

PART 22 & 90 MEASUREMENT REPORT**Applicant Name:**

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Gyeonggi-do, 16677, Korea

Date of Testing:

1/6/2025 - 3/5/2025

Test Report Issue Date:

3/6/2025

Test Site/Location:

Element lab., Columbia, MD, USA

Test Report Serial No.:

1M2501020001-12.A3L

FCC ID:

A3LSMG766U

APPLICANT:

Samsung Electronics Co., Ltd.

Application Type:

Certification

Model:

SM-G766U

Additional Model:

SM-G766U1

EUT Type:

Portable Handset

FCC Classification:

PCS Licensed Transmitter Held to Ear (PCE)

FCC Rule Part:

§22(H), §90(S), §90(R)

Test Procedure(s):

ANSI C63.26-2015

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

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



RJ Ortanez
Executive Vice President



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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	Measurement	Max. Power [W]	Max. Power [dBm]	Emission Designator
LTE Band 14	10 MHz	QPSK	793.0	ERP	0.054	17.31	9M07G7D
		16QAM	793.0	ERP	0.041	16.09	9M05W7D
	5 MHz	QPSK	790.5 - 795.5	ERP	0.056	17.47	4M55G7D
		16QAM	790.5 - 795.5	ERP	0.044	16.39	4M57W7D
LTE Band 26	15 MHz	QPSK	821.5	ERP	0.081	19.08	13M5G7D
		16QAM	821.5	ERP	0.061	17.89	13M5W7D
	15 MHz	QPSK	821.5	Conducted	0.286	24.57	13M5G7D
		16QAM	821.5	Conducted	0.234	23.69	13M5W7D
	10 MHz	QPSK	819.0	Conducted	0.292	24.66	9M03G7D
		16QAM	819.0	Conducted	0.264	24.21	9M03W7D
	5 MHz	QPSK	816.5 - 821.5	Conducted	0.299	24.76	4M54G7D
		16QAM	816.5 - 821.5	Conducted	0.248	23.94	4M55W7D
	3 MHz	QPSK	815.5 - 822.5	Conducted	0.298	24.74	2M72G7D
		16QAM	815.5 - 822.5	Conducted	0.243	23.86	2M72W7D
NR Band n14	10 MHz	$\pi/2$ BPSK	793.0	ERP	0.053	17.24	9M06G7D
		QPSK	793.0	ERP	0.052	17.13	9M04G7D
		16QAM	793.0	ERP	0.037	15.72	9M05W7D
	5 MHz	$\pi/2$ BPSK	790.5 - 795.5	ERP	0.056	17.49	4M52G7D
		QPSK	790.5 - 795.5	ERP	0.055	17.43	4M52G7D
		16QAM	790.5 - 795.5	ERP	0.038	15.77	4M54W7D

EUT Overview

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1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

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

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

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMG766U**. 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 90 and 22H.

Test Device Serial No.: 1969M, 4418M, 3704M

2.2 Device Capabilities

This device contains the following capabilities:

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

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.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version C766USQ0AXL3 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

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

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

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

Deviation from Measurement Procedure.....None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

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

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.

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4.0 MEASUREMENT UNCERTAINTY

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

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

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5.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	AP2	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	AP2
-	AP1	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	AP1
-	ETS	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	ETS
-	LTx1	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx1
-	LTx4	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx4
-	LTx5	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx5
Agilent	N9030A	50GHz PXA Signal Analyzer	4/23/2024	Annual	4/23/2025	US51350301
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201381794
Emco	3116	Horn Antenna (18 - 40GHz)	7/5/2023	Triennial	7/5/2025	9203-2178
Espec	ESX-2CA	Environmental Chamber	9/26/2024	Annual	9/26/2026	17620
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/29/2023	Biennial	3/29/2025	128337
ETS Lindgren	3164-10	Quad Ridge Horn 400MHz - 10000MHz	7/13/2023	Biennial	7/13/2025	00166283
Keysight Technologies	N9020A	MXA Signal Analyzer	4/11/2024	Annual	4/11/2025	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer	2/29/2024	Annual	3/1/2025	MY55410501
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11403100002
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	10/16/2024	Annual	10/16/2025	100342
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	3/8/2024	Annual	3/8/2025	103187
Sunol	JB6	LB6 Antenna	3/2/2023	Biennial	3/2/2025	A082816

Table 5-1. Test Equipment

Notes:

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

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6.0 SAMPLE CALCULATIONS

Emission Designator

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 – LTE Band

Example: Middle Channel LTE Mode 2nd Harmonic (1564 MHz)

The average 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 1564 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80) = 50.3 dBc.

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7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.
 FCC ID: A3LSMG766U
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)
 Mode(s): LTE/NR

Test Condition	Test Description	FCC Part Section(s)	RSS Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power*	2.1046(a), 90.635(b)	RSS-Gen(6.12)	< 100 Watts	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	RSS-Gen(6.7)	N/A	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions (LTE Band 14; NR Band n14)	2.1051, 90.543(c)(e)	RSS-Gen(6.13), RSS-140(4.4)	On all frequencies between 769-775 MHz and 799-805 MHz, attenuation by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations. On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, attenuation by at least $43 + 10 \log(P)$ dB $> 43 + 10 \log_{10}(P[\text{Watts}])$ for all out-of-band emissions outside of those specified in 90.543(e)	PASS	Sections 7.4, 7.5
	Conducted Band Edge / Spurious Emissions (LTE Band 26)	2.1051, 90.691(a)	N/A	$> 43 + 10 \log_{10}(P[\text{Watts}])$ for all out-of-band emissions except emissions beyond 37.5kHz from the block edge $> 50 + 10 \log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions within 37.5kHz of Block Edge	PASS	Sections 7.4, 7.5
	Frequency Stability	2.1055, 90.213	RSS-Gen(6.11), RSS-140(4.2)	< 2.5 ppm **Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
RADIATED	Effective Radiated Power (LTE Band 14; NR Band n14)	90.542(a)(7)	RSS-Gen(6.12), RSS-140(4.3)	< 3 Watts max. ERP	PASS	Section 7.6
	Effective Radiated Power (LTE Band 26)	22.913(a)(2)	N/A	< 7 Watts max. ERP	PASS	Section 7.6
	Radiated Spurious Emissions (LTE Band 14; NR Band n14)	2.1053, 90.543(e)(f)	RSS-Gen(7.3), RSS-140(4.4)	$> 43 + 10 \log_{10}(P[\text{Watts}])$ for all out-of-band emissions except emissions in the 1559 - 1610MHz band are subject to a limit of -40dBm/MHz for wideband signals	PASS	Section 7.7
	Radiated Spurious Emissions (LTE Band 26)	2.1053, 90.691(a)	N/A	$> 43 + 10 \log_{10}(P[\text{Watts}])$ for all out-of-band emissions except emissions beyond 37.5kHz from the block edge $> 50 + 10 \log_{10}(P[\text{Watts}])$ at Band Edge and for all out-of-band emissions within 37.5kHz of Block Edge	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 shown in Section 7.0 were 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) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v2.3.0.

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7.2 Conducted Output Power Data

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.2

Test Settings

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

Test Setup

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



Figure 7-1. Test Instrument & Measurement Setup

Test Notes

1. For LTE mode, the device was tested under all modulations, RB sizes and offsets, and channel bandwidth configurations and the worst case emissions are reported with 1 RB.
2. Conducted power measurements were evaluated using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
3. All other conducted power measurements are contained in the RF exposure report for this filing.
4. Conducted power was found to reduce for the higher order QAM modulations when compared to 16QAM. Due to this trend, only the worst-case QAM (16QAM) powers are included in this section.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
10 MHz	QPSK	23330	793.0	1 / 25	23.96	0.249	50.00	-26.04
	16-QAM	23330	793.0	1 / 25	23.09	0.204	50.00	-26.91
5 MHz	QPSK	23305	790.5	1 / 0	24.07	0.255	50.00	-25.93
		23330	793.0	1 / 0	23.92	0.246	50.00	-26.08
		23355	795.5	1 / 12	24.11	0.258	50.00	-25.89
	16-QAM	23305	790.5	1 / 12	23.21	0.209	50.00	-26.79
		23330	793.0	1 / 24	23.15	0.206	50.00	-26.85
		23355	795.5	1 / 12	23.38	0.218	50.00	-26.62

Table 7-2. LTE Band 14 Conducted Powers

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
15 MHz	QPSK	26765	821.5	1 / 37	24.57	0.286	50.00	-25.43
	16-QAM	26765	821.5	1 / 37	23.69	0.234	50.00	-26.31
10 MHz	QPSK	26740	819.0	1 / 25	24.66	0.292	50.00	-25.34
	16-QAM	26740	819.0	1 / 25	24.21	0.264	50.00	-25.79
5 MHz	QPSK	26715	816.5	1 / 24	24.66	0.292	50.00	-25.34
		26765	821.5	1 / 0	24.76	0.299	50.00	-25.24
	16-QAM	26715	816.5	1 / 24	23.94	0.248	50.00	-26.06
		26765	821.5	1 / 0	23.86	0.243	50.00	-26.14
3 MHz	QPSK	26705	815.5	1 / 0	24.49	0.281	50.00	-25.51
		26775	822.5	1 / 7	24.74	0.298	50.00	-25.26
	16-QAM	26705	815.5	1 / 0	23.66	0.232	50.00	-26.34
		26775	822.5	1 / 7	23.86	0.243	50.00	-26.14
1.4 MHz	QPSK	26697	814.7	1 / 3	24.59	0.288	50.00	-25.41
		26783	823.3	1 / 0	24.71	0.296	50.00	-25.29
	16-QAM	26697	814.7	1 / 3	23.90	0.245	50.00	-26.10
		26783	823.3	1 / 3	24.10	0.257	50.00	-25.90

Table 7-3. LTE Band 26 Conducted Powers

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Conducted Power [Watts]	Conducted Power Limit [dBm]	Margin [dB]
10 MHz	$\pi/2$ BPSK	23330	793.0	1 / 26	23.48	0.223	50.00	-26.52
	QPSK	23330	793.0	1 / 26	23.56	0.227	50.00	-26.44
	16-QAM	23330	793.0	1 / 26	22.72	0.187	50.00	-27.28
5 MHz	$\pi/2$ BPSK	23305	790.5	1 / 23	23.68	0.234	50.00	-26.32
		23330	793.0	1 / 1	23.73	0.236	50.00	-26.27
		23355	795.5	1 / 12	23.70	0.234	50.00	-26.30
	QPSK	23305	790.5	1 / 23	23.41	0.219	50.00	-26.59
		23330	793.0	1 / 1	23.58	0.228	50.00	-26.42
		23355	795.5	1 / 12	23.86	0.243	50.00	-26.14
	16-QAM	23305	790.5	1 / 23	22.53	0.179	50.00	-27.47
		23330	793.0	1 / 1	22.76	0.189	50.00	-27.24
		23355	795.5	1 / 12	22.62	0.183	50.00	-27.38

Table 7-4. NR Band n26 Conducted Powers

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 13 of 61

7.3 Occupied Bandwidth

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

Test Settings

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

Test Setup

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

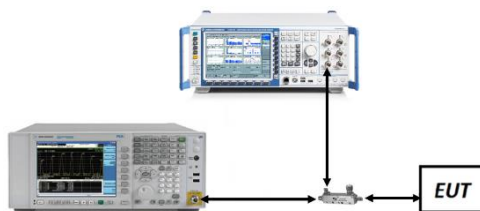


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 14 of 61

Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B14	10 MHz	QPSK	9.07
		16QAM	9.05
	5 MHz	QPSK	4.55
		16QAM	4.57
LTE-B26	15 MHz	QPSK	13.54
		16QAM	13.51
	10 MHz	QPSK	9.03
		16QAM	9.03
	5 MHz	QPSK	4.54
		QPSK	4.53
		16QAM	4.54
		16QAM	4.55
	3 MHz	QPSK	2.72
		QPSK	2.72
		16QAM	2.72
		16QAM	2.72
	1.4 MHz	QPSK	1.11
		QPSK	1.11
		16QAM	1.11
		16QAM	1.11
NR-n14	10 MHz	$\pi/2$ BPSK	9.06
		QPSK	9.04
		16QAM	9.05
	5 MHz	$\pi/2$ BPSK	4.52
		QPSK	4.52
		16QAM	4.54

Table 7-5. Occupied Bandwidth Test Results

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 15 of 61

LTE Band 14

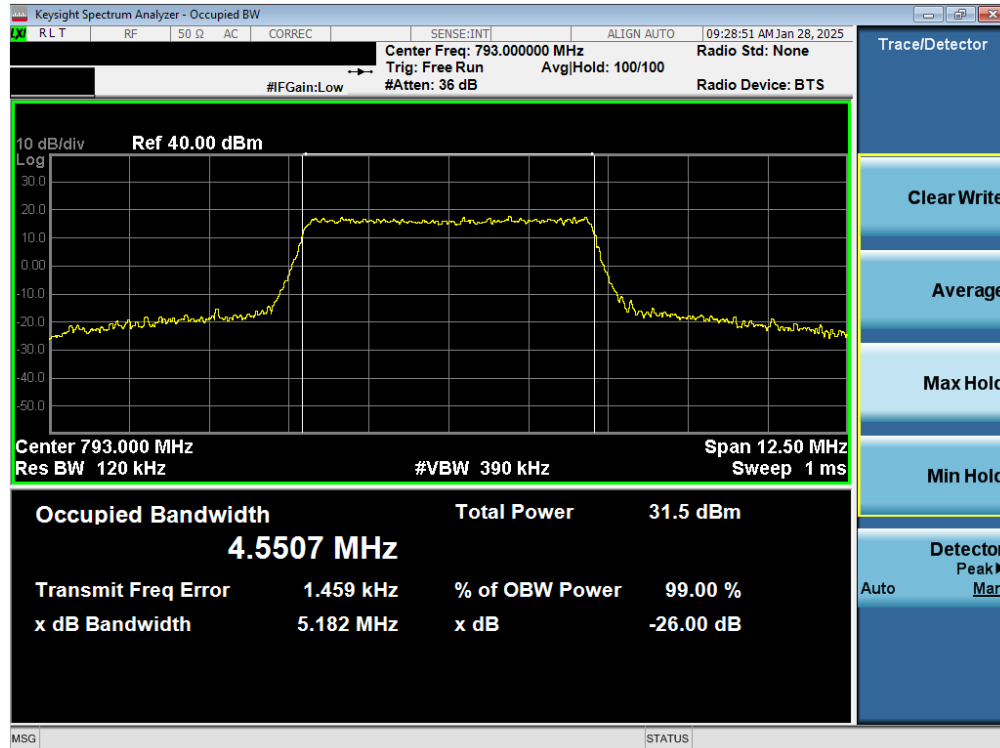


Plot 7-1. Occupied Bandwidth Plot (LTE Band 14 - 10MHz QPSK - Full RB)



Plot 7-2. Occupied Bandwidth Plot (LTE Band 14 - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 16 of 61



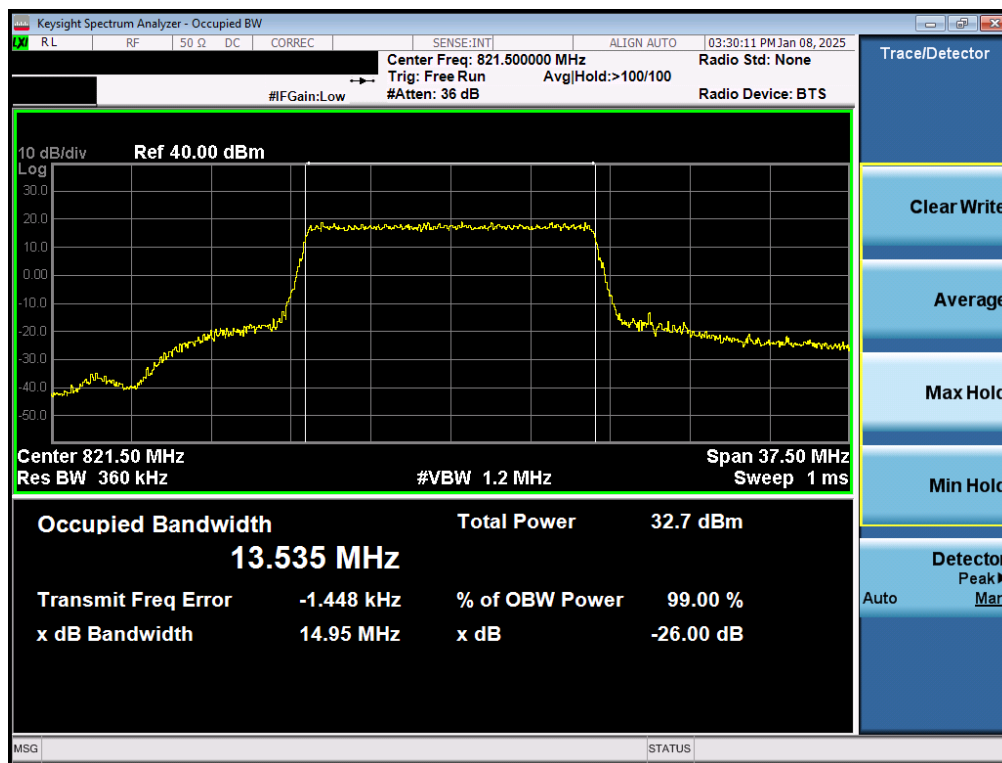
Plot 7-3. Occupied Bandwidth Plot (LTE Band 14 - 5MHz QPSK - Full RB)



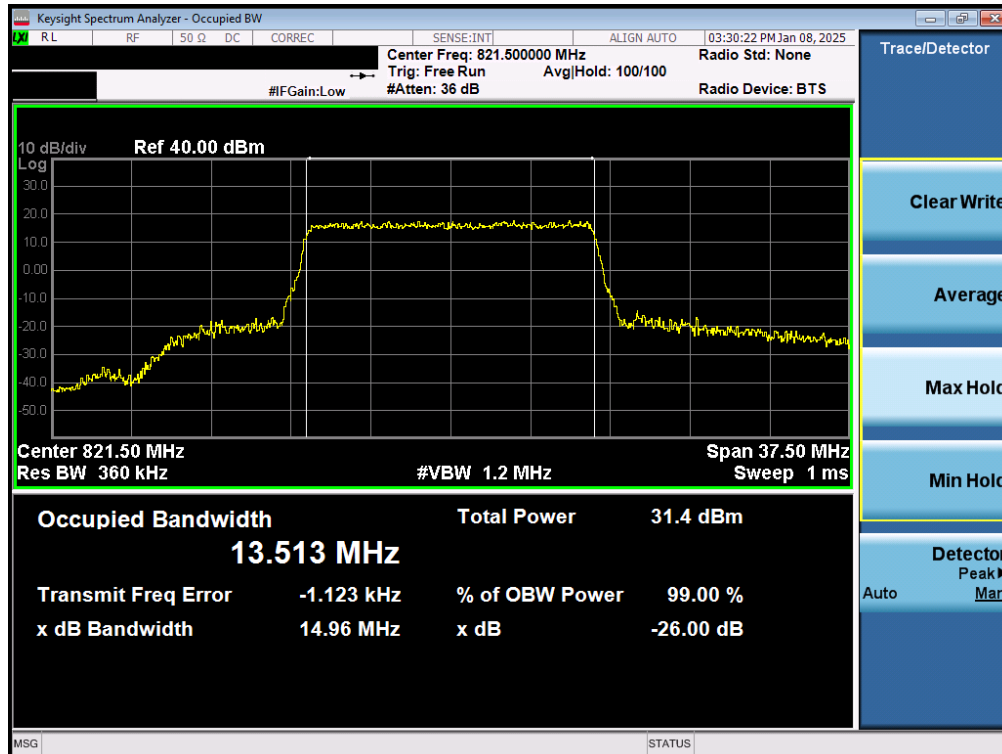
Plot 7-4. Occupied Bandwidth Plot (LTE Band 14 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 17 of 61

LTE Band 26

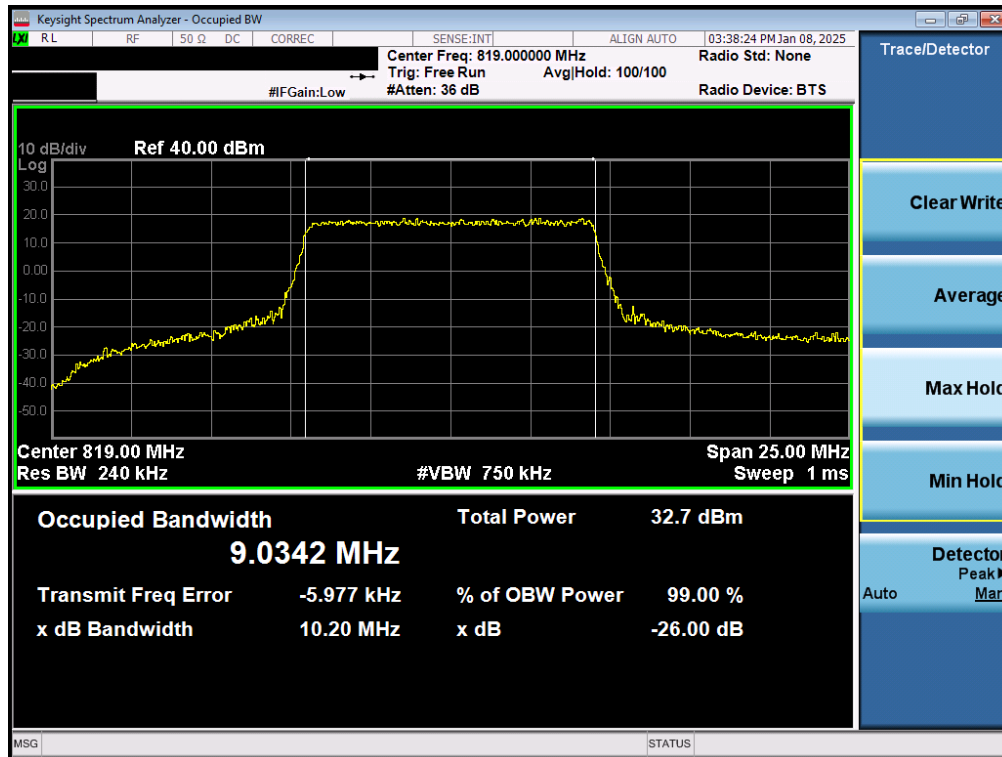


Plot 7-5. Occupied Bandwidth Plot (LTE Band 26 - 15MHz QPSK - Full RB)

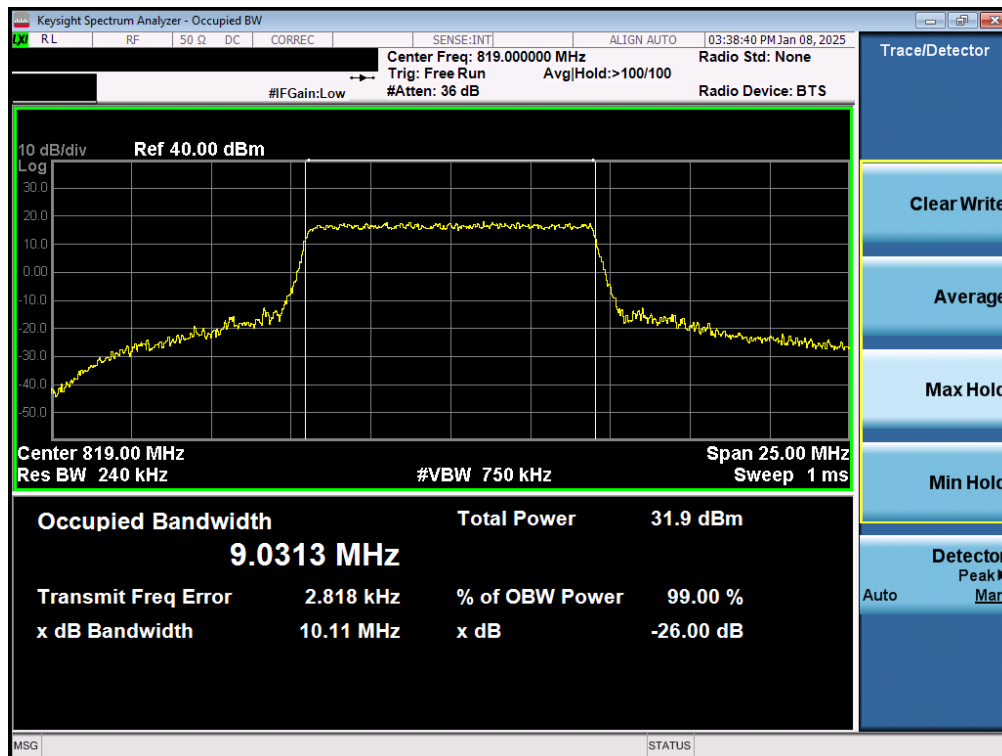


Plot 7-6. Occupied Bandwidth Plot (LTE Band 26 - 15MHz 16-QAM - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 18 of 61



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



Plot 7-8. Occupied Bandwidth Plot (LTE Band 26 - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 19 of 61

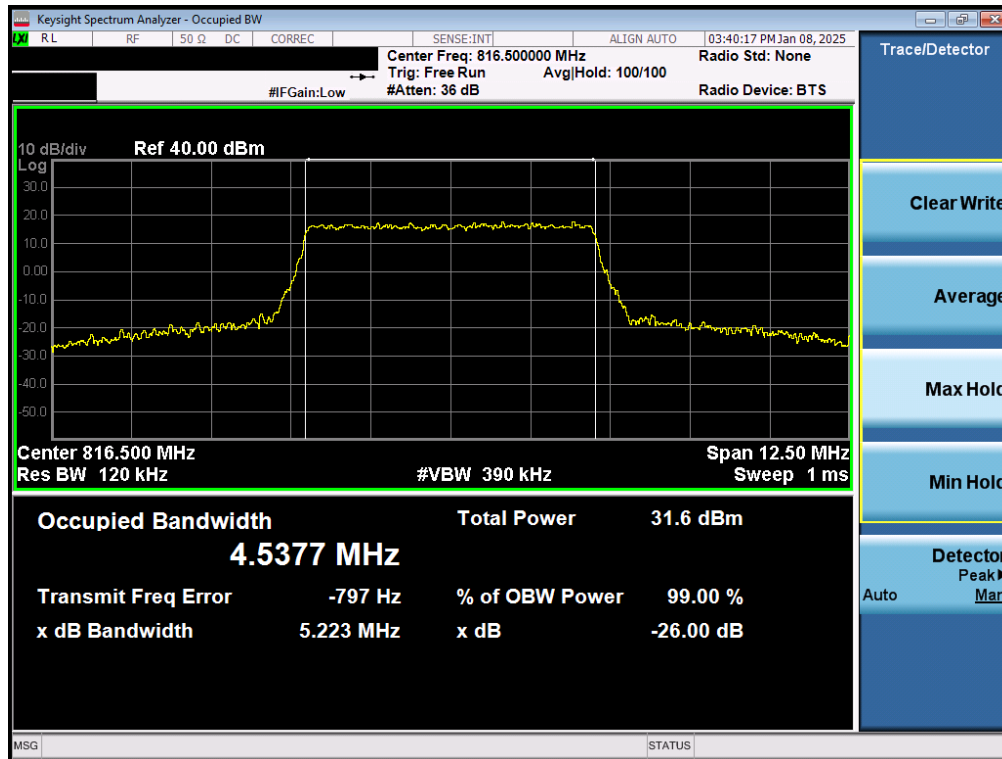


Plot 7-9. Occupied Bandwidth Plot (LTE Band 26 - 5MHz QPSK Low Channel- Full RB)



Plot 7-10. Occupied Bandwidth Plot (LTE Band 26 - 5MHz QPSK High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 20 of 61

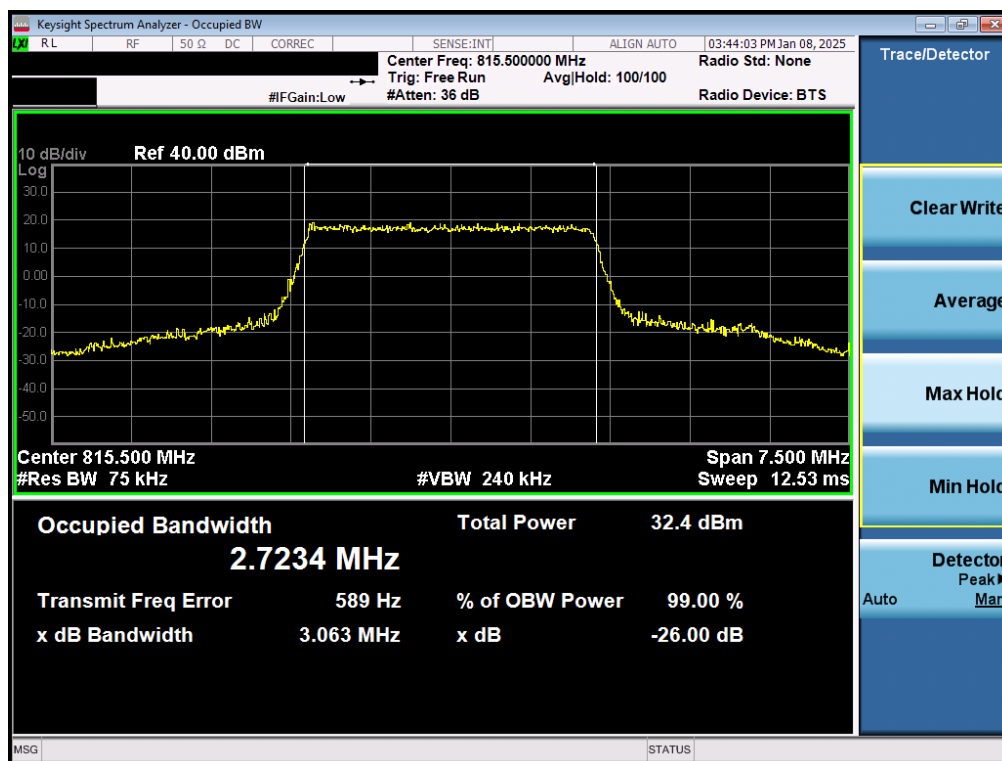


Plot 7-11. Occupied Bandwidth Plot (LTE Band 26 - 5MHz 16-QAM Low Channel - Full RB)

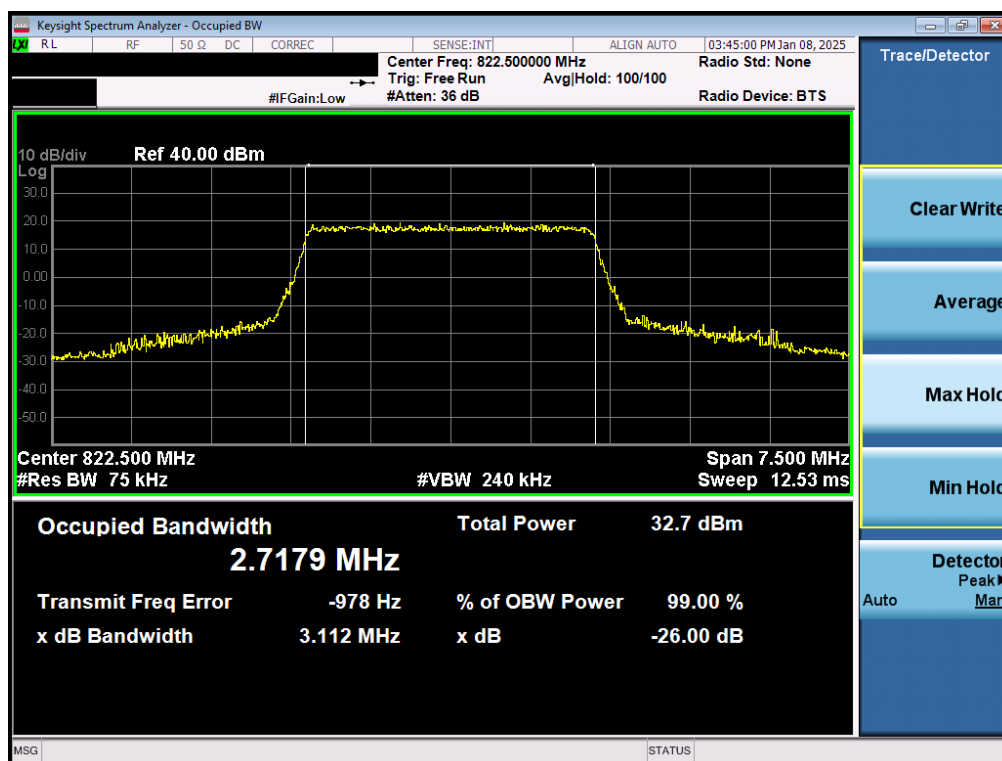


Plot 7-12. Occupied Bandwidth Plot (LTE Band 26 - 5MHz 16-QAM High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 21 of 61

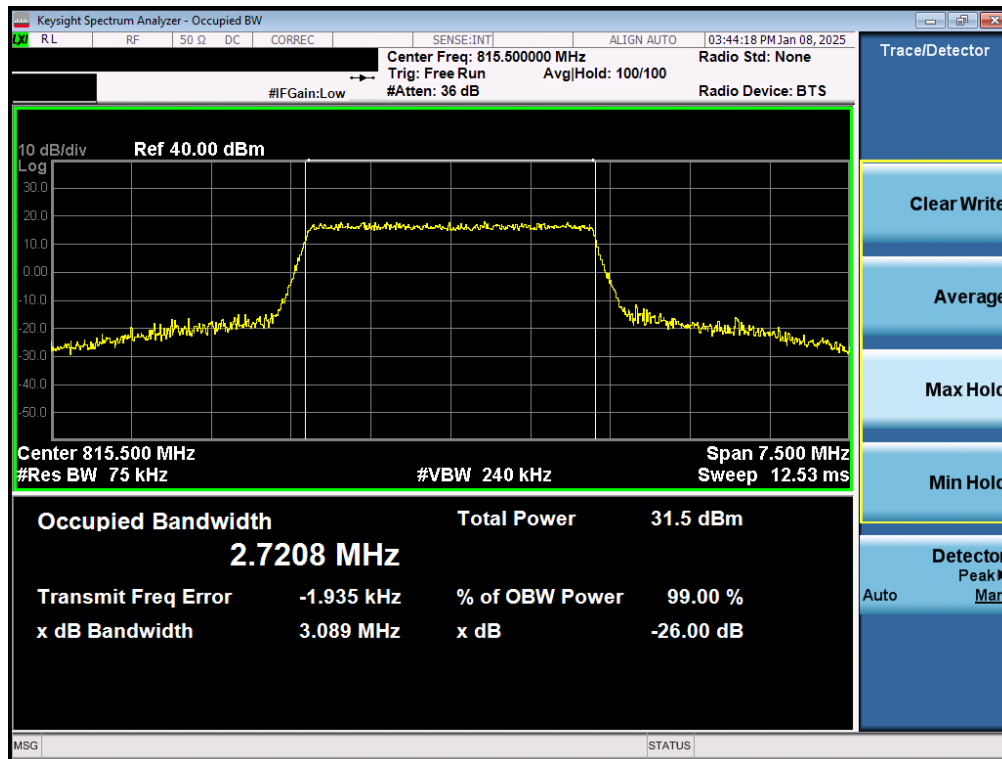


Plot 7-13. Occupied Bandwidth Plot (LTE Band 26 - 3MHz QPSK Low Channel- Full RB)



Plot 7-14. Occupied Bandwidth Plot (LTE Band 26 - 3MHz QPSK High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 22 of 61

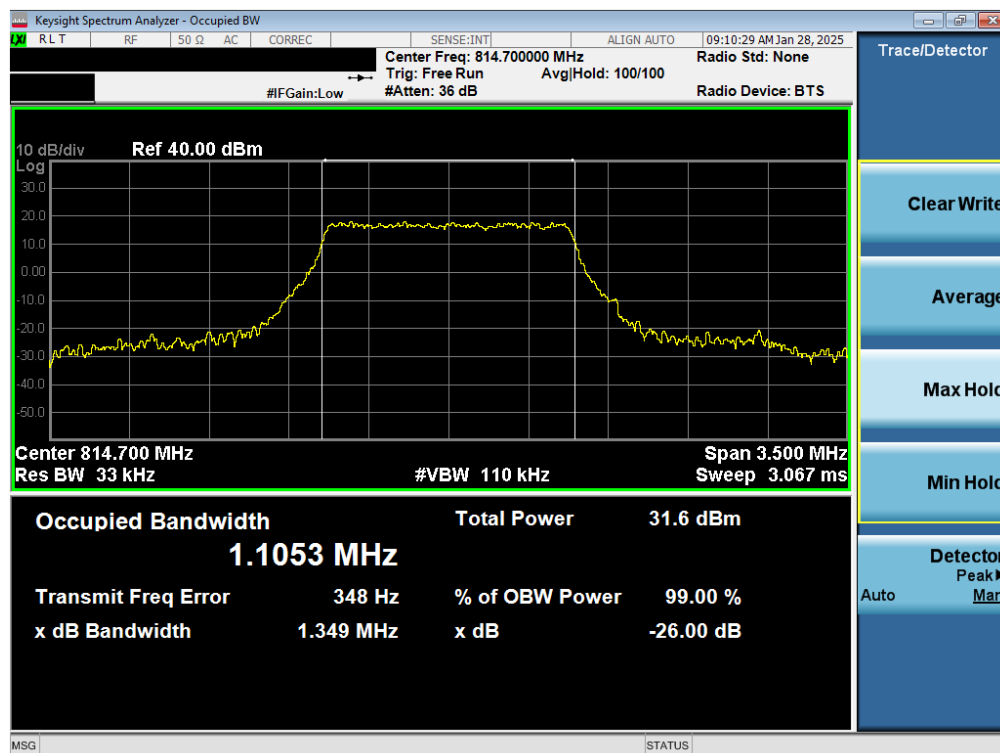


Plot 7-15. Occupied Bandwidth Plot (LTE Band 26 - 3MHz 16-QAM Low Channel - Full RB)

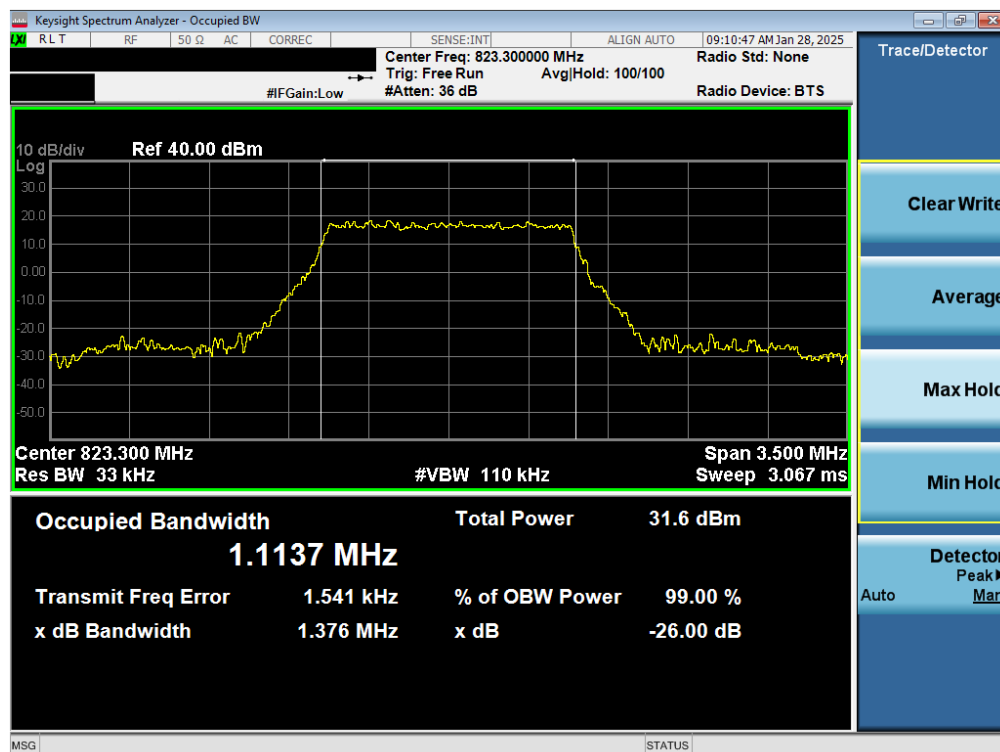


Plot 7-16. Occupied Bandwidth Plot (LTE Band 26 - 3MHz 16-QAM High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 23 of 61



Plot 7-17. Occupied Bandwidth Plot (LTE Band 26 – 1.4MHz QPSK Low Channel- Full RB)

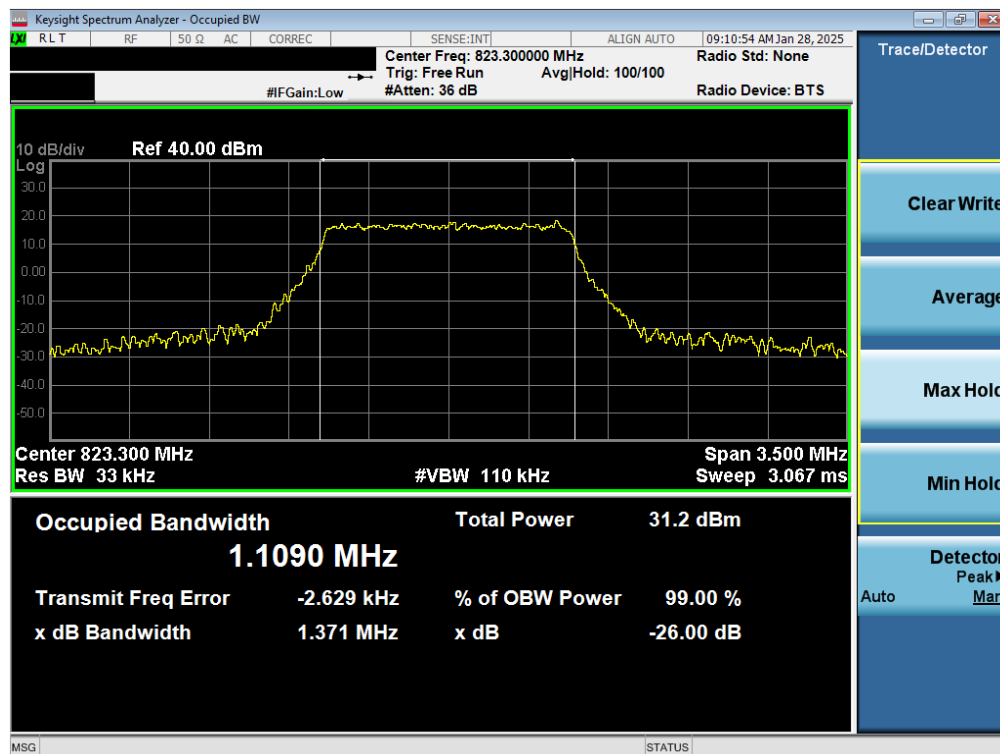


Plot 7-18. Occupied Bandwidth Plot (LTE Band 26 – 1.4MHz QPSK High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 24 of 61



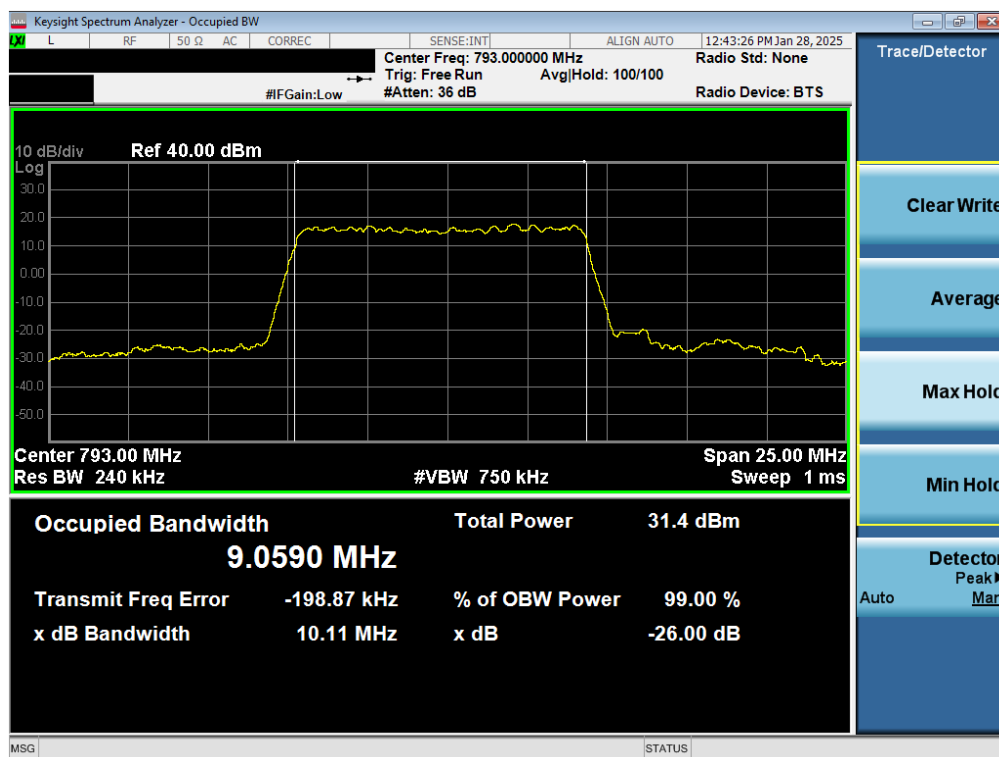
Plot 7-19. Occupied Bandwidth Plot (LTE Band 26 – 1.4MHz 16-QAM Low Channel - Full RB)



Plot 7-20. Occupied Bandwidth Plot (LTE Band 26 – 1.4MHz 16-QAM High Channel - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 25 of 61

NR Band n14



Plot 7-21. Occupied Bandwidth Plot (NR Band n14 - 10MHz $\pi/2$ BPSK - Full RB)



Plot 7-22. Occupied Bandwidth Plot (NR Band n14 - 10MHz QPSK - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 26 of 61

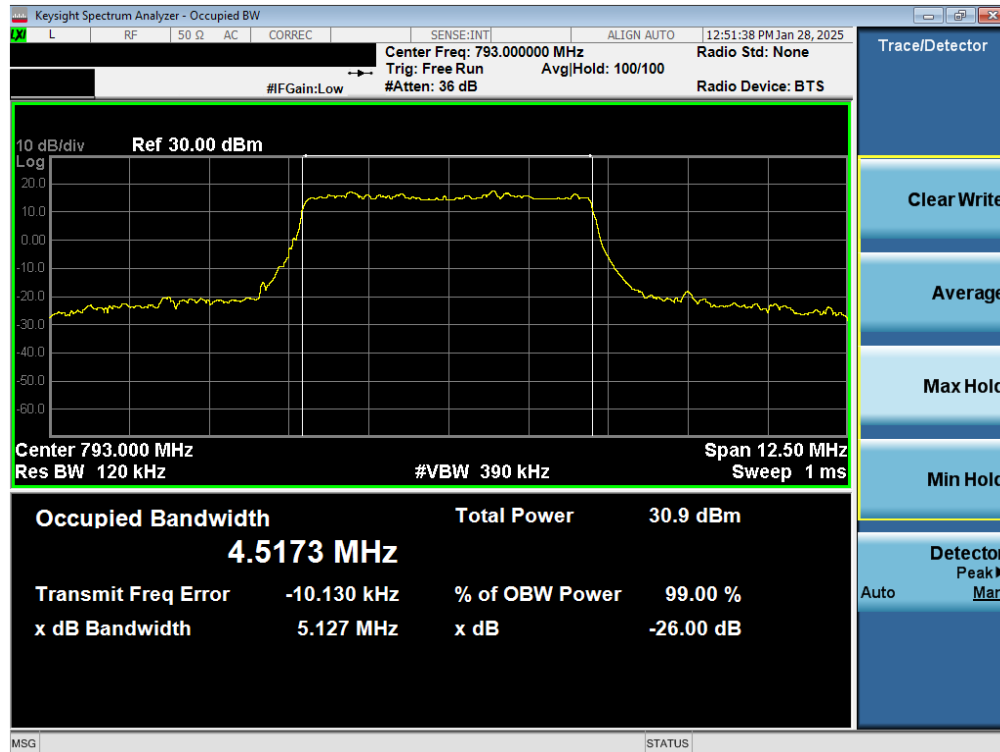


Plot 7-23. Occupied Bandwidth Plot (NR Band n14 - 10MHz 16-QAM - Full RB)

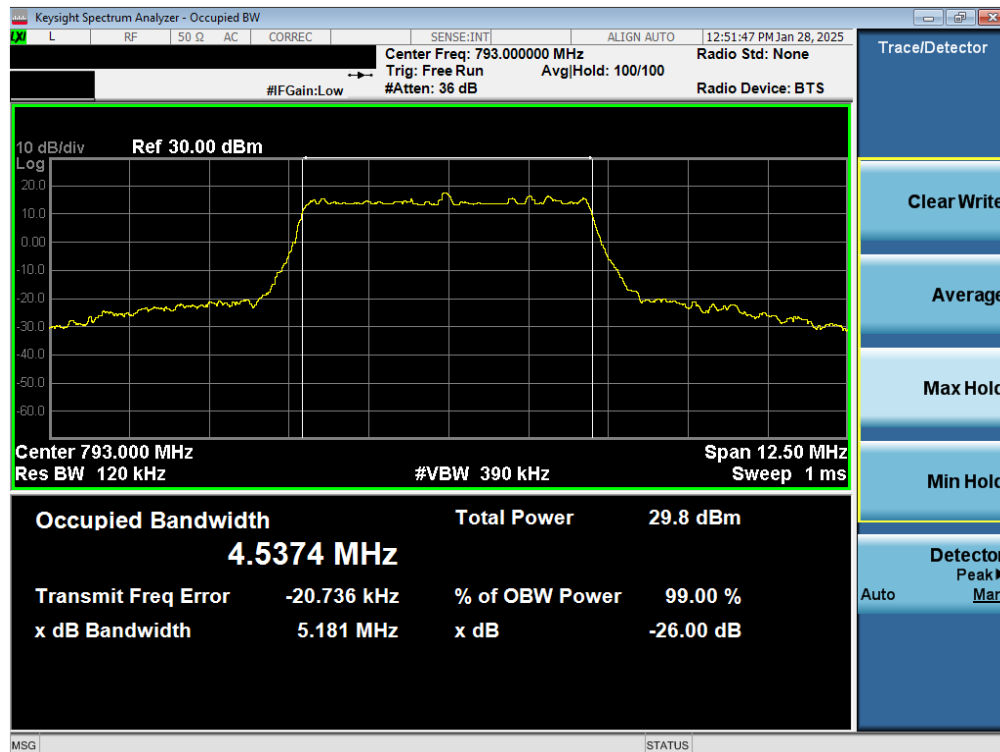


Plot 7-24. Occupied Bandwidth Plot (NR Band n14 - 5MHz $\pi/2$ BPSK - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 27 of 61



Plot 7-25. Occupied Bandwidth Plot (NR Band n14 - 5MHz QPSK - Full RB)



Plot 7-26. Occupied Bandwidth Plot (NR Band n14 - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 28 of 61

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 $43 + 10 \log_{10}(P_{\text{Watts}})$, 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. RBW $\geq$ 100kHz
3. VBW $\geq$ 3 x RBW
4. Detector = RMS
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

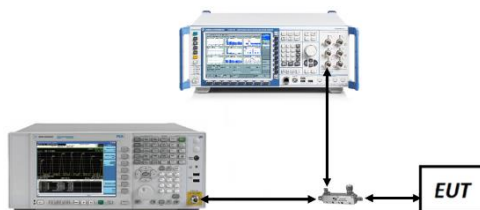


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 22H and 90, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.
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.

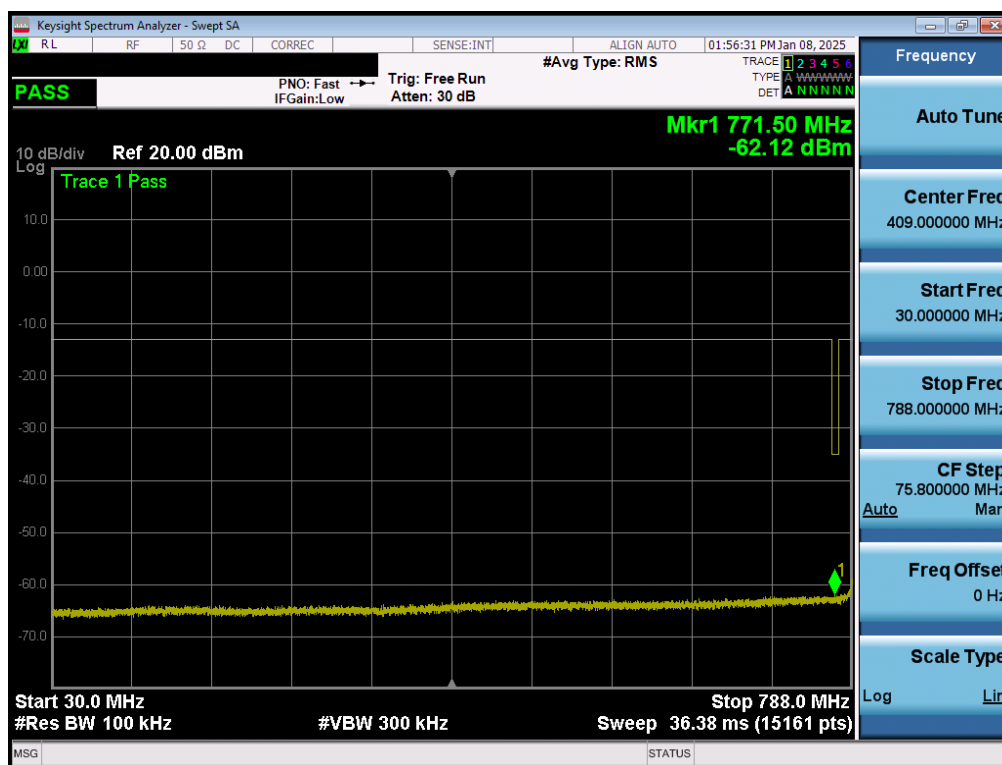
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 29 of 61

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B14	10MHz	Mid	30.0 - 788.0	-62.12	-35	-27.12
		Mid	798.0 - 1000.0	-60.00	-35	-25.00
		Mid	1000.0 - 10000.0	-43.46	-13	-30.46
LTE-B26	15 MHz	Mid	30.0 - 814.0	-46.80	-13	-33.79
		Mid	824.0 - 1000.0	-32.73	-13	-19.73
		Mid	1000.0 - 10000.0	-43.09	-13	-30.09
NR-n14	10 MHz	Mid	30.0 - 788.0	-61.05	-35	-26.05
		Mid	824.0 - 1000.0	-58.02	-35	-23.02
		Mid	1000.0 - 10000.0	-44.62	-13	-31.62

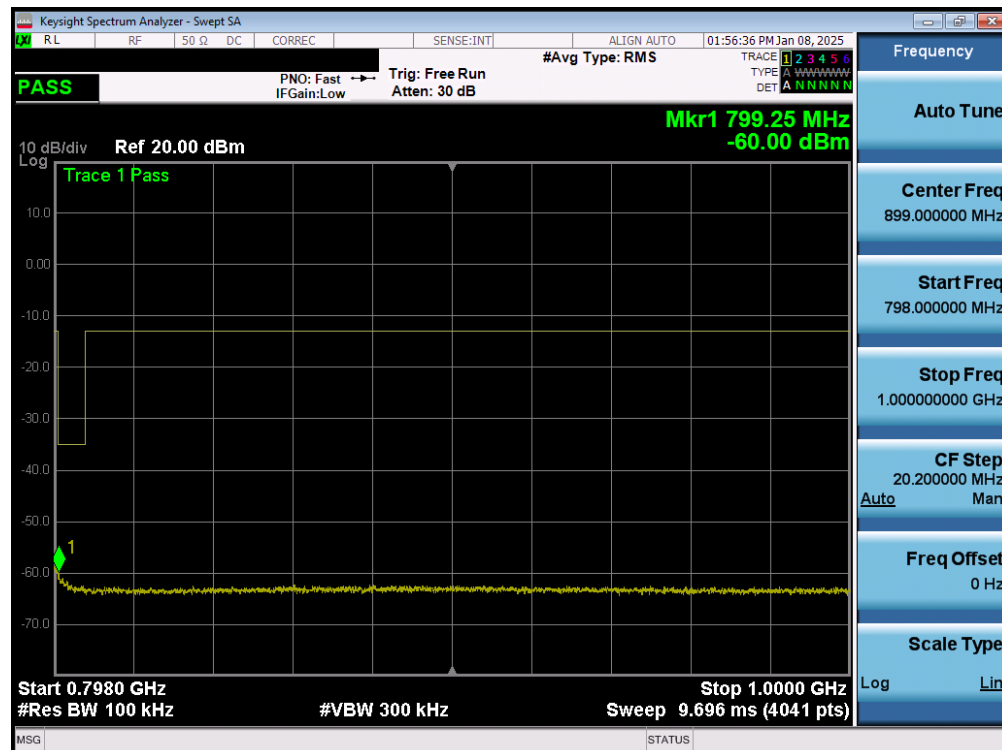
Table 7-6. Conducted Spurious Emission Results

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 30 of 61

LTE Band 14



Plot 7-27. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 25)

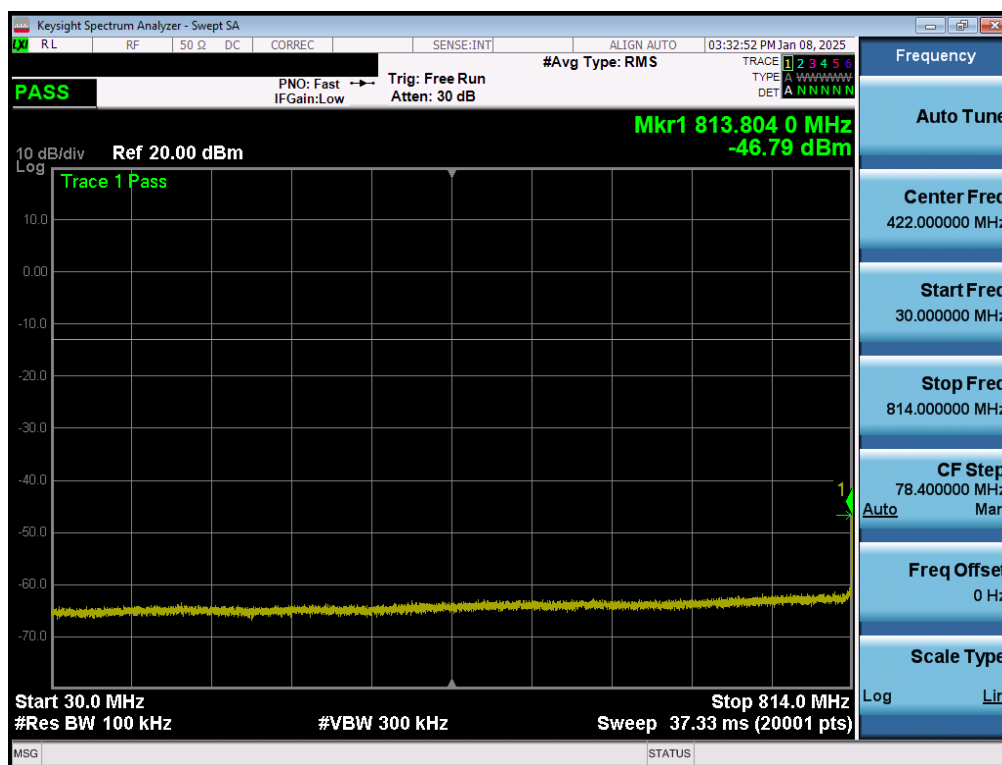


Plot 7-28. Conducted Spurious Plot (LTE Band 14 - 10MHz QPSK - RB Size 1, RB Offset 25)

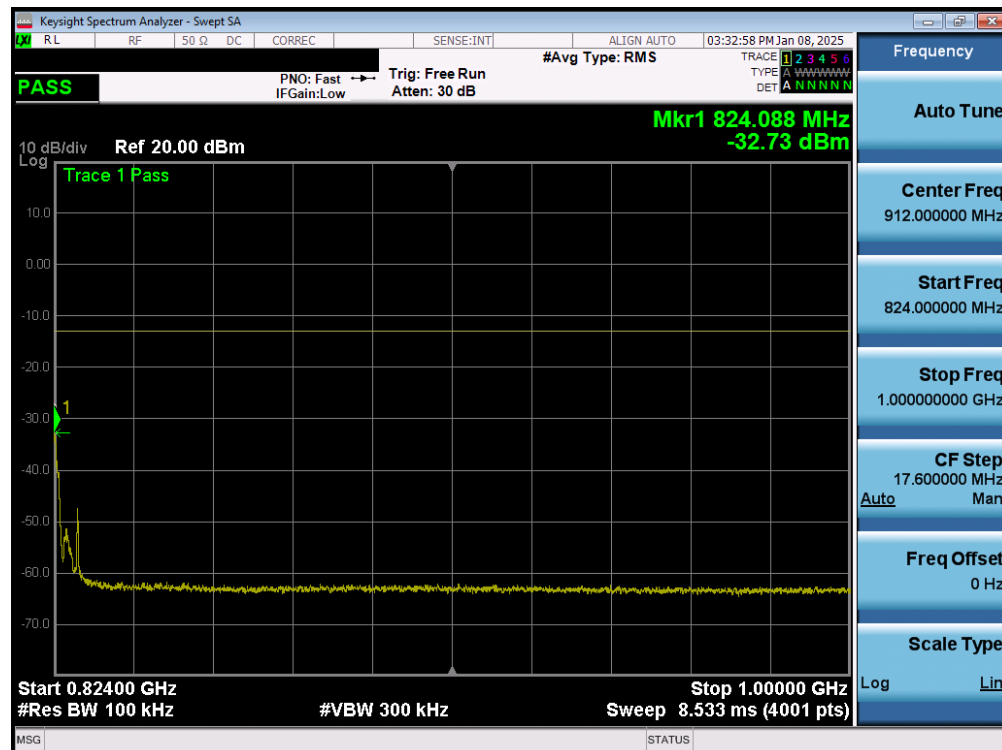
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 31 of 61

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 32 of 61

LTE Band 26

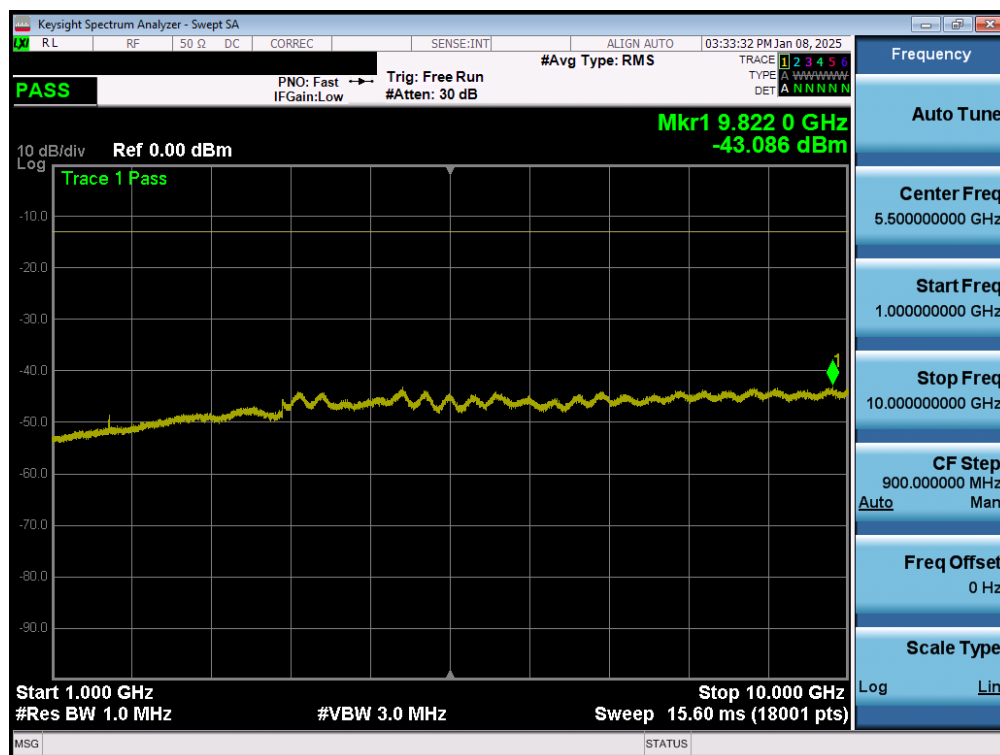


Plot 7-30. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 37)



Plot 7-31. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 37)

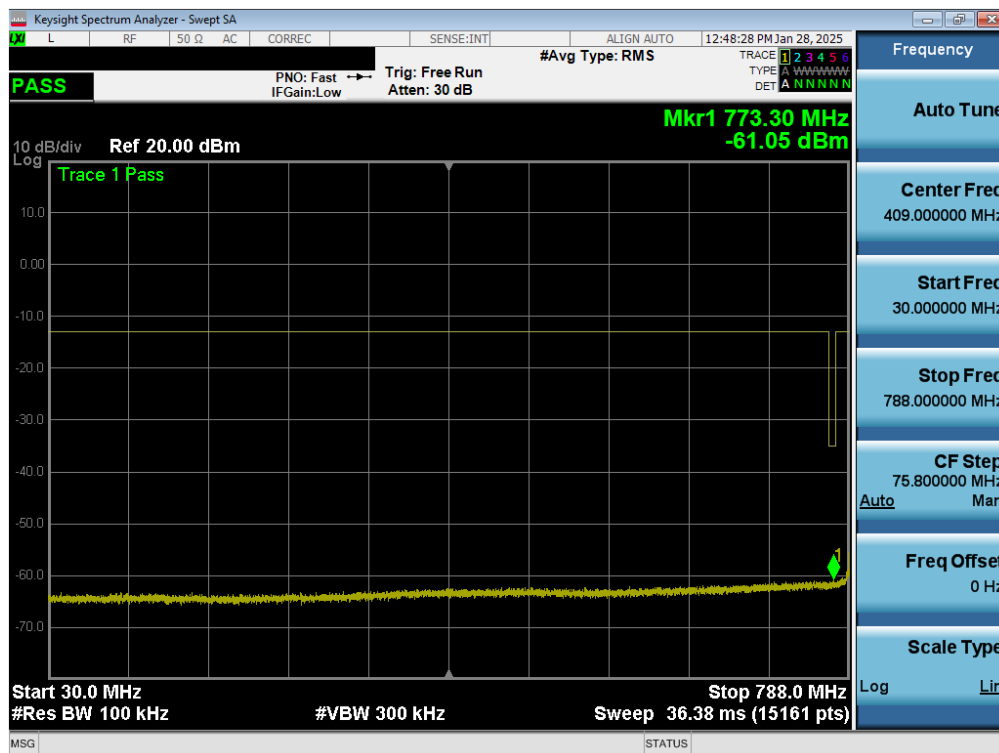
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 33 of 61



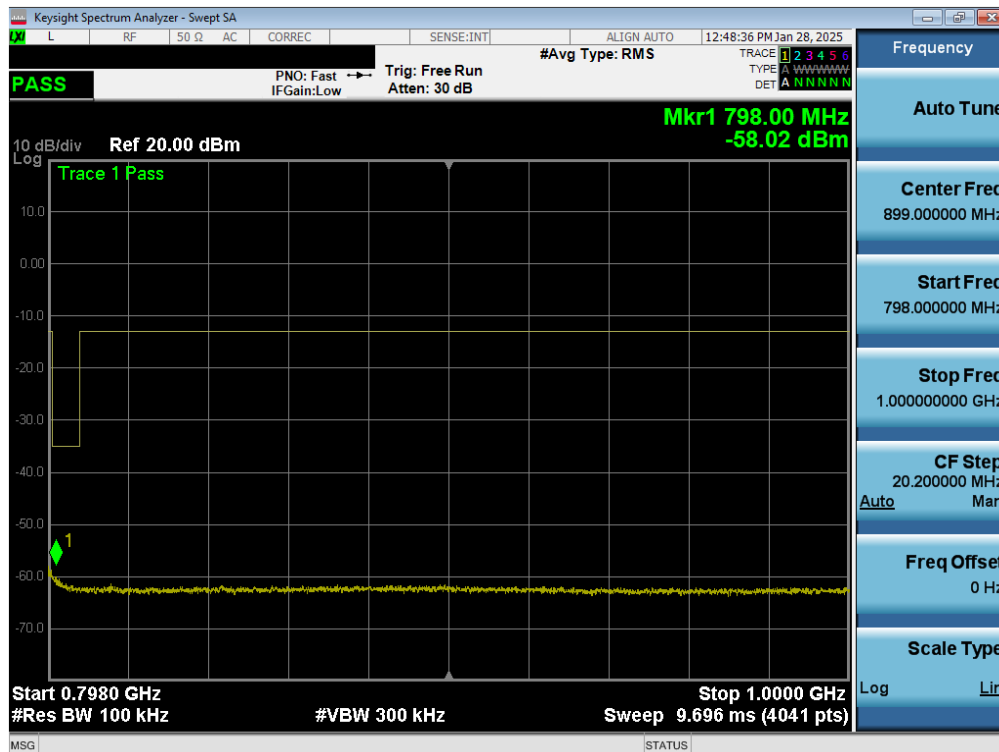
Plot 7-32. Conducted Spurious Plot (LTE Band 26 - 15MHz QPSK - RB Size 1, RB Offset 37)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 34 of 61

NR Band n14

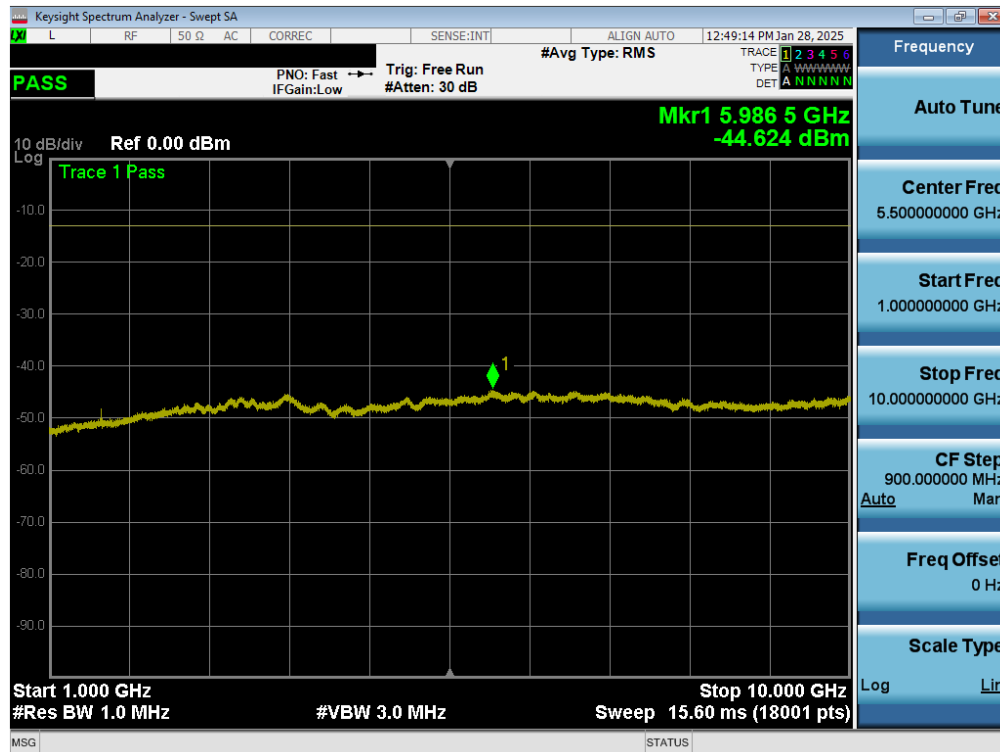


Plot 7-33. Conducted Spurious Plot (NR Band n14 - 10MHz QPSK - RB Size 1, RB Offset 0)



Plot 7-34. Conducted Spurious Plot (NR Band n14 - 10MHz QPSK - RB Size 1, RB Offset 0)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 35 of 61



Plot 7-35. Conducted Spurious Plot (NR Band n14 - 10MHz QPSK - RB Size 1, RB Offset 0)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 36 of 61

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.

For LTE B26 operation under Part 90.691, the minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by greater than 37.5 kHz is $43 + 10\log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts. The minimum permissible attenuation level of any spurious emission removed from the EA licensee's frequency block by up to and including 37.5 kHz is $50 + 10\log_{10}(P_{\text{Watts}})$, where P is the transmitter power in Watts.

For LTE Band 14 operation under Part 90.543, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10\log(P)$ dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

Additionally, for LTE Band 14 operation, on all frequencies between 769-775 MHz and 799-805 MHz, the power of any emission shall be attenuated by a factor not less than $65 + 10\log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Span was set large enough so as to capture all out of band emissions near the band edge
2. RBW = 100 kHz
3. VBW = 300 kHz
4. Detector = RMS
5. Trace mode = trace average
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

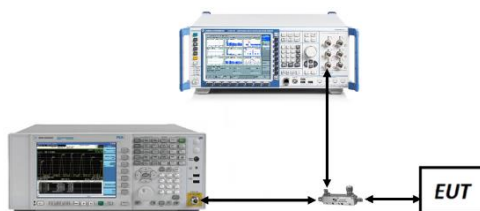


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 37 of 61

Test Notes

1. For channel edge emission, the signal analyzer's "ACP" measurement capability is used.
2. Per 22.917(b) 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.
3. 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.

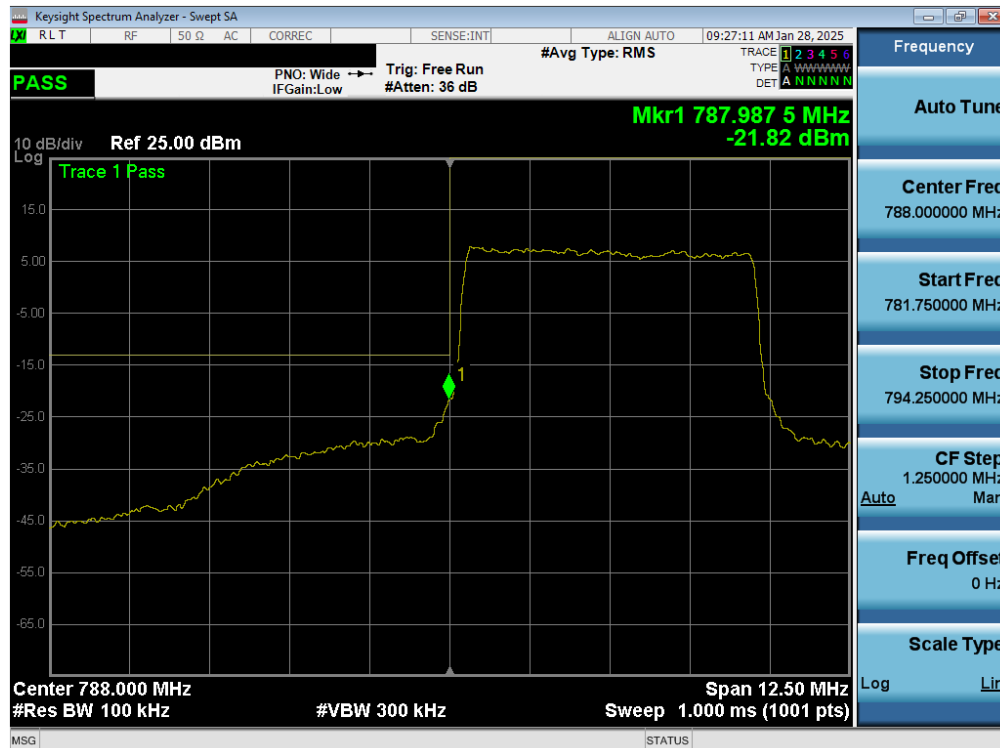
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 38 of 61

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B14	10 MHz	Low	Band Edge	-29.30	-13	-16.30
		Low EmMask	Band Edge	-67.17	-35	-32.17
		High	Band Edge	-27.62	-13	-14.62
		High EmMask	Band Edge	-43.00	-35	-8.00
	5 MHz	Low	Band Edge	-21.82	-13	-8.82
		Low EmMask	Band Edge	-66.93	-35	-31.93
		High	Band Edge	-21.18	-13	-8.18
		High EmMask	Band Edge	-41.46	-35	-6.46
LTE-B26	15 MHz	Mid	Band Edge	-38.96	-20	-18.96
	10 MHz	Mid	Band Edge	-34.04	-20	-14.04
	5 MHz	Low	Band Edge	-28.51	-20	-8.51
		High	Band Edge	-28.40	-20	-8.40
	3 MHz	Low	Band Edge	-25.05	-20	-5.05
		High	Band Edge	-24.88	-20	-4.88
	1.4 MHz	Low	Band Edge	-24.01	-20	-4.01
		High	Band Edge	-24.32	-20	-4.32
NR-n14	10 MHz	Low	Band Edge	-26.93	-13	-13.93
		Low EmMask	Band Edge	-68.78	-35	-33.78
		High	Band Edge	-32.79	-13	-19.79
		High EmMask	Band Edge	-44.94	-35	-9.94
	5 MHz	Low	Band Edge	-22.39	-13	-9.39
		Low EmMask	Band Edge	-67.59	-35	-32.59
		High	Band Edge	-21.41	-13	-8.41
		High EmMask	Band Edge	-45.42	-35	-10.42

Table 7-7. Band Edge Test Results

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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LTE Band 14



Plot 7-36. Lower Band Edge Plot (LTE Band 14, 5MHz QPSK - RB Size 50)

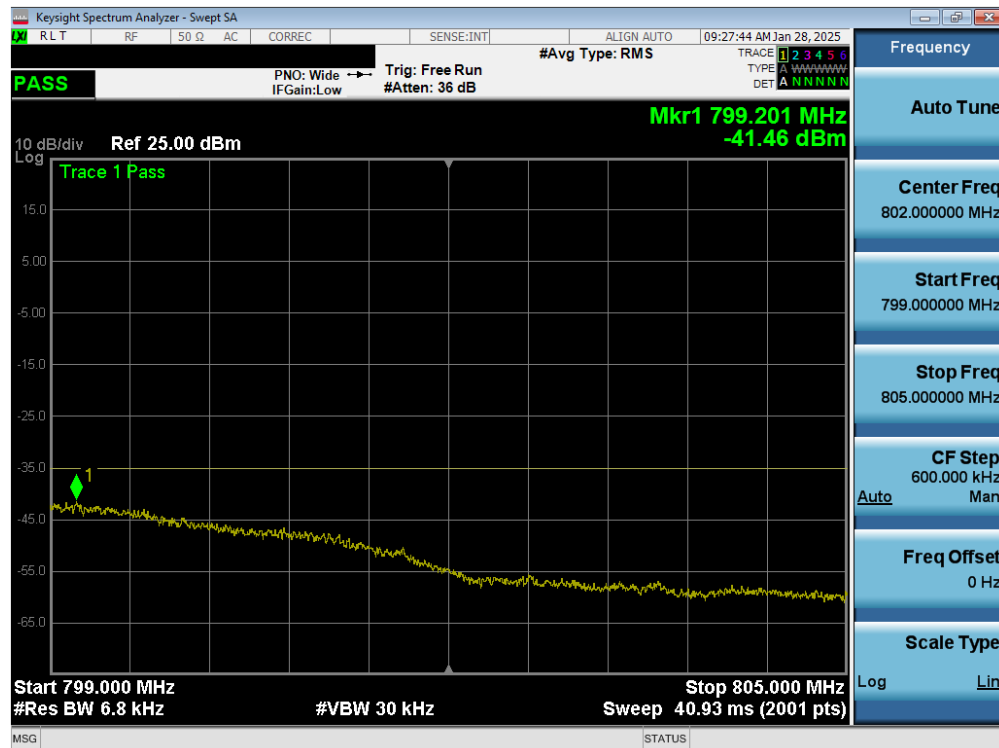


Plot 7-37. Lower Emission Mask Plot (LTE Band 14, 5MHz QPSK - RB Size 50)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 40 of 61



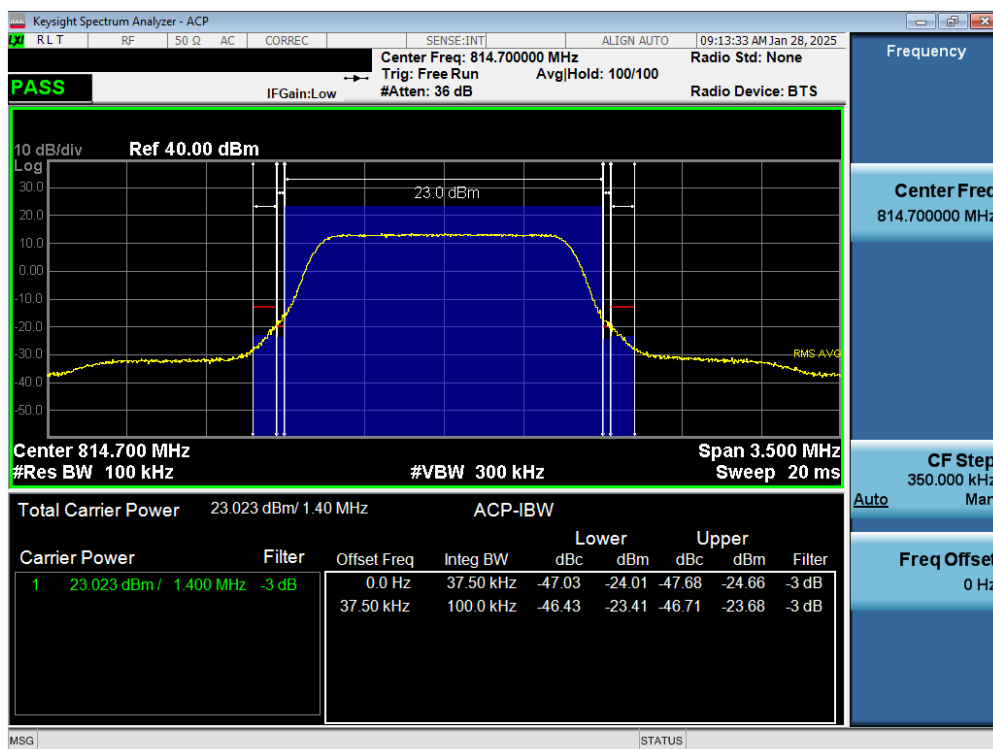
Plot 7-38. Upper Band Edge Plot (LTE Band 14, 5MHz QPSK - RB Size 50)



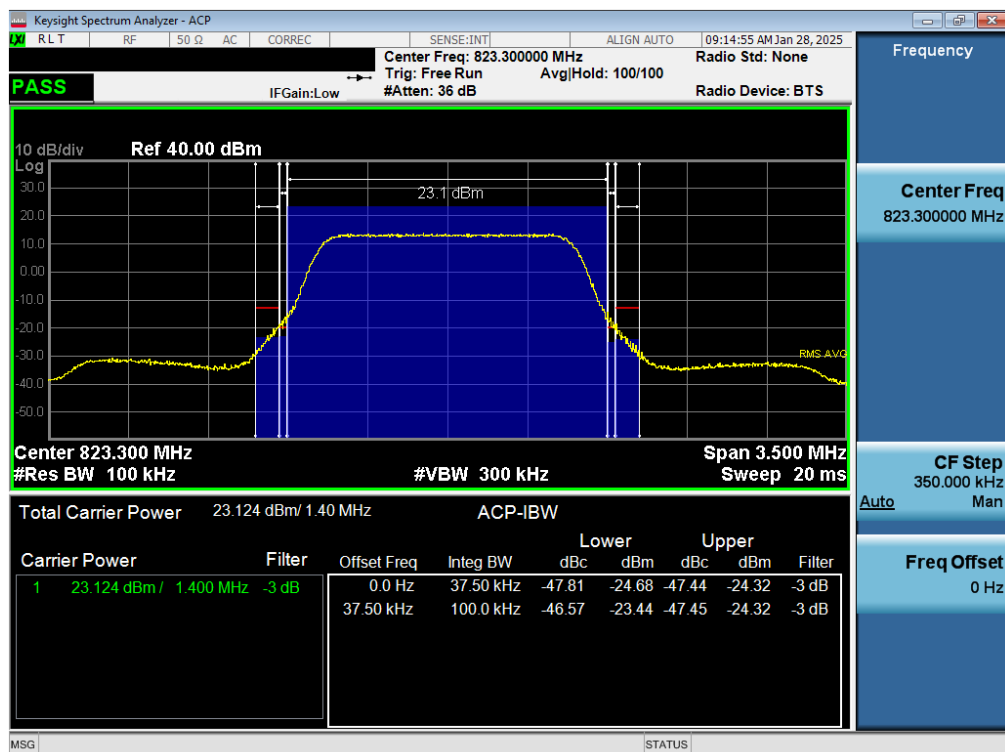
Plot 7-39. Upper Emission Mask Plot (LTE Band 14, 5MHz QPSK - RB Size 50)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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LTE Band 26



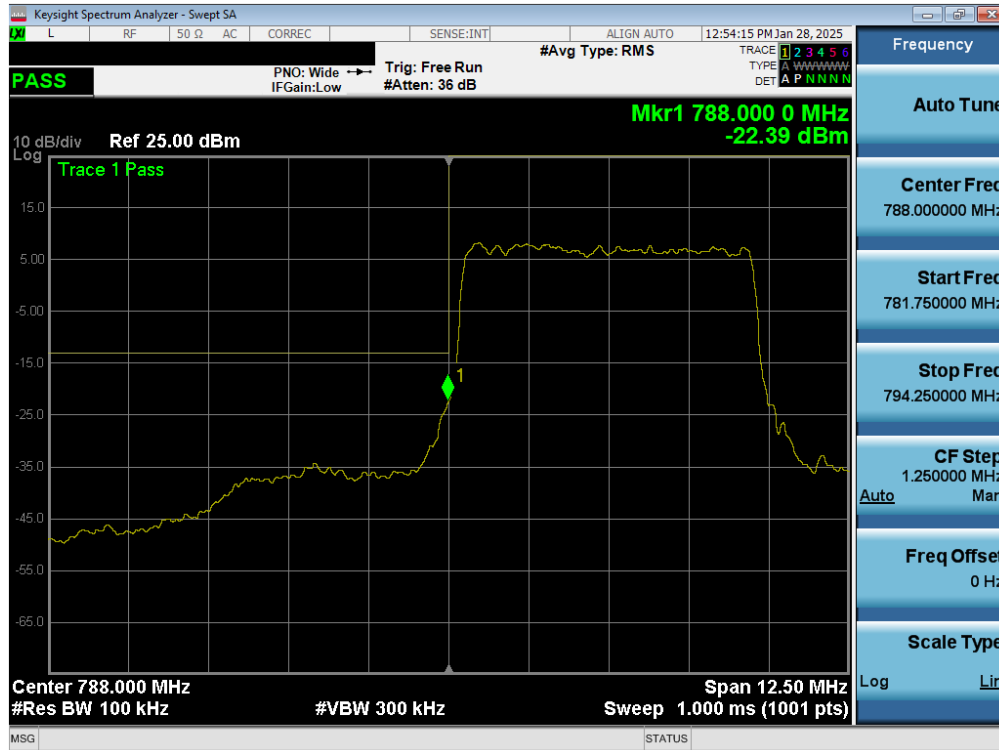
Plot 7-40. Channel - Edge Plot (LTE Band 26 – 1.4MHz QPSK - Low Channel)



Plot 7-41. Channel - Edge Plot (LTE Band 26 – 1.4MHz QPSK - High Channel)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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NR Band n14



Plot 7-42. Channel Edge Plot (NR Band n14 - 5MHz BPSK - Low Channel)

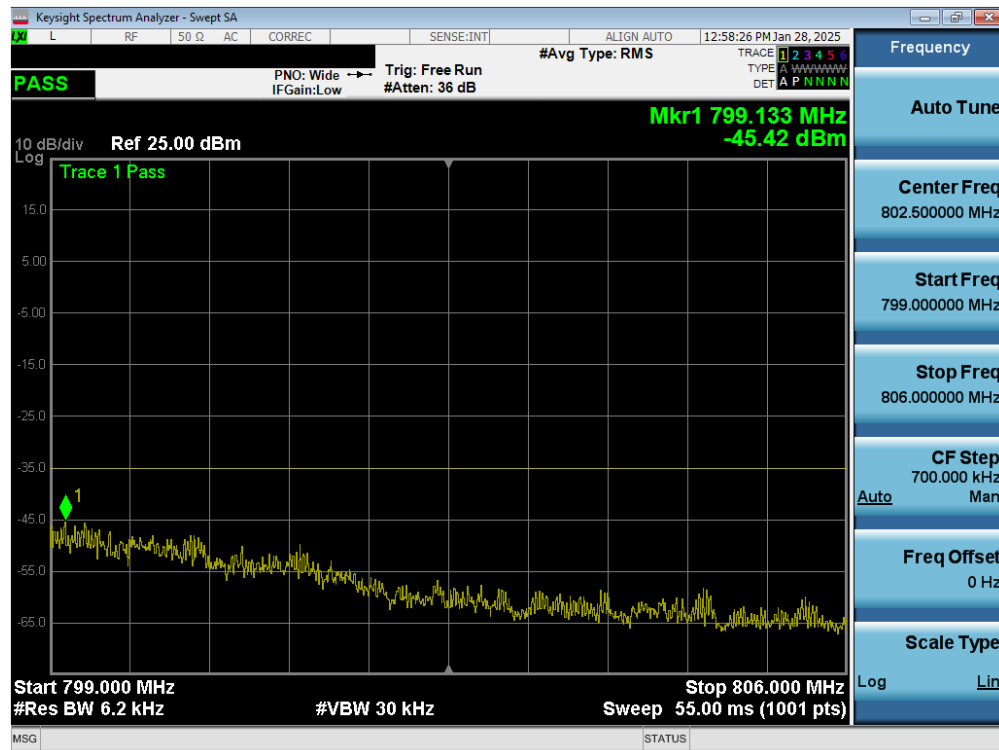


Plot 7-43. Lower Emission Mask Plot (NR Band n14 - 5MHz BPSK - Low Channel)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 43 of 61



Plot 7-44. Channel Edge Plot (NR Band n14 - 5MHz BPSK - High Channel)



Plot 7-45. Upper Emission Mask Plot (NR Band n14 - 5MHz BPSK - High Channel)

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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.
2. RBW = 1 – 5% of the expected OBW
3. VBW $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $\geq 2 \times$ span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize.

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Test Setup

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

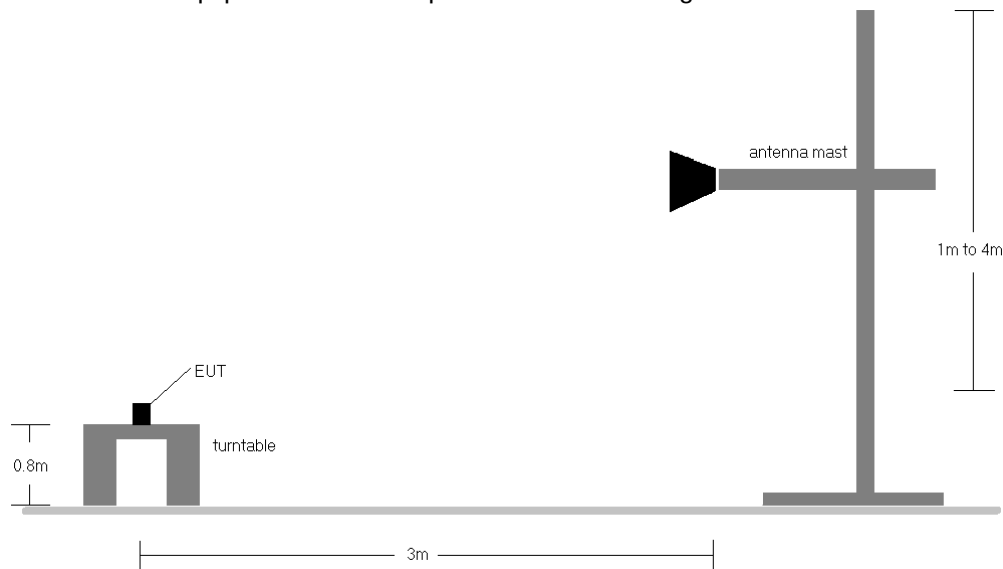


Figure 7-5. Radiated Test Setup <1GHz

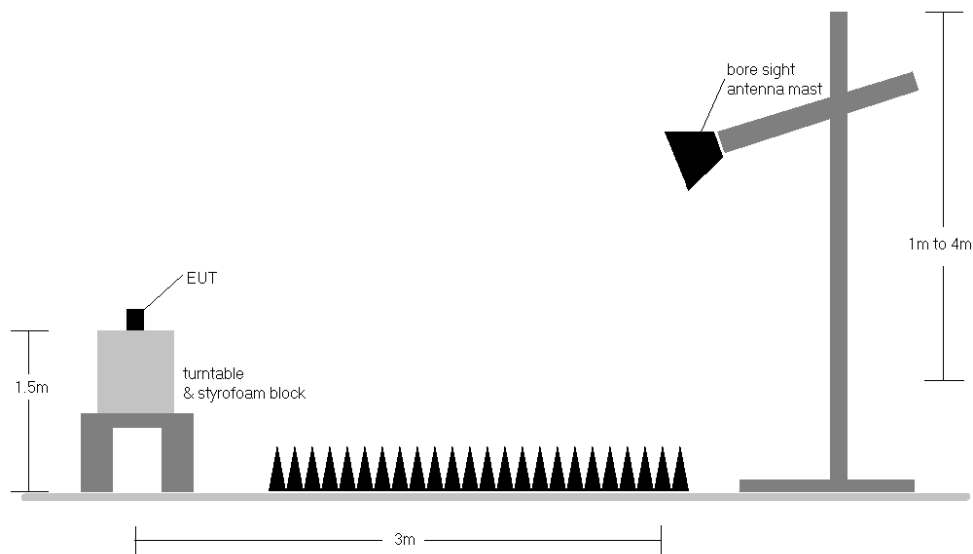


Figure 7-6. Radiated Test Setup > 1GHz

Test Notes

- 1) 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.
- 2) This unit was tested with its standard battery.
- 3) 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.

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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]
10 MHz	QPSK	793.00	H	235	302	0.99	1 / 25	18.47	17.31	0.054	34.77	-17.46	19.46	0.088	36.92	-17.46
	16-QAM	793.00	H	235	302	0.99	1 / 25	17.25	16.09	0.041	34.77	-18.68	18.24	0.067	36.92	-18.68
5 MHz	QPSK	790.50	H	235	302	0.99	1 / 0	18.59	17.43	0.055	34.77	-17.34	19.58	0.091	36.92	-17.34
	QPSK	793.00	H	235	302	1.01	1 / 0	18.41	17.27	0.053	34.77	-17.50	19.42	0.088	36.92	-17.50
	QPSK	795.50	H	235	302	0.99	1 / 12	18.63	17.47	0.056	34.77	-17.30	19.62	0.092	36.92	-17.30
	16-QAM	790.50	H	235	302	0.97	1 / 12	17.39	16.22	0.042	34.77	-18.56	18.37	0.069	36.92	-18.56
	16-QAM	793.00	H	235	302	1.01	1 / 24	17.29	16.15	0.041	34.77	-18.62	18.30	0.068	36.92	-18.62
	16-QAM	795.50	H	235	302	0.99	1 / 12	17.55	16.39	0.044	34.77	-18.38	18.54	0.071	36.92	-18.38

Table 7-8. ERP Data (LTE Band 14)

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]
15 MHz	QPSK	821.50	H	146	208	1.30	1 / 0	19.93	19.08	0.081	38.45	-19.37	21.23	0.133	40.61	-19.38
	16-QAM	821.50	H	146	208	1.30	1 / 0	18.74	17.89	0.061	38.45	-20.56	20.04	0.101	40.61	-20.57

Table 7-9. ERP Data (LTE Band 26)

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]
10 MHz	$\pi/2$ BPSK	793.00	H	235	121	0.99	1 / 50	18.40	17.24	0.053	34.77	-17.53	19.39	0.087	36.92	-17.53
	QPSK	793.00	H	235	121	0.99	1 / 50	18.29	17.13	0.052	34.77	-17.64	19.28	0.085	36.92	-17.64
	16-QAM	793.00	H	235	121	0.99	1 / 50	16.88	15.72	0.037	34.77	-19.05	17.87	0.061	36.92	-19.05
5 MHz	$\pi/2$ BPSK	790.50	H	235	121	1.01	1 / 23	18.58	17.44	0.056	34.77	-17.33	19.59	0.091	36.92	-17.33
	$\pi/2$ BPSK	793.00	H	235	121	0.99	1 / 1	18.65	17.49	0.056	34.77	-17.28	19.64	0.092	36.92	-17.28
	$\pi/2$ BPSK	795.50	H	235	121	0.97	1 / 12	18.64	17.46	0.056	34.77	-17.31	19.61	0.091	36.92	-17.31
	QPSK	790.50	H	235	121	1.01	1 / 23	18.12	16.98	0.050	34.77	-17.79	19.13	0.082	36.92	-17.79
	QPSK	793.00	H	235	121	0.99	1 / 1	18.30	17.15	0.052	34.77	-17.62	19.30	0.085	36.92	-17.62
	QPSK	795.50	H	235	121	0.97	1 / 12	18.60	17.43	0.055	34.77	-17.34	19.58	0.091	36.92	-17.34
	16-QAM	790.50	H	235	121	1.01	1 / 23	16.67	15.54	0.036	34.77	-19.23	17.69	0.059	36.92	-19.23
	16-QAM	793.00	H	235	121	0.99	1 / 1	16.92	15.77	0.038	34.77	-19.00	17.92	0.062	36.92	-19.00
	16-QAM	795.50	H	235	121	0.97	1 / 12	16.80	15.62	0.037	34.77	-19.15	17.77	0.060	36.92	-19.15
	QPSK (CP-OFDM)	795.50	H	238	136	0.99	1 / 50	16.19	15.03	0.032	34.77	-19.74	17.18	0.052	36.92	-19.74

Table 7-10. ERP Data (NR Band n14)

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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

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Test Setup

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

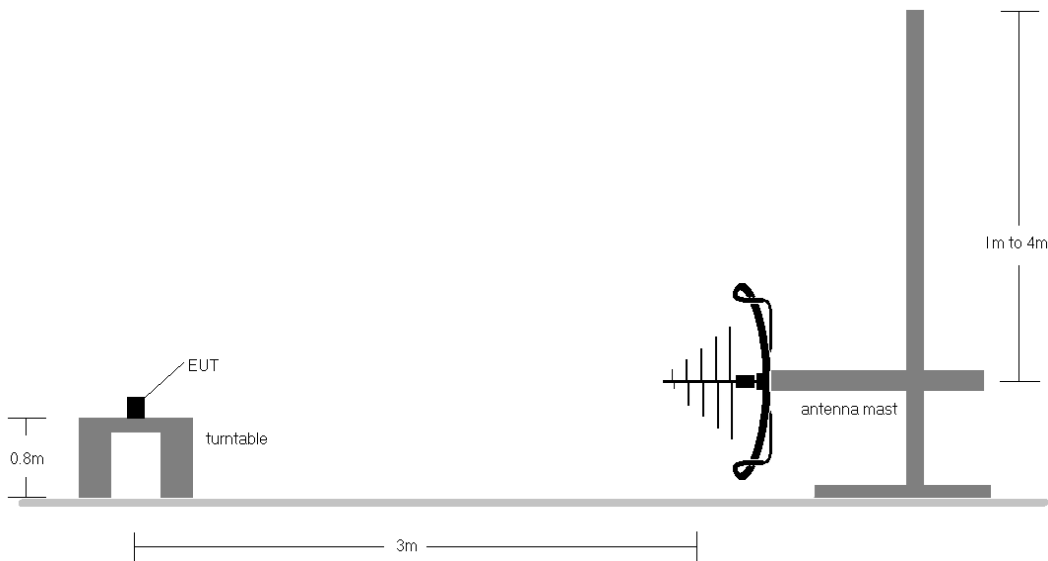


Figure 7-7. Test Instrument & Measurement Setup < 1GHz

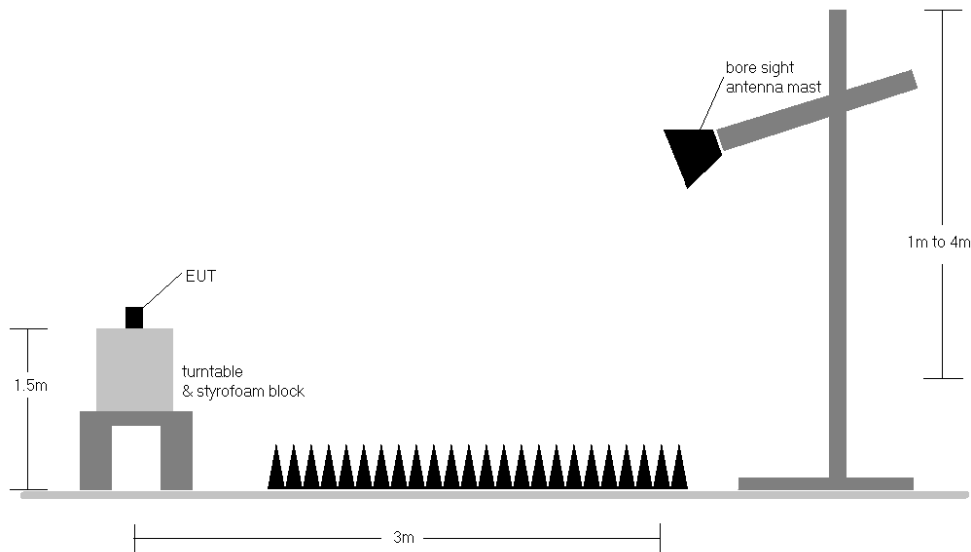


Figure 7-8. Test Instrument & Measurement Setup >1 GHz

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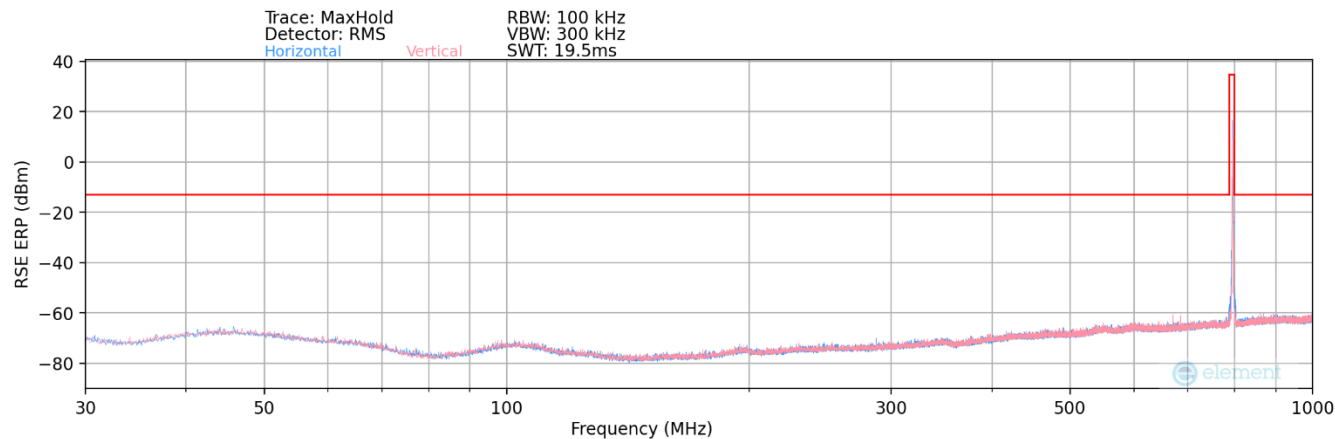
Test Notes

- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(\text{dB}\mu\text{V/m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V/m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) 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.
- 3) This unit was tested with its standard battery.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) 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.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7) 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.
- 8) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates..

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LTE Band 14



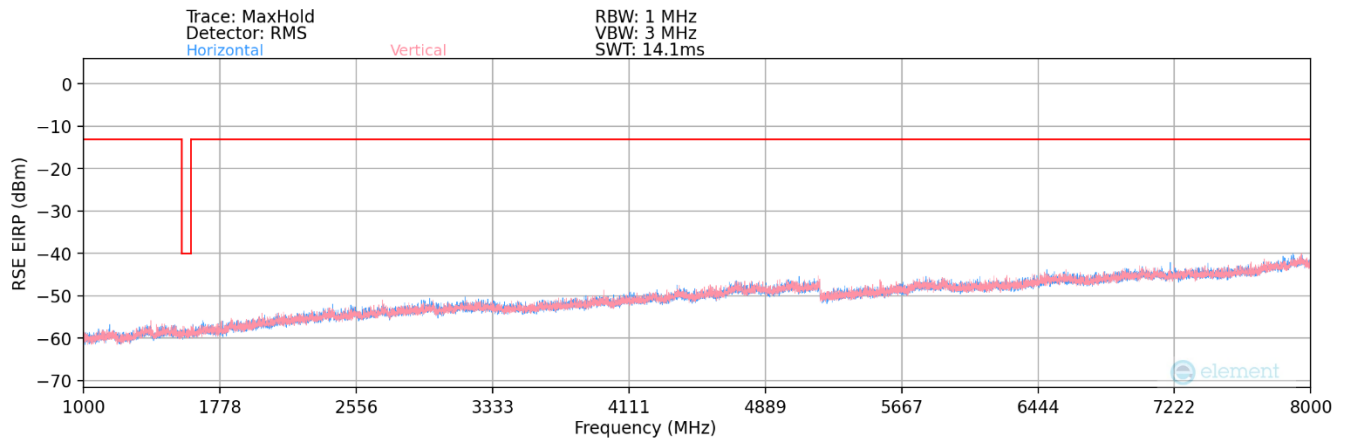
Plot 7-46. Radiated Spurious Plot Below 1GHz (LTE Band 14)

Bandwidth (MHz):	10
Frequency (MHz):	793
RB Config (Size / Offset):	1 / 12

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]
288.00	H	-	-	-114.65	-11.44	-19.09	-116.50	-13.00	-103.50

Table 7-11. Radiated Spurious Data (LTE Band 14)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Plot 7-47. Radiated Spurious Plot Above 1GHz (LTE Band 14)

Bandwidth (MHz):	5
Frequency (MHz):	790.5
RB Config (Size / Offset):	1 / 12

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]
1581.00	H	-	-	-77.91	-0.73	28.36	-66.89	-40.00	-26.89
2371.50	H	-	-	-78.76	3.78	32.02	-63.24	-13.00	-50.24
3162.00	H	-	-	-79.59	6.47	33.88	-61.38	-13.00	-48.38

Table 7-12. Radiated Spurious Data (LTE Band 14 – Low Channel)

Bandwidth (MHz):	5
Frequency (MHz):	793
RB Config (Size / Offset):	1 / 12

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]
1586.00	H	126	336	-76.97	-0.56	29.47	-65.79	-40.00	-25.79
2379.00	H	-	-	-78.60	3.84	32.24	-63.02	-13.00	-50.02
3172.00	H	-	-	-79.88	6.38	33.50	-61.75	-13.00	-48.75
3965.00	H	-	-	-80.16	8.03	34.87	-60.39	-13.00	-47.39

Table 7-13. Radiated Spurious Data (LTE Band 14 – Mid Channel)

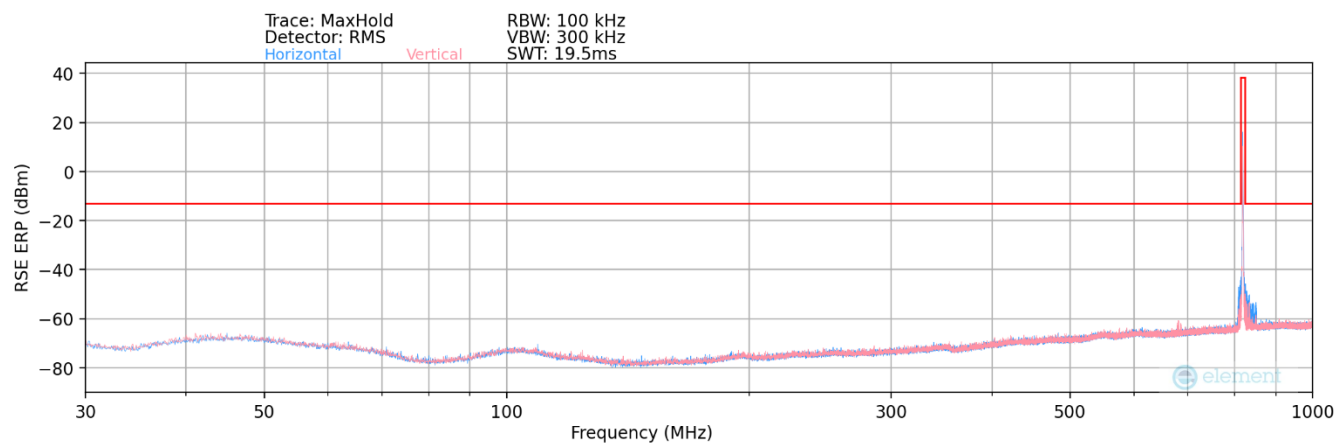
Bandwidth (MHz):	5
Frequency (MHz):	795.5
RB Config (Size / Offset):	1 / 12

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]
1591.00	H	144	346	-75.53	-0.41	31.06	-64.19	-40.00	-24.19
2386.50	H	144	344	-77.80	3.94	33.14	-62.12	-13.00	-49.12
3182.00	H	-	-	-79.55	6.29	33.74	-61.51	-13.00	-48.51
3977.50	H	-	-	-80.20	7.91	34.71	-60.55	-13.00	-47.55
4773.00	H	-	-	-80.40	9.13	35.73	-59.53	-13.00	-46.53

Table 7-14. Radiated Spurious Data (LTE Band 14 – High Channel)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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LTE Band 26



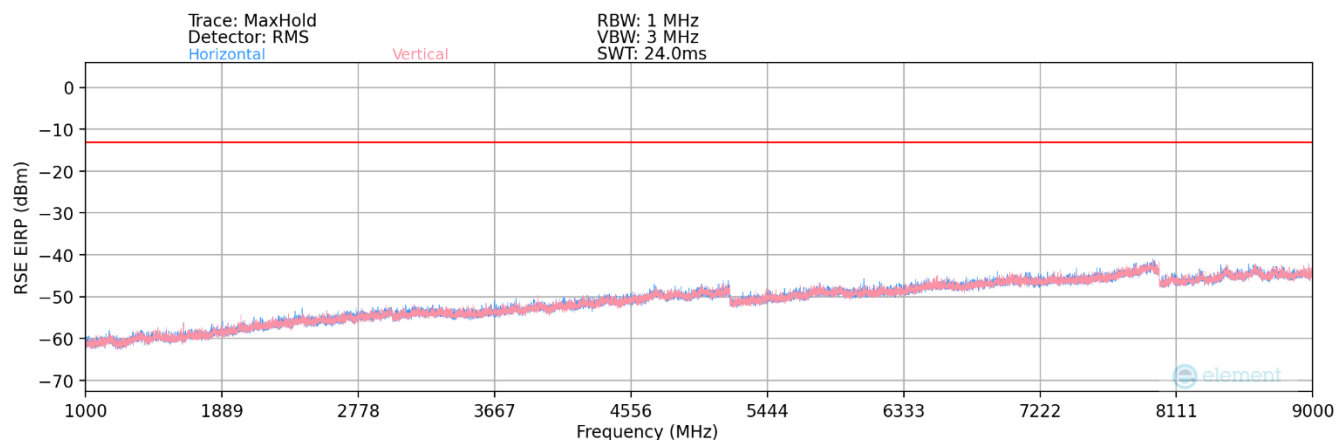
Plot 7-48. Radiated Spurious Plot Below 1GHz (LTE Band 26)

Bandwidth (MHz):	10
Frequency (MHz):	819
RB Config (Size / 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]
108.00	H	-	-	-113.16	-13.69	-19.85	-117.26	-13.00	-104.26

Table 7-15. Radiated Spurious Data (LTE Band 26)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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Plot 7-49. Radiated Spurious Plot Above 1GHz (LTE Band 26)

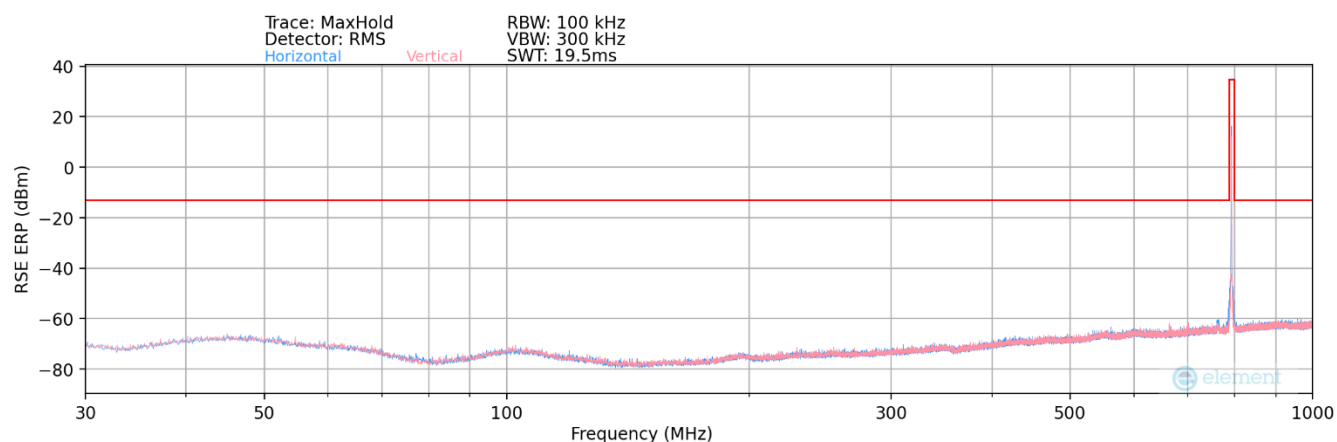
Bandwidth (MHz):	10
Frequency (MHz):	819
RB Config (Size / Offset):	1 / 25

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1638.00	H	325	25	-76.20	-0.43	30.37	-64.89	-13.00	-51.89
2457.00	H	322	35	-78.74	3.79	32.05	-63.21	-13.00	-50.21
3276.00	H	-	-	-81.19	6.41	32.22	-63.04	-13.00	-50.04
4095.00	H	-	-	-81.18	8.33	34.15	-61.11	-13.00	-48.11
4914.00	H	-	-	-81.26	9.70	35.44	-59.82	-13.00	-46.82

Table 7-16. Radiated Spurious Data (LTE Band 26 – Mid Channel)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 54 of 61

NR Band n14



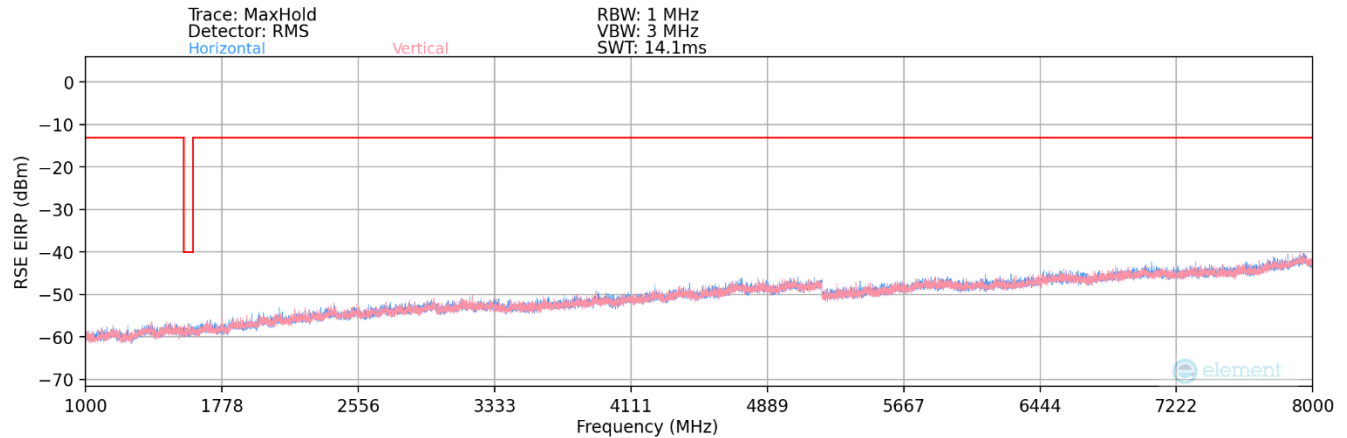
Plot 7-50. Radiated Spurious Plot Below 1GHz (NR Band n14)

Bandwidth (MHz):	5
Frequency (MHz):	790.5
RB / Offset:	1 / 12

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]
555.00	H	-	-	-117.86	-6.01	-16.87	-114.27	-13.00	-101.27

Table 7-17. Radiated Spurious Data (NR Band n14)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 55 of 61



Plot 7-51. Radiated Spurious Plot Above 1GHz (NR Band n14)

Bandwidth (MHz):	5
Frequency (MHz):	790.5
RB / Offset:	1 / 12

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]
1581.00	H	-	-	-78.05	-0.73	28.22	-67.03	-40.00	-27.03
2371.50	H	242	225	-77.80	3.78	32.98	-62.28	-13.00	-49.28
3162.00	H	-	-	-79.85	6.47	33.62	-61.64	-13.00	-48.64
3952.50	H	-	-	-80.44	8.10	34.66	-60.60	-13.00	-47.60
4743.00	H	-	-	-81.24	9.84	35.60	-59.66	-13.00	-46.66

Table 7-18. Radiated Spurious Data (NR Band n14– Low Channel)

Bandwidth (MHz):	5
Frequency (MHz):	793
RB / Offset:	1 / 12

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]
1586.00	H	166	339	-74.75	-0.56	31.69	-63.57	-40.00	-23.57
2379.00	H	156	341	-77.91	3.84	32.93	-62.33	-13.00	-49.33
3172.00	H	-	-	-79.91	6.38	33.47	-61.78	-13.00	-48.78
3965.00	H	-	-	-81.36	8.03	33.67	-61.59	-13.00	-48.59
4758.00	H	-	-	-80.21	9.48	36.27	-58.98	-13.00	-45.98

Table 7-19. Radiated Spurious Data (NR Band n14– Mid Channel)

Bandwidth (MHz):	5
Frequency (MHz):	795.5
RB / Offset:	1 / 12

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]
1591.00	H	115	339	-74.03	-0.41	32.56	-62.69	-40.00	-22.69
2386.50	H	-	-	-78.48	3.94	32.46	-62.80	-13.00	-49.80
3182.00	H	-	-	-79.54	6.29	33.75	-61.50	-13.00	-48.50
3977.50	H	-	-	-80.06	7.91	34.85	-60.41	-13.00	-47.41

Table 7-20. Radiated Spurious Data (NR Band n14– High Channel)

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset		Page 56 of 61

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.

The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 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

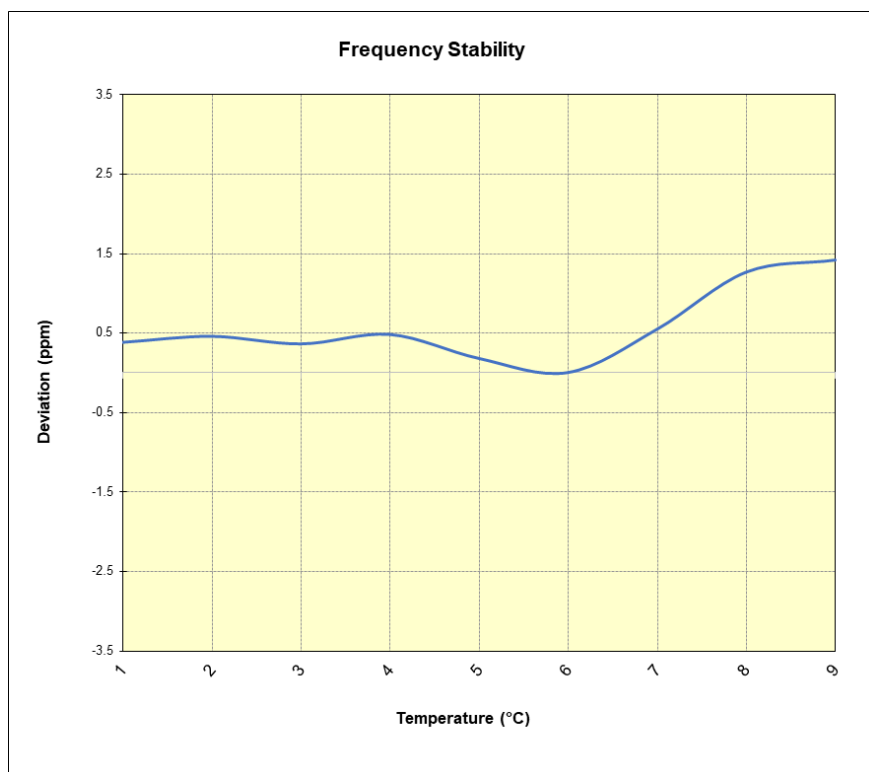
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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LTE Band 14

Operating Frequency (Hz):	793,000,000
Ref. Voltage (VDC):	4.43

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	792,520,301	301	0.0000380
		- 20	792,520,361	361	0.0000456
		- 10	792,520,285	285	0.0000360
		0	792,520,379	379	0.0000478
		+ 10	792,520,140	140	0.0000177
		+ 20 (Ref)	792,520,000	0	0.0000000
		+ 30	792,520,432	432	0.0000545
		+ 40	792,521,001	1,001	0.0001263
Battery Endpoint	3.40	+ 50	792,521,121	1,121	0.0001414
		+ 20	792,484,860	-35,140	-0.0044340

Table 7-21. LTE Band 14 Frequency Stability Data



Plot 7-52. LTE Band 14 Frequency Stability Chart

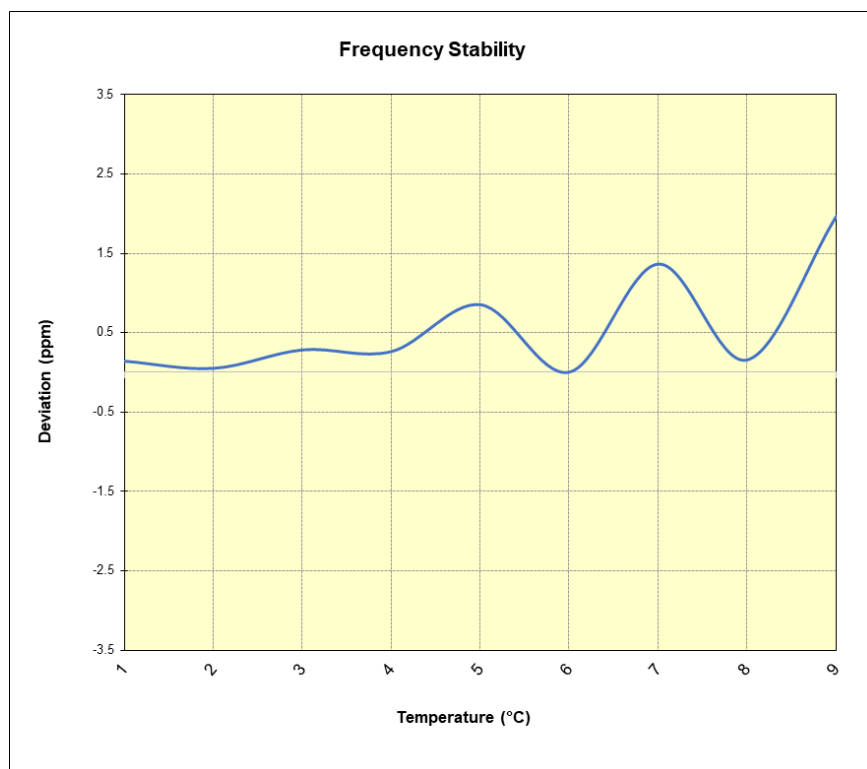
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 58 of 61

LTE Band 26

Operating Frequency (Hz):	819,000,000
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	819,380,113	113	0.0000138
		- 20	819,380,039	39	0.0000048
		- 10	819,380,230	230	0.0000281
		0	819,380,213	213	0.0000260
		+ 10	819,380,697	697	0.0000851
		+ 20 (Ref)	819,380,000	0	0.0000000
		+ 30	819,381,117	1,117	0.0001363
		+ 40	819,380,126	126	0.0000154
Battery Endpoint	3.40	+ 50	819,381,610	1,610	0.0001965
		+ 20	819,341,000	-39,000	-0.0047597

Table 7-22. LTE Band 26 Frequency Stability Data



Plot 7-53. LTE Band 26 Frequency Stability Chart

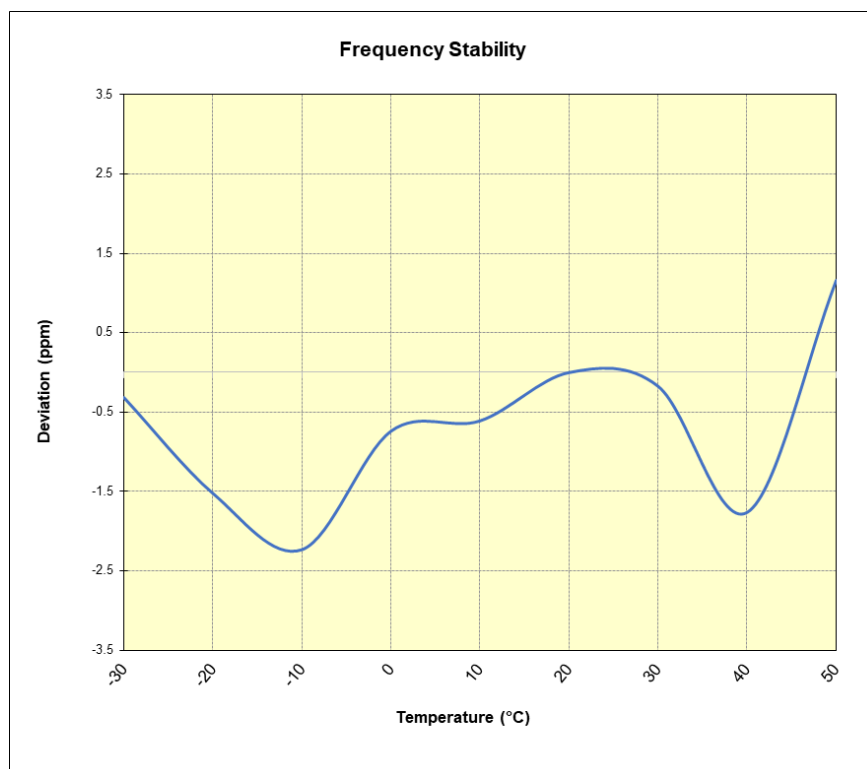
FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 59 of 61

NR Band n14

Operating Frequency (Hz):	793,000,000
Ref. Voltage (VDC):	4.43

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.43	- 30	793,086,865	-249	-0.0000314
		- 20	793,085,909	-1,205	-0.0001519
		- 10	793,085,347	-1,767	-0.0002228
		0	793,086,529	-585	-0.0000738
		+ 10	793,086,632	-482	-0.0000608
		+ 20 (Ref)	793,087,114	0	0.0000000
		+ 30	793,086,977	-137	-0.0000173
		+ 40	793,085,719	-1,395	-0.0001759
Battery Endpoint	3.40	+ 50	793,088,033	919	0.0001159
		+ 20	793,086,312	-802	-0.0001011

Table 7-23. NR Band n14 Frequency Stability Data



Plot 7-54. NR Band n14 Frequency Stability Chart

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG766U** complies with all the requirements of Parts 22(H) and 90 of the FCC rules.

FCC ID: A3LSMG766U	MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2501020001-12.A3L	Test Dates: 1/6/2025 - 3/5/2025	EUT Type: Portable Handset	Page 61 of 61