

# TEST REPORT

of

FCC Part 2 Subpart J and Part 27 Subpart C  
IC RSS-199 Issue 3 and RSS-Gen Issue 5

FCC ID: BEJTFGMEIBBCD1  
IC Certification: 2703H-TFGMEIBBCD1

Equipment Under Test : Telematics  
Model Name : TFGMEIBBCD1  
Variant Model Name(s) : Refer to the page 3  
Applicant : FCC: LG Electronics USA  
IC: LG ELECTRONICS INC.  
Manufacturer : LG Electronics Inc.  
Date of Receipt : 2022.07.22  
Date of Test(s) : 2022.07.25 ~ 2023.03.09  
Date of Issue : 2023.03.13

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
- 3) This test report cannot be reproduced, except in full, without prior written permission of the Company.
- 4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by:



Teo Kim

Technical  
Manager:



Jinhyoung Cho

**SGS Korea Co., Ltd. Gunpo Laboratory**

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## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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Phone No. : +82 31 688 0901

Fax No. : +82 31 688 0921

### 1.2. Details of Applicant

FCC Applicant : LG Electronics USA

FCC Address : 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, United States, 07632

IC Applicant : LG ELECTRONICS INC.

IC Address : 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea (Republic of), 451-713

Contact Person : Cho, Hee-jae

Phone No. : +1 201 470 2696

### 1.3. Details of Manufacturer

Company : LG Electronics Inc.

Address : 10, Magokjungang 10-ro, Gangseo-gu, Seoul, Korea, 07796

### 1.4. Description of EUT

|                             |               |                                                                                 |
|-----------------------------|---------------|---------------------------------------------------------------------------------|
| <b>Kind of Product</b>      |               | Telematics                                                                      |
| <b>Model Name</b>           |               | TFGMEIBBCD1                                                                     |
| <b>Variant Model Name</b>   |               | TFGMEIBBCD2, TFGMEIBBCD3                                                        |
| <b>Serial Number</b>        |               | Conducted: 351015130056680<br>Radiated: 351015130065751                         |
| <b>Power Supply</b>         |               | DC 13.5 V                                                                       |
| <b>Rated Power</b>          |               | NR Band 41: 25 dBm                                                              |
| <b>Frequency Range</b>      | <b>Port 1</b> | NR Band 41(FCC): 2 496 MHz ~ 2 690 MHz<br>NR Band 41(IC): 2 500 MHz ~ 2 690 MHz |
|                             | <b>Port 2</b> | NR Band 41(FCC): 2 496 MHz ~ 2 690 MHz<br>NR Band 41(IC): 2 500 MHz ~ 2 690 MHz |
| <b>Modulation Technique</b> |               | BPSK, QPSK, 16QAM, 64QAM                                                        |
| <b>Antenna Type</b>         |               | Internal: Planar Inverted F Antenna<br>External: Metal Antenna                  |
| <b>Antenna Gain</b> ※       |               | Refer to the clause 1.14                                                        |
| <b>H/W Version</b>          |               | REV.D                                                                           |
| <b>S/W Version</b>          |               | SW168                                                                           |
| <b>FVIN</b>                 |               | N/A                                                                             |

## 1.5. Test Equipment List

| Equipment                  | Manufacturer                | Model                                | S/N                    | Cal. Date     | Cal. Interval | Cal. Due      |
|----------------------------|-----------------------------|--------------------------------------|------------------------|---------------|---------------|---------------|
| Signal Generator           | R&S                         | SMA100B                              | 106887                 | Oct. 13, 2022 | Annual        | Oct. 13, 2023 |
| Signal Generator           | R&S                         | SMBV100A                             | 255834                 | May 25, 2022  | Annual        | May 25, 2023  |
| Spectrum Analyzer          | R&S                         | FSV30                                | 103210                 | Dec. 07, 2022 | Annual        | Dec. 07, 2023 |
| Spectrum Analyzer          | R&S                         | FSV30                                | 103211                 | Dec. 09, 2022 | Annual        | Dec. 09, 2023 |
| Spectrum Analyzer          | R&S                         | FSW67                                | 103242                 | Aug. 26, 2022 | Annual        | Aug. 26, 2023 |
| Spectrum Analyzer          | Agilent                     | N9020A                               | MY53421758             | Aug. 26, 2022 | Annual        | Aug. 26, 2023 |
| Spectrum Analyzer          | Agilent                     | N9030A                               | US51350132             | Nov. 11, 2022 | Annual        | Nov. 11, 2023 |
| Communication test station | Anritsu                     | MT8000A                              | 6261949671             | Oct. 12, 2022 | Annual        | Oct. 12, 2023 |
| Communication Analyzer     | Anritsu                     | MT8821C                              | 6262192291             | Oct. 11, 2022 | Annual        | Oct. 11, 2023 |
| Power Meter                | Anritsu                     | ML2495A                              | 1223004                | Nov. 29, 2022 | Annual        | Nov. 29, 2023 |
| Power Sensor               | Anritsu                     | MA2411B                              | 1207272                | May 27, 2022  | Annual        | May 27, 2023  |
| Temperature Chamber        | ESPEC CORP.                 | SH-662                               | 93000533               | Jun. 02, 2022 | Annual        | Jun. 02, 2023 |
| Low Pass Filter            | Mini-Circuits               | NLP-1200+                            | V 8979400903-1         | May 13, 2022  | Annual        | May 13, 2023  |
| High Pass Filter           | Wainwright Instrument GmbH  | WHKX3.0/18G-6SS                      | 21                     | Jun. 09, 2022 | Annual        | Jun. 09, 2023 |
| High Pass Filter           | Wainwright Instrument GmbH  | WHNX7.5/26.5G-6SS                    | 11                     | Oct. 24, 2022 | Annual        | Oct. 24, 2023 |
| Power Splitter             | Weinschel                   | 1534                                 | 499                    | May 31, 2022  | Annual        | May 31, 2023  |
| Power Splitter             | Weinschel                   | 1534                                 | 500                    | May 31, 2022  | Annual        | May 31, 2023  |
| BRIDGE COUPLER             | MARKI MICROWAVE INC         | CBR16-0012                           | 1542                   | May 06, 2022  | Annual        | May 06, 2023  |
| Directional Coupler        | KRYTAR                      | 152613                               | 122660                 | Jul. 06, 2022 | Annual        | Jul. 06, 2023 |
| Directional Coupler        | KRYTAR                      | 152613                               | 122661                 | Mar. 02, 2023 | Annual        | Mar. 02, 2024 |
| DC Power Supply            | Agilent                     | U8002A                               | MY49030063             | Jan. 20, 2023 | Annual        | Jan. 20, 2024 |
| Preamplifier               | H.P.                        | 8447F                                | 2944A03909             | Aug. 04, 2022 | Annual        | Aug. 04, 2023 |
| Preamplifier               | R&S                         | SCU 18                               | 10117                  | Jun. 13, 2022 | Annual        | Jun. 13, 2023 |
| Preamplifier               | TESTEK                      | TK-PA1840H                           | 130016                 | Jan. 11, 2023 | Annual        | Jan. 11, 2024 |
| Test Receiver              | R&S                         | ESCI 7                               | 100911                 | Feb. 24, 2023 | Annual        | Feb. 24, 2024 |
| Loop Antenna               | Schwarzbeck Mess-Elektronik | FMZB 1519                            | 1519-039               | Aug. 23, 2021 | Biennial      | Aug. 23, 2023 |
| Bilog Antenna              | Schwarzbeck Mess-Elektronik | VULB9163                             | 01126                  | Feb. 09, 2023 | Annual        | Feb. 09, 2024 |
| Horn Antenna               | R&S                         | HF906                                | 100326                 | Feb. 28, 2023 | Annual        | Feb. 28, 2024 |
| Horn Antenna               | Schwarzbeck Mess-Elektronik | BBHA 9170                            | 9170-540               | Nov. 30, 2022 | Annual        | Nov. 30, 2023 |
| Antenna Master             | Innco systems GmbH          | MA4640-XP-ET                         | MA4640/536/383 30516/L | N.C.R.        | N/A           | N.C.R.        |
| Turn Table                 | Innco systems GmbH          | DS 1200S                             | N/A                    | N.C.R.        | N/A           | N.C.R.        |
| Controller                 | Innco systems GmbH          | CONTROLLER CO3000-4P                 | CO3000/963/383 30516/L | N.C.R.        | N/A           | N.C.R.        |
| Anechoic Chamber           | SY Corporation              | L x W x H<br>(9.6 m x 6.4 m x 6.6 m) | N/A                    | N.C.R.        | N/A           | N.C.R.        |
| Coaxial Cable              | RFONE                       | MWX221-NMSNMS (4 m)                  | J1023142               | Oct. 04, 2022 | Semi-Annual   | Apr. 04, 2023 |
| Coaxial Cable              | Qualwave Inc.               | QA500-18-NN-10 (10 m)                | 22200114               | Oct. 04, 2022 | Semi-Annual   | Apr. 04, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182287                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182288                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182291                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182284                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182292                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |
| Coaxial Cable              | RADIALL                     | TESTPRO 3                            | 182285                 | Feb. 18, 2023 | Semi-Annual   | Aug. 18, 2023 |

### Note;

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

## 1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 2 and 27<br>IC RSS-Gen Issue 5 and RSS-199 Issue 3 |                                             |                                       |                        |
|-------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------|------------------------|
| Section(s) in FCC                                                             | Section(s) in IC                            | Test Item                             | Result                 |
| §27.50(h)(2)                                                                  | RSS-199 Issue 3 4.4                         | E.I.R.P.                              | Complied <sup>1)</sup> |
| §27.53(m)(4)                                                                  | RSS-199 Issue 3 4.5                         | Radiated Spurious Emissions           | Complied <sup>1)</sup> |
| §2.1046                                                                       | RSS-Gen Issue 5 6.12                        | Conducted Output Power                | Complied <sup>2)</sup> |
| §2.1049                                                                       | RSS-Gen Issue 5 6.7                         | Occupied Bandwidth                    | Complied <sup>2)</sup> |
| -                                                                             | RSS-199 Issue 3 4.4                         | Peak-Average Ratio                    | Complied <sup>2)</sup> |
| §27.53(m)(4)                                                                  | RSS-199 Issue 3 4.5                         | Spurious Emission at Antenna Terminal | Complied <sup>2)</sup> |
| §27.53(m)(4)                                                                  | RSS-199 Issue 3 4.5                         | Band Edge and Emission Mask           | Complied <sup>2)</sup> |
| §27.54                                                                        | RSS-199 Issue 3 4.3<br>RSS-Gen Issue 5 6.11 | Frequency Stability                   | Complied <sup>2)</sup> |

### Note;

- 1) The EUT has two antennas (external, internal) and each antenna operated by one module.
- 2) The EUT uses same module with TM05FNNAGM0, so only spot check was performed for radiated spurious emissions and the rule was satisfied.

## 1.7. Sample Calculation for Offset

Where relevant, the following sample calculation is provided:

### 1.7.1. Conducted Test

Offset value (dB) = Directional Coupler (dB) + Cable loss (dB)

### 1.7.2. Radiation Test

- E.I.R.P. (dB m) = Measured level (dB<sub>M</sub>) + Antenna factor (dB/m) + Cable loss (dB) + 20 Log D - 104.8;  
where D is the measurement distance in meters.
- E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB)

## 1.8. Introduction of Test Data Reuse

This report referenced from the FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0. The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID and IC Certification.

## 1.9. Difference

| Model name  | Description                                                                                              |
|-------------|----------------------------------------------------------------------------------------------------------|
| TM05FNNAGM0 | - Reference model<br>- Single modular                                                                    |
| TFGMEIBBCD1 | - Host equipment<br>- Same to reference model except below<br>- With external case<br>- Internal antenna |

## 1.10. Spot Check Data

After confirming through preliminary radiated emissions in worst frequency that the performance of the FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0 remains representative of FCC ID: BEJTFGMEIBBCD1 and IC Certification: 2703H-TFGMEIBBCD1. The test data of FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0 being submitted for this application to cover NR features.

| Band         | Test item                   | Frequency (MHz) | Limit       | Original model                                                | Spot check model                                              | Deviation (dB) | Remark      |
|--------------|-----------------------------|-----------------|-------------|---------------------------------------------------------------|---------------------------------------------------------------|----------------|-------------|
|              |                             |                 |             | TM05FNNAGM0                                                   | TFGMEIBBCD1                                                   |                |             |
|              |                             |                 |             | FCC ID: BEJTM05FNNAGM0<br>IC Certification: 2703H-TM05FNNAGM0 | FCC ID: BEJTFGMEIBBCD1<br>IC Certification: 2703H-TFGMEIBBCD1 |                |             |
| n41_FCC SISO | Radiated Spurious Emissions | 2 511           | -25 dB m    | -53.16 dB m                                                   | -53.20 dB m                                                   | -0.04          | Noise floor |
| n41_IC SISO  | Radiated Spurious Emissions | 2 510.01        | -25 dB m    | -53.09 dB m                                                   | -53.25 dB m                                                   | -0.16          | Noise floor |
| n41_FCC MIMO | Radiated Spurious Emissions | 2 592.99        | -28.01 dB m | -53.01 dB m                                                   | -53.13 dB m                                                   | -0.12          | Noise floor |
| n41_IC MIMO  | Radiated Spurious Emissions | 2 515.02        | -28.01 dB m | -52.91 dB m                                                   | -53.13 dB m                                                   | -0.22          | Noise floor |

### Note;

Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC/IC technical limits.

### 1.11. Reference Detail

Reference applicant that contains the reused reference data in the individual test reports:

| Equipment class | Reference FCC ID and IC Certification                               | Application type | Reference test report number           | Exhibit type | Variant test report number           | Data reuse |
|-----------------|---------------------------------------------------------------------|------------------|----------------------------------------|--------------|--------------------------------------|------------|
| PCB             | FCC ID:<br>BEJTM05FNNAGM0<br>IC Certification:<br>2703H-TM05FNNAGM0 | Original grant   | F690501-RF-RTL003820-1 (LTE)           | Test report  | F690501-RF-RTL003895 (LTE)           | All        |
|                 |                                                                     |                  | F690501-RF-RTL003821-1 (NR)            |              | F690501-RF-RTL003896 (NR)            |            |
|                 |                                                                     |                  | F690501-RF-RTL003822-1 (Inter CA)      |              | F690501-RF-RTL003897 (Inter CA)      |            |
|                 |                                                                     |                  | F690501-RF-RTL003823-1 (WCDMA)         |              | F690501-RF-RTL003898 (WCDMA)         |            |
|                 |                                                                     |                  | F690501-RF-RTL003824-1 (Intra CA)      |              | F690501-RF-RTL003899 (Intra CA)      |            |
|                 |                                                                     |                  | F690501-RF-RTL003825-1 (NR n41)        |              | F690501-RF-RTL003900 (NR n41)        |            |
|                 |                                                                     |                  | F690501-RF-RTL003827-1 (FCC NR n77/78) |              | F690501-RF-RTL003902 (FCC NR n77/78) |            |
|                 |                                                                     |                  | F690501-RF-RTL003828-1 (IC NR n77/78)  |              | F690501-RF-RTL003903 (IC NR n77/78)  |            |

### 1.12. Manufacturer Declaration

The EUT supports two ports and LTE, WCDMA and 5G NR FDD bands support only port 1.  
The 5G NR TDD (n41, n77, n78) band supports both port 1 and port 2.  
The EUT has two antennas (external, internal) and each antenna operated by one module.  
The EUT's internal and external antennas do not transmit simultaneously.

Port 1 supports 5G NR TDD bands only for MIMO mode with CP-OFDM Modulation only.

### 1.13. ENDC Configuration

| NR Band | SCS (kHz) | Bandwidth (MHz)                 | Waveform           | Modulation               | ENDC LTE Band |
|---------|-----------|---------------------------------|--------------------|--------------------------|---------------|
| n41     | 30        | 20, 30, 40, 50, 60, 80, 90, 100 | DFTS OFDM, CP OFDM | BPSK, QPSK, 16QAM, 64QAM | 5             |

Note;

- Only SISO mode support ENDC Mode.

### 1.14. Worst Case Configuration and Mode

The worst-case is based on the conducted output power measurement investigation results. All testing was performed using BPSK, QPSK, 16QAM and 64QAM modulations. If both SA and NSA were supported, SA was tested as worst case and NSA was tested only radiated spurious emission for worst conducted output power combination.

On ENDC mode, only radiated spurious emission were tested as worst case for worst conducted output power combination.

However, the spurious radiated emission and spurious at antenna terminal were only performed on bandwidth and RB offset (with RB size 1) with the highest conducted power.

The peak to average ratio were tested only 64QAM modulation as worst case.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z, and the worst case data is reported.

## 1.15. Measurement Configuration

### SISO Mode

| Test Items                                                 | Band | Test Channel |     |      | Bandwidth (MHz) |    |    |    |    |    |    |    |    |    |    |     | Modulation DFTS-OFDM |      |       |       | Modulation CP-OFDM |       |       | RB # |      |      |
|------------------------------------------------------------|------|--------------|-----|------|-----------------|----|----|----|----|----|----|----|----|----|----|-----|----------------------|------|-------|-------|--------------------|-------|-------|------|------|------|
|                                                            |      | Low          | Mid | High | 5               | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 90 | 100 | BPSK                 | QPSK | 16QAM | 64QAM | QPSK               | 16QAM | 64QAM | 1    | Half | Full |
| Conducted Output Power                                     | n41  | V            | V   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                    | V    | V     | V     | V                  | V     | V     | V    | V    | V    |
| Frequency Stability                                        | n41  | -            | V   | -    |                 |    |    | V  |    | -  | -  | -  | -  | -  | -  | -   | -                    | V    | -     | -     | -                  | -     | -     | -    | -    | V    |
| Occupied Bandwidth                                         | n41  | -            | V   | -    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                    | V    | V     | -     | V                  | V     | -     | -    | -    | V    |
| Peak-to-Average Ratio                                      | n41  | V            | V   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | -                    | -    | -     | V     | -                  | -     | V     | -    | -    | V    |
| Band edge                                                  | n41  | V            | -   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                    | -    | V     | -     | V                  | V     | -     | V    | -    | V    |
| Spurious at antenna terminal & Radiated Spurious Emissions | n41  | V            | V   | V    | Worst case      |    |    |    |    |    |    |    |    |    |    |     |                      |      |       |       |                    |       |       |      |      |      |

### MIMO Mode

| Test Items                                                 | Band | Test Channel |     |      | Bandwidth (MHz) |    |    |    |    |    |    |    |    |    |    |     | Modulation CP-OFDM |       |       | RB # |      |      |
|------------------------------------------------------------|------|--------------|-----|------|-----------------|----|----|----|----|----|----|----|----|----|----|-----|--------------------|-------|-------|------|------|------|
|                                                            |      | Low          | Mid | High | 5               | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 90 | 100 | QPSK               | 16QAM | 64QAM | 1    | Half | Full |
| Conducted Output Power                                     | n41  | V            | V   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                  | V     | V     | V    | -    | V    |
| Frequency Stability                                        | n41  | -            | V   | -    |                 |    |    | V  |    | -  | -  | -  | -  | -  | -  | -   | V                  | -     | -     | -    | -    | V    |
| Occupied Bandwidth                                         | n41  | -            | V   | -    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                  | V     | -     | -    | -    | V    |
| Peak-to-Average Ratio                                      | n41  | V            | V   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | -                  | -     | V     | -    | -    | V    |
| Band edge                                                  | n41  | V            | -   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                  | V     | -     | V    | -    | V    |
| Spurious at antenna terminal & Radiated Spurious Emissions | n41  | V            | V   | V    | Worst case      |    |    |    |    |    |    |    |    |    |    |     |                    |       |       |      |      |      |

### ENDC

| Test Items                  | NR Band | Test Channel |     |      | Bandwidth (MHz) |    |    |    |    |    |    |    |    |    |    |     | Modulation DFTS-OFDM |      |       |       | Modulation CP-OFDM |       |       | RB # |      |      |
|-----------------------------|---------|--------------|-----|------|-----------------|----|----|----|----|----|----|----|----|----|----|-----|----------------------|------|-------|-------|--------------------|-------|-------|------|------|------|
|                             |         | Low          | Mid | High | 5               | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 80 | 90 | 100 | BPSK                 | QPSK | 16QAM | 64QAM | QPSK               | 16QAM | 64QAM | 1    | Half | Full |
| Conducted Output Power      | n41     | V            | V   | V    |                 |    |    | V  |    | V  | V  | V  | V  | V  | V  | V   | V                    | V    | -     | -     | -                  | -     | -     | V    | -    | -    |
| Radiated Spurious Emissions | n41     | V            | V   | V    | Worst case      |    |    |    |    |    |    |    |    |    |    |     |                      |      |       |       |                    |       |       |      |      |      |

Note;

- All measurement was performed with 1RB or FULL RB or both, we chosen RB condition for each test items as worst case.

### Radiated Emission Test

| NR Band |           | SCS (kHz) | Bandwidth (MHz) | Modulation       | Resource Block Allocation |
|---------|-----------|-----------|-----------------|------------------|---------------------------|
|         |           |           |                 |                  | RBs allocated             |
| SISO    | n41 (FCC) | 30        | 30              | DFTS OFDM - QPSK | 1                         |
|         | n41 (IC)  | 30        | 20              | DFTS OFDM - BPSK | 1                         |
| MIMO    | n41 (FCC) | 30        | 40              | CP OFDM - QPSK   | 1                         |
|         | n41 (IC)  | 30        | 30              | CP OFDM - QPSK   | 1                         |

### ENDC

| NR Band      | SCS (kHz) | Bandwidth (MHz) | Modulation       | Resource Block Allocation |
|--------------|-----------|-----------------|------------------|---------------------------|
|              |           |                 |                  | RBs allocated             |
| 5A-n41 (FCC) | 30        | 5-30            | DFTS OFDM - BPSK | 1                         |
| 5A-n41 (IC)  | 30        | 5-30            | DFTS OFDM - BPSK | 1                         |

### 1.16. Measurement Uncertainty

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

| Parameter                          | Uncertainty |         |
|------------------------------------|-------------|---------|
| RF Output Power                    | 0.32 dB     |         |
| Occupied Bandwidth                 | 3.90 kHz    |         |
| Conducted Spurious Emissions       | 0.61 dB     |         |
| Peak to Average Ratio              | 0.60 dB     |         |
| Frequency Stability                | 5.97 kHz    |         |
| Radiated Emission, 9 kHz to 30 MHz | H           | 3.40 dB |
|                                    | V           | 3.40 dB |
| Radiated Emission, below 1 GHz     | H           | 4.50 dB |
|                                    | V           | 5.10 dB |
| Radiated Emission, above 1 GHz     | H           | 3.70 dB |
|                                    | V           | 3.90 dB |

All measurement uncertainty values are shown with a coverage factor of  $k=2$  to indicate a 95 % level of confidence.

### 1.17. Test Report Revision

| Revision | Report Number        | Date of Issue | Description |
|----------|----------------------|---------------|-------------|
| 0        | F690501-RF-RTL003900 | 2023.03.13    | Initial     |

## 1.18. Antenna Information

### - Internal Antenna

| Operating Frequency (MHz) |               | Antenna Peak Gain (dB i) |        |                               |
|---------------------------|---------------|--------------------------|--------|-------------------------------|
|                           |               | Ant. Gain                |        |                               |
|                           |               | Port 1                   | Port 2 | Port 1 + port 2 <sup>1)</sup> |
| NR Band 41                | 2 496 ~ 2 690 | 2.41                     | 2.50   | 5.47                          |

### - External Antenna

| Operating Frequency (MHz) |               | Antenna Peak Gain (dB i) |        |                               |
|---------------------------|---------------|--------------------------|--------|-------------------------------|
|                           |               | Ant. Gain                |        |                               |
|                           |               | Port 1                   | Port 2 | Port 1 + port 2 <sup>1)</sup> |
| NR Band 41                | 2 496 ~ 2 690 | 0.09                     | 5.99   | 6.54                          |

### Remark;

- Port 1 means secondary cell and Port 2 means primary cell.

1) According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)d)(i),  
 Port 1 + Port 2 Antenna Gain =  $10 * \log[(10^{G_1/20} + 10^{G_2/20})^2 / N_{ANT}]$

Where,

$G_1$  = antenna gain of port 1,

$G_2$  = antenna gain of port 2,

$N_{ANT}$  = the number of antennas

## 1.19. Emission Designator and Max Power

### - Internal Antenna

| NR Band            | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|--------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>FCC<br>SISO | 20               | DFTS-OFDM  | BPSK  | 2 506.02        | 2 679.99          | 25.97                    | 2.41             | 28.38                   | 0.689                | 17M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 17M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.00                    |                  | 27.41                   | 0.551                | 17M9D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.55                    |                  | 26.96                   | 0.497                | 18M2G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.87                    |                  | 26.28                   | 0.425                | 18M3D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 30               | DFTS-OFDM  | BPSK  | 2 511           | 2 674.98          | 25.98                    |                  | 28.39                   | 0.690                | 26M8G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.99                    |                  | 28.40                   | 0.692                | 26M8G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.08                    |                  | 27.49                   | 0.561                | 26M8D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.47                    |                  | 26.88                   | 0.488                | 27M8G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.04                    |                  | 26.45                   | 0.442                | 27M8D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 40               | DFTS-OFDM  | BPSK  | 2 516.01        | 2 670             | 25.86                    |                  | 28.27                   | 0.671                | 36M0G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.93                    |                  | 28.34                   | 0.682                | 36M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.85                    |                  | 27.26                   | 0.532                | 36M1D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.46                    |                  | 26.87                   | 0.486                | 38M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.93                    |                  | 26.34                   | 0.431                | 38M1D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 50               | DFTS-OFDM  | BPSK  | 2 521.02        | 2 664.99          | 25.93                    |                  | 28.34                   | 0.682                | 45M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.92                    |                  | 28.33                   | 0.681                | 46M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.93                    |                  | 27.34                   | 0.542                | 45M8D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.42                    |                  | 26.83                   | 0.482                | 47M6G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 26.24                   | 0.421                | 47M7D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 60               | DFTS-OFDM  | BPSK  | 2 526           | 2 659.98          | 25.85                    |                  | 28.26                   | 0.670                | 58M0G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.91                    |                  | 28.32                   | 0.679                | 58M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.77                    |                  | 27.18                   | 0.522                | 58M0D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.39                    |                  | 26.80                   | 0.479                | 57M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.85                    |                  | 26.26                   | 0.423                | 57M9D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 80               | DFTS-OFDM  | BPSK  | 2 536.02        | 2 649.99          | 25.85                    |                  | 28.26                   | 0.670                | 76M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.87                    |                  | 28.28                   | 0.673                | 77M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.80                    |                  | 27.21                   | 0.526                | 76M9D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.34                    |                  | 26.75                   | 0.473                | 77M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 26.24                   | 0.421                | 77M4D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 90               | DFTS-OFDM  | BPSK  | 2 541           | 2 644.98          | 25.96                    |                  | 28.37                   | 0.687                | 86M5G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.95                    |                  | 28.36                   | 0.685                | 86M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.85                    |                  | 27.26                   | 0.532                | 86M7D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.40                    |                  | 26.81                   | 0.480                | 87M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.90                    |                  | 26.31                   | 0.428                | 87M4D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 100              | DFTS-OFDM  | BPSK  | 2 546.01        | 2 640             | 25.81                    |                  | 28.22                   | 0.664                | 96M3G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.89                    |                  | 28.30                   | 0.676                | 96M3G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.77                    |                  | 27.18                   | 0.522                | 96M1D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.25                    |                  | 26.66                   | 0.463                | 97M3G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 26.24                   | 0.421                | 97M3D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |

| NR Band           | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|-------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>IC<br>SISO | 20               | DFTS-OFDM  | BPSK  | 2 510.01        | 2 679.99          | 25.99                    | 2.41             | 28.40                   | 0.692                | 17M9G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 17M9G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.12                    |                  | 27.53                   | 0.566                | 17M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.76                    |                  | 27.17                   | 0.521                | 18M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.22                    |                  | 26.63                   | 0.460                | 18M2D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 30               | DFTS-OFDM  | BPSK  | 2 515.02        | 2 674.98          | 25.98                    |                  | 28.39                   | 0.690                | 26M8G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.97                    |                  | 28.38                   | 0.689                | 26M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.96                    |                  | 27.37                   | 0.546                | 26M8D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.44                    |                  | 26.85                   | 0.484                | 27M8G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.06                    |                  | 26.47                   | 0.444                | 27M8D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 40               | DFTS-OFDM  | BPSK  | 2 520           | 2 670             | 25.98                    |                  | 28.39                   | 0.690                | 36M0G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 36M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.20                    |                  | 27.61                   | 0.577                | 36M0D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.71                    |                  | 27.12                   | 0.515                | 38M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.10                    |                  | 26.51                   | 0.448                | 38M2D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 50               | DFTS-OFDM  | BPSK  | 2 525.01        | 2 664.99          | 25.95                    |                  | 28.36                   | 0.685                | 45M8G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 46M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.98                    |                  | 27.39                   | 0.548                | 45M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.55                    |                  | 26.96                   | 0.497                | 47M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.00                    |                  | 26.41                   | 0.438                | 47M7D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 60               | DFTS-OFDM  | BPSK  | 2 530.02        | 2 659.98          | 25.96                    |                  | 28.37                   | 0.687                | 58M0G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 58M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.01                    |                  | 27.42                   | 0.552                | 58M0D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.56                    |                  | 26.97                   | 0.498                | 58M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.94                    |                  | 26.35                   | 0.432                | 57M9D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 80               | DFTS-OFDM  | BPSK  | 2 540.01        | 2 649.99          | 25.97                    |                  | 28.38                   | 0.689                | 77M2G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 77M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.09                    |                  | 27.50                   | 0.562                | 76M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.45                    |                  | 26.86                   | 0.485                | 77M5G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.02                    |                  | 26.43                   | 0.440                | 77M4D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 90               | DFTS-OFDM  | BPSK  | 2 545.02        | 2 644.98          | 25.98                    |                  | 28.39                   | 0.690                | 86M7G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 28.39                   | 0.690                | 86M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.03                    |                  | 27.44                   | 0.555                | 86M7D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.57                    |                  | 26.98                   | 0.499                | 87M4G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.94                    |                  | 26.35                   | 0.432                | 87M4D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 100              | DFTS-OFDM  | BPSK  | 2 550           | 2 640             | 25.96                    |                  | 28.37                   | 0.687                | 96M1G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.97                    |                  | 28.38                   | 0.689                | 96M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.84                    |                  | 27.25                   | 0.531                | 96M3D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.30                    |                  | 26.71                   | 0.469                | 97M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.95                    |                  | 26.36                   | 0.433                | 97M3D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |

| NR Band            | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|--------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>FCC<br>MIMO | 20               | CP-OFDM    | QPSK  | 2 506.02        | 2 679.99          | 25.95                    | 5.47             | 31.42                   | 1.387                | 18M2G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.38                    |                  | 30.85                   | 1.216                | 18M3D7D             |
|                    | 30               |            | QPSK  | 2 511           | 2 674.98          | 25.98                    |                  | 31.45                   | 1.396                | 27M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.39                    |                  | 30.86                   | 1.219                | 27M9D7D             |
|                    | 40               |            | QPSK  | 2 516.01        | 2 670             | 25.98                    |                  | 31.45                   | 1.396                | 38M1G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.49                    |                  | 30.96                   | 1.247                | 38M0D7D             |
|                    | 50               |            | QPSK  | 2 521.02        | 2 664.99          | 25.80                    |                  | 31.27                   | 1.340                | 47M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.27                    |                  | 30.74                   | 1.186                | 47M7D7D             |
|                    | 60               |            | QPSK  | 2 526           | 2 659.98          | 25.98                    |                  | 31.45                   | 1.396                | 58M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.00                    |                  | 30.47                   | 1.114                | 58M0D7D             |
|                    | 80               |            | QPSK  | 2 536.02        | 2 649.99          | 25.95                    |                  | 31.42                   | 1.387                | 77M5G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.23                    |                  | 30.70                   | 1.175                | 77M5D7D             |
|                    | 90               |            | QPSK  | 2 541           | 2 644.98          | 25.90                    |                  | 31.37                   | 1.371                | 87M6G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.17                    |                  | 30.64                   | 1.159                | 87M4D7D             |
|                    | 100              |            | QPSK  | 2 546.01        | 2 640             | 25.95                    |                  | 31.42                   | 1.387                | 97M5G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.08                    |                  | 30.55                   | 1.135                | 97M5D7D             |

| NR Band     | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|-------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41 IC MIMO | 20               | CP-OFDM    | QPSK  | 2 510.01        | 2 679.99          | 25.96                    | 5.47             | 31.43                   | 1.390                | 18M2G7D             |
|             |                  |            | 16QAM |                 |                   | 25.44                    |                  | 30.91                   | 1.233                | 18M3D7D             |
|             | 30               |            | QPSK  | 2 515.02        | 2 674.98          | 25.99                    |                  | 31.46                   | 1.400                | 27M8G7D             |
|             |                  |            | 16QAM |                 |                   | 25.41                    |                  | 30.88                   | 1.225                | 27M9D7D             |
|             | 40               |            | QPSK  | 2 520           | 2 670             | 25.98                    |                  | 31.45                   | 1.396                | 38M2G7D             |
|             |                  |            | 16QAM |                 |                   | 25.45                    |                  | 30.92                   | 1.236                | 38M0D7D             |
|             | 50               |            | QPSK  | 2 525.01        | 2 664.99          | 25.98                    |                  | 31.45                   | 1.396                | 47M7G7D             |
|             |                  |            | 16QAM |                 |                   | 25.22                    |                  | 30.69                   | 1.172                | 47M8D7D             |
|             | 60               |            | QPSK  | 2 530.02        | 2 659.98          | 25.98                    |                  | 31.45                   | 1.396                | 58M1G7D             |
|             |                  |            | 16QAM |                 |                   | 25.14                    |                  | 30.61                   | 1.151                | 58M0D7D             |
|             | 80               |            | QPSK  | 2 540.01        | 2 649.99          | 25.94                    |                  | 31.41                   | 1.384                | 77M5G7D             |
|             |                  |            | 16QAM |                 |                   | 25.16                    |                  | 30.63                   | 1.156                | 77M5D7D             |
|             | 90               |            | QPSK  | 2 545.02        | 2 644.98          | 25.97                    |                  | 31.44                   | 1.393                | 87M6G7D             |
|             |                  |            | 16QAM |                 |                   | 25.21                    |                  | 30.68                   | 1.169                | 87M4D7D             |
|             | 100              |            | QPSK  | 2 550           | 2 640             | 25.92                    |                  | 31.39                   | 1.377                | 97M5G7D             |
|             |                  |            | 16QAM |                 |                   | 24.95                    |                  | 30.42                   | 1.102                | 97M7D7D             |

**- External Antenna**

| NR Band            | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|--------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>FCC<br>SISO | 20               | DFTS-OFDM  | BPSK  | 2 506.02        | 2 679.99          | 25.97                    | 0.09             | 26.06                   | 0.404                | 17M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 17M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.00                    |                  | 25.09                   | 0.323                | 17M9D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.55                    |                  | 24.64                   | 0.291                | 18M2G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.87                    |                  | 23.96                   | 0.249                | 18M3D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 30               | DFTS-OFDM  | BPSK  | 2 511           | 2 674.98          | 25.98                    |                  | 26.07                   | 0.405                | 26M8G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.99                    |                  | 26.08                   | 0.406                | 26M8G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.08                    |                  | 25.17                   | 0.329                | 26M8D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.47                    |                  | 24.56                   | 0.286                | 27M8G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.04                    |                  | 24.13                   | 0.259                | 27M8D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 40               | DFTS-OFDM  | BPSK  | 2 516.01        | 2 670             | 25.86                    |                  | 25.95                   | 0.394                | 36M0G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.93                    |                  | 26.02                   | 0.400                | 36M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.85                    |                  | 24.94                   | 0.312                | 36M1D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.46                    |                  | 24.55                   | 0.285                | 38M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.93                    |                  | 24.02                   | 0.252                | 38M1D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 50               | DFTS-OFDM  | BPSK  | 2 521.02        | 2 664.99          | 25.93                    |                  | 26.02                   | 0.400                | 45M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.92                    |                  | 26.01                   | 0.399                | 46M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.93                    |                  | 25.02                   | 0.318                | 45M8D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.42                    |                  | 24.51                   | 0.282                | 47M6G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 23.92                   | 0.247                | 47M7D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 60               | DFTS-OFDM  | BPSK  | 2 526           | 2 659.98          | 25.85                    |                  | 25.94                   | 0.393                | 58M0G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.91                    |                  | 26.00                   | 0.398                | 58M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.77                    |                  | 24.86                   | 0.306                | 58M0D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.39                    |                  | 24.48                   | 0.281                | 57M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.85                    |                  | 23.94                   | 0.248                | 57M9D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 80               | DFTS-OFDM  | BPSK  | 2 536.02        | 2 649.99          | 25.85                    |                  | 25.94                   | 0.393                | 76M9G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.87                    |                  | 25.96                   | 0.394                | 77M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.80                    |                  | 24.89                   | 0.308                | 76M9D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.34                    |                  | 24.43                   | 0.277                | 77M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 23.92                   | 0.247                | 77M4D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 90               | DFTS-OFDM  | BPSK  | 2 541           | 2 644.98          | 25.96                    |                  | 26.05                   | 0.403                | 86M5G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.95                    |                  | 26.04                   | 0.402                | 86M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.85                    |                  | 24.94                   | 0.312                | 86M7D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.40                    |                  | 24.49                   | 0.281                | 87M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.90                    |                  | 23.99                   | 0.251                | 87M4D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                    | 100              | DFTS-OFDM  | BPSK  | 2 546.01        | 2 640             | 25.81                    |                  | 25.90                   | 0.389                | 96M3G7D             |
|                    |                  |            | QPSK  |                 |                   | 25.89                    |                  | 25.98                   | 0.396                | 96M3G7D             |
|                    |                  |            | 16QAM |                 |                   | 24.77                    |                  | 24.86                   | 0.306                | 96M1D7D             |
|                    |                  | CP-OFDM    | QPSK  |                 |                   | 24.25                    |                  | 24.34                   | 0.272                | 97M3G7D             |
|                    |                  |            | 16QAM |                 |                   | 23.83                    |                  | 23.92                   | 0.247                | 97M3D7D             |
|                    |                  |            |       |                 |                   |                          |                  |                         |                      |                     |

| NR Band           | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|-------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>IC<br>SISO | 20               | DFTS-OFDM  | BPSK  | 2 510.01        | 2 679.99          | 25.99                    | 0.09             | 26.08                   | 0.406                | 17M9G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 17M9G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.12                    |                  | 25.21                   | 0.332                | 17M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.76                    |                  | 24.85                   | 0.305                | 18M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.22                    |                  | 24.31                   | 0.270                | 18M2D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 30               | DFTS-OFDM  | BPSK  | 2 515.02        | 2 674.98          | 25.98                    |                  | 26.07                   | 0.405                | 26M8G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.97                    |                  | 26.06                   | 0.404                | 26M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.96                    |                  | 25.05                   | 0.320                | 26M8D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.44                    |                  | 24.53                   | 0.284                | 27M8G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.06                    |                  | 24.15                   | 0.260                | 27M8D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 40               | DFTS-OFDM  | BPSK  | 2 520           | 2 670             | 25.98                    |                  | 26.07                   | 0.405                | 36M0G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 36M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.20                    |                  | 25.29                   | 0.338                | 36M0D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.71                    |                  | 24.80                   | 0.302                | 38M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.10                    |                  | 24.19                   | 0.262                | 38M2D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 50               | DFTS-OFDM  | BPSK  | 2 525.01        | 2 664.99          | 25.95                    |                  | 26.04                   | 0.402                | 45M8G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 46M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.98                    |                  | 25.07                   | 0.321                | 45M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.55                    |                  | 24.64                   | 0.291                | 47M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.00                    |                  | 24.09                   | 0.256                | 47M7D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 60               | DFTS-OFDM  | BPSK  | 2 530.02        | 2 659.98          | 25.96                    |                  | 26.05                   | 0.403                | 58M0G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 58M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.01                    |                  | 25.10                   | 0.324                | 58M0D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.56                    |                  | 24.65                   | 0.292                | 58M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.94                    |                  | 24.03                   | 0.253                | 57M9D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 80               | DFTS-OFDM  | BPSK  | 2 540.01        | 2 649.99          | 25.97                    |                  | 26.06                   | 0.404                | 77M2G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 77M0G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.09                    |                  | 25.18                   | 0.330                | 76M9D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.45                    |                  | 24.54                   | 0.284                | 77M5G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.02                    |                  | 24.11                   | 0.258                | 77M4D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 90               | DFTS-OFDM  | BPSK  | 2 545.02        | 2 644.98          | 25.98                    |                  | 26.07                   | 0.405                | 86M7G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.98                    |                  | 26.07                   | 0.405                | 86M7G7D             |
|                   |                  |            | 16QAM |                 |                   | 25.03                    |                  | 25.12                   | 0.325                | 86M7D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.57                    |                  | 24.66                   | 0.292                | 87M4G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.94                    |                  | 24.03                   | 0.253                | 87M4D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |
|                   | 100              | DFTS-OFDM  | BPSK  | 2 550           | 2 640             | 25.96                    |                  | 26.05                   | 0.403                | 96M1G7D             |
|                   |                  |            | QPSK  |                 |                   | 25.97                    |                  | 26.06                   | 0.404                | 96M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 24.84                    |                  | 24.93                   | 0.311                | 96M3D7D             |
|                   |                  | CP-OFDM    | QPSK  |                 |                   | 24.30                    |                  | 24.39                   | 0.275                | 97M3G7D             |
|                   |                  |            | 16QAM |                 |                   | 23.95                    |                  | 24.04                   | 0.254                | 97M3D7D             |
|                   |                  |            |       |                 |                   |                          |                  |                         |                      |                     |

| NR Band            | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|--------------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41<br>FCC<br>MIMO | 20               | CP-OFDM    | QPSK  | 2 506.02        | 2 679.99          | 25.95                    | 6.54             | 32.49                   | 1.774                | 18M2G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.38                    |                  | 31.92                   | 1.556                | 18M3D7D             |
|                    | 30               |            | QPSK  | 2 511           | 2 674.98          | 25.98                    |                  | 32.52                   | 1.786                | 27M9G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.39                    |                  | 31.93                   | 1.560                | 27M9D7D             |
|                    | 40               |            | QPSK  | 2 516.01        | 2 670             | 25.98                    |                  | 32.52                   | 1.786                | 38M1G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.49                    |                  | 32.03                   | 1.596                | 38M0D7D             |
|                    | 50               |            | QPSK  | 2 521.02        | 2 664.99          | 25.80                    |                  | 32.34                   | 1.714                | 47M7G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.27                    |                  | 31.81                   | 1.517                | 47M7D7D             |
|                    | 60               |            | QPSK  | 2 526           | 2 659.98          | 25.98                    |                  | 32.52                   | 1.786                | 58M0G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.00                    |                  | 31.54                   | 1.426                | 58M0D7D             |
|                    | 80               |            | QPSK  | 2 536.02        | 2 649.99          | 25.95                    |                  | 32.49                   | 1.774                | 77M5G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.23                    |                  | 31.77                   | 1.503                | 77M5D7D             |
|                    | 90               |            | QPSK  | 2 541           | 2 644.98          | 25.90                    |                  | 32.44                   | 1.754                | 87M6G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.17                    |                  | 31.71                   | 1.483                | 87M4D7D             |
|                    | 100              |            | QPSK  | 2 546.01        | 2 640             | 25.95                    |                  | 32.49                   | 1.774                | 97M5G7D             |
|                    |                  |            | 16QAM |                 |                   | 25.08                    |                  | 31.62                   | 1.452                | 97M5D7D             |

| NR Band     | Band width (MHz) | Modulation |       | Low Freq. (MHz) | Upper Freq. (MHz) | Conducted Average (dB m) | Ant. Gain (dB i) | E.I.R.P. Average (dB m) | E.I.R.P. Average (W) | Emission Designator |
|-------------|------------------|------------|-------|-----------------|-------------------|--------------------------|------------------|-------------------------|----------------------|---------------------|
| n41 IC MIMO | 20               | CP-OFDM    | QPSK  | 2 510.01        | 2 679.99          | 25.96                    | 6.54             | 32.50                   | 1.778                | 18M2G7D             |
|             |                  |            | 16QAM |                 |                   | 25.44                    |                  | 31.98                   | 1.578                | 18M3D7D             |
|             | 30               |            | QPSK  | 2 515.02        | 2 674.98          | 25.99                    |                  | 32.53                   | 1.791                | 27M8G7D             |
|             |                  |            | 16QAM |                 |                   | 25.41                    |                  | 31.95                   | 1.567                | 27M9D7D             |
|             | 40               |            | QPSK  | 2 520           | 2 670             | 25.98                    |                  | 32.52                   | 1.786                | 38M2G7D             |
|             |                  |            | 16QAM |                 |                   | 25.45                    |                  | 31.99                   | 1.581                | 38M0D7D             |
|             | 50               |            | QPSK  | 2 525.01        | 2 664.99          | 25.98                    |                  | 32.52                   | 1.786                | 47M7G7D             |
|             |                  |            | 16QAM |                 |                   | 25.22                    |                  | 31.76                   | 1.500                | 47M8D7D             |
|             | 60               |            | QPSK  | 2 530.02        | 2 659.98          | 25.98                    |                  | 32.52                   | 1.786                | 58M1G7D             |
|             |                  |            | 16QAM |                 |                   | 25.14                    |                  | 31.68                   | 1.472                | 58M0D7D             |
|             | 80               |            | QPSK  | 2 540.01        | 2 649.99          | 25.94                    |                  | 32.48                   | 1.770                | 77M5G7D             |
|             |                  |            | 16QAM |                 |                   | 25.16                    |                  | 31.70                   | 1.479                | 77M5D7D             |
|             | 90               |            | QPSK  | 2 545.02        | 2 644.98          | 25.97                    |                  | 32.51                   | 1.782                | 87M6G7D             |
|             |                  |            | 16QAM |                 |                   | 25.21                    |                  | 31.75                   | 1.496                | 87M4D7D             |
|             | 100              |            | QPSK  | 2 550           | 2 640             | 25.92                    |                  | 32.46                   | 1.762                | 97M5G7D             |
|             |                  |            | 16QAM |                 |                   | 24.95                    |                  | 31.49                   | 1.409                | 97M7D7D             |

## 1.20. Information of Variant Model

| Model Name     |             | Description                                                                                                                                                                    |
|----------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic Model    | TFGMEIBBCD1 | - Dual GNSS                                                                                                                                                                    |
| Variant Models | TFGMEIBBCD2 | - Same to RF module with basic model except following function<br>- Single GNSS and Ultra-super cruise service doesn't supported                                               |
|                | TFGMEIBBCD3 | - Same to RF module with basic model except following function<br>- Single GNSS and Ultra-super cruise service doesn't supported<br>- eUICC part is different with TFGMEIBBCD2 |

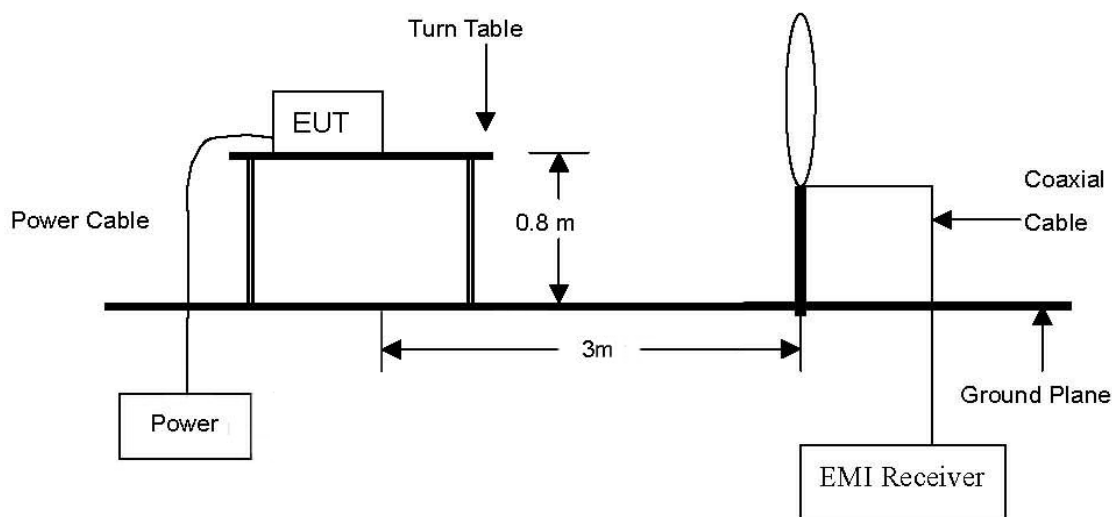
### Note;

The all test items performed with basic model.

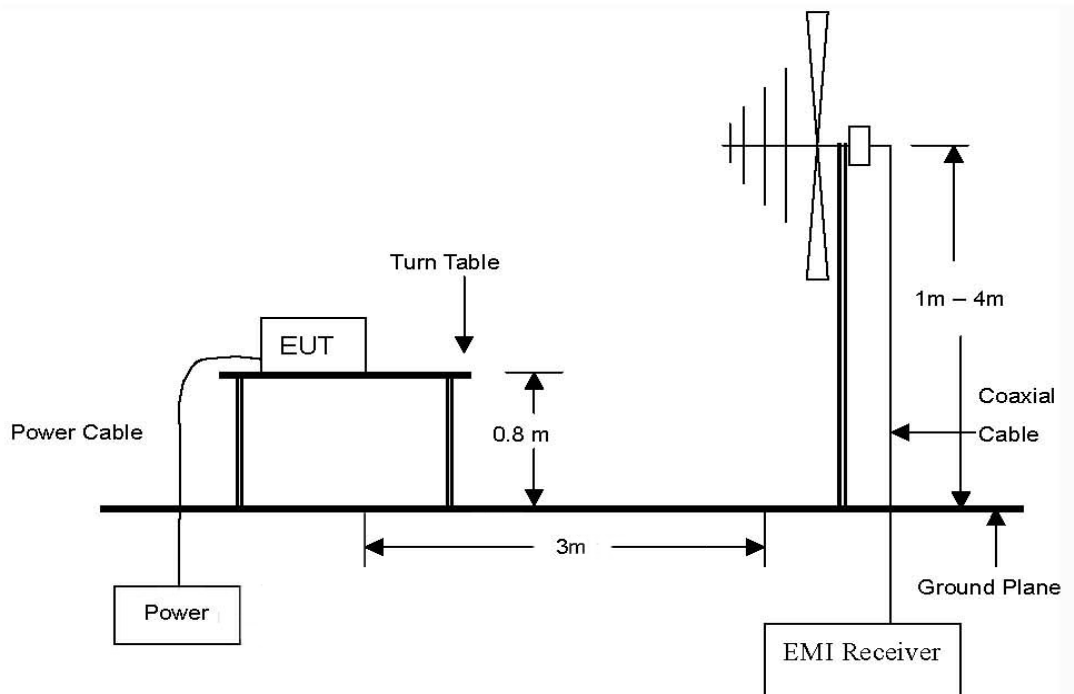
## 2. E.I.R.P. & Radiated Spurious Emissions

### 2.1. Test setup

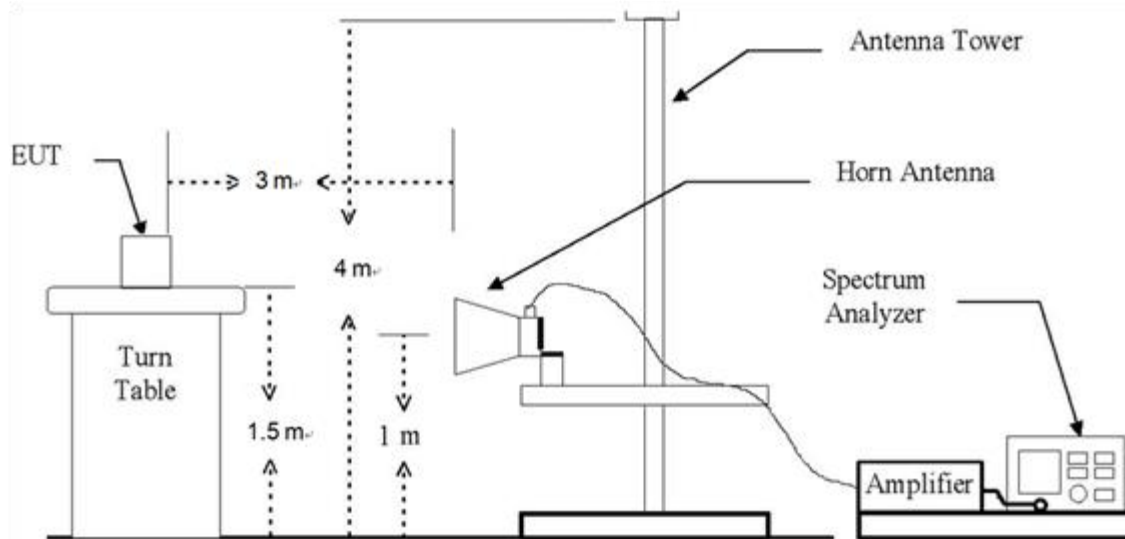
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 27 GHz Emissions.



## 2.2. Limit

### 2.2.1. Limit of E.I.R.P.

#### FCC

- §27.50(h)(2), Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

#### IC

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4.4, the transmitter output power shall be measured in terms of average value.

For base station equipment, refer to SRSP-517 for the maximum permissible e.i.r.p.

For mobile subscriber equipment, the e.i.r.p. shall not exceed 2 W. For fixed subscriber equipment, the transmitter output power shall not exceed 2 W and the e.i.r.p. shall be limited to 40 W.

### 2.2.2. Limit of Radiated Spurious Emissions

#### FCC

- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log_{10} (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log_{10} (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log_{10} (P)$  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  $43 + 10 \log_{10} (P)$  dB on all frequencies between 2 490.5 MHz and 2 496 MHz and  $55 + 10 \log_{10} (P)$  dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

#### IC

- RSS-199 Issue 3

4.5, In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment, and 2% for mobile subscriber equipment. Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:

for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dB W), by at least  $43 + 10 \log_{10} p$  for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dB W), by at least:

- i.  $40 + 10 \log_{10} p$  from the channel edges to 5 MHz away
- ii.  $43 + 10 \log_{10} p$  between 5 MHz and X MHz from the channel edges, and
- iii.  $55 + 10 \log_{10} p$  at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than  $43 + 10 \log_{10} p$  on all frequencies between 2 490.5 MHz and 2 496 MHz, and  $55 + 10 \log_{10} p$  at or below 2 490.5 MHz.

In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

### **2.3. Test Procedure: Based on ANSI/TIA 603E: 2016 and ANSI C63.26-2015 and KDB 971168 D01 Power Meas License Digital Systems v03r01.**

1. On a test site, the EUT shall be placed at 0.8 m or 1.5 m height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. Radiated spurious emissions measurement method was set as follows:  
RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz, VBW  $\geq 3 \times$  RBW,  
Detector = RMS, trace mode = max hold, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
5. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
11. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
12. The measurement shall be repeated with the test antenna orientated for horizontal polarization.

## 2.4. Test Results

Ambient temperature : (23 ± 1) °C  
Relative humidity : 47 % R.H.

### 2.4.1. E.I.R.P.

#### - Internal Antenna

| Band         | Frequency (MHz) | Maximum Conducted Power (dB m) | Maximum Conducted Power (W) | Worst Antenna Gain (dB i) | Maximum E.I.R.P. (dB m) | Maximum E.I.R.P. (W) | Maximum E.R.P. (dB m) | Maximum E.R.P. (W) | Output Power Limit |
|--------------|-----------------|--------------------------------|-----------------------------|---------------------------|-------------------------|----------------------|-----------------------|--------------------|--------------------|
| n41 FCC SISO | 2 496 ~ 2 690   | 25.99                          | 0.397                       | 2.41                      | 28.40                   | 0.692                |                       |                    | 2 W<br>E.I.R.P.    |
| n41 IC SISO  | 2 500 ~ 2 690   | 25.99                          | 0.397                       | 2.41                      | 28.40                   | 0.692                |                       |                    |                    |
| n41 FCC MIMO | 2 496 ~ 2 690   | 25.98                          | 0.396                       | 5.47                      | 31.45                   | 1.396                |                       |                    |                    |
| n41 IC MIMO  | 2 500 ~ 2 690   | 25.99                          | 0.397                       | 5.47                      | 31.46                   | 1.400                |                       |                    |                    |

#### - External Antenna

| Band         | Frequency (MHz) | Maximum Conducted Power (dB m) | Maximum Conducted Power (W) | Worst Antenna Gain (dB i) | Maximum E.I.R.P. (dB m) | Maximum E.I.R.P. (W) | Maximum E.R.P. (dB m) | Maximum E.R.P. (W) | Output Power Limit |
|--------------|-----------------|--------------------------------|-----------------------------|---------------------------|-------------------------|----------------------|-----------------------|--------------------|--------------------|
| n41 FCC SISO | 2 496 ~ 2 690   | 25.99                          | 0.397                       | 0.09                      | 26.08                   | 0.406                |                       |                    | 2 W<br>E.I.R.P.    |
| n41 IC SISO  | 2 500 ~ 2 690   | 25.99                          | 0.397                       | 0.09                      | 26.08                   | 0.406                |                       |                    |                    |
| n41 FCC MIMO | 2 496 ~ 2 690   | 25.98                          | 0.396                       | 6.54                      | 32.52                   | 1.786                |                       |                    |                    |
| n41 IC MIMO  | 2 500 ~ 2 690   | 25.99                          | 0.397                       | 6.54                      | 32.53                   | 1.791                |                       |                    |                    |

#### Remark;

1. E.I.R.P. (dB m) = Maximum Conducted Power (dB m) + Antenna Gain (dB i)
2. E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.

### 2.4.1. Spurious Radiated Emission

#### - Internal Antenna

#### SISO

#### NR Band 41 (30 MHz - DFTS-OFDM QPSK) FCC

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 511.00 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 592.99 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

#### NR Band 41 (20 MHz - DFTS-OFDM BPSK) IC

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 510.01 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 595.00 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 679.99 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**ENDC**

**5A-n41A (30 MHz - DFTS-OFDM BPSK)\_FCC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 511.00 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 592.99 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**5A-n41A (30 MHz - DFTS-OFDM BPSK)\_IC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 515.02 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 595.00 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**MIMO**

**NR Band 41 (40 MHz - CP-OFDM QPSK)\_FCC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 516.01 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 592.99 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 670.00 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**NR Band 41 (30 MHz - CP-OFDM QPSK)\_IC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 515.02 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 595.00 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**- External Antenna**

**SISO**

**NR Band 41 (30 MHz - DFTS-OFDM QPSK)\_FCC**

| Frequency<br>(MHz)            | Measured<br>Level<br>(dBμV) | Ant.<br>Pol. | AF<br>(dB/m) | AMP+CL<br>(dB) | E<br>(dBμV/m) | CF<br>(dB) | E.I.R.P.<br>(dB m) | Limit<br>(dB m) | Margin<br>(dB) |
|-------------------------------|-----------------------------|--------------|--------------|----------------|---------------|------------|--------------------|-----------------|----------------|
| Low Channel (2 511.00 MHz)    |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Middle Channel (2 592.99 MHz) |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| High Channel (2 674.98 MHz)   |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |

**NR Band 41 (20 MHz - DFTS-OFDM BPSK)\_IC**

| Frequency<br>(MHz)            | Measured<br>Level<br>(dBμV) | Ant.<br>Pol. | AF<br>(dB/m) | AMP+CL<br>(dB) | E<br>(dBμV/m) | CF<br>(dB) | E.I.R.P.<br>(dB m) | Limit<br>(dB m) | Margin<br>(dB) |
|-------------------------------|-----------------------------|--------------|--------------|----------------|---------------|------------|--------------------|-----------------|----------------|
| Low Channel (2 510.01 MHz)    |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Middle Channel (2 595.00 MHz) |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| High Channel (2 679.99 MHz)   |                             |              |              |                |               |            |                    |                 |                |
| Below<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |
| Above<br>1 000.00             | Not<br>detected             | -            | -            | -              | -             | -          | -                  | -               | -              |

**ENDC**

**5A-n41A (30 MHz - DFTS-OFDM BPSK)\_FCC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 511.00 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 592.99 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**5A-n41A (30 MHz - DFTS-OFDM BPSK)\_IC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 515.02 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 595.00 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**MIMO**

**NR Band 41 (40 MHz - CP-OFDM QPSK)\_FCC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 516.01 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 592.99 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 670.00 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**NR Band 41 (30 MHz - CP-OFDM QPSK)\_IC**

| Frequency (MHz)               | Measured Level (dBμV) | Ant. Pol. | AF (dB/m) | AMP+CL (dB) | E (dBμV/m) | CF (dB) | E.I.R.P. (dB m) | Limit (dB m) | Margin (dB) |
|-------------------------------|-----------------------|-----------|-----------|-------------|------------|---------|-----------------|--------------|-------------|
| Low Channel (2 515.02 MHz)    |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Middle Channel (2 595.00 MHz) |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| High Channel (2 674.98 MHz)   |                       |           |           |             |            |         |                 |              |             |
| Below 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |
| Above 1 000.00                | Not detected          | -         | -         | -           | -          | -       | -               | -            | -           |

**Remark;**

1. AF = Antenna Factor, CL = Cable Loss, CF = Conversion Factor.
2. E (dBμV/m) = Measured Level (dBμV) + Antenna Factor (dB/m) + AMP (dB) + Cable Loss (dB).
3. E.I.R.P. (dB m) = E (dBμV/m) + CF (dB).
4. E.R.P. (dB m) = E (dBμV/m) + CF (dB) - 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.
5. CF (dB) = 20 log D - 104.8; where D is the measurement distance in meters, According to KDB 971168 D01 v03r01 5.8.4.
6. The frequency spectrum is examined from 9 MHz to the 10<sup>th</sup> harmonic of the fundamental frequency of the transmitter. No other spurious and harmonic emissions were reported greater than listed emissions above table.

### 3. Conducted Output Power

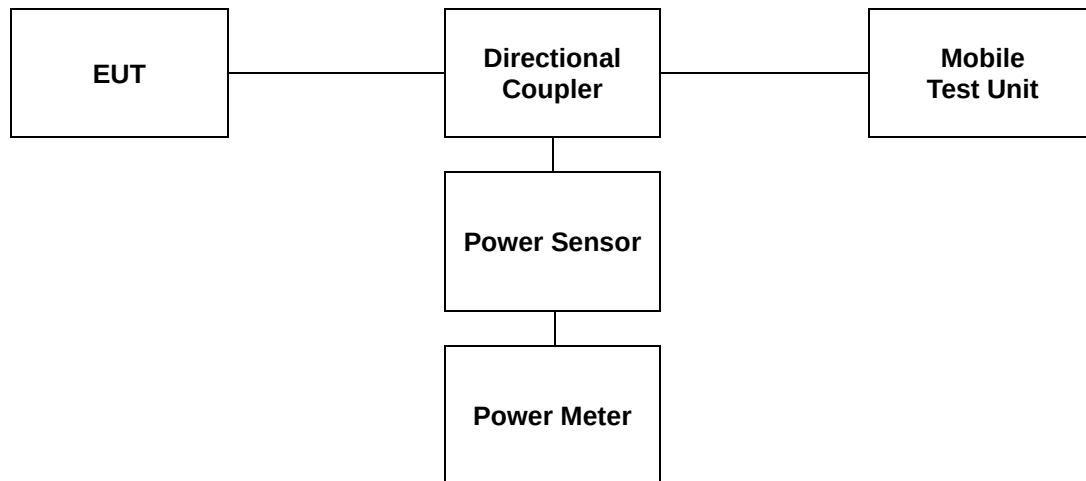
#### 3.1. Limit

CFR 47, Section FCC §2.1046 and IC RSS-Gen Issue 5 6.12.

#### 3.2. Test Procedure

Output power shall be measured at the RF output terminals for all configurations.

1. The RF output of the transmitter was connected to the input of the mobile test unit in order to establish communication with the EUT.
2. The EUT was set up for the max. output power with pseudo random data modulation by using mobile test unit parameters.
3. The measurement performed using a wideband RF power meter.
4. This EUT was tested under all configurations and the highest power was investigated and reported.



### 3.3. Test Result

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

#### SISO

| NR Band 41 (FCC) |              |                     |            |              |                          |              |                          |       |                          |              |
|------------------|--------------|---------------------|------------|--------------|--------------------------|--------------|--------------------------|-------|--------------------------|--------------|
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size | RB<br>Offset | Conducted Output Power   |              |                          |       |                          |              |
|                  |              |                     |            |              | 501204<br>(2 506.02 MHz) |              | 518598<br>(2 592.99 MHz) |       | 535998<br>(2 679.99 MHz) |              |
|                  |              |                     |            |              | (dB m)                   | (W)          | (dB m)                   | (W)   | (dB m)                   | (W)          |
| 20               | 30           | DFT-S-OFDM<br>BPSK  | 1          | 1            | 25.89                    | 0.388        | 25.75                    | 0.376 | 25.95                    | 0.394        |
|                  |              |                     | 1          | 26           | 25.88                    | 0.387        | 25.72                    | 0.373 | 25.86                    | 0.385        |
|                  |              |                     | 1          | 49           | 25.91                    | 0.390        | 25.78                    | 0.378 | <b>25.97</b>             | <b>0.395</b> |
|                  |              |                     | 25         | 0            | 25.36                    | 0.344        | 25.21                    | 0.332 | 25.44                    | 0.350        |
|                  |              |                     | 25         | 13           | 25.97                    | 0.395        | 25.83                    | 0.383 | 25.80                    | 0.380        |
|                  |              |                     | 25         | 26           | 25.39                    | 0.346        | 25.25                    | 0.335 | 25.46                    | 0.352        |
|                  |              |                     | 50         | 0            | 25.34                    | 0.342        | 25.17                    | 0.329 | 25.36                    | 0.344        |
|                  |              | DFT-S-OFDM<br>QPSK  | 1          | 1            | 25.86                    | 0.385        | 25.77                    | 0.378 | 25.93                    | 0.392        |
|                  |              |                     | 1          | 26           | <b>25.98</b>             | <b>0.396</b> | 25.70                    | 0.372 | 25.97                    | 0.395        |
|                  |              |                     | 1          | 49           | 25.81                    | 0.381        | 25.79                    | 0.379 | 25.86                    | 0.385        |
|                  |              |                     | 25         | 0            | 24.88                    | 0.308        | 24.83                    | 0.304 | 24.89                    | 0.308        |
|                  |              |                     | 25         | 13           | 25.87                    | 0.386        | 25.80                    | 0.380 | 25.94                    | 0.393        |
|                  |              |                     | 25         | 26           | 24.82                    | 0.303        | 24.69                    | 0.294 | 25.03                    | 0.318        |
|                  |              |                     | 50         | 0            | 24.78                    | 0.301        | 24.75                    | 0.299 | 25.06                    | 0.321        |
|                  |              | DFT-S-OFDM<br>16QAM | 1          | 1            | 24.96                    | 0.313        | 24.72                    | 0.296 | <b>25.00</b>             | <b>0.316</b> |
|                  |              | DFT-S-OFDM<br>64QAM | 1          | 1            | 23.37                    | 0.217        | 23.28                    | 0.213 | 23.50                    | 0.224        |
|                  |              | CP-OFDM<br>QPSK     | 1          | 1            | 24.45                    | 0.279        | 24.19                    | 0.262 | <b>24.55</b>             | <b>0.285</b> |
|                  |              | CP-OFDM<br>16QAM    | 1          | 1            | <b>23.87</b>             | <b>0.244</b> | 23.68                    | 0.233 | 23.86                    | 0.243        |
|                  |              | CP-OFDM<br>64QAM    | 1          | 1            | 22.43                    | 0.175        | 22.19                    | 0.166 | 22.54                    | 0.179        |

| NR Band 41 (FCC) |              |                     |                     |              |                          |              |                          |              |                          |       |       |
|------------------|--------------|---------------------|---------------------|--------------|--------------------------|--------------|--------------------------|--------------|--------------------------|-------|-------|
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size          | RB<br>Offset | Conducted Output Power   |              |                          |              |                          |       |       |
|                  |              |                     |                     |              | 502200<br>(2 511.00 MHz) |              | 518598<br>(2 592.99 MHz) |              | 534996<br>(2 674.98 MHz) |       |       |
|                  |              |                     |                     |              | (dB m)                   | (W)          | (dB m)                   | (W)          | (dB m)                   | (W)   |       |
| 30               | 30           | DFT-S-OFDM<br>BPSK  | 1                   | 1            | 25.95                    | 0.394        | 25.83                    | 0.383        | 25.52                    | 0.356 |       |
|                  |              |                     | 1                   | 39           | 25.95                    | 0.394        | 25.79                    | 0.379        | 25.58                    | 0.361 |       |
|                  |              |                     | 1                   | 76           | <u>25.98</u>             | <u>0.396</u> | 25.91                    | 0.390        | 25.58                    | 0.361 |       |
|                  |              |                     | 36                  | 0            | 25.52                    | 0.356        | 25.34                    | 0.342        | 24.98                    | 0.315 |       |
|                  |              |                     | 36                  | 21           | 25.49                    | 0.354        | 25.74                    | 0.375        | 25.49                    | 0.354 |       |
|                  |              |                     | 36                  | 42           | 25.50                    | 0.355        | 25.33                    | 0.341        | 24.98                    | 0.315 |       |
|                  |              | DFT-S-OFDM<br>QPSK  | 75                  | 0            | 25.45                    | 0.351        | 25.31                    | 0.340        | 25.05                    | 0.320 |       |
|                  |              |                     | 1                   | 1            | 25.95                    | 0.394        | 25.78                    | 0.378        | 25.51                    | 0.356 |       |
|                  |              |                     | 1                   | 39           | 25.96                    | 0.394        | 25.90                    | 0.389        | 25.53                    | 0.357 |       |
|                  |              |                     | 1                   | 76           | <u>25.99</u>             | <u>0.397</u> | 25.84                    | 0.384        | 25.60                    | 0.363 |       |
|                  |              |                     | 36                  | 0            | 24.97                    | 0.314        | 24.98                    | 0.315        | 24.59                    | 0.288 |       |
|                  |              |                     | 36                  | 21           | 25.91                    | 0.390        | 25.78                    | 0.378        | 25.62                    | 0.365 |       |
|                  |              | DFT-S-OFDM<br>16QAM | 36                  | 42           | 24.91                    | 0.310        | 24.92                    | 0.310        | 24.62                    | 0.290 |       |
|                  |              |                     | 75                  | 0            | 25.05                    | 0.320        | 24.87                    | 0.307        | 24.49                    | 0.281 |       |
|                  |              |                     | DFT-S-OFDM<br>16QAM | 1            | 1                        | <u>25.08</u> | <u>0.322</u>             | 24.78        | 0.301                    | 24.42 | 0.277 |
|                  |              |                     | DFT-S-OFDM<br>64QAM | 1            | 1                        | 23.50        | 0.224                    | 23.30        | 0.214                    | 22.97 | 0.198 |
| CP-OFDM<br>QPSK  | 1            | 1                   | <u>24.47</u>        | <u>0.280</u> | 24.38                    | 0.274        | 24.06                    | 0.255        |                          |       |       |
| CP-OFDM<br>16QAM | 1            | 1                   | <u>24.04</u>        | <u>0.254</u> | 23.86                    | 0.243        | 23.43                    | 0.220        |                          |       |       |
| CP-OFDM<br>64QAM | 1            | 1                   | 22.52               | 0.179        | 22.42                    | 0.175        | 21.98                    | 0.158        |                          |       |       |
| NR Band 41 (FCC) |              |                     |                     |              |                          |              |                          |              |                          |       |       |
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size          | RB<br>Offset | Conducted Output Power   |              |                          |              |                          |       |       |
|                  |              |                     |                     |              | 503202<br>(2 516.01 MHz) |              | 518598<br>(2 592.99 MHz) |              | 534000<br>(2 670.00 MHz) |       |       |
|                  |              |                     |                     |              | (dB m)                   | (W)          | (dB m)                   | (W)          | (dB m)                   | (W)   |       |
| 40               | 30           | DFT-S-OFDM<br>BPSK  | 1                   | 1            | <u>25.86</u>             | <u>0.385</u> | 25.75                    | 0.376        | 25.68                    | 0.370 |       |
|                  |              |                     | 1                   | 53           | 25.85                    | 0.385        | 25.85                    | 0.385        | 25.66                    | 0.368 |       |
|                  |              |                     | 1                   | 104          | 25.82                    | 0.382        | 25.77                    | 0.378        | 25.78                    | 0.378 |       |
|                  |              |                     | 50                  | 0            | 25.35                    | 0.343        | 25.33                    | 0.341        | 25.27                    | 0.337 |       |
|                  |              |                     | 50                  | 28           | 25.79                    | 0.379        | 25.85                    | 0.385        | 25.59                    | 0.362 |       |
|                  |              |                     | 50                  | 56           | 25.37                    | 0.344        | 25.30                    | 0.339        | 25.23                    | 0.333 |       |
|                  |              | DFT-S-OFDM<br>QPSK  | 100                 | 0            | 25.27                    | 0.337        | 25.32                    | 0.340        | 25.20                    | 0.331 |       |
|                  |              |                     | 1                   | 1            | <u>25.93</u>             | <u>0.392</u> | 25.65                    | 0.367        | 25.58                    | 0.361 |       |
|                  |              |                     | 1                   | 53           | 25.85                    | 0.385        | 25.82                    | 0.382        | 25.60                    | 0.363 |       |
|                  |              |                     | 1                   | 104          | 25.80                    | 0.380        | 25.75                    | 0.376        | 25.73                    | 0.374 |       |
|                  |              |                     | 50                  | 0            | 24.93                    | 0.311        | 24.84                    | 0.305        | 24.55                    | 0.285 |       |
|                  |              |                     | 50                  | 28           | 25.82                    | 0.382        | 25.66                    | 0.368        | 25.67                    | 0.369 |       |
|                  |              | DFT-S-OFDM<br>16QAM | 50                  | 56           | 24.94                    | 0.312        | 24.64                    | 0.291        | 24.55                    | 0.285 |       |
|                  |              |                     | 100                 | 0            | 24.99                    | 0.316        | 24.84                    | 0.305        | 24.72                    | 0.296 |       |
|                  |              |                     | DFT-S-OFDM<br>16QAM | 1            | 1                        | 24.76        | 0.299                    | <u>24.85</u> | <u>0.305</u>             | 24.63 | 0.290 |
|                  |              |                     | DFT-S-OFDM<br>64QAM | 1            | 1                        | 23.30        | 0.214                    | 23.31        | 0.214                    | 23.11 | 0.205 |
| CP-OFDM<br>QPSK  | 1            | 1                   | <u>24.46</u>        | <u>0.279</u> | 24.17                    | 0.261        | 24.26                    | 0.267        |                          |       |       |
| CP-OFDM<br>16QAM | 1            | 1                   | <u>23.93</u>        | <u>0.247</u> | 23.73                    | 0.236        | 23.70                    | 0.234        |                          |       |       |
| CP-OFDM<br>64QAM | 1            | 1                   | 22.34               | 0.171        | 22.22                    | 0.167        | 22.18                    | 0.165        |                          |       |       |

| NR Band 41 (FCC) |              |                     |              |              |                          |              |                          |       |                          |       |
|------------------|--------------|---------------------|--------------|--------------|--------------------------|--------------|--------------------------|-------|--------------------------|-------|
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size   | RB<br>Offset | Conducted Output Power   |              |                          |       |                          |       |
|                  |              |                     |              |              | 504204<br>(2 521.02 MHz) |              | 518598<br>(2 592.99 MHz) |       | 532998<br>(2 664.99 MHz) |       |
|                  |              |                     |              |              | (dB m)                   | (W)          | (dB m)                   | (W)   | (dB m)                   | (W)   |
| 50               | 30           | DFT-S-OFDM<br>BPSK  | 1            | 1            | 25.85                    | 0.385        | 25.72                    | 0.373 | 25.80                    | 0.380 |
|                  |              |                     | 1            | 67           | 25.77                    | 0.378        | 25.63                    | 0.366 | 25.75                    | 0.376 |
|                  |              |                     | 1            | 131          | 25.85                    | 0.385        | 25.70                    | 0.372 | 25.77                    | 0.378 |
|                  |              |                     | 64           | 0            | 25.29                    | 0.338        | 25.22                    | 0.333 | 25.25                    | 0.335 |
|                  |              |                     | 64           | 35           | <u>25.93</u>             | <u>0.392</u> | 25.77                    | 0.378 | 25.87                    | 0.386 |
|                  |              |                     | 64           | 69           | 25.37                    | 0.344        | 25.15                    | 0.327 | 25.21                    | 0.332 |
|                  |              | DFT-S-OFDM<br>QPSK  | 128          | 0            | 25.45                    | 0.351        | 25.30                    | 0.339 | 25.40                    | 0.347 |
|                  |              |                     | 1            | 1            | 25.84                    | 0.384        | 25.76                    | 0.377 | 25.83                    | 0.383 |
|                  |              |                     | 1            | 67           | 25.75                    | 0.376        | 25.73                    | 0.374 | 25.71                    | 0.372 |
|                  |              |                     | 1            | 131          | 25.84                    | 0.384        | 25.67                    | 0.369 | 25.77                    | 0.378 |
|                  |              |                     | 64           | 0            | 24.77                    | 0.300        | 24.59                    | 0.288 | 24.70                    | 0.295 |
|                  |              |                     | 64           | 35           | <u>25.92</u>             | <u>0.391</u> | 25.62                    | 0.365 | 25.77                    | 0.378 |
|                  |              | DFT-S-OFDM<br>16QAM | 64           | 69           | 24.70                    | 0.295        | 24.82                    | 0.303 | 24.91                    | 0.310 |
|                  |              |                     | 128          | 0            | 24.79                    | 0.301        | 24.72                    | 0.296 | 24.70                    | 0.295 |
|                  |              | DFT-S-OFDM<br>64QAM | 1            | 1            | <u>24.93</u>             | <u>0.311</u> | 24.81                    | 0.303 | 24.70                    | 0.295 |
|                  |              | DFT-S-OFDM<br>64QAM | 1            | 1            | 23.39                    | 0.218        | 23.26                    | 0.212 | 23.28                    | 0.213 |
| CP-OFDM<br>QPSK  | 1            | 1                   | <u>24.42</u> | <u>0.277</u> | 24.19                    | 0.262        | 24.29                    | 0.269 |                          |       |
| CP-OFDM<br>16QAM | 1            | 1                   | <u>23.83</u> | <u>0.242</u> | 23.76                    | 0.238        | 23.71                    | 0.235 |                          |       |
| CP-OFDM<br>64QAM | 1            | 1                   | 22.34        | 0.171        | 22.24                    | 0.167        | 22.22                    | 0.167 |                          |       |
| NR Band 41 (FCC) |              |                     |              |              |                          |              |                          |       |                          |       |
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size   | RB<br>Offset | Conducted Output Power   |              |                          |       |                          |       |
|                  |              |                     |              |              | 505200<br>(2 526.00 MHz) |              | 518598<br>(2 592.99 MHz) |       | 531996<br>(2 659.98 MHz) |       |
|                  |              |                     |              |              | (dB m)                   | (W)          | (dB m)                   | (W)   | (dB m)                   | (W)   |
| 60               | 30           | DFT-S-OFDM<br>BPSK  | 1            | 1            | 25.83                    | 0.383        | 25.71                    | 0.372 | 25.52                    | 0.356 |
|                  |              |                     | 1            | 81           | <u>25.85</u>             | <u>0.385</u> | 25.77                    | 0.378 | 25.53                    | 0.357 |
|                  |              |                     | 1            | 160          | 25.77                    | 0.378        | 25.67                    | 0.369 | 25.43                    | 0.349 |
|                  |              |                     | 81           | 0            | 25.31                    | 0.340        | 25.11                    | 0.324 | 25.11                    | 0.324 |
|                  |              |                     | 81           | 41           | 25.83                    | 0.383        | 25.77                    | 0.378 | 25.62                    | 0.365 |
|                  |              |                     | 81           | 81           | 25.27                    | 0.337        | 25.22                    | 0.333 | 25.10                    | 0.324 |
|                  |              | DFT-S-OFDM<br>QPSK  | 162          | 0            | 25.33                    | 0.341        | 25.30                    | 0.339 | 25.11                    | 0.324 |
|                  |              |                     | 1            | 1            | 25.79                    | 0.379        | 25.65                    | 0.367 | 25.47                    | 0.352 |
|                  |              |                     | 1            | 81           | 25.88                    | 0.387        | 25.71                    | 0.372 | 25.48                    | 0.353 |
|                  |              |                     | 1            | 160          | <u>25.91</u>             | <u>0.390</u> | 25.70                    | 0.372 | 25.61                    | 0.364 |
|                  |              |                     | 81           | 0            | 24.84                    | 0.305        | 24.82                    | 0.303 | 24.65                    | 0.292 |
|                  |              |                     | 81           | 41           | 25.83                    | 0.383        | 25.69                    | 0.371 | 25.47                    | 0.352 |
|                  |              | DFT-S-OFDM<br>16QAM | 81           | 81           | 24.71                    | 0.296        | 24.57                    | 0.286 | 24.67                    | 0.293 |
|                  |              |                     | 162          | 0            | 24.98                    | 0.315        | 24.86                    | 0.306 | 24.67                    | 0.293 |
|                  |              | DFT-S-OFDM<br>16QAM | 1            | 1            | <u>24.77</u>             | <u>0.300</u> | 24.63                    | 0.290 | 24.56                    | 0.286 |
|                  |              | DFT-S-OFDM<br>64QAM | 1            | 1            | 23.23                    | 0.210        | 23.13                    | 0.206 | 23.08                    | 0.203 |
| CP-OFDM<br>QPSK  | 1            | 1                   | <u>24.39</u> | <u>0.275</u> | 24.30                    | 0.269        | 23.95                    | 0.248 |                          |       |
| CP-OFDM<br>16QAM | 1            | 1                   | <u>23.85</u> | <u>0.243</u> | 23.64                    | 0.231        | 23.55                    | 0.226 |                          |       |
| CP-OFDM<br>64QAM | 1            | 1                   | 22.37        | 0.173        | 22.18                    | 0.165        | 21.99                    | 0.158 |                          |       |

| NR Band 41 (FCC) |              |                     |            |              |                          |              |                          |              |                          |       |
|------------------|--------------|---------------------|------------|--------------|--------------------------|--------------|--------------------------|--------------|--------------------------|-------|
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size | RB<br>Offset | Conducted Output Power   |              |                          |              |                          |       |
|                  |              |                     |            |              | 507204<br>(2 536.02 MHz) |              | 518598<br>(2 592.99 MHz) |              | 529998<br>(2 649.99 MHz) |       |
|                  |              |                     |            |              | (dB m)                   | (W)          | (dB m)                   | (W)          | (dB m)                   | (W)   |
| 80               | 30           | DFT-S-OFDM<br>BPSK  | 1          | 1            | 25.82                    | 0.382        | 25.74                    | 0.375        | 25.49                    | 0.354 |
|                  |              |                     | 1          | 109          | <b>25.85</b>             | <b>0.385</b> | 25.84                    | 0.384        | 25.41                    | 0.348 |
|                  |              |                     | 1          | 215          | 25.85                    | 0.385        | 25.71                    | 0.372        | 25.41                    | 0.348 |
|                  |              |                     | 108        | 0            | 25.27                    | 0.337        | 25.15                    | 0.327        | 25.01                    | 0.317 |
|                  |              |                     | 108        | 55           | 25.82                    | 0.382        | 25.69                    | 0.371        | 25.43                    | 0.349 |
|                  |              |                     | 108        | 109          | 25.34                    | 0.342        | 25.24                    | 0.334        | 25.06                    | 0.321 |
|                  |              |                     | 216        | 0            | 25.38                    | 0.345        | 25.32                    | 0.340        | 24.95                    | 0.313 |
|                  |              | DFT-S-OFDM<br>QPSK  | 1          | 1            | 25.83                    | 0.383        | 25.80                    | 0.380        | 25.53                    | 0.357 |
|                  |              |                     | 1          | 109          | 25.74                    | 0.375        | 25.66                    | 0.368        | 25.51                    | 0.356 |
|                  |              |                     | 1          | 215          | 25.78                    | 0.378        | 25.81                    | 0.381        | 25.45                    | 0.351 |
|                  |              |                     | 108        | 0            | 24.68                    | 0.294        | 24.75                    | 0.299        | 24.56                    | 0.286 |
|                  |              |                     | 108        | 55           | <b>25.87</b>             | <b>0.386</b> | 25.78                    | 0.378        | 25.55                    | 0.359 |
|                  |              |                     | 108        | 109          | 24.76                    | 0.299        | 24.71                    | 0.296        | 24.59                    | 0.288 |
|                  |              |                     | 216        | 0            | 24.69                    | 0.294        | 24.73                    | 0.297        | 24.43                    | 0.277 |
|                  |              | DFT-S-OFDM<br>16QAM | 1          | 1            | <b>24.80</b>             | <b>0.302</b> | 24.80                    | 0.302        | 24.56                    | 0.286 |
|                  |              | DFT-S-OFDM<br>64QAM | 1          | 1            | 23.40                    | 0.219        | 23.32                    | 0.215        | 23.04                    | 0.201 |
|                  |              | CP-OFDM<br>QPSK     | 1          | 1            | 24.29                    | 0.269        | <b>24.34</b>             | <b>0.272</b> | 24.07                    | 0.255 |
|                  |              | CP-OFDM<br>16QAM    | 1          | 1            | <b>23.83</b>             | <b>0.242</b> | 23.78                    | 0.239        | 23.49                    | 0.223 |
|                  |              | CP-OFDM<br>64QAM    | 1          | 1            | 22.26                    | 0.168        | 22.26                    | 0.168        | 21.99                    | 0.158 |
| NR Band 41 (FCC) |              |                     |            |              |                          |              |                          |              |                          |       |
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size | RB<br>Offset | Conducted Output Power   |              |                          |              |                          |       |
|                  |              |                     |            |              | 508200<br>(2 541.00 MHz) |              | 518598<br>(2 592.99 MHz) |              | 528996<br>(2 644.98 MHz) |       |
|                  |              |                     |            |              | (dB m)                   | (W)          | (dB m)                   | (W)          | (dB m)                   | (W)   |
| 90               | 30           | DFT-S-OFDM<br>BPSK  | 1          | 1            | 25.86                    | 0.385        | 25.69                    | 0.371        | 25.65                    | 0.367 |
|                  |              |                     | 1          | 123          | 25.83                    | 0.383        | 25.68                    | 0.370        | 25.69                    | 0.371 |
|                  |              |                     | 1          | 243          | <b>25.96</b>             | <b>0.394</b> | 25.64                    | 0.366        | 25.65                    | 0.367 |
|                  |              |                     | 120        | 0            | 25.33                    | 0.341        | 25.17                    | 0.329        | 25.18                    | 0.330 |
|                  |              |                     | 120        | 63           | 25.88                    | 0.387        | 25.64                    | 0.366        | 25.75                    | 0.376 |
|                  |              |                     | 120        | 125          | 25.45                    | 0.351        | 25.18                    | 0.330        | 25.11                    | 0.324 |
|                  |              |                     | 243        | 0            | 25.39                    | 0.346        | 25.14                    | 0.327        | 25.08                    | 0.322 |
|                  |              | DFT-S-OFDM<br>QPSK  | 1          | 1            | 25.87                    | 0.386        | 25.78                    | 0.378        | 25.72                    | 0.373 |
|                  |              |                     | 1          | 123          | <b>25.95</b>             | <b>0.394</b> | 25.67                    | 0.369        | 25.66                    | 0.368 |
|                  |              |                     | 1          | 243          | 25.88                    | 0.387        | 25.63                    | 0.366        | 25.69                    | 0.371 |
|                  |              |                     | 120        | 0            | 24.91                    | 0.310        | 24.83                    | 0.304        | 24.70                    | 0.295 |
|                  |              |                     | 120        | 63           | 25.95                    | 0.394        | 25.64                    | 0.366        | 25.64                    | 0.366 |
|                  |              |                     | 120        | 125          | 25.00                    | 0.316        | 24.64                    | 0.291        | 24.58                    | 0.287 |
|                  |              |                     | 243        | 0            | 24.71                    | 0.296        | 24.64                    | 0.291        | 24.74                    | 0.298 |
|                  |              | DFT-S-OFDM<br>16QAM | 1          | 1            | <b>24.85</b>             | <b>0.305</b> | 24.65                    | 0.292        | 24.69                    | 0.294 |
|                  |              | DFT-S-OFDM<br>64QAM | 1          | 1            | 23.42                    | 0.220        | 23.21                    | 0.209        | 23.13                    | 0.206 |
|                  |              | CP-OFDM<br>QPSK     | 1          | 1            | <b>24.40</b>             | <b>0.275</b> | 24.28                    | 0.268        | 24.16                    | 0.261 |
|                  |              | CP-OFDM<br>16QAM    | 1          | 1            | <b>23.90</b>             | <b>0.245</b> | 23.72                    | 0.236        | 23.74                    | 0.237 |
|                  |              | CP-OFDM<br>64QAM    | 1          | 1            | 22.26                    | 0.168        | 22.13                    | 0.163        | 22.21                    | 0.166 |

| NR Band 41 (FCC) |              |                     |            |              |                          |                     |                          |       |                          |       |
|------------------|--------------|---------------------|------------|--------------|--------------------------|---------------------|--------------------------|-------|--------------------------|-------|
| BW<br>(MHz)      | SCS<br>(kHz) | Modulation          | RB<br>Size | RB<br>Offset | Conducted Output Power   |                     |                          |       |                          |       |
|                  |              |                     |            |              | 509202<br>(2 546.01 MHz) |                     | 518598<br>(2 592.99 MHz) |       | 528000<br>(2 640.00 MHz) |       |
|                  |              |                     |            |              | (dB m)                   | (W)                 | (dB m)                   | (W)   | (dB m)                   | (W)   |
| 100              | 30           | DFT-S-OFDM<br>BPSK  | 1          | 1            | <b><u>25.81</u></b>      | <b><u>0.381</u></b> | 25.57                    | 0.361 | 25.59                    | 0.362 |
|                  |              |                     | 1          | 137          | 25.73                    | 0.374               | 25.59                    | 0.362 | 25.68                    | 0.370 |
|                  |              |                     | 1          | 271          | 25.73                    | 0.374               | 25.63                    | 0.366 | 25.57                    | 0.361 |
|                  |              |                     | 135        | 0            | 25.38                    | 0.345               | 25.14                    | 0.327 | 25.00                    | 0.316 |
|                  |              |                     | 135        | 69           | 25.80                    | 0.380               | 25.58                    | 0.361 | 25.62                    | 0.365 |
|                  |              |                     | 135        | 138          | 25.21                    | 0.332               | 25.00                    | 0.316 | 25.04                    | 0.319 |
|                  |              |                     | 270        | 0            | 25.23                    | 0.333               | 25.03                    | 0.318 | 25.16                    | 0.328 |
|                  |              | DFT-S-OFDM<br>QPSK  | 1          | 1            | 25.79                    | 0.379               | 25.51                    | 0.356 | 25.65                    | 0.367 |
|                  |              |                     | 1          | 137          | 25.84                    | 0.384               | 25.56                    | 0.360 | 25.53                    | 0.357 |
|                  |              |                     | 1          | 271          | <b><u>25.89</u></b>      | <b><u>0.388</u></b> | 25.48                    | 0.353 | 25.65                    | 0.367 |
|                  |              |                     | 135        | 0            | 24.81                    | 0.303               | 24.57                    | 0.286 | 24.51                    | 0.282 |
|                  |              |                     | 135        | 69           | 25.84                    | 0.384               | 25.56                    | 0.360 | 25.67                    | 0.369 |
|                  |              |                     | 135        | 138          | 24.92                    | 0.310               | 24.62                    | 0.290 | 24.68                    | 0.294 |
|                  |              |                     | 270        | 0            | 24.90                    | 0.309               | 24.71                    | 0.296 | 24.47                    | 0.280 |
|                  |              | DFT-S-OFDM<br>16QAM | 1          | 1            | <b><u>24.77</u></b>      | <b><u>0.300</u></b> | 24.49                    | 0.281 | 24.57                    | 0.286 |
|                  |              | DFT-S-OFDM<br>64QAM | 1          | 1            | 23.21                    | 0.209               | 23.03                    | 0.201 | 23.15                    | 0.207 |
|                  |              | CP-OFDM<br>QPSK     | 1          | 1            | <b><u>24.25</u></b>      | <b><u>0.266</u></b> | 24.12                    | 0.258 | 24.04                    | 0.254 |
|                  |              | CP-OFDM<br>16QAM    | 1          | 1            | <b><u>23.83</u></b>      | <b><u>0.242</u></b> | 23.51                    | 0.224 | 23.55                    | 0.226 |
|                  |              | CP-OFDM<br>64QAM    | 1          | 1            | 22.38                    | 0.173               | 22.08                    | 0.161 | 22.19                    | 0.166 |