



# ELEMENT WASHINGTON DC LLC

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## PART 27 MEASUREMENT REPORT

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

**Date of Testing:**  
11/23/2022 - 2/10/2023  
**Test Report Issue Date:**  
2/24/2023  
**Test Site/Location:**  
Element Lab., Columbia, MD, USA  
**Test Report Serial No.:**  
1M2212080137-04-R1.A3L

<b>FCC ID:</b>	<b>A3LSMS918JPN</b>
<b>Applicant Name:</b>	<b>Samsung Electronics Co., Ltd.</b>

<b>Application Type:</b>	Certification
<b>Model(s):</b>	SC-52D, SCG20
<b>EUT Type:</b>	Portable Handset
<b>FCC Classification:</b>	PCS Licensed Transmitter Held to Ear (PCE)
<b>FCC Rule Part:</b>	27
<b>Test Procedure(s):</b>	ANSI C63.26-2015, KDB 648474 D03 v01r04

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

Note: This revised Test Report (S/N: 1M2212080137-04-R1.A3L) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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

**RJ Ortanez**  
**Executive Vice President**



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Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 41(PC3)	20 MHz	QPSK	2506.0 - 2680.0	0.266	24.25	18M0G7D
		16QAM	2506.0 - 2680.0	0.216	23.35	18M0W7D
	15 MHz	QPSK	2503.5 - 2682.5	0.270	24.31	13M6G7D
		16QAM	2503.5 - 2682.5	0.231	23.63	13M5W7D
	10 MHz	QPSK	2501.0 - 2685.0	0.285	24.54	9M04G7D
		16QAM	2501.0 - 2685.0	0.227	23.57	9M01W7D
5 MHz	QPSK	2498.5 - 2687.5	0.288	24.59	4M56G7D	
	16QAM	2498.5 - 2687.5	0.263	24.19	4M57W7D	
NR Band n41(PC3)	100 MHz	$\pi/2$ BPSK	2546.0 - 2640.0	0.297	24.73	97M1G7D
		QPSK	2546.0 - 2640.0	0.290	24.62	98M0G7D
		16QAM	2546.0 - 2640.0	0.202	23.06	98M1W7D
	90 MHz	$\pi/2$ BPSK	2541.0 - 2645.0	0.303	24.81	87M3G7D
		QPSK	2541.0 - 2645.0	0.300	24.78	87M9G7D
		16QAM	2541.0 - 2645.0	0.264	24.22	88M0W7D
	80 MHz	$\pi/2$ BPSK	2536.0 - 2650.0	0.288	24.60	77M4G7D
		QPSK	2536.0 - 2650.0	0.303	24.81	77M9G7D
		16QAM	2536.0 - 2650.0	0.255	24.07	77M8W7D
	70 MHz	$\pi/2$ BPSK	2526.0 - 2660.0	0.272	24.35	64M7G7D
		QPSK	2526.0 - 2660.0	0.297	24.72	67M7G7D
		16QAM	2526.0 - 2660.0	0.255	24.07	67M6W7D
	60 MHz	$\pi/2$ BPSK	2521.0 - 2665.0	0.282	24.50	58M2G7D
		QPSK	2521.0 - 2665.0	0.304	24.83	58M1G7D
		16QAM	2521.0 - 2665.0	0.284	24.54	58M0W7D
	50 MHz	$\pi/2$ BPSK	2516.0 - 2670.0	0.295	24.70	46M0G7D
		QPSK	2516.0 - 2670.0	0.297	24.73	47M8G7D
		16QAM	2516.0 - 2670.0	0.243	23.85	47M7W7D
	40 MHz	$\pi/2$ BPSK	2511.0 - 2675.0	0.297	24.72	35M9G7D
		QPSK	2511.0 - 2675.0	0.298	24.75	37M9G7D
		16QAM	2511.0 - 2675.0	0.245	23.90	38M1W7D
	30 MHz	$\pi/2$ BPSK	2506.0 - 2680.0	0.299	24.76	27M0G7D
		QPSK	2506.0 - 2680.0	0.294	24.69	27M9G7D
		16QAM	2506.0 - 2680.0	0.231	23.63	28M0W7D
	20MHz	$\pi/2$ BPSK	2580.0 - 2610.0	0.285	24.54	18M0G7D
		QPSK	2580.0 - 2610.0	0.292	24.65	18M3G7D
		16QAM	2580.0 - 2610.0	0.221	23.44	18M3W7D
	15 MHz	$\pi/2$ BPSK	2577.5 - 2612.5	0.291	24.64	13M0G7D
		QPSK	2577.5 - 2612.5	0.294	24.69	13M7G7D
		16QAM	2577.5 - 2612.5	0.234	23.69	13M6W7D
	10MHz	$\pi/2$ BPSK	2575.0 - 2615.0	0.286	24.57	8M66G7D
		QPSK	2575.0 - 2615.0	0.298	24.74	8M66G7D
		16QAM	2575.0 - 2615.0	0.181	22.58	8M63W7D

### EUT Overview

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# 1.0 INTRODUCTION

## 1.1 Scope

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

## 1.2 Element Test Location

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

## 1.3 Test Facility / Accreditations

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

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

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## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS918JPN**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitters that operate under the provisions of Part 27.

**Test Device Serial No.:** 1415M, 1409M, 0203M, 0178M, 0179M, 0946M, 0984M

### 2.2 Device Capabilities

This device contains the following capabilities:

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

This device uses a tuner circuit that dynamically updates the antenna impedance parameters to optimize antenna performance for certain bands and modes of operation. The tuner for this device was set to simulate a "free space" condition where the transmit antenna is matched to the medium into which it is transmitting and, thus, the power is at its maximum level.

### 2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device supports wireless charging capability and, thus, is subject to the test requirements of KDB 648474 D03 v01r04. Additional radiated spurious emission measurements were performed with the EUT lying flat on an authorized wireless charging pad (WCP) Model: EP-N5100 while operating under normal conditions in a simulated call or data transmission configuration. The worst case radiated emissions data is shown in this report.

### 2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version S918USQU0AVJH installed on the EUT.

### 2.5 EMI Suppression Device(s)/Modifications

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

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## 3.0 DESCRIPTION OF TESTS

### 3.1 Evaluation Procedure

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

**Deviation from Measurement Procedure.....None**

### 3.2 Radiated Power and Radiated Spurious Emissions

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

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

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

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

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

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

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

And

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

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

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

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## 4.0 MEASUREMENT UNCERTAINTY

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

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

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## 5.0 TEST EQUIPMENT CALIBRATION DATA

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

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	AP2	EMC Cable and Switch System	8/11/2022	Annual	8/11/2023	AP2
-	AP1	EMC Cable and Switch System	8/15/2022	Annual	8/15/2023	AP1
-	ETS	EMC Cable and Switch System	8/11/2022	Annual	8/11/2023	ETS
-	LTX1	Licensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTX1
-	LTX2	Licensed Transmitter Cable Set	8/15/2022	Annual	8/15/2023	LTX2
-	LTX3	Licensed Transmitter Cable Set	8/15/2022	Annual	8/15/2023	LTX3
-	LTX4	Licensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTX4
-	LTX5	Licensed Transmitter Cable Set	7/29/2022	Annual	7/29/2023	LTX5
Agilent	E5515C	Wireless Communications Test Set	N/A			GB45360985
Agilent	E5515C	Wireless Communications Test Set	N/A			GB46310798
Anritsu	MT8820C	Radio Communication Analyzer	N/A			6201300731
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201381794
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6200901190
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201525694
Com-Power	AL-130R	Active Loop Antenna	1/19/2022	Biennial	1/19/2024	121085
Emco	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9704-5182
Espec	ESX-2CA	Environmental Chamber	5/25/2022	Biennial	5/25/2024	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2021	Biennial	4/20/2023	00125518
ETS Lindgren	3164-10	Quad Ridge Horn 400MHz - 10000MHz	5/10/2021	Biennial	5/10/2023	00166283
ETS Lindgren	3816/2NM	LISN	8/11/2022	Biennial	8/11/2024	00114451
Keysight Technologies	N9020A	MXA Signal Analyzer	3/15/2022	Annual	3/15/2023	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	8/18/2022	Annual	8/18/2023	MY49430494
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	2/14/2022	Annual	2/14/2023	MY52350166
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11208010032
Mini-Circuits	SSG-4000HP	Synthesized Signal Generator	N/A			11403100002
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			836371/0079
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			833855/0010
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			107826
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			109892
Rohde & Schwarz	CMU200	Base Station Simulator	N/A			836536/0005
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			100976
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	8/29/2022	Annual	8/29/2023	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	8/25/2022	Annual	8/25/2023	100348
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz to 44 GHz	3/28/2022	Annual	3/28/2023	101716
Rohde & Schwarz	FSW26	2Hz-26.5GHz Signal and Spectrum Analyzer	4/14/2022	Annual	4/14/2023	103187
Sunol	JB6	LB6 Antenna	11/13/2020	Biennial	11/13/2022	A082816

**Table 5-1. Test Equipment**

**Notes:**

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

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## 6.0 SAMPLE CALCULATIONS

### QPSK Modulation

**Emission Designator = 8M62G7D**

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

### QAM Modulation

**Emission Designator = 8M45W7D**

LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

### Spurious Radiated Emission

**Example: Spurious emission at 3700.40 MHz**

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was  $-81.0$  dBm. The gain of the substituted antenna is  $8.1$  dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of  $-81.0$  dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is  $2.0$  dB at  $3700.40$  MHz. So  $6.1$  dB is added to the signal generator reading of  $-30.9$  dBm yielding  $-24.80$  dBm. The fundamental EIRP was  $25.50$  dBm so this harmonic was  $25.50$  dBm  $- (-24.80) = 50.3$  dBc.

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## 7.0 TEST RESULTS

### 7.1 Summary

Company Name: Samsung Electronics Co., Ltd.  
 FCC ID: A3LSMS918JPN  
 FCC Classification: PCS Licensed Transmitter Held to Ear (PCE)  
 Mode(s): LTE/NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power*	2.1046(a), 2.1046(c)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
	Frequency Stability	2.1055, 27.54	Fundamental emissions stay within authorized frequency block	PASS	Section 7.8
RADIATED	Equivalent Isotropic Radiated Power	27.50(h)(2)	≤ 2 Watts max. EIRP	PASS	Section 7.6
	Radiated Spurious Emissions	2.1053, 27.53(m)	Undesirable emissions must meet the limits detailed in 27.53(m)	PASS	Section 7.7

\* The only transmitter output conducted powers included in this report are those where the Pmax value, per the tune-up document, is higher than any of the DSI power levels. For the remaining conducted power measurements, see the **RF Exposure Report**.

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

**Notes:**

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
- 3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
- 4) All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v1.0.

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## 7.2 Conducted Output Power Data

### Test Overview

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

### Test Procedure Used

ANSI C63.26-2015 – Section 5.2

### Test Settings

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

### Test Setup

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



**Figure 7-1. Test Instrument & Measurement Setup**

### Test Notes

1. Conducted power measurements were evaluated using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
2. All other conducted power measurements are contained in the RF exposure report for this filing.

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
20 MHz	QPSK	39750	2506.0	1 / 0	24.11
		40620	2593.0	1 / 99	24.93
		41490	2680.0	1 / 50	24.04
	16-QAM	39750	2506.0	1 / 50	23.28
15 MHz	QPSK	39725	2503.5	1 / 0	24.17
		40620	2593.0	1 / 74	24.04
		41515	2682.5	1 / 0	24.05
	16-QAM	39725	2503.5	1 / 0	23.57
10 MHz	QPSK	39700	2501.0	1 / 25	24.40
		40620	2593.0	1 / 25	24.23
		41540	2685.0	1 / 49	24.27
	16-QAM	39700	2501.0	1 / 0	23.50
5 MHz	QPSK	39675	2498.5	1 / 12	24.45
		40620	2593.0	1 / 0	24.31
		41565	2687.5	1 / 24	24.61
	16-QAM	39675	2498.5	1 / 0	24.13

**Table 7-2. Conducted Power Data (LTE B41 (PC3))**

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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]
100 MHz	π/2 BPSK	509202	2546.01	1 / 136	24.65
		518598	2592.99	1 / 68	24.86
		528000	2640.00	1 / 68	24.91
	QPSK	509202	2546.01	1 / 136	24.73
		518598	2592.99	1 / 68	24.71
		528000	2640.00	1 / 68	24.76
16-QAM	528000	2640.00	1 / 68	24.27	
90 MHz	π/2 BPSK	508200	2541.00	1 / 61	24.54
		518598	2592.99	1 / 61	24.95
		528996	2644.98	1 / 61	24.95
	QPSK	508200	2541.00	1 / 61	24.64
		518598	2592.99	1 / 61	24.92
		528996	2644.98	1 / 61	24.92
16-QAM	528996	2644.98	1 / 61	24.47	
80 MHz	π/2 BPSK	507204	2536.02	1 / 54	24.72
		518598	2592.99	1 / 108	24.73
		529998	2649.99	1 / 162	24.62
	QPSK	507204	2536.02	1 / 54	24.71
		518598	2592.99	1 / 108	24.74
		529998	2649.99	1 / 162	24.96
16-QAM	529998	2649.99	1 / 162	24.46	
70 MHz	π/2 BPSK	506202	2531.01	1 / 47	24.86
		518598	2592.99	1 / 141	24.49
		531000	2655.00	1 / 47	24.69
	QPSK	506202	2531.01	1 / 47	24.53
		518598	2592.99	1 / 141	24.82
		531000	2655.00	1 / 47	24.86
16-QAM	531000	2655.00	1 / 47	24.25	
60 MHz	π/2 BPSK	505200	2526.00	1 / 81	24.82
		518598	2592.99	1 / 121	24.63
		531996	2659.98	1 / 40	24.90
	QPSK	505200	2526.00	1 / 81	24.82
		518598	2592.99	1 / 121	24.80
		531996	2659.98	1 / 40	24.97
16-QAM	531996	2659.98	1 / 40	24.60	
50 MHz	π/2 BPSK	504204	2521.02	1 / 99	24.85
		518598	2592.99	1 / 66	24.84
		532998	2664.99	1 / 66	24.69
	QPSK	504204	2521.02	1 / 99	24.87
		518598	2592.99	1 / 66	24.90
		532998	2664.99	1 / 66	24.87
16-QAM	518598	2592.99	1 / 66	24.27	
40 MHz	π/2 BPSK	503202	2516.01	1 / 26	24.57
		518598	2592.99	1 / 53	24.85
		534000	2670.00	1 / 79	24.85
	QPSK	503202	2516.01	1 / 26	24.55
		518598	2592.99	1 / 53	24.95
		534000	2670.00	1 / 79	24.83
16-QAM	534000	2670.00	1 / 79	23.96	
30 MHz	π/2 BPSK	502200	2511.00	1 / 58	24.67
		518598	2592.99	1 / 58	24.89
		534996	2674.98	1 / 19	24.87
	QPSK	502200	2511.00	1 / 58	24.65
		518598	2592.99	1 / 58	24.85
		534996	2674.98	1 / 19	24.83
16-QAM	518598	2592.99	1 / 58	24.06	
20 MHz	π/2 BPSK	501204	2506.02	1 / 37	24.94
		518598	2592.99	1 / 13	24.68
		535998	2679.99	1 / 37	24.85
	QPSK	501204	2506.02	1 / 37	24.78
		518598	2592.99	1 / 13	24.86
		535998	2679.99	1 / 37	24.77
16-QAM	518598	2592.99	1 / 25	23.67	
15 MHz	π/2 BPSK	500700	2503.50	1 / 19	24.55
		518598	2592.99	1 / 19	24.92
		536496	2682.48	1 / 19	24.81
	QPSK	500700	2503.50	1 / 19	24.70
		518598	2592.99	1 / 19	24.88
		536496	2682.48	1 / 19	24.70
16-QAM	536496	2682.48	1 / 19	23.25	
10 MHz	π/2 BPSK	500201	2501.00	1 / 6	24.90
		518598	2592.99	1 / 6	24.58
		537000	2685.00	1 / 6	24.45
	QPSK	501204	2506.02	1 / 6	24.91
		518598	2592.99	1 / 6	24.59
		537000	2685.00	1 / 6	24.50
16-QAM	535998	2679.99	1 / 6	23.52	

Table 7-3. Conducted Power Data (NR n41)

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Power State	Band	Bandwidth (PCC + SCC)	PCC				SCC				ULCA Tx. Power [dBm]			
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency		UL # RB	UL RB Offset	
Max	LTE B41 (PC3)	20MHz + 20MHz	QPSK	39750	2506.0	1	99	QPSK	39948	2525.8	1	0	23.73	
				40620	2593.0	1	99		40818	2612.8	1	0	23.84	
				41490	2680.0	1	0		41292	2660.2	1	99	23.80	
			QPSK	40620	2593	100	0	QPSK	40818	2612.8	100	0	22.10	
				16-QAM	40620	2593	100	0	16-QAM	40818	2612.8	100	0	21.13
				64-QAM	40620	2593	100	0	64-QAM	40818	2612.8	100	0	21.12
				256-QAM	40620	2593	100	0	256-QAM	40818	2612.8	100	0	19.18

Table 7-4. Conducted Power Data (ULCA LTE B41(PC3))

NR (SCS 30kHz)						LTE						NR	LTE	EN-DC
NR Band	NR Bandwidth [MHz]	NR Channel	NR Frequency [MHz]	Mod.	NR RB#/Offset	LTE Band	LTE Bandwidth [MHz]	LTE Channel	LTE Frequency [MHz]	Mod.	LTE RB#/Offset	Conducted Power [dBm]	Conducted Power [dBm]	Total Tx. Power [dBm]
n41	100	Mid	2593	QPSK	270/0	B66	20	Mid	1745	QPSK	100/0	20.30	21.21	23.79
				QPSK	270/0					QPSK	1/50	18.58	22.74	24.15
				QPSK	1/136					QPSK	100/0	20.31	21.29	23.84
				QPSK	1/136					QPSK	1/50	18.67	22.21	23.80
				16Q	270/0					16Q	1/50	20.66	21.36	24.03

Table 7-5. Conducted Power Data (EN-DC Combo n41 – B66)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## 7.3 Occupied Bandwidth

### Test Overview

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

### Test Procedure Used

ANSI C63.26-2015 – Section 5.4.4

### Test Settings

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

### Test Setup

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



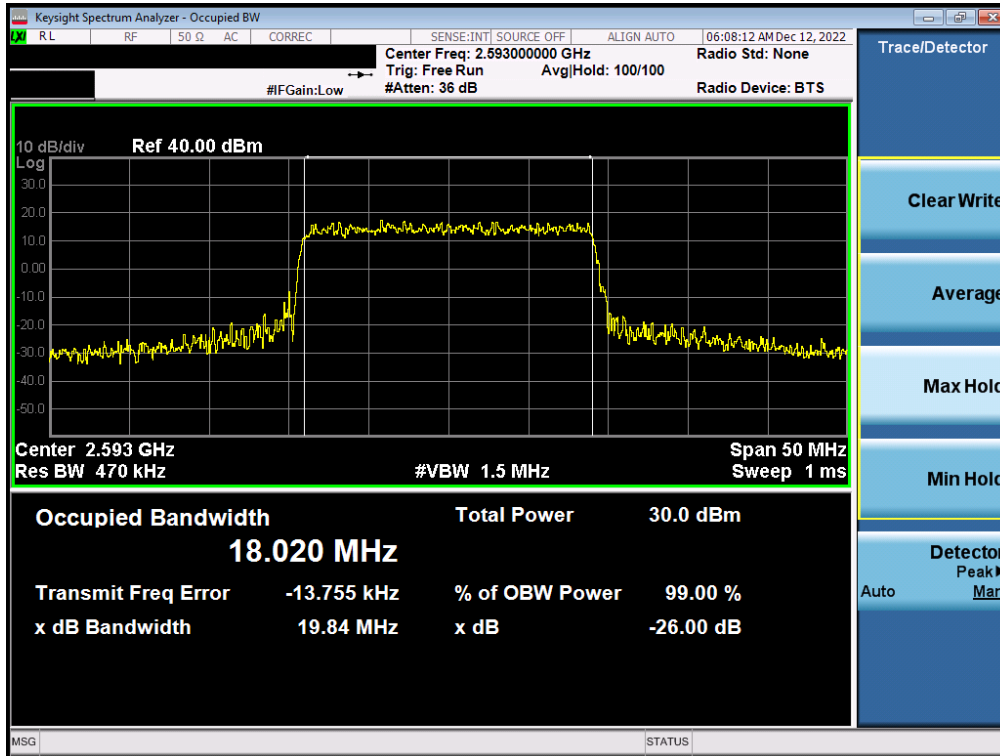
**Figure 7-2. Test Instrument & Measurement Setup**

### Test Notes

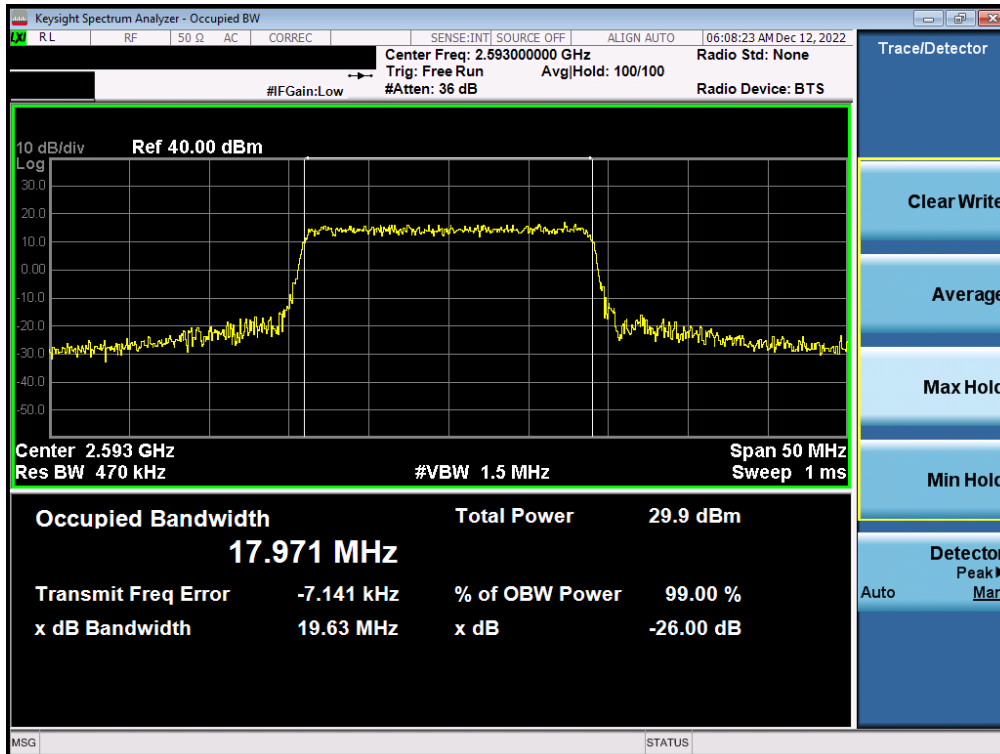
None.

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# LTE Band 41(PC3)



Plot 7-1. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz QPSK - Full RB)



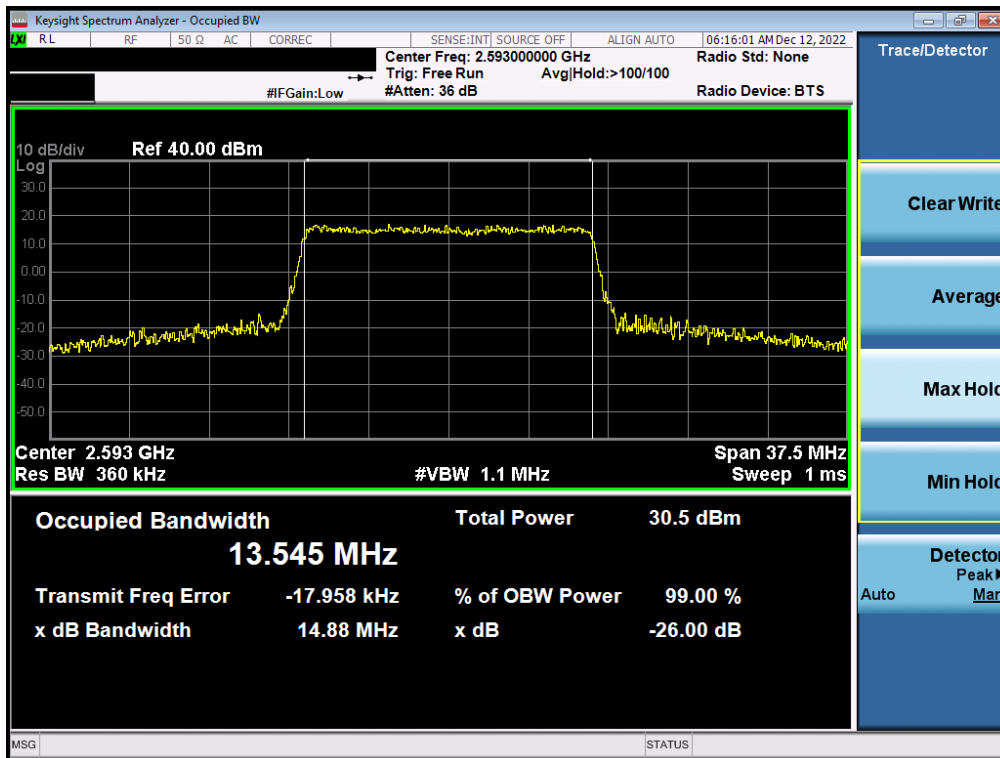
Plot 7-2. Occupied Bandwidth Plot (LTE Band 41(PC3) - 20MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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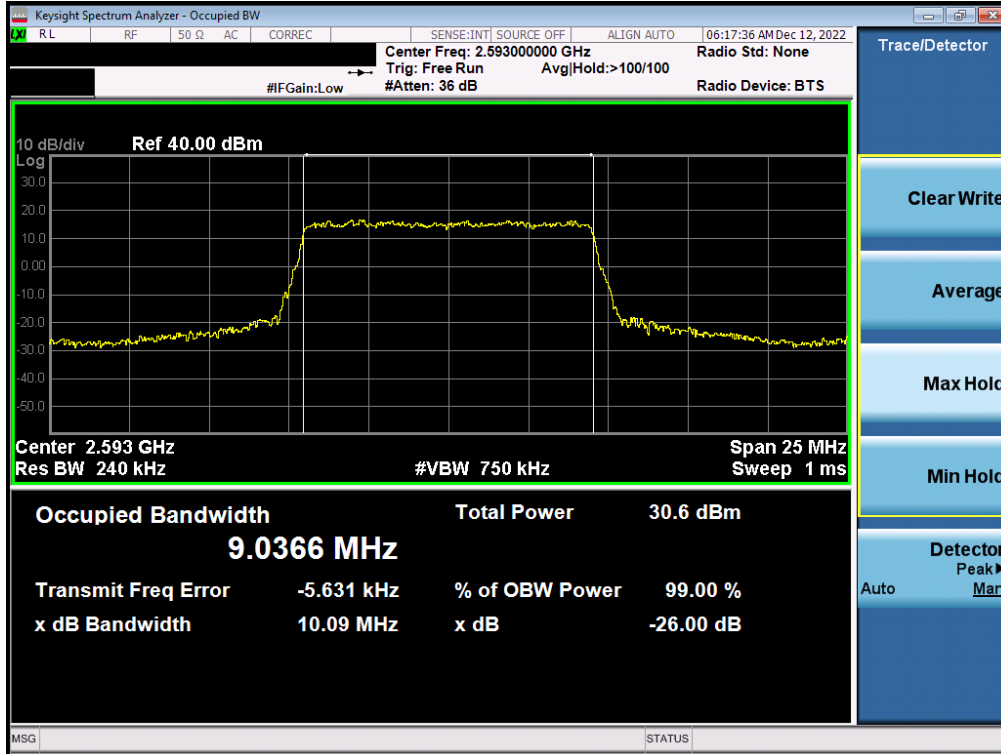


Plot 7-3. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz QPSK - Full RB)

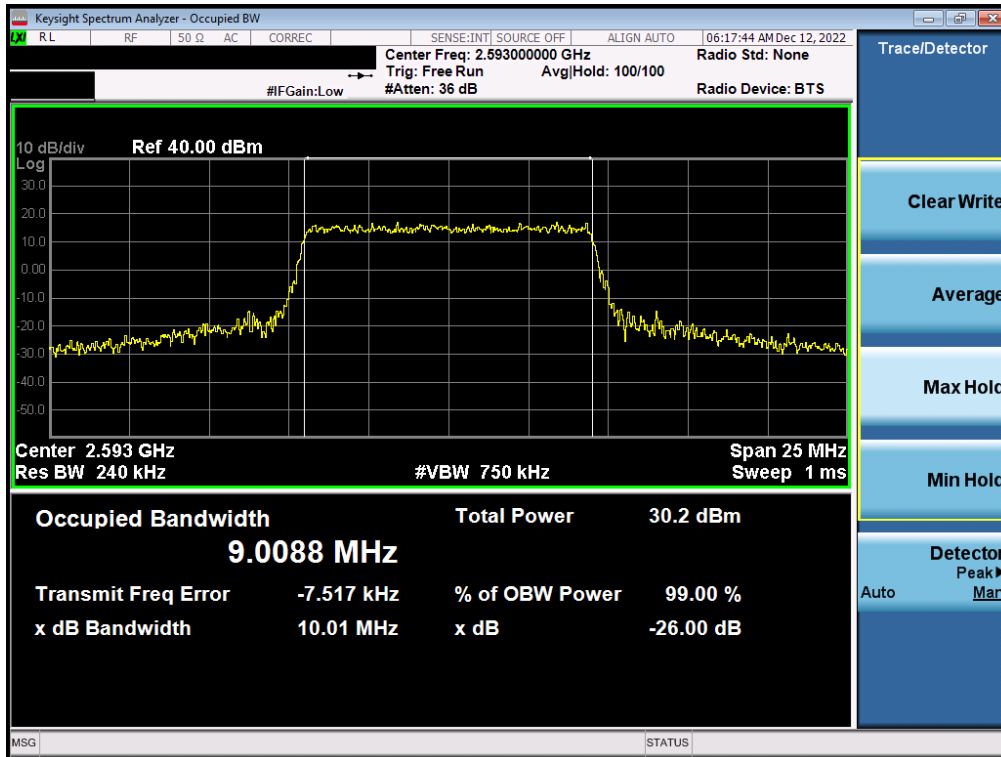


Plot 7-4. Occupied Bandwidth Plot (LTE Band 41(PC3) - 15MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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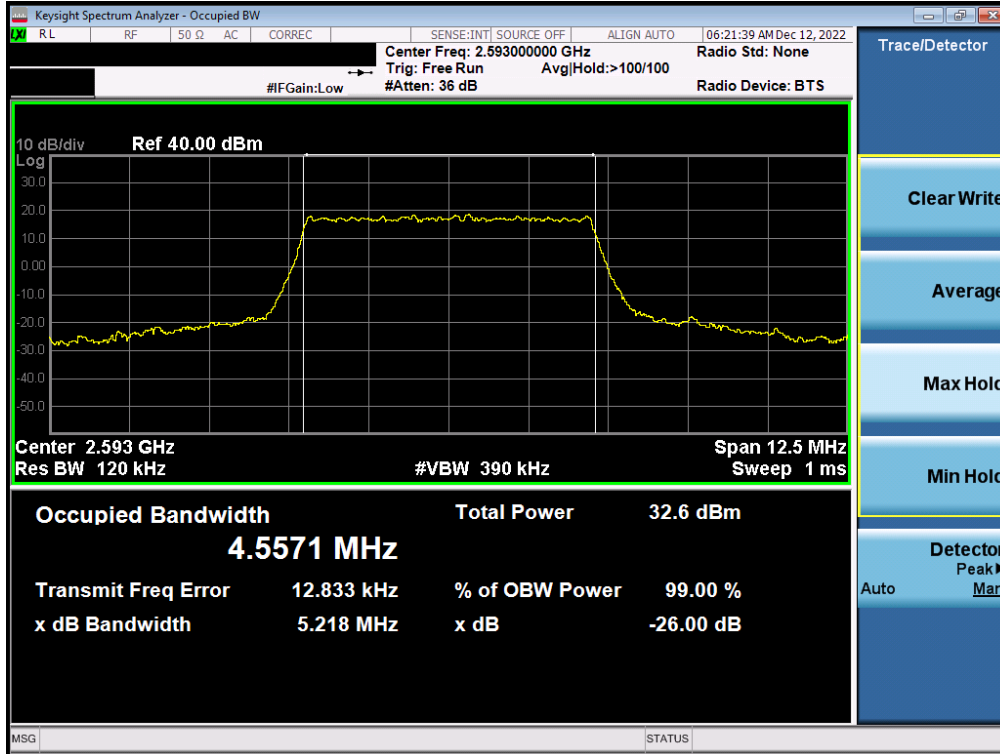


Plot 7-5. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz QPSK - Full RB)

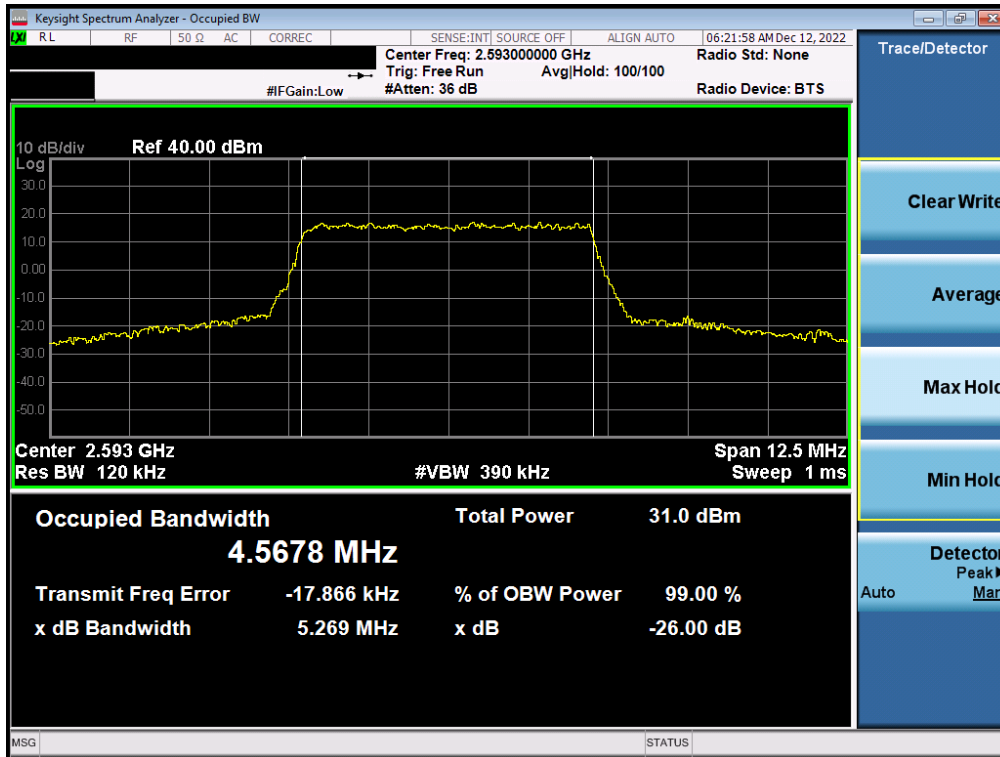


Plot 7-6. Occupied Bandwidth Plot (LTE Band 41(PC3) - 10MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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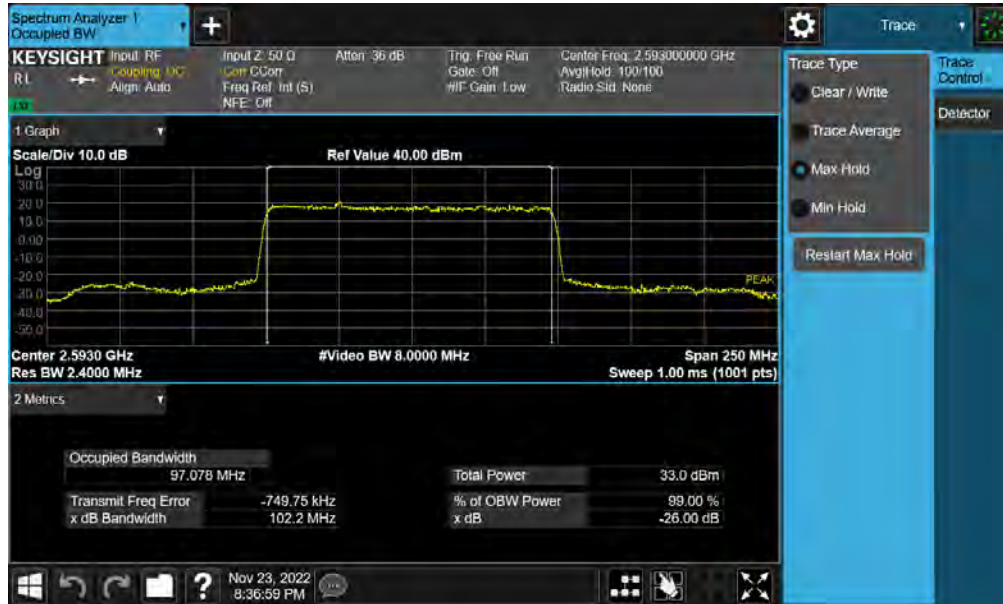
Plot 7-7. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz QPSK - Full RB)



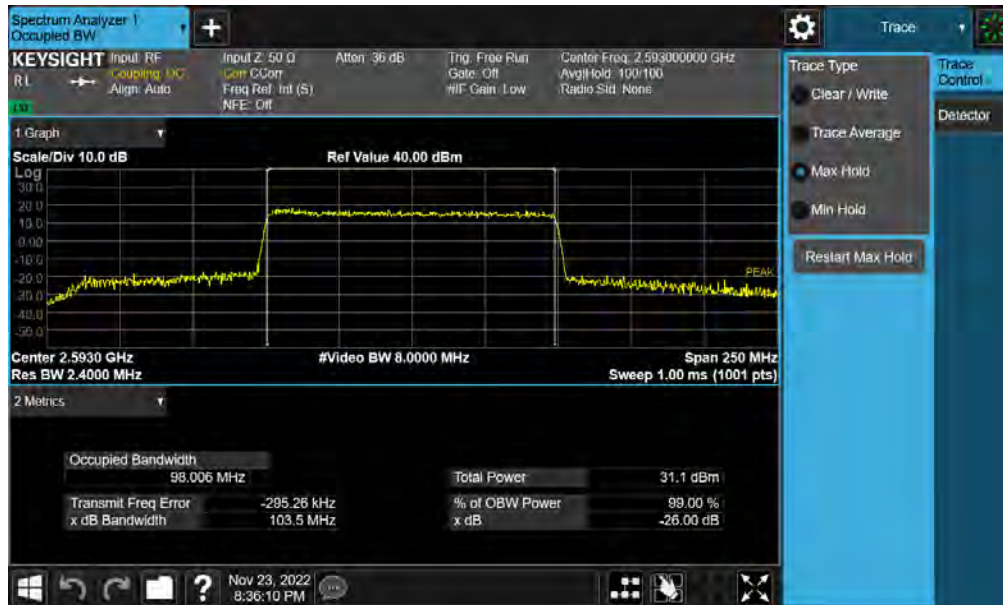
Plot 7-8. Occupied Bandwidth Plot (LTE Band 41(PC3) - 5MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## NR Band n41(PC3)

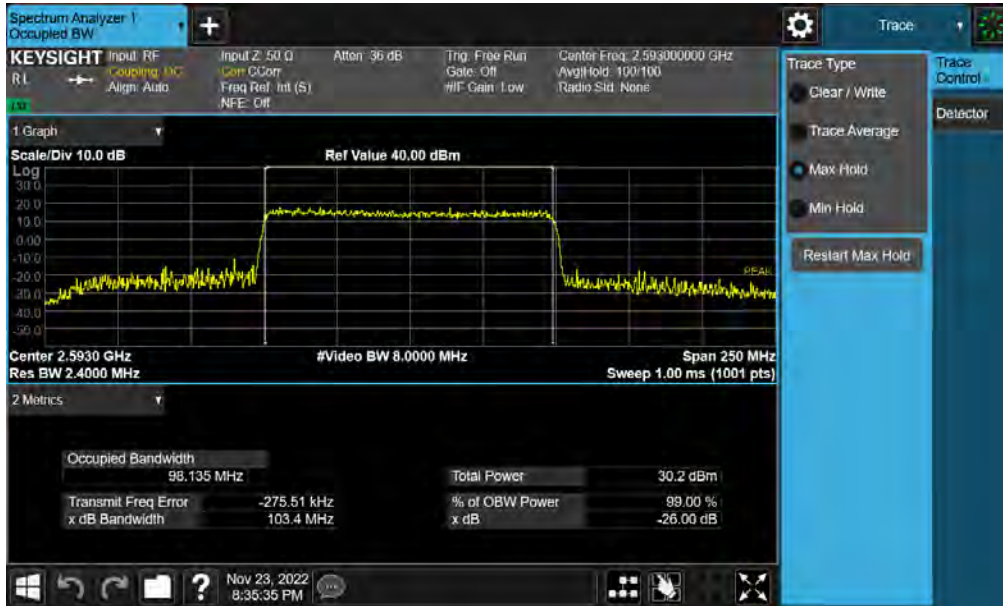


Plot 7-9. Occupied Bandwidth Plot (NR Band n41(PC3) - 100MHz  $\pi/2$  BPSK - Full RB)



Plot 7-10. Occupied Bandwidth Plot (NR Band n41(PC3) - 100MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-11. Occupied Bandwidth Plot (NR Band n41(PC3) - 100MHz 16-QAM - Full RB)



Plot 7-12. Occupied Bandwidth Plot (NR Band n41(PC3) - 90MHz  $\pi/2$  BPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-13. Occupied Bandwidth Plot (NR Band n41(PC3) - 90MHz QPSK - Full RB)



Plot 7-14. Occupied Bandwidth Plot (NR Band n41(PC3) - 90MHz 16-QAM - Full RB)

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Plot 7-15. Occupied Bandwidth Plot (NR Band n41(PC3) - 80MHz  $\pi/2$  BPSK - Full RB)



Plot 7-16. Occupied Bandwidth Plot (NR Band n41(PC3) - 80MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-17. Occupied Bandwidth Plot (NR Band n41(PC3) - 80MHz 16-QAM - Full RB)



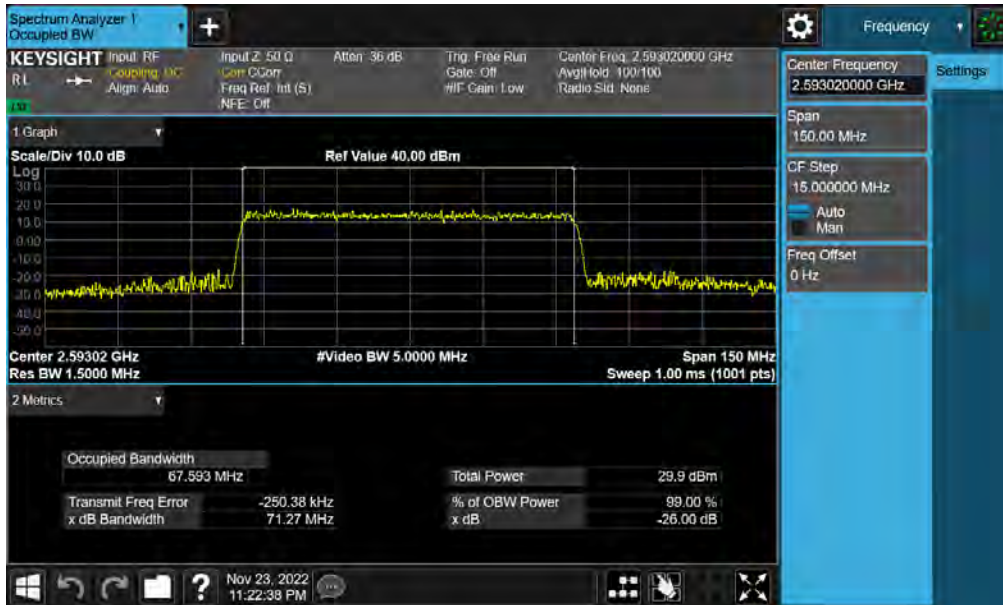
Plot 7-18. Occupied Bandwidth Plot (NR Band n41(PC3) - 70MHz  $\pi/2$  BPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-19. Occupied Bandwidth Plot (NR Band n41(PC3) - 70MHz QPSK - Full RB)

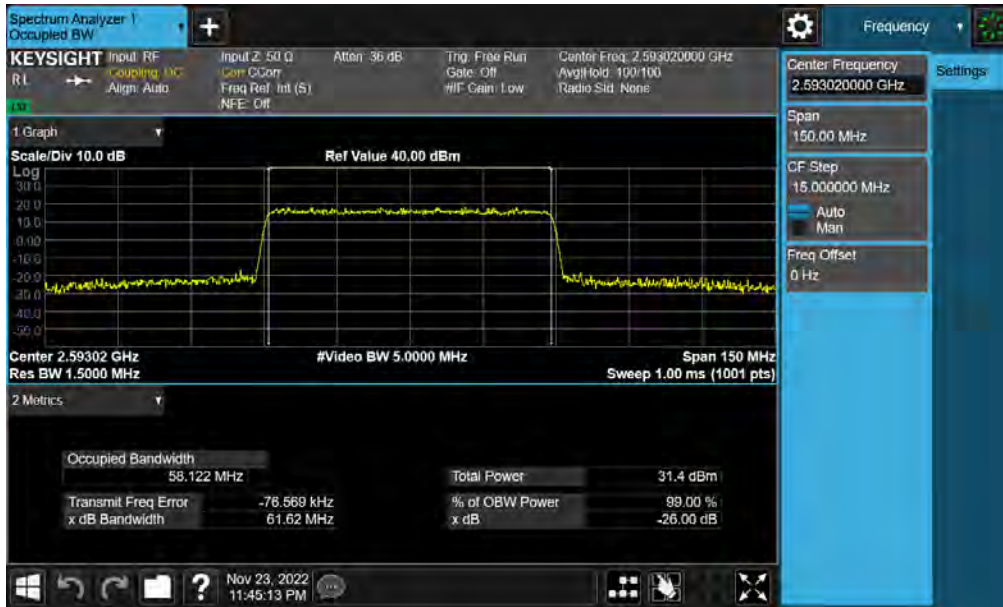


Plot 7-20. Occupied Bandwidth Plot (NR Band n41(PC3) - 70MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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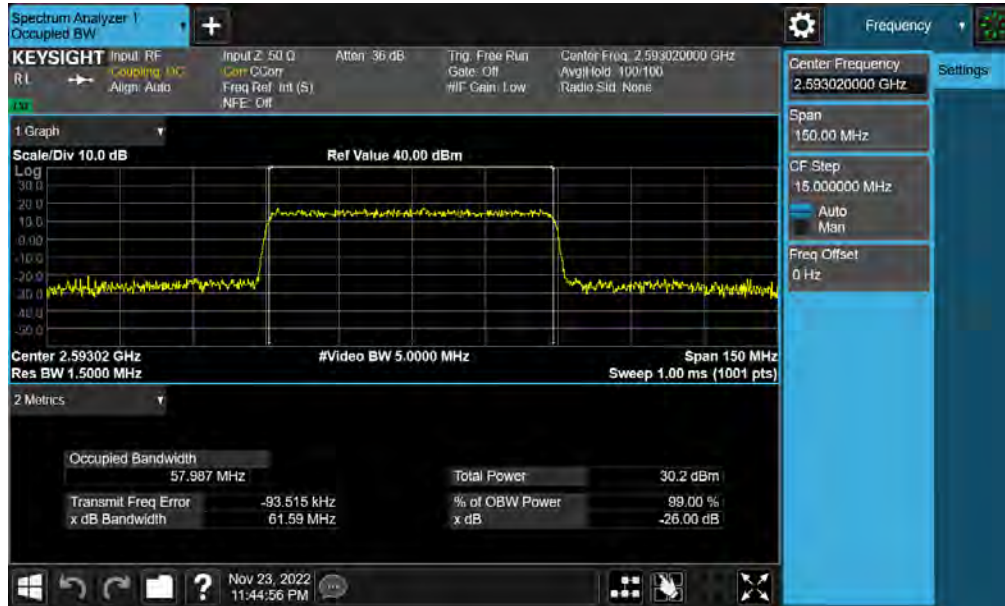


Plot 7-21. Occupied Bandwidth Plot (NR Band n41(PC3) - 60MHz  $\pi/2$  BPSK - Full RB)

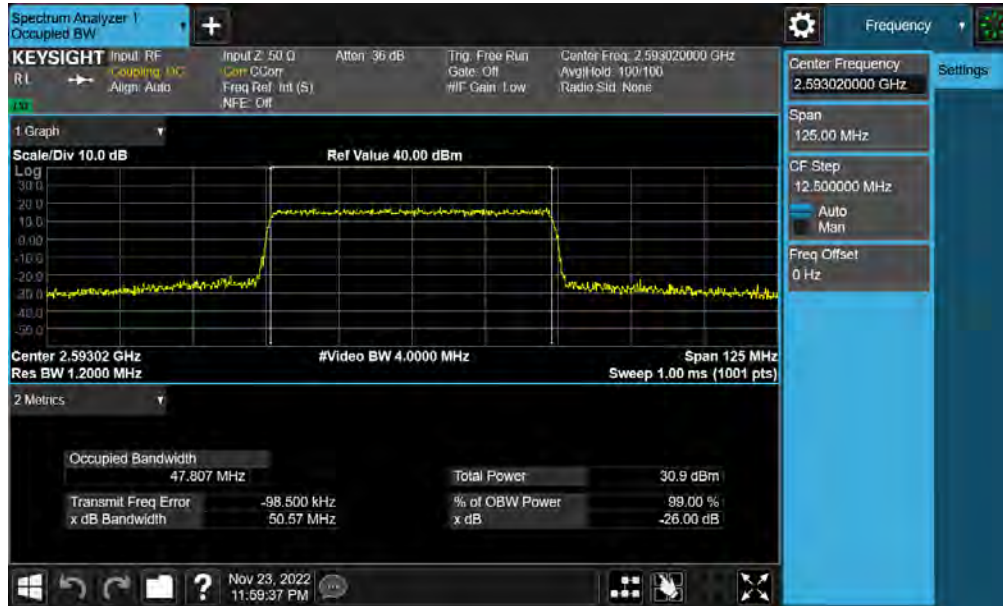


Plot 7-22. Occupied Bandwidth Plot (NR Band n41(PC3) - 60MHz QPSK - Full RB)

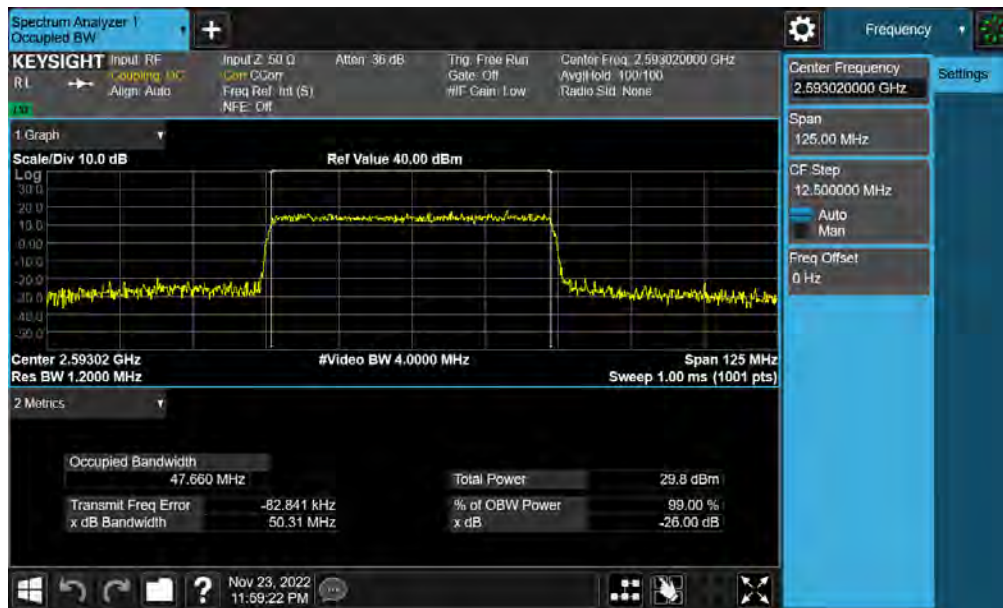
FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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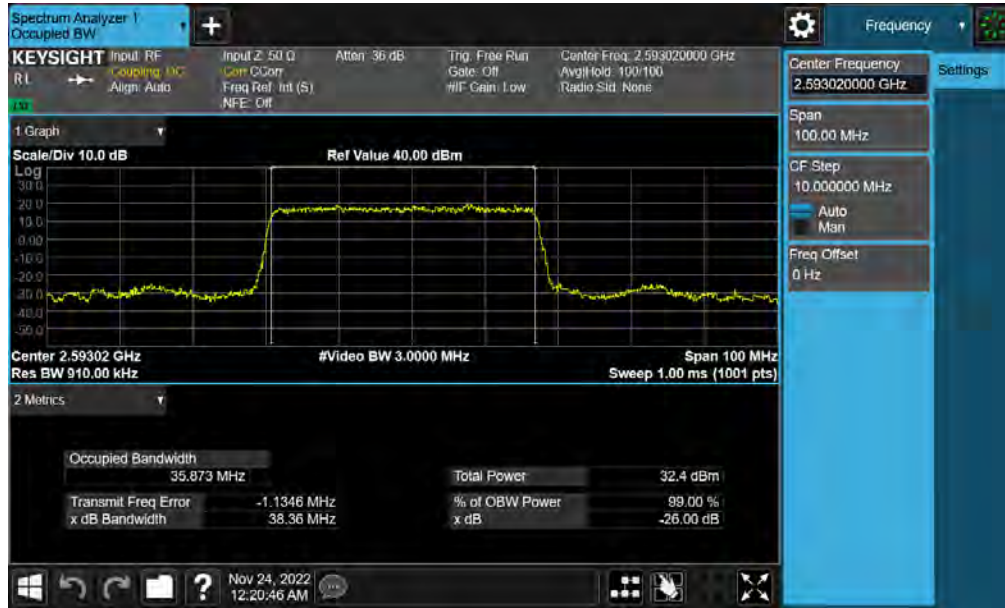


Plot 7-25. Occupied Bandwidth Plot (NR Band n41(PC3) - 50MHz QPSK - Full RB)



Plot 7-26. Occupied Bandwidth Plot (NR Band n41(PC3) - 50MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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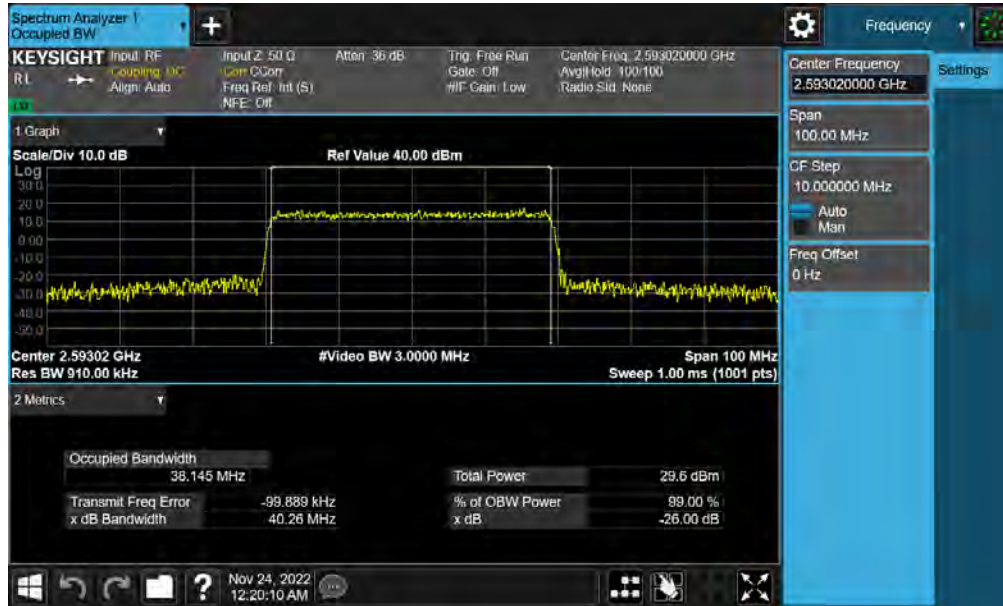


Plot 7-27. Occupied Bandwidth Plot (NR Band n41(PC3) - 40MHz  $\pi/2$  BPSK - Full RB)

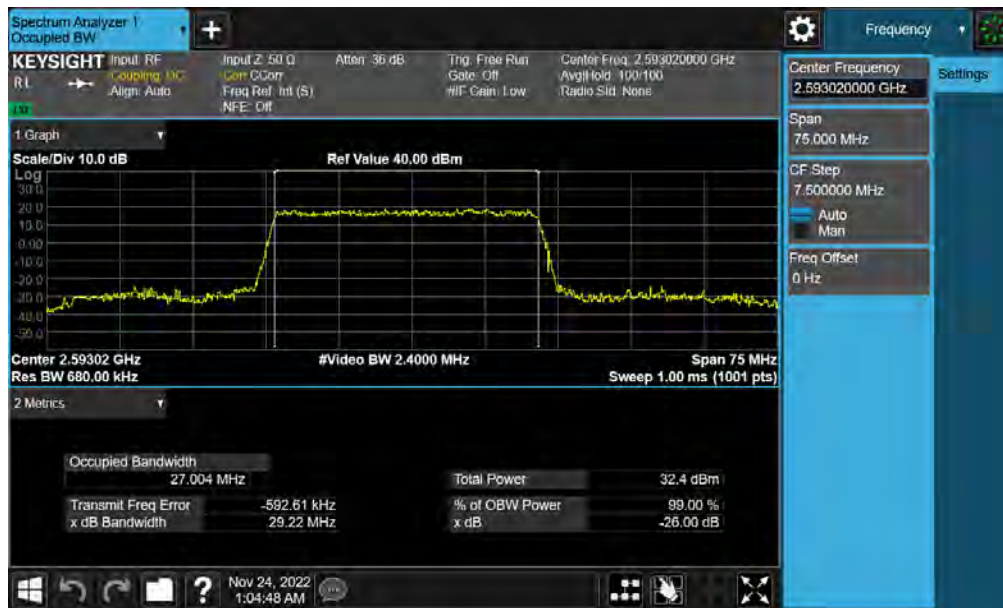


Plot 7-28. Occupied Bandwidth Plot (NR Band n41(PC3) - 40MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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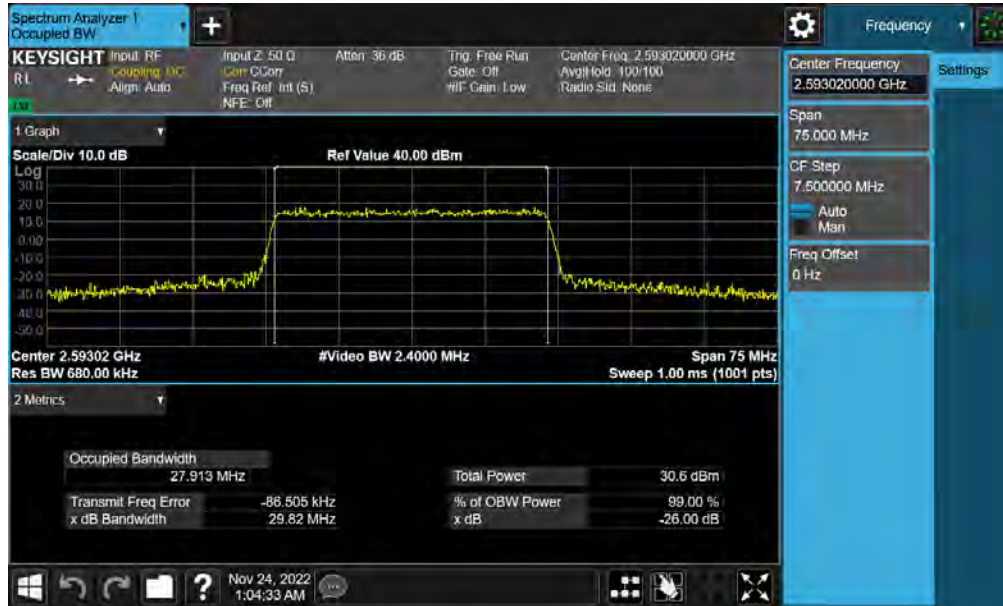


Plot 7-29. Occupied Bandwidth Plot (NR Band n41(PC3) - 40MHz 16-QAM - Full RB)



Plot 7-30. Occupied Bandwidth Plot (NR Band n41(PC3) - 30MHz  $\pi/2$  BPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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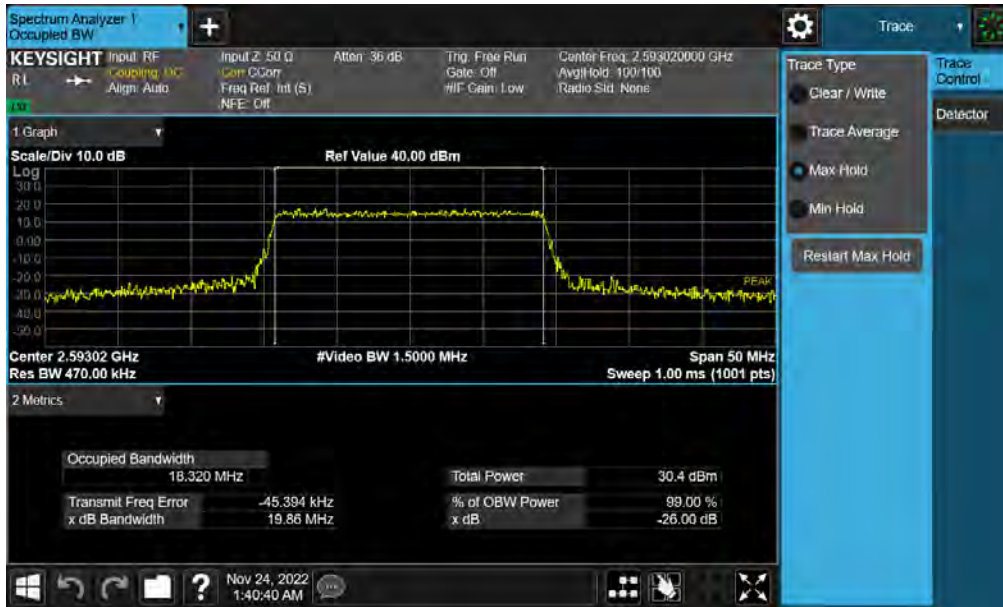


Plot 7-31. Occupied Bandwidth Plot (NR Band n41(PC3) - 30MHz QPSK - Full RB)



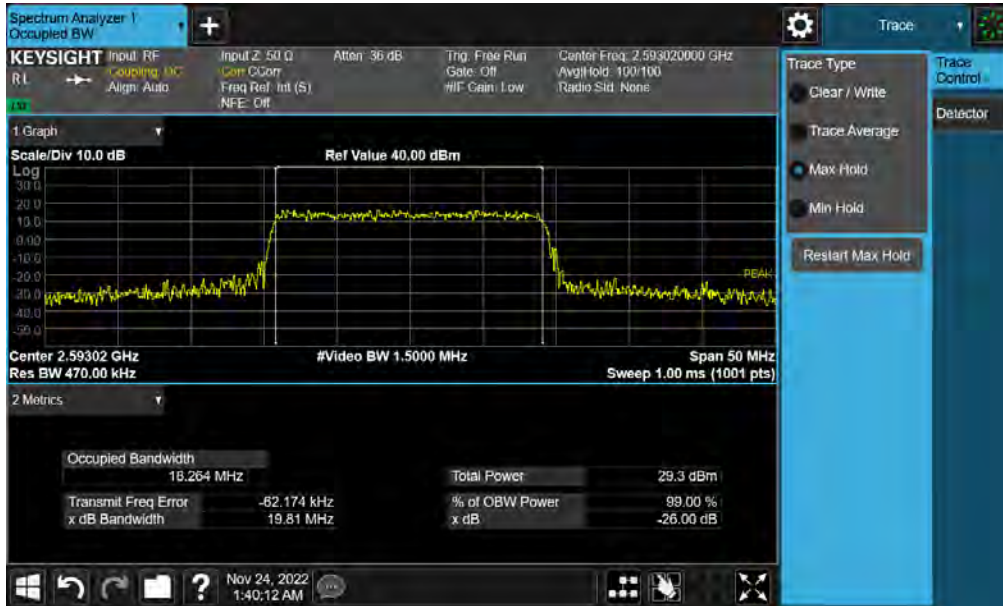
Plot 7-32. Occupied Bandwidth Plot (NR Band n41(PC3) - 30MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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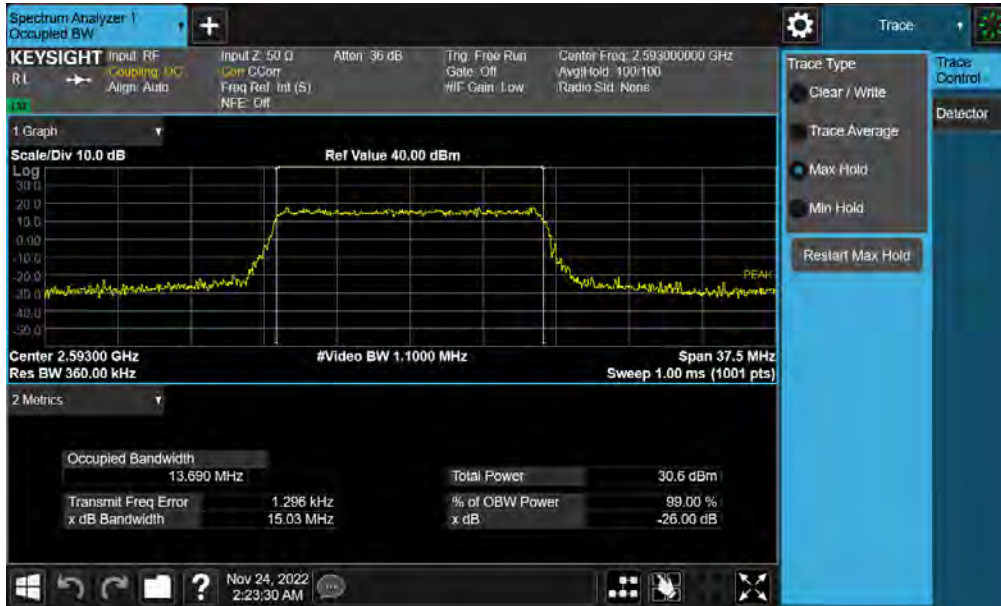


Plot 7-35. Occupied Bandwidth Plot (NR Band n41(PC3) - 20MHz 16-QAM - Full RB)



Plot 7-36. Occupied Bandwidth Plot (NR Band n41(PC3) - 15MHz  $\pi/2$  BPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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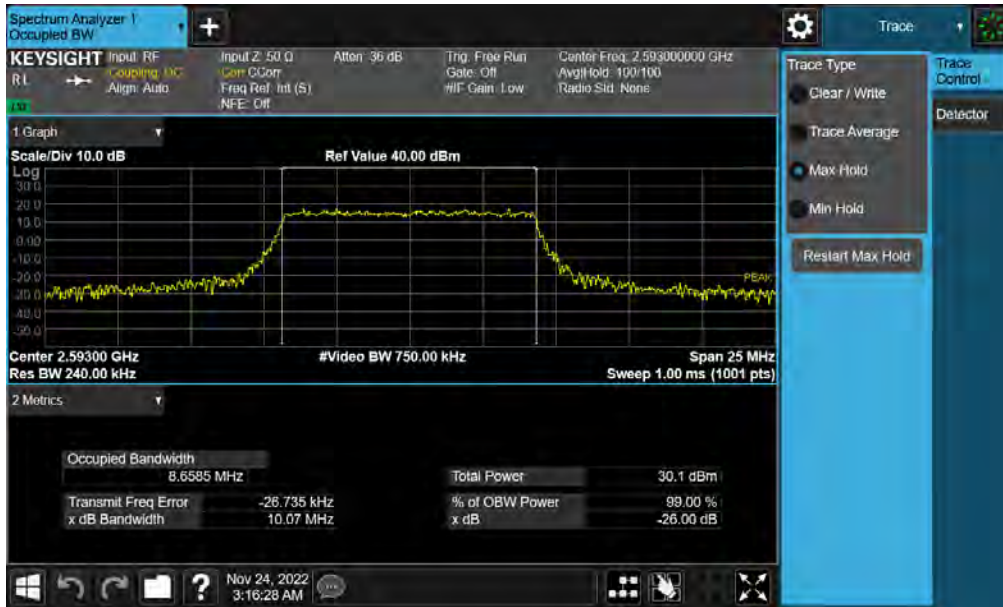


Plot 7-37. Occupied Bandwidth Plot (NR Band n41(PC3) - 15MHz QPSK - Full RB)

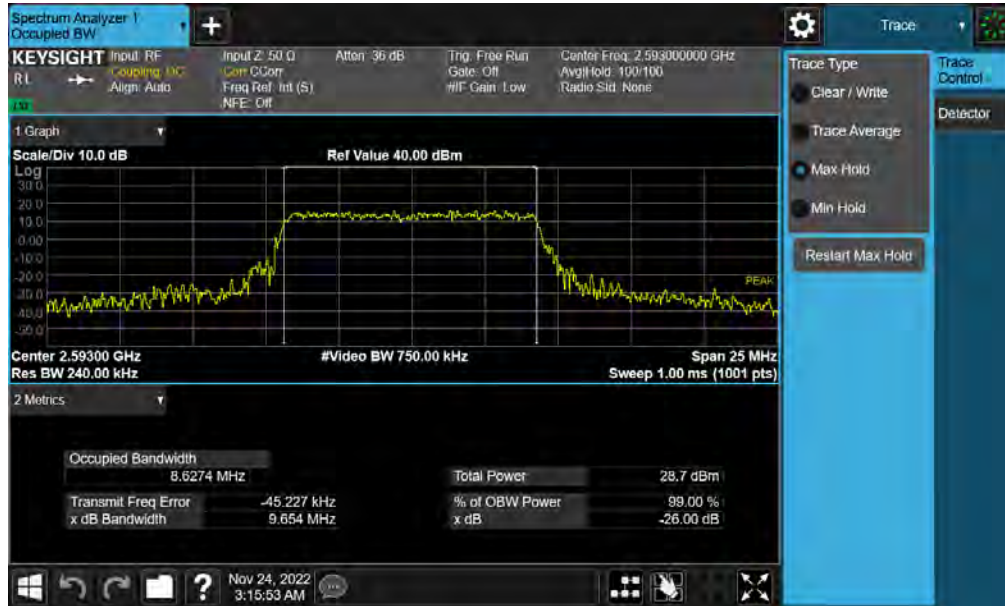


Plot 7-38. Occupied Bandwidth Plot (NR Band n41(PC3) - 15MHz 16-QAM - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 34 of 92



FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 35 of 92



<b>FCC ID:</b> A3LSMS918JPN	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2212080137-04-R1.A3L	<b>Test Dates:</b> 11/23/2022 - 2/10/2023	<b>EUT Type:</b> Portable Handset	Page 36 of 92

## 7.4 Spurious and Harmonic Emissions at Antenna Terminal

### Test Overview

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

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

***For Band 41, the minimum permissible attenuation level of any spurious emission is  $55 + 10 \log_{10}(P_{[Watts]})$ .***

### Test Procedure Used

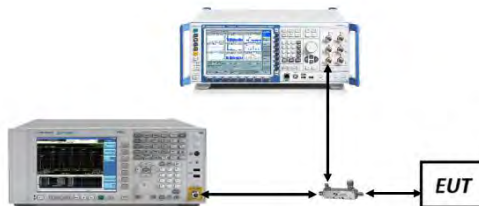
ANSI C63.26-2015 – Section 5.7.4

### Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 10GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

### Test Setup

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



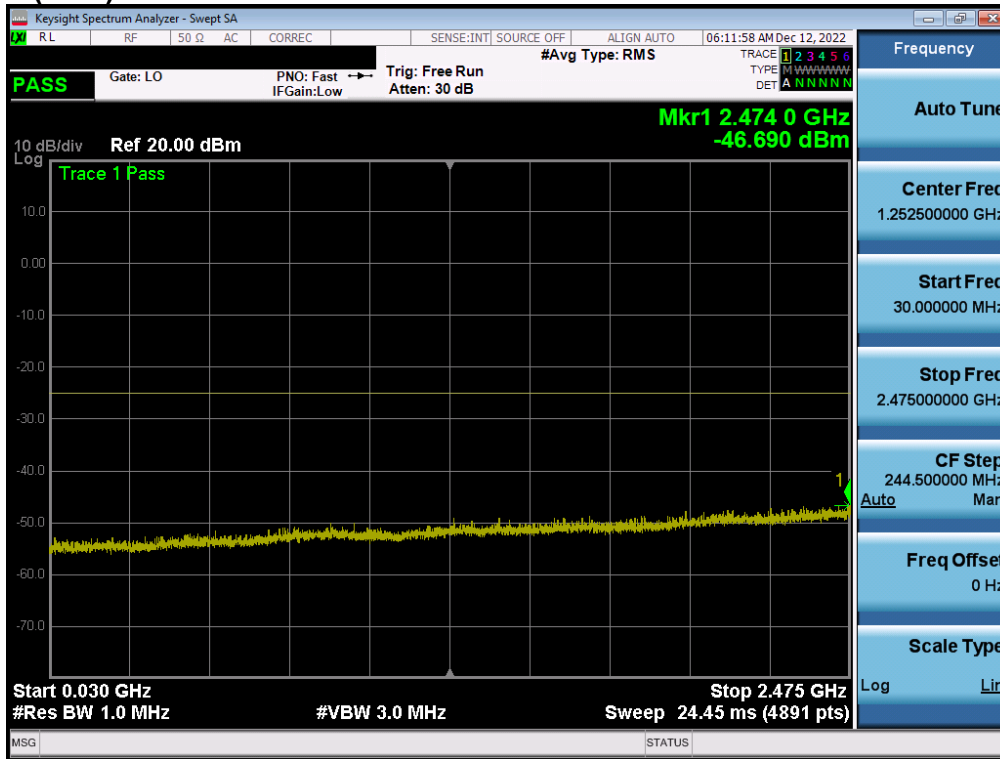
**Figure 7-3. Test Instrument & Measurement Setup**

### Test Notes

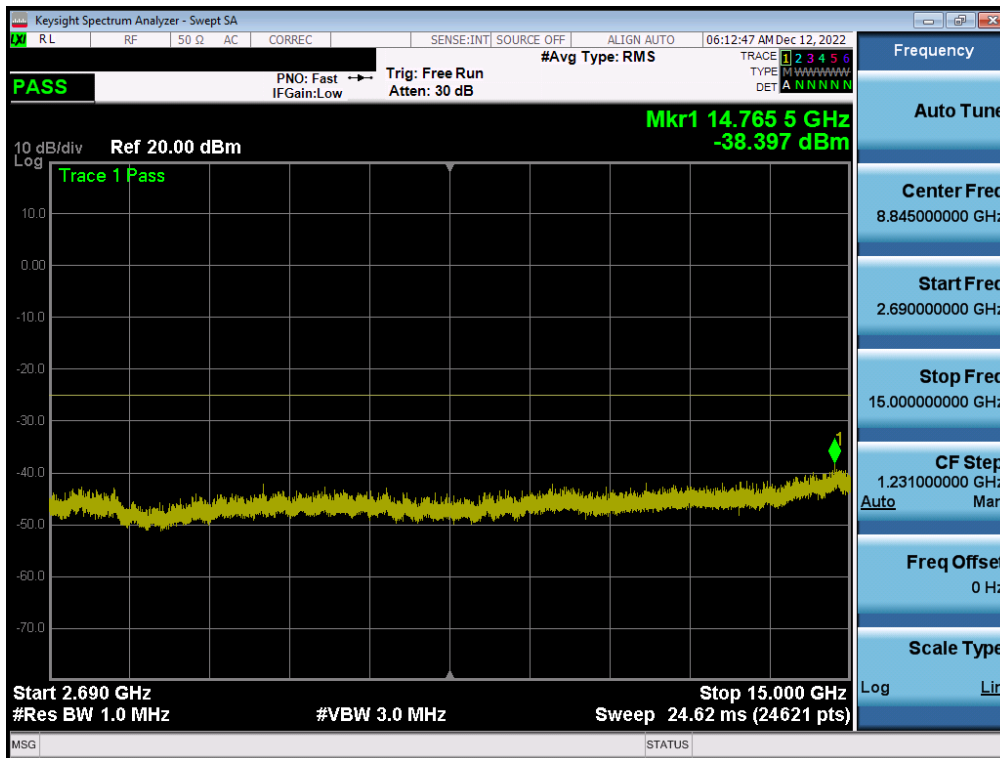
1. Per Part 27 compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 37 of 92

### LTE Band 41(PC3)

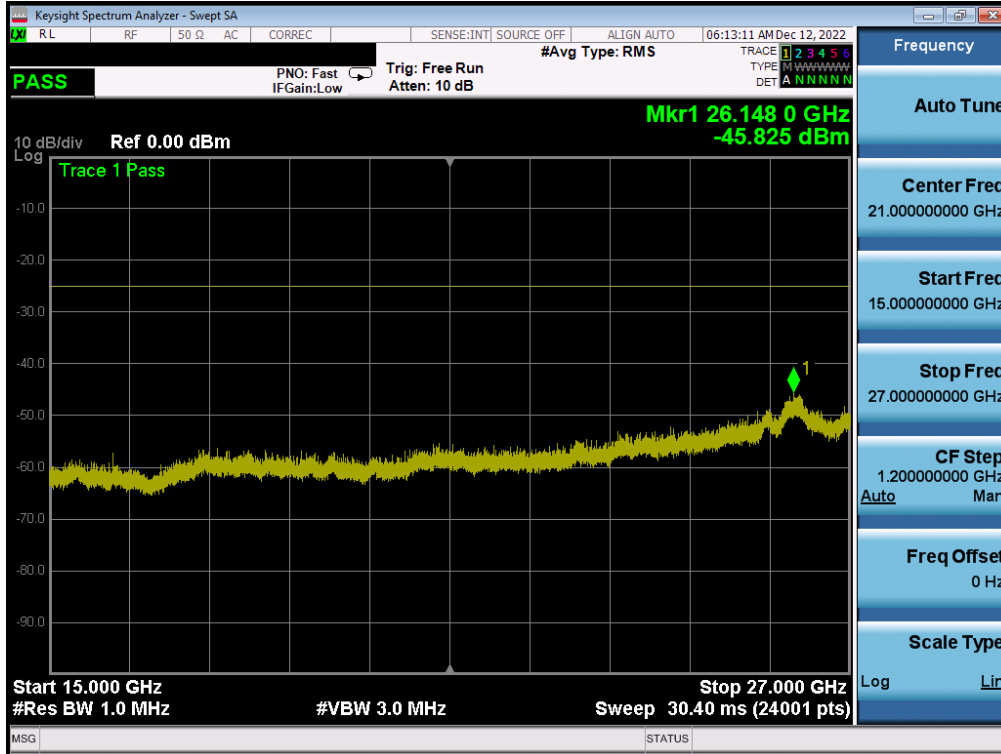


Plot 7-42. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel - Ant1)

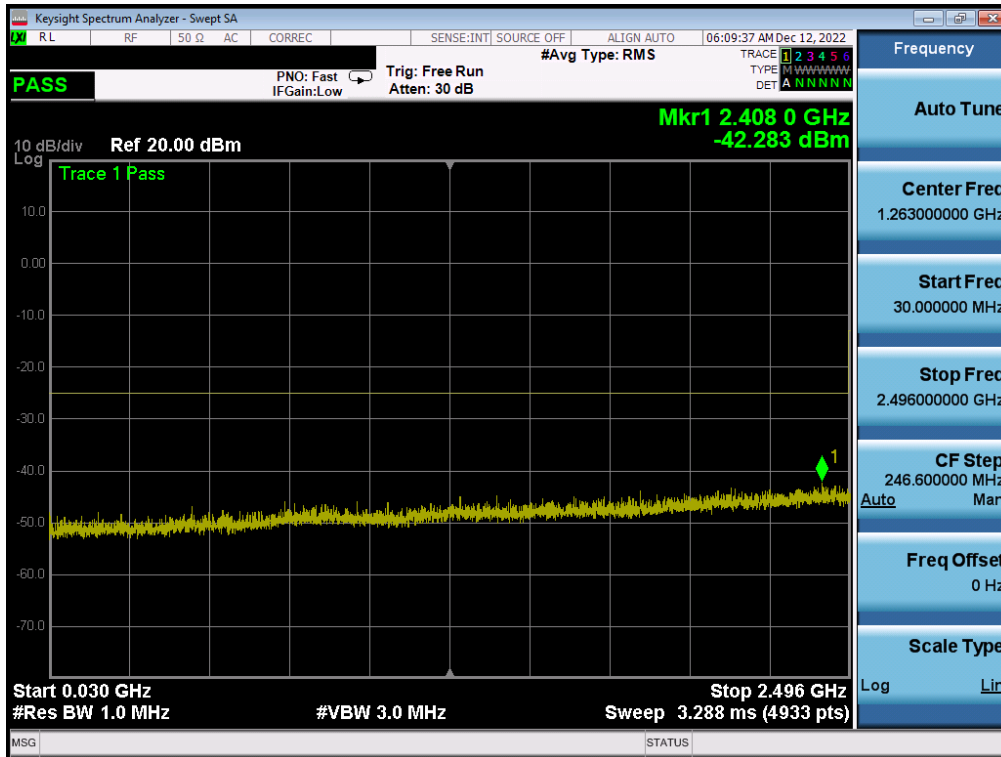


Plot 7-43. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel - Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 38 of 92

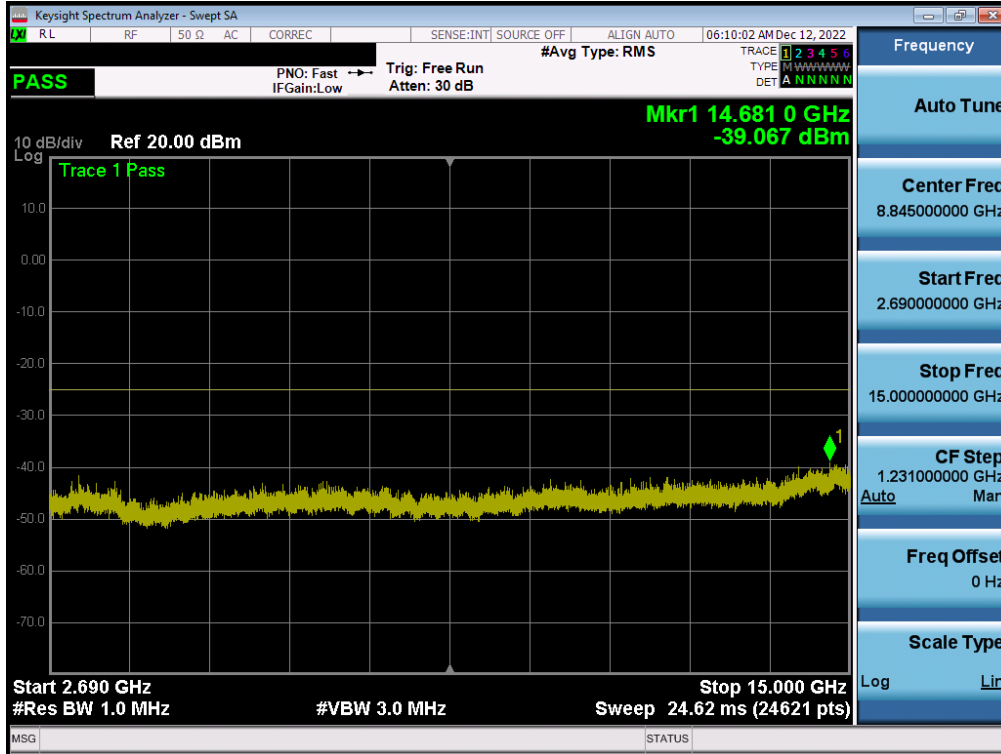


Plot 7-44. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel - Ant1)

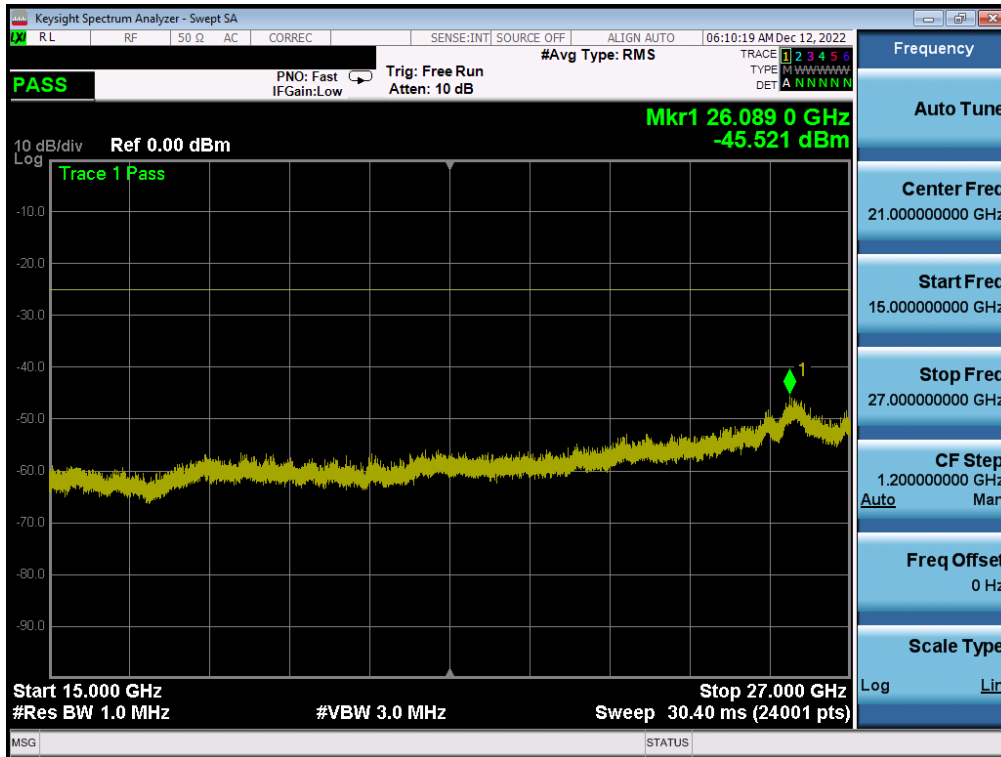


Plot 7-45. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel - Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 39 of 92



Plot 7-46. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel - Ant1)



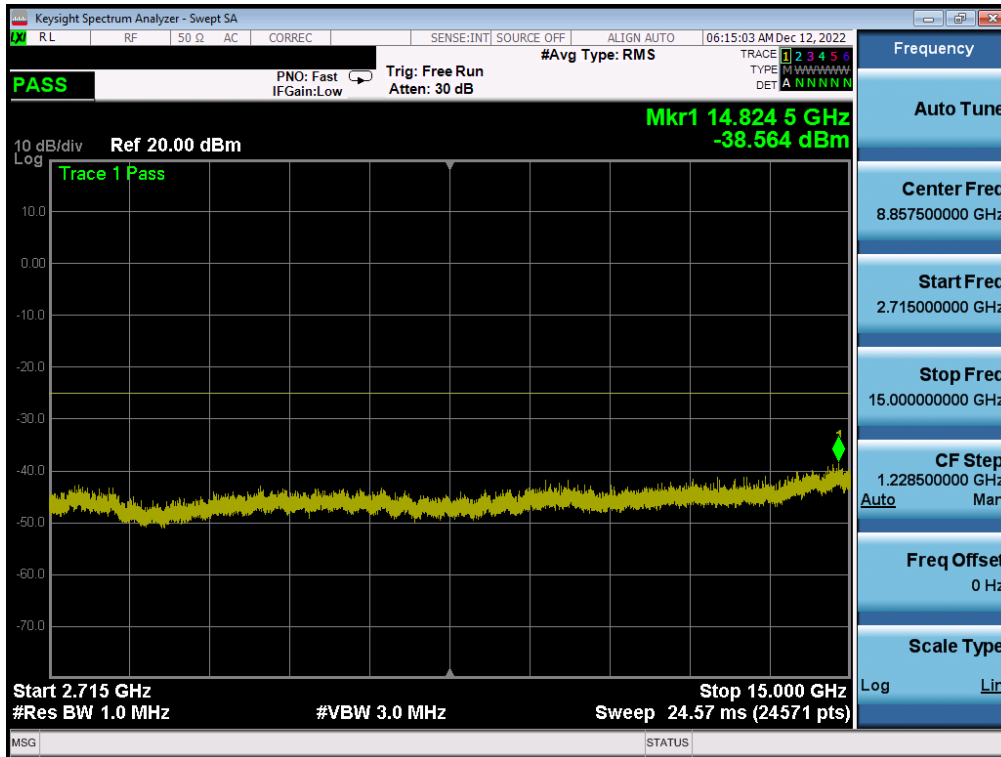
Plot 7-47. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel - Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 40 of 92





Plot 7-48. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel - Ant1)



Plot 7-49. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel - Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 41 of 92



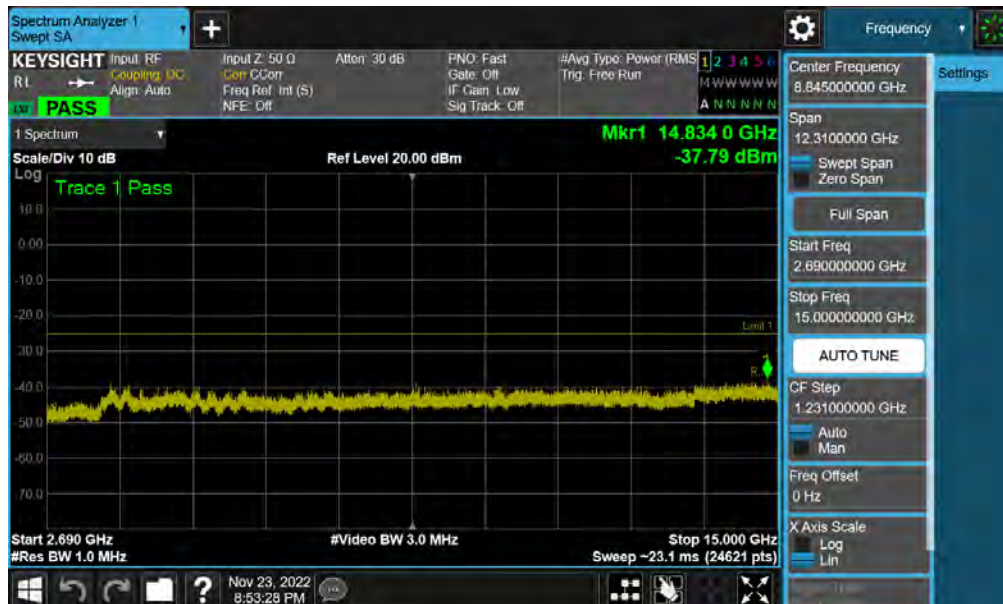
Plot 7-50. Conducted Spurious Plot (LTE Band 41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel - Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 42 of 92

# NR Band n41(PC3)



Plot 7-51. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel Ant1)

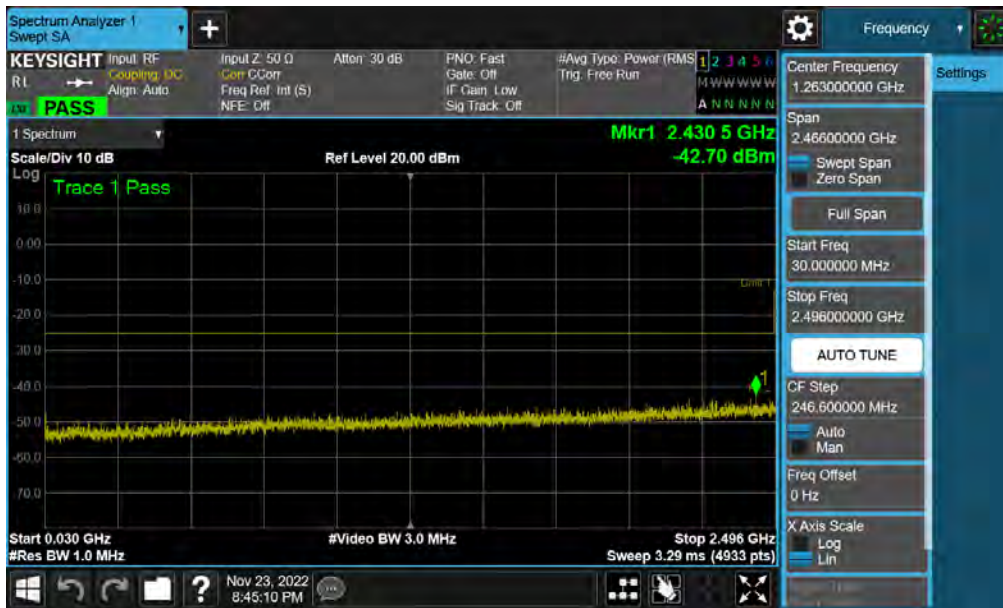


Plot 7-52. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 43 of 92

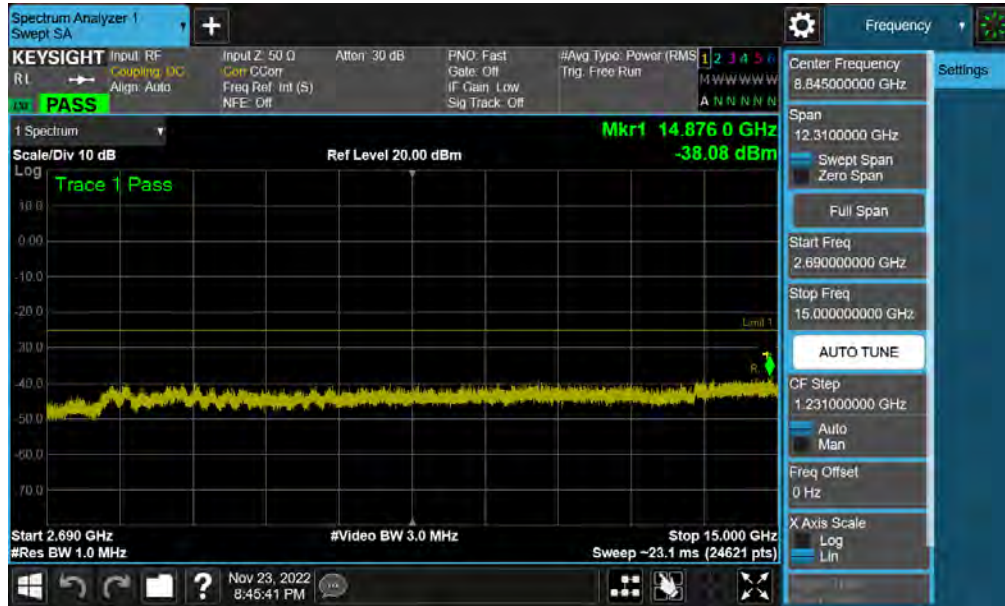


Plot 7-53. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Low Channel Ant1)

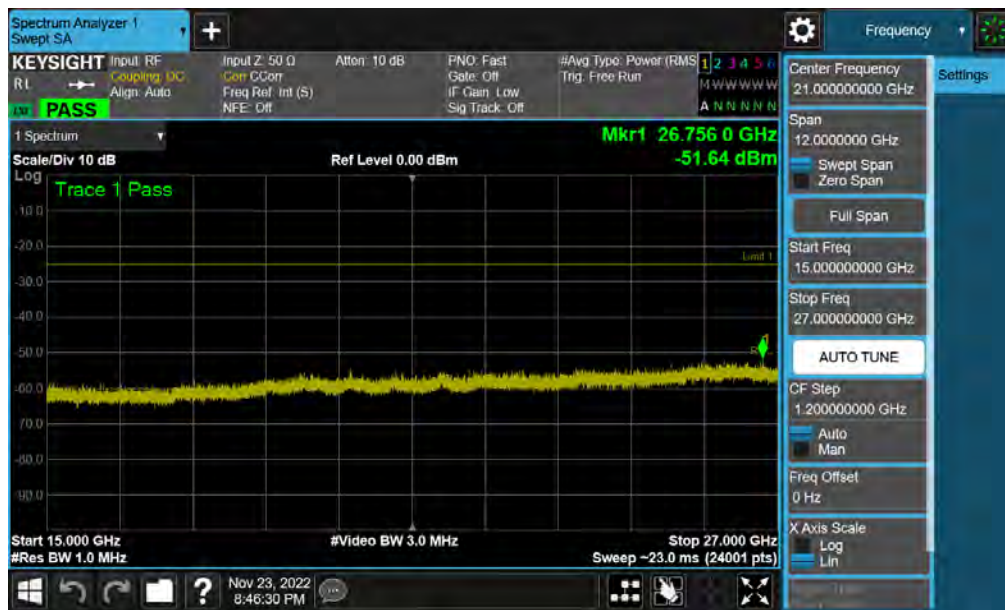


Plot 7-54. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 44 of 92



Plot 7-55. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel Ant1)

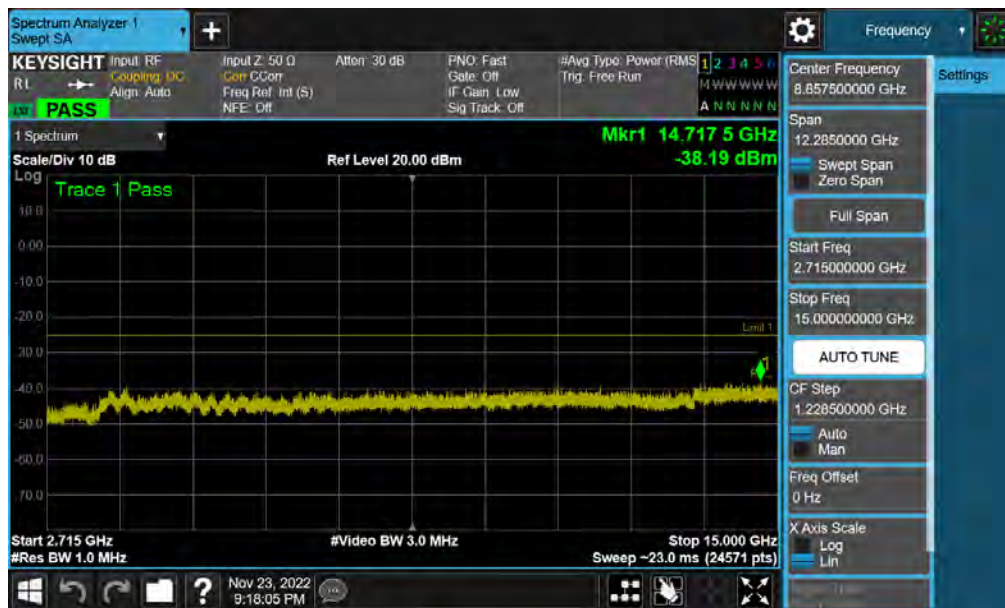


Plot 7-56. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 45 of 92

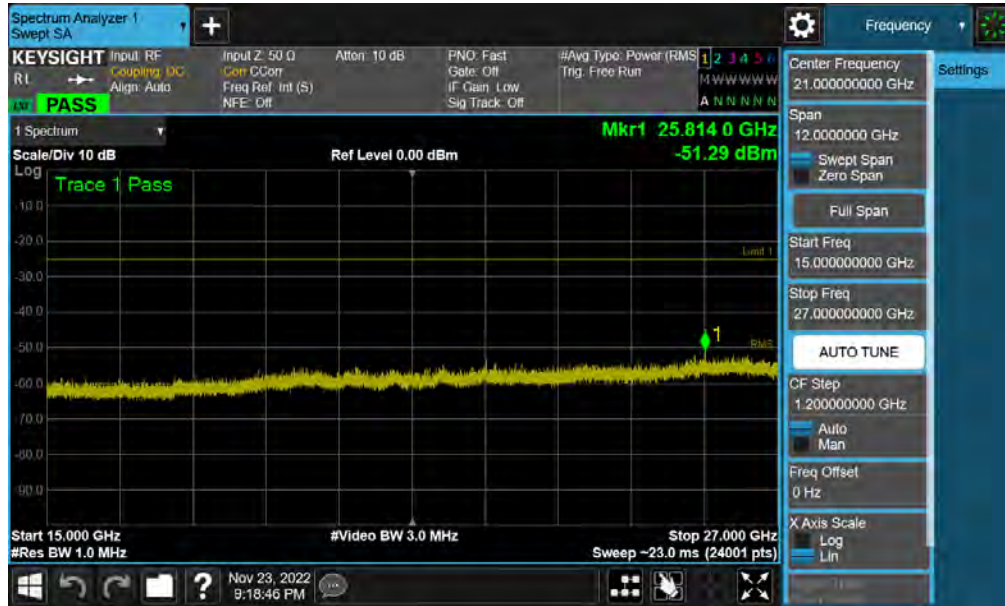


Plot 7-57. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel Ant1)



Plot 7-58. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel Ant1)

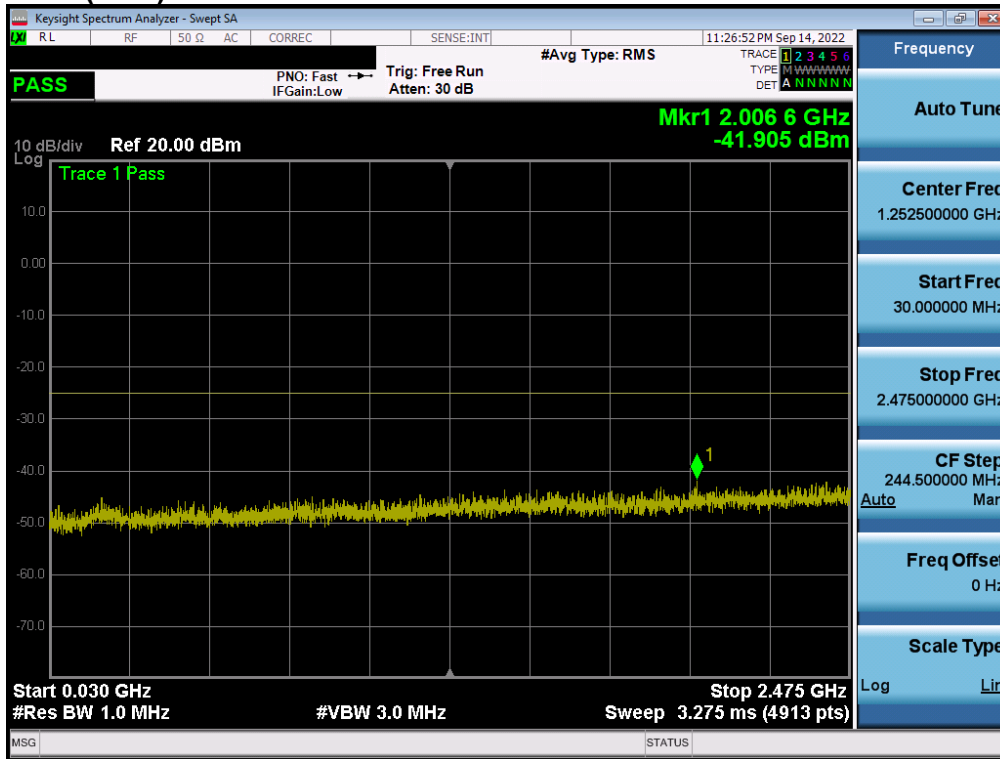
FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 46 of 92



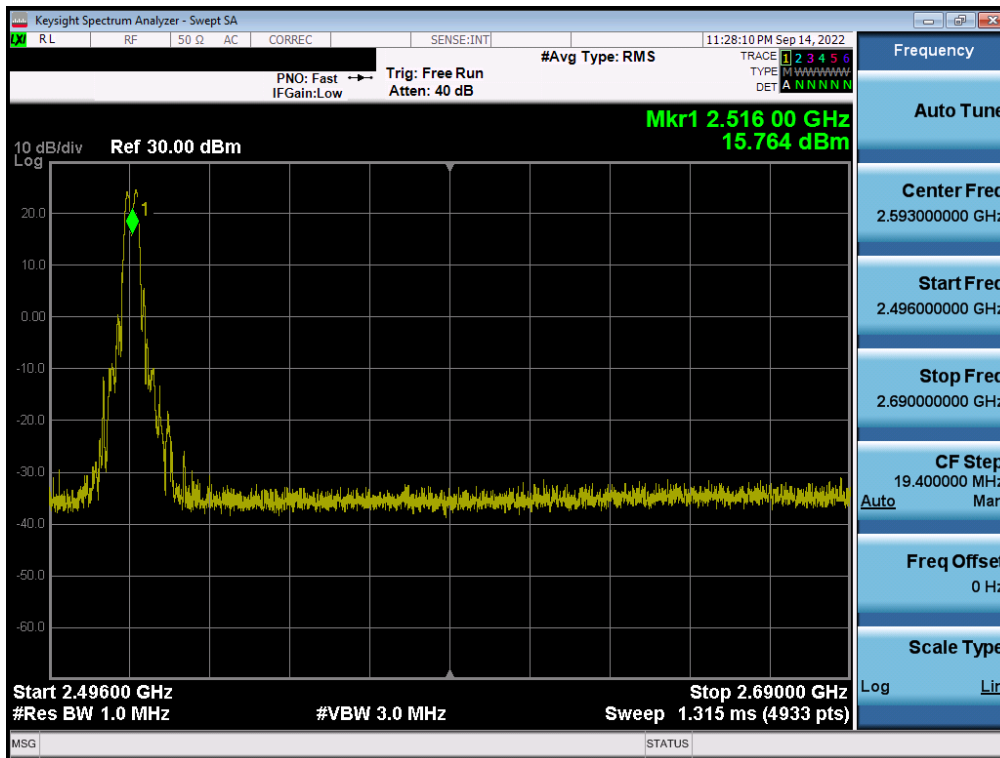
Plot 7-59. Conducted Spurious Plot (NR Band n41(PC3) - 100MHz QPSK - RB Size 1, RB Offset 0 - High Channel Ant1)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 47 of 92

# ULCA - LTE B41(PC3)



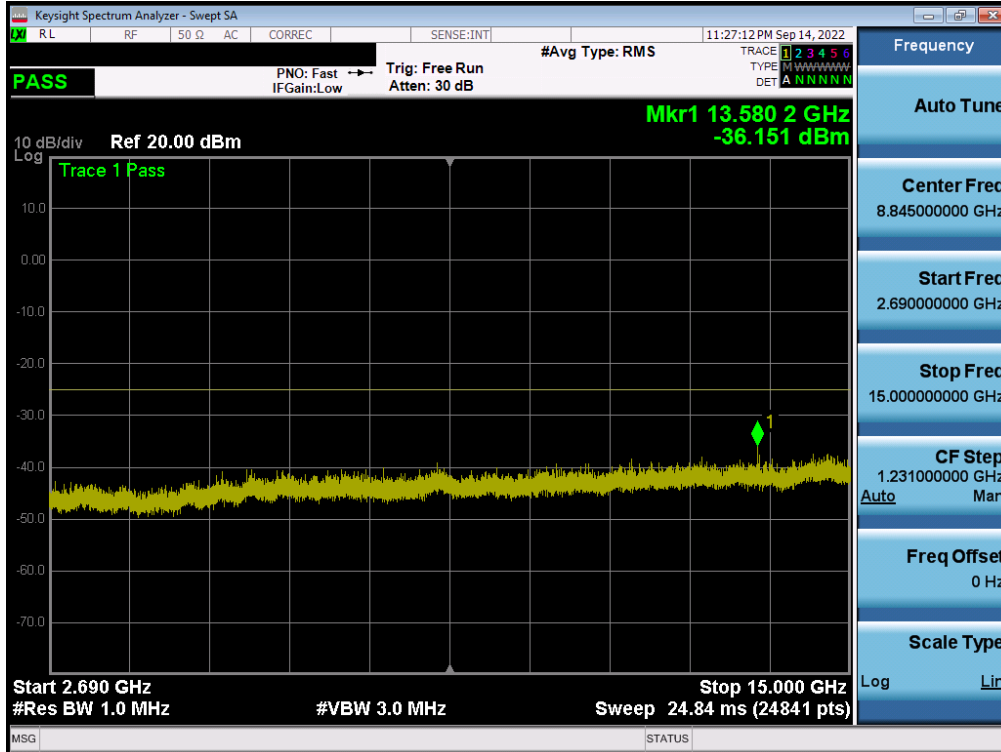
Plot 7-60. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



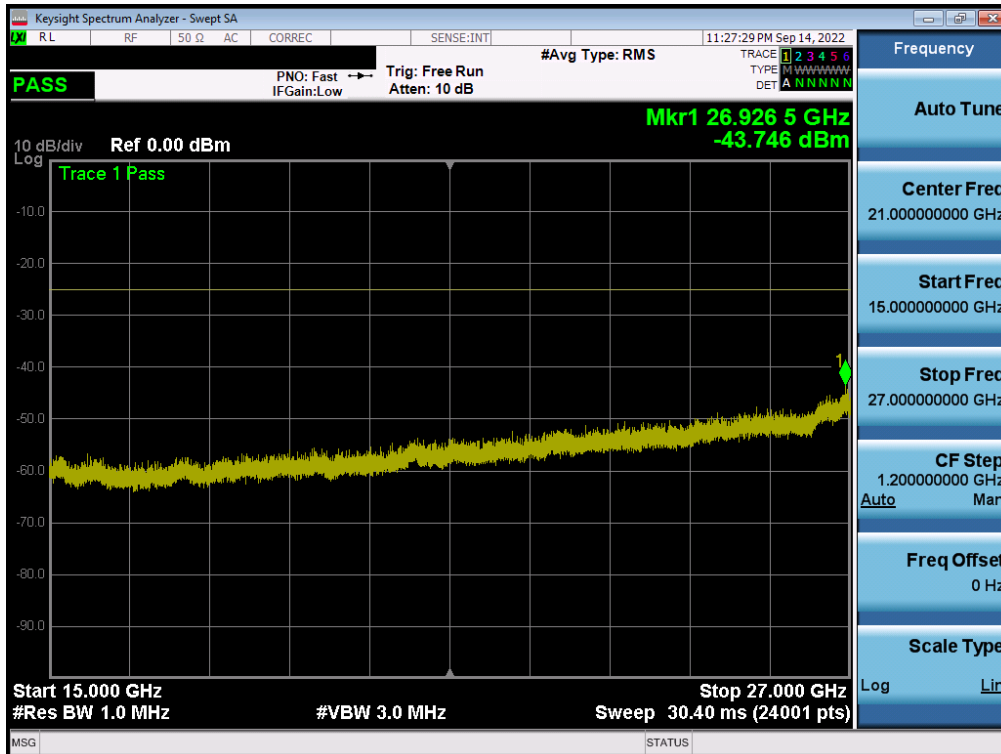
Plot 7-61. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 48 of 92



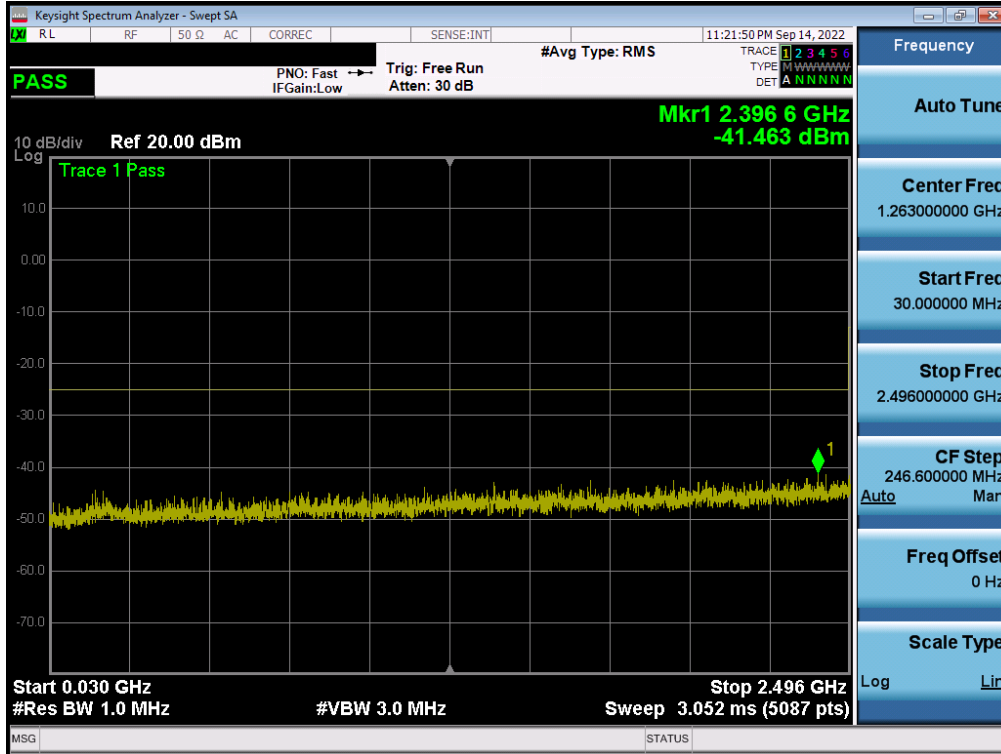


Plot 7-62. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

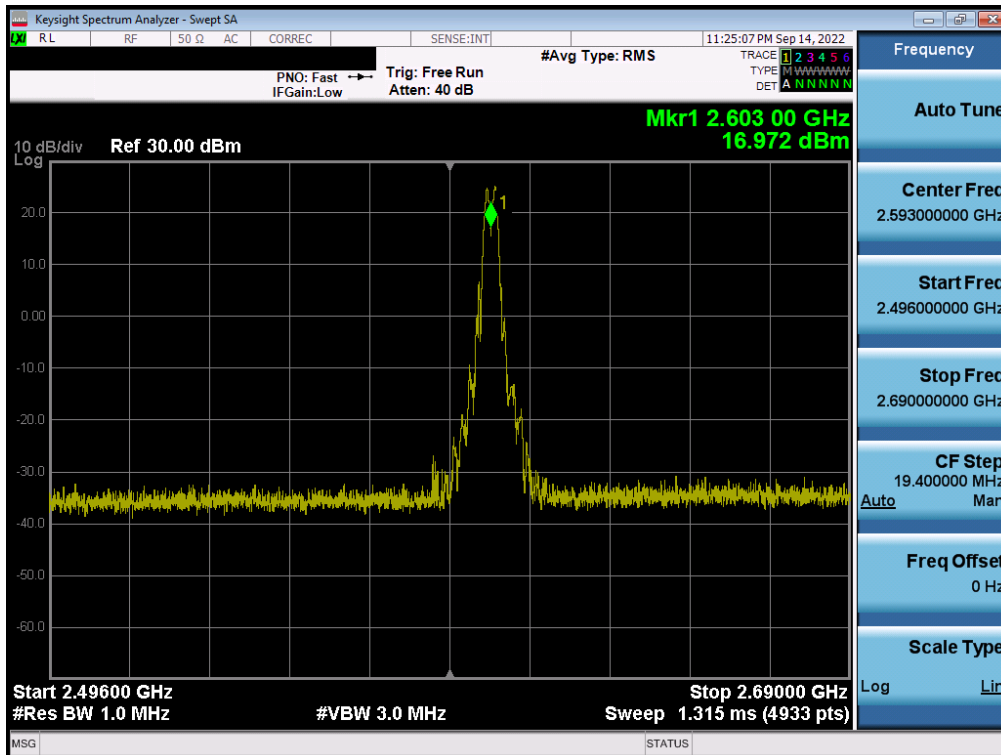


Plot 7-63. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 49 of 92

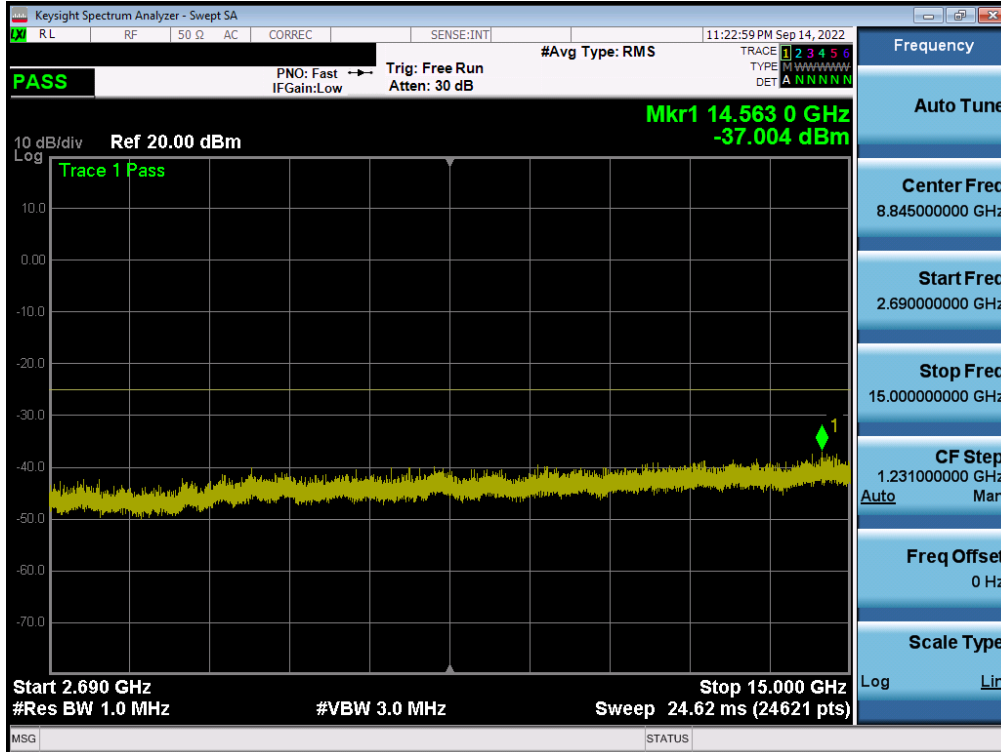


Plot 7-64. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

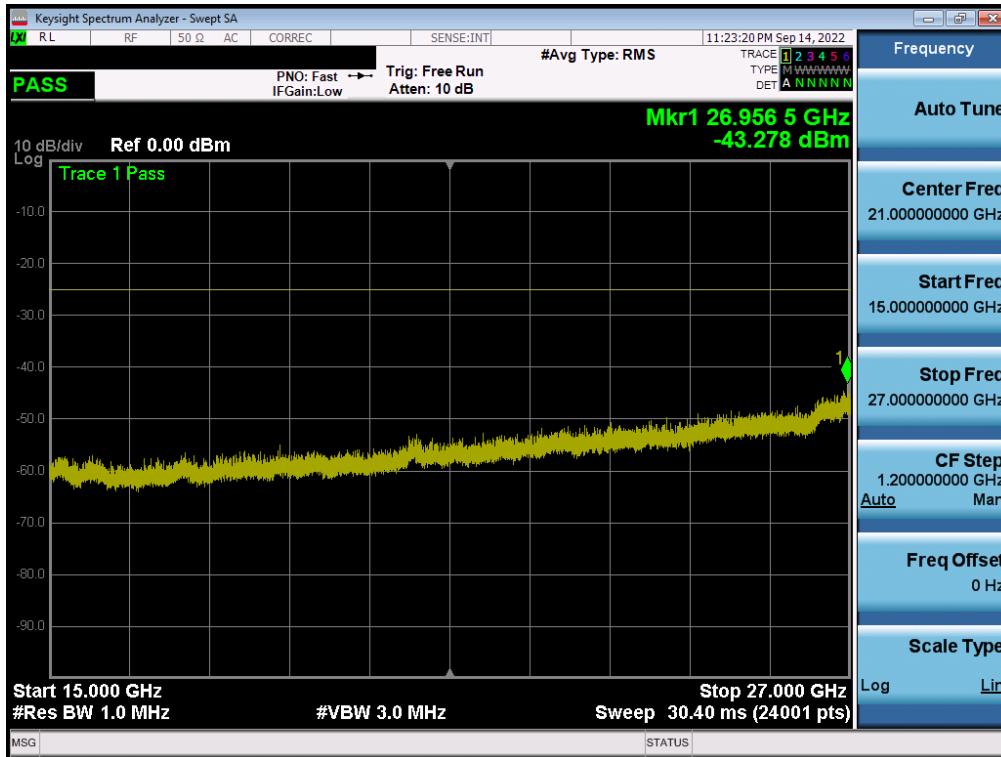


Plot 7-65. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 50 of 92

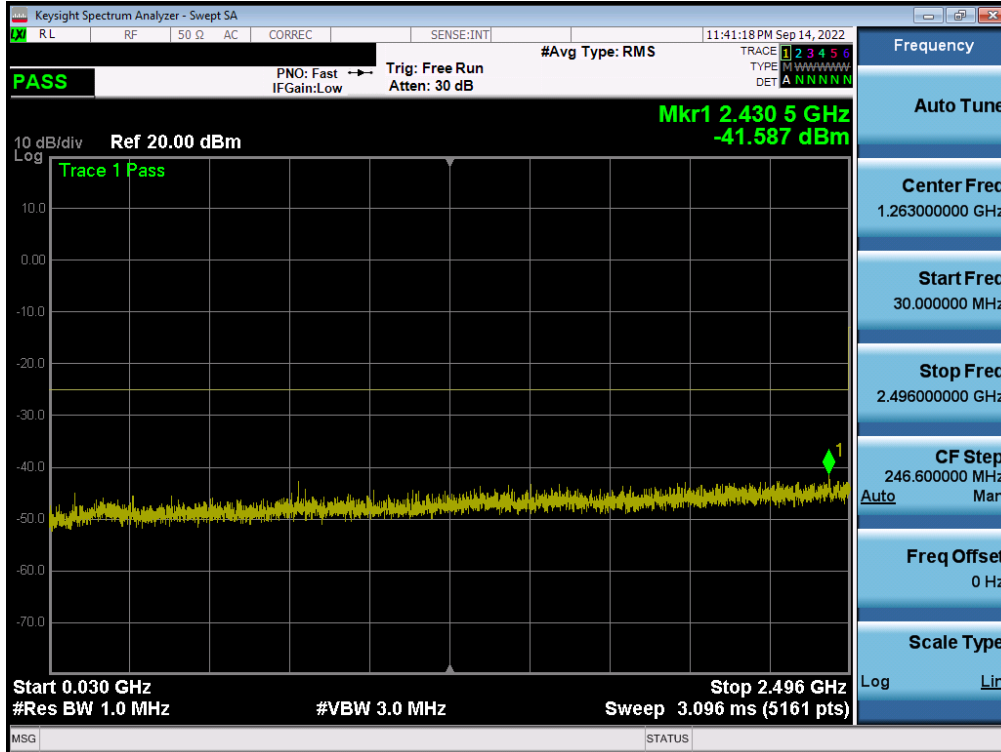


Plot 7-66. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

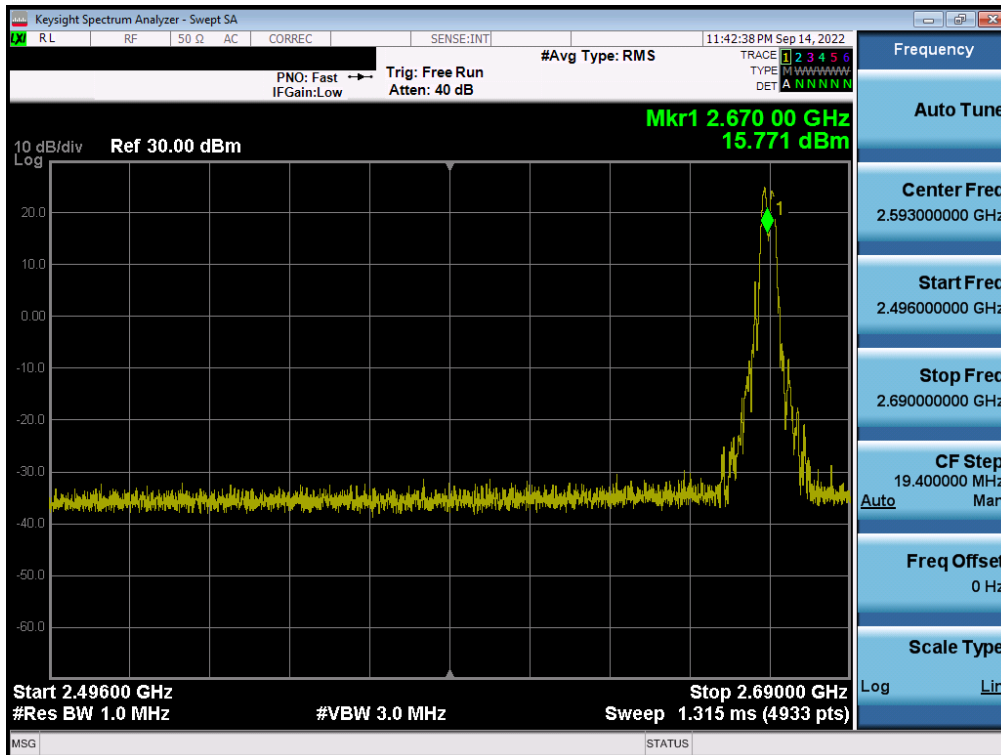


Plot 7-67. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 51 of 92

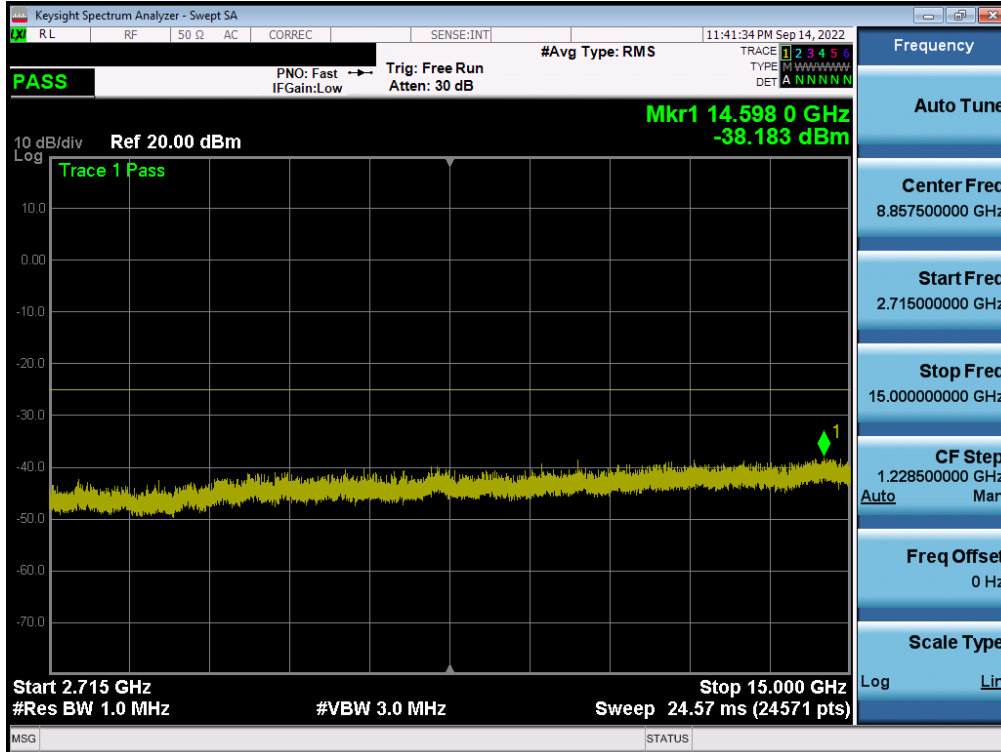


Plot 7-68. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

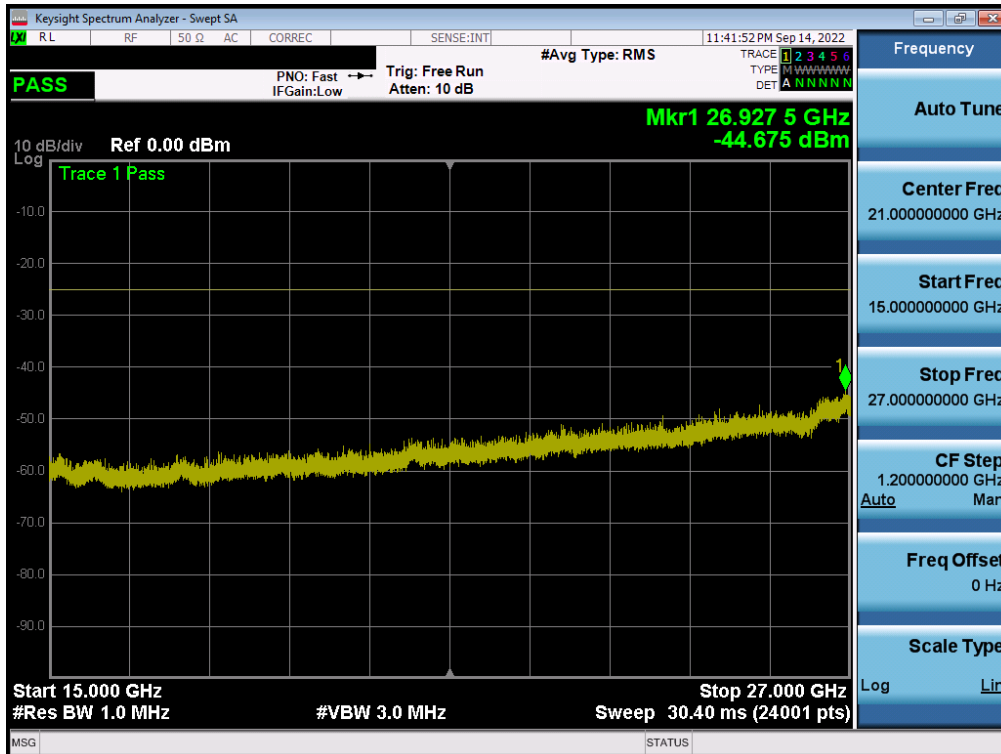


Plot 7-69. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 52 of 92



Plot 7-70. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



Plot 7-71. Conducted Spurious Plot (ULCA LTE B41(PC3) - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 53 of 92

## 7.5 Band Edge Emissions at Antenna Terminal

### Test Overview

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

***The minimum permissible attenuation level for Band 41 is as noted in the Test Notes on the following page.***

### Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

### Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW  $\geq$  1% of the emission bandwidth
4. VBW  $\geq$  3 x RBW
5. Detector = RMS
6. Number of sweep points  $\geq$  2 x Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Setup

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



**Figure 7-4. Test Instrument & Measurement Setup**

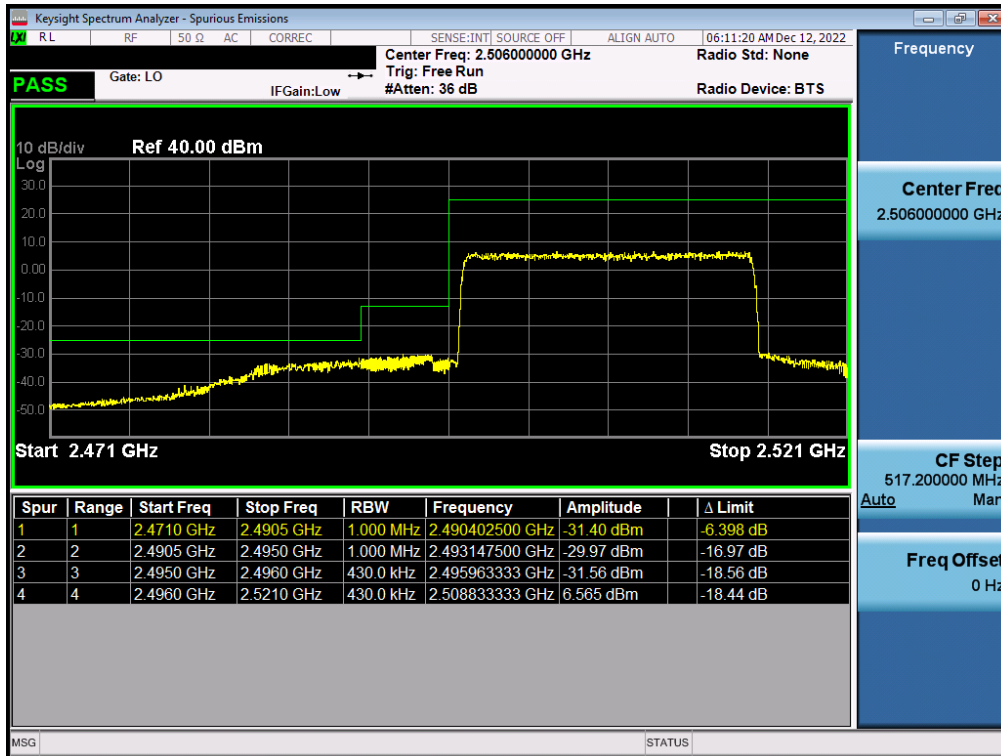
FCC ID: A3LSMS918JPN	<b>PART 27 MEASUREMENT REPORT</b>		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 54 of 92

**Test Notes**

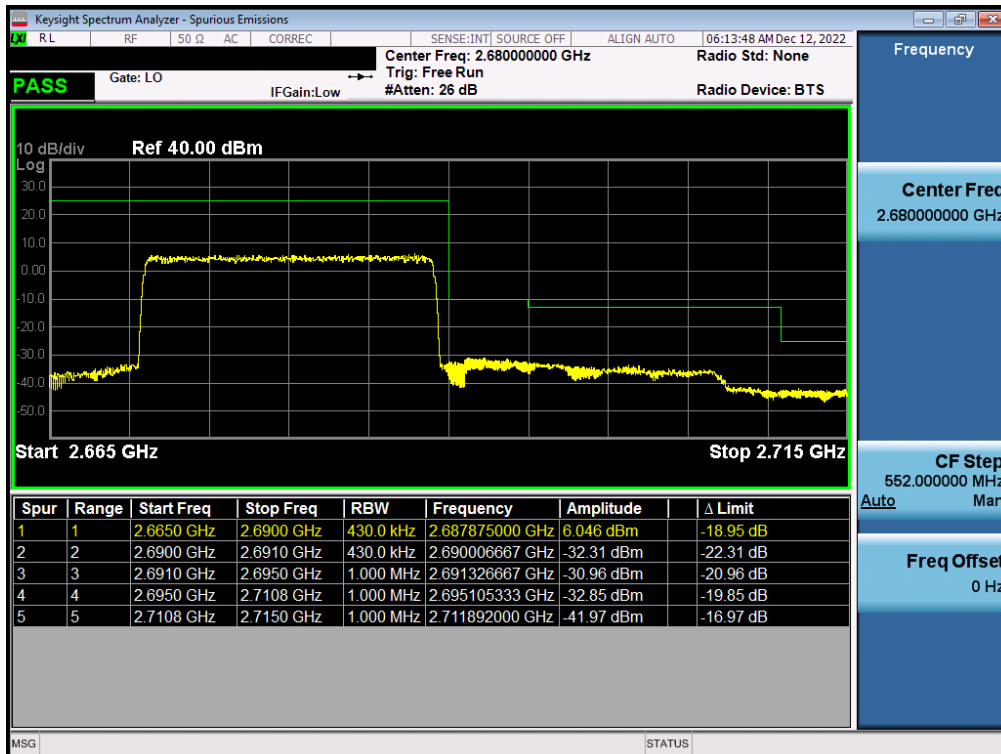
1. Per 27.53(a)(5) in the 1 MHz bands immediately outside and adjacent to the channel blocks at 2305, 2310, 2315, 2320, 2345, 2350, 2355, and 2360 MHz, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e., 1 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
  
2. Per 27.53(m) for operations in the BRS/EBS bands, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz.
  
3. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

FCC ID: A3LSMS918JPN	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 55 of 92

# LTE Band 41(PC3)



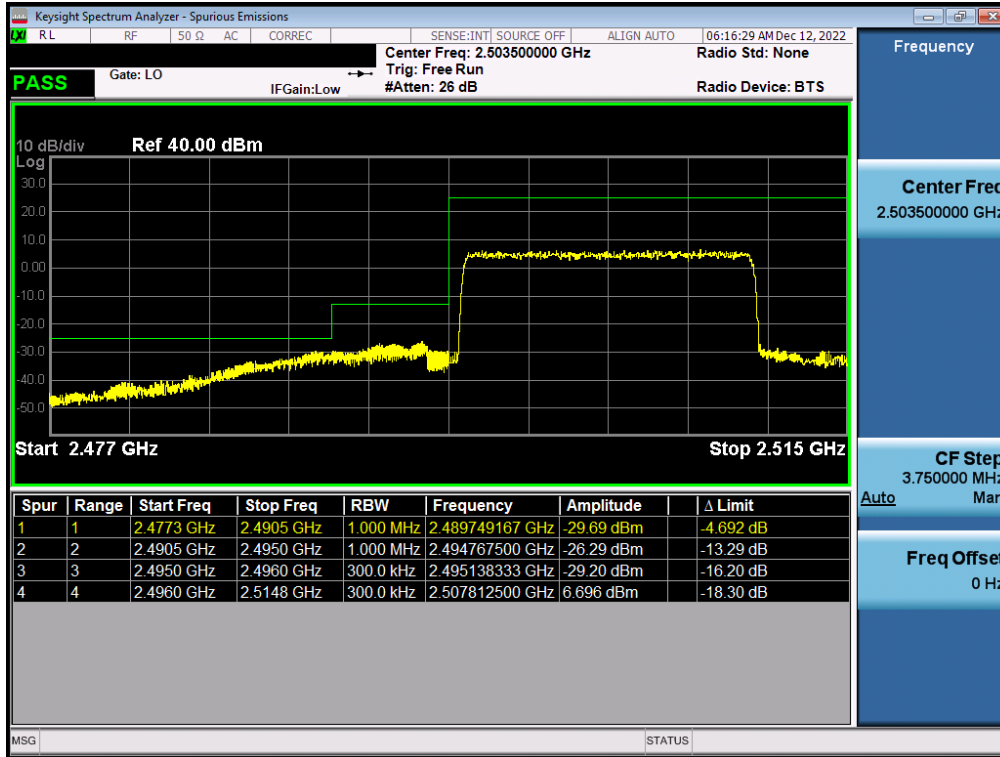
Plot 7-72. Lower ACP Plot (LTE Band 41(PC3) - 20MHz QPSK - Full RB)



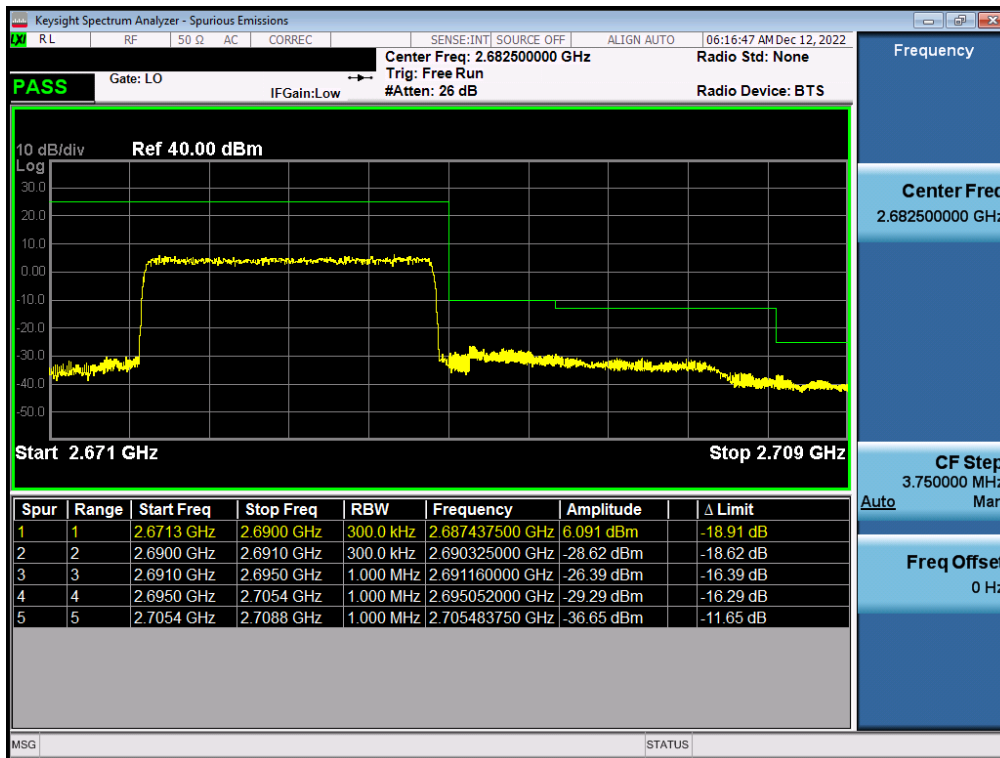
Plot 7-73. Upper ACP Plot (LTE Band 41(PC3) - 20MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 56 of 92



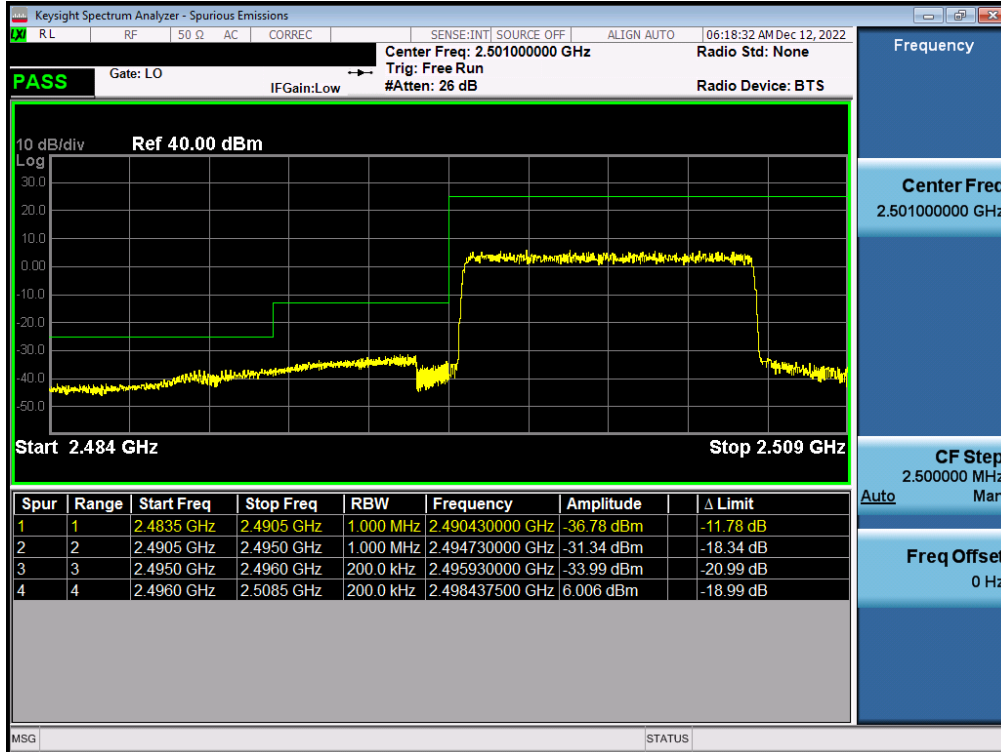


Plot 7-74. Lower ACP Plot (LTE Band 41(PC3) - 15MHz QPSK - Full RB)

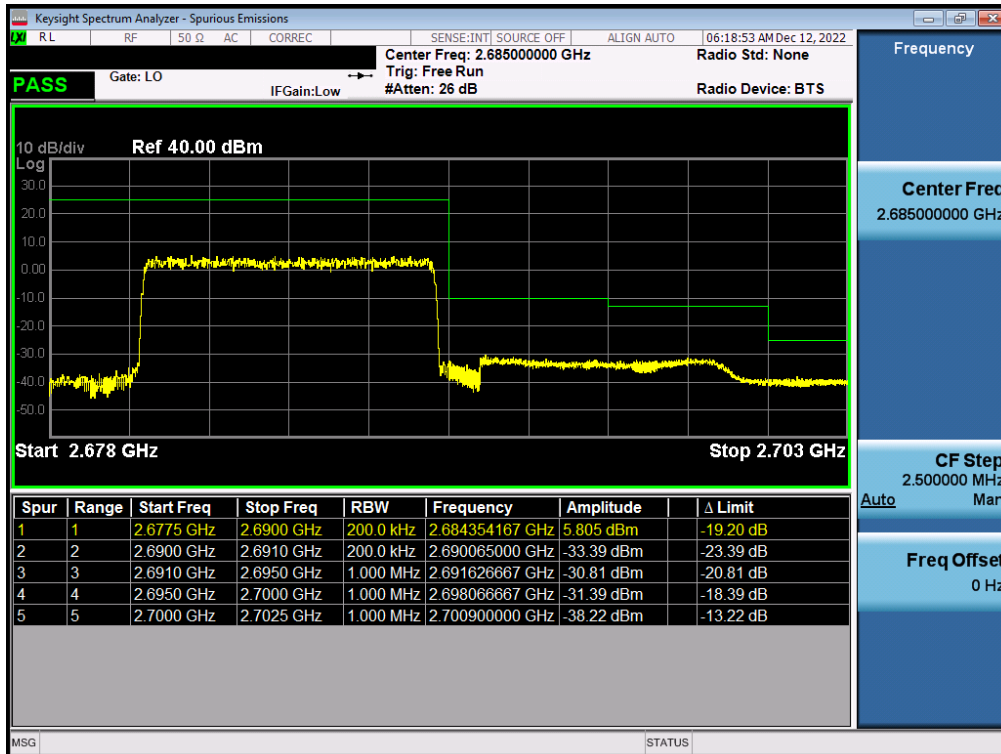


Plot 7-75. Upper ACP Plot (LTE Band 41(PC3) - 15MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 57 of 92

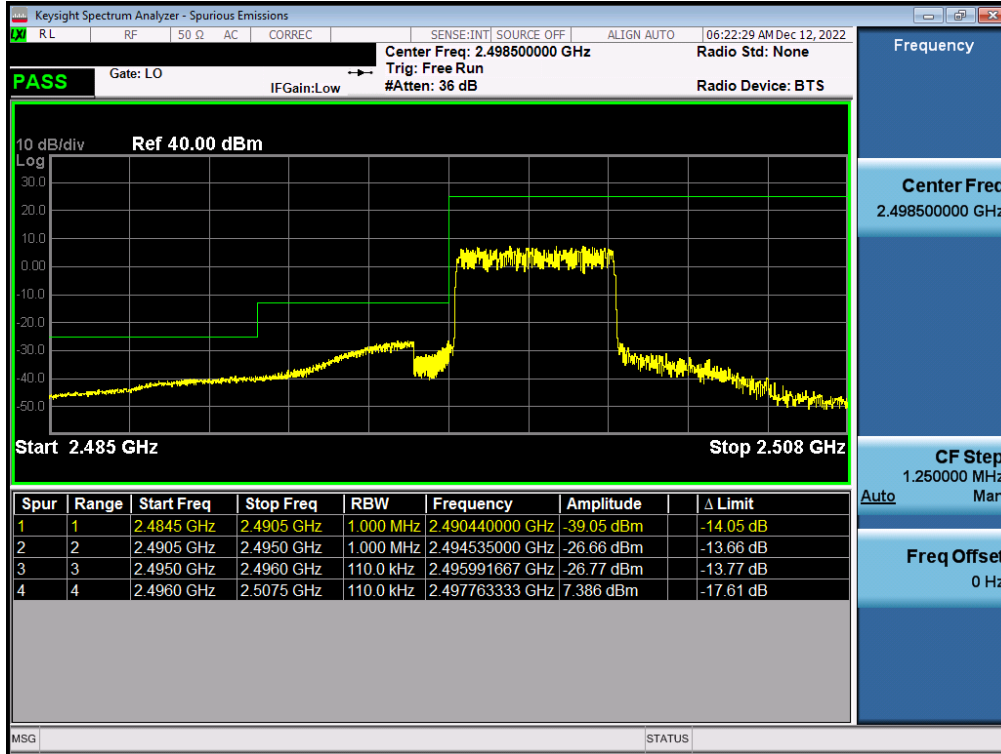


Plot 7-76. Lower ACP Plot (LTE Band 41(PC3) - 10MHz QPSK – Full RB)

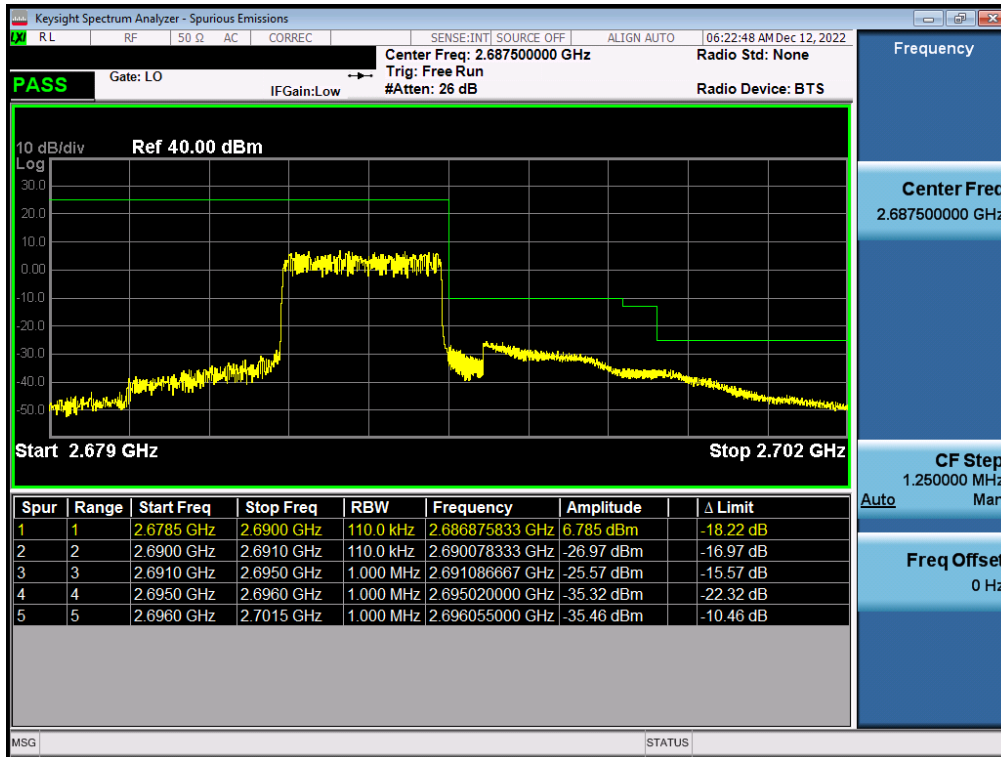


Plot 7-77. Upper ACP Plot (LTE Band 41(PC3) - 10MHz QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 58 of 92



Plot 7-78. Lower ACP Plot (LTE Band 41(PC3) - 5MHz QPSK – Full RB)



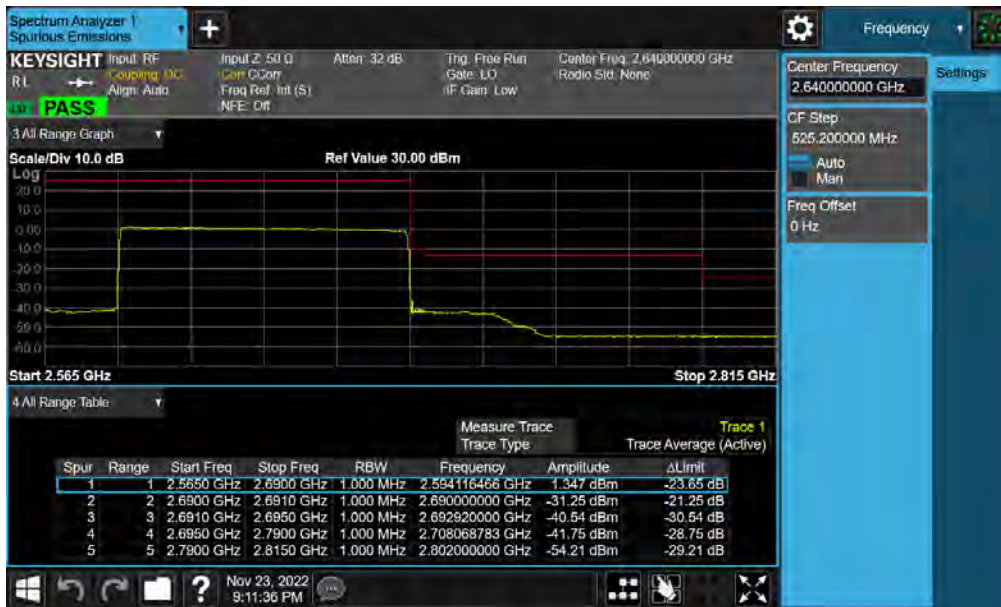
Plot 7-79. Upper ACP Plot (LTE Band 41(PC3) - 5MHz QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 59 of 92

# NR Band n41(PC3)



Plot 7-80. Lower ACP Plot (NR Band n41(PC3) - 100MHz CP-OFDM-QPSK – Full RB)

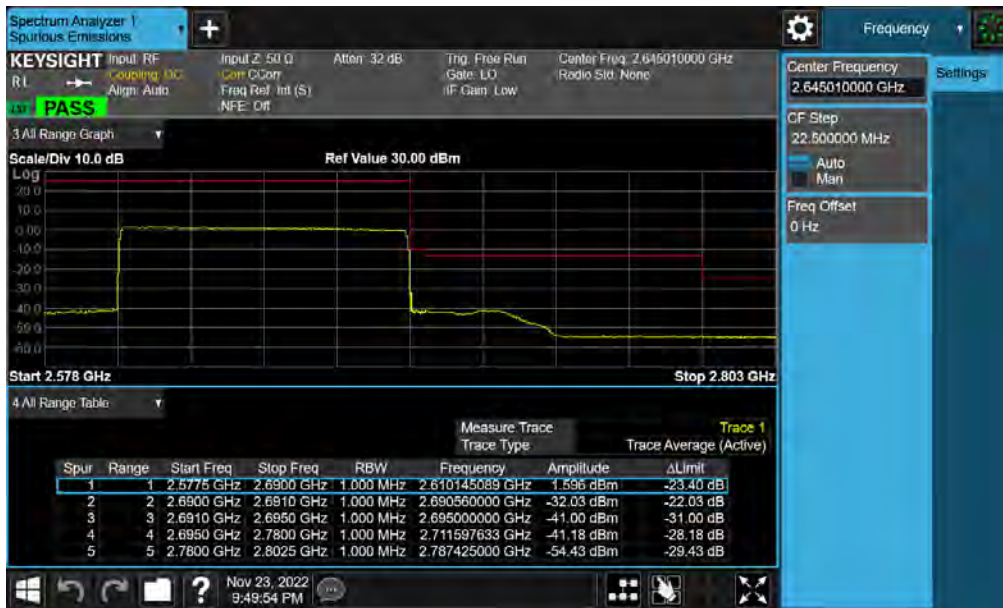


Plot 7-81. Upper ACP Plot (NR Band n41(PC3) - 100MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-82. Lower ACP Plot (NR Band n41(PC3) - 90MHz CP-OFDM-QPSK – Full RB)

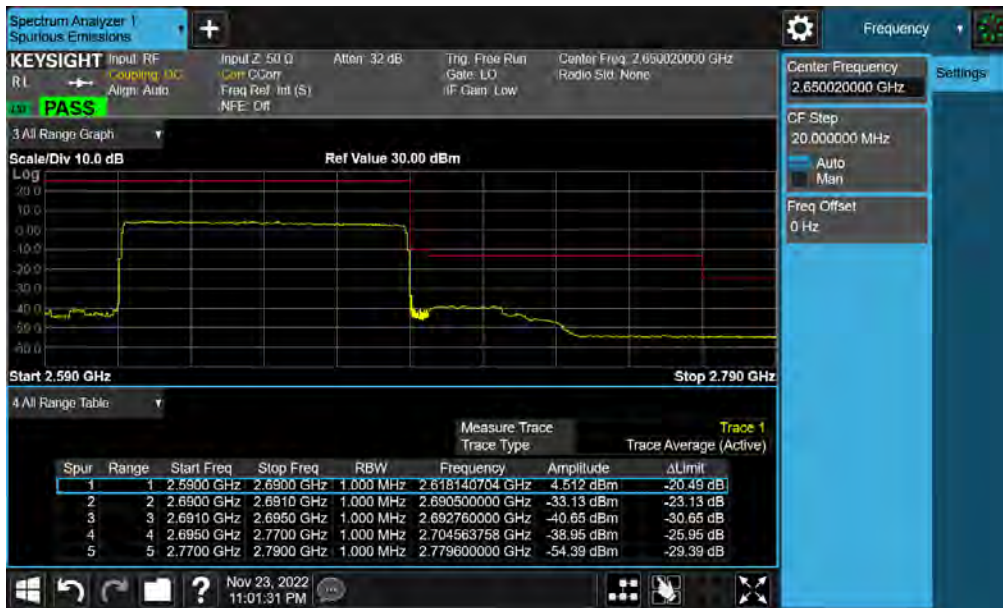


Plot 7-83. Upper ACP Plot (NR Band n41(PC3) - 90MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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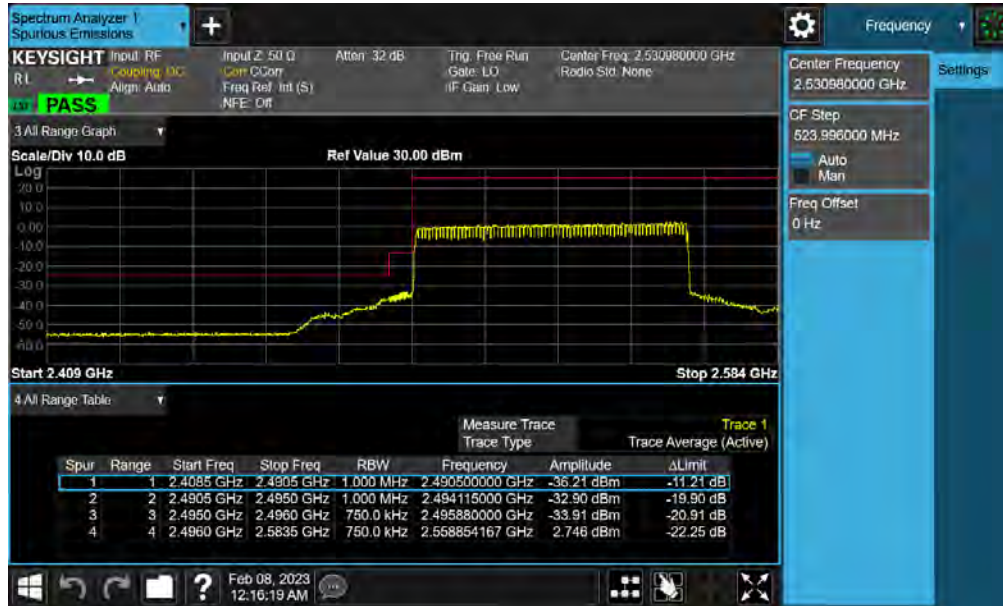


Plot 7-84. Lower ACP Plot (NR Band n41(PC3) - 80MHz CP-OFDM-QPSK – Full RB)

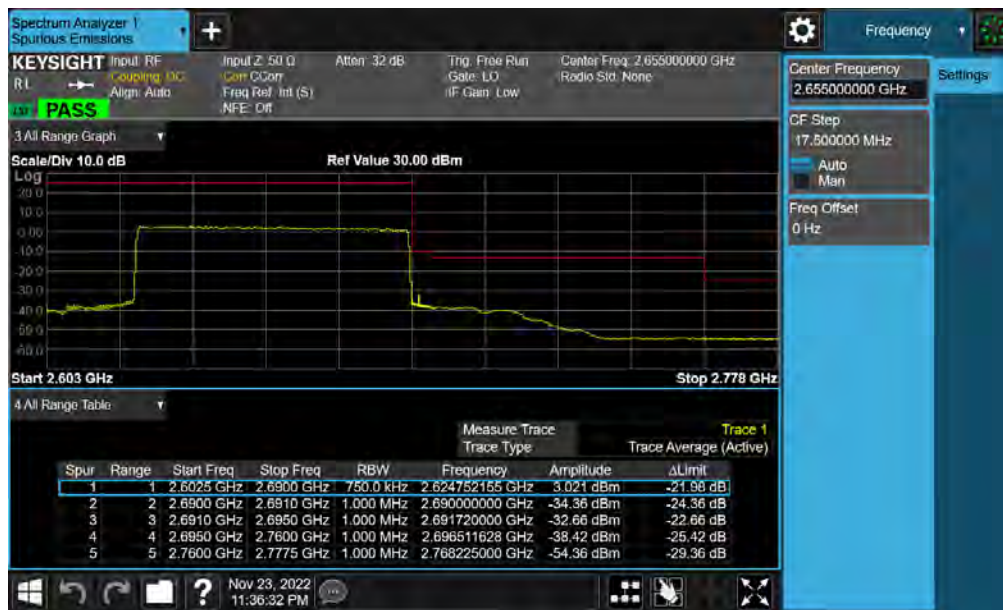


Plot 7-85. Upper ACP Plot (NR Band n41(PC3) - 80MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-86. Lower ACP Plot (NR Band n41(PC3) - 70MHz CP-OFDM-QPSK – Full RB)

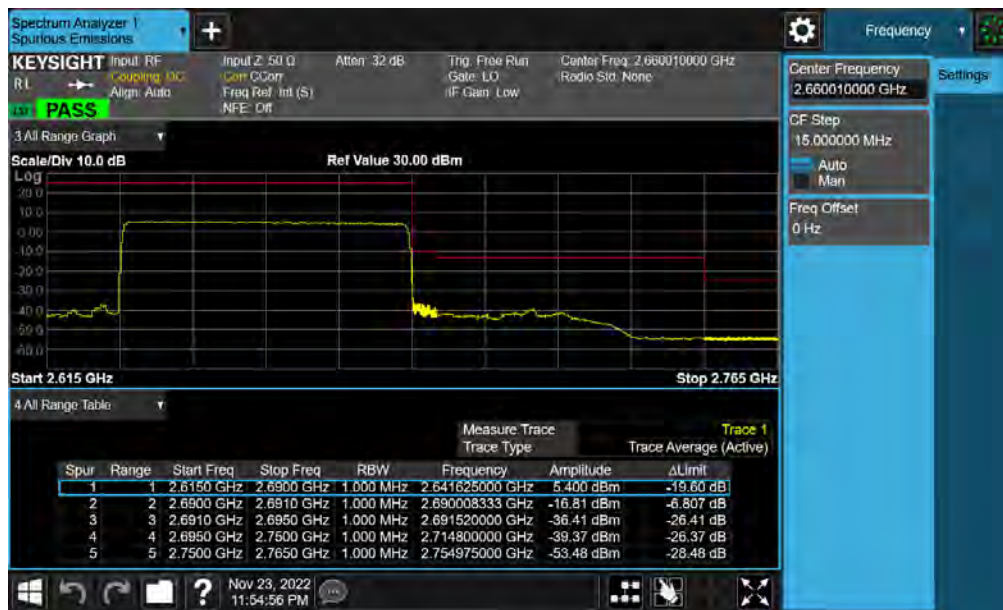


Plot 7-87. Upper ACP Plot (NR Band n41(PC3) - 70MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 63 of 92



Plot 7-88. Lower ACP Plot (NR Band n41(PC3) - 60MHz CP-OFDM-QPSK – Full RB)



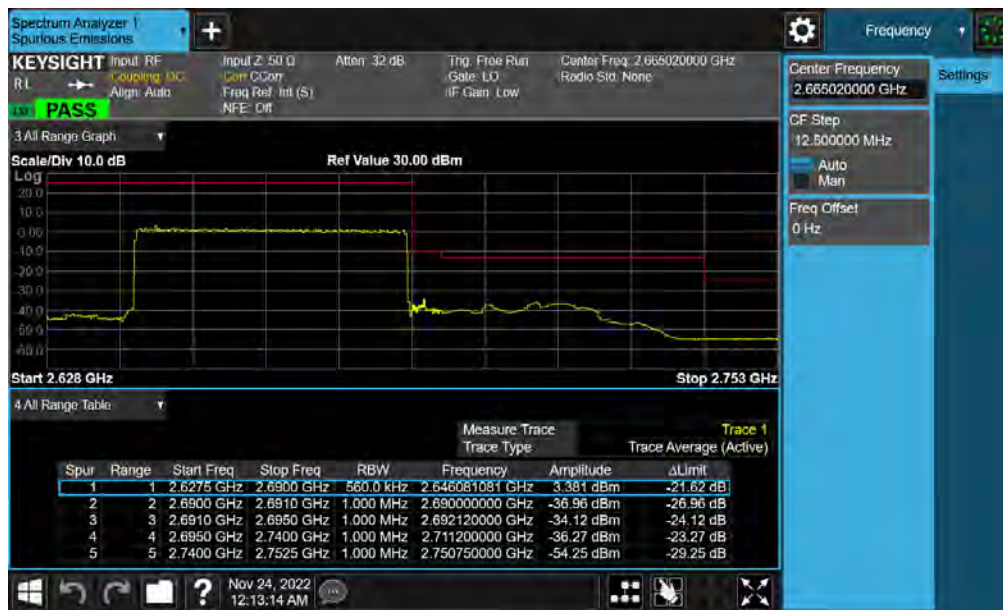
Plot 7-89. Upper ACP Plot (NR Band n41(PC3) - 60MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 64 of 92



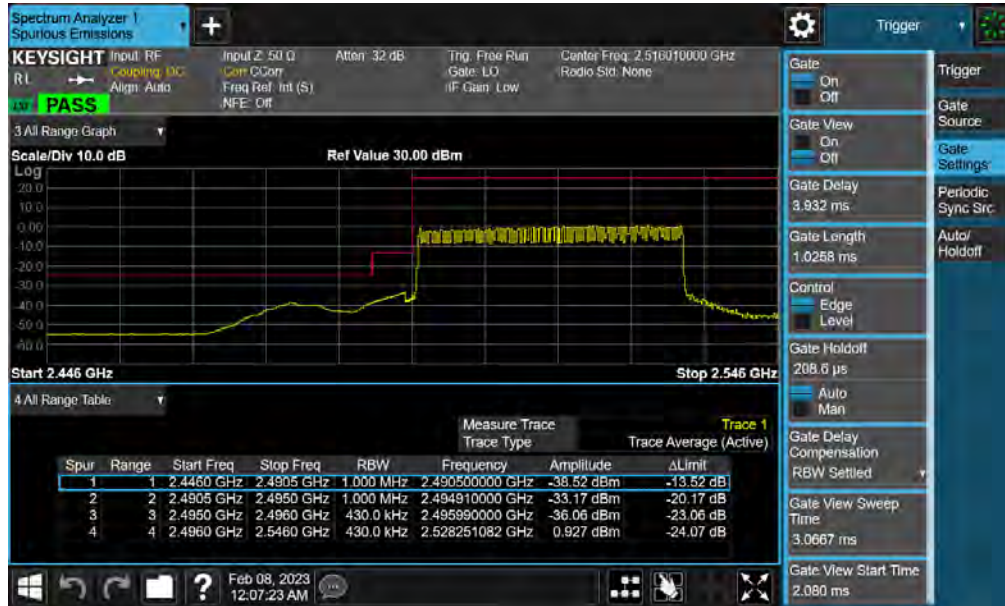


Plot 7-90. Lower ACP Plot (NR Band n41(PC3) - 50MHz CP-OFDM-QPSK – Full RB)



Plot 7-91. Upper ACP Plot (NR Band n41(PC3) - 50MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-92. Lower ACP Plot (NR Band n41(PC3) - 40MHz CP-OFDM-QPSK – Full RB)



Plot 7-93. Upper ACP Plot (NR Band n41(PC3) - 40MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 66 of 92

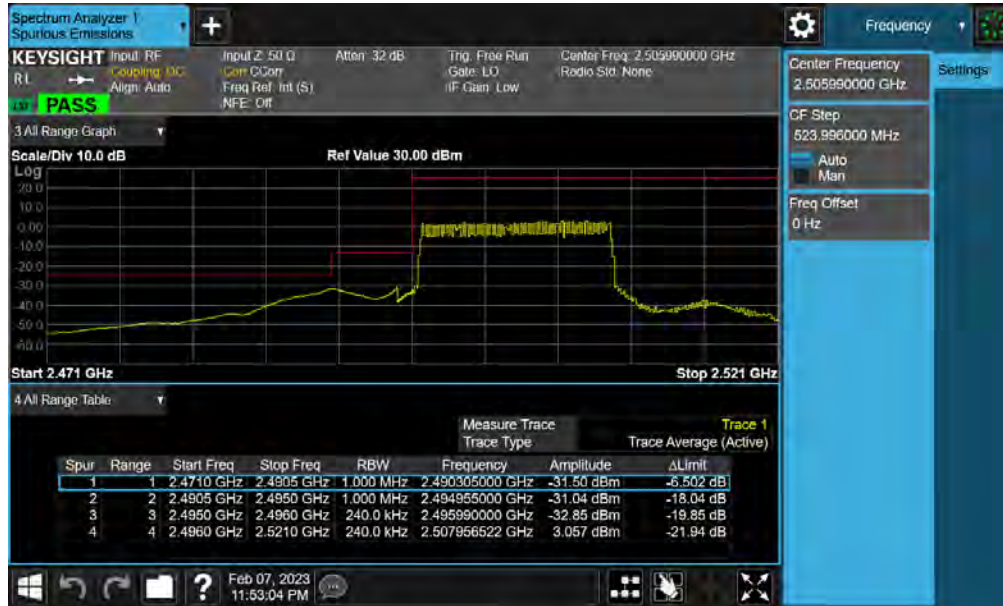


Plot 7-94. Lower ACP Plot (NR Band n41(PC3) - 20MHz CP-OFDM-QPSK – Full RB)



Plot 7-95. Upper ACP Plot (NR Band n41(PC3) - 20MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 67 of 92

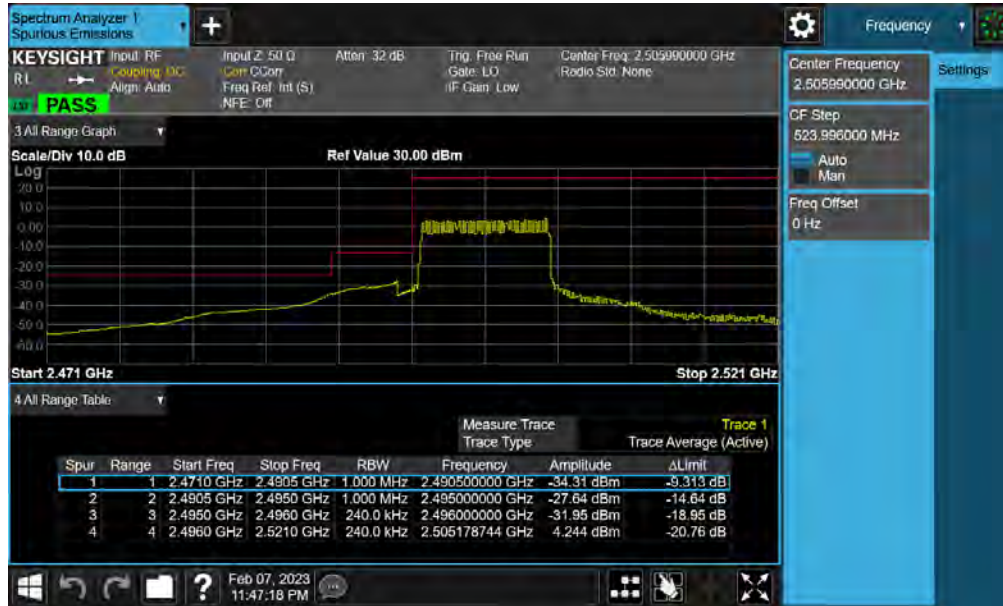


Plot 7-96. Lower ACP Plot (NR Band n41(PC3) - 15MHz CP-OFDM-QPSK – Full RB)



Plot 7-97. Upper ACP Plot (NR Band n41(PC3) - 15MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 68 of 92



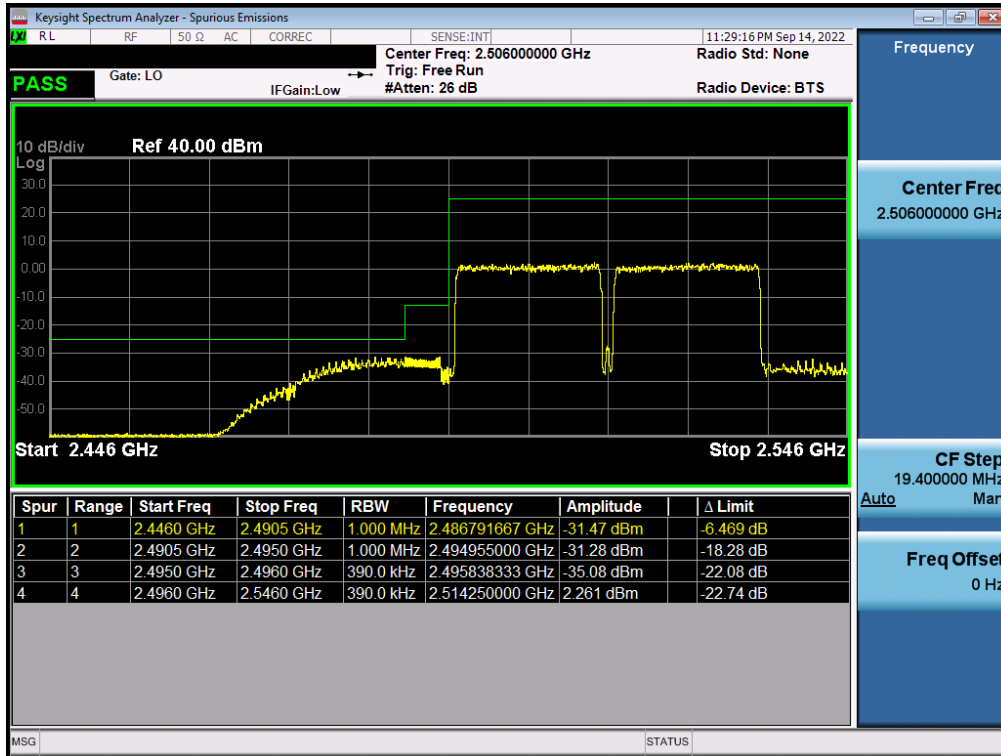
Plot 7-98. Lower ACP Plot (NR Band n41(PCI3) - 10MHz CP-OFDM-QPSK – Full RB)



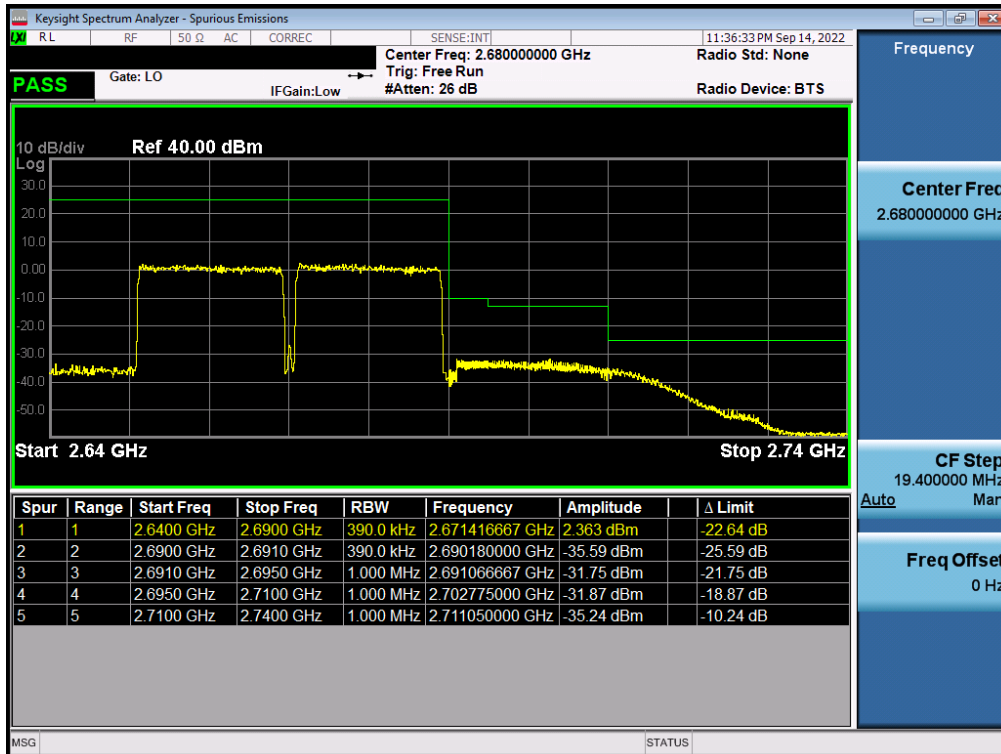
Plot 7-99. Upper ACP Plot (NR Band n41(PCI3) - 10MHz CP-OFDM-QPSK – Full RB)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 69 of 92

# ULCA - LTE Band 41(PC3)



Plot 7-100. Lower ACP Plot (ULCA LTE B41(PC3) - 20MHz QPSK - Full RB)



Plot 7-101. Upper ACP Plot (ULCA LTE B41(PC3) - 20MHz QPSK - Full RB)

FCC ID: A3LSMS918JPN		PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 70 of 92	



## 7.6 Radiated Power (EIRP)

### Test Overview

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

### Test Procedures Used

ANSI C63.26-2015 – Section 5.2.4.4

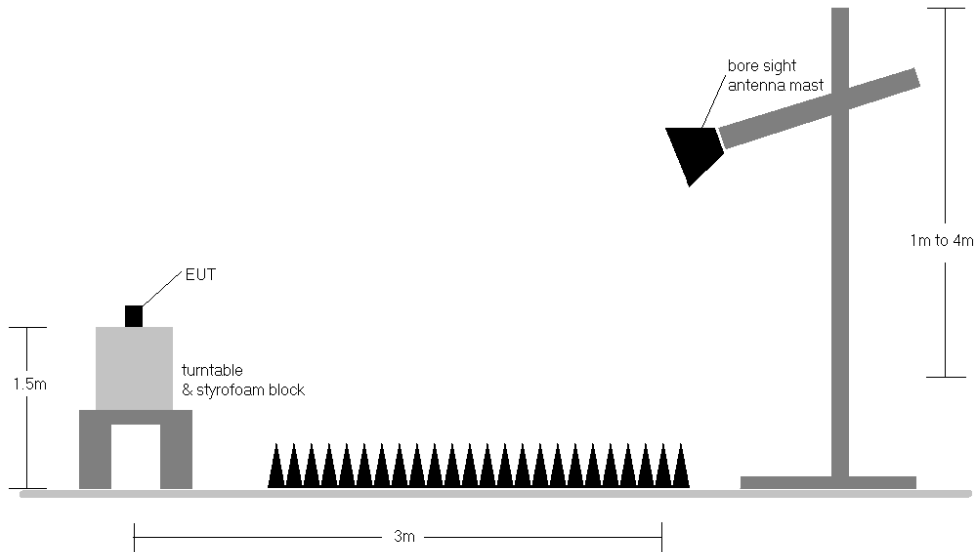
### Test Settings

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

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**Test Setup**

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



**Figure 7-5. Radiated Test Setup >1GHz**

**Test Notes**

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

FCC ID: A3LSMS918JPN	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
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Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	2506.0	H	146	151	9.50	1 / 99	14.75	<b>24.25</b>	0.266	33.01	-8.76
	QPSK	2593.0	H	169	141	9.49	1 / 99	13.53	23.02	0.201	33.01	-9.99
	QPSK	2680.0	H	125	143	9.87	1 / 99	13.85	23.72	0.236	33.01	-9.29
	16-QAM	2506.0	H	146	151	9.50	1 / 99	13.85	23.35	0.216	33.01	-9.66
15 MHz	QPSK	2503.5	H	146	151	9.50	1 / 0	14.81	<b>24.31</b>	0.270	33.01	-8.70
	QPSK	2593.0	H	169	141	9.49	1 / 74	12.63	22.13	0.163	33.01	-10.88
	QPSK	2682.5	H	125	143	9.87	1 / 0	13.86	23.73	0.236	33.01	-9.28
	16-QAM	2503.5	H	146	151	9.50	1 / 0	14.14	23.63	0.231	33.01	-9.38
10 MHz	QPSK	2501.0	H	146	151	9.49	1 / 25	15.05	<b>24.54</b>	0.285	33.01	-8.47
	QPSK	2593.0	H	169	141	9.49	1 / 25	12.83	22.32	0.171	33.01	-10.69
	QPSK	2685.0	H	125	143	9.86	1 / 49	14.09	23.95	0.249	33.01	-9.06
	16-QAM	2501.0	H	146	151	9.49	1 / 0	14.07	23.57	0.227	33.01	-9.44
5 MHz	QPSK	2498.5	H	116	164	9.49	1 / 12	15.10	<b>24.59</b>	0.288	33.01	-8.42
	QPSK	2593.0	H	169	141	9.49	1 / 0	12.91	22.40	0.174	33.01	-10.61
	QPSK	2687.5	H	125	143	9.86	1 / 24	14.44	24.29	0.269	33.01	-8.72
	16-QAM	2498.5	H	116	164	9.49	1 / 0	14.70	24.19	0.263	33.01	-8.82
20 MHz	Opposite Pol.	2506.0	V	136	272	9.54	1 / 99	11.85	21.39	0.138	33.01	-11.62
	WCP	2506.0	H	146	151	9.50	1 / 99	14.30	23.80	0.240	33.01	-9.21

Table 7-6. EIRP Data (LTE Band 41(PC3))

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 73 of 92



Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	2546.01	H	267	349	9.37	1 / 68	14.69	24.06	0.255	33.01	-8.95
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 68	15.24	<b>24.73</b>	0.297	33.01	-8.28
	π/2 BPSK	2640.00	H	244	339	9.89	1 / 68	14.50	24.39	0.275	33.01	-8.62
	QPSK	2546.01	H	267	349	9.37	1 / 68	14.08	23.45	0.221	33.01	-9.56
	QPSK	2592.99	H	250	349	9.49	1 / 68	15.02	24.51	0.283	33.01	-8.50
	QPSK	2640.00	H	244	339	9.89	1 / 68	14.73	24.62	0.290	33.01	-8.39
16-QAM	2640.00	H	244	339	9.89	1 / 68	14.31	24.20	0.263	33.01	-8.81	
90 MHz	π/2 BPSK	2541.00	H	267	349	9.39	1 / 61	14.57	23.95	0.248	33.01	-9.06
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 61	15.32	<b>24.81</b>	0.303	33.01	-8.20
	π/2 BPSK	2644.98	H	244	339	9.91	1 / 61	14.52	24.43	0.277	33.01	-8.58
	QPSK	2541.00	H	267	349	9.39	1 / 61	13.97	23.36	0.217	33.01	-9.65
	QPSK	2592.99	H	250	349	9.49	1 / 61	15.22	24.72	0.296	33.01	-8.29
	QPSK	2644.98	H	244	339	9.91	1 / 61	14.86	24.78	0.300	33.01	-8.23
16-QAM	2644.98	H	244	339	9.91	1 / 61	14.49	24.41	0.276	33.01	-8.60	
80 MHz	π/2 BPSK	2536.02	H	267	349	9.40	1 / 54	14.73	24.13	0.259	33.01	-8.88
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 108	15.11	24.60	0.288	33.01	-8.41
	π/2 BPSK	2649.99	H	244	339	9.93	1 / 162	14.17	24.10	0.257	33.01	-8.91
	QPSK	2536.02	H	267	349	9.40	1 / 54	14.03	<b>23.43</b>	0.220	33.01	-9.58
	QPSK	2592.99	H	250	349	9.49	1 / 108	15.05	<b>24.54</b>	0.284	33.01	-8.47
	QPSK	2649.99	H	244	339	9.93	1 / 162	14.88	<b>24.81</b>	0.303	33.01	-8.20
16-QAM	2649.99	H	244	339	9.93	1 / 162	14.47	<b>24.40</b>	0.275	33.01	-8.61	
70 MHz	π/2 BPSK	2531.01	H	267	349	9.43	1 / 47	14.83	24.27	0.267	33.01	-8.74
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 141	14.86	24.35	0.273	33.01	-8.66
	π/2 BPSK	2655.00	H	244	339	9.85	1 / 47	14.32	24.17	0.262	33.01	-8.84
	QPSK	2531.01	H	267	349	9.43	1 / 47	13.82	23.25	0.211	33.01	-9.76
	QPSK	2592.99	H	250	349	9.49	1 / 141	15.13	24.62	0.290	33.01	-8.39
	QPSK	2655.00	H	244	339	9.85	1 / 47	14.87	24.72	0.297	33.01	-8.29
16-QAM	2655.00	H	244	339	9.85	1 / 47	14.34	24.19	0.262	33.01	-8.82	
60 MHz	π/2 BPSK	2526.00	H	267	349	9.45	1 / 81	14.78	24.23	0.265	33.01	-8.78
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 121	15.01	24.50	0.282	33.01	-8.51
	π/2 BPSK	2659.98	H	244	339	9.84	1 / 40	14.54	24.38	0.274	33.01	-8.63
	QPSK	2526.00	H	267	349	9.45	1 / 81	14.09	23.54	0.226	33.01	-9.47
	QPSK	2592.99	H	250	349	9.49	1 / 121	15.11	24.60	0.288	33.01	-8.41
	QPSK	2659.98	H	244	339	9.84	1 / 40	15.00	<b>24.83</b>	0.304	33.01	-8.18
16-QAM	2659.98	H	244	339	9.84	1 / 40	14.70	<b>24.54</b>	0.284	33.01	-8.47	
50 MHz	π/2 BPSK	2521.02	H	267	349	9.48	1 / 99	14.78	24.26	0.266	33.01	-8.75
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 66	15.21	24.70	0.295	33.01	-8.31
	π/2 BPSK	2664.99	H	244	339	9.82	1 / 66	14.35	24.17	0.261	33.01	-8.84
	QPSK	2521.02	H	267	349	9.48	1 / 99	14.12	23.59	0.229	33.01	-9.42
	QPSK	2592.99	H	250	349	9.49	1 / 66	15.21	24.70	0.295	33.01	-8.31
	QPSK	2664.99	H	244	339	9.82	1 / 66	14.91	<b>24.73</b>	0.297	33.01	-8.28
16-QAM	2592.99	H	250	349	9.49	1 / 66	14.36	23.85	0.243	33.01	-9.16	
40 MHz	π/2 BPSK	2516.01	H	267	349	9.50	1 / 26	14.48	23.98	0.250	33.01	-9.03
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 53	15.23	24.72	0.297	33.01	-8.29
	π/2 BPSK	2670.00	H	244	339	9.85	1 / 79	14.48	24.33	0.271	33.01	-8.68
	QPSK	2516.01	H	267	349	9.50	1 / 26	13.77	23.27	0.212	33.01	-9.74
	QPSK	2592.99	H	250	349	9.49	1 / 53	15.26	<b>24.75</b>	0.298	33.01	-8.26
	QPSK	2670.00	H	244	339	9.85	1 / 79	14.84	24.69	0.294	33.01	-8.32
16-QAM	2670.00	H	244	339	9.85	1 / 79	14.05	<b>23.90</b>	0.245	33.01	-9.11	
30 MHz	π/2 BPSK	2511.00	H	267	349	9.50	1 / 58	14.58	24.08	0.256	33.01	-8.93
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 58	15.27	<b>24.76</b>	0.299	33.01	-8.25
	π/2 BPSK	2674.98	H	244	339	9.87	1 / 19	14.48	24.35	0.272	33.01	-8.66
	QPSK	2511.00	H	267	349	9.50	1 / 58	13.87	23.37	0.217	33.01	-9.64
	QPSK	2592.99	H	250	349	9.49	1 / 58	15.15	24.64	0.291	33.01	-8.37
	QPSK	2674.98	H	244	339	9.87	1 / 19	14.82	24.69	0.294	33.01	-8.32
16-QAM	2592.99	H	250	349	9.49	1 / 58	14.14	23.63	0.231	33.01	-9.38	
20 MHz	π/2 BPSK	2506.02	H	267	349	9.50	1 / 37	14.85	<b>24.35</b>	0.272	33.01	-8.66
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 13	15.05	24.54	0.285	33.01	-8.47
	π/2 BPSK	2679.99	H	244	339	9.87	1 / 37	14.46	24.33	0.271	33.01	-8.68
	QPSK	2506.02	H	267	349	9.50	1 / 37	14.00	23.50	0.224	33.01	-9.51
	QPSK	2592.99	H	250	349	9.49	1 / 13	15.16	<b>24.65</b>	0.292	33.01	-8.36
	QPSK	2679.99	H	244	339	9.87	1 / 37	14.75	24.62	0.290	33.01	-8.39
16-QAM	2592.99	H	250	349	9.49	1 / 25	13.76	23.25	0.211	33.01	-9.76	
15 MHz	π/2 BPSK	2503.50	H	267	349	9.50	1 / 19	14.46	23.96	0.249	33.01	-9.05
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 19	15.29	<b>24.79</b>	0.301	33.01	-8.22
	π/2 BPSK	2682.48	H	244	339	9.87	1 / 19	14.43	24.29	0.269	33.01	-8.72
	QPSK	2503.50	H	267	349	9.50	1 / 19	13.93	23.42	0.220	33.01	-9.59
	QPSK	2592.99	H	250	349	9.49	1 / 19	15.19	24.68	0.294	33.01	-8.33
	QPSK	2682.48	H	244	339	9.87	1 / 19	14.70	24.56	0.286	33.01	-8.45
16-QAM	2682.48	H	244	339	9.87	1 / 19	13.32	23.19	0.208	33.01	-9.82	
10 MHz	π/2 BPSK	2501.00	H	267	349	9.49	1 / 6	14.82	24.31	0.270	33.01	-8.70
	π/2 BPSK	2592.99	H	250	349	9.49	1 / 6	14.95	24.44	0.278	33.01	-8.57
	π/2 BPSK	2685.00	H	244	339	9.86	1 / 6	14.07	23.93	0.247	33.01	-9.08
	QPSK	2506.02	H	267	349	9.50	1 / 6	14.13	23.63	0.231	33.01	-9.38
	QPSK	2592.99	H	250	349	9.49	1 / 6	14.90	24.39	0.275	33.01	-8.62
	QPSK	2685.00	H	244	339	9.86	1 / 6	14.50	24.36	0.273	33.01	-8.65
16-QAM	2679.99	H	244	339	9.86	1 / 6	13.60	23.46	0.222	33.01	-9.55	
100 MHz	QPSK (CP-OFDM)	2593.0	H	130	159	9.37	1 / 136	16.32	25.69	0.371	33.01	-7.32
	QPSK (Opposite Pol.)	2593.0	V	102	99	9.35	1 / 68	13.31	22.66	0.185	33.01	-10.35
	QPSK (WCP)	2593.0	H	137	151	9.37	1 / 68	15.28	24.65	0.292	33.01	-8.36

Table 7-7. EIRP Data (NR Band n41(PC3))

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## 7.7 Radiated Spurious Emissions Measurements

### Test Overview

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

### Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

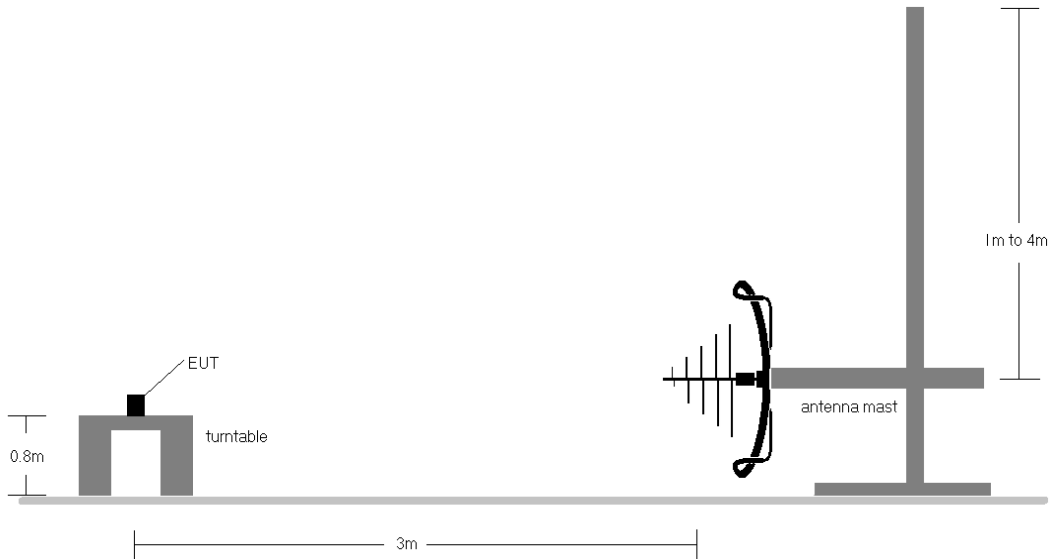
### Test Settings

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

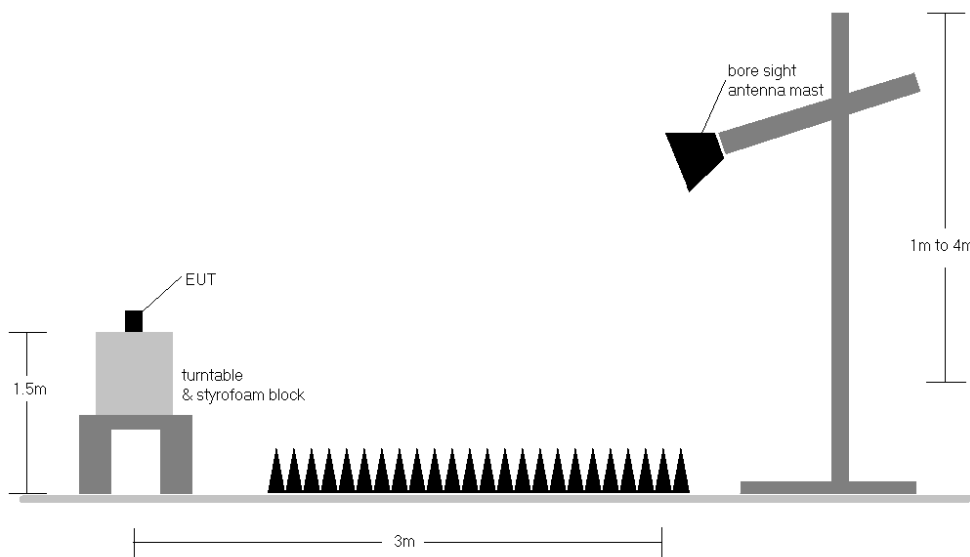
<b>FCC ID:</b> A3LSMS918JPN	<b>PART 27 MEASUREMENT REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 1M2212080137-04-R1.A3L	<b>Test Dates:</b> 11/23/2022 - 2/10/2023	<b>EUT Type:</b> Portable Handset	Page 75 of 92

**Test Setup**

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



**Figure 7-6. Test Instrument & Measurement Setup < 1GHz**



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

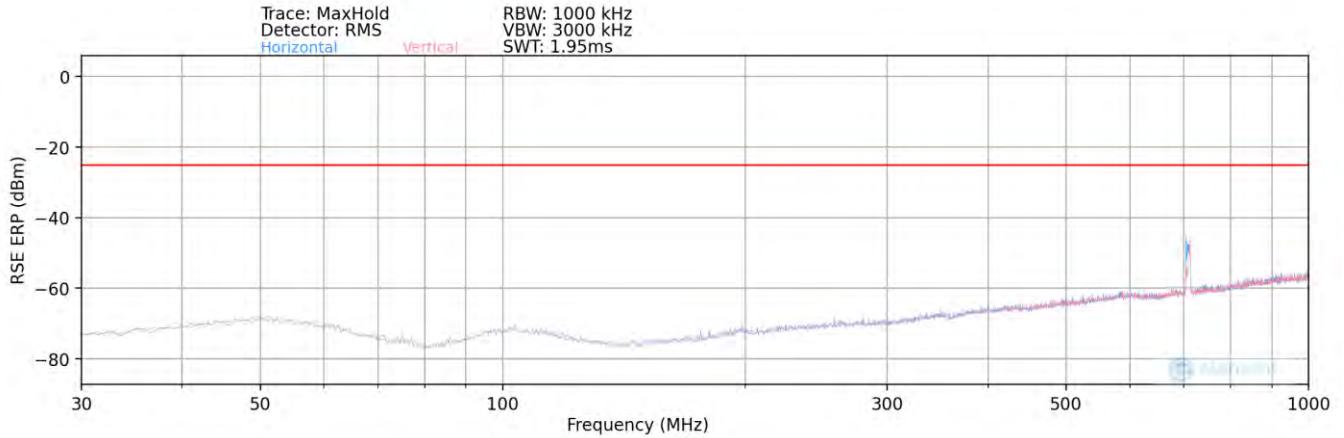
FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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**Test Notes**

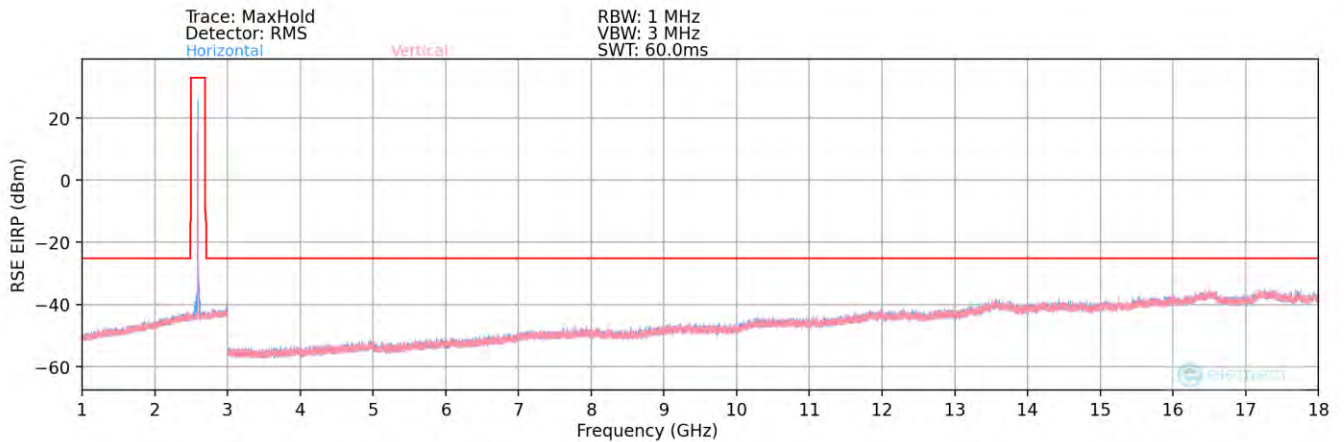
- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
  - a)  $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
  - b)  $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$ ; where D is the measurement distance in meters.
- 2) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 3) This unit was tested with its standard battery.
- 4) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 5) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7) ULCA spurious emissions measurements were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
- 8) For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
- 9) Spurious emissions shown in this section are measured while operating in EN-DC mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor). Spurious emissions from the NR carrier device, is subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

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<b>Test Report S/N:</b> 1M2212080137-04-R1.A3L	<b>Test Dates:</b> 11/23/2022 - 2/10/2023	<b>EUT Type:</b> Portable Handset	Page 77 of 92

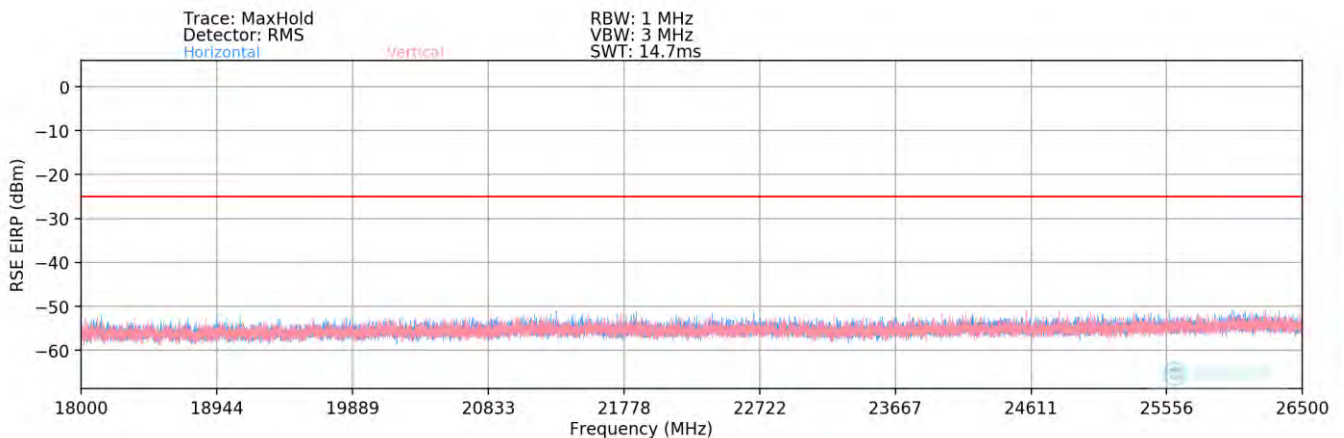
## LTE Band 41(PC3)



Plot 7-102. Radiated Spurious Plot (LTE Band 41(PC3))



Plot 7-103. Radiated Spurious Plot (LTE Band 41(PC3))



Plot 7-104. Radiated Spurious Plot (LTE Band 41(PC3))

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Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
712.72	H	339	127	-47.62	-6.53	52.85	-44.56	-25.00	-19.56

Table 7-8. Radiated Spurious Data Below 1GHz (LTE Band 41(PC3) – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2506.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.00	H	-	-	-72.12	10.21	45.09	-50.17	-25.00	-25.17
7518.00	H	-	-	-74.08	15.54	48.46	-46.79	-25.00	-21.79
10024.00	H	-	-	-75.27	18.74	50.47	-44.79	-25.00	-19.79

Table 7-9. Radiated Spurious Data (LTE Band 41(PC3) – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	2593.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	H	-	-	-72.44	10.42	44.98	-50.28	-25.00	-25.28
7779.00	H	-	-	-73.82	15.58	48.76	-46.49	-25.00	-21.49
10372.00	H	-	-	-75.05	19.64	51.59	-43.67	-25.00	-18.67

Table 7-10. Radiated Spurious Data (LTE Band 41(PC3) – Mid Channel)

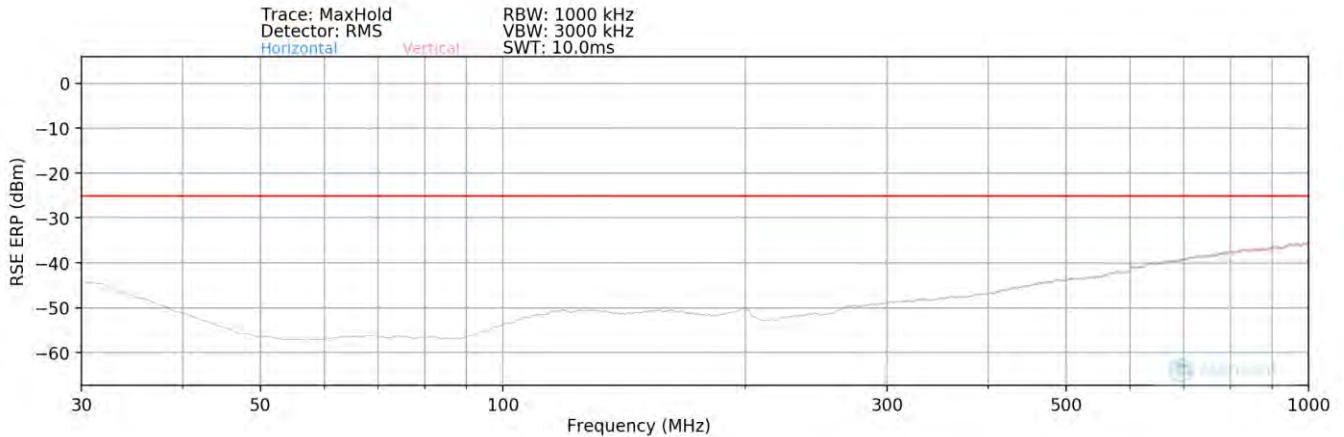
Bandwidth (MHz):	20
Frequency (MHz):	2680.0
RB / Offset:	1 / 50

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.00	H	-	-	-72.28	10.69	45.41	-49.85	-25.00	-24.85
8040.00	H	-	-	-73.01	16.05	50.04	-45.21	-25.00	-20.21
10720.00	H	-	-	-74.45	20.31	52.86	-42.40	-25.00	-17.40

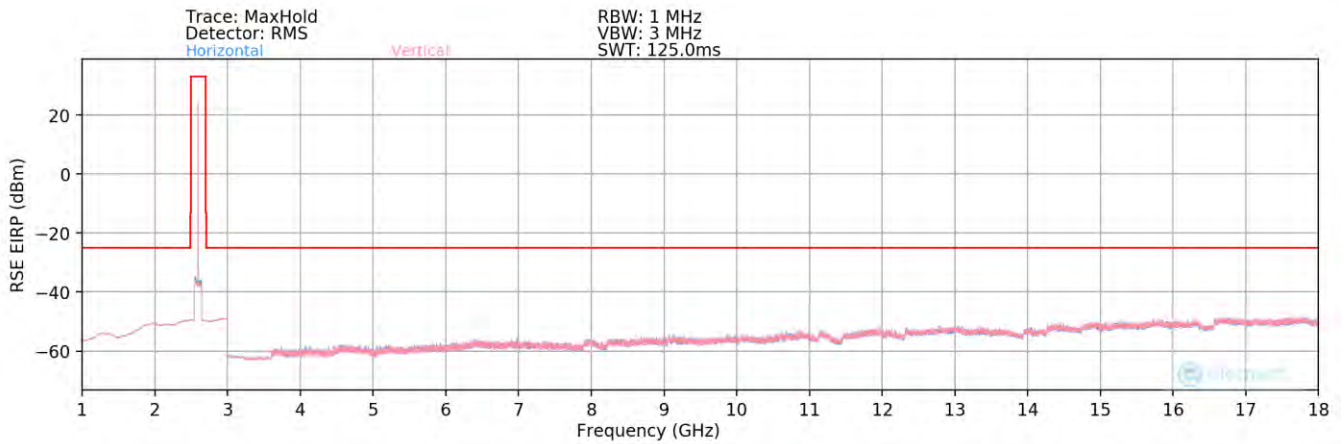
Table 7-11. Radiated Spurious Data (LTE Band 41(PC3) – High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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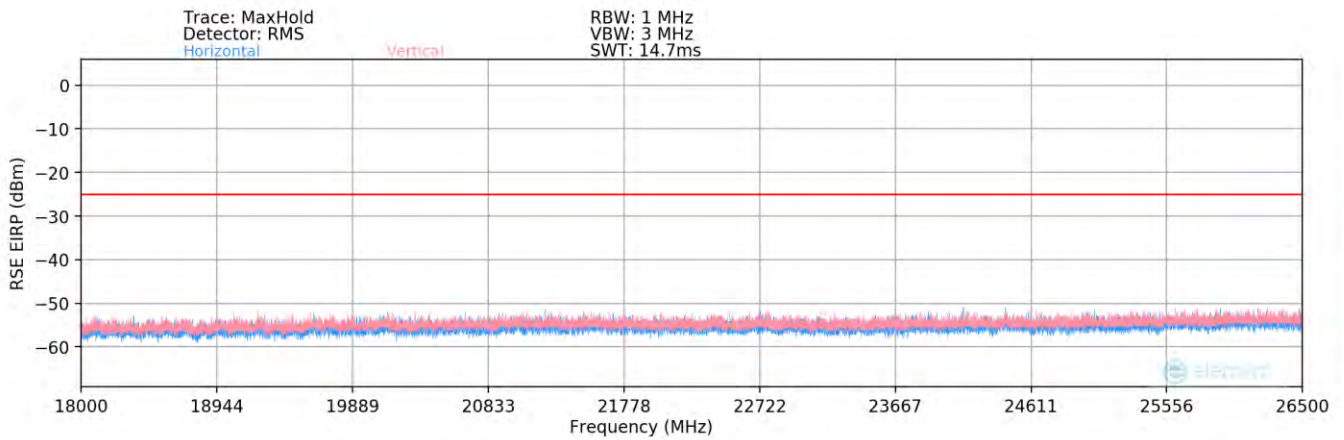
### NR Band n41(PC3)



Plot 7-105. Radiated Spurious Plot (NR Band n41(PC3))



Plot 7-106. Radiated Spurious Plot (NR Band n41(PC3))



Plot 7-107. Radiated Spurious Plot (NR Band n41(PC3))

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Bandwidth (MHz):	100
Frequency (MHz):	2593.0
RB / Offset:	1 / 136
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
85.01	H	-	-	-79.91	14.40	41.49	-53.77	-25.00	-28.77
261.21	H	-	-	-80.41	19.85	46.44	-48.81	-25.00	-23.81
523.79	H	-	-	-80.09	26.02	52.93	-42.32	-25.00	-17.32

Table 7-12. Radiated Spurious Data Below 1GHz NR Band n41(PC3) – Mid Channel)

Bandwidth (MHz):	100
Frequency (MHz):	2550.0
RB / Offset:	1 / 136
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5100.00	H	218.00	329.00	-74.24	4.75	37.51	-57.74	-25.00	-32.74
7650.00	H	147.00	21.00	-75.35	7.70	39.35	-55.91	-25.00	-30.91
10200.00	H	-	-	-78.08	11.01	39.93	-55.33	-25.00	-30.33
12750.00	H	-	-	-78.77	13.94	42.17	-53.09	-25.00	-28.09
15300.00	H	-	-	-78.72	15.84	44.12	-51.13	-25.00	-26.13

Table 7-13. Radiated Spurious Data (NR Band n41(PC3) – Low Channel)

Bandwidth (MHz):	100
Frequency (MHz):	2593.0
RB / Offset:	1 / 136
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	H	365.00	346.00	-75.13	5.06	36.93	-58.32	-25.00	-33.32
7779.00	H	125.00	365.00	-71.66	7.29	42.63	-52.62	-25.00	-27.62
10372.00	H	-	-	-77.93	11.01	40.08	-55.18	-25.00	-30.18
12965.00	H	-	-	-78.20	14.59	43.39	-51.87	-25.00	-26.87
15558.00	H	-	-	-77.94	15.64	44.70	-50.56	-25.00	-25.56

Table 7-14. Radiated Spurious Data (NR Band n41(PC3) – Mid Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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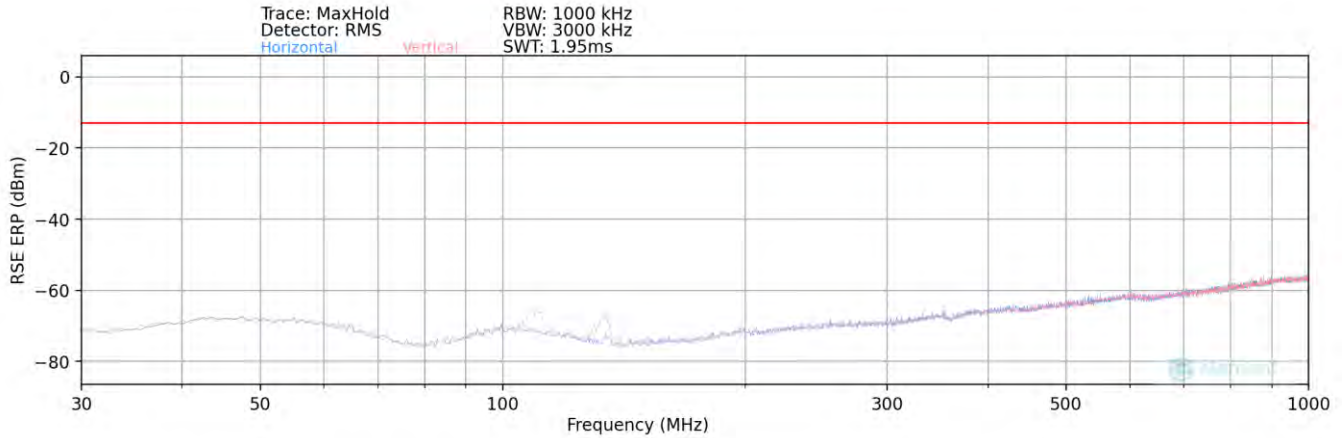
Bandwidth (MHz):	100
Frequency (MHz):	2640.0
RB / Offset:	1 / 136
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
280.00	H	197.00	328.00	-72.54	4.75	39.21	-56.05	-25.00	-31.05
920.00	H	144.00	14.00	-76.30	8.35	39.05	-56.21	-25.00	-31.21
0560.00	H	-	-	-78.51	11.58	40.07	-55.19	-25.00	-30.19
3200.00	H	-	-	-78.36	13.82	42.46	-52.79	-25.00	-27.79
15840.00	H	-	-	-78.86	16.90	45.04	-50.22	-25.00	-25.22

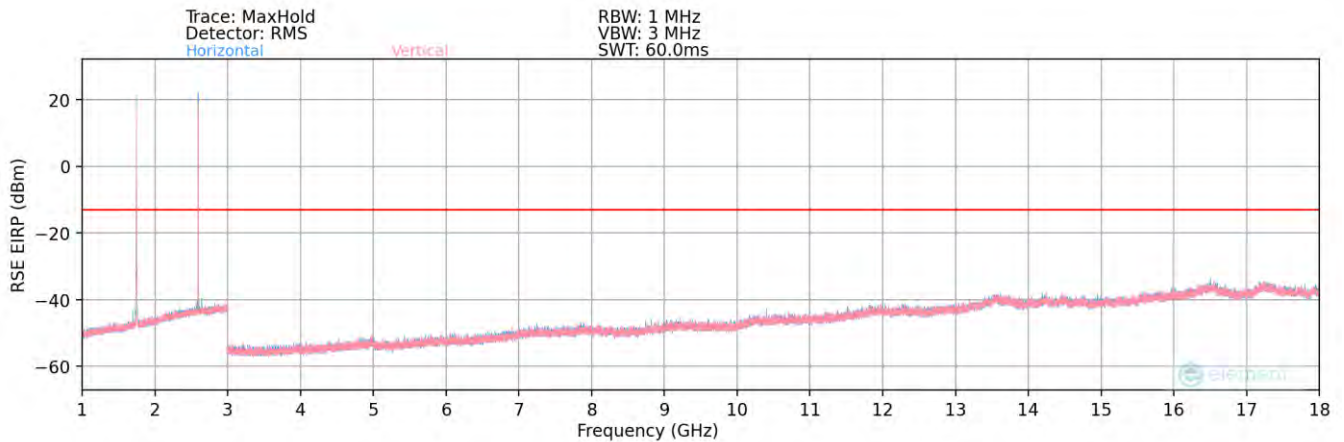
Table 7-15. Radiated Spurious Data (NR Band n41(PC3) – High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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# EN-DC n41(PC3) – Band 66



Plot 7-108. Radiated Spurious Plot (NR n41(PC3 – Band 66))



Plot 7-109. Radiated Spurious Plot (NR n41(PC3 – Band 66))

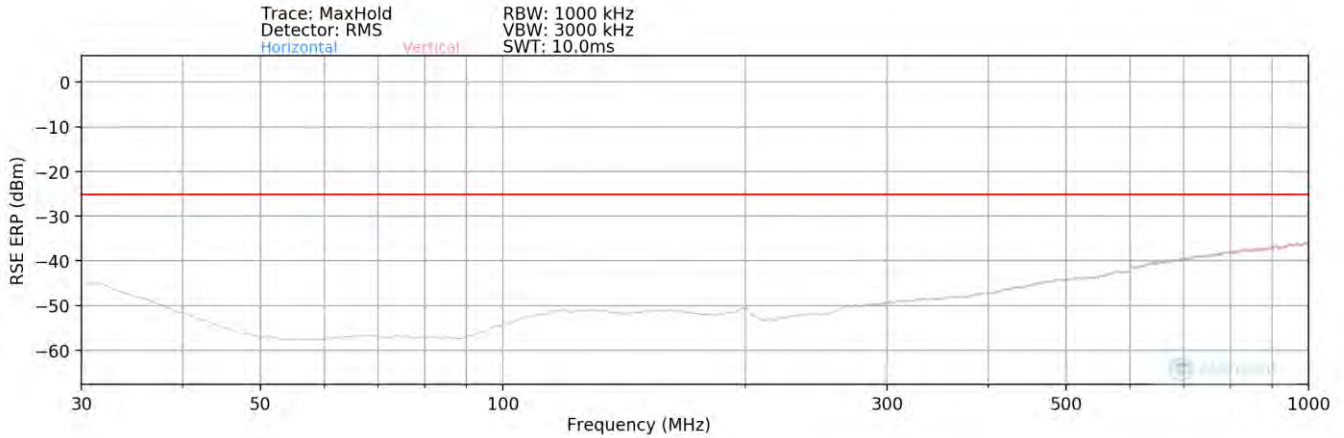
Case:	n41-B66
Bandwidth (MHz):	100 & 20
Frequency (MHz):	2593 & 1745
RB / Offset:	1/136 & 1/50
Mode:	EN-DC
Anchor Band:	B66

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
108.0	V	147	349	-62.46	-16.42	28.12	-67.14	-13.00	-54.14
135.0	V	177	144	-66.23	-19.58	21.19	-74.07	-13.00	-61.07
848.0	V	-	-	-72.03	-3.58	31.39	-63.87	-13.00	-50.87
5985.0	H	-	-	-73.89	12.09	45.20	-50.06	-13.00	-37.06
8774.0	H	-	-	-74.40	16.80	49.40	-45.86	-13.00	-32.86
10421.0	H	-	-	-75.51	19.60	51.09	-44.17	-13.00	-31.17

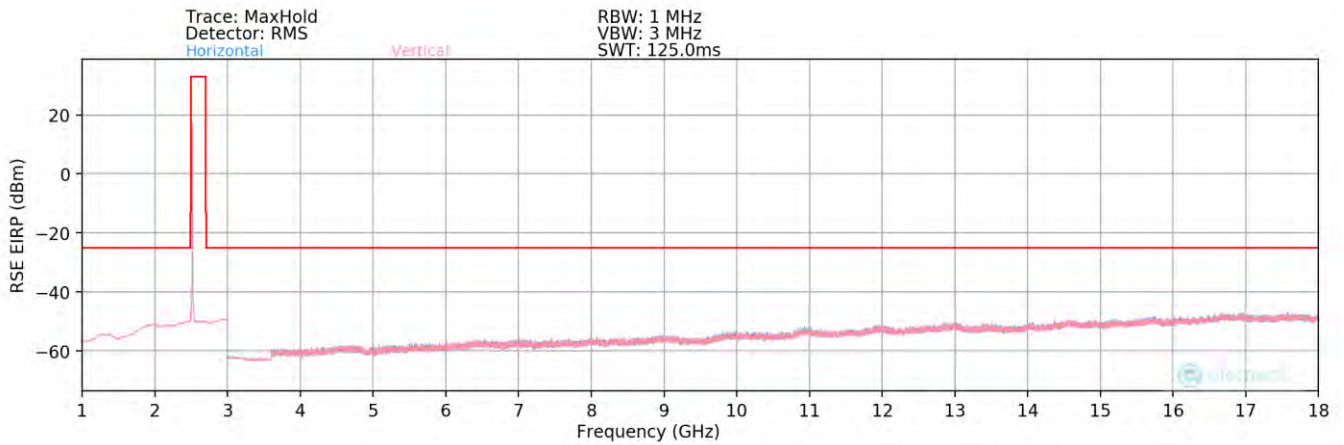
Table 7-16. Radiated Spurious Data (NR Band n41(PC3) – Band 66)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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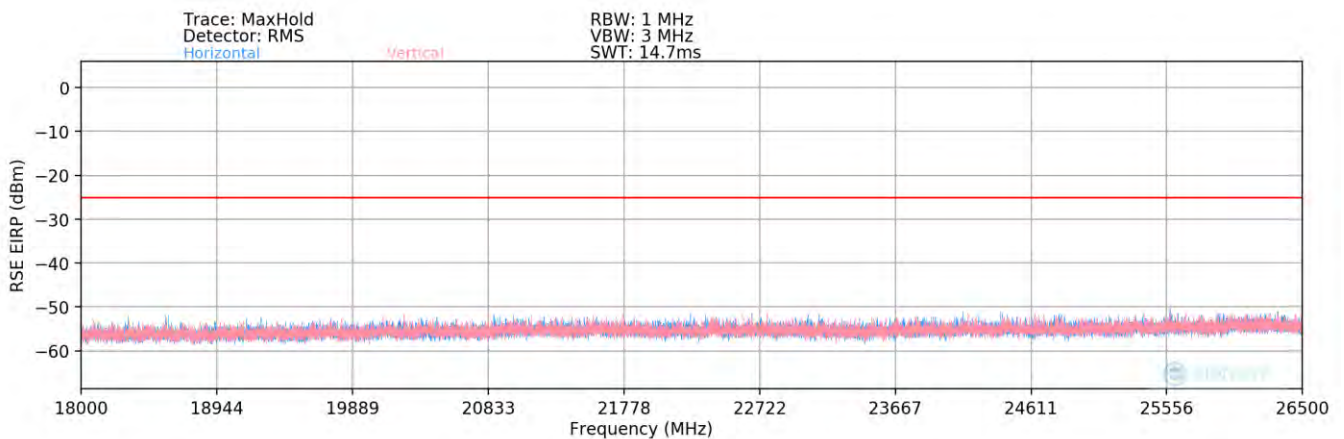
## ULCA - LTE B41(PC3)



Plot 7-110. Radiated Spurious Plot (ULCA LTE B41(PC3) – Low Channel)

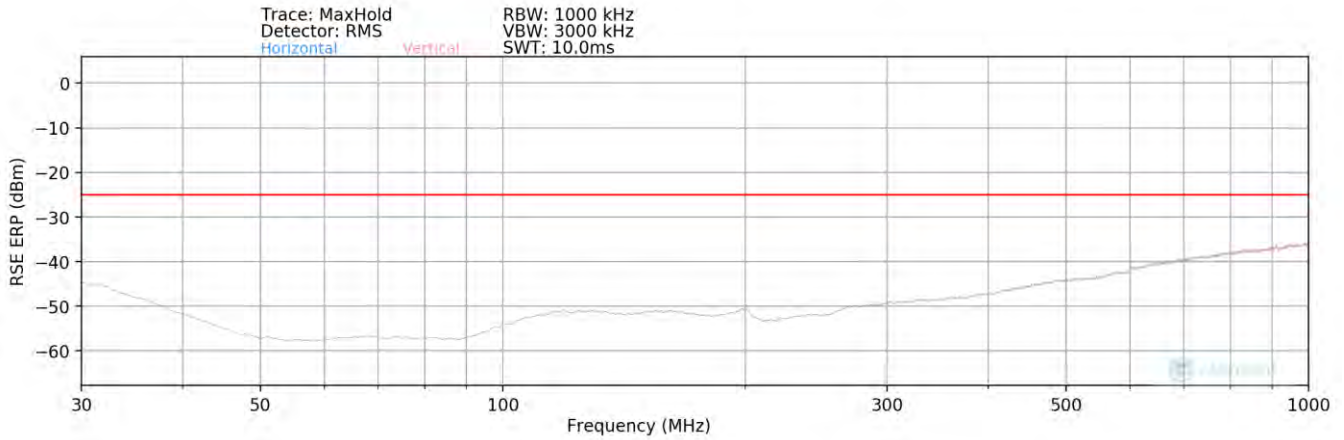


Plot 7-111. Radiated Spurious Plot (ULCA LTE B41(PC3) – Low Channel)

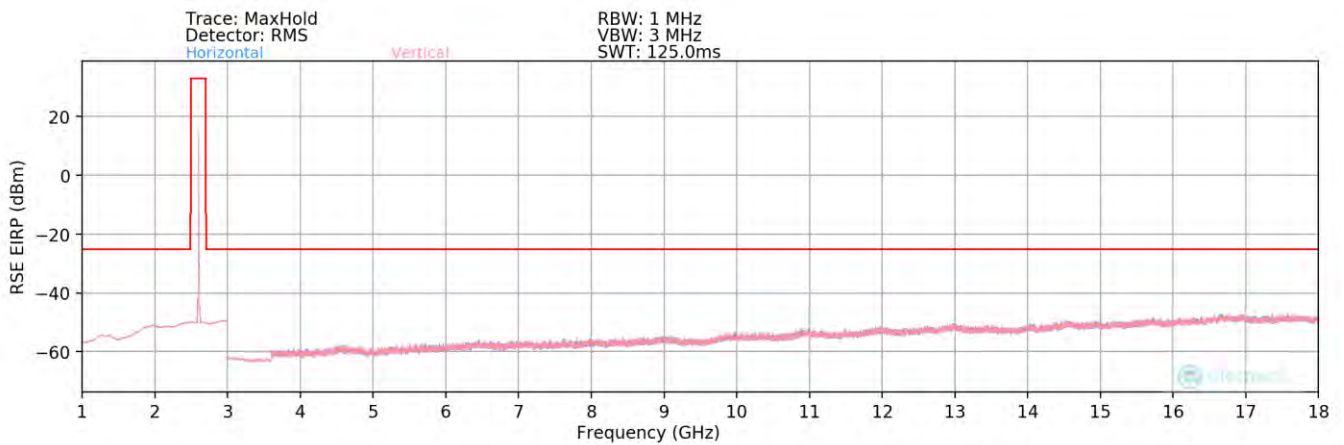


Plot 7-112. Radiated Spurious Plot (ULCA LTE B41(PC3) – Low Channel)

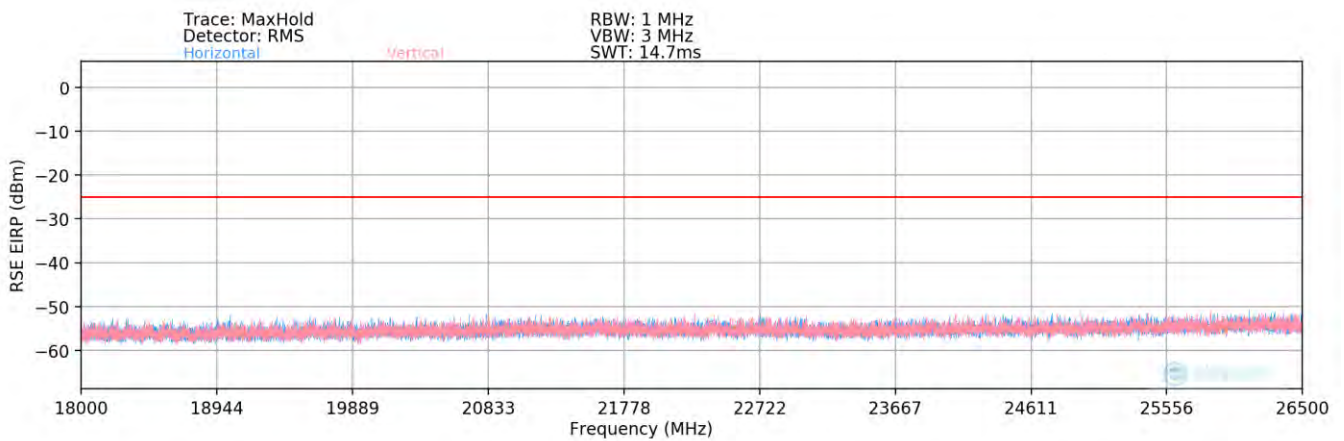
FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-113. Radiated Spurious Plot (ULCA LTE B41(PC3) – Mid Channel)

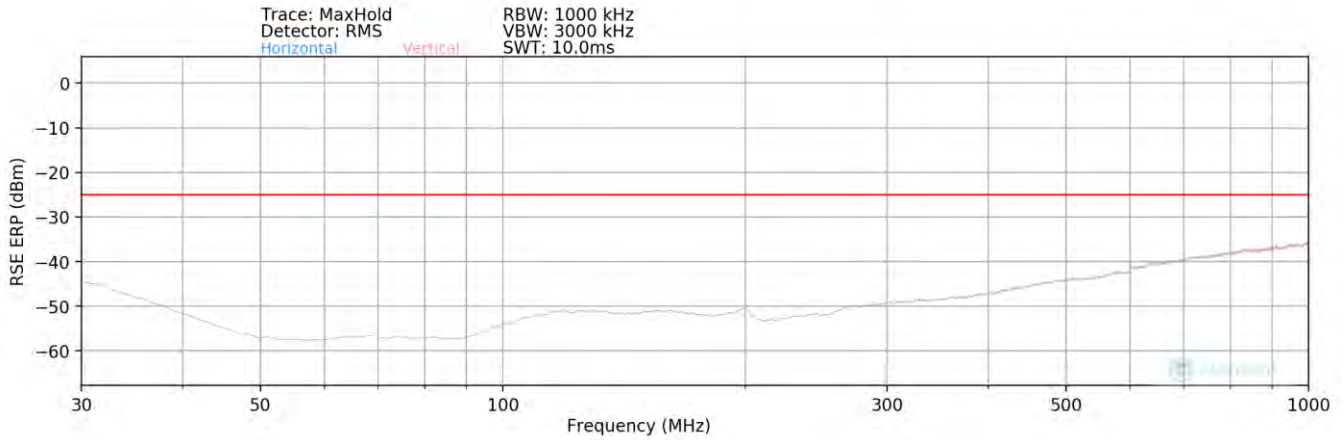


Plot 7-114. Radiated Spurious Plot (ULCA LTE B41(PC3) – Mid Channel)

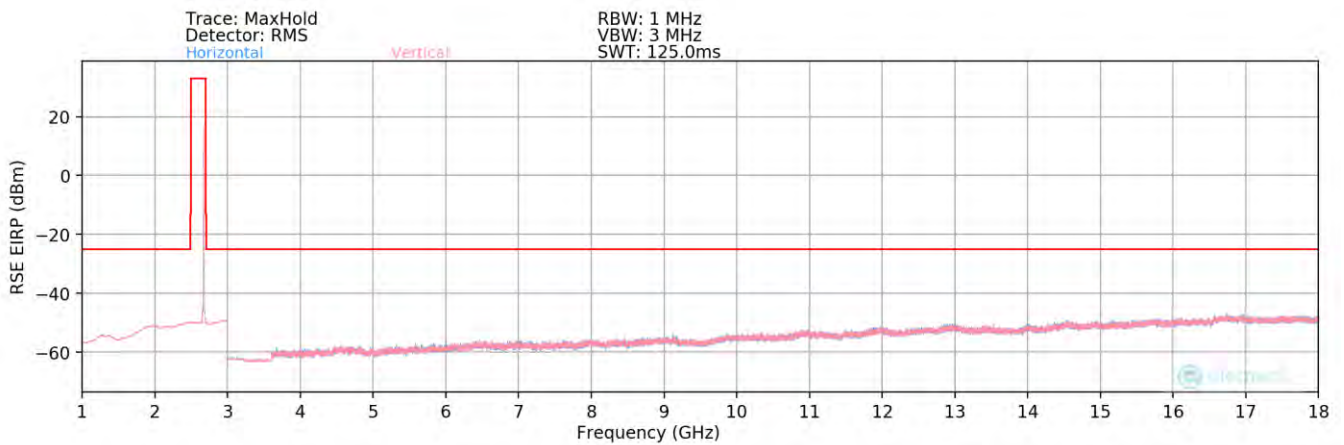


Plot 7-115. Radiated Spurious Plot (ULCA LTE B41(PC3) – Mid Channel)

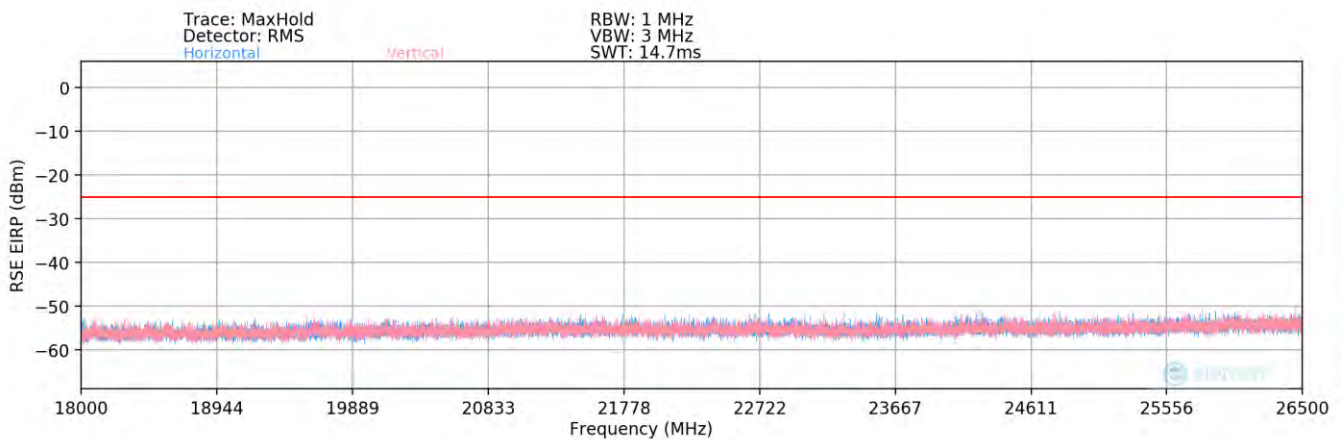
FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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Plot 7-116. Radiated Spurious Plot (ULCA LTE B41(PC3) – High Channel)



Plot 7-117. Radiated Spurious Plot (ULCA LTE B41(PC3) – High Channel)



Plot 7-118. Radiated Spurious Plot (ULCA LTE B41(PC3) – High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2593.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2612.8
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
196.60	V	-	-	-68.60	19.75	58.15	-39.26	-25.00	-14.26

Table 7-17. Radiated Spurious Data (ULCA LTE B41(PC3) – Mid Channel)

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2506.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2525.8
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5012.00	V	-	-	-74.22	4.36	37.14	-58.12	-25.00	-33.12
7518.00	V	262	359	-68.15	7.50	46.35	-48.91	-25.00	-23.91
10024.00	V	-	-	-78.28	10.28	39.00	-56.26	-25.00	-31.26
12530.00	V	169	10	-77.73	13.59	42.86	-52.40	-25.00	-27.40
15036.00	V	282	25	-79.64	15.29	42.65	-52.60	-25.00	-27.60
17542.00	V	-	-	-78.93	17.15	45.22	-50.04	-25.00	-25.04
20048.00	V	-	-	-64.41	2.99	45.59	-59.21	-25.00	-34.21
22554.00	V	-	-	-66.17	3.79	44.62	-60.18	-25.00	-35.18

Table 7-18. Radiated Spurious Data (ULCA LTE B41(PC3) – Low Channel)

PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2593.0
PCC RB / Offset:	1 / 99
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2612.8
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5186.00	V	264	15	-69.69	5.06	42.37	-52.88	-25.00	-27.88
7779.00	V	236	366	-65.48	7.29	48.81	-46.44	-25.00	-21.44
10372.00	V	-	-	-79.70	11.01	38.31	-56.95	-25.00	-31.95
12965.00	V	221	37	-72.59	14.59	49.00	-46.26	-25.00	-21.26
15558.00	V	-	-	-79.22	15.64	43.42	-51.84	-25.00	-26.84
18151.00	V	-	-	-55.48	1.37	52.89	-51.91	-25.00	-26.91
20744.00	V	-	-	-66.06	3.41	44.35	-60.45	-25.00	-35.45
23337.00	V	-	-	-65.67	3.75	45.08	-59.72	-25.00	-34.72

Table 7-19. Radiated Spurious Data (ULCA LTE B41(PC3) – Mid Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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PCC Bandwidth (MHz):	20
PCC Frequency (MHz):	2680.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	20
SCC Frequency (MHz):	2660.2
SCC RB / Offset:	1 / 99

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
5360.00	V	242	157	-73.38	4.86	38.48	-56.78	-25.00	-31.78
8040.00	V	386	355	-74.53	8.14	40.61	-54.65	-25.00	-29.65
10720.00	V	235	15	-75.09	11.70	43.61	-51.65	-25.00	-26.65
13400.00	V	210	357	-74.90	13.81	45.91	-49.34	-25.00	-24.34
16080.00	V	-	-	-79.80	16.85	44.05	-51.20	-25.00	-26.20
18760.00	V	-	-	-54.93	1.80	53.87	-50.93	-25.00	-25.93
21440.00	V	-	-	-66.22	3.82	44.60	-60.20	-25.00	-35.20
24120.00	V	-	-	-64.45	4.31	46.86	-57.94	-25.00	-32.94

Table 7-20. Radiated Spurious Data (ULCA LTE B41(PC3) – High Channel)

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2212080137-04-R1.A3L	Test Dates: 11/23/2022 - 2/10/2023	EUT Type: Portable Handset	Page 88 of 92





## 7.8 Frequency Stability / Temperature Variation

### Test Overview and Limit

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

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

***For Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.***

### Test Procedure Used

ANSI C63.26-2015 – Section 5.6

### Test Settings

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

### Test Setup

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

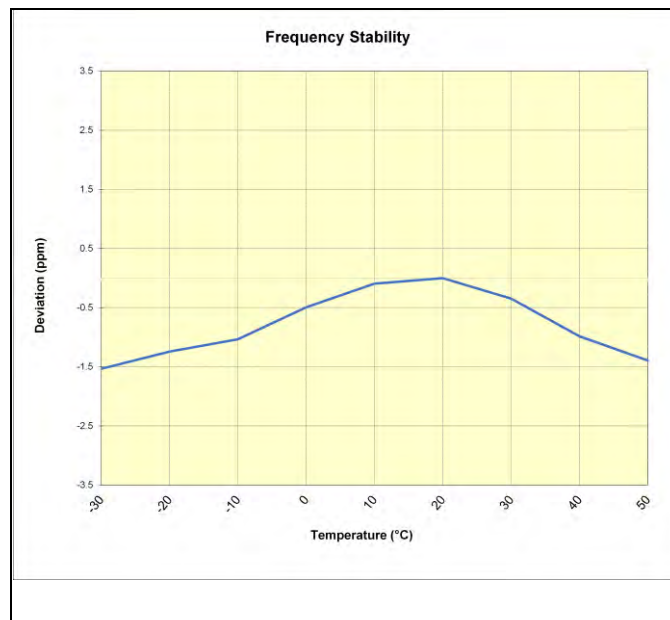
### Test Notes

None

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 41 (PC3)					
		Operating Frequency (Hz):		2,593,000,000	
		Ref. Voltage (VDC):		4.28	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.28	- 30	2,593,154,921	-3,981	-0.0001535
		- 20	2,593,155,678	-3,224	-0.0001243
		- 10	2,593,156,221	-2,681	-0.0001034
		0	2,593,157,618	-1,284	-0.0000495
		+ 10	2,593,158,654	-248	-0.0000096
		+ 20 (Ref)	2,593,158,902	0	0.0000000
		+ 30	2,593,158,002	-900	-0.0000347
		+ 40	2,593,156,348	-2,554	-0.0000985
Battery Endpoint	3.47	+ 20	2,593,161,151	2,249	0.0000867

Table 7-21. LTE Band 41(PC3) Frequency Stability Data

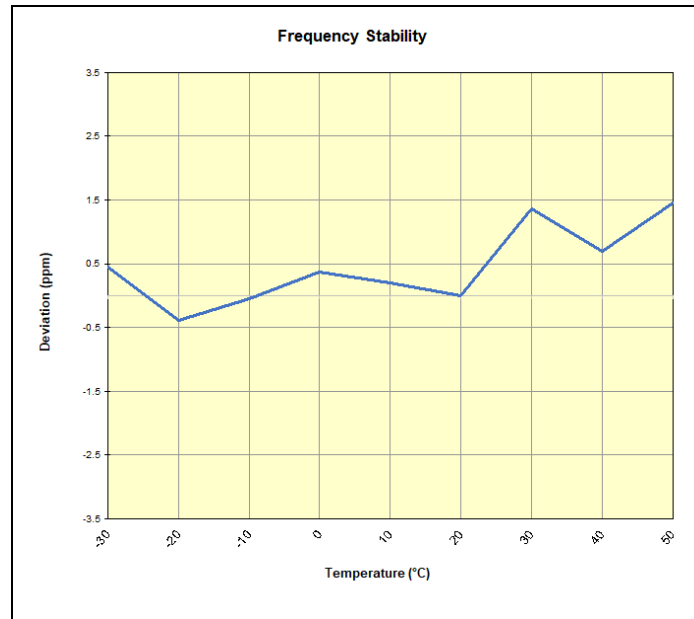


Plot 7-119. LTE Band 41(PC3) Frequency Stability Chart

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NR Band n41(PC3)					
		Operating Frequency (Hz):		2,593,000,000	
		Ref. Voltage (VDC):		4.28	
Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.28	- 30	2,593,013,647	1,178	0.0000454
		- 20	2,593,011,478	-991	-0.0000382
		- 10	2,593,012,333	-136	-0.0000052
		0	2,593,013,417	948	0.0000366
		+ 10	2,593,012,977	508	0.0000196
		+ 20 (Ref)	2,593,012,469	0	0.0000000
		+ 30	2,593,015,987	3,518	0.0001357
		+ 40	2,593,014,258	1,789	0.0000690
		+ 50	2,593,016,247	3,778	0.0001457
Battery Endpoint	3.47	+ 20	2,593,013,572	1,103	0.0000425

Table 7-22. NR Band n41(PC3) Frequency Stability Data



Plot 7-120. NR Band n41(PC3) Frequency Stability Chart

FCC ID: A3LSMS918JPN	PART 27 MEASUREMENT REPORT		Approved by: Technical Manager
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## 8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMS918JPN** complies with all the requirements of Part 27 of the FCC rules.

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<b>Test Report S/N:</b> 1M2212080137-04-R1.A3L	<b>Test Dates:</b> 11/23/2022 - 2/10/2023	<b>EUT Type:</b> Portable Handset	Page 92 of 92