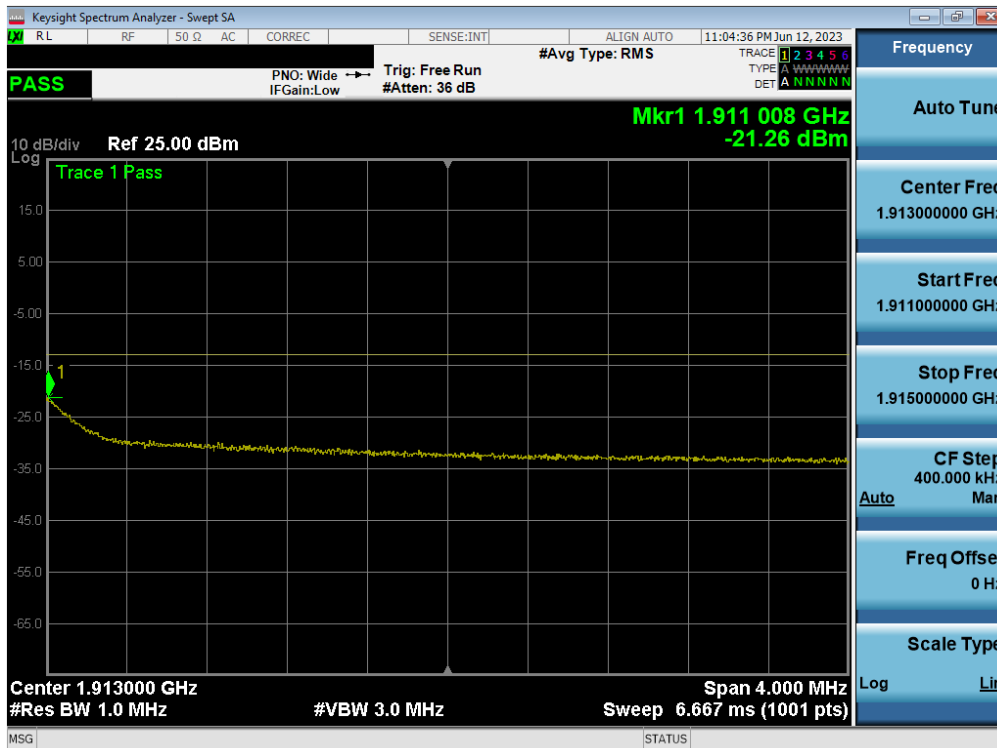
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR Band n25	40MHz	Lower	Band Edge	-27.15	-13	-14.15
		Lower	Extended	-30.84	-13	-17.84
		Upper	Band Edge	-27.34	-13	-14.33
		Upper	Extended	-28.28	-13	-15.28
	30MHz	Lower	Band Edge	-27.94	-13	-14.94
		Lower	Extended	-26.32	-13	-13.32
		Upper	Band Edge	-33.17	-13	-20.17
		Upper	Extended	-28.41	-13	-15.41
	25MHz	Lower	Band Edge	-29.65	-13	-16.65
		Lower	Extended	-29.32	-13	-16.32
		Upper	Band Edge	-32.12	-13	-19.12
		Upper	Extended	-28.70	-13	-15.70
NR Band n25/n2	20MHz	Lower	Band Edge	-30.83	-13	-17.82
Lower		Extended	-26.26	-13	-13.26	
NR Band n2		Upper	Band Edge	-32.59	-13	-19.59
Upper		Extended	-28.59	-13	-15.59	
NR Band n25		Upper	Band Edge	-31.91	-13	-18.91
Upper		Extended	-26.71	-13	-13.71	
NR Band n25/n2	15MHz	Lower	Band Edge	-27.59	-13	-14.59
Lower		Extended	-20.67	-13	-7.67	
NR Band n2		Upper	Band Edge	-31.85	-13	-18.85
Upper		Extended	-24.64	-13	-11.64	
NR Band n25		Upper	Band Edge	-32.28	-13	-19.28
Upper		Extended	-25.62	-13	-12.62	
NR Band n25/n2	10MHz	Lower	Band Edge	-25.40	-13	-12.40
Lower		Extended	-18.24	-13	-5.24	
NR Band n2		Upper	Band Edge	-28.94	-13	-15.94
Upper		Extended	-21.26	-13	-8.26	
NR Band n25		Upper	Band Edge	-29.99	-13	-16.99
Upper		Extended	-21.56	-13	-8.56	
NR Band n25/n2	5MHz	Lower	Band Edge	-24.99	-13	-11.99
Lower		Extended	-31.69	-13	-18.69	
NR Band n2		Upper	Band Edge	-23.00	-13	-10.00
Upper		Extended	-29.08	-13	-16.08	
NR Band n25		Upper	Band Edge	-22.19	-13	-9.19
Upper		Extended	-25.12	-13	-12.12	

Table 7-11. Band Edge Test Results– Ant A

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 81 of 130



Plot 7-104. Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant A)

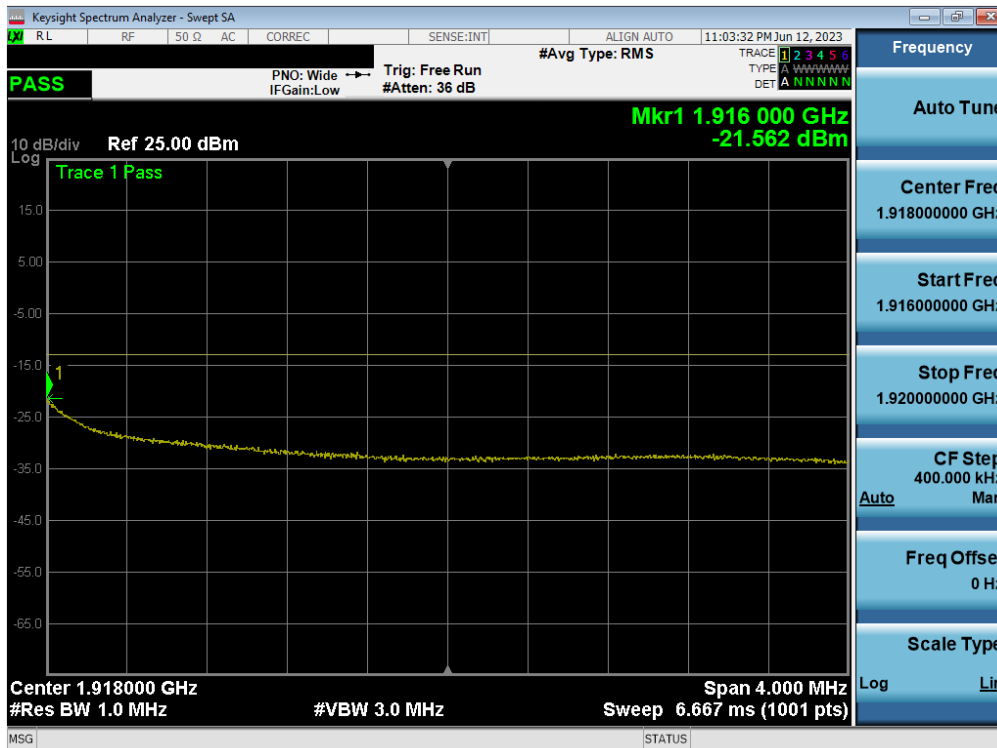


Plot 7-105. Extended Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 83 of 130



Plot 7-106. Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB - Ant A)



Plot 7-107. Extended Upper Band Edge Plot (NR Band n25 - 10MHz QPSK – Full RB - Ant A)

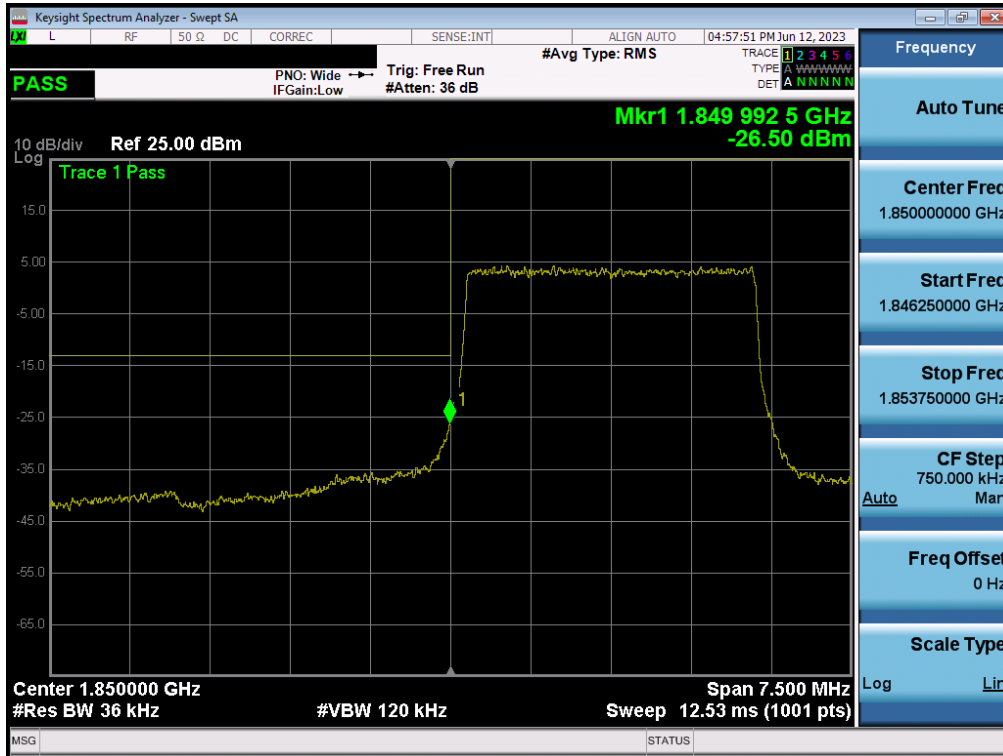
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 84 of 130

LTE Band 25/2 – Ant F

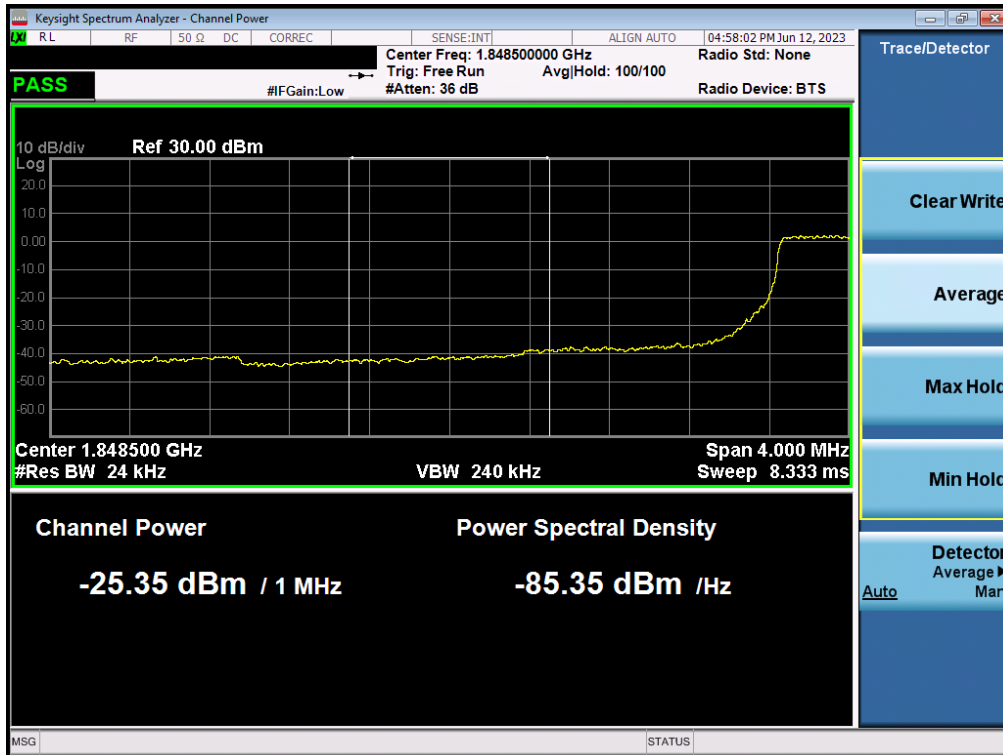
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE Band 25/2	20MHz	Lower	Band Edge	-29.48	-13	-16.48
		Lower	Extended	-26.62	-13	-13.62
LTE Band 2		Upper	Band Edge	-29.06	-13	-16.06
		Upper	Extended	-24.60	-13	-11.60
LTE Band 25		Upper	Band Edge	-29.58	-13	-16.58
		Upper	Extended	-24.91	-13	-11.91
LTE Band 25/2	15MHz	Lower	Band Edge	-31.17	-13	-18.16
		Lower	Extended	-25.70	-13	-12.70
LTE Band 2		Upper	Band Edge	-28.08	-13	-15.08
		Upper	Extended	-23.41	-13	-10.41
LTE Band 25		Upper	Band Edge	-29.11	-13	-16.11
		Upper	Extended	-23.72	-13	-10.72
LTE Band 25/2	10MHz	Lower	Band Edge	-32.48	-13	-19.48
		Lower	Extended	-25.96	-13	-12.96
LTE Band 2		Upper	Band Edge	-29.10	-13	-16.10
		Upper	Extended	-22.78	-13	-9.78
LTE Band 25		Upper	Band Edge	-28.15	-13	-15.14
		Upper	Extended	-22.41	-13	-9.41
LTE Band 25/2	5MHz	Lower	Band Edge	-29.02	-13	-16.02
		Lower	Extended	-24.71	-13	-11.71
LTE Band 2		Upper	Band Edge	-24.91	-13	-11.91
		Upper	Extended	-21.19	-13	-8.19
LTE Band 25		Upper	Band Edge	-25.77	-13	-12.76
		Upper	Extended	-20.72	-13	-7.72
LTE Band 25/2	3MHz	Lower	Band Edge	-26.50	-13	-13.50
		Lower	Extended	-25.35	-13	-12.35
LTE Band 2		Upper	Band Edge	-25.70	-13	-12.70
		Upper	Extended	-21.32	-13	-8.32
LTE Band 25		Upper	Band Edge	-25.50	-13	-12.50
		Upper	Extended	-19.77	-13	-6.77
LTE Band 25/2	1.4MHz	Lower	Band Edge	-27.71	-13	-14.71
		Lower	Extended	-23.45	-13	-10.45
LTE Band 2		Upper	Band Edge	-25.60	-13	-12.60
		Upper	Extended	-20.88	-13	-7.88
LTE Band 25		Upper	Band Edge	-26.21	-13	-13.21
		Upper	Extended	-21.25	-13	-8.25

Table 7-12. Band Edge Test Results– Ant F

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 85 of 130



Plot 7-108. Lower Band Edge Plot (LTE Band 25/2 – 3MHz QPSK – Full RB - Ant F)

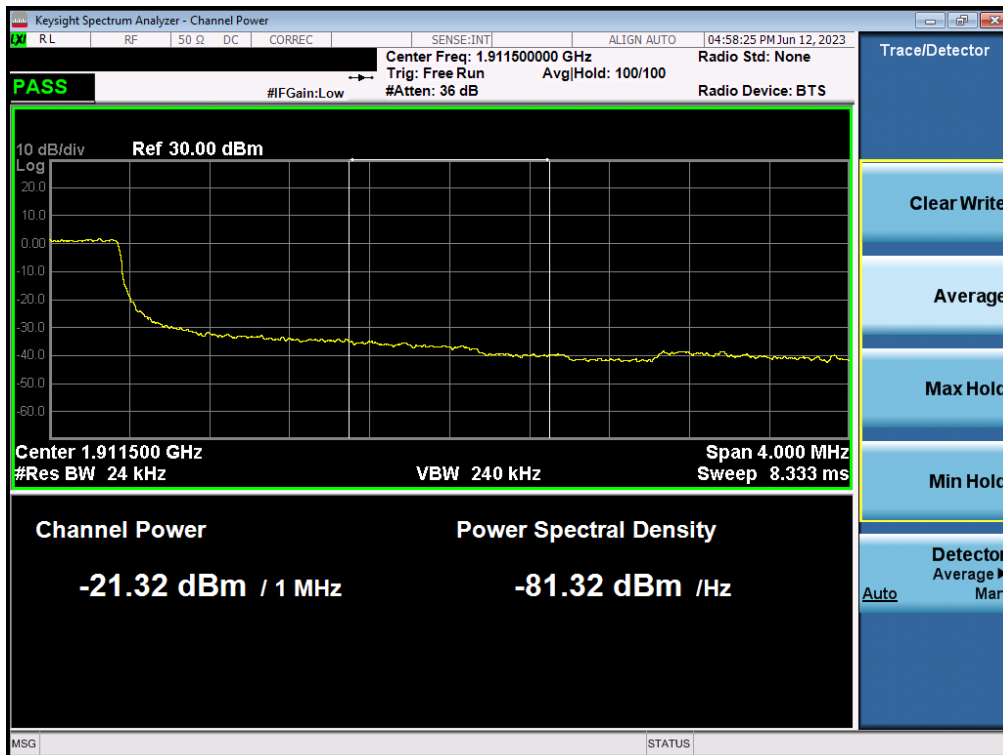


Plot 7-109. Extended Lower Band Edge Plot (LTE Band 25/2 – 3MHz QPSK – Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 86 of 130



Plot 7-110. Upper Band Edge Plot (LTE Band 2 – 3MHz QPSK – Full RB - Ant F)

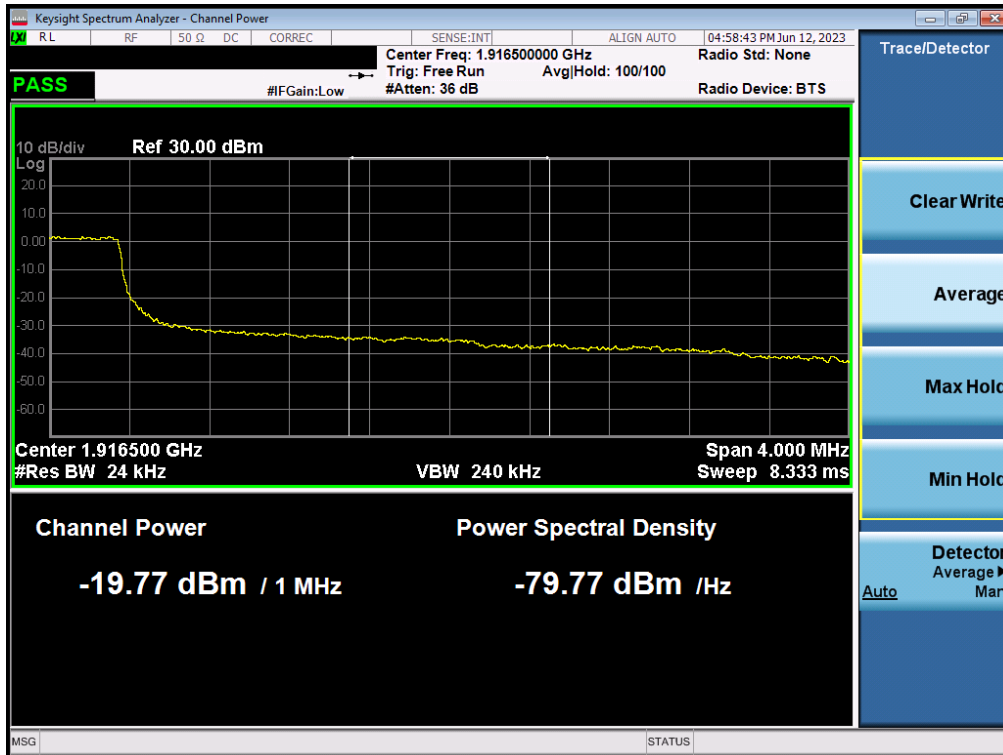


Plot 7-111. Extended Upper Band Edge Plot (LTE Band 2 – 3MHz QPSK – Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 87 of 130



Plot 7-112. Upper Band Edge Plot (LTE Band 25 – 3MHz QPSK – Full RB - Ant F)



Plot 7-113. Extended Upper Band Edge Plot (LTE Band 25 – 3MHz QPSK – Full RB - Ant F)

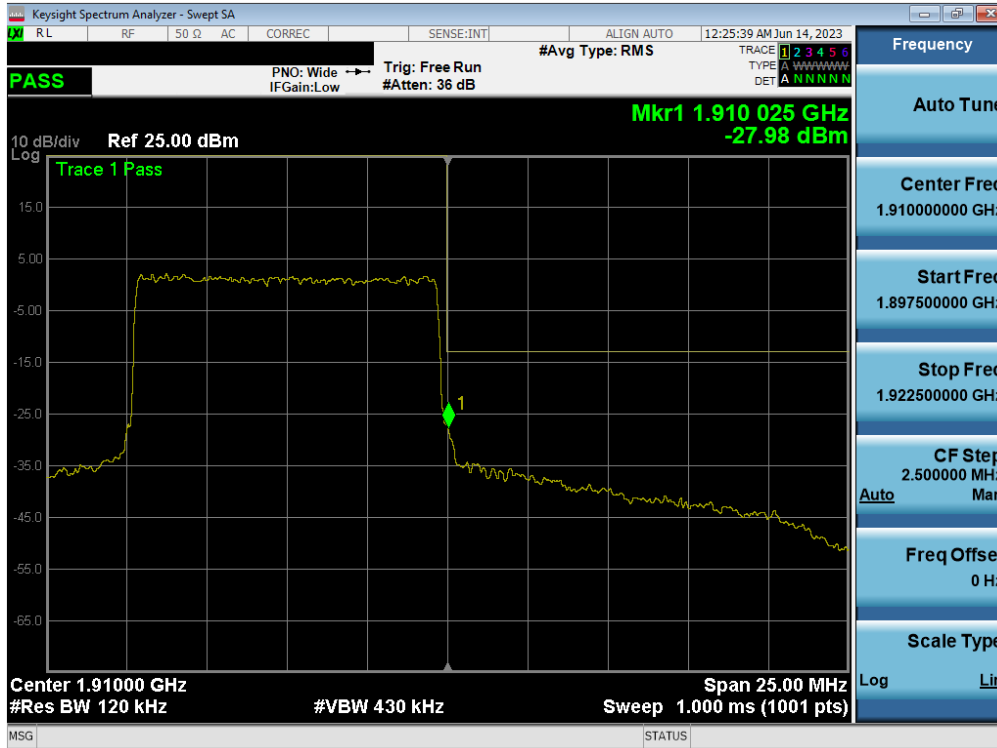
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 88 of 130

NR Band n25/2 – Ant F

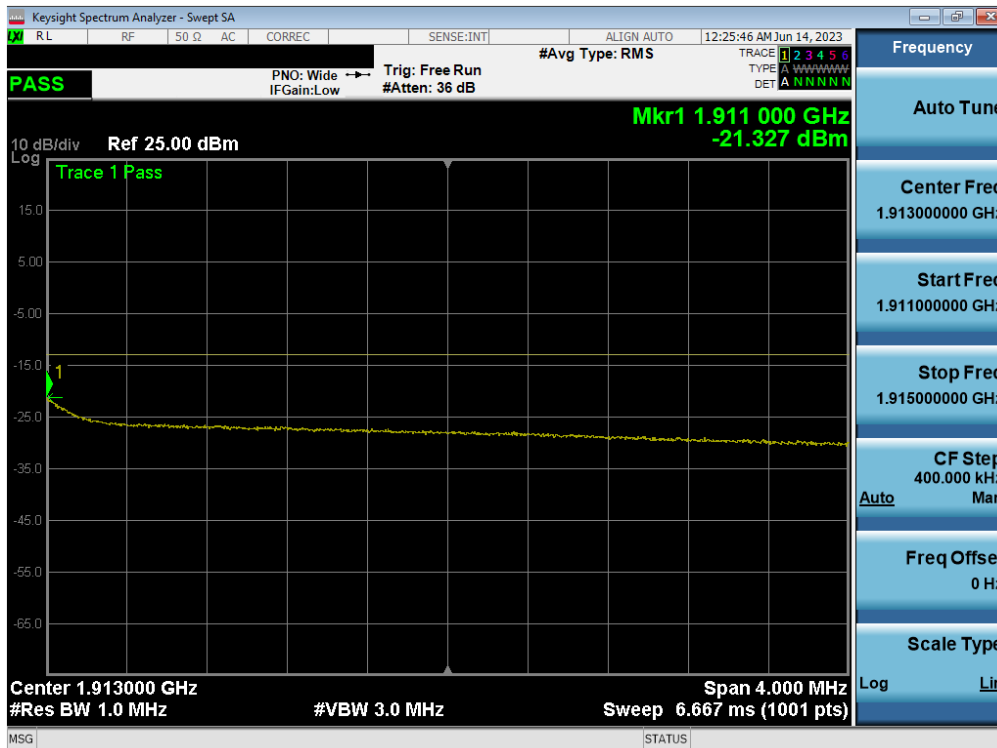
Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR Band n25	40MHz	Lower	Band Edge	-27.61	-13	-14.61
		Lower	Extended	-28.89	-13	-15.89
		Upper	Band Edge	-27.43	-13	-14.43
		Upper	Extended	-27.91	-13	-14.91
	30MHz	Lower	Band Edge	-27.55	-13	-14.54
		Lower	Extended	-28.50	-13	-15.50
		Upper	Band Edge	-32.75	-13	-19.75
		Upper	Extended	-28.30	-13	-15.30
	25MHz	Lower	Band Edge	-29.64	-13	-16.64
		Lower	Extended	-25.92	-13	-12.92
		Upper	Band Edge	-33.86	-13	-20.86
		Upper	Extended	-29.21	-13	-16.21
NR Band n25/n2	20MHz	Lower	Band Edge	-28.33	-13	-15.33
		Lower	Extended	-22.70	-13	-9.70
NR Band n2		Upper	Band Edge	-29.20	-13	-16.20
		Upper	Extended	-24.36	-13	-11.36
NR Band n25		Upper	Band Edge	-29.98	-13	-16.98
	Upper	Extended	-25.74	-13	-12.74	
NR Band n25/n2	15MHz	Lower	Band Edge	-27.88	-13	-14.88
		Lower	Extended	-22.14	-13	-9.14
NR Band n2		Upper	Band Edge	-29.78	-13	-16.78
		Upper	Extended	-24.33	-13	-11.33
NR Band n25		Upper	Band Edge	-32.66	-13	-19.66
	Upper	Extended	-25.20	-13	-12.20	
NR Band n25/n2	10MHz	Lower	Band Edge	-28.73	-13	-15.73
		Lower	Extended	-18.73	-13	-5.73
NR Band n2		Upper	Band Edge	-27.98	-13	-14.98
		Upper	Extended	-21.33	-13	-8.33
NR Band n25		Upper	Band Edge	-30.31	-13	-17.31
	Upper	Extended	-22.01	-13	-9.01	
NR Band n25/n2	5MHz	Lower	Band Edge	-26.05	-13	-13.05
		Lower	Extended	-26.61	-13	-13.61
NR Band n2		Upper	Band Edge	-24.80	-13	-11.80
		Upper	Extended	-25.88	-13	-12.88
NR Band n25		Upper	Band Edge	-24.00	-13	-10.99
	Upper	Extended	-24.98	-13	-11.98	

Table 7-13. Band Edge Test Results– Ant F

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 89 of 130



Plot 7-116. Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant F)



Plot 7-117. Extended Upper Band Edge Plot (NR Band n2 - 10MHz QPSK – Full RB - Ant F)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 91 of 130

7.6 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.3.4

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW \geq OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power

Test Setup

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

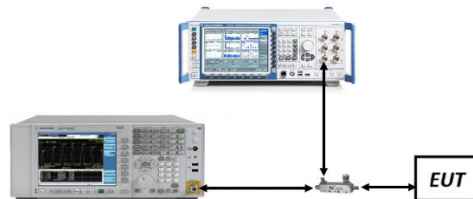


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

None.

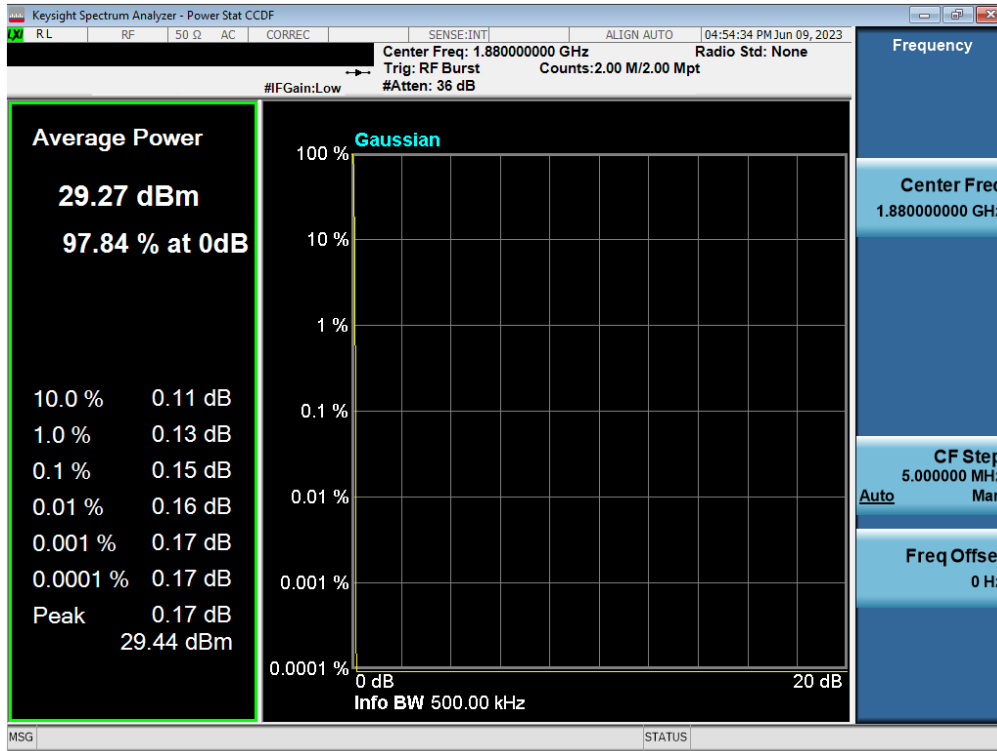
FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 93 of 130

Mode	Bandwidth	Modulation	Average Power [dBm]	PAR at 0.1% [dB]	PAR Limit [dB]	Margin [dB]	
GSM 1900	N/A	GMSK	29.27	0.15	13	-12.85	
EDGE 1900	N/A	8-PSK	22.67	5.83	13	-7.17	
WCDMA 1900	N/A	Spread Spectrum	23.74	3.14	13	-9.86	
LTE Band 25/2	20MHz	QPSK	22.51	4.90	13	-8.10	
		256QAM	18.52	6.70	13	-6.30	
	15MHz	QPSK	22.50	5.05	13	-7.95	
		256QAM	18.51	6.71	13	-6.29	
	10MHz	QPSK	22.61	4.94	13	-8.06	
		256QAM	18.67	6.68	13	-6.32	
	5MHz	QPSK	22.62	4.85	13	-8.15	
		256QAM	18.63	6.71	13	-6.29	
	3MHz	QPSK	22.60	4.78	13	-8.22	
		256QAM	18.64	6.67	13	-6.33	
	1.4MHz	QPSK	22.61	4.72	13	-8.28	
		256QAM	18.63	6.68	13	-6.32	
	NR Band n25	40MHz	$\pi/2$ BPSK	23.36	5.25	13	-7.75
			QPSK	20.84	8.19	13	-4.81
256QAM			17.32	8.28	13	-4.72	
30MHz		$\pi/2$ BPSK	23.37	4.56	13	-8.44	
		QPSK	20.78	8.28	13	-4.72	
		256QAM	17.32	8.25	13	-4.75	
25MHz		$\pi/2$ BPSK	23.30	4.51	13	-8.49	
		QPSK	20.77	8.57	13	-4.43	
		256QAM	17.23	8.53	13	-4.47	
NR Band n25/n2	20MHz	$\pi/2$ BPSK	23.33	4.41	13	-8.59	
		QPSK	20.76	8.07	13	-4.93	
		256QAM	17.26	8.27	13	-4.73	
	15MHz	$\pi/2$ BPSK	23.31	4.49	13	-8.51	
		QPSK	20.77	8.11	13	-4.89	
		256QAM	17.25	8.33	13	-4.67	
	10MHz	$\pi/2$ BPSK	23.19	4.52	13	-8.48	
		QPSK	20.63	8.14	13	-4.86	
		256QAM	17.13	8.60	13	-4.40	
	5MHz	$\pi/2$ BPSK	23.17	4.22	13	-8.78	
		QPSK	20.60	8.04	13	-4.96	
		256QAM	17.07	8.26	13	-4.74	

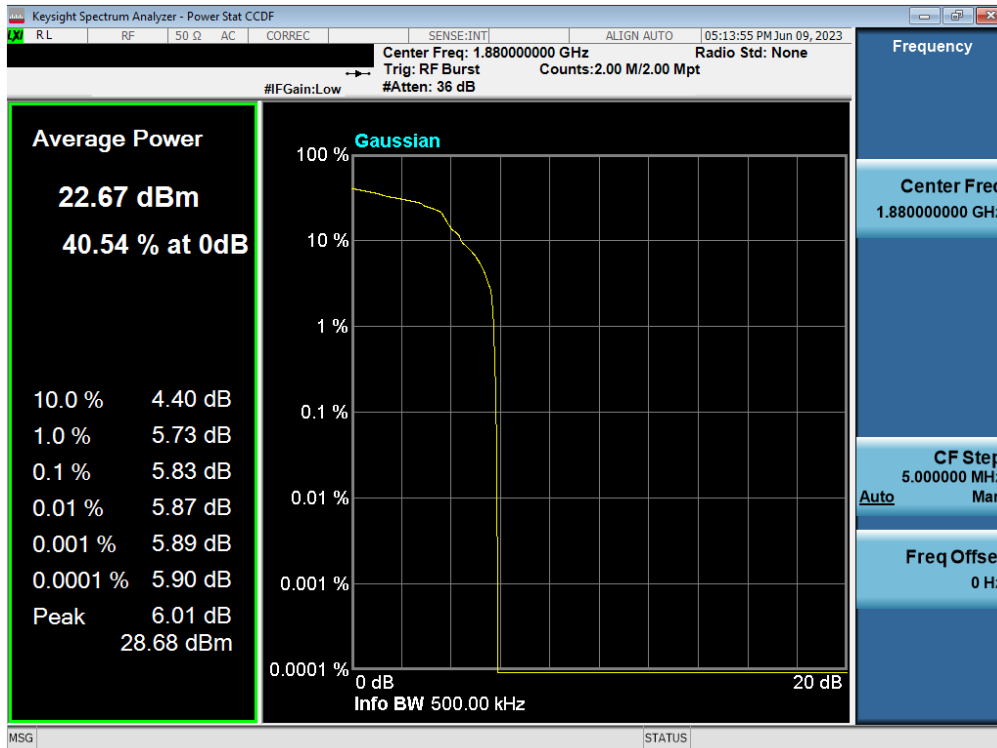
Table 7-14. PAR Test Results– Ant A

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 94 of 130

GSM/GPRS PCS – Ant A



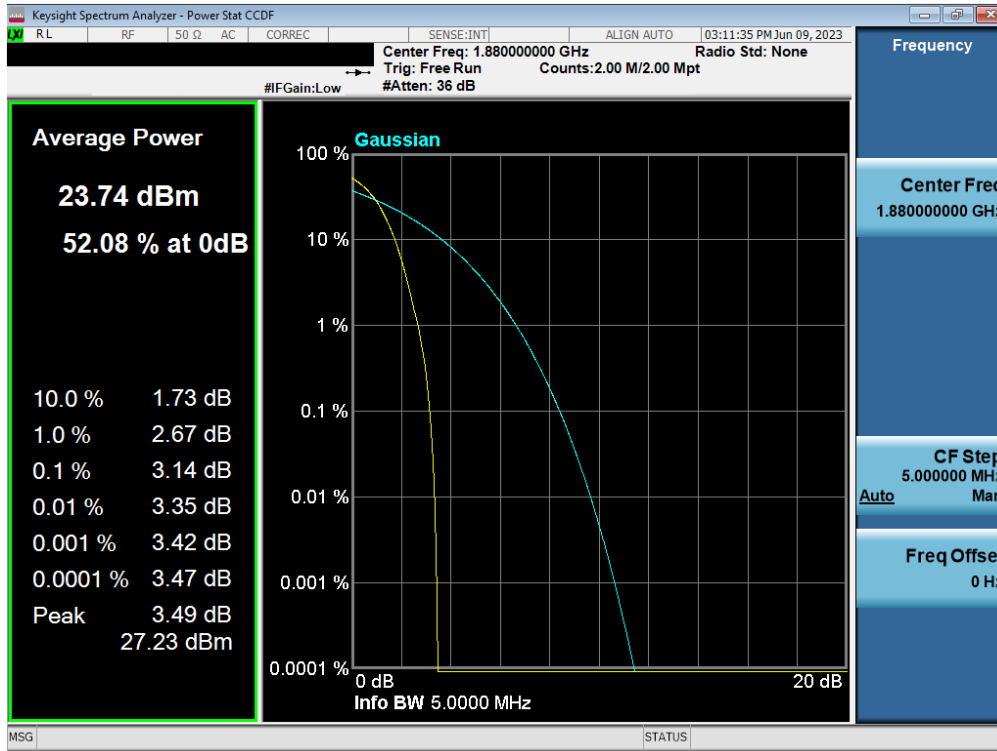
Plot 7-120. PAR Plot (GPRS, Ch. 661 - Ant A)



Plot 7-121. PAR Plot (EDGE, Ch. 661 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 95 of 130

WCDMA PCS – Ant A



Plot 7-122. PAR Plot (WCDMA, Ch. 9400 - Ant A)

FCC ID: A3LSMS711U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M230426006-06.A3L	Test Dates: 5/24/2023 - 7/31/2023	EUT Type: Portable Handset	Page 96 of 130