

ELEMENT WASHINGTON DC LLC

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

PART 24 MEASUREMENT REPORT

Applicant Name:

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

Date of Testing:

9/9/2022 - 11/7/2022 **Test Report Issue Date:** 11/15/2022 **Test Site/Location:** Element lab., Columbia, MD, USA **Test Report Serial No.:** 1M2209010096-02.A3L

FCC ID:

A3LSMS911U

Applicant Name:

Samsung Electronics Co., Ltd.

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

Certification SM-S911U SM-S911U1 Portable Handset PCS Licensed Transmitter Held to Ear (PCE) 24 ANSI C63.26-2015, KDB 648474 D03 v01r04

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

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

RJ Ortanez Executive Vice President



FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 1 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 1 01 232
© 2022 ELEMENT			V11.0 9/14/2022



TABLE OF CONTENTS

1.0	INTRO	ODUCTION	5
	1.1	Scope	5
	1.2	Element Test Location	5
	1.3	Test Facility / Accreditations	5
2.0	PRO	DUCT INFORMATION	6
	2.1	Equipment Description	6
	2.2	Device Capabilities	6
	2.3	Test Configuration	6
	2.4	Software and Firmware	6
	2.5	EMI Suppression Device(s)/Modifications	6
3.0	DESC	CRIPTION OF TESTS	7
	3.1	Evaluation Procedure	7
	3.2	Radiated Power and Radiated Spurious Emissions	7
4.0	MEAS	SUREMENT UNCERTAINTY	8
5.0	TEST	EQUIPMENT CALIBRATION DATA	9
6.0	SAMF	PLE CALCULATIONS	10
7.0	TEST	RESULTS	12
	7.1	Summary	12
	7.2	Conducted Output Power Data	13
	7.3	Occupied Bandwidth	18
	7.4	Spurious and Harmonic Emissions at Antenna Terminal	55
	7.5	Band Edge Emissions at Antenna Terminal	
	7.6	Peak-Average Ratio	
	7.7	Radiated Power (EIRP)	
	7.8	Radiated Spurious Emissions Measurements	
	7.9	Frequency Stability / Temperature Variation	227
8.0	CON	CLUSION	232

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 2 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 2 01 232
© 2022 ELEMENT			V11.0 9/14/2022



PART 24 MEASUREMENT REPORT

Antenna A						
				EI	RP	Emission
Mode	Bandwidth	Modulation	Range [MHz]	Max. Power [W]	Max. Power [dBm]	Designator
GSM/GPRS	N/A	GMSK	1850.2 - 1909.8	1.011	30.05	244KGXW
EDGE	N/A	8-PSK	1850.2 - 1909.8	0.463	26.66	243KG7W
WCDMA	N/A	Spread Spectrum	1852.4 - 1907.6	0.294	24.69	4M17F9W
	20 MH-	QPSK	1860 - 1905	0.216	23.35	18M1G7D
		16QAM	1860 - 1905	0.190	22.78	18M1W7D
		QPSK	1857.5 - 1907.5	0.219	23.40	13M6G7D
		16QAM	1857.5 - 1907.5	0.183	22.62	13M6W7D
	10 MHz	QPSK	1855 - 1910	0.234	23.69	9M05G7D
LTE Band 25/2	10 10112	16QAM	1855 - 1910	0.197	22.94	9M06W7D
Ant A	5 MHz	QPSK	1852.5 - 1912.5	0.235	23.72	4M54G7D
	5 10112	16QAM	1852.5 - 1912.5	0.206	23.13	4M54W7D
	3 MHz	QPSK	1851.5 - 1913.5	0.236	23.73	2M72G7D
	5 10112	16QAM	1851.5 - 1913.5	0.195	22.90	2M73W7D
	1.4 MHz	QPSK	1850.7 - 1914.3	0.229	23.59	1M11G7D
		16QAM	1850.7 - 1914.3	0.188	22.73	1M11W7D
	40 MHz 30 MHz	π/2 BPSK	1870 - 1895	0.189	22.77	38M7G7D
		QPSK	1870 - 1895	0.184	22.64	38M8G7D
		16QAM	1870 - 1895	0.140	21.47	38M8W7D
		π/2 BPSK	1865 - 1900	0.192	22.84	28M8G7D
		QPSK	1865 - 1900	0.191	22.80	28M7G7D
		16QAM	1865 - 1900	0.141	21.50	28M8W7D
	25 MHz	π/2 BPSK	1862.5 - 1902.5	0.193	22.85	23M0G7D
		QPSK	1862.5 - 1902.5	0.201	23.04	23M9G7D
		16QAM	1862.5 - 1902.5	0.140	21.46	23M9W7D
NR Band n25/2		π/2 BPSK	1860 - 1905	0.199	23.00	18M0G7D
Ant A	20 MHz	QPSK	1860 - 1905	0.205	23.11	19M0G7D
/ 410 / 1		16QAM	1860 - 1905	0.144	21.59	19M0W7D
		π/2 BPSK	1857.5 - 1907.5	0.189	22.76	13M6G7D
	15 MHz	QPSK	1857.5 - 1907.5	0.191	22.82	14M2G7D
		16QAM	1857.5 - 1907.5	0.145	21.62	14M2W7D
		π/2 BPSK	1855 - 1910	0.186	22.69	9M02G7D
	10 MHz	QPSK	1855 - 1910	0.189	22.75	9M35G7D
		16QAM	1855 - 1910	0.142	21.53	9M38W7D
		π/2 BPSK	1852.5 - 1912.5	0.189	22.77	4M52G7D
	5 MHz	QPSK	1852.5 - 1912.5	0.195	22.90	4M52G7D
		16QAM	1852.5 - 1912.5	0.142	21.52	4M52W7D

EUT Overview

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 2 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 3 of 232	
© 2022 ELEMENT			V11 0 9/14/2022	



Antenna F						
			Ty Freemanney	EI	Emission	
Mode	Bandwidth Modulatio		Range [MHz]	Max. Power [W]	Max. Power [dBm]	Designator
	20 MHz	QPSK	1860 - 1905	0.154	21.87	18M1G7D
	20 1011 12	16QAM	1860 - 1905	0.133	21.23	18M1W7D
-	15 MU-	QPSK	1857.5 - 1907.5	0.154	21.87	13M6G7D
	13 10112	16QAM	1857.5 - 1907.5	0.136	21.34	13M5W7D
	10 MH-	QPSK	1855 - 1910	0.157	21.95	9M05G7D
LTE Band 25/2		16QAM	1855 - 1910	0.132	21.19	9M04W7D
Ant F	5 MU-	QPSK	1852.5 - 1912.5	0.155	21.90	4M53G7D
	5 IVII IZ	16QAM	1852.5 - 1912.5	0.132	21.19	4M53W7D
	2 M⊔-	QPSK	1851.5 - 1913.5	0.148	21.72	2M71G7D
	3 WII 12	16QAM	1851.5 - 1913.5	0.133	21.23	2M73W7D
		QPSK	1850.7 - 1914.3	0.153	21.84	1M11G7D
	1.4 101112	16QAM	1850.7 - 1914.3	0.138	21.39	1M11W7D
	40 MHz	π/2 BPSK	1870 - 1895	0.106	20.24	38M7G7D
		QPSK	1870 - 1895	0.103	20.11	38M8G7D
		16QAM	1870 - 1895	0.087	19.41	38M9W7D
		π/2 BPSK	1865 - 1900	0.105	20.21	28M9G7D
	30 MHz	QPSK	1865 - 1900	0.102	20.09	28M8G7D
		16QAM	1865 - 1900	0.087	19.39	28M8W7D
	25 MHz	π/2 BPSK	1862.5 - 1902.5	0.106	20.24	23M0G7D
		QPSK	1862.5 - 1902.5	0.097	19.85	23M9G7D
		16QAM	1862.5 - 1902.5	0.085	19.29	23M9W7D
ND Dond n25/2		π/2 BPSK	1860 - 1905	0.109	20.39	18M0G7D
Ant E	20 MHz	QPSK	1860 - 1905	0.106	20.24	19M1G7D
		16QAM	1860 - 1905	0.087	19.42	19M1W7D
		π/2 BPSK	1857.5 - 1907.5	0.110	20.40	13M6G7D
	15 MHz	QPSK	1857.5 - 1907.5	0.103	20.12	14M2G7D
		16QAM	1857.5 - 1907.5	0.083	19.18	14M2W7D
		π/2 BPSK	1855 - 1910	0.107	20.30	9M02G7D
	10 MHz	QPSK	1855 - 1910	0.102	20.07	9M39G7D
		16QAM	1855 - 1910	0.074	18.71	9M37W7D
		π/2 BPSK	1852.5 - 1912.5	0.105	20.22	4M56G7D
	5 MHz	QPSK	1852.5 - 1912.5	0.100	19.98	4M53G7D
		16QAM	1852.5 - 1912.5	0.078	18.90	4M51W7D

EUT Overview

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 4 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 4 01 232
© 2022 ELEMENT			V11.0 9/14/2022



1.0 INTRODUCTION

1.1 Scope

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

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

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

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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage E of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 5 01 232
© 2022 ELEMENT			V11.0 9/14/2022

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.



2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS911U**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 24 and RSS-133.

Test Device Serial No.: 0218M, 0235M, 0248M, 0371M, 0286M, 0247M, 0308M, 0238M, 0237M, 0241M, 0228M

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

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version S911USQU0AVJM 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: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 6 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 6 01 232
© 2022 ELEMENT			V11.0 9/14/2022



3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

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

Deviation from Measurement Procedure......None

3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

 $P_{d [dBm]} = P_{g [dBm]} - cable loss [dB] + antenna gain [dBd/dBi];$

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

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

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

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: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 7 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 7 01 232
© 2022 ELEMENT			V11.0 9/14/2022



4.0 MEASUREMENT UNCERTAINTY

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

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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 9 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage o UI 232
© 2022 ELEMENT	•	·	V11.0 9/14/2022



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	8/11/2022	Annual	8/11/2023	AP2
-	AP1	EMC Cable and Switch System	8/15/2022	Annual	8/15/2023	AP1
-	ETS	EMC Cable and Switch System	8/11/2022	Annual	8/11/2023	ETS
-	LTx1	Licensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTx1
-	LTx2	Licensed Transmitter Cable Set	8/15/2022	Annual	8/15/2023	LTx2
-	LTx3	LIcensed Transmitter Cable Set	8/15/2022	Annual	8/15/2023	LTx3
-	LTx4	Licensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTx4
-	LTx5	LIcensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTx5
Agilent	E5515C	Wireless Communications Test Set		N/A		GB45360985
Agilent	E5515C	Wireless Communications Test Set		N/A		GB46310798
Anritsu	MT8820C	Radio Communication Analyzer		N/A		6201300731
Anritsu	MT8821C	Radio Communication Analyzer		N/A		6201381794
Anritsu	MT8821C	Radio Communication Analyzer		N/A		6200901190
Anritsu	MT8821C	Radio Communication Analyzer		N/A		6201525694
Com-Power	AL-130R	Active Loop Antenna	1/19/2022	Biennial	1/19/2024	121085
Emco	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9704-5182
Espec	ESX-2CA	Environmental Chamber	5/25/2022	Biennial	5/25/2024	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2021	Biennial	4/20/2023	00125518
ETS Lindgren	3164-10	Quad Ridge Horn 400MHz - 10000MHz	5/10/2021	Biennial	5/10/2023	00166283
ETS Lindgren	3816/2NM	LISN	8/11/2022	Biennial	8/11/2024	00114451
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2022	Annual	3/15/2023	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	8/18/2022	Annual	8/18/2023	MY49430494
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	2/14/2022	Annual	2/14/2023	MY52350166
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator		N/A		11403100002
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		833855/0010
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		107826
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		109892
Rohde & Schwarz	CMU200	Base Station Simulator		N/A		836536/0005
Rohde & Schwarz	CMW500	Radio Communication Tester		N/A		100976
Rohde & Schwarz	CMW500	Radio Communication Tester		N/A		112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/29/2022	Annual	8/29/2023	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	8/25/2022	Annual	8/25/2023	100348
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/28/2022	Annual	3/28/2023	101716
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	4/14/2022	Annual	4/14/2023	103187
Sunol	JB6	LB6 Antenna	11/13/2020	Biennial	11/13/2022	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.

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 0 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 9 01 232
© 2022 ELEMENT			V11.0 9/14/2022



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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 10 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 10 01 232
© 2022 ELEMENT			V11.0 9/14/2022



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: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 11 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage IT 01232
© 2022 ELEMENT			V11.0 9/14/2022



7.0 TEST RESULTS

7.1 Summary

Company Name:	Samsung Electronics Co., Ltd.
FCC ID:	A3LSMS911U
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
Mode(s):	GSM/GPRS/EDGE/WCDMA/LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference	
	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	N/A	PASS	Section 7.2	
Ë	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3	
NDUCT	Conducted Band Edge / Spurious Emissions	2.1051, 24.238(a)	> 43 + 10log10(P[Watts]) at Band Edge and for all out-of- band emissions	PASS	Sections 7.4, 7.5	
8	Peak-to-Average Ratio	24.232(d)	≤ 13 dB	PASS	Section 7.6	
	Frequency Stability	2.1055, 24.235	Fundamental emissions stay within authorized frequency block **Carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm	PASS	Section 7.9	
ATED	Equivalent Isotropic Radiated Power	24.232(c)	< 2 Watts max. EIRP	PASS	Section 7.7	
RADI	Radiated Spurious Emissions	2.1053, 24.238(a)	≥ 43 + 10 log (P[Watts]) dB of attenuation below transmitter power **Spurious emissions from receivers shall not exceed the limits detailed in RSS-Gen(7.3)	PASS	Section 7.8	
* The only tr	* The only transmitter output conducted powers included in this report are those where the Pmax value, per the tune-up document, is higher than any of the DSI power levels. For the remaining conducted power measurements, see the RF Exposure Report .					

Table 7-1. Summary of Test Results

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v1.1.

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 12 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 12 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	



7.2 Conducted Output Power Data

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 - Section 5.2

Test Settings

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

Test Setup

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



Figure 7-1. Test Instrument & Measurement Setup

Test Notes

- 1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
- 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.

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 12 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 13 01 232
© 2022 ELEMENT			V11.0 9/14/2022



Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
<u> </u>		26140	1860.0	1/0	23.53
НИ	QPSK	26365	1882.5	1 / 50	23.33
2		26590	1905.0	1 / 50	23.31
7	16-QAM	26140	1860.0	1/0	22.74
N		26115	1857.5	1 / 74	23.54
НИ	QPSK	26365	1882.5	1/0	23.32
5 N		26615	1907.5	1 / 0	23.19
-	16-QAM	26115	1857.5	1 / 74	22.85
10 MHz		26090	1855.0	1/0	23.61
	QPSK	26365	1882.5	1/0	23.46
		26640	1910.0	1 / 49	23.19
	16-QAM	26090	1855.0	1/0	22.70
; MHz	QPSK	26065	1852.5	1 / 0	23.57
		26365	1882.5	1 / 12	23.62
		26665	1912.5	1 / 12	23.40
ì	16-QAM	26365	1882.5	1 / 12	22.77
N		26055	1851.5	1 / 0	23.27
IH	QPSK	26365	1882.5	1 / 7	23.40
3 N		26675	1913.5	1 / 7	23.56
ං 	16-QAM	26675	1913.5	1 / 7	22.90
N		26047	1850.7	1 / 5	23.51
M	QPSK	26365	1882.5	1/3	23.47
4		26683	1914.3	1/0	23.49
	16-QAM	26047	1850.7	1 / 5	22.90

Table 7-2. Conducted Max Powers (LTE Band B25/2 – Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 14 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 14 01 232
© 2022 ELEMENT			V11.0 9/14/2022



Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
		374000	1870.0	1 / 161	23.28
	π/2 BPSK	376500	1882.5	1 / 54	23.22
40 MHz		379000	1895.0	1 / 54	23.11
		374000	1870.0	1 / 54	23.31
	QPSK	376500	1882.5	1 / 54	23.40
		379000	1895.0	1 / 54	23.14
	16-QAM	374000	1870.0	1 / 54	22.51
		372000	1865.0	1 / 40	23.25
	π/2 BPSK	376500	1882.5	1 / 80	23.30
		381000	1900.0	1 / 40	23.16
30 MHz		372000	1865.0	1 / 40	23.28
	QPSK	376500	1882.5	1 / 80	23.31
		381000	1900.0	1 / 40	23.28
	16-QAM	376500	1882.5	1 / 80	22.82
		372000	1862.5	1 / 33	23.28
	π/2 BPSK	376500	1882.5	1 / 66	23.36
		381000	1902.5	1 / 33	23.20
25 MHz		372000	1862.5	1 / 33	23.04
	QPSK	376500	1882.5	1 / 66	23.03 22.94
		381000	1902.5	1 / 33	22.94
	16-QAM	376500	1882.5	1 / 66	22.19
		372000	1860.0	1 / 53	23.43
	π/2 BPSK	376500	1882.5	1 / 53	23.10
		381000	1905.0	1 / 53	23.16
20 MHz	QPSK	372000	1860.0	1 / 26	23.44
		376500	1882.5	1 / 53	23.19
	-	381000	1905.0	1 / 53	22.76
	16-QAM	372000	1860.0	1 / 26	22.52
		371500	1857.5	1 / 20	23.44
	π/2 BPSK	376500	1882.5	1 / 20	23.35
		381500	1907.5	1 / 58	23.03
15 MHz	0001	371500	1857.5	1 / 20	23.32
	QPSK	376500	1882.5	1 / 20	23.10
		381500	1907.5	1 / 58	22.95
	16-QAM	371500	1857.5	1/20	22.28
		371000	1855.0	1/26	23.34
	TI/2 BPSK	376500	1882.5	1/38	23.27
		382000	1910.0	1/13	22.86
	ODOK	371000	1855.0	1/26	23.27
	QPSK	376500	1882.5	1/38	22.89
	16 OAM	382000	1910.0	1/13	22.75
	IO-QAIVI	371000	1952.5	1/20	21.01
		376500	1892.5	1/6	23.20
	II/2 DFSK	370000	1002.0	1/6	23.14
5 MHz		370500	1852.5	1/0	23.00
	ODer	376500	1892.5	1/6	20.10
	97 JN	382500	1002.0	1/6	22.32
	16-0AM	370500	1852.5	1/18	22.19
		010000	1002.0	1710	22.00

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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 15 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 15 01 252
© 2022 ELEMENT			V/11 0 0/14/2022



	NR (SCS 15kHz)					LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	50/0	17.10	22.92	23.93
- 25 /2				QPSK	100/0	D 12				QPSK	1/25	17.04	23.07	24.04
n25/2	20	Mid	1882.5	QPSK	1/53	B12	10	Mid	707.5	QPSK	50/0	16.85	22.93	23.89
ANT A			100215	QPSK	1/53	ANTA				QPSK	1/25	16.87	22.98	23.93
				16Q	1/53					16Q	1/25	17.15	23.32	24.26

Table 7-4. Conducted Max Powers (EN-DC Combo n25/2 ANT A – LTE B12)

NR (SCS 15kHz)						LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	50/0	17.03	22.85	23.86
-2 41				QPSK	100/0	D 12				QPSK	1/25	17.02	22.76	23.79
	20	Mid	1882.5	QPSK	1/53	B13	10	Mid	836.5	QPSK	50/0	16.77	22.81	23.78
				QPSK	1/53	ANTA				QPSK	1/25	16.86	22.80	23.79
				16Q	1/53					16Q	1/25	17.18	23.04	24.04

Table 7-5. Conducted Max Powers (EN-DC Combo n2 ANT A – LTE B13)

	NR (SCS 15kHz)					LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	100/0	19.38	21.96	23.87
				QPSK	100/0	D 4 9				QPSK	1/50	16.86	22.88	23.85
n2 ANT A	20	Mid	1880	QPSK	1/53	848 ANT 5	20	Mid	3625	QPSK	100/0	18.96	21.94	23.71
				QPSK	1/53	ANTE				QPSK	1/50	16.49	22.80	23.71
				16Q	1/53					16Q	1/50	19.10	22.37	24.05

Table 7-6. Conducted Max Powers (EN-DC Combo n2 ANT A – LTE B48)

	NR (SCS 15kHz)					LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	50/0	16.71	22.63	23.62
- 25 /2				QPSK	100/0	D 12				QPSK	1/25	16.70	22.71	23.68
n25/2 ANT F	20	Mid	1882.5	QPSK	1/53	B12	10	Mid	707.5	QPSK	50/0	16.61	22.63	23.60
				QPSK	1/53	ANTA				QPSK	1/25	16.60	22.75	23.69
				16Q	1/53					16Q	1/25	16.85	23.03	23.97

Table 7-7. Conducted Max Powers (EN-DC Combo n25/2 ANT F – LTE B12)

NR (SCS 15kHz)						LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	100/0	18.40	21.70	23.37
				QPSK	100/0	DCC				QPSK	1/50	16.91	22.25	23.36
	20	Mid	1882.5	QPSK	1/53	BOD	20	Mid	1745	QPSK	100/0	18.15	21.69	23.28
ANT F				QPSK	1/53	ANTA				QPSK	1/50	16.65	22.17	23.24
				16Q	1/53					16Q	1/50	20.23	20.68	23.47

Table 7-8. Conducted Max Powers (EN-DC Combo n25/2 ANT F – LTE B66)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 16 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 10 01 232
© 2022 ELEMENT			V11.0 9/14/2022



	NR (SCS 15kHz)					LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	50/0	16.67	22.53	23.53
				QPSK	100/0	D12				QPSK	1/25	16.70	22.44	23.47
	20	Mid	1882.5	QPSK	1/53		10	Mid	836.5	QPSK	50/0	16.53	22.47	23.46
ANT F				QPSK	1/53	ANT A				QPSK	1/25	16.57	22.47	23.46
				16Q	1/53					16Q	1/25	16.75	22.80	23.76

Table 7-9. Conducted Max Powers (EN-DC Combo n2 ANT F – LTE B13)

	NR (SCS 15kHz)					LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
				QPSK	100/0					QPSK	50/0	20.07	20.52	23.31
				QPSK	100/0	D 20				QPSK	1/25	18.33	21.70	23.34
	20	Mid	1880	QPSK	1/53 B30	10	Mid	2310	QPSK	50/0	19.98	20.57	23.30	
ANTE				QPSK	1/53	ANTA				QPSK	1/25	18.21	21.73	23.33
				16Q	100/0					16Q	1/25	20.13	21.01	23.60

Table 7-10. Conducted Max Powers (EN-DC Combo n2 ANT F – LTE B30)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 17 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 17 01 232
© 2022 ELEMENT			V11.0 9/14/2022



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: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 19 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 10 01 232
© 2022 ELEMENT			V11.0 9/14/2022



LTE Band 25/2 - Ant A



Plot 7-1. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant A)



FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 10 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 19 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-3. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz QPSK - Full RB - Ant A)



Plot 7-4. Occupied Bandwidth Plot (LTE Band 25/2 - 15MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 20 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 20 01 232
© 2022 ELEMENT			V11.0 9/14/2022





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



Plot 7-6. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 21 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 21 01 252
© 2022 ELEMENT			V11.0 9/14/2022





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



Plot 7-8. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 22 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 22 01 232
© 2022 ELEMENT			V11.0 9/14/2022



🔤 Keysight Spectrum Analyzer - Occupiec	d BW				
LXIRL RF 50Ω AC	CORREC	SENSE:INT SOURCE OFF	ALIGN AUTO 12:46:21	PM Sep 08, 2022	Trace/Detector
		a: Free Run Avg Hold	d: 100/100	d: None	
	#IFGain:Low #At	iten: 36 dB	Radio De	vice: BTS	
10 dB(div Ref 40 00 d	Bm				
Log					
30.0	<u> موالک م</u>				
20.0	an manual and the second	- A - A - A - A - A - A - A - A - A - A			Clear write
10.0	<u>س معية الم</u> لك				
0.00					
0.00					Average
-10.0 how how have	and a second sec		mmmmmm		Average
-20.0	<u>م والم</u>			man when	
-30.0	<u> </u>				
-40.0	<u>م معالمه</u>				Max Hold
-50.0	<u>س معالمه</u>				Alan Inc
Center 1.883 GHz			Spa	n 7.5 MHz	
#Res BW 75 kHz		#VBW 240 kHz	Sweep	1.333 ms	Min Hold
		Tetel Dowor	22.0 dBm		
Occupied Bandwid	dth	Total Power	32.9 abin		
2	2.7241 MHz				Detector
					Peak►
Transmit Freq Error	-859 Hz	% of OBW Pow	ver 99.00 %		Auto <u>Man</u>
x dB Bandwidth	3.127 MHz	x dB	-26.00 dB		
MSG			STATUS		

Plot 7-9. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz QPSK - Full RB - Ant A)



Plot 7-10. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 22 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 23 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-11. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB - Ant A)



Plot 7-12. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 24 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 24 01 232
© 2022 ELEMENT			V11.0 9/14/2022



LTE Band 25/2 – Ant F

Keysight Spectrum Analyzer - Occu	upied BW							_	
LX/ RL RF 50 Ω	AC CORRE	C	SENSE:INT enter Freq: 1.88250	00000 GHz	ALIGN AUTO	10:27:10 P	M Oct 03, 2022 None	Trac	e/Detector
	#EC-	iani Ti #4	rig: Free Run	Avg Hold	:>100/100	Padio Dev	ice: BTS		
	#IFGal	n.Low				radio Der			
10 dB/div Ref 40.00	dBm								
Log									
30.0									Clear Write
20.0			hand the and the second	Lannan					
10.0	/								
10.0				Į,	L .				Average
20.0	marchinghow				multungen	4			Average
30.0						and whet where	allow water provident		
-40.0									
-50.0									Max Hold
Center 1.88250 GHz			#\/B\M 45 B	11.7		Span 5	0.00 MHz		
Kes BW 470 KHZ			#VDVV 1.5 IV			SWE	ep mis		Min Hold
Occupied Bandy	width		Total F	ower	31.5	dBm			
	18 09	6 MHz							Detector
									Peak▶
Transmit Freq Erro	or -	9.806 kHz	% of O	BW Pow	er 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	1	9.88 MHz	x dB		-26.0	00 dB			
MSG					STATUS				

Plot 7-13. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz QPSK - Full RB - Ant F)



Plot 7-14. Occupied Bandwidth Plot (LTE Band 25/2 - 20MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT		
Test Report S/N:	Test Dates:	EUT Type:	Dage 25 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 25 01 232	
© 2022 ELEMENT			V/11 0 0/14/2022	



🔤 Keysight Spectrum Analyzer - Occuj	ipied BW				
<mark>(X)</mark> RL RF 50 Ω	AC CORREC	SENSE:INT	ALIGN AUTO 10:27:52	2 PM Oct 03, 2022	Trace/Detector
	Trig	i: Free Run Avg Ho	old: 100/100	ta. None	
	#IFGain:Low #At	ten: 36 dB	Radio D	evice: BTS	
10 dB/div Ref 40.00	dBm				
Log					
30.0					Clear Write
20.0	monorgrowth	annon an and the strangher wat him in a			Cicui Milic
10.0					
0.00	k				
-10.0	/		<u>ل</u>		Average
-20.0	mutution		White mand to		
30.0				monorwysuble	
40.0					
-40.0					Max Hold
-50.0					
Center 1,88250 GHz			Snan	37.50 MHz	
Res BW 360 kHz		#VBW 1.1 MHz	S	veep 1 ms	Min Hold
Occupied Bandy	width	Total Power	31.3 dBm		
	13 577 MHz				Detector
					Peak▶
Transmit Freq Erro	or -25.628 kHz	% of OBW Poy	wer 99.00 %		Auto <u>Man</u>
x dB Bandwidth	15 11 MHz	x dB	-26 00 dB		
	10.111 11112	X db	-20.00 dB		
MSG			STATUS		

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



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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 20 01 232
© 2022 ELEMENT			V11.0 9/14/2022



- Ccc Keysight Spectrum Analyzer - Occ	upied BW						
LXI RE 50 Ω	AC CORREC	SENSE:INT Center Freq: 1.882500	ALIGN AUTO	10:28:23 PM Radio Std:	Oct 03, 2022 None	Trace/	Detector
	+→→ #IEGain:Low	Trig: Free Run #Atten: 36 dB	Avg Hold:>100/100	Radio Devic	e BTS		
	#IFGam.Low	materili oo ab		Itudio Derio			
10 dB/div Ref 40.00	0 dBm						
Log							
30.0						СІ	ear Write
20.0	monorm	millionmanshare	many				
0.00			L.				
10.0	<i>.</i>		1				Average
-20.0	In month of		Washington .				Arenage
30.0 Median March				wellen were	mantellaryargant		
-40.0							
-50.0							Max Hold
Center 1.88250 GHz			-	Span 25	.00 MHz		
Res BW 240 KHZ		#VBW 750 KF	1Z	Swee	ep 1 ms		Min Hold
Occupied Band	width	Total Po	wer 31.2	dBm			
	9 0495 MH	7					Detector
	0.0400 Milli						Peak►
Transmit Freq Err	or 3.211 kH	z % of OB	W Power 99	.00 %		Auto	<u>Man</u>
x dB Bandwidth	10.27 MF	z xdB	-26.	00 dB			
MSG			STATUS	8			

Plot 7-17. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz QPSK - Full RB - Ant F)



Plot 7-18. Occupied Bandwidth Plot (LTE Band 25/2 - 10MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 27 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 27 01 232
© 2022 ELEMENT			V11.0 9/14/2022



🔤 Keysight Spectrum Analyzer - Occup	pied BW					
L <mark>X/</mark> RL RF 50 Ω	AC CORREC	SENSE:INT	ALIGN AUTO	10:29:38 PM Oct 03, 202	2 Trac	ce/Detector
		Tria: Free Run	AvalHold: 100/100	Radio Std: None		
	#IFGain:Low	#Atten: 36 dB	•	Radio Device: BTS		
10 dB/div Ref 40.00	dBm					
Log						
30.0						
20.0						Clear Write
10.0	have	m have the man way way and	m			
0.00			L.			
10.00	لمحر		λ.			Avorago
-10.0	م میں ر		North Land			Average
-20.0 may may my month	mar and a second			manne a malalism	~	
-30.0						
-40.0						Max Hold
-50.0						maxiloid
Center 1.882500 GHz				Span 12.50 MH	z	
Res BW 120 kHz		#VBW 390 kH:	Z	Sweep 1 m	5	Min Hold
Occupied Bandw	vidth	I otal Pov	wer 31.0	dBm		
	4.5346 MH	Z				Detector
						Peak▶
Transmit Freq Erro	or 2.063 kH	z % of OBV	V Power 99	.00 %	Auto	<u>Man</u>
x dB Bandwidth	5 252 MH	z x dB	-26	00 dB		
x ab Banamath	0.202 1111		20.			
MSG			STATUS			

Plot 7-19. Occupied Bandwidth Plot (LTE Band 25/2 - 5MHz QPSK - Full RB - Ant F)



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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 29 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 20 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-21. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz QPSK - Full RB - Ant F)



Plot 7-22. Occupied Bandwidth Plot (LTE Band 25/2 - 3MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 29 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-23. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz QPSK - Full RB - Ant F)



Plot 7-24. Occupied Bandwidth Plot (LTE Band 25/2 - 1.4MHz 16-QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 50 01 252
© 2022 ELEMENT			V11.0 9/14/2022



NR Band n25/2 - Ant A

Spectrum A Occupied B	nalyzer 1 3W	+					Trace	- * 崇
KEYSIG RL ↔	HT Input: RF Coupling: DC Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Off	Atten: 36 dB	Trig: Free Run Gate: Off #IF Gain: Low	Center Freq: 1.882500000 GH Avg Hold:>100/100 Radio Std: None	iz T	race Type Clear / Write	Trace Control
1 Graph							Trace Average	Delector
Scale/Div 1	10.0 dB		Ref Value 40.00) dBm			Max Hold	
30.0 20.0 10.0			+ manapartition	Manager and an and a second second			Min Hold	
0.00							Restart Max Hold	
-30.0	and the second s	And the second s			and the second s	PEAK		
-50.0 Center 1.88	8250 GHz	. #	Video BW 3.000	00 MHz	. Span 1	100 MHz		
#Res BW 1	.0000 MHz				Sweep 1.00 ms (1	001 pts)		
2 Metrics	T							
0	ccupied Bandwidth 38.71	9 MHz		Total Power	32.4 dBm			
Tr	ransmit Freq Error dB Bandwidth	-55.780 kH 41.04 MH	z z	% of OBW Pow x dB	er 99.00 % -26.00 dB			
1		Sep 10, 2022 6:45:47 AM				X		

Plot 7-25. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)



Plot 7-26. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM QPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 21 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 31 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-27. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM 16QAM - Full RB - Ant A)



Plot 7-28. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 22 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 32 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-29. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM QPSK - Full RB - Ant A)



Plot 7-30. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 22 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 33 of 232	
© 2022 ELEMENT	•		V11.0 9/14/2022	





Plot 7-31. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)



Plot 7-32. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM QPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 24 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 34 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-33. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM 16QAM - Full RB - Ant A)



Plot 7-34. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 25 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 35 of 232	
© 2022 ELEMENT	•	· · · · · · · · · · · · · · · · · · ·	V11.0 9/14/2022	





Plot 7-35. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB - Ant A)



Plot 7-36. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 36 of 232	
© 2022 ELEMENT	•		V11.0 9/14/2022	





Plot 7-37. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)



Plot 7-38. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 27 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 37 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	





Plot 7-39. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM 16QAM - Full RB - Ant A)



Plot 7-40. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 28 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 38 of 232	
© 2022 ELEMENT	•	· · · · · · · · · · · · · · · · · · ·	V11.0 9/14/2022	





Plot 7-41. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB - Ant A)



Plot 7-42. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 20 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 39 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-43. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB - Ant A)



Plot 7-44. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 40 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 40 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-45. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM 16QAM - Full RB - Ant A)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 41 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 41 01 232
© 2022 ELEMENT			V11.0 9/14/2022



NR Band n25/2 - Ant F

Spectrum A Occupied B	Analyzer 1 3W	+				Trace	- 7 😤
KEYSIG	HT Input: RF Coupling: DC Align: Auto	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Off	Atten: 36 dB	Trig: Free Run Gate: Off #IF Gain: Low	Center Freq: 1.882500000 GHz Avg Hold: 100/100 Radio Std: None	Trace Type Clear / Write	Trace Control
1 Graph	*					Trace Average	Delector
Scale/Div '	10.0 dB		Ref Value 40.00	dBm			
30.0							
20.0			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			Min Hold	
0.00 -10.0						Restart Max Hold	
-20.0		non l			harry		
-40.0							
Center 1.8	8250 GHz	. #	Video BW 3.000	00 MHz	Span 10 Sweep 1.00 ms (100	0 MHz	
2 Metrics	v						
0	ccupied Bandwidth						
	38.74	8 MHz		Total Power	31.9 dBm		
Tr X	ransmit Freq Error dB Bandwidth	-65.394 k⊢ 41.09 M⊦	z z	% of OBW Pow x dB	ver 99.00 % -26.00 dB		
15		Oct 08, 2022					

Plot 7-46. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)

EYSIGHT Input: RF Coupling: DC Align: Auto	Input Ζ: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Off	Atten: 36 dB	Trig: Free Run Gate: Off #IF Gain: Low	Center Fred Avg Hold:> Radio Std: I	ų: 1.882500000 (100/100 None	θHz	Trace Type Clear / Write	Trace Control
Graph v cale/Div 10.0 dB		Ref Value 40.00	dBm				Trace Average Max Hold	
0.0 0.0 0.0 0.0 0.0 0.0 0.0	and a second sec				hummen		Min Hold Restart Max Hold	
0.0 0.0 enter 1.88250 GHz tes BW 1.0000 MHz		Video BW 3.000	0 MHz		Spar veep 1.00 ms (100 MHz (1001 pts)		
Metrics T								
38.79	95 MHz		Total Power		29.6 dBn	ı		
Transmit Freq Error x dB Bandwidth	-30.489 kH 41.11 MH	IZ IZ	% of OBW Por x dB	wer	99.00 % -26.00 dE	3		

Plot 7-47. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM QPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 42 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 42 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-48. Occupied Bandwidth Plot (NR Band n25/2 - 40.0MHz CP-OFDM 16QAM - Full RB - Ant F)



Plot 7-49. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Daga 42 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 43 01 232
© 2022 ELEMENT	•		V11.0 9/14/2022





Plot 7-50. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM QPSK - Full RB - Ant F)



Plot 7-51. Occupied Bandwidth Plot (NR Band n25/2 - 30.0MHz CP-OFDM 16QAM - Full RB - Ant F)

FCC ID: A3LSMS911U		PART 24 MEASUREMENT REPORT	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 44 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 44 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-52. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)



Plot 7-53. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM QPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 45 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 45 01 232	
© 2022 ELEMENT			V11.0 9/14/2022	





Plot 7-54. Occupied Bandwidth Plot (NR Band n25/2 - 25.0MHz CP-OFDM 16QAM - Full RB - Ant F)



Plot 7-55. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 46 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 46 01 232
© 2022 ELEMENT	•	· · · · · · · · · · · · · · · · · · ·	V11.0 9/14/2022





Plot 7-56. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM QPSK - Full RB - Ant F)



Plot 7-57. Occupied Bandwidth Plot (NR Band n25/2 - 20.0MHz CP-OFDM 16QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 47 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 47 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-58. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)



Plot 7-59. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM QPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 49 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 40 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-60. Occupied Bandwidth Plot (NR Band n25/2 - 15.0MHz CP-OFDM 16QAM - Full RB - Ant F)



Plot 7-61. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 40 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 49 01 232
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-62. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM QPSK - Full RB - Ant F)



Plot 7-63. Occupied Bandwidth Plot (NR Band n25/2 - 10.0MHz CP-OFDM 16QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dago E0 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 50 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	





Plot 7-64. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz DFT-s-OFDM BPSK - Full RB - Ant F)



Plot 7-65. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM QPSK - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage E1 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 51 01 252
© 2022 ELEMENT			V11.0 9/14/2022





Plot 7-66. Occupied Bandwidth Plot (NR Band n25/2 - 5.0MHz CP-OFDM 16QAM - Full RB - Ant F)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage 52 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 52 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	



GSM/GPRS PCS



Plot 7-67. Occupied Bandwidth Plot (GPRS, Ch. 661)





FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 52 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 55 01 252
© 2022 ELEMENT			\/11.0.0/14/2022



WCDMA PCS

Keysight Spectrum Analyzer - Occupied BW						-	- 6 .
KL RF 50Ω AC	CORREC	SENSE:INT SOURCE OFF	ALIGN AUTO	11:09:08 AM	Sep 09, 2022	Trace	Detector
		rig: Free Run Avg H	old:>100/100	Radio Std: I	vone		
	#IFGain:Low #/	Atten: 36 dB	I	Radio Devid	e: BTS		
10 dB/div Ref 40.00 dBm	1						
Log							
30.0						~	loar Mrito
20.0						Ľ	lear write
10.0							
0.00	/						
-10.0							Average
20.0			١.				/ if of ago
-20.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		- Anna -				
-30.0				- Transmith	man mayo		
-40.0							Max Hold
-50.0							
				0	4.5 8411-		
Center 1.88 GHZ				Span	15 IVIHZ		
Res BW TJU KHZ				Swee	sh i ilis		Min Hold
Occupied Bandwidt	h	Total Power	32.0	dBm			
Decupied Danawidt							
4.7	1706 MHZ						Detector
Transmit Freg Error	19.256 kHz	% of OBW Po	wer 99.0	00 %		Auto	Peak⊫ Man
x dB Bandwidth	4.783 MHz	x dB	-26.0	0 dB			
MSG			STATUS				
MSG			STATUS				

Plot 7-69. Occupied Bandwidth Plot (WCDMA, Ch. 9400)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 54 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 54 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	



7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

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

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

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4

Test Settings

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

Test Setup

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



Figure 7-3. Test Instrument & Measurement Setup

Test Notes

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

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dage EE of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 55 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	



LTE Band 25/2 – Ant A

Keysight Spectrum Analyzer - Swept SA					
RL RF 50Ω AC	CORREC	SENSE:INT SOURCE O	AVG Type: RMS	07:27:25 AM Sep 08, 2022 TRACE 1 2 3 4 5 6	Frequency
ASS 0 dB/div Ref 20.00 dBm	PNO: Fast ++ I'l IFGain:Low At	g: Free Run ten: 30 dB	МІ	cr1 1.630 0 GHz -53.391 dBm	Auto Tune
Trace 1 Pass					Center Free 939.500000 MH
10.0					Start Fre 30.000000 MH
30.0					Stop Fre 1.849000000 GH
40.0				1	CF Ste 181.900000 MH <u>Auto</u> Ma
50.0 	nangkalika kanangka nangka kanang	19-2 ⁹⁻⁴	Manianangi na kumbangi na kumbanangi Kana ang kang kang kang kang kang kang ka		Freq Offse 0 H
itart 0.0300 GHz				Stop 1.8490 GHz	Scale Typ
Res BW 1.0 MHz	#VBW 3.0	MHz	Sweep 2	2.425 ms (3639 pts)	

Plot 7-70. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant A)



Plot 7-71. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo F6 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 56 of 232	
© 2022 ELEMENT			V/11 0 9/14/2022	





Plot 7-72. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant A)



Plot 7-73. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo E7 of 222	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 57 of 232	
© 2022 ELEMENT			V11.0 9/14/2022	

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.





Plot 7-74. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)



Plot 7-75. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Mid Channel - Ant A)

FCC ID: A3LSMS911U	PART 24 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo E9 of 222
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Fage 56 01 252
© 2022 ELEMENT			V11.0 9/14/2022



🔤 Keys	sight Spe	ctrum Analyzer	- Swept SA									×
LXI RL		RF 5	50 Ω AC	CORREC	SEI	NSE:INT SOUR	#Avg Typ	ALIGN AUTO	07:34:22 A	M Sep 08, 2022	Frequency	
PAS	S /div	Ref 20.0	0 dBm	PNO: Fast ↔ IFGain:Low	 Trig: Free Atten: 30 	e Run) dB		N	™ ■ ■ ■ ■ ■ ■	6 0 GHz 54 dBm	Auto Ti	une
10.0	Trace	e 1 Pass									Center F 940.000000 I	req MHz
-10.0											Start F 30.000000 I	req MHz
-20.0 - -30.0 -											Stop F 1.850000000	req GHz
-40.0										1	CF S 182.000000 I <u>Auto</u>	tep MHz Man
-60.0	piygar of the s		مريدين مريدين	and a state of the		Andrik Andrika andrika Andrika andrika a	an a	67997-in-16-ropp10997	hi ya na		Freq Ofi	f set) Hz
-70.0											Scale T	ype
Start	0.03	10 GHZ		#\/B\A	(30 MHz			Sween	Stop 1.	3641 ptc)	Log	Lm
MEG				#VOV	75.011112			oweep		JO4 T PLS)		
MSG								STAT	05			

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



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

FCC ID: A3LSMS911U		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	Test Dates: EUT Type:		
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 59 01 232	
© 2022 ELEMENT			V11.0 9/14/2022	

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.





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

FCC ID: A3LSMS911U		Approved by: Technical Manager		
Test Report S/N:	Report S/N: Test Dates: EUT Type: 209010096-02.A3L 9/9/2022 - 11/7/2022 Portable Handset		Page 60 of 232	
1M2209010096-02.A3L				
© 2022 ELEMENT			V11.0 9/14/2022	



LTE Band 25/2 – Ant F

🔤 Keysig	ght Spect	rum Analyzer - S	wept SA									
L <mark>XI</mark> RL		RF 50 9	Ω AC	CORREC	S	ENSE:INT	#Avg	ALIGN AUTO Type: RMS	10:24:54 PM TRAC	10ct 03, 2022 E 1 2 3 4 5 6	F	requency
	div	Ref 20.00	dBm	PNO: Fast IFGain:Low	Atten: 3	ee Run 30 dB		М	kr1 1.847 -52.6	7 5 GHz 68 dBm		Auto Tune
	Trace	1 Pass									(93	Center Freq 9.500000 MHz
-10.0											31	Start Freq 0.000000 MHz
-20.0 — -30.0 —											1.84	Stop Freq 99000000 GHz
-40.0 -										1	18 [.] <u>Auto</u>	CF Step 1.900000 MHz Man
-60.0	ali-de de la grad	alla da line effer a conserv	1			<u></u>	and and and a second	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	An house and a solar of grade and grade a	99944444 		Freq Offset 0 Hz
0.0	0.000								040m 4-0		Log	Scale Type
start #Res	0.030 BW 1	0 MHz		#VE	3.0 MH	z		Sweep	Stop 1.8 2.425 ms (490 GHZ 3639 pts)	LUg	
MSG								STATU	JS			

Plot 7-79. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)



Plot 7-80. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)

FCC ID: A3LSMS911U		Approved by: Technical Manager		
Test Report S/N:	Test Dates:	EUT Type:	Dege 61 of 000	
1M2209010096-02.A3L	9/9/2022 - 11/7/2022	Portable Handset	Page 61 01 232	
© 2022 ELEMENT			V11.0 9/14/2022	



Keysight Specific Action	ectrum Analyzer - Swep	t SA							
LXI RL	RF 50 Ω	AC CORREC	SEN	ISE:INT		ALIGN AUTO	10:25:49 PI	M Oct 03, 2022	Frequency
PASS		PNO: Fast 🔸	. Trig: Free Atten: 10	Run dB	#Avg Typ	e: RMS	TRAC TYF DE	E 1 2 3 4 5 6 E A WWWWW A N N N N N	rrequency
10 dB/div	Ref 0.00 dBi	m				Mk	r1 18.27 -61.1	0 5 GHz 49 dBm	Auto Tune
-10.0	e 1 Pass								Center Freq 15.000000000 GHz
-20.0									Start Freq 10.000000000 GHz
-40.0									Stop Freq 20.000000000 GHz
-60.0				an and a state of the state of th			↓ 1		CF Step 1.00000000 GHz <u>Auto</u> Man
-80.0									Freq Offset 0 Hz
-90.0									Scale Type
Start 10.0 #Res BW	1.0 MHz	#VBW	3.0 MHz		s	weep 2	Stop 20 5.33 ms (2	.000 GHz 0001 pts)	

Plot 7-81. Conducted Spurious Plot (LTE Band 25/2 - 20MHz QPSK - 1RB - Low Channel - Ant F)



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

FCC ID: A3LSMS911U		Approved by: Technical Manager		
Test Report S/N:	Test Dates: EUT Type:		Page 62 of 232	
1M2209010096-02.A3L 9/9/2022 - 11/7/2022		Portable Handset		
© 2022 ELEMENT			V11.0 9/14/2022	

Unless otherwise specified, no part of this report may be reproduced or utilized in any part, form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from Element. If you have any questions about this or have an inquiry about obtaining additional rights to this report or assembly of contents thereof, please contact ct.info@element.com.





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



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

FCC ID: A3LSMS911U		Approved by: Technical Manager		
Test Report S/N:	Test Dates: EUT Type:		Page 63 of 222	
1M2209010096-02.A3L 9/9/2022 - 11/7/2022 Portable Handset		Portable Handset	Fage 03 01 232	
© 2022 ELEMENT			V11.0 9/14/2022	