



ELEMENT SUWON

13, Heungdeok 1-ro, Giheung-gu, Yongin-si,
Gyeonggi-do, 16954 South Korea
Tel. 031.660.7319 / Fax 031.660.7318
<http://www.element.com>

PART 22 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 - 6/15/2023
Test Report Issue Date:
07/31/2023
Test Site/Location:
Element lab., Gyeonggi-do, South Korea
Test Report Serial No.:
1M2304260060-05.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:	22
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.

Prepared by

Reviewed by

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 1 of 74

T A B L E O F C O N T E N T S

1.0	INTRODUCTION	4
1.1	Scope	4
1.2	Element Test Location.....	4
1.3	Test Facility / Accreditations.....	4
2.0	PRODUCT INFORMATION.....	5
2.1	Equipment Description	5
2.2	Device Capabilities.....	5
2.3	Test Configuration	5
2.4	Software and Firmware	5
2.5	EMI Suppression Device(s)/Modifications	5
3.0	DESCRIPTION OF TESTS	6
3.1	Evaluation Procedure	6
3.2	Radiated Power and Radiated Spurious Emissions	6
4.0	MEASUREMENT UNCERTAINTY	7
5.0	TEST EQUIPMENT CALIBRATION DATA	8
6.0	SAMPLE CALCULATIONS	9
7.0	TEST RESULTS	10
7.1	Summary.....	10
7.2	Conducted Power Output Data	11
7.3	Occupied Bandwidth	13
7.4	Spurious and Harmonic Emissions at Antenna Terminal	28
7.5	Band Edge Emissions at Antenna Terminal.....	40
7.6	Radiated Power (ERP).....	48
7.7	Radiated Spurious Emissions Measurements.....	53
7.8	Frequency Stability / Temperature Variation	69
8.0	CONCLUSION.....	74

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 2 of 74

PART 22 MEASUREMENT REPORT

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	Max. Power [W]	Max. Power [dBm]	
GSM/GPRS	N/A	GMSK	824.2 - 848.8	0.562	27.50	0.923	29.65	240KGXW
EDGE	N/A	8-PSK	824.2 - 848.8	0.192	22.83	0.315	24.98	243KG7W
WCDMA	N/A	Spread Spectrum	826.4 - 846.6	0.098	19.89	0.160	22.04	4M16F9W
LTE Band 26/5	15MHz (Band 26 only)	QPSK	831.5 - 841.5	0.078	18.91	0.128	21.06	13M5G7D
		16QAM	831.5 - 841.5	0.063	17.98	0.103	20.13	13M5W7D
	10 MHz	QPSK	829.0 - 844.0	0.080	19.05	0.132	21.20	8M99G7D
		16QAM	829.0 - 844.0	0.065	18.10	0.106	20.25	9M05W7D
	5 MHz	QPSK	826.5 - 846.5	0.079	18.99	0.130	21.14	4M54G7D
		16QAM	826.5 - 846.5	0.066	18.18	0.108	20.33	4M55W7D
	3 MHz	QPSK	825.5 - 847.5	0.079	19.00	0.130	21.15	2M71G7D
		16QAM	825.5 - 847.5	0.065	18.14	0.107	20.29	2M72W7D
	1.4 MHz	QPSK	824.7 - 848.3	0.079	18.97	0.129	21.12	1M10G7D
		16QAM	824.7 - 848.3	0.064	18.09	0.106	20.24	1M11W7D
NR Band n26/5	20 MHz	$\pi/2$ BPSK	834.0 - 839.0	0.089	19.51	0.146	21.66	18M0G7D
		QPSK	834.0 - 839.0	0.090	19.52	0.147	21.67	19M0G7D
		16QAM	834.0 - 839.0	0.071	18.53	0.117	20.68	19M0W7D
	15 MHz	$\pi/2$ BPSK	831.5 - 841.5	0.090	19.53	0.147	21.68	13M5G7D
		QPSK	831.5 - 841.5	0.088	19.42	0.144	21.57	14M2G7D
		16QAM	831.5 - 841.5	0.071	18.51	0.116	20.66	14M2W7D
	10 MHz	$\pi/2$ BPSK	829.0 - 844.0	0.085	19.31	0.140	21.46	9M02G7D
		QPSK	829.0 - 844.0	0.082	19.13	0.134	21.28	9M35G7D
		16QAM	829.0 - 844.0	0.066	18.19	0.108	20.34	9M37W7D
	5 MHz	$\pi/2$ BPSK	826.5 - 846.5	0.086	19.36	0.142	21.51	4M48G7D
		QPSK	826.5 - 846.5	0.087	19.39	0.142	21.54	4M51G7D
		16QAM	826.5 - 846.5	0.068	18.33	0.112	20.48	4M54W7D

EUT Overview

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 3 of 74

1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

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

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

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 4 of 74

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 22 and RSS-132.

Test Device Serial No.: 0168M, 0585M, 0599M

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 Transfer

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: EN-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 S711UFAU0AWF1 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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 5 of 74

3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

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

Deviation from Measurement Procedure.....None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

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

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

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

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

And

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

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

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

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 6 of 74

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	1.95
Radiated Disturbance (<1GHz)	4.10
Radiated Disturbance (>1GHz)	4.82
Radiated Disturbance (>18GHz)	4.96

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 7 of 74

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9030A	PXA Signal Analyzer	2023-07-04	Annual	2024-07-03	MY49432391
Anritsu	S820E	Cable and Antenna Analyzer	2023-07-05	Annual	2024-07-04	1839097
Anritsu	MA24106A	USB Power Sensor	2023-07-05	Annual	2024-07-04	1244512
Com-Power	AL-130	9kHz - 30MHz Loop Antenna	2022-10-21	Biennial	2024-10-20	10160045
Com-Power	PAM-118A	Preamplifier	2023-07-05	Annual	2024-07-04	551042
Espec	SH-242	Environmental Chamber	2022-08-26	Annual	2023-08-25	93011064
Fairview Microwave	FM2CP1122-10	2.92mm Directional Coupler	2023-07-04	Annual	2024-07-03	1946
Keysight Technologies	N9030B	MXA Signal Analyzer	2023-07-04	Annual	2024-07-03	MY57143276
Mini-Circuits	BW-N10W5+	Attenuator	2023-07-04	Annual	2024-07-03	1607
Mini-Circuits	BW-N10W5+	Attenuator	2023-07-04	Annual	2024-07-03	1607
Rohde & Schwarz	TS-PR18	Preamplifier	2023-07-05	Annual	2024-07-04	102141
Rohde & Schwarz	SMB100A03	Signal Generator	2023-01-17	Annual	2024-01-16	182487
Rohde & Schwarz	CMW500	Wideband Radio Communication Tester	2023-02-17	Annual	2024-02-16	131453
Rohde & Schwarz	FSW43	Signal and Spectrum Analyzer	2023-01-13	Annual	2024-01-12	101955
Rohde & Schwarz	SFUNIT-Rx	Shielded Filter Unit	2023-02-17	Annual	2024-02-16	102131
Rohde & Schwarz	TC-TA18	VIVALDI-ANT	2021-10-22	Biennial	2023-10-21	101097
Rohde & Schwarz	TC-TA18	VIVALDI-ANT	2021-10-22	Biennial	2023-10-21	101098
Schwarzbeck	VULB9162	Broadband TRILOG Antenna	2023-06-01	Biennial	2025-05-31	9162-217
Schwarzbeck	UHA9105	Dipole Antenna	2022-07-19	Biennial	2024-07-18	91052522
Sunol	DRH-118	Horn Antenna	2023-01-26	Biennial	2025-01-25	A060215

Table 5-1. Test Equipment

Notes:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 8 of 74

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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 9 of 74

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/WCDMA/NR/LTE/ULCA

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-132(5.4)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	RSS-Gen(6.7)	N/A	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions	2.1051, 22.917(a)	RSS-132(5.5)	> 43 + 10log10(P[Watts]) at Band Edge and for all out-of-band emissions	PASS	Sections 7.4, 7.5
	Frequency Stability	2.1055, 22.355	RSS-132(5.3)	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
	Uplink Carrier Aggregation	22.917(a), 27.53(h)	RSS-199(4.5)	> 43 + 10log10(P[Watts]) at Band Edge and for all out-of-band emissions	PASS	Sections 7.5
RADIATED	Effective Radiated Power / Equivalent Isotropic Radiated Power	22.913(a)(5)	RSS-132(5.4)	< 7 Watts max. ERP	PASS	Section 7.6
	Radiated Spurious Emissions	2.1053, 22.917(a)	RSS-132(5.5)	> 43 + 10 log10 (P[Watts]) for all out-of-band emissions	PASS	Section 7.7

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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 10 of 74

7.2 Conducted Power Output 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.

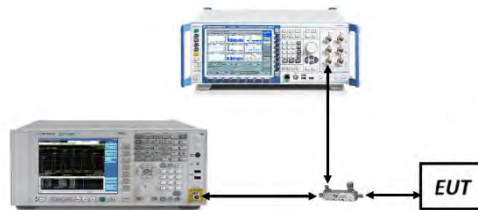


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
2. Conducted power measurements were evaluated for the two contiguous channels 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.
3. All other conducted power measurements are contained in the RF exposure report for this filing.

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 11 of 74



Power State	Band	Bandwidth (PCC + SCC)	PCC				SCC				ULCA Tx. Power [dBm]				
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency		UL # RB	UL RB Offset		
Max	LTE B5	10MHz + 10MHz	QPSK	20450	829.0	1	49	QPSK	20549	838.9	1	0	25.17		
				20475	831.5	1	49		20574	841.4	1	0	25.21		
				20600	844.0	1	0		20501	834.1	1	49	25.23		
			QPSK	20600	844	50	0	QPSK	20501	834.1	50	0	23.29		
				16-QAM	20600	844	50		0	16-QAM	20501	834.1	50	0	22.25
				64-QAM	20600	844	50		0	64-QAM	20501	834.1	50	0	22.18
			256-QAM	20600	844	50	0	256-QAM	20501	834.1	50	0	20.16		

Table 7-2. Conducted Power Output Data (ULCA LTE Band 5)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 12 of 74

7.3 Occupied Bandwidth

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

Test Settings

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

Test Setup

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

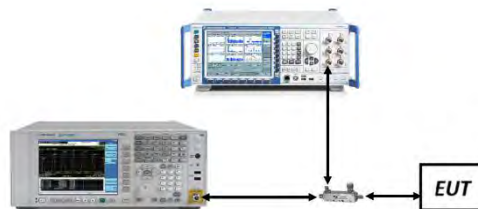


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

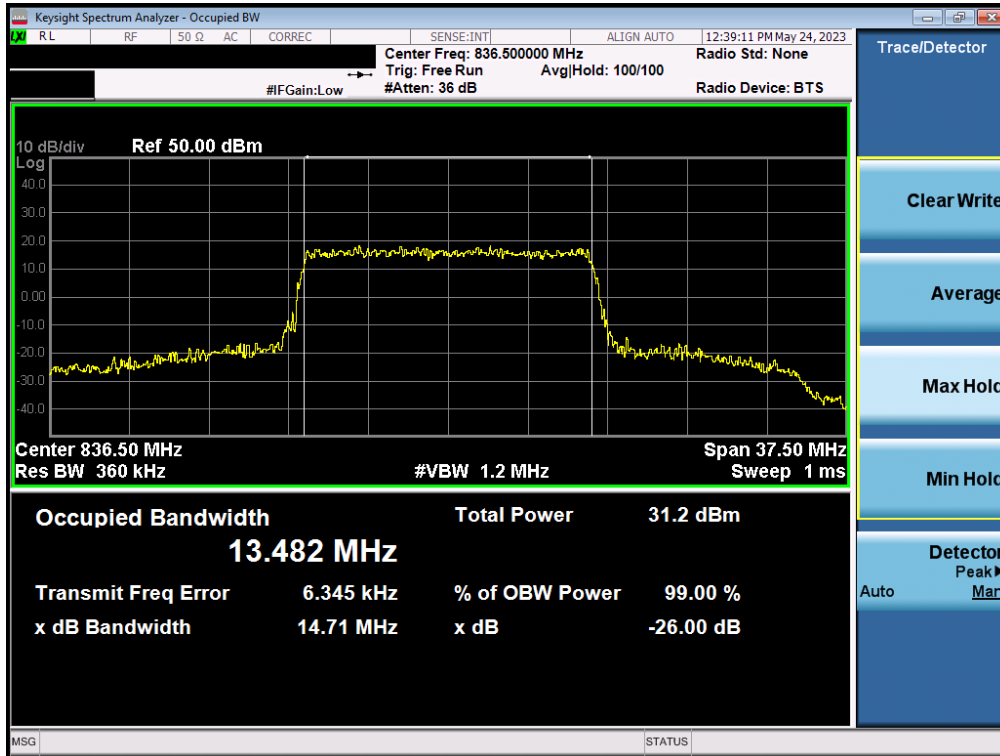
FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 13 of 74

Mode	Bandwidth	Modulation	OBW [MHz]
GSM-Cell	N/A	GMSK	0.240
GSM-Cell Edge		8-PSK	0.243
WCDMA-Cell		Spread Spectrum	4.16
LTE-B26-5	15MHz	QPSK	13.48
		16QAM	13.51
	10MHz	QPSK	8.99
		16QAM	9.05
	5 MHz	QPSK	4.54
		16QAM	4.55
	3 MHz	QPSK	2.71
		16QAM	2.72
	1.4 MHz	QPSK	1.10
		16QAM	1.11
NR-n26/5	20 MHz	$\pi/2$ BPSK	17.97
		QPSK	19.00
		16QAM	19.00
	15 MHz	$\pi/2$ BPSK	13.46
		QPSK	14.21
		16QAM	14.20
	10 MHz	$\pi/2$ BPSK	9.02
		QPSK	9.35
		16QAM	9.37
	5 MHz	$\pi/2$ BPSK	4.48
		QPSK	4.51
		16QAM	4.54

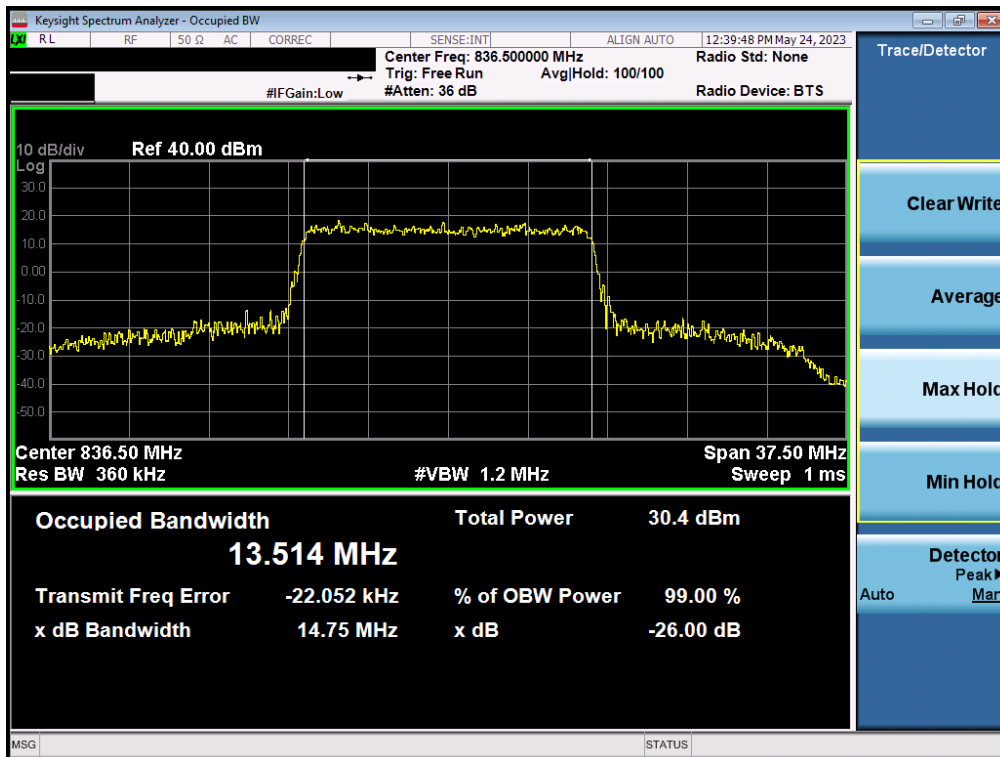
Table 7-3. Occupied Bandwidth Test Results

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 14 of 74

LTE Band 26/5

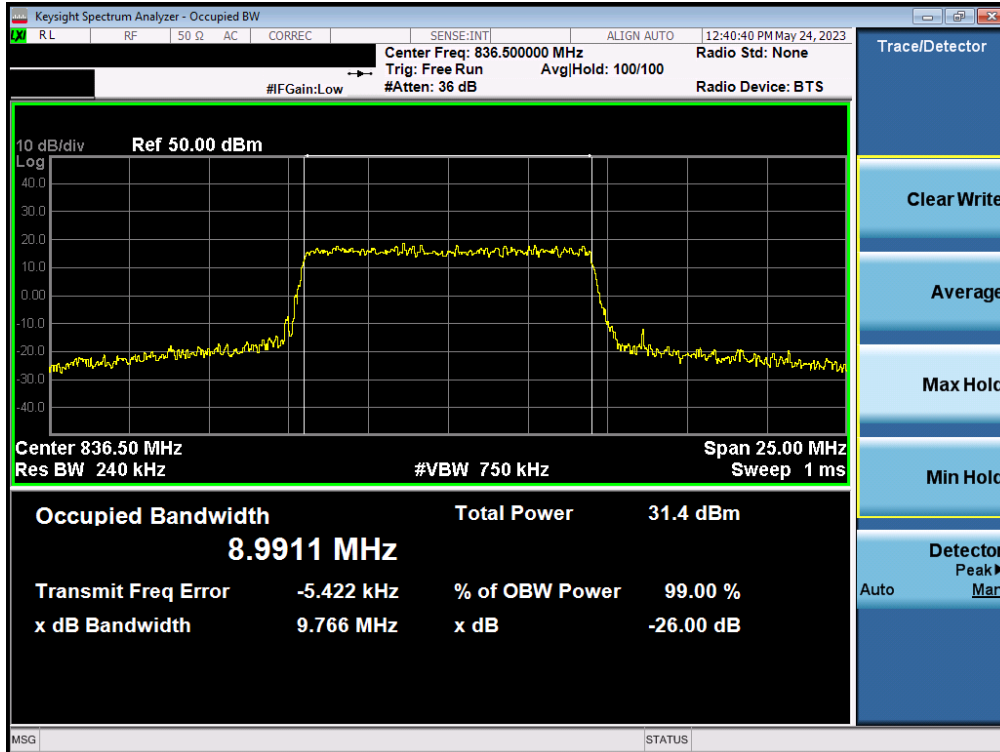


Plot 7-1. Occupied Bandwidth Plot (LTE Band 26 - 15MHz QPSK - Full RB Configuration)

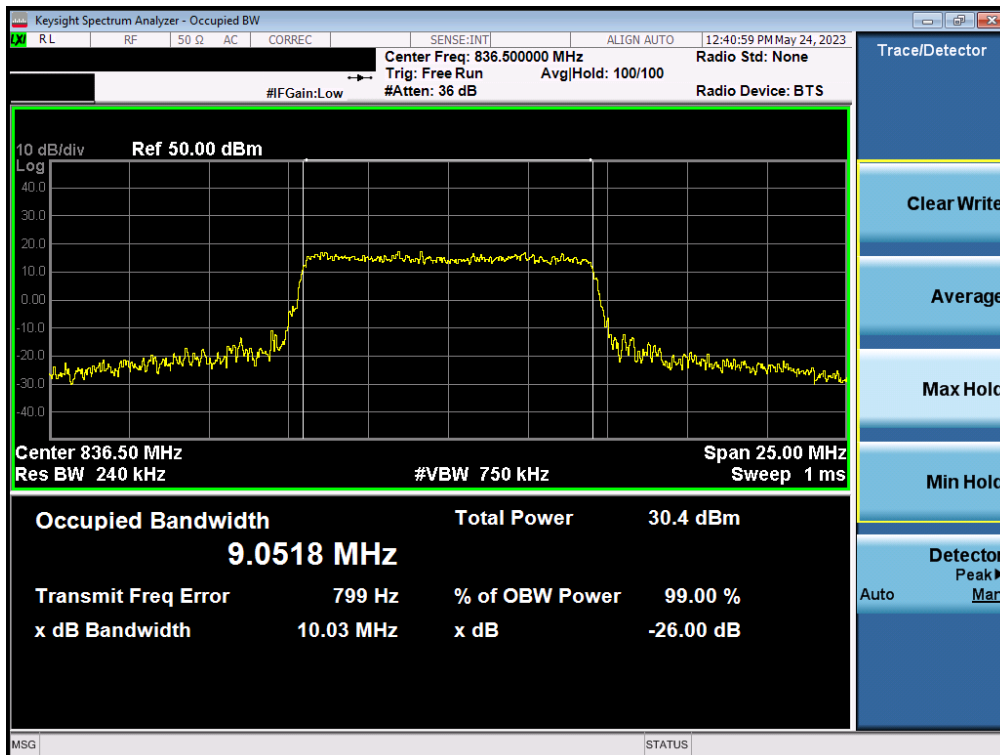


Plot 7-2. Occupied Bandwidth Plot (LTE Band 26 - 15MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 15 of 74

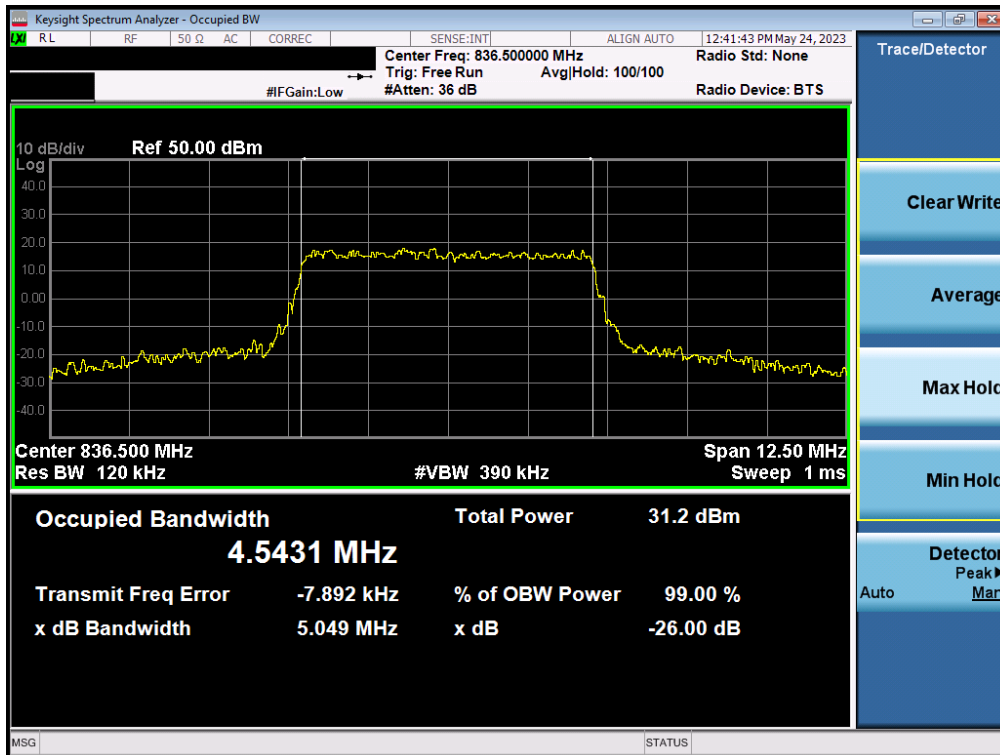


Plot 7-3. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz QPSK - Full RB Configuration)

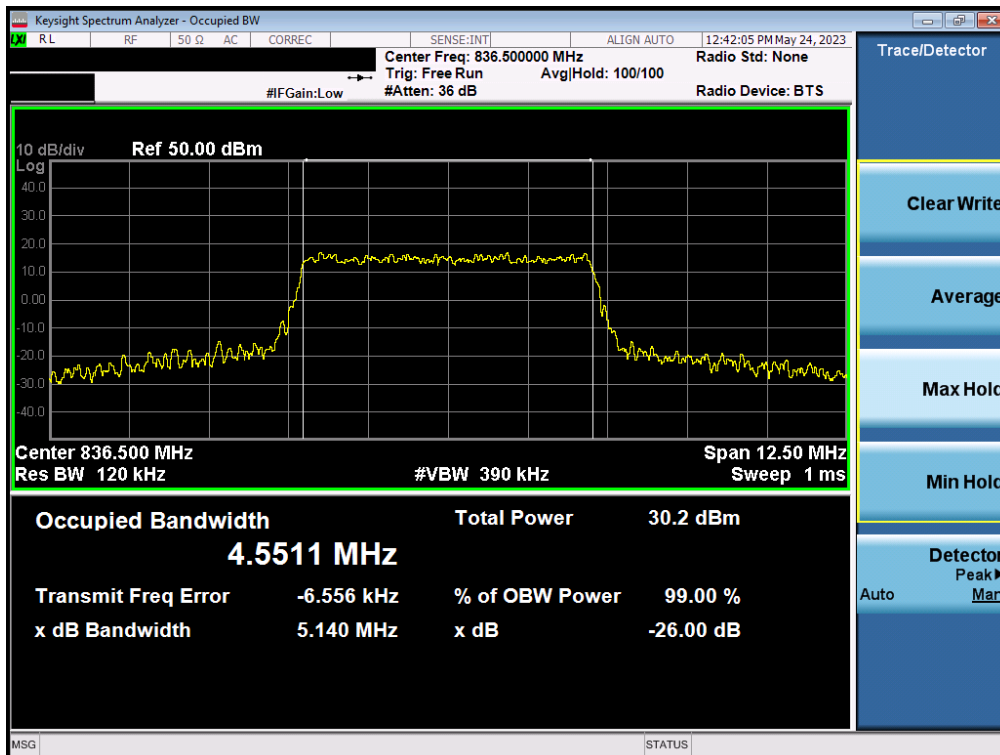


Plot 7-4. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 16 of 74

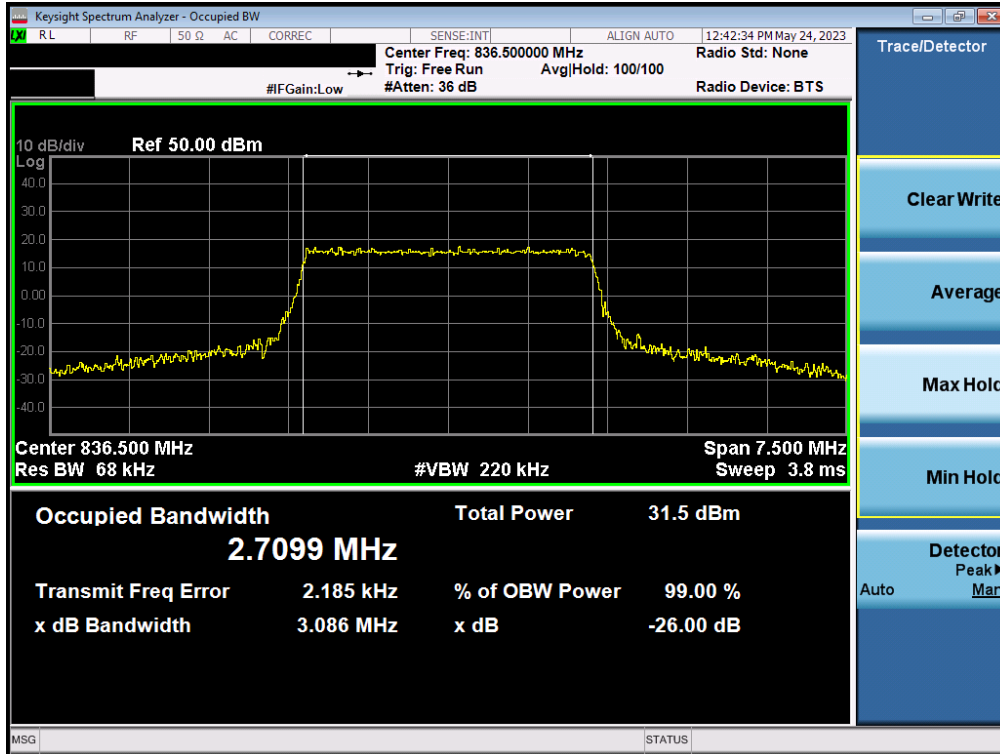


Plot 7-5. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz QPSK - Full RB Configuration)

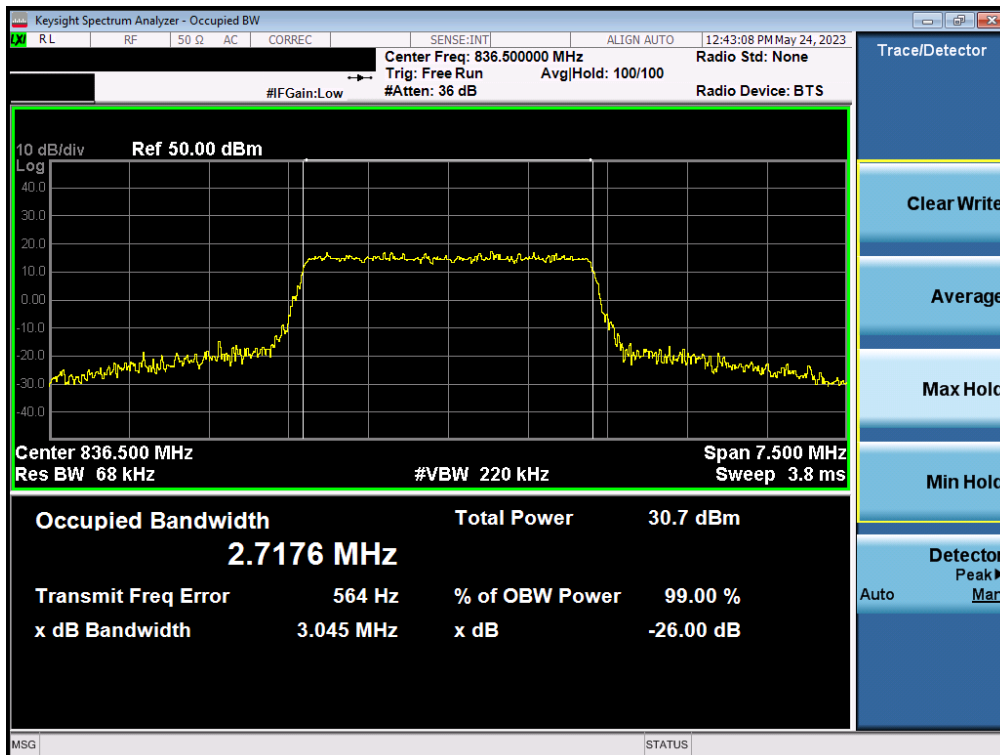


Plot 7-6. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 17 of 74

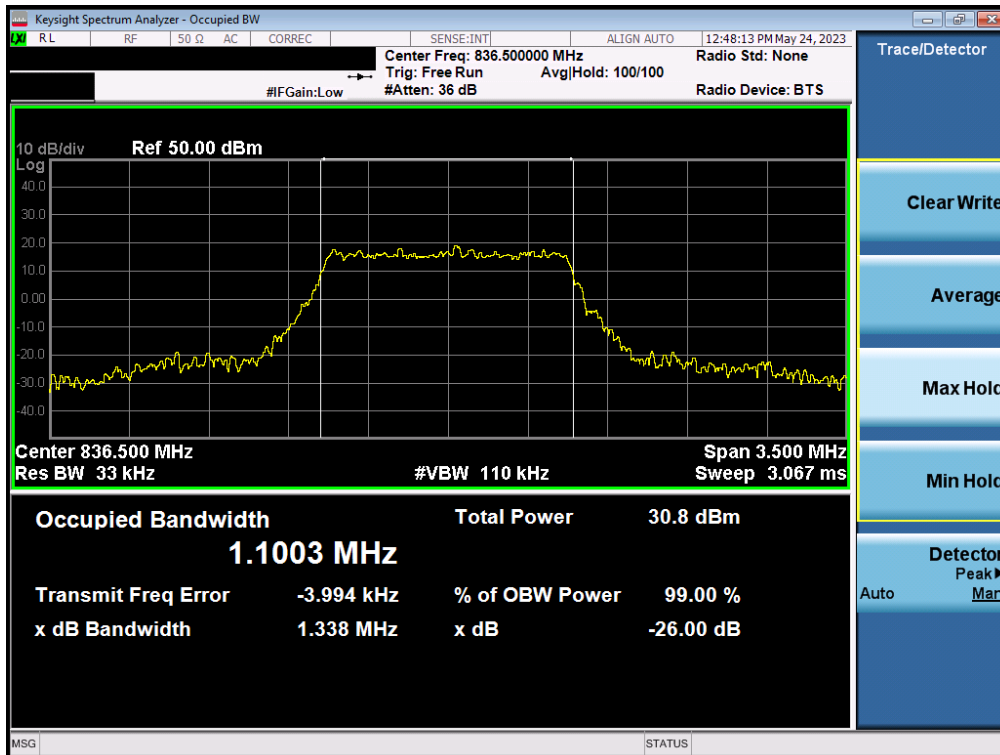


Plot 7-7. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz QPSK - Full RB Configuration)

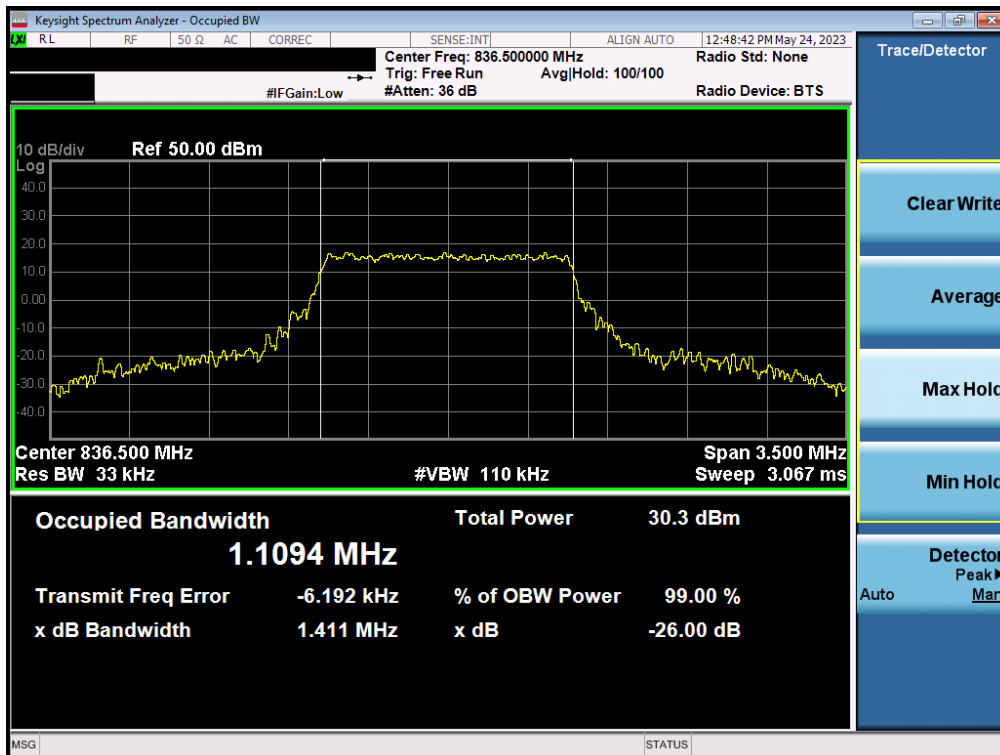


Plot 7-8. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 18 of 74



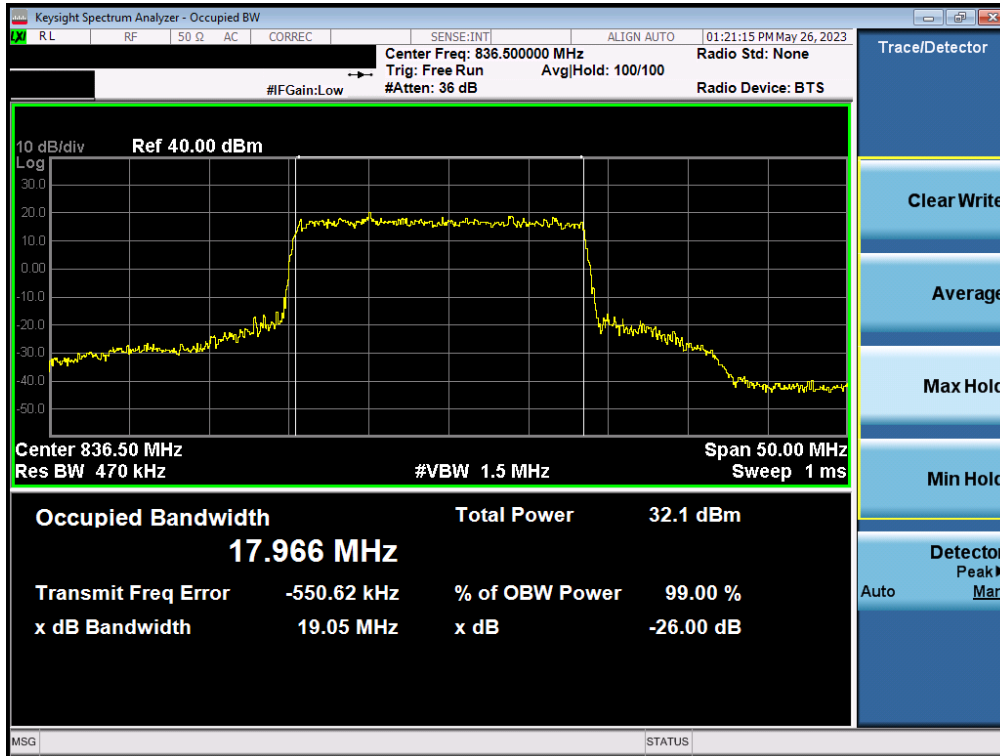
Plot 7-9. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz QPSK - Full RB Configuration)



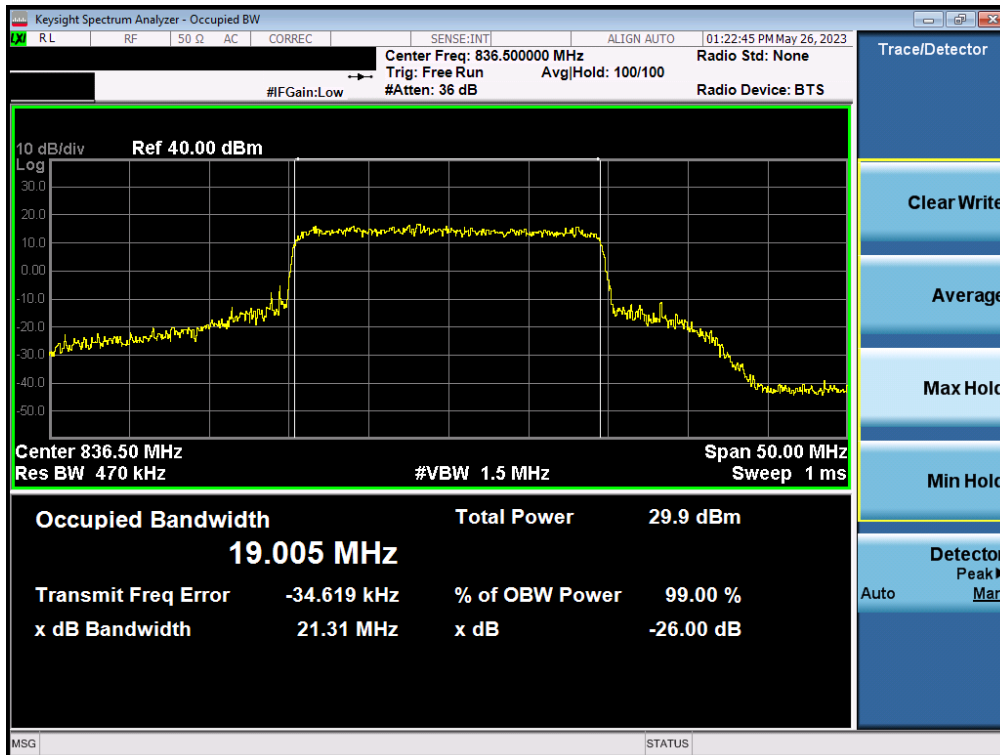
Plot 7-10. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 19 of 74

NR Band n26/5

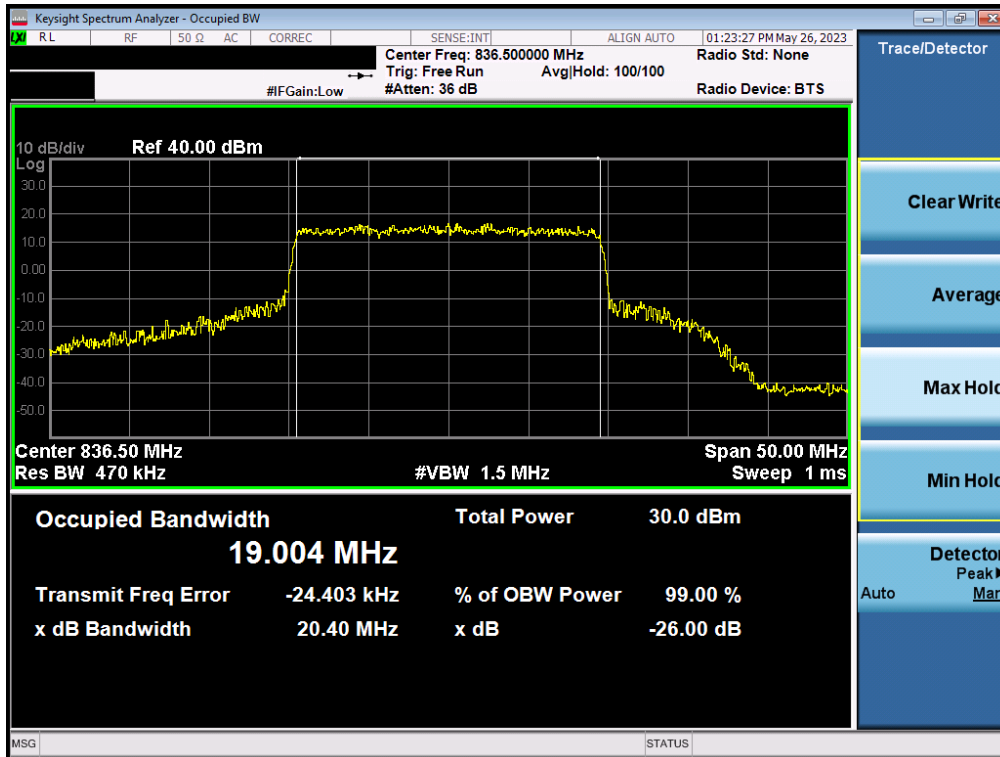


Plot 7-11. Occupied Bandwidth Plot (NR Band n26/5 - 20MHz $\pi/2$ BPSK - Full RB Configuration)

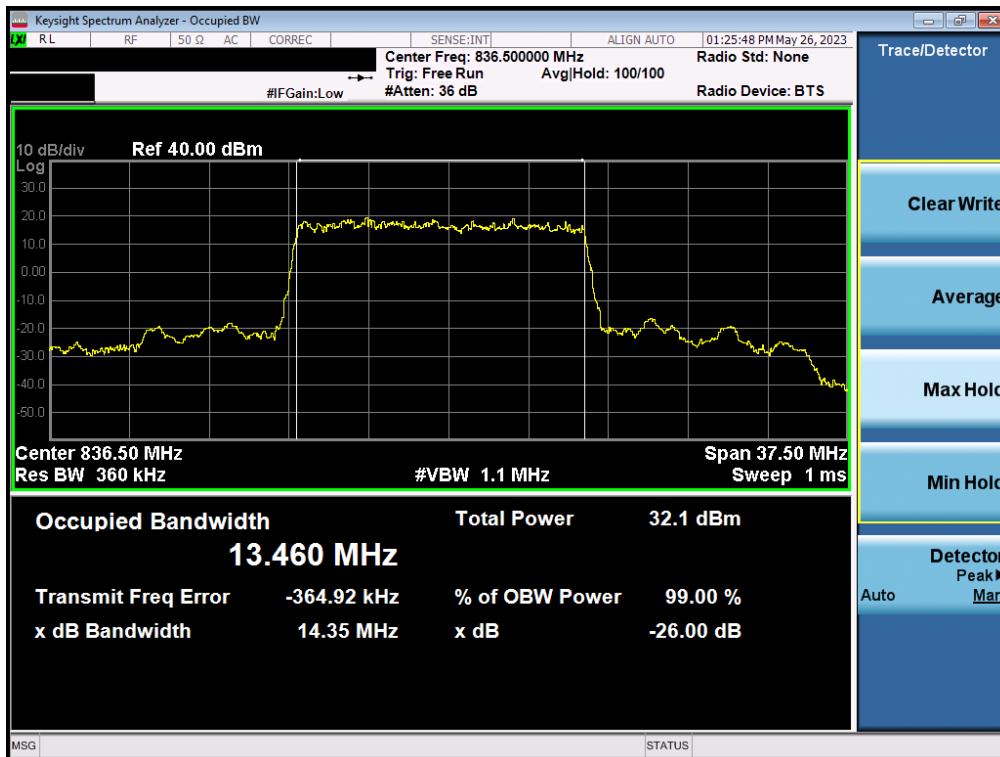


Plot 7-12. Occupied Bandwidth Plot (NR Band n26/5 - 20MHz QPSK - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 20 of 74

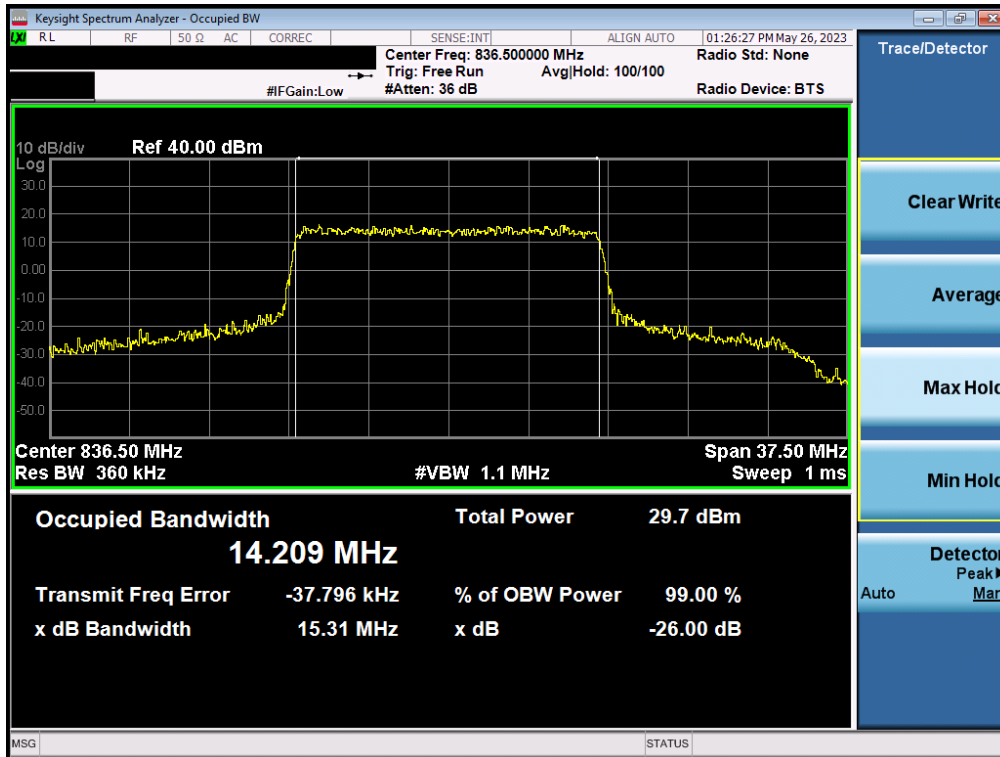


Plot 7-13. Occupied Bandwidth Plot (NR Band n26/5 - 20MHz 16-QAM - Full RB Configuration)



Plot 7-14. Occupied Bandwidth Plot (NR Band n26/5 - 15MHz $\pi/2$ BPSK - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 21 of 74

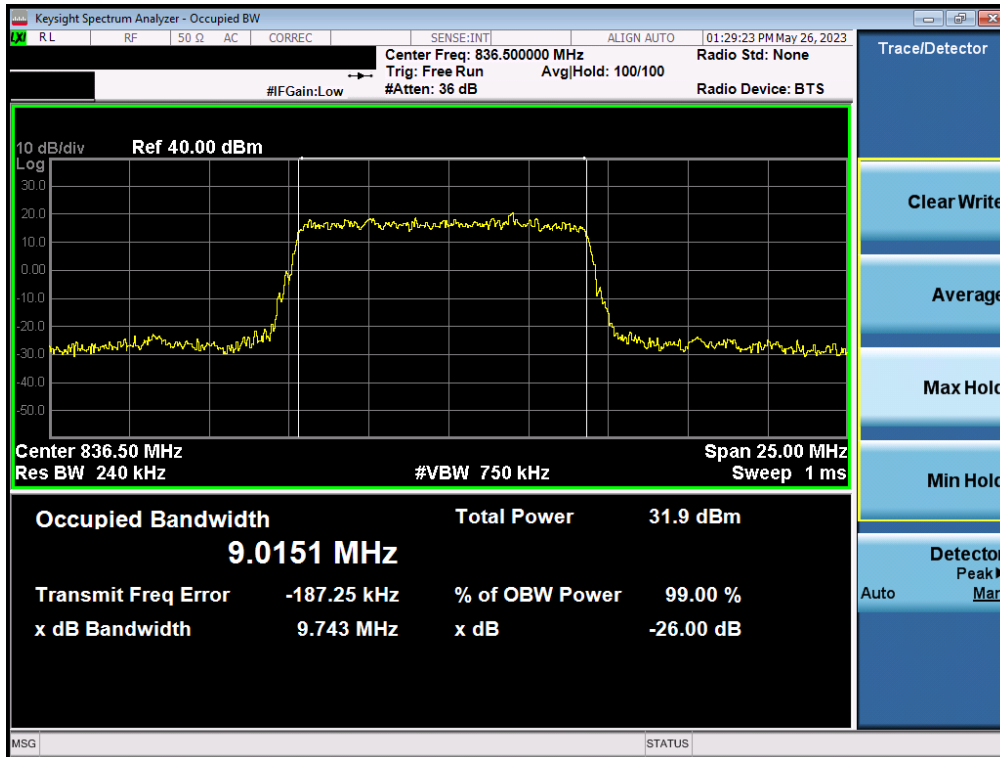


Plot 7-15. Occupied Bandwidth Plot (NR Band n26/5 - 15MHz QPSK - Full RB Configuration)

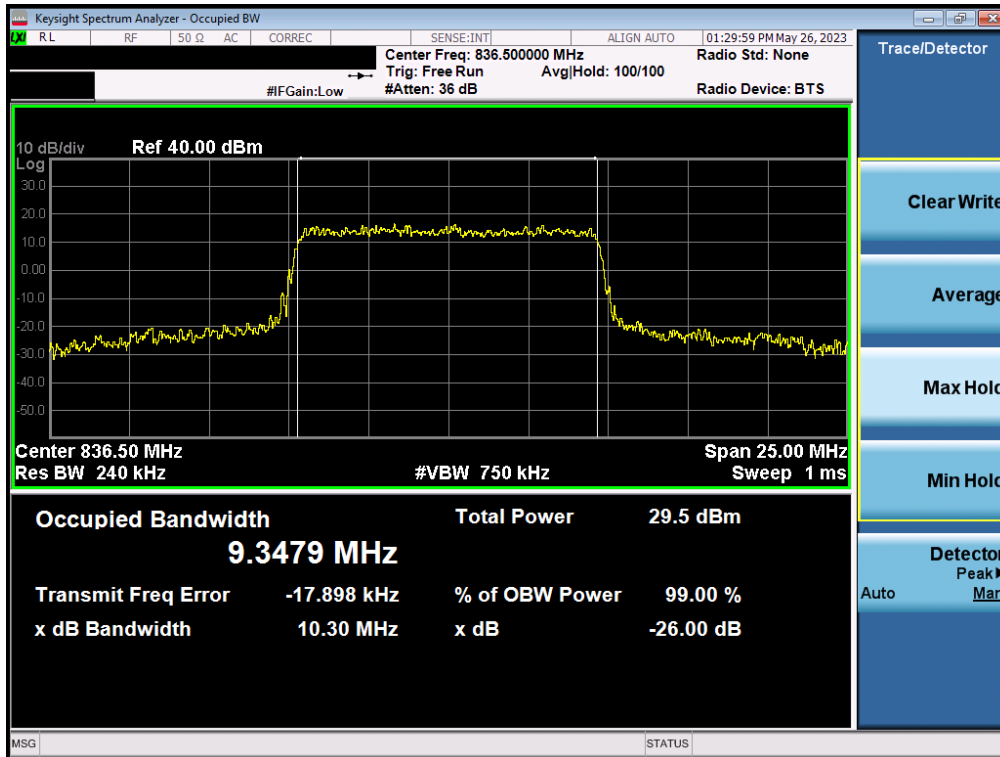


Plot 7-16. Occupied Bandwidth Plot (NR Band n26/5 - 15MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 22 of 74

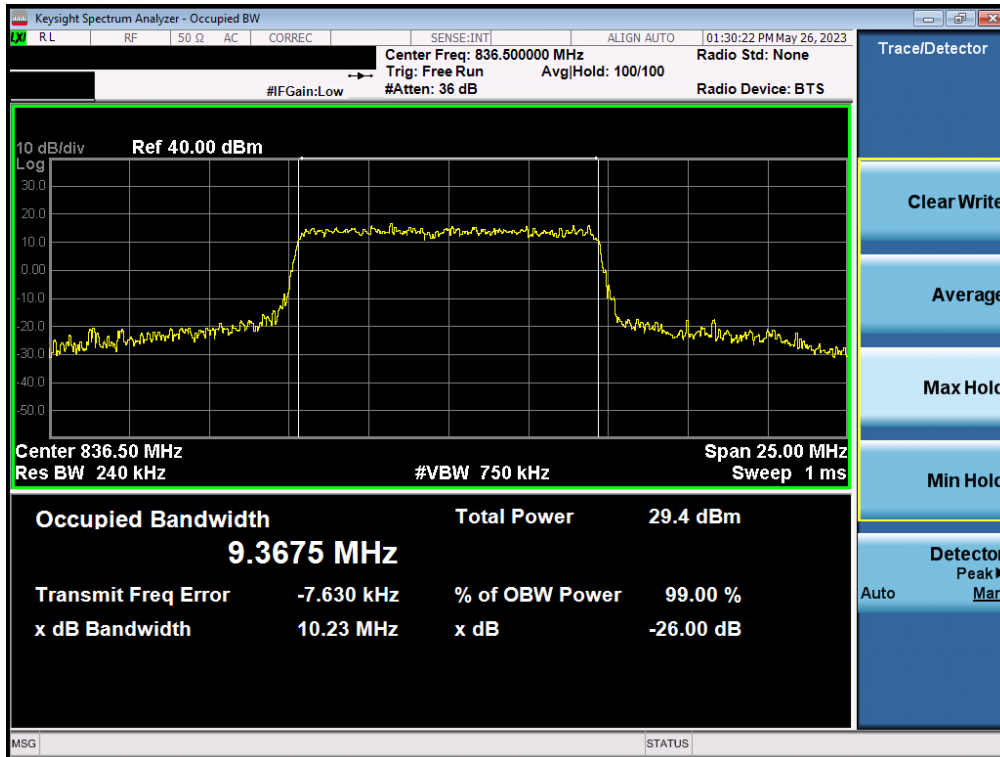


Plot 7-17. Occupied Bandwidth Plot (NR Band n26/5 - 10MHz $\pi/2$ BPSK - Full RB Configuration)

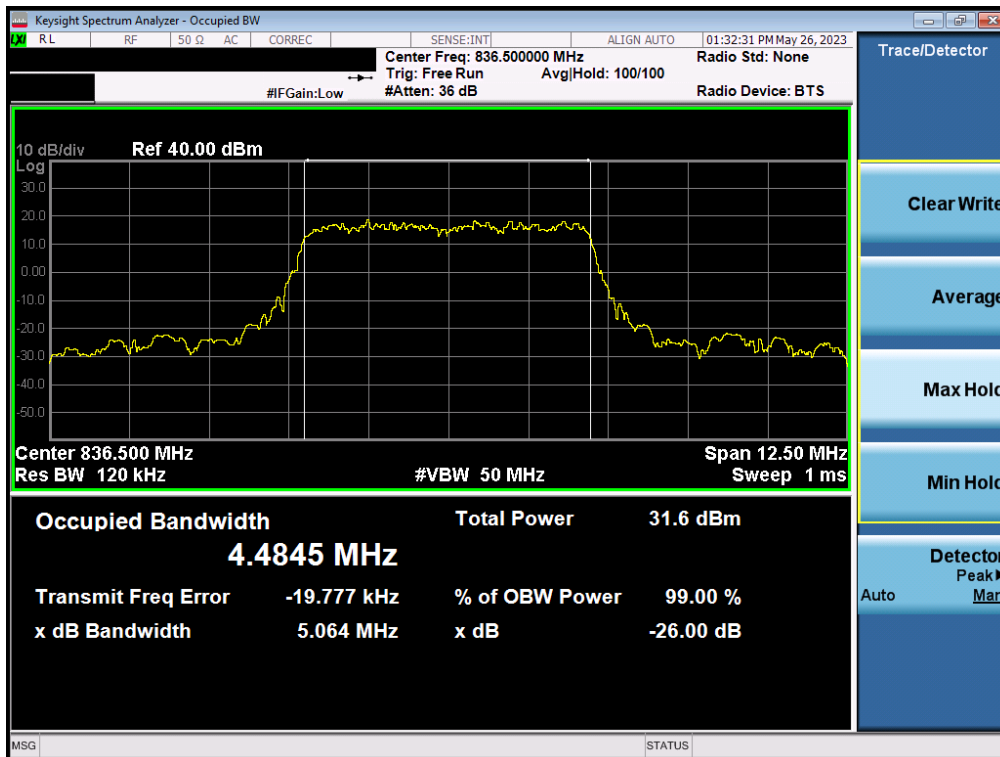


Plot 7-18. Occupied Bandwidth Plot (NR Band n26/5 - 10MHz QPSK - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 23 of 74

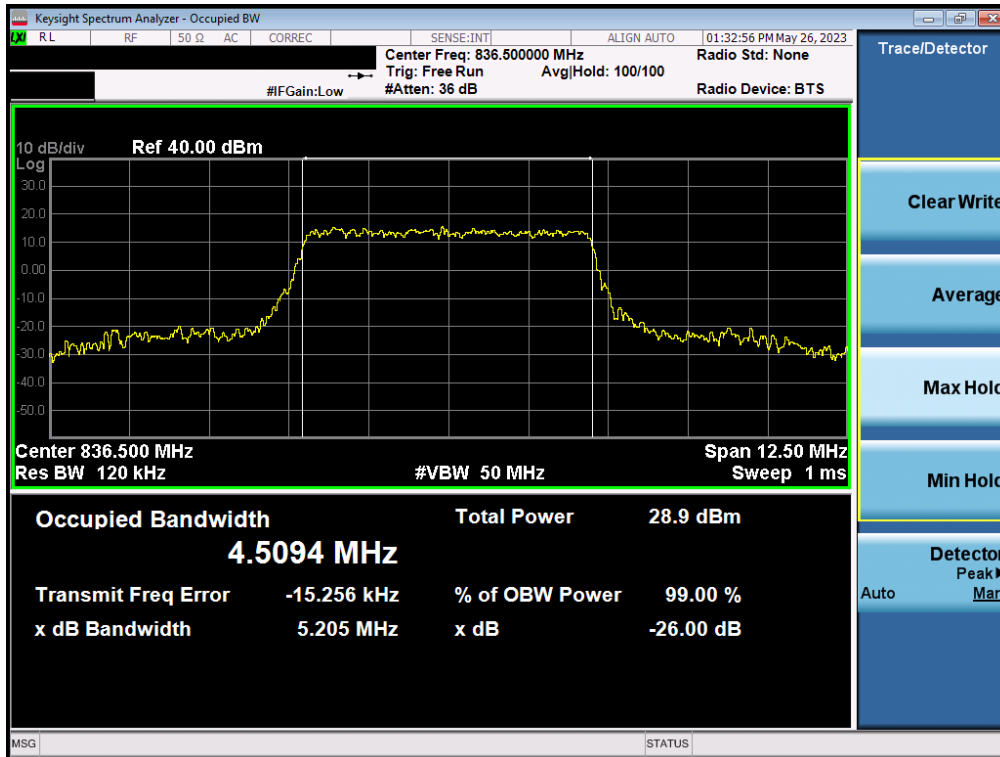


Plot 7-19. Occupied Bandwidth Plot (NR Band n26/5 - 10MHz 16-QAM - Full RB Configuration)

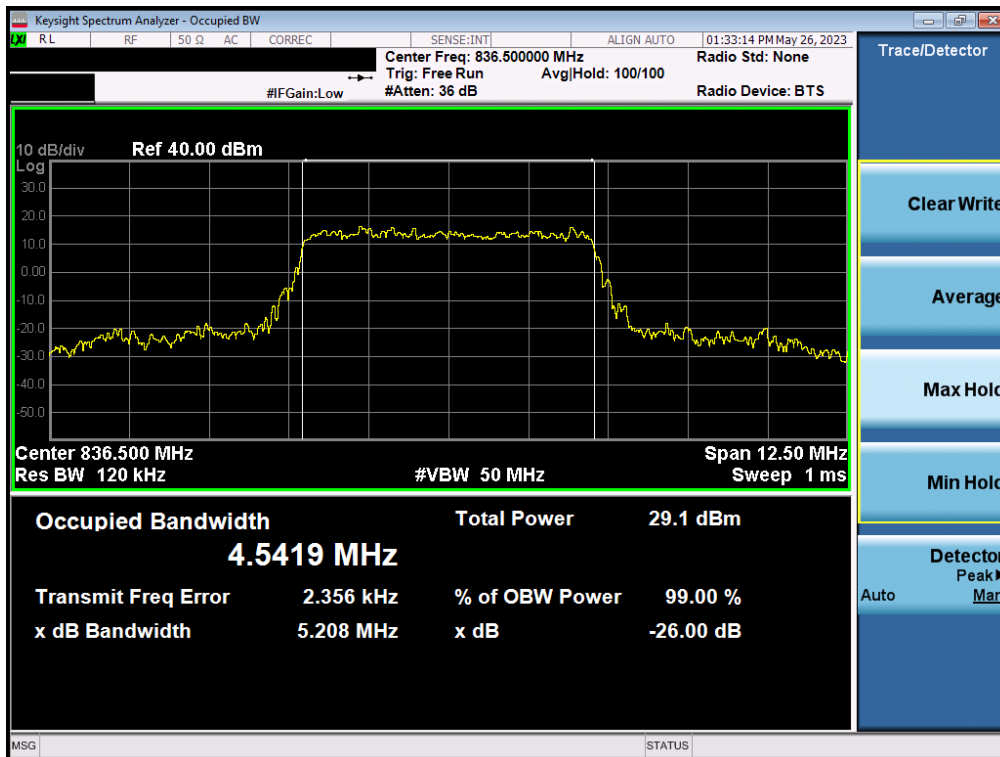


Plot 7-20. Occupied Bandwidth Plot (NR Band n26/5 - 5MHz $\pi/2$ BPSK - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 24 of 74



Plot 7-21. Occupied Bandwidth Plot (NR Band n26/5 - 5MHz QPSK - Full RB Configuration)



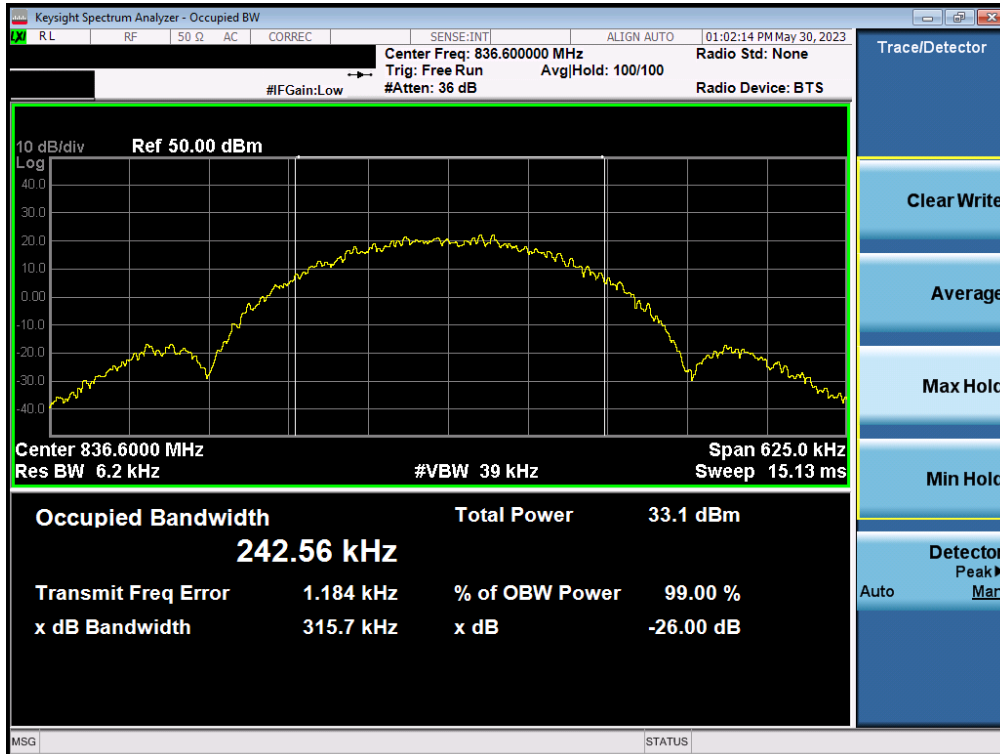
Plot 7-22. Occupied Bandwidth Plot (NR Band n26/5 - 5MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 25 of 74

GPRS Cell



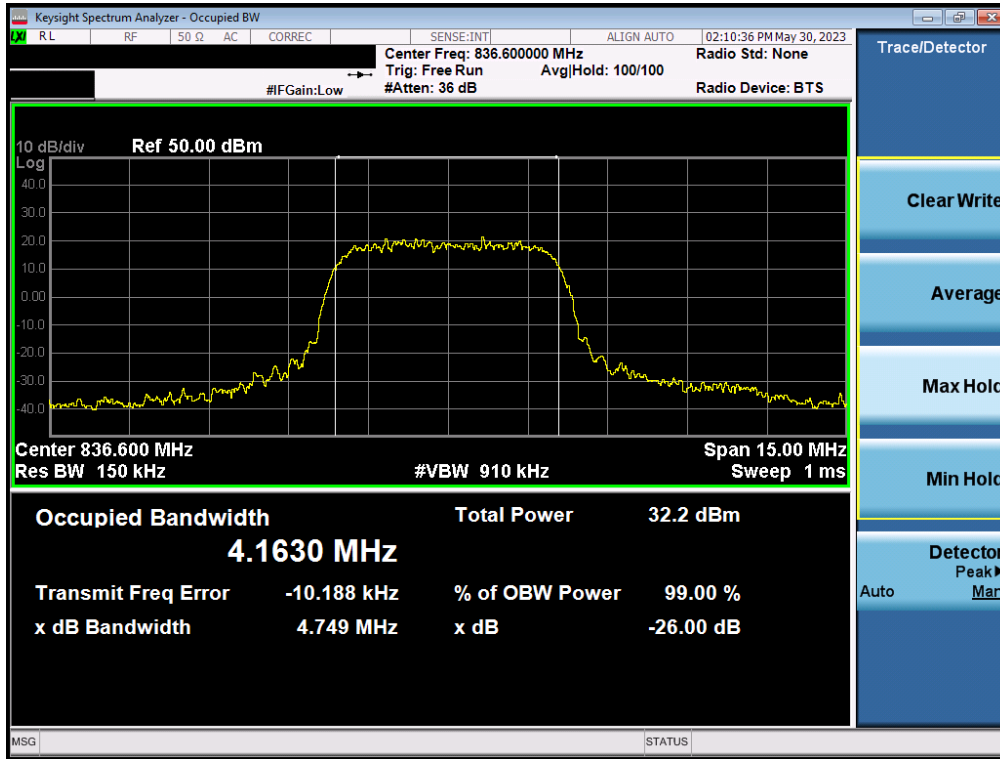
Plot 7-23. Occupied Bandwidth Plot (GPRS, Ch. 190)



Plot 7-24. Occupied Bandwidth Plot (EDGE, Ch. 190)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 26 of 74

WCDMA Cell



Plot 7-25. Occupied Bandwidth Plot (WCDMA, Ch. 4183)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 27 of 74

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

Test Setup

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

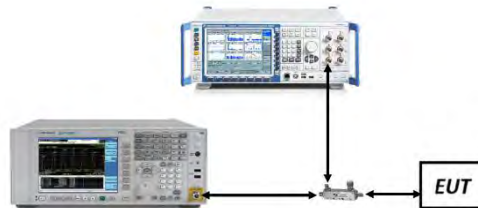


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

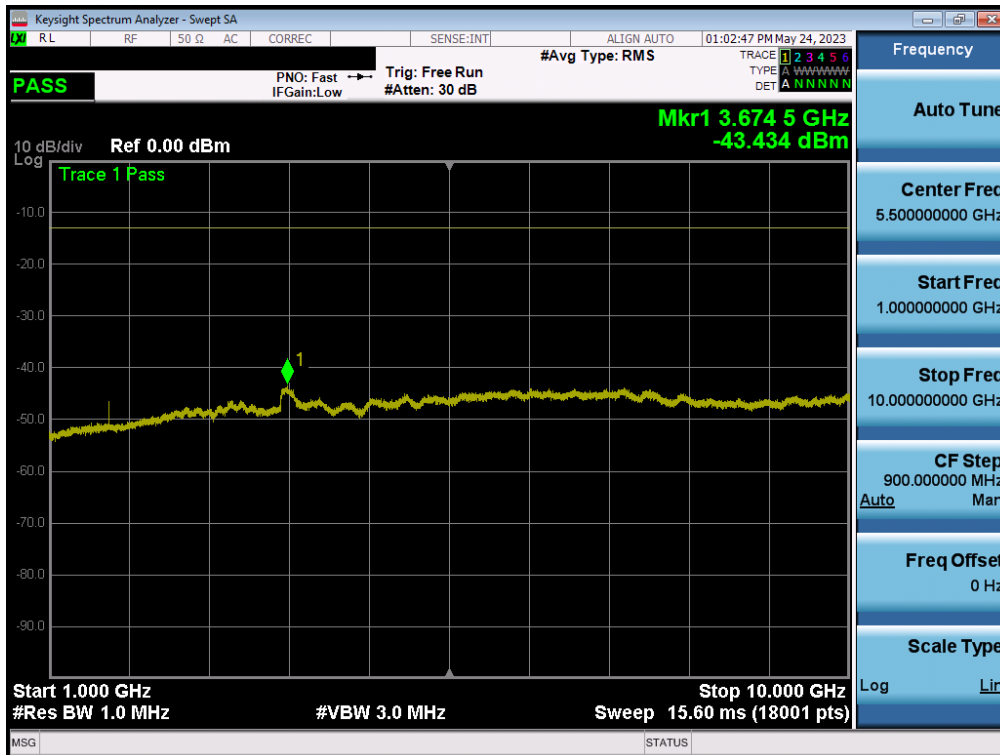
1. Per Part 22 and RSS-132, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. 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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 28 of 74

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
GSM-Cell	250kHz	Low	30.0 - 823.0	-36.70	-13.0	-23.70
		Low	849.0 - 1000.0	-42.93	-13.0	-29.93
		Low	1000.0 - 10000.0	-25.94	-13.0	-12.94
		Mid	30.0 - 824.0	-41.71	-13.0	-28.71
		Mid	849.0 - 1000.0	-42.39	-13.0	-29.39
		Mid	1000.0 - 10000.0	-25.47	-13.0	-12.47
		High	30.0 - 824.0	-42.26	-13.0	-29.26
		High	850.0 - 1000.0	-38.21	-13.0	-25.21
		High	1000.0 - 10000.0	-25.62	-13.0	-12.62
WCDMA-Cell	5MHz	Low	30.0 - 823.0	-36.65	-13.0	-23.65
		Low	849.0 - 1000.0	-61.72	-13.0	-48.72
		Low	1000.0 - 10000.0	-43.71	-13.0	-30.71
		Mid	30.0 - 824.0	-56.08	-13.0	-43.08
		Mid	849.0 - 1000.0	-56.73	-13.0	-43.73
		Mid	1000.0 - 10000.0	-43.75	-13.0	-30.75
		High	30.0 - 824.0	-61.42	-13.0	-48.42
		High	850.0 - 1000.0	-32.25	-13.0	-19.25
		High	1000.0 - 10000.0	-43.88	-13.0	-30.88
LTE-B26-5	10MHz	Low	30.0 - 823.0	-58.95	-13.0	-45.95
		Low	849.0 - 1000.0	-61.62	-13.0	-48.62
		Low	1000.0 - 10000.0	-43.74	-13.0	-30.74
		Mid	30.0 - 824.0	-61.13	-13.0	-48.13
		Mid	849.0 - 1000.0	-61.71	-13.0	-48.71
		Mid	1000.0 - 10000.0	-43.43	-13.0	-30.43
		High	30.0 - 824.0	-61.26	-13.0	-48.26
		High	850.0 - 1000.0	-44.20	-13.0	-31.20
		High	1000.0 - 10000.0	-43.75	-13.0	-30.75
ULCA LTE-B5	10+10MHz	Low	30.0 - 824.0	-56.95	-13.0	-43.95
		Low	849.0 - 1000.0	-61.59	-13.0	-48.59
		Low	1000.0 - 10000.0	-43.87	-13.0	-30.87
		Mid	30.0 - 824.0	-58.22	-13.0	-45.22
		Mid	849.0 - 1000.0	-57.26	-13.0	-44.26
		Mid	1000.0 - 10000.0	-43.60	-13.0	-30.60
		High	30.0 - 824.0	-59.03	-13.0	-46.03
		High	849.0 - 1000.0	-57.49	-13.0	-44.49
		High	1000.0 - 10000.0	-43.54	-13.0	-30.53
NR-n26/5	20MHz	Low	30.0 - 824.0	-57.59	-13.0	-44.59
		Low	849.0 - 1000.0	-58.97	-13.0	-45.97
		Low	1000.0 - 10000.0	-43.86	-13.0	-30.86
		Mid	30.0 - 824.0	-60.97	-13.0	-47.97
		Mid	849.0 - 1000.0	-55.96	-13.0	-42.95
		Mid	1000.0 - 10000.0	-43.42	-13.0	-30.42
		High	30.0 - 824.0	-60.72	-13.0	-47.72
		High	849.0 - 1000.0	-60.72	-13.0	-47.72
		High	1000.0 - 10000.0	-43.68	-13.0	-30.68

Table 7-4. Conducted Spurious Emission Results

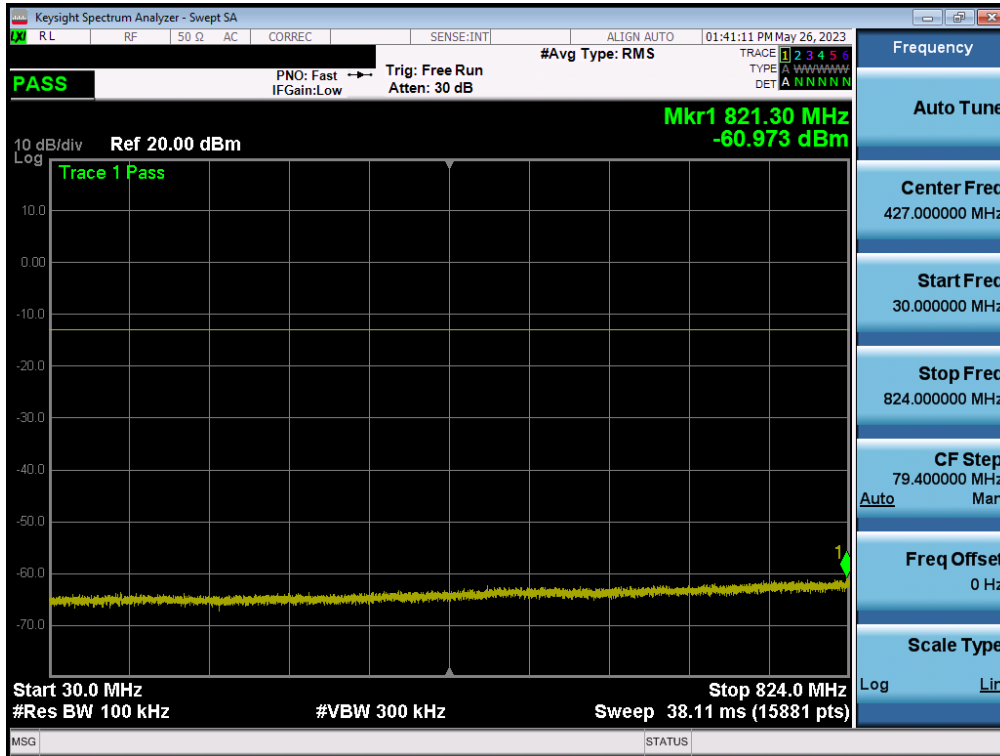
FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 29 of 74



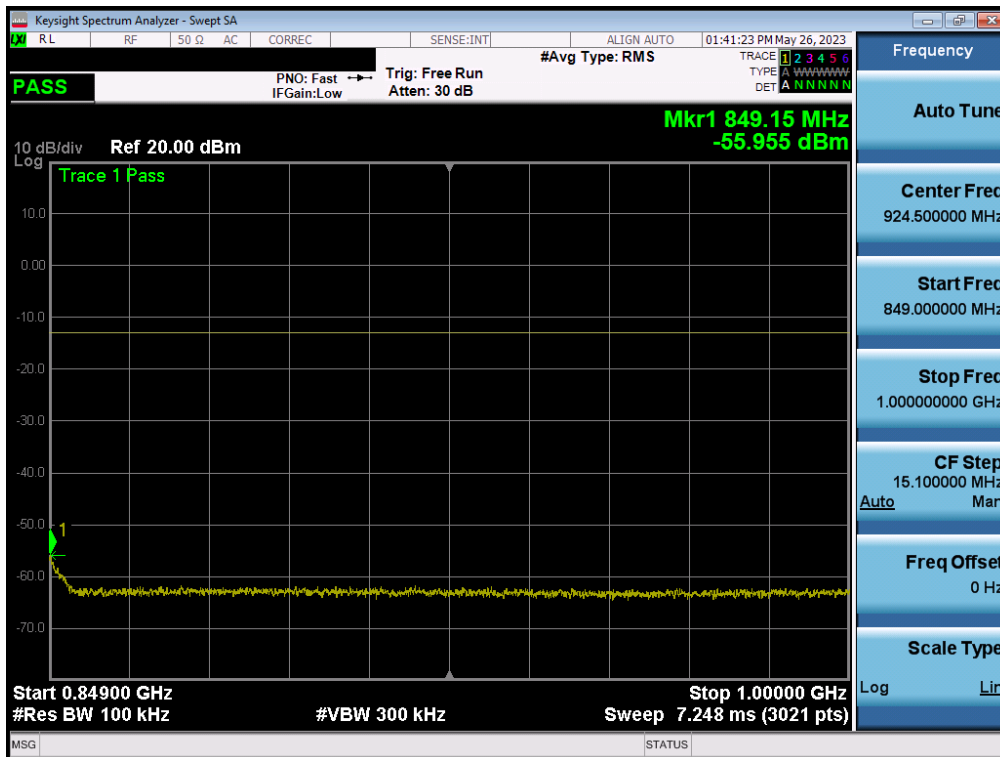
Plot 7-28. Conducted Spurious Plot (LTE Band 26/5 – 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 31 of 74

NR Band n26/5



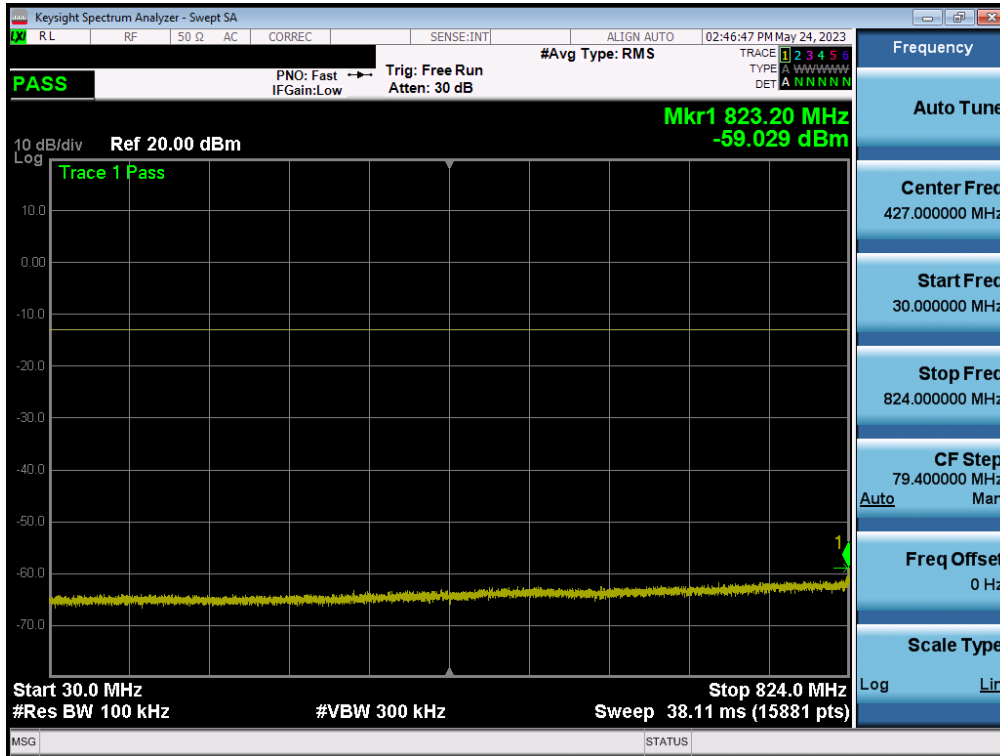
Plot 7-29. Conducted Spurious Plot (NR Band n26/5 – 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



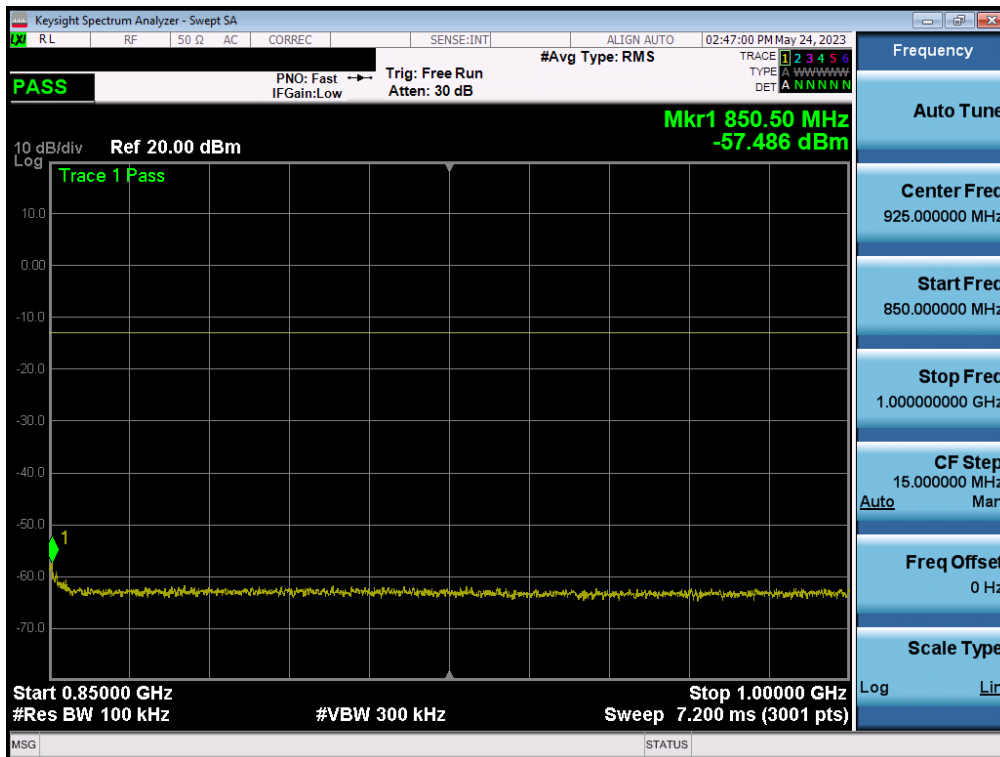
Plot 7-30. Conducted Spurious Plot (NR Band n26/5 – 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 32 of 74

ULCA LTE Band 5



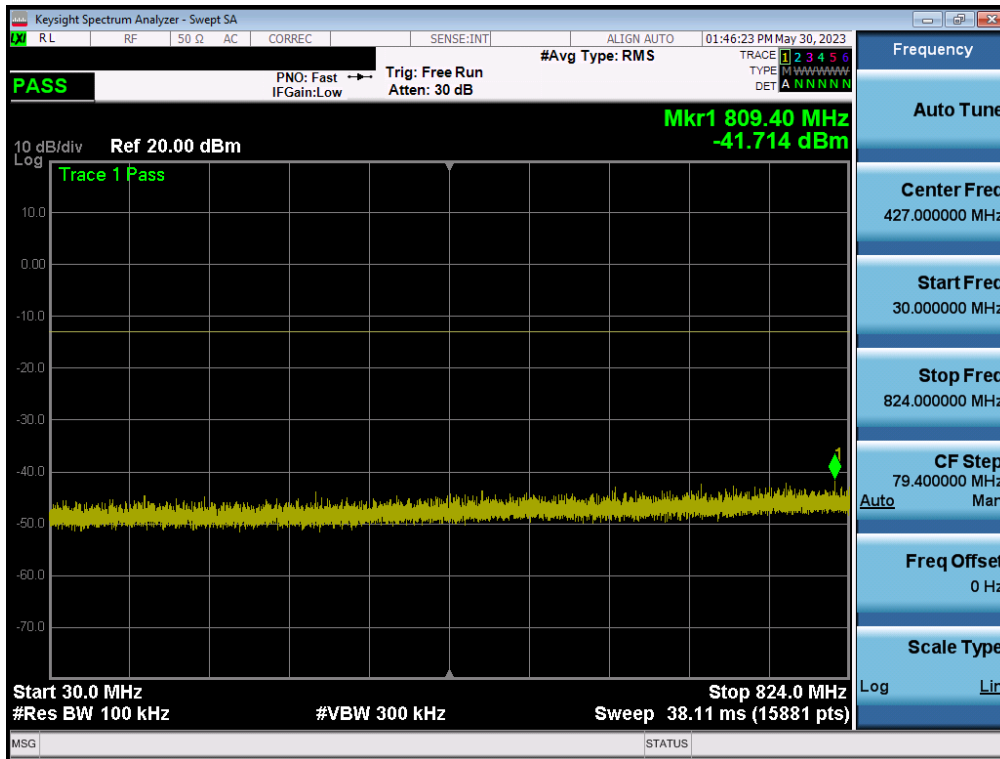
Plot 7-32. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK – PCC 1/0 SCC 1/49 - High Channel)



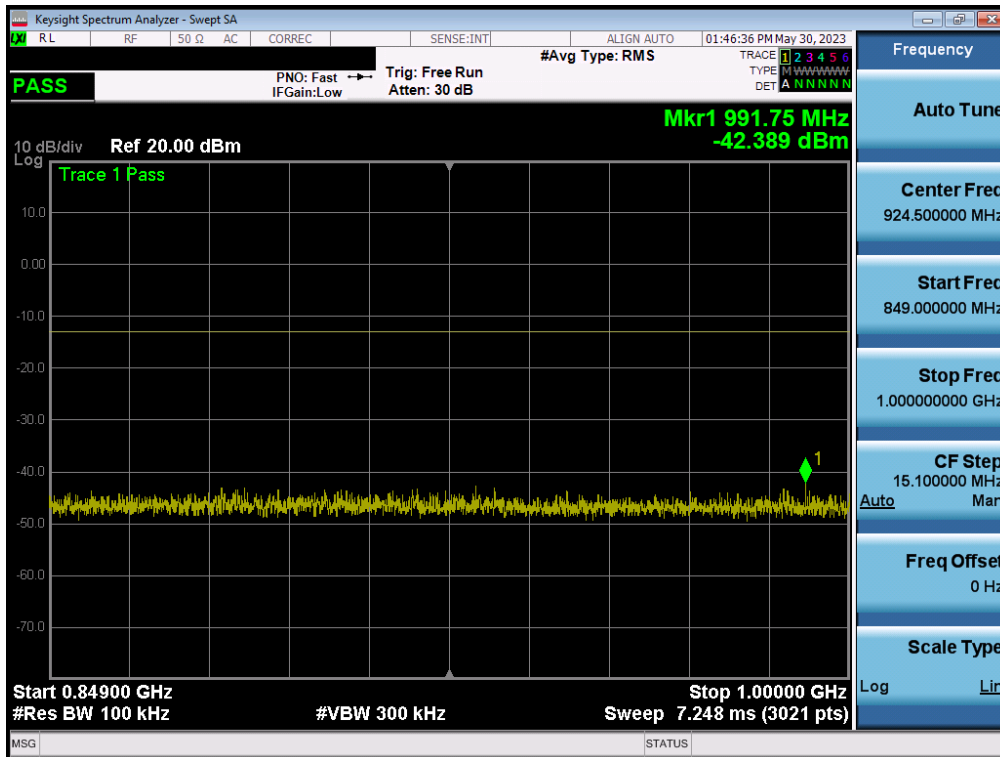
Plot 7-33. Conducted Spurious Plot (ULCA LTE Band 5 – (10 + 10)MHz QPSK – PCC 1/0 SCC 1/49 - High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 34 of 74

GSM/GPRS Cell

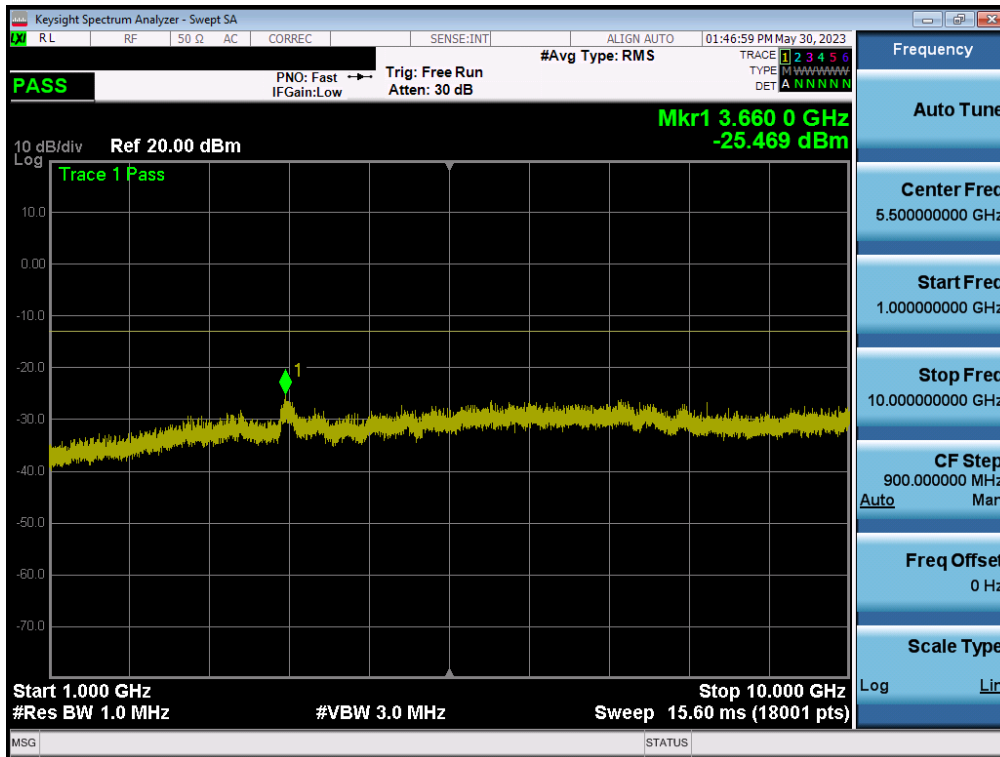


Plot 7-31. Conducted Spurious Plot (GPRS Ch. 190)



Plot 7-31. Conducted Spurious Plot (GPRS Ch. 190)

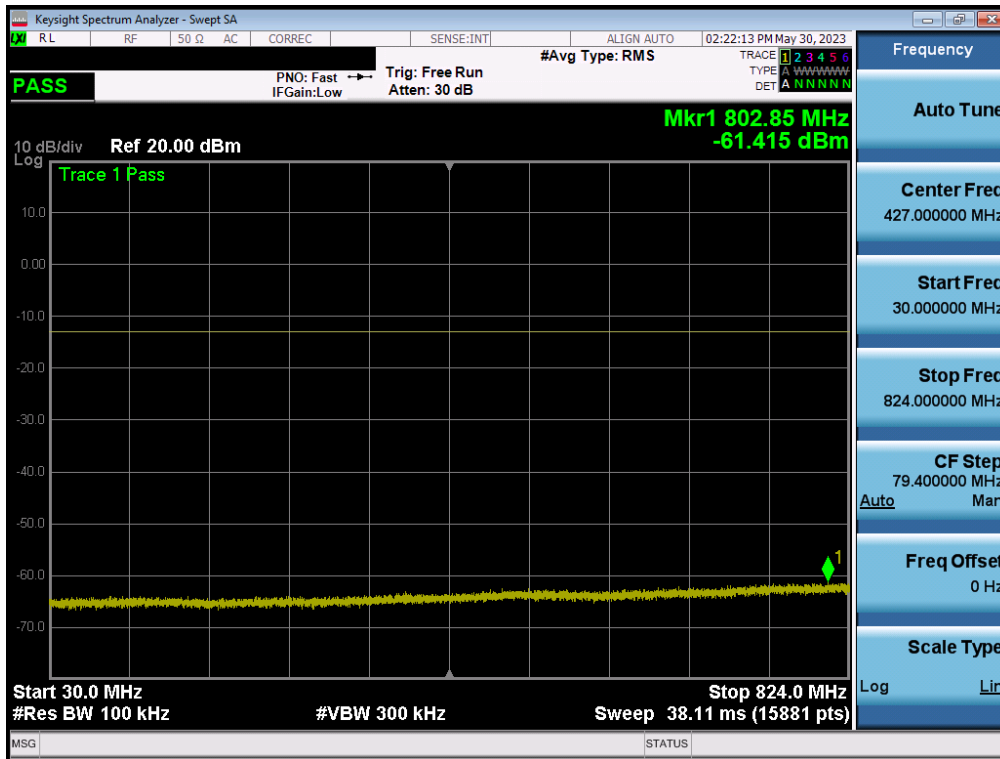
FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 36 of 74



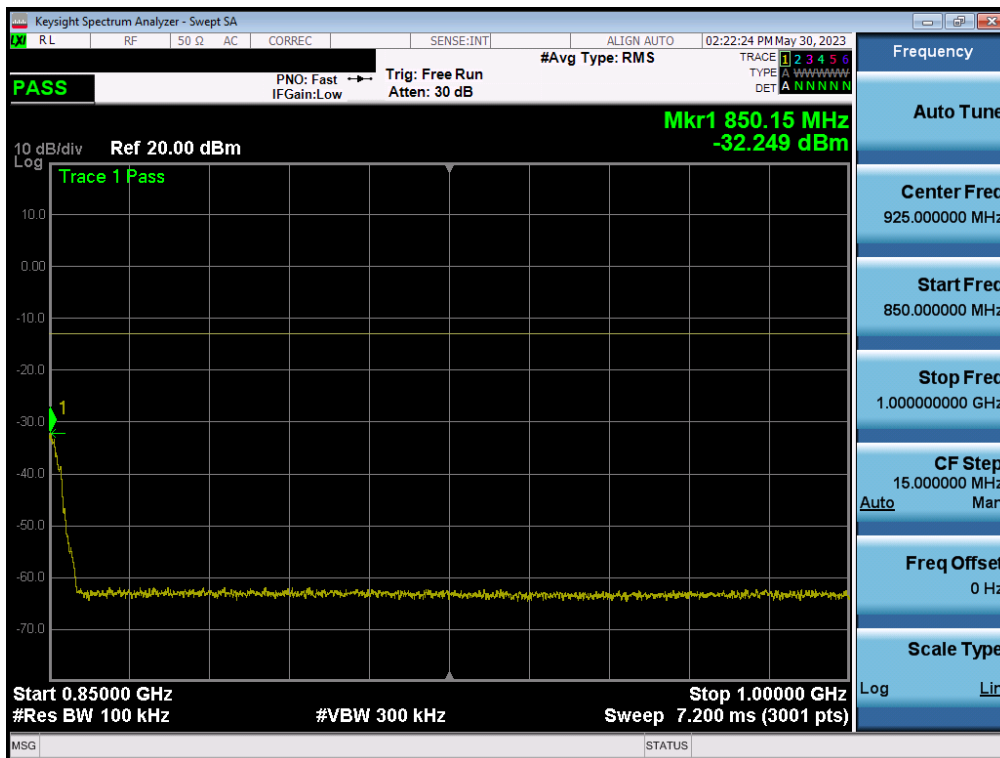
Plot 7-31. Conducted Spurious Plot (GPRS Ch. 190)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 37 of 74

WCDMA Cell

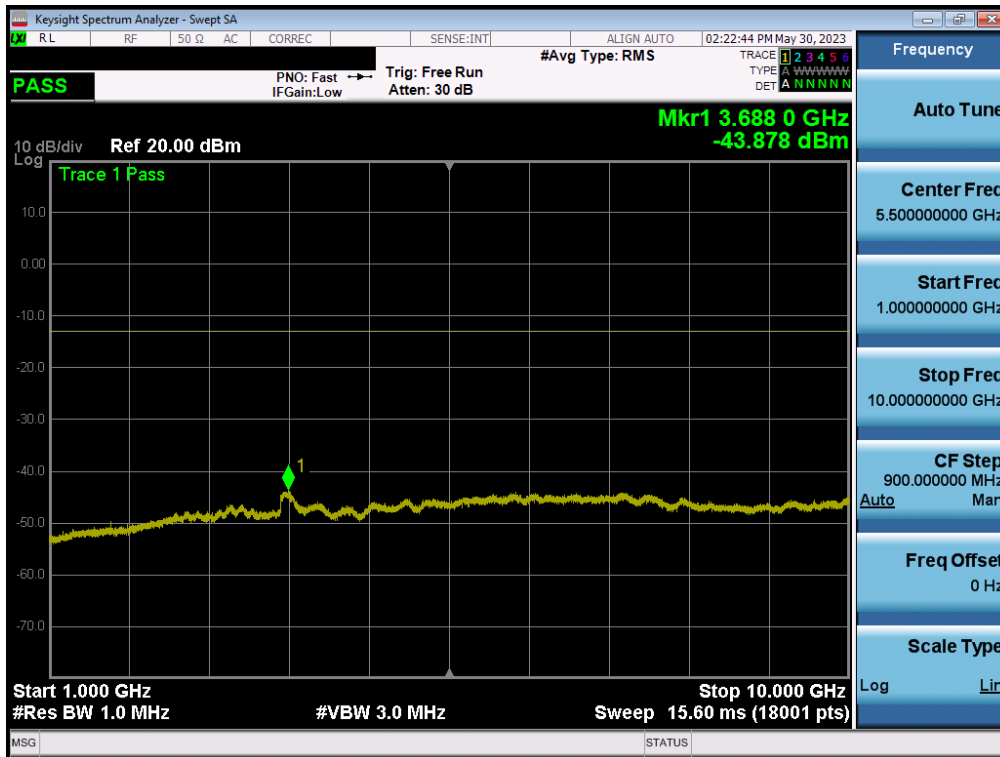


Plot 7-31. Conducted Spurious Plot (WCDMA Ch. 4233)



Plot 7-31. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 38 of 74



Plot 7-31. Conducted Spurious Plot (WCDMA Ch. 4233)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 39 of 74

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 $43 + 10 \log_{10}(P_{[Watts]})$, 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.

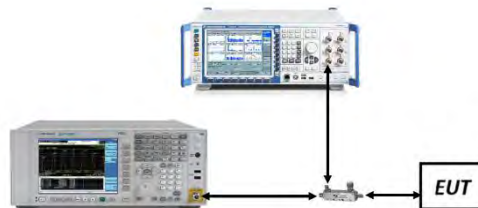


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 40 of 74

Test Notes

1. Per 22.917(b) and RSS-132(5.5), 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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 41 of 74

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
GSM-Cell	250kHz	Low	Band Edge	-16.45	-13	-3.45
		High	Band Edge	-16.46	-13	-3.46

Table 7-5. Band Edge Test Results – GSM/GPRS

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
WCDMA-Cell	5MHz	Low	Band Edge	-23.22	-13	-10.22
		High	Band Edge	-21.73	-13	-8.73

Table 7-6. Band Edge Test Results – WCDMA

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26-5	15 MHz (Band 26 only)	Low	Band Edge	-29.85	-13	-16.85
		High	Band Edge	-28.83	-13	-15.83
	10 MHz	Low	Band Edge	-29.45	-13	-16.45
		High	Band Edge	-28.86	-13	-15.86
	5 MHz	Low	Band Edge	-21.64	-13	-8.64
		High	Band Edge	-21.79	-13	-8.79
	3 MHz	Low	Band Edge	-16.68	-13	-3.68
		High	Band Edge	-18.33	-13	-5.33
	1.4 MHz	Low	Band Edge	-16.18	-13	-3.18
		High	Band Edge	-16.65	-13	-3.65

Table 7-7. Band Edge Test Results – LTE B26/5

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
ULCA LTE-B5	10 MHz + 10 MHz	Low	Band Edge	-31.02	-13	-18.02
		High	Band Edge	-29.99	-13	-16.99

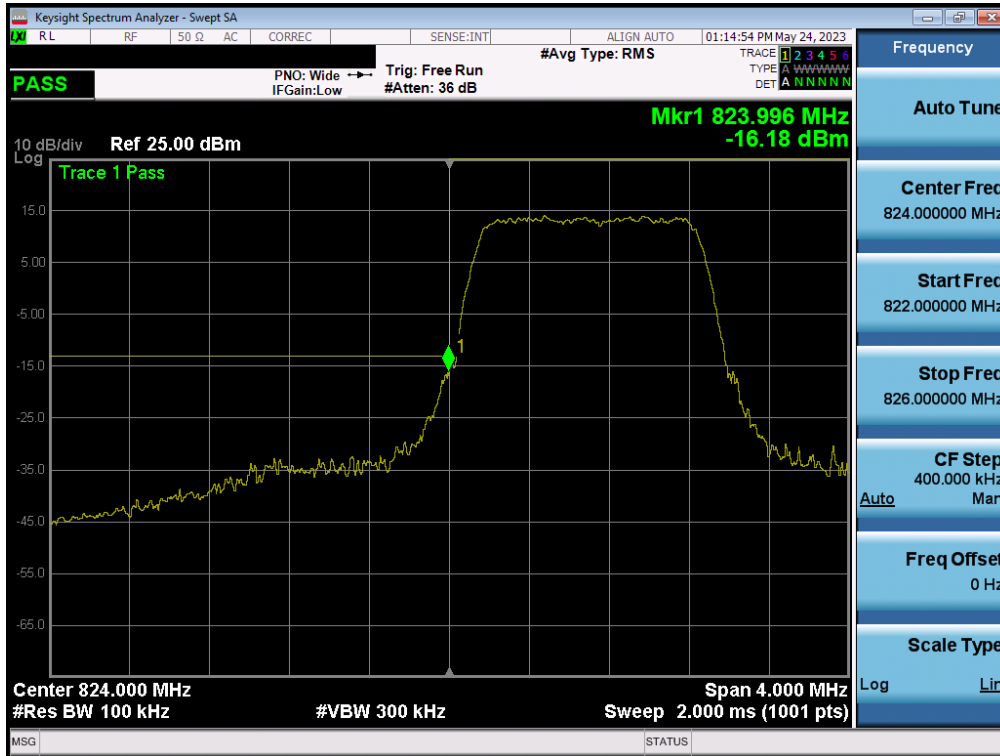
Table 7-8. Band Edge Test Results – ULCA LTE B5

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n26/5	20 MHz	Low	Band Edge	-27.17	-13	-14.17
		High	Band Edge	-26.42	-13	-13.42
	15 MHz	Low	Band Edge	-27.43	-13	-14.43
		High	Band Edge	-28.58	-13	-15.58
	10 MHz	Low	Band Edge	-26.52	-13	-13.52
		High	Band Edge	-29.07	-13	-16.07
	5 MHz	Low	Band Edge	-21.78	-13	-8.78
		High	Band Edge	-21.31	-13	-8.31

Table 7-9. Band Edge Test Results – NR n26/5

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 42 of 74

LTE Band 26/5



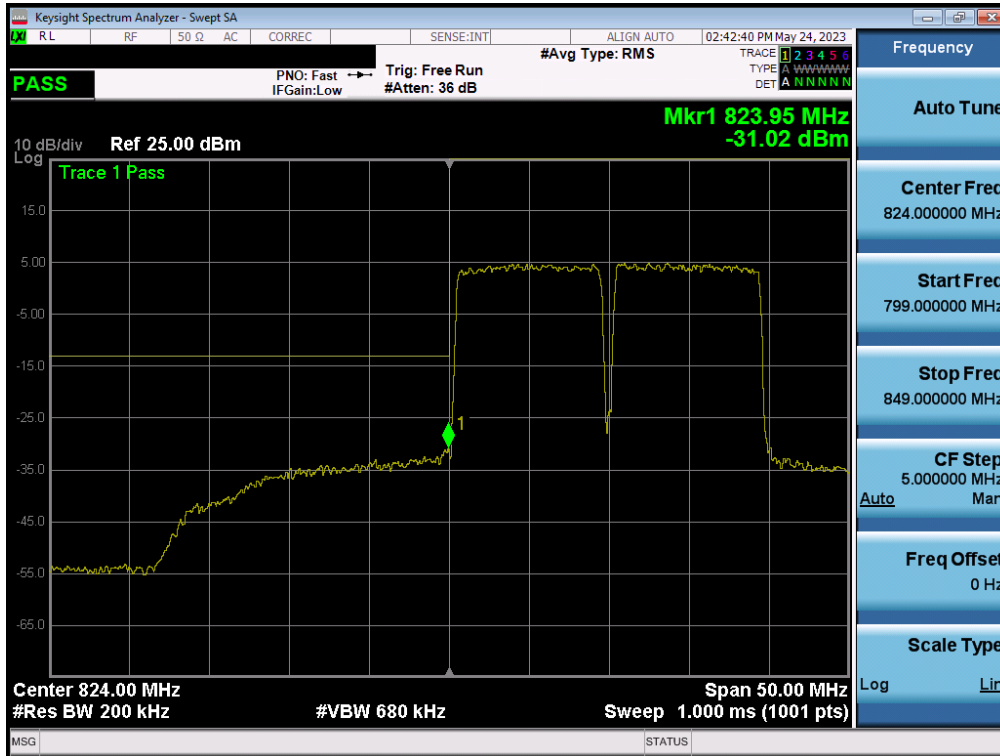
Plot 7-35. Lower Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB Configuration)



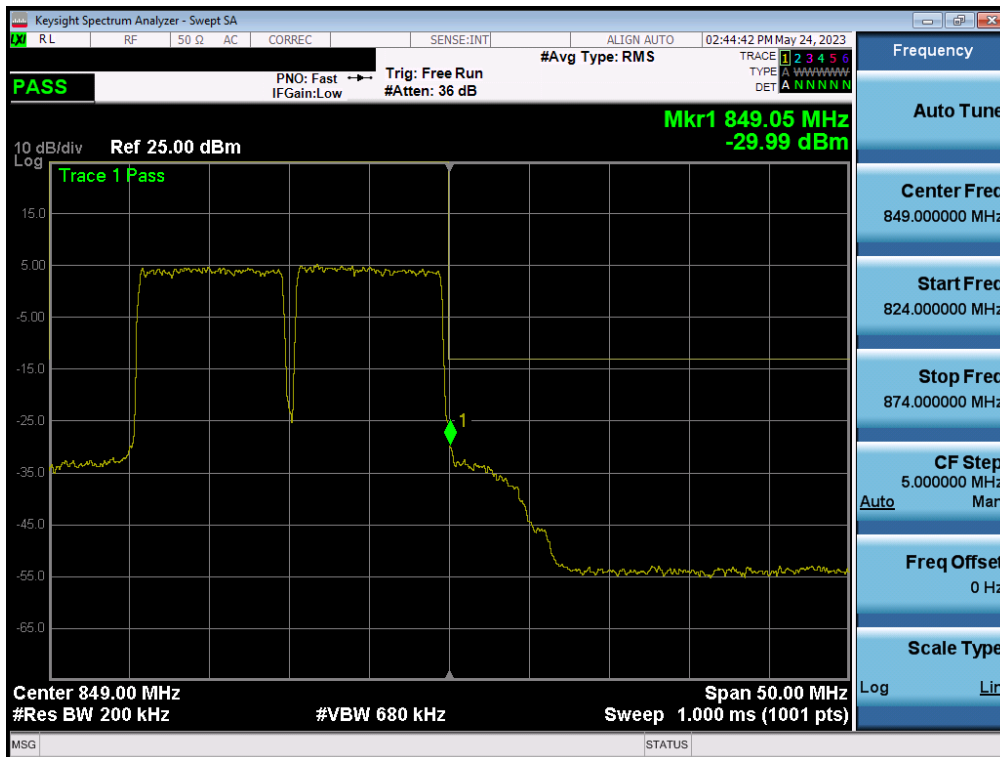
Plot 7-36. Upper Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 43 of 74

ULCA LTE Band 5



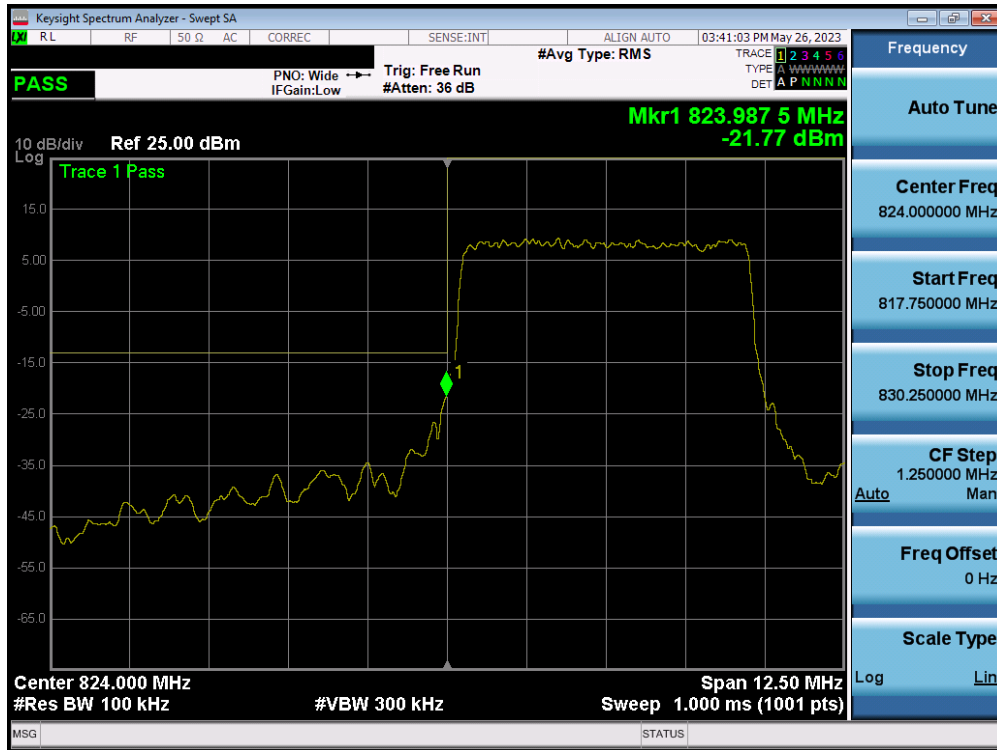
Plot 7-37. Lower Band Edge Plot (ULCA LTE Band 5 – 10MHz + 10MHz QPSK – Full RB Configuration)



Plot 7-38. Upper Band Edge Plot (ULCA LTE Band 5 – 10MHz + 10MHz QPSK – Full RB Configuration)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 44 of 74

NR Band n26/5



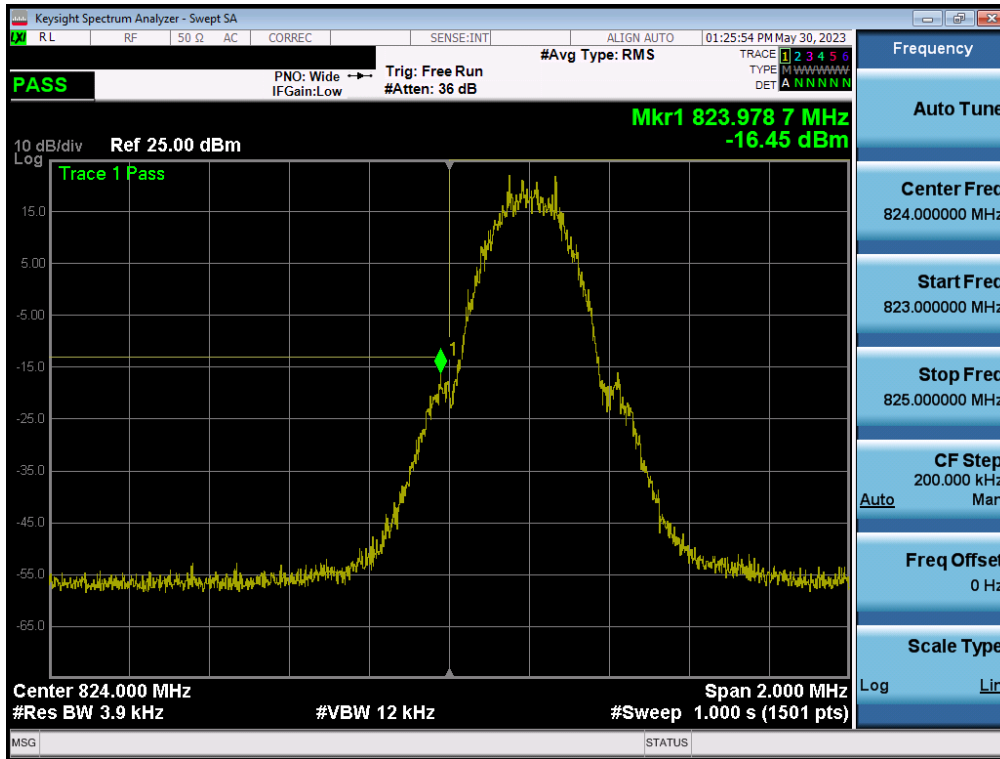
Plot 7-39. Lower Band Edge Plot (NR Band n26/5 – 5.0MHz - Full RB)



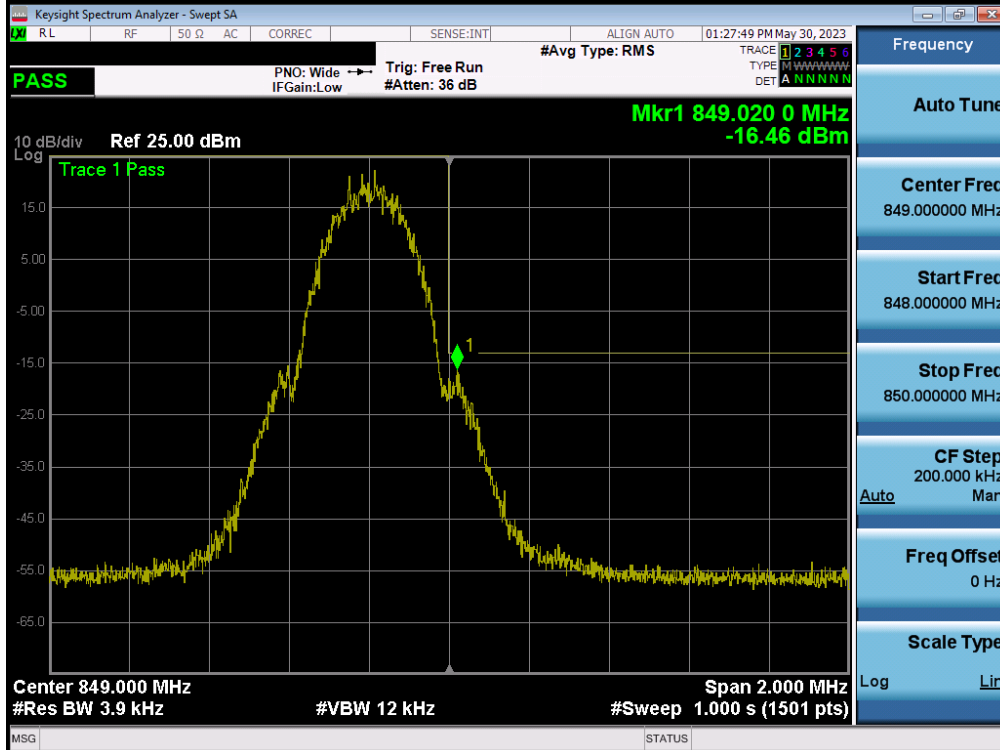
Plot 7-40. Upper Band Edge Plot (NR Band n26/5 – 5.0MHz - Full RB)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 45 of 74

GSM/GPRS Cell



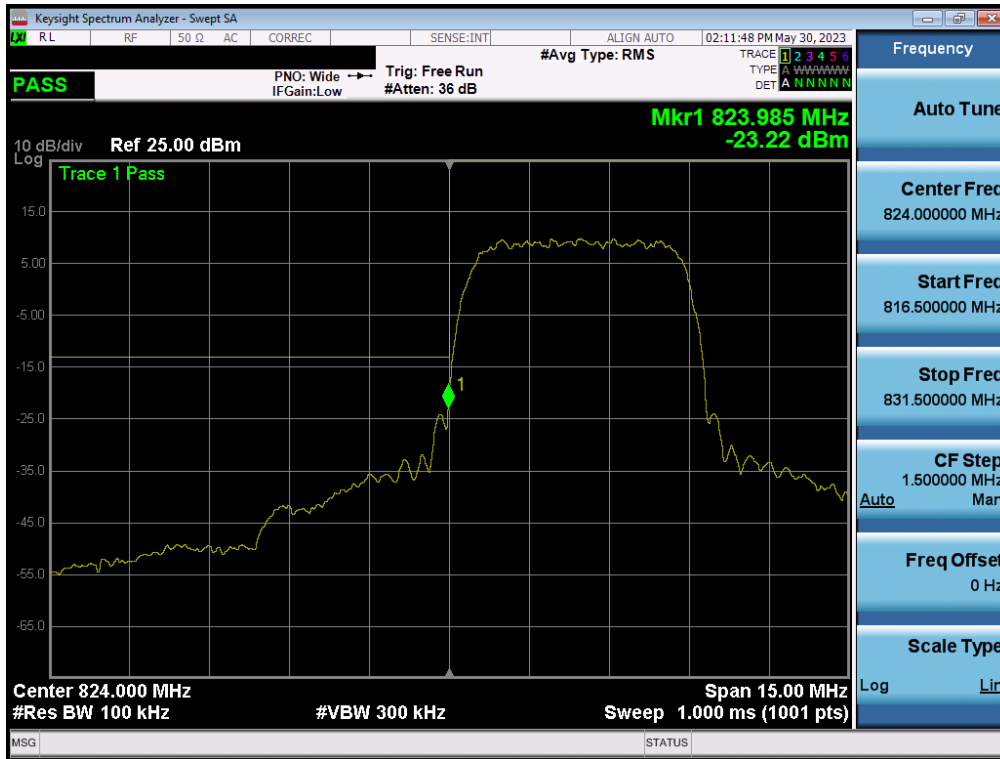
Plot 7-41. Lower Band Edge Plot (GPRS Cell – Ch. 128)



Plot 7-42. Upper Band Edge Plot (GPRS Cell – Ch. 251)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 46 of 74

WCDMA Cell



Plot 7-43. Lower Band Edge Plot (WCDMA Cell – Ch. 4132)



Plot 7-44. Upper Band Edge Plot (WCDMA Cell – Ch. 4233)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 47 of 74

7.6 Radiated Power (ERP)

Test Overview

Effective Radiated Power (ERP) measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4

Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation. For signals with burst transmission, the signal analyzer’s “time domain power” measurement capability is used.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”. Trigger is set to enable triggering only on full power bursts with the sweep time set less than or equal to the transmission burst duration.
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation. For signals with burst transmission, the “gating” function was enabled to ensure that measurements are performed during times in which the transmitter is operating at its maximum power.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize.

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 48 of 74

Test Setup

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

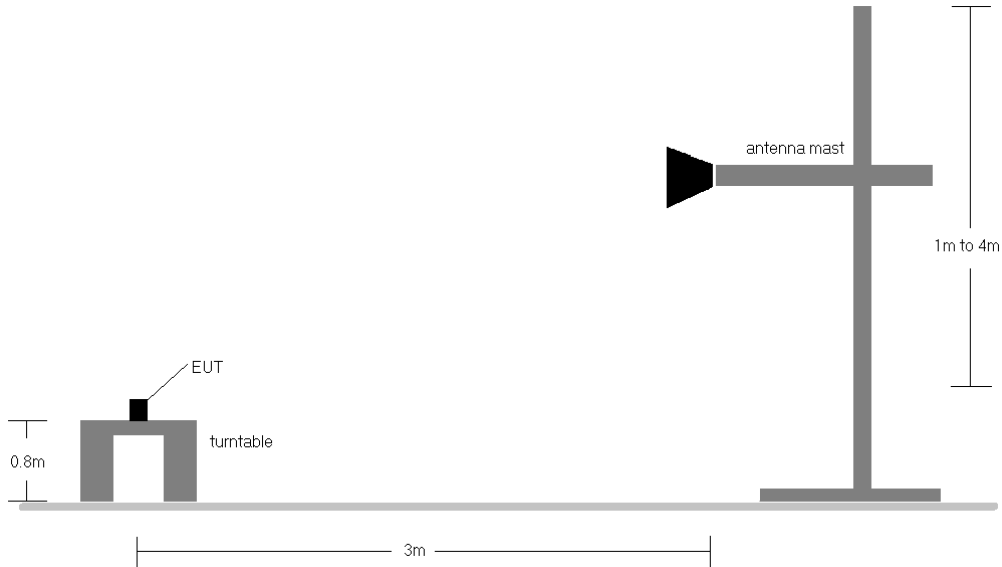


Figure 7-5. Radiated Test Setup < 1GHz

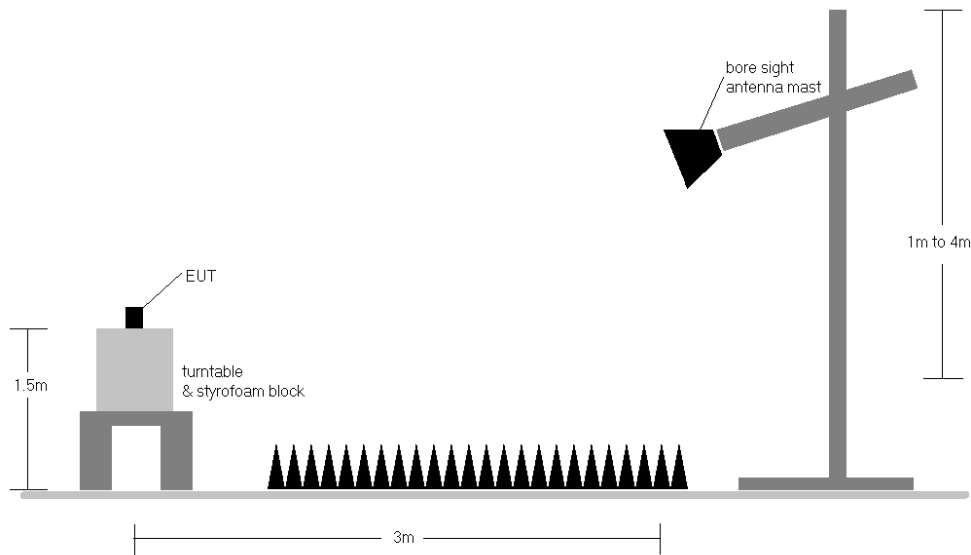


Figure 7-6. Radiated Test Setup > 1GHz

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 49 of 74

Test Notes

- 1) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers are reported in GPRS mode while transmitting with one slot active.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 4) This unit was tested with its standard battery.
- 5) 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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 50 of 74

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
15MHz (Band 26 only)	QPSK	831.5	V	144	286	1.29	1 / 0	19.77	18.91	0.078	38.45	-19.54	21.06	0.128	40.61	-19.55
	QPSK	836.5	V	148	275	1.31	1 / 37	19.46	18.62	0.073	38.45	-19.83	20.77	0.119	40.61	-19.84
	QPSK	841.5	V	148	281	1.33	1 / 0	19.40	18.58	0.072	38.45	-19.87	20.73	0.118	40.61	-19.87
	16-QAM	831.5	V	144	286	1.29	1 / 0	18.84	17.98	0.063	38.45	-20.47	20.13	0.103	40.61	-20.48
10 MHz	QPSK	829.0	V	144	286	1.27	1 / 49	19.93	19.05	0.080	38.45	-19.40	21.20	0.132	40.61	-19.41
	QPSK	836.5	V	148	275	1.31	1 / 49	19.63	18.79	0.076	38.45	-19.66	20.94	0.124	40.61	-19.67
	QPSK	844.0	V	148	281	1.35	1 / 25	19.49	18.69	0.074	38.45	-19.76	20.84	0.121	40.61	-19.77
	16-QAM	829.0	V	144	286	1.27	1 / 49	18.98	18.10	0.065	38.45	-20.35	20.25	0.106	40.61	-20.36
5 MHz	QPSK	826.5	V	144	286	1.26	1 / 12	19.88	18.99	0.079	38.45	-19.46	21.14	0.130	40.61	-19.47
	QPSK	836.5	V	148	275	1.31	1 / 24	19.64	18.81	0.076	38.45	-19.65	20.96	0.125	40.61	-19.65
	QPSK	846.5	V	148	281	1.36	1 / 24	19.42	18.62	0.073	38.45	-19.83	20.77	0.119	40.61	-19.83
	16-QAM	826.5	V	144	286	1.26	1 / 24	19.07	18.18	0.068	38.45	-20.27	20.33	0.108	40.61	-20.28
3 MHz	QPSK	825.5	V	144	286	1.26	1 / 0	19.89	19.00	0.079	38.45	-19.45	21.15	0.130	40.61	-19.46
	QPSK	836.5	V	148	275	1.31	1 / 0	19.63	18.79	0.076	38.45	-19.66	20.94	0.124	40.61	-19.67
	QPSK	847.5	V	148	281	1.36	1 / 7	19.47	18.69	0.074	38.45	-19.76	20.84	0.121	40.61	-19.77
	16-QAM	825.5	V	144	286	1.26	1 / 0	19.03	18.14	0.065	38.45	-20.31	20.29	0.107	40.61	-20.32
1.4 MHz	QPSK	824.7	V	144	286	1.25	1 / 5	19.86	18.97	0.079	38.45	-19.48	21.12	0.129	40.61	-19.49
	QPSK	836.5	V	148	275	1.31	1 / 3	19.60	18.76	0.075	38.45	-19.69	20.91	0.123	40.61	-19.70
	QPSK	848.3	V	148	281	1.37	1 / 0	19.50	18.72	0.074	38.45	-19.73	20.87	0.122	40.61	-19.74
	16-QAM	824.7	V	144	286	1.25	1 / 3	18.99	18.09	0.064	38.45	-20.36	20.24	0.106	40.61	-20.36
15 MHz	QPSK (Opposite Pol.)	831.5	H	112	290	1.29	1 / 37	19.32	18.46	0.070	38.45	-19.99	20.61	0.115	40.61	-20.00
	QPSK (WCP)	831.5	V	160	265	1.29	1 / 0	16.93	16.07	0.040	38.45	-22.38	18.22	0.066	40.61	-22.39

Table 7-10. ERP Data (LTE Band 26/5)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	834.0	V	147	281	1.30	1 / 1	20.36	19.51	0.089	38.45	-18.94	21.66	0.146	40.61	-18.95
	π/2 BPSK	836.5	V	144	278	1.31	1 / 53	19.32	18.48	0.070	38.45	-19.97	20.63	0.116	40.61	-19.98
	π/2 BPSK	839.0	V	144	279	1.32	1 / 53	19.25	18.42	0.070	38.45	-20.03	20.57	0.114	40.61	-20.03
	QPSK	834.0	V	147	281	1.30	1 / 1	20.37	19.52	0.090	38.45	-18.93	21.67	0.147	40.61	-18.94
	QPSK	836.5	V	144	278	1.31	1 / 53	19.43	18.59	0.072	38.45	-19.86	20.74	0.119	40.61	-19.87
	QPSK	839.0	V	144	279	1.32	1 / 53	19.32	18.49	0.071	38.45	-19.96	20.64	0.116	40.61	-19.96
15 MHz	16-QAM	834.0	V	147	281	1.30	1 / 1	19.38	18.53	0.071	38.45	-19.92	20.68	0.117	40.61	-19.93
	π/2 BPSK	831.5	V	147	281	1.29	1 / 39	20.40	19.53	0.090	38.45	-18.92	21.68	0.147	40.61	-18.92
	π/2 BPSK	836.5	V	144	278	1.31	1 / 77	19.33	18.49	0.071	38.45	-19.96	20.64	0.116	40.61	-19.96
	π/2 BPSK	841.5	V	144	279	1.33	1 / 1	19.24	18.43	0.070	38.45	-20.02	20.58	0.114	40.61	-20.03
	QPSK	831.5	V	147	281	1.29	1 / 1	20.29	19.42	0.088	38.45	-19.03	21.57	0.144	40.61	-19.03
	QPSK	836.5	V	144	278	1.31	1 / 77	19.46	18.62	0.073	38.45	-19.83	20.77	0.119	40.61	-19.84
10 MHz	QPSK	841.5	V	144	279	1.33	1 / 1	19.38	18.57	0.072	38.45	-19.89	20.72	0.118	40.61	-19.89
	16-QAM	831.5	V	147	281	1.29	1 / 1	19.37	18.51	0.071	38.45	-19.94	20.66	0.116	40.61	-19.95
	π/2 BPSK	829.0	V	147	281	1.27	1 / 26	20.19	19.31	0.085	38.45	-19.14	21.46	0.140	40.61	-19.14
	π/2 BPSK	836.5	V	144	278	1.31	1 / 50	19.24	18.40	0.069	38.45	-20.05	20.55	0.114	40.61	-20.05
	π/2 BPSK	844.0	V	144	279	1.35	1 / 50	19.16	18.36	0.069	38.45	-20.09	20.51	0.112	40.61	-20.10
	QPSK	829.0	V	147	281	1.27	1 / 26	20.00	19.13	0.082	38.45	-19.32	21.28	0.134	40.61	-19.33
5 MHz	QPSK	836.5	V	144	278	1.31	1 / 26	19.15	18.31	0.068	38.45	-20.14	20.46	0.111	40.61	-20.15
	QPSK	844.0	V	144	279	1.35	1 / 50	19.13	18.32	0.068	38.45	-20.13	20.47	0.111	40.61	-20.13
	16-QAM	829.0	V	147	281	1.27	1 / 26	19.07	18.19	0.066	38.45	-20.26	20.34	0.108	40.61	-20.26
	π/2 BPSK	829.0	V	147	281	1.26	1 / 23	20.25	19.36	0.086	38.45	-19.09	21.51	0.142	40.61	-19.10
	π/2 BPSK	836.5	V	144	278	1.31	1 / 23	19.21	18.37	0.069	38.45	-20.08	20.52	0.113	40.61	-20.09
	π/2 BPSK	844.0	V	144	279	1.36	1 / 1	19.23	18.44	0.070	38.45	-20.01	20.59	0.115	40.61	-20.02
20 MHz	QPSK	829.0	V	147	281	1.26	1 / 12	20.28	19.39	0.087	38.45	-19.06	21.54	0.142	40.61	-19.07
	QPSK	836.5	V	144	278	1.31	1 / 23	19.35	18.51	0.071	38.45	-19.94	20.66	0.117	40.61	-19.94
	QPSK	844.0	V	144	279	1.36	1 / 1	19.26	18.47	0.070	38.45	-19.99	20.62	0.115	40.61	-19.99
	16-QAM	829.0	V	147	281	1.26	1 / 12	19.22	18.33	0.068	38.45	-20.12	20.48	0.112	40.61	-20.13
	QPSK (CP-OFDM)	834.0	V	143	282	1.30	1 / 1	18.82	17.97	0.063	38.45	-20.48	20.12	0.103	40.61	-20.49
	QPSK (Opposite Pol.)	834.0	H	115	289	1.30	1 / 1	19.90	19.05	0.080	38.45	-19.40	21.20	0.132	40.61	-19.41
QPSK (WCP)	834.0	V	152	251	1.30	1 / 1	16.16	15.31	0.034	38.45	-23.14	17.46	0.056	40.61	-23.15	

Table 7-11. ERP Data (NR Band n26/5)

Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.20	GSM850	V	144	261	28.40	1.25	27.50	0.562	38.45	-10.95	29.65	0.923	40.61	-10.96
836.60	GSM850	V	148	259	27.64	1.31	26.80	0.479	38.45	-11.65	28.95	0.785	40.61	-11.66
848.80	GSM850	V	140	258	27.47	1.37	26.69	0.467	38.45	-11.76	28.84	0.765	40.61	-11.77
824.20	GSM850	H	217	279	25.16	1.25	24.26	0.267	38.45	-14.19	26.41	0.438	40.61	-14.20
824.20	EDGE850	V	144	261	23.73	1.25	22.83	0.192	38.45	-15.62	24.98	0.315	40.61	-15.63
824.20	GSM850 (WCP)	V	154	256	24.98	1.25	24.08	0.256	38.45	-14.37	26.23	0.420	40.61	-14.38

Table 7-12. ERP Data (GPRS Cell)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 51 of 74	



Frequency [MHz]	Mode	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
826.40	WCDMA850	V	146	254	20.78	1.26	19.89	0.098	38.45	-18.56	22.04	0.160	40.61	-18.57
836.60	WCDMA850	V	139	261	20.04	1.31	19.20	0.083	38.45	-19.25	21.35	0.136	40.61	-19.26
846.60	WCDMA850	V	144	250	19.64	1.36	18.85	0.077	38.45	-19.60	21.00	0.126	40.61	-19.61
826.40	WCDMA850	H	111	285	19.98	1.26	19.09	0.081	38.45	-19.36	21.24	0.133	40.61	-19.37
826.40	WCDMA850 (WCP)	V	146	257	17.16	1.26	16.27	0.042	38.45	-22.18	18.42	0.070	40.61	-22.19

Table 7-13. ERP Data (WCDMA Cell)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 52 of 74



7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 53 of 74

Test Setup

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

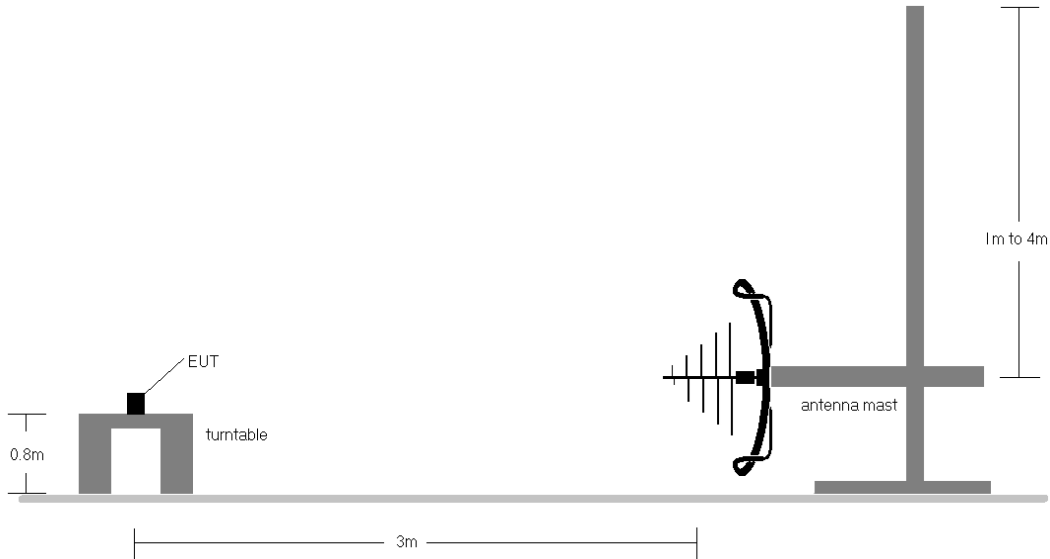


Figure 7-7. Test Instrument & Measurement Setup < 1GHz

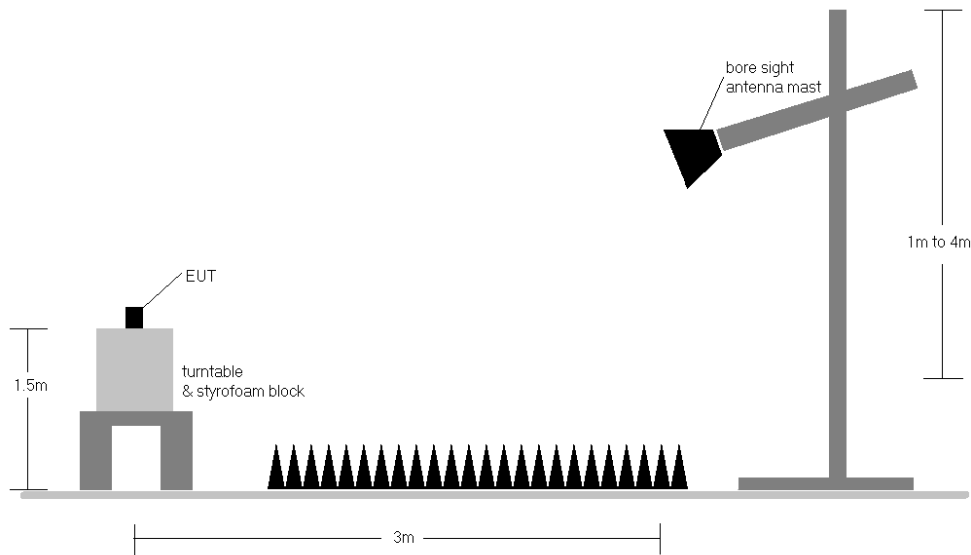


Figure 7-8. Test Instrument & Measurement Setup > 1GHz

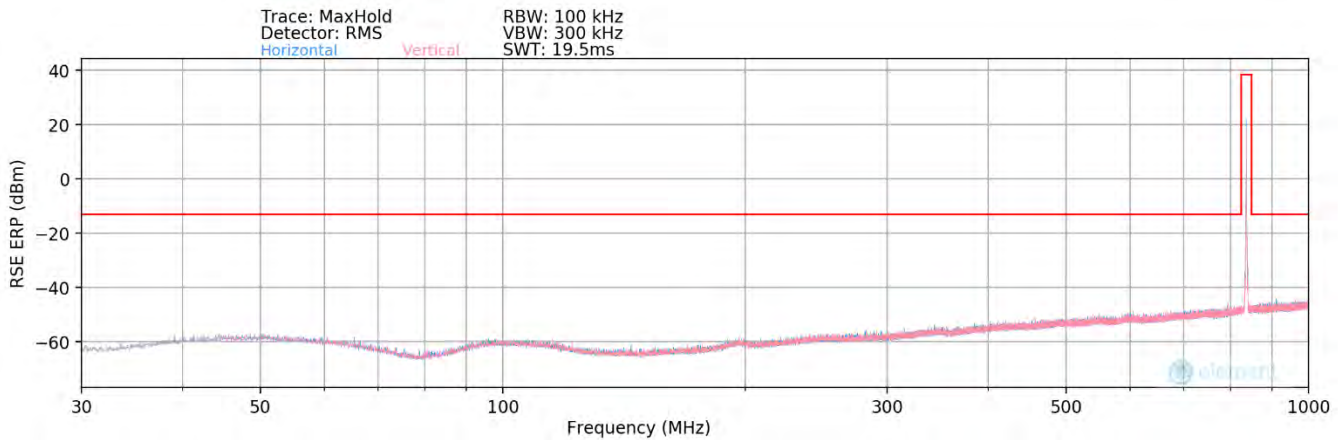
FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 54 of 74

Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) This device employs GSM, GPRS, and EDGE capabilities. The EUT was tested under all configurations and the highest powers are reported in GPRS mode while transmitting with one slot active.
- 3) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 4) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 5) This unit was tested with its standard battery.
- 6) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 7) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 9) ULCA spurious emissions measurements were evaluated for the two contiguous channels 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.
- 10) 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 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 55 of 74

LTE Band 26/5

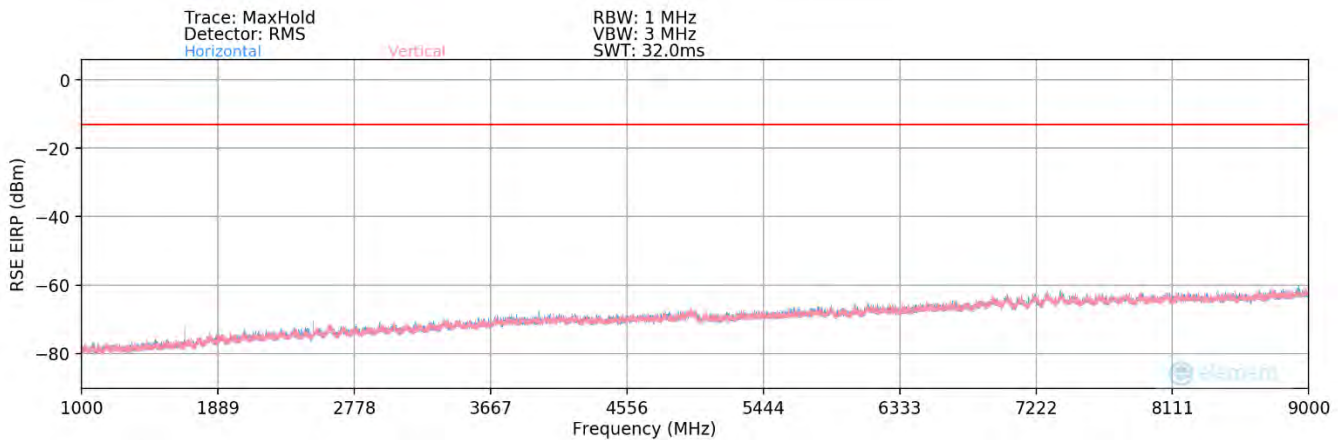


Plot 7-45. Radiated Spurious Plot Below 1GHz (LTE Band 26/5)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1/25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
545.77	H	-	-	-106.04	25.24	26.20	-69.06	-13.00	-56.06
814.32	H	-	-	-105.68	29.35	30.67	-64.58	-13.00	-51.58
878.85	H	-	-	-105.72	30.26	31.54	-63.72	-13.00	-50.72

Table 7-14. Radiated Spurious Data Below 1GHz (LTE Band 26/5)



Plot 7-46. Radiated Spurious Plot Above 1GHz (LTE Band 26/5)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 56 of 74

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	V	375	340	-67.22	-9.08	30.70	-64.55	-13.00	-51.55
2487.00	V	389	355	-70.25	-5.63	31.12	-64.14	-13.00	-51.14
3316.00	V	-	-	-76.63	-2.45	27.92	-67.34	-13.00	-54.34
4145.00	V	-	-	-76.25	-0.50	30.26	-65.00	-13.00	-52.00
4974.00	V	-	-	-76.63	1.03	31.40	-63.86	-13.00	-50.86
5803.00	V	-	-	-77.65	3.07	32.42	-62.84	-13.00	-49.84
6632.00	V	-	-	-78.12	4.53	33.41	-61.85	-13.00	-48.85

Table 7-15. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – Low Channel)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	V	361	327	-67.05	-8.89	31.06	-64.20	-13.00	-51.20
2509.50	V	372	340	-70.95	-5.37	30.68	-64.57	-13.00	-51.57
3346.00	V	-	-	-76.14	-2.19	28.67	-66.58	-13.00	-53.58
4182.50	V	-	-	-76.71	-0.12	30.17	-65.09	-13.00	-52.09
5019.00	V	-	-	-76.61	0.51	30.90	-64.36	-13.00	-51.36
5855.50	V	-	-	-76.72	1.91	32.19	-63.07	-13.00	-50.07
6692.00	V	-	-	-77.05	4.04	33.99	-61.26	-13.00	-48.26

Table 7-16. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – Mid Channel)

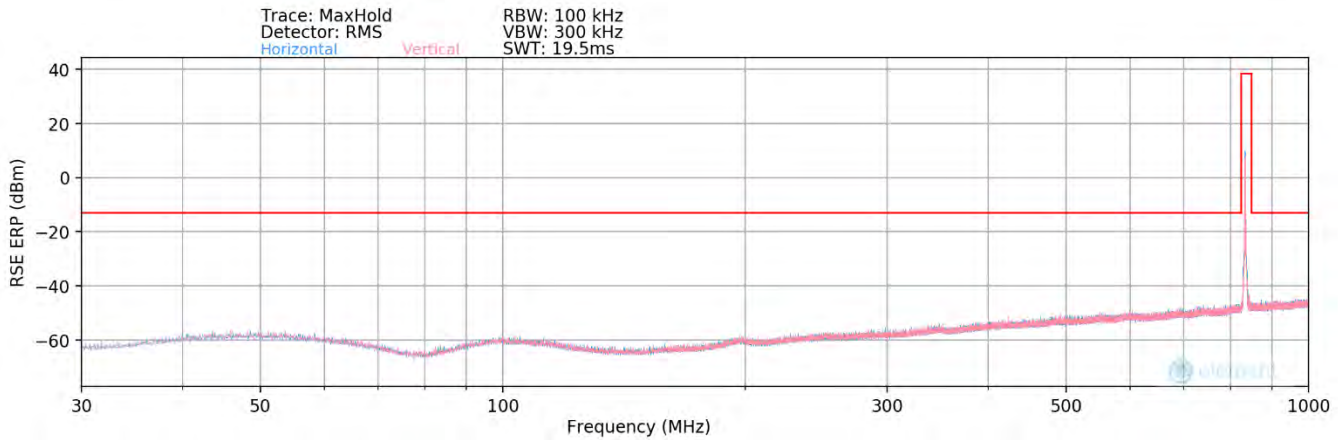
Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	V	363	334	-65.21	-8.69	33.10	-62.16	-13.00	-49.16
2532.00	V	366	349	-69.28	-4.94	32.78	-62.48	-13.00	-49.48
3376.00	V	-	-	-75.83	-1.88	29.29	-65.97	-13.00	-52.97
4220.00	V	-	-	-76.15	-0.52	30.33	-64.93	-13.00	-51.93
5064.00	V	-	-	-76.20	0.91	31.71	-63.54	-13.00	-50.54
5908.00	V	-	-	-76.39	1.55	32.16	-63.09	-13.00	-50.09
6752.00	V	-	-	-76.76	3.58	33.82	-61.44	-13.00	-48.44

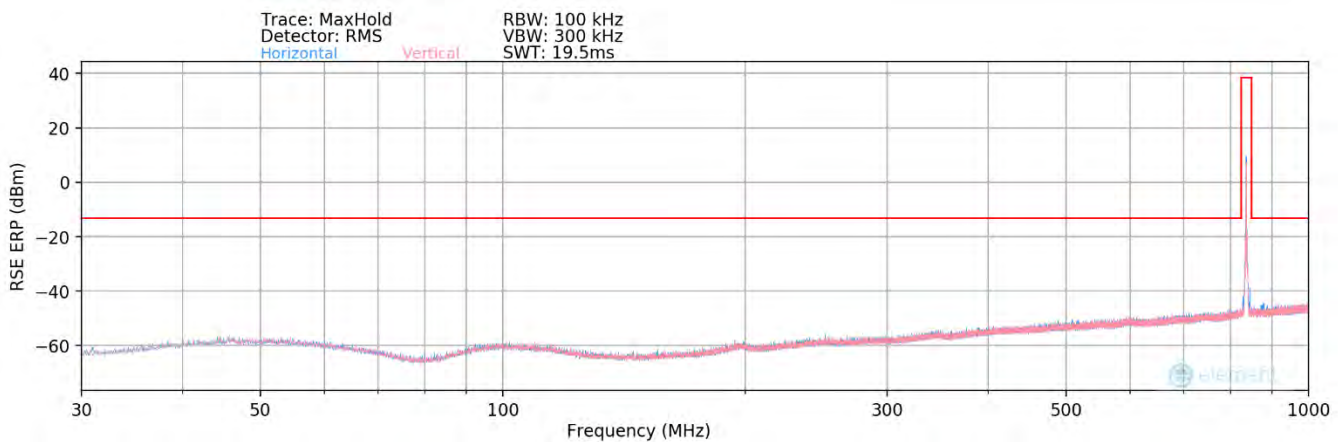
Table 7-17. Radiated Spurious Data Above 1GHz (LTE Band 26/5 – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 57 of 74

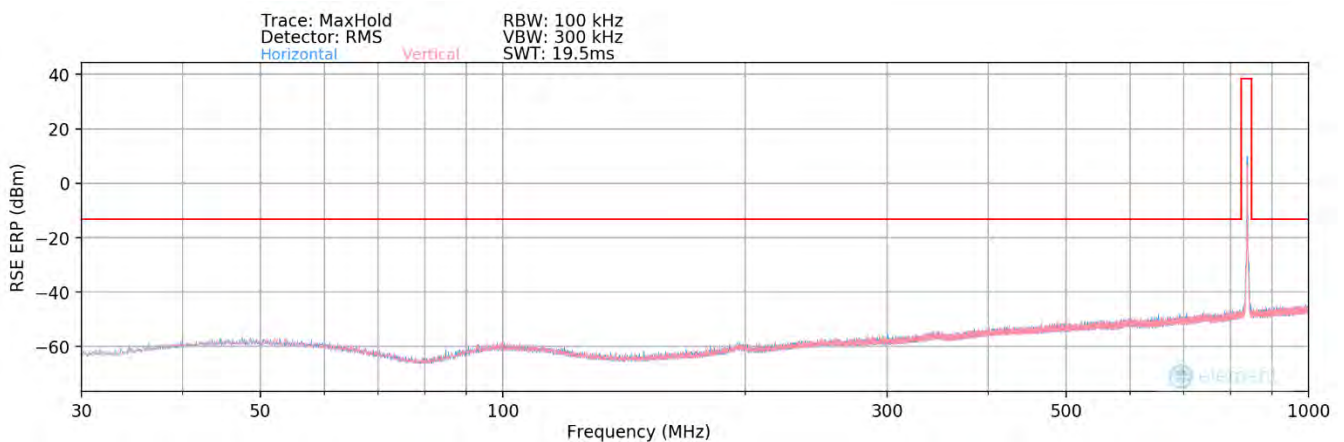
ULCA LTE Band 5



Plot 7-47. Radiated Spurious Plot Below 1GHz (ULCA LTE Band 5 – Low Channel)



Plot 7-48. Radiated Spurious Plot Below 1GHz (ULCA LTE Band 5 – Mid Channel)



Plot 7-49. Radiated Spurious Plot Below 1GHz (ULCA LTE Band 5 – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 58 of 74

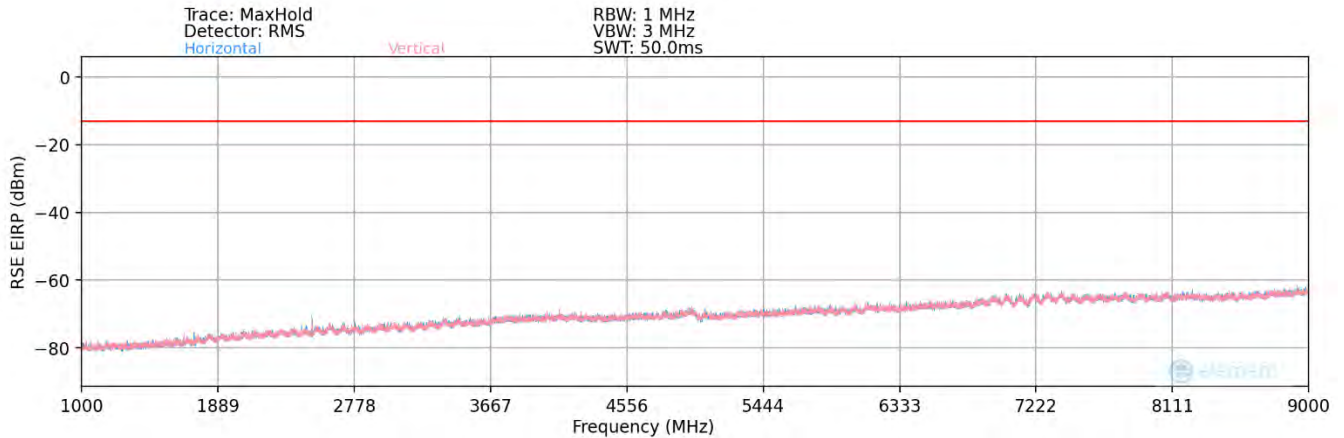


PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	831.5
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	841.4
SCC RB / Offset:	1 / 0

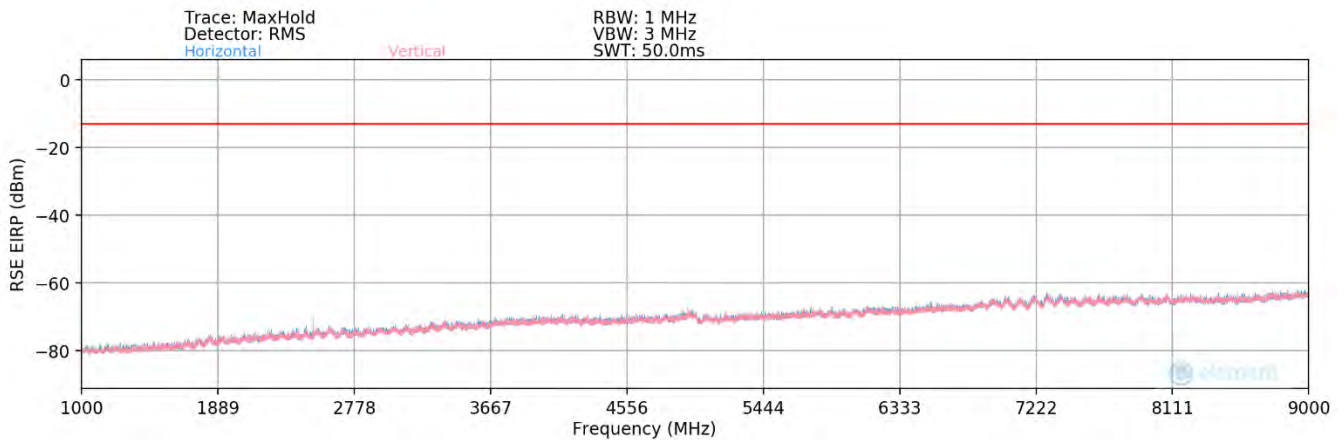
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
551.90	H	-	-	-106.12	25.37	26.25	-69.01	-13.00	-56.01
863.91	H	-	-	-105.34	30.14	31.80	-63.46	-13.00	-50.46
997.45	H	-	-	-105.69	31.24	32.55	-62.71	-13.00	-49.71

Table 7-18. Radiated Spurious Data Below 1GHz (ULCA LTE Band 5)

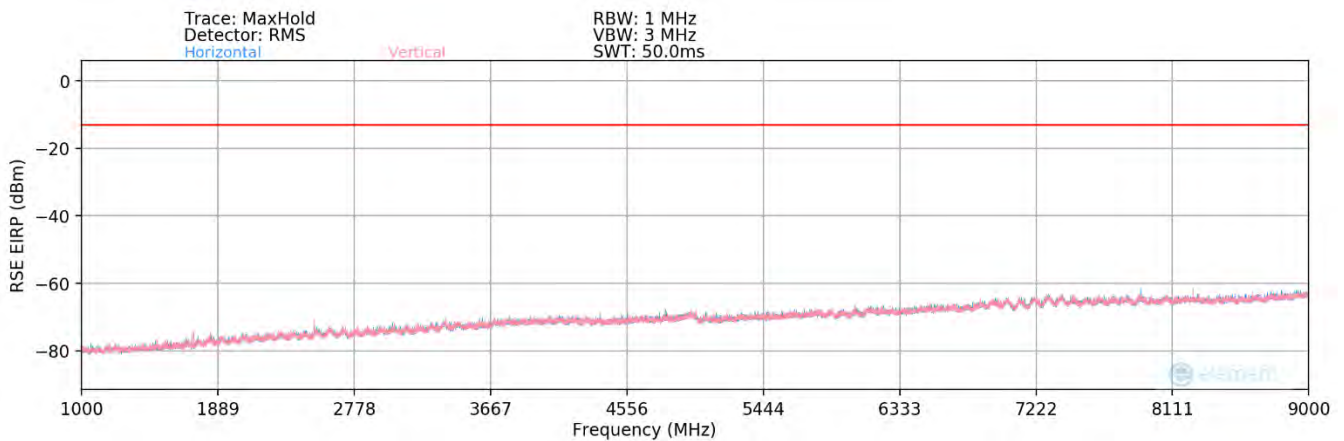
FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 59 of 74



Plot 7-50. Radiated Spurious Plot Above 1GHz (ULCA LTE Band 5 – Low Channel)



Plot 7-51. Radiated Spurious Plot Above 1GHz (ULCA LTE Band 5 – Mid Channel)



Plot 7-52. Radiated Spurious Plot Above 1GHz (ULCA LTE Band 5 – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 60 of 74

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	829.0
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	838.9
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	V	169	278	-70.63	-9.08	27.29	-67.96	-13.00	-54.96
2487.00	V	182	293	-73.32	-5.63	28.05	-67.21	-13.00	-54.21
3316.00	V	-	-	-76.59	-2.45	27.96	-67.30	-13.00	-54.30
4145.00	V	-	-	-75.90	-0.50	30.60	-64.65	-13.00	-51.65
4974.00	V	-	-	-76.52	1.03	31.51	-63.75	-13.00	-50.75
5803.00	V	-	-	-77.39	3.07	32.68	-62.58	-13.00	-49.58

Table 7-19. Radiated Spurious Data Above 1GHz (ULCA LTE Band 5 – Low Channel)

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	831.5
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	841.4
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1663.00	V	184	276	-69.52	-9.02	28.46	-66.79	-13.00	-53.79
2494.50	V	177	269	-64.49	-5.60	36.91	-58.35	-13.00	-45.35
3326.00	V	-	-	-76.90	-2.42	27.68	-67.57	-13.00	-54.57
4157.50	V	-	-	-76.49	-0.44	30.07	-65.18	-13.00	-52.18
4989.00	V	-	-	-76.47	0.90	31.43	-63.83	-13.00	-50.83
5820.50	V	-	-	-77.32	2.89	32.57	-62.69	-13.00	-49.69

Table 7-20. Radiated Spurious Data Above 1GHz (ULCA LTE Band 5 – Mid Channel)

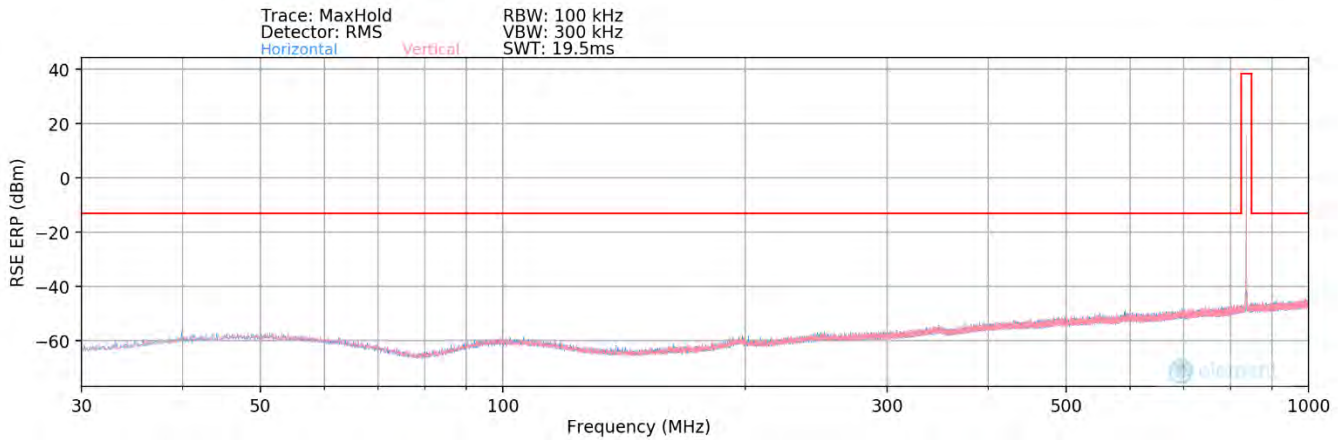
PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	844.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	834.1
SCC RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	V	175	300	-69.95	-8.69	28.36	-66.90	-13.00	-53.90
2532.00	V	177	311	-71.35	-4.94	30.71	-64.55	-13.00	-51.55
3376.00	V	-	-	-75.69	-1.88	29.43	-65.83	-13.00	-52.83
4220.00	V	-	-	-76.05	-0.52	30.43	-64.83	-13.00	-51.83
5064.00	V	-	-	-76.18	0.91	31.73	-63.52	-13.00	-50.52
5908.00	V	-	-	-76.23	1.55	32.32	-62.93	-13.00	-49.93

Table 7-21. Radiated Spurious Data Above 1GHz (ULCA LTE Band 5 – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 61 of 74

NR Band n26/5

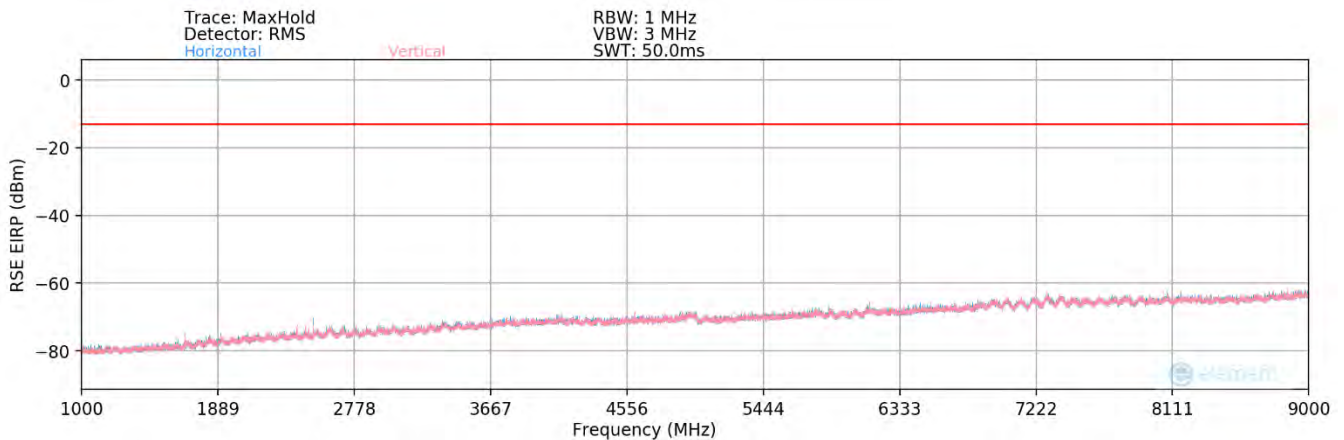


Plot 7-53. Radiated Spurious Plot Below 1GHz (NR Band n26/5)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1/53

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
75.88	H	-	-	-104.94	13.99	16.05	-79.21	-13.00	-66.21
882.49	H	-	-	-105.37	30.26	31.89	-63.37	-13.00	-50.37
971.38	H	-	-	-105.51	30.88	32.37	-62.89	-13.00	-49.89

Table 7-22. Radiated Spurious Data Below 1GHz (NR Band n26/5)



Plot 7-54. Radiated Spurious Plot Above 1GHz (NR Band n26/5)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 62 of 74

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 104

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	V	373	336	-68.32	-8.95	29.73	-65.53	-13.00	-52.53
2502.00	V	370	351	-74.04	-5.58	27.38	-67.87	-13.00	-54.87
3336.00	V	-	-	-76.34	-2.32	28.34	-66.92	-13.00	-53.92
4170.00	V	-	-	-76.48	-0.24	30.28	-64.98	-13.00	-51.98
5004.00	V	-	-	-76.75	0.66	30.91	-64.35	-13.00	-51.35
5838.00	V	-	-	-76.86	2.04	32.18	-63.07	-13.00	-50.07
6672.00	V	-	-	-76.86	4.09	34.23	-61.02	-13.00	-48.02

Table 7-23. Radiated Spurious Data Above 1GHz (NR Band n26/5 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 104

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	V	374	331	-68.31	-8.89	29.80	-65.46	-13.00	-52.46
2509.50	V	368	343	-74.12	-5.37	27.51	-67.74	-13.00	-54.74
3346.00	V	-	-	-75.95	-2.19	28.86	-66.39	-13.00	-53.39
4182.50	V	-	-	-76.58	-0.12	30.30	-64.96	-13.00	-51.96
5019.00	V	-	-	-76.45	0.51	31.06	-64.20	-13.00	-51.20
5855.50	V	-	-	-76.41	1.91	32.50	-62.76	-13.00	-49.76
6692.00	V	-	-	-76.85	4.04	34.19	-61.06	-13.00	-48.06

Table 7-24. Radiated Spurious Data Above 1GHz (NR Band n26/5 – Mid Channel)

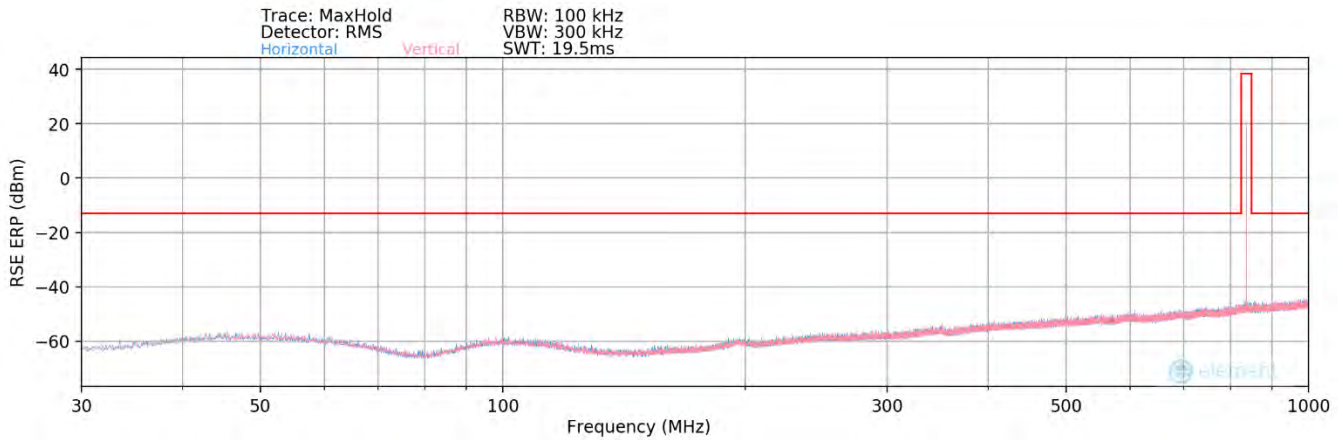
Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 104

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	V	362	343	-67.53	-8.83	30.64	-64.61	-13.00	-51.61
2517.00	V	360	358	-72.64	-5.13	29.23	-66.03	-13.00	-53.03
3356.00	V	-	-	-75.34	-2.03	29.63	-65.63	-13.00	-52.63
4195.00	V	-	-	-76.37	-0.12	30.51	-64.74	-13.00	-51.74
5034.00	V	-	-	-76.75	0.30	30.55	-64.71	-13.00	-51.71
5873.00	V	-	-	-76.50	2.38	32.88	-62.38	-13.00	-49.38
6712.00	V	-	-	-77.41	3.91	33.50	-61.75	-13.00	-48.75

Table 7-25. Radiated Spurious Data Above 1GHz (NR Band n26/5 – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 63 of 74

GSM/GPRS Cell

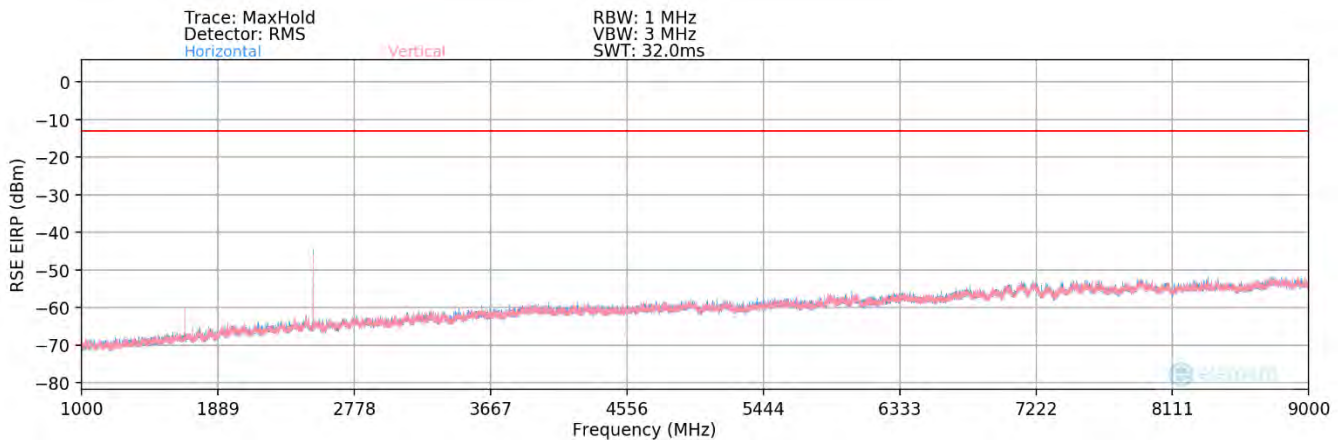


Plot 7-55. Radiated Spurious Plot Below 1GHz (GPRS Cell)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
337.02	H	-	-	-101.16	21.68	27.52	-67.74	-13.00	-54.74
860.30	H	-	-	-95.91	30.13	41.22	-54.04	-13.00	-41.04
927.32	H	-	-	-97.11	30.60	40.49	-54.76	-13.00	-41.76

Table 7-26. Radiated Spurious Data Below 1GHz (GPRS Cell)



Plot 7-56. Radiated Spurious Plot Above 1GHz (GPRS Cell)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 64 of 74



Mode:	GPRS 1 Tx Slot
Channel:	128
Frequency (MHz):	824.2

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1648.40	H	121	213	-67.83	-9.16	30.01	-65.24	-13.00	-52.24
2472.60	H	120	220	-51.71	-5.75	49.54	-45.71	-13.00	-32.71
3296.80	H	-	-	-75.91	-2.73	28.36	-66.90	-13.00	-53.90
4121.00	H	-	-	-76.26	-0.28	30.46	-64.79	-13.00	-51.79
4945.20	H	-	-	-76.86	0.60	30.74	-64.52	-13.00	-51.52
5769.40	H	-	-	-77.46	2.88	32.42	-62.83	-13.00	-49.83
6593.60	H	-	-	-77.50	4.22	33.72	-61.53	-13.00	-48.53

Table 7-27. Radiated Spurious Data Above 1GHz (GPRS Cell – Low Channel)

Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	119	221	-62.91	-8.89	35.20	-60.06	-13.00	-47.06
2509.80	H	118	227	-49.86	-5.36	51.78	-43.47	-13.00	-30.47
3346.40	H	-	-	-76.21	-2.18	28.61	-66.65	-13.00	-53.65
4183.00	H	-	-	-76.88	-0.12	30.00	-65.26	-13.00	-52.26
5019.60	H	-	-	-76.64	0.50	30.86	-64.40	-13.00	-51.40
5856.20	H	-	-	-76.80	1.93	32.13	-63.13	-13.00	-50.13
6692.80	H	-	-	-77.06	4.04	33.98	-61.28	-13.00	-48.28

Table 7-28. Radiated Spurious Data Above 1GHz (GPRS Cell – Mid Channel)

Mode:	GPRS 1 Tx Slot
Channel:	251
Frequency (MHz):	848.8

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1697.60	H	115	222	-58.83	-8.57	39.60	-55.66	-13.00	-42.66
2546.40	H	119	229	-56.58	-4.90	45.52	-49.74	-13.00	-36.74
3395.20	H	-	-	-76.83	-1.89	28.28	-66.98	-13.00	-53.98
4244.00	H	-	-	-76.24	-0.89	29.87	-65.38	-13.00	-52.38
5092.80	H	-	-	-76.33	0.78	31.45	-63.81	-13.00	-50.81
5941.60	H	-	-	-77.16	2.31	32.15	-63.10	-13.00	-50.10
6790.40	H	-	-	-77.34	4.46	34.12	-61.14	-13.00	-48.14

Table 7-29. Radiated Spurious Data Above 1GHz (GPRS Cell – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 65 of 74



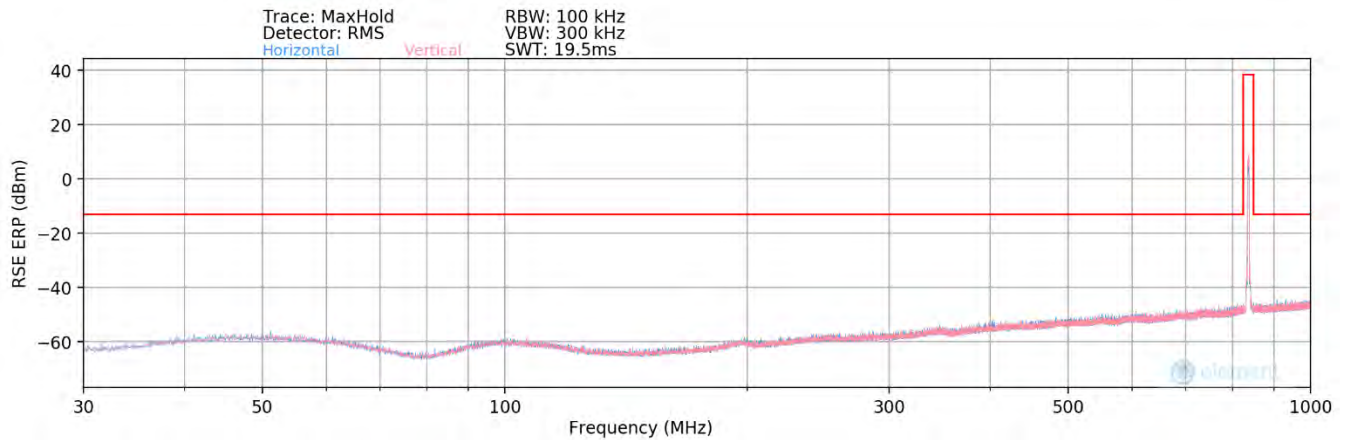
Case:	w/ Wireless Charging Pad
Mode:	GPRS 1 Tx Slot
Channel:	190
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	115	13	-52.32	-8.89	45.79	-49.47	-13.00	-36.47
2509.80	H	127	25	-67.73	-5.36	33.91	-61.34	-13.00	-48.34
3346.40	H	-	-	-76.14	-2.18	28.68	-66.58	-13.00	-53.58
4183.00	H	-	-	-76.40	-0.12	30.48	-64.78	-13.00	-51.78
5019.60	H	-	-	-76.39	0.50	31.11	-64.15	-13.00	-51.15
5856.20	H	-	-	-76.77	1.93	32.16	-63.10	-13.00	-50.10
6692.80	H	-	-	-77.02	4.04	34.02	-61.24	-13.00	-48.24

Table 7-30. Radiated Spurious Data with WCP Above 1GHz (GPRS Cell)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 66 of 74

WCDMA Cell

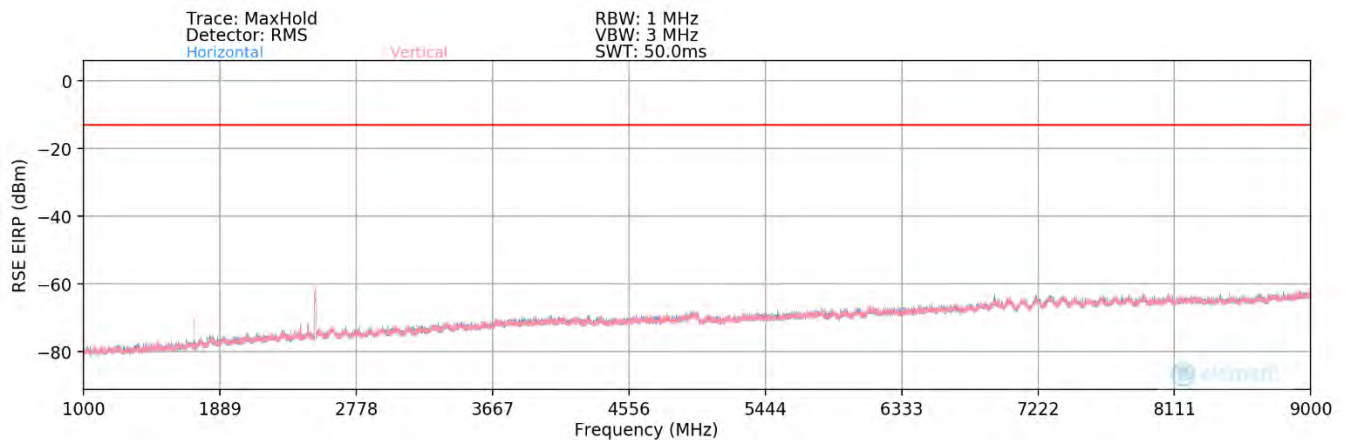


Plot 7-57. Radiated Spurious Plot Below 1GHz (WCDMA Cell)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
544.68	H	-	-	-106.14	25.21	26.07	-69.19	-13.00	-56.19
898.48	H	-	-	-105.23	30.37	32.14	-63.12	-13.00	-50.12
992.56	H	-	-	-105.77	31.13	32.36	-62.89	-13.00	-49.89

Table 7-31. Radiated Spurious Data Below 1GHz (WCDMA Cell)



Plot 7-58. Radiated Spurious Plot Above 1GHz (WCDMA Cell)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 67 of 74

Mode:	WCDMA RMC
Channel:	4132
Frequency (MHz):	826.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1652.80	H	107	224	-72.93	-9.12	24.95	-70.31	-13.00	-57.31
2479.20	H	108	226	-62.05	-5.69	39.26	-55.99	-13.00	-42.99
3305.60	H	-	-	-75.97	-2.59	28.44	-66.81	-13.00	-53.81
4132.00	H	-	-	-75.91	-0.43	30.66	-64.59	-13.00	-51.59
4958.40	H	-	-	-76.50	0.83	31.33	-63.93	-13.00	-50.93
5784.80	H	-	-	-77.38	3.04	32.66	-62.60	-13.00	-49.60
6611.20	H	-	-	-77.32	4.33	34.01	-61.25	-13.00	-48.25

Table 7-32. Radiated Spurious Data Above 1GHz (WCDMA Cell – Low Channel)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	H	124	236	-74.15	-8.89	23.96	-71.30	-13.00	-58.30
2509.80	H	115	231	-59.21	-5.36	42.43	-52.82	-13.00	-39.82
3346.40	H	-	-	-75.78	-2.18	29.04	-66.22	-13.00	-53.22
4183.00	H	-	-	-76.63	-0.12	30.25	-65.01	-13.00	-52.01
5019.60	H	-	-	-76.30	0.50	31.20	-64.06	-13.00	-51.06
5856.20	H	-	-	-76.53	1.93	32.40	-62.86	-13.00	-49.86
6692.80	H	-	-	-77.08	4.04	33.96	-61.30	-13.00	-48.30

Table 7-33. Radiated Spurious Data Above 1GHz (WCDMA Cell – Mid Channel)

Mode:	WCDMA RMC
Channel:	4233
Frequency (MHz):	846.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1693.20	H	110	217	-73.02	-8.62	25.36	-69.90	-13.00	-56.90
2539.80	H	110	224	-57.72	-4.90	44.38	-50.88	-13.00	-37.88
3386.40	H	-	-	-76.37	-1.90	28.73	-66.53	-13.00	-53.53
4233.00	H	-	-	-76.14	-0.69	30.17	-65.09	-13.00	-52.09
5079.60	H	-	-	-76.35	0.87	31.52	-63.74	-13.00	-50.74
5926.20	H	-	-	-76.65	1.64	31.99	-63.26	-13.00	-50.26
6772.80	H	-	-	-76.93	4.31	34.38	-60.88	-13.00	-47.88

Table 7-34. Radiated Spurious Data Above 1GHz (WCDMA Cell – High Channel)

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 68 of 74



7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22 and RSS-132, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

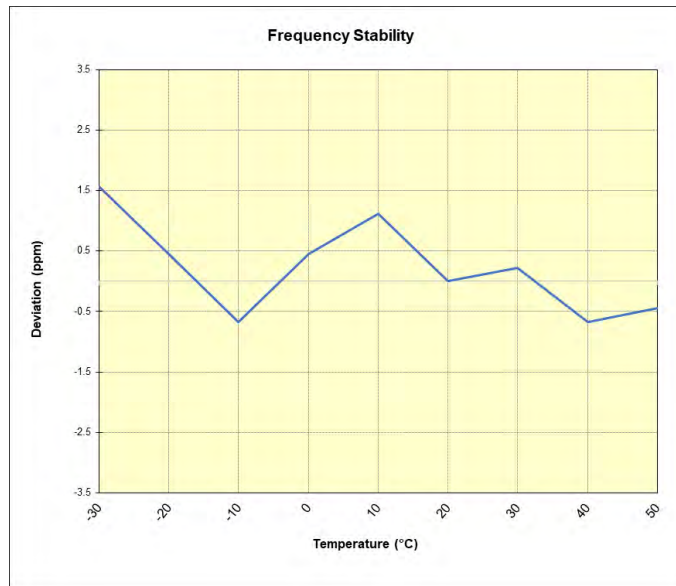
None

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 69 of 74

LTE Band 26/5

LTE Band 26/5					
Operating Frequency (Hz):		836,500,000			
Ref. Voltage (VDC):		4.43			
Deviation Limit:		± 0.00025% or 2.5 ppm			
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	836,500,750	1,313	0.0001569
		- 20	836,499,813	375	0.0000448
		- 10	836,498,875	-563	-0.0000672
		0	836,499,813	375	0.0000448
		+ 10	836,500,375	938	0.0001121
		+ 20 (Ref)	836,499,438	0	0.0000000
		+ 30	836,499,625	188	0.0000224
		+ 40	836,498,875	-563	-0.0000672
		+ 50	836,499,063	-375	-0.0000448
Battery Endpoint	3.27	+ 20	836,499,850	413	0.0000493

Table 7-35. LTE Band 26/5 Frequency Stability Data



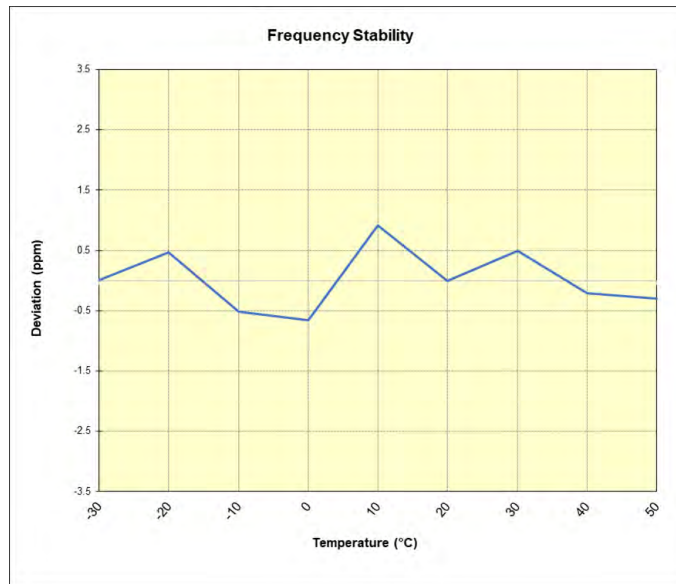
Plot 7-59. LTE Band 26/5 Frequency Stability Chart

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 70 of 74

NR Band n26/5

NR Band n5					
		Operating Frequency (Hz):		836,500,000	
		Ref. Voltage (VDC):		4.43	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	836,499,438	13	0.0000015
		- 20	836,499,813	388	0.0000463
		- 10	836,498,995	-430	-0.0000514
		0	836,498,875	-550	-0.0000658
		+ 10	836,500,188	763	0.0000912
		+ 20 (Ref)	836,499,425	0	0.0000000
		+ 30	836,499,838	413	0.0000493
		+ 40	836,499,250	-175	-0.0000209
		+ 50	836,499,173	-253	-0.0000302
Battery Endpoint	3.27	+ 20	836,499,250	-175	-0.0000209

Table 7-36. NR Band n26/5 Frequency Stability Data



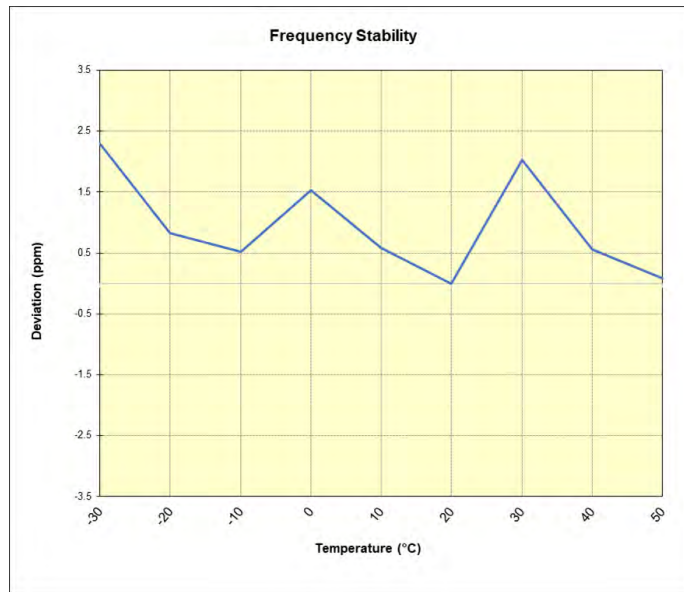
Plot 7-60. NR Band n26/5 Frequency Stability Chart

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 71 of 74

GSM/GPRS Cell

GSM/GPRS Cellular					
		Operating Frequency (Hz):		836,600,000	
		Ref. Voltage (VDC):		4.43	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	836,600,458	1,920	0.0002295
		- 20	836,599,230	693	0.0000828
		- 10	836,598,975	438	0.0000523
		0	836,599,818	1,280	0.0001530
		+ 10	836,599,030	493	0.0000589
		+ 20 (Ref)	836,598,538	0	0.0000000
		+ 30	836,600,231	1,694	0.0002025
		+ 40	836,599,006	469	0.0000560
Battery Endpoint	3.27	+ 20	836,598,635	98	0.0000117

Table 7-37. GSM/GPRS Cell Frequency Stability Data



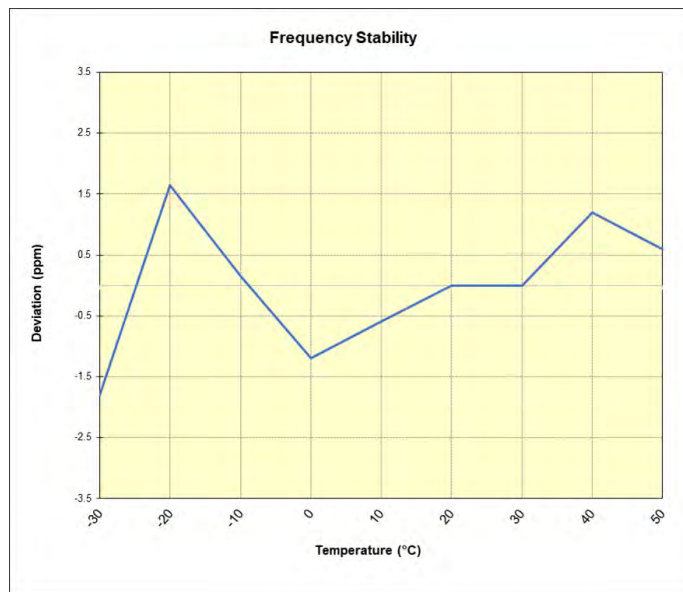
Plot 7-61. GSM/GPRS Cell Frequency Stability Chart

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 72 of 74

WCDMA Cell

WCDMA Cellular					
		Operating Frequency (Hz):		836,600,000	
		Ref. Voltage (VDC):		4.43	
		Deviation Limit:		± 0.00025% or 2.5 ppm	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	836,598,750	-1,500	-0.0001793
		- 20	836,601,625	1,375	0.0001644
		- 10	836,600,375	125	0.0000149
		0	836,599,250	-1,000	-0.0001195
		+ 10	836,599,750	-500	-0.0000598
		+ 20 (Ref)	836,600,250	0	0.0000000
		+ 30	836,600,250	0	0.0000000
		+ 40	836,601,250	1,000	0.0001195
Battery Endpoint	3.27	+ 20	836,599,375	-875	-0.0001046

Table 7-38. WCDMA Cell Frequency Stability Data



Plot 7-62. WCDMA Cell Frequency Stability Chart

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 73 of 74

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS711U** complies with all the requirements of Part 22 of the FCC rules.

FCC ID: A3LSMS711U	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2304260060-05.A3L	Test Dates: 5/24/2023 - 6/15/2023	EUT Type: Portable Handset	Page 74 of 74