

# TEST REPORT

|                        |                                            |
|------------------------|--------------------------------------------|
| EUT Description        | Convertible PC                             |
| Brand Name             | HP                                         |
| Model Name             | HSN-I55C                                   |
| FCC/IC ID              | FCC ID: B94HNI55CPT; IC ID: 21374-L860GL16 |
| Date of Test Start/End | 2022-04-15 / 2022-06-10                    |
| Features               | WWAN (LTE, UMTS)<br>(see section 5)        |

|                      |                                                                                     |
|----------------------|-------------------------------------------------------------------------------------|
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|                     |                                                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference Standards | FCC CFR Title 47 Part 2, 22, 24, 27, 90, 96<br>RSS-Gen issue 5 A1, RSS 130 issue 2, RSS 132 issue 3, RSS 133 issue 6 A1,<br>RSS 140 issue 1, RSS 139 issue 3, RSS-192 issue 4, RSS-195 issue 2, RSS<br>199 issue 3, RSS 197 issue 1<br>(see section 1) |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                            |                                                                                                    |
|----------------------------|----------------------------------------------------------------------------------------------------|
| Test Report identification | 220316-04.TR05                                                                                     |
| Revision Control           | Rev. 03<br>This test report revision replaces any previous test report revision<br>(see section 8) |

The test results relate only to the samples tested.

Reference to accreditation shall be used only by full reproduction of test report.

Issued by

Reviewed by

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## 1. Standards, reference documents and applicable test methods

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC  | <ol style="list-style-type: none"> <li>1. FCC Title 47 CFR part 2 - Subpart J - Equipment Authorization Procedures. 2020-10-01 Edition</li> <li>2. FCC Title 47 CFR part 22 - Subpart H - Cellular Radiotelephone Service. 2020-10-01 Edition</li> <li>3. FCC Title 47 CFR part 24 – Subpart E - Broadband PCS. 2020-10-01 Edition</li> <li>4. FCC Title 47 CFR part 27 – Subpart C - Technical Standards. 2020-10-01 Edition</li> <li>5. FCC Title 47 CFR part 27 – Subpart L - 1695-1710, 1710-1755 MHz, 1755-1780 MHz, 2110-2155 MHz, 2155-2180 MHz, 2180-2200 MHz Bands. 2020-10-01 Edition</li> <li>6. FCC Title 47 CFR Part 90 - Subpart R - Regulations governing the licensing and use of frequencies in the 763-775 and 793-805 MHz bands. 2020-10-01 Edition</li> <li>7. FCC Title 47 CFR Part 90 - Subpart S - Regulations governing licensing and use of frequencies in the 806-824, 851-869, 896-901, and 935-940 MHz bands. 2020-10-01 Edition</li> <li>8. FCC Title 47 CFR Part 96 - Subpart E - Technical rules. 2020-10-01 Edition</li> <li>9. FCC OET KDB 971168 D01 v03r01 Measurement guidance for certification of licensed digital transmitters.</li> <li>10. FCC OET KDB 842590 D01 v01r01 Upper Microwave Flexible Use Service.</li> <li>11. C63.26-2015 - IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ISED | <ol style="list-style-type: none"> <li>1. ISED RSS-Gen issue 5 A1 - General Requirements for Compliance of Radio Apparatus.</li> <li>2. ISED RSS-130 issue 2 - Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz</li> <li>3. ISED RSS 132 issue 3 - Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz</li> <li>4. ISED RSS 133 issue 6 A1 - 2 GHz Personal Communications Services.</li> <li>5. ISED SRSP-510 — Technical Requirements for Personal Communications Services (PCS) in the Bands 1850-1915 MHz and 1930-1995 MHz</li> <li>6. ISED RSS 139 issue 3 - Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz</li> <li>7. ISED RSS-140 issue 1 - Equipment Operating in the Public Safety Broadband Frequency Bands 758-768 MHz and 788-798 MHz</li> <li>8. ISED RSS-192 issue 4 - Flexible Use Broadband Equipment Operating in the Band 3450-3650 MHz</li> <li>9. ISED RSS-195 issue 2 - Wireless Communication Service (WCS) Equipment Operating in the Bands 2305-2320 MHz and 2345-2360 MHz</li> <li>10. ISED RSS-199 issue 3 - Broadband Radio Services (BRS) Equipment Operating in the Bands 2500-2690 MHz</li> <li>11. ISED RSS-197 issue 1 - Wireless Broadband Access Equipment Operating in the Band 3650–3700 MHz</li> <li>12. FCC OET KDB 971168 D01 v03r01 Measurement guidance for certification of licensed digital transmitters.</li> <li>13. FCC OET KDB 842590 D01 v01r01 Upper Microwave Flexible Use Service.</li> <li>14. C63.26-2015 - IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services</li> <li>15. C63.4-2014 – American National Standard for Methods of measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.</li> </ol> |

## 2. General conditions, competences and guarantees

- ✓ Tests performed under FCC standards identified in section 1 are covered by A2LA accreditation.
- ✓ Tests performed under ISED standards identified in section 1 are covered by Cofrac accreditation.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 testing laboratory accredited by the French Committee for Accreditation (Cofrac) with the certificate number 1-6736.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by ISED, with ISED #1000Y.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

### 3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

|             |                                              |
|-------------|----------------------------------------------|
| Temperature | $24^{\circ}\text{C} \pm 2.1^{\circ}\text{C}$ |
| Humidity    | $37.1\% \pm 12.5\%$                          |

## 4. Test samples

| Sample | Control #     | Description    | Model    | Serial #   | Date of receipt | Note |
|--------|---------------|----------------|----------|------------|-----------------|------|
| #01    | 220316-04.S01 | Convertible PC | HSN-I55C | 00027705FP | 05/04/2022      | N/A  |
| #02    | 220316-04.S02 | Convertible PC | HSN-I55C | 00027705FT | 05/04/2022      | N/A  |

## 5. EUT Features

The herein information is provided by the customer.

Intel WRF Lab declines any responsibility for the accuracy of the stated customer provided information, especially if it has any impact on the correctness of test results presented in this report.

|                                                                                                                                                                                                                                           |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------|-----------------------------------|-------|-------|----------|----|------------------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Brand Name                                                                                                                                                                                                                                | HP                      |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| Model Name                                                                                                                                                                                                                                | HSN-I55C                |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| Prototype / Production                                                                                                                                                                                                                    | Production              |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| Supported Radios                                                                                                                                                                                                                          | Mode                    | Bands                         | Supported Tx Mode                 |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         |                               | WCDMA                             | HSDPA | HSUPA | DC-HSDPA |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | WCDMA / HSPA+           | FDD II (1850.0 – 1910.0 MHz)  | ✓                                 | ✓     | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | FDD IV (1710.0 – 1755.0 MHz)  | ✓                                 | ✓     | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | FDD V (824.0 – 849.0 MHz)     | ✓                                 | ✓     | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | Mode                    | Bands                         | Supported Channel Bandwidth (MHz) |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         |                               | 1.4                               | 3     | 5     | 10       | 15 | 20                     |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | LTE FDD                 | Band 2 (1850.0 – 1910.0 MHz)  | ✓                                 | ✓     | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 4 (1710.0 – 1755.0 MHz)  | ✓                                 | ✓     | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 5 (824.0 – 849.0 MHz)    | ✓                                 | ✓     | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 7 (2500.0 – 2570.0 MHz)  |                                   |       | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 12 (699.0 – 716.0 MHz)   | ✓                                 | ✓     | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 13 (777.0 – 787.0 MHz)   |                                   |       | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 14 (788.0 – 798.0 MHz)   |                                   |       | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 17 (704.0 – 716.0 MHz)   |                                   |       | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 25 (1850.0 – 1915.0 MHz) | ✓                                 | ✓     | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 26 (814.0 – 849.0 MHz)   | ✓                                 | ✓     | ✓     | ✓        | ✓  |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 30 (2305.0 – 2315.0 MHz) |                                   |       | ✓     | ✓        |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 66 (1710.0 – 1780.0 MHz) | ✓                                 | ✓     | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | LTE TDD                 | Band 38 (2570.0 – 2620.0 MHz) |                                   |       | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 41 (2496.0 – 2690.0 MHz) |                                   |       | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           |                         | Band 48 (3550.0 – 3700.0MHz)  |                                   |       | ✓     | ✓        | ✓  | ✓                      |             |             |              |              |              |              |
| UL carrier aggregation LTE (Intra-band)                                                                                                                                                                                                   |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| <table><tr><td>Supported combinations</td></tr><tr><td>FDD Band 5B</td></tr><tr><td>FDD Band 7C</td></tr><tr><td>FDD Band 66B</td></tr><tr><td>FDD Band 66C</td></tr><tr><td>TDD Band 38C</td></tr><tr><td>TDD Band 41C</td></tr></table> |                         |                               |                                   |       |       |          |    | Supported combinations | FDD Band 5B | FDD Band 7C | FDD Band 66B | FDD Band 66C | TDD Band 38C | TDD Band 41C |
| Supported combinations                                                                                                                                                                                                                    |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| FDD Band 5B                                                                                                                                                                                                                               |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| FDD Band 7C                                                                                                                                                                                                                               |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| FDD Band 66B                                                                                                                                                                                                                              |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| FDD Band 66C                                                                                                                                                                                                                              |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| TDD Band 38C                                                                                                                                                                                                                              |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| TDD Band 41C                                                                                                                                                                                                                              |                         |                               |                                   |       |       |          |    |                        |             |             |              |              |              |              |
| Antenna Information                                                                                                                                                                                                                       | Transmitter             |                               | Ant 5                             |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | Manufacturer            |                               | Hong Bo                           |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | Antenna type            |                               | PIFA Antenna                      |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | Part number             |                               | 6036B0317401<br>(00-3302701450)   |       |       |          |    |                        |             |             |              |              |              |              |
|                                                                                                                                                                                                                                           | Antenna peak gain (dBi) |                               | -1.10                             |       |       |          |    |                        |             |             |              |              |              |              |

## 6. Remarks and comments

1. The tested configurations were selected based on the worst-case spurious emissions per frequency band from modular type approval report (FCC ID: ZMOL860GL16)
2. The smallest bandwidth and 1 RB offset 0 were selected to guarantee the worst case in terms of power density
3. The DUT has two Form-Factors: Notebook and Tablet mode. The WWAN module and antennas remain the same. RSE Tests were performed only on Notebook DUT form Factor.

## 7. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

| RAT      | Band     | FCC part                  | RSS part               | Verdict |
|----------|----------|---------------------------|------------------------|---------|
| WCDMA    | WCDMA II | 24.238, 2.1053            | 133-ch 6.5.1           | P       |
|          | WCDMA IV | 27.53 (h), 2.1053         | 139-ch.6.5             | P       |
|          | WCDMA V  | 22.917(a), 2.1053         | 132-ch.5.5             | P       |
| LTE      | LTE 2    | 24.238(a), 2.1053         | 133-ch 6.5.1           | P       |
|          | LTE 4    | 27.53 (h), 2.1053         | 139-ch.6.5             | P       |
|          | LTE 5    | 22.917(a), 2.1053         | 132-ch.5.5             | P       |
|          | LTE 7    | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | P       |
|          | LTE12    | 27.53 (g), 2.1053         | 130-ch.4.7             | P       |
|          | LTE 13   | 27.53 (c)(f), 2.1053      | 130-ch.4.7             | P       |
|          | LTE14    | 90.543(e)(f), 2.1053      | 140-ch.4.4             | P       |
|          | LTE17    | 27.53 (g), 2.1053         | 130-ch.4.7             | P       |
|          | LTE 25   | 24.238(a), 2.1053         | 133-ch 6.5.1           | P       |
|          | LTE 26   | 90.691, 22.917(a), 2.1053 | 132-ch.5.5             | P       |
|          | LTE 30   | 27.53 (a)(4), 2.1053      | 195- ch.5.6.2          | P       |
|          | LTE 38   | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | NM      |
|          | LTE 41   | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | P       |
|          | LTE 48   | 96.41(e), 2.1053          | 192-ch.8.7, 197-ch.5.7 | P       |
|          | LTE 66   | 27.53(h), 2.1053          | 139-ch.6.5             | P       |
| LTE ULCA | 5B_CA    | 22.917(a), 2.1053         | 132-ch.5.5             | P       |
|          | 7C_CA    | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | P       |
|          | 66B_CA   | 27.53(h), 2.1053          | 139-ch.6.5             | P       |
|          | 38C_CA   | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | NM      |
|          | 41C_CA   | 27.53 (m)(4), 2.1053      | 199-ch.4.5             | P       |

P: Pass

F: Fail

NM: Not Measured

NA: Not Applicable

## 8. Document Revision History

| Revision # | Modified by | Revision Details                                                 |
|------------|-------------|------------------------------------------------------------------|
| Rev. 00    | N.Bui       | First Issue                                                      |
| Rev. 01    | K.RIDA      | LTE ULCA 7C Band added                                           |
| Rev. 02    | K.RIDA      | Add Item 3 in section 6<br>Add ERP / EIRP results in section B.2 |
| Rev.03     | K.RIDA      | Update the used antenna name of LTE B48 in section B.2           |

# Annex A. Test & System Description

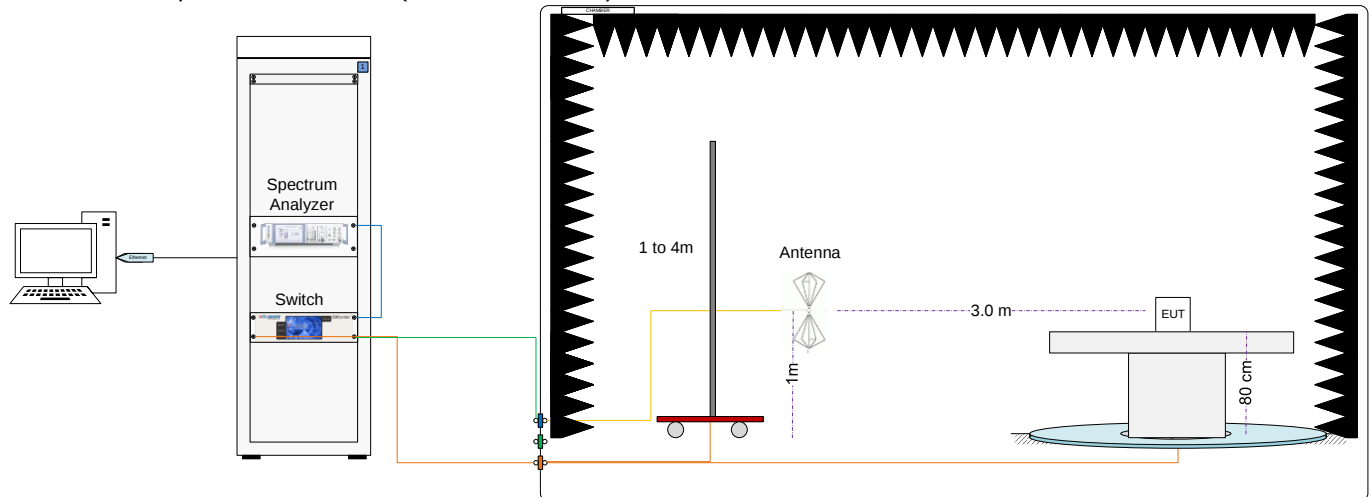
## A.1 Measurement System

Measurements were performed using the following setups.

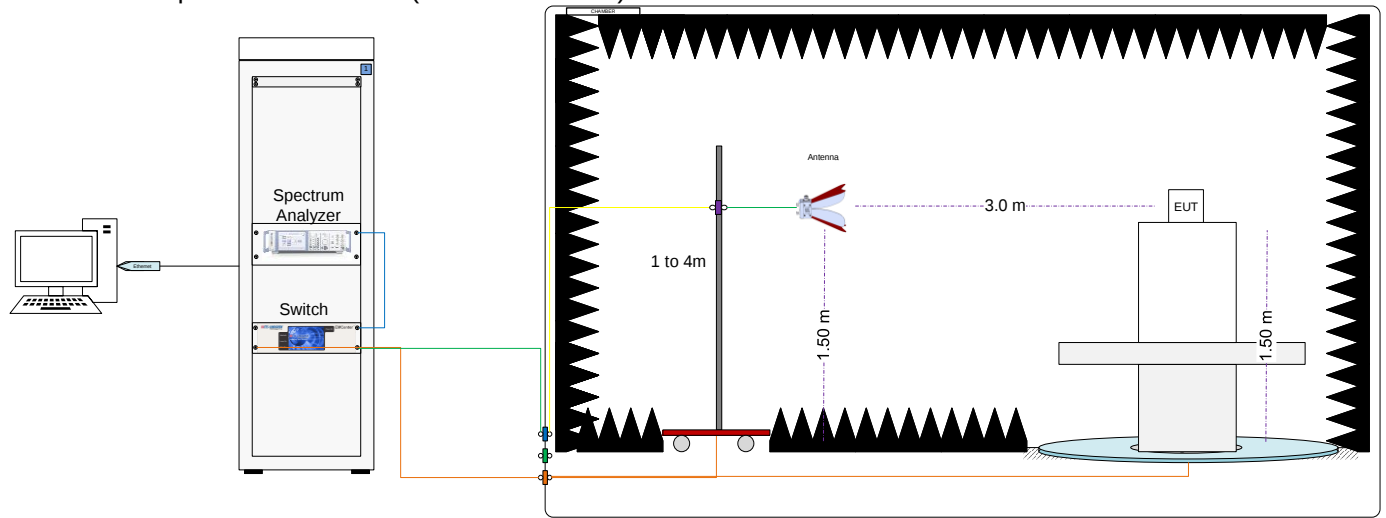
For WCDMA, LTE and ULCA-LTE (Intra-band) a communication tester was used to establish a communication link with the EUT, and the communication tester parameters were set to get the maximum output power from the EUT.

### Radiated test setup

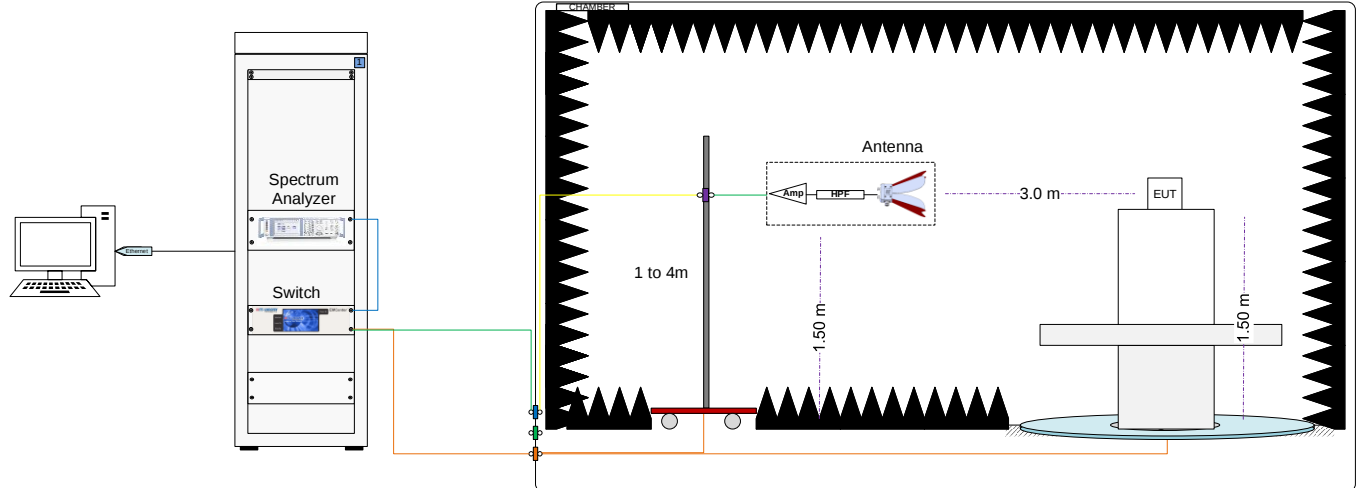
#### Radiated Setup 30 MHz - 1 GHz (Transmitter tests)



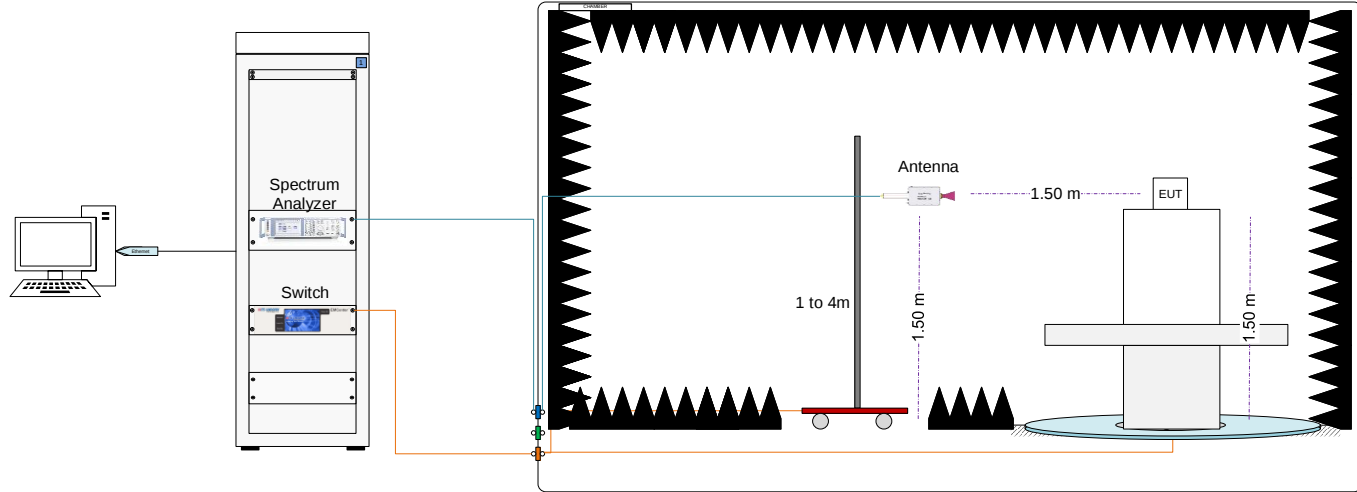
#### Radiated Setup 1 GHz – 6.4 GHz (Transmitter tests)



## Radiated Setup 6.4 GHz – 18 GHz (Transmitter tests)



## Radiated Setup 18 GHz – 40 GHz (Transmitter tests)

Sample Calculation

The spurious received power  $P$  at the spectrum Analyzer is converted to EIRP the equivalent isotropically radiated power, in dBm using the transducer factor  $F$  corresponding to the Rx path Loss:

$$F \text{ (dB)} = \text{Free Space Attenuation (dB)} + \text{Cable losses (dB)} - \text{Amplifiers Gain (dB)} - \text{Rx Antenna Gain (dBi)}$$

$$\text{EIRP (dBm)} = P(\text{dBm}) + F \text{ (dB)}$$

## A.2 Test Equipment List

### A.2.1 Radiated Setup

| ID#      | Device                                    | Type/Model                     | Serial #               | Manufacturer    | Cal. Date  | Cal. Due Date |
|----------|-------------------------------------------|--------------------------------|------------------------|-----------------|------------|---------------|
| 006-000  | Anechoic chamber                          | FACT 3                         | 5720                   | ETS Lindgren    | 2022-01-21 | 2024-01-21    |
| 006-001  | Turntable                                 | -                              | -                      | ETS Lindgren    | N/A        | N/A           |
| 006-002  | Switch & Positioning                      | EMC center                     | 00159757               | ETS Lindgren    | N/A        | N/A           |
| 006-003  | Multi axis Positioning                    | 2116CR-5905                    | 00153265               | ETS Lindgren    | N/A        | N/A           |
| 006-008  | Measurement Software v11.30.00            | EMC32                          | 100623                 | Rohde & Schwarz | N/A        | N/A           |
| 006-011  | Boresight antenna mast                    | BAM4.0-P                       | P/278/2890.01          | Maturo          | N/A        | N/A           |
| 147-000  | Spectrum analyzer                         | FSW43                          | 101847                 | Rohde & Schwarz | 2020-11-02 | 2022-11-02    |
| 006-023  | Conical log spiral antenna                | 3102                           | 00154400               | ETS Lindgren    | NA         | NA            |
| 006-019  | Biconical antenna 30 MHz – 1 GHz          | UBAA9115 + BBVU9135 + DGA9552N | 0286 + CH 9044         | Schwarzbeck     | 2022-02-01 | 2024-02-01    |
| 006-020  | Double Ridged Horn Antenna 1 GHz – 18 GHz | 3117                           | 00157734               | ETS Lindgren    | 2021-08-05 | 2023-08-05    |
| 056-000  | Double Ridged Horn Antenna + HPF6.4+PA    | 3117                           | 00157736               | ETS Lindgren    | 2022-04-25 | 2024-04-25    |
| 007-008  | Double Horn Ridged antenna + Amplifier    | 3116C-PA                       | 00169308bis + 00196308 | ETS-Lindgren    | 2021-08-05 | 2023-08-05    |
| 006-059  | RF Cable 7.0m                             | R286304174                     | 20.46.369              | Radiall         | 2022-03-04 | 2022-09-04    |
| 006-051  | RF Cable 1.0m                             | CBL-1.5M-SMSM+                 | 202879                 | Mini-Circuits   | 2022-02-02 | 2022-08-02    |
| 006-030  | RF Cable 1.2m                             | UFA147A-0-0480-200200          | MFR 64639223720-003    | Micro-coax      | 2022-02-02 | 2022-08-02    |
| 006-034  | RF Cable 1.0m                             | UFA147A                        | -                      | Utilflex        | 2022-02-02 | 2022-08-02    |
| 006-036* | RF Cable 1.0m                             | UFB311A-0-0590-50U50U          | MFR 64639 223230-001   | Micro-coax      | 2022-02-02 | 2022-05-09    |
| 026-018  | RF Cable 1.2m                             | 0500990991200 KE               | 18.23.179              | Radiall         | 2022-05-09 | 2022-11-09    |
| 006-038* | RF Cable 7.0m                             | R286304009                     | -                      | Radiall         | 2022-02-02 | 2022-05-16    |
| 006-039  | RF Cable 2.5m                             | 0500990992500 KE               | 19.23.395              | Radiall         | 2022-02-02 | 2022-08-02    |
| 295-000  | Communication tester                      | CMW500                         | 147712                 | Rohde & Schwarz | N/A        | N/A           |
| 365-000  | Temperature & Humidity logger             | RA12E-TH1-RAS                  | 00-80-A3-E1-6E-55      | Avtech          | 2021-03-08 | 2023-03-08    |

N/A: Not Applicable

\* items not used during out of calibration period

| ID#      | Device                                   | Type/Model      | Serial #                  | Manufacturer    | Cal. Date  | Cal. Due Date |
|----------|------------------------------------------|-----------------|---------------------------|-----------------|------------|---------------|
| 007-000  | Anechoic chamber                         | RFD-FA-100      | 5996                      | ETS Lindgren    | 2021-09-14 | 2023-09-14    |
| 007-002  | Turntable                                | -               | -                         | ETS Lindgren    | N/A        | N/A           |
| 007-003  | Antenna Tower                            | 2171B-3.0M      | 00150123                  | ETS Lindgren    | N/A        | N/A           |
| 007-006  | Switch & Positioner                      | EMCenter        | 00151232                  | ETS Lindgren    | N/A        | N/A           |
| 007-005  | Measurement SW,<br>V11.20.00             | EMC32           | 100401                    | Rohde & Schwarz | N/A        | N/A           |
| 127-000  | Spectrum Analyzer                        | FSV40           | 101358                    | Rohde & Schwarz | 2021-01-15 | 2023-01-15    |
| 007-030  | Horn Antenna 1-18GHz                     | 3115            | 9911-5967                 | Emco            | N/A        | N/A           |
| 007-007  | Double Ridge Horn<br>Antenna 1- 18GHz    | 3117            | 00152266                  | ETS Lindgren    | 2022-03-29 | 2024-03-29    |
| 056-000* | Double Ridged Horn<br>Antenna 1 – 18 GHz | 3117            | 00157736                  | ETS Lindgren    | 2022-04-25 | 2024-04-25    |
| 007-008  | Double Horn Ridged<br>antenna +Amplifier | 3116C-PA        | 00169308bis +<br>00196308 | ETS-Lindgren    | 2021-08-05 | 2023-08-05    |
| 007-022  | RF Cable 1-18 GHz,<br>1.5m               | 0501050991200GX | 19.23.493                 | Radiall         | 2022-02-03 | 2022-08-03    |
| 007-020  | RF Cable 1-18 GHz,<br>1.2 m              | 2301761761200PJ | 12.22.1104                | Radiall         | 2022-02-03 | 2022-08-03    |
| 007-011  | RF Cable 1-18 GHz –<br>6.5m              | 140-8500-11-51  | 001                       | Spectrum        | 2022-02-03 | 2022-08-03    |
| 007-015  | RF Cable 1GHz-18<br>GHz 1.5m             | -               | -                         | Spirent         | 2022-02-03 | 2022-08-03    |
| 007-014  | RF Cable 18-40 GHz<br>6m                 | R286304009      | 1747364                   | Radiall         | 2022-02-03 | 2022-08-03    |
| 007-023  | RF Cable 1m DC-<br>40GHz                 | PE360-100CM     | -                         | Pasternack      | 2022-02-03 | 2022-08-03    |
| 007-018  | RF Cable 1-9.5GHz<br>1.2m                | 0500990991200KE | -                         | Radiall         | 2022-02-03 | 2022-08-03    |
| 295-000  | Communication tester                     | CMW500          | 147712                    | Rohde & Schwarz | N/A        | N/A           |
| 325-000  | Temp & Humidity<br>Logger                | RA12E-TH1-RAS   | RA12-B9B7C6               | Avtech          | 2022-01-17 | 2024-01-17    |

### A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of  $k = 2$  to indicate a 95% level of confidence:

| Measurement type               | Uncertainty | Unit |
|--------------------------------|-------------|------|
| Tx Radiated test < 1GHz        | $\pm 6.24$  | dB   |
| Tx Radiated test 1GHz - 40 GHz | $\pm 6.04$  | dB   |

# Annex B. Test Results

The herein test results were performed by:

|                       |                   |
|-----------------------|-------------------|
| Test case measurement | Test Personnel    |
| Tx spurious emissions | R.Simonini, N.Bui |

## B.1 Radiated spurious emission

### B.1.1 Standard references

| Band                        | FCC part                                          | RSS Part        | FCC Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | IC Limit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------|---------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WCDMA II<br>LTE 2<br>LTE 25 | 24.238,<br>2.1053                                 | 133-ch<br>6.5.1 | The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1 MHz is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| WCDMA IV<br>LTE 4<br>LTE 66 | 27.53 (h),<br>2.1053                              | 139-<br>ch.6.5  | The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| WCDMA V<br>LTE 5<br>LTE 26  | 22.917,<br>2.1053<br>90.691,<br>22.917,<br>2.1053 | 132-<br>ch.5.5  | The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| LTE 12<br>LTE 13<br>LTE 17  | 27.53<br>(g)(f),<br>2.1053                        | 130-<br>ch.4.7  | The power of any emission outside a licensee's frequency block shall be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The power of any emission outside a licensee's frequency block shall be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.<br><br>In addition, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:<br><br>a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:<br>(i) $76 + 10 \log_{10} p$ (watts), dB, for base and fixed equipment, and<br>(ii) $65 + 10 \log_{10} p$ (watts), dB, for mobile and portable equipment.<br><br>b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed -70 dBW/MHz for wideband signal and -80 dBW for discrete emission with bandwidth less than 700 Hz.                                                                                                                                                                                                                                                                 |
| LTE 14                      | 90.543(c)                                         | 140-ch.4.4      | (e) For operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:<br>(1) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations.<br>(2) On all frequencies between 769-775 MHz and 799-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.<br>(3) On any frequency between 775-788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log(P)$ dB.<br>(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment. | The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:<br><br>For any frequency between 769-775 MHz and 799-806 MHz:<br><ul style="list-style-type: none"> <li><math>76 + 10 \log(p)</math>, dB in a 6.25 kHz band for fixed and base station equipment</li> <li><math>65 + 10 \log(p)</math>, dB in a 6.25 kHz band for mobile and portable/hand-held equipment</li> </ul> For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: $43 + 10 \log(p)$ , dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.<br><br>In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed -70 dBW/MHz for wideband emissions, and -80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth. |

|                           |                      |              | (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
|---------------------------|----------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|-------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------|------------------|
| LTE 30                    | 27.53 (a)(4), 2.1053 | 195 ch.5.6.2 | By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;<br>(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;<br>(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.                                  | <table><tr><th>Frequency (MHz)</th><th>Attenuation (dB)</th></tr><tr><td>&lt;2200</td><td>43 + 10 log10(p)</td></tr><tr><td>2200 - 2288</td><td>70 + 10 log10(p)</td></tr><tr><td>2288 - 2292</td><td>67 + 10 log10(p)</td></tr><tr><td>2292 - 2296</td><td>61 + 10 log10(p)</td></tr><tr><td>2296 - 2300</td><td>55 + 10 log10(p)</td></tr><tr><td>2300 - 2305</td><td>43 + 10 log10(p)</td></tr><tr><td>2305 - 2320</td><td>43 + 10 log10(p)</td></tr><tr><td>2320 - 2324</td><td>55 + 10 log10(p)</td></tr><tr><td>2324 - 2328</td><td>61 + 10 log10(p)</td></tr><tr><td>2328 - 2337</td><td>67 + 10 log10(p)</td></tr><tr><td>2337 - 2341</td><td>61 + 10 log10(p)</td></tr><tr><td>2341 - 2345</td><td>55 + 10 log10(p)</td></tr><tr><td>2345 - 2360</td><td>43 + 10 log10(p)</td></tr><tr><td>2360 - 2365</td><td>43 + 10 log10(p)</td></tr><tr><td>2365 - 2395</td><td>70 + 10 log10(p)</td></tr><tr><td>&gt;2395</td><td>43 + 10 log10(p)</td></tr></table> | Frequency (MHz) | Attenuation (dB) | <2200 | 43 + 10 log10(p) | 2200 - 2288 | 70 + 10 log10(p) | 2288 - 2292 | 67 + 10 log10(p) | 2292 - 2296 | 61 + 10 log10(p) | 2296 - 2300 | 55 + 10 log10(p) | 2300 - 2305 | 43 + 10 log10(p) | 2305 - 2320 | 43 + 10 log10(p) | 2320 - 2324 | 55 + 10 log10(p) | 2324 - 2328 | 61 + 10 log10(p) | 2328 - 2337 | 67 + 10 log10(p) | 2337 - 2341 | 61 + 10 log10(p) | 2341 - 2345 | 55 + 10 log10(p) | 2345 - 2360 | 43 + 10 log10(p) | 2360 - 2365 | 43 + 10 log10(p) | 2365 - 2395 | 70 + 10 log10(p) | >2395 | 43 + 10 log10(p) |
| Frequency (MHz)           | Attenuation (dB)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| <2200                     | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2200 - 2288               | 70 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2288 - 2292               | 67 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2292 - 2296               | 61 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2296 - 2300               | 55 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2300 - 2305               | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2305 - 2320               | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2320 - 2324               | 55 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2324 - 2328               | 61 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2328 - 2337               | 67 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2337 - 2341               | 61 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2341 - 2345               | 55 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2345 - 2360               | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2360 - 2365               | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| 2365 - 2395               | 70 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| >2395                     | 43 + 10 log10(p)     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| LTE 7<br>LTE 38<br>LTE 41 | 27.53 (m), 2.1053    | 199- ch.4.5  | For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.                                                                                                                                                                                                                                                                                                                                                                                                                    | for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:<br><br>(i) 40 + 10 log10 p from the channel edges to 5 MHz away<br>(ii) 43 + 10 log10 p between 5 MHz and X MHz from the channel edges, and<br>(iii) 55 + 10 log10 p at X MHz and beyond from the channel edges<br>In addition, the attenuation shall not be less than 43 + 10 log10 p on all frequencies between 2490.5 MHz and 2496 MHz, and 55 + 10 log10 p at or below 2490.5 MHz.                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                  |       |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |             |                  |       |                  |
| LTE 48                    | 96.41(e)             |              | (ii) Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by a CBSD to End User Devices, the conducted power of any End User Device emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B megahertz (where B is the bandwidth in megahertz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B megahertz below the lower CBSD-assigned channel edge. At all frequencies greater than B megahertz above the upper CBSD assigned channel edge and less than B megahertz below the lower CBSD-assigned channel edge, the conducted power of any End User Device emission shall not exceed -25 dBm/MHz. Notwithstanding the emission limits in this paragraph, the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.<br>(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 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |
|----------------------------------|-------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------|--|--|--|-----|-----|-----|----|----------------------------------|----------------|-------------|-------------|-------------|----------|----------------|-------------|-------------|-------------|
| LTE48                            |                                                                   | 192-ch.8.7  | -                                                                                                                                                                                                 | <p>Subscriber equipment shall have the TRP (per cell) or conducted power (per single antenna connector), where applicable, of unwanted emission outside the frequency block group not exceeding the following, where B is the frequency block group in MHz as shown in table 5.</p> <table border="1"> <tr> <th rowspan="2">Frequency block group (B)</th><th colspan="4">Offset frequency from the edge of the frequency block group (MHz)</th></tr> <tr> <th>0-1</th><th>1-5</th><th>5-B</th><th>&gt;B</th></tr> <tr> <td>10 MHz, 20MHz, 30 MHz and 40 MHz</td><td>-13dBm/1% of B</td><td>-10 dBm/MHz</td><td>-13 dBm/MHz</td><td>-25 dBm/MHz</td></tr> <tr> <td>&gt; 40 MHz</td><td>-24 dBm/30 kHz</td><td>-10 dBm/MHz</td><td>-13 dBm/MHz</td><td>-25 dBm/MHz</td></tr> </table> <p>Notwithstanding the above limits in 8.7.2 and 8.7.3, the TRP (per cell) or conducted power (per single antenna connector), where applicable, for the unwanted emissions shall not exceed: for subscriber equipment: -30 dBm/MHz in the frequency range greater than (B+5) MHz from the edge of the frequency band, where B is the frequency block group in MHz</p> | Frequency block group (B) | Offset frequency from the edge of the frequency block group (MHz) |  |  |  | 0-1 | 1-5 | 5-B | >B | 10 MHz, 20MHz, 30 MHz and 40 MHz | -13dBm/1% of B | -10 dBm/MHz | -13 dBm/MHz | -25 dBm/MHz | > 40 MHz | -24 dBm/30 kHz | -10 dBm/MHz | -13 dBm/MHz | -25 dBm/MHz |
| Frequency block group (B)        | Offset frequency from the edge of the frequency block group (MHz) |             |                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |
|                                  | 0-1                                                               | 1-5         | 5-B                                                                                                                                                                                               | >B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |
| 10 MHz, 20MHz, 30 MHz and 40 MHz | -13dBm/1% of B                                                    | -10 dBm/MHz | -13 dBm/MHz                                                                                                                                                                                       | -25 dBm/MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |
| > 40 MHz                         | -24 dBm/30 kHz                                                    | -10 dBm/MHz | -13 dBm/MHz                                                                                                                                                                                       | -25 dBm/MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |
| LTE 48                           |                                                                   | 197-ch.5.7  | -                                                                                                                                                                                                 | <p>The unwanted emissions shall be measured at the frequencies of the highest and lowest channel of all bandwidths and types of modulation that the equipment can operate with a resolution bandwidth of 1 MHz or less, but at least 1% of the occupied bandwidth of the transmitter, provided that the measured power is integrated over a 1 MHz bandwidth.</p> <p>The power of any emissions outside the frequency band 3650-3700 MHz shall be attenuated below the channel transmitter power P (dBW) by <math>43 + 10 \log(p)</math>, where p is measured in watts</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                           |                                                                   |  |  |  |     |     |     |    |                                  |                |             |             |             |          |                |             |             |             |

## B.1.2 Test procedure

The setup described in Test & System Description section was used to measure the radiated spurious emissions. Depending on the frequency range and bands being tested, different antennas and filters were used. The final measurement is done by varying the antenna height from 1 to 4 meters, the EUT azimuth over 360° and for both Vertical and Horizontal polarizations.

### B.1.3 Test Results

#### B.1.3.1 WCDMA

##### WCDMA 2

| 30 MHz to 26.5 GHz - Radiated Spurious<br>WCDMA 2- QPSK - Mid channel – 1880 MHz |            |       |        |
|----------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                        | RMS (EIRP) | Limit | Margin |
| MHz                                                                              | dBm        | dBm   | dB     |
| 994.6                                                                            | -53.8      | -13.0 | 40.8   |
| 3397.5                                                                           | -37.8      | -13.0 | 24.8   |
| 6992.1                                                                           | -49.1      | -13.0 | 36.1   |
| 11318.6                                                                          | -45.2      | -13.0 | 32.2   |
| 16420.8                                                                          | -37.7      | -13.0 | 24.7   |
| 18398.6                                                                          | -57.9      | -13.0 | 44.9   |

##### WCDMA 4

| 30 MHz to 18GHz - Radiated Spurious<br>WCDMA 4- QPSK - Mid channel – 1732.5 MHz |            |       |        |
|---------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                       | RMS (EIRP) | Limit | Margin |
| MHz                                                                             | dBm        | dBm   | dB     |
| 993.5                                                                           | -54.6      | -13.0 | 41.6   |
| 3399.5                                                                          | -37.8      | -13.0 | 24.8   |
| 6993.5                                                                          | -49.1      | -13.0 | 36.1   |
| 7329.8                                                                          | -49.7      | -13.0 | 36.7   |
| 16397.9                                                                         | -38.1      | -13.0 | 25.1   |
| 17112.8                                                                         | -37.6      | -13.0 | 24.6   |

##### WCDMA 5

| 30 MHz to 18 GHz - Radiated Spurious<br>WCDMA 5- QPSK - Mid channel – 836.5 MHz |           |       |        |
|---------------------------------------------------------------------------------|-----------|-------|--------|
| Frequency                                                                       | RMS (ERP) | Limit | Margin |
| MHz                                                                             | dBm       | dBm   | dB     |
| 963.4                                                                           | -42.9     | -13.0 | 29.9   |
| 1499.1                                                                          | -54.0     | -13.0 | 41.0   |
| 1953.6                                                                          | -53.9     | -13.0 | 40.9   |
| 2950.9                                                                          | -52.7     | -13.0 | 39.7   |
| 6993.5                                                                          | -52.2     | -13.0 | 39.2   |
| 7914.3                                                                          | -51.6     | -13.0 | 38.6   |

**B.1.3.2 LTE****LTE 7**

**30MHz to 26.5GHz - Radiated Spurious  
LTE 7- QPSK – Low channel – 2510 MHz  
BW 20 MHz– RB 1**

| Frequency | RMS (EIRP) | Limit | Margin |
|-----------|------------|-------|--------|
| MHz       | dBm        | dBm   | dB     |
| 914.4     | -54.3      | -25.0 | 29.3   |
| 3395.5    | -37.6      | -25.0 | 12.7   |
| 6967.3    | -49.3      | -25.0 | 24.3   |
| 11339.5   | -44.4      | -25.0 | 19.4   |
| 16383.3   | -37.7      | -25.0 | 12.7   |
| 23148.6   | -55.7      | -25.0 | 30.7   |

**LTE 12**

**30MHz to 9.5GHz - Radiated Spurious  
LTE 12 - QPSK - Mid channel – 707.5 MHz  
BW 10 MHz– RB 1**

| Frequency | RMS (ERP) | Limit | Margin |
|-----------|-----------|-------|--------|
| MHz       | dBm       | dBm   | dB     |
| 967.2     | -42.4     | -13.0 | 29.4   |
| 1405.8    | -62.8     | -13.0 | 49.8   |
| 2109.2    | -50.8     | -13.0 | 37.8   |
| 2553.5    | -56.1     | -13.0 | 43.1   |
| 3076.8    | -54.9     | -13.0 | 41.9   |
| 6981.4    | -52.2     | -13.0 | 39.2   |

**LTE 13**

**30MHz to 9.5GHz - Radiated Spurious  
LTE 13 - QPSK - High channel – 784.5 MHz  
BW 5 MHz– RB 1**

| Frequency | RMS (ERP) | Limit | Margin |
|-----------|-----------|-------|--------|
| MHz       | dBm       | dBm   | dB     |
| 960.5     | -41.4     | -13.0 | 28.4   |
| 1564.6    | -57.0     | -40.0 | 17.0   |
| 2000.1    | -52.3     | -13.0 | 39.3   |
| 2346.9    | -49.8     | -13.0 | 36.8   |
| 3999.8    | -55.7     | -13.0 | 42.7   |
| 6963.8    | -51.9     | -13.0 | 38.9   |

**LTE 14**

**30MHz to 9.5GHz - Radiated Spurious  
LTE 14 - QPSK - Mid channel – 793 MHz  
BW 5 MHz– RB 1**

| Frequency | RMS (ERP) | Limit | Margin |
|-----------|-----------|-------|--------|
| MHz       | dBm       | dBm   | dB     |
| 946.9     | -42.2     | -13.0 | 29.2   |
| 1956.0    | -54.6     | -13.0 | 41.6   |
| 2372.4    | -50.1     | -13.0 | 37.1   |
| 2964.9    | -50.6     | -13.0 | 37.6   |
| 3969.1    | -52.4     | -13.0 | 39.4   |
| 6985.6    | -51.4     | -13.0 | 38.4   |

**LTE 25**

**30MHz to 26.5GHz - Radiated Spurious  
LTE 25 - QPSK - High channel – 1905 MHz  
BW 20 MHz– RB 1**

| Frequency | RMS (ERP) | Limit | Margin |
|-----------|-----------|-------|--------|
| MHz       | dBm       | dBm   | dB     |
| 963.1     | -55.8     | -13.0 | 42.8   |
| 3397.5    | -40.0     | -13.0 | 27.0   |
| 6976.0    | -51.5     | -13.0 | 38.5   |
| 11821.3   | -46.9     | -13.0 | 33.9   |
| 16477.2   | -40.0     | -13.0 | 27.0   |
| 18399.5   | -59.5     | -13.0 | 46.5   |

**LTE 26**

**30MHz to 9.5GHz - Radiated Spurious  
LTE 26 - QPSK - Mid channel – 831.5 MHz  
BW 15 MHz– RB 1**

| Frequency | RMS (ERP) | Limit | Margin |
|-----------|-----------|-------|--------|
| MHz       | dBm       | dBm   | dB     |
| 966.8     | -41.9     | -13.0 | 28.9   |
| 1505.6    | -55.8     | -13.0 | 42.8   |
| 2474.1    | -53.3     | -13.0 | 40.3   |
| 2749.9    | -56.6     | -13.0 | 43.6   |
| 2999.7    | -45.2     | -13.0 | 32.2   |
| 6980.5    | -51.6     | -13.0 | 38.6   |

**LTE 30**

**30MHz to 26.5GHz - Radiated Spurious  
LTE 30 - QPSK - Mid channel – 2310 MHz  
BW 10 MHz– RB 1**

| Frequency | RMS (EIRP) | Limit | Margin |
|-----------|------------|-------|--------|
| MHz       | dBm        | dBm   | dB     |
| 995.4     | -53.7      | -40.0 | 13.7   |
| 1504.0    | -50.4      | -40.0 | 10.4   |
| 4574.2    | -53.7      | -40.0 | 13.7   |
| 10000.4   | -48.0      | -40.0 | 8.0    |
| 15000.4   | -49.2      | -40.0 | 9.2    |
| 21197.9   | -55.8      | -40.0 | 15.8   |

**LTE 41**

**30MHz to 26.5GHz - Radiated Spurious  
LTE 41 - QPSK - Low channel – 2506 MHz  
BW 20 MHz– RB 1**

| Frequency | RMS (EIRP) | Limit | Margin |
|-----------|------------|-------|--------|
| MHz       | dBm        | dBm   | dB     |
| 994.1     | -57.5      | -25.0 | 32.5   |
| 3386.5    | -48.8      | -25.0 | 23.8   |
| 6992.0    | -50.4      | -25.0 | 25.4   |
| 11892.0   | -45.2      | -25.0 | 20.2   |
| 14726.0   | -42.2      | -25.0 | 17.2   |
| 23130.0   | -57.0      | -40.0 | 17.0   |

**LTE 48**

**30MHz to 40GHz – Tx Radiated Spurious  
LTE 48 - QPSK - High channel – 3690 MHz  
BW 20 MHz– RB 1**

| Frequency | RMS (EIRP) | Limit | Margin |
|-----------|------------|-------|--------|
| MHz       | dBm        | dBm   | dB     |
| 969.5     | -57.7      | -40.0 | 17.7   |
| 3527.0    | -49.2      | -40.0 | 9.2    |
| 3834.5    | -48.8      | -40.0 | 8.8    |
| 10000.5   | -48.4      | -40.0 | 8.4    |
| 12500.0   | -53.0      | -40.0 | 13.0   |
| 15000.5   | -50.0      | -40.0 | 10.1   |
| 34539.0   | -54.4      | -40.0 | 14.4   |

**LTE 66**

**30MHz to 18GHz – Tx Radiated Spurious  
LTE 66 - QPSK - High channel – 1770 MHz  
BW 20 MHz– RB 1**

| Frequency | RMS (EIRP) | Limit | Margin |
|-----------|------------|-------|--------|
| MHz       | dBm        | dBm   | dB     |
| 945.8     | -53.8      | -13.0 | 40.8   |
| 3398.0    | -37.7      | -13.0 | 24.7   |
| 5282.9    | -51.2      | -13.0 | 38.2   |
| 6997.0    | -49.0      | -13.0 | 36.0   |
| 9940.8    | -47.2      | -13.0 | 34.2   |
| 17096.7   | -37.7      | -13.0 | 24.7   |

**B.1.3.3 UL carrier aggregation LTE (Intra-band)****LTE ULCA 5B**

| <b>30MHz to 9.5GHz – Tx Radiated Spurious</b><br><b>LTE 5 - QPSK - Mid channel – 831.6 MHz / 841.5 MHz</b><br><b>BW 10MHz / 10MHz</b> |            |       |        |
|---------------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                                                                             | RMS (EIRP) | Limit | Margin |
| MHz                                                                                                                                   | dBm        | dBm   | dB     |
| 998.9                                                                                                                                 | -40.2      | -13.0 | 27.2   |
| 1488.9                                                                                                                                | -51.9      | -13.0 | 38.9   |
| 1956.9                                                                                                                                | -52.8      | -13.0 | 39.8   |
| 2949.5                                                                                                                                | -51.2      | -13.0 | 38.2   |
| 6156.4                                                                                                                                | -51.8      | -13.0 | 38.8   |
| 7636.0                                                                                                                                | -49.8      | -13.0 | 36.8   |

**LTE ULCA 66B**

| <b>30MHz to 18GHz – Tx Radiated Spurious</b><br><b>LTE 66 - QPSK - Mid channel – 1752.6 MHz / 1761.9 MHz</b><br><b>BW 15MHz / 5MHz</b> |            |       |        |
|----------------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                                                                              | RMS (EIRP) | Limit | Margin |
| MHz                                                                                                                                    | dBm        | dBm   | dB     |
| 959.5                                                                                                                                  | -54.2      | -13.0 | 41.2   |
| 3394.5                                                                                                                                 | -37.8      | -13.0 | 24.8   |
| 5237.7                                                                                                                                 | -51.0      | -13.0 | 38.0   |
| 6991.6                                                                                                                                 | -49.4      | -13.0 | 36.4   |
| 7355.6                                                                                                                                 | -49.4      | -13.0 | 36.4   |
| 16391.6                                                                                                                                | -37.9      | -13.0 | 24.9   |

**LTE ULCA 7C**

| <b>30MHz to 26.5GHz – Tx Radiated Spurious</b><br><b>LTE 7 - QPSK - High channel – 2540.2 MHz / 2560 MHz</b><br><b>BW 20MHz / 20MHz</b> |            |       |        |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                                                                               | RMS (EIRP) | Limit | Margin |
| MHz                                                                                                                                     | dBm        | dBm   | dB     |
| 875.0                                                                                                                                   | -52.2      | -25.0 | 27.2   |
| 3375.0                                                                                                                                  | -37.5      | -25.0 | 12.5   |
| 6961.4                                                                                                                                  | -49.4      | -25.0 | 24.4   |
| 11292.8                                                                                                                                 | -45.3      | -25.0 | 20.3   |
| 16395.9                                                                                                                                 | -37.0      | -25.0 | 12.0   |
| 24204.1                                                                                                                                 | -55.3      | -25.0 | 30.3   |

**LTE\_ULCA\_41C**

| <b>30MHz to 26.5GHz – Tx Radiated Spurious<br/>LTE 41 - QPSK - Low channel – 2506.0 MHz / 2525.8 MHz<br/>BW 20MHz / 20MHz</b> |            |       |        |
|-------------------------------------------------------------------------------------------------------------------------------|------------|-------|--------|
| Frequency                                                                                                                     | RMS (EIRP) | Limit | Margin |
| MHz                                                                                                                           | dBm        | dBm   | dB     |
| 977.6                                                                                                                         | -57.5      | -25.0 | 32.5   |
| 1492.5                                                                                                                        | -50.7      | -25.0 | 25.7   |
| 3394.5                                                                                                                        | -49.2      | -25.0 | 24.2   |
| 6993.5                                                                                                                        | -50.5      | -25.0 | 25.5   |
| 16846.0                                                                                                                       | -38.4      | -25.0 | 13.4   |
| 24201.5                                                                                                                       | -56.6      | -25.0 | 31.6   |

## B.1 Declared ERP / EIRP

|       | Band     | Form-Factor | WWAN Antenna | Tx Antenna | Conducted Power (dBm) | Antenna Gain (dBi) | ERP / EIRP (dBm) | ERP / EIRP (W) |
|-------|----------|-------------|--------------|------------|-----------------------|--------------------|------------------|----------------|
| WCDMA | WCDMA II | Notebook    | Hong Bo      | Ant 5      | 20.5                  | -2.02              | 18.48            | 0.07           |
|       | WCDMA IV | Tablet      | Hong Bo      | Ant 5      | 16.5                  | -1.06              | 15.44            | 0.03           |
|       | WCDMA V* | Notebook    | Hong Bo      | Ant 5      | 25                    | -3.38              | 19.47            | 0.09           |
| LTE   | LTE 2    | Notebook    | Hong Bo      | Ant 5      | 21                    | -2.02              | 18.98            | 0.08           |
|       | LTE 4    | Notebook    | Hong Bo      | Ant 5      | 21.5                  | -2.25              | 19.25            | 0.08           |
|       | LTE 5*   | Notebook    | Hong Bo      | Ant 5      | 24.5                  | -3.38              | 18.97            | 0.08           |
|       | LTE 7    | Notebook    | Hong Bo      | Ant 5      | 21                    | -1.58              | 19.42            | 0.09           |
|       | LTE12*   | Notebook    | Hong Bo      | Ant 5      | 25                    | -4.04              | 18.81            | 0.08           |
|       | LTE 13*  | Notebook    | Hong Bo      | Ant 5      | 25                    | -3.73              | 19.12            | 0.08           |
|       | LTE14*   | Notebook    | Hong Bo      | Ant 5      | 25                    | -4.71              | 18.14            | 0.07           |
|       | LTE17*   | Notebook    | Hong Bo      | Ant 5      | 25                    | -4.04              | 18.81            | 0.08           |
|       | LTE 25   | Notebook    | Hong Bo      | Ant 5      | 21                    | -2.02              | 18.98            | 0.08           |
|       | LTE 26*  | Notebook    | Hong Bo      | Ant 5      | 25                    | -3.38              | 19.47            | 0.09           |
|       | LTE 30   | Notebook    | Hong Bo      | Ant 5      | 22.5                  | -1.1               | 21.4             | 0.14           |
|       | LTE 38   | Notebook    | Hong Bo      | Ant 5      | 23.5                  | -1.83              | 21.67            | 0.15           |
|       | LTE 41   | Notebook    | Hong Bo      | Ant 5      | 21                    | -1.41              | 19.59            | 0.09           |
|       | LTE 48   | Notebook    | Hong Bo      | Ant 5      | 17                    | -3.25              | 13.75            | 0.02           |
|       | LTE 66   | Notebook    | Hong Bo      | Ant 5      | 18.5                  | -2.25              | 16.25            | 0.04           |

\* ERP values