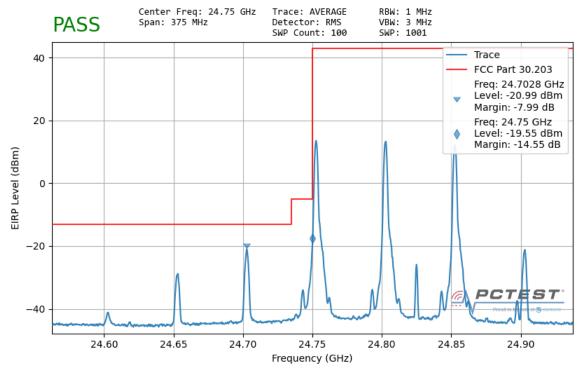


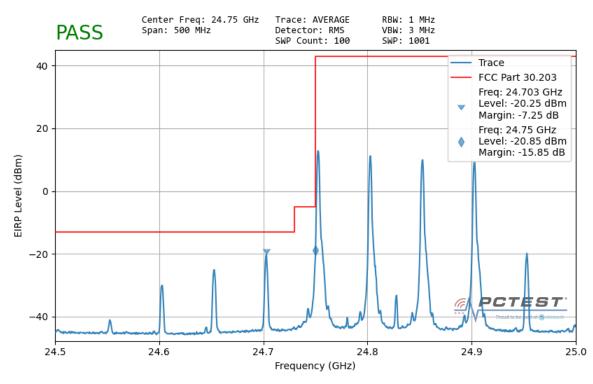


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 96 of 141
			V/1.0





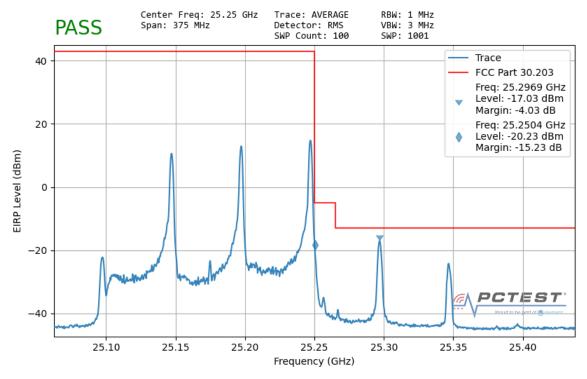




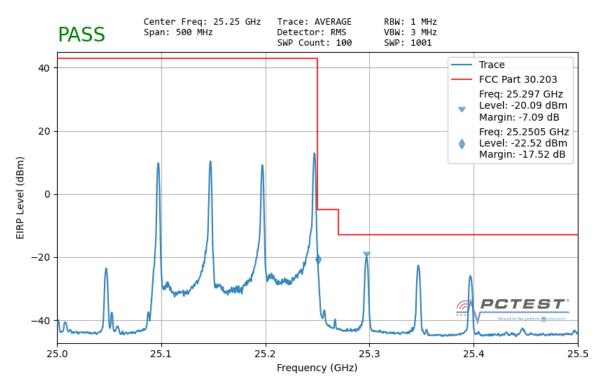


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 07 -6444
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 97 of 141
		·	V1.0





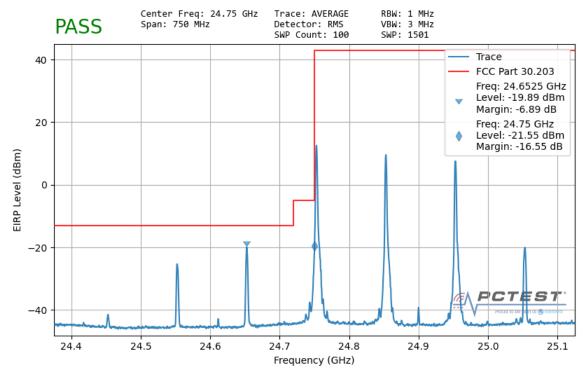




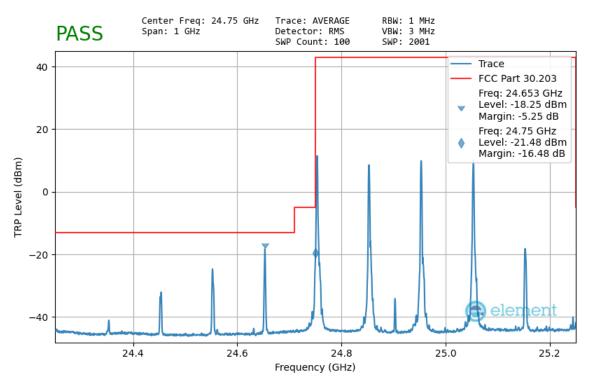


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 00 at 4.44
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 98 of 141
			V1.0





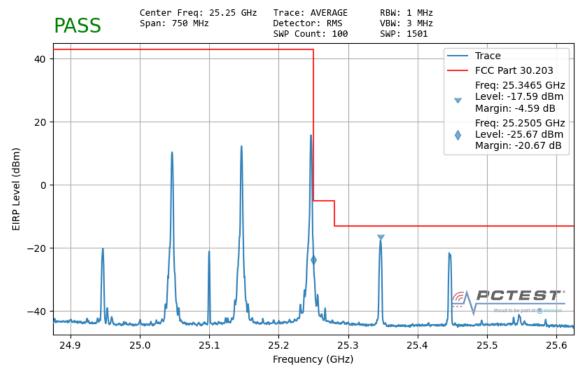




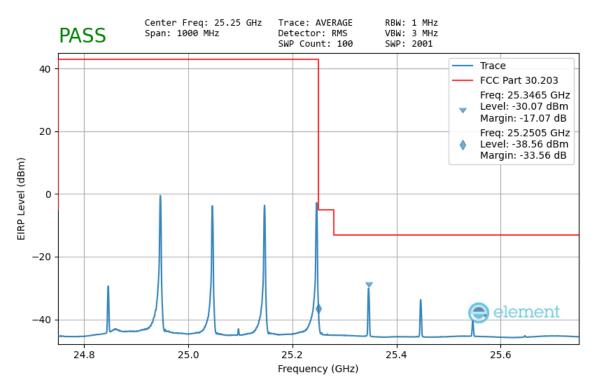


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 99 of 141
			V1.0







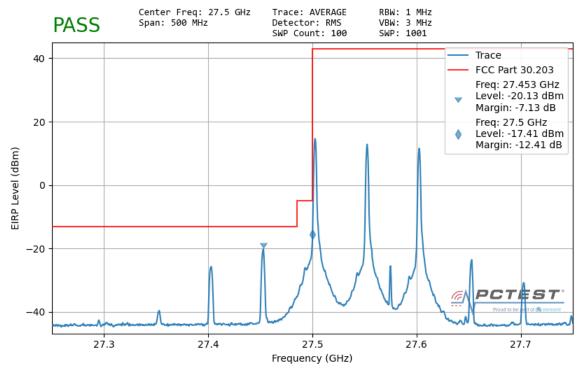




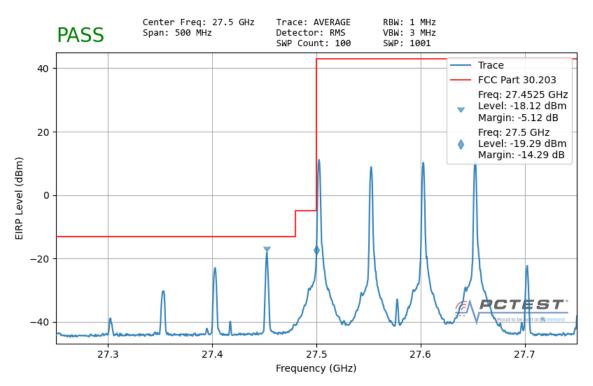
FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 100 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 100 of 141
			\/1.0



Band n261 – Worst-Case



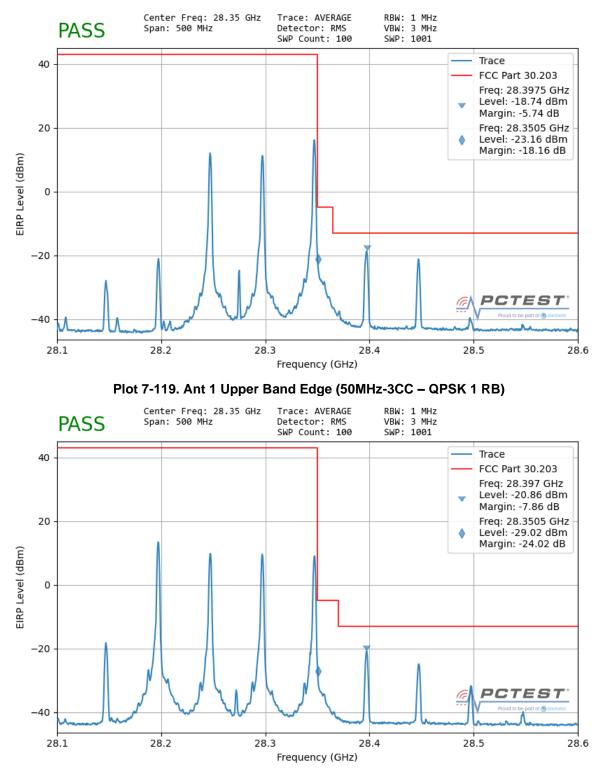






FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 404 -6444
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 101 of 141
			V1.0

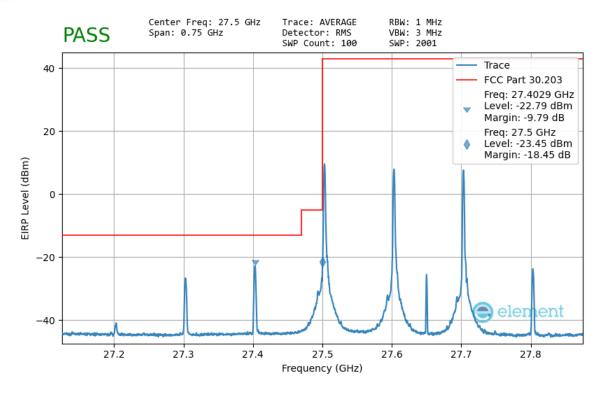




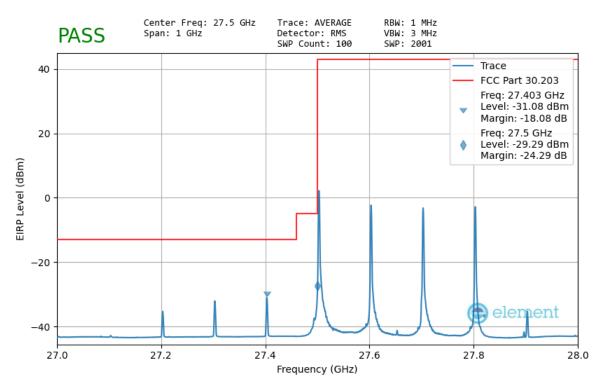


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 102 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 102 of 141
	•	·	V1.0





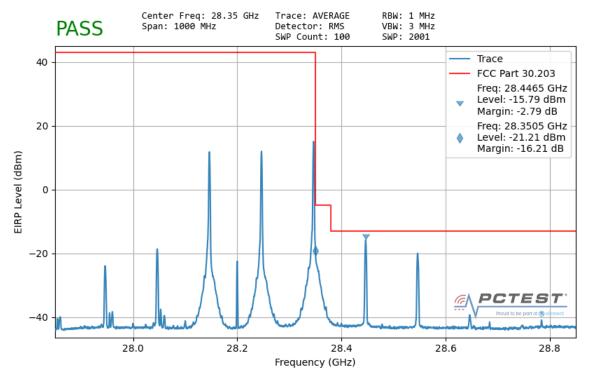




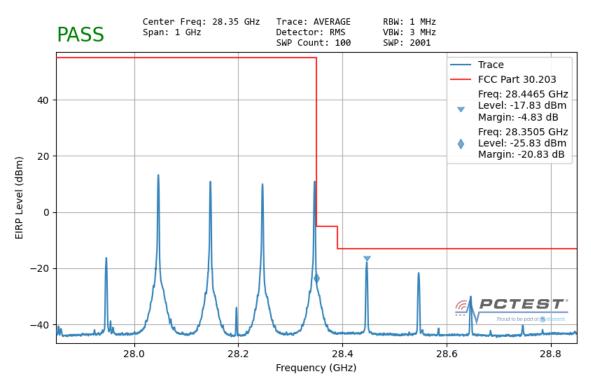
Plot 7-122. Ant 1 Lower Band Edge TRP (100MHz-4CC – QPSK 1 RB)

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 102 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 103 of 141
			\/1.0





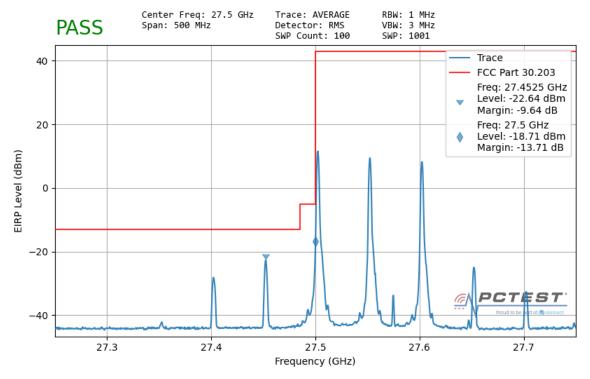




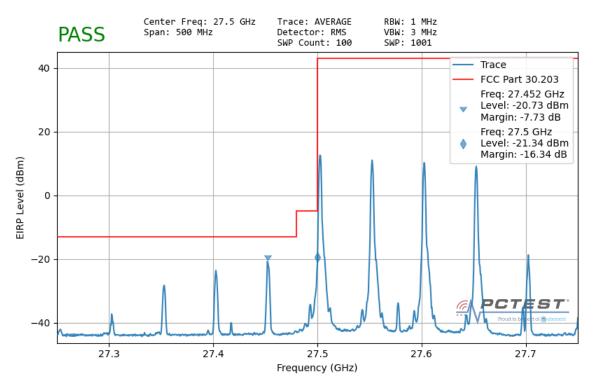


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 104 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 104 of 141
			V1.0





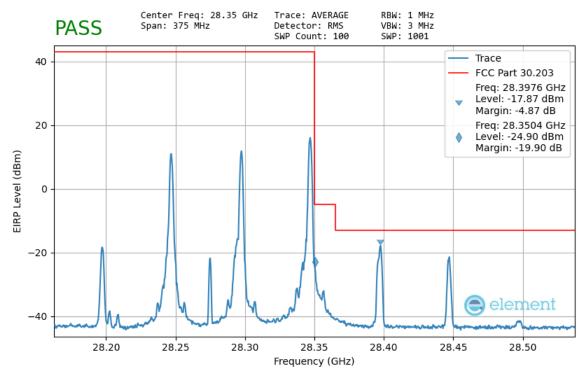




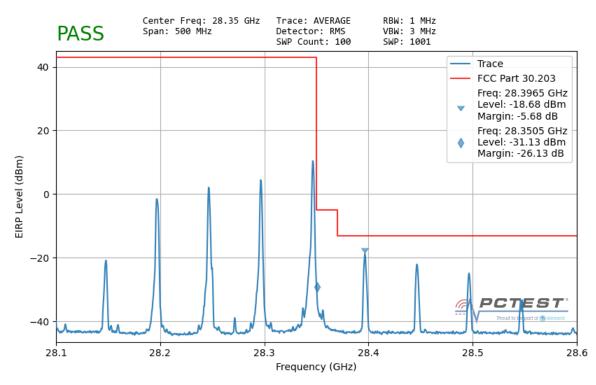


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 405 af 444
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 105 of 141
	•	·	V1.0





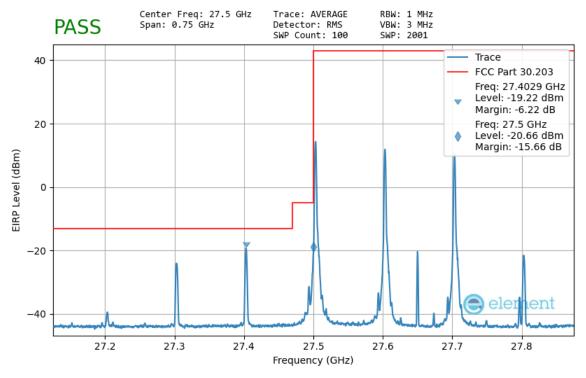




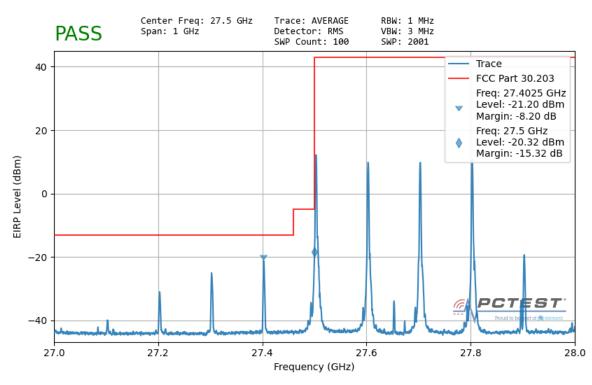


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dama 400 -6444
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 106 of 141
			V1.0





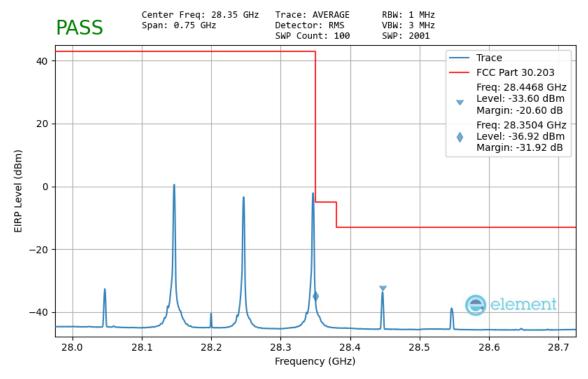




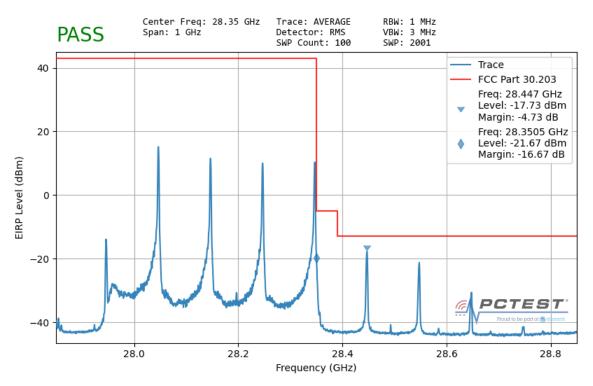


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 107 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 107 of 141
			\/1.0







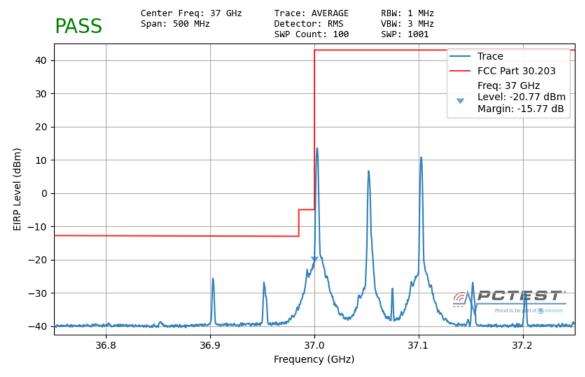




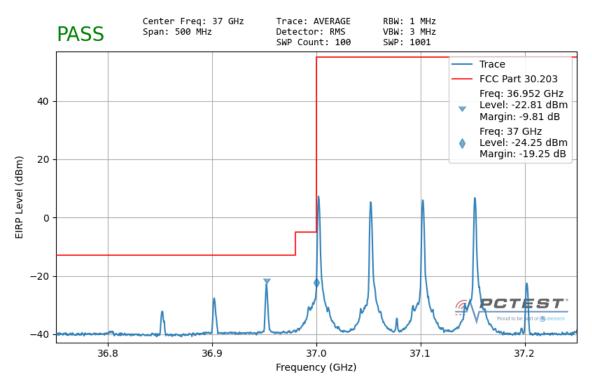
FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 100 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 108 of 141
	•	·	V1.0



Band n260 – Worst Case



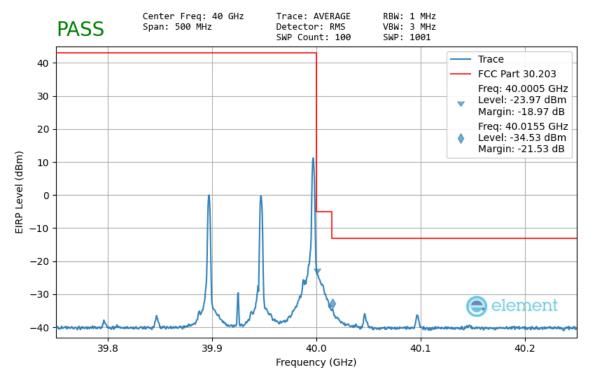




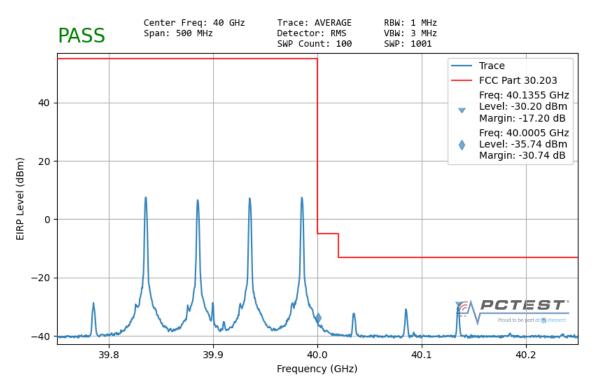


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dama 400 of 444	
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 109 of 141	
			V1.0	





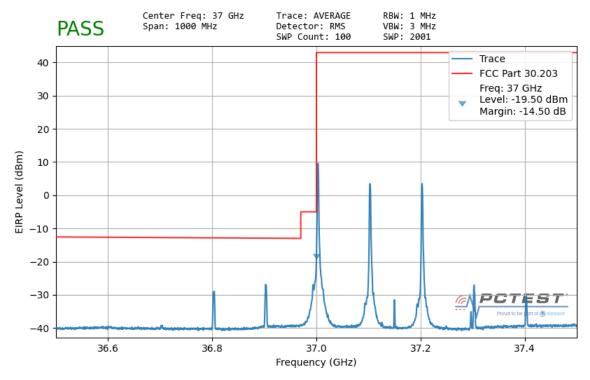




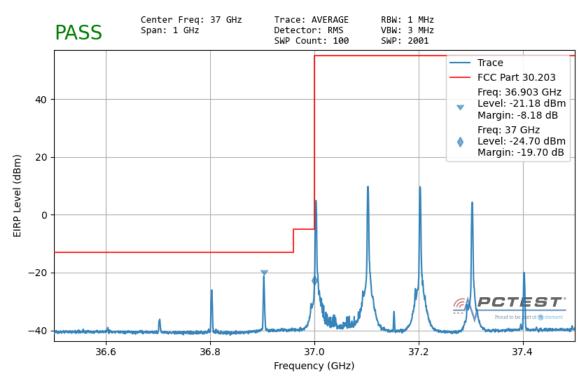


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 110 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 110 of 141
			\/1.0





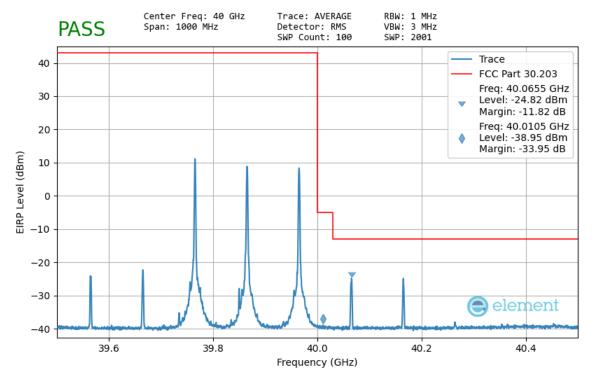




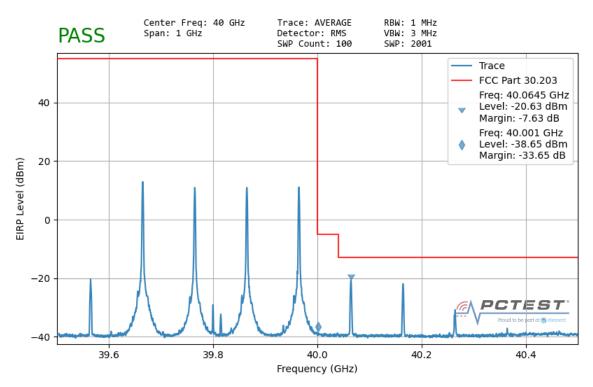


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dama 444 -6444	
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 111 of 141	
			V1.0	





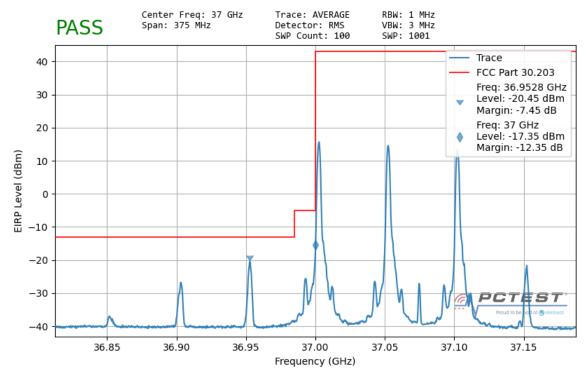




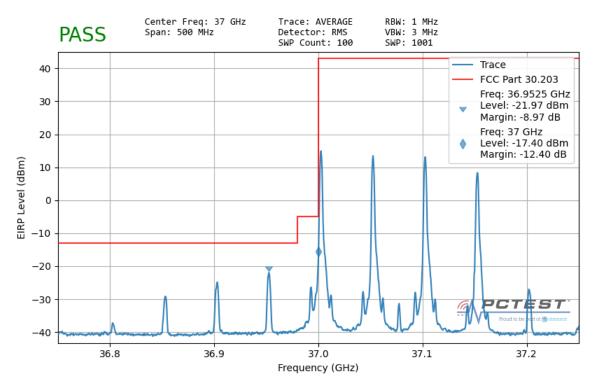


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 112 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 112 of 141
			\/1.0





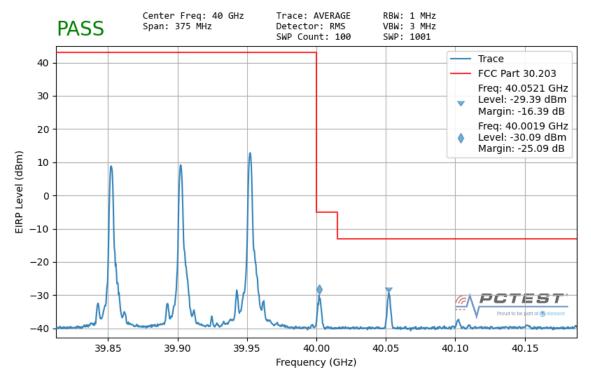




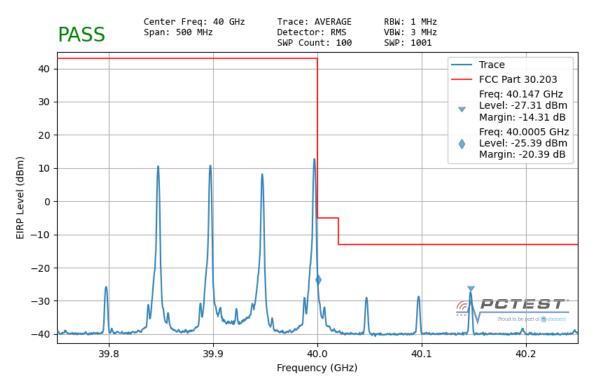


FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 112 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 113 of 141
	•	·	V1.0





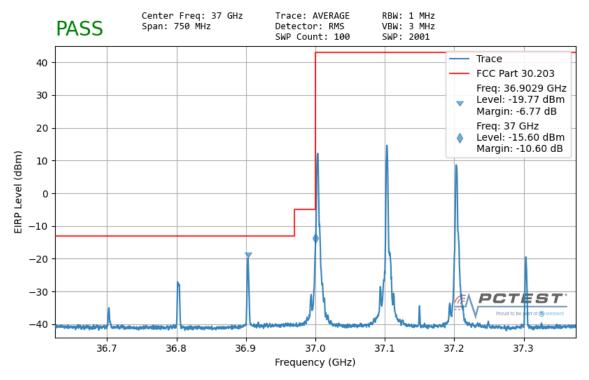




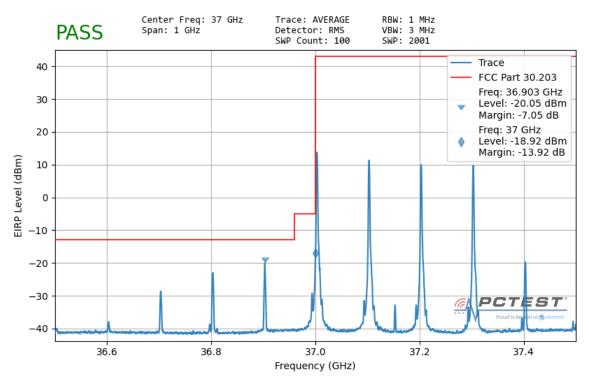


FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 114 of 141
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 114 of 141
			\/1.0





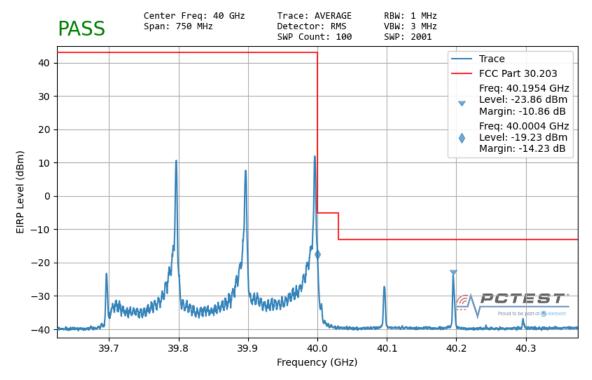




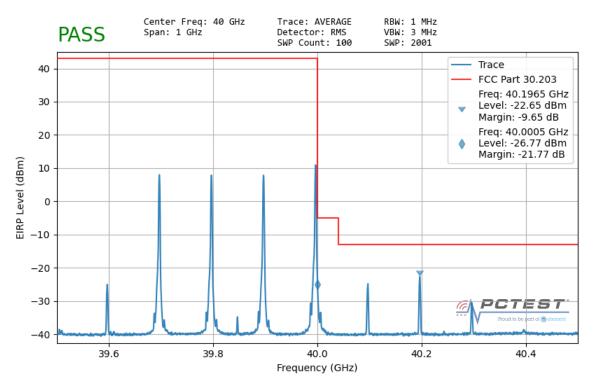
Plot 7-146. Ant 2 Lower Band Edge (100MHz-4CC – QPSK 1 RB)

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 115 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 115 of 141
			\/1.0











FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 116 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 116 of 141
			\/1.0



7.6 Frequency Stability / Temperature Variation §2.1055

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.

Test Procedure Used

ANSI C63.5-2015 Section 5.6 KDB 842590 D01 v01r02 Section 4.5

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 measured using horn antenna connected to a spectrum analyzer. The EUT was placed inside an environmental chamber that uses a foam plug to maintain the temperature condition inside the chamber. The horn antenna measured the frequency of the fundamental signal.

Test Notes

The Frequency Deviation column in the table below is the amount of deviation measured from the center frequency of the Reference measurement (first row).

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 117 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 117 of 141
			V1.0



Frequency Stability Measurements (Band n258-R1) §2.1055

OPERATING FREQUENCY:	24,275,702,423	Hz
CHANNEL:	2017083	_
REFERENCE VOLTAGE:	4.38	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.38	+ 20 (Ref)	24,275,702,423	0	0.0000000
100 %		- 30	24,275,719,698	-17,275	-0.0000712
100 %		- 20	24,275,764,410	-61,987	-0.0002553
100 %		- 10	24,275,759,874	-57,451	-0.0002367
100 %		0	24,275,689,222	13,201	0.0000544
100 %		+ 10	24,275,772,456	-70,033	-0.0002885
100 %		+ 30	24,275,711,235	-8,812	-0.0000363
100 %		+ 40	24,275,759,250	-56,827	-0.0002341
100 %		+ 50	24,275,738,898	-36,475	-0.0001503
BATT. ENDPOINT	3.38	+ 20	24,275,712,670	-10,247	-0.0000422

 Table 7-51. Frequency Stability Data (n258-R1)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 119 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 118 of 141
	•	·	V1.0



Frequency Stability Measurements (Band n258) §2.1055

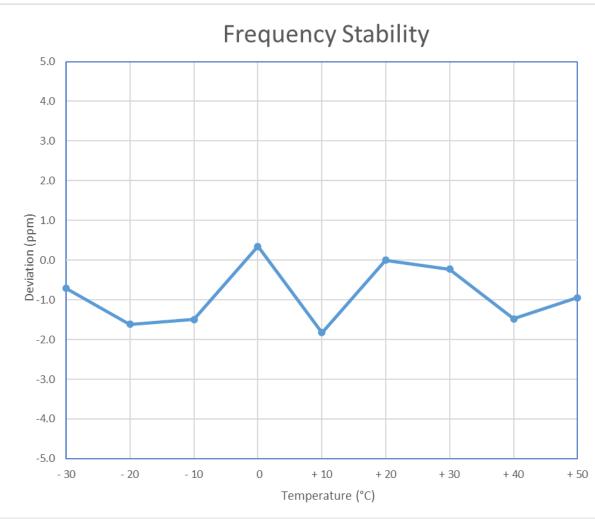


Figure 7-1. Frequency Stability Graph (n258)

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 110 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 119 of 141
		-	V1.0



Frequency Stability Measurements (Band n261) §2.1055

OPERATING FREQUENCY:	28,024,270,733	Hz
CHANNEL:	2254091	
REFERENCE VOLTAGE:	4.38	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.38	+ 20 (Ref)	28,024,270,733	0	0.0000000
100 %		- 30	28,024,231,024	39,709	0.0001417
100 %		- 20	28,024,286,121	-15,388	-0.0000549
100 %		- 10	28,024,294,767	-24,034	-0.0000858
100 %		0	28,024,198,769	71,964	0.0002568
100 %		+ 10	28,024,203,271	67,462	0.0002407
100 %		+ 30	28,024,281,365	-10,632	-0.0000379
100 %		+ 40	28,024,311,658	-40,925	-0.0001460
100 %		+ 50	28,024,310,778	-40,045	-0.0001429
BATT. ENDPOINT	3.38	+ 20	28,024,270,999	-266	-0.000009

 Table 7-52. Frequency Stability Data (n261)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMS906U	element 🕞	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 100 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 120 of 141
	•	·	V1.0



Frequency Stability Measurements (Band n261) §2.1055

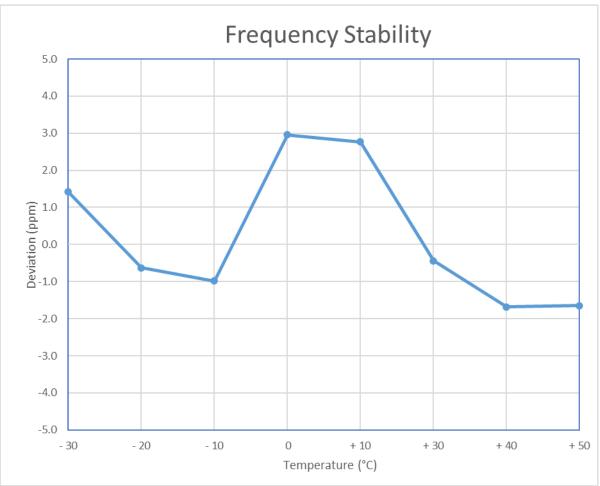


Figure 7-2. Frequency Stability Graph (n261)

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dego 101 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 121 of 141
		·	V1 0



Frequency Stability Measurements (Band n260) §2.1055

OPERATING FREQUENCY:	38,425,153,698	Hz
CHANNEL:	2252917	_
REFERENCE VOLTAGE:	4.38	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.38	+ 20 (Ref)	38,425,153,698	0	0.0000000
100 %		- 30	38,425,101,999	51,699	0.0001345
100 %		- 20	38,425,184,970	-31,272	-0.0000814
100 %		- 10	38,425,128,999	24,699	0.0000643
100 %		0	38,425,124,789	28,909	0.0000752
100 %		+ 10	38,425,169,458	-15,760	-0.0000410
100 %		+ 30	38,425,132,896	20,802	0.0000541
100 %		+ 40	38,425,182,496	-28,798	-0.0000749
100 %		+ 50	38,425,184,126	-30,428	-0.0000792
BATT. ENDPOINT	3.38	+ 20	38,425,141,255	12,443	0.0000324

Table 7-53. Frequency Stability Data (n260)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 100 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 122 of 141
	•		V1.0



Frequency Stability Measurements (Band n260) §2.1055

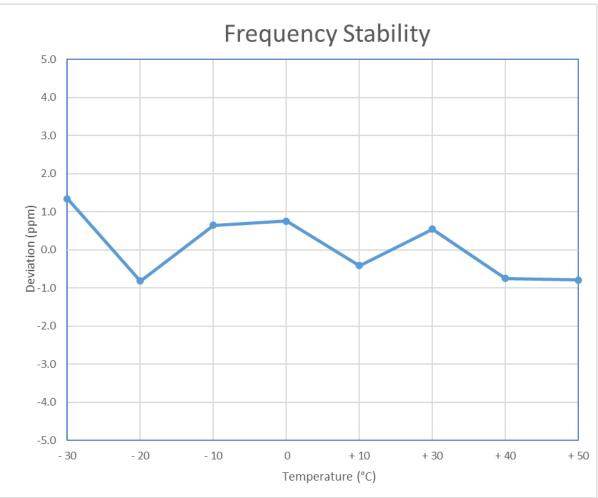


Figure 7-3. Frequency Stability Graph (n260)

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dego 102 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 123 of 141
	•	·	V1.0



8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS906U** complies with all the requirements of Part 30.

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Degs 104 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 124 of 141
			V1.0



9.0 APPENDIX A

9.1 VDI Mixer Verification Certificate



Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902 Phone: 434-297-3257 Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
 7185 Oakland Mills Road
 Columbia, MD 21046
 United States

From: Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902

Packing List No: 202943 Shipping Date: 08/28/20 Today's Date: 08/28/20 PO Number: 200414.DP2

Quantity

<u>Shipped Unit</u> <u>Description</u> 1 EA VDIWR19.0SAX-M-M4 WR19SAX-M-M4 / SN: SAX 679 <u>Order-Job</u> <u>Number</u> 20177A-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature Virginia Diodes, Inc

Page 1 of 1

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 125 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 125 of 141
			V1.0





Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902 Phone: 434-297-3257 Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory 7185 Oakland Mills Road Columbia, MD 21046 United States From: Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902

Packing List No: 202695 Shipping Date: 08/12/20 Today's Date: 08/14/20 PO Number: 200414.DP2

Quantity

<u>Shipped</u> 1

Unit Description EA VDIWR12.0SAX-M-M6 S/N; SAX 680

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature Virginia Diodes, Inc

Page 1 of 1

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 100 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 126 of 141
			V1.0

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.

Order-Job Number 20177B-01





Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902 Phone: 434-297-3257 Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
 7185 Oakland Mills Road
 Columbia, MD 21046
 United States

From: Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902

Packing List No: 203623 Shipping Date: 10/22/20 Today's Date: 10/22/20 PO Number: 200414.DP2

Quantity

Shipped 1 Unit Description EA VDIWR8.0SAX-M-M9 S/N: SAX 681 Order-Job Number 20177C-01

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature

Virginia Diodes, Inc

Page 1 of 1

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 107 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 127 of 141
			V1.0





Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902 Phone: 434-297-3257 Fax: 434-297-3258

Certificate of Conformance

To: PCTEST Engineering Laboratory
 7185 Oakland Mills Road
 Columbia, MD 21046
 United States

From: Virginia Diodes, Inc 979 2nd St. SE Suite 309 Charlottesville, VA 22902

Packing List No: 203281 Shipping Date: 09/24/20 Today's Date: 09/24/20 PO Number: 200414.DP2

Quantity

Shipped

<u>ed Unit</u> 1 EA Description VDIWR5.1SAX-M-M18 WR5.1SAX-M-M18 - Mini Spectrum Analyzer Extension Module; SN: SAX 682.

The VDI product(s) in this shipment meet(s) the guidelines for performance specifications established in accordance with the corresponding Purchase Order. Data presented in the User Guide, where applicable, has been obtained in accordance with VDI's Quality Management System. All instruments, used to obtain data, which require calibration have been calibrated with equipment traceable to the National Institute of Standards and Technology (NIST) and through NIST to the International System of Units (SI).

Authorized Signature

Virginia Diodes, Inc

Page 1 of 1

Order-Job

20177D-01

Number

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Degs 120 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 128 of 141
			V/1.0



9.2 Test Scope Accreditation



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY WASHINGTON DC LLC (formerly PCTEST) 7185 Oakland Mills Road Columbia, MD 21046 Randy Ortanez Phone: 410 290 6652

$ELECTRICAL^1$

Valid To: September 30, 2022

Certificate Number: 2041.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above, *as well as the three satellite laboratory locations listed below*, to perform the following Electromagnetic Compatibility, SAR, HAC, Telecommunications, OTA, Battery, RF, and Conformance and Protocol testing of wireless devices:

Test Technology:	<u>Test Method(s)²:</u>
Emissions Radiated and Conducted	 CFR 47, FCC Parts 15B/C/D/E/F/G/H (using ANSI C63.4:2014, ANSI C63.10:2013, ANSI C63.17:2013, and FCC KDB 905462 D02 (v02)), 18 (using MP-5:1986); ANSI C63.10:2020; KDB 987594; ETSI TS 134 124 Universal Mobile Telecommunications System (UMTS); (3GPP TS 34.124); (3GPP TS38.124 NR; Electromagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment); ETSI TS 136 124 LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); (3GPP TS 36.124); ETSI TS 151 010-1 Digital Cellular Telecommunications System (Phase 2+) (GSM); 3GPP TS 51.010-1, Section 12 (Conducted and Radiated Spurious Emissions); EN55011; EN 55032; CNS 13438 (up to 6 GHz); AS/NZS CISPR 11; IEC/CISPR 11; CISPR 32; FCC OET/MP-5; ICES-003; KN 11; KN 32; VCCI V-3(2016.11); VCCI V-3 (2015.04); VCCI 32-1: VCCI-CISPR 32
Accessibility	CFR 47, FCC Part 14
Transmitter/Receiver	RSS 111; RSS 112; RSS 117; RSS 119; RSS 123; RSS 125; RSS 127; RSS 130; RSS 131; RSS 132; RSS 133; RSS 134; RSS 135; RSS 137; RSS 139; RSS 140; RSS 141; RSS 142; RSS 170; RSS 181; RSS 182; RSS 191; RSS 192; RSS 194; RSS 195; RSS 196; RSS 197; RSS 199; RSS 210; RSS 211; RSS 213; RSS 215; RSS 216; RSS 220; RSS 222; RSS 236; RSS 238; RSS 243; RSS 244; RSS 246; RSS 247; RSS 248; RSS 251; RSS 252; RSS 287; RSS 288; RSS 310; RSS Gen
	Λ

(A2LA Cert. No. 2041.01) Revised 05/20/2022

// Page 1 of 13

5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 120 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 129 of 141
			V1.0



Test Technology:	Test Method(s) ² :
SAR/RF Exposure	IEEE 1528-2013; RSS 102 Issue 5 (2015); EN 50360-2017; EN 62209-1:2016; EN 62209-2:2010; IEC 62209-1 2 nd Edition 2016; IEC 62209-2 2010; IEC PAS 63083-2017; EN 50566-2017; IEC 62209-2 AMD 1; Australian Communications Authority Radio Communications (Electromagnetic Radiation – Human Exposure) Standard 2014; FCC KDB 248227 D01; FCC KDB 447498 D01, D02, and D03; FCC KDB 643646 D01; FCC KDB 616217 D04; FCC KDB 643646 D01; FCC KDB 616217 D04; FCC KDB 643646 D01; FCC KDB 865664 D01 and D02; FCC KDB 640106 D01; FCC KDB 865664 D01 and D02; FCC KDB 941225 D01, D05, D05A, D06, and D07; EN 50401:2017; EN 50385:2017; IEC 62311:2008; IEC 62479:2010; EN 62479:2010; EN 50663:2017; EN 62311:2007; EN 62232:2017; IEE 62232:2017; IEEE C95.1-2005; IEEE C95.1-1992; IEEE C95.3-2002; RSS-102 (SAR. RF Exposure, NS), SPR-003; SPR-002; SPR-001; SPR-004; IEC TR 62630:2010; IEEE C95.3.1:2010; IEC TR 63170:2018; AS/NZS 2772.2:2016; EN 62209-3: 2019; IEC 62209-3:2019; C95.1: 2019; ICNIRP (100KHz – 300 GHz): 2020; IEC 62311:2019; EN 62311:2020; IEC/IEEE 62209-1528:2020; RRA Public Notification 2018-18, December 7, 2018
Hearing Aid Compatibility	ANSI C63.19:2007; ANSI C63.19:2011; ANSI C63.19:2019; CTIA Test Plan for Hearing Aid Compatibility v.3.1.1 (2017); FCC KDB 285076, D01 & D02; RSS-HAC
United States Radio	47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI/TIA-603-E, TIA-102.CAAA-E, ANSI C63.26:2015); ANSI/TIA-603-D; TIA-102.CAAA-D; FCC KDB 935210 D03 (v04); FCC KDB 935210 D04 (v02); FCC KDB 935210 D05 (v01)
European Radio	ETSI EN 302 065-1 Version 2.1.1 (2016-11); ETSI EN 302 065-2 Version 2.1.1 (2016-11); ETSI EN 302 065-3 Version 2.1.1 (2016-11); ETSI EN 302 065-4 Version 1.1.1 (2016-11); ETSI EN 302 291-1 Version 1.1.1 (2005-07); ETSI EN 302 291-2 Version 1.1.1 (2005-07); ETSI EN 302 502 Version 2.1.3 (2017-07); ETSI EN 302 510-1 Version 1.1.1; ETSI EN 302 510-2 Version 1.1.1; ETSI EN 302 510-2 Version 1.1.1; ETSI EN 302 537 Version 2.1.1 (2016-10); ETSI EN 301 511 Version 12.5.1 (2017-03); ETSI EN 301 839 Version 2.1.1 (2016-04); ETSI EN 301 893 Version 1.8.1 (2015-03); ETSI EN 301 908-1 Version 13.1.1 (2019-11); ETSI EN 301 908-13 Version 13.1.1 (2019-11);

Page 2 of 13

 FCC ID: A3LSMS906U
 PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)
 Approved by: Technical Manager

 Test Report S/N:
 Test Dates:
 EUT Type:

 1M2203290040-01.A3L
 07/11/2022 - 08/29/2022
 Portable Handset



Test Technology:	Test Method(s) ² :
European Radio (cont'd)	ETSI EN 300 220-1 Version 3.1.1 (2017-02); ETSI EN 300 220-2 Version 3.2.1 (2018-06); ETSI EN 300 328 Version 2.1.1 (2016-11); ETSI EN 300 328 Version 2.2.2 (2019-07); ETSI EN 300 330 Version 2.1.1 (2017-02); ETSI EN 300 440 Version 2. (22.1 (2018-07); ETSI EN 300 440-2 Version 1.4.1 (2010-08); KS X 3123, KS X 3142, KS X 3270, KS X 3271; LP0002; DGT LP0002;
Korean Radio	Regulations on Radio Equipment (MSIT Ordinance MSIT No. 63, Dec. 24, 2020); Unlicensed Radio Equipment Established Without Notice (MSIT Public Notification 2020-59, Oct. 16, 2020); Technical Requirements for the Human Protection against Electromagnetic Waves (MSIT Public Notification 2019-4, January 16, 2019); Equipment to be Subject of the Test Procedure for Electromagnetic Field Strength and Specific Absorption Rate (RRA Public Notification 2019-1, January 17, 2019); Technical Requirements for Radio Equipment for Telecommunication Services (RRA Public Notification 2019-9, June 3, 2019); Technical Requirements for Measurement and Test Procedure of Specific Absorption Rate (RRA Public Notification 2018-18, Dec 7, 2018); Technical Requirements for Measurement of Electromagnetic Field Strength (RRA Public Notification 2019-3, March 4, 2019)
Australia/New Zealand Radio	AS/NZS 4268:2017
Licensed Wireless Devices	ANSI C63.26:2015
Wired and Wireless Conformance	
5G NR	3GPP TS 38.508-1; 3GPP TS 38.508-2; 3GPP TS 38.521-1; 3GPP TS 38.521-2; 3GPP TS 38.521-3; 3GPP TS 38.521-4; 3GPP TS 38.522; 3GPP TS 38.523-1; 3GPP TS 38.523-2; 3GPP 38.523-3; 3GPP TS 38.533; VZW 5G NR FR2 RFOTA; VZW 5G Protocol Pre-Conformance (TS 38.523-1); VZW 5G NR FR1 Supp RF; VZW 5G NR RF Pre Conformance (TS 38.521-3); VZW 5G NR Radio Resource Management (RRM) Pre-Confromance (TS 38.533)

Page 3 of 13

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Degs 121 of 111
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 131 of 141
			V1.0



<u>Test Technology:</u>	<u>Test Method(s) ²:</u>
LTE	 3GPP TS 36.521-1; 3GPP TS 36.521-3; 3GPP TS 36.523-1; 3GPP 37.571-1; 3GPP 37.571-2; 3GPP TS 34.229; 3GPP Carrier Aggregation; PTCRB NAPRD.03; PTCRB PPMD; PTCRB Cat-M (per RFT132 eMTC); PVG.09 LTE Data Throughput & TR 37.901 Data Throughput Performance; PVG.04 PTCRB Radiated Spurious Emissions; Global Certification Forum (GCF-CC) Certification / LTE Field Test (TS.11)³; 3GPP Cat-NB & Cat-M; MetroPCS Lab Conformance; AT&T LTE Conformance; AT&T IoT Accelerator Conformance, 19263; VZW Lab Conformance; VZW Supl RF; VZW FR2 Supplementary RF, VZW FR1 Supplementary RF; VZW Supl Signaling Conformance; VZW Supl RRM;
	VZW LTE LBS Performance; VZW Safe for Network (SFN), VZW Phase 1, VZW Open Development and Field Interoperability Testing (FIT) ³ ; VZW Network Extender; VZW PCO; VZW Data Retry; VZW Data Throughput; VZW SMS; VZW AT Commands; VZW CMAS; VZW eMBMS; VZW APN; VZW Cat-M VoLTE; Live Network Extender and Android Test Plan; Sprint LTE Test Plan; Sprint LTE Safe for Network (SFN); Sprint LTE Conformance; Sprint LTE IoT; Sprint Lab Conformance; USCC Lab Conformance; KDDI LTE Device Testing; SoftBank LTE Testing
WCDMA (UTRA)	3GPP TS 34.121-1; 3GPP TS 34.123-1; SoftBank Mobile WCDMA Testing
SVLTE / Multimode	CDMA-LTE Inter-RAT (iRAT); CDMA-LTE Inter-RAT SVD; SVLTE: 1x RF with LTE Data Cal; SVLTE: LTE RF with 1x Voice Call; SVD and SVLTE: LTE Data Throughput with 1x Voice Call; eHRPD; GMSS; SVD GMSS; E911 Data Call Processing; Stress Testing; RSSI for MM Devices; SVD Interband; LTE LBS Performance; VZW Multimode Supl Signaling; VZW Multimode SMS; VZW Multimode Data Retry
VoLTE	IMS VoIP; Rich Communication Services (RCS); VoLTE to 1xRTT Fallback for SVLTE (1xRTT Fallback); IMS Registration and Retry; ePDG Live Network; E911 for VoLTE; VZW hVoLTE; VZW VoIP and VT Performance; VZW Interband RRM and Protocol
	1

Page 4 of 13

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 122 of 141
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 132 of 141
			V1.0



<u>Test Technology:</u>	<u>Test Method(s) ²:</u>
Carrier Aggregation	VZW Carrier Aggregation Supplementary RF; VZW Carrier Aggregation Data Throughout
UICC	USIM/USAT/CSIM/ISIM Interaction Test Plan (LTE/WCDMA/GSM/CDMA/MM); 3GPP TS 31.121; 3GPP TS 31.124; ETSI TS 102 230; SIM Application Interaction Test Plan; UICC USIM ISIM Electrical; UICC USIM ISIM Protocol (LTE/WCDMA/GSM/CDMA); SWP/HCI ETSI TS 102 694-1; ETSI TS 102 695-1
SunSpec Alliance	SunSpec – CSIP (Common Smart Inverter Profile) Conformance Test Procedures; SunSpec – Advanced Function Inverter Test Lab Specification; SunSpec – UL1741 Supplement SA/Rule 21 Implementation Guide; IEEE 2030.5-2018 Smart Energy Profile Application Protocol
CBRS (OnGo) / WInnForum	CBRS Alliance Certification Test Plan; WInnForum Conformance and Performance Test Technical Standards

¹This accreditation covers testing performed at the main laboratory listed above, and the three satellite laboratories listed below:

(A2LA Cert. No. 2041.01) Revised 05/20/2022

Page 5 of 13

FCC ID: A3LSMS906U	element)	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 122 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 133 of 141
			V1.0



7195 Oakland Mills Rd, Suite A Columbia, MD 21046

Test Method(s) 2:

Test Technology:

Wireless

3GPP2 C.S0011-C 20-Feb-2006 (TIA-98D/E/F) (excluding Sections 3.2.1.3, 3.2.3.2, 3.3.3, 3.3.4, 3.3.5, 3.3.6, 3.4.6, 3.4.8, 3.4.10, 3.4.11, 3.4.12, 3.4.13, 3.7.2, 4.4.8, 4.4.9.2.1, 4.4.10, 4.4.11); 3GPP2 C.S0043-0 24-Sep-2004 (TIA-1035); 3GPP2 C.S0036-0 11-Mar-2002 (TIA-916); 3GPP2 C.S0036-A 23-May-2011 (TIA-916-A); 3GPP2 C.S0037-0 19-Apr-2002 (TIA-918); 3GPP2 C.S0056-0 22-Jul-2005 (TIA-1042); 3GPP2 C.S0059-0 20-Aug-2008 (TIA-1038); 3GPP2 C.S0060-0 06-Dec-2005 (TIA-1044); 3GPP2 C.S0061-0 22-Jun-2005 (TIA-1045); 3GPP2 C.S0062-0 14-May-2007 (TIA-1046); 3GPP2 C.S0073-0 26-Sep-2005 (TIA-1084); 3GPP2 C.S0073-B 21-Aug-2009 (TIA n/a); 3GPP2 C.S0094-0 30-Oct-2008 (TIA-1157); CTIA Conformance Test Plan for CDMA Wireless Devices; GCF Certification Criteria 2 (CAG2) Test Plan; VZW Wireless Priority Services (WPS); VZW Safe for Network (SFN); VZW Open Development (OD) Device Specifications; VZW Location Based Services (LBS); VZW CMAS; VZW NBPCD; VZW Phase 1 3GPP2 C.S0033-0 12-Dec-2003 (TIA-866); 3GPP2 C.S0033-A 14-Dec-2005 (TIA-866); 3GPP2 C.S0038-0 19-Apr-2002 (TIA-919); 3GPP2 C.S0038-A 26-Sep-2005 (TIA-919);

3GPP2 C.S0038-B 30-Mar-2009 (TIA n/a); 3GPP2 C.S0037-0 19-Apr-2002 (TIA-918);

GCF Certification Criteria 2 (CAG2) Test Plan

CTIA Conformance Test Plan for CDMA Wireless Devices;

EVDO

(A2LA Cert. No. 2041.01) Revised 05/20/2022

1____ Page 6 of 13

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 124 of 141
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 134 of 141
			V1.0



<u>Test Method(s) ²:</u>
CFR 47, FCC Parts 15B/C/D/E/F/G/H (using ANSI C63.4:2014, ANSI C63.10:2020, ANSI C63.10:2013; ANSI C63.17:2013, FCC KDB 905462, and KDB 987594, 18 (using MP-5:1986); ANSI C63.10:2013; ETSI TS 134 124 Universal Mobile Telecommunications System (UMTS); (3GPP TS 34.124); ETSI TS 136 124 LTE; Evolved Universal Terrestrial Radio Access (E-UTRA); (3GPP TS 36.124); (3GPP TS38.124 NR; Electromagnetic Compatibility (EMC) Requirements for Mobile Terminals and Ancillary Equipment); ETSI TS 151 010-1 Digital Cellular Telecommunications System (Phase 2+) (GSM); 3GPP TS 51.010-1, Section 12 (Conducted and Radiated Spurious Emissions); EN55011; EN 55032; CNS 13438 (up to 6 GHz); AS/NZS CISPR 11; IEC/CISPR 11; CISPR 32; FCC OET/MP-5; ICES-003; KN 11; KN 32; VCCI V- 3(2016.11); VCCI V-3 (2015.04); VCCI 32-1: VCCI-CISPR 32
CFR 47, FCC Part 14
RSS 111; RSS 112; RSS 117; RSS 119; RSS 123; RSS 125; RSS 127; RSS 130; RSS 131; RSS 132; RSS 133; RSS 134; RSS 135; RSS 137; RSS 139; RSS 140; RSS 141; RSS 142; RSS 170; RSS 181; RSS 182; RSS 191; RSS 192; RSS 194; RSS 195; RSS 196; RSS 197; RSS 199; RSS 210; RSS 211; RSS 213; RSS 215; RSS 216; RSS 220; RSS 222; RSS 236; RSS 238; RSS 243; RSS 244; RSS 246; RSS 247; RSS 248; RSS 251; RSS 252; RSS 287; RSS 288; RSS 310; RSS Gen
ANSI C63.19:2007; ANSI C63.19:2011; ANSI C63.19:2019; CTIA Test Plan for Hearing Aid Compatibility v.3.1.1 (2017); FCC KDB 285076, D01 & D02; RSS-HAC
47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87, 90, 95, 96, 97, 101 (using ANSI/TIA-603-E, TIA-102.CAAA-E, ANSI C63.26:2015); FCC KDB 935210;
ETSI EN 302 065-1 Version 2.1.1 (2016-11); ETSI EN 302 065-2 Version 2.1.1 (2016-11); ETSI EN 302 065-3 Version 2.1.1 (2016-11); ETSI EN 302 065-4 Version 1.1.1 (2016-11); ETSI EN 302 291-1 Version 1.1.1 (2005-07); ETSI EN 302 291-2 Version 1.1.1 (2005-07); ETSI EN 302 502 Version 2.1.3 (2017-07); ETSI EN 302 510-1 Version 1.1.1; ETSI EN 302 510-2 Version 1.1.1; ETSI EN 302 537 Version 2.1.1 (2016-10); ETSI EN 301 511 Version 12.5.1 (2017-03); ETSI EN 301 839 Version 2.1.1 (2016-04); ETSI EN 301 893 Version 1.8.1 (2015-05);

Page 7 of 13

FCC ID: A3LSMS906U	element	PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 125 of 144
1M2203290040-01.A3L	07/11/2022 - 08/29/2022	Portable Handset	Page 135 of 141
			V1.0