

ELEMENT WASHINGTON DC LLC

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MEASUREMENT REPORT

FCC Part 30 5G mmWave

Applicant Name:

Samsung Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, 16677, Korea Date of Testing: 06/08/2023- 07/20/2023 Test Report Issue Date: 08/2/2023 Test Site/Location: Element Lab., Columbia, MD, USA Test Report Serial No.: 1M2304260060-12.A3L

FCC ID:

A3LSMS711U

APPLICANT:

Samsung Electronics Co., Ltd.

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

| Certification |
|---|
| SM-S711U |
| SM-S711U1 |
| Portable Handset |
| Part 30 Mobile Transmitter (5GM) |
| 30 |
| ANSI C63.26-2015, KDB 971168 D01 v03r01 |
| KDB 842590 D01 v01r02 |

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

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

RJ Ortanez Executive Vice President



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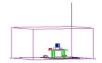


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MEASUREMENT REPORT FCC Part 30

| | | | Тх | | | | EIRP | | |
|---------|------------|--------------------|--------------------|---------------|------------|------|---------------------|-----------------------|------------------------|
| Antenna | Band | Bandwidth [MHz] | Frequency [MHz] | CCs Active | Modulation | Mode | Max Power [W] | Max Power [dBm] | Emission Designator |
| Ant-1 | NR-n258-R1 | 50 | 24275 - 24425 | 1 | QPSK | SISO | 0.601 | 27.79 | 47M2G7D |
| | | | | | QPSK | 2Tx | 0.861 | 29.35 | 47M2G7D |
| | | | | | π/2 BPSK | 2Tx | 0.875 | 29.42 | 46M2G7D |
| | | | | | 16QAM | 2Tx | 0.558 | 27.47 | 46M9W7D |
| | | | | | 64QAM | 2Tx | 0.362 | 25.59 | 47M9W7D |
| | | 100 | 24300 - 24400 | 1 | QPSK | SISO | 0.605 | 27.82 | 95M8G7D |
| | | | | | QPSK | 2Tx | 0.889 | 29.49 | 95M8G7D |
| | | | | | π/2 BPSK | 2Tx | 0.938 | 29.72 | 92M1G7D |
| | | | | | 16QAM | 2Tx | 0.532 | 27.26 | 94M6W7D |
| | | | | | 64QAM | 2Tx | 0.351 | 25.45 | 95M5W7D |
| | | | | 2 | QPSK | 2Tx | 0.225 | 23.52 | 200MG7D |
| | | | | | π/2 BPSK | 2Tx | 0.222 | 23.46 | 193MG7D |
| | | | | | 16QAM | 2Tx | 0.145 | 21.60 | 198MW7D |
| | | | | | 64QAM | 2Tx | 0.090 | 19.54 | 198MW7D |

EUT Overview (Band n258-R1)

| | | | Tv | | | | E | RP | | | | | | |
|---------|------------|--------------------|--------------------------|---------------|------------|------|---------------------|-----------------------|------------------------|---------|----------|---------|-------|-------|
| Antenna | Band | Bandwidth [MHz] | Tx Frequency [MHz] | CCs Active | Modulation | Mode | Max Power [W] | Max Power [dBm] | Emission Designator | | | | | |
| Ant-1 | NR-n258-R2 | 50 | 24775 - 25225 | 1 | QPSK | SISO | 0.583 | 27.66 | 46M5G7D | | | | | |
| | | | | | QPSK | 2Tx | 0.906 | 29.57 | 46M5G7D | | | | | |
| | | | | | π/2 BPSK | 2Tx | 0.916 | 29.62 | 46M1G7D | | | | | |
| | | | | | 16QAM | 2Tx | 0.610 | 27.85 | 46M1W7D | | | | | |
| | | | | | 64QAM | 2Tx | 0.368 | 25.66 | 46M1W7D | | | | | |
| | | 100 | 24800 - 25200 | 1 | QPSK | SISO | 0.564 | 27.51 | 95M0G7D | | | | | |
| | | | | | | QPSK | 2Tx | 0.993 | 29.97 | 95M0G7D | | | | |
| | | | | | | | | | | | π/2 BPSK | 2Tx | 1.033 | 30.14 |
| | | | | | | | | 16QAM | 2Tx | 0.619 | 27.92 | 94M9W7D | | |
| | | | | | 64QAM | 2Tx | 0.391 | 25.92 | 94M8W7D | | | | | |
| | | | | 2 | QPSK | 2Tx | 0.238 | 23.77 | 195MG7D | | | | | |
| | | | | | π/2 BPSK | 2Tx | 0.240 | 23.80 | 192MG7D | | | | | |
| | | | | | 16QAM | 2Tx | 0.153 | 21.84 | 194MW7D | | | | | |
| | | | | | 64QAM | 2Tx | 0.107 | 20.31 | 195MW7D | | | | | |
| | | | | 3 | QPSK | 2Tx | 0.160 | 22.03 | 296MG7D | | | | | |
| | | | | | π/2 BPSK | 2Tx | 0.245 | 23.89 | 294MG7D | | | | | |
| | | | | | 16QAM | 2Tx | 0.143 | 21.56 | 297MW7D | | | | | |
| | | | | | 64QAM | 2Tx | 0.114 | 20.55 | 297MW7D | | | | | |

EUT Overview (Band n258-R2)

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| | | | Тх | | | | EIRP | | |
|---------|---------|-----------|---------------|--------|------------|------|--------------|----------------|------------|
| Antenna | Band | Bandwidth | Frequency | CCs | Modulation | Mode | Max | Max | Emission |
| | | [MHz] | [MHz] | Active | | | Power [W] | Power [dBm] | Designator |
| Ant-1 | NR-n261 | 50 | 27525 - 28325 | 1 | QPSK | SISO | 0.718 | 28.56 | 46M3G7D |
| 7.010 1 | 111201 | 00 | 21020 20020 | | QPSK | 2Tx | 1.479 | 31.70 | 46M3G7D |
| | | | | | π/2 BPSK | 2Tx | 1.476 | 31.69 | 46M3G7D |
| | | | | | 16QAM | 2Tx | 0.931 | 29.69 | 46M2W7D |
| | | | | | 64QAM | 2Tx | 0.581 | 27.64 | 46M1W7D |
| | | 100 | 27550 - 28300 | 1 | QPSK | SISO | 0.670 | 28.26 | 95M3G7D |
| | | | | | QPSK | 2Tx | 1.096 | 30.40 | 95M3G7D |
| | | | | | π/2 BPSK | 2Tx | 1.094 | 30.39 | 92M0G7D |
| | | | | | 16QAM | 2Tx | 0.679 | 28.32 | 95M1W7D |
| | | | | | 64QAM | 2Tx | 0.431 | 26.34 | 95M1W7D |
| | | | | 2 | QPSK | 2Tx | 0.244 | 23.88 | 198MG7D |
| | | | | | π/2 BPSK | 2Tx | 0.249 | 23.97 | 198MG7D |
| | | | | | 16QAM | 2Tx | 0.161 | 22.08 | 198MW7D |
| | | | | | 64QAM | 2Tx | 0.111 | 20.46 | 195MW7D |
| | | | | 3 | QPSK | 2Tx | 0.259 | 24.13 | 293MG7D |
| | | | | | π/2 BPSK | 2Tx | 0.263 | 24.20 | 292MG7D |
| | | | | | 16QAM | 2Tx | 0.210 | 23.22 | 293MW7D |
| | | | | | 64QAM | 2Tx | 0.126 | 21.02 | 292MW7D |
| | | | | 4 | QPSK | 2Tx | 0.230 | 23.62 | 395MG7D |
| | | | | | π/2 BPSK | 2Tx | 0.234 | 23.69 | 393MG7D |
| | | | | | 16QAM | 2Tx | 0.185 | 22.68 | 394MW7D |
| | | | | | 64QAM | 2Tx | 0.137 | 21.36 | 396MW7D |

EUT Overview (Band n261)

| | | | Тх | | | | EIRP | | | |
|---------|---------|-----------|---------------|--------|------------|-------|-------|-------|------------|---------|
| Antenna | Band | Bandwidth | | CCs | Modulation | Mode | Max | Max | Emission | |
| Antenna | Danu | [MHz] | Frequency | Active | wooulation | Mode | Power | Power | Designator | |
| | | | [MHz] | | | | [W] | [dBm] | | |
| Ant-1 | NR-n260 | 50 | 37025 - 39975 | 1 | QPSK | SISO | 0.815 | 29.11 | 46M7G7D | |
| | | | | | QPSK | 2Tx | 1.109 | 30.45 | 46M7G7D | |
| | | | | | π/2 BPSK | 2Tx | 1.199 | 30.79 | 46M0G7D | |
| | | | | | 16QAM | 2Tx | 0.745 | 28.72 | 46M3W7D | |
| | | | | | 64QAM | 2Tx | 0.448 | 26.51 | 46M0W7D | |
| | | 100 | 37050 - 39950 | 1 | QPSK | 2Tx | 1.202 | 30.80 | 96M0G7D | |
| | | | | | π/2 BPSK | 2Tx | 1.225 | 30.88 | 92M3G7D | |
| | | | | | 16QAM | 2Tx | 0.685 | 28.36 | 95M6W7D | |
| | | | | | 64QAM | 2Tx | 0.511 | 27.08 | 96M9W7D | |
| | | | | 2 | QPSK | 2Tx | 0.261 | 24.16 | 197MG7D | |
| | | | | | π/2 BPSK | 2Tx | 0.259 | 24.14 | 196MG7D | |
| | | | | | | 16QAM | 2Tx | 0.177 | 22.47 | 194MW7D |
| | | | | | 64QAM | 2Tx | 0.119 | 20.75 | 195MW7D | |
| | | | | 3 | QPSK | 2Tx | 0.259 | 24.14 | 298MG7D | |
| | | | | | π/2 BPSK | 2Tx | 0.259 | 24.13 | 297MG7D | |
| | | | | | 16QAM | 2Tx | 0.182 | 22.59 | 299MW7D | |
| | | | | | 64QAM | 2Tx | 0.120 | 20.79 | 298MW7D | |
| | | | | 4 | QPSK | 2Tx | 0.274 | 24.37 | 396MG7D | |
| | | | | | π/2 BPSK | 2Tx | 0.271 | 24.33 | 395MG7D | |
| | | | | | 16QAM | 2Tx | 0.260 | 24.15 | 397MW7D | |
| | | | | | 64QAM | 2Tx | 0.188 | 22.75 | 397MW7D | |

EUT Overview (Band n260)

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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.

1.2 Element Test Location

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

1.3 Test Facility / Accreditations

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

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

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung FCC ID: A3LSMS711U**. The test data contained in this report pertains only to the emissions due to the EUT's 5G mmWave function.

The EUT supports both 50MHz bandwidth and 100MHz bandwidth. The EUT supports 1CC for 50MHz bandwidth and upto 4CC for 100MHz bandwidth. The table below indicates the supported bandwidths and component carriers for the Frequency ranges tested.

| # CC's | BW (MHz) | Total CC BW (MHz) | Channel | 24.25 - 24.45GHz (n258-R1) | 24.75 - 25.25GHz (n258-R2) | 27.5 - 28.35GHz (n261) | 37 - 40GHz (n260) |
|--------|-------------|-------------------------|---------|-------------------------------|-------------------------------|---------------------------|----------------------|
| | | | Low | х | х | х | x |
| | 50 | 50 | Mid | х | х | х | x |
| 1CC | | | High | х | х | х | x |
| icc | | | Low | х | х | х | x |
| | 100 | 100 | Mid | х | х | х | х |
| | | | High | х | х | х | x |
| | | | Low | - | - | - | - |
| | 50 | 100 | Mid | - | - | - | - |
| 2CC | | | High | - | - | - | - |
| 200 | 100 | 200 | Low | - | x | х | x |
| | | | Mid | х | x | х | x |
| | | | High | - | х | х | x |
| | 50 | 150 | Low | - | - | - | - |
| | | | Mid | - | - | - | - |
| 3CC | | | High | - | - | - | - |
| SUC | | | Low | - | x | х | x |
| | 100 | 300 | Mid | - | х | х | x |
| | | | High | - | х | х | х |
| | | | Low | - | - | - | - |
| | 50 | 200 | Mid | - | - | - | - |
| 100 | | | High | - | - | - | - |
| 4CC | | | Low | - | - | х | x |
| | 100 | 400 | Mid | - | - | х | x |
| | | | High | - | - | х | х |

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

Test Device Serial No.: 0579M, 0600M, 0107M

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 GSM/GPRS/EDGE, 850/1700/1900 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (FR1 and FR2), 802.11b/g/n/ax WLAN, 802.11a/n/ac/ax UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), NFC, Wireless Power

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2.3 Test Configuration

The EUT was tested per the guidance of KDB 842590 D01 v01r02 and ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated tests.

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

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

2.4 Software and Firmware

The test was conducted with firmware version S711USQU0AWG7 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

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

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 v01r02 were used in the measurement of the EUT.

3.2 Radiated Power and Radiated Spurious Emissions §30.202, §30.203

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

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

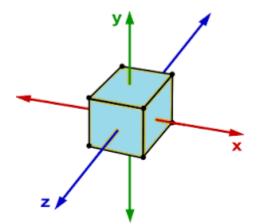


Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

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

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

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

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

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

Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in KDB 971168 D01.

| Field Strength [dB μ V/m] | = Measured Value [dBm] + AFCL [dB/m] + 107 |
|-------------------------------|--|
| | = - 32.74 dBm + (40.7dB/m + 8.78dB) + 107 = 123.74dBuV/m |
| | = 10^(123.74/20)/1000000 = 1.54 V/m |
| e.i.r.p. [dBm] | = 10 * log((E-Field*D _m)^2/30) + 30dB |
| | = 10 * log((1.54V/m * 1.00m)^2/30) + 30dB |
| | = 18.98 dBm e.i.r.p. |

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4.0 MEASUREMENT UNCERTAINTY

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

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

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

| Manufacturer | Model | Description | Cal Date | Cal Interval | Cal Due | Serial Number |
|-----------------------|-------------|---|------------|--------------|------------|----------------------------|
| Agilent | N9030A | 50GHz PXA Signal Analyzer | 9/9/2022 | Annual | 9/9/2023 | US51350301 |
| Carlisle IT | UTiFlex | FAC mmWave UTiFlex 40GHz | 1/12/2023 | Annual | 1/12/2024 | 234142-001 |
| Carlisle IT | UTiFlex | FAC mmWave UTiFlex 40GHz | 1/12/2023 | Annual | 1/12/2024 | 232062-001 |
| EMCO | 3115 | Horn Antenna (1-18GHz) | 8/8/2022 | Biennial | 8/8/2024 | 9704-5182 |
| EMCO | 3116 | Horn Antenna (18-40GHz) | 7/20/2021 | Biennial | 8/30/2023 | 9203-2178 |
| Fairview Microwave | NC-100 | Torque Wrench | 12/5/2022 | Biennial | 12/5/2024 | N/A |
| N/A | AP2-001 | EMC Cable and Switch System | 1/11/2023 | Annual | 1/11/2024 | AP2-001 |
| N/A | AP2-002 | EMC Cable and Switch System | 1/11/2023 | Annual | 1/11/2024 | AP2-002 |
| N/A | MD 1M 18-40 | EMC Cable and Switch System | 1/11/2023 | Annual | 1/11/2024 | MD 1M 18-40 |
| Narda | 180-422-KF | Horn (Small) | 8/30/2022 | Biennial | 8/30/2024 | U157403-01 |
| OML, Inc. | M05RH | WR-05 Horn Antenna, 24dBi, 140 to 220 GHz | 9/27/2022 | Biennial | 9/27/2024 | 18073001 |
| OML, Inc. | M08RH | Horn Antenna (90 - 140GHz) | 10/6/2021 | Biennial | 10/6/2023 | 17111701 |
| OML, Inc. | M12RH | Horn Antenna (60 - 90GHz) | 11/16/2021 | Biennial | 11/16/2023 | 17111701 |
| OML, Inc. | M19RH | Horn Antenna (40 - 60GHz) | 10/12/2021 | Biennial | 10/12/2023 | 17111701 |
| Pasternack | NC-100 | Torque Wrench | 12/5/2022 | Biennial | 12/5/2024 | 1240 |
| Rohde & Schwarz | ESW44 | EMI Test Receiver 2Hz to 44 GHz | 3/1/2023 | Annual | 3/1/2024 | 101716 |
| Rohde & Schwarz | FSW67 | Signal / Spectrum Analyzer | 1/13/2023 | Annual | 1/13/2024 | ID: 1312.8000K67-103200-iQ |
| Virginia Diodes, Inc. | SAX680 | SAX Module (60 - 90GHz) | 11/21/2022 | Biennial | 11/21/2024 | SAX680 |
| Virginia Diodes, Inc. | SAX681 | SAX Module (90 - 140GHz) | 1/5/2023 | Biennial | 1/5/2025 | SAX681 |
| Virginia Diodes, Inc. | SAX682 | SAX Module (140 - 220GHz) | 3/1/2023 | Biennial | 3/1/2025 | SAX682 |
| Sunol | JB5 | Bi-Log Antenna (30M- 5GHz) | 8/30/2022 | Biennial | 8/30/2024 | A051107 |

Table 5-1. Test Equipment

Notes:

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

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6.0 SAMPLE CALCULATIONS

Emission Designator

π/2 BPSK/ QPSK Modulation

Emission Designator = 800MG7D

BW = 800 MHz

- G = Phase Modulation
- 7 = Quantized/Digital Info
- D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 802MW7D

BW = 802 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | |
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7.0 TEST RESULTS

7.1 Summary

| Company Name: | Samsung Electronics Co., Ltd. |
|---------------------|----------------------------------|
| FCC ID: | A3LSMS711U |
| FCC Classification: | Part 30 Mobile Transmitter (5GM) |
| Mode(s): | TDD |

| FCC Part Section(s) | Test Description | Test Limit | Test Condition | Test Result | Reference |
|------------------------|---|--|-------------------|----------------|-------------|
| 2.1049 | Occupied Bandwidth | N/A | | PASS | Section 7.2 |
| 2.1046, 30.202 | Equivalent Isotropic Radiated Power | 43dBm | | PASS | Section 7.3 |
| 2.1051, 30.203 | Spurious Emissions | -13dBm/MHz for all out-of-band emissions | RADIATED | PASS | Section 7.4 |
| 2.1051, 30.203 | Out-of-Band Emissions at the Band Edge | -13dBm/MHz for all out-of- band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW | RADIATED | PASS | Section 7.5 |
| 2.1055 | Frequency Stability | Fundamental emissions stay within authorized frequency block | | PASS | Section 7.6 |

Table 7-1. Summary of Radiated Test Results

Notes:

- 1) All modes of operation and modulations were investigated. The test results shown in the following sections represent the worst case emissions.
- This report contains references to "n258-R1" and "n258-R2". These correspond to n258 Range 1, operating from 24.25 - 24.45GHz, and n258 Range 2, operating from 24.75 - 25.25GHz, respectively, as defined in Part 30.4(a).
- 3) Per 2.1057(a)(2), spurious emissions were investigated up to 100GHz for n258-R1, n258-R2 and n261. For n260, spurious emissions were investigated up to 200GHz.
- The radiated RF output power and all out-of-band emissions in the spurious domain are evaluated to the EIRP limits.
- 5) "CC" refers to "Component Carriers".
- 6) Beam IDs were chosen based on which Beam ID produces the highest EIRP during EIRP simulation.
- 7) All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation (100% duty cycle).
- 8) The CP-OFDM and DFT-s-OFDM transmission schemes were investigated fully for each test type and only the worst case data is included.

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|
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7.2 Occupied Bandwidth §2.1049

Test Overview

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

Test Procedure Used

ANSI C63.26-2015 Section 5.4.3 KDB 842590 D01 v01r02 Section 4.3

Test Settings

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

1-5% of the 99% occupied bandwidth observed in Step 7

Test Notes

The EUT supports CP-OFDM and DFT-s-OFDM. OBW was measured for both waveforms and the worst case has been included in the report.

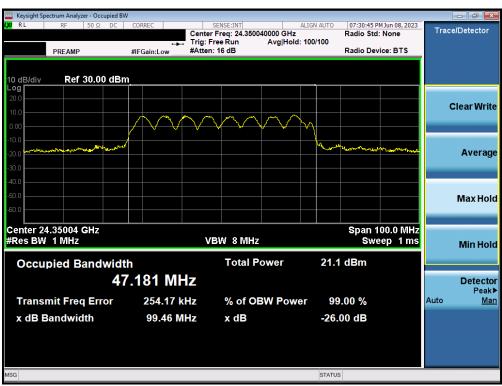
| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|------------------------------------|----------------|--|--|
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Band n258-R1

| Antenna | Bandwidth [MHz] | CCs Active | Transmition Scheme | Modulation | OBW [MHz] |
|---------|--------------------|------------|-----------------------|------------|--------------|
| Ant-1 | 50 | 1 | CP-OFDM | QPSK | 47.18 |
| | | | DFT-s-OFDM | π/2 BPSK | 46.24 |
| | | | CP-OFDM | 16QAM | 46.92 |
| | | | CP-OFDM | 64QAM | 47.85 |
| | 100 | 1 | CP-OFDM | QPSK | 95.75 |
| | | | DFT-s-OFDM | π/2 BPSK | 92.06 |
| | | | CP-OFDM | 16QAM | 94.62 |
| | | | CP-OFDM | 64QAM | 95.53 |
| | | 2 | CP-OFDM | QPSK | 199.83 |
| | | | DFT-s-OFDM | π/2 BPSK | 192.90 |
| | | | CP-OFDM | 16QAM | 198.27 |
| | | | CP-OFDM | 64QAM | 197.77 |

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



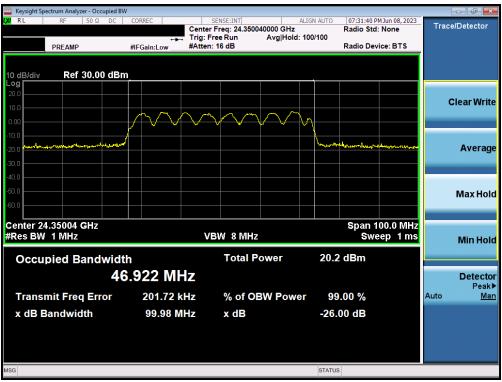
Plot 7-1. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM QPSK - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|
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| Keysight Spectrum Analyzer - Occupied BW | / | | | | |
|--|--------------------------|--|----------------------------------|------------------------------|-------------------|
| LXI RL RF 50Ω DC | | SENSE:INT AL Freg: 24.350040000 GHz | IGN AUTO 07:29:38 P Radio Std | M Jun 08, 2023 | Trace/Detector |
| | Trig: Fi | ree Run Avg Hold:>* | 100/100 | | |
| PREAMP | #IFGain:Low #Atten: | : 16 dB | Radio Dev | ice: BTS | |
| | | | | | |
| 10 dB/div Ref 30.00 dBn | 1 _. | | | | |
| 20.0 | | | | | |
| | | | | | Clear Write |
| 10.0 | $M \wedge \wedge \wedge$ | n - n - n | ^ | | |
| 0.00 | | | | | |
| -10.0 | / | | he and water | and a starting of the second | |
| -20.0 | | | | | Average |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | maxitora |
| | | | | | |
| Center 24.35004 GHz | | | | 00.0 MHz | |
| #Res BW 1 MHz | VI | BW 8 MHz | SWe | ep 1 ms | Min Hold |
| Occupied Bandwidt | h | Total Power | 23.1 dBm | | |
| | | | | | |
| 46 | 5.244 MHz | | | | Detector Peak▶ |
| Transmit Freq Error | 200.88 kHz | % of OBW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 94.15 MHz | x dB | -26.00 dB | | |
| | 94.13 WHZ | Xub | -20.00 UB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

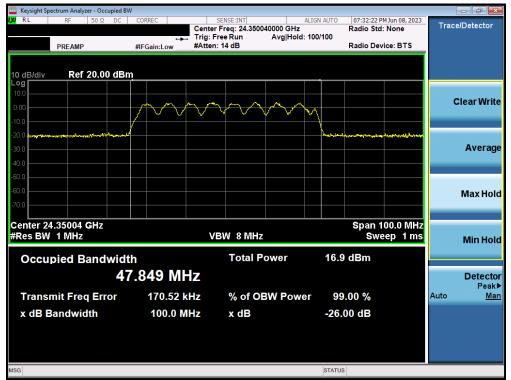
Plot 7-2. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



Plot 7-3. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 16QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 16 of 145 | | | | | |
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Plot 7-4. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 64QAM - Mid Channel)



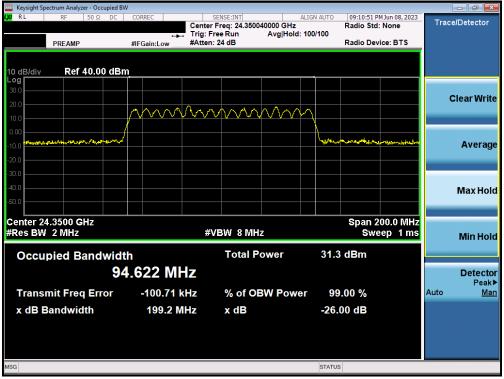
Plot 7-5. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM QPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 17 of 145 | | | | | |
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| 🔤 Keysight Spectrum Analyzer - Occupied BW | | | | | | | |
|---|-------------------|--|--|--|--|--|--|
| IX RF 50 Ω DC CORREC SENSE:INT ALIGN AUTO 09:09:45 PM Jun 08, 2023 Center Freq: 24.350040000 GHz Radio Std: None | Trace/Detector | | | | | | |
| Trig: Free Run Avg Hold: 100/100 | | | | | | | |
| PREAMP #IFGain:Low #Atten: 24 dB Radio Device: BTS | | | | | | | |
| | | | | | | | |
| 10 dB/div Ref 40.00 dBm | | | | | | | |
| | | | | | | | |
| | Clear Write | | | | | | |
| | | | | | | | |
| | | | | | | | |
| -10.0 heart has a heart has a heart has heart | Average | | | | | | |
| -20.0 | - | | | | | | |
| 30.0 | | | | | | | |
| -40.0 | Max Hold | | | | | | |
| 50.0 | Max Hold | | | | | | |
| | | | | | | | |
| Center 24.3500 GHz Span 200.0 MHz | | | | | | | |
| #Res BW 2 MHz #VBW 8 MHz Sweep 1 ms | Min Hold | | | | | | |
| Occupied Bandwidth Total Power 34.0 dBm | | | | | | | |
| | D. to the | | | | | | |
| 92.057 MHz | Detector Peak▶ | | | | | | |
| Transmit Freq Error -695.18 kHz % of OBW Power 99.00 % | | | | | | | |
| x dB Bandwidth 99.16 MHz x dB -26.00 dB | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG STATUS | | | | | | | |

Plot 7-6.Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



Plot 7-7. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 16QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|
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| | 🔤 Keysight Spectrum Analyzer - Occupied BW | | | | | | | | - đ - | | |
|---------------------|--|-------------|---------------------|---|-----------|-------|----------|------------------------------|----------------------------|------|---------------------|
| LXI RL | RF 50 Ω DC | CORREC | SENS Center Free | E:INT | | ALIGN | AUTO | 09:11:30 P Radio Std | M Jun 08, 2023 | Trac | e/Detector |
| | | ↔ | Trig: Free F | Run | Avg Hold: | 100 | /100 | | | | |
| | PREAMP | #IFGain:Low | #Atten: 22 | dB | | | | Radio Dev | rice: BTS | | |
| | | | | | | | | | | | |
| 10 dB/div | Ref 30.00 dE | 3m | | | | | | | | | |
| Log 20.0 | | | | | | | | | | | |
| | | ~~~~ | A A A A | A A A | <u></u> | n | | | | (| Clear Write |
| 10.0 | | \sim | | \mathcal{I} \mathcal{V} \mathcal{V} \mathcal{V} | | ٧\ | | | | | |
| 0.00 | | | | | | | | | | | |
| -10.0 - 10.0 | ward and a second s | ~ | | | | | Vistoria | and the second second second | afragelorge generalization | | |
| -20.0 | | | | | | | | | | | Average |
| -30.0 | | | | | | | | | | | |
| -40.0 | | | | | | | | | | | |
| -50.0 | | | | | | | | | | | Max Hold |
| -60.0 | | | | | | | | | | | wax noiu |
| 00.0 | | | | | | | | | | | |
| | .3500 GHz | | | | | | | | 00.0 MHz | | |
| #Res BW | 2 MHz | | #VBV | N 8 MH | Z | | | Swe | eep 1 ms | | Min Hold |
| 0 | | | | Total P | ower | | 28.4 | dBm | | | |
| Occup | oied Bandwig | | | | OWEI | | 20.4 | ubiii | | | |
| | ę | 95.534 MI | HZ | | | | | | | | Detector |
| Transn | nit Freq Error | -73.890 | kHz 9 | % of OE | W Powe | ər | 99 | .00 % | | Auto | Peak▶ <u>Man</u> |
| v dB B | andwidth | 200.0 | | x dB | | | -26 (| 00 dB | | | |
| | | 200.0 1 | 1112 7 | A GD | | | -20.0 | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| MSG | | | | | | | STATUS | | | | |

Plot 7-8. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 64QAM - Mid Channel)



Plot 7-9. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM QPSK - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
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| Keysight Spectrum Analyzer - Occupied RL RF 50 Ω DC | CORREC | SENSE:INT | ALIGN AUTO | 09:46:32 PM Jun 08, 20 | 23 Trace/Detector |
|--|------------|---|-----------------|--------------------------------------|----------------------|
| PREAMP | | Center Freq: 24.349980000 Trig: Free Run Av IAtten: 18 dB | g Hold: 100/100 | Radio Std: None Radio Device: BTS | _ |
| 10 dB/div Ref 40.00 dB | m | | | | |
| 20.0 | m | man manun | marian | | Clear Writ |
| 0.00 | | V | | | |
| 0.0 | | | \$4.a | | Averag |
| 0.0 | | | | | Max Hol |
| enter 24.3500 GHz | | | | Span 400.0 Mi | 12 |
| Res BW 4 MHz | | VBW 50 MHz | | Sweep 1 n | |
| Occupied Bandwid | | Total Powe | or 31.7 | 7 dBm | |
| 1 | 92.90 MHz | 2 | | | Detecto |
| Transmit Freq Error | -1.4587 MH | z % of OBW | Power 99 | 9.00 % | Auto Ma |
| x dB Bandwidth | 203.6 MH | z xdB | -26. | 00 dB | |
| a | | | STATU | 5 | |

Plot 7-10. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



Plot 7-11. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 16QAM - Mid Channel)

| FCC ID: A3LSMS711U MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|--|-------------------|------------------|----------------|--|--|--|
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| | um Analyzer - C | | w | | | | | | | | | | |
|--------------------------|--------------------|--------|---------|---------|---------|-----------|--------------|----------|---------|-----------------------|---------------------|------|------------------|
| X/RL | RF 50 | Ω DC | CORREC | | | ENSE:INT | 9980000 GHz | ALIGN | | 9:45:28 P adio Std | MJun 08, 2023 | Trac | e/Detector |
| | | | | ÷. | | | Avg Hold | I: 100/1 | | auto stu | None | | |
| Р | REAMP | | #IFGaiı | n:Low | #Atten: | 18 dB | | | Ra | adio Dev | ice: BTS | | |
| | | | | | | | | | | | | | |
| 10 dB/div | Ref 30. | 00 dBi | m | | | | | | | | | | |
| Log | | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | | Clear Write |
| 10.0 | | | man | ~~~~ | Warner | a menonew | walnu muntur | honory | | | | | |
| 0.00 | | | | | | V | | | | | | | |
| -10.0 | su and also up the | www.w | | | | | | | - | and the second second | description that | | |
| -20.0 | | | | | | | | | | | | | Average |
| -30.0 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| -40.0 | | | | | | | | | | | | | |
| -50.0 | | | | | | | | | | | | | Max Hold |
| -60.0 | | _ | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| Center 24.3 #Res BW 4 | | | | | VE | 3W 50 M | 47 | | | | 00.0 MHz ep 1 ms | | |
| THES DIV 4 | F IVII 12 | | | | VL | JVY JU IV | 112 | | | 300 | ep mis | | Min Hold |
| Occupi | ed Ban | dwid | th | | | Total | Power | | 27.0 dl | Вm | | | |
| C C C C C C C | | | | 7 8 4 1 | | | | | | | | | _ |
| | | 1 | 97.7 | | 1Z | | | | | | | | Detecto Peakl |
| Transmi | it Freq E | rror | 2/ | .671 | Hz | % of C | BW Pow | er | 99.00 | 0 % | | Auto | Mai |
| | | | | | | x dB | | | | | | | |
| x dB Baı | nawiath | | 4 | 00.0 N | IHZ | хав | | | -26.00 | aв | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| ISG | | | | | | | | | STATUS | | | | |

Plot 7-12. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM 64QAM – Mid Channel)

| FCC ID: A3LSMS711U | CC ID: A3LSMS711U MEASUREMENT REPORT (CERTIFICATION) Te | | | |
|---------------------|---|------------------|----------------|--|
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Band n258-R2

| Antenna | Bandwidth [MHz] | CCs Active | Transmition Scheme | Modulation | OBW [MHz] |
|---------|--------------------|------------|-----------------------|------------|--------------|
| Ant-1 | 50 | 1 | CP-OFDM | QPSK | 46.50 |
| | | | DFT-s-OFDM | π/2 BPSK | 46.13 |
| | | | CP-OFDM | 16QAM | 46.07 |
| | | | CP-OFDM | 64QAM | 46.07 |
| | 100 | 1 | CP-OFDM | QPSK | 94.98 |
| | | 2 | DFT-s-OFDM | π/2 BPSK | 91.68 |
| | | | CP-OFDM | 16QAM | 94.88 |
| | | | CP-OFDM | 64QAM | 94.75 |
| | | | CP-OFDM | QPSK | 194.69 |
| | | | DFT-s-OFDM | π/2 BPSK | 191.52 |
| | | | CP-OFDM | 16QAM | 194.43 |
| | | | CP-OFDM | 64QAM | 194.61 |
| | | 3 | CP-OFDM | QPSK | 296.33 |
| | | | DFT-s-OFDM | π/2 BPSK | 293.70 |
| | | | CP-OFDM | 16QAM | 296.61 |
| | | | CP-OFDM | 64QAM | 296.94 |

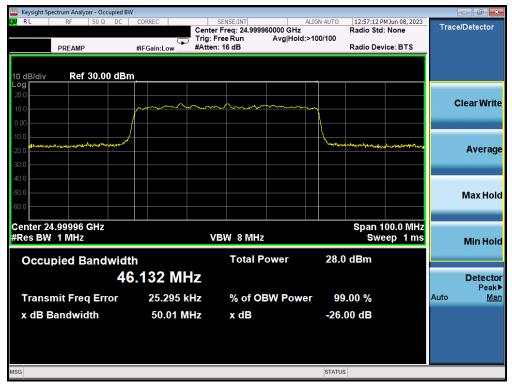
Table 7-3. Summary of Occupied Bandwidths (n258-R2)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|---------------------|-----------------------|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: EUT Type: | | Page 22 of 145 |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | 6/08- 07/20/2023 Portable Handset | |
| © 2023 ELEMENT | • | · | V1.0 |



| Keysight Spectrum Analyzer - Occupied B RL RF 50 0 DC | W CORREC | SENSE:INT | ALIGN AUTO | 12:58:54 PM Jun 08 | 2022 | -) @ 📕 | |
|--|--|---------------------|------------|---|-------|-------------------|--|
| PREAMP | Cent Trig | er Freq: 24.9999600 | | Radio Std: None Radio Device: B1 | Trace | Detector | |
| dB/div Ref 30.00 dBr | m | | | | | | |
| 0.0 | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | ~~~~~~ | | | | lear Writ | |
| | | | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | •••• | Averag | |
| 0.0 | | | | | | Max Ho | |
| enter 24.99996 GHz Res BW 1 MHz | | VBW 8 MHz | | Span 100.0 Sweep 1 | | Min Ho | |
| Occupied Bandwid | th 6.497 MHz | Total Pov | ver 28.3 | 2 dBm | | Detect | |
| Transmit Freq Error x dB Bandwidth | -118.52 kHz 91.64 MHz | % of OBW x dB | | 9.00 % .00 dB | Auto | Peak <u>Ma</u> | |
| 9 | | | STATU | | | | |

Plot 7-13. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM QPSK - Mid Channel)



Plot 7-14. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 22 of 145 | | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 23 of 145 | | | | | |
| © 2023 ELEMENT V1.0 | | | | | | | | |



| Keysight Spectrum Analyzer - Occupied BV | | | | | |
|--|--------------------------|--|------------------|--|----------------|
| RL RF 50 Ω DC | Trig: | SENSE:INT Freq: 24.999960000 GHz Free Run Avg Hold n: 16 dB | :>100/100 | 12:58:37 PM Jun 08, 2023 Radio Std: None Radio Device: BTS | Trace/Detector |
| 10 dB/div Ref 30.00 dBn -og 20.0 | n | | | | |
| | | | | | Clear Writ |
| 20.0 | | | | Antonia and the School and a second as second as | Averaç |
| | | | | | Max Ho |
| enter 24.99996 GHz Res BW 1 MHz | \ | /BW 8 MHz | | Span 100.0 MHz Sweep 1 ms | Min Ho |
| Occupied Bandwidt | հ Տ.075 MHz | Total Power | 27.4 | dBm | Detecto |
| Transmit Freq Error x dB Bandwidth | -30.727 kHz 61.84 MHz | % of OBW Powe x dB | er 99.(-26.0 | 00 % 0 dB | Auto <u>Ma</u> |
| G | | | STATUS | | |

Plot 7-15. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-16. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 24 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 24 of 145 | | | |
| © 2023 ELEMENT | | des al se suffere d'he server en la server en la server en la strategia en estado en la barde de la destruction | V1.0 | | | |



| Keysight Spectrum Analyzer - Occupie | | | | | | | •) Ø 💽 |
|--------------------------------------|-------------|-----------------------------------|--------------|--------------------|---------------|-------|-------------------|
| 🕅 RL RF 50Ω D0 | C CORREC | SENSE:INT Center Freq: 24.9995 | 60000 GHz | Radio Std | MJun 08, 2023 | Trace | Detector |
| PREAMP | #FGain:Low | Trig: Free Run #Atten: 10 dB | Avg Hold:>10 | 0/100 Radio Dev | ice: BTS | | |
| PREAMP | IP Gall.LOW | articles: 10 00 | | 10010 001 | | | |
| 10 dB/div Ref 30.00 d | Bm | | | | | | |
| 20.0 | | | | | | | |
| 10.0 | | | | | | c | lear Write |
| 0.00 | | | mann | <u>,</u> | | _ | |
| -10.0 | | | | \ | | | |
| 20.0 manunation and a second | ww - | | | hannon | - | | Average |
| -30.0 | | | | | | _ | - |
| -40.0 | | | | | | | |
| -50.0 | | | | | | | Max Hold |
| -60.0 | | | | | | | |
| Center 25.0000 GHz | | | | Snan 2 | 00.0 MHz | | |
| #Res BW 2 MHz | | #VBW 8 MH | z | | eep 1 ms | | Min Hold |
| Occupied Bandwi | dth | Total P | ower | 23.6 dBm | | | |
| | 94.979 MH | | | | | | Detector |
| | 54.575 WIN | Z | | | | | Detector Peak▶ |
| Transmit Freq Error | -17.454 ki | Hz % of O | BW Power | 99.00 % | | Auto | Man |
| x dB Bandwidth | 152.1 M | Hz xdB | | -26.00 dB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | | STATUS | | | |

Plot 7-17. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM QPSK - Mid Channel)



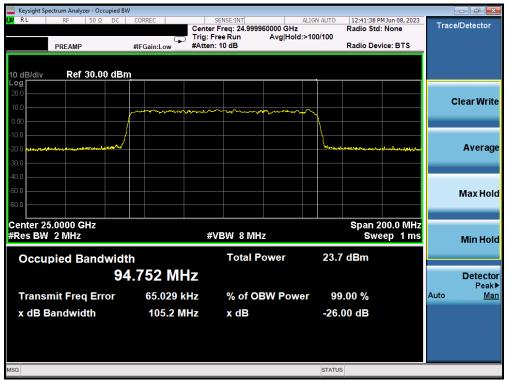
Plot 7-18. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | | | Approved by: Technical Manager |
|---------------------|---------------------------------------|------------------|----------------|--|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 25 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 25 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| RL RF 50Ω DC | Cente Trig: | Free Run Avg Hold:> | Rad 100/100 | 42:13 PMJun 08, 2023 lio Std: None | Trace/Detector |
|------------------------------------|------------------|---------------------|----------------|---------------------------------------|----------------|
| PREAMP | #FGain:Low #Atte | n: 10 dB | Rad | io Device: BTS | |
| 0 dB/div Ref 30.00 dB | m | | | | |
| 20.0 | | | | | Clear Writ |
| 0.00 | | | γ | | |
| 10.0 | | | Uman | - | Averag |
| 30.0 | | | | | |
| 50.0 | | | | | Max Hol |
| 60.0 | | | | | |
| Center 25.0000 GHz Res BW 2 MHz | | VBW 8 MHz | 5 | pan 200.0 MHz Sweep 1 ms | Min Hol |
| Occupied Bandwid | th | Total Power | 23.6 dB | m | |
| 9 | 4.877 MHz | | | | Detecto |
| Transmit Freq Error | -54.449 kHz | % of OBW Power | 99.00 | % | Auto <u>Ma</u> |
| x dB Bandwidth | 113.8 MHz | x dB | -26.00 c | iB | |
| 6 | | | STATUS | | |

Plot 7-19. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 16QAM - Mid Channel)



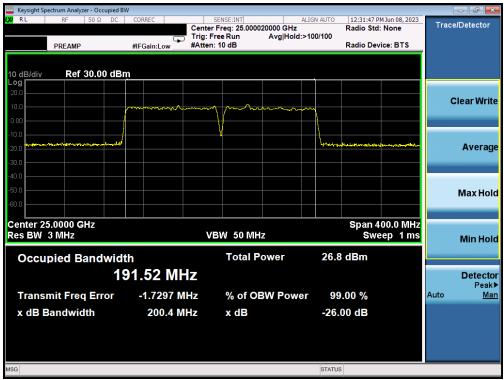
Plot 7-20. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | | |
|---------------------|---------------------------------------|------------------|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage OC of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 26 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - Occupied B\ | | | | | |
|---|--------------------------|--|--------------------------------|--|-----------------|
| KRL RF 50Ω DC | Trig: | SENSE:INT er Freq: 25.000020000 GHz Free Run Avg Hol m: 10 dB | ALIGN AUTO z id:>100/100 | 12:35:32 PM Jun 08, 2023 Radio Std: None Radio Device: BTS | Trace/Detector |
| 0 dB/div Ref 30.00 dBr -og 20.0 10.0 | n | ma from the second | | | Clear Writ |
| 0.00 0.00 0.00 0.00 0.00 | | | | Andre State of the generation of the second | Averag |
| 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 | | | | | Max Ho |
| enter 25.0000 GHz es BW 3 MHz Occupied Bandwidt | | /BW 50 MHz Total Power | 24.0 | Span 400.0 MHz Sweep 1 ms dBm | Min Ho |
| 19 | 94.69 MHz | | | | Detecto Peak |
| Transmit Freq Error x dB Bandwidth | -371.45 kHz 399.0 MHz | % of OBW Pov x dB | | .00 % 00 dB | Auto <u>M</u> a |
| G | | | STATUS | | |

Plot 7-21. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM QPSK - Mid Channel)



Plot 7-22. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dege 07 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 27 of 145 | | | |
| © 2023 ELEMENT V1.0 | | | | | | |



| Keysight Spectrum Analyzer - Occupied | | | | | |
|---|-------------------|-------------------------------------|-----------|-----------------|-------------------|
| LX/ RL RF 50Ω DC | | SENSE:INT Freg: 25.000020000 GHz | | PM Jun 08, 2023 | Trace/Detector |
| | Trig: | Free Run Avg Hold: | >100/100 | | |
| PREAMP | #IFGain:Low #Atte | n: 10 dB | Radio D | evice: BTS | |
| | | | | | |
| 10 dB/div Ref 30.00 dE | 3m | | | | |
| 20.0 | | | | | |
| 10.0 | | | | | Clear Write |
| 0.00 | marine | | ~~ | | |
| -10.0 | | V | | | |
| -20.0 | | | hermonda | - | Average |
| | | | | | Average |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | |
| Center 25.0000 GHz | | | Span | 400.0 MHz | |
| Res BW 3 MHz | ١ | /BW 50 MHz | | veep 1 ms | Min Hold |
| | | | | | Minitiona |
| Occupied Bandwid | dth | Total Power | 24.2 dBm | | |
| 1 | 94.43 MHz | | | | Detector |
| T | | 0/ - f ODW D | | | Peak▶ Auto Man |
| Transmit Freq Error | -387.54 kHz | % of OBW Powe | | | Auto <u>Man</u> |
| x dB Bandwidth | 397.0 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-23. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-24. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | Approved by: Technical Manager | | | |
|---------------------|-------------------|-----------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dege 20 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 28 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| <mark>Keysight Spectrum Analyzer - Occupied B</mark> Ζ RL RF 50 Ω DC | CORREC | SENSE:INT | ALIGN AUTO | 12:27:42 PM Jun 0 | |
|--|--------------------------|---|-----------------|------------------------------------|-------------|
| PREAMP | Trig: F | r Freq: 24.999960000 GHz Free Run Avg Hol : 10 dB | : d:>100/100 | Radio Std: None Radio Device: B | , |
| 10 dB/div Ref 30.00 dBr -og 20.0 | | | | | ClearW |
| 0.00 0.00 10.0 <mark></mark> | | han | Inder-own (| hostinativative and as a set | |
| 20.0 | | | | | Aver |
| 50.0 | | | | | Max H |
| Center 25.0000 GHz Res BW 8 MHz | | BW 50 MHz Total Power | 27 / | Span 600.0 Sweep | |
| Occupied Bandwidd | 96.33 MHz | Total Power | 21.4 | dBiii | Detec Pe |
| Transmit Freq Error x dB Bandwidth | -982.91 kHz 529.4 MHz | % of OBW Pow x dB | | .00 % 00 dB | Auto |
| G | | | STATUS | | , |

Plot 7-25. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM QPSK - Mid Channel)



Plot 7-26. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 20 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 29 of 145 | | | |
| © 2023 ELEMENT V1.0 | | | | | | |



| Keysight Spectrum Analyzer - Occupied | | | | | |
|---|--------------------------|---|-----------------|---|----------------|
| RL RF 50 Ω DC | Trig: | SENSE:INT or Freq: 24.999960000 GHz Free Run Avg Holo n: 10 dB | d:>100/100 | 12:26:46 PM Jun 08, 20: Radio Std: None Radio Device: BTS | Trace/Detector |
| 0 dB/div Ref 30.00 dE | Bm | | | | Clear Wri |
| 0.0 .0 .0 .0 .0 .0 .0 | | | de regeção de | หรุงาลัปไข่ระที่กลุ่ง _ต ุปัญญาไม่ | Averaç |
| 0.0 0.0 0.0 | | | | | Max Ho |
| enter 25.0000 GHz Res BW 8 MHz | \ | /BW 50 MHz | | Span 600.0 MH Sweep 1 m | |
| Occupied Bandwig | 96.61 MHz | Total Power | 26.6 | dBm | Detect |
| Transmit Freq Error x dB Bandwidth | -455.20 kHz 545.2 MHz | % of OBW Pow x dB | er 99. -26.0 | 00 % 0 dB | Auto <u>Ma</u> |
| G | | | STATUS | | |

Plot 7-27. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-28. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 20 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 30 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



Band n261

| Antenna | Bandwidth [MHz] | CCs Active | Transmition Scheme | Modulation | OBW [MHz] | | | | | | |
|---------|--------------------|------------|-----------------------|------------|--------------|--|--|--|------------|----------|--------|
| Ant-1 | 50 | 1 | CP-OFDM | QPSK | 46.27 | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 46.32 | | | | | | |
| | | | CP-OFDM | 16QAM | 46.17 | | | | | | |
| | | | CP-OFDM | 64QAM | 46.12 | | | | | | |
| | 100 | 1 | CP-OFDM | QPSK | 95.34 | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 91.98 | | | | | | |
| | | | CP-OFDM | 16QAM | 95.07 | | | | | | |
| | | | CP-OFDM | 64QAM | 95.13 | | | | | | |
| | | 2 | CP-OFDM | QPSK | 197.58 | | | | | | |
| | | | | | | | | | DFT-s-OFDM | π/2 BPSK | 197.60 |
| | | | CP-OFDM | 16QAM | 197.80 | | | | | | |
| | | | CP-OFDM | 64QAM | 194.60 | | | | | | |
| | | 3 | CP-OFDM | QPSK | 292.88 | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 292.45 | | | | | | |
| | | | CP-OFDM | 16QAM | 293.03 | | | | | | |
| | | | CP-OFDM | 64QAM | 292.48 | | | | | | |
| | | 4 | CP-OFDM | QPSK | 395.05 | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 393.00 | | | | | | |
| | | | CP-OFDM | 16QAM | 394.35 | | | | | | |
| | | | CP-OFDM | 64QAM | 395.81 | | | | | | |

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

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager |
|---------------------|---------------------------------------|------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 21 of 145 |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 31 of 145 |
| © 2023 ELEMENT | | | V1.0 |



| Keysight Spectrum Analyzer - Occupied | | | | | | |
|---------------------------------------|-------------------|--------------|--------------------------------|--------------------------------------|---------------|-------------------------|
| RL RF 50Ω DC | Cente Trig: | | ALIGN AUTO z id:>100/100 | 12:15:54 PM Jun 1 Radio Std: None | e Trace/Detec | ctor |
| PREAMP | #IFGain:Low #Atte | n: 16 dB | | Radio Device: B | TS | |
| | | | | | | |
| 0 dB/div Ref 40.00 dE | 3m | | | | | |
| 0.0 | | | | | | |
| 0.0 | | | | | Clear | Nri |
| 0.0 | | m | man | | | |
| .00 | | | | | | |
| 0.0 | J | | hower | | Ave | era |
| | | | | | | |
| D.O | | | | | | |
| 0.0 | | | | | | |
| 0.0 | | | | | Max | но |
| 0.0 | | | | | | |
| enter 27.92496 GHz | | | | Span 100.0 | | |
| Res BW 1 MHz | \ | /BW 8 MHz | | Sweep | 1 ms Min | Ho |
| Occupied Bandwig | lth | Total Power | 31.3 | dBm | | |
| | | | | | | |
| 4 | 6.275 MHz | | | | Det | ect ^P eal |
| Transmit Freq Error | -36.146 kHz | % of OBW Pov | ver 99 | .00 % | Auto | M |
| x dB Bandwidth | 76.12 MHz | x dB | -26 | 00 dB | | |
| A de Danawidui | 70.12 MI12 | X UD | -20. | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| G | | | STATUS | š | | |

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



Plot 7-30. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | | | Approved by: Technical Manager | |
|---------------------|---------------------------------------|------------------|----------------|--|-----------------------------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 22 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 32 of 145 | | | |
| © 2023 ELEMENT V1.0 | | | | | | |



| Keysight Spectrum Analyzer - Occupied B | | | | | |
|---|--------------------------|--|------------|--|-------------------------------|
| RL RF 50 Ω DC | Trig: F | SENSE:INT r Freq: 27.924960000 GHz Free Run Avg Hold n: 16 dB | ALIGN AUTO | 12:15:17 PM Jun 13, 20 Radio Std: None Radio Device: BTS | Trace/Detecto |
| 0 dB/div Ref 30.00 dBr | n | | | | |
| 0.00 | | | | harrown a south to a farm the strong | Clear Wr |
| 10.0 | | | | | Avera |
| enter 27.92496 GHz | | | | Span 100.0 M | |
| Res BW 1 MHz Occupied Bandwidt | th | BW 8 MHz Total Power | 30.3 | Sweep 1 n dBm | |
| 40 Transmit Freq Error | 5.171 MHz -110.89 kHz | % of OBW Pow | er 99 | .00 % | Detec Pea Auto <u>N</u> |
| x dB Bandwidth | 61.03 MHz | x dB | -26. | 00 dB | |
| G | | | STATUS | | |

Plot 7-31. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-32. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 22 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 33 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - Occupied | | | | | | | × |
|---------------------------------------|----------------------------|--|------------|--|--------------------|-------------|------|
| RL RF 50 Ω DC | Trig: F | SENSE:INT r Freq: 27.924960000 GHz Free Run Avg Hold n: 16 dB | ALIGN AUTO | 12:40:14 PM Radio Std: I Radio Devic | None | Trace/Detec | tor |
| 0 dB/div Ref 30.00 dB | m | | | | | | |
| 10.0 .00 | | | | | | ClearV | Vrit |
| 0.0 0.0 0.0 | | | had and | nanan jaga da | ,1.44., | Ave | ra |
| D.0 | | | | | | Max | Но |
| enter 27.9250 GHz Res BW 2 MHz | # | VBW 8 MHz | | Span 20 Swee | 0.0 MHz ep 1 ms | Min | Но |
| Occupied Bandwid 9 | th 5.340 MHz | Total Power | 30.4 | dBm | | Dete | ect |
| Transmit Freq Error x dB Bandwidth | -138.23 kHz 185.5 MHz | % of OBW Pow x dB | | .00 % 00 dB | A | uto | M |
| | | | | | | | |
| G | | | STATUS | | | | |

Plot 7-33. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM QPSK - Mid Channel)



Plot 7-34. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | | | |
|---------------------|---------------------------------------|------------------|-----------------------------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 24 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 34 of 145 | | | |
| © 2023 ELEMENT V1.0 | | | | | | |



| Keysight Spectrum Analyzer - Occu | | | | | |
|-----------------------------------|----------------|--|--------------------------------|--|----------------|
| RL RF 50 Ω | Cer Tri | SENSE:INT nter Freq: 27.924960000 GH g: Free Run Avg Ho tten: 16 dB | ALIGN AUTO z id:>100/100 | 12:20:31 PM Jun 13, 2023 Radio Std: None Radio Device: BTS | Trace/Detector |
| 0 dB/div Ref 30.00 | dBm | | | | |
| 0.0 0.00 0.0 | | | han day | - Maser - Maler - Malling - Malling | Clear Writ |
| 0.0 | | | | | Avera |
| enter 27.9250 GHz | | | | Span 200.0 MHz | Max Ho |
| Res BW 2 MHz | | #VBW 8 MHz Total Power | 20.6 | Sweep 1 ms | Min Ho |
| Occupied Bandv | 95.070 MHz | Total Fower | 50.5 | ubini | Detect Peal |
| Transmit Freq Erro | or -142.88 kHz | % of OBW Pov | wer 99 | .00 % | Auto <u>Ma</u> |
| x dB Bandwidth | 134.5 MHz | x dB | -26. | 00 dB | |
| G | | | STATUS | | |

Plot 7-35. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 16QAM - Mid Channel)



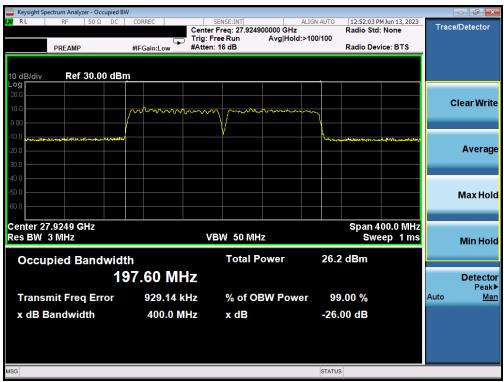
Plot 7-36. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager |
|---------------------|---------------------------------------|------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 25 of 145 |
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| © 2023 ELEMENT | | | V1.0 |



| 🔤 Keysight Spectrum Analyzer - Occupie | | | | | |
|--|----------------------|---|---------------------|-----------------------------------|-------------------|
| L <mark>X/</mark> RL RF 50 Ω D(| | SENSE:INT Iter Freg: 27.924900000 GH | | 06 PM Jun 13, 2023 Std: None | Trace/Detector |
| | Trig | g:FreeRun Avg H | old:>100/100 | Stu. None | |
| PREAMP | #IFGain:Low #At | ten: 16 dB | Radio | Device: BTS | |
| | | | | | |
| 10 dB/div Ref 30.00 d | Bm | | | | |
| 20.0 | | | | | |
| | | | | | Clear Write |
| 10.0 | wat would we we want | man for and the second | - market | | |
| 0.00 | | | | | |
| -10.0 managen and and and and and and and and and an | ~ | | and a second second | enterna data vage har har har har | |
| -20.0 | | | | | Average |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | |
| | | | | | |
| Center 27.9249 GHz | | VOW SO MU- | | n 400.0 MHz | |
| Res BW 3 MHz | | VBW 50 MHz | | weep 1ms | Min Hold |
| Occupied Bandwi | dth | Total Power | 26.9 dBm | | |
| | | | | | |
| | 197.58 MHz | | | | Detector Peak▶ |
| Transmit Freq Error | -99.132 kHz | % of OBW Po | wer 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 400.0 MHz | x dB | -26.00 dB | | |
| | 400.0 10112 | A UD | -20.00 00 | | |
| | | | | | |
| | | | | | |
| | | | , , | | |
| MSG | | | STATUS | | |

Plot 7-37. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM QPSK - Mid Channel)



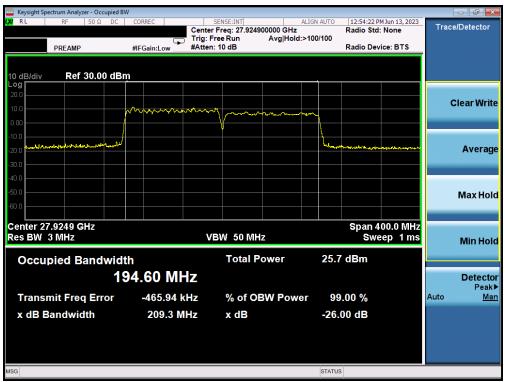
Plot 7-38. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager | | | |
|---------------------|---------------------------------------|------------------|-----------------------------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 26 of 145 | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 36 of 145 | | | |
| © 2023 ELEMENT V1.0 | | | | | | |



| 🔤 Keysight Spectrum Analyzer - Occupi | ed BW | | | | |
|---------------------------------------|----------------|------------------------------------|------------------|--|-----------------|
| <mark>(X)</mark> RL RF 50Ω [| C CORREC | SENSE:INT nter Freg: 27.9249000 | ALIGN AUTO | 12:53:34 PM Jun 13, 20 Radio Std: None | Trace/Detector |
| | Tri | ig: Free Run A | vg Hold:>100/100 | Radio Stu. None | |
| PREAMP | #IFGain:Low #A | tten: 16 dB | | Radio Device: BTS | |
| | | | | | |
| 10 dB/div Ref 30.00 d | dBm | | | | |
| Log | | | | | |
| 20.0 | | | | | Clear Write |
| 10.0 | mmmm | m mont | many | | |
| 0.00 | | ₩ | | | |
| -10.0 | | | | والمروالي المروحية والمروحية والمروالي المروحية والمروحية والمروحية والمروحية والمروحية والمروحية والمروحية وا | |
| -20.0 | | | | | Average |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | |
| | | | | | Max Hold |
| -60.0 | | | | | |
| Center 27.9249 GHz | | | | Span 400.0 M | HZ |
| Res BW 3 MHz | | VBW 50 MHz | | Sweep 1 r | |
| | | | | | Wiinthold |
| Occupied Bandw | idth | Total Pow | ver 26.9 |) dBm | |
| | 197.80 MHz | | | | Detector |
| | | | | | Peak► |
| Transmit Freq Error | -120.77 kHz | % of OBW | Power 99 | .00 % | Auto <u>Man</u> |
| x dB Bandwidth | 400.0 MHz | x dB | -26 | 00 dB | |
| | | | 201 | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | 3 | |

Plot 7-39. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 16QAM - Mid Channel)



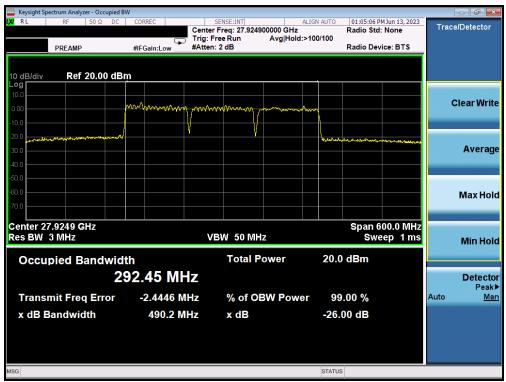
Plot 7-40. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | Approved by: Technical Manager | | | |
|---------------------|-------------------|-----------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dego 27 of 145 | | |
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| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - Occupied | BW | | | | |
|---------------------------------------|-----------------|--|---------------|---|----------------|
| LX/RL RF 50Ω DC | CORREC | SENSE:INT nter Freg: 27.924900000 0 | ALIGN AUTO | 01:14:45 PM Jun 13, 2023 Radio Std: None | Trace/Detector |
| | Tri | g: Free Run Avg | Hold:>100/100 | Radio Sta. None | |
| PREAMP | #IFGain:Low #At | tten: 8 dB | | Radio Device: BTS | _ |
| | | | | | |
| 10 dB/div Ref 30.00 dB | 3m | | | | |
| 20.0 | | | | | |
| | | | | | Clear Writ |
| 10.0 | manument he | my how was | mm | | |
| 0.00 | <u>γ</u> | ¥ | | | |
| -10.0 | | | | | _ |
| -20.0 | | | | high the marked and marked from | Averag |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hol |
| -60.0 | | | | | |
| | | | | | |
| Center 27.9249 GHz | | VOW SO MU- | | Span 600.0 MH | |
| Res BW 3 MHz | | VBW 50 MHz | | Sweep 1 ms | Min Hol |
| Occupied Bandwid | ith | Total Power | 27.8 | dBm | |
| | | | | | _ |
| | 92.88 MHz | | | | Detecto |
| Transmit Freq Error | -843.91 kHz | % of OBW P | ower 99 | .00 % | Auto <u>Ma</u> |
| x dB Bandwidth | 342.1 MHz | x dB | -26 | 00 dB | |
| | J42.1 WITZ | A UD | -20. | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | 3 | |

Plot 7-41. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM QPSK - Mid Channel)



Plot 7-42. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | Approved by: Technical Manager | | | |
|---------------------|-------------------|-----------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 20 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 38 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - Occupied I | BW | | | | |
|---|--------------------|-------------------------------------|--|----------------------|-------------------|
| LXIRL RF 50ΩDC | CORREC | SENSE:INT Freq: 27.924900000 GHz | ALIGN AUTO 01:13:56 Radio St | PM Jun 13, 2023 | Trace/Detector |
| | Trig: I | Free Run Avg Hold: | | u. None | |
| PREAMP | #IFGain:Low #Atter | n: 8 dB | Radio De | evice: BTS | |
| | | | | | |
| 10 dB/div Ref 30.00 dB | m | | | | |
| 20.0 | | | | | |
| | | | | | Clear Write |
| 10.0 | many more way | monthly portugues | m | | |
| 0.00 | <u> </u> ¥ | | | | |
| -10.0 | | | | | |
| -20.0 and | | | hard grade and hard a | aterno constants and | Average |
| -30.0 | | | | | |
| -40.0 | | | | | |
| -50.0 | | | | | Max Hold |
| -60.0 | | | | | IVIAX HOID |
| -00.0 | | | | | |
| Center 27.9249 GHz | | | | 600.0 MHz | |
| Res BW 3 MHz | <u> </u> | /BW 50 MHz | Sw | veep 1 ms | Min Hold |
| | | Total Power | 26.8 dBm | | |
| Occupied Bandwid | | Total Power | 20.0 000 | | |
| 2 | 93.03 MHz | | | | Detector |
| T | 070 04 111- | 0/ -f 000// 0 | | | Peak▶ Auto Man |
| Transmit Freq Error | -972.81 kHz | % of OBW Powe | er 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 303.5 MHz | x dB | -26.00 dB | | |
| | | | | | |
| | | | | | |
| | | | | | |
| MSG | | | STATUS | | |

Plot 7-43. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 16QAM - Mid Channel)



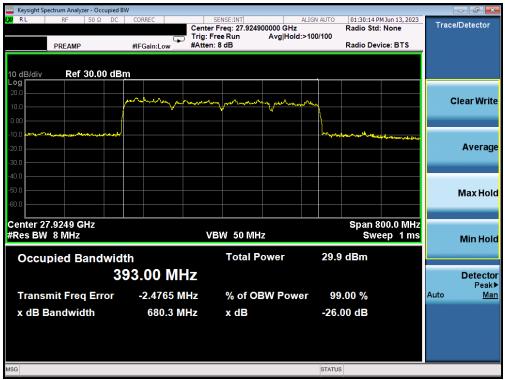
Plot 7-44. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dega 20 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 39 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - RL RF 50 | Occupied BW Ω DC CORREC | SENSE:INT | ALIGN AUTO | 01:33:07 PM Jun 13, 2023 | Trace/Detector |
|--|----------------------------|---|----------------------------|---|----------------|
| PREAMP | ر #IFGain:Low _ | Center Freq: 27.9249000 Trig: Free Run A #Atten: 8 dB | 00 GHz vg Hold:>100/100 | Radio Std: None Radio Device: BTS | Tace/Delector |
| 10 dB/div Ref 30 | .00 dBm | | | | |
| 10.0 D.00 | Manual Contraction | ment and pour days | | | Clear Writ |
| 10.0 +++++++++++++++++++++++++++++++++++ | | | - Winner | And and a strategy of the second strategy of | Averag |
| 0.0 | | | | | Max Ho |
| enter 27.9249 GHz Res BW 8 MHz | | VBW 50 MHz | | Span 800.0 MHz Sweep 1 ms | Min Ho |
| Occupied Ban | idwidth 395.05 M | Total Pow | er 29.4 | dBm | Detecto |
| Transmit Freq E x dB Bandwidth | | | | .00 % 00 dB | Auto <u>Ma</u> |
| G | | | STATUS | | |

Plot 7-45. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM QPSK - Mid Channel)



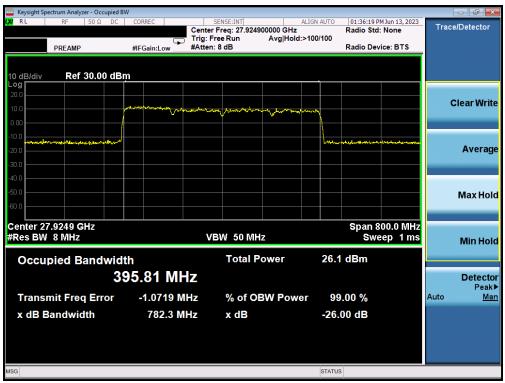
Plot 7-46. Occupied Bandwidth Plot (100MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | Approved by: Technical Manager | | | |
|---------------------|-------------------|-----------------------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 40 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 40 of 145 | | |
| © 2023 ELEMENT V1.0 | | | | | |



| Keysight Spectrum Analyzer - Occupied | | | | | | - 6 |
|---------------------------------------|---|--------------------------------------|------------|--|----------|----------------|
| RL RF 50 Ω DC | | | ALIGN AUTO | 01:34:55 PM Jun Radio Std: Nor Radio Device: I | ne Traci | e/Detector |
| 0 dB/div Ref 30.00 dE | m from the second | the phone and a free of a grant of a | U | | | Clear Writ |
| 0.00 | | | | and the second second | | Averag |
| 0.0 | | | | | | Max Ho |
| enter 27.9249 GHz Res BW 8 MHz | | BW 50 MHz | | Span 800.0 Sweep | | Min Ho |
| Occupied Bandwic | 94.35 MHz | Total Power | 29.3 | dBm | | Detect Peak |
| Transmit Freq Error x dB Bandwidth | -2.0069 MHz 408.7 MHz | % of OBW Pow x dB | | .00 % 00 dB | Auto | Ma |
| G | | | STATUS | | | |

Plot 7-47. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-48. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 41 of 145 | | | |
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| © 2023 ELEMENT V1.0 | | | | | | |



Band n260

| Antenna | Bandwidth [MHz] | CCs Active | Transmition Scheme | Modulation | OBW [MHz] | | | | | | | | | | | |
|---------|--------------------|------------|-----------------------|------------|--------------|---------|---------|--------|---------|------------|----------|--------|--|------------|----------|--------|
| Ant-1 | 50 | 1 | CP-OFDM | QPSK | 46.65 | | | | | | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 46.03 | | | | | | | | | | | |
| | | | CP-OFDM | 16QAM | 46.29 | | | | | | | | | | | |
| | | | CP-OFDM | 64QAM | 46.01 | | | | | | | | | | | |
| | 100 | 1 | CP-OFDM | QPSK | 95.98 | | | | | | | | | | | |
| | 2 | | DFT-s-OFDM | π/2 BPSK | 92.33 | | | | | | | | | | | |
| | | | CP-OFDM | 16QAM | 95.59 | | | | | | | | | | | |
| | | | CP-OFDM | 64QAM | 96.94 | | | | | | | | | | | |
| | | | 2 | CP-OFDM | QPSK | 197.21 | | | | | | | | | | |
| | | | | | | | | | | | | | | DFT-s-OFDM | π/2 BPSK | 195.80 |
| | | | CP-OFDM | 16QAM | 194.49 | | | | | | | | | | | |
| | | | CP-OFDM | 64QAM | 195.24 | | | | | | | | | | | |
| | | | | | 3 | 3 | CP-OFDM | QPSK | 298.10 | | | | | | | |
| | | | DFT-s-OFDM | π/2 BPSK | 297.44 | | | | | | | | | | | |
| | | | | | | CP-OFDM | 16QAM | 299.16 | | | | | | | | |
| | | | CP-OFDM | 64QAM | 297.73 | | | | | | | | | | | |
| | | | | | 4 | | 4 | 4 | CP-OFDM | QPSK | 396.16 | | | | | |
| | | | | | | | | | | DFT-s-OFDM | π/2 BPSK | 395.33 | | | | |
| | | | CP-OFDM | 16QAM | 396.58 | | | | | | | | | | | |
| | | | CP-OFDM | 64QAM | 396.64 | | | | | | | | | | | |

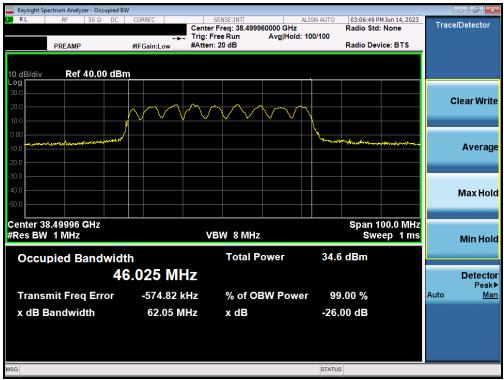
Table 7-5. Summary of Occupied Bandwidths (n260)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Technical Manager |
|---------------------|---------------------------------------|------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 42 of 145 |
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| Keysight Spectrum Analyzer - Occupied R | BW | | | | | - 5 |
|---|------------------|-----------------------------------|-----------------------|--------------------------------|---------------------|-------------------|
| LX RL RF 50 Ω DC | CORREC | SENSE:INT Center Freg: 38.4999 | | N AUTO 03:06:15 P Radio Std | M Jun 14, 2023 | Trace/Detector |
| | ÷ | T C C | Avg Hold:>10 | | : None | |
| PREAMP | #IFGain:Low | #Atten: 20 dB | 0. | Radio Dev | vice: BTS | |
| | | | | | | |
| 10 dB/div Ref 40.00 dB | m | | | | | |
| Log | | | | | | |
| 30.0 | | | | | | Clear Write |
| 20.0 | $\sim \sim \sim$ | $m \wedge \wedge \wedge$ | | | | Clear write |
| 10.0 | | | $\vee \vee \setminus$ | | | |
| 0.00 | / | | | | | |
| -10.0 | | | | - And the second second second | whitemature | Average |
| -20.0 | | | | | | |
| | | | | | | |
| -30.0 | | | | | | |
| -40.0 | | | | | | Max Hold |
| -50.0 | | | | | | |
| | | | | 0 | 00.0 MU | |
| Center 38.49996 GHz #Res BW 1 MHz | | VBW 8 MHz | | Span 1 | 00.0 MHz ep 1 ms | |
| The s Day I will z | | | | 300 | sep mis | Min Hold |
| Occupied Bandwid | lth | Total P | ower | 32.9 dBm | | |
| | | I | | | | |
| 4 | 6.651 M⊦ | 1Z | | | | Detector Peak▶ |
| Transmit Freq Error | -438.74 k | Hz % of O | BW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 99.63 M | Hz xdB | | -26.00 dB | | |
| | 99.03 M | | | -20.00 UB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | | STATUS | | |

Plot 7-49. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM QPSK - Mid Channel)



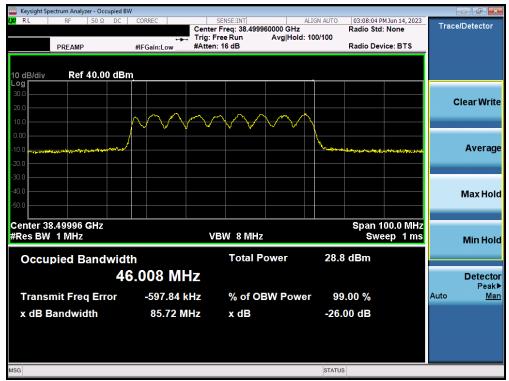
Plot 7-50. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | Approved by: Technical Manager | | | | |
|---------------------|-------------------|-----------------------------------|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 42 of 145 | | | |
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| © 2023 ELEMENT V1.0 | | | | | | |



| 🧱 Keysight Spectrum Analyzer - Occupied E | W | | | | | - 5 |
|---|------------------------|---|------------------------|-------------------------------|---------------------|-------------------|
| LXU RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.4999 | ALIGN AU | UTO 03:07:20 PM Radio Std: | 1Jun 14, 2023 | Trace/Detector |
| | ·→ | Trig: Free Run | Avg Hold:>100/10 | | None | |
| PREAMP | #IFGain:Low | #Atten: 20 dB | | Radio Devi | ce: BTS | |
| | | | | | | |
| 10 dB/div Ref 40.00 dB | m | | | | | |
| Log 30.0 | | | | | | |
| | | | | | | Clear Write |
| 20.0 | $\wedge \wedge \wedge$ | $ \wedge \wedge$ | $\gamma \wedge \gamma$ | | | |
| 10.0 | | | | | | |
| 0.00 | | | - Aver | where the second | Arda Barran II. A | _ |
| -10.0 | | | | | | Average |
| -20.0 | | | | | | |
| -30.0 | | | | | | |
| -40.0 | | | | | | Max Hold |
| -50.0 | | | | | | |
| | | | | | | |
| Center 38.49996 GHz #Res BW 1 MHz | | VBW 8 MHz | | | 00.0 MHz ep 1 ms | |
| #Res BW T MHZ | | | | Swe | ep mis | Min Hold |
| Occupied Bandwid | th | Total P | ower 3 | 31.7 dBm | | |
| | | | | | | Detector |
| 4 | 6.286 M | пZ | | | | Detector Peak► |
| Transmit Freq Error | -498.03 | kHz % of O | BW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 99.50 N | MHz xdB | - | 26.00 dB | | |
| | 55.50 1 | | | 20.00 00 | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | ST | TATUS | | |

Plot 7-51. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-52. Occupied Bandwidth Plot (50MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | |
|---------------------|-------------------|---------------------------------------|----------------|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 44 of 145 | |
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| Keysight Spectrum Analyzer - Occupied B | W | | | | | | |
|---|-------------|-----------------------------------|--------------|--------------------------------|-------------------------|------------|------------|
| LXI RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.4999 | | N AUTO 03:10:42 F Radio Std | M Jun 14, 2023 | Trace/Dete | ctor |
| | ÷. | Trig: Free Run | Avg Hold:>10 | | . None | | |
| PREAMP | #IFGain:Low | #Atten: 16 dB | | Radio Dev | vice: BTS | | |
| | | | | | | | |
| 10 dB/div Ref 40.00 dB | n | | | | | | |
| Log | l l | | | | | | |
| 30.0 | | | | | | Clear | Write |
| 20.0 | | \sim | ~~~~~ | | | Gicai | in ne |
| 10.0 | 1 4 4 4 4 4 | | | | | | |
| 0.00 | / | | | | | | |
| -10.0 mmatingthingthere and and all the | | | | how work and | the sol that the second | Ave | erage |
| -20.0 | | | | | | | - |
| -30.0 | | | | | | | |
| -40.0 | | | | | | | |
| | | | | | | Max | Hold |
| -50.0 | | | | | | | _ |
| Center 38.5000 GHz | | | | Span 2 | 200.0 MHz | | |
| #Res BW 2 MHz | | VBW 50 MH | z | | eep 1 ms | Min | Hold |
| | | | | | | | noid |
| Occupied Bandwid | th | Total P | ower | 33.0 dBm | | | |
| 9 | 5.984 MI | 17 | | | | Det | ector |
| | 0.001 111 | | | | | | Peak▶ |
| Transmit Freq Error | 27.088 | Hz % of O | BW Power | 99.00 % | | Auto | <u>Man</u> |
| x dB Bandwidth | 190.1 N | Hz xdB | | -26.00 dB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | | STATUS | | | |

Plot 7-53. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM QPSK - Mid Channel)



Plot 7-54. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 45 of 145 | | | | |
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| © 2023 ELEMENT V1.0 | | | | | | | |



| Keysight Spectrum Analyzer - Occupied | BW | | | | | | |
|---------------------------------------|-----------------------------------|----------------------------------|--------------|--------------------------------|------------------|------------|-----------------|
| LX/RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.499 | | N AUTO 03:11:00 P Radio Std | M Jun 14, 2023 | Trace/Dete | ctor |
| | | Trig: Free Run | Avg Hold:>10 | | . None | | |
| PREAMP | #IFGain:Low | #Atten: 16 dB | | Radio Dev | /ice: BTS | | |
| | | | | | | | |
| 10 dB/div Ref 40.00 dB | 3mj | | | | | | |
| Log 30.0 | | | | | | | |
| | | | | | | Clear | Write |
| 20.0 | $\Lambda \Lambda \Lambda \Lambda$ | $\sim\sim\sim\sim$ | \sim | V | | | |
| 10.0 | | | | | | | |
| 0.00 | 1 | | | Jul werman work | | _ | |
| -10.0 manufanter | | | | | wentlett-halpety | Av | erage |
| -20.0 | | | | | | | |
| -30.0 | | | | | | | |
| -40.0 | | | | | | Max | Hold |
| -50.0 | | | | | | | |
| | | | | | | | |
| Center 38.5000 GHz #Res BW 2 MHz | | VBW 50 MH | 1- | | 200.0 MHz | | |
| #Res BW 2 WH2 | | APAA 20 Mil | 12 | SW | eep 1 ms | Mir | n Hold |
| Occupied Bandwig | dth | Total F | ower | 32.0 dBm | | | |
| | | | | | | _ | |
| 8 | 05.585 M | ΠZ | | | | | tector Peak▶ |
| Transmit Freq Error | 122.47 | kHz % of O | BW Power | 99.00 % | | Auto | Man |
| x dB Bandwidth | 195.5 N | /Hz xdB | | -26.00 dB | | | |
| | 195.5 1 | | | -20.00 uB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | | STATUS | | | |

Plot 7-55. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 16QAM - Mid Channel)



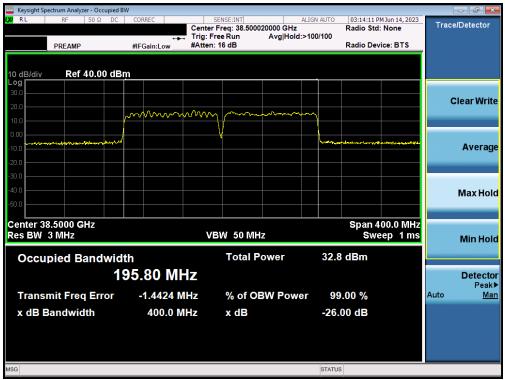
Plot 7-56. Occupied Bandwidth Plot (100MHz-1CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 46 of 145 | | | | |
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| Keysight Spectrum Analyzer - Occupied | BW | | | | | |
|---------------------------------------|--------------------|-----------------------------------|----------------|------------------------------|---------------------|-----------------|
| KM RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.5000 | ALIGN | AUTO 03:15:27 P Radio Std | M Jun 14, 2023 | Trace/Detector |
| | ↔ | T C D | Avg Hold: 100/ | | . None | |
| PREAMP | #IFGain:Low | #Atten: 16 dB | | Radio Dev | rice: BTS | |
| | | | | | | |
| 10 dB/div Ref 40.00 dB | Im | | | | | |
| Log 30.0 | | | | | | |
| 20.0 | | | | | | Clear Write |
| | mm | mm | mm | N N | | |
| 10.0 | | V | | | | |
| 0.00 |) | | | harrow and a state and a | moundary | |
| -10.0 | | | | | | Average |
| -20.0 | | | | | | |
| -30.0 | | | | | | |
| -40.0 | | | | | | Max Hold |
| -50.0 | | | | | | |
| Center 38.5000 GHz | | | | 0 | | |
| Res BW 3 MHz | | VBW 50 MH | 7 | | 00.0 MHz ep 1 ms | |
| | | ADAA 20141 | 12 | 000 | cp ma | Min Hold |
| Occupied Bandwid | ith | Total F | ower | 32.2 dBm | | |
| | 97.21 M | | | | | Detector |
| | 37.2 F IVII | | | | | Peak |
| Transmit Freq Error | 648.17 | kHz % of O | BW Power | 99.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 400.0 N | /Hz xdB | | -26.00 dB | | |
| | 10010 1 | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | | STATUS | | |

Plot 7-57. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM QPSK - Mid Channel)



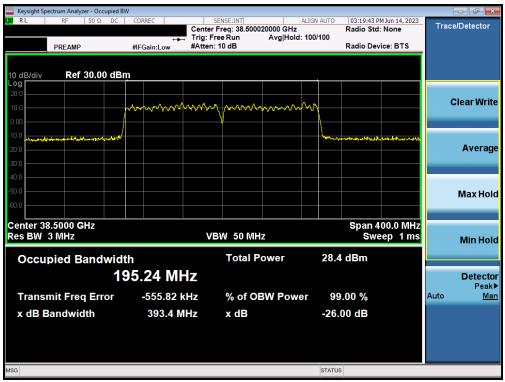
Plot 7-58. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 47 of 145 | | | |
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| Keysight Spectrum Analyzer - Occupied | | | | | | |
|---------------------------------------|-------------|-----------------------------------|------------------|-----------------------------------|---------------------|-------------------|
| LX/RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.5000 | ALIGN A | UTO 03:19:01 Pf Radio Std: | MJun 14, 2023 | Trace/Detector |
| | → | Trig: Free Run | Avg Hold: 100/10 | 00 | | |
| PREAMP | #IFGain:Low | #Atten: 10 dB | | Radio Dev | ice: BTS | |
| | | | | | | |
| 10 dB/div Ref 30.00 dE | 3m | | | | | |
| 20.0 | | | | | | |
| | 00-0-0-000 | mm mm | 000010000 | | | Clear Write |
| 10.0 | | 10000 | | | | |
| 0.00 | | | | | | |
| -10.0 Muthanshipman and Marshiphater | / | | \ | weldly and an and a second second | Again Manufalan And | |
| -20.0 | | | | | | Average |
| -30.0 | | | | | | |
| -40.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -60.0 | | | | | | Maxitola |
| | | | | | | |
| Center 38.5000 GHz | | | | | 00.0 MHz | |
| Res BW 3 MHz | | VBW 50 MH | Z | Swe | ep 1 ms | Min Hold |
| Occupied Bandwid | ith | Total P | ower | 30.3 dBm | | |
| | | | | 50.5 dBm | | |
| 1 | 94.49 M | HZ | | | | Detector |
| Transmit Freq Error | -921.09 | kHz % of O | BW Power | 99.00 % | | Peak▶ Auto Man |
| | | | | | | |
| x dB Bandwidth | 337.3 N | /Hz xdB | - | -26.00 dB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | S | STATUS | | |

Plot 7-59. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-60. Occupied Bandwidth Plot (100MHz-2CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 40 of 145 | | | | |
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| Keysight Spectrum Analyzer - Occupied | BW | | | | | | |
|---------------------------------------|-------------|---------------------------------------|------------------|---------------------------|--|-------|------------|
| LXI RL RF 50Ω DC | CORREC | SENSE:INT Center Freg: 38.49990000 | ALIGN AUTO | 03:45:22 PM Radio Std: | Jun 14, 2023 | Trace | Detector |
| | | Trig: Free Run Av | /g Hold: 100/100 | Radio Stu. | None | | |
| PREAMP | #IFGain:Low | #Atten: 8 dB | | Radio Devi | ce: BTS | | |
| | | | | | | | |
| 10 dB/div Ref 40.00 dB | m | | | | | | |
| Log 30.0 | | | | | | | |
| 20.0 | | | | | | С | lear Write |
| | menunahyaha | ma man man | Huerry | | | | |
| 10.0 | | | | | | | |
| 0.00 | | | - | maddie Marten also | | | A |
| -10.0 | | | | | and an | | Average |
| -20.0 | | | | | | | |
| -30.0 | | | | | | | |
| -40.0 | | | | | | | Max Hold |
| -50.0 | | | | | | | |
| Center 38.4999 GHz | | | | Snan 8(| 0.0 MHz | | |
| #Res BW 8 MHz | | VBW 50 MHz | | | ep 1 ms | | Min Hold |
| | | | | | <u> </u> | | WIIII HOIG |
| Occupied Bandwid | lth | Total Pow | er 32.0 | dBm | | | |
| 2 | 98.10 MH | 7 | | | | | Detector |
| | | | | | | | Peak▶ |
| Transmit Freq Error | 61.254 ki | Iz % of OBW | Power 99 | .00 % | | Auto | <u>Man</u> |
| x dB Bandwidth | 466.1 MI | lz xdB | -26. | 00 dB | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| MSG | | | STATUS | ; | | | |

Plot 7-61. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM QPSK - Mid Channel)



Plot 7-62. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------------------|--|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 40 of 145 | | | | |
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| 🔤 Keysight Spectrum Analyzer - Occupie | d BW | | | | | |
|--|--------------|--|-------------------|--------------------------------|----------------|-----------------|
| <mark>(X)</mark> RL RF 50 Ω D | C CORREC | SENSE:INT | ALIGN AUTO | 03:46:23 PM Ju Radio Std: N | | Trace/Detector |
| | | Trig: Free Run | Avg Hold:>100/100 | | | |
| PREAMP | #IFGain:Low | #Atten: 8 dB | | Radio Device | e: BTS | |
| | | | | | | |
| 10 dB/div Ref 30.00 d | Bm | | | | | |
| 20.0 | | | | | | |
| 10.0 | june | had a marked and and a marked | amonting | | | Clear Write |
| 0.00 | | | | | | |
| -10.0 commences | hise war and | | - temp montale | a at the fact and be | Antabul I. and | |
| | | | | | | Average |
| -20.0 | | | | | | Average |
| -30.0 | | | | | | |
| -40.0 | | | | | | |
| -50.0 | | | | | | Max Hold |
| -60.0 | | | | | | |
| Center 38,4999 GHz | | | | Span 800 | | |
| #Res BW 8 MHz | | VBW 50 MH | z | Swee | p 1 ms | Min Hold |
| | | | | | | WIITHOID |
| Occupied Bandwi | dth | Total P | ower 31. | 1 dBm | | |
| | 299.16 MH | Z | | | | Detector |
| | | | | | | Peak► |
| Transmit Freq Error | 135.45 k | Hz % of O | BW Power 99 | 9.00 % | | Auto <u>Man</u> |
| x dB Bandwidth | 689.0 M | lHz x dB | -26. | 00 dB | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| MSG | | | STATU | S | | |

Plot 7-63. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 16QAM - Mid Channel)



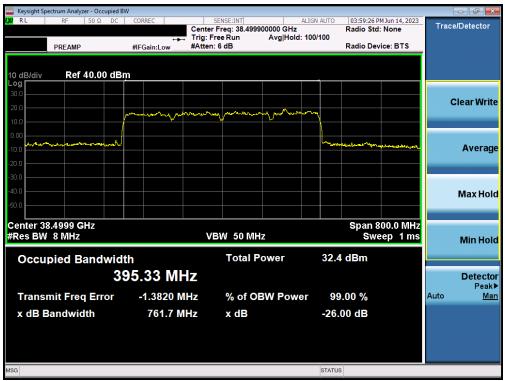
Plot 7-64. Occupied Bandwidth Plot (100MHz-3CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dege E0 of 145 | | | | | |
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| Keysight Spectrum Analyzer - Occupied BW Keysight Spectrum Analyzer - Occupied BW RE RE 50 Ω DC | tri | | ALIGN AUTO GHz Hold: 100/100 | 04:01:03 PMJ0 Radio Std: N | one | Trace/Detector |
|---|---|-----------------------|------------------------------------|---------------------------------|-------------------|----------------|
| PREAMP | #IFGain:Low #A | tten: 6 dB | | Radio Device | E BTS | |
| 0 dB/div Ref 30.00 dBm | | | | 1 | | |
| 0.0 | Marine Male and | have with marker with | when rooting | | | Clear Writ |
| .00 | | | | | | |
| 0.0 <mark>deserves and the second second</mark> | | | | dell'httaasteryaagtaptietelegen | di | Avera |
| D.0 | | | | | | |
| D.O | | | | | | Max Ho |
| 0.0 | | | | | | |
| enter 38.4999 GHz Res BW 8 MHz | | VBW 50 MHz | | Span 800 Swee | 0.0 MHz p 1 ms | Min Ho |
| Occupied Bandwidt | า | Total Power | 31.4 | dBm | | |
| 39 | 6.16 MHz | | | | | Detect Peal |
| Transmit Freq Error | 94.046 kHz | % of OBW P | ower 99 | .00 % | Au | |
| x dB Bandwidth | 781.1 MHz | x dB | -26. | 00 dB | | |
| G | | | STATUS | 5 | | |

Plot 7-65. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM QPSK - Mid Channel)



Plot 7-66. Occupied Bandwidth Plot (100MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|--|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage E1 of 14E | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 51 of 145 | | | | |
| © 2023 ELEMENT | | and as utilized in any part form as hy any magnetic plastropic or machemical including photo | V1.0 | | | | |



| Keysight Spectrum Analyzer - Occupied Β RL RF 50 Ω DC | W CORREC | SENSE:INT | ALIGN AUTO | 04:02:57 PM Jun 14, 202 | |
|--|--|--|------------|--|----------------|
| PREAMP | · • • | Center Freq: 38.499900000 | | Radio Std: None Radio Device: BTS | Trace/Detector |
| 0 dB/div Ref 30.00 dBi | <u>n</u> | | | | |
| 0.0 | mmaalaalaa ahaa ahaa ahaa ahaa ahaa ahaa | and the second from the former of the second former | www.mt | | Clear Writ |
| 0.0 | | | L | n na | Averaç |
| 0.0 0.0 | | | | | Max Ho |
| enter 38.4999 GHz Res BW 8 MHz | | VBW 50 MHz | | Span 800.0 MH Sweep 1 m | |
| Occupied Bandwid | th 96.58 MHz | Total Powe | r 30.3 | 3 dBm | Detect |
| Transmit Freq Error | 96.495 kH | z % of OBW F | ower 99 | 9.00 % | Auto <u>M</u> |
| x dB Bandwidth | 698.0 MH | z x dB | -26. | 00 dB | |
| G | | | STATUS | 5 | |

Plot 7-67. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM 16QAM - Mid Channel)



Plot 7-68. Occupied Bandwidth Plot (100MHz-4CC - CP-OFDM 64QAM - Mid Channel)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | |
|---------------------|-------------------|--|----------------|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 52 of 145 | | | | | |
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7.3 Equivalent Isotropic Radiated Power

§2.1046, §30.202

Test Overview

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

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

Test Procedures Used

ANSI C63.26-2015 Section 5.2.4.4.1 KDB 842590 D01 v01r02 Section 4.2

Test Settings

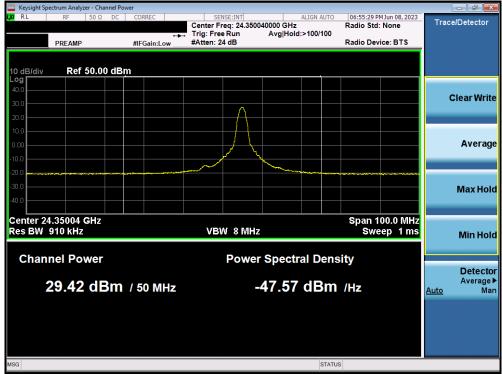
- 1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 2x to 3x the OBW
- 5. No. of sweep points $\geq 2 \times \text{span} / \text{RBW}$
- 6. Detector = RMS
- 7. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
- 8. Trace mode = trace averaging (RMS) over 100 sweeps
- 9. The trace was allowed to stabilize

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|---------------------|-------------------|---------------------------------------|-----------------------------------|
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| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] | |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|-------|
| 50 | 1 | Low | 24275.04 | DFT-s-OFDM | QPSK | 17+145 | H+V | 2Tx | н | 320 | 64.2 | 1 / 19 | 29.02 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 17+145 | H+V | 2Tx | н | 320 | 64.2 | 1 / 19 | 29.04 | |
| | | Mid | 24350.04 | DFT-s-OFDM | QPSK | 17+145 | H+V | 2Tx | н | 320 | 62.1 | 1 / 19 | 29.35 | |
| | | | | CP-OFDM | QPSK | 17+145 | H+V | MIMO | н | 320 | 62.1 | 1 / 19 | 26.25 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 17+145 | H+V | 2Tx | н | 320 | 62.1 | 1 / 19 | 29.42 | |
| | | | | DFT-s-OFDM | 16QAM | 17+145 | H+V | 2Tx | н | 320 | 62.1 | 1 / 19 | 27.47 | |
| | | | | DFT-s-OFDM | 64QAM | 17+145 | H+V | 2Tx | н | 320 | 62.1 | 1 / 19 | 25.59 | |
| | | High | High | 24424.92 | DFT-s-OFDM | QPSK | 16+144 | H+V | 2Tx | н | 334 | 253.0 | 1 / 16 | 28.71 |
| | | | | DFT-s-OFDM | QPSK | 148 | н | SISO | н | 305 | 312.0 | 1 / 19 | 25.26 | |
| | | | | DFT-s-OFDM | QPSK | 18 | V | SISO | V | 333 | 248.9 | 1 / 16 | 27.79 | |
| | | | | CP-OFDM | QPSK | 148 | н | SISO | н | 305 | 312.0 | 1 / 19 | 21.43 | |
| | | | | CP-OFDM | QPSK | 18 | V | SISO | V | 333 | 248.9 | 1 / 19 | 24.72 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 16+144 | H+V | 2Tx | н | 334 | 253.0 | 1 / 16 | 28.80 | |

Table 7-6. EIRP Data (Band n258-R1 - 50MHz)



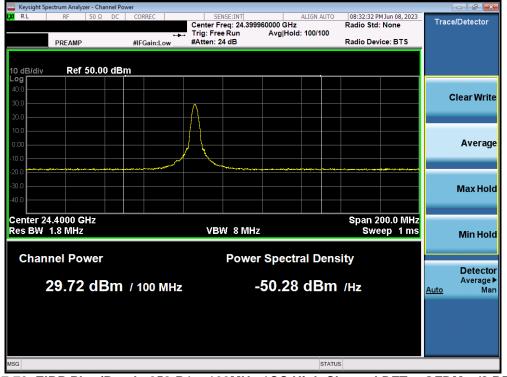
Plot 7-69. EIRP Plot (Band n258-R1 - 50MHz-1CC Mid Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|---------------------|-------------------|---------------------------------------|-----------------------------------|
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| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 100 | 1 | Low | 24300.00 | DFT-s-OFDM | QPSK | 17+145 | H+V | 2Tx | н | 317 | 63.8 | 1 / 23 | 28.68 |
| | | | | DFT-s-OFDM | π/2 BPSK | 17+145 | H+V | 2Tx | н | 317 | 63.8 | 1 / 23 | 28.63 |
| | [| Mid | 24350.04 | DFT-s-OFDM | QPSK | 17+145 | H+V | 2Tx | н | 318 | 63.9 | 1 / 33 | 28.76 |
| | | | | DFT-s-OFDM | π/2 BPSK | 17+145 | H+V | 2Tx | н | 318 | 63.9 | 1 / 33 | 28.78 |
| | | High | 24399.96 | DFT-s-OFDM | QPSK | 16+144 | H+V | 2Tx | н | 327 | 256.4 | 1 / 23 | 29.49 |
| | | | | DFT-s-OFDM | QPSK | 148 | н | SISO | н | 305 | 311.2 | 1 / 33 | 24.87 |
| | | | | DFT-s-OFDM | QPSK | 18 | V | SISO | V | 335 | 246.9 | 1 / 42 | 27.82 |
| | | | | CP-OFDM | QPSK | 16+144 | H+V | MIMO | н | 327 | 256.4 | 1 / 23 | 26.68 |
| | | | | CP-OFDM | QPSK | 148 | н | SISO | н | 305 | 311.2 | 1 / 33 | 21.80 |
| | | | | CP-OFDM | QPSK | 18 | V | SISO | V | 335 | 246.9 | 1 / 23 | 24.87 |
| | | | | DFT-s-OFDM | π/2 BPSK | 16+144 | H+V | 2Tx | н | 327 | 256.4 | 1 / 23 | 29.72 |
| | | | | DFT-s-OFDM | 16QAM | 16+144 | H+V | 2Tx | н | 327 | 256.4 | 1 / 23 | 27.26 |
| | | | | DFT-s-OFDM | 64QAM | 16+144 | H+V | 2Tx | н | 327 | 256.4 | 1 / 23 | 25.45 |
| 100+100 | 2 | Mid | 24349.98 | DFT-s-OFDM | QPSK | 17+145 | H+V | 2Tx | н | 320 | 63.7 | 64 / 0 | 23.52 |
| | | | | CP-OFDM | QPSK | 17+145 | H+V | MIMO | н | 320 | 63.7 | 66 / 0 | 21.58 |
| | | | | DFT-s-OFDM | π/2 BPSK | 17+145 | H+V | 2Tx | Н | 320 | 63.7 | 64 / 0 | 23.46 |
| | | | | DFT-s-OFDM | 16QAM | 17+145 | H+V | 2Tx | Н | 320 | 63.7 | 64 / 0 | 21.60 |
| | | | | DFT-s-OFDM | 64QAM | 17+145 | H+V | 2Tx | Н | 320 | 63.7 | 64 / 0 | 19.54 |

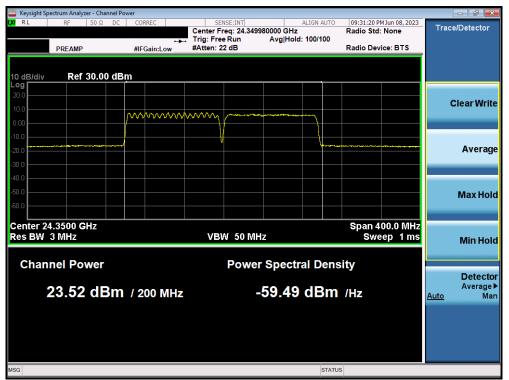
Table 7-7. EIRP Data (Band n258-R1 - 100MHz)



Plot 7-70. EIRP Plot (Band n258-R1 - 100MHz-1CC High Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | | | | | |
|---------------------|---------------------|---------------------------------------|-----------------------------------|--|--|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga FE of 145 | | | | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 55 of 145 | | | | | | | |
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Plot 7-71. EIRP Plot (Band n258-R1 - 100MHz-2CC Mid Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Daga FC of 145 | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 56 of 145 | | | | |
| © 2023 ELEMENT | | | V1.0 | | | | |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 50 | 1 | Low | 24775.08 | DFT-s-OFDM | QPSK | 18 | V | SISO | V | 330 | 115 | 1 / 12 | 27.66 |
| | | | | DFT-s-OFDM | QPSK | 148 | н | SISO | V | 252 | 310 | 1 / 16 | 25.96 |
| | | | | CP-OFDM | QPSK | 18 | V | SISO | V | 330 | 115 | 1 / 12 | 24.53 |
| | | | | CP-OFDM | QPSK | 148 | н | SISO | V | 252 | 310 | 1 / 16 | 22.85 |
| | | | | DFT-s-OFDM | π/2 BPSK | 16+145 | H+V | 2Tx | н | 335 | 250 | 1 / 16 | 28.82 |
| | | Mid | 24999.96 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | Н | 336 | 248 | 1 / 16 | 29.27 |
| | | High | 25224.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 335 | 250 | 1 / 16 | 29.57 |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 335 | 250 | 1 / 16 | 26.64 |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 335 | 250 | 1 / 16 | 29.62 |
| [| | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 335 | 250 | 1 / 16 | 27.85 |
| [| | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | Н | 335 | 250 | 1 / 16 | 25.66 |

Table 7-8. EIRP Data (Band n258-R2 - 50MHz)

| XX R L RF 50 Ω DC CORREC SENSE:INT ALIGN AUTO 08:23:19 AM Jun 08, 2023 | |
|--|-------------|
| | e/Detector |
| Center Freq. 20.224960000 GHZ Radio Std. None | elbetector |
| Trig: Free Run Avg Hold: 100/100 | |
| PREAMP #IFGain:Low #Atten: 30 dB Radio Device: BTS | |
| | |
| | |
| 10 dB/div Ref 50.00 dBm | |
| 40.0 | |
| | Clear Write |
| | sical write |
| | |
| | |
| | |
| | Average |
| | - |
| | |
| -20.0 | |
| -30.0 | |
| | Max Hold |
| | |
| | |
| Center 25.22496 GHz Span 100.0 MHz | |
| Res BW 910 kHz VBW 8 MHz Sweep 1 ms | Min Hold |
| | minnord |
| | |
| Channel Power Power Spectral Density | |
| | Detector |
| 29.62 dBm / 50 мнz -47.37 dBm /нz Auto | Average► |
| 29.62 dBin / 50 MHz -47.37 dBin /Hz Auto | Man |
| | |
| | |
| | |
| | |
| | |
| | |
| MSG STATUS | |

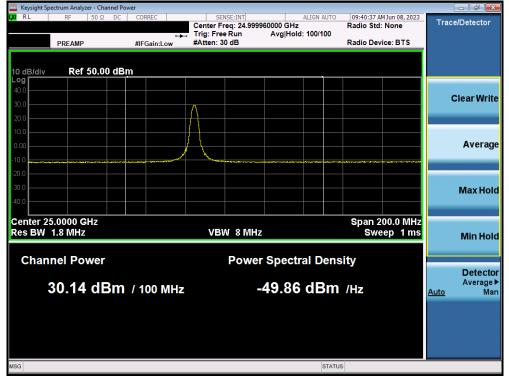
Plot 7-72. EIRP Plot (Band n258-R2 – 50MHz-1CC Mid Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo EZ of 14E | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 57 of 145 | | | | |
| © 2023 ELEMENT | | | V1.0 | | | | |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] | |
|--------------------|------------|---------|--------------------|------------------------|------------|----------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|-------|
| 100 | 1 | Low | 24800.04 | DFT-s-OFDM | QPSK | 18 | V | SISO | V | 328 | 114 | 1 / 42 | 27.51 | |
| | | | | DFT-s-OFDM | QPSK | 148 | н | SISO | н | 252 | 310 | 1 / 33 | 26.01 | |
| | | | | CP-OFDM | QPSK | 18 | V | SISO | V | 328 | 114 | 1 / 42 | 24.42 | |
| | | | | CP-OFDM | QPSK | 148 | н | SISO | н | 252 | 310 | 1 / 33 | 23.56 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 16+144 | H+V | 2Tx | н | 335 | 249 | 1 / 23 | 28.77 | |
| | | Mid | 24999.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 334 | 250 | 1 / 23 | 29.97 | |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 334 | 250 | 1 / 23 | 27.04 | |
| | | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 334 | 250 | 1 / 23 | 30.14 |
| | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | Н | 334 | 250 | 1 / 23 | 27.92 | |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | Н | 334 | 250 | 1 / 23 | 25.92 | |
| | | High | 25200.00 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | Н | 335 | 250 | 1 / 23 | 27.88 | |
| 100+100 | 2 | Low | 24850.02 | DFT-s-OFDM | π/2 BPSK | 16+144 | H+V | 2Tx | н | 335 | 249 | 64 / 0 | 23.54 | |
| | | Mid | 25000.02 | CP-OFDM | QPSK | 16+144 | H+V | MIMO | н | 335 | 249 | 66 / 0 | 20.79 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 335 | 249 | 64 / 0 | 23.60 | |
| | | High | High | 25150.02 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 336 | 246 | 64 / 0 | 23.77 |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 336 | 246 | 66 / 0 | 21.65 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | Н | 336 | 246 | 64 / 0 | 23.80 | |
| | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | Н | 336 | 246 | 64 / 0 | 21.84 | |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 336 | 246 | 1 / 33 | 20.31 | |
| 100+100+100 | 3 | Low | 24900.00 | DFT-s-OFDM | π/2 BPSK | 16+144 | H+V | 2Tx | н | 337 | 263 | 64 / 0 | 23.82 | |
| | | High | 25100.04 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 332 | 257 | 64 / 0 | 22.03 | |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 332 | 257 | 66 / 0 | 20.56 | |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 332 | 257 | 64 / 0 | 23.89 | |
| | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 332 | 257 | 1 / 23 | 21.56 | |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 332 | 257 | 1 / 23 | 20.55 | |

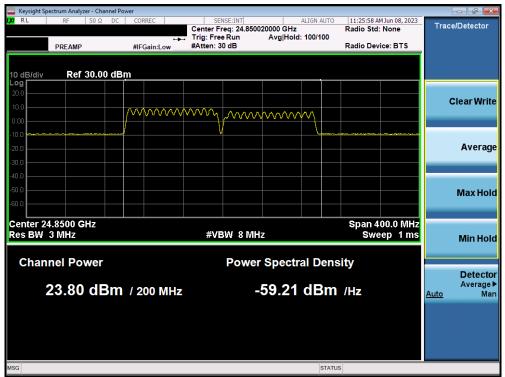
Table 7-9. Ant-1 EIRP Data (Band n258-R2 - 100MHz)



Plot 7-73.EIRP Plot (Band n258-R2 - 100MHz-1CC Mid Channel DFT-s-OFDM BPSK)

| FCC ID: A3LSMS711U | MEASUREMENT REPORT Approved by (CERTIFICATION) | | | | |
|---------------------|---|------------------|----------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 50 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 58 of 145 | | |
| © 2023 ELEMENT | | · | V1.0 | | |





Plot 7-74.EIRP Plot (Band n258-R2 - 100MHz-2CC High Channel DFT-s-OFDM BPSK)



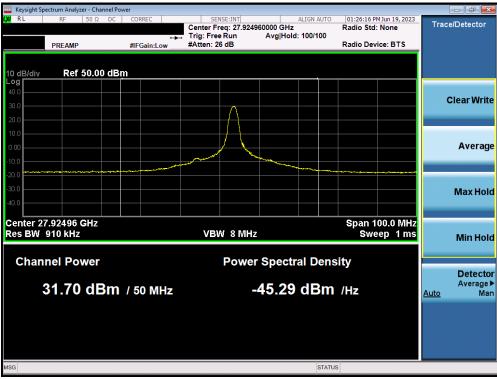
Plot 7-75.EIRP Plot (Band n258-R2 - 100MHz-3CC High Channel DFT-s-OFDM BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 50 of 145 | | | | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 59 of 145 | | | | | | | |
| © 2023 ELEMENT | | | | | | | | | | |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 50 | 1 | Low | 27525.00 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 45 | 16 | 1 / 16 | 29.25 |
| | | Mid | 27924.96 | DFT-s-OFDM | QPSK | 19+147 | H+V | 2Tx | н | 242 | 19 | 1 / 19 | 31.70 |
| | | | | DFT-s-OFDM | QPSK | 15 | V | SISO | V | 264 | 42 | 1 / 12 | 28.56 |
| | | | | DFT-s-OFDM | QPSK | 142 | н | SISO | н | 216 | 55 | 1 / 12 | 25.26 |
| Ĩ | | | | CP-OFDM | QPSK | 19+147 | H+V | MIMO | н | 242 | 19 | 1 / 19 | 28.68 |
| Ĩ | | | | CP-OFDM | QPSK | 15 | V | SISO | V | 264 | 42 | 1 / 12 | 25.26 |
| [| | | | CP-OFDM | QPSK | 142 | н | SISO | н | 216 | 55 | 1 / 12 | 22.94 |
| [| | | | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | н | 242 | 19 | 1 / 19 | 31.69 |
| [| | | | DFT-s-OFDM | 16QAM | 19+147 | H+V | 2Tx | н | 242 | 19 | 1 / 19 | 29.69 |
| | | | | DFT-s-OFDM | 64QAM | 19+147 | H+V | 2Tx | н | 242 | 19 | 1 / 19 | 27.64 |
| [| | High | 28324.92 | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 50 | 17 | 1 / 12 | 29.56 |

Table 7-10. Ant-1 EIRP Data (Band n261 - 50MHz)



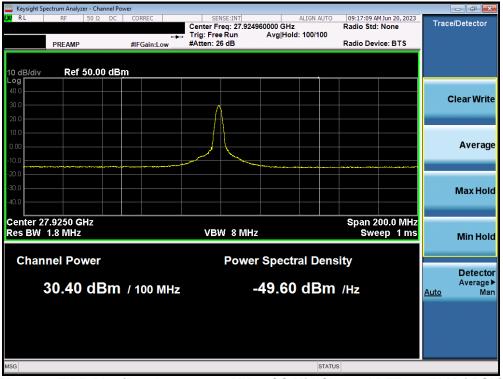
Plot 7-76.EIRP Plot (Band n261 - 50MHz-1CC Mid Channel DFT-s-OFDM QPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-----------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: EUT Type: | | Dage 60 of 145 | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 60 of 145 | | | | |
| © 2023 ELEMENT | | · | V1.0 | | | | |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 100 | 1 | Low | 27550.08 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | V | 45 | 16 | 1 / 33 | 28.54 |
| | [| Mid | 27924.96 | DFT-s-OFDM | QPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 30.40 |
| | | | | DFT-s-OFDM | QPSK | 15 | V | SISO | V | 240 | 52 | 1 / 33 | 28.26 |
| | | | | DFT-s-OFDM | QPSK | 142 | н | SISO | Н | 251 | 56 | 1 / 24 | 25.22 |
| | | | | CP-OFDM | QPSK | 19+147 | H+V | MIMO | V | 59 | 19 | 1 / 33 | 27.37 |
| | | | | CP-OFDM | QPSK | 15 | V | SISO | V | 240 | 52 | 1 / 33 | 25.13 |
| | | | | CP-OFDM | QPSK | 142 | н | SISO | н | 251 | 56 | 1 / 24 | 22.21 |
| | | | | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 30.39 |
| | | | | DFT-s-OFDM | 16QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 28.32 |
| | | | | DFT-s-OFDM | 64QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 26.34 |
| | | High | 28299.96 | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 50 | 17 | 1 / 33 | 29.56 |
| 100+100 | 2 | Low | 27600.06 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | V | 46 | 17 | 64 / 0 | 22.98 |
| | | Mid | 27925.02 | DFT-s-OFDM | QPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 23.88 |
| | | | | CP-OFDM | QPSK | 19+147 | H+V | MIMO | V | 59 | 19 | 66 / 0 | 22.04 |
| | | | | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 23.97 |
| | | | | DFT-s-OFDM | 16QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 22.08 |
| | | | | DFT-s-OFDM | 64QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 20.46 |
| | | High | 28249.98 | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 50 | 17 | 64 / 0 | 23.69 |
| 100+100+100 | 3 | Low | 27650.04 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | V | 46 | 17 | 64 / 0 | 22.98 |
| | | Mid | 27924.96 | DFT-s-OFDM | QPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 24.13 |
| | | | | CP-OFDM | QPSK | 19+147 | H+V | MIMO | V | 59 | 19 | 66 / 0 | 22.24 |
| | | | | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 24.20 |
| | | | | DFT-s-OFDM | 16QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 23.22 |
| | | | | DFT-s-OFDM | 64QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 21.02 |
| | | High | 28200.00 | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 50 | 17 | 64 / 0 | 23.55 |
| 100+100+100+100 | 4 | Low | 27700.02 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | V | 46 | 17 | 64 / 0 | 22.98 |
| [| [| Mid | 27925.02 | DFT-s-OFDM | QPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 23.62 |
| [| | | | CP-OFDM | QPSK | 19+147 | H+V | MIMO | V | 59 | 19 | 66 / 0 | 21.54 |
| | | | | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 59 | 19 | 64 / 0 | 23.69 |
| | | | | DFT-s-OFDM | 16QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 33 | 22.68 |
| [| | | | DFT-s-OFDM | 64QAM | 19+147 | H+V | 2Tx | V | 59 | 19 | 1 / 24 | 21.36 |
| | | High | 28150.02 | DFT-s-OFDM | π/2 BPSK | 19+147 | H+V | 2Tx | V | 50 | 17 | 64 / 0 | 23.38 |

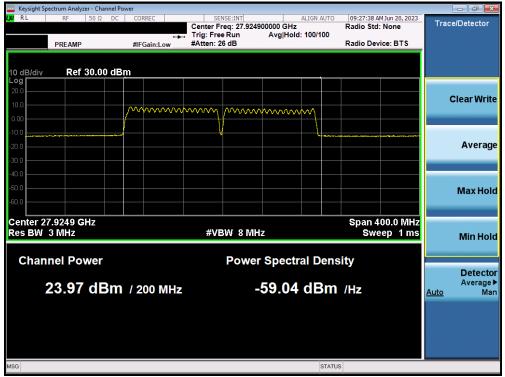
Table 7-11.EIRP Data (Band n261 - 100MHz)



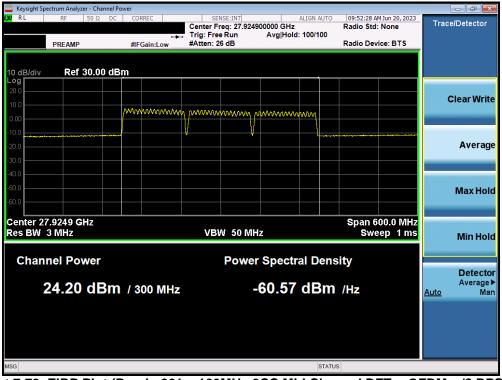
Plot 7-77.EIRP Plot (Band n261 - 100MHz-1CC Mid Channel DFT-s-OFDM QPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | | | | | |
|---------------------|-------------------|---------------------------------------|----------------|--|--|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 61 of 145 | | | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 61 of 145 | | | | |
| © 2023 ELEMENT | | | V1.0 | | | | |





Plot 7-78.EIRP Plot (Band n261 – 100MHz-2CC Mid Channel DFT-s-OFDM π/2 BPSK)



Plot 7-79. EIRP Plot (Band n261 – 100MHz-3CC Mid Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | |
|---------------------|-------------------|---------------------------------------|-----------------------------------|--|--|
| Test Report S/N: | Test Dates: | EUT Type: | Dogo 62 of 145 | | |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 62 of 145 | | |
| © 2023 ELEMENT | | · | V1.0 | | |



| Keysight Spectrum Analy RL RF | | DC | CORREC | | SEI | NSE:INT | | ALIGN AUTO | 10-14-10/ | M Jun 20, 2023 | | |
|----------------------------------|-------|-----|----------|---|-----------|----------------------|-------------------------|------------|--------------|-----------------------|-------------|-----------|
| PREAMP | 50 12 | | #IFGain: | •• | Center Fr | req: 27.924 e Run | 1900000 GHz Avg Hold | | Radio Sto | l: None | Trace | /Detector |
| | 30.00 | dPw | | LOW | #Atten: 2 | U U D | | | Radio De | NCE. BTS | | |
| og 20.0 10.0 | 30.00 | | | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | | | | | | с | lear Writ |
| .00 D.0 D.0 D.0 | | | | | | | | | | | | Averaç |
|).0).0).0 | | | | | | | | | | | | Max Ho |
| enter 27.9249 G es BW 3 MHz | iHz | | | | VBI | N 50 M | Hz | | Span 8 Sw | 300.0 MHz eep 1 ms | | Min Ho |
| Channel Po | wer | | | | | Powe | r Spect | ral Den | sity | | | Detect |
| 23.69 | dB | m | / 400 | MHz | | | -62.33 | dBm | /Hz | | <u>Auto</u> | Average |
| | | | | | | | | | | | | |
| 3 | | | | | | | | STATU | IS | | | |

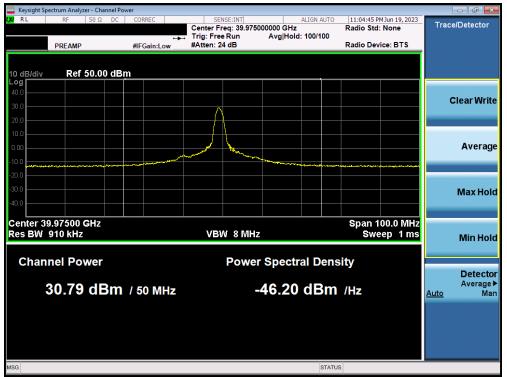
Plot 7-80.EIRP Plot (Band n261 - 100MHz-4CC Mid Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manage | ər |
|---------------------|--|---------------------------------------|----------------------------------|------|
| Test Report S/N: | Test Dates: EUT Type: .3L 06/08- 07/20/2023 Portable Handset | | Dage 62 of 145 | |
| 1M2304260060-12.A3L | | | Page 63 of 145 | |
| © 2023 ELEMENT | | | | V1.0 |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 50 | 1 | Low | 37025.04 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 333 | 16.9 | 1 / 19 | 28.04 |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 333 | 16.9 | 1 / 19 | 27.88 |
| | | Mid | 38499.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 326 | 17.1 | 1 / 12 | 29.41 |
| | | | | DFT-s-OFDM | QPSK | 142 | н | SISO | н | 99 | 28.6 | 1 / 19 | 28.70 |
| | | | | DFT-s-OFDM | QPSK | 14 | V | SISO | V | 283 | 337.6 | 1 / 19 | 29.11 |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 326 | 17.1 | 1 / 12 | 28.33 |
| | | | | CP-OFDM | QPSK | 142 | н | SISO | н | 99 | 28.6 | 1 / 19 | 25.64 |
| | | | | CP-OFDM | QPSK | 14 | V | SISO | V | 283 | 337.6 | 1 / 19 | 25.92 |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 326 | 17.1 | 1 / 16 | 29.22 |
| | | High | 39975.00 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 327 | 16.2 | 1 / 16 | 30.45 |
| | | | | DFT-s-OFDM | QPSK | 147 | н | SISO | н | 99 | 31.2 | 1 / 12 | 28.07 |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 327 | 16.2 | 1 / 16 | 27.46 |
| | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 327 | 16.2 | 1 / 16 | 30.79 |
| | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 327 | 16.2 | 1 / 16 | 28.72 |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 327 | 16.2 | 1 / 16 | 26.51 |

Table 7-12. EIRP Data (Band n260 - 50MHz)



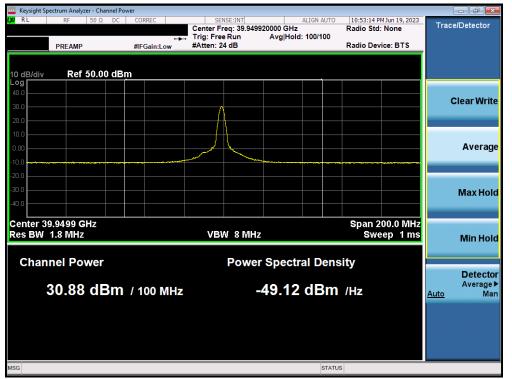
Plot 7-81.EIRP Plot (Band n260 - 50MHz-1CC High Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager |
|---------------------|-------------------|---------------------------------------|-----------------------------------|
| Test Report S/N: | Test Dates: | EUT Type: | Dage 64 of 145 |
| 1M2304260060-12.A3L | 06/08- 07/20/2023 | Portable Handset | Page 64 of 145 |
| © 2023 ELEMENT | | | V1.0 |



| Bandwidth [MHz] | CCs Active | Channel | Frequency [MHz] | Transmission Scheme | Modulation | Beam ID | Beam Pol. | Ant. Div. | Ant. Pol. [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | RB Size/Offsets | EIRP [dBm] |
|--------------------|------------|---------|--------------------|------------------------|------------|---------|-----------|-----------|--------------------|---------------------------------|-----------------------------------|--------------------|---------------|
| 100 | 1 | Low | 37050.00 | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 332 | 17.2 | 1 / 33 | 28.21 |
| į l | [| Mid | 38499.96 | DFT-s-OFDM | QPSK | 142 | н | SISO | V | 97 | 28.6 | 1 / 33 | 28.48 |
| | | | | DFT-s-OFDM | QPSK | 14 | V | SISO | н | 283 | 338.2 | 1 / 33 | 28.92 |
| | | | | CP-OFDM | QPSK | 142 | н | SISO | V | 97 | 28.6 | 1 / 33 | 25.28 |
| Į I | | | | CP-OFDM | QPSK | 14 | V | SISO | н | 283 | 338.2 | 1 / 33 | 25.79 |
| Į I | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 333 | 17.1 | 1 / 23 | 29.26 |
| ļ l | | High | 39949.92 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 327 | 16.7 | 1 / 33 | 30.80 |
| l I | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 327 | 16.7 | 1 / 42 | 27.73 |
| Į I | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 327 | 16.7 | 1 / 33 | 30.88 |
| Į I | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 327 | 16.7 | 1 / 42 | 28.36 |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 327 | 16.7 | 1 / 42 | 27.08 |
| 100+100 | 2 | Low | 37099.98 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 333 | 17.8 | 64 / 0 | 21.60 |
| | | Mid | 38500.02 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 335 | 17.7 | 64 / 0 | 24.16 |
| | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 335 | 17.7 | 66 / 0 | 22.52 |
| [] | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 335 | 17.7 | 64 / 0 | 24.14 |
| | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 335 | 17.7 | 64 / 0 | 22.47 |
| | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 335 | 17.7 | 64 / 0 | 20.75 |
| [] | | High | 39899.94 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 329 | 17.1 | 64 / 0 | 24.03 |
| 100+100+100 | 3 | Low | 37149.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 334 | 16.9 | 1 / 33 | 21.65 |
| ĺ | [| Mid | 38499.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 335 | 17.0 | 64 / 0 | 24.14 |
| Í | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 335 | 17.0 | 66 / 0 | 22.56 |
| í l | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 335 | 17.0 | 64 / 0 | 24.13 |
| Í l | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 335 | 17.0 | 64 / 0 | 22.59 |
| [] | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | н | 335 | 17.0 | 64 / 0 | 20.79 |
| [] | l i | High | 39849.96 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 335 | 16.6 | 64 / 0 | 24.02 |
| 100+100+100+100 | 4 | Low | 37199.94 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 328 | 17.5 | 64 / 0 | 21.34 |
| Í l | | Mid | 38500.02 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 333 | 17.3 | 1 / 23 | 24.37 |
| Í l | | | | CP-OFDM | QPSK | 18+146 | H+V | MIMO | н | 333 | 17.3 | 1 / 23 | 24.24 |
| í I | | | | DFT-s-OFDM | π/2 BPSK | 18+146 | H+V | 2Tx | н | 333 | 17.3 | 1 / 23 | 24.33 |
| í I | | | | DFT-s-OFDM | 16QAM | 18+146 | H+V | 2Tx | н | 333 | 17.3 | 1 / 23 | 24.15 |
| į I | | | | DFT-s-OFDM | 64QAM | 18+146 | H+V | 2Tx | Н | 333 | 17.3 | 1 / 23 | 22.75 |
| í l | | High | 39799.98 | DFT-s-OFDM | QPSK | 18+146 | H+V | 2Tx | н | 331 | 17.0 | 64 / 0 | 23.90 |

Table 7-13.EIRP Data (Band n260 - 100MHz)

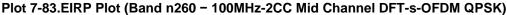


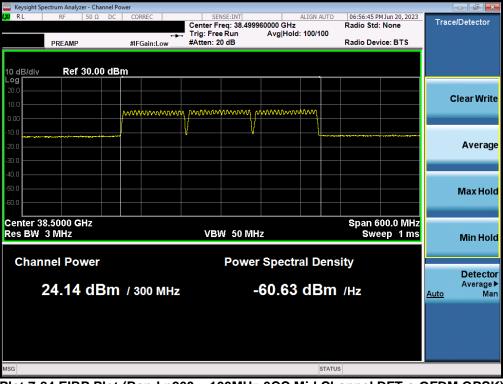
Plot 7-82.EIRP Plot (Band n260 – 100MHz-1CC High Channel DFT-s-OFDM π/2 BPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | | | | | |
|---------------------|-------------------|---------------------------------------|-----------------------------------|--|--|--|--|--|
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Plot 7-84.EIRP Plot (Band n260 - 100MHz-3CC Mid Channel DFT-s-OFDM QPSK)

| FCC ID: A3LSMS711U | | MEASUREMENT REPORT (CERTIFICATION) | Approved by: Technical Manager | |
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| | RF 50 S | 2 DC | CORREC | | SE Center F | NSE:INT | | ALIGN / | AUTO | 06:05:53 P | M Jun 20, 2023 | | |
|--------------|----------|-------|---------|-------|----------------|---------|-----------|---------|------------|------------|----------------|-------------|------------------|
| | REAMP | | | | | | 00000 GHz | | | Radio Std | | Irac | e/Detector |
| | REAMP | | | + | | e Run | Avg Hold | : 100/1 | 00 | | | | |
| 10 dB/div | | | #IFGair | n:Low | #Atten: 2 | 4 dB | | | | Radio Dev | rice: BTS | | |
| 10 dBidiy | | | | | | | | | | | | | |
| | Ref 40.0 | 00 dB | m | | | | | | | | | | |
| Log 30.0 | | | | | | | | | | | | | |
| 20.0 | | | | | | | | | | | | (| Clear Write |
| 10.0 | | | Λ | | A | A | A | | | | | | |
| 0.00 | | | | | Π (| I (Ì | | | | | | | |
| -10.0 | | | | | | | بالسبب | | | ···· | | | Average |
| | | | | | | | | | | | | | Average |
| -20.0 | | | | | | | | | | | | | |
| -30.0 | | | | | | | | | | | | | |
| -40.0 | | | | | | | | | | | | | Max Hold |
| -50.0 | | | | | | | | | | | | | |
| Center 38.49 | 999 GHz | | | | | | | | | Span 8 | 00.0 MHz | | |
| ResBW 3N | 1Hz | | | | VBW 50 MHz | | | | Sweep 1 ms | | | Min Hold | |
| | | | | | | | | | | | | | |
| Channe | I Powe | r | | | | Power | Spectr | al D | ens | ity | | | |
| | | | | | | | | | | | | | Detector |
| 24 | .37 d | Bm | / 400 | MHz | | _ | 61.65 | dE | ßm | /Hz | | Auto | Average ► Man |
| | | | | | | | | | | | | <u>Auto</u> | Iviali |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| MSG | | | | | | | | | STATUS | 3 | | | |

Plot 7-85.EIRP Plot (Band n260 - 100MHz-4CC Mid Channel DFT-s-OFDM QPSK)

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Test Notes

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

Sample Calculation

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

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

For example, to measure an EIRP at a frequency of 24400MHz with an antenna factor of 45.49dB/m, a cable loss of 8.53dB, and a measurement distance of 1 meter, an offset level of:

Offset Level = 45.49dB/m + 8.53dB + 20 Log(1 meter) + 107 - 104.8 = 56.22 dB

shall be loaded into the spectrum analyzer.

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7.4 Radiated Spurious and Harmonic Emissions

§2.1051, §30.203

Test Overview

The spectrum is scanned from 30MHz to 100GHz for n258-R1, n258-R2, and n261. For n260, the spectrum is scanned from 30MHz to 200GHz. All out of band emissions are measured in a radiated test setup while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

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

Test Procedure Used

ANSI C63.26-2015 Section 5.7.4 KDB 842590 D01 v01r02 Section 4.4.3

Test Settings

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

Test Notes

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

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

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

Table 7-14. Far-Field Distance & Measurement Distance per Frequency Range

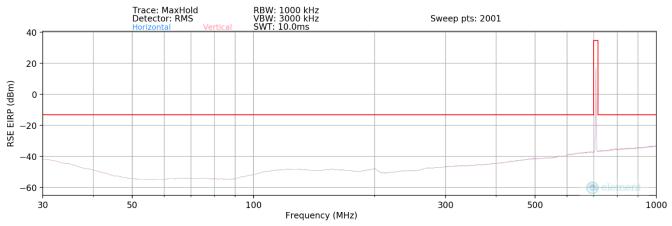
- 6) All emissions from 30MHz 40GHz were measured using a spectrum analyzer with an internal preamplifier. Emissions >40GHz were measured using a harmonic mixer with the spectrum analyzer.
- All RSE's were measured with 1CC. It was determined that adding more CC's causes the overall amplitude of just 1CC to decrease, therefore, 1CC is the worst case for the purposes of spurious emissions measurements.
- 8) The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 9) All RSE's were investigated in EN-DC mode and with 802.11 chipset active. It was determined that there is no new emission introduced by EN-DC mode, or the 802.11 chipset. For EN-DC mode, n261 uses LTE B2, B4, B5, B12, B13, B48 and B66, n260 uses LTE B2, B14, B5, B12, B13, B30, B48 and B66 and n258 uses LTE B2, B5, B12, B14, B30, and B66.
- 10) Additionally, this device supports anchor bands operating in FR1 spectrum. The n261 band uses NR Bands n2, n5, n25, n41, n48, n66 and n77. The n260 band uses NR Bands n2, n5, n12, n25, n30, n41, n48, n66 and n77. The n258 band uses NR Bands NR n2, n5, n12, n25, n30, n41, n66 and n77 as anchor bands.
- 11) LTE and FR1 anchor bands supports default configuration and Tx hopping configuration. Both configurations were investigated. There was no discernible difference in the spurious emission levels when using different LTE and NR FR1 anchor bands. Thus, LTE Band 12 was used as a representative anchor band for EN-DC and NR-DC investigations.

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Band n258-R1

30MHz - 1GHz



Plot 7-86.n258-R1 Radiated Spurious Plot – EN-DC Anchor LTE Band 12

Spurious Emissions ERP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 484.70 | Low | 50 | 2Tx | QPSK | Н | - | - | -51.81 | -13.00 | -38.81 |
| 554.00 | Mid | 50 | 2Tx | QPSK | Н | - | - | -51.65 | -13.00 | -38.65 |
| 591.60 | High | 50 | 2Tx | QPSK | Н | - | - | -50.50 | -13.00 | -37.50 |

Table 7-15.n258-R1 Radiated Spurious Emissions Table (30MHz - 1GHz)

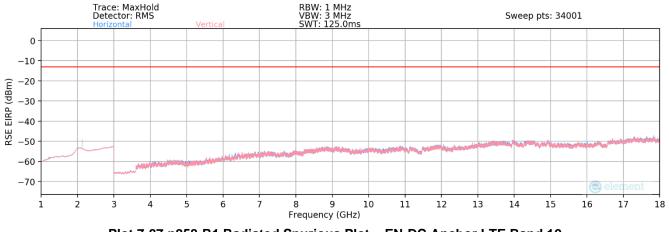
<u>Notes</u>

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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1GHz - 18GHz



Plot 7-87.n258-R1 Radiated Spurious Plot – EN-DC Anchor LTE Band 12

Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 17907.54 | Low | 50 | 2Tx | QPSK | н | - | - | -53.05 | -13.00 | -40.05 |
| 2122.50 | Mid | 50 | 2Tx | QPSK | н | 138 | 181 | -48.89 | -13.00 | -35.89 |
| 17982.54 | Mid | 50 | 2Tx | QPSK | Н | - | - | -52.59 | -13.00 | -39.59 |
| 17990.00 | High | 50 | 2Tx | QPSK | Н | - | - | -52.49 | -13.00 | -39.49 |

Table 7-16.n258-R1 Radiated Spurious Emissions Table (1GHz - 18GHz)

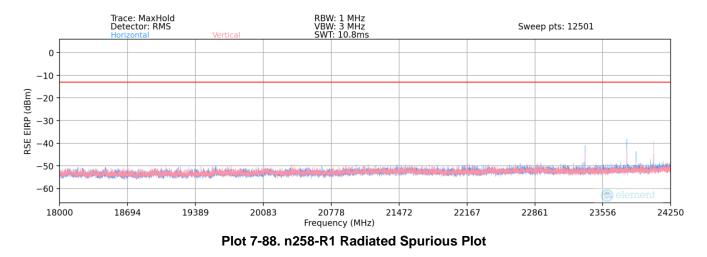
<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a test distance of 3 meter.

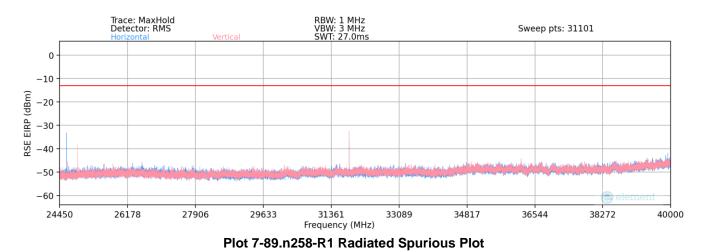
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18GHz-24.25GHz



24.45GHz-40GHz



| | | MEASUREMENT REPORT | Approved by: | |
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Spurious Emissions EIRP Sample Calculation (n258-R1)

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

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 23450.00 | Low | 50 | 2Tx | QPSK | V | 150 | 285 | -43.10 | -13.00 | -30.10 |
| 24550.40 | Low | 50 | 2Tx | QPSK | V | 150 | 282 | -39.10 | -13.00 | -26.10 |
| 24824.00 | Low | 50 | 2Tx | QPSK | V | 150 | 312 | -40.19 | -13.00 | -27.19 |
| 23802.00 | Mid | 50 | 2Tx | QPSK | н | 150 | 353 | -42.83 | -13.00 | -29.83 |
| 24657.67 | Mid | 50 | 2Tx | QPSK | н | 150 | 12 | -43.11 | -13.00 | -30.11 |
| 24899.50 | Mid | 50 | 2Tx | QPSK | V | 150 | 308 | -39.68 | -13.00 | -26.68 |
| 31817.00 | Mid | 50 | 2Tx | QPSK | V | 150 | 91 | -33.42 | -13.00 | -20.42 |
| 24151.50 | High | 50 | 2Tx | QPSK | Н | 150 | 10 | -36.22 | -13.00 | -23.22 |
| 24700.50 | High | 50 | 2Tx | QPSK | н | 150 | 36 | -32.73 | -13.00 | -19.73 |
| 24974.50 | High | 50 | 2Tx | QPSK | н | 150 | 332 | -33.46 | -13.00 | -20.46 |
| | Та | ble 7-17.n | 258-R1 Ra | adiated Sp | ourious Er | nissions 1 | able (180 | Hz - 40Gł | lz) | |

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

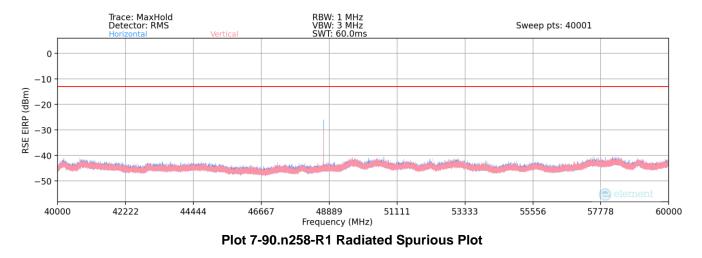
Notes

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

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40GHz - 60GHz



Spurious Emissions EIRP Sample Calculation (n258-R1)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

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

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 48550.94 | Low | 50 | 2Tx | QPSK | Н | 244 | 209 | -26.93 | -13.00 | -13.93 |
| 48701.53 | Mid | 50 | 2Tx | QPSK | Н | 341 | 211 | -26.62 | -13.00 | -13.62 |
| 48850.64 | High | 50 | 2Tx | QPSK | V | 24 | 33 | -27.44 | -13.00 | -14.44 |

Table 7-18.n258-R1 Radiated Spurious Emissions Table (40GHz - 60GHz)

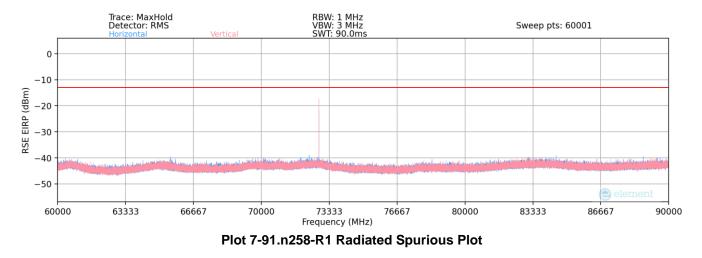
<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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60GHz - 90GHz



Spurious Emissions EIRP Sample Calculation (n258-R1)

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

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

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|---------------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 72827.96 | Low | 50 | 2Tx | QPSK | V | 9 | 177 | -17.06 | -13.00 | -4.06 |
| 73051.03 | Mid | 50 | 2Tx | QPSK | V | 19 | 179 | -16.99 | -13.00 | -3.99 |
| 73276.76 | High | 50 | 2Tx | QPSK | V | 0 | 179 | -21.83 | -13.00 | -8.83 |

Table 7-19. Ant-1n258-R1 Radiated Spurious Emissions Table (60GHz - 90GHz)

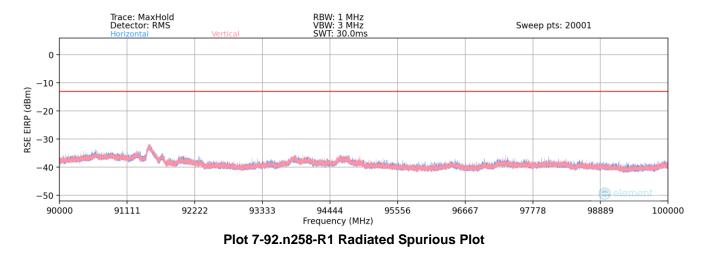
<u>Notes</u>

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

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90GHz - 100GHz



Spurious Emissions EIRP Sample Calculation (n258-R1)

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

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

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Positioner Roll [degrees] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|---------------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 95999.00 | Low | 50 | 2Tx | QPSK | V | - | - | -45.80 | -13.00 | -32.80 |
| 96495.00 | Mid | 50 | 2Tx | QPSK | V | - | - | -42.71 | -13.00 | -29.71 |
| 97265.00 | High | 50 | 2Tx | QPSK | V | - | - | -44.03 | -13.00 | -31.03 |

Table 7-20.n258-R1 Radiated Spurious Emissions table (90GHz-100GHz)

Notes

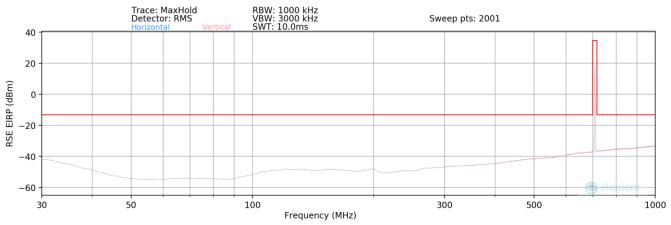
The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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Band n258-R2

30MHz - 1GHz





Spurious Emissions ERP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8 - 2.15 (dB)

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 272.00 | Low | 50 | 2Tx | QPSK | Н | - | - | -57.18 | -13.00 | -44.18 |
| 281.00 | Mid | 50 | 2Tx | QPSK | Н | - | - | -57.27 | -13.00 | -44.27 |
| 330.00 | High | 50 | 2Tx | QPSK | Н | - | - | -56.32 | -13.00 | -43.32 |

Table 7-21.n258-R2 Radiated Spurious Emissions Table (30MHz - 1GHz)

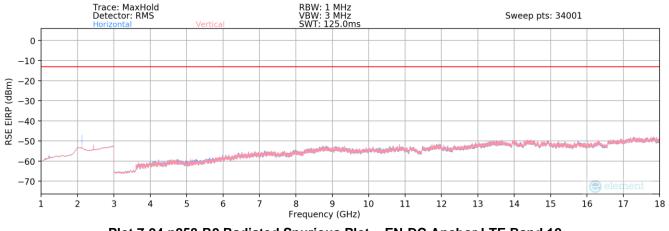
<u>Notes</u>

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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1GHz - 18GHz



Plot 7-94.n258-R2 Radiated Spurious Plot – EN-DC Anchor LTE Band 12

Spurious Emissions EIRP Sample Calculation (n258-R2)

The raw radiated spurious level is converted to field strength in dBuV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP (dBm) = Analyzer Level (dBm) + 107 + AFCL (dB/m) + 20Log(Dm) - 104.8

| Frequency [MHz] | Channnel | Bandwidth (MHz) | EUT Beam Pol. | Modulation | Antenna Polarization [H/V] | Antenna Height [cm] | Turntable Azimuth [degrees] | Spurious Emission Level [dBm] | Limit [dBm] | Margin [dB] |
|--------------------|----------|--------------------|------------------|------------|----------------------------------|------------------------|-----------------------------------|-------------------------------------|-------------|-------------|
| 10868.70 | Low | 50 | 2Tx | QPSK | н | - | - | -56.99 | -13.00 | -43.99 |
| 2123.00 | Mid | 50 | 2Tx | QPSK | Н | 151 | 187 | -46.90 | -13.00 | -33.90 |
| 10983.00 | Mid | 50 | 2Tx | QPSK | н | - | - | -56.89 | -13.00 | -43.89 |
| 11047.12 | High | 50 | 2Tx | QPSK | н | - | - | -56.45 | -13.00 | -43.45 |

Table 7-22.n258-R2 Radiated Spurious Emissions Table (1GHz - 18GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, and cable losses. Measurements were performed at a distance of 3 meter.

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