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MEASUREMENT REPORT FCC Part 15.407 802.11ax WIFI 6E

Applicant Name:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea Date of Testing: 9/9 – 11/18/2021 Report Release Date: 11/18/2021 Test Site/Location: PCTEST Lab. Columbia, MD, USA Test Report Serial No.: 1M2112100159-10-R1.A3L

FCC ID:

A3LSMS908JPN

Certification

APPLICANT:

Application Type: Model: Additional Model(s): EUT Type: Frequency Range: Modulation Type: FCC Classification: Test Procedure(s): Samsung Electronics Co., Ltd.

SC-52C SCG14 Portable Handset 5935 – 7115MHz OFDMA 15E 6GHz Low Power Indoor Client (6XD) ANSI C63.10-2013, KDB 789033 D02 v02r01, KDB 648474 D03 v01r04, KDB 662911 D01 v02r01, KDB 987594 D02 V01R01

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 ANSI C63.10-2013 and KDB 789033 D02 v02r01. Test results reported herein relate only to the item(s) tested.

Note: This revised Test Report (S/N: 1M2112100159-10-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.

Randy Ortanez President



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MEASUREMENT REPORT



| Channel | | | ΜΙΜΟ | | | |
|--------------------|---|-------------|-----------------------|------------------------|--|--|
| Bandwidth [MHz] | Channel UNII Tx Frequency Bandwidth Band [MHz] | | Max. Power [mW] | Max. Power [dBm] | | |
| | 5 | 5935 - 6415 | 19.377 | 12.87 | | |
| 20 | 6 | 6435 - 6515 | 31.470 | 14.98 | | |
| 20 | 7 | 6535 - 6875 | 30.190 | 14.80 | | |
| | 8 | 6895 - 7115 | 31.328 | 14.96 | | |
| | 5 | 5965 - 6405 | 36.736 | 15.65 | | |
| 40 | 6 | 6445 - 6525 | 38.712 | 15.88 | | |
| 40 | 7 | 6565 - 6845 | 39.716 | 15.99 | | |
| | 8 | 6885 - 7085 | 36.405 | 15.61 | | |
| | 5 | 5985 - 6385 | 39.621 | 15.98 | | |
| <u>00</u> | 6 | 6465 | 38.078 | 15.81 | | |
| 80 | 7 | 6545 - 6865 | 39.056 | 15.92 | | |
| | 8 | 6945 - 7025 | 38.391 | 15.84 | | |
| | 5 | 6025 - 6345 | 39.727 | 15.99 | | |
| 160 | 6 | 6505 | 39.742 | 15.99 | | |
| 100 | 7 | 6665 - 6825 | 39.489 | 15.96 | | |
| | 8 | 6985 | 38.791 | 15.89 | | |
| | | | | | | |

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 PCTEST Test Location

These measurement tests were conducted at the PCTEST facility 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 PCTEST located in Columbia, MD 21046, U.S.A.

- PCTEST 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.
- PCTEST 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).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 **PRODUCT INFORMATION**

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LSMS908JPN**. The test data contained in this report pertains only to the emissions due to the EUT's UNII transmitter while operating in the 6GHz band.

Test Device Serial No.: 0501M, 0579M, 3922M, 0299M, 0545M

2.2 Device Capabilities

This device contains the following capabilities:

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

| Band 5 Band 6 | | | | Band 6 | _ | Band 7 | | | | Band 8 | |
|---------------|-----------------|--|-----|-----------------|---|--------|-----------------|--|-----|-----------------|--|
| Ch. | Frequency (MHz) | | Ch. | Frequency (MHz) | | Ch. | Frequency (MHz) | | Ch. | Frequency (MHz) | |
| 2 | 5935 | | 97 | 6435 | | 117 | 6535 | | 189 | 6895 | |
| : | : | | : | : | | : | : | | : | : | |
| 45 | 6175 | | 105 | 6475 | | 149 | 6695 | | 209 | 6995 | |
| : | : | | : | : | | : | : | | : | : | |
| 93 | 6415 | | 113 | 6515 | | 185 | 6875 | | 233 | 7115 | |

Table 2-1. 802.11a / 802.11ax (20MHz) Frequency / Channel Operations

| | Band 5 | | Band 6 | d 6 Band 7 | | | | | Band 8 |
|-----|--------------------|-----|--------------------|------------|-----|--------------------|--|-----|--------------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | | Ch. | Frequency (MHz) | | Ch. | Frequency (MHz) |
| 3 | 5965 | 99 | 6445 | | 123 | 6565 | | 187 | 6885 |
| : | : | : | : | | : | : | | : | : |
| 43 | 6165 | 107 | 6485 | | 155 | 6725 | | 211 | 7005 |
| : | : | : | : | | : | : | | : | : |
| 91 | 6405 | 115 | 6525 | | 179 | 6845 | | 227 | 7085 |

Table 2-2. 802.11ax (40MHz BW) Frequency / Channel Operations

| | Band 5 | | Band 6 | | Band 7 | | Band 8 |
|-----|-----------------|-----|-----------------|-----|------------------------------|-----|-----------------|
| Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 7 | 5985 | 103 | 6465 | 119 | 6545 | 199 | 6945 |
| : | : | | | : | : | : | : |
| 39 | 6145 | | | 151 | 6705 | 215 | 7025 |
| : | : | | | : | | | |
| 87 | 6385 | | | 183 | 6865 | | |
| | Tala | | | | and the second of the second | 4 | |

Table 2-3. 802.11ax (80MHz BW) Frequency / Channel Operations

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:

6345

| Band 5 | _ | Band 6 | | Band 7 | | Band 8 |
|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|
| Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) | Ch. | Frequency (MHz) |
| 6025 | 111 | 6505 | 143 | 6665 | 207 | 6985 |
| : | | | : | : | | |
| 6185 | | | 175 | 6825 | | |
| | | | | | | |

Notes:

Ch.

15

1

47

2

79

1. 6GHz NII operation is possible in 20MHz, and 40MHz, and 80MHz and 160MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = peak per the guidance of Section B)2)b) of ANSI C63.10-2013 and KDB 789033 D02 v02r01. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Table 2-4. 802.11ax (160MHz BW) Frequency / Channel Operations

| 802.11 Mode | Bandwidth [MHz] | Tone | Duty Cycle |
|----------------|--------------------|------|------------|
| | | 26T | 99.0 |
| | 20 | 52T | 98.2 |
| | 20 | 106T | 96.1 |
| | | 242T | 96.8 |
| | | 26T | 99.0 |
| | | 52T | 98.0 |
| | 40 | 106T | 98.2 |
| | | 242T | 96.7 |
| | | 484T | 94.3 |
| | | 26T | 98.9 |
| | | 52T | 97.9 |
| | 80 | 106T | 95.4 |
| | | 242T | 96.6 |
| 6GHz | | 484T | 93.5 |
| | | 996T | 90.8 |
| | | 26T | 98.9 |
| | | 52T | 97.9 |
| | 160 | 106T | 97.9 |
| | 1st | 242T | 96.7 |
| | | 484T | 94.2 |
| | | 996T | 90.6 |
| | | 26T | 99.6 |
| | | 52T | 97.9 |
| | 160 | 106T | 95.9 |
| | 2nd | 242T | 96.6 |
| | | 484T | 94.1 |
| | | 996T | 90.4 |

Table 2-5. Measured Duty Cycles

2. The device employs MIMO technology. Below are the possible configurations.

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| WiFi Configurations | | CE | DD | SE | DM |
|---------------------|---------------|-------|------|--------------|--------------|
| | | ANT1 | ANT2 | ANT1 | ANT2 |
| 6 GHz | 11ax (20MHz) | ✓ | ✓ | \checkmark | ~ |
| | 11ax (40MHz) | ✓ | ✓ | \checkmark | ~ |
| | 11ax (80MHz) | ✓ | ✓ | \checkmark | ~ |
| | 11ax (160MHz) | ✓ | ✓ | \checkmark | ~ |
| | 11ax (160MHz) | ✓ | ✓ | \checkmark | \checkmark |

| able 2-6. Frequen | cy / Channe | Operations |
|-------------------|-------------|------------|
|-------------------|-------------|------------|

 \checkmark = Support; = NOT Support SDM = Spatial Diversity Multiplexing – MIMO function CDD = Cyclic Delay Diversity - 2Tx Function

3. This device supports simultaneous transmission operation, which allows for two SISO channels to operate independent of one another in the 2.4GHz (WLAN & BT), 5GHz, and 6GHz bands simultaneously on each antenna.

2.3 Antenna Description

| Fraguency Dand | Antenna-1 Gain | Antenna-2 Gain | Directional Gain | | |
|----------------|----------------|----------------|------------------|--|--|
| Frequency Band | [dBi] | [dBi] | [dBi] | | |
| Band 5 | -6.31 | -5.56 | -2.92 | | |
| Band 6 | -11.39 | -6.32 | -5.48 | | |
| Band 7 | -7.00 | -7.37 | -4.17 | | |
| Band 8 | -7.00 | -10.56 | -5.59 | | |
| | | | | | |

Following antenna gain was used for the testing.

Table 2-7. Antenna Peak Gain

2.4 Test Configuration

The EUT was tested per the guidance of KDB 987594 D02 and KDB 789033 D02 v02r01. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing. See Sections 3.2 for AC line conducted emissions test setups, 3.3 for radiated emissions test setups, and 7.3, 7.4, 7.5 and 7.6 for antenna port conducted emissions test setups.

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.

2.5 Software and Firmware

The test was conducted with firmware version F926USQ0AUCE installed on the EUT.

2.6 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or 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 of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) and the guidance provided in KDB 789033 D02 v02r01 were used in the measurement of the EUT.

Deviation from measurement procedure.....None

3.2 AC Line Conducted Emissions

The line-conducted facility is located inside a 10'x16'x9' shielded enclosure. The shielded enclosure is manufactured by ETS Lindgren RF Enclosures. The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 65-5. A 1m x 1.5m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, $50\Omega/50\mu$ H Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. The external power line filter is an ETS Lindgren Model LPRX-4X30 (100dB Attenuation, 14kHz-18GHz) and the two EMI/RFI filters are ETS Lindgren Model LRW-2030-S1 (100dB Minimum Insertion Loss, 14kHz – 10GHz). These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1-meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference groundplane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The spectrum was scanned from 150kHz to 30MHz with a spectrum analyzer. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 10kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Once the worst-case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions is used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

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3.3 Radiated 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. An 80cm tall test table made of Styrodur is placed on top of the turn table. For measurements above 1GHz, an additional Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33 depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions.

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.

3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

- The antennas of the EUT are permanently attached.
- There are no provisions for connection to an external antenna.

Conclusion:

The EUT complies with the requirement of §15.203.

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5.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

| Contribution | Expanded Uncertainty (±dB) |
|-------------------------------------|----------------------------|
| Conducted Bench Top Measurements | 1.13 |
| Line Conducted Disturbance | 3.09 |
| Radiated Disturbance (<1GHz) | 4.98 |
| Radiated Disturbance (>1GHz) | 5.07 |
| Radiated Disturbance (>18GHz) | 5.09 |

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6.0 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 |
|-----------------------|------------------|--------------------------------------|-----------|--------------|------------|---------------|
| - | WL25-1 | Conducted Cable Set (25GHz) | 9/7/2021 | Annual | 9/7/2022 | WL25-1 |
| - | WL25-2 | Conducted Cable Set (25GHz) | 9/7/2021 | Annual | 9/7/2022 | WL25-2 |
| - | WL25-3 | Conducted Cable Set (25GHz) | 9/7/2021 | Annual | 9/7/2022 | WL25-3 |
| - | WL40-1 | Conducted Cable Set (40GHz) | 9/10/2021 | Annual | 9/10/2022 | WL40-1 |
| Agilent | N9038A | MXE EMI Receiver | 8/11/2020 | Annual | 12/1/2021 | MY51210133 |
| Agilent | N9030A | PXA Signal Analyzer (44GHz) | 7/21/2021 | Annual | 7/21/2022 | MY49430494 |
| Anritsu | ML2495A | Power Meter | 1/18/2021 | Annual | 1/18/2022 | 941001 |
| Anritsu | MA2411B | Pulse Power Sensor | 3/8/2021 | Annual | 3/8/2022 | 1339007 |
| Emco | 3115 | Horn Antenna (1-18GHz) | 6/18/2020 | Biennial | 6/18/2022 | 9704-5182 |
| Emco | 3116C | Horn Antenna (18 - 40GHz) | 5/112021 | Biennial | 5/11/2023 | 218893 |
| ETS-Lindgren | 3816/2NM | Line Impedance Stabilization Network | 7/9/2020 | Biennial | 7/9/2022 | 114451 |
| Keysight Technologies | N9030A | PXA Signal Analyzer (44GHz) | 8/17/2020 | Annual | 12/17/2021 | MY52350166 |
| Pasternack | NMLC-2 | Line Conducted Emissions Cable (NM) | 9/10/2021 | Annual | 9/10/2022 | NMLC-2 |
| Keysight Technologies | N9030A | PXA Signal Analyzer (44GHz) | 7/21/2021 | Annual | 7/12/2022 | MY49430494 |
| Rohde & Schwarz | ESU26 | EMI Test Receiver (26.5GHz) | 8/3/2021 | Annual | 8/3/2022 | 100342 |
| Rohde & Schwarz | ESW44 | EMI Test Receiver 2Hz to 44GHz | 1/21/2021 | Annual | 1/21/2022 | 101716 |
| Rohde & Schwarz | FSW67 | Signal / Spectrum Analyzer | 8/25/2021 | Annual | 8/25/2022 | 103200 |
| Rohde & Schwarz | SFUNIT-Rx | Shielded Filter Unit | 9/3/2021 | Annual | 9/3/2022 | 102138 |
| Solar Electronics | 8012-50-R-24-BNC | Line Impedance Stabilization Network | 9/21/2021 | Biennial | 9/21/2023 | 310233 |
| Schwarzbeck | VULB9162 | Bilog Antenna | 4/17/2020 | Biennial | 4/17/2022 | 00301 |

Table 6-1. Annual Test Equipment Calibration Schedule

Note:

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

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 12 of 205 | |
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7.0 TEST RESULTS

7.1 Summary

| Company Name: | Samsung Electronics Co., Ltd. |
|---------------------|---|
| FCC ID: | A3LSMS908JPN |
| FCC Classification: | 15E 6 GHz Low Power Indoor Client (6XD) |

| FCC Part Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|--------------------------|---|---|-------------------|----------------|---------------------|
| 2.1046, 15.407(a)(11) | Maximum Conducted Output Power | N/A | | PASS | Section 7.3 |
| 2.1049, 15.407(a)(10) | Occupied Bandwidth/ 26dB Bandwidth | 99% of the occupied bandwidth of any channel must be contained within each of its respective U-NII sub bands The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz. | | PASS | Section 7.2 |
| 15.407(a)(8) | Maximum Power Spectral Density | < -1dBm/MHz e.i.r.p. | CONDUCTED | PASS | Section 7.4 |
| 15.407(a)(8) | Maximum Radiated Output Power | < 24dBm over the frequency band of operation | | PASS | Section 7.3 |
| 15.407(b)(6) | In-Band Emissions | EUT must meet the limits detailed in 15.407(b)(6) | | PASS | Section 7.5 |
| 15.407(d)(6) | Contention Based Protocol | EUT must detect AWGN signal with 90% (or better) certainty | | PASS | Section 7.6 |
| 15.407(b)(5) | Undesirable Emissions | < -27dBm/MHz e.i.r.p. outside of the 5.925 – 7.125GHz band | | PASS | Section 7.7 |
| 15.205, 15.209 | General Field Strength Limits (Restricted Bands and Radiated Emission Limits) | Emissions in restricted bands must meet the radiated limits detailed in 15.209 | RADIATED | PASS | Section 7.7, 7.8 |

Table 7-1. Summary of Test Results

Notes:

- 1) All channels, modes, and modulations/data rates were investigated among all UNII bands. The test results shown in the following sections represent the worst case emissions.
- 2) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer 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 and attenuators.
- 4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "UNII Automation," Version 4.7.
- 5) For radiated band edge, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is PCTEST "Chamber Automation," Version 1.3.1.

| FCC ID: A3LSMS908JPN | PCTEST [®] Proud to be part of ® element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------|---|------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 12 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | Page 13 01 305 |
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7.2 26dB Bandwidth Measurement – 802.11ax

<u>2.1049, 15.407(a)(10)</u>

Test Overview and Limit

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in ANSI C63.10-2013 and KDB 789033 D02 v02r01, and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

Test Procedure Used

ANSI C63.10-2013 – Section 12.4 KDB 789033 D02 v02r01 – Section C KDB 987594 D02 V01R01

Test Settings

- The signal analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = approximately 1% of the emission bandwidth
- 3. VBW <u>></u> 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold

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

None.

| CC ID: A3LSMS908JPN | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 14 of 205 | |
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MIMO Antenna-1 26dB Bandwidth Measurements (26 Tones)

Plot 7-1. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 2)



Plot 7-2. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 45)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------------|---|---------------------------------------|-----------------------------------|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 15 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 15 of 305 |
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Plot 7-3. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 93)



Plot 7-4. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 3)

| FCC ID: A3LSMS908JPN | LSMS908JPN | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dogo 16 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 16 01 305 | |
| 2 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | | |
|--|------------------|------------------------------|-------------------|---------------|-------------|-----------------|
| 💢 RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 05:37:21 PM 0 | ct 29, 2021 | Trace/Detector |
| | Cen | ter Freq: 6.165000 | AvaiHold: 100/100 | Radio Std: N | one | 11000000000 |
| | #IFGain:Low #Att | ten: 36 dB | Avginola. 100/100 | Radio Device | BTS | |
| | | | | | | |
| | | | | | | |
| 10 dB/div Ref 20.00 dBm | <u>ו</u> | | | | | |
| Log | | | | | | |
| 10.0 | | <u></u> | | | | Clear Write |
| 0.00 | | | | | | orear mile |
| -10.0 | manunghned | <u> </u> | | | | |
| .20.0 | | "" Martin | | | | |
| 20.0 | | 1 million and a start of the | Myuma | | | Average |
| -30.0 | and all | | Human Maklarum | mummen | monder | Average |
| -40.0 | | | | | | |
| -50.0 | | | | | | |
| 60.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -70.0 | | | | | | |
| | | | | 0 | | |
| Center 6.16500 GHZ | | VOW O MU- | | Span Tu | | |
| Res BW 910 KHZ | | | | Swee | p 1 ms | Min Hold |
| | | Total Bo | | dBm | | |
| Occupied Bandwidt | 1 | TOLATEO | | завш | | |
| 24 | 446 MHz | | | | | Detector |
| | | | | | | Peak▶ |
| Transmit Freq Error | -5.9962 MHz | % of OB | W Power 99 | 0.00 % | 1 | Auto <u>Man</u> |
| v dB Bandwidth | 24 71 M⊟z | v dB | -26 | 00 dB | | |
| | 24.71 111172 | X UD | -20. | UU UB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | STATU | S | | |

Plot 7-5. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 43)



Plot 7-6. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 91)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 17 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 17 01 305 | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | |
|--|---------------------|--|-----------------------------------|------------------|-----------------|
| KL RF 50Ω AC | CORREC S | SENSE:INT AL | IGN AUTO 07:09:25 PI | M Oct 29, 2021 | Trace/Detector |
| | Center Trig: Fr | req: 0.980000000 GHz | Radio Std: | None | |
| | #IFGain:Low #Atten: | 36 dB | Radio Dev | ice: BTS | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | 1 | | | | |
| Log | | | | | |
| 10.0 | | A | | | Clean Write |
| 0.00 | | /\ | | | Clear write |
| -10.0 | | hapl the grant of the second s | | | |
| -20.0 | | | | | |
| 30.0 | A PALAT | and the second sec | a we all the same dealers and the | a contration and | Average |
| 40.0 | | | | | 5 |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Contor 5 0950 CHz | | | Enan 2 | | |
| Res BW 18 MHz | VE | | Swe | en 1 ms | |
| | | 511 0 11112 | 9410 | op 1 mo | Min Hold |
| Occupied Bandwidt | h | Total Power | 11.5 dBm | | |
| | | | | | Data 1 |
| 42 | .9/9 WIHZ | | | | Detector |
| Transmit Freq Error | -1.2136 MHz | % of OBW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 45 55 MHz | x dB | -26.00 dB | | |
| | 43.33 WITZ | A UD | -20.00 uB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-7. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 7)



Plot 7-8. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 39)

| FCC ID: A3LSMS908JPN | PCTEST [•] Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dogo 10 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 18 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-9. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 87)



Plot 7-10. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)

| FCC ID: A3LSMS908JPN | PCTEST [•] Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dogo 10 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 19 01 305 | |
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| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | - • • • |
|--|-----------------------|----------------------------------|-----------------------------------|-----------------------|--------------------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT A | LIGN AUTO 07:48:22 P | M Oct 29, 2021 | Trace/Detector |
| | Cente | Free Run AvalHold | Radio Std: 100/100 | : None | indeen Betterten |
| | #IFGain:Low #Atte | n: 36 dB | Radio Dev | ice: BTS | |
| | | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | <u></u> | | | | |
| Log | | | | | |
| 10.0 | | Λ | | | Clear Write |
| 0.00 | | | | | orear Write |
| -10.0 | | | | | |
| -20.0 | M | | | | |
| | man wanter water with | With the Alexandree and a second | a an an it can that and a shifter | and the second second | Avorado |
| 30.0 | | | | | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| .60.0 | | | | | |
| -00.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Contor 6 0250 CHz | | | Snan / | | |
| | | | Span 4 | | |
| Res BW JIVIHZ | V | | SWE | ep ms | Min Hold |
| Occurried Department | L. | Total Power | 10.0 dBm | | |
| Occupied Bandwidt | 1 | TOtal FOWER | 10.9 UBIII | | |
| 13 | 3.92 MHz | | | | Detector |
| | | | | | Peak▶ |
| Transmit Freq Error | 1.4272 MHz | % of OBW Powe | r 99.00 % | | Auto <u>Man</u> |
| y dB Bondwidth | 47.26 MU- | v dD | 26.00 dB | | |
| | 47.30 MITZ | Xub | -20.00 uB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-11. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)



Plot 7-12. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 20 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 20 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | |
|--|-------------------------|-----------------------|---------------------------|---|-----------------|
| LX RL RF 50 Ω AC | CORREC | SENSE:INT | ALIGN AUTO 08:10 | :33 PM Oct 29, 2021 | Trace/Detector |
| | Cent | Free Run Aval H | z Radio old: 100/100 | Sta: None | |
| | #IFGain:Low #Atte | en: 36 dB | Radio | Device: BTS | |
| | | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | _ | | | | |
| | | | | | |
| | | A | | | Clear Write |
| 0.00 | | 1 MM | | | |
| -10.0 | | X 1. | | | |
| -20.0 | | | | | |
| -30.0 | en an an al and and and | and the second second | Millionandersonanderstand | مۇمىمىيە بىلىن مۇرىد <mark>ۇر</mark> بىرى | Average |
| 40.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| | | | | | |
| Center 6.1850 GHz | | | Spa | an 400.0 MHz | |
| Res BW 3 MHz | | VBW 50 MHz | | Sweep 1 ms | Min Hold |
| | | | | | |
| Occupied Bandwidth | | Total Power | 11.0 dBn | 1 | |
| 14 | 8 46 MHz | | | | Detector |
| 14 | | | | | Peak |
| Transmit Freq Error | -5.9228 MHz | % of OBW Po | wer 99.00 % | 0 | Auto <u>Man</u> |
| v dB Bandwidth | 45 70 MHz | v dB | -26 00 de | 2 | |
| | 45.70 1112 | A UD | -20.00 ui | , , | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-13. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)



Plot 7-14. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 01 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 21 01 305 | |
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Plot 7-15. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)



Plot 7-16. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 97)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dega 22 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 22 01 305 | |
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Plot 7-17. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 105)



Plot 7-18. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 113)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dega 22 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 23 01 305 | |
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Plot 7-19. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 99)



Plot 7-20. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 107)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 24 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 24 01 305 | |
| 2 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-21. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 115)



Plot 7-22. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 103)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga 25 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 25 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | |
|--|----------------------------|--------------------------|------------------------------------|----------------|-----------------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO 08:23:10 | M Oct 29, 2021 | Trace/Detector |
| | Center | r Freq: 6.505000000 GHz | Radio Sto | : None | Hacenbettettor |
| | #IEGain:Low #Atter | n: 36 dB | Radio De | vice: BTS | |
| | mi Gam.eow | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | |
| Log | | | | | |
| 10.0 | | Λ | | | Clear Write |
| 0.00 | | nt l | | | |
| -10.0 | <mark>/</mark> _` | | | | |
| 20.0 | | Whee. | | | |
| | une per all and the second | What is a product of the | والمغرب والمراجع والمراجع والمراجع | | A |
| -30.0 | | | | | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| 60.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Contor 6 5050 CHz | | | | | |
| | W. | | Spail - | | |
| | v | | 310 | eep mis | Min Hold |
| Occurried Dendwidt | | Total Power | 11.0 dBm | | |
| Occupied Bandwidt | 0 | TOtal FOWER | | | |
| 15 | 6.71 MHz | | | | Detector |
| | | | | | Peak▶ |
| Transmit Freq Error | -977.19 kHz | % of OBW Powe | er 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 47 29 MH- | v dP | 26.00 dB | | |
| | 47.20 WITZ | X UD | -20.00 UB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| NEO | | | CTATUC | | |
| MSG | | | STATUS | | |

Plot 7-23. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)



Plot 7-24. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
|------------------------------|--|---------------------------------------|---------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dama 00 at 005 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | | Page 26 01 305 |
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Plot 7-25. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 117)



Plot 7-26. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 149)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dogo 27 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 27 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-27. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 185)



Plot 7-28. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 123)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 20 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 28 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-29. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 155)



Plot 7-30. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 179)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 20 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 29 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |



| 🔤 Keysight Spectrum Analyzer - Occupied BW | | | | | |
|--|-------------------------|---------------------|--------------------------------------|--|-----------------|
| LXI RE RF 50Ω AC | CORREC | SENSE:INT AL | IGN AUTO 07:18:57 PM | Oct 29, 2021 | Trace/Detector |
| | Center Trig: F | ree Run AvalHold: 1 | Radio Std: 100/100 | None | |
| | #IFGain:Low #Atten: | 36 dB | Radio Devi | ce: BTS | |
| | | | | | |
| 10 JEVIN Pof 20.00 dBm | | | | | |
| | | | | | |
| 10.0 | | | | | |
| 0.00 | | | | | Clear Write |
| 10.00 | فريدس سالما | Mallace 1 | | | |
| -10.0 | | | | | |
| -20.0 | L GINNE | Market | | | |
| -30.0 tomore and a state of the second secon | stopped will come a re- | | وروحلحا واللايوم والمثاؤ سنساوه والم | while the state of | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| 50.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Cepter 6 5450 CHz | | | Snan 2(| | |
| Pes BM 1.8 MHz | V | | Sweet | en 1 me | |
| | VI | 344 9 1411 12 | Swe | ep i llis | Min Hold |
| Occupied Bandwidt | h | Total Power | 10.3 dBm | | |
| | | | TOTO GEM | | |
| 50 | .752 MHz | | | | Detector |
| Too on the France France | 4.0520 8411 | | 00.00.00 | | Peak► |
| Transmit Freq Error | -1.0539 MHz | % of OBW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 44.56 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-31. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 119)



Plot 7-32. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 151)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dama 20 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 30 01 305 | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied E | 3W | | | | |
|---|---|----------------------|---|----------------------------------|-----------------|
| LX/ RL RF 50Ω AC | CORREC S | SENSE:INT | ALIGN AUTO 07:23:04 F | M Oct 29, 2021 | Trace/Detector |
| | Center Trig: Fi | req: 6.860000000 GHz | 100/100 Radio Std | : None | |
| | #IFGain:Low #Atten: | : 36 dB | Radio Dev | vice: BTS | |
| | | | | | |
| 10 dB/div Ref 20.00 dB | m | | | | |
| Log | | | | | |
| 10.0 | | ∧ I | | | Clear Write |
| 0.00 | ىلىرىتارىر يەتل | - Unamula | | | |
| -10.0 | at | | | | |
| -20.0 | rid an and the second | hall here have | | | Avorago |
| -30.0 http://www.aster.com/aster.com/aster.com/ | Alar and a second se | | alfilide d'alle ann a tha a chean air a | ىمەسلىمو ايس رۇنار ئەر ام | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| | | | | | |
| Center 6.8650 GHz | V | | Span 2 | 200.0 MHz | |
| Res BW 1.8 MHZ | VI | | SW | eep 1 ms | Min Hold |
| Occupied Bandwid | th | Total Power | 11.6 dBm | | |
| 4 | 3 085 MHz | | | | Detector |
| | | | | | Peak► |
| Transmit Freq Error | -1.0702 MHz | % of OBW Powe | er 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 45.28 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-33. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 183)



Plot 7-34. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|--|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dawa 04 -6 005 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | | Page 31 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | | |



| www.common.com/www.common.com/www.commonweak.com/www.commonweak.com/www.cow/www.com/www.cow/www.co | | | | | |
|--|------------------------|---------------------|--|--------------------------------|-----------------|
| 🗶 RL RF 50Ω AC C | ORREC SE | NSE:INT ALI | GN AUTO 08:52:33 PM | Oct 29, 2021 | Trace/Detector |
| | Center F | e Run Aval Hold: 10 | Radio Std: 1 | None | |
| # | FGain:Low #Atten: | 36 dB | Radio Devid | e: BTS | |
| | | | | | |
| 10 dB/div Ref 20 00 dBm | | | | | |
| Log | | | | | |
| 10.0 | | <u>^</u> | | | Clean Write |
| 0.00 | | | | | Clear write |
| -10.0 | 4 4 | | | | |
| -20.0 | - Arthur - Arthur | | | | |
| 30 0 months and some manufactures | when all the fresh and | White Hallow Lasser | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | يورليفرون مرا _{حير} ن | Average |
| 40.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| | | | Enon 40 | | |
| Center 6.6650 GHZ | VB | W 50 MHz | Span 40 | D.U MHZ | |
| Res Bw J WHZ | | | Swee | sp i llis | Min Hold |
| Occupied Bandwidth | | Total Power | 10.9 dBm | | |
| | 74 8411- | | | | |
| 149 | .71 MHZ | | | | Detector |
| Transmit Freq Error | -1.3436 MHz | % of OBW Power | 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 48 17 MHz | v dB | -26 00 dB | | |
| | 40.17 MITZ | X UD | -20.00 ub | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-35. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)



Plot 7-36. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 175)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | |
|------------------------------|---|---------------------------------------|--|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dama 20 at 205 | |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | | Page 32 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | | |





Plot 7-37. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 7) - Ch. 175)



Plot 7-38. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 189)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dogo 22 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 33 01 305 | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-39. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 209)



Plot 7-40. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 233)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dega 24 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 34 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | | | | | | |
|--|----------------|---|--------------------|---------|------------|------------|------------------|-------------------------|------|---|
| LXI RL RF 50Ω AC | CORREC | SEI | NSE:INT | | | ALIGN AUTO | 06:53:11 P | M Oct 29, 2021 | Trac | e/Detector |
| | | Center Fr | req: 6.88 • Run | 500000 | 0 GHZ | · 100/100 | Radio Std | : None | | |
| | #IFGain:Low | #Atten: 3 | 6 dB | | (vg) lold | . 100/100 | Radio Dev | vice: BTS | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 10 dB/div Ref 20.00 dBm | L., | | | | | | | | | |
| 10.0 | | | | | | | | | | |
| 10.0 | | <u>م</u> م | | | | | | | | Clear Write |
| 0.00 | | A | 4 | | | | | | | |
| -10.0 | | phants of the second | X | | | | | | | |
| -20.0 | <mark>/</mark> | | "When | 1 | | | | | | |
| -30.0 | <mark>/</mark> | | | - WY WY | millioning | | | | | Average |
| water and a state of the second second second second | June | | | | | wanter | and and a second | winest stanight a lares | | ···· · ·· · ···· · ··················· |
| -40.0 | | | | | | | | | | |
| -50.0 | | | | | | | | | | |
| -60.0 | | | | | | | | | | Max Hold |
| -70.0 | | | | | | | | | | Maxilola |
| | | | | | | | | | | |
| Center 6.88500 GHz | | | | | | | Span 1 | 00.0 MHz | | |
| Res BW 910 kHz | | VB | N 8 MI | Ηz | | | Swe | eep 1 ms | | Min Hold |
| | | | | | | | | | | Will Hold |
| Occupied Bandwidt | h | | Total | Pov | /er | 11.2 | 2 dBm | | | |
| 25 | | - | | | | | | | | |
| 20 | .451 MIF | 12 | | | | | | | | Detector |
| Transmit Freg Error | -5.9331 M | Hz | % of | OBW | Pow | er 99 | .00 % | | Auto | Peak ► <u>Man</u> |
| | 00.50 | | | | | 00 | | | | |
| X dB Bandwidth | 26.52 M | HZ | х ав | | | -26. | 00 aB | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| MSG | | | | | | STATU | 5 | | | |

Plot 7-41. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 187)



Plot 7-42. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 211)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 25 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 35 01 305 | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-43. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 227)



Plot 7-44. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 199)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------------|--|---------------------------------------|-----------------------------------|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 26 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 36 01 305 |
| © 2022 PCTEST | | | V 9.0 02/01/2019 |


| Image: Solid Action of the second of the | |
|--|------|
| 10 dB/div Ref 20.00 dBm Log Image: Clear W 100 Image: Clear W 10 | or |
| 100 1 | |
| 100 200 1 | rite |
| 40.0 50.0 <td< th=""><th>age</th></td<> | age |
| ***00 **** Max H **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** **** ***** | |
| Center 7.0250 GHz Span 200.0 MHz Res BW 1.8 MHz VBW 8 MHz Sweep 1 ms | lold |
| | lold |
| Occupied Bandwidth Total Power 11.0 dBm 42.095 MHz Deter | ctor |
| Transmit Freq Error -942.81 kHz % of OBW Power 99.00 % Auto x dB Bandwidth 48.63 MHz x dB -26.00 dB | Man |
| | |

Plot 7-45. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 215)



Plot 7-46. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------|--|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 27 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 37 01 305 |
| © 2022 PCTEST | | | V 9.0 02/01/2019 |



| 😐 Key | sight Spectru | um Analyzer - Oc | cupied BW | | | | | | | | | | |
|----------------------|---------------|----------------------|----------------|--------|----------------|-----------|-------------|-----------|-------------------|------------------|---|------|------------------|
| I <mark>XI</mark> RI | | RF 50 Ω | AC CC | ORREC | | SE | NSE:INT | | ALIGN AUTO | 08:39:00 F | M Oct 29, 2021 | Trac | e/Detector |
| | | | | | | Center Fi | req: 6.9850 | 00000 GHz | 1. 100/100 | Radio Std | : None | mac | CIDelector |
| | | | #16 | | , ; | #Atten: 3 | 6 dB | Avginoid | 1. 100/100 | Radio Dev | ice: BTS | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 10 dE | 3/div | Ref 30.0 | 0 dBm | | | | | - | | | | | |
| LOG | | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | Clear Write |
| 10.0 | | | | | | | n | | | | | | |
| 0.00 | | | | | \vdash | | Wer. | | | | | | |
| -10.0 | | | | | | <u>k</u> | <u>'\</u> | | | | | | |
| -20.0 | | | | | | | | | | | | | Average |
| 20.0 | | and the second state | Jeretunitation | - | and particular | iyir y | "YHY | Harrison | And Bernard Later | And American and | and the state of the | | |
| -30.0 | | | | | | | | | | | | | |
| -40.0 | | | | | | | | | | | | | |
| -50.0 | | | | | | | | | | | | | Max Hold |
| -60.0 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Cen | ter 6.98 | 50 GHz | | | | | | | | Span 4 | 00.0 MHz | | |
| Res | BW 31 | ∀IHz | | | | VB | W 50 MH | z | | Swi | eep 1 ms | | Min Hold |
| | | | | | | | | | | | | | |
| 0 | ccupi | ed Band | width | | | | Total F | ower | 11.0 | 6 dBm | | | |
| | | | 96 2 | 052 | MLI- | - | | | | | | | Detector |
| | | | 30.2 | -52 | | Z | | | | | | | Delector Peak |
| Т | ansmi | t Freq Er | ror | -5.315 | 5 MH | Z | % of O | BW Pow | er 99 | 9.00 % | | Auto | Man |
| v | dR Bar | ndwidth | | 44.7 | 8 MH | 7 | x dB | | -26 | 00 dB | | | |
| ^ | | awiaui | | | | 2 | A UD | | -20 | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

Plot 7-47. 26dB Bandwidth Plot MIMO ANT1 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 20 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | Page 38 01 305 | |
| © 2022 PCTEST | | | V 9.0 02/01/2019 | |



Keysight Spectrum Analyzer - Occupied BW K RL RF S0 Ω AC - - - X 04:58:53 PM Oct 29, 2021 SENSE:INT ALIGN AUTO Trace/Detector Center Freq: 5.935000000 GHz Trig: Free Run Avg|Hol Radio Std: None Avg|Hold: 100/100 Radio Device: BTS #IFGain:Low #Atten: 36 dB Ref 20.00 dBm 0 dB/div og **Clear Write** Average Max Hold Center 5.93500 GHz Res BW 470 kHz Span 50.00 MHz VBW 5 MHz Sweep 1 ms Min Hold Total Power 20.2 dBm **Occupied Bandwidth** 19.222 MHz Detector Peak▶ -19.807 kHz **Transmit Freq Error** % of OBW Power 99.00 % Auto Man x dB Bandwidth 21.87 MHz -26.00 dB x dB STATUS

MIMO Antenna-1 26dB Bandwidth Measurements (FULL Tones)

Plot 7-48. 26dB Bandwidth Plot MIMO ANT1 (20MHz 802.11ax (FULL Tones) (UNII Band 5) - Ch. 2)



Plot 7-49. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 45)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|--|-----------------------------|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 20 of 205 |
| 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 Portable Handset | | Portable Handset | Page 39 01 305 |
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Plot 7-50. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) UNII Band 5) - Ch. 93)



Plot 7-51. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 3)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------|---|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Degr. 40 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 40 01 305 |
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| Keysight Spectrum Analyzer - Occupied BW | | | | | | | |
|--|-------------------------|--------------------|--------------|------------|-----------------|------|---------------|
| LX/ RL RF 50 Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 05:36:31 P | M Oct 29, 2021 | Trac | e/Detector |
| | trig | g: Free Run Avg H | old: 100/100 | | | | |
| | | | | | | | |
| | | | | | | | |
| 10 dB/div Ref 20.00 dBm | | | _ | | | | |
| Log | | | | | | | |
| 10.0 | maller for the male and | when persiveration | A. | | | | Clear Write |
| 0.00 | | | | | | | |
| -10.0 | | | 1 | | | | |
| -20.0 | / | | | | | | |
| -30.0 | <i>k</i> | | hundren | www. | and a formation | | Average |
| -40.0 | | | | | | | |
| -50.0 | | | | | | | |
| -60.0 | | | | | | | Max Hold |
| -70.0 | | | | | | | Max Holu |
| | | | | | | | |
| Center 6.16500 GHz | | | | Span 1 | 00.0 MHz | | |
| Res BW 910 kHz | | VBW 8 MHz | | Swe | eep 1 ms | | Min Hold |
| Occurried Denduridth | | Total Power | 20.3 | dBm | | | |
| Occupied Bandwidth | | Total Fower | 20.5 | ubiii | | | |
| 37. | 780 MHz | | | | | | Detector |
| Transmit Frag Error | 26 707 kHz | | | 00 % | | Auto | Peak► Man |
| Transmit Freq Error | 30.707 KHZ | | wei 99 | .00 % | | Auto | <u>iviari</u> |
| x dB Bandwidth | 41.27 MHz | x dB | -26. | 00 dB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | STATUS | | | | |

Plot 7-52. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 43)



Plot 7-53. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 91)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 44 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 41 of 305 | |
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| Keysight Spectrum Analyzer - Occupied BW | | | | | | | | | |
|--|----------------------|-------------|-----------------------|------------|--------------|------------|----------------|------|--------------|
| LXI RE 50Ω AC | CORREC | SEN | ISE:INT | 0000 GH7 | ALIGN AUTO | 07:08:21 P | M Oct 29, 2021 | Trac | e/Detector |
| | | Trig: Free | Run | Avg Hold | I: 100/100 | Raulo Stu. | None | | |
| | #IFGain:Low | #Atten: 36 | 6 dB | | | Radio Dev | ice: BTS | | |
| | | | | | | | | | |
| 10 dB/div Ref 30.00 dBm | | | | | | | | | |
| | | | | | | | | | |
| 20.0 | | | | | | | | | Clear Write |
| 10.0 | provingender and all | www.www | and the second second | Monthermon | | | | | |
| 0.00 | | | | | | | | | |
| -10.0 | | | | | ļ | | | | |
| -20.0 | | | | | <u> </u> | | | | Average |
| -30.0 management | ~ | | | | Www.withuliu | www. | www. | | |
| -40.0 | | | | | | | | | |
| -50.0 | | | | | | | | | |
| -60.0 | | | | | | | | | iviax noiu |
| | | | | | | | | | |
| Center 5.9850 GHz | | | | | | Span 2 | 00.0 MHz | | |
| Res BW 1.8 MHz | | VBV | V 8 MHz | | | Swe | ep 1 ms | | Min Hold |
| | | | Total P | 011/0F | 22.2 | dDm | | | |
| Occupied Bandwidtr | | | TOTAL | ower | 22.1 | авт | | | |
| 77 | .445 MH | Z | | | | | | | Detector |
| Transmit Frog Error | 61 170 ki | U -7 | % of OF | | or 00 | 00 % | | Auto | Peak▶ Man |
| Transmit Freq Error | -01.172 K | Π Ζ | % OI UE | | er 99 | .00 % | | Auto | <u>Ivian</u> |
| x dB Bandwidth | 83.40 MI | Hz | x dB | | -26. | 00 dB | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| MSG | | | | | STATUS | | | | |

Plot 7-54. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 7)



Plot 7-55. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 39)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------|---|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 42 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 42 01 305 |
| © 2022 PCTEST | | | V 9.0 02/01/2019 |





Plot 7-56. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 87)



Plot 7-57. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 97)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 42 of 205 | |
| 1M2112100159-10-R1.A3L | 3L 9/9 – 11/18/2021 Portable Handset | | Page 43 of 305 | |
| © 2022 PCTEST | | | V 9.0 02/01/2019 | |



| LXI RE 50 Ω AC | CORREC | SEN | SE:INT | | ALIGN AUTO | 05:10:18 P | M Oct 29, 2021 | Trac | e/Detector |
|-------------------------|-------------|---------------|----------------------|---------------------|--------------|------------------------|---------------------------|------|-------------|
| | | Center Free | eq: 6.4/500 . Pup | 0000 GHz | . 100/100 | Radio Std | None | | |
| | #IFGain:Low | #Atten: 36 | dB | Avginoid | . 100/100 | Radio Dev | ice: BTS | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | | | | | |
| Log | | | | | | | | | |
| 10.0 | the Alder | ash a Astanti | Munitohan | adoon bloo - | | | | | Clear Write |
| 0.00 | | | and all a file | 10 10 10 10 10 10 V | 1 | | | | erea mile |
| -10.0 | | | | | 1 | | | | |
| -20.0 | 1 | | | | M | | | | |
| | N I | | | | | | | | Avorago |
| -30.0 | | | | | | | | | Average |
| -40.0 | | | | | (An Inverse) | weigeren fikung Arteri | Contraction of the second | | |
| -50.0 | | | | | | | | | |
| -60.0 | | | | | | | | | |
| | | | | | | | | | Max Hold |
| -70.0 | | | | | | | | _ | |
| Cepter 6 47500 CHz | | | | | | Snan 5 | 0.00 MHz | | |
| | | VRV | 4 5 MHz | | | Shall a | 0.00 MITZ | | |
| Res DW 470 KHz | | 404 | 9 J 1911 12 | | | 300 | ep mis | | Min Hold |
| Occupied Bandwidth | | | Total P | ower | 10 3 | dBm | | | |
| Occupied Bandwidtr | 1 | | Total I | OWCI | 10.0 | u Biii | | | |
| 19 | .286 MH | Z | | | | | | | Detector |
| | | | | | | | | | Peak► |
| Transmit Freq Error | 44.386 kl | z | % of OE | 3W Pow | er 99 | .00 % | | Auto | Man |
| v dB Bandwidth | 21.05 ML | 47 | v dB | | -26 | | | | |
| | 21.55 WI | 12 | A UD | | -20. | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| MSC | | | | | STATIS | | | | |

Plot 7-58. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 105)



Plot 7-59. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 113)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | Dage 44 of 205 | |
| | | Portable Handset | Page 44 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |





Plot 7-60. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 99)



Plot 7-61. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 107)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------------|---|---------------------------------------|-----------------------------------|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 45 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 45 01 305 |
| © 2022 PCTEST | | | V 9.0 02/01/2019 |





Plot 7-62. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 115)



Plot 7-63. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 6) - Ch. 103)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 46 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 46 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | - ē x |
|--|-----------------------|------------------------------|--|----------------------|------------------|
| <mark>ΙΧΙ</mark> RL RF 50Ω AC C | ORREC | SENSE:INT | ALIGN AUTO 05:15:06 | PM Oct 29, 2021 | Trace/Detector |
| | Cent | : Free Run AvalHol | Radio St Id: 100/100 | d: None | |
| #1 | FGain:Low #Att | en: 36 dB | Radio De | evice: BTS | |
| | | | | | |
| 40 dB/dby Bof 20.00 dBm | | | | | |
| | | | | | |
| 10.0 | | | | | |
| 0.00 | Amarkanow | with mouth would be the word | A. | | Clear Write |
| 10.0 | 1 | | | | |
| 20.0 | ^ | | | | |
| -20.0 | | | 1 | | • |
| -30.0 | | | | | Average |
| -40.0 Arealised and algorithmeter and the second | | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | a the surger and the | |
| -50.0 | | | | | |
| -60.0 | | | | | |
| -70.0 | | | | | Max Holu |
| 10.0 | | | | | |
| Center 6.53500 GHz | | | Span | 50.00 MHz | |
| Res BW 470 kHz | | VBW 5 MHz | Sw | /eep 1ms | Min Hold |
| | | | | | |
| Occupied Bandwidth | | Total Power | 18.2 dBm | | |
| 19 ' | 188 MHz | | | | Detector |
| | | | | | Peak► |
| Transmit Freq Error | 223 Hz | % of OBW Pov | ver 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 21 72 M∐ 7 | v dB | -26 00 dB | | |
| | 21.72 MIT12 | A UD | -20.00 ub | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-64. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 117)



Plot 7-65. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 149)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 47 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 47 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| www.commonstream Keysight Spectrum Analyzer - Occupied BW | | | | | - ē x |
|---|----------------------|--|---------------------|-----------------|------------------|
| IXI RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO 05:19:28 | PM Oct 29, 2021 | Trace/Detector |
| | Trig: F | Free Run Avg Hol | d: 100/100 | a. None | |
| | #IFGain:Low #Atten | :: 36 dB | Radio De | evice: BTS | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | |
| Log | | | | | |
| 10.0 | مرماني والأفير وممار | | | | Clear Write |
| 0.00 | | and the second second second second second | 2 \ | | Cicui Milic |
| -10.0 | | | <u> </u> | | |
| -20.0 | | | <u>\</u> | | |
| -30.0 | | | | | Average |
| -40 0 - Mong warmy marks my hard and ward | | | Manhahamania | when when when | |
| -50.0 | | | | | |
| 60.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Center 6.87500 GHz | | | Span | 50.00 MHz | |
| Res BW 470 kHz | v | BW 5 MHz | Sv | veep 1 ms | Min Hold |
| | | | | | Militiona |
| Occupied Bandwidth | h | Total Power | 18.8 dBm | | |
| 19 | 230 MHz | | | | Detector |
| | | | | | Peak▶ |
| Transmit Freq Error | -26.306 kHz | % of OBW Pow | ver 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 21.89 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-66. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 185)



Plot 7-67. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 123)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
|--|--|---------------------------------------|---------|-----------------------------------|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | | Dama 40 af 205 |
| | | Portable Handset | | Page 48 01 305 |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| LXX RL RF 50Ω AC CO | RREC | SENSE:INT | ALIGN AUTO | 06:48:21 PM (| Oct 29, 2021 | Tracel | Detector |
|--------------------------------------|------------------------|--------------------|-----------------------|---------------|---------------|--------|-----------|
| | Cent | Free Run A | gHz gHold: 100/100 | Radio Std: N | ione | | |
| #IF | Gain:Low #Atte | en: 36 dB | | Radio Devic | e: BTS | | |
| | | | | | | | |
| | | | | | | | |
| 10 dB/div Ref 30.00 dBm | | | | | | | |
| 20.0 | | | | | | | |
| 40.0 | | | | | | C | ear Write |
| 10.0 | المريعه بمراسلهم بعساس | hour man and hours | the brances | | | | |
| 0.00 | 1 | | | | | | |
| -10.0 | / | | | | | | |
| -20.0 | / | | k | | | | Average |
| 30.0 | | | 14 | | | | - |
| deror at lenger brown berger and all | | | 40 marine | WWW | where we have | | |
| -40.0 | | | | | | | |
| -50.0 | | | | | | | Max Hold |
| -60.0 | | | | | | | |
| | | | | | | | |
| Center 6.72500 GHz | | | | Span 10 | 0.0 MHz | | |
| Res BW 910 kHz | | VBW 8MHz | | Swee | p 1 ms | | Min Hold |
| | | Tetel Deve | | | | | |
| Occupied Bandwidth | | Total Pow | er 21.0 | aBm | | | |
| 37.7 | 72 MHz | | | | | | Detector |
| 0111 | | | | | | | Peak▶ |
| Transmit Freq Error | 8.834 kHz | % of OBW | Power 99 | .00 % | | Auto | Man |
| v dB Bandwidth | 44.02 MH- | v dP | 26 | | | | |
| | 41.05 WINZ | X UB | -20. | 00 UB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | STATUS | | | | |

Plot 7-68. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 155)



Plot 7-69. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 179)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
|--|--|---------------------------------------|---------|-----------------------------------|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | | Dage 40 of 205 |
| | | Portable Handset | | Page 49 01 305 |
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| Keysight Spectrum Analyzer - Occupied BW | | | | | | | |
|--|--|--------------------------------------|-----------------|--------------------|---------------------------|---------|-----------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN | N AUTO 07:17:55 PN | 1 Oct 29, 2021 | Trace/I | Detector |
| | | enter Freq: 6.04000 rig: Free Run | AvalHold: 100 | Radio Std: | None | | |
| | #IFGain:Low #/ | Atten: 36 dB | | Radio Devi | ce: BTS | | |
| | | | | | | | |
| | | | | | | | |
| Loa | | | | | | | |
| 20.0 | | | | | | | |
| 10.0 | | | | | | Cl | ear Write |
| 10.0 | and a stand a stand and a stand and a stand a st | many populations | americalization | | | | |
| 0.00 | | | | | | | |
| -10.0 | | | | | | | |
| -20.0 | | | <u> </u> | | | | Average |
| -30.0 and the property when the strends | nd | | L | - | est have been det web and | | |
| -40.0 | | | | | | | |
| 40.0 | | | | | | | |
| -50.0 | | | | | | I I | Max Hold |
| -60.0 | | | | | | | |
| Contor 6 5450 CHa | | | | Enon 3 | | | |
| Center 0.5450 GHZ | | | | Span Z | on 1 me | | |
| Res BW 1.8 MIHz | | | | owe | ep i llis | | Min Hold |
| Occupied Bandwidt | h | Total P | ower | 21.5 dBm | | | |
| | | i otari i | | L no abin | | | |
| 77 | .532 MHz | | | | | | Detector |
| | CO 500 111 | | | 00.00.00 | | A | Peak► |
| I ransmit Freq Error | -68.523 kHz | % of O | SW Power | 99.00 % | | Auto | Man |
| x dB Bandwidth | 83.08 MHz | x dB | | -26.00 dB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | | STATUS | | | |

Plot 7-70. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 119)



Plot 7-71. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 151)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: Test Dates: | | EUT Type: | Dage 50 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 50 01 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | |
|--|----------------------------------|--------------------------|-----------------|---------------------|-----------------------|
| KAL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 07:21:41 PM Oct 29, | , 2021 Trace/Detector |
| | Tria: | Free Run AvalHo | ld: 100/100 | adio Std: None | |
| | #IFGain:Low #Atter | n: 36 dB | R | adio Device: BT | rs |
| | | | | | |
| 10 dB/div Ref 30.00 dBm | ı | | | | |
| Log | | | | | |
| 20.0 | | | | | Clear Write |
| 10.0 | Martin Contraction of the second | - mar marker through man | ~ | | |
| 0.00 | | | | | |
| -10.0 | | | | | |
| -20.0 | | | | | Average |
| -30.0 moundational manufactures | ++ | | Law way way way | mar daught where by | |
| -40.0 | | | | | |
| 50.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | |
| Center 6,8650 GHz | | | | Span 200.0 [| MHZ |
| Res BW 1.8 MHz | V | /BW 8 MHz | | Sweep 1 | ms Min Hold |
| | | | | | |
| Occupied Bandwidt | h | Total Power | 21.4 d | Bm | |
| 77 | 334 MHz | | | | Detector |
| | | | | | Peak |
| Transmit Freq Error | -85.109 kHz | % of OBW Pov | wer 99.0 | 0 % | Auto <u>Man</u> |
| x dB Bandwidth | 83 24 MHz | x dB | -26 00 | dB | |
| | 03.24 10112 | A GD | -20.00 | чв | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-72. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 7) - Ch. 183)



Plot 7-73. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 189)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | | |
|---|--|---------------------------------------|--|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 51 of 205 | | |
| 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | Portable Handset | | Page 51 of 305 | | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | | | |



| 🔤 Keysight Spectrum Analyzer - Occupied BW 👘 | | | | | | | |
|--|----------------------------------|---------------------------------------|--------------------------------|------------------|----------|-------|------------|
| <mark>ΙΧΙ</mark> RL RF 50Ω AC CO | ORREC SE | NSE:INT | ALIGN AUTO 0 | 5:23:59 PM Oct 2 | 29, 2021 | Trace | /Detector |
| | Center F | req: 6.99000000 GHz e Run AvalHolo | ка d: 100/100 | alo sta: Non | e | | |
| #1 | FGain:Low #Atten: 3 | 36 dB | Ra | dio Device: E | зтя | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| 10.0 | | | | | | | |
| 0.00 | press hard have all so have been | h retransmithen resulting | | | | С | lear Write |
| 10.0 | | | 4 | | | | |
| -10.0 | 1 | | h | | | | |
| -20.0 | | | 1 | | | | |
| -30.0 | | | h h | | | | Average |
| -40.0 Australina of the and the second states of the second secon | | | ^w brook internation | www.www.algeliu | and well | | |
| -50.0 | | | | | | | |
| -60.0 | | | | | | | |
| 70.0 | | | | | | | Max Hold |
| | | | | | | | |
| Center 6.99500 GHz | | | S | pan 50.00 |) MHz | | |
| Res BW 470 kHz | VB | W 5 MHz | | Sweep | 1 ms | | Min Hold |
| | | | | | | | Milling |
| Occupied Bandwidth | | Total Power | 18.9 dE | Зm | | | |
| 19 [·] | 174 MHz | | | | | | Detector |
| 10. | | | | | | | Peak▶ |
| Transmit Freq Error | -68 Hz | % of OBW Pow | ver 99.00 |) % | | Auto | Man |
| v dB Bandwidth | 22.08 MHz | v dB | -26.00 | dB | | | |
| | 22.00 MITZ | X UD | -20.00 | uВ | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | STATUS | | | | |

Plot 7-74. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 209)



Plot 7-75. 26dB Bandwidth Plot MIMO ANT1 (20MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 233)

| FCC ID: A3LSMS908JPN | PCTEST [®] Proud to be part of ® element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 52 of 205 | | | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | - 11/18/2021 Portable Handset | | | | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | | | |



| LXI RE RF 50Ω AC C | ORREC | SENSE:INT | ALIGN AUTO | 06:52:09 PM | Oct 29, 2021 | Trace/Detector |
|-----------------------------|--------------|--------------------------------------|-------------------|---------------------------|-----------------------------|-----------------|
| | | enter Freq: 6.88900 rig: Free Run | AvalHold: 100/100 | Radio Std: r | vone | |
| # | FGain:Low #/ | Atten: 36 dB | | Radio Devic | e: BTS | |
| | | | | | | |
| to apply | | | | | | |
| Log Rei 30.00 dBm | | | | | | |
| 20.0 | | | | | | |
| 10.0 | | | | | | Clear Write |
| 10.0 | preserver | mannendelind | for vertices | | | |
| 0.00 | | | | | | |
| -10.0 | 1 | | | | | |
| -20.0 | | | | | | Average |
| -30.0 | / | | <u> </u> | | | |
| -40.0 | | | "เป็นหายมาก"า | generally below all degly | And an and the state of the | |
| 50.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -60.0 | | | | | | |
| Contor 6 99500 CHz | | | | Span 10 | | |
| | | | | Span iv | 0.0 Winz | |
| Res Day 910 Kitz | | | | Gwee | p ms | Min Hold |
| Occupied Bandwidth | | Total P | ower 20. | 4 dBm | | |
| Occupied Ballowidth | | | 201 | | | |
| 37. | 830 MHz | | | | | Detector |
| Turner and it Frank Franker | 44.057.60 | 0/ -5 01 | NA/ D | 0.00.0/ | | Peak► Auto |
| I ransmit Freq Error | 44.257 KHZ | % of OE | SW Power 9 | 9.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 40.64 MHz | x dB | -26 | .00 dB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | STATU | JS | | |

Plot 7-76. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 187)



Plot 7-77. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 211)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | | |
|---|---|---------------------------------------|--|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Daga 52 of 205 | | |
| 1M2112100159-10-R1.A3L 9/9 - 11/18/2021 | | Portable Handset | | Page 53 of 305 | | |
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Plot 7-78. 26dB Bandwidth Plot MIMO ANT1 (40MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 227)



Plot 7-79. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 199)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | |
|---|--|---------------------------------------|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga 54 of 205 | | |
| 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | Portable Handset | Page 54 01 305 | | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | | |



| Keysight Spectrum Analyzer - Occupied BV | V | | | | | |
|--|--------------------------|--------------------------------|------------------|----------------------|---|-----------------|
| LX RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 07:25:56 PM | Oct 29, 2021 | Trace/Detector |
| | Cen | ter Freq: 7.025000000 GHz | Id: 100/100 | Radio Std: I | None | Haceibereetoi |
| | #IFGain:Low #Att | en: 36 dB | 10. 100/100 | Radio Devic | e: BTS | |
| | | | | | | |
| | | | | | | |
| 10 dB/div Ref 30.00 dBn | n | | - | | | |
| 20.0 | | | | | | |
| 20.0 | | | | | | Clear Write |
| 10.0 | ميناد ورالير ومناجع بالم | hand the address of the second | | | | |
| 0.00 | | | | | | |
| -10.0 | | | | | | |
| 20.0 | | | | | | Average |
| -20.0 | | | l l | | | Average |
| -30.0 mough watants way para yaan watata | hoya | | all and a second | aloge and the second | and the state of the | |
| -40.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -60.0 | | | | | | Max Holu |
| -00.0 | | | | | | |
| Center 7.0250 GHz | | | | Span 20 | 0.0 MHz | |
| Res BW 1.8 MHz | | VBW 8 MHz | | Swee | p 1 ms | Min Hold |
| | | | | | <u> </u> | MITHOU |
| Occupied Bandwidt | h | Total Power | 21.6 | dBm | | |
| | 7 200 MILL- | | | | | |
| | .306 MIFIZ | | | | | Detector |
| Transmit Freq Error | -63.523 kHz | % of OBW Pov | wer 99. | .00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 82 82 MHz | v dB | -26.0 | | | |
| | 02.02 WITZ | X UD | -20.0 | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | STATUS | | | |
| | | | | | | |

Plot 7-80. 26dB Bandwidth Plot MIMO ANT1 (80MHz BW 802.11ax (FULL Tones) (UNII Band 8) - Ch. 215)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
|------------------------|--|---------------------------------------|---------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | | Dogo EE of 20E |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | | Page 55 01 305 |
| © 2022 PCTEST | | | | V 9.0 02/01/2019 |





MIMO Antenna-2 26dB Bandwidth Measurements (26 Tones)

Plot 7-81. 26dB Bandwidth Plot MIMO ANT2 (20MHz 802.11ax (26 Tones) (UNII Band 5) - Ch. 2)



Plot 7-82. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 45)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga 56 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 56 of 305 | |
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Plot 7-83. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) UNII Band 5) - Ch. 93)



Plot 7-84. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 3)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 57 of 205 | | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 57 01 305 | | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | | |



| Keysight Spectrum Analyzer - Occupied BV | V | | | | | | | |
|---|------------------|------------------------------|-------------------------|--------------|-------------|----------------|------|---------------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT | , | ALIGN AUTO | 09:54:57 PN | 1 Oct 29, 2021 | Trac | e/Detector |
| | Cen | ter Freq: 6.1650 Eree Run | 00000 GHz AvalHold: | · 100/100 | adio Std: | None | | |
| | #IFGain:Low #Att | ten: 36 dB | / aginoid. | R | adio Devi | ce: BTS | | |
| | | | | | | | | |
| | | | | | | | | |
| 10 dB/div Ref 20.00 dBr | n | | | | | | | |
| 10.0 | | | | | | | | |
| 10.0 | | <i>م</i> مر | | | | | | Clear Write |
| 0.00 | | | | | | | | |
| -10.0 | | ₩ _ <u></u> | | | | | | |
| -20.0 | <mark>0</mark> | William | | | | | | |
| 30.0 | | | Hund Vight and the last | | | | | Average |
| month and a second some some sources and a second | الايدمغ | | | Minder March | | working with | | monugo |
| -40.0 | | | | | | | | |
| -50.0 | | | | | | | | |
| -60.0 | | | | | | | | Max Hold |
| -70.0 | | | | | | | | Maxilola |
| 10.0 | | | | | | | | |
| Center 6.16500 GHz | | | | | Span 1 | 00.0 MHz | | |
| Res BW 910 kHz | | VBW 8 MH | z | | Swe | ep 1 ms | | |
| | | | | | | _ | | Mill Hold |
| Occupied Bandwidt | h | Total F | Power | 10.7 d | Bm | | _ | |
| | | | | | | | | |
| 24 | 1.873 WHZ | | | | | | | Detector |
| Transmit Fred Error | -6 1206 MHz | % of O | BW Powe | or 99.0 | 0 % | | Auto | Peak ► Man |
| | 0.1200 10112 | 70 01 0 | BILLOW | 50.0 | 0 70 | | | |
| x dB Bandwidth | 25.19 MHz | x dB | | -26.00 | dB | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| MSG | | | | STATUS | | | | |

Plot 7-85. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 43)



Plot 7-86. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 91)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | |
|---|-----------------------------|---------------------------------------|-----------------------------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 50 of 205 | | | |
| 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | Portable Handset | Page 58 of 305 | | | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | | | | | |
|--|---------------------------------------|------------|--|----------------|--|-------------|-------------------|------|-------------|
| LXI RL RF 50Ω AC | CORREC | SEN | ISE:INT | | ALIGN AUTO | 10:21:41 P | M Oct 29, 2021 | Trac | e/Detector |
| | | Trig: Free | eq: 0.98000 Run | AvalHold | 100/100 | Radio Std | : None | | |
| | #IFGain:Low | #Atten: 3 | 6 dB | | | Radio Dev | vice: BTS | | |
| , | | | | | | | | | |
| 10 dB/div Dof 30 00 dBm | | | | | | | | | |
| Log | · · · · · · · · · · · · · · · · · · · | _ | | | | | | | |
| 20.0 | | | | | | | | | |
| 10.0 | | | | | | | | | Clear Write |
| 0.00 | | Ţ | \ | | | | | _ | |
| 0.00 | | \sim | m ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | | | | | |
| -10.0 | | | | | | | | | |
| -20.0 | the of Monard and a | | | Mary helping | | | | | Average |
| -30.0 | and sold and a sold and a | | | | and the state of the second state of the secon | -kartenaa H | -arithernet-state | _ | |
| -40.0 | | | | | | | | | |
| -50.0 | | | | | | | | | Mayllald |
| 60.0 | | | | | | | | | |
| -30.0 | | | | | | | | | |
| Center 5.9850 GHz | | | | | | Span 2 | 00.0 MHz | | |
| Res BW 1.8 MHz | | VBV | V 8 MHz | | | Swe | eep 1 ms | | |
| , | | | | | | | | | Minitiona |
| Occupied Bandwidt | h | | Total P | ower | 12.8 | l dBm | | | |
| 30 | 930 ML | 7 | | | | | | | Detector |
| | | 12 | | | | | | | Peak |
| Transmit Freg Error | -106.52 k | Hz | % of OF | SW Powe | er 99 | .00 % | | Auto | Man |
| v dD Demolucialth | 20.00 М | | u dD | | 26 | | | | |
| X dB Bandwidth | 39.99 M | ΠZ | хав | | -20. | 00 aB | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| MSG | | | | | STATUS | 3 | | | |

Plot 7-87. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 7)



Plot 7-88. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 39)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 50 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 59 of 305 | |
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Plot 7-89. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 5) - Ch. 87)



Plot 7-90. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)

| FCC ID: A3LSMS908JPN | PCTEST [•] Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 60 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 60 of 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | |
|--|---|---------------------|--|------------------|---------------------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT ALI | IGN AUTO 10:45:36 PM | Oct 29, 2021 | Trace/Detector |
| | Center Tria: F | ree Run AvaiHold: 1 | Radio Std: f | None | |
| | #IFGain:Low #Atten | : 36 dB | Radio Devic | e: BTS | |
| | | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | |
| 10.0 | | | | | |
| 0.00 | | A. | | | Clear Write |
| 0.00 | | 1 44 | | | |
| -10.0 | | | | | |
| -20.0 | I A A A A A A A A A A A A A A A A A A A | Marine - | | | |
| -30.0 summer to the state of the second seco | YLLA WHERE Y HAR HAR AND | "WHITHWARD Age | and a strategy and the state of | newspania Martin | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -38.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -70.0 | | | | | |
| Contor 6 0250 CHz | | | Spap 40 | | |
| | v | BW 50 MHz | Spail 40 Swaa | 1 me | |
| | v. | | ONCO | , p i ma | Min Hold |
| Occupied Bandwidth | | Total Power | 10.9 dBm | | |
| Cecupica Ballawida | | | | | |
| 12 | (./9 MHz | | | | Detector |
| Transmit Fred Error | 610 30 kHz | % of OBW Power | 00 00 % | | Peak▶ Auto Man |
| | 013.30 KHZ | | 33.00 % | | inato <u>intari</u> |
| x dB Bandwidth | 40.46 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-91. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 15)



Plot 7-92. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)

| FCC ID: A3LSMS908JPN | PCTEST [•] Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 61 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 61 of 305 | |
| © 2022 PCTEST V 9.0 02/01/2019 | | | | |



| Keysight Spectrum Analyzer - Occupied BW | / | | | | |
|--|---------------------------|--|-----------------------|-----------------------|-----------------|
| LX/ RL RF 50 Ω AC | CORREC | SENSE:INT | ALIGN AUTO 10:47:34 F | M Oct 29, 2021 | Trace/Detector |
| | Center | Freq: 6.185000000 GHz | Radio Std | : None | Theorem |
| | #IFGain:Low #Atten | : 36 dB | Radio Dev | vice: BTS | |
| | an ounicou | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBn | 1 | | | | |
| Log | | | | | |
| 10.0 | | Λ | | | Clear Write |
| 0.00 | | | | | |
| -10.0 | | | | | |
| 20.0 | | | | | |
| -20.0 | a so I wollowsorthing the | Mar Market and a state of the s | | | A |
| -30.0 | | | | and the second second | Average |
| -40.0 | | | | | |
| -50.0 | | | | | |
| 69 A | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | |
| | | | | | |
| Center 6.1850 GHz | | | Span 4 | 00.0 MHz | |
| Res BW 3 MHZ | V | BW 50 MHZ | SW | eep 1 ms | Min Hold |
| | | | | | |
| Occupied Bandwidt | h | Total Power | 10.7 dBm | | |
| 15 | 54 50 MHz | | | | Detector |
| | | | | | Peak▶ |
| Transmit Freq Error | -5.5692 MHz | % of OBW Powe | r 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 37 01 M⊌ 7 | v dB | -26 00 dB | | |
| | 37.91 MHZ | XUD | -20.00 uB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-93. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 47)



Plot 7-94. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | |
|--------------------------------|--|---------------------------------------|--|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 62 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | rtable Handset | | Page 62 of 305 | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | | | | |
|---|----------------------------------|---------------|----------------|---------------|--------------|----------------|------|-------------|
| LXX RL RF 50Ω AC COP | RREC SE | NSE:INT | Α | LIGN AUTO | 10:49:17 PI | M Oct 29, 2021 | Trac | e/Detector |
| | Center F | req: 6.345000 | AvalHold: | 100/100 | Radio Std: | None | | |
| #IF | Gain:Low #Atten: 3 | 6 dB | Avginoid. | 100/100 | Radio Dev | ice: BTS | | |
| | | | | | | | | |
| | | | | | | | | |
| 10 dB/div Ref 30.00 dBm | | | | | | | | |
| 20.0 | | | | | | | | |
| 20.0 | | | | | | | | Clear Write |
| 10.0 | | ٨ | | | | | | |
| 0.00 | | Mudela . | | | | | | |
| -10.0 | <i>/</i> | | | | | | | |
| -20.0 | . where | <u> </u> | | | | | | Average |
| 20 0 marth of the fundamental and all and the | where and the first of the state | A MARTIN | Millertyrolung | whether and a | monoralition | mandrewoodras | | Ŭ |
| -30.0 | | | | | | | | |
| -40.0 | | | | | | | | |
| -50.0 | | | | | | | | Max Hold |
| -60.0 | | | | | | | | |
| | | | | | | | | |
| Center 6.3450 GHz | | | | | Span 4 | 00.0 MHz | | |
| Res BW 3 MHz | VB | W 50 MHz | | | Swe | ep 1 ms | | Min Hold |
| | | _ | | | | | | |
| Occupied Bandwidth | | Total Po | ower | 10.6 | dBm | | | |
| 166 | 46 MHz | | | | | | | Detector |
| 100. | | | | | | | | Peak▶ |
| Transmit Freq Error | -480.56 kHz | % of OB | W Powe | r 99. | .00 % | | Auto | <u>Man</u> |
| | 20 45 MUL | w alD | | 26.0 | | | | |
| | 39.43 MINZ | хав | | -20.0 | JU 08 | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| MSG | | | | STATUS | | | | |

Plot 7-95. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 5) - Ch. 79)



Plot 7-96. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 97)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dege 62 of 205 | |
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Plot 7-97. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 105)



Plot 7-98. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 113)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|-----------------------------|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 64 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 64 of 305 | |
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Plot 7-99. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 99)



Plot 7-100. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 107)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage (5 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 65 of 305 | |
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Plot 7-101. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 115)



Plot 7-102. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 6) - Ch. 103)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|--------------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 66 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 00 01 305 | |
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| Keysight Spectrum Analyzer - Occupied B\ | N | | | | | |
|--|--|--------------------------|---------------------------------|--------------------------|----------|----------------|
| ΙΧΙ RE 50 Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 10:53:31 PM Oct 2 | 29, 2021 | Trace/Detector |
| | Cer | nter Freq: 6.505000000 G | Hz Hold: 100/100 | Radio Std: Non | e | Theorem |
| | #IFGain:Low #At | ten: 36 dB | 100,100 | Radio Device: E | втя | |
| | an ounicou | | | | | |
| | | | | | | |
| 10 dB/div Ref 20.00 dBr | n | | | | | |
| Log | | | | | | |
| 10.0 | | Λ | | | | Clear Write |
| 0.00 | | /hq-4 | | | | |
| -10.0 | | | | | | |
| 20.0 | | Mr. | | | | |
| | and and and the state of the st | What work and the | the sales subtraction at most a | able baster to a line of | | • |
| -30.0 | | | | | | Average |
| -40.0 | | | | | | |
| -50.0 | | | | | | |
| | | | | | | |
| -60.0 | | | | | | Max Hold |
| -70.0 | | | | | | |
| | | | | | | |
| Center 6.5050 GHz | | | | Span 400.0 | MHZ | |
| Res BW 3 MHz | | VBW 50 MHz | | Sweep | 1 ms | Min Hold |
| | | - | 10.0 | 10 | | |
| Occupied Bandwid | th | lotal Power | 12.2 | dBm | | |
| 1. | 10 83 MHz | | | | | Detector |
| · · · | | | | | | Peak▶ |
| Transmit Freq Error | -1.0021 MHz | % of OBW P | ower 99. | 00 % | P | uto <u>Man</u> |
| v dB Bandwidth | 36 13 MHz | v dB | -26.0 | 0 dB | | |
| | 30.13 MHZ | X UB | -20.0 | UUB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| l | | | in the second | | | |
| MSG | | | STATUS | | | |

Plot 7-103. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)



Plot 7-104. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 6) - Ch. 111)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | |
|--|-----------------------------|---------------------------------------|-----------------------------------|--|--|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 - 11/18/2021 | | EUT Type: | Dage 67 of 205 | | | |
| | | Portable Handset | Page 67 of 305 | | | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | | | |





Plot 7-105. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 117)



Plot 7-106. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 149)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | MSUNG | Approved by: Technical Manager | | |
|--|---|---------------------------------------|-------|-----------------------------------|--|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | | Dage 60 of 205 | | |
| | | Portable Handset | | Page 68 of 305 | | |
| 2 2022 PCTEST V 9.0 02/01/2019 | | | | | | |





Plot 7-107. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 185)



Plot 7-108. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 123)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager | | | |
|--|-----------------------------|---------------------------------------|---------|-----------------------------------|--|--------------------------------|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: Portable Handset | | Page 69 of 305 | | | |
| | | | | | | > 2022 PCTEST V 9.0 02/01/2019 | |



| 🔤 Keysight Spectrum Analyzer - Occupied BW 👘 | | | | | | | | | | |
|--|-----------------|-------------|----------------|------------------|--------------------|------------|------------------|----------------|------|-------------|
| LXI RL RF 50Ω AC CO | ORREC | SENS | E:INT | | | ALIGN AUTO | 10:06:27 P | M Oct 29, 2021 | Trac | e/Detector |
| | | Center Free | q: 6.73 200 | 250000 | 00 GHZ AvalHold | . 100/100 | Radio Std | : None | | 0.20100101 |
| #1 | -⊷ FGain:Low | #Atten: 36 | dB | | Avginoid | . 100/100 | Radio Dev | ice: BTS | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | | | | | | |
| Log | | | | | | | | | | |
| 10.0 | | <u>بمر</u> | | | | | | | | Clear Write |
| 0.00 | | | | | | | | | | |
| -10.0 | - Alter trailer | Hilling 1 | h | | | | | | | |
| -20.0 | ի իս | | ~%ny | | | | | | | |
| 20.0 | ř I | | [| and when we have | run hand | | | | | Average |
| -30.0 moutonorphy town and intrationary | 1 | | | | ٣ | - | sales per former | - | | Average |
| -40.0 | | | | | | | | | | |
| -50.0 | | | | | | | | | | |
| -60.0 | | | | | | | | | | Mayllald |
| 70.0 | | | | | | | | | | Max Hold |
| -70.0 | | | | | | | | | _ | |
| Cepter 6 72500 GHz | | | | | | | Snan 1 | 00.0 MHz | _ | |
| Res BW 910 kHz | | VBW | 8 № | 1H7 | | | Swe | ep 1 ms | | |
| | | | • II | | | | | | | Min Hold |
| Occupied Bandwidth | | | Tota | | wer | 11.6 | dBm | | | |
| Occupied Ballawidth | | | | | | | | | | |
| 24.2 | 157 MF | Z | | | | | | | | Detector |
| | 0 5074 1 | | | | | 0.0 | 00.0/ | | 0 | Peak► |
| Transmit Freq Error | -6.53/1 M | HZ | % of | OB | V Powe | er 99 | .00 % | | Auto | Man |
| x dB Bandwidth | 24.10 M | Hz > | k dB | 3 | | -26. | 00 dB | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| MSG | | | | | | STATUS | | | | |

Plot 7-109. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 155)



Plot 7-110. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 179)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager | | | |
|--|-----------------------------|---------------------------------------|---------|-----------------------------------|--|--------------------------------|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: Portable Handset | | Page 70 of 305 | | | |
| | | | | | | > 2022 PCTEST V 9.0 02/01/2019 | |



| | Occupied BW | | | | | | | | | |
|-----------------------|-----------------------|----------|-----------------|---------------------|---------------------|------------|-------------|----------------|------|-------------|
| LXX RL RF 5 | 0Ω AC CO | RREC | SEI | NSE:INT | | ALIGN AUTO | 10:32:29 P | M Oct 29, 2021 | Trac | e/Detector |
| | | | Trig: Free | eq: 6.54500 ≘Run | AvalHold: | >100/100 | Radio Std | None | | |
| | #IF | Gain:Low | #Atten: 3 | 6 dB | | | Radio Dev | ice: BTS | | |
| | | | | | | | | | | |
| to any and Dof 20 | 0.00 dBm | | | | | | | | | |
| | авт | | | | | | | | | |
| 20.0 | | | | | | | | | | |
| 10.0 | | | | | | | | | | Clear Write |
| 0.00 | | | ſ | N | | | | | | |
| 0.00 | | | كماري بالمعالمة | . 1 6.1 s | | | | | | |
| -10.0 | | | A LAND | N | | | | | | |
| -20.0 | | - M | | | the state | | | | | Average |
| -30.0 marsh have 30.0 | April To Antheory and | Man Work | | | Why why why why why | mananakan | monderstand | Wandgungala | | |
| -40.0 | | | | | | | | | | |
| 50.0 | | | | | | | | | | |
| -50.0 | | | | | | | | | | Max Hold |
| -60.0 | | | | | | | | | | |
| Contor 6 5450 CHz | | | | | | | Enon 3 | | | |
| Des BM 18 MHz | | | VB | M SMH2 | | | Swe | en 1 ms | | |
| | | | VDV | V 0 IVII 12 | | | 300 | ep mis | | Min Hold |
| Occupied Bar | adwidth | | | Total P | ower | 11.0 | dBm | | | |
| | | | | | | | | | | |
| | 39.1 | 23 MI | ΗZ | | | | | | | Detector |
| | | 100.001 | | | | 0.0 | 00.0/ | | 0 | Peak► |
| Transmit Freq I | Error | -433.221 | (HZ | % of O | BW Powe | er 99 | .00 % | | Auto | Man |
| x dB Bandwidth | า | 39.48 N | IHz | x dB | | -26. | 00 dB | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| MSG | | | | | | STATUS | 5 | | | |

Plot 7-111. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 119)



Plot 7-112. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 151)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | |
|--|-----------------------------|---------------------------------------|-----------------------------------|--|--|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | Daga 71 of 205 | | | |
| | | Portable Handset | Page 71 of 305 | | | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | | | |



| Keysight Spectrum Analyzer - Occupied BW | | | | | | |
|--|--------------------|------------------------------------|--|---------------------------|--------------------------|-----------------|
| LXI RE RF 50Ω AC | CORREC | SENSE:INT | ALIO | GN AUTO 10:37:08 P | M Oct 29, 2021 | Trace/Detector |
| | Cer Tric | iter Freq: 6.860000 1: Free Run | AvalHold: 10 | Radio Std: 00/100 | None | |
| | #IFGain:Low #At | ten: 36 dB | | Radio Dev | ice: BTS | |
| | | | | | | |
| 10 dB/div Bef 20.00 dBm | | | | | | |
| | | | | | | |
| 10.0 | | | | | | |
| 0.00 | | | | | | Clear Write |
| -10.0 | 1 ⁰⁰ w1 | No mapping | | | | |
| 20.0 | | | | | | |
| -20.0 | and thread when | | and the state of t | | | Avorado |
| -3U.U coloring and a | | | | المراهمة ومعاليما ومعاليه | worker had a monthly had | Average |
| -40.0 | | | | | | |
| -50.0 | | | | | | |
| -60.0 | | | | | | Max Hold |
| -70.0 | | | | | | maxitora |
| | | | | | | |
| Center 6.8650 GHz | | | | Span 2 | 00.0 MHz | |
| Res BW 1.8 MHz | | VBW 8 MHz | | Swe | ep 1 ms | Min Hold |
| | | | | | | |
| Occupied Bandwidt | n | l otal Po | ower | 11.0 dBm | | |
| 39 | .048 MHz | | | | | Detector |
| | | | | | | Peak▶ |
| Transmit Freq Error | -57.119 kHz | % of OB | W Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 40.26 MHz | x dB | | -26.00 dB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | | STATUS | | |

Plot 7-113. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 7) - Ch. 183)



Plot 7-114. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | |
|--|-----------------------------|---------------------------------------|-----------------------------------|--|--|--|
| Test Report S/N: Test Dates: 1M2112100159-10-R1.A3L 9/9 – 11/18/2021 | | EUT Type: | Dega 72 of 205 | | | |
| | | Portable Handset | Page 72 of 305 | | | |
| ≥ 2022 PCTEST V 9.0 02/01/2019 | | | | | | |


| 🔤 Keysight Spectrum Analyzer - Occupied BW 🚽 | | | | | |
|---|-------------------|-------------------------|--|-----------------|-----------------|
| <mark>LX/</mark> RL RF 50Ω AC 0 | CORREC | SENSE:INT | ALIGN AUTO 10:56:27 | PM Oct 29, 2021 | Trace/Detector |
| | Center | r Freq: 6.665000000 GHz | 100/100 Radio Sto | 1: None | The off botton |
| # | IFGain:Low #Atten | : 36 dB | Radio De | vice: BTS | |
| | | | | | |
| | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | |
| 10.0 | | | | | |
| 10.0 | | Λ | | | Clear Write |
| 0.00 | | / 1000 | | | |
| -10.0 | | | | | |
| -20.0 | | Maxii - | | | |
| 30.0 months and the second second second second | multiplicational | Mary Harpelly and | ر. مرجع معرجوم مرجوم مر | allestorstand | Average |
| 10.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | |
| -60.0 | | | | | Max Hold |
| -70.0 | | | | | maxinoid |
| | | | | | |
| Center 6.6650 GHz | | | Span 4 | 100.0 MHz | |
| Res BW/3 MHz | v | BW 50 MHz | Sw | eep 1 ms | Min Hold |
| | | | | | Minitiona |
| Occupied Bandwidth | | Total Power | 10.8 dBm | | |
| -4.4.0 | | | | | Detector |
| 148 | | | | | Detector |
| Transmit Freq Error | -1.1364 MHz | % of OBW Powe | er 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 35 05 MHz | v dB | -26 00 dB | | |
| | 33.93 MITZ | X UD | -20.00 uB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-115. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 7) - Ch. 143)



Plot 7-116. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 7) - Ch. 175)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|---------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | | Dage 72 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | | Page 73 of 305 | |
| © 2022 PCTEST | | | | V 9.0 02/01/2019 | |



| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | |
|--|-------------------------------|--------------------------|--|--------------------|-----------------|
| LXI RL RF 50Ω AC | CORREC S | SENSE:INT | ALIGN AUTO 10:58:13 P | M Oct 29, 2021 | Trace/Detector |
| | Center Trim Fr | Freq: 6.825000000 GHz | Radio Std | : None | Hacenbettettor |
| | #EGain:Low #Atten: | 36 dB | Radio Dev | ice: BTS | |
| | WI Gam. LOW | | | | |
| | | | | | |
| 10 dB/div Ref 30.00 dBm | h j | | | | |
| Log | | | | | |
| 20.0 | | | | | Clear Write |
| 10.0 | | | | | Clear write |
| 0.00 | | | | | |
| 0.00 | | | | | |
| -10.0 | | | | | |
| -20.0 | | - Wardson - | | | Average |
| -30.0 martine and a second sec | man which the property of the | and the free by the harm | and the second state of th | when when a second | |
| 19.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | |
| | | | | | |
| Center 6.8250 GHz | | | Span 4 | 00.0 MHz | |
| Res BW 3 MHz | VE | 3W 50 MHz | Swe | eep 1 ms | Min Hold |
| | | | | | win Hold |
| Occupied Bandwidt | h | Total Power | 11.9 dBm | | |
| Occupied Ballowide | | i otari i otror | | | |
| 96 | 5.097 MHz | | | | Detector |
| | | | | | Peak► |
| Transmit Freq Error | 3.3635 MHz | % of OBW Powe | er 99.00 % | | Auto <u>Man</u> |
| v dB Bandwidth | 20 00 MH- | v dD | 26 00 dB | | |
| | 39.00 WINZ | хub | -20.00 UB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-117. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 7) - Ch. 175)



Plot 7-118. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 189)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 74 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 74 of 305 | |
| © 2022 PCTEST | | | V 9.0 02/01/2019 | |





Plot 7-119. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 209)



Plot 7-120. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 233)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager | |
|------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga 75 of 205 | | |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | | Page 75 of 305 | |
| © 2022 PCTEST | | | | V 9.0 02/01/2019 | |



| 🔤 Keysight Spectrum Analyzer - Occupied BW | | | | | | | | | |
|--|-------------|--------------|-----------|--|------------|------------|-----------------------|------|-------------|
| LXIRL RF 50Ω AC | CORREC | SENS | E:INT | | ALIGN AUTO | 10:11:09 P | M Oct 29, 2021 | Trac | e/Detector |
| | | Center Free | q: 6.8850 | 000000 GHz | - 100/100 | Radio Std | : None | mac | cibereeroi |
| | #IEGain:Low | #Atten: 36 d | dB | Avginoid | . 100/100 | Radio Dev | ice: BTS | | |
| , | an ounicou | _ | | | | | | | |
| | | | | | | | | | |
| 10 dB/div Ref 20.00 dBm | | | | | | | | | |
| Log | | | | | | | | | |
| 10.0 | | M | | | | | | | Clear Write |
| 0.00 | | | | | | | | | |
| -10.0 | 1 Mary | m-land h | | | | | | | |
| -20.0 | | " | Wahd | | | | | | |
| 20.0 | | | a start | Ward and a state of the state o | | | | | Average |
| -30.0 market market and the sound and the second | V~** | | | | hannan | munhanna | infolition and a part | | Average |
| -40.0 | | | | | | | | | |
| -50.0 | | | | | | | | | |
| 60.0 | | | | | | | | | |
| -00.0 | | | | | | | | | Max Hold |
| -70.0 | | | | | | | | | |
| Contor 6 89500 Olla | | | | | | Cnon 4 | | | |
| Center 6.88500 GHZ | | VDW | O BALL | _ | | span 1 | | | |
| Res BW 910 KHZ | | VDW | 8 IVIN | 2 | | SWG | ep 1 ms | | Min Hold |
| | | | Total | Power | 10.6 | dDm | | | |
| Occupied Bandwidtr | 1 | | lotai | ower | 10.0 | ubili | | | |
| 24 | .932 MH | 7 | | | | | | | Detector |
| | | | | | | | | | Peak▶ |
| Transmit Freq Error | -5.9947 M | Hz % | % of C | BW Pow | er 99 | .00 % | | Auto | Man |
| y dD Dan dwidth | 24 64 M | | | | 26. | | | | |
| | 24.04 M | nz x | Cав | | -20.0 | υυαΒ | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| MSG | | | | | STATUS | | | | |

Plot 7-121. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 187)



Plot 7-122. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 211)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 76 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 76 of 305 | |
| © 2022 PCTEST | | | V 9.0 02/01/2019 | |





Plot 7-123. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 227)



Plot 7-124. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 199)

| FCC ID: A3LSMS908JPN | PCTEST Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------|---|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga 77 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 77 of 305 | |
| © 2022 PCTEST | | | V 9.0 02/01/2019 | |



| Keysight Spectrum Analyzer - Occupied BW | 1 | | | | | |
|--|--|-----------------|----------------------------------|----------------|--------------|-------------------|
| LXI RL RF 50Ω AC | CORREC | SENSE:INT | ALIGN AUTO | 10:40:42 PM Oc | t 29, 2021 | Trace/Detector |
| | | ig: Free Run Av | alHold: 100/100 | Radio Std: No | ne | |
| | #IFGain:Low #A | tten: 36 dB | | Radio Device: | BTS | |
| , | | | | | | |
| 10 dB/div Ref 30 00 dBm | | | | | | |
| Log | • | | | | | |
| 20.0 | | | | | | . |
| 10.0 | | | | | | Clear write |
| 0.00 | | | | | | |
| -10.0 | <u>k</u> lu | the have | | | | |
| 20.0 | | " | | | | Average |
| -20:0 | moundry | the state | Mana I | | | Avenuge |
| -30.0 Production from the state of the state | water of the second sec | | and a start of the second second | www.thill. | Parlanti ang | |
| -40.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -60.0 | | | | | | |
| | | | | | | |
| Center 7.0250 GHz | | | | Span 200. | 0 MHz | |
| Res BW 1.8 MHz | | VBW 8 MHZ | | Sweep | 1 ms | Min Hold |
| Occupied Rendwidt | b | Total Pow | or 11.2 | dBm | | |
| | | | | | | |
| 38 | <u>.014 MHz</u> | | | | | Detector |
| Tronomit From France | 220 40 611- | 9/ of ODM | Bauran 00 | 00.9/ | | Peak► Auto Man |
| Fransmit Freq Error | -220.48 KHZ | % of OBW | Power 99 | .00 % | í l | Hulo <u>Ivian</u> |
| x dB Bandwidth | 38.82 MHz | x dB | -26. | 00 dB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | STATUS | 5 | | |

Plot 7-125. 26dB Bandwidth Plot MIMO ANT2 (80MHz BW 802.11ax (26 Tones) (UNII Band 8) - Ch. 215)



Plot 7-126. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (L) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager | |
|------------------------|--|---------------------------------------|----------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dama 70 at 205 | | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | | Page 78 of 305 | |
| © 2022 PCTEST | | | | V 9.0 02/01/2019 | |



| | Keysi | ight Spec | ctrum (| Analy: | zer - Oco | upied E | BW | | | | | | | | | | | | | |
|---------|-------|-----------|---------|--------|--------------|------------|----------|---------|--------|---------|------------|--------------------|---------|------------------------|------------|------------|-------------|-----------------------|------|--------------------|
| LXI | RL | | RF | | 50 Ω | AC | COF | REC | | | SEI | VSE:INT | | | ALIGN | I AUTO | 11:00:38 | PM Oct 29, 2021 | Tra | na/Detector |
| | | | | | | | | | | Cen | ter Fr | eq: 6.98 | 50000 | 00 GHz | | | Radio St | td: None | IIa | |
| | | | | | | | | | + | Trig | : Free | Run | | Avg Hol | d: 100/ | 100 | | | | |
| | | | | | | | #IF(| Sain:Lo | w | #At | ten: o | 6 a B | | | | | Radio D | evice: DTS | | |
| | | | | | | | | | | | | | | | | | | | | |
| 10 | | diu | | Dof | 30.0 | n dB | m | | | | | | | | | | | | | |
| Lo | αΓ | uiv | | NGI | 30.0 | u u D | | | | | | | | | | | | _ | | |
| 20 | ōL | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Clear Write |
| 10 | ╹┣ | | | | | | | | | | | ٨ | | | | | | | | |
| 0.0 | | | | | | | | | | | | horthy | | | | | | | | |
| -10 | ۰L | | | | | | | | | | الم | ι <u>\</u> | | | | | | | | |
| 10. | Ĭ | | | | | | | | | | Not . | | | | | | | | | A |
| -20. | ᆘ | | | | | | | | | ALM STR | I | ΥL- _k , | When we | | | | | | | Average |
| -30. | o 🚧 | VM, Engel | w.hw | | policitation | الواليانية | -ry-bure | -10-10- | MAN IN | | | | | and the Allowed Street | الارمدارمة | mane and a | elloporenno | ana kan Nana Ran Main | | |
| -40 | ۰L | | | | | | | | | | | | | | | | | | | |
| -40. | ۳Ľ | | | | | | | | | | | | | | | | | | | |
| -50. | 마 | | | | | | | | | | | | | | | | | | | Max Hold |
| -60. | oŀ | | | | | | | | | | | | | | | | | | | |
| | L | | | | | | | | | | | | | | | | | | | |
| Ce | nt | er 6.9 | 850 | G | z | | | | | | | | | | | | Span | 400.0 MHz | | |
| Re | s E | 3W 3 | I MI | z | | | | | | | VBW 50 MHz | | | | Sv | veep 1 ms | | Min Hold | | |
| | | | | | | | | | | | | | | | | | | | | MILLHOID |
| | 0 | CUIP | vier | | and | wid | th | | | | | Total | Po | wer | | 11.9 | dBm | | | |
| | | Jun | nec | | anu | wid | | | | | | 10141 | | | | | | | | |
| | | | | | | - 1 | 05. | 09 | M | Z | | | | | | | | | | Detector |
| | | | | | | | | | | | | | | | | | | | | Peak▶ |
| | Tra | ansn | nit F | rec | g Err | or | _ | 6.29 | 46 N | IHz | | % of | OB | N Pow | /er | 99 | .00 % | | Auto | Man |
| | | | | - | | | | | | | | | | | | | | | | |
| | X C | IB Ba | and | WIC | ith | | | 35. | 61 M | IHZ | | x dB | | | | -26.0 | JU dB | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
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| MSG | | | | | | | | | | | | | | | | STATUS | | | | |
| | _ | | | _ | | | | | | | | | | | | _ | | | | |

Plot 7-127. 26dB Bandwidth Plot MIMO ANT2 (160MHz BW (U) 802.11ax (26 Tones) (UNII Band 8) - Ch. 207)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | SAMSUNG | Approved by: Technical Manager |
|------------------------|--|---------------------------------------|----------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Page 70 of 305 | |
| 1M2112100159-10-R1.A3L | 9/9 – 11/18/2021 | Portable Handset | | Page 79 01 305 |
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MIMO Antenna-2 26dB Bandwidth Measurements (FULL Tones)





Plot 7-129. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 45)

| FCC ID: A3LSMS908JPN | Proud to be part of element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|------------------------|-----------------------------|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 80 of 205 |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page ou or 305 |
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Plot 7-130. 26dB Bandwidth Plot MIMO ANT2 (20MHz BW 802.11ax (FULL Tones) UNII Band 5) - Ch. 93)



Plot 7-131. 26dB Bandwidth Plot MIMO ANT2 (40MHz BW 802.11ax (FULL Tones) (UNII Band 5) - Ch. 3)

| FCC ID: A3LSMS908JPN | PCTEST° Proud to be part of @ element | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
|------------------------------|--|---------------------------------------|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 81 of 205 | |
| 1M2112100159-10-R1.A3L | 9/9 - 11/18/2021 | Portable Handset | Page 81 01 305 | |
| 2022 PCTEST V 9.0 02/01/2019 | | | | |