

TEST REPORT

Report Number: 15556059-E1V2

- Applicant NOKIA CANADA INC. 600 MARCH RD OTTAWA, ON K2K 2T6, CANADA
 - Model : Nokia 7705 SAR-Hmc
 - FCC ID : AS57705SARHMC-3
- Contain FCC ID : N7NEM75T
- EUT Description : REMOTE RADIO BASE STATION
- Test Standard(s) : FCC 47 CFR PART 2, PART 96

Date Of Issue: 2025-04-22

Prepared by:

UL Verification Services Inc. 47173 Benicia Street Fremont, CA 94538, U.S.A. TEL: (510) 319-4000 FAX: (510) 661-0888



Revision History

| Rev. | lssue Date | Revisions | Revised By |
|------|---------------|--------------------|-------------|
| V1 | 2025-01-13 | Initial Review | |
| V2 | 2025-04-22 | Updated Section 10 | Kiya Kedida |

Page 2 of 53

TABLE OF CONTENTS

| 1. | • | ATTESTATION OF TEST RESULTS | 5 |
|----------------|----------------------------|--|--|
| 2. | • | SUMMARY OF TEST RESULTS | 6 |
| 3. | - | TEST METHODOLOGY | 7 |
| 4 | - | FACILITIES AND ACCREDITATION | 7 |
| 5. | | DECISION RULES AND MEASUREMENT UNCERTAINTY | 8 |
| | 5. | .1. METROLOGICAL TRACEABILITY | 8 |
| | 5. | .2. DECISION RULES | 8 |
| | 5. | .3. MEASUREMENT UNCERTAINTY | 8 |
| | 5. | .4. SAMPLE CALCULATION | 8 |
| 6. | | EQUIPMENT UNDER TEST | 9 |
| | 6. | 1. DESCRIPTION OF EUT | 9 |
| | 6. | 1. MAXIMUM OUTPUT POWER | 9 |
| | 6.: | .2. MAXIMUM ANTENNA GAIN | .11 |
| | 6. | .4. WORST-CASE CONFIGURATION AND MODE | .12 |
| | 6. | .5. DESCRIPTION OF TEST SETUP | .13 |
| | | | |
| 7. | - | TEST AND MEASUREMENT EQUIPMENT | .15 |
| 7. 8. | • | TEST AND MEASUREMENT EQUIPMENT | .15 .16 |
| 7. 8. | 8. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48. | .15 .16 |
| 7. 8. | 8. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT .1. LTE BAND 48 | .15 .16 .16 |
| 7. 8. 9. | 8. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT .1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED DANIDWIDTH | .15 .16 .16 .17 |
| 7. 8. 9. | 8. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT .1. LTE BAND 48 CONDUCTED TEST RESULTS .1. OCCUPIED BANDWIDTH | .15 .16 .16 .17 .17 |
| 7. 8. 9. | 8. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT .1. LTE BAND 48 .1. LTE BAND 48 .1. OCCUPIED TEST RESULTS .1. OCCUPIED BANDWIDTH .1. LTE BAND 48 | .15 .16 .16 .17 .17 .19 |
| 7. 8. 9. | 8. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY | .15 .16 .16 .17 .17 .19 .21 |
| 7. 8. 9. | 8. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 2. EMISSION MASK | .15 .16 .17 .17 .19 .21 .24 |
| 7. 8. 9. | 8. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48. CONDUCTED TEST RESULTS. 1. OCCUPIED BANDWIDTH. 9.1.1. LTE BAND 48. 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48. 3. EMISSION MASK. 9.3.1. LTE BAND 48 | .15 .16 .17 .17 .17 .21 .24 .28 .28 |
| 7. 8. 9. | 8. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 3. EMISSION MASK 9.3.1. LTE BAND 48 4. OUT OF BAND EMISSIONIS | .15 .16 .17 .17 .19 .21 .24 .28 .29 |
| 7. 8. 9. | 8. 9. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 3. EMISSION MASK 9.3.1. LTE BAND 48 4. OUT OF BAND EMISSIONS 9.4.1 | .15 .16 .17 .17 .21 .21 .24 .28 .29 .33 |
| 7. 8. 9. | 8. 9. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48. CONDUCTED TEST RESULTS. 1. OCCUPIED BANDWIDTH. 9.1.1. LTE BAND 48. 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48. 3. EMISSION MASK. 9.3.1. LTE BAND 48. 4. OUT OF BAND EMISSIONS. 9.4.1. LTE BAND 48. | .15 .16 .17 .17 .17 .21 .24 .28 .29 .33 .34 .30 |
| 7. 8. 9. | 9. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 3. EMISSION MASK 9.3.1. LTE BAND 48 4. OUT OF BAND EMISSIONS 9.4.1. LTE BAND 48 5. FREQUENCY STABILITY | .15 .16 .17 .17 .17 .21 .24 .28 .29 .33 .34 .39 .40 |
| 7. 8. 9. | 8. 9. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 3. EMISSION MASK 9.3.1. LTE BAND 48 4. OUT OF BAND EMISSIONS 9.4.1. LTE BAND 48 5. FREQUENCY STABILITY 9.5.1. LTE BAND 48 6. PEAK-TO-AVERAGE POWER RATIO | .15 .16 .17 .17 .17 .21 .21 .24 .29 .33 .34 .39 .40 .41 |
| 7. 8. 9. | 8. 9. 9. 9. 9. | TEST AND MEASUREMENT EQUIPMENT RF OUTPUT POWER MEASUREMENT 1. LTE BAND 48 CONDUCTED TEST RESULTS 1. OCCUPIED BANDWIDTH 9.1.1. LTE BAND 48 2. POWER SPECTRAL DENSITY 9.2.1. LTE BAND 48 3. EMISSION MASK 9.3.1. LTE BAND 48 4. OUT OF BAND EMISSIONS 9.4.1. LTE BAND 48 5. FREQUENCY STABILITY 9.5.1. LTE BAND 48 6. PEAK-TO-AVERAGE POWER RATIO 96.1 | .15 .16 .17 .17 .19 .21 .21 .24 .29 .33 .34 .39 .40 .41 42 |

Page 3 of 53

| 10. | RAD | DIATED TEST RESULTS | 44 |
|-----|----------|--------------------------------------|----|
| 10 | 0.1. FII | FIELD STRENGTH OF SPURIOUS RADIATION | 45 |
| | 10.1.1. | 1. LTE Band 48 | 46 |
| 11. | SET | TUP PHOTOS | 52 |

Page 4 of 53

1. ATTESTATION OF TEST RESULTS

| | NOKIA CANADA INC. |
|----------------------------|----------------------------|
| Applicant Name and Address | 600 MARCH RD OTTAWA, |
| | ON K2K 2T6, CANADA |
| Model | Nokia 7705 SAR-Hmc |
| FCC ID | AS57705SARHMC-3 |
| EUT Description | REMOTE RADIO BASE STATION |
| Serial Number | GRM1-02-028 |
| Sample Receipt Date | 2024-11-12 |
| Date Tested | 2024-11-14 to 2024-12-18 |
| Applicable Standards | FCC 47 CFR PART 2, PART 96 |
| Test Results | COMPLIES |

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

This document may not be altered or revised in any way unless done so by UL Verification Services Inc.and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc.will constitute fraud and shall nullify the document.

| Approved & Released By: | Reviewed By: | Prepared By: |
|-------------------------------|-------------------------------|-------------------------------|
| Alloreni | | Pater Va |
| Dan Coronia | Kiya Kedida | Peter Vu |
| Operations Leader | Lead Project Engineer | Laboratory Engineer |
| UL Verification Services Inc. | UL Verification Services Inc. | UL Verification Services Inc. |

2. SUMMARY OF TEST RESULTS

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for correctly integrating customer-provided data with measurements performed by Verification Services Inc.

Below is a list of the data provided by the customer:

1. Antenna gain (see section 6.2)

| Requirement Description | Band | Requirement Clause Number (FCC) | Result* | Remarks |
|--|------|------------------------------------|----------|---------|
| Equivalent Isotropic Radiated Power and Power Spectral Density | 48 | 96.41 (b) | Compiles | |

| Requirement Description | Requirement Clause Number (FCC) | Result* | Remarks |
|--------------------------------------|------------------------------------|----------|---------|
| Occupied Bandwidth | 2.1049 | Compiles | |
| Band Edge and Emission Mask | 96.41(e) | Compiles | |
| Out of Band Emissions | 96.41(e) | Compiles | |
| Frequency Stability | 2.1055 | Compiles | |
| Peak-to-Average Ratio | 96.41 (g) | Compiles | |
| Field Strength of Spurious Radiation | 2.1053, 96.41(e) | Compiles | |

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with the following:

- ANSI C63.26:2015
- FCC 47 CFR Part 2, Part 96
- FCC KDB 971168 D01: Power Meas License Digital Systems
- <u>FCC KDB 971168 D02</u>: Misc Rev Approv License Devices
- <u>FCC KDB 412172 D01</u>: Determining ERP and EIRP

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

| | Address | FCC Registration |
|-------------|--|---------------------|
| \boxtimes | Building 1: 47173 Benicia Street, Fremont, CA 94538, USA | |
| | Building 2: 47266 Benicia Street, Fremont, CA 94538, USA | |
| | Building 3: 843 Auburn Court, Fremont, CA 94538, USA | 550739 |
| \boxtimes | Building 4: 47658 Kato Rd, Fremont, CA 94538, USA | |
| | Building 5: 47670 Kato Rd, Fremont, CA 94538, USA | |

5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| PARAMETER | U _{Lab} |
|--|------------------|
| Conducted Antenna Port Emission Measurement | 1.940 db |
| Power Spectral Density | 2.466 db |
| Time Domain Measurements Using SA | 3.39 % |
| RF Power Measurement Direct Method Using Power Meter | 1.300 db Peak |
| | 0.450 db Ave. |
| Radio Frequency (Spectrum Analyzer) | 141.16 Hz |
| Occupied Bandwidth | 1.22% |
| Worst Case Conducted Disturbance, 9KHz to 0.15 MHz | 3.78 db |
| Worst Case Conducted Disturbance, 0.15 to 30 MHz | 3.40 db |
| Worst Case Radiated Disturbance, 9KHz to 30 MHz | 2.87 db |
| Worst Case Radiated Disturbance, 30 to 1000 MHz | 6.01 db |
| Worst Case Radiated Disturbance, 1000 to 18000 MHz | 4.73 db |
| Worst Case Radiated Disturbance, 18000 to 26000 MHz | 4.51 db |
| Worst Case Radiated Disturbance, 26000 to 40000 MHz | 5.29 db |

Uncertainty figures are valid to a confidence level of 95%.

5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

Where relevant, the following sample calculation is provided: Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB) 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

Page 8 of 53

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a remote radio base station.

6.1. MAXIMUM OUTPUT POWER

EIRP/ERP TEST PROCEDURE

ANSI C63.26:2015 KDB 971168 D01 Section 5.6

ERP/EIRP = PMeas + GT - LC

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted and ERP/EIRP output powers as follows:

Page 9 of 53

LTE BAND 48 Category A

| Part 96 | | | _ | | | | | |
|--------------------|-------------|---------------------------|-----------------------------|-------------------------------|--------------------------|------------------------|-----------------|------------------------|
| EIRP Limit (d | dBm)/ 10MHz | 30.00 |] | | | | | |
| Antenna Gai | n (dBi) | 7.00 | | | | | | |
| Bandwidth (MHz) | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0 | QPSK | 2550 F | 2607 F | 21.90 | 28.90 | 0.776 | 4910 | 4M91G7W |
| 5.0 | 16QAM | 3002.0 | 3097.5 | 21.00 | 28.00 | 0.631 | 4466 | 4M47D7W |
| 10.0 | QPSK | 3555.0 | 3605.0 | 22.00 | 29.00 | 0.794 | 8980 | 8M98G7W |
| 10.0 | 16QAM | 3555.0 | 3095.0 | 21.10 | 28.10 | 0.646 | 8983 | 8M98D7W |
| 15.0 | QPSK | 2557.5 | 2602 5 | 22.00 | 29.00 | 0.794 | 13437 | 13M4G7W |
| 15.0 | 16QAM | 3007.0 | 3092.5 | 21.00 | 28.00 | 0.631 | 13481 | 13M5D7W |
| 20.0 | QPSK | 3560.0 | 3600.0 | 22.00 | 29.00 | 0.794 | 17897 | 17M9G7W |
| 20.0 | 16QAM | 5500.0 | 5090.0 | 21.00 | 28.00 | 0.631 | 17819 | 17M8D7W |

LTE BAND 48 Category B

| Part 96 | | | | | | | | |
|-------------------------|------------|---------------------------|-----------------------------|-------------------------------|--------------------------|------------------------|-----------------|------------------------|
| EIRP Limit (dBm)/ 10MHz | | 47.00 | | | | | | |
| Antenna Gai | n (dBi) | 24.00 | | | | | | |
| Bandwidth (MHz) | Modulation | Low Frequency (MHz) | Upper Frequency (MHz) | Conducted Average (dBm) | EIRP Average (dBm) | EIRP Average (W) | 99% BW (kHz) | Emission Designator |
| 5.0 | QPSK | 2552.5 | 2607.5 | 21.90 | 45.90 | 38.905 | 4910 | 4M91G7W |
| 5.0 | 16QAM | 3002.0 | 3097.5 | 21.00 | 45.00 | 31.623 | 4466 | 4M47D7W |
| 10.0 | QPSK | 2555.0 | 2605.0 | 22.00 | 46.00 | 39.811 | 8980 | 8M98G7W |
| 10.0 | 16QAM | 3555.0 | 3095.0 | 21.10 | 45.10 | 32.359 | 8983 | 8M98D7W |
| 15.0 | QPSK | 2557 5 | 2602 5 | 22.00 | 46.00 | 39.811 | 13437 | 13M4G7W |
| 15.0 | 16QAM | 3007.0 | 3092.5 | 21.00 | 45.00 | 31.623 | 13481 | 13M5D7W |
| 20.0 | QPSK | 3560.0 | 3600.0 | 22.00 | 46.00 | 39.811 | 17897 | 17M9G7W |
| 20.0 | 16QAM | 5500.0 | 5090.0 | 21.00 | 45.00 | 31.623 | 17819 | 17M8D7W |

6.2. MAXIMUM ANTENNA GAIN

The antenna(s) gain, as provided by the manufacturer' are as follows:

| LTE Band | Frequency Range (MHz) | Category A(dBi) | Category B(dBi) | |
|-------------|-----------------------|-----------------|-----------------|--|
| LTE Band 48 | 3550 – 3700 | 7 | 24 | |

Page 11 of 53

6.4. WORST-CASE CONFIGURATION AND MODE

The EUT supports the following LTE Band 48.

The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. Then, QPSK were observed as the worst mode to LTE bands and set for all conducted and radiated test. Output power measurements were measured on QPSK ,16QAM and 64QAM modulations. For testing purposes emissions on sections 9 and 10 were measured while QPSK was set.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y, & Z. It was determined that X orientation was the worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation

Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz. There were no emissions found with less than 20dB of margin from 9kHz to 30MHz, 30MHz-1GHz and above 18GHz.

Page 12 of 53

6.5. DESCRIPTION OF TEST SETUP

| SUPPORT TEST EQUIPMENT | | | | | | | |
|--|--------|-------------|-------------------------|-----|--|--|--|
| Description Manufacturer Model Serial Number FCC ID/ | | | | | | | |
| Laptop | Lenovo | T460s | PC0JMBF8 | Doc | | | |
| Laptop AC/DC Adapter | Lenovo | ADLX65YLC2A | 8SSA10M13548L1CZ85M00Y6 | Doc | | | |

| I/O CABLES (RF CONDUCTED TEST) | | | | | | | | |
|--------------------------------|-------------------------------|----------------|-------------|---------------------|-----------------------------|--|--|--|
| Port | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks | | | |
| SMA Cable | 1 | SMA | Un-Shielded | 1.0 | EUT to Spectrum Analyzer | | | |
| Ethernet | 2 | RJ45 | Un-shielded | 1.5 | EUT to Laptop | | | |
| | I/O CABLES (RF RADIATED TEST) | | | | | | | |
| Port | # of Identical Ports | Connector Type | Cable Type | Cable Length (m) | Remarks | | | |
| RF In/Out | 1 | Antenna | Un-shielded | 5.0 | N/A | | | |

Page 13 of 53

CONDUCTED SETUP



RADIATED SETUP



Page 14 of 53

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| TEST EQUIPMENT LIST | | | | | | |
|---|------------------|--------------------|---------------|---------------|--|--|
| Description | Manufacturer | Model | Asset | Cal Due | | |
| Antenna, Horn 1-18GHz | ETS Lindgren | 3117 | 79834 | 2025-06-30 | | |
| Antenna, Broadband Hybrid, 30MHz to 3000MHz | SUNAR | JB3 | 222009 | 2025-10-31 | | |
| RF Filter Box, 1-18GHz | UL-FR1 | RATS 2 | 226781 | 2025-09-30 | | |
| Amplifier, 10KHz to 1GHz, 32dB | Sonoma | 310N | 430250 | 2025-09-30 | | |
| EMI TEST RECEIVER | Rohde & Schwarz | ESW44 | 169936 | 2025-02-28 | | |
| Directional Coupler | KRYTAR | 152610 231664 | | 2025-01-22 | | |
| Filter, BRF 3.4 – 3.8GHz | Micro-Tronics | BRM50711-02 208398 | | 2025-10-31 | | |
| Spectrum Analyzer, PXA, 2Hz to 44GHz | Keysight | N9030B | 231739 | 2025-01-31 | | |
| Chamber, Environmental | Thermotron Corp. | SM-16C Mini-Max | 179936 | 2025-06-30 | | |
| Antenna, Horn 18 to 26.5GHz | A.R.A. | MWH-1826/B | 199659 | 2024-12-31 | | |
| Amplifier 18-26.5GHz, +5Vdc, -54dBm P1dB | AMPLICAL | AMP18G26.5-60 | 234683 | 2025-06-29 | | |
| UL AUTOMATION SOFTWARE | | | | | | |
| CLT Software | UL | UL RF | V2023.11.21.0 | | | |
| Power Measurement Software | UL | UL RF | V20 | 023.08.14.0 | | |
| Radiated test software | UL | UL RF | Ver 9 | .5 2023-05-01 | | |

NOTES:

1. * Testing is completed before the equipment expiration date.

8. RF OUTPUT POWER MEASUREMENT

CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All bands conducted average power is obtained from the base station simulator.

The following tests were conducted according to the test requirements outlined in ANSI C63.26 Section 5.2.

RESULTS

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.1. LTE BAND 48

LTE BAND 48

| Test Engineer ID: | 27966 PV | Test Date: | 2024-12-12 |
|-------------------|----------|------------|------------|

OUTPUT POWER FOR LTE BAND 48

| Bandwidth | | RB Allocation | RB Offset | Conducted Average (dBm) | | | |
|-----------|------------|----------------------|-----------|-------------------------|---------------|--------|--|
| | Modulation | | | 55265 | 55990 | 56715 | |
| (IVIHZ) | | | | 3552.5 | 3625.0 | 3697.5 | |
| | QPSK | 25 | 0 | 21.9 | 21.9 | 21.7 | |
| 5.0 | 16QAM | 25 | 0 | 21.0 | 21.0 | 20.8 | |
| | 64QAM | 25 | 0 | 20.0 | 20.0 | 19.8 | |
| Bandwidth | | | | Condu | icted Average | (dBm) | |
| | Modulation | RB Allocation | RB Offset | 55290 | 55990 | 56690 | |
| | | | | 3555.0 | 3625.0 | 3695.0 | |
| | QPSK | 50 | 0 | 22.0 | 22.0 | 21.8 | |
| 10.0 | 16QAM | 50 | 0 | 21.1 | 21.0 | 20.8 | |
| | 64QAM | 50 | 0 | 20.0 | 20.0 | 19.8 | |
| Bandwidth | Modulation | RB Allocation | RB Offset | Conducted Average (dBm) | | | |
| | | | | 55315 | 55990 | 56665 | |
| (10112) | | | | 3557.5 | 3625.0 | 3692.5 | |
| | QPSK | 75 | 0 | 22.0 | 21.9 | 21.7 | |
| 15.0 | 16QAM | 75 | 0 | 21.0 | 21.0 | 20.8 | |
| | 64QAM | 75 | 0 | 20.0 | 19.9 | 19.7 | |
| Bandwidth | | | | Condu | icted Average | (dBm) | |
| | Modulation | RB Allocation | RB Offset | 55340 | 55990 | 56640 | |
| (101112) | | | | 3560.0 | 3625.0 | 3690.0 | |
| | QPSK | 100 | 0 | 22.0 | 22.0 | 21.7 | |
| 20.0 | 16QAM | 100 | 0 | 21.0 | 21.0 | 20.8 | |
| | | | | | | | |

NOTE: Category A and B conducted output power are the same.

9. CONDUCTED TEST RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only.

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the middle channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

RESULTS

LTE BAND 48

| Band | Mode | RB Allocation/RB Offset | f(MHz) | 99% BW (MHz) | -26dB BW (MHz) |
|-------------|--------------|----------------------------|--------|-----------------|-------------------|
| | 5MHz, QPSK | 25/0 | 3625.0 | 4.4910 | 4.918 |
| | 5MHz, 16QAM | 25/0 | | 4.4662 | 4.851 |
| | 10MHz, QPSK | 50/0 | | 8.9799 | 9.560 |
| | 10MHz, 16QAM | 50/0 | | 8.9827 | 9.552 |
| LIE DAND 40 | 15MHz, QPSK | 75/0 | | 13.437 | 13.99 |
| | 15MHz, 16QAM | 75/0 | | 13.481 | 14.39 |
| | 20MHz, QPSK | 100/0 | | 17.897 | 19.18 |
| | 20MHz, 16QAM | 100/0 | | 17.819 | 18.79 |

Page 18 of 53

9.1.1. LTE BAND 48

LTE BAND 48



Page 19 of 53



Page 20 of 53

9.2. POWER SPECTRAL DENSITY

LIMITS

FCC: §96.41

(b) Power limits. Unless otherwise specified in this section, the maximum effective isotropic radiated power (EIRP) and maximum Power Spectral Density (PSD) of any CBSD and End User Device must comply with the limits shown in the table below:

| Device | Maximum EIRP (dBm/10 megahertz) | Maximum PSD (dBm/MHz) |
|------------------------------|--|--------------------------|
| End User Device | 23 | n/a |
| Category A CBSD | 30 | 20 |
| Category B CBSD ¹ | 47 | 37 |

TEST PROCEDURE

Maximum PSD—The rules require "maximum power spectral density" measurements, where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission. To perform this measurement, the DUT must be configured to transmit continuously at full power. The procedure in Section 5.2 of ANSI C63.26-2015 is acceptable

RESULTS

Page 21 of 53

LTE BAND 48 Category A

| Band | BW (MHz) | Mode | Frq(MHz) | PSD (dBm) | Limit(dBm) | Delta(dBm) |
|------|----------|---------|----------|--------------|------------|------------|
| | | 0.001/ | 3552.5 | 15.553 | 20 | -4.447 |
| | | QPSK | 3625 | 15.532 | 20 | -4.468 |
| | 5 | | 3697.5 | 15.347 | 20 | -4.653 |
| | | 400 444 | 3552.5 | 14.522 | 20 | -5.478 |
| | | 16QAM | 3625 | 14.279 | 20 | -5.721 |
| | | | 3697.5 | 14.398 | 20 | -5.602 |
| | | 0.001/ | 3555 | 12.528 | 20 | -7.472 |
| | | QPSK | 3625 | 12.259 | 20 | -7.741 |
| | 10 | | 3695 | 12.728 | 20 | -7.272 |
| | | 16QAM | 3555 | 11.585 | 20 | -8.415 |
| | | | 3625 | 11.133 | 20 | -8.867 |
| | | | 3695 | 11.583 | 20 | -8.417 |
| 48 | 15 | QPSK | 3557.5 | 10.794 | 20 | -9.206 |
| | | | 3625 | 10.501 | 20 | -9.499 |
| | | | 3692.5 | 10.340 | 20 | -9.66 |
| | | 16QAM | 3557.5 | 9.691 | 20 | -10.309 |
| | | | 3625 | 10.374 | 20 | -9.626 |
| | | | 3692.5 | 9.451 | 20 | -10.549 |
| | | 0001 | 3560 | 9.514 | 20 | -10.486 |
| | | QPSK | 3625 | 10.078 | 20 | -9.922 |
| | 20 | | 3690 | 10.080 | 20 | -9.92 |
| | | 100.004 | 3560 | 8.363 | 20 | -11.637 |
| | | 16QAM | 3625 | 8.871 | 20 | -11.129 |
| | | | 3690 | 8.874 | 20 | -11.126 |

LTE BAND 48 Category B

| Band | BW (MHz) | Mode | Frq(MHz) | PSD (dBm) | Limit(dBm) | Delta(dBm) |
|------|----------|---------|----------|--------------|------------|------------|
| | | 0.001/ | 3552.5 | 15.553 | 37 | -21.447 |
| | | QPSK | 3625 | 15.532 | 37 | -21.468 |
| | 5 | | 3697.5 | 15.347 | 37 | -21.653 |
| | | 400 444 | 3552.5 | 14.522 | 37 | -22.478 |
| | | 16QAM | 3625 | 14.279 | 37 | -22.721 |
| | | | 3697.5 | 14.398 | 37 | -22.602 |
| | | | 3555 | 12.528 | 37 | -24.472 |
| | | QPSK | 3625 | 12.259 | 37 | -24.741 |
| | 10 | | 3695 | 12.728 | 37 | -24.272 |
| | | 16QAM | 3555 | 11.585 | 37 | -25.415 |
| | | | 3625 | 11.133 | 37 | -25.867 |
| | | | 3695 | 11.583 | 37 | -25.417 |
| 48 | 15 | QPSK | 3557.5 | 10.794 | 37 | -26.206 |
| | | | 3625 | 10.501 | 37 | -26.499 |
| | | | 3692.5 | 10.340 | 37 | -26.66 |
| | | | 3557.5 | 9.691 | 37 | -27.309 |
| | | 16QAM | 3625 | 10.374 | 37 | -26.626 |
| | | | 3692.5 | 9.451 | 37 | -27.549 |
| | | | 3560 | 9.514 | 37 | -27.486 |
| | | QPSK | 3625 | 10.078 | 37 | -26.922 |
| | 20 | | 3690 | 10.080 | 37 | -26.92 |
| | | 400.004 | 3560 | 8.363 | 37 | -28.637 |
| | | 16QAM | 3625 | 8.871 | 37 | -28.129 |
| | | | 3690 | 8.874 | 37 | -28.126 |

9.2.1. LTE BAND 48













9.3. EMISSION MASK

LIMITS

FCC: §96.41

(e) 3.5 GHz Emissions and Interference Limits—

(1) General protection levels

(i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(2) Additional protection levels. Notwithstanding paragraph (e)(1) of this section, for CBSDs and End User Devices, the conducted power of emissions below 3540 MHz or above 3710 MHz shall not exceed -25 dBm/MHz, and the conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

TEST PROCEDURE

For Spectrum Emission Mask plots, the Keysight PXA N9030A is configured to sweep with a moving integration window, the width of which can be adjusted to different sizes across the sweep. The window width is configured to be greater than or equal to the required reference bandwidth. The center frequencies of the integration window for the different integration windows was set such that the upper and lower edges of the windows are aligned with the transition points in the reference bandwidths. This is achieved by setting the start / stop frequencies of the window with an offset equal to the reference bandwidth / 2 from the transition point.

The transmitter output was connected to a CMW500Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

- 1. Set the spectrum analyzer span to include the block edge frequency.
- 2. Set a marker to point the corresponding band edge frequency in each test case.
- 3. Set display line at -13 dBm
- 4. Set resolution bandwidth to at least 1% of emission bandwidth.

RESULTS

9.3.1. LTE BAND 48

LTE BAND 48 EMISSION MASK (FCC)



Page 29 of 53



