

**PART 30 MEASUREMENT REPORT**

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

**Date of Testing:**  
 07/11/2022 – 08/29/2022  
**Test Report Issue Date:**  
 08/29/2022  
**Test Site/Location:**  
 Element Lab., Columbia, MD, USA  
**Test Report Serial No.:**  
 1M2203290040-01.A3L

<b>FCC ID:</b>	<b>A3LSMS906U</b>
<b>APPLICANT:</b>	<b>Samsung Electronics Co., Ltd.</b>

**Application Type:** Certification  
**Model:** SM-S906U  
**Additional Models:** SM-S906U1  
**EUT Type:** Portable Handset  
**FCC Classification:** Part 30 Mobile Transmitter (5GM)  
**FCC Rule Part(s):** 30  
**Test Procedure(s):** ANSI C63.26-2015, KDB 842590 D01 v01r02  
**Class II Permissive Change:** Adding 3CC & 4CC capabilities  
**Original Grant Date:** 12/07/2021


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**



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

## TABLE OF CONTENTS


1.0	INTRODUCTION .....	7
1.1	Scope .....	7
1.2	Element Test Location.....	7
1.3	Test Facility / Accreditations.....	7
2.0	PRODUCT INFORMATION.....	8
2.1	Equipment Description .....	8
2.2	Device Capabilities.....	8
2.3	Test Configuration .....	8
2.4	Software and Firmware .....	9
2.5	EMI Suppression Device(s)/Modifications .....	9
3.0	DESCRIPTION OF TESTS .....	10
3.1	Measurement Procedure.....	10
3.2	Radiated Power and Radiated Spurious Emissions .....	10
4.0	MEASUREMENT UNCERTAINTY .....	12
5.0	TEST EQUIPMENT CALIBRATION DATA .....	13
6.0	SAMPLE CALCULATIONS .....	14
7.0	TEST RESULTS .....	15
7.1	Summary .....	15
7.2	Occupied Bandwidth .....	16
7.3	Equivalent Isotropic Radiated Power.....	49
7.4	Radiated Spurious and Harmonic Emissions .....	77
7.5	Band Edge Emissions .....	87
7.6	Frequency Stability / Temperature Variation .....	117
8.0	CONCLUSION.....	124
9.0	APPENDIX A .....	125
9.1	VDI Mixer Verification Certificate.....	125
9.2	Test Scope Accreditation .....	129

<b>FCC ID:</b> A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 2 of 141

## PART 30 MEASUREMENT REPORT


Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
M-Patch	NR-n258-R1	50	24250 - 24450	3	QPSK	2Tx	0.081	19.08	145MG7D
					$\pi/2$ BPSK	2Tx	0.084	19.23	144MG7D
					16QAM	2Tx	0.054	17.32	144MW7D
					64QAM	2Tx	0.034	15.33	144MW7D
N-Patch				4	QPSK	2Tx	0.081	19.07	193MG7D
					$\pi/2$ BPSK	2Tx	0.081	19.11	194MG7D
					16QAM	2Tx	0.054	17.36	194MW7D
					64QAM	2Tx	0.035	15.42	193MW7D
N-Patch	3	QPSK	2Tx	0.176	22.45				
		$\pi/2$ BPSK	2Tx	0.180	22.55				
		16QAM	2Tx	0.111	20.44				
		64QAM	2Tx	0.071	18.53				
N-Patch		4	QPSK	2Tx	0.130	21.15			
			$\pi/2$ BPSK	2Tx	0.133	21.25			
			16QAM	2Tx	0.084	19.24			
			64QAM	2Tx	0.056	17.52			

**EUT Overview (Band n258, 24.25 – 24.45GHz)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 3 of 141


Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
M-Patch	NR-n258-R2	50	24750 - 25250	3	QPSK	2Tx	0.125	20.95	153MG7D
					$\pi/2$ BPSK	2Tx	0.138	21.40	154MG7D
					16QAM	2Tx	0.085	19.30	152MW7D
				64QAM	2Tx	0.056	17.47	152MW7D	
				4	QPSK	2Tx	0.128	21.07	194MG7D
					$\pi/2$ BPSK	2Tx	0.127	21.04	194MG7D
		16QAM			2Tx	0.080	19.01	195MW7D	
		3		64QAM	2Tx	0.050	17.01	195MW7D	
				QPSK	2Tx	0.120	20.81	293MG7D	
				$\pi/2$ BPSK	2Tx	0.121	20.83	290MG7D	
		100		4	16QAM	2Tx	0.075	18.73	294MW7D
					64QAM	2Tx	0.049	16.89	293MW7D
QPSK	2Tx		0.130		21.13	393MG7D			
3	$\pi/2$ BPSK		2Tx	0.129	21.11	391MG7D			
	16QAM		2Tx	0.082	19.12	392MW7D			
	64QAM		2Tx	0.053	17.21	393MW7D			
N-Patch	NR-n258-R2	50	24750 - 25250	3	QPSK	2Tx	0.129	21.10	
					$\pi/2$ BPSK	2Tx	0.131	21.17	
					16QAM	2Tx	0.082	19.16	
				64QAM	2Tx	0.058	17.64		
				4	QPSK	2Tx	0.164	22.16	
					$\pi/2$ BPSK	2Tx	0.164	22.14	
		16QAM			2Tx	0.103	20.11		
		3		64QAM	2Tx	0.065	18.15		
				QPSK	2Tx	0.167	22.23		
				$\pi/2$ BPSK	2Tx	0.168	22.26		
		100		4	16QAM	2Tx	0.106	20.26	
					64QAM	2Tx	0.067	18.28	
QPSK	2Tx		0.147		21.67				
3	$\pi/2$ BPSK	2Tx	0.146	21.63					
	16QAM	2Tx	0.091	19.60					
	64QAM	2Tx	0.058	17.64					

**EUT Overview (Band n258, 24.75 – 25.25GHz)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 4 of 141

Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
M-Patch	NR-n261	50	27525 - 28325	3	QPSK	2Tx	0.194	22.88	147MG7D
					$\pi/2$ BPSK	2Tx	0.190	22.80	147MG7D
					16QAM	2Tx	0.122	20.87	147MW7D
				64QAM	2Tx	0.080	19.04	147MW7D	
				4	QPSK	2Tx	0.159	22.02	196MG7D
					$\pi/2$ BPSK	2Tx	0.163	22.11	196MG7D
		16QAM			2Tx	0.102	20.10	196MW7D	
		3		64QAM	2Tx	0.067	18.26	196MW7D	
				QPSK	2Tx	0.202	23.05	298MG7D	
				$\pi/2$ BPSK	2Tx	0.203	23.09	298MG7D	
		4		16QAM	2Tx	0.127	21.03	298MW7D	
				64QAM	2Tx	0.083	19.17	298MW7D	
QPSK	2Tx		0.181	22.58	397MG7D				
N-Patch	NR-n261	50	27525 - 28325	3	$\pi/2$ BPSK	2Tx	0.181	22.59	398MG7D
					16QAM	2Tx	0.112	20.49	397MW7D
					64QAM	2Tx	0.074	18.68	398MW7D
				4	QPSK	2Tx	0.178	22.50	
					$\pi/2$ BPSK	2Tx	0.179	22.52	
					16QAM	2Tx	0.112	20.48	
		3		64QAM	2Tx	0.071	18.54		
				QPSK	2Tx	0.164	22.16		
				$\pi/2$ BPSK	2Tx	0.166	22.21		
		4		16QAM	2Tx	0.102	20.10		
				64QAM	2Tx	0.067	18.27		
				QPSK	2Tx	0.157	21.95		
3	$\pi/2$ BPSK	2Tx	0.157	21.97					
	16QAM	2Tx	0.096	19.82					
	64QAM	2Tx	0.062	17.92					
4	QPSK	2Tx	0.149	21.75					
	$\pi/2$ BPSK	2Tx	0.131	21.18					
	16QAM	2Tx	0.082	19.15					
		100		4	64QAM	2Tx	0.052	17.15	

**EUT Overview (Band n261)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 5 of 141

Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
M-Patch	NR-n260	50	37050 - 39950	3	QPSK	2Tx	0.074	18.68	147MG7D
					$\pi/2$ BPSK	2Tx	0.074	18.72	147MG7D
					16QAM	2Tx	0.055	17.41	148MW7D
				64QAM	2Tx	0.034	15.30	148MW7D	
				4	QPSK	2Tx	0.082	19.13	196MG7D
					$\pi/2$ BPSK	2Tx	0.080	19.05	198MG7D
		16QAM			2Tx	0.057	17.58	196MW7D	
		3		64QAM	2Tx	0.034	15.36	196MW7D	
				QPSK	2Tx	0.093	19.67	298MG7D	
				$\pi/2$ BPSK	2Tx	0.093	19.68	297MG7D	
		100		4	16QAM	2Tx	0.065	18.12	298MW7D
					64QAM	2Tx	0.041	16.16	299MW7D
QPSK	2Tx		0.083		19.17	397MG7D			
3	$\pi/2$ BPSK		2Tx	0.082	19.16	397MG7D			
	16QAM		2Tx	0.058	17.62	396MW7D			
	64QAM		2Tx	0.039	15.92	398MW7D			
N-Patch	NR-n260	50	37050 - 39950	3	QPSK	2Tx	0.158	21.98	
					$\pi/2$ BPSK	2Tx	0.156	21.92	
					16QAM	2Tx	0.111	20.45	
				64QAM	2Tx	0.074	18.67		
				4	QPSK	2Tx	0.164	22.15	
					$\pi/2$ BPSK	2Tx	0.167	22.23	
		16QAM			2Tx	0.117	20.67		
		100		64QAM	2Tx	0.078	18.92		
					QPSK	2Tx	0.166	22.20	
					$\pi/2$ BPSK	2Tx	0.165	22.19	
				3	16QAM	2Tx	0.117	20.67	
					64QAM	2Tx	0.075	18.78	
QPSK	2Tx		0.140		21.47				
4	$\pi/2$ BPSK	2Tx	0.140	21.45					
	16QAM	2Tx	0.088	19.43					
	64QAM	2Tx	0.057	17.56					

### EUT Overview (Band n260)

**Note:** Due to similar antenna performance from the antennas after thorough investigation, the Occupied Bandwidth was only measured on one antenna for each band.

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 6 of 141

## 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.


### 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 laboratory 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: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 7 of 141

## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS906U**. The test data contained in this report pertains only to the emissions due to the EUT's 5G mmWave function.

The EUT contains two patch antennas, referred to herein as Ant1 (M-Patch) and Ant2 (N-Patch). Each of the antennas is comprised of two separate antenna feeds - one for horizontal and one for vertical polarization. Only one array antenna can be active at a time.

The EUT supports up to 4CC for UL. Only contiguous carrier operation is supported. For each CC, the EUT supports both 50MHz bandwidth and 100MHz bandwidth. The EUT supports a subcarrier spacing (SCS) of 120kHz with two transmission schemes, CP-OFDM and DFT-s-OFDM, with pi/2-BPSK, QPSK, 16-QAM, and 64-QAM modulations. Different Beam IDs are supported, each corresponding to a different position in space for each antenna. During testing, FTM (Factory Test Mode) was used to operate the transmitter. MIMO operation was achieved by enabling two Beam IDs at the same time: one is from the list of H Beam IDs and other is from the list of V Beam IDs.

**Test Device Serial No.:** 0043M, 0101M, 0052M

### 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, Ultra Wideband


### 2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 842590 D01. See Section 7.0 of this test report for a description of the radiated tests.

EIRP Simulation data for all Beam IDs was used to help determine the worst case Beam ID for SISO operation and Beam ID pair for 2Tx (DFT-s-OFDM) and MIMO (CP-OFDM) operation. Several additional Beam ID's were also investigated to determine the Beam ID's producing the highest measured EIRP.

All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation. When implemented out in the field, the EUT will operate with a maximum uplink configuration as allowed by the 5G network/carrier. The FTM software was also used for the EUT operation in the EN-DC mode.

While operating in the FR2 band, this device supports anchor band operation with either an LTE carrier or an NR FR1 carrier. Both were investigated during FR2 measurements.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 8 of 141



The table below indicates the channel Plan for all the Frequency range tested for 3CC/4CC:


# CC's	BW (MHz)	Total CC BW (MHz)	Channel	24.25 - 24.45GHz (n258-R1)	24.75 - 25.25GHz (n258-R2)	27.5 - 28.35GHz (n261)	37 - 40GHz (n260)
3CC	50	150	Low	x	x	x	x
			Mid	-	x	x	x
			High	x	x	x	x
	100	300	Low	-	x	x	x
			Mid	-	-	x	x
			High	-	x	x	x
4CC	50	200	Low	-	x	x	x
			Mid	x	x	x	x
			High	-	x	x	x
	100	400	Low	-	x	x	x
			Mid	-	-	x	x
			High	-	x	x	x

## 2.4 Software and Firmware

The test was conducted with firmware version FAS0\_S906UFAU0AUI3 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: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 9 of 141

## 3.0 DESCRIPTION OF TESTS

### 3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 were used in the measurement of the EUT.

### 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 for radiated emissions measurements in the spurious domain. 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 for measurements above 1GHz.

Radiated power (EIRP) measurements were performed in a full anechoic chamber (FAC) conforming to the site validation requirements of CISPR 16-1-4. Radiated spurious emission measurements from 30MHz - 18GHz were performed in a semi anechoic chamber (SAC) conforming to the site validation requirements of CISPR 16-1-4. A positioner was used to manipulate the EUT through several positions in space by rotating about the roll axis as shown in the figure below. The positioner was mounted on top of a turntable bringing the total EUT height to 1.5m.

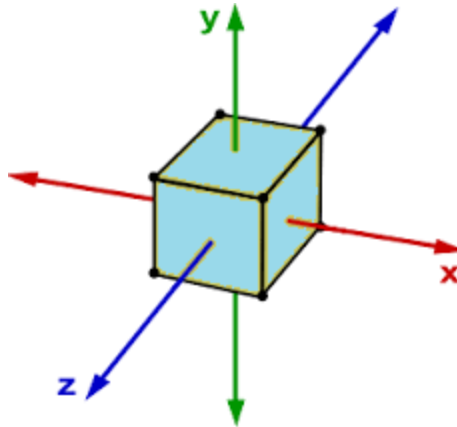


Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 10 of 141

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable. The measurement antenna is in the far field of the EUT per formula  $2D^2/\lambda$  where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

**Table 3-1. Far-Field Distance & Measurement Distance per Frequency Range**

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration bandwidth set to at least the emissions' occupied bandwidth. The EIRP is calculated from the raw power level measured with the spectrum analyzer using the formulas shown below.

### Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in ANSI C63.26-2015.

$$\begin{aligned} \text{Field Strength [dB}\mu\text{V/m]} &= \text{Measured Value [dBm]} + \text{AFCL [dB/m]} + 107 \\ &= -32.74 \text{ dBm} + (40.7 \text{ dB/m} + 8.78 \text{ dB}) + 107 = 123.74 \text{ dB}\mu\text{V/m} \\ &= 10^{(123.74/20)/1000000} = 1.54 \text{ V/m} \end{aligned}$$


$$\begin{aligned} \text{e.i.r.p. [dBm]} &= 10 * \log((\text{E-Field} * D_m)^2/30) + 30 \text{ dB} \\ &= 10 * \log((1.54 \text{ V/m} * 1.00 \text{ m})^2/30) + 30 \text{ dB} \\ &= 18.98 \text{ dBm e.i.r.p.} \end{aligned}$$

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

## 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  $U_{\text{CISPR}}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

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

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 12 of 141

V1.0

## 5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. 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
	AP1	EMC Cable and Switch System	9/10/2021	Annual	9/10/2022	AP1
	AP2	EMC Cable and Switch System	9/3/2021	Annual	9/3/2022	AP2
ETS-Lindgren	3116C	DRG Horn Antenna	5/11/2021	Biennial	5/11/2023	218893
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2021	Biennial	4/20/2023	125518
Megaphase	FAC mmWave	AP FAC mmWave 18ft 40GHz	8/18/2021	Annual	8/18/2022	20033003
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	9/14/2020	Biennial	9/14/2022	2172481
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	11/5/2020	Biennial	11/5/2022	U157403-01
OML Inc.	M12RH	WR-12 Horn Antenna, 24dBi, 60 to 90 GHz	8/12/2020	Triennial	8/12/2023	18073001
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and spectrum analyzer	2/2/2022	Annual	2/2/2023	103187
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/25/2021	Annual	8/25/2022	103200
Rohde & Schwarz	SMW200A	Signal Generator	N/A			190456
UTiFlex	UTiFlex	FAC mmWave UTiFlex 40GHz	3/9/2022	Annual	3/9/2023	234142-001
UTiFlex	UTiFlex	FAC mmWave UTiFlex 40GHz	3/9/2022	Annual	3/9/2023	232062-001
UTiFlex	UTiFlex	1m UTiFlex 40GHz	9/10/2021	Annual	9/10/2022	232063-001

**Table 5-1. Test Equipment**

**Notes:**

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

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 13 of 141

## 6.0 SAMPLE CALCULATIONS

### Emission Designator

#### $\pi/2$ BPSK/ QPSK Modulation

**Emission Designator = 800MG7D**

BW = 800 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

#### QAM Modulation


**Emission Designator = 802MW7D**

BW = 802 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 14 of 141

V1.0

## 7.0 TEST RESULTS

### 7.1 Summary


Company Name: Samsung Electronics Co., Ltd.  
 FCC ID: A3LSMS906U  
 FCC Classification: Part 30 Mobile Transmitter (5GM)  
 Mode(s): TDD

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
<b>RADIATED</b>	Occupied Bandwidth	2.1049	N/A	<b>PASS</b>	Section 7.2
	Equivalent Isotropic Radiated Power	2.1046, 30.202	43 dBm	<b>PASS</b>	Section 7.3
	Spurious Emissions	2.1053, 30.203	-13 dBm/MHz for all out-of-band emissions	<b>PASS</b>	Section 7.4
	Out-of-Band Emissions at the Band Edge	30.203	-13 dBm/MHz for all out-of-band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW	<b>PASS</b>	Section 7.5
	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	<b>PASS</b>	Section 7.6

**Table 7-1. Summary of Radiated Test Results**

#### Notes:

- All modes of operation and modulations were investigated. The test results shown in the following sections represent the worst case emissions.
- Per 2.1057(a)(2), spurious emissions were investigated up to 100GHz for n258-R1, n258-R2, n261. Per 2.1057(a)(3), spurious emissions were investigated up to 200GHz for n260.
- The radiated RF output power and all out-of-band emissions in the spurious domain are evaluated to the limits first as EIRP measurements to determine if the "early-exit" condition of KDB 842590 D01 applies. If not, then additional TRP measurements are performed.
- "CC" refers to "Component Carriers".
- Beam IDs were chosen based on which Beam ID produces the highest EIRP during EIRP simulation.
- All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation (100% duty cycle).
- The CP-OFDM and DFT-s-OFDM transmission schemes were investigated fully for each test type and only the worst case data is included.
- This report contains references to "n258-R1" and "n258-R2". These correspond to n258 Range 1, operating from 24.25 - 24.45GHz, and n258 Range 2, operating from 24.75 - 25.25GHz, respectively, as defined in Part 30.4(a)."

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 15 of 141

## 7.2 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 5.4.3

### Test Settings

1. The signal analyzer’s automatic bandwidth measurement capability was used to perform the 99% occupied 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 Notes

1. The EUT supports CP-OFDM and DFT-s-OFDM. OBW was measured for both waveforms and the worst case has been included in the report.
2. Due to similar antenna performance from both patch antennas, the Occupied Bandwidth was only measured on one antenna for each band.

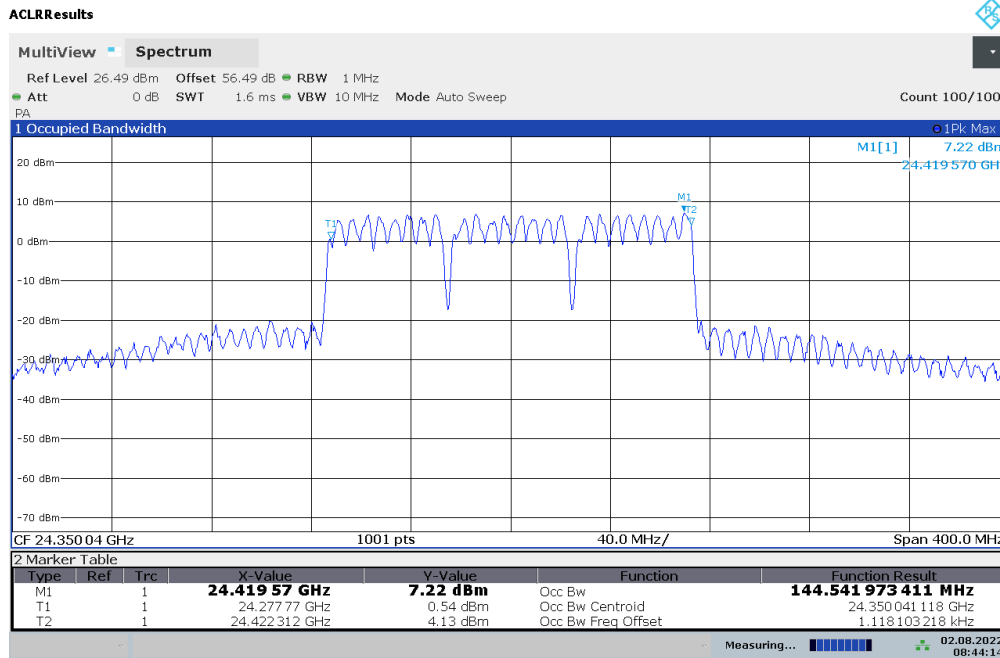
FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 16 of 141



**Band n258-R1**

Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
M-Patch	50	3	CP-OFDM	QPSK	144.54
			DFT-s-OFDM	$\pi/2$ BPSK	144.50
			CP-OFDM	16QAM	144.49
			CP-OFDM	64QAM	144.49
		4	CP-OFDM	QPSK	195.54
			DFT-s-OFDM	$\pi/2$ BPSK	195.51
			CP-OFDM	16QAM	195.40
			CP-OFDM	64QAM	195.42

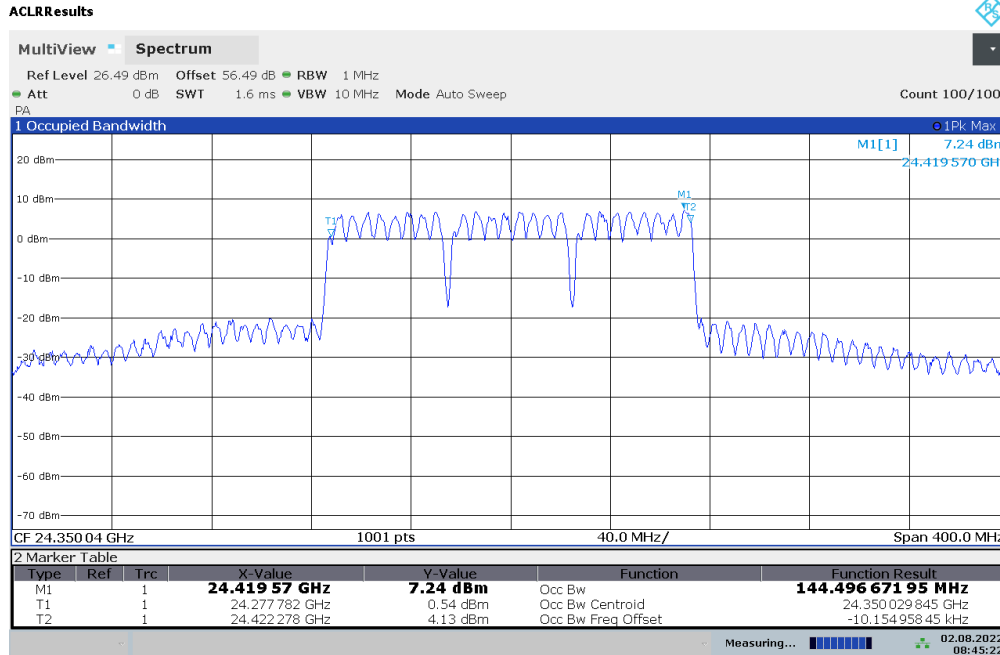
**Table 7-2. Summary of Ant 1 Occupied Bandwidths (n258-R1)**



08:44:14 02.08.2022

**Plot 7-1. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – QPSK – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 17 of 141



08:45:22 02.08.2022

**Plot 7-2. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – pi/2-BPSK – Mid Channel)**

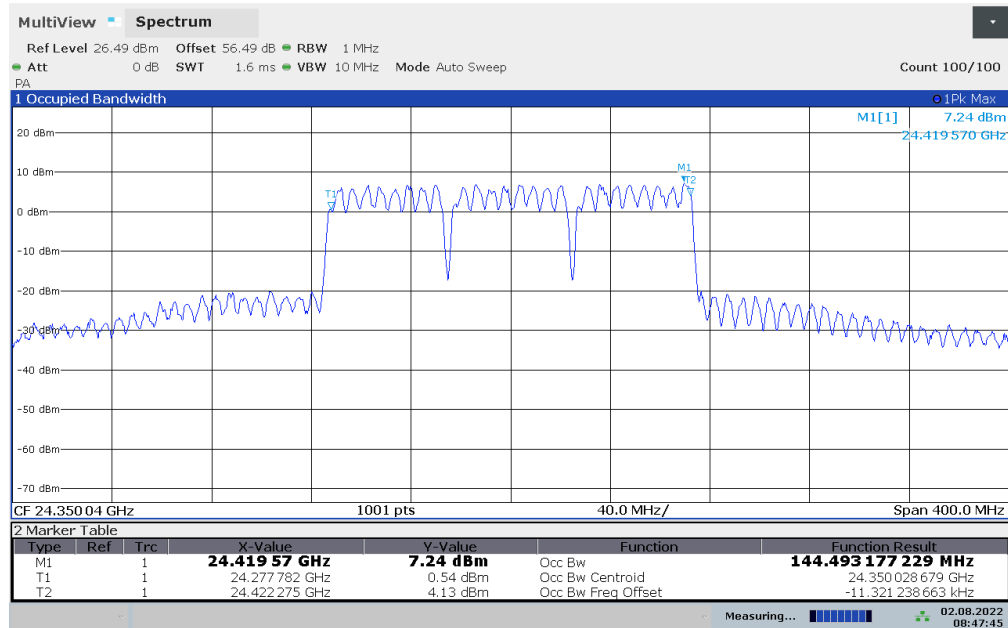


08:46:44 02.08.2022

**Plot 7-3. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 18 of 141

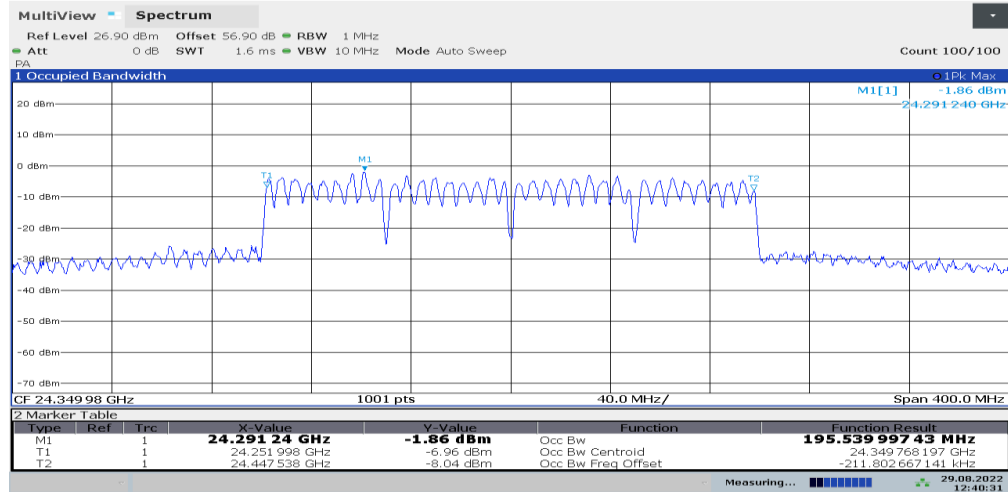
ACLRRResults



08:47:45 02.08.2022

Plot 7-4. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 64QAM – Mid Channel)

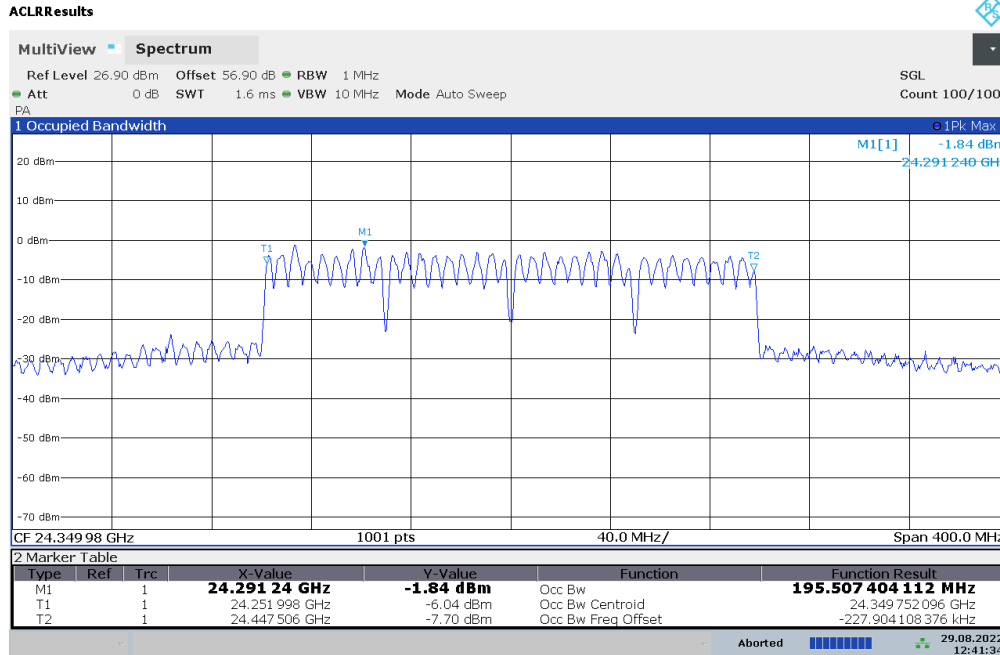
ACLRRResults



12:40:31 29.08.2022

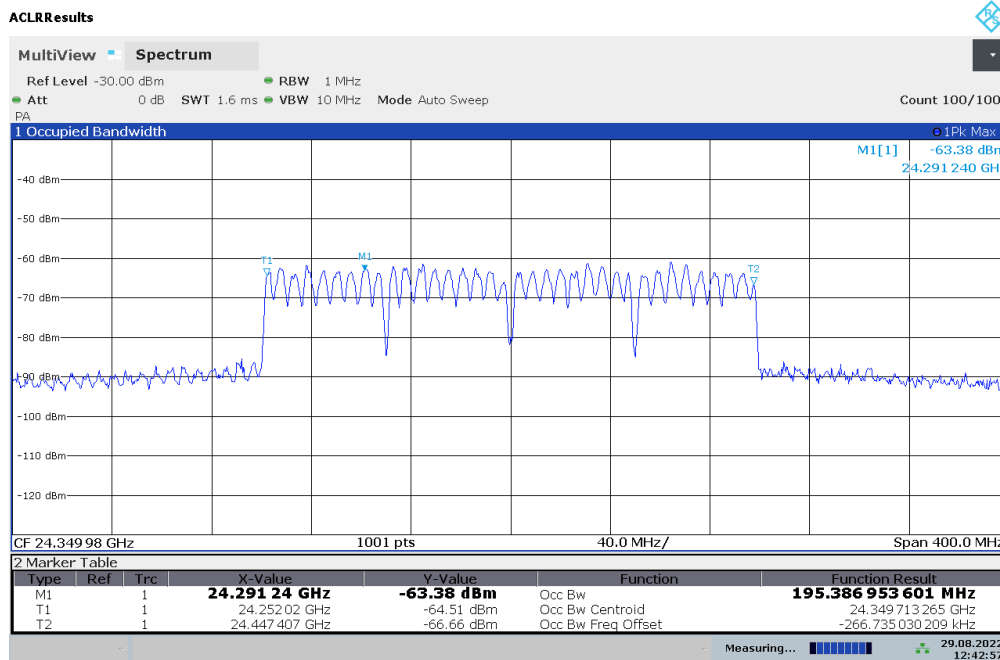
Plot 7-5. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 19 of 141



12:41:35 29.08.2022

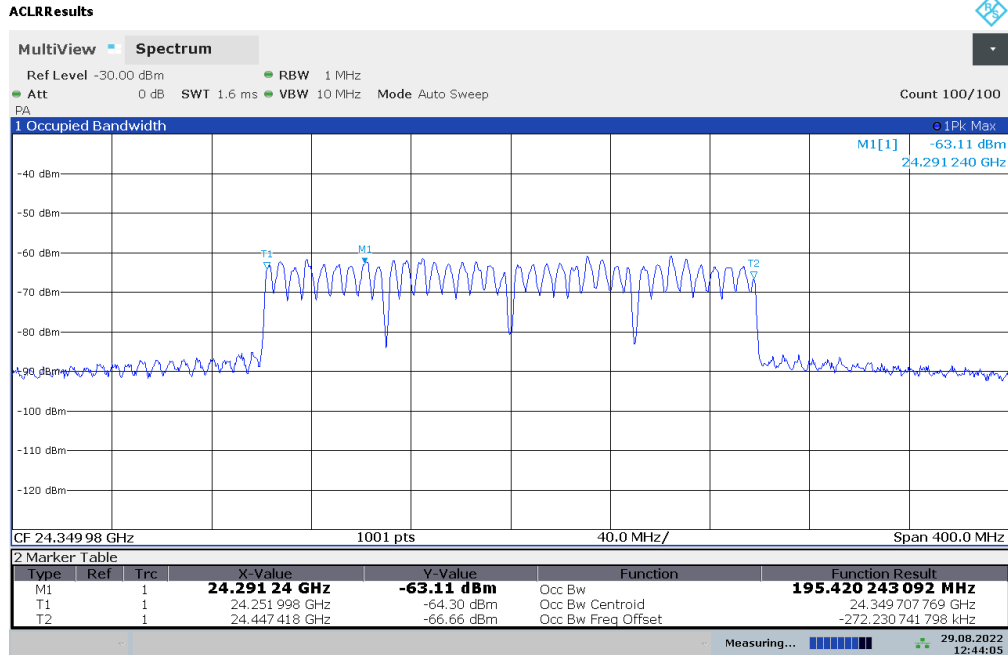
**Plot 7-6. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – pi/2-BPSK – Mid Channel)**



12:42:57 29.08.2022

**Plot 7-7. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 20 of 141



12:44:05 29.08.2022

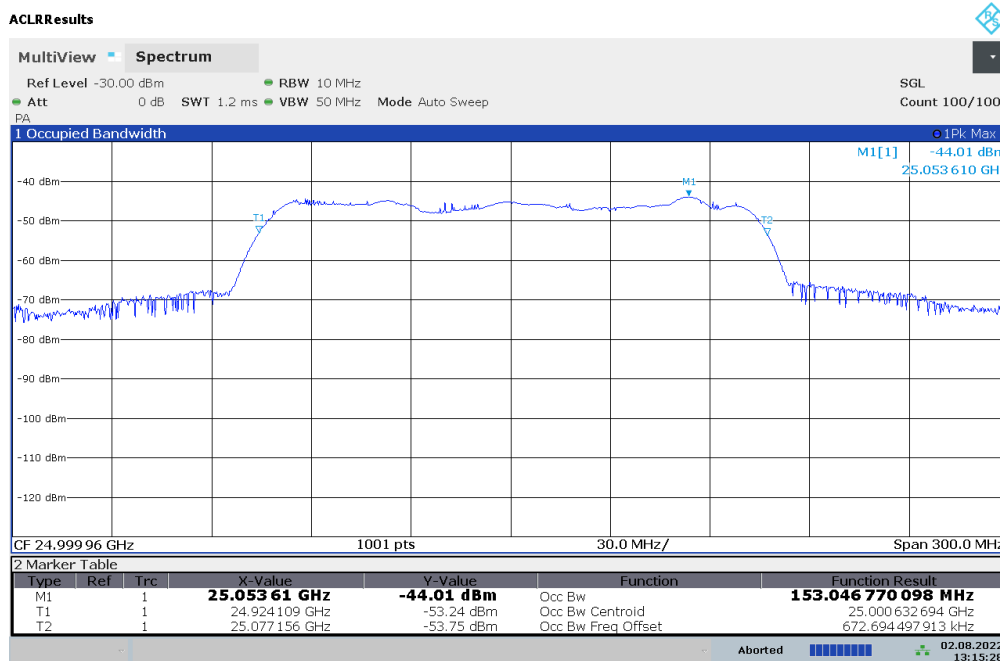
**Plot 7-8. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 64QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 21 of 141

Band n258-R2

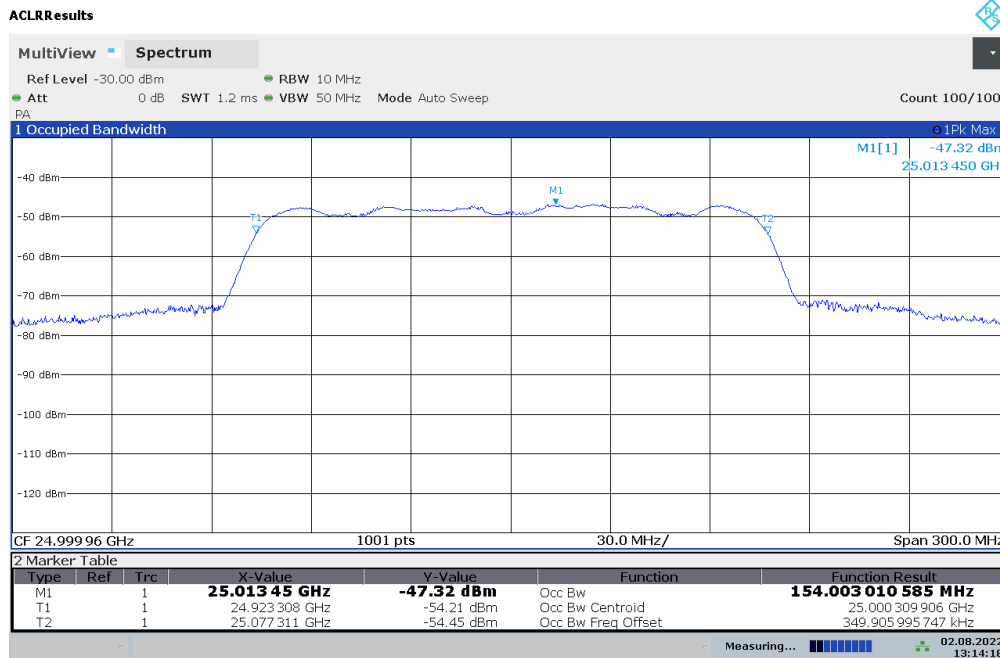
Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
M-Patch	50	3	CP-OFDM	QPSK	153.05
			DFT-s-OFDM	$\pi/2$ BPSK	153.98
			CP-OFDM	16QAM	152.19
			CP-OFDM	64QAM	152.37
		4	CP-OFDM	QPSK	194.44
			DFT-s-OFDM	$\pi/2$ BPSK	194.44
			CP-OFDM	16QAM	194.74
			CP-OFDM	64QAM	194.73
	100	3	CP-OFDM	QPSK	293.49
			DFT-s-OFDM	$\pi/2$ BPSK	290.13
			CP-OFDM	16QAM	293.51
			CP-OFDM	64QAM	293.32
		4	CP-OFDM	QPSK	392.58
			DFT-s-OFDM	$\pi/2$ BPSK	390.65
			CP-OFDM	16QAM	392.15
			CP-OFDM	64QAM	392.63

Table 7-3. Summary of Ant 1 Occupied Bandwidths (n258-R2)



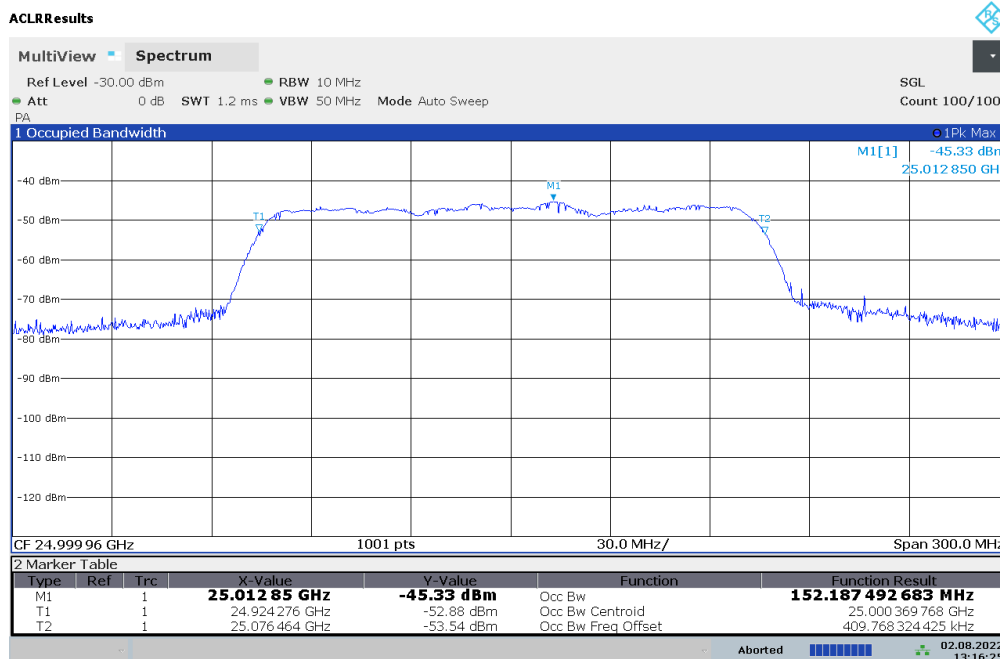
Plot 7-9. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 22 of 141



13:14:18 02.08.2022

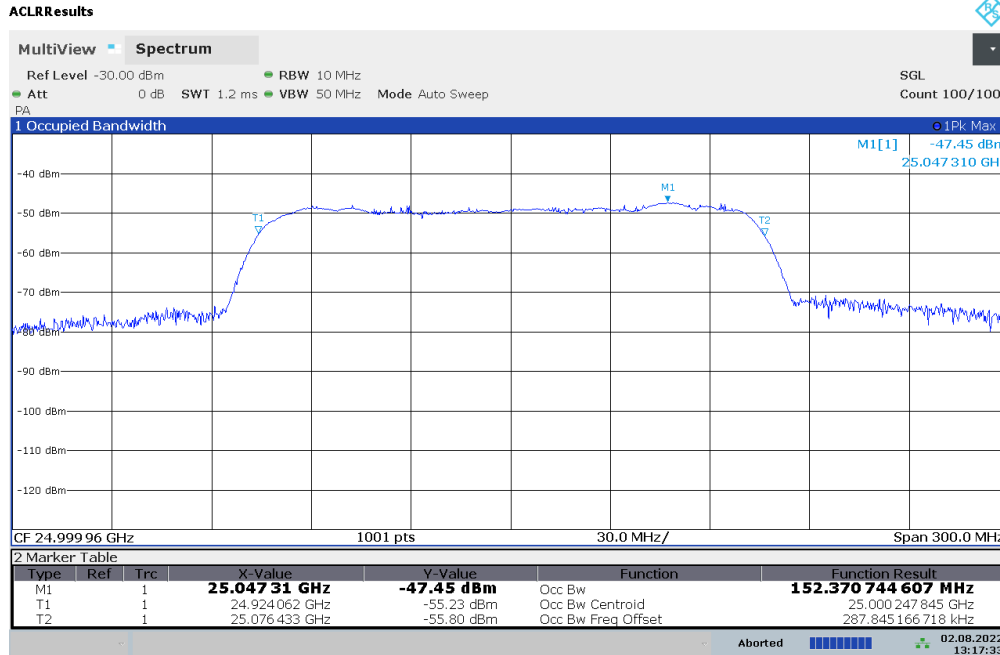
**Plot 7-10. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – pi/2-BPSK – Mid Channel)**



13:16:26 02.08.2022

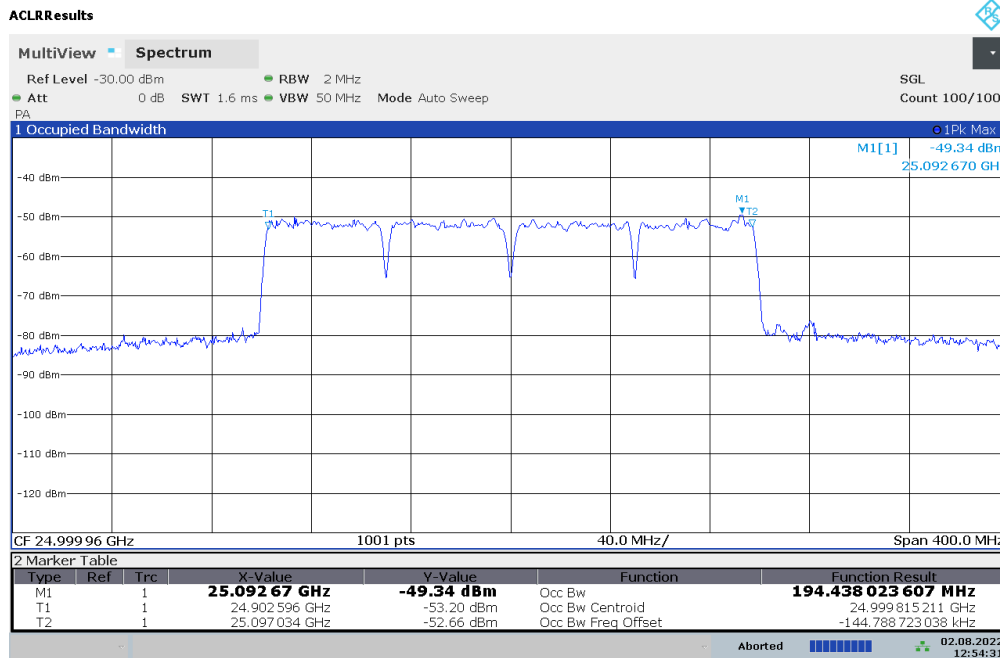
**Plot 7-11. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 23 of 141



13:17:34 02.08.2022

**Plot 7-12. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 64QAM – Mid Channel)**

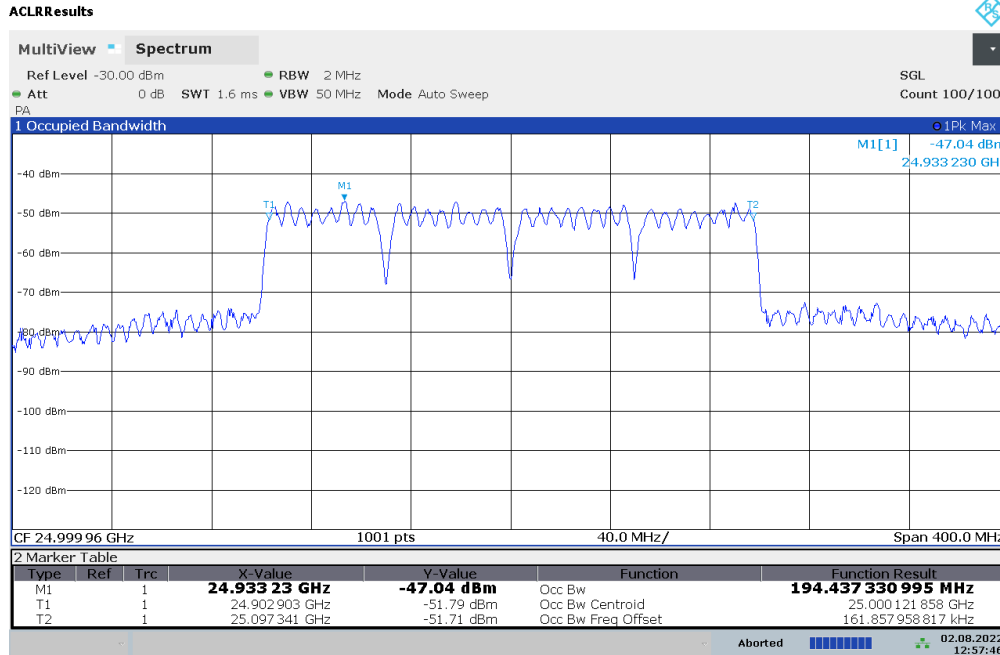


12:54:32 02.08.2022

**Plot 7-13. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – QPSK – Mid Channel)**

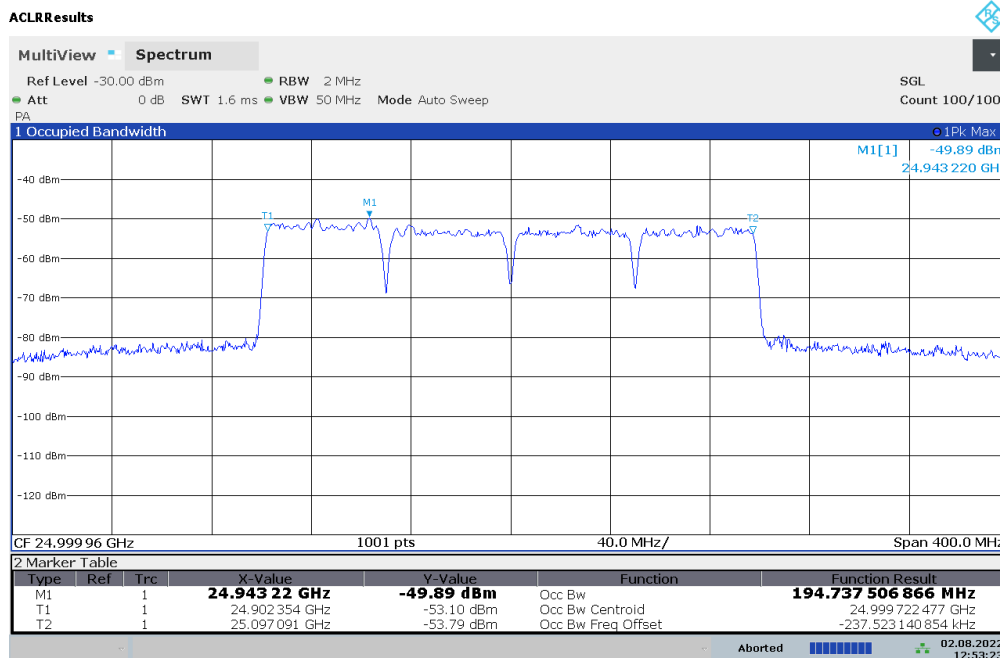
FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 24 of 141





12:57:47 02.08.2022

**Plot 7-14. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – pi/2-BPSK – Mid Channel)**

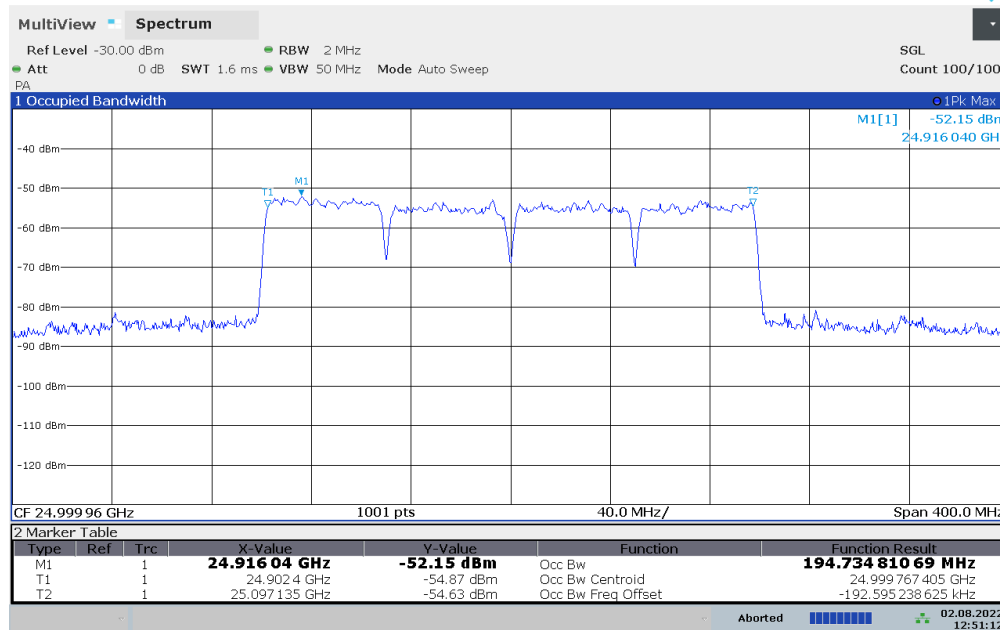


12:53:24 02.08.2022

**Plot 7-15. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 25 of 141

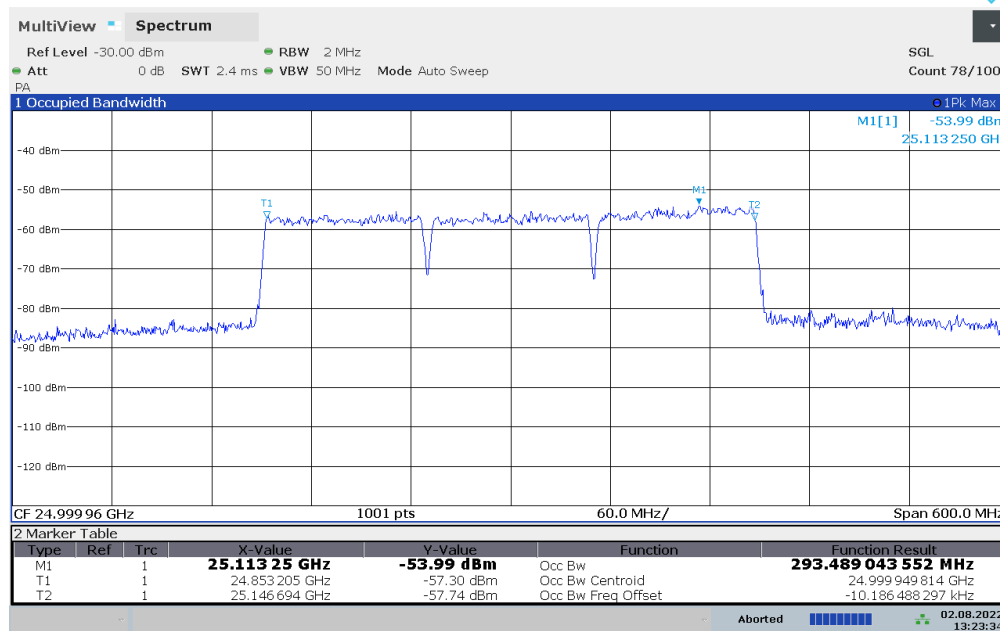
ACLRRResults



12:51:13 02.08.2022

Plot 7-16. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 64QAM – Mid Channel)

ACLRRResults



13:23:35 02.08.2022

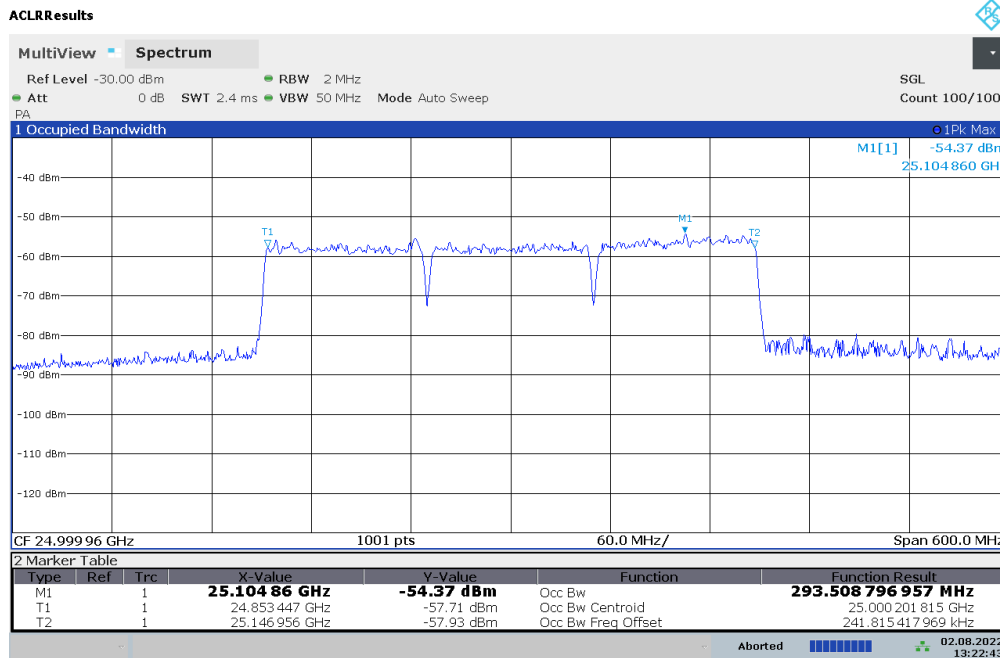
Plot 7-17. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 26 of 141



13:25:19 02.08.2022

Plot 7-18. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – pi/2-BPSK – Mid Channel)

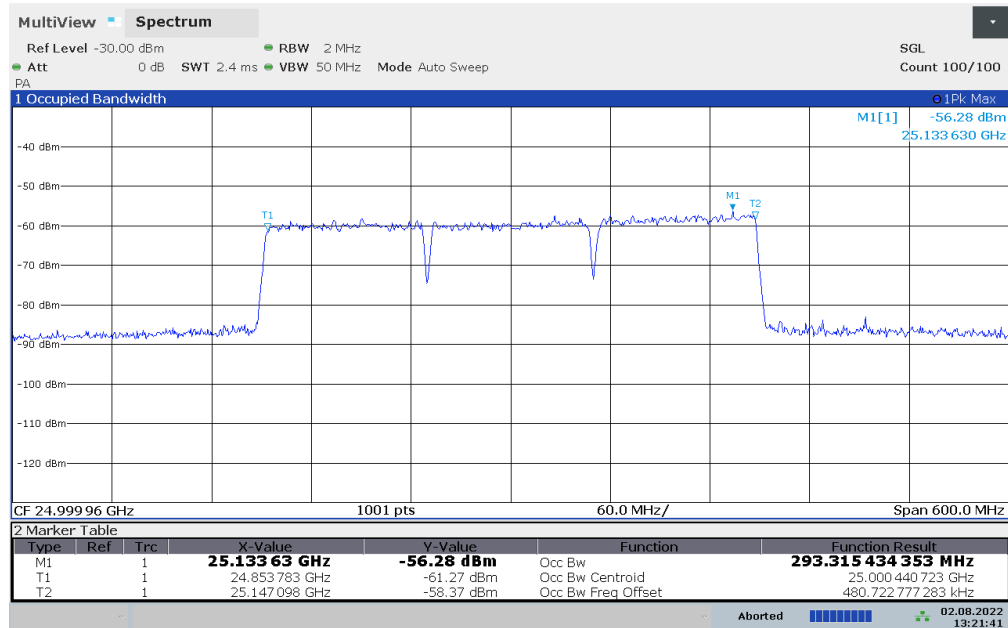


13:22:43 02.08.2022

Plot 7-19. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 16QAM – Mid Channel)

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 27 of 141

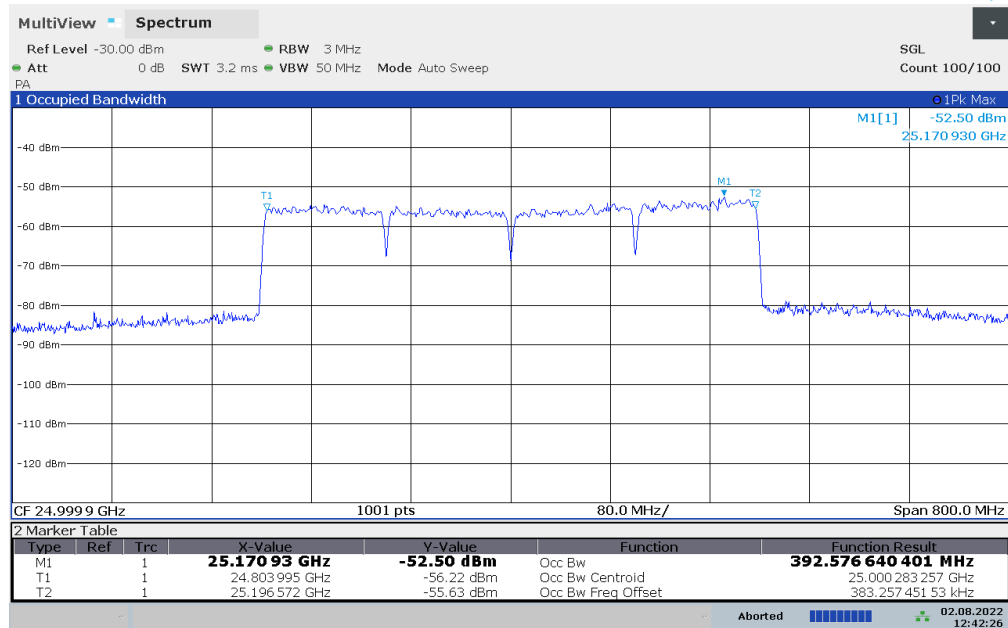
ACLRRResults



13:21:42 02.08.2022

Plot 7-20. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 64QAM – Mid Channel)

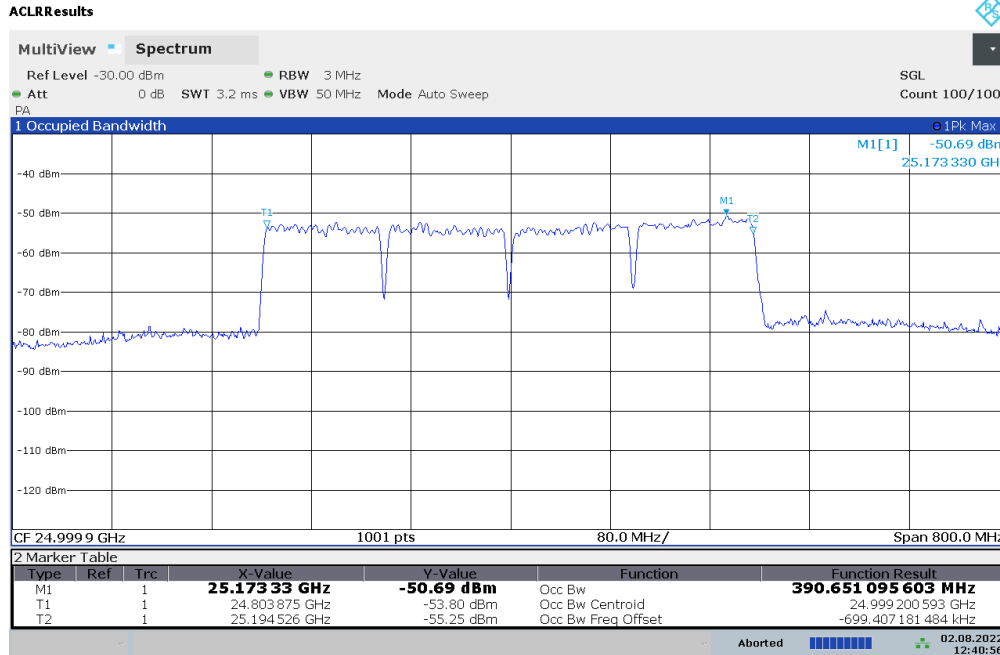
ACLRRResults



12:42:27 02.08.2022

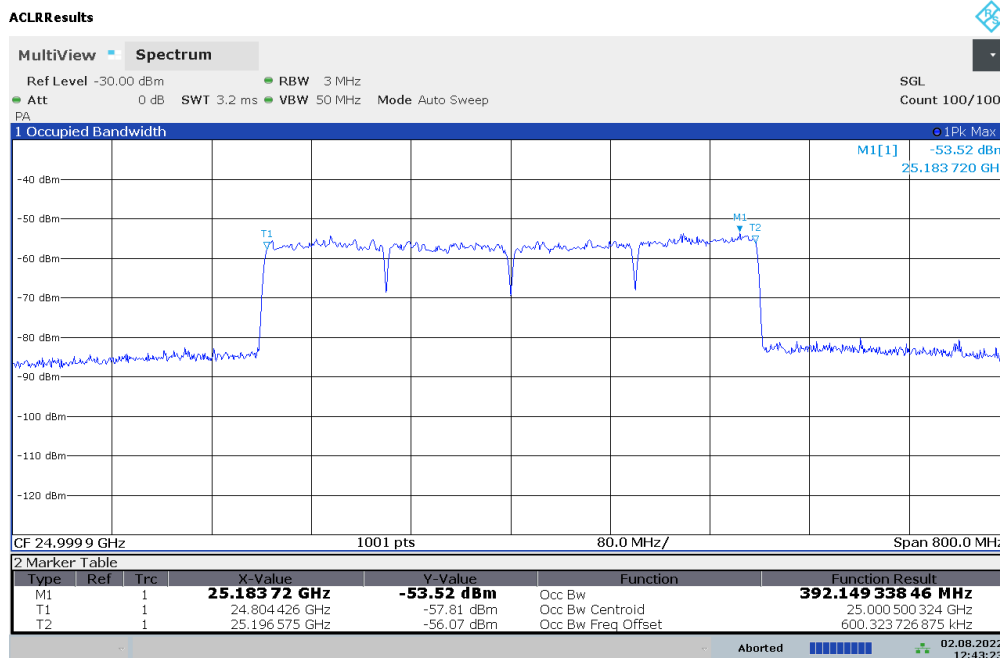
Plot 7-21. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 28 of 141



12:40:56 02.08.2022

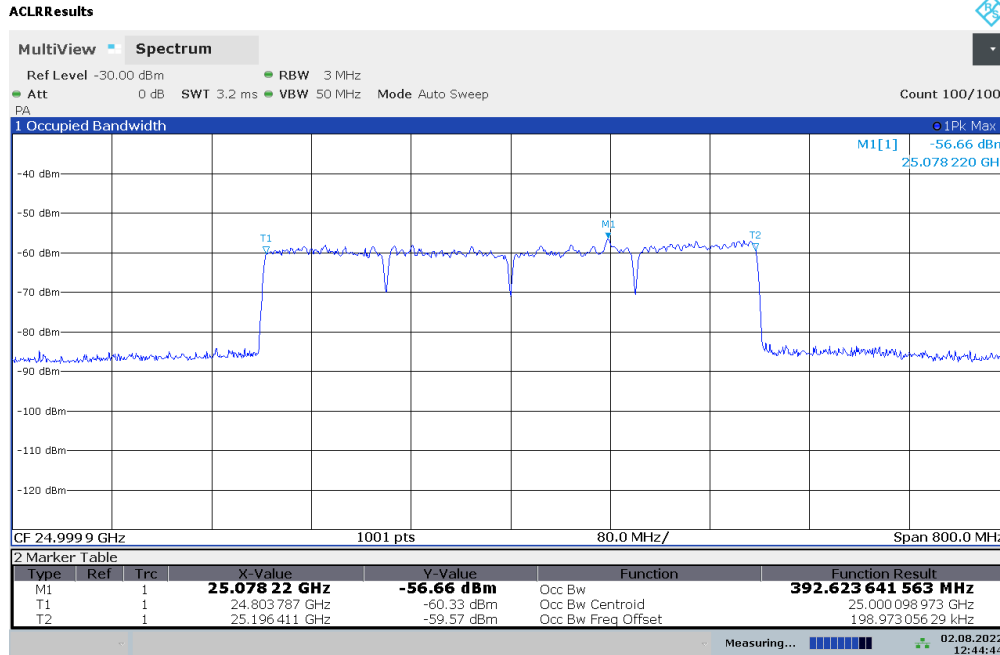
Plot 7-22. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – pi/2-BPSK – Mid Channel)



12:43:24 02.08.2022

Plot 7-23. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 16QAM – Mid Channel)

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



12:44:44 02.08.2022

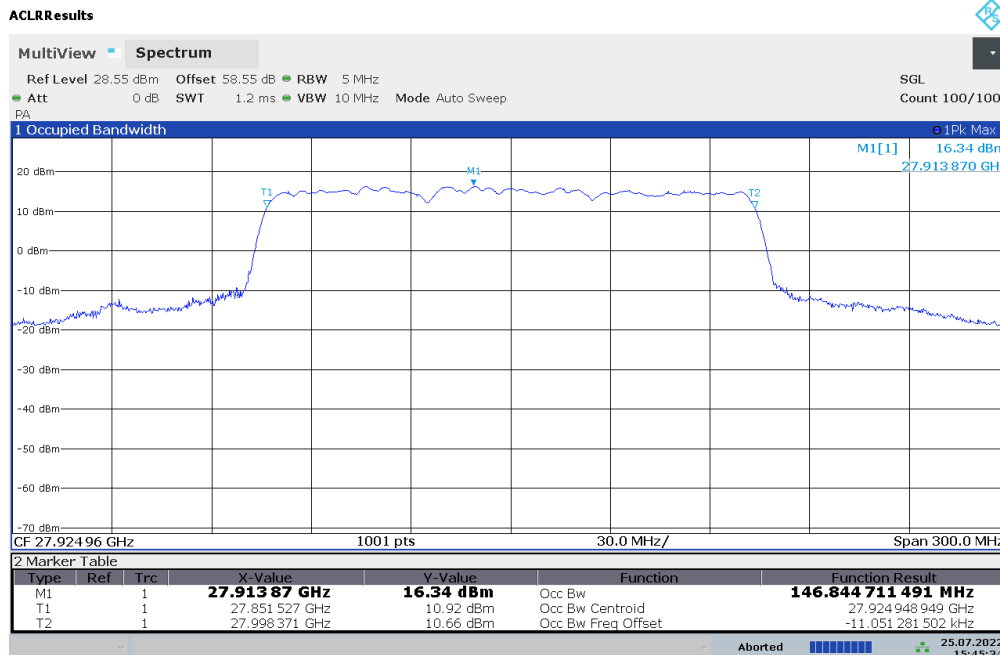
**Plot 7-24. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 64QAM – Mid Channel)**

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

Band n261

Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
M-Patch	50	3	CP-OFDM	QPSK	146.84
			DFT-s-OFDM	$\pi/2$ BPSK	146.94
			CP-OFDM	16QAM	147.02
			CP-OFDM	64QAM	147.05
		4	CP-OFDM	QPSK	196.39
			DFT-s-OFDM	$\pi/2$ BPSK	196.34
			CP-OFDM	16QAM	196.19
			CP-OFDM	64QAM	196.38
	100	3	CP-OFDM	QPSK	298.07
			DFT-s-OFDM	$\pi/2$ BPSK	297.77
			CP-OFDM	16QAM	297.40
			CP-OFDM	64QAM	297.75
		4	CP-OFDM	QPSK	396.96
			DFT-s-OFDM	$\pi/2$ BPSK	397.50
			CP-OFDM	16QAM	397.40
			CP-OFDM	64QAM	397.57

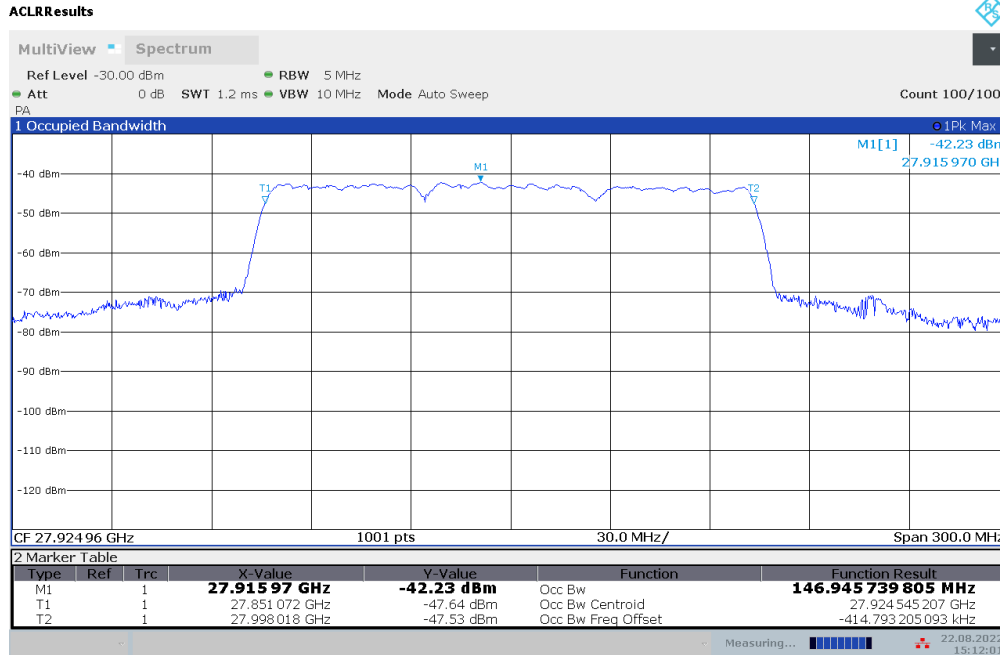
Table 7-4. Summary of Ant 1 Occupied Bandwidths (n261)



15:45:35 25.07.2022

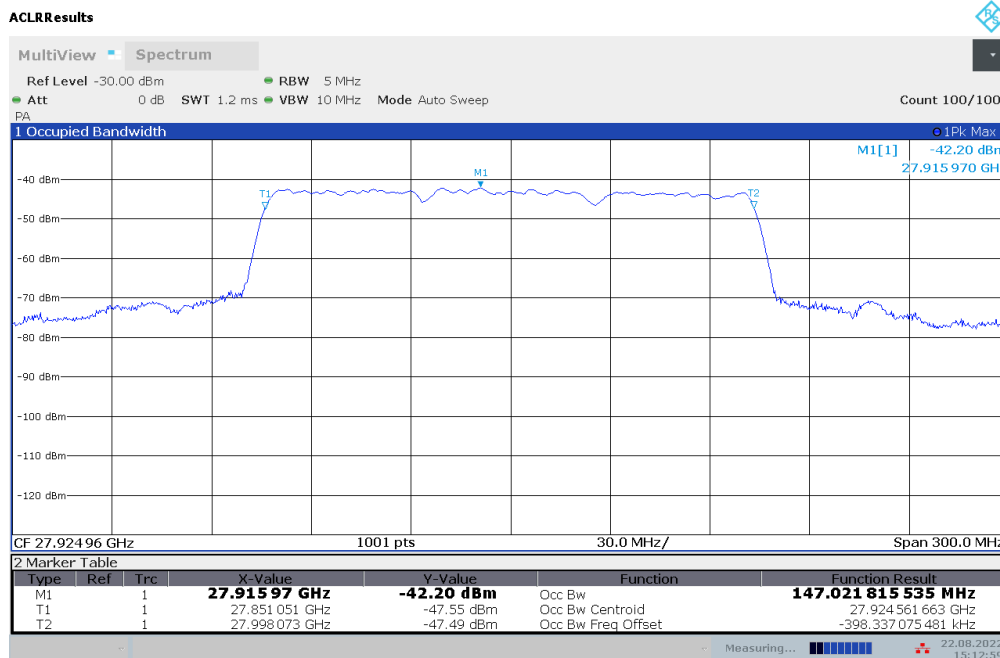
Plot 7-25. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 31 of 141



15:12:02 22.08.2022

**Plot 7-26. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – pi/2-BPSK – Mid Channel)**



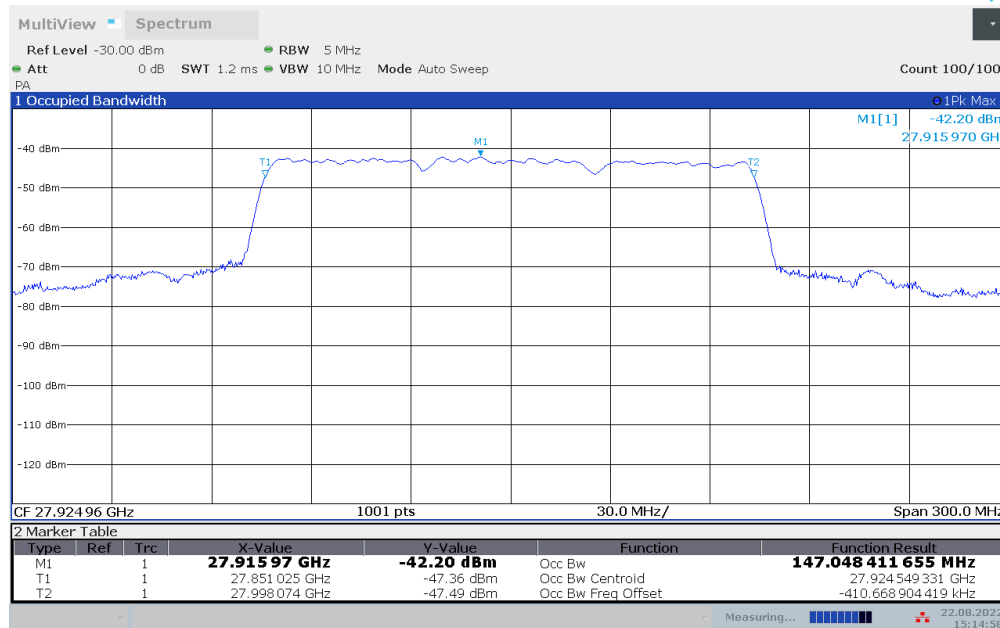
15:12:59 22.08.2022

**Plot 7-27. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 32 of 141



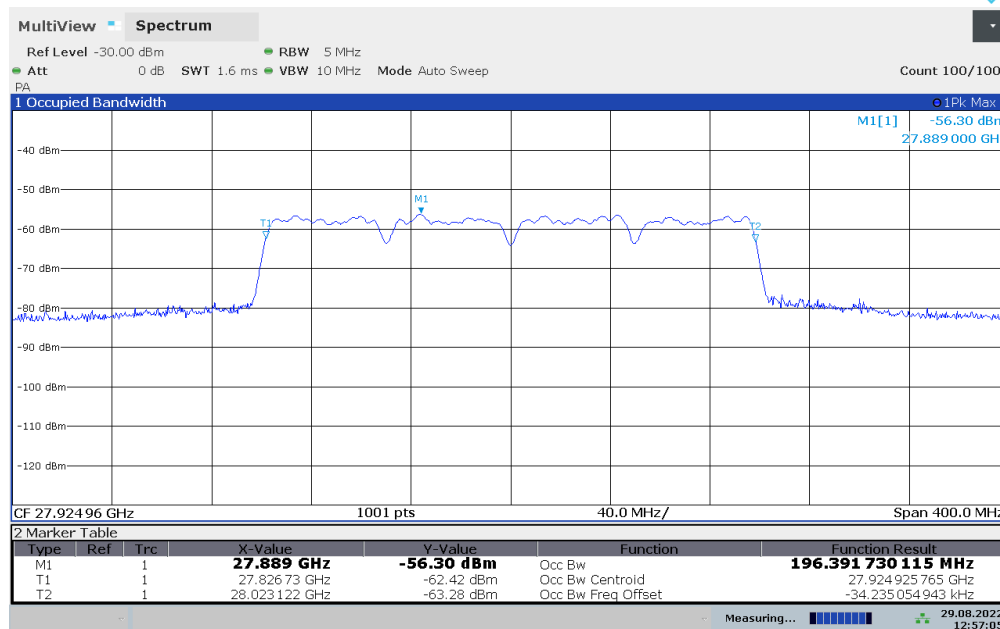
ACLRRResults



15:14:58 22.08.2022

Plot 7-28. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 64QAM – Mid Channel)

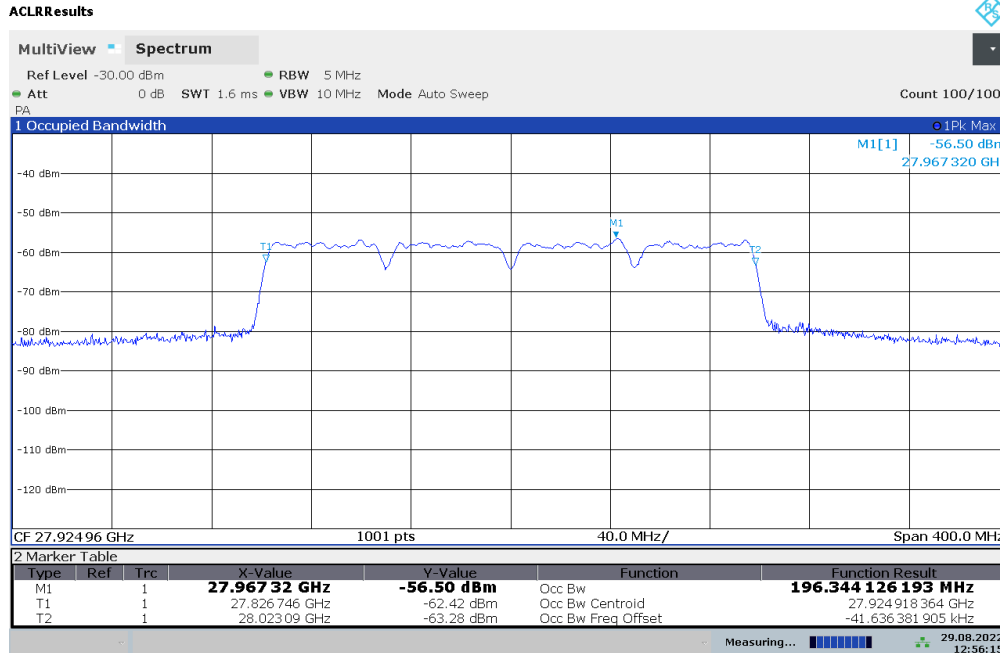
ACLRRResults



12:57:06 29.08.2022

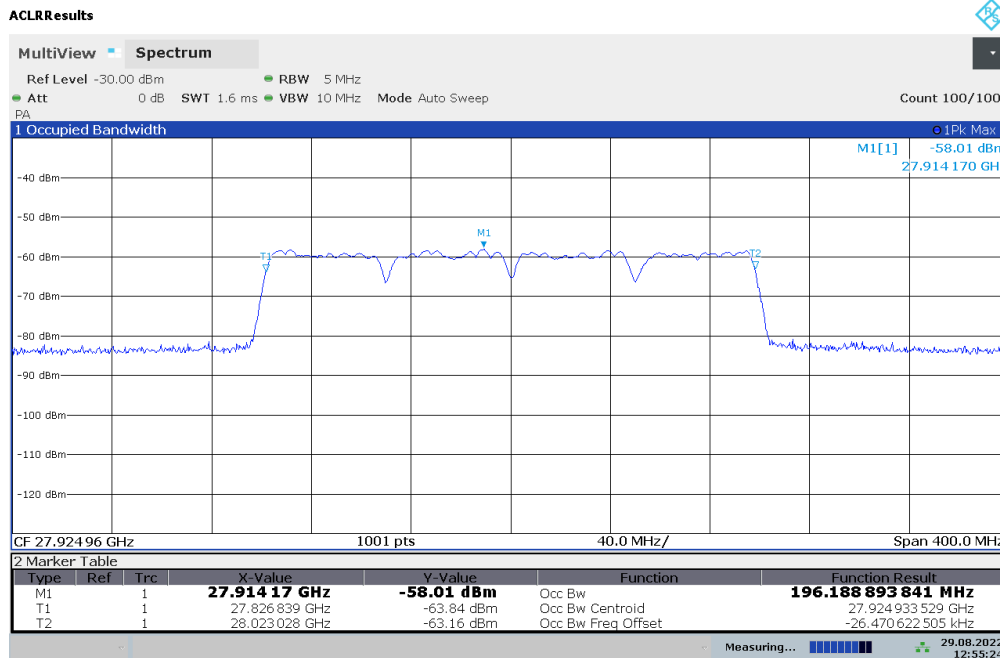
Plot 7-29. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 33 of 141



12:56:16 29.08.2022

**Plot 7-30. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – pi/2-BPSK – Mid Channel)**

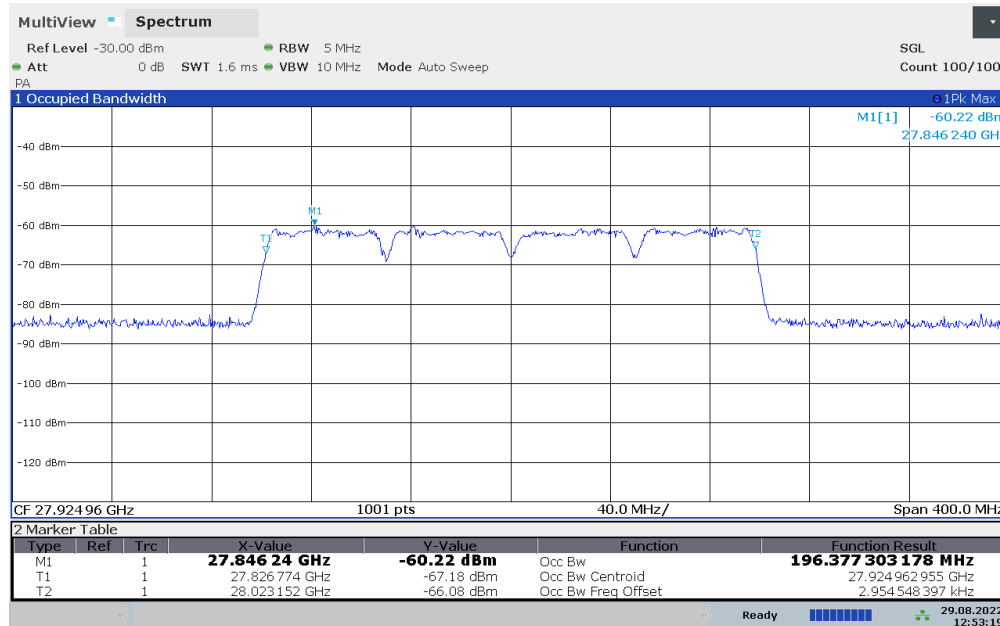


12:55:25 29.08.2022

**Plot 7-31. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 34 of 141

ACLRRResults



12:53:20 29.08.2022

Plot 7-32. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 64QAM – Mid Channel)

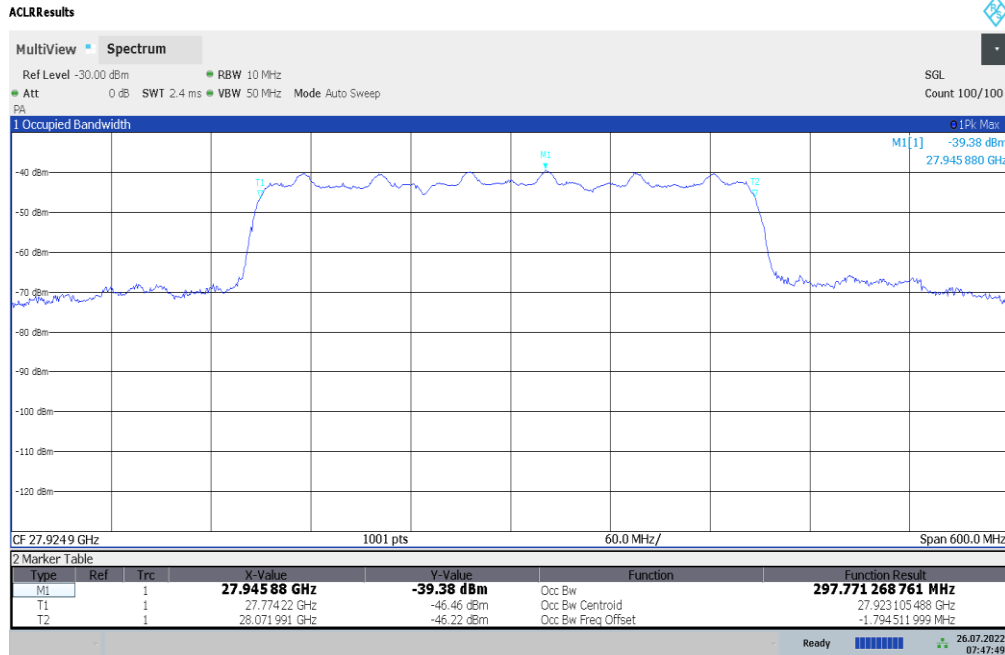
ACLRRResults



07:49:50 26.07.2022

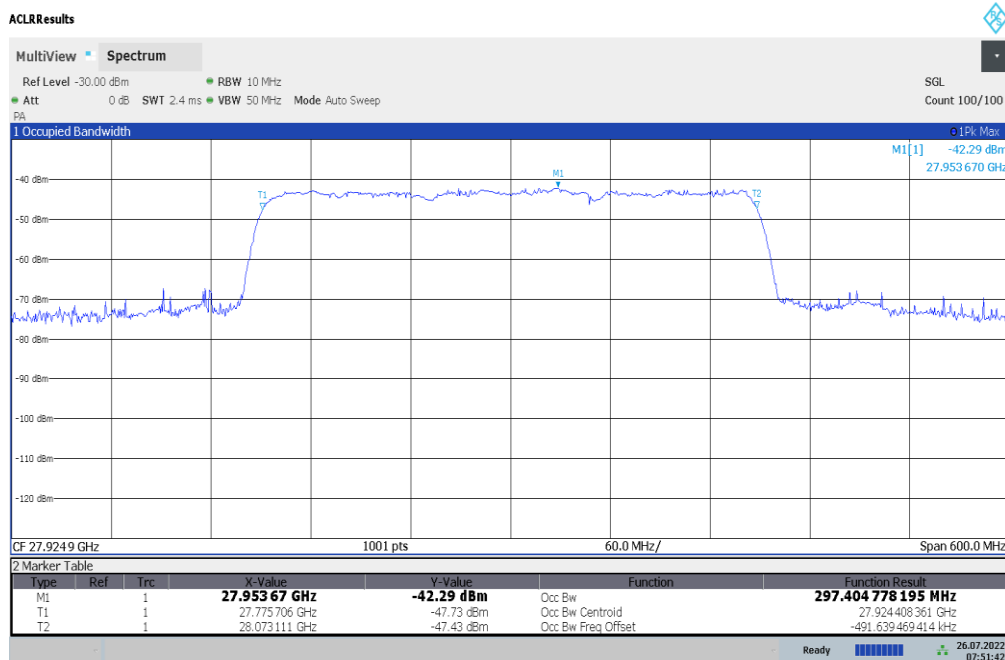
Plot 7-33. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 35 of 141



07:47:50 26.07.2022

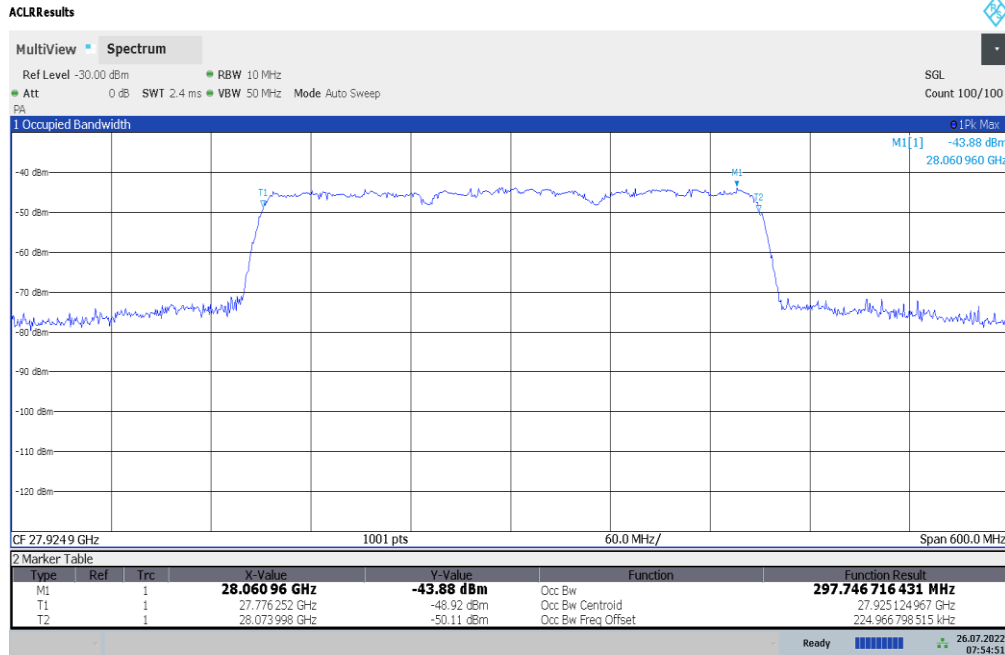
Plot 7-34. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – pi/2-BPSK – Mid Channel)



07:51:42 26.07.2022

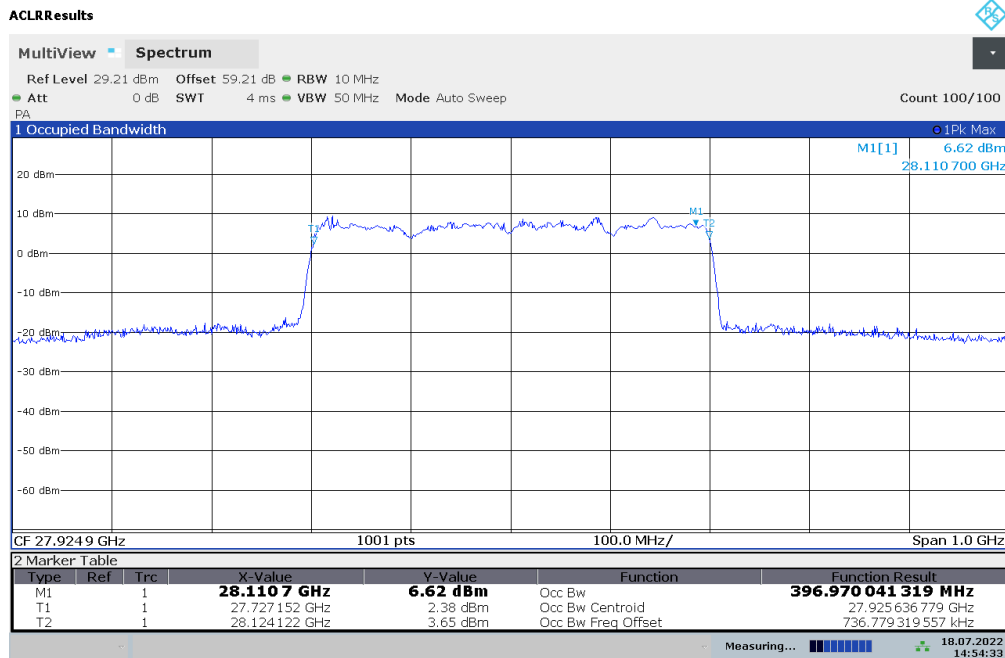
Plot 7-35. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 16QAM – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 36 of 141



07:54:52 26.07.2022

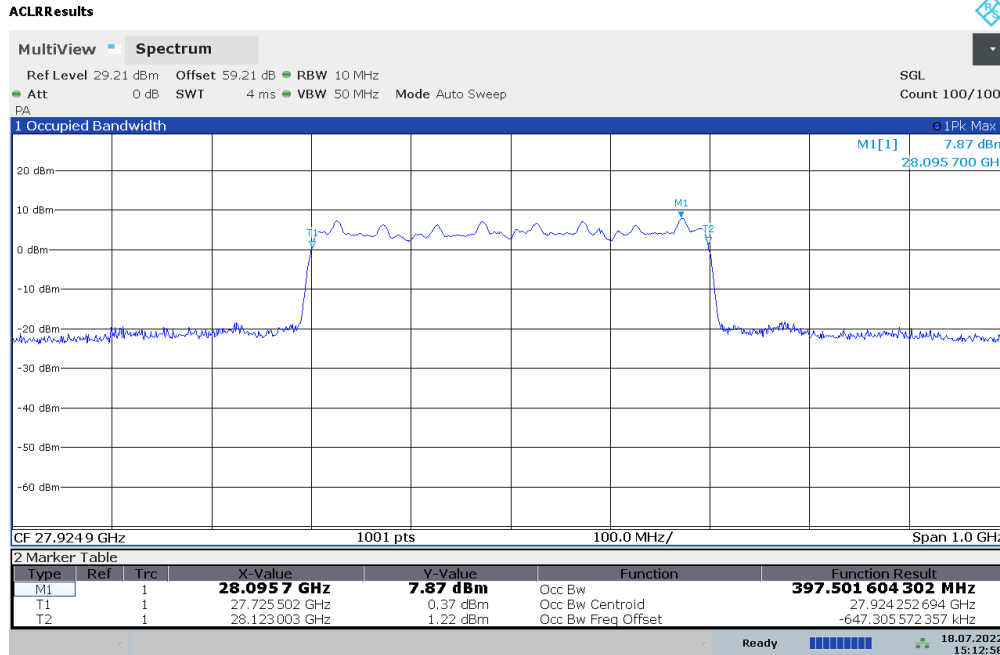
Plot 7-36. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 64QAM – Mid Channel)



14:54:33 18.07.2022

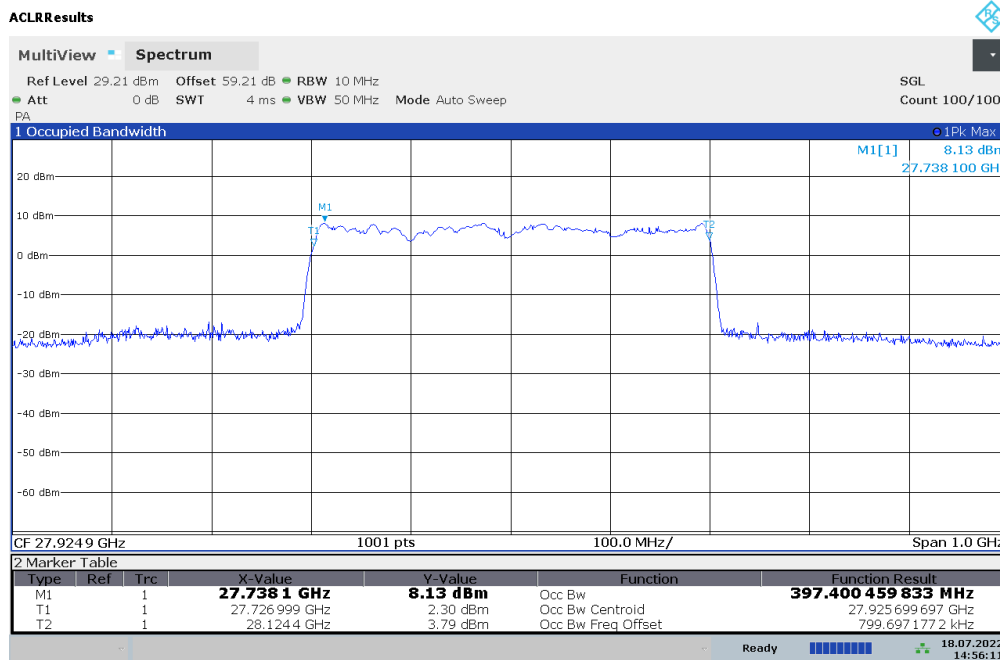
Plot 7-37. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 37 of 141



15:12:59 18.07.2022

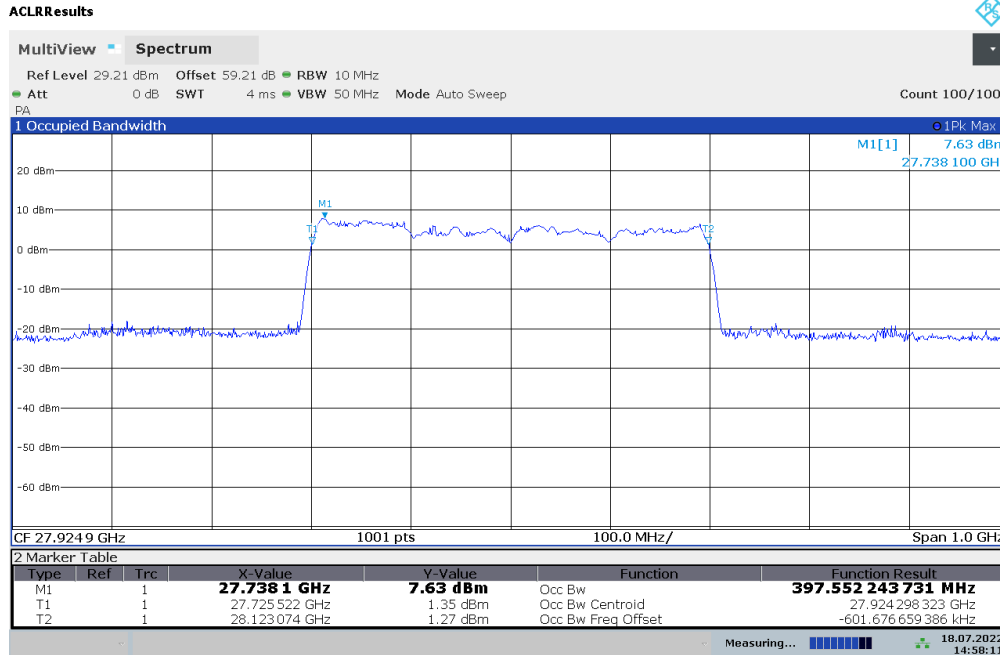
**Plot 7-38. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – pi/2-BPSK – Mid Channel)**



14:56:11 18.07.2022

**Plot 7-39. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 38 of 141



14:58:11 18.07.2022

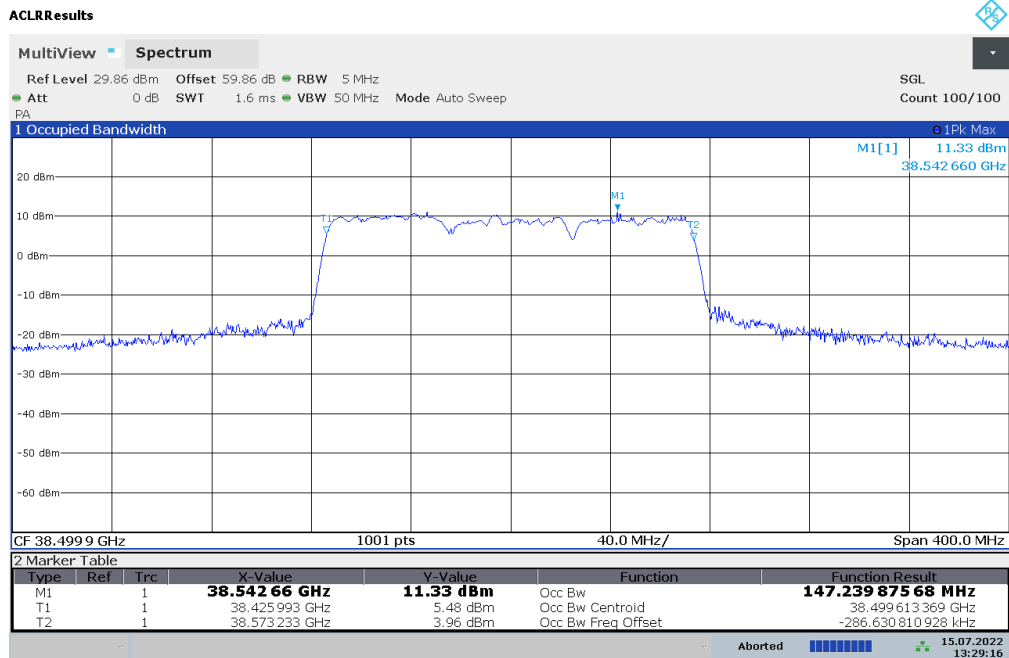
**Plot 7-40. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 64QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 39 of 141

### Band n260

Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
M-Patch	50	3	CP-OFDM	QPSK	147.24
			DFT-s-OFDM	$\pi/2$ BPSK	147.31
			CP-OFDM	16QAM	147.65
		CP-OFDM	64QAM	148.10	
		4	CP-OFDM	QPSK	196.13
			DFT-s-OFDM	$\pi/2$ BPSK	197.57
	CP-OFDM		16QAM	196.05	
	100	3	CP-OFDM	64QAM	196.33
			CP-OFDM	QPSK	298.03
			DFT-s-OFDM	$\pi/2$ BPSK	297.18
		4	CP-OFDM	16QAM	297.78
			CP-OFDM	64QAM	299.37
CP-OFDM			QPSK	397.04	
			DFT-s-OFDM	$\pi/2$ BPSK	396.89
			CP-OFDM	16QAM	395.59
			CP-OFDM	64QAM	397.85

Table 7-5. Summary of Ant 1 Occupied Bandwidths (n260)

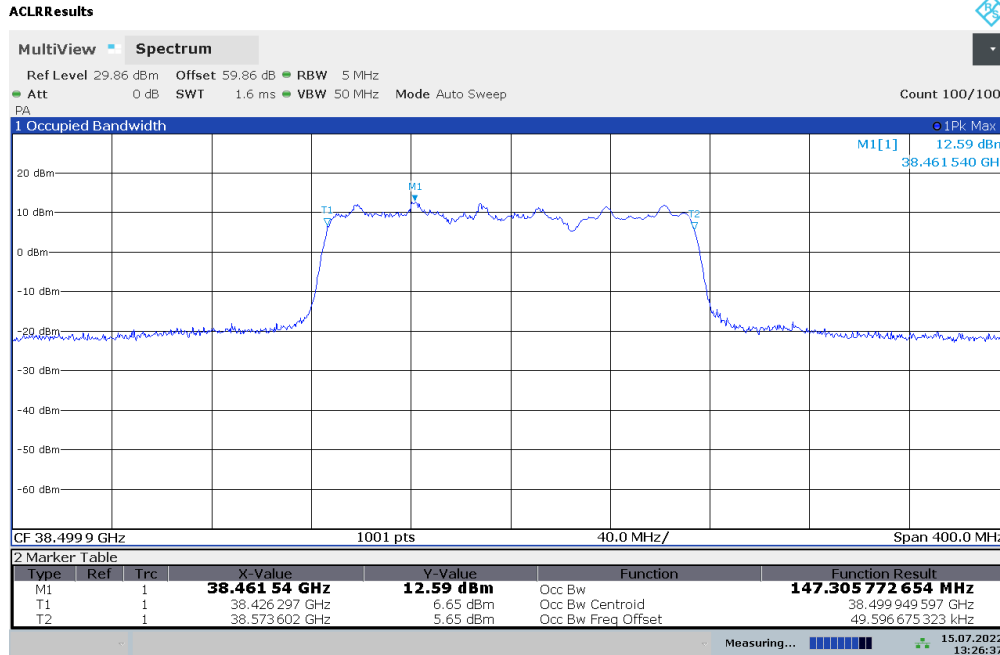


13:29:16 15.07.2022

Plot 7-41. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – QPSK – Mid Channel)

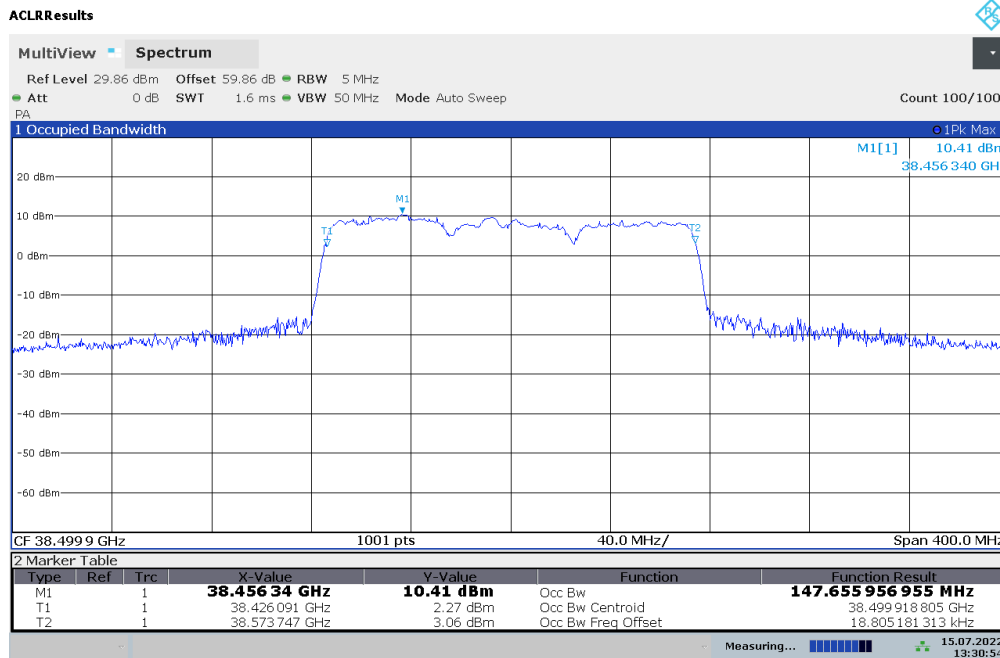
FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 40 of 141





13:26:37 15.07.2022

**Plot 7-42. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – pi/2-BPSK – Mid Channel)**

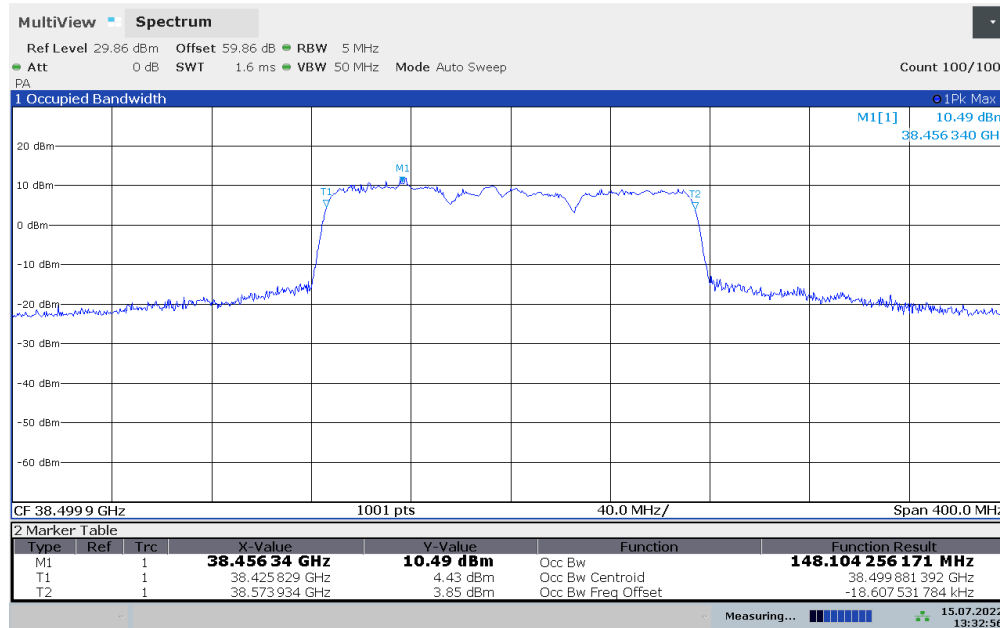


13:30:54 15.07.2022

**Plot 7-43. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 41 of 141

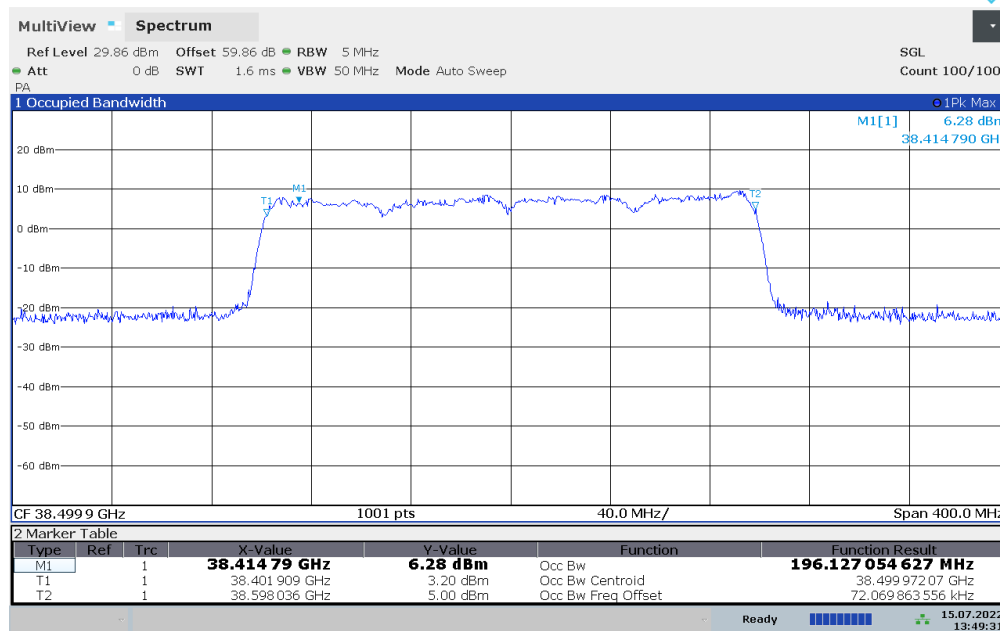
ACLRRResults



13:32:56 15.07.2022

Plot 7-44. Ant 1 Occupied Bandwidth Plot (50MHz-3CC – 64QAM – Mid Channel)

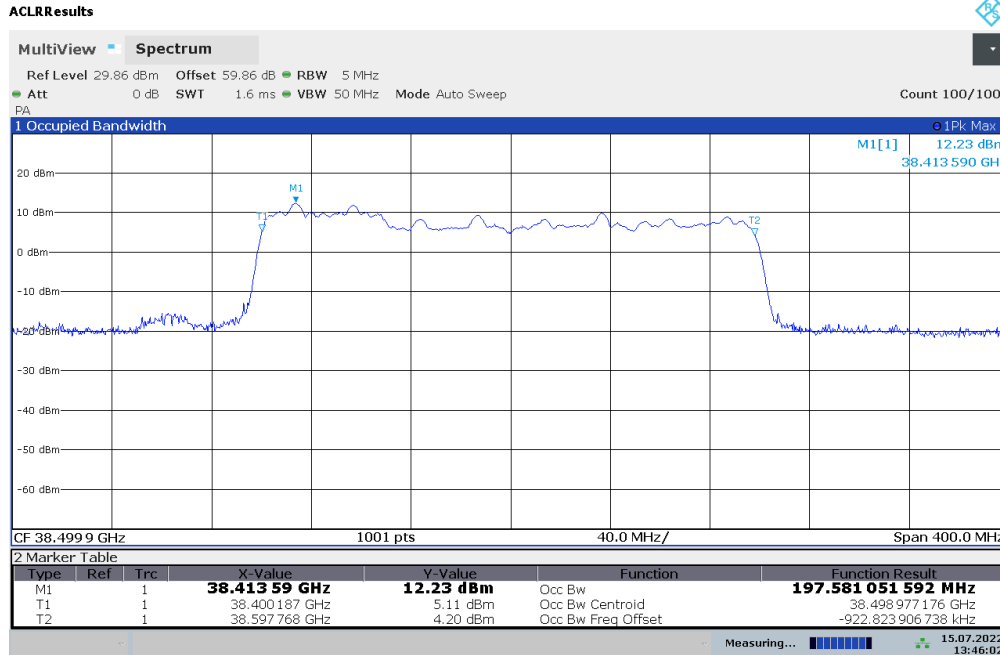
ACLRRResults



13:49:31 15.07.2022

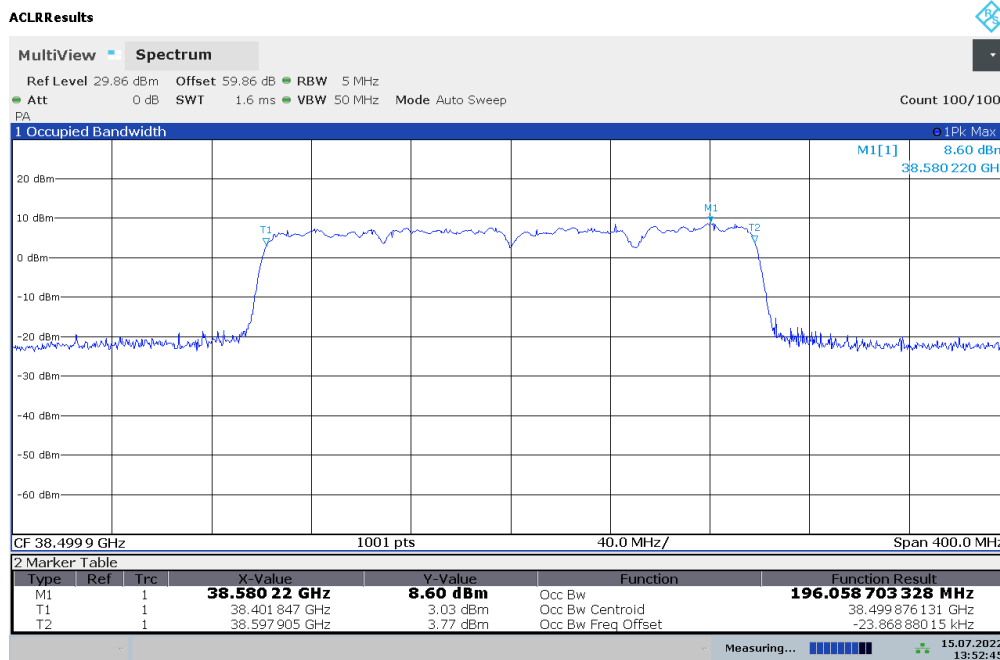
Plot 7-45. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 42 of 141



13:46:03 15.07.2022

**Plot 7-46. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – pi/2-BPSK – Mid Channel)**

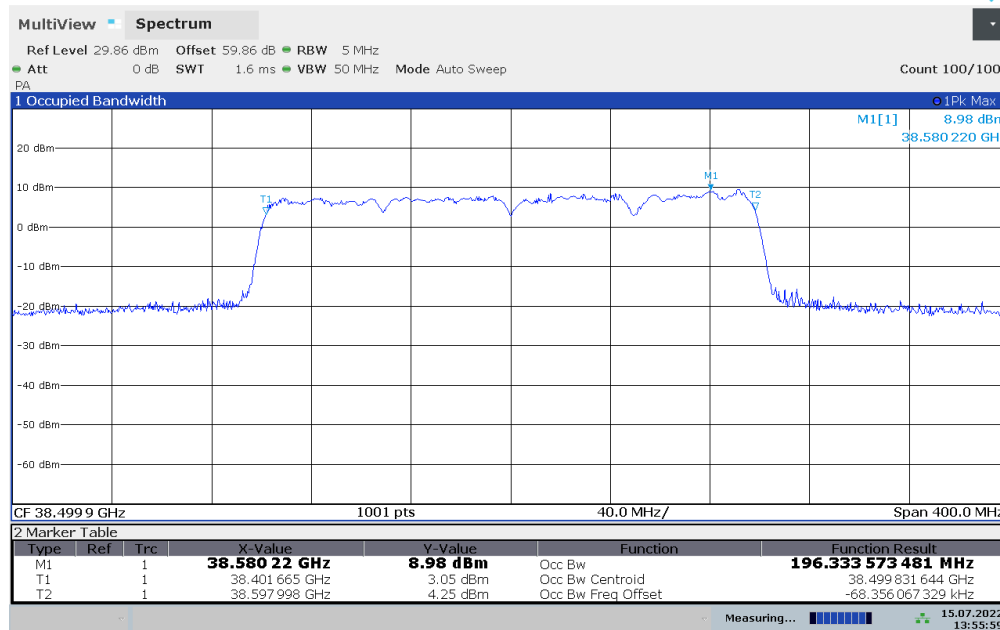


13:52:46 15.07.2022

**Plot 7-47. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 43 of 141

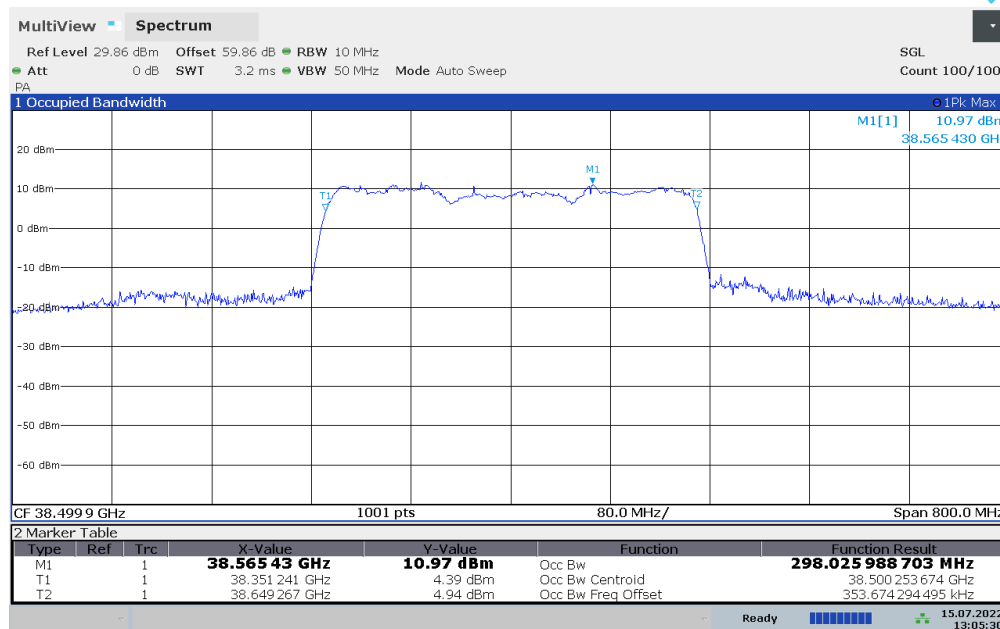
ACLRRResults



13:56:00 15.07.2022

Plot 7-48. Ant 1 Occupied Bandwidth Plot (50MHz-4CC – 64QAM – Mid Channel)

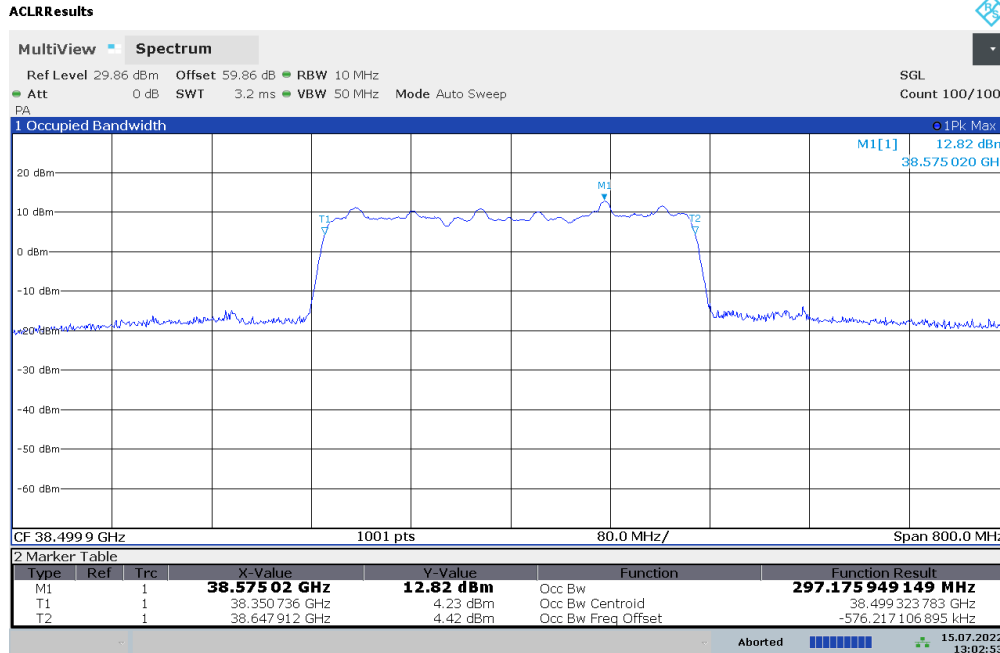
ACLRRResults



13:05:31 15.07.2022

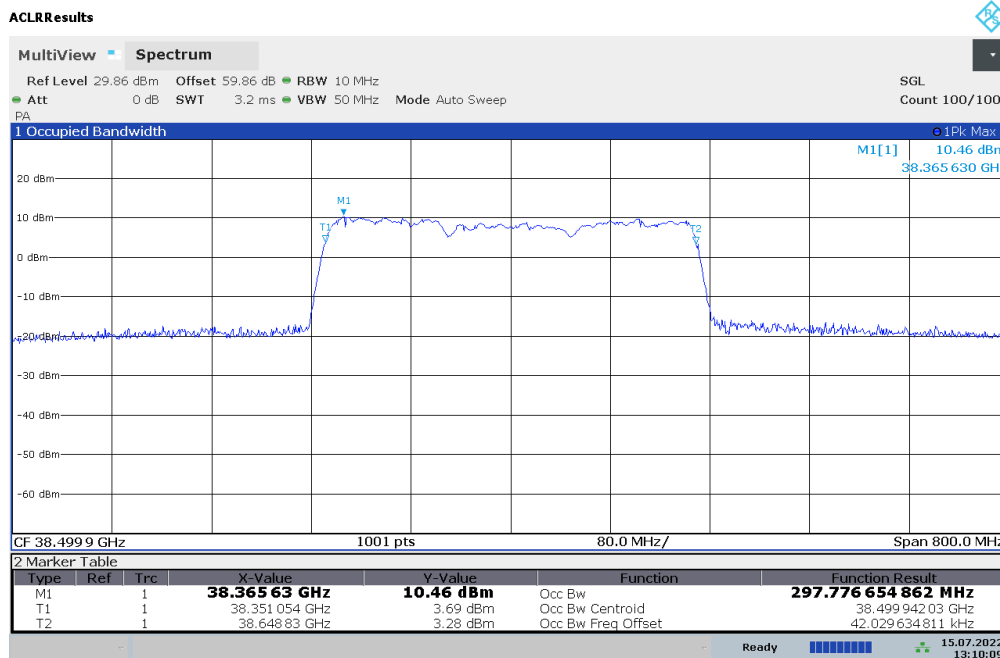
Plot 7-49. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – QPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 44 of 141



13:02:53 15.07.2022

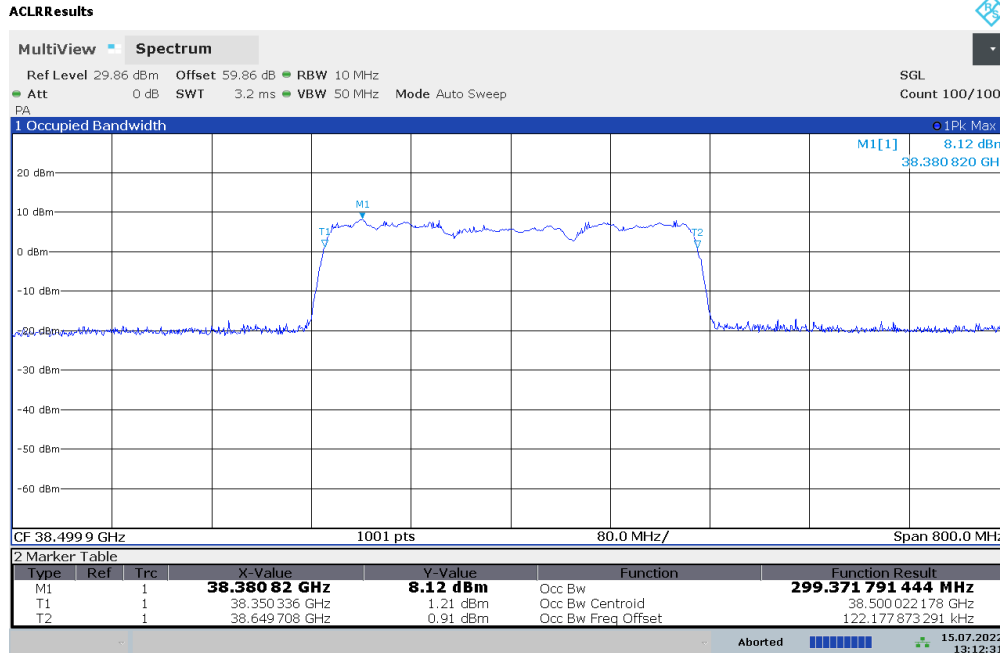
**Plot 7-50. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – pi/2-BPSK – Mid Channel)**



13:10:09 15.07.2022

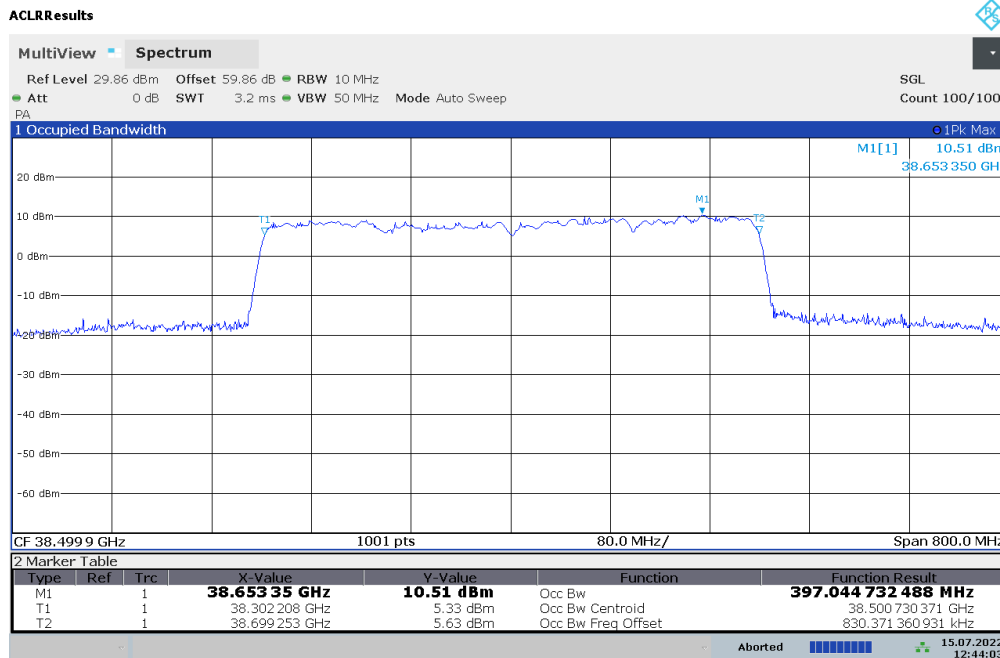
**Plot 7-51. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 45 of 141



13:12:31 15.07.2022

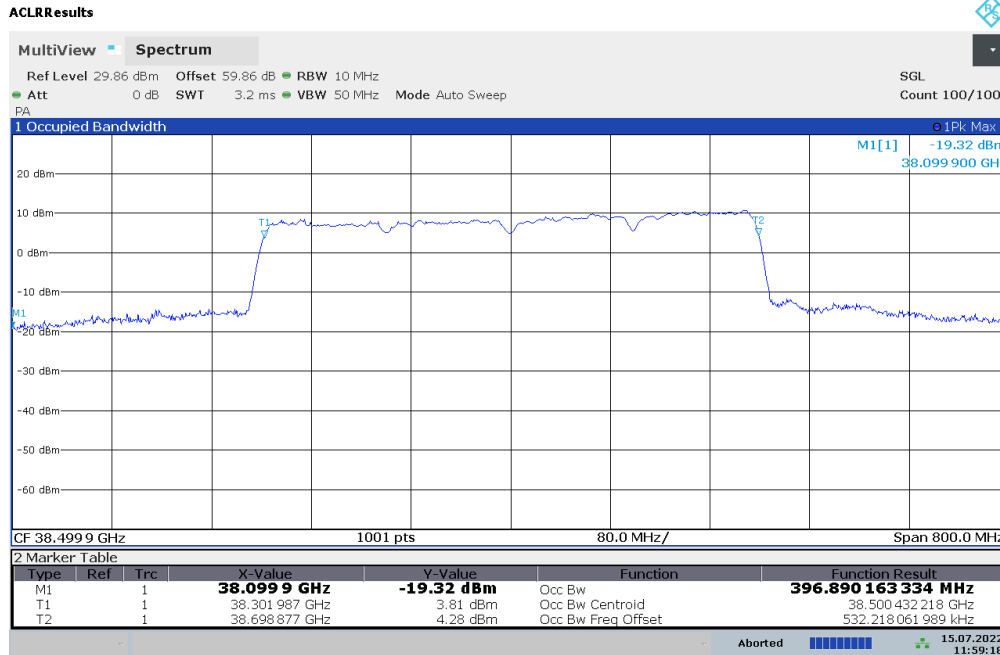
**Plot 7-52. Ant 1 Occupied Bandwidth Plot (100MHz-3CC – 64QAM – Mid Channel)**



12:44:04 15.07.2022

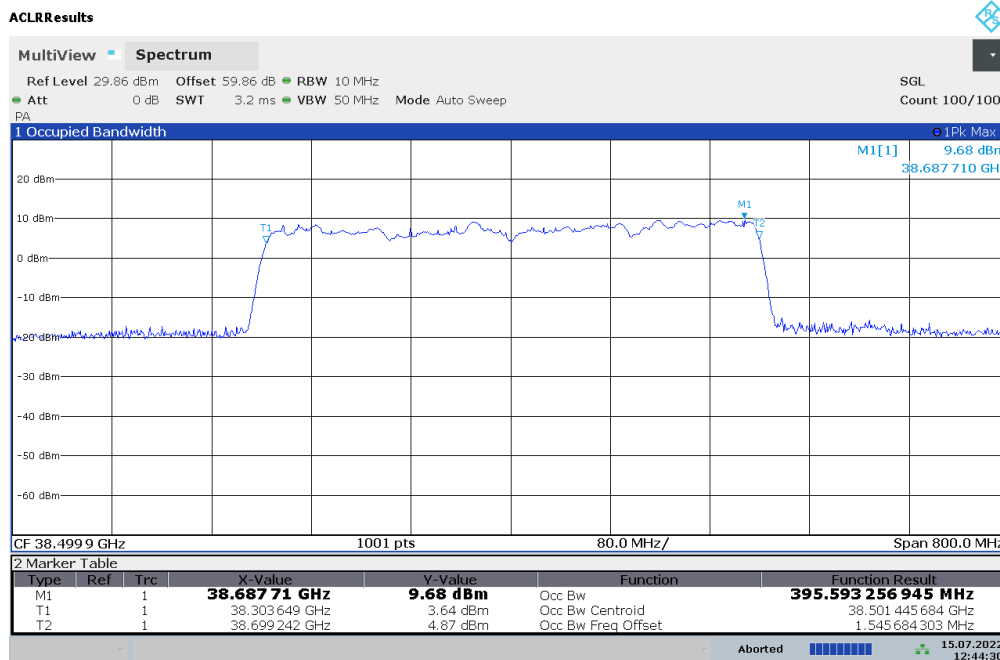
**Plot 7-53. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – QPSK – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 46 of 141



11:59:18 15.07.2022

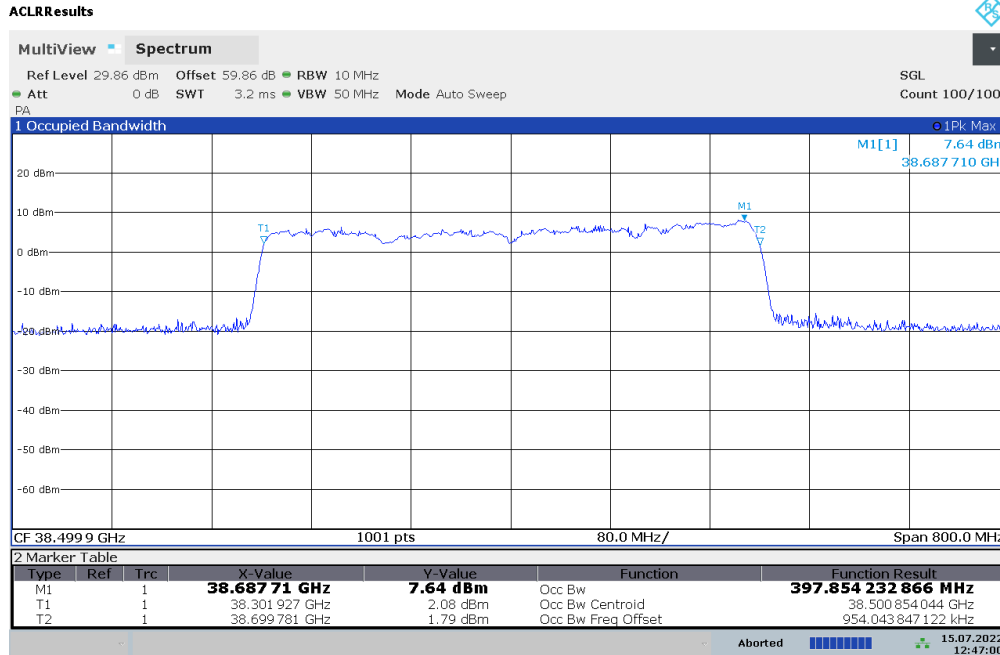
**Plot 7-54. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – pi/2-BPSK – Mid Channel)**



12:44:30 15.07.2022

**Plot 7-55. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 16QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 47 of 141



12:47:00 15.07.2022

**Plot 7-56. Ant 1 Occupied Bandwidth Plot (100MHz-4CC – 64QAM – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 48 of 141



## 7.3 Equivalent Isotropic Radiated Power

### Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

***The average power of the sum of all antenna elements is limited to a maximum EIRP of +43 dBm.***


### Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4.1

KDB 842590 D01 – Section 4.2

### Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW
3. VBW  $\geq$  3 x RBW
4. Span = 2x to 3x the OBW
5. No. of sweep points  $\geq$  2 x span / RBW
6. Sweep time = Auto
7. Detector = RMS
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 49 of 141

V1.0

**Test Notes**

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below. Both H-Beam and V-Beam were investigated and the worst-case measurements were reported below.
- 2) Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.
- 3) EIRP measurements for all bands were taken at 1m test distance as was required for far-field conditions (see Table 3-1).
- 4) The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBμV/m) + 20log(D) – 104.8; where D is the measurement distance (in the far field region) in m. The field strength at the antenna terminals E is calculated as: E (dBμV/m) = Spectrum Analyzer Channel Power Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + 107.
- 5) All EIRP measurements were made with the appropriate offset levels loaded into the spectrum analyzer as determined from the measurement distance, antenna factor, cable loss, and the equations in Note 4 above.
- 6) Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning.
- 7) This device supports transmission of H-polarized and V-polarized beams from the antenna array in both CP-OFDM and DFT-s-OFDM transmission schemes. SISO and MIMO operation is also supported for some configurations. As part of the testing, all modes are investigated fully on the channel showing the highest simulated EIRP using QPSK modulation. The configuration that shows the highest measured EIRP was then used to determine the EIRP for the low and high channels and for the additional modulations.
- 8) Several BeamID's are investigated based on the provided simulated data to determine the worst-case BeamID.
- 9) For each band and antenna array configuration tested, worst case EIRP plots are displayed for all total bandwidths tested (50MHz, 100MHz, 200MHz). Since these EIRP plots were measured separately from the data in the EIRP tables, results displayed in the plots may marginally differ from the corresponding results displayed in EIRP data tables. However, any differences are negligible and well within the stated measurement uncertainty.

**Sample Calculation**


The offset level loaded into the spectrum analyzer allows for a direct conversion of the raw channel power level measured by the analyzer into an EIRP. This offset level is frequency dependent and is calculated as follows:

$$\text{Offset Level [dB]} = \text{Antenna Factor [dB/m]} + \text{Cable Loss [dB]} + 20 \text{ Log}(\text{Distance [m]}) + 107 - 104.8 .$$

For example, to measure an EIRP at a frequency of 24400MHz with an antenna factor of 40.40dB/m, a cable loss of 7.68dB, and a measurement distance of 1 meter, an offset level of:

$$\text{Offset Level} = 40.40\text{dB/m} + 7.68\text{dB} + 20 \text{ Log}(1 \text{ meter}) + 107 - 104.8 = \mathbf{50.28 \text{ dB}}$$

shall be loaded into the spectrum analyzer.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 50 of 141


## Band n258-R1 Beam ID Configurations

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	155	27
	Mid	2Tx/MIMO	155	27
	High	2Tx/MIMO	155	27

Table 7-6. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	167	39
	Mid	2Tx/MIMO	167	39
	High	2Tx/MIMO	167	39

Table 7-7. Ant 2 Worst Case Beam ID

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 51 of 141


## Band n258-R1

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	24325.00	DFT-s-OFDM	$\pi/2$ BPSK	27+155	H + V	2Tx	H	297	250	32 / 0	19.00
		Mid	24350.04	DFT-s-OFDM	QPSK	27+155	H + V	2Tx	H	296	250	32 / 0	19.08
		Mid	24350.04	CP-OFDM	QPSK	27+155	H + V	MIMO	H	296	250	32 / 0	17.31
		Mid	24350.04	DFT-s-OFDM	$\pi/2$ BPSK	27+155	H + V	2Tx	H	296	250	32 / 0	19.23
		Mid	24350.04	DFT-s-OFDM	16QAM	27+155	H + V	2Tx	H	296	250	32 / 0	17.27
		Mid	24350.04	DFT-s-OFDM	64QAM	27+155	H + V	2Tx	H	296	250	32 / 0	15.33
		High	24375.00	DFT-s-OFDM	$\pi/2$ BPSK	27+155	H + V	2Tx	H	297	249	32 / 0	19.15

**Table 7-8. Ant 1 EIRP Data (Band n258-R1 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Mid	24350.04	DFT-s-OFDM	QPSK	27+155	H + V	2Tx	H	297	251	32 / 0	19.07
		Mid	24350.04	CP-OFDM	QPSK	27+155	H + V	MIMO	H	297	251	32 / 0	18.88
		Mid	24350.04	DFT-s-OFDM	$\pi/2$ BPSK	27+155	H + V	2Tx	H	297	251	32 / 0	19.11
		Mid	24350.04	DFT-s-OFDM	16QAM	27+155	H + V	2Tx	H	297	251	32 / 0	17.36
		Mid	24350.04	DFT-s-OFDM	64QAM	27+155	H + V	2Tx	H	297	251	32 / 0	15.42

**Table 7-9. Ant 1 EIRP Data (Band n258-R1 – 50MHz-4CC)**

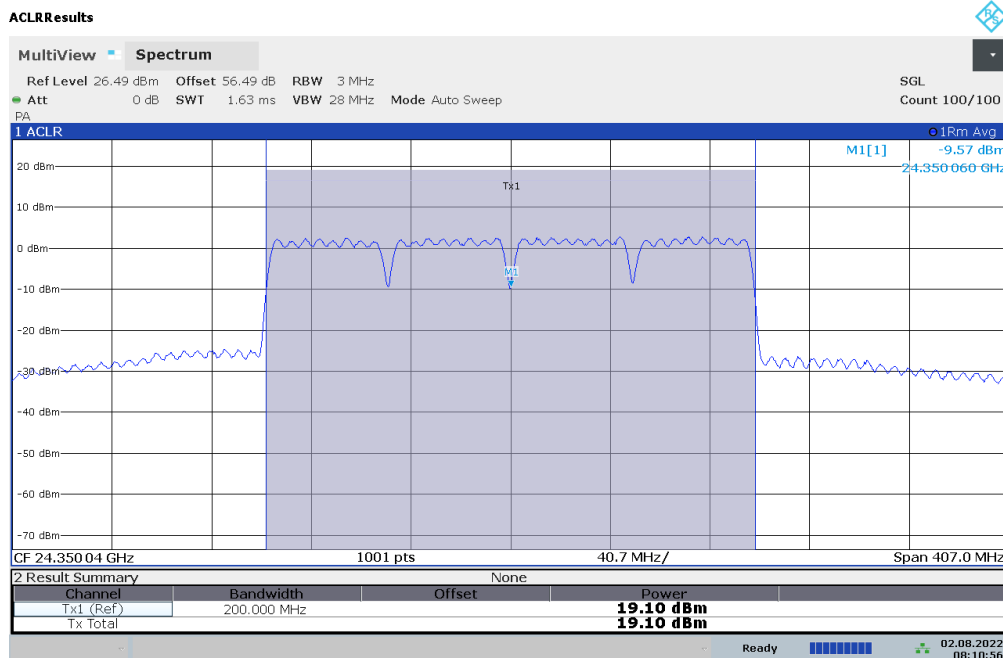
FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 52 of 141

## Worst-Case EIRP Plots (n258-R1)



09:32:13 02.08.2022

Plot 7-57. Ant 1 EIRP Plot (Band n258-R1 – 50MHz-3CC –  $\pi/2$ -BPSK – High Channel)



08:10:56 02.08.2022

Plot 7-58. Ant 1 EIRP Plot (Band n258-R1 – 50MHz-4CC –  $\pi/2$ -BPSK)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 53 of 141


V1.0

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	24325.00	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	H	119.0	225.5	32 / 0	22.45
		Low	24325.00	CP-OFDM	QPSK	37+165	H + V	MIMO	H	119.0	225.5	32 / 0	20.49
		Low	24325.00	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	H	119.0	225.5	32 / 0	<b>22.55</b>
		Low	24325.00	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	H	119.0	225.5	32 / 0	20.44
		Low	24325.00	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	H	119.0	225.5	32 / 0	18.53
		Mid	24350.04	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	H	65.0	127.0	32 / 0	<b>20.56</b>
		High	24375.00	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	H	65.0	127.0	32 / 0	<b>20.16</b>

**Table 7-10. Ant 2 EIRP Data (Band n258-R1 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Mid	24350.04	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	H	297.0	306.0	32 / 0	21.15
		Mid	24350.04	CP-OFDM	QPSK	37+165	H + V	MIMO	H	297.0	306.0	32 / 0	19.41
		Mid	24350.04	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	H	297.0	306.0	32 / 0	<b>21.25</b>
		Mid	24350.04	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	H	297.0	306.0	32 / 0	19.24
		Mid	24350.04	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	H	297.0	306.0	32 / 0	17.52

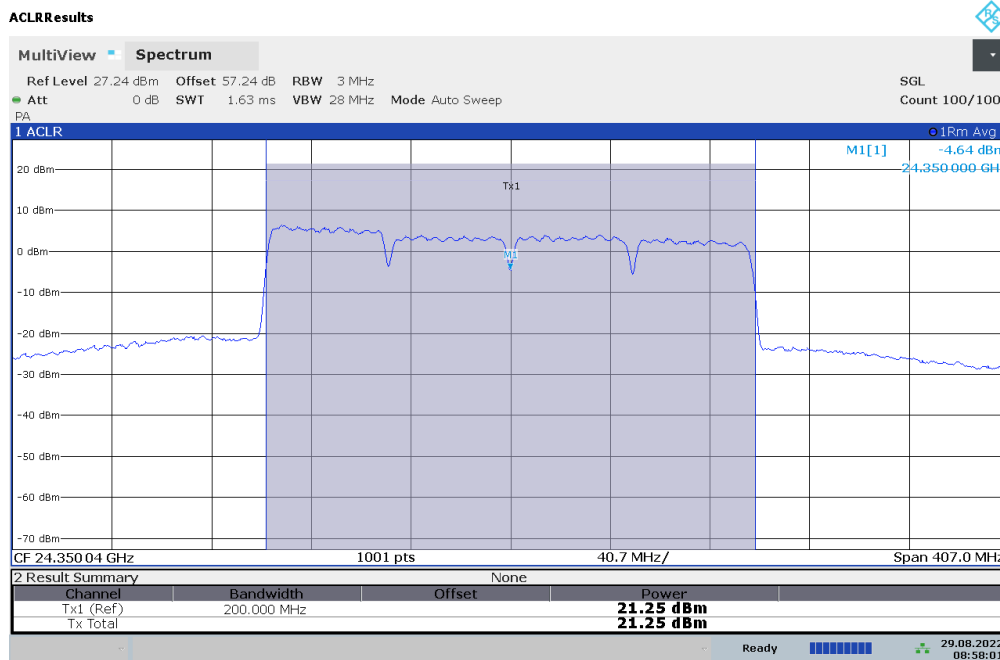
**Table 7-11. Ant 2 EIRP Data (Band n258-R1 – 50MHz-4CC)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 54 of 141



09:46:01 04.08.2022

**Plot 7-59. Ant 2 EIRP Plot (Band n258-R1 – 50MHz-3CC –  $\pi/2$ -BPSK – High Channel)**



08:58:02 29.08.2022

**Plot 7-60. Ant 2 EIRP Plot (Band n258-R1 – 50MHz-4CC –  $\pi/2$ -BPSK)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 55 of 141

## Band n258-R2 Beam ID Configurations

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	165	37
	Mid	2Tx/MIMO	165	37
	High	2Tx/MIMO	165	37

Table 7-12. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	168	40
	Mid	2Tx/MIMO	168	40
	High	2Tx/MIMO	168	40

Table 7-13. Ant 2 Worst Case Beam ID

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 56 of 141



## Band n258-R2

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	24825.00	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	284.0	61.0	32 / 0	20.12
		Mid	24999.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	278.0	58.0	32 / 0	20.81
		Mid	24999.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	278.0	58.0	32 / 0	19.38
		Mid	24999.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	278.0	58.0	32 / 0	21.40
		Mid	24999.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	278.0	58.0	32 / 0	19.30
		Mid	24999.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	278.0	58.0	32 / 0	17.47
		High	25175.04	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	277.0	55.0	32 / 0	20.95

Table 7-14. Ant 1 EIRP Data (Band n258-R2 – 50MHz-3CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Low	24849.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	280.0	56.0	32 / 0	21.07
		Low	24849.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	280.0	56.0	32 / 0	19.05
		Low	24849.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	280.0	56.0	32 / 0	21.04
		Low	24849.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	280.0	56.0	32 / 0	19.01
		Low	24849.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	280.0	56.0	32 / 0	17.01
		Mid	24999.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	285.0	61.0	32 / 0	20.67
		High	25150.08	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	277.0	56.0	32 / 0	20.89

Table 7-15. Ant 1 EIRP Data (Band n258-R2 – 50MHz-4CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100	3	Low	24900.00	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	286.0	60.0	32 / 0	20.20
		Mid	24999.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	278.0	60.0	32 / 0	20.81
		Mid	24999.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	278.0	60.0	32 / 0	18.65
		Mid	24999.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	278.0	60.0	32 / 0	20.83
		Mid	24999.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	278.0	60.0	32 / 0	18.73
		Mid	24999.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	278.0	60.0	32 / 0	16.89
		High	25100.04	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	277.0	55.0	32 / 0	20.72

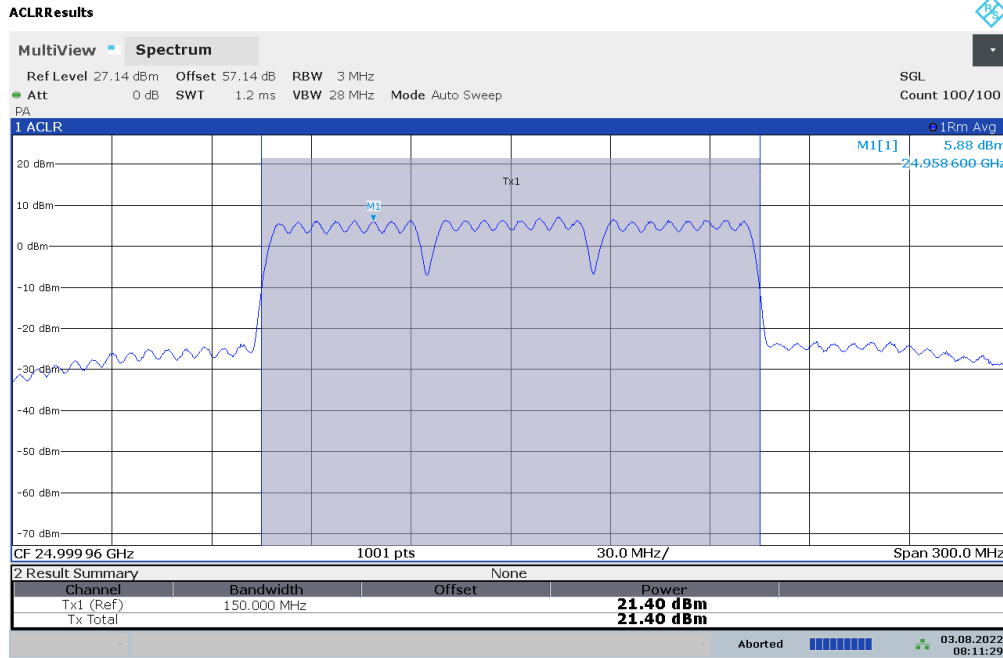
Table 7-16. Ant 1 EIRP Data (Band n258-R2 – 100MHz-3CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100+100	4	Low	24949.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	276.0	54.0	32 / 0	20.20
		Mid	25000.02	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	277.0	59.2	32 / 0	20.26
		High	25050.06	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	262.0	57.0	32 / 0	21.13
		High	25050.06	CP-OFDM	QPSK	37+165	H + V	MIMO	V	262.0	57.0	32 / 0	19.13
		High	25050.06	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	262.0	57.0	32 / 0	21.11
		High	25050.06	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	262.0	57.0	32 / 0	19.12
		High	25050.06	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	262.0	57.0	32 / 0	17.21

Table 7-17. Ant 1 EIRP Data (Band n258-R2 – 100MHz-4CC)

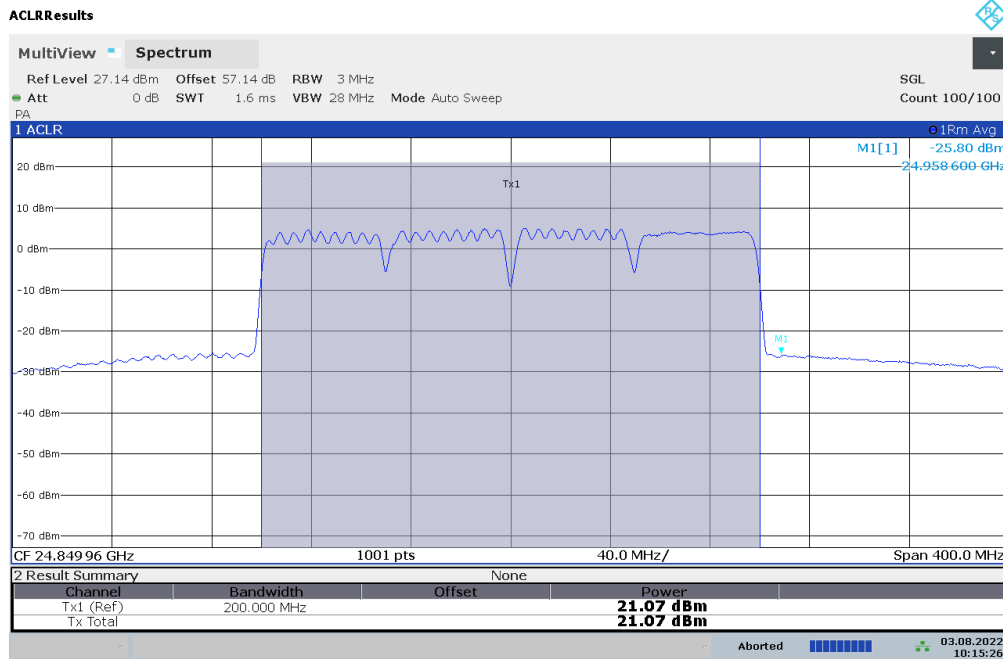
FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 57 of 141

## Worst-Case EIRP Plots (n258-R2)



08:11:29 03.08.2022

### Plot 7-61. Ant 1 EIRP Plot (Band n258-R2 – 50MHz-3CC – QPSK – Mid Channel)



10:15:26 03.08.2022

### Plot 7-62. Ant 1 EIRP Plot (Band n258-R2 – 50MHz-4CC – QPSK – Low Channel)

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 58 of 141



07:59:54 03.08.2022

**Plot 7-63. Ant 1 EIRP Plot (Band n258-R2 – 100MHz-3CC –  $\pi/2$ -BPSK – Mid Channel)**



11:34:59 03.08.2022

**Plot 7-64. Ant 1 EIRP Plot (Band n258-R2 – 100MHz-4CC – QPSK – High Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 59 of 141

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	24825.00	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	358.0	99.4	32 / 0	21.10
		Low	24825.00	CP-OFDM	QPSK	168+40	H + V	MIMO	V	358.0	99.4	32 / 0	19.10
		Low	24825.00	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	358.0	99.4	32 / 0	21.17
		Low	24825.00	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	358.0	99.4	32 / 0	19.16
		Low	24825.00	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	358.0	99.4	32 / 0	17.64
		Mid	24999.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	365.0	97.0	32 / 0	20.78
		High	25175.04	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	358.0	100.0	32 / 0	21.01

**Table 7-18. Ant 2 EIRP Data (Band n258-R2 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Low	24849.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	358.0	99.4	32 / 0	21.41
		Mid	24999.96	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	365.0	97.0	32 / 0	21.02
		High	25150.08	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	358.0	100.0	32 / 0	22.16
		High	25150.08	CP-OFDM	QPSK	168+40	H + V	MIMO	V	358.0	100.0	32 / 0	20.11
		High	25150.08	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	358.0	100.0	32 / 0	22.14
		High	25150.08	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	358.0	100.0	32 / 0	20.11
		High	25150.08	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	358.0	100.0	32 / 0	18.15


**Table 7-19. Ant 2 EIRP Data (Band n258-R2 – 50MHz-4CC)**

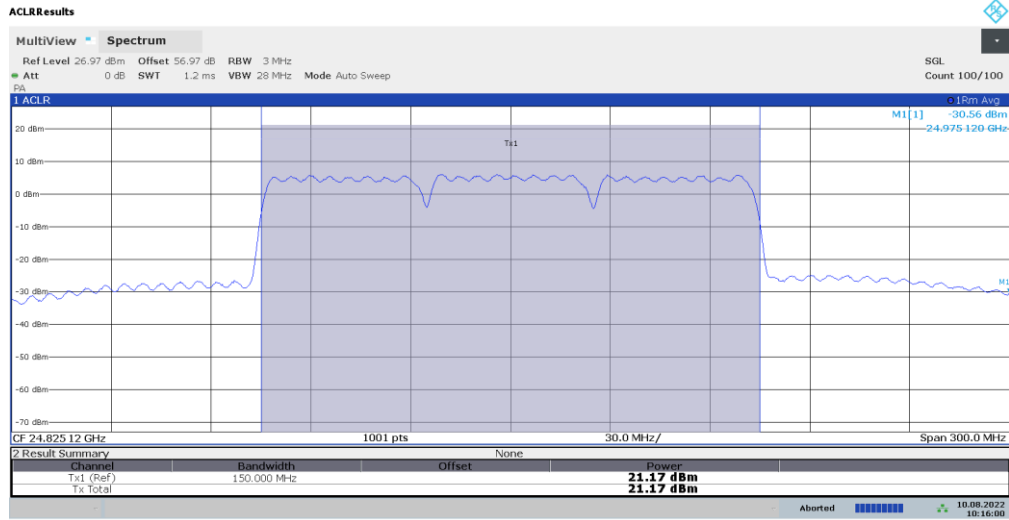
Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100	3	Low	24900.00	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	367.0	99.0	32 / 0	21.02
		Mid	24999.96	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	3.0	99.5	32 / 0	21.18
		High	25100.04	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	22.23
		High	25100.04	CP-OFDM	QPSK	168+40	H + V	MIMO	V	3.0	100.0	32 / 0	20.22
		High	25100.04	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	22.26
		High	25100.04	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	20.26
		High	25100.04	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	18.28

**Table 7-20. Ant 2 EIRP Data (Band n258-R2 – 100MHz-3CC)**

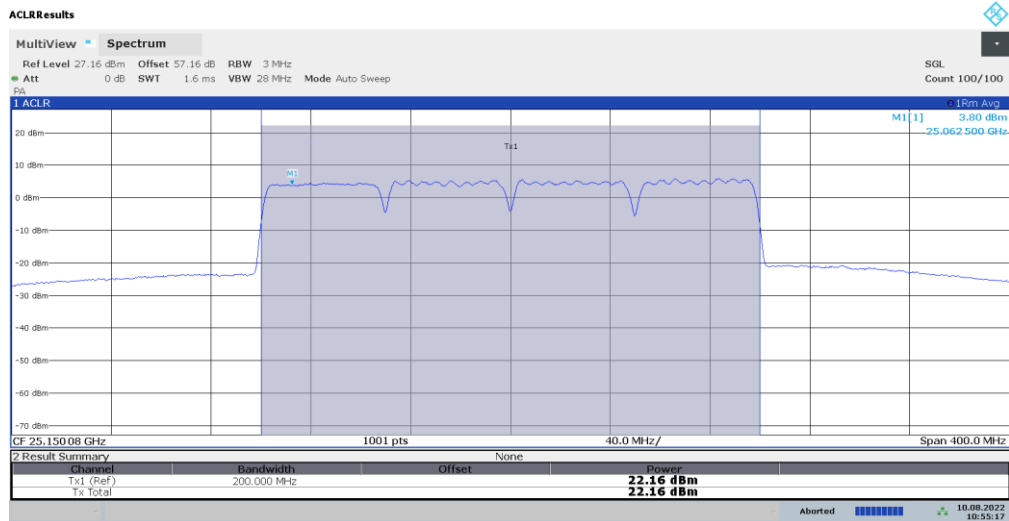
Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100+100	4	Low	24949.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	356.0	99.0	32 / 0	20.70
		Mid	25000.02	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	362.0	99.4	32 / 0	20.84
		High	25050.06	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	21.67
		High	25050.06	CP-OFDM	QPSK	168+40	H + V	MIMO	V	3.0	100.0	32 / 0	19.62
		High	25050.06	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	21.63
		High	25050.06	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	19.60
		High	25050.06	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	3.0	100.0	32 / 0	17.64

**Table 7-21. Ant 2 EIRP Data (Band n258-R2 – 100MHz-2CC)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 60 of 141



10:16:00 10.08.2022  
**Plot 7-65. Ant 2 EIRP Plot (Band n258-R2 – 50MHz-3CC –  $\pi/2$ -BPSK – Low Channel)**

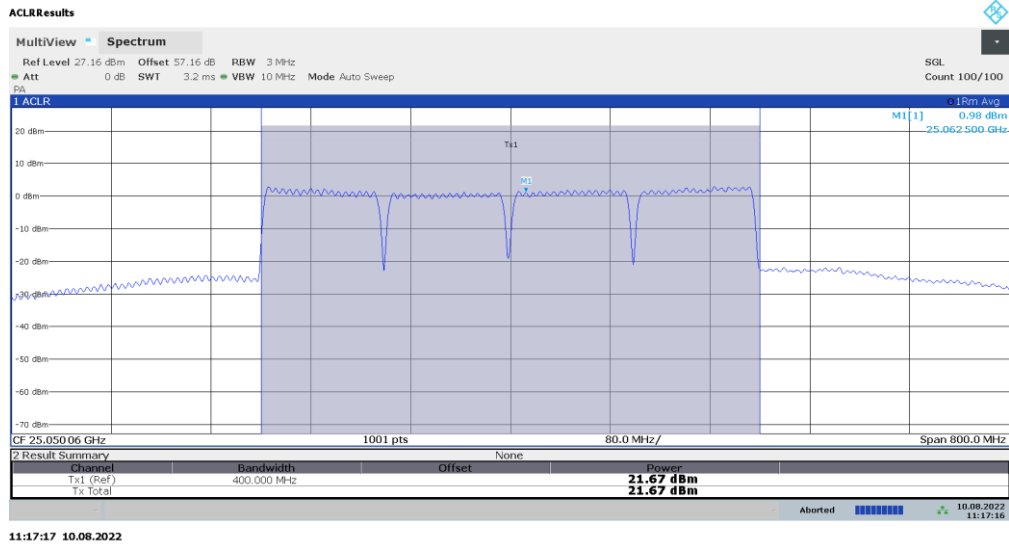


10:55:18 10.08.2022  
**Plot 7-66. Ant 2 EIRP Plot (Band n258-R2 – 50MHz-4CC – QPSK – High Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 61 of 141



Plot 7-67. Ant 2 EIRP Plot (Band n258-R2 – 100MHz-3CC –  $\pi/2$ -BPSK – High Channel)



Plot 7-68. Ant 2 EIRP Plot (Band n258-R2 – 100MHz-4CC – QPSK – High Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 62 of 141


## Band n261 Beam ID Configurations

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	165	37
	Mid	2Tx/MIMO	165	37
	High	2Tx/MIMO	165	37

Table 7-22. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	159	31
	Mid	2Tx/MIMO	168	40
	High	2Tx/MIMO	168	40

Table 7-23. Ant 2 Worst Case Beam ID

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 63 of 141

## Band n261

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	27574.92	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	266.0	74.8	32 / 0	22.80
		Mid	27924.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	263.0	79.0	32 / 0	22.88
		Mid	27924.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	263.0	79.0	32 / 0	20.86
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	263.0	79.0	32 / 0	22.74
		Mid	27924.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	263.0	79.0	32 / 0	20.87
		Mid	27924.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	263.0	79.0	32 / 0	19.04
		High	28200.00	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	264.0	76.8	32 / 0	22.58

**Table 7-24. Ant 1 EIRP Data (Band n261 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Low	27600.06	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	268.0	81.0	32 / 0	21.93
		Mid	27924.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	266.0	82.0	32 / 0	22.02
		Mid	27924.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	266.0	82.0	32 / 0	19.93
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	266.0	82.0	32 / 0	22.11
		Mid	27924.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	266.0	82.0	32 / 0	20.10
		Mid	27924.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	266.0	82.0	32 / 0	18.26
		High	28250.04	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	264.0	74.0	32 / 0	21.57


**Table 7-25. Ant 1 EIRP Data (Band n261 – 50MHz-4CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100	3	Low	27650.04	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	285.0	76.5	32 / 0	22.06
		Mid	27924.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	265.0	79.0	32 / 0	23.05
		Mid	27924.96	CP-OFDM	QPSK	37+165	H + V	MIMO	V	265.0	79.0	32 / 0	21.05
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	265.0	79.0	32 / 0	23.09
		Mid	27924.96	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	265.0	79.0	32 / 0	21.03
		Mid	27924.96	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	265.0	79.0	32 / 0	19.17
		High	28200.00	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	265.0	79.0	32 / 0	22.84

**Table 7-26. Ant 1 EIRP Data (Band n261 – 100MHz-3CC)**

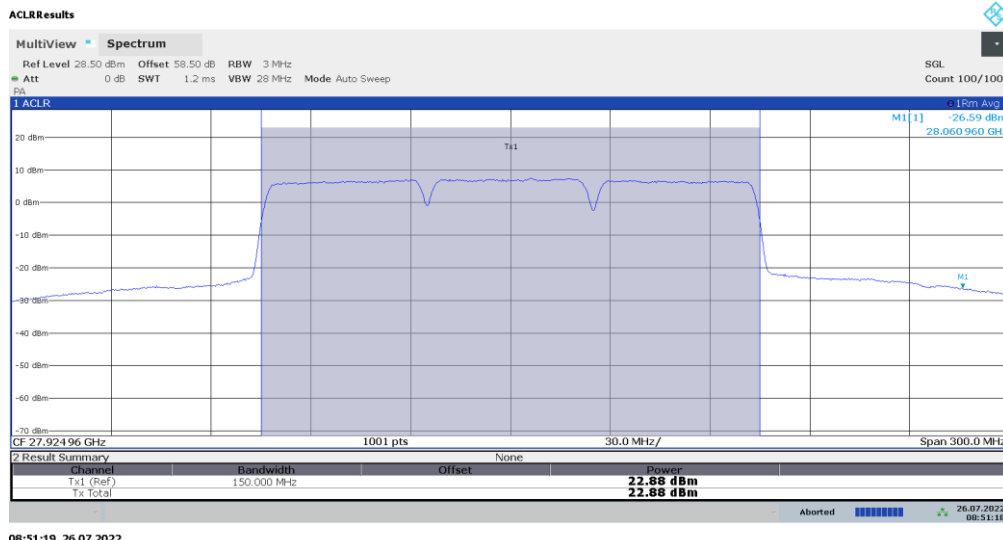
Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100+100	4	Low	27700.02	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	22.58
		Low	27700.02	CP-OFDM	QPSK	37+165	H + V	MIMO	V	267.0	81.0	32 / 0	20.51
		Low	27700.02	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	22.59
		Low	27700.02	DFT-s-OFDM	16QAM	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	20.49
		Low	27700.02	DFT-s-OFDM	64QAM	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	18.68
		Mid	27924.96	DFT-s-OFDM	QPSK	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	21.85
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	267.0	81.0	32 / 0	21.91
		High	28150.02	DFT-s-OFDM	$\pi/2$ BPSK	37+165	H + V	2Tx	V	263.0	79.0	32 / 0	22.21

**Table 7-27. Ant 1 EIRP Data (Band n261 – 100MHz-4CC)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 64 of 141

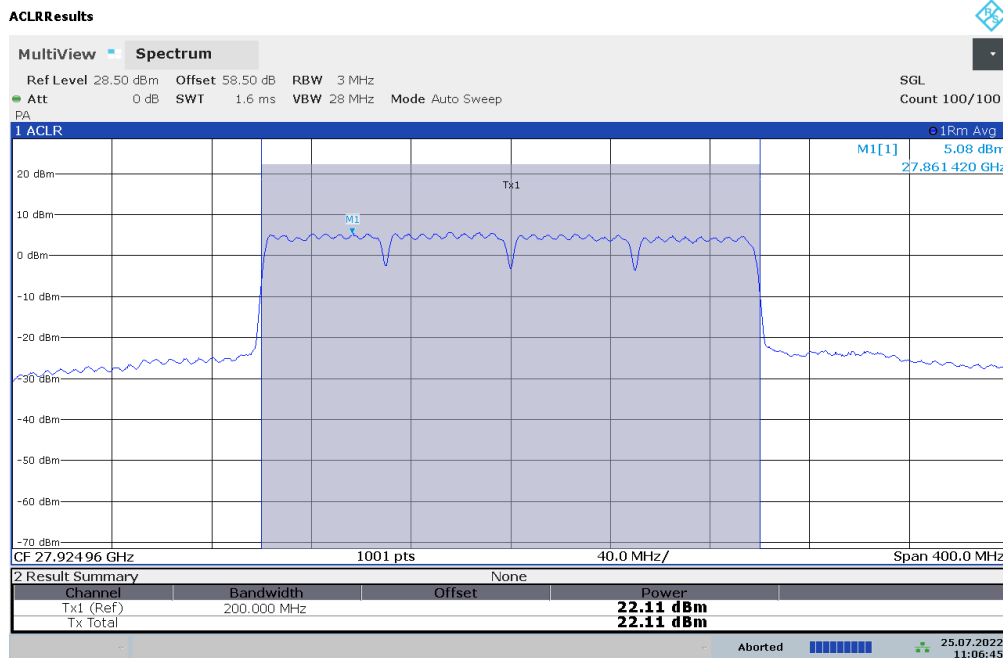


## Worst-Case EIRP Plots (n261)



08:51:19 26.07.2022

Plot 7-69. Ant 1 EIRP Plot (Band n261 – 50MHz-3CC – QPSK – Mid Channel)

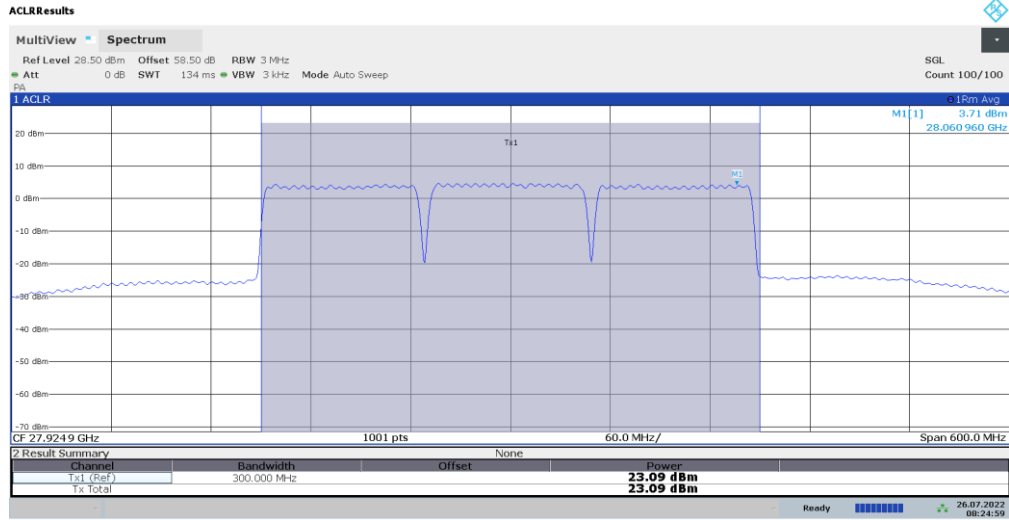


11:06:45 25.07.2022

Plot 7-70. Ant 1 EIRP Plot (Band n261 – 50MHz-4CC –  $\pi/2$ -BPSK – Mid Channel)

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 65 of 141

V1.0



08:25:00 26.07.2022  
**Plot 7-71. Ant 1 EIRP Plot (Band n261 – 100MHz-3CC –  $\pi/2$ -BPSK – Mid Channel)**



13:03:53 25.07.2022  
**Plot 7-72. Ant 1 EIRP Plot (Band n261 – 100MHz-4CC –  $\pi/2$ -BPSK – Low Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 66 of 141

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	27574.92	DFT-s-OFDM	QPSK	159+31	H + V	2Tx	V	357.0	256.0	32 / 0	21.85
		Mid	27924.96	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	344.0	11.0	32 / 0	22.50
		Mid	27924.96	CP-OFDM	QPSK	168+40	H + V	MIMO	V	344.0	11.0	32 / 0	20.43
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	344.0	11.0	32 / 0	22.52
		Mid	27924.96	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	344.0	11.0	32 / 0	20.48
		Mid	27924.96	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	344.0	11.0	32 / 0	18.54
		High	28200.00	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	336.0	12.0	32 / 0	20.73

Table 7-28. Ant 2 EIRP Data (Band n261 – 50MHz-3CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Low	27600.06	DFT-s-OFDM	$\pi/2$ BPSK	159+31	H + V	2Tx	V	354.0	266.0	32 / 0	21.82
		Mid	27924.96	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	34.0	12.0	32 / 0	22.16
		Mid	27924.96	CP-OFDM	QPSK	168+40	H + V	MIMO	V	34.0	12.0	32 / 0	20.16
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	34.0	12.0	32 / 0	22.21
		Mid	27924.96	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	34.0	12.0	32 / 0	20.10
		Mid	27924.96	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	34.0	12.0	32 / 0	18.27
		High	28250.04	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	335.0	13.0	32 / 0	21.05


Table 7-29. Ant 2 EIRP Data (Band n261 – 50MHz-4CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100	3	Low	27650.04	DFT-s-OFDM	$\pi/2$ BPSK	159+31	H + V	2Tx	V	3.0	265.0	32 / 0	21.50
		Mid	27924.96	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	48.0	13.0	32 / 0	21.95
		Mid	27924.96	CP-OFDM	QPSK	168+40	H + V	MIMO	V	48.0	13.0	32 / 0	19.83
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	48.0	13.0	32 / 0	21.97
		Mid	27924.96	DFT-s-OFDM	16QAM	168+40	H + V	2Tx	V	48.0	13.0	32 / 0	19.82
		Mid	27924.96	DFT-s-OFDM	64QAM	168+40	H + V	2Tx	V	48.0	13.0	32 / 0	17.92
		High	28200.00	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	335.0	13.0	32 / 0	19.77

Table 7-30. Ant 2 EIRP Data (Band n261 – 100MHz-3CC)

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100+100	4	Low	27700.02	DFT-s-OFDM	QPSK	159+31	H + V	2Tx	V	359.0	266.0	32 / 0	21.75
		Low	27700.02	CP-OFDM	QPSK	159+31	H + V	MIMO	V	359.0	266.0	32 / 0	18.89
		Low	27700.02	DFT-s-OFDM	$\pi/2$ BPSK	159+31	H + V	2Tx	V	359.0	266.0	32 / 0	21.18
		Low	27700.02	DFT-s-OFDM	16QAM	159+31	H + V	2Tx	V	359.0	266.0	32 / 0	19.15
		Low	27700.02	DFT-s-OFDM	64QAM	159+31	H + V	2Tx	V	359.0	266.0	32 / 0	17.15
		Mid	27924.96	DFT-s-OFDM	$\pi/2$ BPSK	168+40	H + V	2Tx	V	52.0	12.0	32 / 0	20.82
		High	28150.02	DFT-s-OFDM	QPSK	168+40	H + V	2Tx	V	35.0	17.0	32 / 0	20.96

Table 7-31. Ant 2 EIRP Data (Band n261 – 100MHz-4CC)

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 67 of 141



11:34:23 28.07.2022

**Plot 7-73. Ant 2 EIRP Plot (Band n261 – 50MHz-3CC –  $\pi/2$ -BPSK – Mid Channel)**



11:14:24 28.07.2022

**Plot 7-74. Ant 2 EIRP Plot (Band n261 – 50MHz-4CC –  $\pi/2$ -BPSK – Mid Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 68 of 141



12:00:49 28.07.2022

**Plot 7-75. Ant 2 EIRP Plot (Band n261 – 100MHz-3CC –  $\pi/2$ -BPSK – Mid Channel)**



09:42:51 28.07.2022

**Plot 7-76. Ant 2 EIRP Plot (Band n261 – 100MHz-4CC – QPSK – Low Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 69 of 141

## Band n260 Beam ID Configurations

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	155	27
	Mid	2Tx/MIMO	155	27
	High	2Tx/MIMO	155	27

Table 7-32. Ant 1 Worst Case Beam ID

Mode	Channel	Beam Polarization	Beam ID	Beam ID Pair
MIMO	Low	2Tx/MIMO	167	39
	Mid	2Tx/MIMO	167	39
	High	2Tx/MIMO	158	30

Table 7-33. Ant 2 Worst Case Beam ID

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 70 of 141

## Band n260

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]	
50+50+50	3	Low	37074.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	245.0	277.9	32 / 0	18.68	
		Low	37074.96	CP-OFDM	QPSK	27 + 155	H + V	MIMO	H	245.0	277.9	32 / 0	17.21	
		Low	37074.96	DFT-s-OFDM	$\pi/2$ BPSK	16QAM	27 + 155	H + V	2Tx	H	245.0	277.9	32 / 0	18.72
		Low	37074.96	DFT-s-OFDM	16QAM	27 + 155	H + V	2Tx	H	245.0	277.9	32 / 0	17.41	
		Low	37074.96	DFT-s-OFDM	64QAM	27 + 155	H + V	2Tx	H	245.0	277.9	32 / 0	15.30	
		Mid	38499.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	245.0	284.0	32 / 0	16.02	
		High	39925.08	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	274.0	46.0	32 / 0	17.36	

**Table 7-34. Ant 1 EIRP Data (Band n260 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]	
50+50+50+50	4	Low	37099.92	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	278.0	244.0	32 / 0	19.13	
		Low	37099.92	CP-OFDM	QPSK	27 + 155	H + V	MIMO	H	278.0	244.0	32 / 0	17.58	
		Low	37099.92	DFT-s-OFDM	$\pi/2$ BPSK	16QAM	27 + 155	H + V	2Tx	H	278.0	244.0	32 / 0	19.05
		Low	37099.92	DFT-s-OFDM	16QAM	27 + 155	H + V	2Tx	H	278.0	244.0	32 / 0	17.58	
		Low	37099.92	DFT-s-OFDM	64QAM	27 + 155	H + V	2Tx	H	278.0	244.0	32 / 0	15.36	
		Mid	39899.94	DFT-s-OFDM	$\pi/2$ BPSK	27 + 155	H + V	2Tx	H	246.0	284.0	32 / 0	16.07	
		High	39849.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	286.0	57.0	32 / 0	18.49	

**Table 7-35. Ant 1 EIRP Data (Band n260 – 50MHz-4CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]	
100+100+100	3	Low	37149.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	247.0	284.0	64 / 0	17.88	
		Mid	38499.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	283.0	246.0	32 / 0	16.08	
		High	39949.92	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	V	246.0	288.0	32 / 0	19.67	
		High	39949.92	CP-OFDM	QPSK	27 + 155	H + V	MIMO	V	246.0	288.0	32 / 0	18.03	
		High	39949.92	DFT-s-OFDM	$\pi/2$ BPSK	16QAM	27 + 155	H + V	2Tx	V	246.0	288.0	32 / 0	19.68
		High	39949.92	DFT-s-OFDM	16QAM	27 + 155	H + V	2Tx	V	246.0	288.0	32 / 0	18.12	
		High	39949.92	DFT-s-OFDM	64QAM	27 + 155	H + V	2Tx	V	246.0	288.0	32 / 0	16.16	

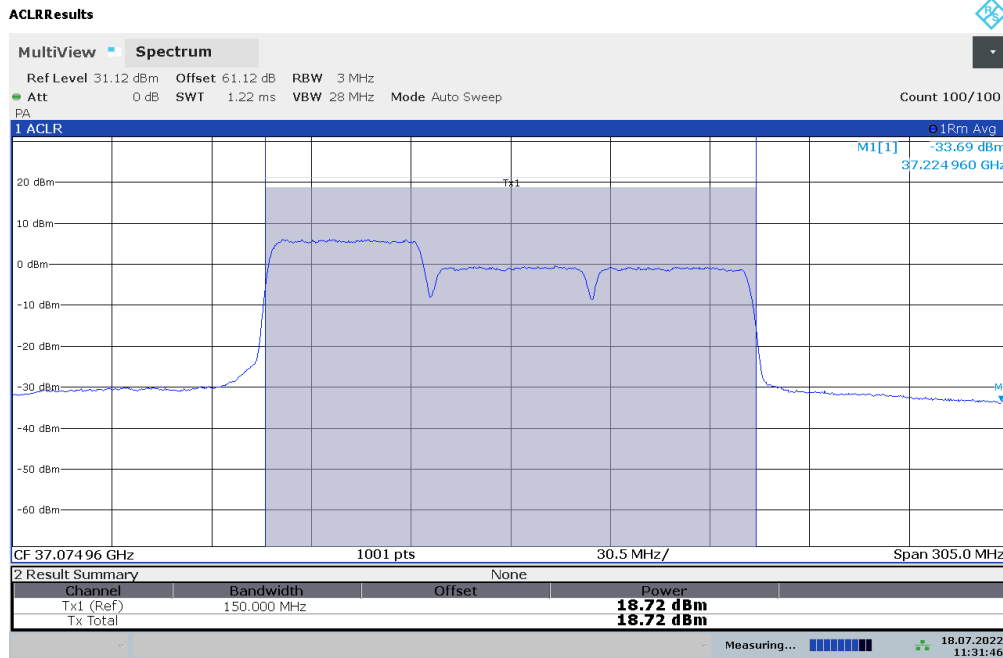
**Table 7-36. Ant 1 EIRP Data (Band n260 – 100MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]	
100+100+100+100	4	Low	37199.94	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	247.0	284.0	64 / 0	16.97	
		Mid	38499.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	H	245.0	286.0	32 / 0	15.59	
		High	39799.96	DFT-s-OFDM	QPSK	27 + 155	H + V	2Tx	V	245.0	287.0	64 / 0	19.17	
		High	39799.96	CP-OFDM	QPSK	27 + 155	H + V	MIMO	V	245.0	287.0	64 / 0	17.55	
		High	39799.96	DFT-s-OFDM	$\pi/2$ BPSK	16QAM	27 + 155	H + V	2Tx	V	245.0	287.0	64 / 0	19.16
		High	39799.96	DFT-s-OFDM	16QAM	27 + 155	H + V	2Tx	V	245.0	287.0	64 / 0	17.62	
		High	39799.96	DFT-s-OFDM	64QAM	27 + 155	H + V	2Tx	V	245.0	287.0	64 / 0	15.92	

**Table 7-37. Ant 1 EIRP Data (Band n260 – 100MHz-4CC)**

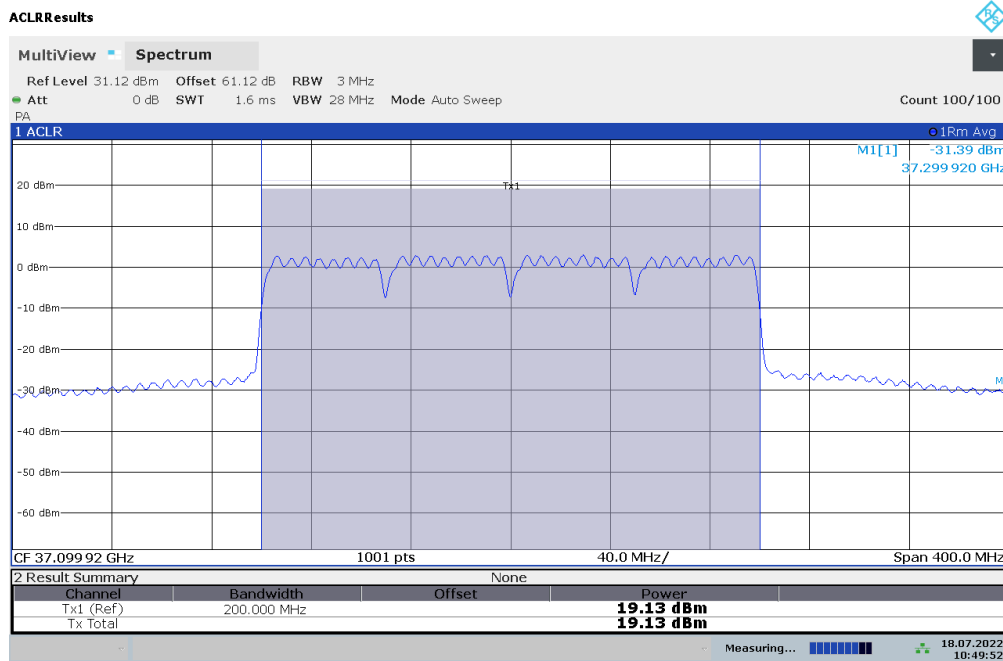
FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 71 of 141

## Worst-Case EIRP Plots (n260)



11:31:47 18.07.2022

**Plot 7-77. Ant 1 EIRP Plot (Band n260 – 50MHz-3CC –  $\pi/2$ -BPSK – Low Channel)**

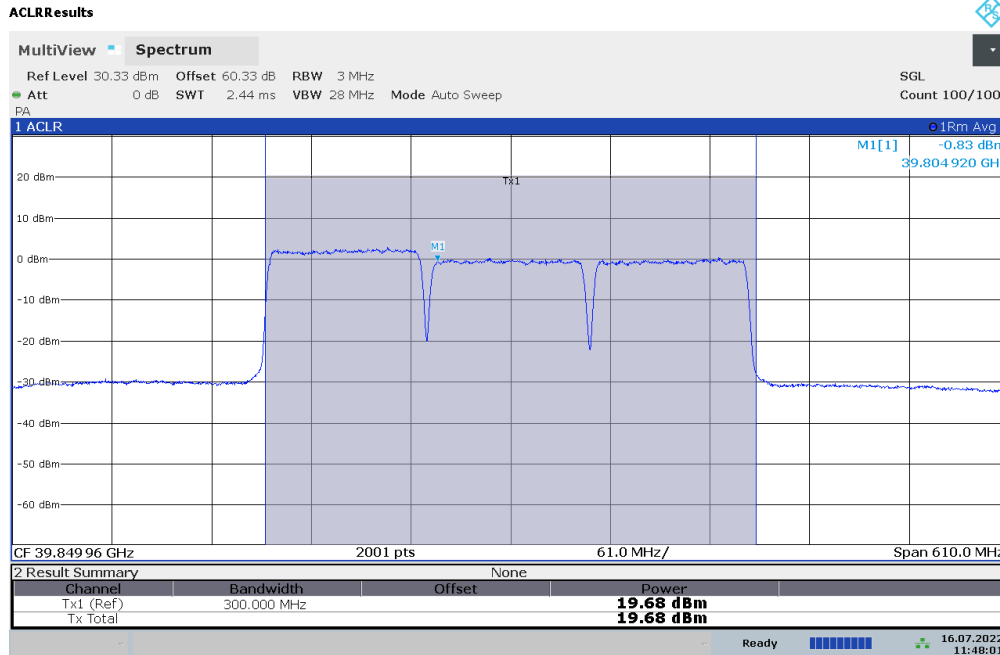


10:49:52 18.07.2022

**Plot 7-78. Ant 1 EIRP Plot (Band n260 – 50MHz-4CC – QPSK – Low Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 72 of 141





11:48:02 16.07.2022

**Plot 7-79. Ant 1 EIRP Plot (Band n260 – 100MHz-3CC –  $\pi/2$ -BPSK – High Channel)**



10:52:31 16.07.2022

**Plot 7-80. Ant 1 EIRP Plot (Band n260 – 100MHz-4CC – QPSK – High Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 73 of 141

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50	3	Low	37074.96	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	23.0	271.0	32 / 0	21.98
		Low	37074.96	CP-OFDM	QPSK	39+167	H + V	MIMO	V	23.0	271.0	32 / 0	20.43
		Low	37074.96	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	23.0	271.0	32 / 0	21.92
		Low	37074.96	DFT-s-OFDM	16QAM	39+167	H + V	2Tx	V	23.0	271.0	32 / 0	20.45
		Low	37074.96	DFT-s-OFDM	64QAM	39+167	H + V	2Tx	V	23.0	271.0	32 / 0	18.67
		Mid	38499.96	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	31.0	275.0	32 / 0	21.44
		High	39925.08	DFT-s-OFDM	QPSK	30+158	H + V	2Tx	V	30.0	285.0	32 / 0	19.41

**Table 7-38. Ant 2 EIRP Data (Band n260 – 50MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
50+50+50+50	4	Low	37099.92	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	27.0	273.0	32 / 0	22.15
		Low	37099.92	CP-OFDM	QPSK	39+167	H + V	MIMO	V	27.0	273.0	32 / 0	19.83
		Low	37099.92	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	27.0	273.0	32 / 0	22.23
		Low	37099.92	DFT-s-OFDM	16QAM	39+167	H + V	2Tx	V	27.0	273.0	32 / 0	20.67
		Low	37099.92	DFT-s-OFDM	64QAM	39+167	H + V	2Tx	V	27.0	273.0	32 / 0	18.92
		Mid	39899.94	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	31.0	275.0	32 / 0	21.60
		High	39849.96	DFT-s-OFDM	$\pi/2$ BPSK	30+158	H + V	2Tx	V	25.0	287.0	32 / 0	19.34

**Table 7-39. Ant 2 EIRP Data (Band n260 – 50MHz-4CC)**

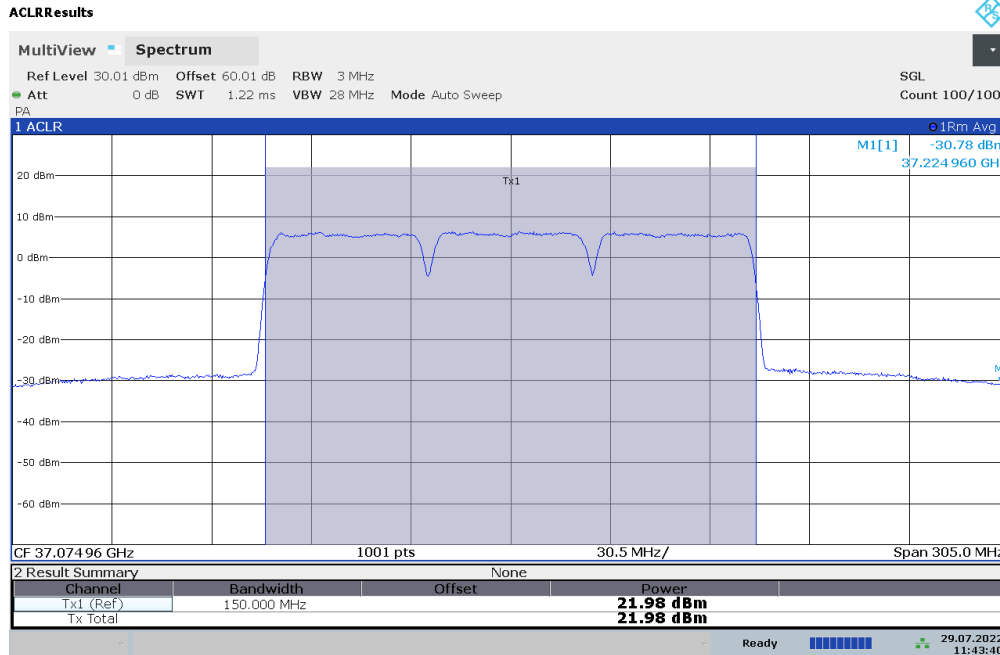
Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100	3	Low	37149.96	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	27.0	274.0	32 / 0	22.20
		Low	37149.96	CP-OFDM	QPSK	39+167	H + V	MIMO	V	27.0	274.0	32 / 0	20.65
		Low	37149.96	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	27.0	274.0	32 / 0	22.19
		Low	37149.96	DFT-s-OFDM	16QAM	39+167	H + V	2Tx	V	27.0	274.0	32 / 0	20.67
		Low	37149.96	DFT-s-OFDM	64QAM	39+167	H + V	2Tx	V	27.0	274.0	32 / 0	18.78
		Mid	38499.96	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	30.0	277.0	32 / 0	21.11
		High	39949.96	DFT-s-OFDM	$\pi/2$ BPSK	30+158	H + V	2Tx	V	26.0	287.0	32 / 0	19.67

**Table 7-40. Ant 2 EIRP Data (Band n260 – 100MHz-3CC)**

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
100+100+100+100	4	Low	37199.94	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	23.0	275.0	32 / 0	21.47
		Low	37199.94	CP-OFDM	QPSK	39+167	H + V	MIMO	V	23.0	275.0	32 / 0	19.79
		Low	37199.94	DFT-s-OFDM	$\pi/2$ BPSK	39+167	H + V	2Tx	V	23.0	275.0	32 / 0	21.45
		Low	37199.94	DFT-s-OFDM	16QAM	39+167	H + V	2Tx	V	23.0	275.0	32 / 0	19.31
		Low	37199.94	DFT-s-OFDM	64QAM	39+167	H + V	2Tx	V	23.0	275.0	32 / 0	17.35
		Mid	38499.96	DFT-s-OFDM	QPSK	39+167	H + V	2Tx	V	28.0	276.0	32 / 0	21.09
		High	39799.98	DFT-s-OFDM	$\pi/2$ BPSK	30+158	H + V	2Tx	V	27.0	286.0	32 / 0	19.04

**Table 7-41. Ant 2 EIRP Data (Band n260 – 100MHz-4CC)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 74 of 141



11:43:40 29.07.2022

**Plot 7-81. Ant 2 EIRP Plot (Band n260 – 50MHz-3CC – QPSK – Low Channel)**



13:09:19 29.07.2022

**Plot 7-82. Ant 2 EIRP Plot (Band n260 – 50MHz-4CC –  $\pi/2$ -BPSK – Low Channel)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 75 of 141



11:17:59 29.07.2022

### Plot 7-83. Ant 2 EIRP Plot (Band n260 – 100MHz-3CC – QPSK – Low Channel)



10:55:48 29.07.2022

### Plot 7-84. Ant 2 EIRP Plot (Band n260 – 100MHz-4CC – QPSK – Low Channel)

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 76 of 141

## 7.4 Radiated Spurious and Harmonic Emissions

### Test Overview

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

***The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.***

### Test Procedure Used


ANSI C63.26-2015 – Section 5.5.4  
KDB 842590 D01 – Section 4.4.3

### Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 100 GHz for n261 and n258 and 200GHz for n260. Several plots are used to show investigations in this entire span.
2. Detector = RMS
3. Trace mode = trace average
4. Sweep time = auto couple
5. Number of sweep points  $\geq 2 \times \text{Span/RBW}$
6. The trace was allowed to stabilize
7. RBW = 1MHz, VBW = 3MHz

### Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) The plots in this section were taken with the analyzer set to max hold. All final measurements shown in the tables that accompany the plots were taken with trace averaging performed over 100 sweeps while the analyzer was triggering on a specific emission of interest.
- 3) Elements within the same antenna array are correlated to produce beamforming array gain. Antenna arrays cannot be correlated with another antenna array. During testing, only one antenna array was active.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 77 of 141

- 4) The plots from 1 – 200GHz show corrected average EIRP levels. The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states:  $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$ ; where D is the measurement distance (in the far field region) in m. The field strength E is calculated  $E (dB\mu V/m) = \text{Spectrum Analyzer Level (dBm)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} + \text{Harmonic Mixer Conversion Loss (dB)} + 107$ . All appropriate Antenna Factors and Cable Losses have been applied in the spectrum analyzer for each measurement. For measurements > 40GHz, a Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.
- 5) Emissions below 18GHz were measured at a 3 meter test distance, while emissions above 18GHz were measured at the appropriate far field distance. The far field of the mmWave signal is based on formula:  $R > 2D^2/\text{wavelength}$ , where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, D is the largest dimension of the measurement antenna.

Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

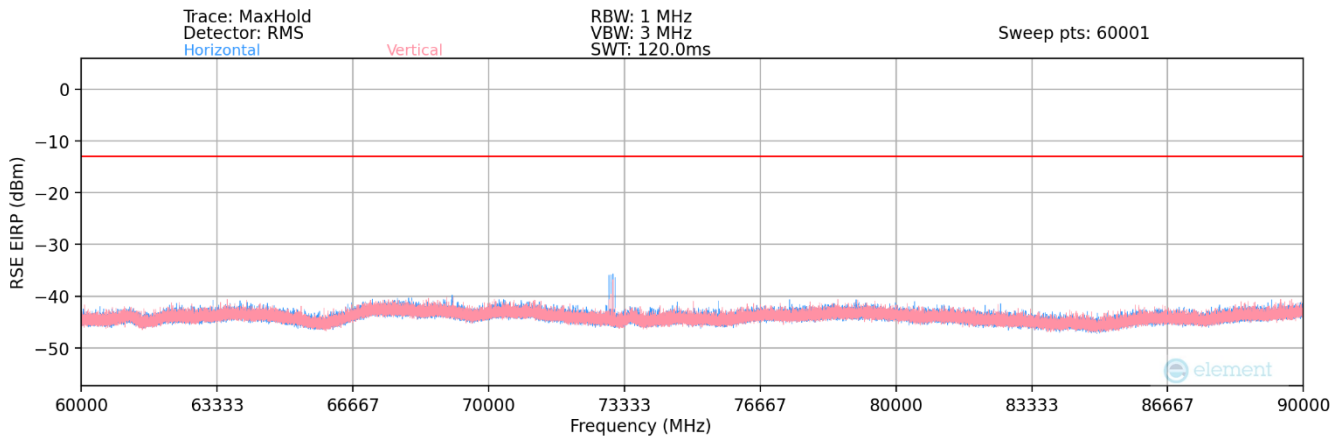
**Table 7-42. Far-Field Distance & Measurement Distance per Frequency Range**

- 6) All emissions from 30MHz - 40GHz were measured using a spectrum analyzer with an internal preamplifier. Emissions >40GHz were measured using a harmonic mixer with the spectrum analyzer.
- 7) All RSE's were measured with 3CC. It was determined that adding more CC's causes the overall amplitude of just 3CC to decrease, therefore, 1CC is the worst case for the purposes of spurious emissions measurements.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 9) All RSE's were investigated in EN-DC mode and with 802.11 chipset active. It was determined that there is no new emission introduced by EN-DC mode, or the 802.11 chipset. For EN-DC mode, n261 uses LTE B2, B5, B12, B13, B48 and B66, n260 uses LTE B2, B5, B12, B13, B14, B30, B48 and B66 and n258 uses LTE B2, B5, B12, B14, B30, and B66.
- 10) Additionally, this device supports anchor bands operating in FR1 spectrum. The n261 band uses NR Bands n2, n5, n66, and n77 as anchor bands. The n260 band uses NR Bands n2, n5, n12, n30, n66, and n77 as anchor bands. The n258 band uses NR Bands n2, n5, n12, n14, n30, and n66 as anchor bands.
- 11) There was no discernible difference in the spurious emission levels when using different LTE and NR FR1 anchor bands. Thus, LTE Band 2 was used as a representative anchor band for EN-DC investigations.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 78 of 141

## Band n258-R1 – Ant 1

### 60GHz - 90GHz



**Plot 7-85. Ant 1 - n258-R1 Radiated Spurious Plot (3CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
72825.12	Low	50	2Tx	QPSK	H	88	38	-36.81	-13.00	-23.81
73050.12	Mid	50	2Tx	QPSK	H	88	38	-36.12	-13.00	-23.12
73274.76	High	50	2Tx	QPSK	H	88	38	-39.02	-13.00	-26.02

**Table 7-43. Ant 1 - n258-R1 Radiated Spurious Emissions Table (60GHz - 90GHz)**

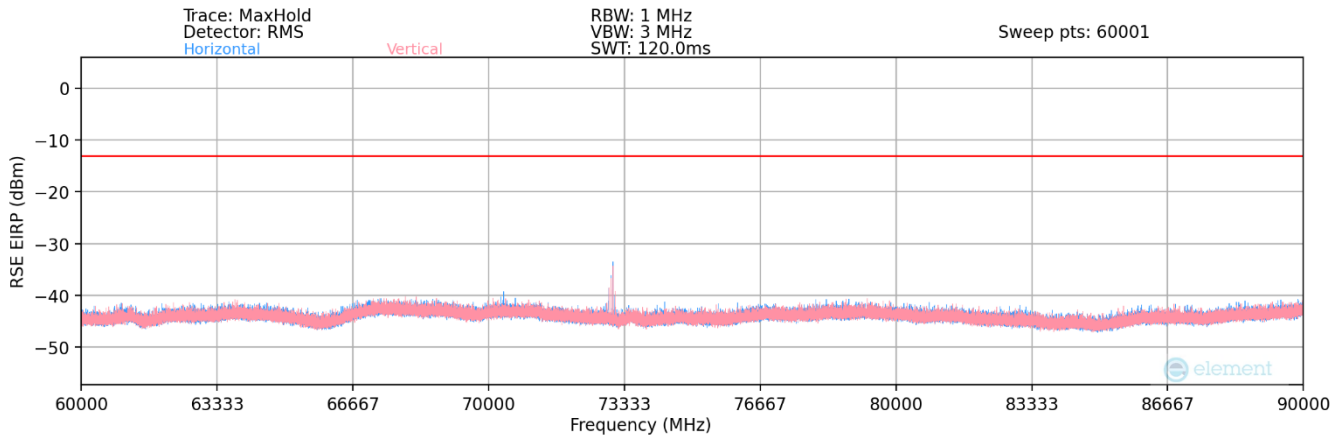
### Notes

- 1) The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 79 of 141

## Band n258-R1 – Ant 2

### 60GHz - 90GHz



**Plot 7-86. Ant 2 - n258-R1 Radiated Spurious Plot (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.


$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
72825.12	Low	50	2Tx	QPSK	V	62	211	-35.02	-13.00	-22.02
73050.12	Mid	50	2Tx	QPSK	V	62	204	-34.07	-13.00	-21.07
73274.76	High	50	2Tx	QPSK	V	62	208	-35.08	-13.00	-22.08

**Table 7-44. Ant 2 - n258-R1 Radiated Spurious Emissions Table (60GHz - 90GHz)**

### Notes

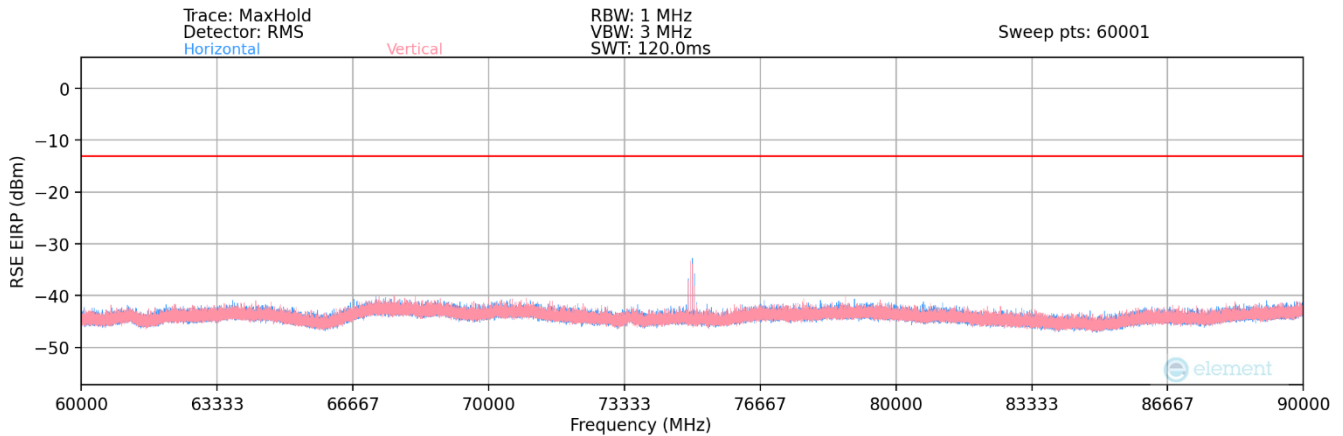
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 80 of 141



## Band n258-R2 – Ant 1

### 60GHz - 90GHz



**Plot 7-87. Ant 1 - n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel )**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.


**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74325.24	Low	50	2Tx	QPSK	H	10	36	-33.16	-13.00	-20.16
74999.88	Mid	50	2Tx	QPSK	H	11	37	-32.76	-13.00	-19.76
75674.88	High	50	2Tx	QPSK	H	10	33	-33.46	-13.00	-20.46

**Table 7-45. Ant 1 - n258-R2 Radiated Spurious Emissions Table (60GHz - 90GHz)**

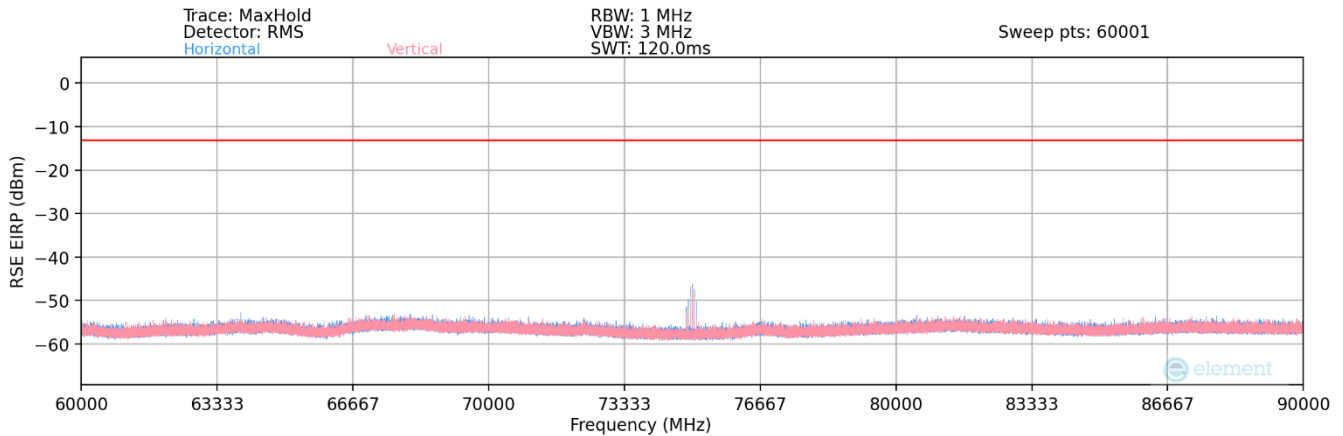
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 81 of 141

## Band n258-R2 – Ant 2

### 60GHz - 90GHz



**Plot 7-88. Ant 2 - n258-R2 Radiated Spurious Plot (1CC QPSK Mid Channel )**

### Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.


**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
74325.24	Low	50	2Tx	QPSK	V	62	4	-34.02	-13.00	-21.02
74999.88	Mid	50	2Tx	QPSK	V	63	4	-33.28	-13.00	-20.28
75674.88	High	50	2Tx	QPSK	V	62	4	-35.02	-13.00	-22.02

**Table 7-46. Ant 2 - n258-R2 Radiated Spurious Emissions Table (60GHz - 90GHz)**

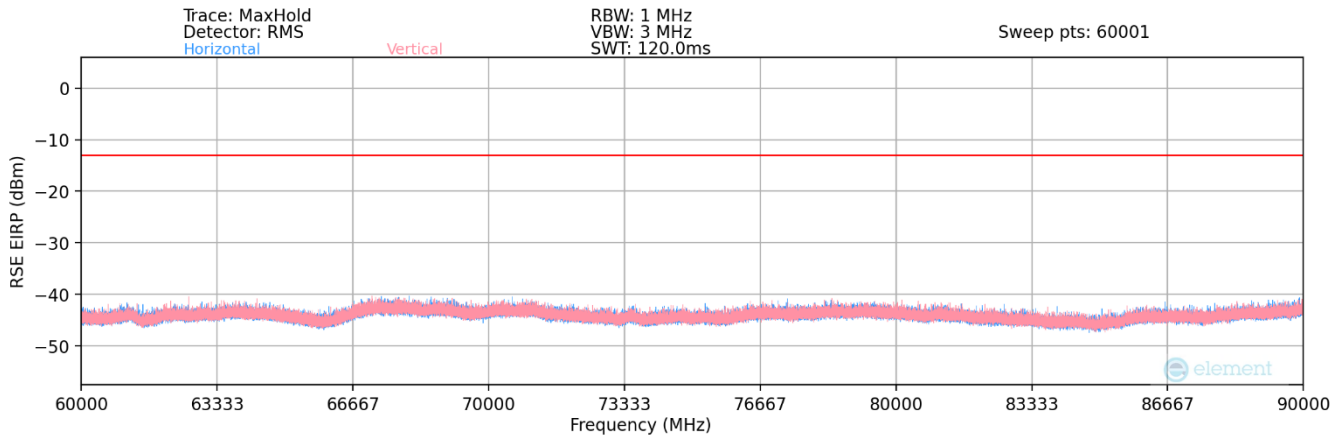
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 82 of 141

## Band n261 – Ant 1

### 60GHz - 90GHz



**Plot 7-89. Ant 1 - n261 Radiated Spurious Plot (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
83175.00	Low	50	2Tx	QPSK	V	-	-	-42.01	-13.00	-29.01
83774.88	Mid	50	2Tx	QPSK	V	-	-	-41.49	-13.00	-28.49
84974.76	High	50	2Tx	QPSK	V	-	-	-42.78	-13.00	-29.78

**Table 7-47. Ant 1 - n261 Radiated Spurious Emissions Table (60GHz - 90GHz)**

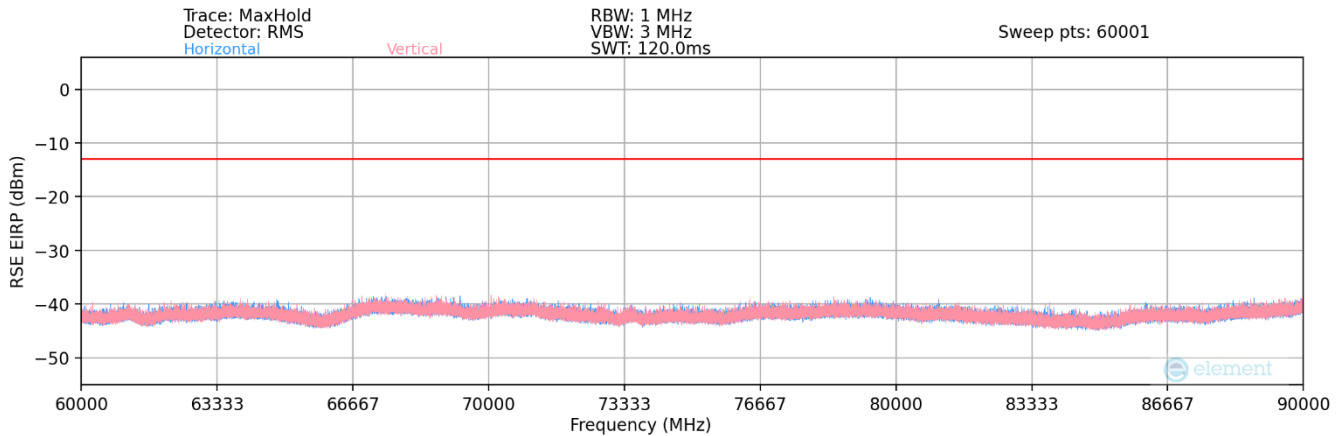
### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 83 of 141

## Band n261 – Ant 2

### 60GHz - 90GHz



**Plot 7-90. Ant 2 - n261 Radiated Spurious Plot (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n261)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
83175.00	Low	50	2Tx	QPSK	H	-	-	-39.99	-13.00	-26.99
83774.88	Mid	50	2Tx	QPSK	H	-	-	-40.96	-13.00	-27.96
84974.76	High	50	2Tx	QPSK	H	-	-	-41.09	-13.00	-28.09

**Table 7-48. Ant 2 - n261 Radiated Spurious Emissions Table (60GHz - 90GHz)**

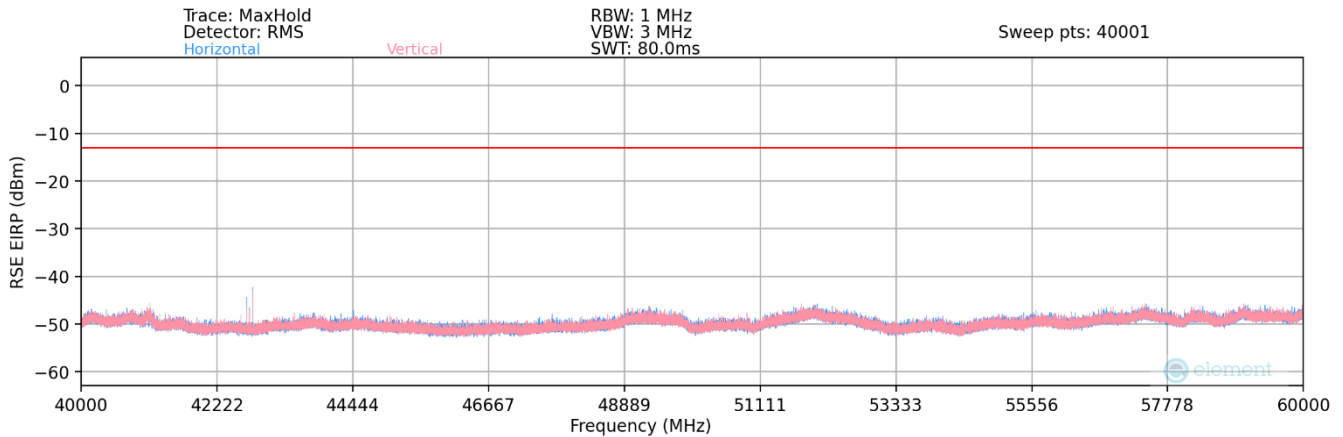
#### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 84 of 141

## Band n260 – Ant 1

### 40GHz - 60GHz



**Plot 7-91. Ant 1 - n260 Radiated Spurious Plot (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

**RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) – 104.8 + Harmonic Mixer Conversion Loss [dB]**

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
40388.47	Low	50	2Tx	QPSK	H	63	42	-42.32	-13.00	-29.32
42753.42	Mid	50	2Tx	QPSK	H	23	34	-41.53	-13.00	-28.53
44811.26	High	50	2Tx	QPSK	H	24	34	-42.89	-13.00	-29.89

**Table 7-49. Ant 1 - n260 Radiated Spurious Emissions Table (40GHz - 60GHz)**

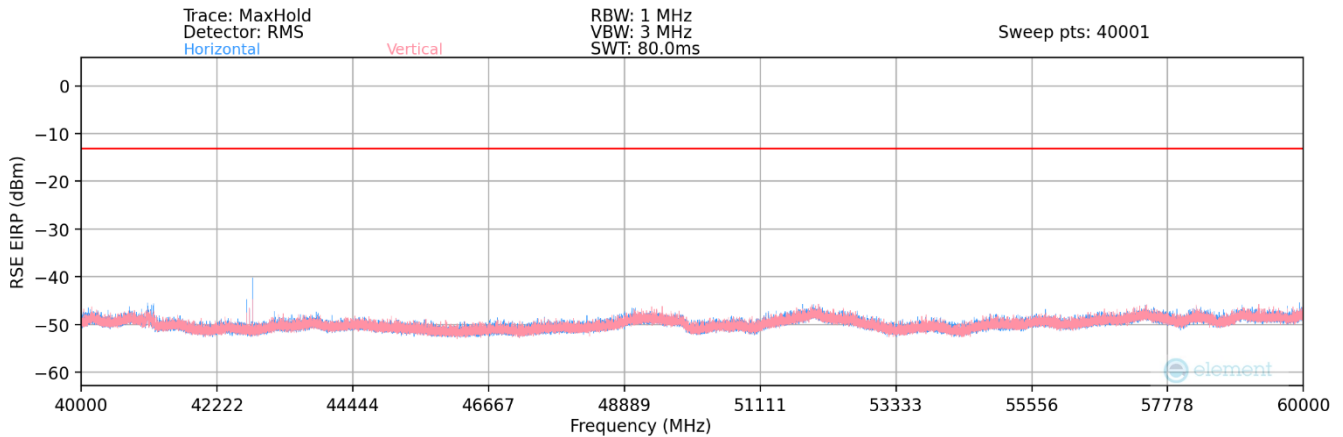
#### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>		Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset		Page 85 of 141

## Band n260 – Ant 2

### 40GHz - 60GHz



**Plot 7-92. Ant 2 - n260 Radiated Spurious Plot (1CC QPSK Mid Channel)**

### Spurious Emissions EIRP Sample Calculation (n260)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.


$$\text{RSE EIRP (dBm)} = \text{Analyzer Level (dBm)} + 107 + \text{AFCL (dB/m)} + 20\text{Log(Dm)} - 104.8 + \text{Harmonic Mixer Conversion Loss [dB]}$$

Frequency [MHz]	Channel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Positioner Azimuth [degrees]	Turntable Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
40388.47	Low	50	2Tx	QPSK	V	33	270	-38.69	-13.00	-25.69
42753.42	Mid	50	2Tx	QPSK	V	29	284	-39.36	-13.00	-26.36
4481.26	High	50	2Tx	QPSK	V	73	299	-40.01	-13.00	-27.01

**Table 7-50. Ant 2 - n260 Radiated Spurious Emissions Table (40GHz - 60GHz)**

#### Notes

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L	<b>Test Dates:</b> 07/11/2022 – 08/29/2022	<b>EUT Type:</b> Portable Handset	Page 86 of 141

## 7.5 Band Edge Emissions

### Test Overview

All out of band emissions are measured in a radiated setup while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All modulations 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 -13dBm/1MHz. However, in the bands immediately outside and adjacent to the licensee's frequency block, having a bandwidth equal to 10 percent of the channel bandwidth, the conductive power or the total radiated power of any emission shall be -5 dBm/MHz or lower.***

### Test Procedure Used


ANSI C63.26-2015 Section 5 and ANSI C63.26-2015 Section 6.4  
KDB 842590 D01 – Section 4.4.2.4

### Test Settings

1. Start and stop frequency were set such that both upper and lower band edges are measured.
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW = 1MHz
4. VBW  $\geq$  3 x RBW
5. Detector = RMS
6. Number of sweep points  $\geq$  2 x Span/RBW
7. Trace mode = trace average
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.
- 2) Band Edge emissions were measured at a 1 meter distance.
- 3) The spectrum analyzer for each measurement shows an offset value that was determined using the measurement antenna factor, cable loss, far field measurement distance. A sample calculation is shown on the following page.
- 4) This device supports transmission of H-polarized and V-polarized beams from the antenna array in both CP-OFDM and DFT-s-OFDM transmission schemes. SISO and MIMO operation is also supported for some configurations. As part of the testing, all modes were fully investigated and only the worst case has been included in this report.

FCC ID: A3LSMS906U		PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 87 of 141

V1.0


- 5) All combinations of 3CC and 4CC were fully investigated, and only the worst case has been included in this report.
- 6) All 3CC and 4CC cases were investigated with PCC prioritization feature, which has the higher power PCC at the band edge for the worst case.
- 7) Unless otherwise specified, the radiated band edge plots in this section display the worst case EIRP measurements for the indicated bandwidth–component carrier configuration.
- 8) The plots in this section that display Total Radiated Power (TRP) were obtained from measurements that were performed in accordance with the guidance of Section 4.4.2.4 of KDB 842590 D01 for the Spherical Method.

**Sample Analyzer Offset Calculation (at 27.5GHz)**

Measurement Antenna Factor = 40.70dB/m

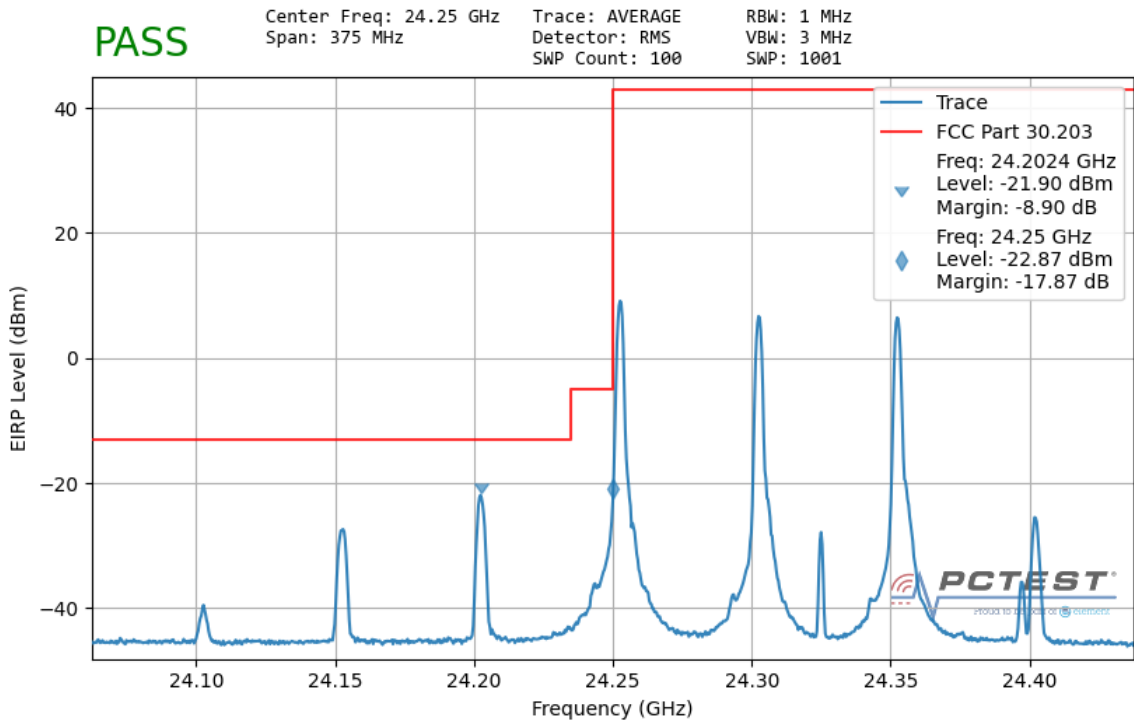
Cable Loss = 8.82dB

$$\begin{aligned}
 \text{Analyzer Offset (dB)} &= \text{AF (dB/m)} + \text{CL (dB)} + 107 + 20\log_{10}(D) - 104.8\text{dB, where } D = 1\text{m} \\
 &= 40.70\text{dB/m} + 8.82\text{dB} + 107 + 20\log_{10}(1\text{m}) - 104.8\text{dB} \\
 &= 51.72\text{dB}
 \end{aligned}$$

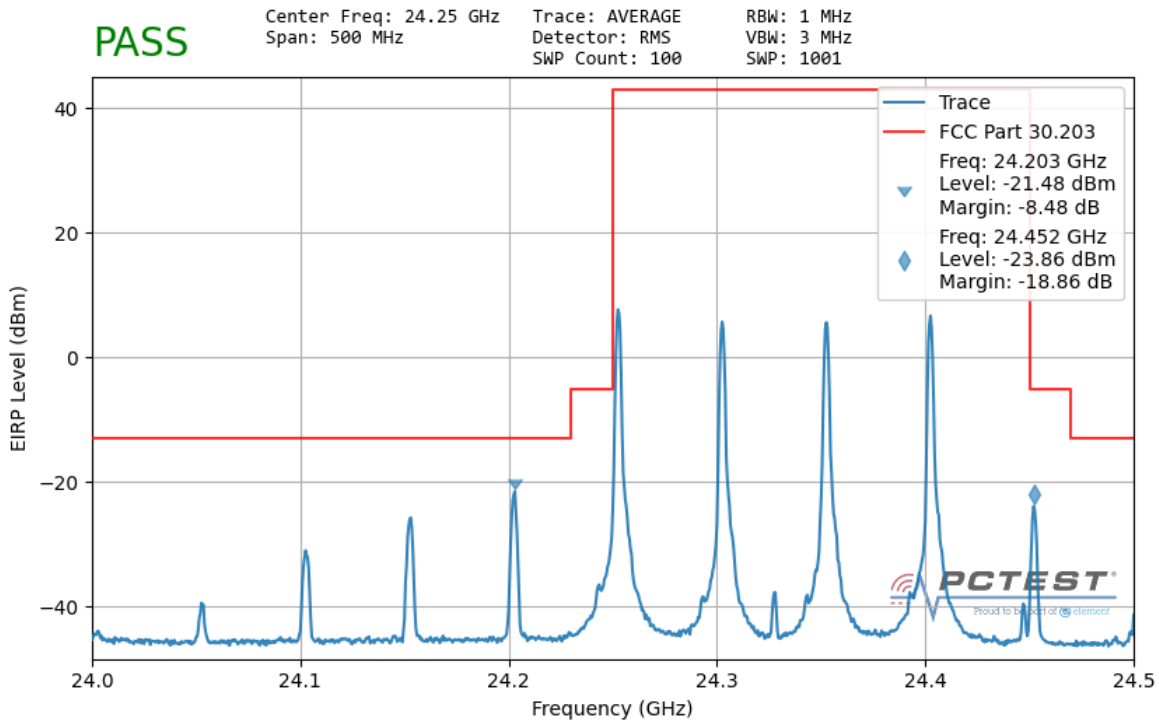
FCC ID: A3LSMS906U	 <b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2203290040-01.A3L		<b>Test Dates:</b> 07/11/2022 – 08/29/2022 <b>EUT Type:</b> Portable Handset



### Band n258-R1 – Worst-Case

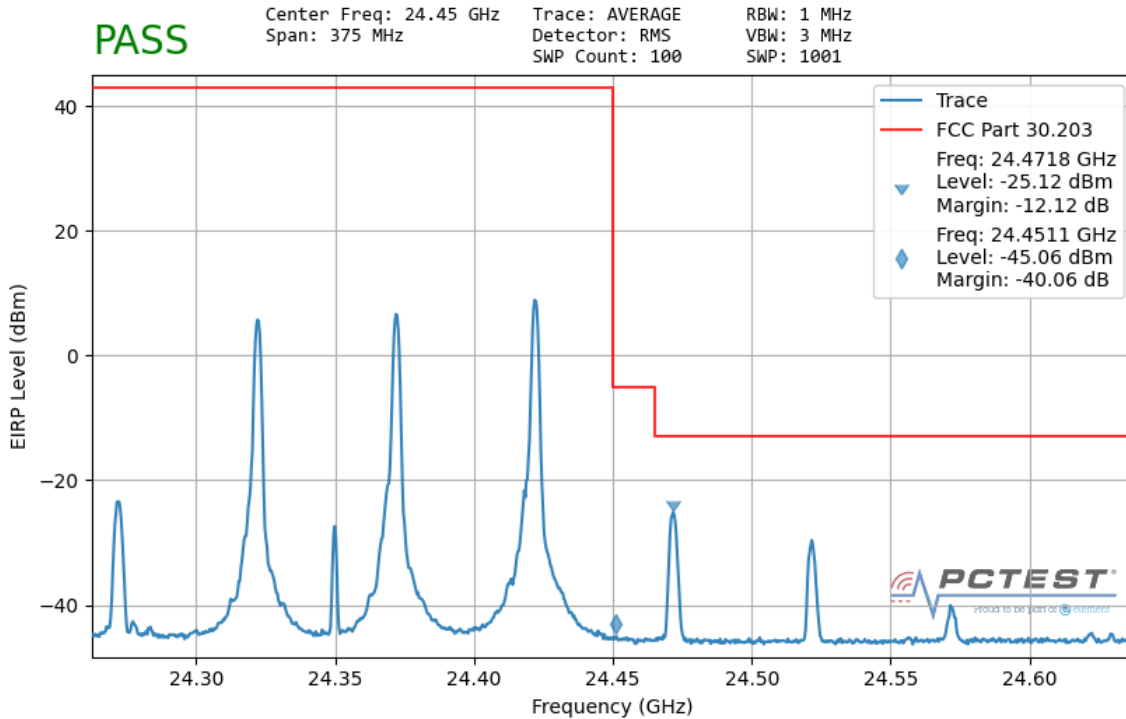


**Plot 7-93. Ant 1 Lower Band Edge – (50MHz-3CC –  $\pi/2$ -BPSK 1 RB)**

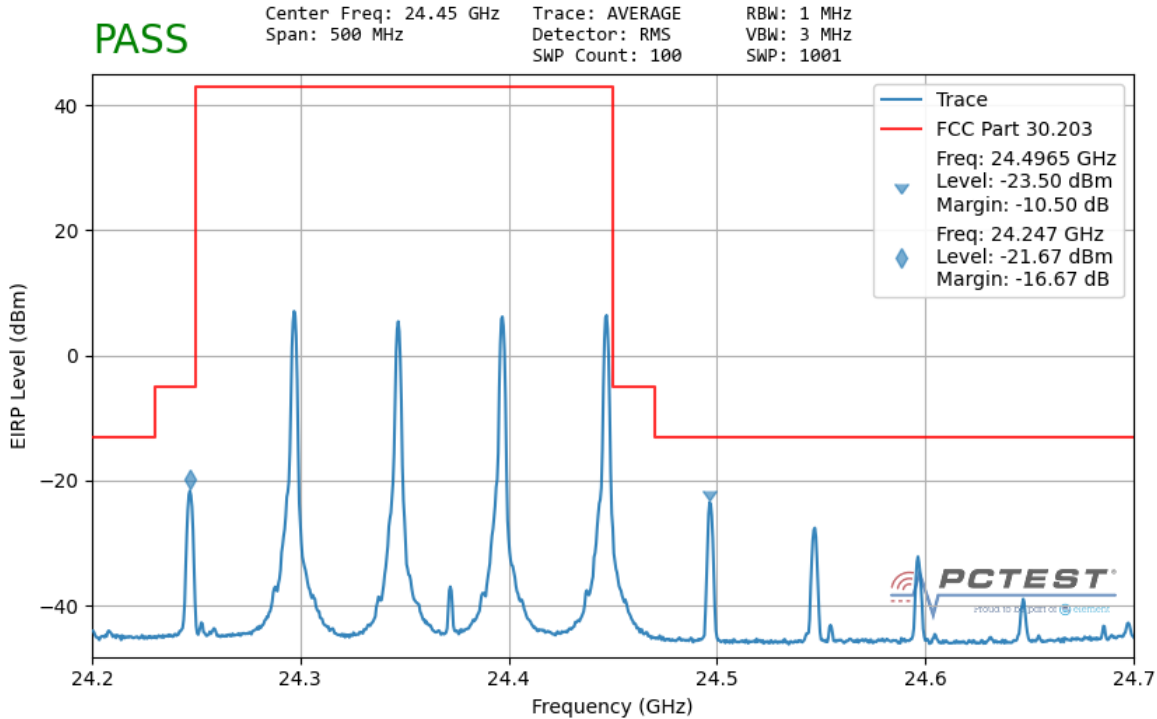


**Plot 7-94. Ant 1 Lower Band Edge – (50MHz-4CC –  $\pi/2$ -BPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 89 of 141

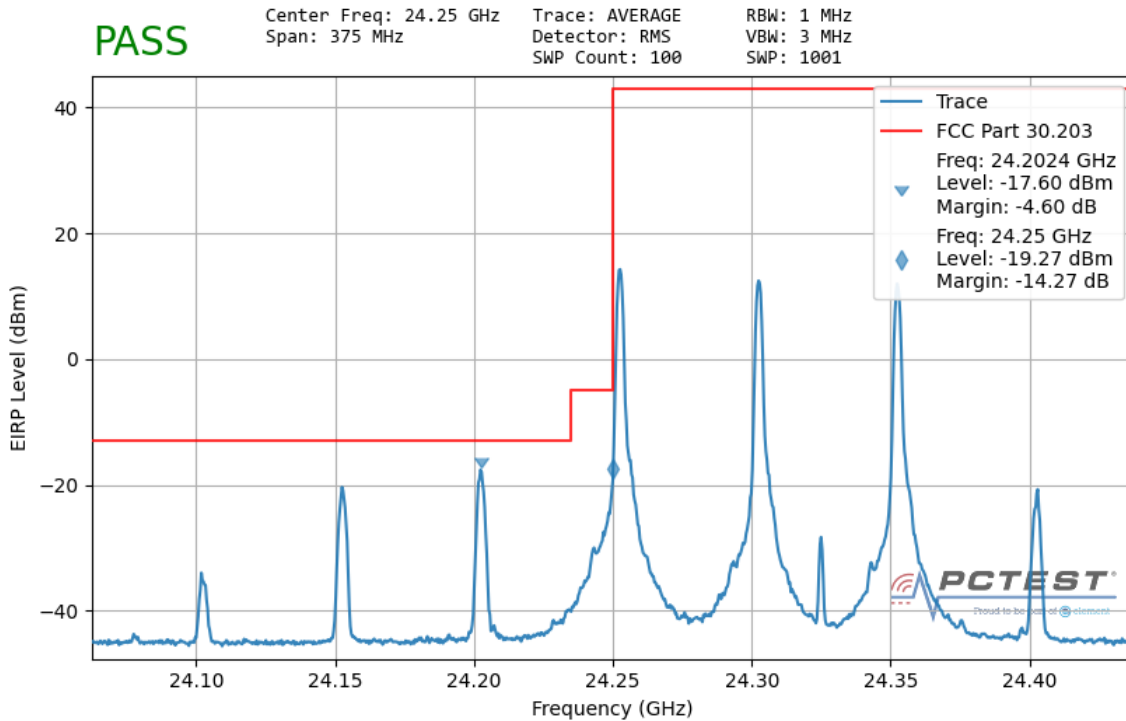


**Plot 7-95. Ant 1 Upper Band Edge – (50MHz-3CC – QPSK 1 RB)**

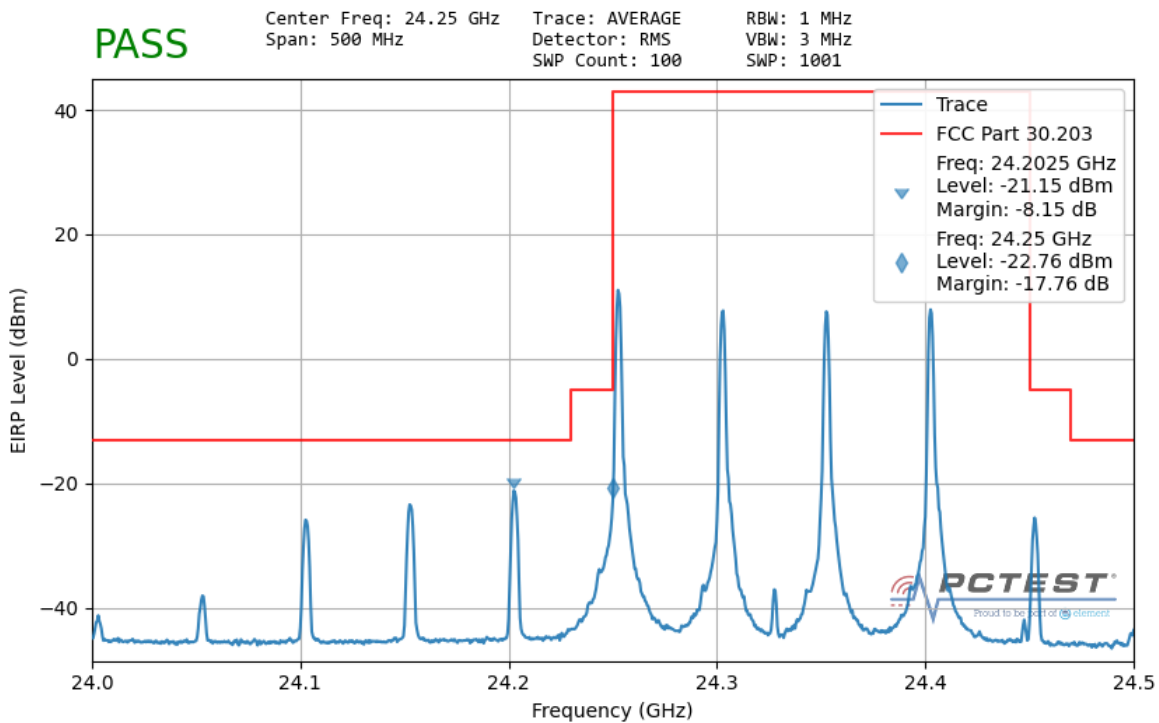


**Plot 7-96. Ant 1 Upper Band Edge – (50MHz-4CC –  $\pi/2$ -BPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 90 of 141

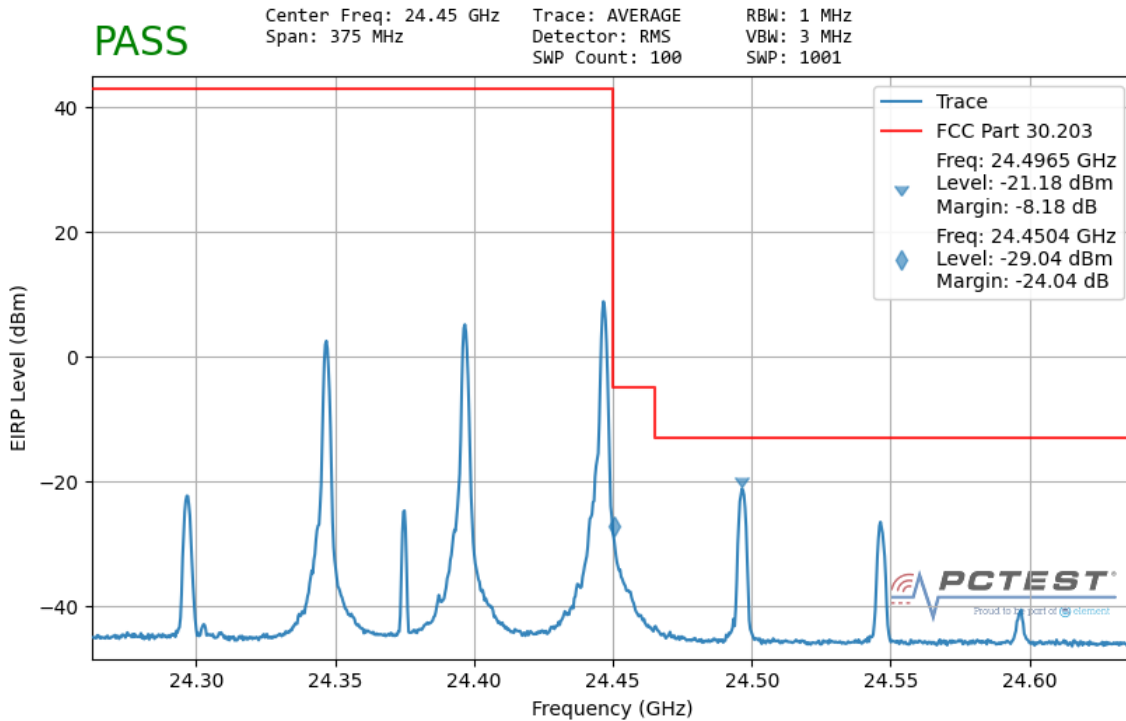


**Plot 7-97. Ant 2 Lower Band Edge (50MHz-3CC – QPSK 1 RB)**

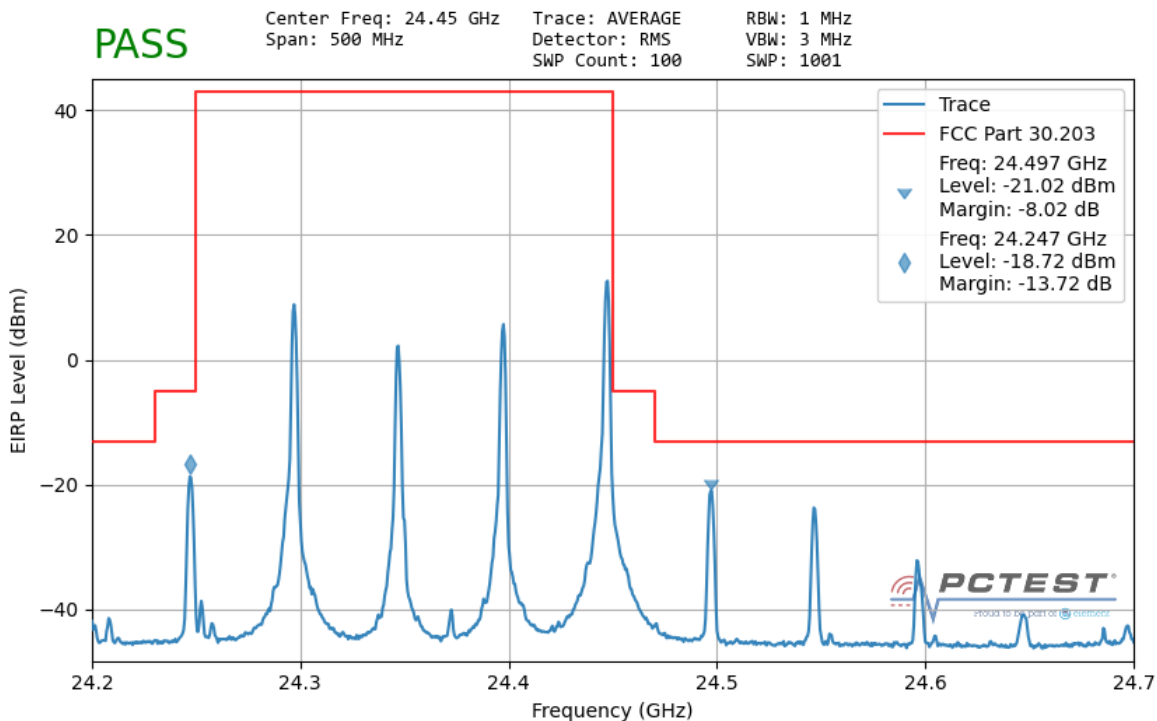


**Plot 7-98. Ant 2 Lower Band Edge (50MHz-4CC – QPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 91 of 141



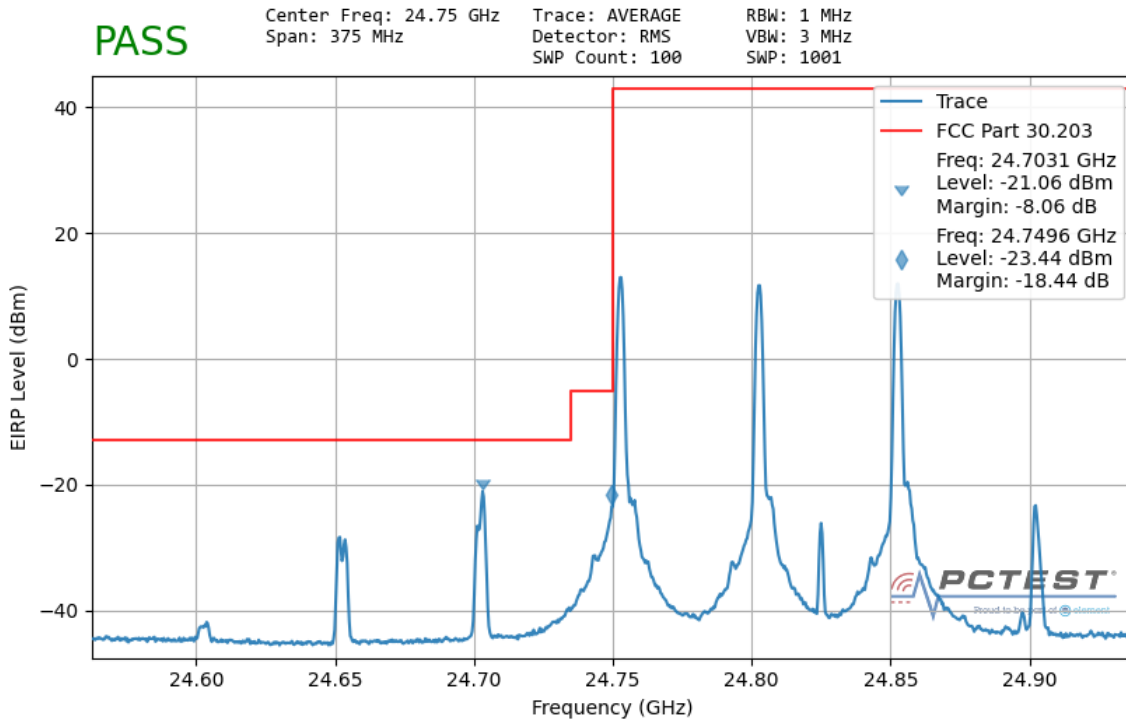
**Plot 7-99. Ant 2 Upper Band Edge (50MHz-3CC – QPSK 1 RB)**



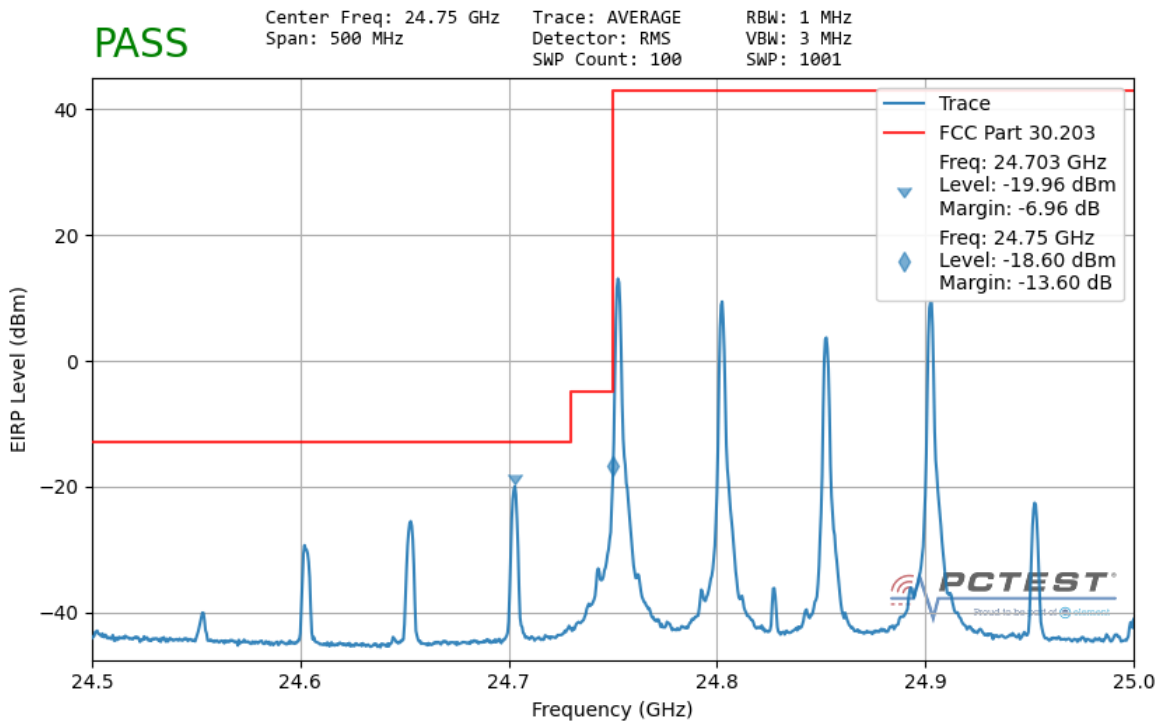
**Plot 7-100. Ant 2 Upper Band Edge (50MHz-4CC – QPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 92 of 141

### Band n258-R2 – Worst-Case

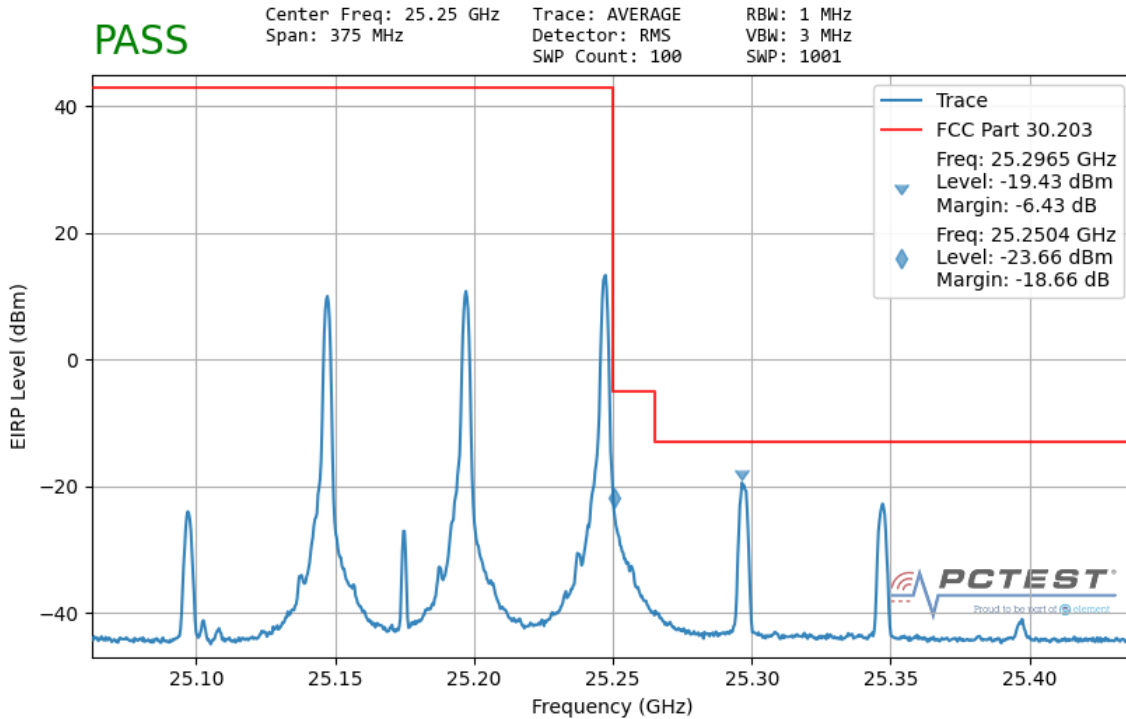


**Plot 7-101. Ant 1 Lower Band Edge (50MHz-3CC –  $\pi/2$ -BPSK 1 RB)**

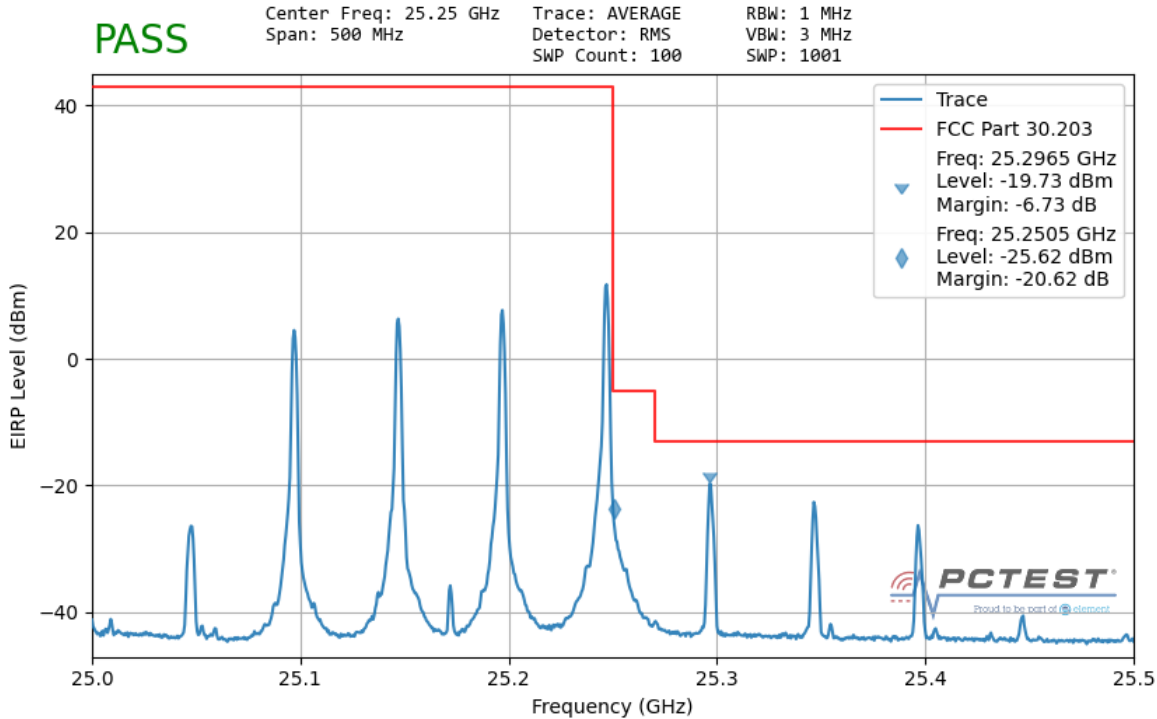


**Plot 7-102. Ant 1 Lower Band Edge (50MHz-4CC –  $\pi/2$ -BPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 93 of 141

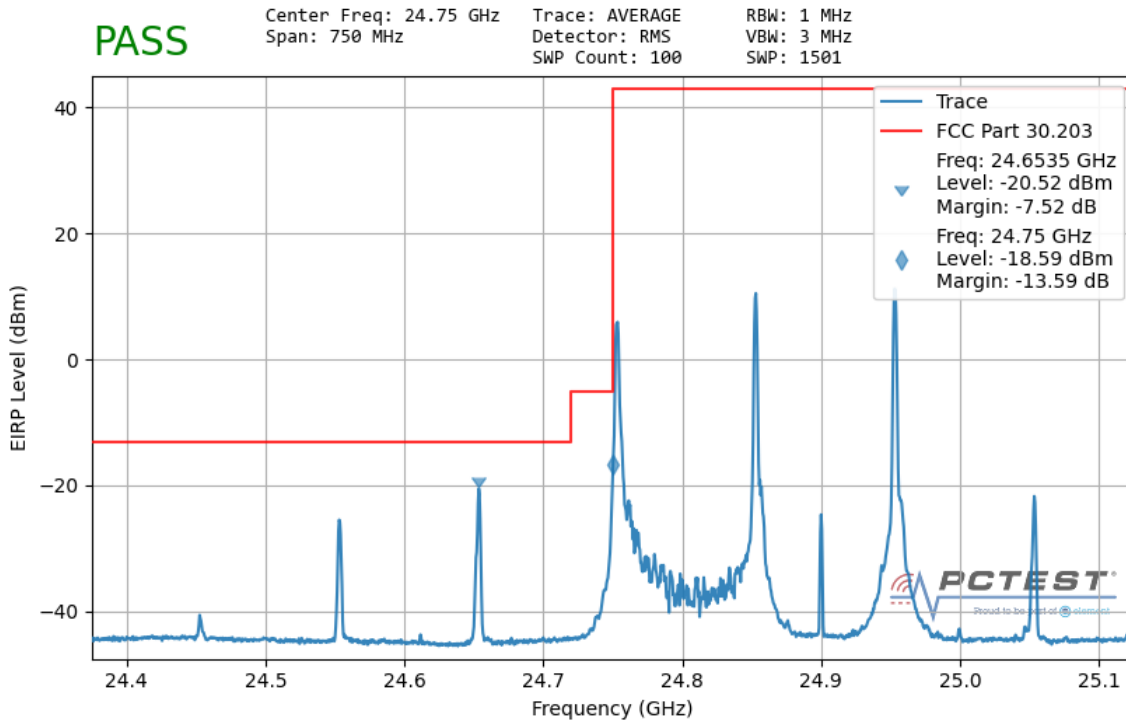


**Plot 7-103. Ant 1 Upper Band Edge (50MHz-3CC –  $\pi/2$ -BPSK 1 RB)**

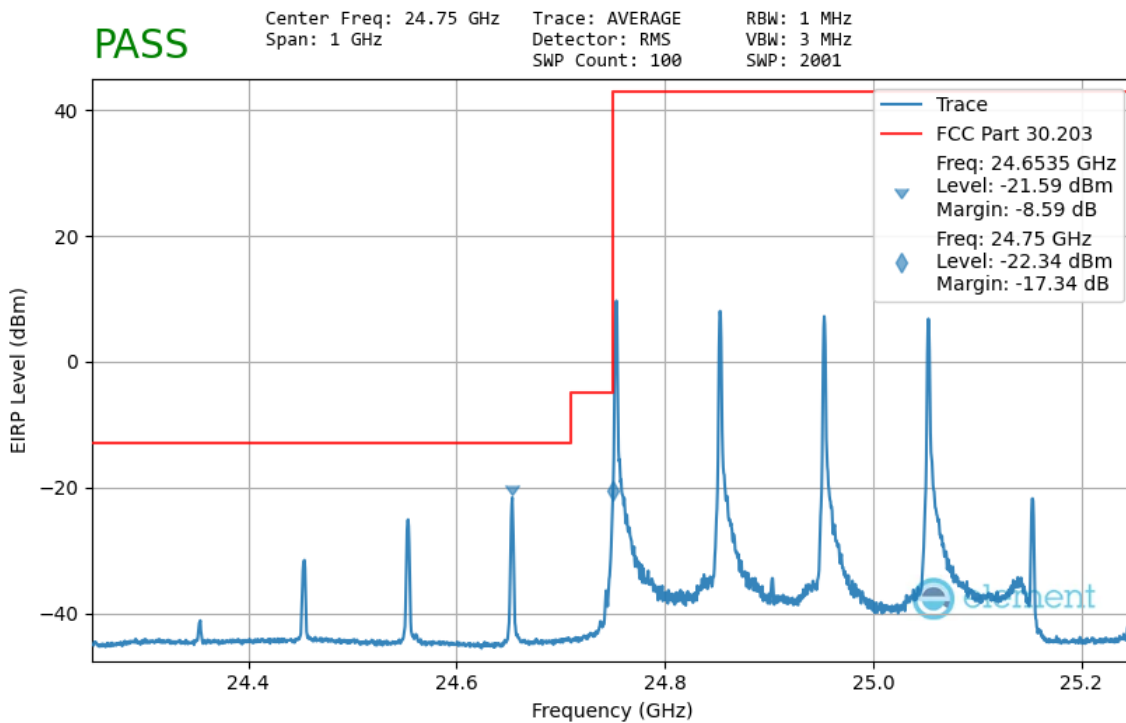


**Plot 7-104. Ant 1 Upper Band Edge (50MHz-4CC – QPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 94 of 141



**Plot 7-105. Ant 1 Lower Band Edge (100MHz-3CC – QPSK 1 RB)**



**Plot 7-106. Ant 1 Lower Band Edge (100MHz-4CC – QPSK 1 RB)**

FCC ID: A3LSMS906U		<b>PART 30 MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)</b>	Approved by: Technical Manager
Test Report S/N: 1M2203290040-01.A3L	Test Dates: 07/11/2022 – 08/29/2022	EUT Type: Portable Handset	Page 95 of 141