



# FCC RADIO TEST REPORT

**FCC ID** : LHJ-FE5NAR110  
**Equipment** : FE5NAR110, FE5NAR111  
**Brand Name** : Continental  
**Model Name** : FE5NAR110, FE5NAR111  
**Applicant** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Manufacturer** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Standard** : FCC 47 CFR Part 2, 27

The product was received on May 06, 2024 and testing was performed from Jul. 04, 2024 to Aug. 30, 2024. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International (USA) Inc., the test report shall not be reproduced except in full.

Approved by: Neil Kao

**Sporton International (USA) Inc.**  
1175 Montague Expressway, Milpitas, CA 95035



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## History of this test report

| Report No.   | Version | Description                                                                                                                                             | Issue Date    |
|--------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| FG240808005B | 01      | Initial issue of report                                                                                                                                 | Sep. 23, 2024 |
| FG240808005B | 02      | Revise Appendix A and Product Specification of Equipment Under Test<br>This report is an updated version, replacing the report issued on Sep. 23, 2024. | Oct. 09, 2024 |
|              |         |                                                                                                                                                         |               |
|              |         |                                                                                                                                                         |               |
|              |         |                                                                                                                                                         |               |
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|              |         |                                                                                                                                                         |               |
|              |         |                                                                                                                                                         |               |
|              |         |                                                                                                                                                         |               |
|              |         |                                                                                                                                                         |               |



## Summary of Test Result

| Report Clause | Ref Std. Clause       | Test Items                                    | Result (PASS/FAIL) | Remark                                         |
|---------------|-----------------------|-----------------------------------------------|--------------------|------------------------------------------------|
| 3.2           | §2.1046               | Conducted Output Power                        | Pass               | -                                              |
|               | §27.50 (d)(4)         | Equivalent Isotropic Radiated Power (Band 66) |                    |                                                |
| -             | §27.50 (d)(5)         | Peak-to-Average Ratio                         | -                  | See Note                                       |
| -             | §2.1049               | Occupied Bandwidth                            | -                  | See Note                                       |
| -             | §2.1051<br>§27.53 (h) | Conducted Band Edge Measurement (Band 66)     | -                  | See Note                                       |
| -             | §2.1051<br>§27.53 (h) | Conducted Spurious Emission (Band 66)         | -                  | See Note                                       |
| -             | §2.1055<br>§27.54     | Frequency Stability<br>Temperature & Voltage  | -                  | See Note                                       |
| 4.2           | §2.1053<br>§27.53 (h) | Radiated Spurious Emission (Band 66)          | Pass               | 31.14 dB<br>under the limit at<br>10104.00 MHz |

**Note:**

- For host device, Radiated Spurious Emission, Equivalent Isotropic Radiated Power and Effective Radiated Power are verified and complies with the limit in this test report.
- For host device, the Conducted Output Power is no difference after compared to module (Model: FE5NAR110, FE5NAR111).

**Conformity Assessment Condition:**

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

**Disclaimer:**

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

| Product Feature                 |                                                                                                     |
|---------------------------------|-----------------------------------------------------------------------------------------------------|
| Equipment                       | FE5NAR110, FE5NAR111                                                                                |
| Brand Name                      | Continental                                                                                         |
| Model Name                      | FE5NAR110, FE5NAR111                                                                                |
| FCC ID                          | LHJ-FE5NAR110                                                                                       |
| Installed into the Host         | Equipment name: G12N51RG1, G12N50RG1<br>Brand name: Continental<br>Model name: G12N51RG1, G12N50RG1 |
| EUT supports Radios application | WCDMA/HSPA/LTE/5G NR/GNSS                                                                           |
| EUT Stage                       | Identical Prototype                                                                                 |

| Sample Information |           |             |                                                                       |
|--------------------|-----------|-------------|-----------------------------------------------------------------------|
| Sample             | TA-code   | L2/L5 GNSS  | Band Difference                                                       |
| 1                  | FE5NAR110 | Support     | /                                                                     |
| 2                  | FE5NAR111 | Not Support | BOM change: depopulated passive components from the GNSS RF front-end |

**Remark:** The above EUT's information was declared by manufacturer.

| Support Band and Evaluated Information |                                                        |
|----------------------------------------|--------------------------------------------------------|
| Supported band                         | B2, B4, B5, B7, B12, B13, B14, B28. B29, B30, B66, B71 |
| Evaluated and Tested band              | B66                                                    |

## 1.2 Product Specification of Equipment Under Test

| Product Specification is subject to this standard |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                   |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| <b>Tx Frequency</b>                               | LTE Band 66: 1710.7 MHz ~ 1779.3 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                   |
| <b>Rx Frequency</b>                               | LTE Band 66: 2110.7 MHz ~ 2199.3 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                   |
| <b>Bandwidth</b>                                  | LTE Band 66: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                   |
| <b>Maximum Output Power to Antenna</b>            | LTE Band 66 : 22.72 dBm<br>LTE Band 66B : 22.81 dBm<br>LTE Band 66C : 23.02 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                   |
| <b>Radiated EIRP</b>                              | <b>Band</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Channel</b>    | <b>EIRP (dBm)</b> |
|                                                   | LTE Band 66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CH1413            | 22.52             |
|                                                   | LTE Band 66B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CH132373+CH132472 | 22.80             |
|                                                   | LTE Band 66C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CH132374+CH132572 | 23.14             |
| <b>Antenna Gain</b>                               | <b>&lt;Internal Antenna&gt;:</b><br><b>Primary cell antenna:</b><br>LTE Band 66: 4.86 dBi<br><b>&lt;External Glass Antenna (Composed by component PN: 85038208, 85038209, 85038210, 85732934)&gt;:</b><br><b>Primary cell antenna:</b><br>LTE Band 66: 5.07 dBi<br><b>&lt;External Front Fender Antenna (Composed by component PN: 86784729, 86784728)&gt;:</b><br><b>Primary cell antenna:</b><br>LTE Band 66: 4.55 dBi<br><b>&lt;External Conti Sharkfin Antenna Composed by component PN: 86783279)&gt;:</b><br><b>Primary cell antenna:</b><br>LTE Band 66: 2.60 dBi |                   |                   |
| <b>Type of Modulation</b>                         | QPSK / 16QAM / 64QAM / 256QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                   |

**Remark:**

1. The Radiated EIRP listed in this section is only for radiated record, please refer the actual value in the Section 3.2.
2. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.



### 1.3 Modification of EUT

No modifications made to the EUT during the testing.

### 1.4 Testing Location

|                       |                                                                   |                          |                              |
|-----------------------|-------------------------------------------------------------------|--------------------------|------------------------------|
| Test Site             | Sporton International (USA) Inc.                                  |                          |                              |
| Test Site Location    | 1175 Montague Expressway, Milpitas, CA 95035<br>TEL : 408 9043300 |                          |                              |
| Test Site No.         | Sporton Site No.                                                  |                          |                              |
|                       | TH01-CA                                                           | 03CH01-CA<br><Radiation> | 03CH01-CA<br><Radiated EIRP> |
| Test Engineer         | Leo Liu                                                           | Ken Kuo and Leo Liu      | Leo Liu                      |
| Temperature (°C)      | 22.7~24.5                                                         | 21.4~23.9                | 21.9~22.9                    |
| Relative Humidity (%) | 43.5~51.6                                                         | 42.3~49.8                | 40.0~51.8                    |

**Note:** The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: US1250

### 1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ ANSI C63.26-2015
- ♦ FCC 47 CFR Part 2, 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.

**Remark:**

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.

## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

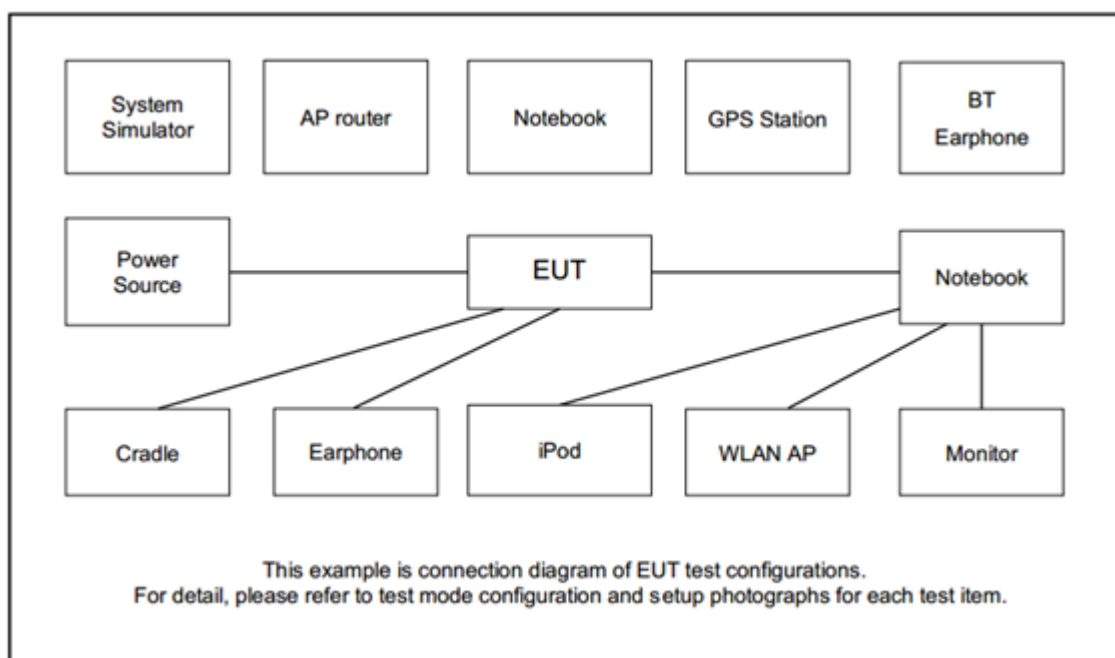
| Modulation Type | Modulation |
|-----------------|------------|
| A               | QPSK       |
| B               | 16QAM      |
| C               | 64QAM      |

| Test Item       | Modulation Type | Bandwidth       | RB Size   | Channel |
|-----------------|-----------------|-----------------|-----------|---------|
| Conducted Power | A, B, C         | All             | 1         | L, M, H |
| EIRP            | A, B, C         | All             | 1         | L, M, H |
| RSE             | A               | Maximum or less | Inner_1RB | M       |

**Remark:**

1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst-case emissions are reported.
3. All the radiated test cases were performed with sample 1

### 2.2 Connection Diagram of Test System





## 2.3 Support Unit used in test configuration and system

| Item | Equipment        | Brand Name | Model No. | FCC ID | Data Cable | Power Cord        |
|------|------------------|------------|-----------|--------|------------|-------------------|
| 1.   | System Simulator | R&S        | CMU 500   | N/A    | N/A        | Unshielded, 1.8 m |
| 2.   | Power supply     | GW Instek  | SPS-606   | N/A    | N/A        | N/A               |

## 2.4 Frequency List of Low/Middle/High Channels

| LTE Band 66 Channel and Frequency List |                        |        |        |         |
|----------------------------------------|------------------------|--------|--------|---------|
| BW [MHz]                               | Channel/Frequency(MHz) | Lowest | Middle | Highest |
| 20                                     | Channel                | 132072 | 132322 | 132572  |
|                                        | Frequency              | 1720   | 1745   | 1770    |
| 15                                     | Channel                | 132047 | 132322 | 132597  |
|                                        | Frequency              | 1717.5 | 1745   | 1772.5  |
| 10                                     | Channel                | 132022 | 132322 | 132622  |
|                                        | Frequency              | 1715   | 1745   | 1775    |

| LTE Band 66B Channel and Frequency List_CA |                        |           |        |        |         |
|--------------------------------------------|------------------------|-----------|--------|--------|---------|
| BW [MHz]                                   | Channel/Frequency(MHz) |           | Lowest | Middle | Highest |
| 10 + 10                                    | PCC                    | Channel   | 132022 | 132373 | 135523  |
|                                            |                        | Frequency | 1715.0 | 1750.1 | 1765.1  |
|                                            | SCC                    | Channel   | 132121 | 133372 | 132622  |
|                                            |                        | Frequency | 1724.9 | 1760.0 | 1775.0  |

| LTE Band 66C Channel and Frequency List_CA |     |           |        |        |        |
|--------------------------------------------|-----|-----------|--------|--------|--------|
| 20 + 20                                    | PCC | Channel   | 132072 | 132323 | 132374 |
|                                            |     | Frequency | 1720.0 | 1745.1 | 1750.2 |
|                                            | SCC | Channel   | 132270 | 133421 | 132572 |
|                                            |     | Frequency | 1739.8 | 1764.9 | 1770.0 |

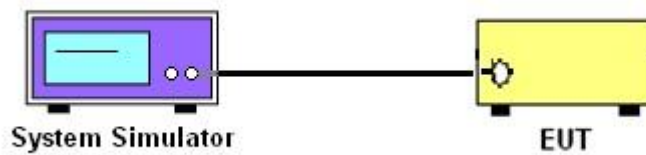
### 3 Conducted Test Items

#### 3.1 Measuring Instruments

See list of measuring instruments of this test report.

##### 3.1.1 Test Setup

##### 3.1.2 Conducted Output Power



##### 3.1.3 Test Result of Conducted Test

Please refer to Appendix A.



## **3.2 Conducted Output Power and EIRP**

### **3.2.1 Description of the Conducted Output Power Measurement and EIRP Measurement**

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 66

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$ ,  $ERP = EIRP - 2.15$ , where

$P_T$  = transmitter output power in dBm

$G_T$  = gain of the transmitting antenna in dBi

$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna in dB

### **3.2.2 Test Procedures**

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

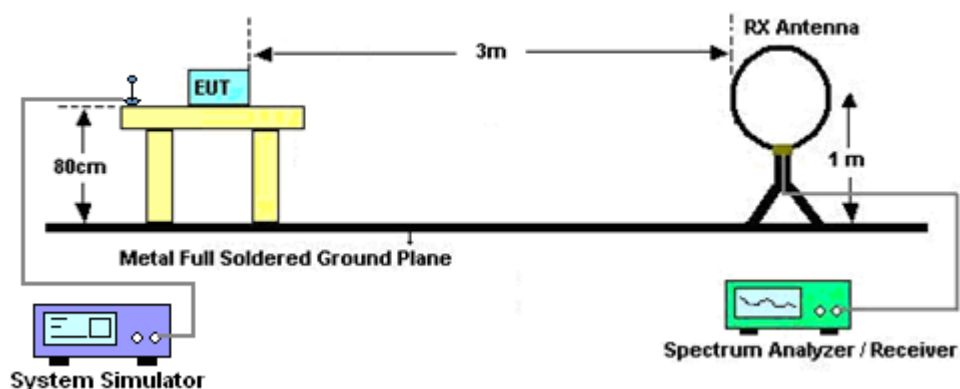
## 4 Radiated Test Items

### 4.1 Measuring Instruments

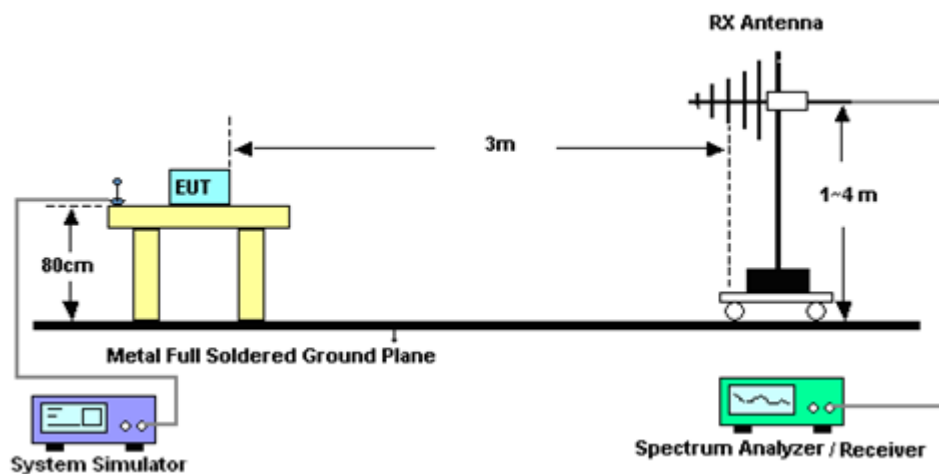
See list of measuring instruments of this test report.

#### 4.1.1 Test Setup

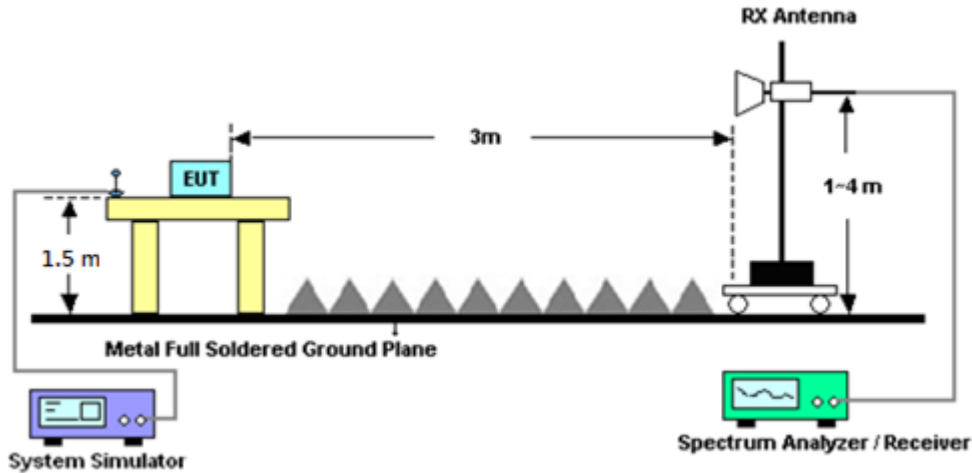
For radiated test below 30MHz



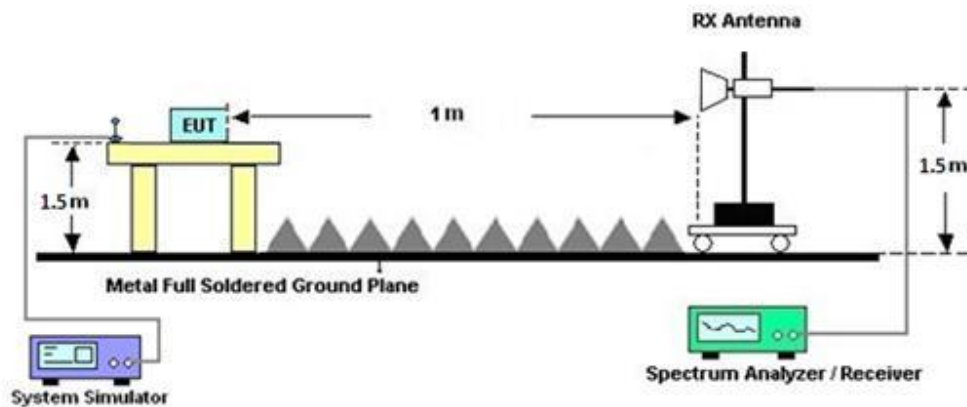
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



#### 4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

##### Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



## **4.2 Radiated Spurious Emission Measurement**

### **4.2.1 Description of Radiated Spurious Emission Measurement**

The radiated spurious emission was measured by substitution method according to ANSI C63.26-2015.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### **4.2.2 Test Procedures**

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)  
$$\text{EIRP(dBm)} = \text{Level (dBuV/m)} + 20\log(d) - 104.77,$$
where d is the distance at which field strength limit is specified in the rules
7. 
$$\text{Field Strength Level (dBm)} = \text{Spectrum Reading (dBm)} + \text{Antenna Factor} + \text{Cable Loss} + \text{Read Level} - \text{Preamp Factor}.$$
8. 
$$\text{ERP (dBm)} = \text{EIRP (dBm)} - 2.15$$
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from  $43 + 10\log(P)$ dB below the transmitter power P(Watts)



## 5 List of Measuring Equipment

| Instrument                          | Brand Name      | Model No.                  | Serial No.                           | Characteristics                   | Calibration Date | Test Date                       | Due Date      | Remark                    |
|-------------------------------------|-----------------|----------------------------|--------------------------------------|-----------------------------------|------------------|---------------------------------|---------------|---------------------------|
| Hygrometer                          | Testo           | 608-H1                     | 45142595                             | N/A                               | Aug. 14, 2024    | Aug. 26, 2024~<br>Aug. 30, 2024 | Aug. 13, 2025 | Conducted (TH01-CA)       |
| UXM 5G Wireless Test Platform       | Keysight        | E7515B                     | MY59321821                           | N/A                               | Oct. 29, 2023    | Aug. 26, 2024~<br>Aug. 30, 2024 | Oct. 28, 2024 | Conducted (TH01-CA)       |
| Bilog Antenna                       | TESEQ           | 6111D                      | 54683                                | 30MHz~1GHz                        | Nov. 13, 2023    | Jul. 02, 2024~<br>Jul. 08, 2024 | Nov. 12, 2024 | Radiation (03CH01-CA)     |
| Horn Antenna                        | SCHWARZBECK     | BBHA 9120D                 | 02115                                | 1GHz~18GHz                        | Aug. 09, 2023    | Jul. 02, 2024~<br>Jul. 08, 2024 | Aug. 08, 2024 | Radiation (03CH01-CA)     |
| Horn Antenna                        | SCHWARZBECK     | BBHA 9120D                 | 02113                                | 1GHz~18GHz                        | Apr. 26, 2024    | Aug. 12, 2024                   | Apr. 25, 2025 | Radiation (03CH01-CA)     |
| Amplifier                           | SONOMA          | 310N                       | 372241                               | 9kHz~1GHz                         | Apr.24,2024      | Jul. 02, 2024~<br>Jul. 08, 2024 | Apr. 23,2025  | Radiation (03CH01-CA)     |
| Preamplifier                        | E-instrument    | ERA-100M-18<br>G-56-01-A70 | EC1900251                            | 1GHz~18GHz                        | Apr. 24, 2024    | Jul. 02, 2024~<br>Jul. 08, 2024 | Apr. 23, 2025 | Radiation (03CH01-CA)     |
| Preamplifier                        | E-instrument    | ERA-100M-18<br>G-56-01-A70 | EC1900252                            | 1GHz~18GHz                        | Apr. 25, 2024    | Aug. 12, 2024                   | Apr. 24, 2025 | Radiation (03CH01-CA)     |
| RF Cable                            | HUBER+SUHNER    | SUCOFLEX 102               | 8015932/2,<br>8015762/2,<br>804938/2 | N/A                               | Mar. 05, 2024    | Jul. 02, 2024~<br>Aug. 12, 2024 | Mar. 04, 2025 | Radiation (03CH01-CA)     |
| Hygrometer                          | TESEO           | 608-H1                     | 45142559                             | N/A                               | Aug. 30, 2023    | Jul. 02, 2024~<br>Aug. 12, 2024 | Aug. 29, 2024 | Radiation (03CH01-CA)     |
| Controller                          | Chaintek        | EM-1000                    | 060881                               | Control Turn Table & Antenna Mast | N/A              | Jul. 02, 2024~<br>Aug. 12, 2024 | N/A           | Radiation (03CH01-CA)     |
| Antenna Mast                        | ChainTek        | MBS-520-1                  | N/A                                  | 1m~4m                             | N/A              | Jul. 02, 2024~<br>Aug. 12, 2024 | N/A           | Radiation (03CH01-CA)     |
| Turn Table                          | ChainTek        | T-200-S-1                  | N/A                                  | 0~360 Degree                      | N/A              | Jul. 02, 2024~<br>Aug. 12, 2024 | N/A           | Radiation (03CH01-CA)     |
| Test Software                       | Audix E3        | E3 230621<br>Sporton US,V9 | PK-002093                            | N/A                               | N/A              | Jul. 02, 2024~<br>Aug. 12, 2024 | N/A           | Radiation (03CH01-CA)     |
| Horn Antenna                        | SCHWARZBECK     | BBHA 9120D                 | 02113                                | 1GHz~18GHz                        | Apr. 26, 2024    | Aug. 30, 2024                   | Apr. 25, 2025 | Radiated EIRP (03CH01-CA) |
| RF Cable                            | HUBER+SUHNER    | SUCOFLEX 102               | 8015932/2,<br>8015762/2,<br>804938/2 | N/A                               | Mar. 05, 2024    | Aug. 30, 2024                   | Mar. 04, 2025 | Radiated EIRP (03CH01-CA) |
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW500                     | 150251                               | N/A                               | Apr. 26, 2024    | Aug. 30, 2024                   | Apr. 25, 2025 | Radiated EIRP (03CH01-CA) |
| UXM 5G Wireless Test Platform       | Keysight        | E7515B                     | MY59321821                           | N/A                               | Oct. 29, 2023    | Aug. 30, 2024                   | Oct. 28, 2024 | Radiated EIRP (03CH01-CA) |
| Hygrometer                          | TESEO           | 608-H1                     | 45142559                             | N/A                               | Aug. 14, 2024    | Aug. 30, 2024                   | Aug. 13, 2025 | Radiated EIRP (03CH01-CA) |
| Controller                          | Chaintek        | EM-1000                    | 060881                               | Control Turn Table & Antenna Mast | N/A              | Aug. 30, 2024                   | N/A           | Radiated EIRP (03CH01-CA) |
| Antenna Mast                        | ChainTek        | MBS-520-1                  | N/A                                  | 1m~4m                             | N/A              | Aug. 30, 2024                   | N/A           | Radiated EIRP (03CH01-CA) |
| Turn Table                          | ChainTek        | T-200-S-1                  | N/A                                  | 0~360 Degree                      | N/A              | Aug. 30, 2024                   | N/A           | Radiated EIRP (03CH01-CA) |
| Test Software                       | Audix E3        | E3 230621<br>Sporton US,V9 | PK-002093                            | N/A                               | N/A              | Aug. 30, 2024                   | N/A           | Radiated EIRP (03CH01-CA) |



## 6 Measurement Uncertainty

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 4.70 dB |
|-------------------------------------------------------------------------|---------|

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

|                                                                         |         |
|-------------------------------------------------------------------------|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ ) | 5.50 dB |
|-------------------------------------------------------------------------|---------|



## Appendix A. Test Results of Conducted Test

### Conducted Output Power(Average power & ERP/EIRP)

| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 20                                                          | 1         | 0         | QPSK   | 22.45  | 22.26  | 22.53   | 27.60      | 0.5754   |
| 20                                                          | 1         | 0         | 16-QAM | 21.97  | 22.18  | 22.23   | 27.30      | 0.5370   |
| 20                                                          | 1         | 0         | 64-QAM | 20.56  | 20.66  | 20.78   | 25.85      | 0.3846   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |

| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 15                                                          | 1         | 0         | QPSK   | 22.63  | 22.50  | 22.60   | 27.70      | 0.5888   |
| 15                                                          | 1         | 0         | 16-QAM | 21.92  | 22.23  | 22.25   | 27.32      | 0.5395   |
| 15                                                          | 1         | 0         | 64-QAM | 20.81  | 21.06  | 20.87   | 26.13      | 0.4102   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |

| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 10                                                          | 1         | 0         | QPSK   | 22.48  | 22.35  | 22.37   | 27.55      | 0.5689   |
| 10                                                          | 1         | 0         | 16-QAM | 21.66  | 21.40  | 22.00   | 27.07      | 0.5093   |
| 10                                                          | 1         | 0         | 64-QAM | 21.08  | 20.89  | 20.83   | 26.15      | 0.4121   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |



| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 5                                                           | 1         | 0         | QPSK   | 22.72  | 22.45  | 22.02   | 27.79      | 0.6012   |
| 5                                                           | 1         | 0         | 16-QAM | 22.02  | 22.10  | 22.01   | 27.17      | 0.5212   |
| 5                                                           | 1         | 0         | 64-QAM | 21.11  | 20.94  | 20.89   | 26.18      | 0.4150   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |

| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 3                                                           | 1         | 0         | QPSK   | 22.56  | 22.51  | 22.56   | 27.63      | 0.5794   |
| 3                                                           | 1         | 0         | 16-QAM | 21.97  | 22.38  | 21.98   | 27.45      | 0.5559   |
| 3                                                           | 1         | 0         | 64-QAM | 21.03  | 20.97  | 20.98   | 26.10      | 0.4074   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |

| LTE Band 66 Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |        |        |        |         |            |          |
|-------------------------------------------------------------|-----------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                    | RB Size   | RB Offset | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
| 1.4                                                         | 1         | 0         | QPSK   | 22.64  | 22.57  | 22.48   | 27.71      | 0.5902   |
| 1.4                                                         | 1         | 0         | 16-QAM | 21.88  | 22.29  | 22.10   | 27.36      | 0.5445   |
| 1.4                                                         | 1         | 0         | 64-QAM | 21.01  | 20.77  | 20.91   | 26.08      | 0.4055   |
| Limit                                                       | EIRP < 1W |           |        | Result |        |         | Pass       |          |



| LTE Band 66B_CA Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |         |           |        |        |        |         |            |          |
|-----------------------------------------------------------------|-----------|-----------|---------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                        | PCC       |           | SCC     |           | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
|                                                                 | RB Size   | RB Offset | RB Size | RB Offset |        |        |        |         |            |          |
| 10+10                                                           | 1         | 49        | 1       | 0         | QPSK   | 22.78  | 22.81  | 22.71   | 27.88      | 0.6138   |
| 10+10                                                           | 1         | 49        | 1       | 0         | 16-QAM | 21.90  | 21.82  | 21.61   | 26.97      | 0.4977   |
| 10+10                                                           | 1         | 49        | 1       | 0         | 64-QAM | 20.92  | 20.79  | 20.61   | 25.99      | 0.3972   |
| Limit                                                           | EIRP < 1W |           |         |           |        | Result |        |         | Pass       |          |

| LTE Band 66C_CA Maximum Average Power [dBm] (GT - LC = 5.07 dB) |           |           |         |           |        |        |        |         |            |          |
|-----------------------------------------------------------------|-----------|-----------|---------|-----------|--------|--------|--------|---------|------------|----------|
| BW [MHz]                                                        | PCC       |           | SCC     |           | Mod    | Lowest | Middle | Highest | EIRP (dBm) | EIRP (W) |
|                                                                 | RB Size   | RB Offset | RB Size | RB Offset |        |        |        |         |            |          |
| 20+20                                                           | 1         | 99        | 1       | 0         | QPSK   | 22.98  | 23.02  | 22.87   | 28.09      | 0.6442   |
| 20+20                                                           | 1         | 99        | 1       | 0         | 16-QAM | 22.10  | 22.07  | 21.84   | 27.17      | 0.5212   |
| 20+20                                                           | 1         | 99        | 1       | 0         | 64-QAM | 21.27  | 21.06  | 21.02   | 26.34      | 0.4305   |
| Limit                                                           | EIRP < 1W |           |         |           |        | Result |        |         | Pass       |          |



## Appendix B. Test Results of Radiated Test

### B1. Summary of each worse mode

| Mode | Part     | Band        | Ch | Freq (MHz) | Level (dBm) | Det | Ant Factor (dB) | AmplCbl (dB) | Filter (dB) | EIRPCF (dB) | Reading (dBuV) | Limit (dBm) | Margin (dB) | Pol | Ant                    |
|------|----------|-------------|----|------------|-------------|-----|-----------------|--------------|-------------|-------------|----------------|-------------|-------------|-----|------------------------|
| 2    | Part 27L | LTE B66     | M  | 6944       | -59.99      | RMS | 35.96           | -53.71       | 0.34        | -95.23      | 52.65          | -13.00      | -46.99      | V   | External Glass Antenna |
| 3    | Part 27L | LTE CA B66B | M  | 7020       | -56.11      | RMS | 36.28           | -53.00       | 0.34        | -95.23      | 55.50          | -13.00      | -43.11      | V   | External Glass Antenna |
| 4    | Part 27L | LTE CA B66C | H  | 7035       | -56.24      | RMS | 36.34           | -52.82       | 0.34        | -95.23      | 55.13          | -13.00      | -43.24      | V   | External Glass Antenna |

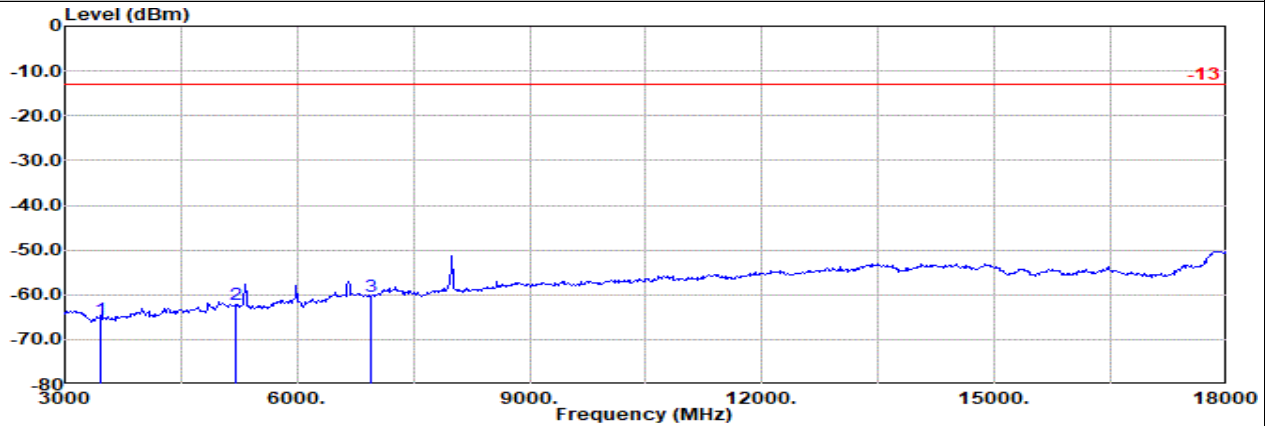


## External Glass Antenna

## Part 27L Mode 2

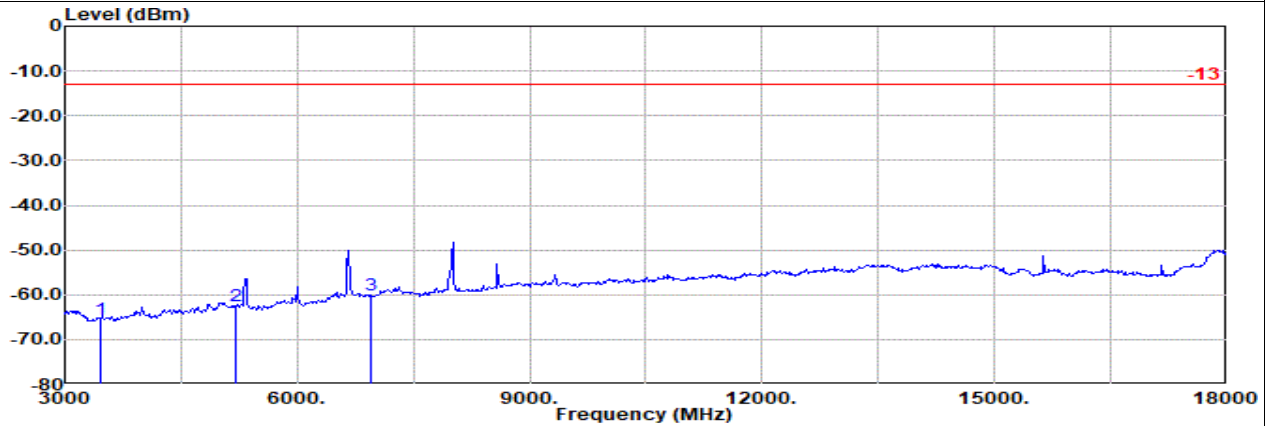
LTE B66 20M Ch132322 1RB0 QPSK

M



Site : 03CH01-CA  
Condition: -13 3m HORN\_02115\_230809 Horizontal  
: LTE Band 66 20M Ch132322 1RB0 QPSK

|   | Freq Level |        | Detector | Ant Factor | Amp\Cb |      | Filter 1 | EIRPCF | Readin g | Limit  | Margin     | Pol |
|---|------------|--------|----------|------------|--------|------|----------|--------|----------|--------|------------|-----|
|   | MHz        | dBm    |          |            | dB/m   | dB   | dB       | dB     | dBuV     | dBm    | dB         |     |
| 1 | 3472.00    | -65.36 | RMS      | 29.47      | -58.39 | 0.99 | -95.23   | 57.80  | -13.00   | -52.36 | Horizontal |     |
| 2 | 5208.00    | -62.33 | RMS      | 32.99      | -56.08 | 0.48 | -95.23   | 55.51  | -13.00   | -49.33 | Horizontal |     |
| 3 | 6944.00    | -60.28 | RMS      | 35.90      | -53.71 | 0.34 | -95.23   | 52.42  | -13.00   | -47.28 | Horizontal |     |



Site : 03CH01-CA  
Condition: -13 3m HORN\_02115\_230809 Vertical  
: LTE Band 66 20M Ch132322 1RB0 QPSK

|   | Freq Level |        | Detector | Ant Factor | Amp\Cb |      | Filter 1 | EIRPCF | Readin g | Limit  | Margin   | Pol |
|---|------------|--------|----------|------------|--------|------|----------|--------|----------|--------|----------|-----|
|   | MHz        | dBm    |          |            | dB/m   | dB   | dB       | dB     | dBuV     | dBm    | dB       |     |
| 1 | 3472.00    | -65.41 | RMS      | 29.54      | -58.39 | 0.99 | -95.23   | 57.68  | -13.00   | -52.41 | Vertical |     |
| 2 | 5208.00    | -62.46 | RMS      | 32.99      | -56.08 | 0.48 | -95.23   | 55.38  | -13.00   | -49.46 | Vertical |     |
| 3 | 6944.00    | -59.99 | RMS      | 35.96      | -53.71 | 0.34 | -95.23   | 52.65  | -13.00   | -46.99 | Vertical |     |

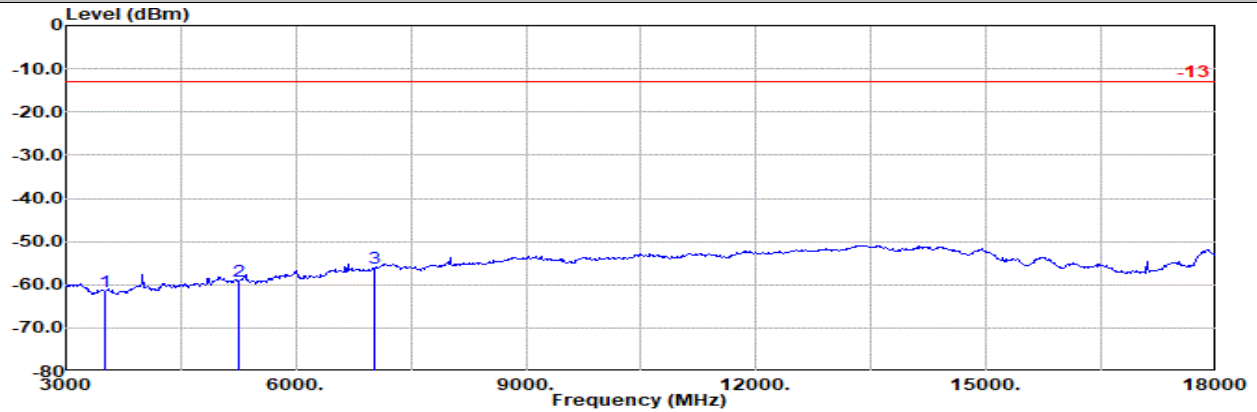


## External Glass Antenna

## Part 27L Mode 3

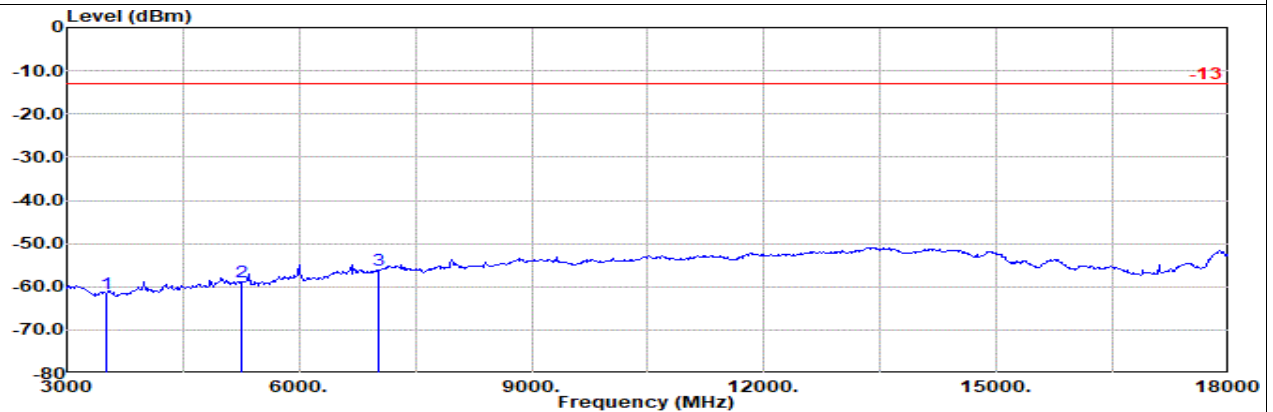
LTE CA B66B 10M + 10M Ch132373 1RB49 QPSK + Ch132472 1RB0 QPSK

M



Site : 03CH01-CA  
Condition : -13 3m HORN\_02113\_240426 Horizontal  
LTE CA B66 10M+10M :  
Ch132373 1RB49 QPSK + Ch132472 1RB0 QPSK:

|   | Freq    | Level  | Detector | Ant Factor | Amp\Cb | Filter | EIRPCF | Readin | Limit  | Margin | Pol        |
|---|---------|--------|----------|------------|--------|--------|--------|--------|--------|--------|------------|
|   | MHz     | dBm    |          |            | 1      |        |        | g      | dBm    | dB     |            |
| 1 | 3510.00 | -61.47 | RMS      | 29.59      | -58.47 | 0.91   | -95.23 | 61.73  | -13.00 | -48.47 | Horizontal |
| 2 | 5265.00 | -59.04 | RMS      | 33.11      | -55.75 | 0.40   | -95.23 | 58.43  | -13.00 | -46.04 | Horizontal |
| 3 | 7020.00 | -56.13 | RMS      | 36.18      | -53.00 | 0.34   | -95.23 | 55.58  | -13.00 | -43.13 | Horizontal |



Site : 03CH01-CA  
Condition : -13 3m HORN\_02113\_240426 Vertical  
LTE CA B66 10M+10M :  
Ch132373 1RB49 QPSK + Ch132472 1RB0 QPSK:

|   | Freq    | Level  | Detector | Ant Factor | Amp\Cb | Filter | EIRPCF | Readin | Limit  | Margin | Pol      |
|---|---------|--------|----------|------------|--------|--------|--------|--------|--------|--------|----------|
|   | MHz     | dBm    |          |            | 1      |        |        | g      | dBm    | dB     |          |
| 1 | 3510.00 | -61.44 | RMS      | 29.62      | -58.47 | 0.91   | -95.23 | 61.73  | -13.00 | -48.44 | Vertical |
| 2 | 5265.00 | -58.85 | RMS      | 33.15      | -55.75 | 0.40   | -95.23 | 58.58  | -13.00 | -45.85 | Vertical |
| 3 | 7020.00 | -56.11 | RMS      | 36.28      | -53.00 | 0.34   | -95.23 | 55.50  | -13.00 | -43.11 | Vertical |

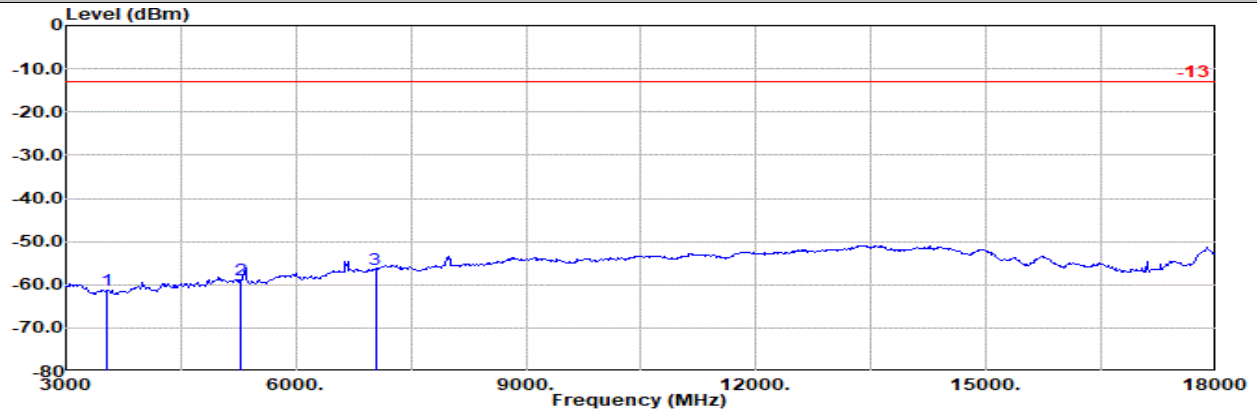


## External Glass Antenna

## Part 27L Mode 4

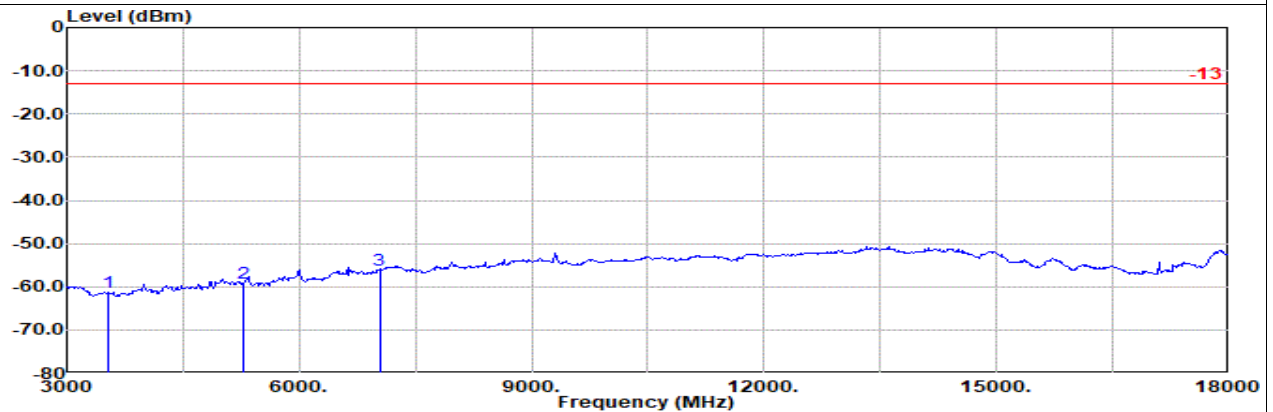
LTE CA B66C 20M + 20M Ch132374 1RB99 QPSK + Ch132572 1RB0 QPSK

H



Site : 03CH01-CA  
Condition : -13 3m HORN\_02113\_240426 Horizontal  
LTE CA B66 20M+20M :  
Ch132374 1RB99 QPSK + Ch132572 1RB0 QPSK:

|   | Freq    | Level  | Detector | Ant Factor | Amp\Cb | Filter | EIRPCF | Readin | Limit  | Margin | Pol        |
|---|---------|--------|----------|------------|--------|--------|--------|--------|--------|--------|------------|
|   | MHz     | dBm    |          |            | 1      |        |        | g      |        |        |            |
| 1 | 3525.00 | -61.33 | RMS      | 29.59      | -58.47 | 0.90   | -95.23 | 61.87  | -13.00 | -48.33 | Horizontal |
| 2 | 5280.00 | -58.84 | RMS      | 33.10      | -55.65 | 0.41   | -95.23 | 58.53  | -13.00 | -45.84 | Horizontal |
| 3 | 7035.00 | -56.45 | RMS      | 36.25      | -52.82 | 0.34   | -95.23 | 55.01  | -13.00 | -43.45 | Horizontal |



Site : 03CH01-CA  
Condition : -13 3m HORN\_02113\_240426 Vertical  
LTE CA B66 20M+20M :  
Ch132374 1RB99 QPSK + Ch132572 1RB0 QPSK:

|   | Freq    | Level  | Detector | Ant Factor | Amp\Cb | Filter | EIRPCF | Readin | Limit  | Margin | Pol      |
|---|---------|--------|----------|------------|--------|--------|--------|--------|--------|--------|----------|
|   | MHz     | dBm    |          |            | 1      |        |        | g      |        |        |          |
| 1 | 3525.00 | -61.35 | RMS      | 29.62      | -58.47 | 0.90   | -95.23 | 61.83  | -13.00 | -48.35 | Vertical |
| 2 | 5280.00 | -59.08 | RMS      | 33.15      | -55.65 | 0.41   | -95.23 | 58.24  | -13.00 | -46.08 | Vertical |
| 3 | 7035.00 | -56.24 | RMS      | 36.34      | -52.82 | 0.34   | -95.23 | 55.13  | -13.00 | -43.24 | Vertical |