

Test report No:

NIE: 68000RAN.002

## Test report

IEEE Std 1528™-2013

FCC 47 CFR Part 2.1091, FCC 47 CFR Part 2.1093

|   |   |
|---|---|
| (*) Identification of item tested         | Telematic control unit with wireless technologies, used in automotive industry  |
| (*) Trademark                             | BMW   |
| (*) Model and /or type reference tested   | WAVE-11-HIGH-R2   |
| (*) Derived model not tested              | WAVE-11-HAF-R2  |
| (*) Other identification of the product   | HW version: D5<br>SW version: 21411A.004_045_017<br>Contains FCC ID: T8GSAN9000<br>Contains FCC ID: T8GSAN9001  |
| (*) Features                              | GSM, UMTS, LTE, 5G, GNSS  |
| Manufacturer                              | HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH<br>BECKER-GOERING-STR. 16;<br>76307 KARLSBAD GERMANY  |
| Test method requested, standard           | <ol style="list-style-type: none"> <li>1. IEEE Std 1528™-2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.</li> <li>2. FCC 47 CFR Part 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.</li> <li>3. FCC 47 CFR Part 2.1093. Radiofrequency radiation exposure evaluation: portable devices.</li> </ol> |
| Summary                                   | <p>Considering the results of the performed test, the item under test is IN COMPLIANCE with FCC 47CFR Part 2.1093 exposure limits.</p> <p>The maximum 1-g SAR found during this test has been 0.903 W/kg, for GPRS 4 slots 850 MHz.</p>   |
| Approved by (name / position & signature) | Miguel Lacave<br>Antennas Lab Manager   |
| Date of issue                             | 2022-01-28  |
| Report template No                        | FDT08_23<br>(* "Data provided by the client")   |

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## Competences and guarantees

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DEKRA Testing and Certification is a FCC-recognized accredited testing laboratory with appropriate scope of accreditation that include testing performed in this test report.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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## General conditions

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1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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## Uncertainty

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Uncertainty (factor  $k=2$ ) was calculated according to the following documents:

1. DEKRA Testing and Certification S.A.U. internal document PODT000.
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).

## Data provided by the client

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The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested" and "Other identification of the product").
2. Maximum output power, 5G conducted output power values and testing distance.
3. Derived model not tested. These models have been declared by the supplier of the sample as being the same as the model under test.

**HARMAN AUTOMOTIVE DIVISION**  
HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH  
BECKER-GOERING-STRASSE 16  
76307 KARLSBAD, GERMANY



### Declaration of similarity

To whom it may concern,

We, **Harman Becker Automotive Systems GmbH**, located in  
**Becker-Goering-Str. 16; 76307 Karlsbad, Germany**

Hereby declare that the following units: **WAVE-11-HIGH-R2** and **WAVE-11-HAF-R2**  
have integrated the same NAD modules, are using same schematic and same PCB  
layout.

The only difference between the two models is that **WAVE-11-HIGH-R2** is equipped  
with chipset U-Blox UBX-F9940, where **WAVE-11-HAF-R2** is equipped with chipset  
ST-Micro STA9100MGA & STA5635S.

Where only one of the aforementioned variants has been used as DUT, shall remain  
valid and applicable for these two models described.

This declaration is intended to be included in the test reports where applies

Regards



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DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by  
the client and that may affect the validity of results.

## Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

| Control Nº | Description         | Model           | Serial Nº       | Date of reception |
|------------|---------------------|-----------------|-----------------|-------------------|
| 68000C/007 | TCU                 | WAVE-11-HIGH-R2 | B392F10M4914018 | 2021/07/29        |
| 68000C/073 | DA WAVE HIGH 5G ROW | DA04DI20        | 0016            | 2021/08/27        |
| 68000C/075 | DA WAVE HIGH 5G US  | DA05DI20        | 0109            | 2021/08/27        |

1. Sample M/01 has undergone the test(s) specified in subclause "Test method requested": Conducted average output power and SAR evaluation for 2G, 3G, LTE and 5G modes.

## Test sample description

|  |  |   |              |
|--|--|---|--------------|
| Description of product .....                 | Telematic control unit with wireless technologies. |   |              |
| Software version.....                        | 21411A.004_045_017                                 |   |              |
| Hardware version .....                       | D5   |   |              |
| Mounting position .....                      | <input type="checkbox"/>                           | Table top equipment                               |              |
|  | <input type="checkbox"/>                           | Wall/Ceiling mounted equipment                    |              |
|  | <input type="checkbox"/>                           | Floor standing equipment                          |              |
|  | <input type="checkbox"/>                           | Hand-held equipment                               |              |
|  | <input checked="" type="checkbox"/>                | Other: Vehicular environment equipment (Car Roof) |              |
| Accessories (not part of the test item)..... | Description  | Type  | Manufacturer |
|  | Charging adapter                                   | ---   |              |
|  | USB cable  | ---   |              |

## Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH  
 BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY

## Testing period and place

|               |  |
|---------------|--|
| Test Location | DEKRA Testing and Certification S.A.U. |
| Date (start)  | 2021-10-04                             |
| Date (finish) | 2022-01-03                             |

## Document history

| Report number | Date       | Description   |
|---------------|------------|---------------|
| 68000RAN.002  | 2022-01-28 | First release |

## Environmental conditions

| Date                          | Max. Temp. | Min. Temp. | Max. Hum. | Min. Hum. | Limit            |
|-------------------------------|------------|------------|-----------|-----------|------------------|
|                               | °C         | °C         | %         | %         |                  |
| From 2021-10-04 to 2021-12-27 | 24.52      | 20.04      | 69.97     | 30.06     | 18-25 °C, 30-70% |

## Remarks and comments

1: Testing of GPRS EDGE mode is not required according to test reductions mentioned in FCC OET KDB 941225 D01 3G SAR Procedures, paragraph "5. GSM, GPRS and EDGE".

2: Testing of HSDPA/HSPA/HSPA+/DC-HSPA modes are not required according to paragraph "2.1 3G SAR test reduction procedure" mentioned in FCC OET KDB 941225 D01 3G SAR Procedures.

3: Only the plots of the highest reported SAR for each mode/band are included in appendix C.

4: The tests have been performed by the technical personnel: Ismael Gamarro and Francisco J. Sánchez.

5: References:

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093 and the following FCC Published RF exposure KDB procedures:

- FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
- FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
- FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
- FCC OET KDB 941225 D01 3G SAR Procedures v03r01 (October 2015).
- FCC OET KDB 941225 D05 SAR for LTE Devices v02r05 (October 2015).
- FCC OET KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 (October 2015).
- TCB Workshop Nov. 2017, TCB Workshop October 2018, TCB Workshop October 2020 and TCB Workshop February 2021

6: LTE Rel.10 and 5G NR FR1 testing method and procedure was consulted and approved through FCC inquiry.

8: The instrumentation utilized to perform the tests covered in this test report is listed in the following table:

| Equipment   | NC   |
|---|------|
| Dosimetric E-field probe SPEAG EX3DV4                         | 6125 |
| Dosimetric E-field probe SPEAG ES3DV3                         | 3052 |
| Data acquisition device SPEAG DAE4                            | 3430 |
| Data acquisition device SPEAG DAE4                            | 8876 |
| SPEAG Mounting Device for Laptop and Body-Worn Transmitters   | 3526 |
| Oval flat phantom SPEAG ELI 4                                 | 3525 |
| Electro-optical converter SPEAG SE UMS 018 BB                 | 8902 |
| Robot Stäubli RX60BL, Robot controller STÄUBLI CS8CSpeag-TX60 | 8867 |
| Measurement server SPEAG DASY6 SE UMS 028 CA                  | 8895 |
| SAR measurement software SPEAG cDASY6 16.0.0.116              | 8898 |
| Head Tissue Equivalent Liquid for 750 MHz band                | 3920 |
| Head Tissue Equivalent Liquid for 900 MHz band                | 3631 |
| Head Tissue Equivalent Liquid for 1700 MHz band               | 6028 |
| Head Tissue Equivalent Liquid for 1900 MHz band               | 8844 |
| Head Tissue Equivalent Liquid for 2000 MHz band               | 4173 |
| Head Tissue Equivalent Liquid for 2100 MHz band               | 4173 |
| Head Tissue Equivalent Liquid for 2300 MHz band               | 4173 |
| Head Tissue Equivalent Liquid for 2600 MHz band               | 4173 |
| Head Tissue Equivalent Liquid for 3300 MHz band               | 3636 |
| Head Tissue Equivalent Liquid for 3500 MHz band               | 3636 |
| Head Tissue Equivalent Liquid for 3700 MHz band               | 3636 |
| Head Tissue Equivalent Liquid for 4200 MHz band               | 3636 |
| 750 MHz dipole validation kit SPEAG D750V3                    | 3919 |
| 900 MHz dipole validation kit SPEAG D900V2                    | 3426 |
| 1800 MHz dipole validation kit SPEAG D1800V2                  | 3427 |
| 2000 MHz dipole validation kit SPEAG D2000V2                  | 3428 |
| 2300 MHz dipole validation kit SPEAG D2300V2                  | 8148 |
| 2600 MHz dipole validation kit SPEAG D2600V2                  | 3527 |
| 3300 MHz dipole validation kit SPEAG D3300V2                  | 8761 |
| 3500 MHz dipole validation kit SPEAG D3500V2                  | 8762 |
| 3700 MHz dipole validation kit SPEAG D3700V2                  | 8763 |
| 4200 MHz dipole validation kit SPEAG D4200V2                  | 8765 |
| Vector network analyzer Agilent FieldFox N9923A               | 4482 |
| Dielectric probe kit SPEAG DAK-3.5                            | 4171 |
| RF Generator R&S SMU200                                       | 3346 |
| Power amplifier MITEQ AMF-4D-00400600-50-30P                  | 3485 |
| DC Power supply Agilent U8002A                                | 4835 |
| Dual directional coupler HP 778D                              | 1084 |
| Dual directional coupler NARDA 4227-16                        | 3630 |
| Power meter Agilent E4419B                                    | 4393 |
| Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z81            | 4164 |
| Digital thermometer LKM Electronics model DTM300-Spezial      | 4170 |
| Temperature and humidity probe HUMIDIPROBE Pico Technology    | 3453 |
| Universal Radio Communication Tester R&S CMW 500              | 3934 |
| Universal Radio Communication Tester R&S CMW 500              | 4804 |
| Wideband Radio Communication Tester Keysight E7515A UXM       | 8066 |
| Universal Radio Communication Tester R&S CMW 500              | 8922 |
| Wideband Radio Communication Tester R&S CMX 500               | 8923 |

## Testing verdicts

|                  |     |
|------------------|-----|
| Not applicable : | N/A |
| Pass :           | P   |
| Fail :           | F   |
| Not measured :   | N/M |

| FCC 47CFR Part 2.1093 | VERDICT |   |   |    |
|-----------------------|---------|---|---|----|
|                       | N/A     | P | F | NM |
| GSM 850               |         | P |   |    |
| GSM 1900              |         | P |   |    |
| WCDMA II              |         | P |   |    |
| WCDMA IV              |         | P |   |    |
| WCDMA V               |         | P |   |    |
| LTE 2                 |         | P |   |    |
| LTE 4                 |         | P |   |    |
| LTE 5                 |         | P |   |    |
| LTE 7                 |         | P |   |    |
| LTE 12                |         | P |   |    |
| LTE 13                |         | P |   |    |
| LTE 17                |         | P |   |    |
| LTE 25                |         | P |   |    |
| LTE 26                |         | P |   |    |
| LTE 38                |         | P |   |    |
| LTE 41                |         | P |   |    |
| LTE 42                |         | P |   |    |
| LTE 66                |         | P |   |    |
| LTE 71                |         | P |   |    |
| n2                    |         | P |   |    |
| n5                    |         | P |   |    |
| n7                    |         | P |   |    |
| n25                   |         | P |   |    |
| n38                   |         | P |   |    |
| n41                   |         | P |   |    |
| n66                   |         | P |   |    |
| n71                   |         | P |   |    |
| n77                   |         | P |   |    |
| n78                   |         | P |   |    |



## Appendix A: RF Exposure assessment result

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## 1. General description of the device under evaluation

The device under evaluation consists of a telematics control unit with wireless technologies, used in automotive, equipped with 2 modems, OEM and customer. The project name WAVE has the meaning “Wireless Access in Vehicular Environment” and thus describes the key features of this device as Communication and Data Interface. This unit was designed for automotive usage and contains the following features: GSM, UMTS, LTE, 5G, and GNSS.

The equipment supports two cellular modules and multiple antennas that can be used for transmission. It supports different configurations in which different antennas can be used for different purposes and transmit simultaneously. Technologies and frequency bands supported by each antenna, as well as simultaneous transmission conditions, are evaluated in the “RF Exposure Assessment result and verdict” section.

The list of cellular modules and antennas supported by the device are:

- Cellular modules: “NAD1 (OEM)” and “NAD2 (Consumer)”
- Antennas: “MIMO1 High”, “MIMO2 High”, “MIMO1 RoW”, “MIMO2 RoW”, “DSDA1 FSA”, “DSDA2 FSA”, “DSDA1 Antennenbox”, “DSDA2 Antennenbox” and “Int BuA”

Each antenna can be connected through switching to different modules and used for specific technologies and/or frequency band ranges depending on the configuration of the device. The table below shows all possible configurations of the device, usage of each antenna and simultaneous transmission combinations:

| Configuration | Module                    | Antenna           | Tx - Bands   |
|---------------|---------------------------|-------------------|--|
| Conf 1        | NAD2                      | DSDA1 Antennenbox | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Antennenbox | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | Int BuA           | 2G (850/1900 MHz)<br>3G (II, IV, V)  |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Antennebox + Int BuA<br>2. DSDA2 Antennebox + Int BuA<br>3. DSDA1 Antennebox + MIMO2<br>4. DSDA2 Antennebox + MIMO2   |
| Conf 2        | NAD2                      | DSDA1 FSA         | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 FSA         | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | Int BuA           | 2G (850/1900 MHz)<br>3G (II, IV, V)  |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 FSA + Int BuA<br>2. DSDA2 FSA + Int BuA<br>3. DSDA1 FSA + MIMO2<br>4. DSDA2 FSA + MIMO2   |

| Configuration | Module                    | Antenna  | Tx - Bands   |
|---------------|---------------------------|--|--|
| Conf 3        | NAD2                      | DSDA1 Antennenbox  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Antennenbox  | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW  | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission | 1. DSDA1 Antennebox + MIMO1<br>2. DSDA1 Antennebox + MIMO2<br>3. DSDA2 Antennebox + MIMO1<br>4. DSDA2 Antennebox + MIMO2   |  |
| Conf 4        | NAD2                      | DSDA1 FSA  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 FSA  | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW  | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission | 1. DSDA1 FSA + MIMO1<br>2. DSDA1 FSA + MIMO2<br>3. DSDA2 FSA + MIMO1<br>4. DSDA2 FSA + MIMO2   |  |
| Conf 5        | NAD2                      | DSDA1 Antennenbox  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Antennenbox  | LTE (42)<br>5G (n77,n78)   |
|               | NAD2                      | Int BuA  | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW  | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW  | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission | 1. DSDA1 Antennebox + MIMO1<br>2. DSDA1 Antennebox + MIMO2<br>3. DSDA2 Antennebox + MIMO1<br>4. DSDA2 Antennebox + MIMO2<br>5. Int BuA + MIMO1<br>6. Int BuA + MIMO2 |  |

| Configuration | Module                    | Antenna           | Tx - Bands   |
|---------------|---------------------------|-------------------|--|
| Conf 6        | NAD2                      | DSDA1 FSA         | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 FSA         | LTE (42)<br>5G (n77,n78)   |
|               | NAD2                      | Int BuA Antenna   | None (this port is only for UHB)   |
|               | NAD2                      | Int BuA           | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 FSA + MIMO1<br>2. DSDA1 FSA + MIMO2<br>3. DSDA2 FSA + MIMO1<br>4. DSDA2 FSA + MIMO2<br>5. Int BuA + MIMO1<br>6. Int BuA + MIMO2                                 |
| Conf 7        | NAD2                      | DSDA1 Monopol     | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Monopol     | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | Int BuA           | 2G (850/1900 MHz)<br>3G (II, IV, V)  |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Monopol + Int BuA<br>2. DSDA2 Monopol + Int BuA<br>3. DSDA1 Monopol + MIMO2<br>4. DSDA2 Monopol + MIMO2   |
| Conf 8        | NAD2                      | DSDA1 Spoiler     | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Spoiler     | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | Int BuA           | 2G (850/1900 MHz)<br>3G (II, IV, V)  |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Spoiler + Int BuA<br>2. DSDA2 Spoiler + Int BuA<br>3. DSDA1 Spoiler + MIMO2<br>4. DSDA2 Spoiler + MIMO2   |

| Configuration | Module                    | Antenna           | Tx - Bands   |
|---------------|---------------------------|-------------------|--|
| Conf 9        | NAD2                      | DSDA1 Monopol     | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Monopol     | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Monopol + MIMO1<br>2. DSDA1 Monopol + MIMO2<br>3. DSDA2 Monopol + MIMO1<br>4. DSDA2 Monopol + MIMO2   |
| Conf 10       | NAD2                      | DSDA1 Spoiler     | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 FSA         | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Spoiler + MIMO1<br>2. DSDA1 Spoiler + MIMO2<br>3. DSDA2 Spoiler + MIMO1<br>4. DSDA2 Spoiler + MIMO2   |
| Conf 11       | NAD2                      | DSDA1 Antennenbox | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Antennenbox | LTE (42)<br>5G (n77,n78)   |
|               | NAD2                      | Int BuA           | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Monopol + MIMO1<br>2. DSDA1 Monopol + MIMO2<br>3. DSDA2 Monopol + MIMO1<br>4. DSDA2 Monopol + MIMO2<br>5. Int BuA + MIMO1<br>6. Int BuA + MIMO2                 |

| Configuration | Module                    | Antenna           | Tx - Bands   |
|---------------|---------------------------|-------------------|--|
| Conf 12       | NAD2                      | DSDA1 Spoiler     | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD2                      | DSDA2 Spoiler     | LTE (42)<br>5G (n77,n78)   |
|               | NAD2                      | Int BuA Antenna   | None (this port is only for UHB)   |
|               | NAD2                      | Int BuA           | LTE (42)<br>5G (n77,n78)   |
|               | NAD1                      | MIMO1 High or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1                      | MIMO2 High or RoW | LTE (42)<br>5G (n77,n78)   |
|               | Simultaneous transmission |                   | 1. DSDA1 Spoiler + MIMO1<br>2. DSDA1 Spoiler + MIMO2<br>3. DSDA2 Spoiler + MIMO1<br>4. DSDA2 Spoiler + MIMO2<br>5. Int BuA + MIMO1<br>6. Int BuA + MIMO2                 |

**Table 1:** Equipment configurations and simultaneous transmission antenna combinations

Declared worst-case carline installation distance are shown in the following tables:

| Wave Head Unit Worst-case distances summary                           |                            |
|---|----------------------------|
| Antenna   | Min. distance to passenger |
| DSDA1/2 Antennenbox, DSDA1/2 FSA, DSDA1/2 Monopol and DSDA1/2 Spoiler | > 20 cm                    |
| MIMO1, MIMO2 and Int BuA  | 37.92 mm                   |

**Table 2:** Minimum distance to passenger

In order to cover all carlines installations, the attenuation of the installation cable, which will depend on the cable length, was not taken into account to assess a more conservative worst-case condition.

An assessment according to FCC 47 CFR Part 2.1091 for each antenna installed more than 20 cm away from nearby passengers has been performed at an evaluation distance of 20 cm for DSDA1/2 Antennenbox and DSDA1/2 FSA antennas and 24 cm for DSDA1/2 Monopol and DSDA1/2 Spoiler antennas.

For antennas that could be installed closer than 20 cm to the nearest passenger SAR testing according IEEE Std 1528™-2013, FCC 47 CFR Part 2.1093 and FCC Published RF exposure KDB procedures have been performed for the worst-case installation distance between all carlines.

The equipment specifications for each supported technology are shown in the following tables.

Values corresponding to antenna gain for DSDA1 FSA, DSDA2 FSA, DSDA1 Antennebox and DSDA2 Antennebox have been measured and stated into DEKRA Testing and Certification, S.A.U. test report num. 62486RAN.001.

Values corresponding to antenna gain for DSDA1 Monopol, DSDA2 Monopol, DSDA1 Spoiler and DSDA2 Spoiler are data provided by the client.

**Equipment specs - Antennas DSDA1 FSA and DSDA2 FSA:**

| Technology / Mode | Band | Frequency (MHz) | Maximum Conducted Output Power (Incl. Tune-Up) (dBm) | Duty Cycle (%) | Time Averaged Conducted Power (dBm) | Antenna peak gain DSDA1 FSA (dBi) | Antenna peak gain DSDA2 FSA (dBi) | Maximum Averaged E.I.R.P. (dBm) | Maximum Averaged E.I.R.P. (mW) |
|-------------------|------|-----------------|--|----------------|-------------------------------------|-----------------------------------|-----------------------------------|---------------------------------|--------------------------------|
| GSM               | 850  | 824 - 849       | 34.00  | 12.50          | 24.97                               | -0.99                             | -                                 | 23.98                           | 249.98                         |
| GPRS 1TX          | 850  | 824 - 849       | 33.50  | 12.50          | 24.47                               | -0.99                             | -                                 | 23.48                           | 222.80                         |
| GPRS 2TX          | 850  | 824 - 849       | 31.50  | 25.00          | 25.48                               | -0.99                             | -                                 | 24.49                           | 281.15                         |
| GPRS 3TX          | 850  | 824 - 849       | 29.50  | 37.50          | 25.24                               | -0.99                             | -                                 | 24.25                           | 266.09                         |
| GPRS 4TX          | 850  | 824 - 849       | 28.50  | 50.00          | 25.49                               | -0.99                             | -                                 | 24.50                           | 281.82                         |
| EGPRS 1TX         | 850  | 824 - 849       | 27.50  | 12.50          | 18.47                               | -0.99                             | -                                 | 17.48                           | 55.96                          |
| EGPRS 2TX         | 850  | 824 - 849       | 26.50  | 25.00          | 20.48                               | -0.99                             | -                                 | 19.49                           | 88.91                          |
| EGPRS 3TX         | 850  | 824 - 849       | 24.50  | 37.50          | 20.24                               | -0.99                             | -                                 | 19.25                           | 84.15                          |
| EGPRS 4TX         | 850  | 824 - 849       | 23.50  | 50.00          | 20.49                               | -0.99                             | -                                 | 19.50                           | 89.12                          |
| GSM               | 1900 | 1850 - 1910     | 31.00  | 12.50          | 21.97                               | -1.58                             | -                                 | 20.39                           | 109.37                         |
| GPRS 1TX          | 1900 | 1850 - 1910     | 30.50  | 12.50          | 21.47                               | -1.58                             | -                                 | 19.89                           | 97.48                          |
| GPRS 2TX          | 1900 | 1850 - 1910     | 27.50  | 25.00          | 21.48                               | -1.58                             | -                                 | 19.90                           | 97.71                          |
| GPRS 3TX          | 1900 | 1850 - 1910     | 26.50  | 37.50          | 22.24                               | -1.58                             | -                                 | 20.66                           | 116.42                         |
| GPRS 4TX          | 1900 | 1850 - 1910     | 24.50  | 50.00          | 21.49                               | -1.58                             | -                                 | 19.91                           | 97.94                          |
| EGPRS 1TX         | 1900 | 1850 - 1910     | 26.50  | 12.50          | 17.47                               | -1.58                             | -                                 | 15.89                           | 38.81                          |
| EGPRS 2TX         | 1900 | 1850 - 1910     | 25.00  | 25.00          | 18.98                               | -1.58                             | -                                 | 17.40                           | 54.95                          |
| EGPRS 3TX         | 1900 | 1850 - 1910     | 23.00  | 37.50          | 18.74                               | -1.58                             | -                                 | 17.16                           | 52.00                          |
| EGPRS 4TX         | 1900 | 1850 - 1910     | 22.00  | 50.00          | 18.99                               | -1.58                             | -                                 | 17.41                           | 55.08                          |
| UMTS              | II   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -1.58                             | -                                 | 22.92                           | 195.88                         |
| UMTS              | IV   | 1710 - 1755     | 24.00  | 100.00         | 24.00                               | -0.06                             | -                                 | 23.94                           | 247.74                         |
| UMTS              | V    | 824 - 849       | 25.00  | 100.00         | 25.00                               | -0.99                             | -                                 | 24.01                           | 251.77                         |
| LTE               | 2    | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -1.58                             | -                                 | 22.92                           | 195.88                         |
| LTE               | 4    | 1710 - 1755     | 25.00  | 100.00         | 25.00                               | -0.06                             | -                                 | 24.94                           | 311.89                         |
| LTE               | 5    | 824 - 849       | 24.50  | 100.00         | 24.50                               | -0.99                             | -                                 | 23.51                           | 224.39                         |
| LTE               | 7    | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | -0.16                             | -                                 | 24.84                           | 304.79                         |
| LTE               | 10   | 1710 - 1770     | 25.00  | 100.00         | 25.00                               | -0.06                             | -                                 | 24.94                           | 311.89                         |
| LTE               | 12   | 699 - 716       | 24.50  | 100.00         | 24.50                               | 1.24                              | -                                 | 25.74                           | 374.97                         |
| LTE               | 13   | 777 - 787       | 24.50  | 100.00         | 24.50                               | 1.24                              | -                                 | 25.74                           | 374.97                         |
| LTE               | 17   | 704 - 716       | 24.50  | 100.00         | 24.50                               | 1.24                              | -                                 | 25.74                           | 374.97                         |
| LTE               | 25   | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | -1.58                             | -                                 | 22.92                           | 195.88                         |
| LTE               | 26   | 814 - 849       | 25.00  | 100.00         | 25.00                               | -0.99                             | -                                 | 24.01                           | 251.77                         |
| LTE               | 38   | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | -1.95                             | -                                 | 22.55                           | 179.89                         |
| LTE               | 41   | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | -1.95                             | -                                 | 22.55                           | 179.89                         |
| LTE               | 42   | 3400 - 3600     | 24.50  | 100.00         | 24.50                               | -                                 | -3.87                             | 20.63                           | 115.61                         |
| LTE               | 66   | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | -0.48                             | -                                 | 24.02                           | 252.35                         |
| LTE               | 71   | 663 - 698       | 24.50  | 100.00         | 24.50                               | 1.01                              | -                                 | 25.51                           | 355.63                         |
| 5G                | n2   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -1.58                             | -                                 | 22.92                           | 195.88                         |
| 5G                | n5   | 824 - 849       | 25.00  | 100.00         | 25.00                               | -0.99                             | -                                 | 24.01                           | 251.77                         |
| 5G                | n7   | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | -0.16                             | -                                 | 24.84                           | 304.79                         |
| 5G                | n25  | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | -1.58                             | -                                 | 22.92                           | 195.88                         |
| 5G                | n38  | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | -1.95                             | -                                 | 22.55                           | 179.89                         |
| 5G                | n41  | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | -1.95                             | -                                 | 22.55                           | 179.89                         |
| 5G                | n66  | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | -0.48                             | -                                 | 24.02                           | 252.35                         |
| 5G                | n71  | 663 - 698       | 24.50  | 100.00         | 24.50                               | 1.01                              | -                                 | 25.51                           | 355.63                         |
| 5G                | n77  | 3300 - 4200     | 24.50  | 100.00         | 24.50                               | -                                 | -3.87                             | 20.63                           | 115.61                         |
| 5G                | n78  | 3300 - 3800     | 24.50  | 100.00         | 24.50                               | -                                 | -3.87                             | 20.63                           | 115.61                         |

**Table 3:** Equipment specifications



**Equipment specs - Antennas DSDA1 Antennebox and DSDA2 Antennebox:**

| Technology / Mode | Band | Frequency (MHz) | Maximum Conducted Output Power (Incl. Tune-Up) (dBm) | Duty Cycle (%) | Time Averaged Conducted Power (dBm) | Antenna peak gain DSDA1 Antennebox (dBi) | Antenna peak gain DSDA2 Antennebox (dBi) | Maximum Averaged E.I.R.P. (dBm) | Maximum Averaged E.I.R.P. (mW) |
|-------------------|------|-----------------|--|----------------|-------------------------------------|--|--|---------------------------------|--------------------------------|
| GSM               | 850  | 824 - 849       | 34.00  | 12.50          | 24.97                               | -1.18                                    | -  | 23.79                           | 239.28                         |
| GPRS 1TX          | 850  | 824 - 849       | 33.50  | 12.50          | 24.47                               | -1.18                                    | -  | 23.29                           | 213.26                         |
| GPRS 2TX          | 850  | 824 - 849       | 31.50  | 25.00          | 25.48                               | -1.18                                    | -  | 24.30                           | 269.12                         |
| GPRS 3TX          | 850  | 824 - 849       | 29.50  | 37.50          | 25.24                               | -1.18                                    | -  | 24.06                           | 254.70                         |
| GPRS 4TX          | 850  | 824 - 849       | 28.50  | 50.00          | 25.49                               | -1.18                                    | -  | 24.31                           | 269.76                         |
| EGPRS 1TX         | 850  | 824 - 849       | 27.50  | 12.50          | 18.47                               | -1.18                                    | -  | 17.29                           | 53.57                          |
| EGPRS 2TX         | 850  | 824 - 849       | 26.50  | 25.00          | 20.48                               | -1.18                                    | -  | 19.30                           | 85.10                          |
| EGPRS 3TX         | 850  | 824 - 849       | 24.50  | 37.50          | 20.24                               | -1.18                                    | -  | 19.06                           | 80.54                          |
| EGPRS 4TX         | 850  | 824 - 849       | 23.50  | 50.00          | 20.49                               | -1.18                                    | -  | 19.31                           | 85.30                          |
| GSM               | 1900 | 1850 - 1910     | 31.00  | 12.50          | 21.97                               | -0.07                                    | -  | 21.90                           | 154.85                         |
| GPRS 1TX          | 1900 | 1850 - 1910     | 30.50  | 12.50          | 21.47                               | -0.07                                    | -  | 21.40                           | 138.01                         |
| GPRS 2TX          | 1900 | 1850 - 1910     | 27.50  | 25.00          | 21.48                               | -0.07                                    | -  | 21.41                           | 138.34                         |
| GPRS 3TX          | 1900 | 1850 - 1910     | 26.50  | 37.50          | 22.24                               | -0.07                                    | -  | 22.17                           | 164.83                         |
| GPRS 4TX          | 1900 | 1850 - 1910     | 24.50  | 50.00          | 21.49                               | -0.07                                    | -  | 21.42                           | 138.67                         |
| EGPRS 1TX         | 1900 | 1850 - 1910     | 26.50  | 12.50          | 17.47                               | -0.07                                    | -  | 17.40                           | 54.94                          |
| EGPRS 2TX         | 1900 | 1850 - 1910     | 25.00  | 25.00          | 18.98                               | -0.07                                    | -  | 18.91                           | 77.79                          |
| EGPRS 3TX         | 1900 | 1850 - 1910     | 23.00  | 37.50          | 18.74                               | -0.07                                    | -  | 18.67                           | 73.63                          |
| EGPRS 4TX         | 1900 | 1850 - 1910     | 22.00  | 50.00          | 18.99                               | -0.07                                    | -  | 18.92                           | 77.98                          |
| UMTS              | II   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -0.07                                    | -  | 24.43                           | 277.33                         |
| UMTS              | IV   | 1710 - 1755     | 24.00  | 100.00         | 24.00                               | -1.21                                    | -  | 22.79                           | 190.11                         |
| UMTS              | V    | 824 - 849       | 25.00  | 100.00         | 25.00                               | -1.18                                    | -  | 23.82                           | 240.99                         |
| LTE               | 2    | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -0.07                                    | -  | 24.43                           | 277.33                         |
| LTE               | 4    | 1710 - 1755     | 25.00  | 100.00         | 25.00                               | -1.21                                    | -  | 23.79                           | 239.33                         |
| LTE               | 5    | 824 - 849       | 24.50  | 100.00         | 24.50                               | -1.18                                    | -  | 23.32                           | 214.78                         |
| LTE               | 7    | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | 0.84                                     | -  | 25.84                           | 383.71                         |
| LTE               | 10   | 1710 - 1770     | 25.00  | 100.00         | 25.00                               | -1.21                                    | -  | 23.79                           | 239.33                         |
| LTE               | 12   | 699 - 716       | 24.50  | 100.00         | 24.50                               | -0.82                                    | -  | 23.68                           | 233.35                         |
| LTE               | 13   | 777 - 787       | 24.50  | 100.00         | 24.50                               | 0.35                                     | -  | 24.85                           | 305.49                         |
| LTE               | 17   | 704 - 716       | 24.50  | 100.00         | 24.50                               | -0.82                                    | -  | 23.68                           | 233.35                         |
| LTE               | 25   | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | -0.07                                    | -  | 24.43                           | 277.33                         |
| LTE               | 26   | 814 - 849       | 25.00  | 100.00         | 25.00                               | -0.35                                    | -  | 24.65                           | 291.74                         |
| LTE               | 38   | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 1.41                                     | -  | 25.91                           | 389.94                         |
| LTE               | 41   | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 1.41                                     | -  | 25.91                           | 389.94                         |
| LTE               | 42   | 3400 - 3600     | 24.50  | 100.00         | 24.50                               | -  | -3.42                                    | 21.08                           | 128.23                         |
| LTE               | 66   | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | -1.21                                    | -  | 23.29                           | 213.30                         |
| LTE               | 71   | 663 - 698       | 24.50  | 100.00         | 24.50                               | -0.82                                    | -  | 23.68                           | 233.35                         |
| 5G                | n2   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | -0.07                                    | -  | 24.43                           | 277.33                         |
| 5G                | n5   | 824 - 849       | 25.00  | 100.00         | 25.00                               | -1.18                                    | -  | 23.82                           | 240.99                         |
| 5G                | n7   | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | 0.84                                     | -  | 25.84                           | 383.71                         |
| 5G                | n25  | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | -0.07                                    | -  | 24.43                           | 277.33                         |
| 5G                | n38  | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 1.41                                     | -  | 25.91                           | 389.94                         |
| 5G                | n41  | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 1.41                                     | -  | 25.91                           | 389.94                         |
| 5G                | n66  | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | -1.21                                    | -  | 23.29                           | 213.30                         |
| 5G                | n71  | 663 - 698       | 24.50  | 100.00         | 24.50                               | -0.82                                    | -  | 23.68                           | 233.35                         |
| 5G                | n77  | 3300 - 4200     | 24.50  | 100.00         | 24.50                               | -  | -3.42                                    | 21.08                           | 128.23                         |
| 5G                | n78  | 3300 - 3800     | 24.50  | 100.00         | 24.50                               | -  | -3.42                                    | 21.08                           | 128.23                         |

**Table 4:** Equipment specifications

**Equipment specs - Antennas DSDA1 Monopol and DSDA2 Monopol:**

| Technology / Mode | Band | Frequency (MHz) | Maximum Conducted Output Power (Incl. Tune-Up) (dBm) | Duty Cycle (%) | Time Averaged Conducted Power (dBm) | Antenna peak gain DSDA1/DSDA2 Monopol (dBi) | Maximum Averaged E.I.R.P. (dBm) | Maximum Averaged E.I.R.P. (mW) |
|-------------------|------|-----------------|--|----------------|-------------------------------------|---|---------------------------------|--------------------------------|
| GSM               | 850  | 824 - 849       | 34.00  | 12.50          | 24.97                               | 6.00  | 30.97                           | 1250.00                        |
| GPRS 1TX          | 850  | 824 - 849       | 33.50  | 12.50          | 24.47                               | 6.00  | 30.47                           | 1114.06                        |
| GPRS 2TX          | 850  | 824 - 849       | 31.50  | 25.00          | 25.48                               | 6.00  | 31.48                           | 1405.85                        |
| GPRS 3TX          | 850  | 824 - 849       | 29.50  | 37.50          | 25.24                               | 6.00  | 31.24                           | 1330.55                        |
| GPRS 4TX          | 850  | 824 - 849       | 28.50  | 50.00          | 25.49                               | 6.00  | 31.49                           | 1409.19                        |
| EGPRS 1TX         | 850  | 824 - 849       | 27.50  | 12.50          | 18.47                               | 6.00  | 24.47                           | 279.84                         |
| EGPRS 2TX         | 850  | 824 - 849       | 26.50  | 25.00          | 20.48                               | 6.00  | 26.48                           | 444.57                         |
| EGPRS 3TX         | 850  | 824 - 849       | 24.50  | 37.50          | 20.24                               | 6.00  | 26.24                           | 420.76                         |
| EGPRS 4TX         | 850  | 824 - 849       | 23.50  | 50.00          | 20.49                               | 6.00  | 26.49                           | 445.63                         |
| GSM               | 1900 | 1850 - 1910     | 31.00  | 12.50          | 21.97                               | 6.00  | 27.97                           | 626.48                         |
| GPRS 1TX          | 1900 | 1850 - 1910     | 30.50  | 12.50          | 21.47                               | 6.00  | 27.47                           | 558.35                         |
| GPRS 2TX          | 1900 | 1850 - 1910     | 27.50  | 25.00          | 21.48                               | 6.00  | 27.48                           | 559.68                         |
| GPRS 3TX          | 1900 | 1850 - 1910     | 26.50  | 37.50          | 22.24                               | 6.00  | 28.24                           | 666.85                         |
| GPRS 4TX          | 1900 | 1850 - 1910     | 24.50  | 50.00          | 21.49                               | 6.00  | 27.49                           | 561.01                         |
| EGPRS 1TX         | 1900 | 1850 - 1910     | 26.50  | 12.50          | 17.47                               | 6.00  | 23.47                           | 222.28                         |
| EGPRS 2TX         | 1900 | 1850 - 1910     | 25.00  | 25.00          | 18.98                               | 6.00  | 24.98                           | 314.73                         |
| EGPRS 3TX         | 1900 | 1850 - 1910     | 23.00  | 37.50          | 18.74                               | 6.00  | 24.74                           | 297.87                         |
| EGPRS 4TX         | 1900 | 1850 - 1910     | 22.00  | 50.00          | 18.99                               | 6.00  | 24.99                           | 315.48                         |
| UMTS              | II   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| UMTS              | IV   | 1710 - 1755     | 24.00  | 100.00         | 24.00                               | 6.00  | 30.00                           | 1000.00                        |
| UMTS              | V    | 824 - 849       | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| LTE               | 2    | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 4    | 1710 - 1755     | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| LTE               | 5    | 824 - 849       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 7    | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| LTE               | 10   | 1710 - 1770     | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| LTE               | 12   | 699 - 716       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 13   | 777 - 787       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 17   | 704 - 716       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 25   | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 26   | 814 - 849       | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| LTE               | 38   | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 41   | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 42   | 3400 - 3600     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 66   | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| LTE               | 71   | 663 - 698       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n2   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n5   | 824 - 849       | 25.00  | 100.00         | 25.00                               | 6.00  | 31.00                           | 1258.93                        |
| 5G                | n7   | 2500 - 2570     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n25  | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n38  | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n41  | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n66  | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n71  | 663 - 698       | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n77  | 3300 - 4200     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |
| 5G                | n78  | 3300 - 3800     | 24.50  | 100.00         | 24.50                               | 6.00  | 30.50                           | 1122.02                        |

**Table 5:** Equipment specifications

**Equipment specs - Antennas DSDA1 Spoiler and DSDA2 Spoiler:**

| Technology / Mode | Band | Frequency (MHz) | Maximum Conducted Output Power (Incl. Tune-Up) (dBm) | Duty Cycle (%) | Time Averaged Conducted Power (dBm) | Antenna peak gain DSDA1/DSDA2 Spoiler (dBi) | Maximum Averaged E.I.R.P. (dBm) | Maximum Averaged E.I.R.P. (mW) |
|-------------------|------|-----------------|--|----------------|-------------------------------------|---|---------------------------------|--------------------------------|
| GSM               | 850  | 824 - 849       | 34.00  | 12.50          | 24.97                               | 5.00  | 29.97                           | 992.91                         |
| GPRS 1TX          | 850  | 824 - 849       | 33.50  | 12.50          | 24.47                               | 5.00  | 29.47                           | 884.93                         |
| GPRS 2TX          | 850  | 824 - 849       | 31.50  | 25.00          | 25.48                               | 5.00  | 30.48                           | 1116.71                        |
| GPRS 3TX          | 850  | 824 - 849       | 29.50  | 37.50          | 25.24                               | 5.00  | 30.24                           | 1056.89                        |
| GPRS 4TX          | 850  | 824 - 849       | 28.50  | 50.00          | 25.49                               | 5.00  | 30.49                           | 1119.36                        |
| EGPRS 1TX         | 850  | 824 - 849       | 27.50  | 12.50          | 18.47                               | 5.00  | 23.47                           | 222.28                         |
| EGPRS 2TX         | 850  | 824 - 849       | 26.50  | 25.00          | 20.48                               | 5.00  | 25.48                           | 353.13                         |
| EGPRS 3TX         | 850  | 824 - 849       | 24.50  | 37.50          | 20.24                               | 5.00  | 25.24                           | 334.22                         |
| EGPRS 4TX         | 850  | 824 - 849       | 23.50  | 50.00          | 20.49                               | 5.00  | 25.49                           | 353.97                         |
| GSM               | 1900 | 1850 - 1910     | 31.00  | 100.00         | 31.00                               | 5.00  | 36.00                           | 3981.07                        |
| GPRS 1TX          | 1900 | 1850 - 1910     | 30.50  | 100.00         | 30.50                               | 5.00  | 35.50                           | 3548.13                        |
| GPRS 2TX          | 1900 | 1850 - 1910     | 27.50  | 100.00         | 27.50                               | 5.00  | 32.50                           | 1778.28                        |
| GPRS 3TX          | 1900 | 1850 - 1910     | 26.50  | 100.00         | 26.50                               | 5.00  | 31.50                           | 1412.54                        |
| GPRS 4TX          | 1900 | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| EGPRS 1TX         | 1900 | 1850 - 1910     | 26.50  | 100.00         | 26.50                               | 5.00  | 31.50                           | 1412.54                        |
| EGPRS 2TX         | 1900 | 1850 - 1910     | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| EGPRS 3TX         | 1900 | 1850 - 1910     | 23.00  | 100.00         | 23.00                               | 5.00  | 28.00                           | 630.96                         |
| EGPRS 4TX         | 1900 | 1850 - 1910     | 22.00  | 100.00         | 22.00                               | 5.00  | 27.00                           | 501.19                         |
| UMTS              | II   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| UMTS              | IV   | 1710 - 1755     | 24.00  | 100.00         | 24.00                               | 5.00  | 29.00                           | 794.33                         |
| UMTS              | V    | 824 - 849       | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| LTE               | 2    | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 4    | 1710 - 1755     | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| LTE               | 5    | 824 - 849       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 7    | 2500 - 2570     | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| LTE               | 10   | 1710 - 1770     | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| LTE               | 12   | 699 - 716       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 13   | 777 - 787       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 17   | 704 - 716       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 25   | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 26   | 814 - 849       | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| LTE               | 38   | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 41   | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 42   | 3400 - 3600     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 66   | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| LTE               | 71   | 663 - 698       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n2   | 1850 - 1910     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n5   | 824 - 849       | 25.00  | 100.00         | 25.00                               | 5.00  | 30.00                           | 1000.00                        |
| 5G                | n7   | 2500 - 2570     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n25  | 1850 - 1915     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n38  | 2570 - 2620     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n41  | 2496 - 2690     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n66  | 1710 - 1780     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n71  | 663 - 698       | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n77  | 3300 - 4200     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |
| 5G                | n78  | 3300 - 3800     | 24.50  | 100.00         | 24.50                               | 5.00  | 29.50                           | 891.25                         |

**Table 6:** Equipment specifications

## 2. RF Exposure Assessment result and verdict

Limits for Maximum Permissible Exposure (MPE) to comply with FCC 47 CFR § 2.1091 are defined in “§1.1310 Radiation Exposure limits, paragraph (e)”:

### Results - Antennas DSDA1 FSA and DSDA2 FSA:

| Technology / Mode | Band | Frequency (MHz) | Distance (cm) | Power density (mW/cm <sup>2</sup> ) | FCC General Population Limit (mW/cm <sup>2</sup> ) | Verdict |
|-------------------|------|-----------------|---------------|-------------------------------------|--|---------|
| GSM/GPRS          | 850  | 824 - 849       | 20.00         | 0.06                                | 0.55   | Pass    |
| GSM/GPRS          | 1900 | 1850 - 1910     | 20.00         | 0.02                                | 1.00   | Pass    |
| UMTS              | II   | 1850 - 1910     | 20.00         | 0.04                                | 1.00   | Pass    |
| UMTS              | IV   | 1710 - 1755     | 20.00         | 0.05                                | 1.00   | Pass    |
| UMTS              | V    | 824 - 849       | 20.00         | 0.05                                | 0.55   | Pass    |
| LTE               | 2    | 1850 - 1910     | 20.00         | 0.04                                | 1.00   | Pass    |
| LTE               | 4    | 1710 - 1755     | 20.00         | 0.06                                | 1.00   | Pass    |
| LTE               | 5    | 824 - 849       | 20.00         | 0.04                                | 0.55   | Pass    |
| LTE               | 7    | 2500 - 2570     | 20.00         | 0.06                                | 1.00   | Pass    |
| LTE               | 10   | 1710 - 1770     | 20.00         | 0.06                                | 1.00   | Pass    |
| LTE               | 12   | 699 - 716       | 20.00         | 0.07                                | 0.47   | Pass    |
| LTE               | 13   | 777 - 787       | 20.00         | 0.07                                | 0.52   | Pass    |
| LTE               | 17   | 704 - 716       | 20.00         | 0.07                                | 0.47   | Pass    |
| LTE               | 25   | 1850 - 1915     | 20.00         | 0.04                                | 1.00   | Pass    |
| LTE               | 26   | 814 - 849       | 20.00         | 0.05                                | 0.54   | Pass    |
| LTE               | 38   | 2570 - 2620     | 20.00         | 0.04                                | 1.00   | Pass    |
| LTE               | 41   | 2496 - 2690     | 20.00         | 0.04                                | 1.00   | Pass    |
| LTE               | 42   | 3400 - 3600     | 20.00         | 0.02                                | 1.00   | Pass    |
| LTE               | 66   | 1710 - 1780     | 20.00         | 0.05                                | 1.00   | Pass    |
| LTE               | 71   | 663 - 698       | 20.00         | 0.07                                | 0.44   | Pass    |
| 5G                | n2   | 1850 - 1910     | 20.00         | 0.04                                | 1.00   | Pass    |
| 5G                | n5   | 824 - 849       | 20.00         | 0.05                                | 0.55   | Pass    |
| 5G                | n7   | 2500 - 2570     | 20.00         | 0.06                                | 1.00   | Pass    |
| 5G                | n25  | 1850 - 1915     | 20.00         | 0.04                                | 1.00   | Pass    |
| 5G                | n38  | 2570 - 2620     | 20.00         | 0.04                                | 1.00   | Pass    |
| 5G                | n41  | 2496 - 2690     | 20.00         | 0.04                                | 1.00   | Pass    |
| 5G                | n66  | 1710 - 1780     | 20.00         | 0.05                                | 1.00   | Pass    |
| 5G                | n71  | 663 - 698       | 20.00         | 0.07                                | 0.44   | Pass    |
| 5G                | n77  | 3300 - 4200     | 20.00         | 0.02                                | 1.00   | Pass    |
| 5G                | n78  | 3300 - 3800     | 20.00         | 0.02                                | 1.00   | Pass    |

**Table 7:** Assessment result and verdict

**Results - Antennas DSDA1 Antennebox and DSDA2 Antennebox:**

| Technology / Mode | Band | Frequency (MHz) | Distance (cm) | Power density (mW/cm <sup>2</sup> ) | FCC General Population Limit (mW/cm <sup>2</sup> ) | Verdict |
|-------------------|------|-----------------|---------------|-------------------------------------|--|---------|
| GSM/GPRS          | 850  | 824 - 849       | 20.00         | 0.05                                | 0.55   | Pass    |
| GSM/GPRS          | 1900 | 1850 - 1910     | 20.00         | 0.03                                | 1.00   | Pass    |
| UMTS              | II   | 1850 - 1910     | 20.00         | 0.06                                | 1.00   | Pass    |
| UMTS              | IV   | 1710 - 1755     | 20.00         | 0.04                                | 1.00   | Pass    |
| UMTS              | V    | 824 - 849       | 20.00         | 0.05                                | 0.55   | Pass    |
| LTE               | 2    | 1850 - 1910     | 20.00         | 0.06                                | 1.00   | Pass    |
| LTE               | 4    | 1710 - 1755     | 20.00         | 0.05                                | 1.00   | Pass    |
| LTE               | 5    | 824 - 849       | 20.00         | 0.04                                | 0.55   | Pass    |
| LTE               | 7    | 2500 - 2570     | 20.00         | 0.08                                | 1.00   | Pass    |
| LTE               | 10   | 1710 - 1770     | 20.00         | 0.05                                | 1.00   | Pass    |
| LTE               | 12   | 699 - 716       | 20.00         | 0.05                                | 0.47   | Pass    |
| LTE               | 13   | 777 - 787       | 20.00         | 0.06                                | 0.52   | Pass    |
| LTE               | 17   | 704 - 716       | 20.00         | 0.05                                | 0.47   | Pass    |
| LTE               | 25   | 1850 - 1915     | 20.00         | 0.06                                | 1.00   | Pass    |
| LTE               | 26   | 814 - 849       | 20.00         | 0.06                                | 0.54   | Pass    |
| LTE               | 38   | 2570 - 2620     | 20.00         | 0.08                                | 1.00   | Pass    |
| LTE               | 41   | 2496 - 2690     | 20.00         | 0.08                                | 1.00   | Pass    |
| LTE               | 42   | 3400 - 3600     | 20.00         | 0.03                                | 1.00   | Pass    |
| LTE               | 66   | 1710 - 1780     | 20.00         | 0.04                                | 1.00   | Pass    |
| LTE               | 71   | 663 - 698       | 20.00         | 0.05                                | 0.44   | Pass    |
| 5G                | n2   | 1850 - 1910     | 20.00         | 0.06                                | 1.00   | Pass    |
| 5G                | n5   | 824 - 849       | 20.00         | 0.05                                | 0.55   | Pass    |
| 5G                | n7   | 2500 - 2570     | 20.00         | 0.08                                | 1.00   | Pass    |
| 5G                | n25  | 1850 - 1915     | 20.00         | 0.06                                | 1.00   | Pass    |
| 5G                | n38  | 2570 - 2620     | 20.00         | 0.08                                | 1.00   | Pass    |
| 5G                | n41  | 2496 - 2690     | 20.00         | 0.08                                | 1.00   | Pass    |
| 5G                | n66  | 1710 - 1780     | 20.00         | 0.04                                | 1.00   | Pass    |
| 5G                | n71  | 663 - 698       | 20.00         | 0.05                                | 0.44   | Pass    |
| 5G                | n77  | 3300 - 4200     | 20.00         | 0.03                                | 1.00   | Pass    |
| 5G                | n78  | 3300 - 3800     | 20.00         | 0.03                                | 1.00   | Pass    |

**Table 8:** Assessment result and verdict

**Results - Antennas DSDA1 Monopol and DSDA2 Monopol:**

| Technology / Mode | Band | Frequency (MHz) | Distance (cm) | Power density (mW/cm <sup>2</sup> ) | FCC General Population Limit (mW/cm <sup>2</sup> ) | Verdict |
|-------------------|------|-----------------|---------------|-------------------------------------|--|---------|
| GSM/GPRS          | 850  | 824 - 849       | 24.00         | 0.19                                | 0.55   | Pass    |
| GSM/GPRS          | 1900 | 1850 - 1910     | 24.00         | 0.09                                | 1.00   | Pass    |
| UMTS              | II   | 1850 - 1910     | 24.00         | 0.16                                | 1.00   | Pass    |
| UMTS              | IV   | 1710 - 1755     | 24.00         | 0.14                                | 1.00   | Pass    |
| UMTS              | V    | 824 - 849       | 24.00         | 0.17                                | 0.55   | Pass    |
| LTE               | 2    | 1850 - 1910     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 4    | 1710 - 1755     | 24.00         | 0.17                                | 1.00   | Pass    |
| LTE               | 5    | 824 - 849       | 24.00         | 0.16                                | 0.55   | Pass    |
| LTE               | 7    | 2500 - 2570     | 24.00         | 0.17                                | 1.00   | Pass    |
| LTE               | 10   | 1710 - 1770     | 24.00         | 0.17                                | 1.00   | Pass    |
| LTE               | 12   | 699 - 716       | 24.00         | 0.16                                | 0.47   | Pass    |
| LTE               | 13   | 777 - 787       | 24.00         | 0.16                                | 0.52   | Pass    |
| LTE               | 17   | 704 - 716       | 24.00         | 0.16                                | 0.47   | Pass    |
| LTE               | 25   | 1850 - 1915     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 26   | 814 - 849       | 24.00         | 0.17                                | 0.54   | Pass    |
| LTE               | 38   | 2570 - 2620     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 41   | 2496 - 2690     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 42   | 3400 - 3600     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 66   | 1710 - 1780     | 24.00         | 0.16                                | 1.00   | Pass    |
| LTE               | 71   | 663 - 698       | 24.00         | 0.16                                | 0.44   | Pass    |
| 5G                | n2   | 1850 - 1910     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n5   | 824 - 849       | 24.00         | 0.17                                | 0.55   | Pass    |
| 5G                | n7   | 2500 - 2570     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n25  | 1850 - 1915     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n38  | 2570 - 2620     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n41  | 2496 - 2690     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n66  | 1710 - 1780     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n71  | 663 - 698       | 24.00         | 0.16                                | 0.44   | Pass    |
| 5G                | n77  | 3300 - 4200     | 24.00         | 0.16                                | 1.00   | Pass    |
| 5G                | n78  | 3300 - 3800     | 24.00         | 0.16                                | 1.00   | Pass    |

**Table 9:** Assessment result and verdict

**Results - Antennas DSDA1 Spoiler and DSDA2 Spoiler:**

| Technology / Mode | Band | Frequency (MHz) | Distance (cm) | Power density (mW/cm <sup>2</sup> ) | FCC General Population Limit (mW/cm <sup>2</sup> ) | Verdict |
|-------------------|------|-----------------|---------------|-------------------------------------|--|---------|
| GSM/GPRS          | 850  | 824 - 849       | 24.00         | 0.15                                | 0.55   | Pass    |
| GSM/GPRS          | 1900 | 1850 - 1910     | 24.00         | 0.07                                | 1.00   | Pass    |
| UMTS              | II   | 1850 - 1910     | 24.00         | 0.12                                | 1.00   | Pass    |
| UMTS              | IV   | 1710 - 1755     | 24.00         | 0.11                                | 1.00   | Pass    |
| UMTS              | V    | 824 - 849       | 24.00         | 0.14                                | 0.55   | Pass    |
| LTE               | 2    | 1850 - 1910     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 4    | 1710 - 1755     | 24.00         | 0.14                                | 1.00   | Pass    |
| LTE               | 5    | 824 - 849       | 24.00         | 0.12                                | 0.55   | Pass    |
| LTE               | 7    | 2500 - 2570     | 24.00         | 0.14                                | 1.00   | Pass    |
| LTE               | 10   | 1710 - 1770     | 24.00         | 0.14                                | 1.00   | Pass    |
| LTE               | 12   | 699 - 716       | 24.00         | 0.12                                | 0.47   | Pass    |
| LTE               | 13   | 777 - 787       | 24.00         | 0.12                                | 0.52   | Pass    |
| LTE               | 17   | 704 - 716       | 24.00         | 0.12                                | 0.47   | Pass    |
| LTE               | 25   | 1850 - 1915     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 26   | 814 - 849       | 24.00         | 0.14                                | 0.54   | Pass    |
| LTE               | 38   | 2570 - 2620     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 41   | 2496 - 2690     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 42   | 3400 - 3600     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 66   | 1710 - 1780     | 24.00         | 0.12                                | 1.00   | Pass    |
| LTE               | 71   | 663 - 698       | 24.00         | 0.12                                | 0.44   | Pass    |
| 5G                | n2   | 1850 - 1910     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n5   | 824 - 849       | 24.00         | 0.14                                | 0.55   | Pass    |
| 5G                | n7   | 2500 - 2570     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n25  | 1850 - 1915     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n38  | 2570 - 2620     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n41  | 2496 - 2690     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n66  | 1710 - 1780     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n71  | 663 - 698       | 24.00         | 0.12                                | 0.44   | Pass    |
| 5G                | n77  | 3300 - 4200     | 24.00         | 0.12                                | 1.00   | Pass    |
| 5G                | n78  | 3300 - 3800     | 24.00         | 0.12                                | 1.00   | Pass    |

**Table 10:** Assessment result and verdict



**Simultaneous transmission assessment:**

| Antenna Configuration |                            | Simultaneous technologies and modes<br>(worst case per antenna) | Result | Limit | Verdict |
|-----------------------|----------------------------|---|--------|-------|---------|
| Config number         | Antennas                   |   |        |       |         |
| 1                     | DSDA1 Antennebox + Int BuA | LTE 13 + GPRS 4TX   | 0.37   | 1.0   | Pass    |
| 1                     | DSDA2 Antennebox + Int BuA | LTE42/n77/n78 + GPRS 4TX  | 0.27   | 1.0   | Pass    |
| 1/3/5                 | DSDA1 Antennebox + MIMO2   | GPRS 4TX + LTE42  | 0.14   | 1.0   | Pass    |
| 1/3/5                 | DSDA2 Antennebox + MIMO2   | LTE42/n77/n78 + LTE42   | 0.04   | 1.0   | Pass    |
| 2                     | DSDA1 FSA + Int BuA        | LTE 12 + GPRS 4TX   | 0.40   | 1.0   | Pass    |
| 2                     | DSDA2 FSA + Int BuA        | LTE42/n77/n78 + GPRS 4TX  | 0.26   | 1.0   | Pass    |
| 2/4/6                 | DSDA1 FSA + MIMO2          | LTE 12 + LTE42  | 0.17   | 1.0   | Pass    |
| 2/4/6                 | DSDA2 FSA + MIMO2          | LTE42/n77/n78 + LTE42   | 0.03   | 1.0   | Pass    |
| 5/6/11/12             | Int BuA + MIMO1            | LTE 42 + GPRS 4TX   | 0.57   | 1.0   | Pass    |
| 5/6/11/12             | Int BuA + MIMO2            | LTE 42 + LTE 42   | 0.01   | 1.0   | Pass    |
| 7                     | DSDA1 Monopol + Int BuA    | GPRS 4TX + GPRS 4TX   | 0.59   | 1.0   | Pass    |
| 7                     | DSDA2 Monopol + Int BuA    | LTE42/n77/n78 + GPRS 4TX  | 0.39   | 1.0   | Pass    |
| 7/9/11                | DSDA1 Monopol + MIMO2      | GPRS 4TX + LTE42  | 0.36   | 1.0   | Pass    |
| 7/9/11                | DSDA2 Monopol + MIMO2      | LTE42/n77/n78 + LTE42   | 0.16   | 1.0   | Pass    |
| 8                     | DSDA1 Spoiler + Int BuA    | GPRS 4TX + GPRS 4TX   | 0.52   | 1.0   | Pass    |
| 8                     | DSDA2 Spoiler + Int BuA    | LTE42/n77/n78 + GPRS 4TX  | 0.36   | 1.0   | Pass    |
| 8/10/12               | DSDA1 Spoiler + MIMO2      | GPRS 4TX + LTE42  | 0.29   | 1.0   | Pass    |
| 8/10/12               | DSDA2 Spoiler + MIMO2      | LTE42/n77/n78 + LTE42   | 0.13   | 1.0   | Pass    |
| 3/5                   | DSDA1 Antennebox + MIMO1   | LTE13 + GPRS 4TX  | 0.70   | 1.0   | Pass    |
| 3/5                   | DSDA2 Antennebox + MIMO1   | LTE42/n77/n78 + GPRS 4TX  | 0.59   | 1.0   | Pass    |
| 4/6                   | DSDA1 FSA + MIMO1          | LTE 12 + GPRS 4TX   | 0.72   | 1.0   | Pass    |
| 4/6                   | DSDA2 FSA + MIMO1          | LTE42/n77/n78 + GPRS 4TX  | 0.59   | 1.0   | Pass    |
| 9/11                  | DSDA1 Monopol + MIMO1      | GPRS 4TX + GPRS 4TX   | 0.92   | 1.0   | Pass    |
| 9/11                  | DSDA2 Monopol + MIMO1      | LTE42/n77/n78 + GPRS 4TX  | 0.72   | 1.0   | Pass    |
| 10/12                 | DSDA1 Spoiler + MIMO1      | GPRS 4TX + GPRS 4TX   | 0.85   | 1.0   | Pass    |
| 10/12                 | DSDA2 Spoiler + MIMO1      | LTE42/n77/n78 + GPRS 4TX  | 0.69   | 1.0   | Pass    |

**Table 11:** Simultaneous Transmission assessment



### 3. RF Exposure evaluation information

Devices operating in standalone mobile device exposure conditions may contain a single transmitter or multiple transmitters that do not transmit simultaneously. A minimum test separation distance  $\geq 20$  cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits. The distance must be at least 20 cm and fully supported by the operating and installation configurations of the transmitter and its antenna(s), according to the source-based time-averaged maximum power requirements of § 2.1091(d)(2). In cases where cable losses or other attenuations are applied to determine compliance, the most conservative operating configurations and exposure conditions must be evaluated. The minimum test separation distance required for a device to comply with mobile device exposure conditions must be clearly identified in the installation and operating instructions, for all installation and exposure conditions, to enable users and installers to comply with RF exposure requirements. For mobile devices that have the potential to operate in portable device exposure conditions, similar to the configurations described in § 2.1091(d)(4), a KDB inquiry is required to determine the SAR test requirements for demonstrating compliance.

When a device qualifies for the categorical exclusion provision of § 2.1091(c), the minimum test separation distance may be estimated, when applicable, by simple calculations according to plane-wave equivalent conditions, to ensure the transmitter and its antenna(s) can operate in manners that meet or exceed the estimated distance. The source-based time-averaged maximum radiated power, according to the maximum antenna gain, must be applied to calculate the field strength and power density required to establish the minimum test separation distance. When the estimated test separation distance becomes overly conservative and does not support compliance, MPE measurement or computational modeling may be used to determine the required minimum separation distance.

According to §1.1310 Radiofrequency radiation exposure limits, paragraph (e), the limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields are:

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range (MHz)  | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm <sup>2</sup> ) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| <b>(A) Limits for Occupational/Controlled Exposure</b>         |                               |                               |                                     |                          |
| 0.3–3.0 .....  | 614                           | 1.63                          | * 100                               | 6                        |
| 3.0–30 .....   | 1842/f                        | 4.89/f                        | * 900/f <sup>2</sup>                | 6                        |
| 30–300 .....   | 61.4                          | 0.163                         | 1.0                                 | 6                        |
| 300–1,500 .....  | .....                         | .....                         | f/300                               | 6                        |
| 1,500–100,000 .....  | .....                         | .....                         | 5                                   | 6                        |
| <b>(B) Limits for General Population/Uncontrolled Exposure</b> |                               |                               |                                     |                          |
| 0.3–1.34 .....   | 614                           | 1.63                          | * 100                               | 30                       |
| 1.34–30 .....  | 824/f                         | 2.19/f                        | * 180/f <sup>2</sup>                | 30                       |
| 30–300 .....   | 27.5                          | 0.073                         | 0.2                                 | 30                       |
| 300–1,500 .....  | .....                         | .....                         | f/1500                              | 30                       |
| 1,500–100,000 .....  | .....                         | .....                         | 1.0                                 | 30                       |

f = frequency in MHz \* = Plane-wave equivalent power density

## 4. MPE Evaluation

Each supported transmission technology will be evaluated to determine if it is in compliance with limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

In order to perform the assessment, the following equations have been used for the calculations; these equations are accurate in the far-field of an antenna and will over-predict power density in the near field, where they could be used for making a "worst-case" or conservative prediction:

$$\text{Power density: } S[mW/cm^2] = \frac{P_{E.I.R.P.}[mW]}{4\pi R^2[cm^2]}$$

Where:

$S$  = power density

$P_{E.I.R.P.}$  = Equivalent isotropically radiated power

$R$  = distance to the center of radiation of the antenna (evaluation distance)

$$P_{E.I.R.P.} = P_T + G_T - L_C$$

Where:

$P_T$  = transmitter output power (including tune-up tolerance)

$G_T$  = gain of the transmitting antenna

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

### Multiple frequencies assessment

When multiple sources are introduced into an environment, it becomes necessary to address the sources interdependently, since each source will contribute some percentage of the maximum exposure towards the total exposure at a fixed location. The sum of the ratios of the exposure from each source to the corresponding maximum exposure for the frequency of each source must be evaluated.

The exposure complies with the maximum permissible exposure if the sum of the ratios is less than unity:

$$\sum_{i=1}^n \frac{S_i}{Lim_i}$$

Where

$S_i$  is the applicable contribution of each source (e.g. power flux density).

$Lim_i$  is the limit for the applicable contribution of each source (e.g. MPE power flux density basic restriction).

## Appendix B: SAR Test configuration

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## 1. GENERAL INTRODUCTION

### 1.1. Application Standard

The Federal Communications Commission (FCC) sets the limits for General Population/Uncontrolled exposure to radio frequency electromagnetic fields for transmitting devices designed to be used within 20 centimetres of the body of the user under FCC 47 CFR Part 2.1093 - "Radiofrequency radiation exposure evaluation: portable devices", paragraph (d)(2).

### 1.2. General requirements

The SAR measurement has been performed continuing the following considerations and environment conditions:

- The ambient temperature shall be in the range of 18°C to 25°C and the variation shall not exceed +/- 2°C during the test.
- The ambient humidity shall be in the range of and 30% - 70%.
- The device battery shall be fully charged before each measurement.

### 1.3. Measurement system requirements

The measurement system used for SAR tests fulfills the procedural and technical requirements described at the reference standards used.

### 1.4. Phantom requirements

The phantom model for body measurements is an elliptical open-top container with a flat bottom, with the following shape and dimensions:

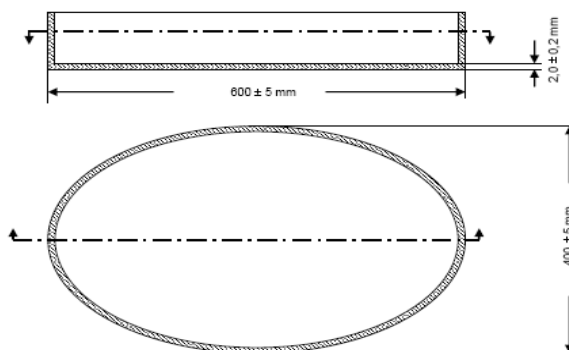


Figure 1: Proportions and shape of Phantom shell

### 1.5. Measurement Liquids requirements.

The liquids used to simulate the human tissues, must fulfill the requirements of the dielectric properties required. These target dielectric properties are indicated into FCC OET KDB 865664 D01 Appendix A.

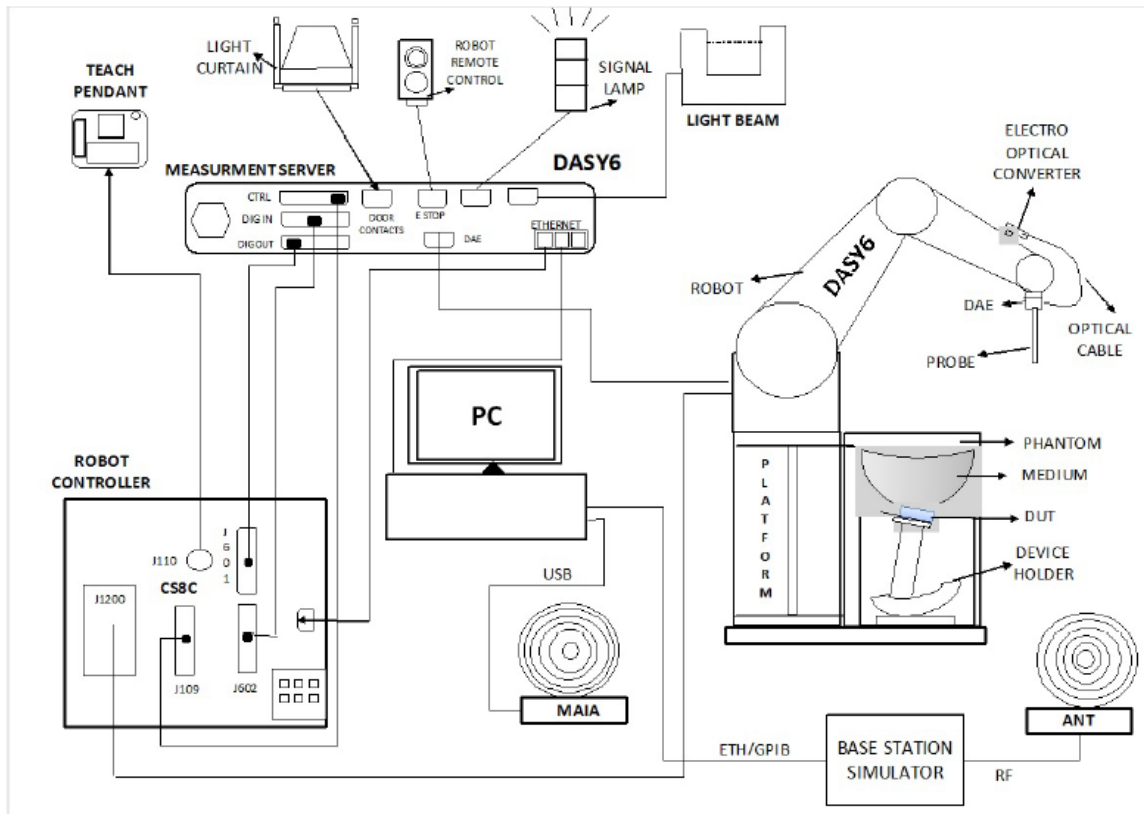
To minimize the effect of reflections on peak spatial-average SAR values, from the upper surface of the tissue-equivalent liquid, the depth of the liquid should be at least 15 cm.

Dielectric properties values of the Tissue Simulant Liquids used for SAR measurements are included in Appendix B, Section 3, of this document.

## 2. MEASUREMENT SYSTEM

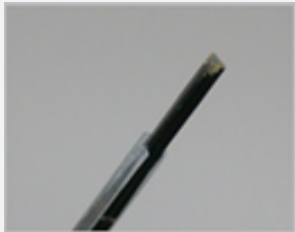
### 2.1. Measurement System


The DASY6 system for performing compliance tests consists of the following items:





**Figure 2:** SAR Measurement system


- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.


|   |                      |  |
|---|----------------------|--|
|  | <b>Model</b>         | <b>EX3DV4</b>  |
|   | <b>Construction</b>  | Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). |
|   | <b>Frequency</b>     | 10 MHz to > 6 GHz;<br>Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)  |
|   | <b>Directivity</b>   | $\pm 0.3$ dB in TSL (rotation around probe axis)<br>$\pm 0.5$ dB in TSL (rotation normal to probe axis)  |
|   | <b>Dynamic Range</b> | 10 $\mu$ W/g to > 100 mW/g<br>Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)   |
|   | <b>Dimensions</b>    | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1.0 mm                   |

|  |  |   |
|--|--|---|
|  | <b>Model</b>   | <b>ES3DV3</b>   |
|  | <b>Construction</b>  | Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). |
|  | <b>Frequency</b>   | 10 MHz to 4 GHz;<br>Linearity: $\pm 0.2$ dB (30 MHz to 4 GHz)   |
|  | <b>Directivity</b>   | $\pm 0.2$ dB in TSL (rotation around probe axis)<br>$\pm 0.3$ dB in TSL (rotation normal to probe axis)   |
|  | <b>Dynamic Range</b>   | 5 $\mu$ W/g to > 100 mW/g<br>Linearity: $\pm 0.2$ dB  |
| <b>Dimensions</b>  | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 3.9 mm (Body: 12 mm)<br>Distance from probe tip to dipole centers: 2.0 mm |   |

|   |                             |   |
|---|-----------------------------|---|
|  | <b>Model</b>                | <b>DAE4</b>   |
|   | <b>Construction</b>         | Signal amplifier, multiplexer, A/D converter, and control logic. Serial optical link communication with DASY4/5 embedded system (fully remote controlled). Two-step probe touch detector for mechanical surface detection and emergency robot stop. |
|   | <b>Measurement Range</b>    | -100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)  |
|   | <b>Input Offset Voltage</b> | < 5 $\mu$ V (with auto zero)  |
|   | <b>Input Resistance</b>     | 200 MOhm  |
| <b>Input Bias Current</b>   | < 50 fA                     |   |

|   |                     |  |
|---|---------------------|--|
|  | <b>Model</b>        | <b>Mounting Device for Laptop and Body-Worn Transmitters</b>   |
|   | <b>Construction</b> | In combination with the Twin SAM V5.0/V5.0c or ELI Phantoms, the Mounting Device (Body-worn) enables testing of transmitters devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at flat phantom section. |
|   | <b>Material</b>     | Polyoxymethylene (POM), PET-G, Foam  |

|   |                             |   |
|---|-----------------------------|---|
|  | <b>Model</b>                | <b>ELI</b>  |
|   | <b>Construction</b>         | Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles. |
|   | <b>Material</b>             | Vinylester, glass fiber reinforced (VE-GF)  |
|   | <b>Liquid Compatibility</b> | Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)   |
|   | <b>Shell Thickness</b>      | 2 ± 0.2 mm (bottom plate)   |
|   | <b>Dimensions</b>           | Major axis: 600 mm<br>Minor axis: 400 mm  |
|   | <b>Filling Volume</b>       | Approx. 30 liters   |
|   | <b>Wooden Support</b>       | SPEAG standard phantom table  |

|   |   |   |                      |                       |  |
|---|---|---|----------------------|-----------------------|--|
|  | <b>Model</b>  | <b>System Validations Kits 450 MHz – 6 GHz</b>  |                      |                       |  |
|   | <b>Construction</b>                                 | Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions. |                      |                       |  |
|   | <b>Frequency</b>                                    | 450 MHz to 5800 MHz   |                      |                       |  |
|   | <b>Return Loss</b>                                  | 20 dB at specified validation position  |                      |                       |  |
|   | <b>Dimensions (length and overall height in mm)</b> | <b>Product</b>  | <b>Dipole length</b> | <b>Overall height</b> |  |
|   |   | D450V3  | 290.0                | 330.0                 |  |
|   |   | D750V3  | 179.0                | 330.0                 |  |
|   |   | D900V2  | 148.5                | 340.0                 |  |
|   |   | D1800V2   | 72.5                 | 300.0                 |  |
|   |   | D2000V2   | 65.0                 | 300.0                 |  |
| D2300V2   |   | 56.3  | 290.0                |                       |  |
| D2450V2   |   | 52.0  | 290.0                |                       |  |
| D2600V2   |   | 49.2  | 290.0                |                       |  |
| D3300V2   |   | 38.0  | 285.0                |                       |  |
| D3500V2   | 37.0  | 285.0   |                      |                       |  |
| D3700V2   | 34.7  | 285.0   |                      |                       |  |
| D3900V2   | 32.0  | 280.0   |                      |                       |  |
| D4200V2   | 30.1  | 280.0   |                      |                       |  |
| D4600V2   | 27.0  | 280.0   |                      |                       |  |
| D4900V2   | 25.0  | 280.0   |                      |                       |  |
| D5GHzV2   | 20.6  | 300.0   |                      |                       |  |



## 2.2. Device Holder

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source in 5mm distance, a positioning uncertainty of  $\pm 0.5$ mm would produce a SAR uncertainty of  $\pm 20\%$ . An accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions, in which the devices must be measured, are defined by the standards.

The DASY Laptop Holder extension is lightweight and made of POM, PET-G acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.

## 2.3. Test Positions of device relative to body

The device under test consists of a Telematics Control Unit, which will be installed into car roofs. It supports two cellular modules and multiple antennas that can be used for transmission. It supports different configurations where different antennas can be used for different purposes and to transmit simultaneously.

The list of cellular modules and antennas supported by the device are:

- Cellular modules: "NAD1 (OEM, model SA-N9000)" and "NAD2 (Customer, model OEM:SA-N9001)"
- Antennas: "MIMO1 RoW", "MIMO2 RoW", "DSDA1 FSA", "DSDA2 FSA", "DSDA1 Antennenbox", "DSDA2 Antennenbox" and "Int BuA"

Only three antennas will be installed close to car passengers at a distance minor to 20 cm, these antennas will be named as "MIMO1 RoW/MIMO2 RoW (both on the external Shark antenna)" and "Int BuA (TCU internal)" antennas.

The main antenna "MIMO1 RoW/MIMO2 RoW (External Shark antenna)" will be placed outside the car cabin, and the back-up antenna "Int BuA (TCU internal)" will be placed oriented to the car roof, inspite being inside the TCU.

During normal device function the "MIMO1 RoW/MIMO2 RoW (External Shark antenna)" will be used to operate normally and if this antenna has any functionality problems, "Int BuA (TCU internal)" could be used for emergency calls.

According to the manufacturer once installed the minimum distance from the TCU to any car passenger will be 37.92mm.

The device was tested placed at the centre of the flat phantom with its backside facing the flat phantom surface simulating the normal use conditions, and due to low SAR results at the declared installation distance, test distance was set to 0 mm and 10 mm for Internal and External antennas.

## 2.4. Test to be performed

Test shall be performed for each test position previously described, using the channel producing the highest rated output power.

Additionally the other applicable test frequency channels must be measured for the test configuration providing the highest SAR for each applicable transmitting band.

## 2.5. Description of interpolation/extrapolation scheme

The local SAR inside the Phantom is measured using small dipole sensing elements inside a probe element. The probe tip must not be in contact with the Phantoms surface in order to minimise measurement errors, but the highest local SAR is obtained from measurements at a certain distances from the shell through extrapolation. The accurate assessment of the maximum SAR averaged over 1 gr and 10 gr. requires a very fine resolution in the three dimensional scanned data array. Since the measurements have to be performed over a limited time, the measured data have to be interpolated to provide an array of sufficient resolution.

The interpolation of 2D area scan is used after the initial area scan, at a fixed distance from the Phantom shell wall. The initial scan data is collected with approx. 15 mm spatial resolution and this interpolation is used to find the location of the local maximum for positioning the subsequent 3D scanning within a 1 mm resolution.

For the 3D scan, data is collected on a spatially regular 3D grid having 5 mm steps in both directions. After the data collection by the SAR probe, the data are extrapolated in the depth direction to assign values to points in the 3D array closer to the shell wall. A notional extrapolation value is also assigned to the first point outside the shell wall so that subsequent interpolation schemes will be applicable right up to the shell wall boundary.

## 2.6. Determination of the largest peak spatial-average SAR

To determine the maximum value of the peak spatial-average SAR of a DUT, all device positions, configurations and operational modes should be tested for each frequency band.

The averaging volume shall be chosen as 1gr. of contiguous tissue. The cubic volumes, over which the SAR measurements are averaged after extrapolation and interpolation, are chosen in order to include the highest values of local SAR.

The maximum SAR level for the DUT will be the maximum level obtained of the performed measurements, and indicated in the previous points.

## 2.7. System Validation

Prior to the SAR measurements, system verification is done to verify the system accuracy. A complete SAR evaluation is done using a half-wavelength dipole as source with the frequency of the mid-band channel of the operating band, or within 10% of this channel.

The measured 1 gr. and 10 gr. SAR should be within 10% of the expected target values specified in the calibration certificate of the dipole, for the specific tissue and frequency used.

### 3. UNCERTAINTY

According to FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015), as the highest measured 1-g SAR has been < 1.5 W/kg, SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in the actual SAR report, but it has been included for ISO 17025 accreditation.

#### Uncertainty for 300 MHz – 3 GHz

| ERROR SOURCES  | Uncertainty value (± %)                       | Probability distribution | Divisor | (c <sub>i</sub> ) 1g | (c <sub>i</sub> ) 10g | Standard uncertainty (1g) (± %) | Standard uncertainty (10g) (± %) |
|--|---|--------------------------|---------|----------------------|-----------------------|---------------------------------|----------------------------------|
| <b>Measurement Equipment</b>   |   |                          |         |                      |                       |                                 |                                  |
| Probe Calibration  | 6.650   | 6.650                    | N       | 1                    | 1                     | 1                               | 6.650                            |
| Axial Isotropy   | 3.500   | 3.500                    | R       | √3                   | 0.7                   | 0.7                             | 1.415                            |
| Hemisfericall Isotropy   | 2.320   | 2.320                    | R       | √3                   | 0.7                   | 0.7                             | 0.938                            |
| Boundary effect  | 1.000   | 1.000                    | R       | √3                   | 1                     | 1                               | 0.577                            |
| Linearity  | 4.700   | 4.700                    | R       | √3                   | 1                     | 1                               | 2.714                            |
| System Detection limits  | 0.250   | 0.250                    | R       | √3                   | 1                     | 1                               | 0.144                            |
| Probe modulation response  | 4.800   | 4.800                    | N       | 1                    | 1                     | 1                               | 4.800                            |
| Readout electronics  | 0.300   | 0.300                    | N       | 1                    | 1                     | 1                               | 0.300                            |
| Response time  | 1.010   | 1.010                    | R       | √3                   | 1                     | 1                               | 0.583                            |
| Integration time   | 2.600   | 2.600                    | R       | √3                   | 1                     | 1                               | 1.501                            |
| RF Ambient noise   | 3.000   | 3.000                    | R       | √3                   | 1                     | 1                               | 1.732                            |
| RF Ambient reflections   | 3.000   | 3.000                    | R       | √3                   | 1                     | 1                               | 1.732                            |
| Probe positioner mech. restrictions  | 0.400   | 0.400                    | R       | √3                   | 1                     | 1                               | 0.231                            |
| Probe positioning with respect to phantom shell                              | 2.900   | 2.900                    | R       | √3                   | 1                     | 1                               | 1.674                            |
| Max. SAR Eval.   | 2.000   | 2.000                    | R       | √3                   | 1                     | 1                               | 1.155                            |
| <b>Test Sample Related</b>   |   |                          |         |                      |                       |                                 |                                  |
| Device holder uncertainty  | 2.900   | N                        | 1       | 1                    | 1                     | 2.900                           | 2.900                            |
| Test sample positioning  | 3.600   | N                        | 1       | 1                    | 1                     | 3.600                           | 3.600                            |
| Drift of output power  | 5.000   | R                        | √3      | 1                    | 1                     | 2.887                           | 2.887                            |
| <b>Phantom and Setup</b>   |   |                          |         |                      |                       |                                 |                                  |
| Phantom uncertainty (shape and thickness tolerances)                         | 6.100   | R                        | √3      | 1                    | 1                     | 3.522                           | 3.522                            |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.900   | R                        | √3      | 1                    | 0.84                  | 1.097                           | 0.921                            |
| Liquid conductivity (meas.)  | 2.454   | N                        | 1       | 0.78                 | 0.71                  | 1.914                           | 1.742                            |
| Liquid permittivity (meas.)  | 2.454   | N                        | 1       | 0.26                 | 0.26                  | 0.638                           | 0.638                            |
| Liquid conductivity – temperature uncertainty                                | 5.220   | R                        | √3      | 0.78                 | 0.71                  | 2.351                           | 2.140                            |
| Liquid permittivity – temperature uncertainty                                | 0.840   | R                        | √3      | 0.23                 | 0.26                  | 0.112                           | 0.126                            |
| <b>Combined standard uncertainty</b>   | $u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$ |                          |         |                      |                       | <b>12.00</b>                    | <b>11.92</b>                     |
| <b>Expanded uncertainty (confidence interval of 95%)</b>                     | $ue = 2.00 u_c$                               |                          |         |                      |                       | <b>24.00</b>                    | <b>23.84</b>                     |

Table 12: Uncertainty Assessment for 300 MHz - 3 GHz.

### Uncertainty for 3 GHz – 6 GHz

| ERROR SOURCES  | Uncertainty value (± %)                       | Probability distribution | Divisor | (c <sub>i</sub> ) 1g | (c <sub>i</sub> ) 10g | Standard uncertainty (1g) (± %) | Standard uncertainty (10g) (± %) |
|--|---|--------------------------|---------|----------------------|-----------------------|---------------------------------|----------------------------------|
| <b>Measurement Equipment</b>   |   |                          |         |                      |                       |                                 |                                  |
| Probe Calibration  | 7.000   | N                        | 1       | 1                    | 1                     | 7.000                           | 7.000                            |
| Axial Isotropy   | 3.500   | R                        | √3      | 0.7                  | 0.7                   | 1.415                           | 1.415                            |
| Hemisfericall Isotropy   | 2.320   | R                        | √3      | 0.7                  | 0.7                   | 0.938                           | 0.938                            |
| Boundary effect  | 2.000   | R                        | √3      | 1                    | 1                     | 1.155                           | 1.155                            |
| Linearity  | 4.700   | R                        | √3      | 1                    | 1                     | 2.714                           | 2.714                            |
| System Detection limits  | 0.250   | R                        | √3      | 1                    | 1                     | 0.144                           | 0.144                            |
| Probe modulation response  | 4.800   | N                        | 1       | 1                    | 1                     | 4.800                           | 4.800                            |
| Readout electronics  | 0.300   | N                        | 1       | 1                    | 1                     | 0.300                           | 0.300                            |
| Response time  | 1.010   | R                        | √3      | 1                    | 1                     | 0.583                           | 0.583                            |
| Integration time   | 2.600   | R                        | √3      | 1                    | 1                     | 1.501                           | 1.501                            |
| RF Ambient noise   | 3.000   | R                        | √3      | 1                    | 1                     | 1.732                           | 1.732                            |
| RF Ambient reflections   | 3.000   | R                        | √3      | 1                    | 1                     | 1.732                           | 1.732                            |
| Probe positioner mech. restrictions  | 0.400   | R                        | √3      | 1                    | 1                     | 0.231                           | 0.231                            |
| Probe positioning with respect to phantom shell                              | 6.700   | R                        | √3      | 1                    | 1                     | 3.868                           | 3.868                            |
| Max. SAR Eval.   | 4.000   | R                        | √3      | 1                    | 1                     | 2.309                           | 2.309                            |
| <b>Test Sample Related</b>   |   |                          |         |                      |                       |                                 |                                  |
| Device holder uncertainty  | 2.900   | N                        | 1       | 1                    | 1                     | 2.900                           | 2.900                            |
| Test sample positioning  | 3.600   | N                        | 1       | 1                    | 1                     | 3.600                           | 3.600                            |
| Drift of output power  | 5.000   | R                        | √3      | 1                    | 1                     | 2.887                           | 2.887                            |
| <b>Phantom and Setup</b>   |   |                          |         |                      |                       |                                 |                                  |
| Phantom uncertainty (shape and thickness tolerances)                         | 6.600   | R                        | √3      | 1                    | 1                     | 3.811                           | 3.811                            |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | 1.900   | R                        | √3      | 1                    | 0.84                  | 1.097                           | 0.921                            |
| Liquid conductivity (meas.)  | 2.454   | N                        | 1       | 0.78                 | 0.71                  | 1.914                           | 1.742                            |
| Liquid permittivity (meas.)  | 2.454   | N                        | 1       | 0.26                 | 0.26                  | 0.638                           | 0.638                            |
| Liquid conductivity – temperature uncertainty                                | 3.360   | R                        | √3      | 0.78                 | 0.71                  | 1.513                           | 1.377                            |
| Liquid permittivity – temperature uncertainty                                | 0.780   | R                        | √3      | 0.23                 | 0.26                  | 0.104                           | 0.117                            |
| <b>Combined standard uncertainty</b>   | $u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$ |                          |         |                      |                       | <b>12.84</b>                    | <b>12.79</b>                     |
| <b>Expanded uncertainty (confidence interval of 95%)</b>                     | $u_e = 2.00 u_c$                              |                          |         |                      |                       | <b>25.68</b>                    | <b>25.57</b>                     |

**Table 13:** Uncertainty Assessment for 3 GHz - 6 GHz.

## 4. SAR LIMIT

Having a worst case measurement, the SAR limit is valid for general population/uncontrolled exposure.

The SAR values have to be averaged over a mass of 1 gr. (SAR 1 gr.) with the shape of a cube and averaged over a mass of 10 gr (Extremity SAR 10 gr). These levels could not exceed the values indicated in the application Standard:

| Standard                              | Exposure                                     | SAR       | SAR Limit (W/kg) |
|---------------------------------------|--|-----------|------------------|
| FCC 47 CFR Part 1.1310, Paragraph (c) | General population/Uncontrolled              | SAR 1-g.  | 1.6              |
| FCC 47 CFR Part 1.1310, Paragraph (c) | General population/Uncontrolled<br>Extremity | SAR 10-g. | 4.0              |

**Table 14:** SAR limit

## 5. DEVICE UNDER TEST

### 5.1. Dimensions

| Dimensions                                      | Millimetres          |
|---|----------------------|
| Length x Width x Height                         | 160.0 x 110.0 x 17.0 |
| Length x Width x Height (including ext antenna) | 160.0 x 140.0 x 55.0 |

**Table 15:** Dimensions

### 5.2. Wireless Technology

| Wireless Technology | Frequency Bands                       | Modes   |
|---------------------|---------------------------------------|---|
| GSM                 | 850 / 1900                            | - Voice (GMSK)<br>- GPRS (GMSK, Multi-slot class 33)<br>- EGPRS (8PSK, Multi-slot class 33) |
| W-CDMA              | II/IV/V                               | - UMTS Rel. 99<br>- HSDPA (Rel. 5)<br>- HSPA (Rel. 6)<br>- HSPA+ (Rel. 7)                   |
| LTE                 | 2/4/5/7/12/13/17/25/26/38/41/42/66/71 | - FDD and TDD Bands<br>- CA Downlink<br>- CA Uplink Intra-Band<br>- CA Uplink Inter-Band    |
| 5G                  | n2/n5/n7/n25/n38/n41/n66/n71/n77/n78  | - FDD and TDD Bands<br>- SA mode<br>- NSA-EN-DC mode  |

**Table 16:** Supported modes

The supported transmitting technology for each antenna combination is:

| Module | Port  | Antenna                                       | Technology | Tx Bands                                    |
|--------|-------|---|------------|---|
| NAD#1  | MIMO1 | MIMO1 Antenna<br>(External shark fin antenna) | 2G         | 850 / 1900 MHz                              |
| NAD#1  | MIMO1 | MIMO1 Antenna<br>(External shark fin antenna) | 3G         | II, IV, V                                   |
| NAD#1  | MIMO1 | MIMO1 Antenna<br>(External shark fin antenna) | LTE        | 2, 4, 5, 7,12,13,17, 25, 26, 38, 41, 66, 71 |
| NAD#1  | MIMO1 | MIMO1 Antenna<br>(External shark fin antenna) | 5G         | n2, n5, n7, n25, n38, n41, n66, n71         |
| NAD#1  | MIMO2 | MIMO2 Antenna<br>(External shark fin antenna) | LTE        | 42  |
| NAD#1  | MIMO2 | MIMO2 Antenna<br>(External shark fin antenna) | 5G         | n77, n78                                    |
| NAD#1  | MIMO1 | Int BuA Antenna<br>(TCU internal)             | 2G         | 850 / 1900 MHz                              |
| NAD#1  | MIMO1 | Int BuA Antenna<br>(TCU internal)             | 3G         | II, IV, V                                   |
| NAD#2  | DSDA2 | Int BuA Antenna<br>(TCU internal)             | LTE        | 42  |
| NAD#2  | DSDA2 | Int BuA Antenna<br>(TCU internal)             | 5G         | n77, n78                                    |

**Table 17:** Antenna supported transmitting modes

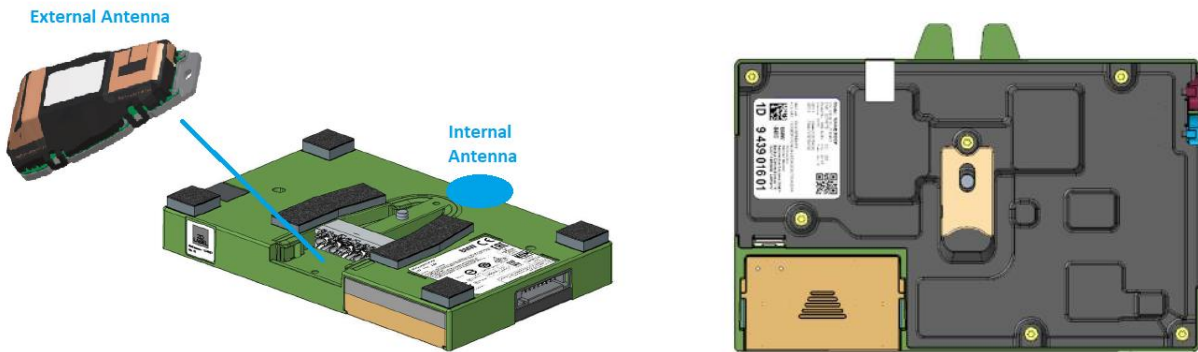
### 5.3. Simultaneous Transmission

“MIMO1/MIMO2 antenna” (External shark fin antenna) is able to transmit simultaneously with “Int BuA Antenna” (TCU internal) in the following configurations:

| Configuration | Module | Antenna              | Tx - Bands   |
|---------------|--------|----------------------|--|
| 5/6/11/12     | NAD2   | Int BuA              | LTE (42)<br>5G (n77,n78)   |
|               | NAD1   | MIMO1 High<br>or RoW | 2G (850/1900 MHz)<br>3G (II, IV, V)<br>LTE (2,4,5,7,12,13,17,25,26,66,71,41)<br>5G SA (n2,n5,n7,n25,n41,n66,n71)<br>5G NSA (2+n5,66+n5,26+n41,5+n66,12+n66,2+n71,66+n71) |
|               | NAD1   | MIMO2 High<br>or RoW | LTE (42)<br>5G (n77,n78)   |

**Table 18:** Simultaneous transmission

## 5.4. Antenna Location



**Figure 3:** Antenna diagram location sketch

## Appendix C: Test results



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## 1. TEST CONDITIONS

### 1.1. Power supply (V):

$V_n = 12.0 \text{ V}$

Type of power supply = DC Voltage from power supply.

### 1.2. Temperature (°C):

$T_n = +20.00 \text{ to } +25.00$

The subscript n indicates normal test conditions.

### 1.3. Test signal, Output Power and Frequencies

The sample was put into operation by using an R&S CMW 500 as base station simulator for 2G, 3G and LTE transmitting technologies and a Keysight UXM E7515A and an R&S CMX500 were used to perform measurements for 5G transmitting technologies.

The maximum conducted time-averaged power of the device for each mode was measured with a power sensor R&S NRP-Z81.

The output power of the device was set to Power Control Level (PCL) maximum for all tests.

In all operating bands and test positions, the measurements were performed on middle, lowest and highest channels.

The target power alignments for RF components declared by the manufacturer for each supported technology are:

| Technology / Mode | Band | Frequency (MHz) | Maximum Output Power (Incl. Tune-Up) (dBm) |
|-------------------|------|-----------------|--|
| GSM               | 850  | 824 - 849       | 34.0                                       |
| GPRS 1TX          | 850  | 824 - 849       | 33.5                                       |
| GPRS 2TX          | 850  | 824 - 849       | 31.5                                       |
| GPRS 3TX          | 850  | 824 - 849       | 29.5                                       |
| GPRS 4TX          | 850  | 824 - 849       | 28.5                                       |
| EGPRS 1TX         | 850  | 824 - 849       | 27.5                                       |
| EGPRS 2TX         | 850  | 824 - 849       | 26.5                                       |
| EGPRS 3TX         | 850  | 824 - 849       | 24.5                                       |
| EGPRS 4TX         | 850  | 824 - 849       | 23.5                                       |
| GSM               | 1900 | 1850 - 1910     | 31.0                                       |
| GPRS 1TX          | 1900 | 1850 - 1910     | 30.5                                       |
| GPRS 2TX          | 1900 | 1850 - 1910     | 27.5                                       |
| GPRS 3TX          | 1900 | 1850 - 1910     | 26.5                                       |
| GPRS 4TX          | 1900 | 1850 - 1910     | 24.5                                       |
| EGPRS 1TX         | 1900 | 1850 - 1910     | 26.5                                       |
| EGPRS 2TX         | 1900 | 1850 - 1910     | 25.0                                       |
| EGPRS 3TX         | 1900 | 1850 - 1910     | 23.0                                       |
| EGPRS 4TX         | 1900 | 1850 - 1910     | 22.0                                       |

| Technology / Mode | Band | Frequency (MHz) | Maximum Output Power (Incl. Tune-Up) (dBm) |
|-------------------|------|-----------------|--|
| UMTS              | II   | 1850 - 1910     | 24.5                                       |
| UMTS              | IV   | 1710 - 1755     | 24.0                                       |
| UMTS              | V    | 824 - 849       | 25.0                                       |

| Technology / Mode | Band | Frequency (MHz) | Maximum Output Power (Incl. Tune-Up) (dBm) |
|-------------------|------|-----------------|--|
| LTE               | 2    | 1850 - 1910     | 24.5                                       |
| LTE               | 4    | 1710 - 1755     | 25.0                                       |
| LTE               | 5    | 824 - 849       | 24.5                                       |
| LTE               | 7    | 2500 - 2570     | 25.0                                       |
| LTE               | 12   | 699 - 716       | 24.5                                       |
| LTE               | 13   | 777 - 787       | 24.5                                       |
| LTE               | 17   | 704 - 716       | 24.5                                       |
| LTE               | 25   | 1850 - 1915     | 24.5                                       |
| LTE               | 26   | 814 - 849       | 25.0                                       |
| LTE               | 38   | 2570 - 2620     | 24.5                                       |
| LTE               | 41   | 2496 - 2690     | 24.5                                       |
| LTE               | 42   | 3400 - 3600     | 24.5                                       |
| LTE               | 66   | 1710 - 1780     | 24.5                                       |
| LTE               | 71   | 663 - 698       | 24.5                                       |

| LTE CA Uplink Combination | PCC Band | Maximum Output Power (Incl. Tune-Up) (dBm) |
|---------------------------|----------|--|
| 2A-5A                     | LTE 2    | 24.5-24.5                                  |
| 2A-12A                    | LTE 2    | 24.5-24.5                                  |
| 2A-13A                    | LTE 2    | 24.5-24.5                                  |
| 4A-5A                     | LTE4     | 25.0-24.5                                  |
| 4A-12A                    | LTE4     | 25.0-24.5                                  |
| 4A-13A                    | LTE4     | 25.0-24.5                                  |
| 4A-17A                    | LTE4     | 25.0-24.5                                  |
| 5A-7A                     | LTE 5    | 24.5-25.0                                  |
| 5A-66A                    | LTE 5    | 24.5-24.5                                  |
| 5B                        | LTE 5    | 24.5                                       |
| 7C                        | LTE 7    | 25.0                                       |
| 41C                       | LTE 41   | 24.5                                       |
| 42C                       | LTE 42   | 24.5                                       |
| 66B                       | LTE 66   | 24.5                                       |
| 66C                       | LTE 66   | 24.5                                       |

| Technology / Mode | Band | Frequency (MHz) | Maximum Output Power (Incl. Tune-Up) (dBm) |
|-------------------|------|-----------------|--|
| 5G SA             | n2   | 1850 - 1910     | 24.5                                       |
|                   | n5   | 824 - 849       | 25.0                                       |
|                   | n7   | 2500 - 2570     | 25.0                                       |
|                   | n25  | 1850 - 1915     | 24.5                                       |
|                   | n38  | 2570 - 2620     | 24.5                                       |
|                   | n41  | 2496 - 2690     | 24.5                                       |
|                   | n66  | 1710 - 1780     | 24.5                                       |
|                   | n71  | 663 - 698       | 24.5                                       |
|                   | n77  | 3450 - 3980     | 24.5                                       |
|                   | n78  | 3300 - 3800     | 24.5                                       |

| Technology / Mode | Band     | Maximum Output Power (Incl. Tune-Up) (dBm) |
|-------------------|----------|--|
| 5G NSA            | 2A-n5A   | 24.5-25.0                                  |
|                   | 66A-n5A  | 24.5-25.0                                  |
|                   | 26A-n41A | 25.0-24.5                                  |
|                   | 5A-n66A  | 24.5-24.5                                  |
|                   | 12A-n66A | 24.5-24.5                                  |
|                   | 2A-n71A  | 24.5-24.5                                  |
|                   | 66A-n71A | 24.5-24.5                                  |

#### 1.4. DUT and test-site configurations

For all supported modes, the back face of the DUT was place facing the flat phantom surface using 0-10 mm test separation distance for measurements with the “External shark fin antenna” and using 0 mm test separation distance for measurements with the “TCU internal antenna”.

## 2. CONDUCTED AVERAGE POWER MEASUREMENTS

### 2.1. MIMO1 port: MIMO1 ANT (Shark fin antenna) and Int BuA ANT (TCU internal)

#### 2.1.1. GSM/GPRS/EGPRS Bands

- GSM 850: For voice mode PCL 5 was set to allow max power transmission.

| GSM 900 - Average Output Power |                 |                                  |                                  |     |            |
|--------------------------------|-----------------|----------------------------------|----------------------------------|-----|------------|
| Channel Number                 | Frequency (MHz) | Frame Average Output Power (dBm) | Average Burst Output Power (dBm) | PCL | Modulation |
| 128                            | 824.2           | 23.85                            | 32.9                             | 5   | GMSK       |
| 190                            | 836.6           | 23.90                            | 32.9                             | 5   | GMSK       |
| 251                            | 848.8           | 23.92                            | 32.9                             | 5   | GMSK       |

- GPRS 850: For data mode. PCL 5, CS1 coding scheme and Gamma 3 were set to allow DUT's max power transmission for each slot.

| GPRS 850 - Frame Average Output Power |                 |                    |                     |                     |                     |     |            |
|---------------------------------------|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                        | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 128                                   | 824.2           | 23.43              | 23.45               | 23.89               | 23.47               | 5   | GMSK-CS1   |
| 190                                   | 836.6           | 23.53              | 23.68               | 23.90               | 23.47               | 5   | GMSK-CS1   |
| 251                                   | 848.8           | 23.74              | 23.77               | 23.96               | 23.48               | 5   | GMSK-CS1   |

| GPRS 850 - Average Burst Output Power |                 |                    |                     |                     |                     |     |            |
|---------------------------------------|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                        | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 128                                   | 824.2           | 32.5               | 29.5                | 28.2                | 26.5                | 5   | GMSK-CS1   |
| 190                                   | 836.6           | 32.6               | 29.7                | 28.2                | 26.5                | 5   | GMSK-CS1   |
| 251                                   | 848.8           | 32.8               | 29.8                | 28.2                | 26.5                | 5   | GMSK-CS1   |

- EGPRS 850: For data mode. PCL 8, MCS5 coding scheme and Gamma 6 were set to allow DUT's max power transmission for each slot.

| EDGE 850 - Frame Average Output Power |                 |                    |                     |                     |                     |     |            |
|---------------------------------------|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                        | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 128                                   | 824.2           | 17.67              | 20.31               | 21.63               | 22.63               | 8   | 8PSK-MCS5  |
| 190                                   | 836.6           | 17.62              | 20.48               | 21.80               | 22.59               | 8   | 8PSK-MCS5  |
| 251                                   | 848.8           | 17.72              | 20.55               | 21.84               | 22.65               | 8   | 8PSK-MCS5  |

| EDGE 850 - Average Burst Output Power |                 |                    |                     |                     |                     |     |            |
|---------------------------------------|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                        | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 128                                   | 824.2           | 26.7               | 26.3                | 25.9                | 25.6                | 8   | 8PSK-MCS5  |
| 190                                   | 836.6           | 26.7               | 26.5                | 26.1                | 25.6                | 8   | 8PSK-MCS5  |
| 251                                   | 848.8           | 26.8               | 26.6                | 26.1                | 25.7                | 8   | 8PSK-MCS5  |

- GSM 1900: For voice mode PCL 0 was set to allow max power transmission.

| GSM 1800 - Average Output Power |                 |                                  |                                 |     |            |
|---------------------------------|-----------------|----------------------------------|---------------------------------|-----|------------|
| Channel Number                  | Frequency (MHz) | Frame Average Output Power (dBm) | Average Burst OutputPower (dBm) | PCL | Modulation |
| 512                             | 1850.2          | 20.37                            | 29.4                            | 0   | GMSK       |
| 661                             | 1880.0          | 20.20                            | 29.2                            | 0   | GMSK       |
| 810                             | 1909.8          | 19.78                            | 28.8                            | 0   | GMSK       |

- GPRS1900: For data mode. PCL 0, CS1 coding scheme and Gamma 3 were set to allow max power transmission for each slot.

| GPRS 1900 - Frame Average Output Power |                 |                    |                     |                     |                     |     |            |
|--|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                         | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 512                                    | 1850.2          | 20.22              | 19.93               | 20.84               | 21.11               | 0   | GMSK-CS1   |
| 661                                    | 1880.0          | 19.92              | 19.25               | 20.22               | 20.38               | 0   | GMSK-CS1   |
| 810                                    | 1909.8          | 19.48              | 18.19               | 18.81               | 19.02               | 0   | GMSK-CS1   |

| GPRS 1900 - Average Burst Output Power |                 |                    |                     |                     |                     |     |            |
|--|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                         | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 512                                    | 1850.2          | 29.3               | 26.0                | 25.1                | 24.1                | 0   | GMSK-CS1   |
| 661                                    | 1880.0          | 29.0               | 25.3                | 24.5                | 23.4                | 0   | GMSK-CS1   |
| 810                                    | 1909.8          | 28.5               | 24.2                | 23.1                | 22.0                | 0   | GMSK-CS1   |

- EGPRS 1900: For data mode, PCL 2, MCS5 coding scheme and Gamma 5 were set to allow max power transmission for each slot.

| EDGE 1900 - Frame Average Output Power |                 |                    |                     |                     |                     |     |            |
|--|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                         | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 512                                    | 1850.2          | 16.37              | 18.74               | 19.87               | 20.50               | 2   | 8PSK-MCS5  |
| 661                                    | 1880.0          | 15.68              | 18.20               | 19.26               | 19.85               | 2   | 8PSK-MCS5  |
| 810                                    | 1909.8          | 14.68              | 16.87               | 17.85               | 18.59               | 2   | 8PSK-MCS5  |

| EDGE 1900 - Average Burst Output Power |                 |                    |                     |                     |                     |     |            |
|--|-----------------|--------------------|---------------------|---------------------|---------------------|-----|------------|
| Channel Number                         | Frequency (MHz) | Power (dBm) 1 Slot | Power (dBm) 2 Slots | Power (dBm) 3 Slots | Power (dBm) 4 Slots | PCL | Modulation |
| 512                                    | 1850.2          | 25.4               | 24.8                | 24.1                | 23.5                | 2   | 8PSK-MCS5  |
| 661                                    | 1880.0          | 24.7               | 24.2                | 23.5                | 22.9                | 2   | 8PSK-MCS5  |
| 810                                    | 1909.8          | 23.7               | 22.9                | 22.1                | 21.6                | 2   | 8PSK-MCS5  |

## 2.1.2. WCDMA/HSDPA/HSPA/HSPA+ Bands

- **WCDMA**: The DUT supports power Class 3, with a nominal maximum output power of 24 dBm. Tests were completed according to 3GPP TS34.121, section 5.

| Mode  | Subtest                 | Rel99        |
|-------|-------------------------|--------------|
| WCDMA | Loopback Mode           | Test Mode 1  |
|       | Rel99 RMC               | 12.2Kbps RMC |
|       | Power Control Algorithm | Algorithm2   |
|       | $\beta_c/\beta_d$       | 8/15         |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-------------|-------|----------------|-----------------|----------------------------|
| FDD II 1900 | WCDMA | 9262           | 1852.4          | 23.06                      |
| FDD II 1900 | WCDMA | 9400           | 1880.0          | 22.87                      |
| FDD II 1900 | WCDMA | 9538           | 1907.6          | 22.78                      |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-------------|-------|----------------|-----------------|----------------------------|
| FDD IV 1700 | WCDMA | 1312           | 1712.4          | 24.01                      |
| FDD IV 1700 | WCDMA | 1412           | 1732.6          | 23.78                      |
| FDD IV 1700 | WCDMA | 1512           | 1752.6          | 23.54                      |

| Band      | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-----------|-------|----------------|-----------------|----------------------------|
| FDD V 850 | WCDMA | 4132           | 826.4           | 23.13                      |
| FDD V 850 | WCDMA | 4182           | 836.4           | 23.01                      |
| FDD V 850 | WCDMA | 4233           | 846.6           | 22.92                      |



**- HSDPA:**

| Mode  | Subtest                       | 1              | 2     | 3     | 4     |
|-------|-------------------------------|----------------|-------|-------|-------|
| HSDPA | Loopback Mode                 | Test Mode 1    |       |       |       |
|       | Rel99 RMC                     | 12.2Kbps RMC   |       |       |       |
|       | HSDPA FRC                     | H-Set1         |       |       |       |
|       | HSUPA Test                    | HSUPA Loopback |       |       |       |
|       | Power Control Algorithm       | Algorithm 2    |       |       |       |
|       | $\beta_c$                     | 2/15           | 12/15 | 15/15 | 15/15 |
|       | $\beta_d$                     | 15/15          | 15/15 | 8/15  | 4/15  |
|       | Bd (SF)                       | 64             | 64    | 64    | 64    |
|       | $\beta_c/\beta_d$             | 2/15           | 12/15 | 15/8  | 15/4  |
|       | $\beta_{hs}$                  | 4/15           | 24/15 | 30/15 | 30/15 |
|       | MPR                           | 0              | 0     | 0.5   | 0.5   |
|       | Dack                          | 8              |       |       |       |
|       | Dnak                          | 8              |       |       |       |
|       | Ack-Nack repetition factor    | 3              |       |       |       |
|       | DCQI                          | 8              |       |       |       |
|       | CQI Feedback                  | 4ms            |       |       |       |
|       | CQI Repetition Factor         | 2              |       |       |       |
|       | $A_{hs} = \beta_{hs}/\beta_c$ | 30/15          |       |       |       |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |       |       |       |
|-------------|-------|----------------|-----------------|----------------------------|-------|-------|-------|
|             |       |                |                 | Subtest                    |       |       |       |
|             |       |                |                 | 1                          | 2     | 3     | 4     |
| FDD II 1900 | HSDPA | 9262           | 1852.4          | 22.71                      | 22.32 | 22.10 | 21.07 |
| FDD II 1900 | HSDPA | 9400           | 1880.0          | 22.63                      | 22.33 | 22.09 | 21.17 |
| FDD II 1900 | HSDPA | 9538           | 1907.6          | 22.59                      | 22.10 | 21.86 | 20.91 |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |       |       |       |
|-------------|-------|----------------|-----------------|----------------------------|-------|-------|-------|
|             |       |                |                 | Subtest                    |       |       |       |
|             |       |                |                 | 1                          | 2     | 3     | 4     |
| FDD IV 1700 | HSDPA | 1312           | 1712.4          | 23.13                      | 22.40 | 22.14 | 21.20 |
| FDD IV 1700 | HSDPA | 1412           | 1732.6          | 23.02                      | 22.25 | 22.03 | 21.06 |
| FDD IV 1700 | HSDPA | 1512           | 1752.6          | 22.72                      | 21.95 | 22.01 | 20.99 |

| Band      | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |       |       |       |
|-----------|-------|----------------|-----------------|----------------------------|-------|-------|-------|
|           |       |                |                 | Subtest                    |       |       |       |
|           |       |                |                 | 1                          | 2     | 3     | 4     |
| FDD V 850 | HSDPA | 4132           | 826.4           | 23.00                      | 22.18 | 22.00 | 21.04 |
| FDD V 850 | HSDPA | 4182           | 836.4           | 22.66                      | 21.90 | 21.93 | 20.95 |
| FDD V 850 | HSDPA | 4233           | 846.6           | 22.94                      | 22.10 | 21.73 | 21.46 |

**- HSPA:**

| Mode                            | Subtest                                | 1              | 2     | 3     | 4     | 5      |
|---------------------------------|--|----------------|-------|-------|-------|--------|
| HSPA                            | Loopback Mode                          | Test Mode 1    |       |       |       |        |
|                                 | Rel99 RMC                              | 12.2Kbps RMC   |       |       |       |        |
|                                 | HSDPA FRC                              | H-Set1         |       |       |       |        |
|                                 | HSUPA Test                             | HSUPA Loopback |       |       |       |        |
|                                 | Power Control Algorithm                | Algorithm 2    |       |       |       |        |
|                                 | $\beta_c$                              | 11/15          | 6/15  | 15/15 | 2/15  | 15/15  |
|                                 | $\beta_d$                              | 15/15          | 15/15 | 9/15  | 15/15 | 15/15  |
|                                 | $\beta_{ec}$                           | 209/225        | 12/15 | 30/15 | 2/15  | 24/15  |
|                                 | $\beta_c/\beta_d$                      | 11/15          | 6/15  | 15/9  | 2/15  | 15/15  |
|                                 | $\beta_{hs}$                           | 22/15          | 12/15 | 30/15 | 4/15  | 30/15  |
|                                 | $\beta_{ed}$                           | 1309/225       | 94/75 | 47/15 | 56/75 | 134/15 |
|                                 | MPR (dB)                               | 0              | 2     | 1     | 2     | 0      |
|                                 | Dack                                   | 8              |       |       |       |        |
|                                 | Dnak                                   | 8              |       |       |       |        |
|                                 | Ack-Nack repetition factor             | 3              |       |       |       |        |
|                                 | DCQI                                   | 8              |       |       |       |        |
|                                 | CQI Feedback                           | 4ms            |       |       |       |        |
|                                 | CQI Repetition Factor                  | 2              |       |       |       |        |
|                                 | A <sub>hs</sub> = $\beta_{hs}/\beta_c$ | 30/15          |       |       |       |        |
|                                 | AG Index                               | 20             | 12    | 15    | 17    | 21     |
| ETFCI                           | 75                                     | 67             | 92    | 71    | 81    |        |
| Associated Max UL DataRate Kbps | 242.1                                  | 174.9          | 482.8 | 205.8 | 308.9 |        |

| Band        | Mode | CH   | Frequency (MHz) | Average Output Power (dBm) |       |       |       |       |
|-------------|------|------|-----------------|----------------------------|-------|-------|-------|-------|
|             |      |      |                 | Subtest                    |       |       |       |       |
|             |      |      |                 | 1                          | 2     | 3     | 4     | 5     |
| FDD II 1900 | HSPA | 9262 | 1852.4          | 23.16                      | 22.16 | 23.18 | 22.16 | 23.34 |
| FDD II 1900 | HSPA | 9400 | 1880.0          | 23.11                      | 22.15 | 23.09 | 22.15 | 23.33 |
| FDD II 1900 | HSPA | 9538 | 1907.6          | 22.86                      | 21.91 | 22.92 | 21.92 | 23.05 |

| Band        | Mode | CH   | Frequency (MHz) | Average Output Power (dBm) |       |       |       |       |
|-------------|------|------|-----------------|----------------------------|-------|-------|-------|-------|
|             |      |      |                 | Subtest                    |       |       |       |       |
|             |      |      |                 | 1                          | 2     | 3     | 4     | 5     |
| FDD IV 1700 | HSPA | 1312 | 1712.4          | 23.18                      | 22.23 | 23.24 | 22.24 | 23.28 |
| FDD IV 1700 | HSPA | 1412 | 1732.6          | 23.07                      | 22.11 | 23.11 | 22.13 | 23.15 |
| FDD IV 1700 | HSPA | 1512 | 1752.6          | 23.07                      | 22.15 | 23.08 | 22.10 | 23.09 |

| Band      | Mode | CH   | Frequency (MHz) | Average Output Power (dBm) |       |       |       |       |
|-----------|------|------|-----------------|----------------------------|-------|-------|-------|-------|
|           |      |      |                 | Subtest                    |       |       |       |       |
|           |      |      |                 | 1                          | 2     | 3     | 4     | 5     |
| FDD V 850 | HSPA | 4132 | 826.4           | 23.00                      | 21.03 | 23.02 | 21.04 | 23.05 |
| FDD V 850 | HSPA | 4182 | 836.4           | 22.92                      | 20.96 | 22.92 | 20.97 | 22.93 |
| FDD V 850 | HSPA | 4233 | 846.6           | 22.94                      | 20.98 | 22.94 | 21.13 | 22.94 |

**- HSPA+**

| Mode  | Subtest                 | 1  |
|-------|-------------------------|--|
| HSPA+ | Loopback Mode           | Test Mode 1                                    |
|       | Rel99 RMC               | 12.2Kbps RMC                                   |
|       | HSDPA FRC               | H-Set1   |
|       | HSUPA Test              | HSUPA Loopback                                 |
|       | Power Control Algorithm | Algorithm 2                                    |
|       | $\beta_c$               | 1  |
|       | $\beta_d$               | 0  |
|       | $\beta_{ec}$            | 30/15  |
|       | $\beta_{hs}$            | 30/15  |
|       | $\beta_{ed}$<br>(2xSF2) | $\beta_{ed1}$ : 30/15<br>$\beta_{ed2}$ : 30/15 |
|       | $\beta_{ed}$<br>(2xSF4) | $\beta_{ed3}$ : 24/15<br>$\beta_{ed4}$ : 24/15 |
|       | CM (dB)                 | 3.5  |
|       | MPR (dB)                | 2.5  |
|       | D E-DPCCH               | 7  |
|       | AG Index                | 14   |
|       | ETFCI                   | 105  |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-------------|-------|----------------|-----------------|----------------------------|
| FDD II 1900 | HSPA+ | 9262           | 1852.4          | 23.16                      |
| FDD II 1900 | HSPA+ | 9400           | 1880.0          | 23.15                      |
| FDD II 1900 | HSPA+ | 9538           | 1907.6          | 22.93                      |

| Band        | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-------------|-------|----------------|-----------------|----------------------------|
| FDD IV 1700 | HSPA+ | 1312           | 1712.4          | 23.26                      |
| FDD IV 1700 | HSPA+ | 1412           | 1732.6          | 23.15                      |
| FDD IV 1700 | HSPA+ | 1512           | 1752.6          | 23.11                      |

| Band      | Mode  | Channel Number | Frequency (MHz) | Average Output Power (dBm) |
|-----------|-------|----------------|-----------------|----------------------------|
| FDD V 850 | HSPA+ | 4132           | 826.4           | 23.02                      |
| FDD V 850 | HSPA+ | 4182           | 836.4           | 22.94                      |
| FDD V 850 | HSPA+ | 4233           | 846.6           | 22.95                      |

### 2.1.3. LTE Bands

LTE MPR is permanently implemented for the device. A-MPR was disable for SAR measurements.

Maximum Power Reductions are specified in Table 6.2.3-1 of the 3GPP TS36.101.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3**

| Modulation | Channel bandwidth / Transmission bandwidth ( $N_{RB}$ ) |          |          |           |           |           | MPR (dB) |
|------------|---|----------|----------|-----------|-----------|-----------|----------|
|            | 1.4 MHz   | 3.0 MHz  | 5 MHz    | 10 MHz    | 15 MHz    | 20 MHz    |          |
| QPSK       | > 5   | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 1$ |
| 16 QAM     | $\leq 5$  | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | $\leq 1$ |
| 16 QAM     | > 5   | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 2$ |
| 64 QAM     | $\leq 5$  | $\leq 4$ | $\leq 8$ | $\leq 12$ | $\leq 16$ | $\leq 18$ | $\leq 2$ |
| 64 QAM     | > 5   | > 4      | > 8      | > 12      | > 16      | > 18      | $\leq 3$ |
| 256 QAM    | $\geq 1$  |          |          |           |           |           | $\leq 5$ |

**- LTE 2**

| Band   | BW     | Modulation | Mode     |     | Average Output Power (dBm) |            |            |
|--------|--------|------------|----------|-----|----------------------------|------------|------------|
|        |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1860.0 MHz                 | 1880.0 MHz | 1900.0 MHz |
| LTE B2 | 20 MHz | QPSK       | 1RB Low  | 0   | 23.06                      | 23.07      | 23.10      |
|        |        |            | 1RB Mid  | 0   | 22.87                      | 22.97      | 23.25      |
|        |        |            | 1RB High | 0   | 23.00                      | 23.00      | 23.23      |
|        |        |            | 50% Low  | 1   | 22.09                      | 22.08      | 22.22      |
|        |        |            | 50% Mid  | 1   | 22.08                      | 22.03      | 22.20      |
|        |        |            | 50% High | 1   | 22.08                      | 22.02      | 22.22      |
|        |        |            | 100%     | 1   | 22.01                      | 21.97      | 22.16      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.35                      | 22.38      | 22.49      |
|        |        |            | 1RB Mid  | 1   | 22.41                      | 22.36      | 22.61      |
|        |        |            | 1RB High | 1   | 22.32                      | 22.18      | 22.45      |
|        |        |            | 50% Low  | 2   | 21.14                      | 21.16      | 21.33      |
|        |        |            | 50% Mid  | 2   | 21.09                      | 21.12      | 21.29      |
|        |        |            | 50% High | 2   | 21.09                      | 21.06      | 21.30      |
|        |        |            | 100%     | 2   | 21.06                      | 21.03      | 21.24      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1857.5 MHz                 | 1880.0 MHz | 1902.5 MHz |
| LTE B2 | 15 MHz | QPSK       | 1RB Low  | 0   | 23.02                      | 23.07      | 23.15      |
|        |        |            | 1RB Mid  | 0   | 22.98                      | 23.01      | 23.14      |
|        |        |            | 1RB High | 0   | 23.08                      | 22.96      | 23.27      |
|        |        |            | 50% Low  | 1   | 22.09                      | 22.01      | 22.14      |
|        |        |            | 50% Mid  | 1   | 22.07                      | 22.00      | 22.18      |
|        |        |            | 50% High | 1   | 22.08                      | 22.02      | 22.27      |
|        |        |            | 100%     | 1   | 22.04                      | 22.02      | 22.23      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.39                      | 22.19      | 22.33      |
|        |        |            | 1RB Mid  | 1   | 22.27                      | 22.08      | 22.36      |
|        |        |            | 1RB High | 1   | 22.32                      | 22.07      | 22.19      |
|        |        |            | 50% Low  | 2   | 21.07                      | 21.08      | 21.24      |
|        |        |            | 50% Mid  | 2   | 21.06                      | 21.05      | 21.23      |
|        |        |            | 50% High | 2   | 21.07                      | 21.05      | 21.22      |
|        |        |            | 100%     | 2   | 21.07                      | 21.03      | 21.25      |

| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|--------|--------|------------|----------|-----|----------------------------|------------|------------|
|        |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1855.0 MHz                 | 1880.0MHz  | 1905.0 MHz |
| LTE B2 | 10 MHz | QPSK       | 1RB Low  | 0   | 22.99                      | 23.04      | 23.09      |
|        |        |            | 1RB Mid  | 0   | 22.96                      | 22.94      | 23.12      |
|        |        |            | 1RB High | 0   | 23.05                      | 22.99      | 23.11      |
|        |        |            | 50% Low  | 1   | 22.02                      | 21.96      | 22.11      |
|        |        |            | 50% Mid  | 1   | 22.01                      | 21.96      | 22.12      |
|        |        |            | 50% High | 1   | 22.00                      | 21.93      | 22.11      |
|        |        |            | 100%     | 1   | 21.97                      | 21.93      | 22.08      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.23                      | 22.09      | 22.25      |
|        |        |            | 1RB Mid  | 1   | 22.34                      | 22.13      | 22.22      |
|        |        |            | 1RB High | 1   | 22.27                      | 22.05      | 22.04      |
|        |        |            | 50% Low  | 2   | 21.07                      | 21.05      | 21.18      |
|        |        |            | 50% Mid  | 2   | 21.05                      | 21.04      | 21.15      |
|        |        |            | 50% High | 2   | 21.03                      | 21.01      | 21.13      |
|        |        |            | 100%     | 2   | 21.03                      | 20.99      | 21.14      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1852.5 MHz                 | 1880.0 MHz | 1907.5 MHz |
| LTE B2 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.05                      | 22.93      | 23.01      |
|        |        |            | 1RB Mid  | 0   | 23.06                      | 22.80      | 23.03      |
|        |        |            | 1RB High | 0   | 23.07                      | 22.95      | 23.03      |
|        |        |            | 50% Low  | 1   | 21.96                      | 21.95      | 22.02      |
|        |        |            | 50% Mid  | 1   | 21.98                      | 21.95      | 22.01      |
|        |        |            | 50% High | 1   | 21.95                      | 21.96      | 22.03      |
|        |        |            | 100%     | 1   | 21.97                      | 21.92      | 21.98      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.24                      | 22.29      | 22.12      |
|        |        |            | 1RB Mid  | 1   | 22.07                      | 22.19      | 22.07      |
|        |        |            | 1RB High | 1   | 22.23                      | 22.15      | 22.18      |
|        |        |            | 50% Low  | 2   | 21.09                      | 20.98      | 21.02      |
|        |        |            | 50% Mid  | 2   | 21.09                      | 21.00      | 21.03      |
|        |        |            | 50% High | 2   | 21.09                      | 20.99      | 21.06      |
|        |        |            | 100%     | 2   | 21.07                      | 20.98      | 20.96      |

| Band   | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|--------|---------|------------|----------|-----|----------------------------|------------|------------|
|        |         |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |         |            |          |     | 1851.5 MHz                 | 1880.0 MHz | 1908.5 MHz |
| LTE B2 | 3 MHz   | QPSK       | 1RB Low  | 0   | 23.05                      | 22.92      | 23.05      |
|        |         |            | 1RB Mid  | 0   | 22.99                      | 22.99      | 22.82      |
|        |         |            | 1RB High | 0   | 23.05                      | 23.03      | 23.06      |
|        |         |            | 50% Low  | 1   | 22.15                      | 22.01      | 22.05      |
|        |         |            | 50% Mid  | 1   | 22.11                      | 21.96      | 21.99      |
|        |         |            | 50% High | 1   | 22.09                      | 21.96      | 22.00      |
|        |         |            | 100%     | 1   | 22.11                      | 21.92      | 21.97      |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.42                      | 22.15      | 22.11      |
|        |         |            | 1RB Mid  | 1   | 22.45                      | 22.04      | 21.99      |
|        |         |            | 1RB High | 1   | 22.60                      | 22.02      | 21.97      |
|        |         |            | 50% Low  | 2   | 21.23                      | 21.01      | 21.06      |
|        |         |            | 50% Mid  | 2   | 21.18                      | 20.99      | 21.03      |
|        |         |            | 50% High | 2   | 21.22                      | 20.98      | 21.00      |
|        |         |            | 100%     | 2   | 21.13                      | 20.95      | 20.99      |
| Band   | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |         |            |          |     | 1850.7 MHz                 | 1880.0 MHz | 1909.3 MHz |
| LTE B2 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.10                      | 22.88      | 22.95      |
|        |         |            | 1RB Mid  | 0   | 23.11                      | 22.92      | 22.82      |
|        |         |            | 1RB High | 0   | 23.13                      | 22.89      | 23.00      |
|        |         |            | 50% Low  | 0   | 23.08                      | 22.87      | 22.97      |
|        |         |            | 50% Mid  | 0   | 23.05                      | 22.86      | 22.96      |
|        |         |            | 50% High | 0   | 23.02                      | 22.84      | 22.88      |
|        |         |            | 100%     | 1   | 21.97                      | 21.82      | 21.89      |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.24                      | 22.03      | 22.04      |
|        |         |            | 1RB Mid  | 1   | 22.24                      | 22.10      | 21.82      |
|        |         |            | 1RB High | 1   | 22.27                      | 22.05      | 21.98      |
|        |         |            | 50% Low  | 1   | 22.30                      | 22.02      | 22.05      |
|        |         |            | 50% Mid  | 1   | 22.30                      | 22.00      | 22.05      |
|        |         |            | 50% High | 1   | 22.26                      | 22.00      | 22.01      |
|        |         |            | 100%     | 2   | 21.10                      | 20.94      | 20.87      |

- **LTE 4**

| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|--------|--------|------------|----------|-----|----------------------------|------------|------------|
|        |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1720.0 MHz                 | 1732.5 MHz | 1745.0 MHz |
| LTE B4 | 20 MHz | QPSK       | 1RB Low  | 0   | 23.94                      | 23.09      | 23.00      |
|        |        |            | 1RB Mid  | 0   | 23.05                      | 23.03      | 23.06      |
|        |        |            | 1RB High | 0   | 23.28                      | 23.08      | 22.97      |
|        |        |            | 50% Low  | 1   | 22.29                      | 22.25      | 22.03      |
|        |        |            | 50% Mid  | 1   | 22.20                      | 22.11      | 22.01      |
|        |        |            | 50% High | 1   | 22.32                      | 22.10      | 22.06      |
|        |        |            | 100%     | 1   | 22.26                      | 22.06      | 21.99      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.51                      | 22.23      | 22.37      |
|        |        |            | 1RB Mid  | 1   | 22.63                      | 22.35      | 22.38      |
|        |        |            | 1RB High | 1   | 22.58                      | 22.16      | 22.32      |
|        |        |            | 50% Low  | 2   | 21.37                      | 21.19      | 21.08      |
|        |        |            | 50% Mid  | 2   | 21.38                      | 21.22      | 21.09      |
|        |        |            | 50% High | 2   | 21.36                      | 21.19      | 21.11      |
|        |        |            | 100%     | 2   | 21.35                      | 21.15      | 21.09      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 1717.5 MHz                 | 1732.5 MHz | 1747.5 MHz |
| LTE B4 | 15 MHz | QPSK       | 1RB Low  | 0   | 23.96                      | 23.75      | 23.72      |
|        |        |            | 1RB Mid  | 0   | 23.13                      | 23.07      | 22.94      |
|        |        |            | 1RB High | 0   | 23.33                      | 23.02      | 22.97      |
|        |        |            | 50% Low  | 1   | 22.33                      | 22.06      | 22.03      |
|        |        |            | 50% Mid  | 1   | 22.34                      | 22.09      | 22.01      |
|        |        |            | 50% High | 1   | 22.38                      | 22.08      | 21.99      |
|        |        |            | 100%     | 1   | 22.36                      | 22.08      | 21.99      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.57                      | 22.19      | 22.33      |
|        |        |            | 1RB Mid  | 1   | 22.41                      | 22.06      | 22.19      |
|        |        |            | 1RB High | 1   | 22.55                      | 22.19      | 22.28      |
|        |        |            | 50% Low  | 2   | 21.33                      | 21.12      | 21.06      |
|        |        |            | 50% Mid  | 2   | 21.31                      | 21.09      | 21.05      |
|        |        |            | 50% High | 2   | 21.33                      | 21.13      | 21.06      |
|        |        |            | 100%     | 2   | 21.35                      | 21.12      | 20.98      |



| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |            |
|--------|--------|------------|----------|-----|----------------------------|-----------|------------|
|        |        |            |          |     | Low CH                     | Mid CH    | High CH    |
|        |        |            |          |     | 1715.0 MHz                 | 1732.5MHz | 1750.0 MHz |
| LTE B4 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.28                      | 23.10     | 23.04      |
|        |        |            | 1RB Mid  | 0   | 23.13                      | 22.94     | 23.12      |
|        |        |            | 1RB High | 0   | 23.30                      | 23.08     | 23.01      |
|        |        |            | 50% Low  | 1   | 22.34                      | 22.09     | 22.01      |
|        |        |            | 50% Mid  | 1   | 22.31                      | 22.08     | 21.99      |
|        |        |            | 50% High | 1   | 22.34                      | 22.08     | 22.01      |
|        |        |            | 100%     | 1   | 22.29                      | 22.08     | 21.99      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.53                      | 22.21     | 22.23      |
|        |        |            | 1RB Mid  | 1   | 22.72                      | 22.15     | 22.43      |
|        |        |            | 1RB High | 1   | 22.61                      | 22.14     | 22.20      |
|        |        |            | 50% Low  | 2   | 21.42                      | 21.15     | 21.07      |
|        |        |            | 50% Mid  | 2   | 21.43                      | 21.12     | 21.08      |
|        |        |            | 50% High | 2   | 21.44                      | 21.13     | 21.06      |
|        |        |            | 100%     | 2   | 21.33                      | 21.10     | 21.04      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH    |
|        |        |            |          |     | 1712.5 MHz                 | 1732.5MHz | 1752.5 MHz |
| LTE B4 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.37                      | 23.08     | 23.02      |
|        |        |            | 1RB Mid  | 0   | 23.37                      | 22.92     | 23.08      |
|        |        |            | 1RB High | 0   | 23.38                      | 23.07     | 23.06      |
|        |        |            | 50% Low  | 1   | 22.36                      | 22.08     | 22.06      |
|        |        |            | 50% Mid  | 1   | 22.35                      | 22.07     | 22.05      |
|        |        |            | 50% High | 1   | 22.36                      | 22.10     | 22.05      |
|        |        |            | 100%     | 1   | 22.32                      | 22.08     | 22.03      |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.42                      | 22.32     | 22.36      |
|        |        |            | 1RB Mid  | 1   | 22.27                      | 22.12     | 22.26      |
|        |        |            | 1RB High | 1   | 22.60                      | 22.32     | 22.28      |
|        |        |            | 50% Low  | 2   | 21.39                      | 21.17     | 21.08      |
|        |        |            | 50% Mid  | 2   | 21.38                      | 21.15     | 21.07      |
|        |        |            | 50% High | 2   | 21.40                      | 21.14     | 21.07      |
|        |        |            | 100%     | 2   | 21.40                      | 21.11     | 21.04      |

| Band   | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |           |            |
|--------|---------|------------|----------|-----|----------------------------|-----------|------------|
|        |         |            |          |     | Low CH                     | Mid CH    | High CH    |
|        |         |            |          |     | 1711.5 MHz                 | 1732.5MHz | 1753.5 MHz |
| LTE B4 | 3 MHz   | QPSK       | 1RB Low  | 0   | 23.32                      | 23.07     | 23.12      |
|        |         |            | 1RB Mid  | 0   | 23.25                      | 23.09     | 22.83      |
|        |         |            | 1RB High | 0   | 23.31                      | 23.16     | 23.13      |
|        |         |            | 50% Low  | 1   | 22.40                      | 22.10     | 22.04      |
|        |         |            | 50% Mid  | 1   | 22.37                      | 22.05     | 22.00      |
|        |         |            | 50% High | 1   | 22.37                      | 22.03     | 22.06      |
|        |         |            | 100%     | 1   | 22.36                      | 22.04     | 22.03      |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.48                      | 22.21     | 22.28      |
|        |         |            | 1RB Mid  | 1   | 22.52                      | 22.19     | 22.18      |
|        |         |            | 1RB High | 1   | 22.58                      | 22.14     | 22.10      |
|        |         |            | 50% Low  | 2   | 21.43                      | 21.17     | 21.07      |
|        |         |            | 50% Mid  | 2   | 21.40                      | 21.14     | 21.05      |
|        |         |            | 50% High | 2   | 21.41                      | 21.14     | 21.03      |
|        |         |            | 100%     | 2   | 21.32                      | 21.11     | 21.03      |
| Band   | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH    |
|        |         |            |          |     | 1710.7 MHz                 | 1732.5MHz | 1754.3 MHz |
| LTE B4 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.26                      | 23.05     | 22.98      |
|        |         |            | 1RB Mid  | 0   | 23.36                      | 22.86     | 23.00      |
|        |         |            | 1RB High | 0   | 23.33                      | 23.09     | 23.03      |
|        |         |            | 50% Low  | 0   | 23.33                      | 23.10     | 23.03      |
|        |         |            | 50% Mid  | 0   | 23.31                      | 23.02     | 22.96      |
|        |         |            | 50% High | 0   | 23.33                      | 22.88     | 22.90      |
|        |         |            | 100%     | 1   | 22.29                      | 21.92     | 21.89      |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.43                      | 21.91     | 21.99      |
|        |         |            | 1RB Mid  | 1   | 22.47                      | 21.72     | 22.08      |
|        |         |            | 1RB High | 1   | 22.42                      | 22.05     | 22.02      |
|        |         |            | 50% Low  | 1   | 22.35                      | 22.11     | 22.10      |
|        |         |            | 50% Mid  | 1   | 22.32                      | 22.08     | 22.05      |
|        |         |            | 50% High | 1   | 22.30                      | 22.04     | 22.05      |
|        |         |            | 100%     | 2   | 21.27                      | 21.05     | 20.92      |

- **LTE 5**

| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|--------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|        |        |            |          |     | Low CH                     | Mid CH    | High CH   |
|        |        |            |          |     | 829.0 MHz                  | 836.5 MHz | 844.0 MHz |
| LTE B5 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.33                      | 23.28     | 23.19     |
|        |        |            | 1RB Mid  | 0   | 23.38                      | 23.10     | 23.31     |
|        |        |            | 1RB High | 0   | 23.41                      | 23.29     | 23.23     |
|        |        |            | 50% Low  | 1   | 22.31                      | 22.20     | 22.11     |
|        |        |            | 50% Mid  | 1   | 22.35                      | 22.21     | 22.11     |
|        |        |            | 50% High | 1   | 22.30                      | 22.17     | 22.16     |
|        |        |            | 100%     | 1   | 22.24                      | 22.12     | 22.05     |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.56                      | 22.37     | 22.20     |
|        |        |            | 1RB Mid  | 1   | 22.65                      | 22.39     | 22.18     |
|        |        |            | 1RB High | 1   | 22.64                      | 22.35     | 22.21     |
|        |        |            | 50% Low  | 2   | 21.28                      | 21.18     | 21.19     |
|        |        |            | 50% Mid  | 2   | 21.27                      | 21.18     | 21.17     |
|        |        |            | 50% High | 2   | 21.31                      | 21.23     | 21.20     |
|        |        |            | 100%     | 2   | 21.26                      | 21.14     | 21.12     |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|        |        |            |          |     | 826.5 MHz                  | 836.5 MHz | 846.5 MHz |
| LTE B5 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.46                      | 23.23     | 23.27     |
|        |        |            | 1RB Mid  | 0   | 23.40                      | 23.10     | 23.25     |
|        |        |            | 1RB High | 0   | 23.43                      | 23.21     | 23.24     |
|        |        |            | 50% Low  | 1   | 22.28                      | 22.12     | 22.17     |
|        |        |            | 50% Mid  | 1   | 22.23                      | 22.15     | 22.11     |
|        |        |            | 50% High | 1   | 22.27                      | 22.15     | 22.14     |
|        |        |            | 100%     | 1   | 22.23                      | 22.11     | 22.12     |
|        |        | 16-QAM     | 1RB Low  | 1   | 22.47                      | 22.36     | 22.44     |
|        |        |            | 1RB Mid  | 1   | 22.36                      | 22.32     | 22.23     |
|        |        |            | 1RB High | 1   | 22.49                      | 22.33     | 22.40     |
|        |        |            | 50% Low  | 2   | 21.23                      | 21.16     | 21.14     |
|        |        |            | 50% Mid  | 2   | 21.23                      | 21.18     | 21.12     |
|        |        |            | 50% High | 2   | 21.24                      | 21.21     | 21.18     |
|        |        |            | 100%     | 2   | 21.26                      | 21.19     | 21.12     |

| Band   | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|--------|---------|------------|----------|-----|----------------------------|-----------|-----------|
|        |         |            |          |     | Low CH                     | Mid CH    | High CH   |
|        |         |            |          |     | 825.5 MHz                  | 836.5 MHz | 847.4 MHz |
| LTE B5 | 3 MHz   | QPSK       | 1RB Low  | 0   | 23.34                      | 23.25     | 23.34     |
|        |         |            | 1RB Mid  | 0   | 23.14                      | 23.19     | 23.18     |
|        |         |            | 1RB High | 0   | 23.34                      | 23.30     | 23.37     |
|        |         |            | 50% Low  | 1   | 22.31                      | 22.20     | 22.22     |
|        |         |            | 50% Mid  | 1   | 22.30                      | 22.13     | 22.13     |
|        |         |            | 50% High | 1   | 22.29                      | 22.14     | 22.16     |
|        |         |            | 100%     | 1   | 22.22                      | 22.08     | 22.10     |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.67                      | 22.53     | 22.39     |
|        |         |            | 1RB Mid  | 1   | 22.54                      | 22.31     | 22.30     |
|        |         |            | 1RB High | 1   | 22.73                      | 22.36     | 22.31     |
|        |         |            | 50% Low  | 2   | 21.33                      | 21.17     | 21.24     |
|        |         |            | 50% Mid  | 2   | 21.27                      | 21.14     | 21.20     |
|        |         |            | 50% High | 2   | 21.31                      | 21.14     | 21.17     |
|        |         |            | 100%     | 2   | 21.17                      | 21.11     | 21.11     |
| Band   | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
| LTE B5 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.52                      | 23.34     | 23.27     |
|        |         |            | 1RB Mid  | 0   | 23.52                      | 23.21     | 23.33     |
|        |         |            | 1RB High | 0   | 23.51                      | 23.37     | 23.29     |
|        |         |            | 50% Low  | 0   | 23.44                      | 23.25     | 23.19     |
|        |         |            | 50% Mid  | 0   | 23.36                      | 23.22     | 23.18     |
|        |         |            | 50% High | 0   | 23.37                      | 23.07     | 23.13     |
|        |         |            | 100%     | 1   | 22.43                      | 22.13     | 22.17     |
|        |         | 16-QAM     | 1RB Low  | 1   | 22.59                      | 22.28     | 22.33     |
|        |         |            | 1RB Mid  | 1   | 22.73                      | 22.26     | 22.35     |
|        |         |            | 1RB High | 1   | 22.69                      | 22.30     | 22.43     |
|        |         |            | 50% Low  | 1   | 22.47                      | 22.28     | 22.36     |
|        |         |            | 50% Mid  | 1   | 22.46                      | 22.26     | 22.33     |
|        |         |            | 50% High | 1   | 22.41                      | 22.29     | 22.32     |
|        |         |            | 100%     | 2   | 21.33                      | 21.12     | 21.20     |

- **LTE 7**

| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|--------|--------|------------|----------|-----|----------------------------|------------|------------|
|        |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 2510.0 MHz                 | 2535.0 MHz | 2560.0 MHz |
| LTE B7 | 20 MHz | QPSK       | 1RB Low  | 0   | 24.38                      | 24.37      | 23.83      |
|        |        |            | 1RB Mid  | 0   | 24.48                      | 24.08      | 23.99      |
|        |        |            | 1RB High | 0   | 24.68                      | 24.10      | 23.98      |
|        |        |            | 50% Low  | 1   | 23.52                      | 23.31      | 22.85      |
|        |        |            | 50% Mid  | 1   | 23.53                      | 23.23      | 22.84      |
|        |        |            | 50% High | 1   | 23.57                      | 23.14      | 22.84      |
|        |        |            | 100%     | 1   | 23.51                      | 23.20      | 22.82      |
|        |        | 16-QAM     | 1RB Low  | 1   | 23.78                      | 23.47      | 23.13      |
|        |        |            | 1RB Mid  | 1   | 23.77                      | 23.50      | 23.23      |
|        |        |            | 1RB High | 1   | 23.79                      | 23.24      | 22.95      |
|        |        |            | 50% Low  | 2   | 22.59                      | 22.34      | 21.85      |
|        |        |            | 50% Mid  | 2   | 22.56                      | 22.28      | 21.80      |
|        |        |            | 50% High | 2   | 22.59                      | 22.21      | 21.90      |
|        |        |            | 100%     | 2   | 22.54                      | 22.24      | 21.85      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 2507.5 MHz                 | 2535.0 MHz | 2562.5 MHz |
| LTE B7 | 15 MHz | QPSK       | 1RB Low  | 0   | 24.53                      | 24.38      | 23.73      |
|        |        |            | 1RB Mid  | 0   | 24.45                      | 24.25      | 23.66      |
|        |        |            | 1RB High | 0   | 24.65                      | 24.03      | 23.78      |
|        |        |            | 50% Low  | 1   | 23.61                      | 23.36      | 22.82      |
|        |        |            | 50% Mid  | 1   | 23.63                      | 23.23      | 22.80      |
|        |        |            | 50% High | 1   | 23.69                      | 23.17      | 22.83      |
|        |        |            | 100%     | 1   | 23.66                      | 23.21      | 22.76      |
|        |        | 16-QAM     | 1RB Low  | 1   | 23.72                      | 23.35      | 22.86      |
|        |        |            | 1RB Mid  | 1   | 23.78                      | 23.29      | 22.76      |
|        |        |            | 1RB High | 1   | 23.73                      | 23.07      | 22.74      |
|        |        |            | 50% Low  | 2   | 22.59                      | 22.32      | 21.76      |
|        |        |            | 50% Mid  | 2   | 22.58                      | 22.25      | 21.79      |
|        |        |            | 50% High | 2   | 22.64                      | 22.18      | 21.78      |
|        |        |            | 100%     | 2   | 22.60                      | 22.20      | 21.75      |

| Band   | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|--------|--------|------------|----------|-----|----------------------------|------------|------------|
|        |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 2505.0 MHz                 | 2535.0 MHz | 2565.0 MHz |
| LTE B7 | 10 MHz | QPSK       | 1RB Low  | 0   | 24.41                      | 24.29      | 23.60      |
|        |        |            | 1RB Mid  | 0   | 24.33                      | 24.07      | 23.66      |
|        |        |            | 1RB High | 0   | 24.44                      | 24.04      | 23.75      |
|        |        |            | 50% Low  | 1   | 23.50                      | 23.22      | 22.65      |
|        |        |            | 50% Mid  | 1   | 23.50                      | 23.17      | 22.64      |
|        |        |            | 50% High | 1   | 23.50                      | 23.13      | 22.65      |
|        |        |            | 100%     | 1   | 23.44                      | 23.12      | 22.65      |
|        |        | 16-QAM     | 1RB Low  | 1   | 23.66                      | 23.31      | 22.86      |
|        |        |            | 1RB Mid  | 1   | 23.71                      | 23.24      | 22.86      |
|        |        |            | 1RB High | 1   | 23.65                      | 23.10      | 22.76      |
|        |        |            | 50% Low  | 2   | 22.50                      | 22.22      | 21.75      |
|        |        |            | 50% Mid  | 2   | 22.51                      | 22.17      | 21.69      |
|        |        |            | 50% High | 2   | 22.52                      | 22.19      | 21.72      |
|        |        |            | 100%     | 2   | 22.49                      | 22.18      | 21.70      |
| Band   | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|        |        |            |          |     | 2502.5 MHz                 | 2535.0 MHz | 2567.5 MHz |
| LTE B7 | 5 MHz  | QPSK       | 1RB Low  | 0   | 24.49                      | 24.24      | 23.61      |
|        |        |            | 1RB Mid  | 0   | 24.49                      | 24.03      | 23.66      |
|        |        |            | 1RB High | 0   | 24.48                      | 24.14      | 23.65      |
|        |        |            | 50% Low  | 1   | 23.47                      | 23.14      | 22.61      |
|        |        |            | 50% Mid  | 1   | 23.46                      | 23.15      | 22.62      |
|        |        |            | 50% High | 1   | 23.46                      | 23.09      | 22.66      |
|        |        |            | 100%     | 1   | 23.47                      | 23.10      | 22.60      |
|        |        | 16-QAM     | 1RB Low  | 1   | 23.60                      | 23.28      | 22.88      |
|        |        |            | 1RB Mid  | 1   | 23.50                      | 23.22      | 22.71      |
|        |        |            | 1RB High | 1   | 23.67                      | 23.16      | 22.83      |
|        |        |            | 50% Low  | 2   | 22.50                      | 22.13      | 21.68      |
|        |        |            | 50% Mid  | 2   | 22.48                      | 22.14      | 21.68      |
|        |        |            | 50% High | 2   | 22.49                      | 22.14      | 21.69      |
|        |        |            | 100%     | 2   | 22.51                      | 22.07      | 21.62      |

- **LTE 12**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|         |        |            |          |     | Low CH                     | Mid CH    | High CH   |
| LTE B12 | 10 MHz | QPSK       | 1RB Low  | 0   | -                          | 707.5 MHz | -         |
|         |        |            | 1RB Mid  | 0   | -                          | 22.96     | -         |
|         |        |            | 1RB High | 0   | -                          | 22.90     | -         |
|         |        |            | 50% Low  | 1   | -                          | 23.09     | -         |
|         |        |            | 50% Mid  | 1   | -                          | 21.94     | -         |
|         |        |            | 50% High | 1   | -                          | 21.84     | -         |
|         |        |            | 100%     | 1   | -                          | 21.86     | -         |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 21.93     | -         |
|         |        |            | 1RB Mid  | 1   | -                          | 22.13     | -         |
|         |        |            | 1RB High | 1   | -                          | 22.20     | -         |
|         |        |            | 50% Low  | 2   | -                          | 22.16     | -         |
|         |        |            | 50% Mid  | 2   | -                          | 20.87     | -         |
|         |        |            | 50% High | 2   | -                          | 20.81     | -         |
|         |        |            | 100%     | 2   | -                          | 20.85     | -         |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 701.5 MHz                  | 707.5 MHz | 713.5 MHz |
| LTE B12 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.11                      | 23.01     | 23.01     |
|         |        |            | 1RB Mid  | 0   | 22.99                      | 22.90     | 23.00     |
|         |        |            | 1RB High | 0   | 23.04                      | 23.02     | 23.09     |
|         |        |            | 50% Low  | 1   | 21.90                      | 21.93     | 21.88     |
|         |        |            | 50% Mid  | 1   | 21.90                      | 21.88     | 21.86     |
|         |        |            | 50% High | 1   | 21.90                      | 21.90     | 21.85     |
|         |        |            | 100%     | 1   | 21.95                      | 21.91     | 21.91     |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.04                      | 22.05     | 22.24     |
|         |        |            | 1RB Mid  | 1   | 21.95                      | 21.97     | 21.94     |
|         |        |            | 1RB High | 1   | 22.09                      | 22.04     | 22.15     |
|         |        |            | 50% Low  | 2   | 20.87                      | 20.89     | 20.88     |
|         |        |            | 50% Mid  | 2   | 20.87                      | 20.84     | 20.85     |
|         |        |            | 50% High | 2   | 20.89                      | 20.87     | 20.90     |
|         |        |            | 100%     | 2   | 20.96                      | 20.95     | 20.90     |

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

| Band    | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|---------|------------|----------|-----|----------------------------|-----------|-----------|
|         |         |            |          |     | Low CH                     | Mid CH    | High CH   |
|         |         |            |          |     | 700.5 MHz                  | 707.5 MHz | 714.5 MHz |
| LTE B12 | 3 MHz   | QPSK       | 1RB Low  | 0   | 22.96                      | 23.04     | 23.07     |
|         |         |            | 1RB Mid  | 0   | 22.73                      | 23.01     | 22.84     |
|         |         |            | 1RB High | 0   | 22.92                      | 23.11     | 23.09     |
|         |         |            | 50% Low  | 1   | 21.94                      | 21.99     | 21.89     |
|         |         |            | 50% Mid  | 1   | 21.92                      | 21.87     | 21.81     |
|         |         |            | 50% High | 1   | 21.91                      | 21.88     | 21.84     |
|         |         |            | 100%     | 1   | 21.97                      | 21.90     | 21.88     |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.07                      | 21.98     | 22.12     |
|         |         |            | 1RB Mid  | 1   | 21.99                      | 21.88     | 21.95     |
|         |         |            | 1RB High | 1   | 22.19                      | 21.93     | 21.99     |
|         |         |            | 50% Low  | 2   | 20.93                      | 20.94     | 20.88     |
|         |         |            | 50% Mid  | 2   | 20.92                      | 20.91     | 20.86     |
|         |         |            | 50% High | 2   | 20.91                      | 20.91     | 20.83     |
|         |         |            | 100%     | 2   | 20.90                      | 20.95     | 20.84     |
| Band    | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |         |            |          |     | 699.7 MHz                  | 707.5 MHz | 715.3 MHz |
| LTE B12 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.02                      | 23.05     | 23.00     |
|         |         |            | 1RB Mid  | 0   | 23.13                      | 22.99     | 22.98     |
|         |         |            | 1RB High | 0   | 23.09                      | 23.11     | 23.00     |
|         |         |            | 50% Low  | 0   | 22.97                      | 22.94     | 22.86     |
|         |         |            | 50% Mid  | 0   | 22.91                      | 22.90     | 22.81     |
|         |         |            | 50% High | 0   | 22.92                      | 22.84     | 22.79     |
|         |         |            | 100%     | 1   | 22.00                      | 21.98     | 21.90     |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.09                      | 22.16     | 21.79     |
|         |         |            | 1RB Mid  | 1   | 22.01                      | 22.13     | 21.79     |
|         |         |            | 1RB High | 1   | 22.15                      | 22.23     | 21.79     |
|         |         |            | 50% Low  | 1   | 21.86                      | 21.94     | 21.91     |
|         |         |            | 50% Mid  | 1   | 21.92                      | 21.95     | 21.89     |
|         |         |            | 50% High | 1   | 21.88                      | 21.94     | 21.91     |
|         |         |            | 100%     | 2   | 20.96                      | 21.00     | 20.89     |



- **LTE 13**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|         |        |            |          |     | Low CH                     | Mid CH    | High CH   |
| LTE B13 | 10 MHz | QPSK       | 1RB Low  | 0   | -                          | 782.0 MHz | -         |
|         |        |            | 1RB Mid  | 0   | -                          | 22.86     | -         |
|         |        |            | 1RB High | 0   | -                          | 22.92     | -         |
|         |        |            | 50% Low  | 1   | -                          | 22.93     | -         |
|         |        |            | 50% Mid  | 1   | -                          | 21.95     | -         |
|         |        |            | 50% High | 1   | -                          | 21.94     | -         |
|         |        |            | 100%     | 1   | -                          | 21.97     | -         |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 22.02     | -         |
|         |        |            | 1RB Mid  | 1   | -                          | 22.11     | -         |
|         |        |            | 1RB High | 1   | -                          | 22.24     | -         |
|         |        |            | 50% Low  | 2   | -                          | 22.24     | -         |
|         |        |            | 50% Mid  | 2   | -                          | 20.90     | -         |
|         |        |            | 50% High | 2   | -                          | 20.96     | -         |
|         |        |            | 100%     | 2   | -                          | 20.97     | -         |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 779.5 MHz                  | 782.0 MHz | 784.5 MHz |
| LTE B13 | 5 MHz  | QPSK       | 1RB Low  | 0   | -                          | 23.05     | -         |
|         |        |            | 1RB Mid  | 0   | -                          | 22.96     | -         |
|         |        |            | 1RB High | 0   | -                          | 23.05     | -         |
|         |        |            | 50% Low  | 1   | -                          | 21.93     | -         |
|         |        |            | 50% Mid  | 1   | -                          | 21.92     | -         |
|         |        |            | 50% High | 1   | -                          | 21.96     | -         |
|         |        |            | 100%     | 1   | -                          | 22.00     | -         |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 22.11     | -         |
|         |        |            | 1RB Mid  | 1   | -                          | 21.93     | -         |
|         |        |            | 1RB High | 1   | -                          | 22.22     | -         |
|         |        |            | 50% Low  | 2   | -                          | 20.92     | -         |
|         |        |            | 50% Mid  | 2   | -                          | 20.97     | -         |
|         |        |            | 50% High | 2   | -                          | 20.95     | -         |
|         |        |            | 100%     | 2   | -                          | 21.00     | -         |

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE 17**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |                  |         |
|---------|--------|------------|----------|-----|----------------------------|------------------|---------|
|         |        |            |          |     | Low CH                     | Mid CH           | High CH |
|         |        |            |          |     | -                          | <b>710.0 MHz</b> | -       |
| LTE B17 | 10 MHz | QPSK       | 1RB Low  | 0   | -                          | 22.86            | -       |
|         |        |            | 1RB Mid  | 0   | -                          | 22.83            | -       |
|         |        |            | 1RB High | 0   | -                          | 22.86            | -       |
|         |        |            | 50% Low  | 1   | -                          | 21.79            | -       |
|         |        |            | 50% Mid  | 1   | -                          | 21.82            | -       |
|         |        |            | 50% High | 1   | -                          | 21.80            | -       |
|         |        |            | 100%     | 1   | -                          | 21.80            | -       |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 22.05            | -       |
|         |        |            | 1RB Mid  | 1   | -                          | 22.15            | -       |
|         |        |            | 1RB High | 1   | -                          | 22.17            | -       |
|         |        |            | 50% Low  | 2   | -                          | 20.82            | -       |
|         |        |            | 50% Mid  | 2   | -                          | 20.82            | -       |
|         |        |            | 50% High | 2   | -                          | 20.83            | -       |
|         |        |            | 100%     | 2   | -                          | 20.81            | -       |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH           | High CH |
|         |        |            |          |     | -                          | <b>710.0 MHz</b> | -       |
| LTE B17 | 5 MHz  | QPSK       | 1RB Low  | 0   | -                          | 22.92            | -       |
|         |        |            | 1RB Mid  | 0   | -                          | 22.84            | -       |
|         |        |            | 1RB High | 0   | -                          | 22.95            | -       |
|         |        |            | 50% Low  | 1   | -                          | 21.79            | -       |
|         |        |            | 50% Mid  | 1   | -                          | 21.83            | -       |
|         |        |            | 50% High | 1   | -                          | 21.84            | -       |
|         |        |            | 100%     | 1   | -                          | 21.85            | -       |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 21.94            | -       |
|         |        |            | 1RB Mid  | 1   | -                          | 21.75            | -       |
|         |        |            | 1RB High | 1   | -                          | 21.97            | -       |
|         |        |            | 50% Low  | 2   | -                          | 20.79            | -       |
|         |        |            | 50% Mid  | 2   | -                          | 20.75            | -       |
|         |        |            | 50% High | 2   | -                          | 20.77            | -       |
|         |        |            | 100%     | 2   | -                          | 20.84            | -       |

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE 25**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1860.0 MHz                 | 1882.5 MHz | 1905.0 MHz |
| LTE B25 | 20 MHz | QPSK       | 1RB Low  | 0   | 23.05                      | 23.07      | 23.15      |
|         |        |            | 1RB Mid  | 0   | 22.85                      | 23.02      | 23.30      |
|         |        |            | 1RB High | 0   | 23.00                      | 23.08      | 23.16      |
|         |        |            | 50% Low  | 1   | 22.05                      | 22.01      | 22.12      |
|         |        |            | 50% Mid  | 1   | 22.03                      | 22.00      | 22.11      |
|         |        |            | 50% High | 1   | 22.01                      | 21.99      | 22.11      |
|         |        |            | 100%     | 1   | 22.02                      | 22.00      | 22.11      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.41                      | 22.44      | 22.59      |
|         |        |            | 1RB Mid  | 1   | 22.47                      | 22.35      | 22.41      |
|         |        |            | 1RB High | 1   | 22.27                      | 22.27      | 22.46      |
|         |        |            | 50% Low  | 2   | 21.10                      | 21.10      | 21.23      |
|         |        |            | 50% Mid  | 2   | 21.04                      | 21.05      | 21.15      |
|         |        |            | 50% High | 2   | 21.07                      | 21.06      | 21.18      |
|         |        |            | 100%     | 2   | 21.09                      | 21.03      | 21.19      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1857.5 MHz                 | 1882.5 MHz | 1907.5 MHz |
| LTE B25 | 15 MHz | QPSK       | 1RB Low  | 0   | 23.09                      | 23.07      | 23.05      |
|         |        |            | 1RB Mid  | 0   | 23.02                      | 23.07      | 22.99      |
|         |        |            | 1RB High | 0   | 23.08                      | 23.00      | 22.98      |
|         |        |            | 50% Low  | 1   | 22.05                      | 21.97      | 22.00      |
|         |        |            | 50% Mid  | 1   | 22.03                      | 21.99      | 21.98      |
|         |        |            | 50% High | 1   | 22.04                      | 21.99      | 22.02      |
|         |        |            | 100%     | 1   | 22.06                      | 22.05      | 22.06      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.33                      | 22.41      | 22.24      |
|         |        |            | 1RB Mid  | 1   | 22.24                      | 22.23      | 22.11      |
|         |        |            | 1RB High | 1   | 22.29                      | 22.22      | 22.20      |
|         |        |            | 50% Low  | 2   | 21.03                      | 21.05      | 20.98      |
|         |        |            | 50% Mid  | 2   | 21.01                      | 21.03      | 20.99      |
|         |        |            | 50% High | 2   | 21.04                      | 21.01      | 21.01      |
|         |        |            | 100%     | 2   | 21.10                      | 21.05      | 21.02      |

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1855.0 MHz                 | 1882.5 MHz | 1910.0 MHz |
| LTE B25 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.03                      | 23.11      | 23.04      |
|         |        |            | 1RB Mid  | 0   | 22.95                      | 22.88      | 23.06      |
|         |        |            | 1RB High | 0   | 23.05                      | 23.02      | 23.06      |
|         |        |            | 50% Low  | 1   | 22.01                      | 21.99      | 21.96      |
|         |        |            | 50% Mid  | 1   | 22.00                      | 21.97      | 21.96      |
|         |        |            | 50% High | 1   | 22.00                      | 21.94      | 21.96      |
|         |        |            | 100%     | 1   | 22.01                      | 21.97      | 21.99      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.42                      | 22.23      | 22.26      |
|         |        |            | 1RB Mid  | 1   | 22.42                      | 21.96      | 22.13      |
|         |        |            | 1RB High | 1   | 22.26                      | 22.10      | 22.27      |
|         |        |            | 50% Low  | 2   | 21.06                      | 21.09      | 20.99      |
|         |        |            | 50% Mid  | 2   | 21.06                      | 21.05      | 21.01      |
|         |        |            | 50% High | 2   | 21.03                      | 21.06      | 21.03      |
|         |        |            | 100%     | 2   | 21.05                      | 21.07      | 21.01      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
| LTE B25 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.18                      | 23.07      | 23.04      |
|         |        |            | 1RB Mid  | 0   | 23.16                      | 22.92      | 23.13      |
|         |        |            | 1RB High | 0   | 23.21                      | 23.04      | 23.11      |
|         |        |            | 50% Low  | 1   | 22.05                      | 21.99      | 21.97      |
|         |        |            | 50% Mid  | 1   | 22.06                      | 21.98      | 21.97      |
|         |        |            | 50% High | 1   | 22.05                      | 21.98      | 21.96      |
|         |        |            | 100%     | 1   | 22.09                      | 21.99      | 21.99      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.33                      | 22.37      | 22.28      |
|         |        |            | 1RB Mid  | 1   | 22.29                      | 22.22      | 22.22      |
|         |        |            | 1RB High | 1   | 22.34                      | 22.23      | 22.25      |
|         |        |            | 50% Low  | 2   | 21.10                      | 21.02      | 20.97      |
|         |        |            | 50% Mid  | 2   | 21.09                      | 21.00      | 21.01      |
|         |        |            | 50% High | 2   | 21.10                      | 21.02      | 21.03      |
|         |        |            | 100%     | 2   | 21.13                      | 21.04      | 21.01      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
| LTE B25 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.18                      | 23.07      | 23.04      |
|         |        |            | 1RB Mid  | 0   | 23.16                      | 22.92      | 23.13      |
|         |        |            | 1RB High | 0   | 23.21                      | 23.04      | 23.11      |
|         |        |            | 50% Low  | 1   | 22.05                      | 21.99      | 21.97      |
|         |        |            | 50% Mid  | 1   | 22.06                      | 21.98      | 21.97      |
|         |        |            | 50% High | 1   | 22.05                      | 21.98      | 21.96      |
|         |        |            | 100%     | 1   | 22.09                      | 21.99      | 21.99      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.33                      | 22.37      | 22.28      |
|         |        |            | 1RB Mid  | 1   | 22.29                      | 22.22      | 22.22      |
|         |        |            | 1RB High | 1   | 22.34                      | 22.23      | 22.25      |
|         |        |            | 50% Low  | 2   | 21.10                      | 21.02      | 20.97      |
|         |        |            | 50% Mid  | 2   | 21.09                      | 21.00      | 21.01      |
|         |        |            | 50% High | 2   | 21.10                      | 21.02      | 21.03      |
|         |        |            | 100%     | 2   | 21.13                      | 21.04      | 21.01      |

| Band    | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|---------|------------|----------|-----|----------------------------|------------|------------|
|         |         |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |         |            |          |     | 1851.5 MHz                 | 1882.5 MHz | 1913.5 MHz |
| LTE B25 | 3 MHz   | QPSK       | 1RB Low  | 0   | 23.12                      | 23.13      | 23.11      |
|         |         |            | 1RB Mid  | 0   | 23.04                      | 23.13      | 22.99      |
|         |         |            | 1RB High | 0   | 23.09                      | 23.16      | 23.23      |
|         |         |            | 50% Low  | 1   | 22.10                      | 22.02      | 21.97      |
|         |         |            | 50% Mid  | 1   | 22.09                      | 21.96      | 21.94      |
|         |         |            | 50% High | 1   | 22.08                      | 21.97      | 21.98      |
|         |         |            | 100%     | 1   | 22.15                      | 22.01      | 22.02      |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.39                      | 22.12      | 22.26      |
|         |         |            | 1RB Mid  | 1   | 22.44                      | 22.08      | 22.17      |
|         |         |            | 1RB High | 1   | 22.51                      | 22.04      | 22.15      |
|         |         |            | 50% Low  | 2   | 21.21                      | 21.01      | 21.02      |
|         |         |            | 50% Mid  | 2   | 21.23                      | 20.97      | 20.98      |
|         |         |            | 50% High | 2   | 21.22                      | 20.98      | 21.02      |
|         |         |            | 100%     | 2   | 21.17                      | 21.02      | 21.00      |
| Band    | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|         |         |            |          |     | 1850.7 MHz                 | 1882.5 MHz | 1914.3 MHz |
| LTE B25 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.13                      | 22.99      | 23.02      |
|         |         |            | 1RB Mid  | 0   | 23.09                      | 23.08      | 22.90      |
|         |         |            | 1RB High | 0   | 23.16                      | 22.99      | 23.07      |
|         |         |            | 50% Low  | 0   | 23.01                      | 22.88      | 22.94      |
|         |         |            | 50% Mid  | 0   | 22.99                      | 22.90      | 22.91      |
|         |         |            | 50% High | 0   | 22.91                      | 22.89      | 22.84      |
|         |         |            | 100%     | 1   | 21.96                      | 21.98      | 21.92      |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.22                      | 22.38      | 21.94      |
|         |         |            | 1RB Mid  | 1   | 22.17                      | 22.33      | 21.79      |
|         |         |            | 1RB High | 1   | 22.25                      | 22.27      | 22.00      |
|         |         |            | 50% Low  | 1   | 22.15                      | 21.94      | 21.93      |
|         |         |            | 50% Mid  | 1   | 22.11                      | 21.93      | 21.86      |
|         |         |            | 50% High | 1   | 22.05                      | 21.94      | 21.82      |
|         |         |            | 100%     | 2   | 20.98                      | 20.92      | 21.00      |

- **LTE 26**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|         |        |            |          |     | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | -                          | 831.5 MHz | -         |
| LTE B26 | 15 MHz | QPSK       | 1RB Low  | 0   | -                          | 23.18     | -         |
|         |        |            | 1RB Mid  | 0   | -                          | 22.99     | -         |
|         |        |            | 1RB High | 0   | -                          | 23.21     | -         |
|         |        |            | 50% Low  | 1   | -                          | 22.20     | -         |
|         |        |            | 50% Mid  | 1   | -                          | 22.25     | -         |
|         |        |            | 50% High | 1   | -                          | 22.28     | -         |
|         |        |            | 100%     | 1   | -                          | 22.21     | -         |
|         |        | 16-QAM     | 1RB Low  | 1   | -                          | 22.35     | -         |
|         |        |            | 1RB Mid  | 1   | -                          | 22.20     | -         |
|         |        |            | 1RB High | 1   | -                          | 22.39     | -         |
|         |        |            | 50% Low  | 2   | -                          | 21.16     | -         |
|         |        |            | 50% Mid  | 2   | -                          | 21.15     | -         |
|         |        |            | 50% High | 2   | -                          | 21.22     | -         |
|         |        |            | 100%     | 2   | -                          | 21.17     | -         |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 819.0 MHz                  | 831.5 MHz | 844.0 MHz |
| LTE B26 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.20                      | 23.23     | 23.04     |
|         |        |            | 1RB Mid  | 0   | 23.16                      | 22.95     | 23.07     |
|         |        |            | 1RB High | 0   | 23.24                      | 23.17     | 23.06     |
|         |        |            | 50% Low  | 1   | 22.29                      | 22.19     | 22.05     |
|         |        |            | 50% Mid  | 1   | 22.29                      | 22.19     | 22.04     |
|         |        |            | 50% High | 1   | 22.29                      | 22.24     | 22.09     |
|         |        |            | 100%     | 1   | 22.22                      | 22.14     | 22.06     |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.28                      | 22.17     | 22.14     |
|         |        |            | 1RB Mid  | 1   | 22.50                      | 22.25     | 22.19     |
|         |        |            | 1RB High | 1   | 22.40                      | 22.19     | 22.19     |
|         |        |            | 50% Low  | 2   | 21.24                      | 21.17     | 21.08     |
|         |        |            | 50% Mid  | 2   | 21.26                      | 21.18     | 21.05     |
|         |        |            | 50% High | 2   | 21.28                      | 21.16     | 21.11     |
|         |        |            | 100%     | 2   | 21.25                      | 21.13     | 21.10     |

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

| Band    | BW      | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|---------|------------|----------|-----|----------------------------|-----------|-----------|
|         |         |            |          |     | Low CH                     | Mid CH    | High CH   |
|         |         |            |          |     | 816.5 MHz                  | 831.5 MHz | 846.5 MHz |
| LTE B26 | 5 MHz   | QPSK       | 1RB Low  | 0   | 23.47                      | 23.25     | 23.19     |
|         |         |            | 1RB Mid  | 0   | 23.39                      | 23.18     | 23.19     |
|         |         |            | 1RB High | 0   | 23.48                      | 23.31     | 23.20     |
|         |         |            | 50% Low  | 1   | 22.39                      | 22.29     | 22.20     |
|         |         |            | 50% Mid  | 1   | 22.40                      | 22.27     | 22.16     |
|         |         |            | 50% High | 1   | 22.41                      | 22.28     | 22.16     |
|         |         |            | 100%     | 1   | 22.36                      | 22.22     | 22.11     |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.34                      | 22.32     | 22.42     |
|         |         |            | 1RB Mid  | 1   | 22.27                      | 22.31     | 22.28     |
|         |         |            | 1RB High | 1   | 22.43                      | 22.34     | 22.42     |
|         |         |            | 50% Low  | 2   | 21.38                      | 21.23     | 21.24     |
|         |         |            | 50% Mid  | 2   | 21.37                      | 21.30     | 21.23     |
|         |         |            | 50% High | 2   | 21.36                      | 21.25     | 21.26     |
|         |         |            | 100%     | 2   | 21.39                      | 21.21     | 21.17     |
| Band    | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |         |            |          |     | 815.5 MHz                  | 831.5 MHz | 847.5 MHz |
| LTE B26 | 3 MHz   | QPSK       | 1RB Low  | 0   | 23.32                      | 23.33     | 23.30     |
|         |         |            | 1RB Mid  | 0   | 23.10                      | 23.28     | 23.09     |
|         |         |            | 1RB High | 0   | 23.31                      | 23.40     | 23.32     |
|         |         |            | 50% Low  | 1   | 22.40                      | 22.37     | 22.32     |
|         |         |            | 50% Mid  | 1   | 22.41                      | 22.28     | 22.14     |
|         |         |            | 50% High | 1   | 22.42                      | 22.35     | 22.24     |
|         |         |            | 100%     | 1   | 22.41                      | 22.22     | 22.17     |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.42                      | 22.36     | 22.35     |
|         |         |            | 1RB Mid  | 1   | 22.38                      | 22.32     | 22.30     |
|         |         |            | 1RB High | 1   | 22.60                      | 22.24     | 22.26     |
|         |         |            | 50% Low  | 2   | 21.43                      | 21.37     | 21.26     |
|         |         |            | 50% Mid  | 2   | 21.44                      | 21.27     | 21.22     |
|         |         |            | 50% High | 2   | 21.41                      | 21.30     | 21.22     |
|         |         |            | 100%     | 2   | 21.28                      | 21.22     | 21.17     |
| Band    | BW      | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |         |            |          |     | 814.5 MHz                  | 831.5 MHz | 848.3 MHz |
| LTE B26 | 1.4 MHz | QPSK       | 1RB Low  | 0   | 23.27                      | 23.26     | 23.13     |
|         |         |            | 1RB Mid  | 0   | 23.36                      | 23.08     | 23.14     |
|         |         |            | 1RB High | 0   | 23.35                      | 23.28     | 23.17     |
|         |         |            | 50% Low  | 0   | 23.38                      | 23.23     | 23.15     |
|         |         |            | 50% Mid  | 0   | 23.33                      | 23.26     | 23.12     |
|         |         |            | 50% High | 0   | 23.34                      | 23.13     | 23.08     |
|         |         |            | 100%     | 1   | 22.30                      | 22.23     | 22.09     |
|         |         | 16-QAM     | 1RB Low  | 1   | 22.47                      | 22.34     | 22.15     |
|         |         |            | 1RB Mid  | 1   | 22.52                      | 22.30     | 22.16     |
|         |         |            | 1RB High | 1   | 22.51                      | 22.37     | 22.15     |
|         |         |            | 50% Low  | 1   | 22.35                      | 22.22     | 22.13     |
|         |         |            | 50% Mid  | 1   | 22.38                      | 22.21     | 22.16     |
|         |         |            | 50% High | 1   | 22.33                      | 22.17     | 22.10     |
|         |         |            | 100%     | 2   | 21.30                      | 21.08     | 21.07     |

- **LTE 38**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 2580.0 MHz                 | 2595.0 MHz | 2610.0 MHz |
| LTE B38 | 20 MHz | QPSK       | 1RB Low  | 0   | 22.52                      | 22.43      | 22.46      |
|         |        |            | 1RB Mid  | 0   | 22.06                      | 22.25      | 22.35      |
|         |        |            | 1RB High | 0   | 22.32                      | 22.31      | 22.34      |
|         |        |            | 50% Low  | 1   | 21.37                      | 21.35      | 21.45      |
|         |        |            | 50% Mid  | 1   | 21.40                      | 21.36      | 21.39      |
|         |        |            | 50% High | 1   | 21.33                      | 21.31      | 21.36      |
|         |        |            | 100%     | 1   | 21.34                      | 21.35      | 21.41      |
|         |        | 16-QAM     | 1RB Low  | 1   | 21.79                      | 21.47      | 21.80      |
|         |        |            | 1RB Mid  | 1   | 21.27                      | 21.05      | 21.52      |
|         |        |            | 1RB High | 1   | 21.36                      | 21.07      | 21.70      |
|         |        |            | 50% Low  | 2   | 20.33                      | 20.44      | 20.49      |
|         |        |            | 50% Mid  | 2   | 20.36                      | 20.44      | 20.46      |
|         |        |            | 50% High | 2   | 20.37                      | 20.42      | 20.48      |
|         |        |            | 100%     | 2   | 20.30                      | 20.40      | 20.44      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
| LTE B38 | 15 MHz | QPSK       | 1RB Low  | 0   | 22.49                      | 22.43      | 22.48      |
|         |        |            | 1RB Mid  | 0   | 22.48                      | 22.25      | 21.99      |
|         |        |            | 1RB High | 0   | 22.31                      | 22.29      | 22.35      |
|         |        |            | 50% Low  | 1   | 21.41                      | 21.38      | 21.44      |
|         |        |            | 50% Mid  | 1   | 21.36                      | 21.33      | 21.42      |
|         |        |            | 50% High | 1   | 21.34                      | 21.31      | 21.38      |
|         |        |            | 100%     | 1   | 21.39                      | 21.35      | 21.45      |
|         |        | 16-QAM     | 1RB Low  | 1   | 21.51                      | 21.62      | 21.54      |
|         |        |            | 1RB Mid  | 1   | 21.92                      | 21.32      | 21.96      |
|         |        |            | 1RB High | 1   | 21.63                      | 21.51      | 21.99      |
|         |        |            | 50% Low  | 2   | 20.43                      | 20.34      | 20.45      |
|         |        |            | 50% Mid  | 2   | 20.40                      | 20.34      | 20.49      |
|         |        |            | 50% High | 2   | 20.41                      | 20.33      | 20.45      |
|         |        |            | 100%     | 2   | 20.38                      | 20.36      | 20.46      |



| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 2575.0 MHz                 | 2595.0 MHz | 2615.0 MHz |
| LTE B38 | 10 MHz | QPSK       | 1RB Low  | 0   | 22.37                      | 22.40      | 22.51      |
|         |        |            | 1RB Mid  | 0   | 22.15                      | 22.04      | 22.41      |
|         |        |            | 1RB High | 0   | 22.35                      | 22.33      | 22.37      |
|         |        |            | 50% Low  | 1   | 21.36                      | 21.34      | 21.43      |
|         |        |            | 50% Mid  | 1   | 21.34                      | 21.29      | 21.45      |
|         |        |            | 50% High | 1   | 21.32                      | 21.23      | 21.41      |
|         |        |            | 100%     | 1   | 21.35                      | 21.33      | 21.41      |
|         |        | 16-QAM     | 1RB Low  | 1   | 21.56                      | 21.63      | 21.42      |
|         |        |            | 1RB Mid  | 1   | 21.49                      | 21.22      | 21.31      |
|         |        |            | 1RB High | 1   | 21.85                      | 21.43      | 21.58      |
|         |        |            | 50% Low  | 2   | 20.40                      | 20.37      | 20.44      |
|         |        |            | 50% Mid  | 2   | 20.38                      | 20.40      | 20.41      |
|         |        |            | 50% High | 2   | 20.43                      | 20.37      | 20.37      |
|         |        |            | 100%     | 2   | 20.35                      | 20.35      | 20.43      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 2572.5 MHz                 | 2595.0 MHz | 2617.5 MHz |
| LTE B38 | 5 MHz  | QPSK       | 1RB Low  | 0   | 22.41                      | 22.31      | 22.38      |
|         |        |            | 1RB Mid  | 0   | 22.52                      | 22.17      | 22.52      |
|         |        |            | 1RB High | 0   | 22.35                      | 22.20      | 22.31      |
|         |        |            | 50% Low  | 1   | 21.34                      | 21.31      | 21.44      |
|         |        |            | 50% Mid  | 1   | 21.31                      | 21.22      | 21.42      |
|         |        |            | 50% High | 1   | 21.33                      | 21.29      | 21.39      |
|         |        |            | 100%     | 1   | 21.28                      | 21.27      | 21.37      |
|         |        | 16-QAM     | 1RB Low  | 1   | 21.50                      | 20.96      | 21.58      |
|         |        |            | 1RB Mid  | 1   | 21.57                      | 21.82      | 21.61      |
|         |        |            | 1RB High | 1   | 21.66                      | 21.81      | 21.48      |
|         |        |            | 50% Low  | 2   | 20.35                      | 20.37      | 20.37      |
|         |        |            | 50% Mid  | 2   | 20.26                      | 20.35      | 20.43      |
|         |        |            | 50% High | 2   | 20.25                      | 20.41      | 20.45      |
|         |        |            | 100%     | 2   | 20.29                      | 20.34      | 20.44      |

**- LTE 41**

To perform LTE TDD measurements, CMW LTE TDD options “Uplink Downlink Configuration” was set to “0” and “Special Subframe” was set to “7”.

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |             |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|-------------|------------|
|         |        |            |          |     | Low CH                     | Low/Mid CH | Mid CH     | Mid/High CH | High CH    |
|         |        |            |          |     | 2506.0 MHz                 | 2549.5 MHz | 2593.0 MHz | 2636.5 MHz  | 2680.0 MHz |
| LTE B41 | 20 MHz | QPSK       | 1RB Low  | 0   | 23.26                      | 23.23      | 22.35      | 22.30       | 22.87      |
|         |        |            | 1RB Mid  | 0   | 23.12                      | 22.82      | 22.11      | 21.72       | 22.77      |
|         |        |            | 1RB High | 0   | 23.28                      | 22.97      | 22.29      | 21.77       | 22.73      |
|         |        |            | 50% Low  | 1   | 22.31                      | 21.77      | 21.35      | 21.27       | 21.72      |
|         |        |            | 50% Mid  | 1   | 22.25                      | 21.86      | 21.27      | 21.16       | 21.71      |
|         |        |            | 50% High | 1   | 22.27                      | 21.80      | 21.29      | 20.95       | 21.71      |
|         |        |            | 100%     | 1   | 22.32                      | 21.87      | 21.32      | 21.10       | 21.76      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.76                      | 22.10      | 22.00      | 21.59       | 21.82      |
|         |        |            | 1RB Mid  | 1   | 22.62                      | 22.01      | 21.98      | 21.42       | 21.37      |
|         |        |            | 1RB High | 1   | 22.85                      | 22.08      | 21.94      | 21.03       | 21.72      |
|         |        |            | 50% Low  | 2   | 21.34                      | 20.80      | 20.31      | 20.25       | 20.77      |
|         |        |            | 50% Mid  | 2   | 21.31                      | 20.94      | 20.25      | 20.11       | 20.71      |
|         |        |            | 50% High | 2   | 21.34                      | 20.81      | 20.30      | 19.93       | 20.77      |
|         |        |            | 100%     | 2   | 21.30                      | 20.87      | 20.35      | 20.11       | 20.77      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Low/Mid CH | Mid CH     | Mid/High CH | High CH    |
| LTE B41 | 15 MHz | QPSK       | 1RB Low  | 0   | 23.33                      | 23.07      | 22.48      | 22.31       | 22.76      |
|         |        |            | 1RB Mid  | 0   | 23.42                      | 23.04      | 22.50      | 22.20       | 22.40      |
|         |        |            | 1RB High | 0   | 23.30                      | 22.70      | 22.36      | 21.82       | 22.62      |
|         |        |            | 50% Low  | 1   | 22.30                      | 21.98      | 21.38      | 21.25       | 21.80      |
|         |        |            | 50% Mid  | 1   | 22.30                      | 21.92      | 21.36      | 21.09       | 21.74      |
|         |        |            | 50% High | 1   | 22.30                      | 21.78      | 21.35      | 20.92       | 21.72      |
|         |        |            | 100%     | 1   | 22.34                      | 21.94      | 21.39      | 21.13       | 21.76      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.64                      | 21.98      | 21.54      | 21.25       | 22.11      |
|         |        |            | 1RB Mid  | 1   | 22.55                      | 21.60      | 20.81      | 21.00       | 21.91      |
|         |        |            | 1RB High | 1   | 22.62                      | 21.61      | 21.48      | 20.79       | 22.02      |
|         |        |            | 50% Low  | 2   | 21.37                      | 20.96      | 20.37      | 20.22       | 20.77      |
|         |        |            | 50% Mid  | 2   | 21.38                      | 20.87      | 20.31      | 20.11       | 20.77      |
|         |        |            | 50% High | 2   | 21.36                      | 20.76      | 20.30      | 19.97       | 20.75      |
|         |        |            | 100%     | 2   | 21.34                      | 20.93      | 20.38      | 20.18       | 20.77      |

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |             |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|-------------|------------|
|         |        |            |          |     | Low CH                     | Low/Mid CH | Mid CH     | Mid/High CH | High CH    |
|         |        |            |          |     | 2501.0 MHz                 | 2549.5 MHz | 2593.0 MHz | 2636.5 MHz  | 2682.5 MHz |
| LTE B41 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.18                      | 23.01      | 22.43      | 22.00       | 22.77      |
|         |        |            | 1RB Mid  | 0   | 22.99                      | 22.51      | 22.05      | 21.66       | 22.62      |
|         |        |            | 1RB High | 0   | 23.24                      | 22.78      | 22.38      | 21.64       | 22.61      |
|         |        |            | 50% Low  | 1   | 22.23                      | 21.91      | 21.29      | 20.99       | 21.69      |
|         |        |            | 50% Mid  | 1   | 22.25                      | 21.86      | 21.31      | 20.92       | 21.73      |
|         |        |            | 50% High | 1   | 22.25                      | 21.83      | 21.29      | 20.84       | 21.69      |
|         |        |            | 100%     | 1   | 22.23                      | 21.91      | 21.28      | 20.94       | 21.69      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.38                      | 22.17      | 21.47      | 20.62       | 21.67      |
|         |        |            | 1RB Mid  | 1   | 22.20                      | 21.94      | 21.24      | 20.39       | 21.52      |
|         |        |            | 1RB High | 1   | 22.49                      | 21.86      | 21.46      | 20.30       | 21.63      |
|         |        |            | 50% Low  | 2   | 21.29                      | 20.99      | 20.31      | 20.06       | 20.75      |
|         |        |            | 50% Mid  | 2   | 21.29                      | 20.95      | 20.34      | 19.94       | 20.76      |
|         |        |            | 50% High | 2   | 21.29                      | 20.89      | 20.33      | 19.89       | 20.72      |
|         |        |            | 100%     | 2   | 21.24                      | 20.85      | 20.30      | 19.99       | 20.65      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Low/Mid CH | Mid CH     | Mid/High CH | High CH    |
|         |        |            |          |     | 2498.5 MHz                 | 2549.5 MHz | 2593.0 MHz | 2636.5 MHz  | 2682.5 MHz |
| LTE B41 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.21                      | 22.98      | 22.35      | 22.27       | 22.67      |
|         |        |            | 1RB Mid  | 0   | 23.39                      | 22.79      | 22.42      | 22.11       | 22.65      |
|         |        |            | 1RB High | 0   | 23.20                      | 22.77      | 22.28      | 22.02       | 22.55      |
|         |        |            | 50% Low  | 1   | 22.16                      | 21.89      | 21.27      | 21.15       | 21.65      |
|         |        |            | 50% Mid  | 1   | 22.12                      | 21.87      | 21.28      | 21.07       | 21.63      |
|         |        |            | 50% High | 1   | 22.17                      | 21.88      | 21.27      | 21.09       | 21.62      |
|         |        |            | 100%     | 1   | 22.17                      | 21.86      | 21.26      | 21.08       | 21.60      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.49                      | 22.14      | 21.57      | 21.30       | 21.61      |
|         |        |            | 1RB Mid  | 1   | 22.37                      | 22.11      | 21.80      | 21.55       | 21.87      |
|         |        |            | 1RB High | 1   | 22.44                      | 21.89      | 21.47      | 21.24       | 21.64      |
|         |        |            | 50% Low  | 2   | 21.22                      | 21.05      | 20.38      | 20.25       | 20.65      |
|         |        |            | 50% Mid  | 2   | 21.20                      | 20.98      | 20.27      | 20.22       | 20.62      |
|         |        |            | 50% High | 2   | 21.22                      | 20.98      | 20.28      | 20.19       | 20.60      |
|         |        |            | 100%     | 2   | 21.16                      | 20.88      | 20.31      | 20.14       | 20.69      |

- **LTE 66**

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1720.0 MHz                 | 1745.0 MHz | 1770.0 MHz |
| LTE B66 | 20 MHz | QPSK       | 1RB Low  | 0   | 23.17                      | 23.14      | 23.18      |
|         |        |            | 1RB Mid  | 0   | 23.12                      | 23.11      | 23.13      |
|         |        |            | 1RB High | 0   | 23.11                      | 23.16      | 23.16      |
|         |        |            | 50% Low  | 1   | 22.28                      | 22.27      | 22.27      |
|         |        |            | 50% Mid  | 1   | 22.25                      | 22.26      | 22.29      |
|         |        |            | 50% High | 1   | 22.26                      | 22.26      | 22.28      |
|         |        |            | 100%     | 1   | 22.39                      | 22.38      | 22.36      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.35                      | 22.40      | 22.30      |
|         |        |            | 1RB Mid  | 1   | 22.59                      | 22.59      | 22.61      |
|         |        |            | 1RB High | 1   | 22.49                      | 22.39      | 22.61      |
|         |        |            | 50% Low  | 2   | 21.29                      | 21.30      | 21.29      |
|         |        |            | 50% Mid  | 2   | 21.23                      | 21.25      | 21.25      |
|         |        |            | 50% High | 2   | 21.27                      | 21.27      | 21.28      |
|         |        |            | 100%     | 2   | 21.40                      | 21.42      | 21.41      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1717.5 MHz                 | 1745.0 MHz | 1772.5 MHz |
| LTE B66 | 15 MHz | QPSK       | 1RB Low  | 0   | 23.12                      | 23.12      | 23.15      |
|         |        |            | 1RB Mid  | 0   | 23.13                      | 23.12      | 23.14      |
|         |        |            | 1RB High | 0   | 23.13                      | 23.15      | 23.13      |
|         |        |            | 50% Low  | 1   | 22.27                      | 22.26      | 22.26      |
|         |        |            | 50% Mid  | 1   | 22.24                      | 22.23      | 22.26      |
|         |        |            | 50% High | 1   | 22.26                      | 22.21      | 22.24      |
|         |        |            | 100%     | 1   | 22.37                      | 22.35      | 22.34      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.35                      | 22.31      | 22.35      |
|         |        |            | 1RB Mid  | 1   | 22.49                      | 22.52      | 22.50      |
|         |        |            | 1RB High | 1   | 22.49                      | 22.51      | 22.50      |
|         |        |            | 50% Low  | 2   | 21.27                      | 21.26      | 21.25      |
|         |        |            | 50% Mid  | 2   | 21.25                      | 21.24      | 21.25      |
|         |        |            | 50% High | 2   | 21.25                      | 21.24      | 21.24      |
|         |        |            | 100%     | 2   | 21.40                      | 21.35      | 21.39      |

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |            |            |
|---------|--------|------------|----------|-----|----------------------------|------------|------------|
|         |        |            |          |     | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1715.0 MHz                 | 1745.0 MHz | 1775.0 MHz |
| LTE B66 | 10 MHz | QPSK       | 1RB Low  | 0   | 23.14                      | 23.12      | 23.14      |
|         |        |            | 1RB Mid  | 0   | 23.10                      | 23.11      | 23.12      |
|         |        |            | 1RB High | 0   | 23.12                      | 23.12      | 23.13      |
|         |        |            | 50% Low  | 1   | 22.26                      | 22.26      | 22.23      |
|         |        |            | 50% Mid  | 1   | 22.25                      | 22.25      | 22.25      |
|         |        |            | 50% High | 1   | 22.26                      | 22.24      | 22.23      |
|         |        |            | 100%     | 1   | 22.36                      | 22.34      | 22.36      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.25                      | 22.32      | 22.30      |
|         |        |            | 1RB Mid  | 1   | 22.51                      | 22.52      | 22.53      |
|         |        |            | 1RB High | 1   | 22.46                      | 22.50      | 22.49      |
|         |        |            | 50% Low  | 2   | 21.25                      | 21.29      | 21.26      |
|         |        |            | 50% Mid  | 2   | 21.23                      | 21.26      | 21.26      |
|         |        |            | 50% High | 2   | 21.29                      | 21.28      | 21.26      |
|         |        |            | 100%     | 2   | 21.39                      | 21.37      | 21.36      |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH     | High CH    |
|         |        |            |          |     | 1712.5 MHz                 | 1745.0 MHz | 1777.5 MHz |
| LTE B66 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.14                      | 23.12      | 23.13      |
|         |        |            | 1RB Mid  | 0   | 23.12                      | 23.12      | 23.12      |
|         |        |            | 1RB High | 0   | 23.05                      | 23.10      | 23.08      |
|         |        |            | 50% Low  | 1   | 23.24                      | 23.23      | 23.23      |
|         |        |            | 50% Mid  | 1   | 23.25                      | 23.24      | 23.23      |
|         |        |            | 50% High | 1   | 23.23                      | 23.20      | 23.21      |
|         |        |            | 100%     | 1   | 22.36                      | 22.37      | 22.36      |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.30                      | 22.29      | 22.28      |
|         |        |            | 1RB Mid  | 1   | 22.45                      | 22.49      | 22.49      |
|         |        |            | 1RB High | 1   | 22.53                      | 22.50      | 22.51      |
|         |        |            | 50% Low  | 2   | 22.23                      | 22.27      | 22.26      |
|         |        |            | 50% Mid  | 2   | 22.25                      | 22.23      | 22.21      |
|         |        |            | 50% High | 2   | 22.23                      | 22.23      | 22.22      |
|         |        |            | 100%     | 2   | 21.37                      | 21.38      | 21.38      |

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| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|         |        |            |          |     | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 673.0 MHz                  | 680.5 MHz | 688.0 MHz |
| LTE B71 | 20 MHz | QPSK       | 1RB Low  | 0   | 22.93                      | 22.92     | 22.93     |
|         |        |            | 1RB Mid  | 0   | 22.95                      | 22.94     | 22.94     |
|         |        |            | 1RB High | 0   | 22.94                      | 22.93     | 22.94     |
|         |        |            | 50% Low  | 1   | 21.73                      | 21.71     | 21.69     |
|         |        |            | 50% Mid  | 1   | 21.71                      | 21.71     | 21.73     |
|         |        |            | 50% High | 1   | 21.71                      | 21.74     | 21.72     |
|         |        |            | 100%     | 1   | 21.60                      | 21.64     | 21.65     |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.07                      | 22.07     | 22.04     |
|         |        |            | 1RB Mid  | 1   | 22.21                      | 22.18     | 22.22     |
|         |        |            | 1RB High | 1   | 22.23                      | 22.21     | 22.23     |
|         |        |            | 50% Low  | 2   | 20.73                      | 20.74     | 20.74     |
|         |        |            | 50% Mid  | 2   | 20.70                      | 20.69     | 20.70     |
|         |        |            | 50% High | 2   | 20.71                      | 20.71     | 20.69     |
|         |        |            | 100%     | 2   | 20.62                      | 20.62     | 20.64     |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
| LTE B71 | 15 MHz | QPSK       | 1RB Low  | 0   | 22.92                      | 22.93     | 22.93     |
|         |        |            | 1RB Mid  | 0   | 22.93                      | 22.95     | 22.97     |
|         |        |            | 1RB High | 0   | 22.95                      | 22.95     | 22.95     |
|         |        |            | 50% Low  | 1   | 21.75                      | 21.76     | 21.75     |
|         |        |            | 50% Mid  | 1   | 21.74                      | 21.74     | 21.74     |
|         |        |            | 50% High | 1   | 21.73                      | 21.76     | 21.73     |
|         |        |            | 100%     | 1   | 21.66                      | 21.67     | 21.66     |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.04                      | 22.04     | 22.04     |
|         |        |            | 1RB Mid  | 1   | 22.25                      | 22.23     | 22.25     |
|         |        |            | 1RB High | 1   | 22.22                      | 22.24     | 22.23     |
|         |        |            | 50% Low  | 2   | 20.72                      | 20.74     | 20.73     |
|         |        |            | 50% Mid  | 2   | 20.75                      | 20.74     | 20.72     |
|         |        |            | 50% High | 2   | 20.76                      | 20.75     | 20.73     |
|         |        |            | 100%     | 2   | 20.62                      | 20.65     | 20.63     |

| Band    | BW     | Modulation | Mode     | MPR | Average Output Power (dBm) |           |           |
|---------|--------|------------|----------|-----|----------------------------|-----------|-----------|
|         |        |            |          |     | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 668.0 MHz                  | 680.5 MHz | 693.0 MHz |
| LTE B71 | 10 MHz | QPSK       | 1RB Low  | 0   | 22.95                      | 22.94     | 22.93     |
|         |        |            | 1RB Mid  | 0   | 22.82                      | 22.83     | 22.83     |
|         |        |            | 1RB High | 0   | 22.92                      | 22.93     | 22.90     |
|         |        |            | 50% Low  | 1   | 21.71                      | 21.72     | 21.72     |
|         |        |            | 50% Mid  | 1   | 21.70                      | 21.71     | 21.70     |
|         |        |            | 50% High | 1   | 21.71                      | 21.74     | 21.72     |
|         |        |            | 100%     | 1   | 21.62                      | 21.64     | 21.63     |
|         |        | 16-QAM     | 1RB Low  | 1   | 22.06                      | 22.12     | 22.17     |
|         |        |            | 1RB Mid  | 1   | 22.45                      | 22.41     | 22.26     |
|         |        |            | 1RB High | 1   | 22.29                      | 22.32     | 22.28     |
|         |        |            | 50% Low  | 2   | 20.69                      | 20.69     | 20.70     |
|         |        |            | 50% Mid  | 2   | 20.69                      | 20.72     | 20.73     |
|         |        |            | 50% High | 2   | 20.69                      | 20.72     | 20.76     |
|         |        |            | 100%     | 2   | 20.62                      | 20.60     | 20.60     |
| Band    | BW     | Modulation | Mode     | MPR | Low CH                     | Mid CH    | High CH   |
|         |        |            |          |     | 665.5 MHz                  | 680.5 MHz | 695.5 MHz |
| LTE B71 | 5 MHz  | QPSK       | 1RB Low  | 0   | 23.30                      | 22.88     | 22.88     |
|         |        |            | 1RB Mid  | 0   | 23.29                      | 22.90     | 22.89     |
|         |        |            | 1RB High | 0   | 23.25                      | 22.78     | 22.77     |
|         |        |            | 50% Low  | 1   | 23.20                      | 22.68     | 22.72     |
|         |        |            | 50% Mid  | 1   | 23.24                      | 22.73     | 22.72     |
|         |        |            | 50% High | 1   | 23.24                      | 22.70     | 22.72     |
|         |        |            | 100%     | 1   | 22.04                      | 21.62     | 21.61     |
|         |        | 16-QAM     | 1RB Low  | 1   | 23.68                      | 22.07     | 22.07     |
|         |        |            | 1RB Mid  | 1   | 23.68                      | 22.27     | 22.28     |
|         |        |            | 1RB High | 1   | 23.58                      | 22.39     | 22.41     |
|         |        |            | 50% Low  | 2   | 22.26                      | 21.66     | 21.72     |
|         |        |            | 50% Mid  | 2   | 22.19                      | 21.70     | 21.73     |
|         |        |            | 50% High | 2   | 22.20                      | 21.70     | 21.73     |
|         |        |            | 100%     | 2   | 22.12                      | 20.59     | 20.59     |

## 2.1.4. LTE CA Donwlink.

|                                  |
|----------------------------------|
| Covered by higher CA combination |
| Measurement needed               |

| DL 2CA      |         | DL 3CA      |         | DL 4CA      |         | DL 5CA       |         |
|-------------|---------|-------------|---------|-------------|---------|--------------|---------|
| Combination | UL Band | Combination | UL Band | Combination | UL Band | Combination  | UL Band |
| 2-2         | 2       | 2-2-4       | 2       | 2-2-4-4     | 2       | 2-2-4-4-5    | 2       |
| 2C          | 2       | 2-2-4       | 4       | 2-2-4-4     | 4       | 2-2-4-4-5    | 4       |
| 2-4         | 2       | 2-2-5       | 2       | 2-2-4-5     | 2       | 2-2-4-4-5    | 5       |
| 2-4         | 4       | 2-2-5       | 5       | 2-2-4-5     | 4       | 2-2-4-5B     | 2       |
| 2-5         | 2       | 2C-5        | 2       | 2-2-4-5     | 5       | 2-2-4-5B     | 4       |
| 2-5         | 5       | 2C-5        | 5       | 2-2-4-12    | 2       | 2-2-4-5B     | 5       |
| 2-12        | 2       | 2-2-12      | 2       | 2-2-4-12    | 4       | 2-2-5-66-66  | 2       |
| 2-12        | 12      | 2-2-12      | 12      | 2-2-4-12    | 12      | 2-2-5-66-66  | 5       |
| 2-13        | 2       | 2C-12       | 2       | 2C-5B       | 2       | 2-2-5-66-66  | 66      |
| 2-13        | 13      | 2C-12       | 12      | 2C-5B       | 5       | 2-2-5-66C    | 2       |
| 2-17        | 2       | 2-2-13      | 2       | 2-2-5-30    | 2       | 2-2-5-66C    | 5       |
| 2-17        | 17      | 2-2-13      | 13      | 2-2-5-30    | 5       | 2-2-5-66C    | 66      |
| 2-29        | 2       | 2-2-29      | 2       | 2C-5-30     | 2       | 2-2-5-66B    | 2       |
| 2-30        | 2       | 2C-29       | 2       | 2C-5-30     | 5       | 2-2-5-66B    | 5       |
| 2-66        | 2       | 2-2-30      | 2       | 2-2-5-66    | 2       | 2-2-5-66B    | 66      |
| 2-66        | 66      | 2C-30       | 2       | 2-2-5-66    | 5       | 2-2-12B-66   | 2       |
| 2-71        | 2       | 2-2-66      | 2       | 2-2-5-66    | 66      | 2-2-12B-66   | 12      |
| 2-71        | 71      | 2-2-66      | 66      | 2-2-12-12   | 2       | 2-2-12B-66   | 66      |
| 4-4         | 4       | 2C-66       | 2       | 2-2-12-12   | 12      | 2-2-12-66-66 | 2       |
| 4-5         | 4       | 2C-66       | 66      | 2-2-12B     | 2       | 2-2-12-66-66 | 12      |
| 4-5         | 5       | 2-2-71      | 2       | 2-2-12B     | 12      | 2-2-12-66-66 | 66      |
| 4-12        | 4       | 2-2-71      | 71      | 2-2-12-30   | 2       | 2-2-66D      | 2       |
| 4-12        | 12      | 2-4-4       | 2       | 2-2-12-30   | 12      | 2-2-66D      | 66      |
| 4-13        | 4       | 2-4-4       | 4       | 2-2-12-66   | 2       | 2-2-66-66C   | 2       |
| 4-13        | 13      | 2-4-5       | 2       | 2-2-12-66   | 12      | 2-2-66-66C   | 66      |
| 4-17        | 4       | 2-4-5       | 4       | 2-2-12-66   | 66      | 2-2-66-66C   | 66      |
| 4-17        | 17      | 2-4-5       | 5       | 2-2-13-66   | 2       | 2-2-66-66B   | 2       |
| 4-29        | 4       | 2-4-12      | 2       | 2-2-13-66   | 13      | 2-2-66-66B   | 66      |
| 4-30        | 4       | 2-4-12      | 4       | 2-2-13-66   | 66      | 2-2-66-66B   | 66      |
| 4-71        | 4       | 2-4-12      | 12      | 2-2-30-66   | 2       | 2-4-4-5B     | 2       |
| 4-71        | 71      | 2-4-13      | 2       | 2-2-30-66   | 66      | 2-4-4-5B     | 4       |
| 5-5         | 5       | 2-4-13      | 4       | 2-2-66-66   | 2       | 2-4-4-5B     | 5       |
| 5B          | 5       | 2-4-13      | 13      | 2-2-66-66   | 66      | 2-5B-66-66   | 2       |
| 5-7         | 5       | 2-4-29      | 2       | 2-2-66C     | 2       | 2-5B-66-66   | 5       |



|       |    |         |    |           |    |             |    |
|-------|----|---------|----|-----------|----|-------------|----|
| 5-7   | 7  | 2-4-29  | 4  | 2-2-66C   | 66 | 2-5B-66-66  | 66 |
| 5-25  | 5  | 2-4-30  | 2  | 2C-66-66  | 2  | 2-5B-66C    | 2  |
| 5-25  | 25 | 2-4-30  | 4  | 2C-66-66  | 66 | 2-5B-66C    | 5  |
| 5-30  | 5  | 2-4-71  | 2  | 2-2-66B   | 2  | 2-5B-66C    | 66 |
| 5-40  | 5  | 2-4-71  | 4  | 2-2-66B   | 66 | 2-5B-66B    | 2  |
| 5-40  | 40 | 2-4-71  | 71 | 2-2-66-71 | 2  | 2-5B-66B    | 5  |
| 5-41  | 5  | 2-5B    | 2  | 2-2-66-71 | 66 | 2-5B-66B    | 66 |
| 5-41  | 41 | 2-5B    | 5  | 2-2-66-71 | 71 | 2-5-66D     | 2  |
| 5-66  | 5  | 2-5-30  | 2  | 2-4-4-5   | 2  | 2-5-66D     | 5  |
| 5-66  | 66 | 2-5-30  | 5  | 2-4-4-5   | 4  | 2-5-66D     | 66 |
| 7-7   | 7  | 2-5-66  | 2  | 2-4-4-5   | 5  | 2-12B-66-66 | 2  |
| 7B    | 7  | 2-5-66  | 5  | 2-4-4-12  | 2  | 2-12B-66-66 | 12 |
| 7C    | 7  | 2-5-66  | 66 | 2-4-4-12  | 4  | 2-12B-66-66 | 66 |
| 7-8   | 7  | 2-12-12 | 2  | 2-4-4-12  | 12 | 2-13-66D    | 2  |
| 7-8   | 8  | 2-12-12 | 12 | 2-4-5B    | 2  | 2-13-66D    | 13 |
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| 66-29 | 66 | 4-4-13  | 13 | 2-5-66C    | 66 |
| 66-30 | 66 | 4-4-29  | 4  | 2-5-66B    | 2  |
| 66-66 | 66 | 4-4-30  | 4  | 2-5-66B    | 5  |
| 66B   | 66 | 4-4-71  | 4  | 2-5-66B    | 66 |
| 66C   | 66 | 4-4-71  | 71 | 2-12B-66   | 2  |
| 66-71 | 66 | 4-5B    | 4  | 2-12B-66   | 12 |
| 66-71 | 71 | 4-5B    | 5  | 2-12B-66   | 66 |
|       |    | 4-5-30  | 4  | 2-12-30-66 | 2  |
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|       |    | 4-12-12 | 4  | 2-12-30-66 | 66 |
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|       |    | 4-12B   | 4  | 2-12-66-66 | 12 |
|       |    | 4-12B   | 12 | 2-12-66-66 | 66 |
|       |    | 4-12-30 | 4  | 2-12-66C   | 2  |
|       |    | 4-12-30 | 12 | 2-12-66C   | 12 |
|       |    | 4-29-30 | 4  | 2-12-66C   | 66 |
|       |    | 5B-30   | 5  | 2-13-66-66 | 2  |
|       |    | 5-5-66  | 5  | 2-13-66-66 | 13 |
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|       |    | 5-30-66 | 66 | 2-29-30-66 | 66 |
|       |    | 5-66-66 | 5  | 2-30-66-66 | 2  |
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|       |    | 5-66C   | 66 | 2-66D      | 66 |
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|       |    | 7C-66   | 7  | 2-66-66B   | 2  |
|       |    | 7-12B   | 7  | 2-66-66B   | 66 |
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|  | 12-30-66 | 12 |  | 4-4-5B     | 4  |  |
|  | 12-30-66 | 66 |  | 4-4-5B     | 5  |  |
|  | 12-66-66 | 12 |  | 4-4-5-30   | 4  |  |
|  | 12-66-66 | 66 |  | 4-4-5-30   | 5  |  |
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|  | 12-66C   | 66 |  | 4-4-12-12  | 12 |  |
|  | 13-66-66 | 13 |  | 4-4-12B    | 4  |  |
|  | 13-66-66 | 66 |  | 4-4-12B    | 12 |  |
|  | 13-66B   | 13 |  | 5B-30-66   | 5  |  |
|  | 13-66B   | 66 |  | 5B-30-66   | 66 |  |
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|  | 25-25-26 | 25 |  | 5-5-66C    | 66 |  |
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|  | 26-41C   | 26 |  | 5B-66-66   | 5  |  |
|  | 26-41C   | 41 |  | 5B-66-66   | 66 |  |
|  | 41-41C   | 41 |  | 5B-66-66   | 66 |  |
|  | 41-41C   | 41 |  | 5B-66C     | 5  |  |
|  | 41-41-41 | 41 |  | 5B-66C     | 66 |  |
|  | 41D      | 41 |  | 5B-66B     | 5  |  |
|  | 41-42C   | 41 |  | 5B-66B     | 66 |  |
|  | 41-42C   | 42 |  | 5-30-66-66 | 5  |  |
|  | 42-42C   | 42 |  | 5-30-66-66 | 66 |  |
|  | 42-42C   | 42 |  | 5-66D      | 5  |  |
|  | 42D      | 42 |  | 5-66D      | 66 |  |
|  | 66-29-30 | 66 |  | 5-66-66C   | 5  |  |
|  | 66-66-29 | 66 |  | 5-66-66C   | 66 |  |
|  | 66C-29   | 66 |  | 5-66-66C   | 66 |  |
|  | 66-66-30 | 66 |  | 5-66-66B   | 5  |  |
|  | 66-66B   | 66 |  | 5-66-66B   | 66 |  |
|  | 66-66B   | 66 |  | 5-66-66B   | 66 |  |
|  | 66-66C   | 66 |  | 7-7-66-66  | 7  |  |
|  | 66-66C   | 66 |  | 7C-66-66   | 7  |  |
|  | 66-66-66 | 66 |  | 7-12B-66   | 7  |  |
|  | 66D      | 66 |  | 7-12B-66   | 12 |  |
|  | 66-66-71 | 66 |  | 12B-66-66  | 12 |  |

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|  | 66-66-71 | 71 | 12B-66-66   | 66 |  |
|  | 66C-71   | 66 | 12-30-66-66 | 12 |  |
|  | 66C-71   | 71 | 12-30-66-66 | 66 |  |
|  |          |    | 13-66-66-66 | 13 |  |
|  |          |    | 13-66-66-66 | 66 |  |
|  |          |    | 13-66D      | 13 |  |
|  |          |    | 13-66D      | 66 |  |
|  |          |    | 13-66-66C   | 13 |  |
|  |          |    | 13-66-66C   | 66 |  |
|  |          |    | 13-66-66C   | 66 |  |
|  |          |    | 13-66-66B   | 13 |  |
|  |          |    | 13-66-66B   | 66 |  |
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|  |          |    | 41-41D      | 41 |  |
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|  |          |    | 41-41-41C   | 41 |  |
|  |          |    | 41C-41C     | 41 |  |
|  |          |    | 41D-42      | 41 |  |
|  |          |    | 41D-42      | 42 |  |
|  |          |    | 41C-42C     | 41 |  |
|  |          |    | 41C-42C     | 42 |  |
|  |          |    | 42-42D      | 42 |  |
|  |          |    | 42-42D      | 42 |  |
|  |          |    | 42C-42C     | 42 |  |

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02, output power measurements have been performed to qualify for UL SAR test exclusion using the configuration with the largest aggregated BW.

Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive to check if with the DL CA active the maximum output power remains within the tune-up tolerance limits and/or the maximum output power increases less than 0.25 dB.

All Downlink CA fulfills with this statements, please check the measured combinations:

| DL 5CA       |         |           |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
|--------------|---------|-----------|----------------|-------|----------|------|-------|------|-------|------|------|-------|------|-------|--------|------|-------|--------|------|-------|--------|
| Combination  | UL Band | PCC (dBm) | PCC+SCCs (dBm) | Delta | Aggr. BW | PCC1 |       |      |       | SCC1 |      |       | SCC2 |       |        | SCC3 |       |        | SCC4 |       |        |
|              |         |           |                |       |          | BW   | CH    | FREQ | RB    | BW   | CH   | FREQ  | BW   | CH    | FREQ   | BW   | CH    | FREQ   | BW   | CH    | FREQ   |
| 2-2-4-4-5    | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-4-4-5    | 4       | 23.94     | 23.96          | 0.02  | 90       | 20   | 20050 | 1720 | 1LOW  | 20   | 700  | 1940  | 20   | 900   | 1960   | 20   | 2175  | 2132.5 | 10   | 2600  | 889    |
| 2-2-4-4-5    | 5       | 23.41     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-4-5B     | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-4-5B     | 4       | 23.94     | 23.95          | 0.01  | 80       | 20   | 20050 | 1720 | 1LOW  | 20   | 700  | 1940  | 20   | 900   | 1960   | 10   | 2476  | 876.6  | 10   | 2575  | 886.5  |
| 2-2-4-5B     | 5       | 23.41     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66-66  | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66-66  | 5       | 23.41     | 23.37          | -0.04 | 90       | 10   | 20600 | 844  | 1LOW  | 20   | 700  | 1940  | 20   | 900   | 1960   | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 2-2-5-66-66  | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66C    | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66C    | 5       | 23.41     | 23.39          | -0.02 | 90       | 10   | 20600 | 844  | 1LOW  | 20   | 700  | 1940  | 20   | 900   | 1960   | 20   | 66787 | 2145.1 | 20   | 66985 | 2164.9 |
| 2-2-5-66C    | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66B    | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-5-66B    | 5       | 23.41     | 23.46          | 0.05  | 70       | 10   | 20450 | 829  | 1HIGH | 20   | 700  | 1940  | 20   | 900   | 1960   | 10   | 66787 | 2145.1 | 10   | 66985 | 2164.9 |
| 2-2-5-66B    | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-12B-66   | 2       | 23.25     | 23.15          | -0.1  | 75       | 20   | 19100 | 1900 | 1MID  | 20   | 700  | 1940  | 5    | 5048  | 732.8  | 10   | 5120  | 740    | 20   | 66886 | 2155   |
| 2-2-12B-66   | 12      | 23.09     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-12B-66   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-12-12-66 | 2       | 23.25     | 23.2           | -0.05 | 80       | 20   | 19100 | 1900 | 1MID  | 20   | 700  | 1940  | 10   | 5095  | 737.5  | 10   | 5060  | 734    | 20   | 66886 | 2155   |
| 2-2-12-12-66 | 12      | 23.09     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-12-12-66 | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-66D      | 2       | 23.25     | 23.16          | -0.09 | 100      | 20   | 19100 | 1900 | 1MID  | 20   | 700  | 1940  | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 | 20   | 66932 | 2160   |
| 2-2-66D      | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-66-66C   | 2       | 23.25     | 23.27          | 0.02  | 100      | 20   | 19100 | 1900 | 1MID  | 20   | 700  | 1940  | 20   | 67039 | 2170.3 | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 |
| 2-2-66-66C   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-66-66B   | 2       | 23.25     | 23.14          | -0.11 | 80       | 20   | 19100 | 1900 | 1MID  | 20   | 700  | 1940  | 20   | 67039 | 2170.3 | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 2-2-66-66B   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-4-5B     | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-4-5B     | 4       | 23.94     | 23.98          | 0.04  | 80       | 20   | 20050 | 1720 | 1LOW  | 20   | 700  | 1940  | 20   | 2175  | 2132.5 | 10   | 2476  | 876.6  | 10   | 2575  | 886.5  |
| 2-4-4-5B     | 5       | 23.41     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66-66   | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66-66   | 5       | 23.41     | 23.29          | -0.12 | 80       | 10   | 20450 | 829  | 1HIGH | 10   | 2501 | 879.1 | 20   | 700   | 1940   | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 2-5B-66-66   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66C     | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66C     | 5       | 23.41     | 23.33          | -0.08 | 80       | 10   | 20450 | 829  | 1HIGH | 10   | 2501 | 879.1 | 20   | 700   | 1940   | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 |
| 2-5B-66C     | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66B     | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5B-66B     | 5       | 23.41     | 23.34          | -0.07 | 60       | 10   | 20450 | 829  | 1HIGH | 10   | 2501 | 879.1 | 20   | 700   | 1940   | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 2-5B-66B     | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5-66D      | 2       | 23.25     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-5-66D      | 5       | 23.41     | 23.33          | -0.08 | 90       | 10   | 20450 | 829  | 1HIGH | 20   | 700  | 1940  | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 | 20   | 66932 | 2160   |
| 2-5-66D      | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-12B-66-66  | 2       | 23.25     | 23.28          | 0.03  | 75       | 20   | 19100 | 1900 | 1MID  | 5    | 5048 | 732.8 | 10   | 5120  | 740    | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 2-12B-66-66  | 12      | 23.09     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-12B-66-66  | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66D     | 2       | 23.25     | 23.22          | -0.03 | 100      | 20   | 19100 | 1900 | 1MID  | 20   | 5230 | 751   | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 | 20   | 66932 | 2160   |
| 2-13-66D     | 13      | 22.93     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66D     | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66-66C  | 2       | 23.25     | 23.37          | 0.12  | 100      | 20   | 19100 | 1900 | 1MID  | 20   | 5230 | 751   | 20   | 67039 | 2170.3 | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 |
| 2-13-66-66C  | 13      | 22.93     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66-66C  | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66-66C  | 2       | 23.25     | 23.33          | 0.08  | 80       | 20   | 19100 | 1900 | 1MID  | 20   | 5230 | 751   | 20   | 67039 | 2170.3 | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 2-13-66-66C  | 13      | 22.93     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 2-13-66-66C  | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 5-5-66D      | 5       | 23.41     | 23.34          | -0.07 | 80       | 10   | 20450 | 829  | 1HIGH | 10   | 2450 | 874   | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 | 20   | 66932 | 2160   |
| 5-5-66D      | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 5-5-66-66C   | 5       | 23.41     | 23.24          | -0.17 | 80       | 10   | 20450 | 829  | 1HIGH | 10   | 2450 | 874   | 20   | 67039 | 2170.3 | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 |
| 5-5-66-66C   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 5-5-66-66B   | 5       | 23.41     | 23.35          | -0.06 | 60       | 10   | 20450 | 829  | 1HIGH | 10   | 2450 | 874   | 20   | 67039 | 2170.3 | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 5-5-66-66B   | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 5B-66-66C    | 5       | 23.41     | 23.38          | -0.03 | 80       | 10   | 20450 | 829  | 1HIGH | 10   | 2501 | 879.1 | 20   | 67039 | 2170.3 | 20   | 66536 | 20120  | 20   | 66734 | 2139.8 |
| 5B-66-66C    | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |
| 5B-66-66B    | 5       | 23.41     | 23.46          | 0.05  | 60       | 10   | 20450 | 829  | 1HIGH | 10   | 2501 | 879.1 | 20   | 67039 | 2170.3 | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 5B-66-66B    | 66      | 23.18     |                |       |          |      |       |      |       |      |      |       |      |       |        |      |       |        |      |       |        |

| DL 4CA      |         |           |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
|-------------|---------|-----------|----------------|-------|----------|------|--------|------|-------|------|-------|--------|------|-------|--------|------|-------|--------|
| Combination | UL Band | PCC (dBm) | PCC+SCCs (dBm) | Delta | Aggr. BW | PCC1 |        |      |       | SCC1 |       |        | SCC2 |       |        | SCC3 |       |        |
|             |         |           |                |       |          | BW   | CH     | FREQ | RB    | BW   | CH    | FREQ   | BW   | CH    | FREQ   | BW   | CH    | FREQ   |
| 2-2-4-12    | 2       | 23.25     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-4-12    | 4       | 23.94     | 23.88          | -0.06 | 70       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 20   | 900   | 1960   | 10   | 5095  | 737.5  |
| 2-2-4-12    | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-12-12   | 2       | 23.25     | 23.14          | -0.11 | 60       | 20   | 19100  | 1900 | 1MID  | 20   | 700   | 1940   | 10   | 5095  | 737.5  | 10   | 5060  | 734    |
| 2-2-12-12   | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-13-66   | 2       | 23.25     | 23.35          | 0.1   | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 700   | 1940   | 20   | 5230  | 751    | 20   | 67039 | 2170.3 |
| 2-2-13-66   | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-13-66   | 66      | 23.18     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2C-66-66    | 2       | 23.25     | 23.32          | 0.07  | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 999   | 1969.9 | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 2C-66-66    | 66      | 23.47     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-66-71   | 2       | 23.25     | 23.31          | 0.06  | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 700   | 1940   | 20   | 67039 | 2170.3 | 20   | 68761 | 634.5  |
| 2-2-66-71   | 66      | 23.18     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-2-66-71   | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-4-12    | 2       | 23.25     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-4-12    | 4       | 23.94     | 23.88          | -0.06 | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 10   | 2476  | 876.6  | 10   | 5095  | 737.5  |
| 2-4-4-12    | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-12-12   | 2       | 23.25     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-12-12   | 4       | 23.94     | 23.96          | 0.02  | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 10   | 5095  | 737.5  | 10   | 5060  | 734    |
| 2-4-12-12   | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-12B     | 2       | 22.46     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-4-12B     | 4       | 23.94     | 23.99          | 0.05  | 55       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 5    | 5048  | 732.8  | 10   | 5120  | 740    |
| 2-4-12B     | 12      | 23.29     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-12-66C    | 2       | 23.25     | 23.19          | -0.06 | 70       | 20   | 19100  | 1900 | 1MID  | 10   | 5095  | 737.5  | 20   | 66536 | 20120  | 20   | 66734 | 2139.8 |
| 2-12-66C    | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-12-66C    | 66      | 23.18     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-66-66-66  | 2       | 23.25     | 23.24          | -0.01 | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 66536 | 2120   | 20   | 66886 | 2155   | 20   | 67039 | 2170.3 |
| 2-66-66-66  | 66      | 23.18     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-66-66-71  | 2       | 23.25     | 23.14          | -0.11 | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 66886 | 2155   | 20   | 67039 | 2170.3 | 20   | 68761 | 634.5  |
| 2-66-66-71  | 66      | 23.47     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-66-66-71  | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-66C-71    | 2       | 23.25     | 23.14          | -0.11 | 80       | 20   | 19100  | 1900 | 1MID  | 20   | 66536 | 2120   | 20   | 66734 | 2139.8 | 20   | 68761 | 634.5  |
| 2-66C-71    | 66      | 23.47     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 2-66C-71    | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 4-4-12-12   | 4       | 23.94     | 23.96          | 0.02  | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 2300  | 2132.5 | 10   | 5095  | 737.5  | 10   | 5060  | 734    |
| 4-4-12-12   | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 4-4-12B     | 4       | 23.94     | 23.87          | -0.07 | 55       | 20   | 20050  | 1720 | 1LOW  | 20   | 2300  | 2132.5 | 5    | 5048  | 732.8  | 10   | 5120  | 740    |
| 4-4-12B     | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 7-7-66-66   | 7       | 24.68     | 24.66          | -0.02 | 80       | 20   | 20850  | 2510 | 1HIGH | 20   | 3350  | 2680   | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 7C-66-66    | 7       | 24.68     | 24.73          | 0.05  | 80       | 20   | 20850  | 2510 | 1HIGH | 20   | 3048  | 2649.8 | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 7-12B-66    | 7       | 24.68     | 24.61          | -0.07 | 55       | 20   | 20850  | 2510 | 1HIGH | 5    | 5048  | 732.8  | 10   | 5120  | 740    | 20   | 67039 | 2170.3 |
| 7-12B-66    | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 12B-66-66   | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 12B-66-66   | 66      | 23.18     | 23.15          | -0.03 | 55       | 20   | 132575 | 1770 | 1LOW  | 5    | 5048  | 732.8  | 10   | 5120  | 740    | 20   | 67039 | 2170.3 |
| 13-66-66-66 | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 13-66-66-66 | 66      | 23.18     | 23.26          | 0.08  | 70       | 10   | 132575 | 1770 | 1LOW  | 20   | 5230  | 751    | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 13-66D      | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 13-66D      | 66      | 23.18     | 23.15          | -0.03 | 80       | 20   | 132072 | 1720 | 1LOW  | 20   | 66734 | 2139.8 | 20   | 66932 | 2159.6 | 20   | 5230  | 751    |
| 13-66-66C   | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 13-66-66C   | 66      | 23.18     | 23.22          | 0.04  | 70       | 10   | 132575 | 1770 | 1LOW  | 20   | 5230  | 751    | 20   | 66536 | 20120  | 20   | 66734 | 2139.8 |
| 13-66-66B   | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |      |       |        |
| 13-66-66B   | 66      | 23.18     | 23.27          | 0.09  | 50       | 10   | 132575 | 1770 | 1LOW  | 20   | 5230  | 751    | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 42-42D      | 42      | 25.16     | 25.18          | 0.02  | 80       | 20   | 41690  | 3410 | 1LOW  | 20   | 43094 | 3550.4 | 20   | 43292 | 3570.2 | 20   | 43490 | 3590   |
| 42C-42C     | 42      | 25.16     | 25.17          | 0.01  | 80       | 20   | 41690  | 3410 | 1LOW  | 20   | 41888 | 3429.8 | 20   | 43292 | 3570.2 | 20   | 43490 | 3590   |

| DL 3CA      |         |           |                |       |          |      |        |      |       |      |       |        |      |       |        |
|-------------|---------|-----------|----------------|-------|----------|------|--------|------|-------|------|-------|--------|------|-------|--------|
| Combination | UL Band | PCC (dBm) | PCC+SCCs (dBm) | Delta | Aggr. BW | PCC1 |        |      |       | SCC1 |       |        | SCC2 |       |        |
|             |         |           |                |       |          | BW   | CH     | FREQ | RB    | BW   | CH    | FREQ   | BW   | CH    | FREQ   |
| 2-4-13      | 2       | 23.25     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 2-4-13      | 4       | 23.94     | 23.85          | -0.09 | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 20   | 5230  | 751    |
| 2-4-13      | 13      | 22.93     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 2-4-71      | 2       | 23.25     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 2-4-71      | 4       | 23.94     | 23.85          | -0.09 | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 700   | 1940   | 20   | 68761 | 634.5  |
| 2-4-71      | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 2-29-66     | 2       | 23.25     | 23.14          | -0.11 | 60       | 20   | 19100  | 1900 | 1MID  | 20   | 66886 | 2155   | 20   | 67039 | 2170.3 |
| 2-29-66     | 66      | 23.18     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 4-4-13      | 4       | 23.94     | 23.85          | -0.09 | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 2300  | 2132.5 | 20   | 5230  | 751    |
| 4-4-13      | 13      | 23.39     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 4-4-29      | 4       | 23.94     | 23.97          | 0.03  | 50       | 20   | 20050  | 1720 | 1LOW  | 20   | 2175  | 2132.5 | 10   | 9715  | 722.5  |
| 4-4-71      | 4       | 23.94     | 23.96          | 0.02  | 60       | 20   | 20050  | 1720 | 1LOW  | 20   | 2300  | 2132.5 | 20   | 68761 | 634.5  |
| 4-4-71      | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 5-7C        | 5       | 23.41     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 5-7C        | 7       | 24.68     | 24.66          | -0.02 | 50       | 20   | 20850  | 2510 | 1HIGH | 20   | 3048  | 2649.8 | 10   | 2450  | 874    |
| 5-7-7       | 5       | 23.41     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 5-7-7       | 7       | 24.68     | 24.55          | -0.13 | 50       | 20   | 20850  | 2510 | 1HIGH | 10   | 2450  | 874    | 20   | 3350  | 2680   |
| 7-7-26      | 7       | 24.68     | 24.6           | -0.08 | 50       | 20   | 20850  | 2510 | 1HIGH | 20   | 3350  | 2680   | 10   | 8865  | 876.5  |
| 7-7-26      | 26      | 23.21     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 7-42-42     | 42      | 25.16     | 25.1           | -0.06 | 60       | 20   | 41690  | 3410 | 1LOW  | 20   | 2850  | 2630   | 20   | 43490 | 3590   |
| 12-66C      | 12      | 23.09     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 12-66C      | 66      | 23.18     | 23.21          | 0.03  | 50       | 20   | 132575 | 1770 | 1LOW  | 20   | 66734 | 2139.8 | 10   | 5095  | 737.5  |
| 25-25-25    | 25      | 23.3      | 23.24          | -0.06 | 60       | 20   | 26590  | 1905 | 1MID  | 20   | 8140  | 1940   | 20   | 8590  | 1985   |
| 25-25-26    | 25      | 23.3      | 23.26          | 0.05  | 55       | 20   | 26590  | 1905 | 1MID  | 20   | 8140  | 1940   | 10   | 8865  | 876.5  |
| 25-25-26    | 26      | 23.21     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 26-41C      | 26      | 23.21     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 26-41C      | 41      | 23.28     | 24.55          | 1.27  | 50       | 20   | 39750  | 2506 | 1HIGH | 20   | 39948 | 2525.8 | 10   | 8865  | 876.5  |
| 66C-29      | 66      | 23.18     | 23.22          | 0.04  | 50       | 20   | 132575 | 1770 | 1LOW  | 20   | 66734 | 2139.8 | 10   | 9715  | 722.5  |
| 66-66B      | 66      | 23.18     | 23.21          | 0.03  | 30       | 10   | 132575 | 1770 | 1LOW  | 10   | 66486 | 2115   | 10   | 66585 | 2124.9 |
| 66-66C      | 66      | 23.18     | 23.19          | 0.01  | 50       | 10   | 132575 | 1770 | 1LOW  | 20   | 66536 | 20120  | 20   | 66734 | 2139.8 |
| 66-66-66    | 66      | 23.18     | 23.17          | -0.01 | 50       | 10   | 132575 | 1770 | 1LOW  | 20   | 67039 | 2170.3 | 20   | 66886 | 2155   |
| 66D         | 66      | 23.18     | 23.23          | 0.05  | 60       | 20   | 132072 | 1720 | 1LOW  | 20   | 66734 | 2140   | 20   | 66932 | 2160   |
| 66-66-71    | 66      | 23.18     | 23.27          | 0.09  | 55       | 10   | 132575 | 1770 | 1LOW  | 20   | 67039 | 2170.3 | 20   | 68761 | 634.5  |
| 66-66-71    | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |
| 66C-71      | 66      | 23.18     | 23.15          | -0.03 | 55       | 20   | 132575 | 1770 | 1LOW  | 20   | 66734 | 2139.8 | 20   | 68761 | 634.5  |
| 66C-71      | 71      | 22.95     |                |       |          |      |        |      |       |      |       |        |      |       |        |

| DL 2CA      |         |           |                |       |          |      |       |       |       |      |       |        |
|-------------|---------|-----------|----------------|-------|----------|------|-------|-------|-------|------|-------|--------|
| Combination | UL Band | PCC (dBm) | PCC+SCCs (dBm) | Delta | Aggr. BW | PCC1 |       |       |       | SCC1 |       |        |
|             |         |           |                |       |          | BW   | CH    | FREQ  | RB    | BW   | CH    | FREQ   |
| 2C          | 2       | 23.25     | 23.21          | -0.04 | 40       | 20   | 19100 | 1900  | 1MID  | 20   | 898   | 1959.8 |
| 2-17        | 2       | 23.25     | 23.36          | 0.11  | 30       | 20   | 19100 | 1900  | 1MID  | 10   | 5790  | 740    |
| 2-17        | 17      | 22.86     |                |       |          |      |       |       |       |      |       |        |
| 2-71        | 2       | 23.25     | 23.29          | 0.04  | 40       | 20   | 19100 | 1900  | 1MID  | 20   | 68761 | 634.5  |
| 2-71        | 71      | 22.95     |                |       |          |      |       |       |       |      |       |        |
| 4-5         | 4       | 23.94     | 23.57          | -0.37 | 30       | 20   | 20050 | 1720  | 1LOW  | 10   | 2450  | 874    |
| 4-5         | 5       | 23.41     |                |       |          |      |       |       |       |      |       |        |
| 4-13        | 4       | 23.94     | 24.01          | 0.07  | 40       | 20   | 20050 | 1720  | 1LOW  | 20   | 5230  | 751    |
| 4-13        | 13      | 22.93     |                |       |          |      |       |       |       |      |       |        |
| 4-17        | 4       | 23.94     | 23.81          | -0.13 | 30       | 20   | 20050 | 1720  | 1LOW  | 10   | 5790  | 740    |
| 4-17        | 17      | 22.86     |                |       |          |      |       |       |       |      |       |        |
| 5-25        | 5       | 23.41     | 23.58          | 0.17  | 30       | 10   | 20450 | 829   | 1HIGH | 20   | 8140  | 1940   |
| 5-25        | 25      | 23.3      |                |       |          |      |       |       |       |      |       |        |
| 5-41        | 5       | 23.41     | 23.55          | 0.14  | 30       | 10   | 20450 | 829   | 1HIGH | 20   | 40175 | 2549.5 |
| 5-41        | 41      | 23.28     |                |       |          |      |       |       |       |      |       |        |
| 7-26        | 7       | 23.09     |                |       |          |      |       |       |       |      |       |        |
| 7-26        | 26      | 23.21     | 23.23          | 0.02  | 40       | 20   | 20850 | 2510  | 1HIGH | 20   | 2850  | 2630   |
| 12-12       | 12      | 23.09     | 23.18          | 0.09  | 20       | 10   | 23095 | 707.5 | 1HIGH | 10   | 5060  | 734    |
| 12-25       | 12      | 23.09     |                |       |          |      |       |       |       |      |       |        |
| 12-25       | 25      | 23.3      | 23.22          | -0.08 | 30       | 20   | 26590 | 1905  | 1MID  | 10   | 5060  | 734    |

### 2.1.5. LTE CA Uplink Inter-Band.

| LTE CA UPLINK | PCC Band |
|---------------|----------|
| 2A-5A         | LTE 2    |
| 2A-12A        | LTE 2    |
| 2A-13A        | LTE 2    |
| 4A-5A         | LTE4     |
| 4A-12A        | LTE4     |
| 4A-13A        | LTE4     |
| 4A-17A        | LTE4     |
| 5A-7A         | LTE 5    |
| 5A-66A        | LTE 5    |

Following guidance from TCB Workshop October 2018:

- Provide the single uplink SAR values you have obtained for the SAR configurations and frequency bands that employ inter-band uplink carrier aggregation.
- If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.
- If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures found in FCC KDB Publication 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04.
- If the algebraic sum of the 1-g SAR values is > 1.45 W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance.

CA UL maximum output power is reduced by 3 dBm from the single carrier maximum output power value. Reported SAR for the CA UL maximum output power have been calculated using worst-case single carrier SAR values for each CC:

| LTE CA UPLINK | CC1  |               |              | CC2  |               |              | CA                |                   |                  |                  |        |
|---------------|------|---------------|--------------|------|---------------|--------------|-------------------|-------------------|------------------|------------------|--------|
|               | Band | Tune-up limit | Reported SAR | Band | Tune-up limit | Reported SAR | CC1 Tune-up limit | CC2 Tune-up limit | CC1 Reported SAR | CC2 Reported SAR | CA sum |
| 2A-5A         | 2A   | 24.5          | 0.108        | 5A   | 24.5          | 0.281        | 21.5              | 21.5              | 0.054            | 0.141            | 0.195  |
| 2A-12A        | 2A   | 24.5          | 0.108        | 12A  | 24.5          | 0.211        | 21.5              | 21.5              | 0.054            | 0.106            | 0.160  |
| 2A-13A        | 2A   | 24.5          | 0.108        | 13A  | 24.5          | 0.250        | 21.5              | 21.5              | 0.054            | 0.125            | 0.179  |
| 4A-5A         | 4A   | 25.0          | 0.073        | 5A   | 24.5          | 0.281        | 22.0              | 21.5              | 0.037            | 0.141            | 0.178  |
| 4A-12A        | 4A   | 25.0          | 0.073        | 12A  | 24.5          | 0.211        | 22.0              | 21.5              | 0.037            | 0.106            | 0.143  |
| 4A-13A        | 4A   | 25.0          | 0.073        | 13A  | 24.5          | 0.250        | 22.0              | 21.5              | 0.037            | 0.125            | 0.162  |
| 4A-17A        | 4A   | 25.0          | 0.073        | 17A  | 24.5          | 0.211        | 22.0              | 21.5              | 0.037            | 0.106            | 0.143  |
| 5A-7A         | 5A   | 24.5          | 0.281        | 7A   | 25.0          | 0.135        | 21.5              | 22.0              | 0.141            | 0.068            | 0.209  |
| 5A-66A        | 5A   | 24.5          | 0.281        | 66A  | 24.5          | 0.094        | 21.5              | 21.5              | 0.141            | 0.047            | 0.188  |



## 2.1.6. LTE CA Uplink Intra-Band

| LTE CA UPLINK | PCC Band |
|---------------|----------|
| 5B            | LTE 5    |
| 7C            | LTE 7    |
| 41C           | LTE 41   |
| 42C           | LTE 42   |
| 66B           | LTE 66   |
| 66C           | LTE 66   |

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 and TCB Workshop Nov. 2017

- SAR for UL CA is required in each exposure condition (highest standalone head test position, body, etc.) and frequency band combination.
- When the maximum output for UL CA is  $\leq$  standalone LTE mode (without CA)
  - PCC is configured according to the highest standalone SAR configuration tested
  - SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC
- Reported SAR for UL CA configuration, described above, is  $> 1.2$  W/kg, UL CA SAR is also required for all required test channels(PCC based)
- UL CA SAR is also required for standalone SAR configurations  $> 1.2$  W/kg when they are scaled to the UL CA power level

All measured SAR values for the bands that supports Uplink CA Intra-band are lower than, 1.2 W/kg, therefore all Uplink CA intra-band combinations values are also  $< 1.2$  W/kg.

| LTE CA UPLINK BAND | Band   | BW (MHz) | Channel | Frequency (MHz) | Configuration | Output power W/O CA | Output power with CA | Delta CA off/on |
|--------------------|--------|----------|---------|-----------------|---------------|---------------------|----------------------|-----------------|
| 5B                 | LTE 5  | 5        | 20528   | 836.8           | 1Rb High      | 23.32               | 21.04                | 2.28            |
| 7C                 | LTE 7  | 20       | 20850   | 2510.0          | 1Rb High      | 24.41               | 22.12                | 2.29            |
| 41C                | LTE 41 | 20       | 39750   | 2506.0          | 1Rb High      | 23.01               | 20.85                | 2.16            |
| 42C                | LTE 42 | 20       | 42565   | 3497.5          | 1Rb High      | 24.86               | 23.1                 | 1.76            |
| 66B                | LTE 66 | 10       | 132575  | 1770.0          | 1Rb High      | 22.97               | 22.04                | 0.93            |
| 66C                | LTE 66 | 20       | 132522  | 1765.0          | 1Rb High      | 23.08               | 21.19                | 1.89            |

| LTE CA UPLINK BAND | PCC      |        |        |          | SCC      |        |        |         | Reported SAR |
|--------------------|----------|--------|--------|----------|----------|--------|--------|---------|--------------|
|                    | BW (MHz) | CH     | FREQ   | RB       | BW (MHz) | CH     | FREQ   | RB      |              |
| 5B                 | 5        | 20528  | 836.8  | 1Rb High | 10       | 20600  | 844.0  | 1Rb Low | 0.513        |
| 7C                 | 20       | 20850  | 2510.0 | 1Rb High | 20       | 21048  | 2529.8 | 1Rb Low | 0.186        |
| 41C                | 20       | 39750  | 2506.0 | 1Rb High | 5        | 39867  | 2517.7 | 1Rb Low | 0.179        |
| 42C                | 20       | 42565  | 3497.5 | 1Rb High | 5        | 42682  | 3509.2 | 1Rb Low | 0.033        |
| 66B                | 10       | 132575 | 1770.0 | 1Rb High | 5        | 132644 | 1777.2 | 1Rb Low | 0.150        |
| 66C                | 20       | 132522 | 1765.0 | 1Rb High | 5        | 132639 | 1776.7 | 1Rb Low | 0.130        |

### 2.1.7. 5G Stand-Alone Bands

MPR is permanently implemented for the device. A-MPR was disabled for SAR measurements.

Maximum Power Reductions are specified in Table 6.2.3-1 of the 3GPP TS138.521-1.

**Table 6.2.2.3-1: Maximum Power Reduction (MPR) for Power 3**

| Modulation  | MPR (dB)            |                      |                      |
|---|---------------------|----------------------|----------------------|
|   | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM PI/2 BPSK  | $\leq 3.5^1$        | $\leq 1.2^1$         | $\leq 0.2^1$         |
|   | $\leq 0.5^2$        |                      | $0^2$                |
| DFT-s-OFDM QPSK   | $\leq 1$            |                      | 0                    |
| DFT-s-OFDM 16 QAM   | $\leq 2$            |                      | $\leq 1$             |
| DFT-s-OFDM 64 QAM   |                     | $\leq 2.5$           |                      |
| DFT-s-OFDM 256 QAM  |                     | $\leq 4.5$           |                      |
| CP-OFDM QPSK  | $\leq 3$            |                      | $\leq 1.5$           |
| CP-OFDM 16 QAM  | $\leq 3$            |                      | $\leq 2$             |
| CP-OFDM 64 QAM  |                     | $\leq 3.5$           |                      |
| CP-OFDM 256 QAM   |                     | $\leq 6.5$           |                      |
| NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and UE indicates support for UE capability <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm.<br>NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE <i>powerBoostPi2BPSK</i> is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. |                     |                      |                      |

- n2

| NR Band 2 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 372000                     | 376000 | 380000 |
|                       |           | Frequency (MHz) |           | 1860                       | 1880   | 1900   |
| 20 MHz                | pi/2 BPSK | 1               | 0         | 23.69                      | 23.67  | 23.65  |
|                       |           | 1               | 53        | 23.79                      | 23.71  | 23.75  |
|                       |           | 1               | 105       | 23.79                      | 23.78  | 23.74  |
|                       |           | 53              | 0         | 23.69                      | 23.64  | 23.64  |
|                       |           | 53              | 27        | 23.67                      | 23.62  | 23.63  |
|                       |           | 53              | 53        | 23.65                      | 23.68  | 23.63  |
|                       |           | 106             | 0         | 23.51                      | 23.50  | 23.50  |
|                       | QPSK      | 1               | 0         | 20.77                      | 20.80  | 20.80  |
|                       |           | 1               | 53        | 20.90                      | 20.87  | 20.85  |
|                       |           | 1               | 105       | 20.87                      | 20.83  | 20.83  |
|                       |           | 53              | 0         | 20.80                      | 20.71  | 20.75  |
|                       |           | 53              | 27        | 20.72                      | 20.75  | 20.71  |
|                       |           | 53              | 53        | 20.74                      | 20.78  | 20.77  |
|                       |           | 106             | 0         | 20.65                      | 20.64  | 20.68  |
|                       | 16QAM     | 1               | 0         | 20.61                      | 20.61  | 20.65  |
|                       |           | 1               | 53        | 20.75                      | 20.79  | 20.70  |
|                       |           | 1               | 105       | 20.77                      | 20.70  | 20.77  |
|                       |           | 53              | 0         | 20.61                      | 20.60  | 20.64  |
|                       |           | 53              | 27        | 20.66                      | 20.60  | 20.65  |
|                       |           | 53              | 53        | 20.68                      | 20.65  | 20.60  |
|                       |           | 106             | 0         | 20.60                      | 20.52  | 20.57  |
|                       | 64QAM     | 1               | 0         | 20.27                      | 20.21  | 20.27  |
|                       |           | 1               | 53        | 20.35                      | 20.37  | 20.30  |
|                       |           | 1               | 105       | 20.30                      | 20.40  | 20.39  |
|                       |           | 53              | 0         | 20.29                      | 20.29  | 20.29  |
|                       |           | 53              | 27        | 20.22                      | 20.30  | 20.21  |
|                       |           | 53              | 53        | 20.21                      | 20.28  | 20.29  |
|                       |           | 106             | 0         | 20.16                      | 20.10  | 20.18  |
|                       | 256QAM    | 1               | 0         | 17.30                      | 17.26  | 17.27  |
|                       |           | 1               | 53        | 17.39                      | 17.30  | 17.40  |
| 1                     |           | 105             | 17.31     | 17.31                      | 17.39  |        |
| 53                    |           | 0               | 17.27     | 17.26                      | 17.21  |        |
| 53                    |           | 27              | 17.27     | 17.25                      | 17.29  |        |
| 53                    |           | 53              | 17.27     | 17.22                      | 17.21  |        |
| 106                   |           | 0               | 17.14     | 17.18                      | 17.11  |        |

| NR Band 2 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 371500                     | 376000 | 380500 |
|                       |           | Frequency (MHz) |           | 1857.5                     | 1880   | 1902.5 |
| 15 MHz                | pi/2 BPSK | 1               | 0         | 23.67                      | 23.62  | 23.65  |
|                       |           | 1               | 39        | 23.70                      | 23.79  | 23.73  |
|                       |           | 1               | 78        | 23.78                      | 23.71  | 23.70  |
|                       |           | 39              | 0         | 23.69                      | 23.68  | 23.62  |
|                       |           | 39              | 19        | 23.69                      | 23.60  | 23.60  |
|                       |           | 39              | 40        | 23.62                      | 23.63  | 23.68  |
|                       |           | 79              | 0         | 23.56                      | 23.54  | 23.55  |
|                       | QPSK      | 1               | 0         | 20.74                      | 20.74  | 20.76  |
|                       |           | 1               | 39        | 20.80                      | 20.86  | 20.81  |
|                       |           | 1               | 78        | 20.85                      | 20.90  | 20.86  |
|                       |           | 39              | 0         | 20.75                      | 20.76  | 20.79  |
|                       |           | 39              | 19        | 20.72                      | 20.77  | 20.70  |
|                       |           | 39              | 40        | 20.72                      | 20.73  | 20.76  |
|                       |           | 79              | 0         | 20.69                      | 20.70  | 20.60  |
|                       | 16QAM     | 1               | 0         | 20.67                      | 20.66  | 20.67  |
|                       |           | 1               | 39        | 20.72                      | 20.71  | 20.70  |
|                       |           | 1               | 78        | 20.73                      | 20.74  | 20.77  |
|                       |           | 39              | 0         | 20.63                      | 20.65  | 20.63  |
|                       |           | 39              | 19        | 20.60                      | 20.68  | 20.65  |
|                       |           | 39              | 40        | 20.68                      | 20.67  | 20.68  |
|                       |           | 79              | 0         | 20.52                      | 20.50  | 20.53  |
|                       | 64QAM     | 1               | 0         | 20.29                      | 20.23  | 20.29  |
|                       |           | 1               | 39        | 20.33                      | 20.35  | 20.36  |
|                       |           | 1               | 78        | 20.34                      | 20.37  | 20.40  |
|                       |           | 39              | 0         | 20.25                      | 20.22  | 20.30  |
|                       |           | 39              | 19        | 20.25                      | 20.22  | 20.28  |
|                       |           | 39              | 40        | 20.28                      | 20.22  | 20.20  |
|                       |           | 79              | 0         | 20.10                      | 20.18  | 20.18  |
|                       | 256QAM    | 1               | 0         | 17.26                      | 17.22  | 17.23  |
|                       |           | 1               | 39        | 17.40                      | 17.36  | 17.37  |
| 1                     |           | 78              | 17.38     | 17.38                      | 17.34  |        |
| 39                    |           | 0               | 17.24     | 17.28                      | 17.29  |        |
| 39                    |           | 19              | 17.27     | 17.23                      | 17.22  |        |
| 39                    |           | 40              | 17.25     | 17.20                      | 17.27  |        |
| 79                    |           | 0               | 17.12     | 17.20                      | 17.15  |        |

| NR Band 2 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 371000                     | 376000 | 381000 |
|                       |           | Frequency (MHz) |           | 1855                       | 1880   | 1905   |
| 10 MHz                | pi/2 BPSK | 1               | 0         | 23.65                      | 23.63  | 23.67  |
|                       |           | 1               | 26        | 23.79                      | 23.79  | 23.72  |
|                       |           | 1               | 51        | 23.77                      | 23.70  | 23.77  |
|                       |           | 26              | 0         | 23.63                      | 23.61  | 23.62  |
|                       |           | 26              | 13        | 23.64                      | 23.63  | 23.66  |
|                       |           | 26              | 26        | 23.66                      | 23.67  | 23.64  |
|                       |           | 52              | 0         | 23.58                      | 23.59  | 23.53  |
|                       | QPSK      | 1               | 0         | 20.74                      | 20.71  | 20.79  |
|                       |           | 1               | 26        | 20.90                      | 20.89  | 20.88  |
|                       |           | 1               | 51        | 20.90                      | 20.88  | 20.86  |
|                       |           | 26              | 0         | 20.75                      | 20.72  | 20.75  |
|                       |           | 26              | 13        | 20.75                      | 20.75  | 20.78  |
|                       |           | 26              | 26        | 20.80                      | 20.77  | 20.71  |
|                       |           | 52              | 0         | 20.61                      | 20.65  | 20.69  |
|                       | 16QAM     | 1               | 0         | 20.70                      | 20.60  | 20.65  |
|                       |           | 1               | 26        | 20.75                      | 20.77  | 20.80  |
|                       |           | 1               | 51        | 20.74                      | 20.74  | 20.77  |
|                       |           | 26              | 0         | 20.64                      | 20.68  | 20.65  |
|                       |           | 26              | 13        | 20.69                      | 20.70  | 20.64  |
|                       |           | 26              | 26        | 20.69                      | 20.64  | 20.70  |
|                       |           | 52              | 0         | 20.50                      | 20.60  | 20.55  |
|                       | 64QAM     | 1               | 0         | 20.30                      | 20.28  | 20.30  |
|                       |           | 1               | 26        | 20.31                      | 20.36  | 20.36  |
|                       |           | 1               | 51        | 20.40                      | 20.30  | 20.39  |
|                       |           | 26              | 0         | 20.28                      | 20.23  | 20.29  |
|                       |           | 26              | 13        | 20.30                      | 20.29  | 20.30  |
|                       |           | 26              | 26        | 20.27                      | 20.22  | 20.28  |
|                       |           | 52              | 0         | 20.18                      | 20.11  | 20.18  |
|                       | 256QAM    | 1               | 0         | 17.28                      | 17.28  | 17.28  |
|                       |           | 1               | 26        | 17.36                      | 17.40  | 17.36  |
|                       |           | 1               | 51        | 17.38                      | 17.30  | 17.32  |
|                       |           | 26              | 0         | 17.21                      | 17.28  | 17.21  |
|                       |           | 26              | 13        | 17.21                      | 17.23  | 17.26  |
|                       |           | 26              | 26        | 17.21                      | 17.25  | 17.21  |
|                       |           | 52              | 0         | 17.11                      | 17.15  | 17.16  |

| NR Band 2 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 370500                     | 376000 | 381500 |
|                       |           | Frequency (MHz) |           | 1852.5                     | 1880   | 1907.5 |
| 5 MHz                 | pi/2 BPSK | 1               | 0         | 23.63                      | 23.62  | 23.60  |
|                       |           | 1               | 12        | 23.71                      | 23.71  | 23.75  |
|                       |           | 1               | 24        | 23.73                      | 23.71  | 23.75  |
|                       |           | 12              | 0         | 23.64                      | 23.63  | 23.67  |
|                       |           | 12              | 6         | 23.66                      | 23.61  | 23.67  |
|                       |           | 12              | 13        | 23.64                      | 23.61  | 23.66  |
|                       |           | 25              | 0         | 23.55                      | 23.58  | 23.54  |
|                       | QPSK      | 1               | 0         | 20.80                      | 20.71  | 20.73  |
|                       |           | 1               | 12        | 20.84                      | 20.82  | 20.87  |
|                       |           | 1               | 24        | 20.81                      | 20.86  | 20.83  |
|                       |           | 12              | 0         | 20.79                      | 20.77  | 20.78  |
|                       |           | 12              | 6         | 20.71                      | 20.72  | 20.74  |
|                       |           | 12              | 13        | 20.78                      | 20.80  | 20.71  |
|                       |           | 25              | 0         | 20.67                      | 20.66  | 20.70  |
|                       | 16QAM     | 1               | 0         | 20.60                      | 20.67  | 20.69  |
|                       |           | 1               | 12        | 20.73                      | 20.70  | 20.74  |
|                       |           | 1               | 24        | 20.72                      | 20.73  | 20.74  |
|                       |           | 12              | 0         | 20.68                      | 20.66  | 20.60  |
|                       |           | 12              | 6         | 20.67                      | 20.60  | 20.69  |
|                       |           | 12              | 13        | 20.70                      | 20.67  | 20.61  |
|                       |           | 25              | 0         | 20.55                      | 20.52  | 20.56  |
|                       | 64QAM     | 1               | 0         | 20.20                      | 20.30  | 20.27  |
|                       |           | 1               | 12        | 20.31                      | 20.35  | 20.35  |
|                       |           | 1               | 24        | 20.33                      | 20.31  | 20.33  |
|                       |           | 12              | 0         | 20.21                      | 20.23  | 20.29  |
|                       |           | 12              | 6         | 20.27                      | 20.28  | 20.26  |
|                       |           | 12              | 13        | 20.21                      | 20.27  | 20.29  |
|                       |           | 25              | 0         | 20.18                      | 20.12  | 20.18  |
|                       | 256QAM    | 1               | 0         | 17.23                      | 17.26  | 17.29  |
|                       |           | 1               | 12        | 17.37                      | 17.32  | 17.37  |
| 1                     |           | 24              | 17.35     | 17.34                      | 17.35  |        |
| 12                    |           | 0               | 17.27     | 17.30                      | 17.28  |        |
| 12                    |           | 6               | 17.20     | 17.22                      | 17.25  |        |
| 12                    |           | 13              | 17.29     | 17.20                      | 17.28  |        |
| 25                    |           | 0               | 17.11     | 17.14                      | 17.10  |        |

- n5

| NR Band 5 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 166800                     | 167300 | 167800 |
|                       |           | Frequency (MHz) |           | 834                        | 836.5  | 839    |
| 20 MHz                | pi/2 BPSK | 1               | 0         | 24.44                      | 24.50  | 24.35  |
|                       |           | 1               | 53        | 24.40                      | 24.36  | 24.21  |
|                       |           | 1               | 105       | 24.40                      | 24.31  | 24.44  |
|                       |           | 53              | 0         | 24.38                      | 24.32  | 24.21  |
|                       |           | 53              | 27        | 24.32                      | 24.31  | 24.24  |
|                       |           | 53              | 53        | 24.23                      | 24.39  | 24.36  |
|                       |           | 106             | 0         | 24.28                      | 24.27  | 24.26  |
|                       | QPSK      | 1               | 0         | 21.45                      | 21.35  | 21.44  |
|                       |           | 1               | 53        | 21.25                      | 21.37  | 21.20  |
|                       |           | 1               | 105       | 21.45                      | 21.34  | 21.31  |
|                       |           | 53              | 0         | 21.38                      | 21.21  | 21.21  |
|                       |           | 53              | 27        | 21.36                      | 21.36  | 21.38  |
|                       |           | 53              | 53        | 21.31                      | 21.40  | 21.23  |
|                       |           | 106             | 0         | 21.22                      | 21.25  | 21.28  |
|                       | 16QAM     | 1               | 0         | 21.32                      | 21.31  | 21.48  |
|                       |           | 1               | 53        | 21.30                      | 21.20  | 21.21  |
|                       |           | 1               | 105       | 21.47                      | 21.34  | 21.32  |
|                       |           | 53              | 0         | 21.25                      | 21.34  | 21.30  |
|                       |           | 53              | 27        | 21.25                      | 21.35  | 21.35  |
|                       |           | 53              | 53        | 21.31                      | 21.36  | 21.38  |
|                       |           | 106             | 0         | 21.14                      | 21.20  | 21.30  |
|                       | 64QAM     | 1               | 0         | 20.74                      | 20.87  | 20.77  |
|                       |           | 1               | 53        | 20.74                      | 20.79  | 20.79  |
|                       |           | 1               | 105       | 20.86                      | 20.72  | 20.83  |
|                       |           | 53              | 0         | 20.70                      | 20.69  | 20.72  |
|                       |           | 53              | 27        | 20.70                      | 20.71  | 20.60  |
|                       |           | 53              | 53        | 20.65                      | 20.67  | 20.75  |
|                       |           | 106             | 0         | 20.56                      | 20.52  | 20.54  |
| 256QAM                | 1         | 0               | 17.76     | 17.86                      | 17.89  |        |
|                       | 1         | 53              | 17.65     | 17.74                      | 17.75  |        |
|                       | 1         | 105             | 17.73     | 17.80                      | 17.90  |        |
|                       | 53        | 0               | 17.78     | 17.67                      | 17.72  |        |
|                       | 53        | 27              | 17.63     | 17.72                      | 17.79  |        |
|                       | 53        | 53              | 17.60     | 17.77                      | 17.73  |        |
|                       | 106       | 0               | 17.58     | 17.68                      | 17.52  |        |

| NR Band 5 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 166300                     | 167300 | 168300 |
|                       |           | Frequency (MHz) |           | 831.5                      | 836.5  | 841.5  |
| 15 MHz                | pi/2 BPSK | 1               | 0         | 24.41                      | 24.49  | 24.35  |
|                       |           | 1               | 39        | 24.39                      | 24.32  | 24.40  |
|                       |           | 1               | 78        | 24.47                      | 24.43  | 24.49  |
|                       |           | 39              | 0         | 24.26                      | 24.36  | 24.22  |
|                       |           | 39              | 19        | 24.38                      | 24.27  | 24.24  |
|                       |           | 39              | 40        | 24.22                      | 24.38  | 24.26  |
|                       |           | 79              | 0         | 24.14                      | 24.29  | 24.12  |
|                       | QPSK      | 1               | 0         | 21.32                      | 21.35  | 21.32  |
|                       |           | 1               | 39        | 21.35                      | 21.20  | 21.30  |
|                       |           | 1               | 78        | 21.34                      | 21.34  | 21.40  |
|                       |           | 39              | 0         | 21.23                      | 21.28  | 21.33  |
|                       |           | 39              | 19        | 21.33                      | 21.23  | 21.23  |
|                       |           | 39              | 40        | 21.24                      | 21.34  | 21.34  |
|                       |           | 79              | 0         | 21.19                      | 21.11  | 21.13  |
|                       | 16QAM     | 1               | 0         | 21.30                      | 21.37  | 21.30  |
|                       |           | 1               | 39        | 21.29                      | 21.40  | 21.23  |
|                       |           | 1               | 78        | 21.45                      | 21.48  | 21.31  |
|                       |           | 39              | 0         | 21.20                      | 21.31  | 21.20  |
|                       |           | 39              | 19        | 21.39                      | 21.29  | 21.22  |
|                       |           | 39              | 40        | 21.21                      | 21.34  | 21.33  |
|                       |           | 79              | 0         | 21.11                      | 21.19  | 21.23  |
|                       | 64QAM     | 1               | 0         | 20.86                      | 20.81  | 20.78  |
|                       |           | 1               | 39        | 20.72                      | 20.72  | 20.62  |
|                       |           | 1               | 78        | 20.73                      | 20.90  | 20.78  |
|                       |           | 39              | 0         | 20.65                      | 20.68  | 20.66  |
|                       |           | 39              | 19        | 20.70                      | 20.64  | 20.60  |
|                       |           | 39              | 40        | 20.68                      | 20.68  | 20.66  |
|                       |           | 79              | 0         | 20.57                      | 20.60  | 20.66  |
|                       | 256QAM    | 1               | 0         | 17.87                      | 17.81  | 17.75  |
|                       |           | 1               | 39        | 17.62                      | 17.66  | 17.69  |
| 1                     |           | 78              | 17.89     | 17.83                      | 17.88  |        |
| 39                    |           | 0               | 17.80     | 17.74                      | 17.65  |        |
| 39                    |           | 19              | 17.61     | 17.61                      | 17.66  |        |
| 39                    |           | 40              | 17.75     | 17.63                      | 17.69  |        |
| 79                    |           | 0               | 17.62     | 17.57                      | 17.58  |        |



| NR Band 5 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 165800                     | 167300 | 168800 |
|                       |           | Frequency (MHz) |           | 829                        | 836.5  | 844    |
| 10 MHz                | pi/2 BPSK | 1               | 0         | 24.35                      | 24.50  | 24.39  |
|                       |           | 1               | 26        | 24.32                      | 24.24  | 24.20  |
|                       |           | 1               | 51        | 24.40                      | 24.48  | 24.50  |
|                       |           | 26              | 0         | 24.20                      | 24.32  | 24.21  |
|                       |           | 26              | 13        | 24.21                      | 24.33  | 24.40  |
|                       |           | 26              | 26        | 24.21                      | 24.30  | 24.33  |
|                       |           | 52              | 0         | 24.20                      | 24.11  | 24.24  |
|                       | QPSK      | 1               | 0         | 21.40                      | 21.50  | 21.30  |
|                       |           | 1               | 26        | 21.30                      | 21.31  | 21.37  |
|                       |           | 1               | 51        | 21.49                      | 21.33  | 21.36  |
|                       |           | 26              | 0         | 21.33                      | 21.29  | 21.27  |
|                       |           | 26              | 13        | 21.20                      | 21.24  | 21.36  |
|                       |           | 26              | 26        | 21.40                      | 21.39  | 21.37  |
|                       |           | 52              | 0         | 21.17                      | 21.21  | 21.27  |
|                       | 16QAM     | 1               | 0         | 21.41                      | 21.39  | 21.30  |
|                       |           | 1               | 26        | 21.30                      | 21.23  | 21.35  |
|                       |           | 1               | 51        | 21.34                      | 21.38  | 21.36  |
|                       |           | 26              | 0         | 21.27                      | 21.23  | 21.30  |
|                       |           | 26              | 13        | 21.32                      | 21.36  | 21.20  |
|                       |           | 26              | 26        | 21.39                      | 21.40  | 21.34  |
|                       |           | 52              | 0         | 21.23                      | 21.24  | 21.23  |
|                       | 64QAM     | 1               | 0         | 20.80                      | 20.78  | 20.83  |
|                       |           | 1               | 26        | 20.66                      | 20.70  | 20.77  |
|                       |           | 1               | 51        | 20.82                      | 20.72  | 20.80  |
|                       |           | 26              | 0         | 20.78                      | 20.80  | 20.65  |
|                       |           | 26              | 13        | 20.64                      | 20.74  | 20.73  |
|                       |           | 26              | 26        | 20.60                      | 20.74  | 20.62  |
|                       |           | 52              | 0         | 20.63                      | 20.52  | 20.58  |
|                       | 256QAM    | 1               | 0         | 17.90                      | 17.75  | 17.70  |
|                       |           | 1               | 26        | 17.64                      | 17.74  | 17.76  |
| 1                     |           | 51              | 17.76     | 17.88                      | 17.87  |        |
| 26                    |           | 0               | 17.68     | 17.66                      | 17.64  |        |
| 26                    |           | 13              | 17.65     | 17.75                      | 17.74  |        |
| 26                    |           | 26              | 17.69     | 17.64                      | 17.70  |        |
| 52                    |           | 0               | 17.66     | 17.54                      | 17.66  |        |

| NR Band 5 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 165300                     | 167300 | 169300 |
|                       |           | Frequency (MHz) |           | 826.5                      | 836.5  | 846.5  |
| 5 MHz                 | pi/2 BPSK | 1               | 0         | 24.36                      | 24.48  | 24.30  |
|                       |           | 1               | 12        | 24.39                      | 24.21  | 24.36  |
|                       |           | 1               | 24        | 24.41                      | 24.47  | 24.35  |
|                       |           | 12              | 0         | 24.32                      | 24.20  | 24.27  |
|                       |           | 12              | 6         | 24.23                      | 24.30  | 24.29  |
|                       |           | 12              | 13        | 24.35                      | 24.39  | 24.25  |
|                       |           | 25              | 0         | 24.29                      | 24.20  | 24.10  |
|                       | QPSK      | 1               | 0         | 21.36                      | 21.50  | 21.37  |
|                       |           | 1               | 12        | 21.24                      | 21.21  | 21.21  |
|                       |           | 1               | 24        | 21.32                      | 21.31  | 21.49  |
|                       |           | 12              | 0         | 21.35                      | 21.31  | 21.38  |
|                       |           | 12              | 6         | 21.40                      | 21.37  | 21.24  |
|                       |           | 12              | 13        | 21.34                      | 21.40  | 21.29  |
|                       |           | 25              | 0         | 21.27                      | 21.17  | 21.12  |
|                       | 16QAM     | 1               | 0         | 21.39                      | 21.35  | 21.50  |
|                       |           | 1               | 12        | 21.24                      | 21.20  | 21.32  |
|                       |           | 1               | 24        | 21.47                      | 21.46  | 21.30  |
|                       |           | 12              | 0         | 21.28                      | 21.20  | 21.29  |
|                       |           | 12              | 6         | 21.38                      | 21.33  | 21.27  |
|                       |           | 12              | 13        | 21.30                      | 21.25  | 21.38  |
|                       |           | 25              | 0         | 21.26                      | 21.29  | 21.16  |
|                       | 64QAM     | 1               | 0         | 20.85                      | 20.76  | 20.79  |
|                       |           | 1               | 12        | 20.64                      | 20.62  | 20.64  |
|                       |           | 1               | 24        | 20.79                      | 20.83  | 20.83  |
|                       |           | 12              | 0         | 20.62                      | 20.72  | 20.74  |
|                       |           | 12              | 6         | 20.73                      | 20.61  | 20.60  |
|                       |           | 12              | 13        | 20.60                      | 20.79  | 20.69  |
|                       |           | 25              | 0         | 20.63                      | 20.56  | 20.65  |
|                       | 256QAM    | 1               | 0         | 17.81                      | 17.81  | 17.82  |
|                       |           | 1               | 12        | 17.75                      | 17.79  | 17.79  |
| 1                     |           | 24              | 17.81     | 17.83                      | 17.80  |        |
| 12                    |           | 0               | 17.80     | 17.67                      | 17.63  |        |
| 12                    |           | 6               | 17.61     | 17.66                      | 17.61  |        |
| 12                    |           | 13              | 17.77     | 17.60                      | 17.67  |        |
| 25                    |           | 0               | 17.60     | 17.61                      | 17.55  |        |

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| NR Band 7 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 502000                     | 507000 | 512000 |
|                       |           | Frequency (MHz) |           | 2510                       | 2535   | 2560   |
| 20 MHz                | pi/2 BPSK | 1               | 0         | 24.00                      | 24.09  | 23.91  |
|                       |           | 1               | 53        | 24.05                      | 23.99  | 23.98  |
|                       |           | 1               | 105       | 23.51                      | 23.50  | 23.61  |
|                       |           | 53              | 0         | 23.96                      | 23.89  | 23.94  |
|                       |           | 53              | 27        | 23.98                      | 23.99  | 23.84  |
|                       |           | 53              | 53        | 23.70                      | 23.74  | 23.74  |
|                       |           | 106             | 0         | 23.85                      | 23.78  | 23.89  |
|                       | QPSK      | 1               | 0         | 20.93                      | 21.07  | 21.06  |
|                       |           | 1               | 53        | 20.90                      | 21.00  | 20.96  |
|                       |           | 1               | 105       | 20.63                      | 20.68  | 20.57  |
|                       |           | 53              | 0         | 20.98                      | 20.94  | 20.98  |
|                       |           | 53              | 27        | 20.90                      | 20.81  | 20.90  |
|                       |           | 53              | 53        | 20.71                      | 20.72  | 20.75  |
|                       |           | 106             | 0         | 20.74                      | 20.71  | 20.85  |
|                       | 16QAM     | 1               | 0         | 20.90                      | 21.06  | 20.97  |
|                       |           | 1               | 53        | 20.92                      | 20.96  | 20.97  |
|                       |           | 1               | 105       | 20.65                      | 20.64  | 20.60  |
|                       |           | 53              | 0         | 20.99                      | 20.92  | 20.91  |
|                       |           | 53              | 27        | 20.97                      | 20.84  | 20.82  |
|                       |           | 53              | 53        | 20.70                      | 20.75  | 20.82  |
|                       |           | 106             | 0         | 20.76                      | 20.88  | 20.71  |
|                       | 64QAM     | 1               | 0         | 20.31                      | 20.49  | 20.49  |
|                       |           | 1               | 53        | 20.49                      | 20.45  | 20.40  |
|                       |           | 1               | 105       | 20.09                      | 20.00  | 19.95  |
|                       |           | 53              | 0         | 20.37                      | 20.26  | 20.39  |
|                       |           | 53              | 27        | 20.24                      | 20.20  | 20.20  |
|                       |           | 53              | 53        | 20.13                      | 20.14  | 20.17  |
|                       |           | 106             | 0         | 20.18                      | 20.24  | 20.26  |
|                       | 256QAM    | 1               | 0         | 17.50                      | 17.30  | 17.44  |
|                       |           | 1               | 53        | 17.39                      | 17.41  | 17.49  |
| 1                     |           | 105             | 16.95     | 17.06                      | 17.07  |        |
| 53                    |           | 0               | 17.37     | 17.27                      | 17.35  |        |
| 53                    |           | 27              | 17.28     | 17.24                      | 17.21  |        |
| 53                    |           | 53              | 17.14     | 17.14                      | 17.15  |        |
| 106                   |           | 0               | 17.30     | 17.28                      | 17.10  |        |

| NR Band 7 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 501500                     | 507000 | 512500 |
|                       |           | Frequency (MHz) |           | 2507.5                     | 2535   | 2562.5 |
| 15 MHz                | pi/2 BPSK | 1               | 0         | 23.90                      | 23.94  | 23.90  |
|                       |           | 1               | 39        | 23.99                      | 24.04  | 23.92  |
|                       |           | 1               | 78        | 23.70                      | 23.52  | 23.67  |
|                       |           | 39              | 0         | 23.86                      | 23.92  | 23.99  |
|                       |           | 39              | 19        | 23.96                      | 23.81  | 23.83  |
|                       |           | 39              | 40        | 23.77                      | 23.83  | 23.70  |
|                       |           | 79              | 0         | 23.89                      | 23.72  | 23.89  |
|                       | QPSK      | 1               | 0         | 21.06                      | 21.03  | 20.93  |
|                       |           | 1               | 39        | 20.92                      | 20.99  | 20.93  |
|                       |           | 1               | 78        | 20.68                      | 20.68  | 20.55  |
|                       |           | 39              | 0         | 20.94                      | 21.00  | 20.92  |
|                       |           | 39              | 19        | 20.87                      | 20.86  | 20.97  |
|                       |           | 39              | 40        | 20.82                      | 20.78  | 20.79  |
|                       |           | 79              | 0         | 20.70                      | 20.70  | 20.77  |
|                       | 16QAM     | 1               | 0         | 20.90                      | 21.00  | 21.00  |
|                       |           | 1               | 39        | 20.93                      | 21.03  | 21.08  |
|                       |           | 1               | 78        | 20.57                      | 20.59  | 20.66  |
|                       |           | 39              | 0         | 20.82                      | 20.85  | 20.96  |
|                       |           | 39              | 19        | 20.93                      | 20.92  | 20.97  |
|                       |           | 39              | 40        | 20.70                      | 20.86  | 20.70  |
|                       |           | 79              | 0         | 20.71                      | 20.78  | 20.90  |
|                       | 64QAM     | 1               | 0         | 20.45                      | 20.34  | 20.48  |
|                       |           | 1               | 39        | 20.31                      | 20.35  | 20.47  |
|                       |           | 1               | 78        | 20.03                      | 19.90  | 19.99  |
|                       |           | 39              | 0         | 20.34                      | 20.25  | 20.20  |
|                       |           | 39              | 19        | 20.35                      | 20.22  | 20.21  |
|                       |           | 39              | 40        | 20.12                      | 20.13  | 20.27  |
|                       |           | 79              | 0         | 20.18                      | 20.12  | 20.12  |
|                       | 256QAM    | 1               | 0         | 17.38                      | 17.32  | 17.32  |
|                       |           | 1               | 39        | 17.44                      | 17.48  | 17.44  |
| 1                     |           | 78              | 16.96     | 17.06                      | 16.95  |        |
| 39                    |           | 0               | 17.40     | 17.39                      | 17.27  |        |
| 39                    |           | 19              | 17.35     | 17.26                      | 17.30  |        |
| 39                    |           | 40              | 17.23     | 17.29                      | 17.24  |        |
| 79                    |           | 0               | 17.18     | 17.26                      | 17.10  |        |

| NR Band 7 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 501000                     | 507000 | 513000 |
|                       |           | Frequency (MHz) |           | 2505                       | 2535   | 2565   |
| 10 MHz                | pi/2 BPSK | 1               | 0         | 24.00                      | 23.92  | 24.03  |
|                       |           | 1               | 26        | 24.01                      | 24.01  | 24.00  |
|                       |           | 1               | 51        | 23.60                      | 23.66  | 23.55  |
|                       |           | 26              | 0         | 23.80                      | 23.98  | 23.81  |
|                       |           | 26              | 13        | 23.98                      | 23.94  | 23.90  |
|                       |           | 26              | 26        | 23.87                      | 23.85  | 23.86  |
|                       |           | 52              | 0         | 23.89                      | 23.77  | 23.88  |
|                       | QPSK      | 1               | 0         | 21.06                      | 21.08  | 20.92  |
|                       |           | 1               | 26        | 20.95                      | 21.01  | 20.92  |
|                       |           | 1               | 51        | 20.69                      | 20.58  | 20.69  |
|                       |           | 26              | 0         | 20.97                      | 20.86  | 20.91  |
|                       |           | 26              | 13        | 20.83                      | 20.91  | 20.80  |
|                       |           | 26              | 26        | 20.76                      | 20.77  | 20.86  |
|                       |           | 52              | 0         | 20.80                      | 20.78  | 20.84  |
|                       | 16QAM     | 1               | 0         | 20.91                      | 20.92  | 20.96  |
|                       |           | 1               | 26        | 20.92                      | 20.91  | 21.05  |
|                       |           | 1               | 51        | 20.51                      | 20.59  | 20.59  |
|                       |           | 26              | 0         | 20.85                      | 20.96  | 20.94  |
|                       |           | 26              | 13        | 20.84                      | 20.87  | 21.00  |
|                       |           | 26              | 26        | 20.80                      | 20.77  | 20.79  |
|                       |           | 52              | 0         | 20.71                      | 20.89  | 20.81  |
|                       | 64QAM     | 1               | 0         | 20.39                      | 20.43  | 20.44  |
|                       |           | 1               | 26        | 20.38                      | 20.34  | 20.45  |
|                       |           | 1               | 51        | 19.98                      | 19.95  | 20.06  |
|                       |           | 26              | 0         | 20.33                      | 20.24  | 20.28  |
|                       |           | 26              | 13        | 20.36                      | 20.20  | 20.25  |
|                       |           | 26              | 26        | 20.25                      | 20.19  | 20.10  |
|                       |           | 52              | 0         | 20.12                      | 20.18  | 20.30  |
|                       | 256QAM    | 1               | 0         | 17.35                      | 17.43  | 17.41  |
|                       |           | 1               | 26        | 17.47                      | 17.37  | 17.34  |
| 1                     |           | 51              | 16.99     | 17.09                      | 17.09  |        |
| 26                    |           | 0               | 17.38     | 17.21                      | 17.30  |        |
| 26                    |           | 13              | 17.28     | 17.24                      | 17.38  |        |
| 26                    |           | 26              | 17.19     | 17.20                      | 17.12  |        |
| 52                    |           | 0               | 17.27     | 17.22                      | 17.23  |        |

| NR Band 7 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 500500                     | 507000 | 513500 |
|                       |           | Frequency (MHz) |           | 2502.5                     | 2535   | 2567.5 |
| 5 MHz                 | pi/2 BPSK | 1               | 0         | 24.07                      | 24.10  | 24.06  |
|                       |           | 1               | 12        | 23.90                      | 23.93  | 24.08  |
|                       |           | 1               | 24        | 23.60                      | 23.61  | 23.65  |
|                       |           | 12              | 0         | 23.82                      | 24.00  | 23.93  |
|                       |           | 12              | 6         | 23.81                      | 23.87  | 23.92  |
|                       |           | 12              | 13        | 23.87                      | 23.89  | 23.73  |
|                       |           | 25              | 0         | 23.84                      | 23.88  | 23.77  |
|                       | QPSK      | 1               | 0         | 20.92                      | 20.96  | 20.96  |
|                       |           | 1               | 12        | 21.00                      | 20.98  | 21.05  |
|                       |           | 1               | 24        | 20.61                      | 20.60  | 20.69  |
|                       |           | 12              | 0         | 20.87                      | 20.87  | 20.85  |
|                       |           | 12              | 6         | 20.95                      | 20.86  | 20.85  |
|                       |           | 12              | 13        | 20.80                      | 20.73  | 20.72  |
|                       |           | 25              | 0         | 20.87                      | 20.83  | 20.80  |
|                       | 16QAM     | 1               | 0         | 20.90                      | 21.01  | 21.03  |
|                       |           | 1               | 12        | 21.09                      | 20.94  | 20.91  |
|                       |           | 1               | 24        | 20.61                      | 20.53  | 20.56  |
|                       |           | 12              | 0         | 20.99                      | 20.85  | 20.94  |
|                       |           | 12              | 6         | 20.96                      | 20.84  | 20.83  |
|                       |           | 12              | 13        | 20.73                      | 20.75  | 20.90  |
|                       |           | 25              | 0         | 20.85                      | 20.72  | 20.89  |
|                       | 64QAM     | 1               | 0         | 20.35                      | 20.33  | 20.47  |
|                       |           | 1               | 12        | 20.40                      | 20.32  | 20.40  |
|                       |           | 1               | 24        | 19.98                      | 20.10  | 20.04  |
|                       |           | 12              | 0         | 20.29                      | 20.40  | 20.30  |
|                       |           | 12              | 6         | 20.21                      | 20.20  | 20.35  |
|                       |           | 12              | 13        | 20.12                      | 20.13  | 20.13  |
|                       |           | 25              | 0         | 20.21                      | 20.12  | 20.12  |
|                       | 256QAM    | 1               | 0         | 17.35                      | 17.32  | 17.46  |
|                       |           | 1               | 12        | 17.40                      | 17.37  | 17.44  |
| 1                     |           | 24              | 17.06     | 17.10                      | 17.00  |        |
| 12                    |           | 0               | 17.21     | 17.22                      | 17.35  |        |
| 12                    |           | 6               | 17.27     | 17.26                      | 17.36  |        |
| 12                    |           | 13              | 17.23     | 17.17                      | 17.26  |        |
| 25                    |           | 0               | 17.30     | 17.16                      | 17.30  |        |

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| NR Band 25 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 374000                     | 376500 | 379000 |
|                        |           | Frequency (MHz) |           | 1870                       | 1882.5 | 1895   |
| 20 MHz                 | pi/2 BPSK | 1               | 0         | 23.98                      | 24.09  | 24.02  |
|                        |           | 1               | 53        | 23.92                      | 23.97  | 24.10  |
|                        |           | 1               | 105       | 24.00                      | 23.94  | 23.92  |
|                        |           | 53              | 0         | 24.02                      | 24.06  | 23.91  |
|                        |           | 53              | 27        | 24.04                      | 23.91  | 24.05  |
|                        |           | 53              | 53        | 23.98                      | 23.97  | 23.89  |
|                        |           | 106             | 0         | 23.82                      | 23.82  | 23.89  |
|                        | QPSK      | 1               | 0         | 21.00                      | 20.96  | 21.02  |
|                        |           | 1               | 53        | 21.03                      | 21.02  | 21.08  |
|                        |           | 1               | 105       | 20.84                      | 20.88  | 20.93  |
|                        |           | 53              | 0         | 21.05                      | 20.90  | 20.98  |
|                        |           | 53              | 27        | 20.92                      | 21.07  | 20.94  |
|                        |           | 53              | 53        | 20.93                      | 20.80  | 20.95  |
|                        |           | 106             | 0         | 20.87                      | 20.88  | 20.85  |
|                        | 16QAM     | 1               | 0         | 21.09                      | 20.92  | 20.97  |
|                        |           | 1               | 53        | 21.10                      | 20.91  | 20.95  |
|                        |           | 1               | 105       | 20.95                      | 20.96  | 20.93  |
|                        |           | 53              | 0         | 21.10                      | 20.97  | 21.03  |
|                        |           | 53              | 27        | 20.91                      | 21.08  | 21.06  |
|                        |           | 53              | 53        | 20.83                      | 20.90  | 20.97  |
|                        |           | 106             | 0         | 20.98                      | 20.94  | 20.83  |
|                        | 64QAM     | 1               | 0         | 20.59                      | 20.49  | 20.40  |
|                        |           | 1               | 53        | 20.40                      | 20.43  | 20.45  |
|                        |           | 1               | 105       | 20.43                      | 20.45  | 20.43  |
|                        |           | 53              | 0         | 20.47                      | 20.52  | 20.52  |
|                        |           | 53              | 27        | 20.44                      | 20.40  | 20.52  |
|                        |           | 53              | 53        | 20.39                      | 20.49  | 20.45  |
|                        |           | 106             | 0         | 20.42                      | 20.46  | 20.42  |
|                        | 256QAM    | 1               | 0         | 17.54                      | 17.54  | 17.57  |
|                        |           | 1               | 53        | 17.45                      | 17.48  | 17.46  |
| 1                      |           | 105             | 17.35     | 17.30                      | 17.41  |        |
| 53                     |           | 0               | 17.48     | 17.58                      | 17.41  |        |
| 53                     |           | 27              | 17.48     | 17.53                      | 17.58  |        |
| 53                     |           | 53              | 17.33     | 17.43                      | 17.44  |        |
| 106                    |           | 0               | 17.38     | 17.38                      | 17.32  |        |

| NR Band 25 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 371500                     | 376500 | 381500 |
|                        |           | Frequency (MHz) |           | 1857.5                     | 1882.5 | 1907.5 |
| 15 MHz                 | pi/2 BPSK | 1               | 0         | 24.03                      | 23.90  | 23.94  |
|                        |           | 1               | 39        | 23.94                      | 23.90  | 24.07  |
|                        |           | 1               | 78        | 23.84                      | 23.97  | 23.98  |
|                        |           | 39              | 0         | 24.06                      | 24.04  | 24.08  |
|                        |           | 39              | 19        | 24.07                      | 23.99  | 23.94  |
|                        |           | 39              | 40        | 23.89                      | 23.87  | 23.90  |
|                        |           | 79              | 0         | 23.92                      | 23.88  | 23.81  |
|                        | QPSK      | 1               | 0         | 21.10                      | 20.97  | 20.94  |
|                        |           | 1               | 39        | 20.91                      | 21.08  | 20.94  |
|                        |           | 1               | 78        | 20.84                      | 20.83  | 20.90  |
|                        |           | 39              | 0         | 20.91                      | 21.03  | 20.95  |
|                        |           | 39              | 19        | 21.04                      | 21.05  | 20.96  |
|                        |           | 39              | 40        | 20.86                      | 20.80  | 20.81  |
|                        |           | 79              | 0         | 20.83                      | 20.84  | 20.81  |
|                        | 16QAM     | 1               | 0         | 20.92                      | 20.90  | 21.06  |
|                        |           | 1               | 39        | 21.00                      | 21.01  | 21.00  |
|                        |           | 1               | 78        | 20.91                      | 20.90  | 20.97  |
|                        |           | 39              | 0         | 21.10                      | 20.98  | 21.01  |
|                        |           | 39              | 19        | 21.05                      | 21.03  | 20.98  |
|                        |           | 39              | 40        | 20.80                      | 20.87  | 20.88  |
|                        |           | 79              | 0         | 20.89                      | 20.80  | 20.82  |
|                        | 64QAM     | 1               | 0         | 20.44                      | 20.51  | 20.50  |
|                        |           | 1               | 39        | 20.57                      | 20.42  | 20.53  |
|                        |           | 1               | 78        | 20.34                      | 20.47  | 20.46  |
|                        |           | 39              | 0         | 20.43                      | 20.42  | 20.57  |
|                        |           | 39              | 19        | 20.60                      | 20.51  | 20.59  |
|                        |           | 39              | 40        | 20.47                      | 20.35  | 20.35  |
|                        |           | 79              | 0         | 20.36                      | 20.50  | 20.45  |
|                        | 256QAM    | 1               | 0         | 17.53                      | 17.58  | 17.57  |
|                        |           | 1               | 39        | 17.50                      | 17.59  | 17.40  |
| 1                      |           | 78              | 17.47     | 17.50                      | 17.36  |        |
| 39                     |           | 0               | 17.57     | 17.47                      | 17.43  |        |
| 39                     |           | 19              | 17.49     | 17.44                      | 17.43  |        |
| 39                     |           | 40              | 17.32     | 17.38                      | 17.42  |        |
| 79                     |           | 0               | 17.42     | 17.34                      | 17.49  |        |



| NR Band 25 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 371000                     | 376500 | 382000 |
|                        |           | Frequency (MHz) |           | 1855                       | 1882.5 | 1910   |
| 10 MHz                 | pi/2 BPSK | 1               | 0         | 24.09                      | 23.95  | 23.98  |
|                        |           | 1               | 26        | 24.04                      | 24.03  | 24.09  |
|                        |           | 1               | 51        | 23.84                      | 23.83  | 23.96  |
|                        |           | 26              | 0         | 23.93                      | 24.00  | 23.95  |
|                        |           | 26              | 13        | 23.91                      | 24.06  | 23.91  |
|                        |           | 26              | 26        | 23.85                      | 23.85  | 23.95  |
|                        |           | 52              | 0         | 23.86                      | 23.87  | 23.84  |
|                        | QPSK      | 1               | 0         | 21.02                      | 20.92  | 21.07  |
|                        |           | 1               | 26        | 20.95                      | 21.03  | 21.06  |
|                        |           | 1               | 51        | 20.81                      | 20.86  | 20.81  |
|                        |           | 26              | 0         | 20.90                      | 21.10  | 21.01  |
|                        |           | 26              | 13        | 20.98                      | 21.08  | 20.91  |
|                        |           | 26              | 26        | 20.91                      | 20.89  | 20.86  |
|                        |           | 52              | 0         | 20.82                      | 20.85  | 20.97  |
|                        | 16QAM     | 1               | 0         | 20.99                      | 20.95  | 21.01  |
|                        |           | 1               | 26        | 20.93                      | 20.95  | 20.94  |
|                        |           | 1               | 51        | 21.00                      | 20.91  | 20.84  |
|                        |           | 26              | 0         | 21.10                      | 20.99  | 20.91  |
|                        |           | 26              | 13        | 21.04                      | 20.95  | 20.91  |
|                        |           | 26              | 26        | 20.86                      | 20.95  | 20.90  |
|                        |           | 52              | 0         | 20.81                      | 20.85  | 20.91  |
|                        | 64QAM     | 1               | 0         | 20.51                      | 20.43  | 20.53  |
|                        |           | 1               | 26        | 20.53                      | 20.40  | 20.44  |
|                        |           | 1               | 51        | 20.46                      | 20.31  | 20.47  |
|                        |           | 26              | 0         | 20.42                      | 20.45  | 20.46  |
|                        |           | 26              | 13        | 20.56                      | 20.59  | 20.43  |
|                        |           | 26              | 26        | 20.43                      | 20.42  | 20.40  |
|                        |           | 52              | 0         | 20.50                      | 20.41  | 20.30  |
|                        | 256QAM    | 1               | 0         | 17.58                      | 17.50  | 17.43  |
|                        |           | 1               | 26        | 17.51                      | 17.55  | 17.52  |
| 1                      |           | 51              | 17.36     | 17.43                      | 17.47  |        |
| 26                     |           | 0               | 17.55     | 17.51                      | 17.43  |        |
| 26                     |           | 13              | 17.43     | 17.51                      | 17.57  |        |
| 26                     |           | 26              | 17.43     | 17.39                      | 17.38  |        |
| 52                     |           | 0               | 17.44     | 17.36                      | 17.45  |        |

| NR Band 25 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 370500                     | 376500 | 382500 |
|                        |           | Frequency (MHz) |           | 1852.5                     | 1882.5 | 1912.5 |
| 5 MHz                  | pi/2 BPSK | 1               | 0         | 24.04                      | 23.93  | 24.04  |
|                        |           | 1               | 12        | 23.93                      | 24.00  | 24.10  |
|                        |           | 1               | 24        | 23.85                      | 23.83  | 23.81  |
|                        |           | 12              | 0         | 23.99                      | 23.96  | 23.96  |
|                        |           | 12              | 6         | 23.95                      | 24.00  | 24.10  |
|                        |           | 12              | 13        | 23.94                      | 23.93  | 23.93  |
|                        |           | 25              | 0         | 23.87                      | 23.96  | 23.94  |
|                        | QPSK      | 1               | 0         | 21.01                      | 21.09  | 21.05  |
|                        |           | 1               | 12        | 20.92                      | 21.07  | 20.91  |
|                        |           | 1               | 24        | 20.89                      | 20.95  | 20.86  |
|                        |           | 12              | 0         | 20.93                      | 21.05  | 21.01  |
|                        |           | 12              | 6         | 21.04                      | 21.09  | 20.97  |
|                        |           | 12              | 13        | 20.81                      | 20.82  | 20.97  |
|                        |           | 25              | 0         | 20.84                      | 20.87  | 20.80  |
|                        | 16QAM     | 1               | 0         | 21.01                      | 20.93  | 21.05  |
|                        |           | 1               | 12        | 21.05                      | 21.09  | 21.00  |
|                        |           | 1               | 24        | 20.99                      | 20.85  | 20.82  |
|                        |           | 12              | 0         | 21.10                      | 20.93  | 20.95  |
|                        |           | 12              | 6         | 20.90                      | 20.99  | 21.05  |
|                        |           | 12              | 13        | 20.95                      | 20.87  | 20.89  |
|                        |           | 25              | 0         | 20.92                      | 20.92  | 20.80  |
|                        | 64QAM     | 1               | 0         | 20.45                      | 20.60  | 20.42  |
|                        |           | 1               | 12        | 20.47                      | 20.45  | 20.45  |
|                        |           | 1               | 24        | 20.39                      | 20.50  | 20.49  |
|                        |           | 12              | 0         | 20.55                      | 20.56  | 20.46  |
|                        |           | 12              | 6         | 20.52                      | 20.56  | 20.44  |
|                        |           | 12              | 13        | 20.42                      | 20.46  | 20.34  |
|                        |           | 25              | 0         | 20.45                      | 20.33  | 20.46  |
|                        | 256QAM    | 1               | 0         | 17.48                      | 17.53  | 17.53  |
|                        |           | 1               | 12        | 17.50                      | 17.42  | 17.42  |
|                        |           | 1               | 24        | 17.36                      | 17.49  | 17.38  |
|                        |           | 12              | 0         | 17.42                      | 17.51  | 17.50  |
| 12                     |           | 6               | 17.59     | 17.45                      | 17.53  |        |
| 12                     |           | 13              | 17.34     | 17.47                      | 17.50  |        |
| 25                     |           | 0               | 17.49     | 17.46                      | 17.43  |        |

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| NR Band 38 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 516000                     | 519000 | 522000 |
|                        |           | Frequency (MHz) |           | 2580                       | 2595   | 2610   |
| 20 MHz                 | pi/2 BPSK | 1               | 0         | 22.91                      | 22.94  | 22.89  |
|                        |           | 1               | 53        | 22.74                      | 22.76  | 22.73  |
|                        |           | 1               | 105       | 22.67                      | 22.69  | 22.64  |
|                        |           | 53              | 0         | 22.51                      | 22.54  | 22.49  |
|                        |           | 53              | 27        | 22.45                      | 22.48  | 22.41  |
|                        |           | 53              | 53        | 22.43                      | 22.46  | 22.41  |
|                        |           | 106             | 0         | 22.38                      | 22.40  | 22.35  |
|                        | QPSK      | 1               | 0         | 22.69                      | 22.46  | 22.28  |
|                        |           | 1               | 53        | 22.81                      | 22.56  | 22.59  |
|                        |           | 1               | 105       | 22.37                      | 22.32  | 22.58  |
|                        |           | 53              | 0         | 22.48                      | 22.45  | 22.41  |
|                        |           | 53              | 27        | 22.64                      | 22.76  | 22.75  |
|                        |           | 53              | 53        | 22.17                      | 22.48  | 22.56  |
|                        |           | 106             | 0         | 22.19                      | 22.80  | 22.21  |
|                        | 16QAM     | 1               | 0         | 21.59                      | 21.78  | 21.07  |
|                        |           | 1               | 53        | 21.51                      | 21.70  | 21.05  |
|                        |           | 1               | 105       | 21.15                      | 21.51  | 21.39  |
|                        |           | 53              | 0         | 21.75                      | 21.75  | 21.56  |
|                        |           | 53              | 27        | 21.19                      | 21.38  | 21.58  |
|                        |           | 53              | 53        | 21.62                      | 21.53  | 21.27  |
|                        |           | 106             | 0         | 21.19                      | 21.43  | 21.39  |
|                        | 64QAM     | 1               | 0         | 20.02                      | 20.87  | 20.78  |
|                        |           | 1               | 53        | 20.32                      | 20.35  | 20.45  |
|                        |           | 1               | 105       | 20.88                      | 20.88  | 20.32  |
|                        |           | 53              | 0         | 20.03                      | 20.33  | 20.41  |
|                        |           | 53              | 27        | 20.34                      | 20.56  | 20.53  |
|                        |           | 53              | 53        | 20.58                      | 20.76  | 20.57  |
|                        |           | 106             | 0         | 20.57                      | 20.64  | 20.29  |
|                        | 256QAM    | 1               | 0         | 19.81                      | 19.84  | 19.82  |
|                        |           | 1               | 53        | 19.65                      | 19.74  | 19.70  |
| 1                      |           | 105             | 19.58     | 19.62                      | 19.56  |        |
| 53                     |           | 0               | 19.49     | 19.55                      | 19.50  |        |
| 53                     |           | 27              | 19.43     | 19.44                      | 19.40  |        |
| 53                     |           | 53              | 19.38     | 19.42                      | 19.37  |        |
| 106                    |           | 0               | 19.29     | 19.31                      | 19.26  |        |

| NR Band 38 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 515500                     | 519000 | 522500 |
|                        |           | Frequency (MHz) |           | 2577.5                     | 2595   | 2612.5 |
| 15 MHz                 | pi/2 BPSK | 1               | 0         | 22.75                      | 22.85  | 22.72  |
|                        |           | 1               | 39        | 22.64                      | 22.67  | 22.60  |
|                        |           | 1               | 78        | 22.50                      | 22.52  | 22.46  |
|                        |           | 39              | 0         | 22.43                      | 22.50  | 22.40  |
|                        |           | 39              | 19        | 22.39                      | 22.41  | 22.34  |
|                        |           | 39              | 40        | 22.37                      | 22.39  | 22.34  |
|                        |           | 79              | 0         | 22.29                      | 22.30  | 22.26  |
|                        | QPSK      | 1               | 0         | 22.31                      | 22.47  | 22.72  |
|                        |           | 1               | 39        | 22.53                      | 22.22  | 22.56  |
|                        |           | 1               | 78        | 22.25                      | 22.34  | 22.14  |
|                        |           | 39              | 0         | 22.56                      | 22.80  | 22.28  |
|                        |           | 39              | 19        | 22.74                      | 22.81  | 22.34  |
|                        |           | 39              | 40        | 22.55                      | 22.59  | 22.16  |
|                        |           | 79              | 0         | 22.75                      | 22.48  | 22.14  |
|                        | 16QAM     | 1               | 0         | 21.46                      | 21.53  | 21.40  |
|                        |           | 1               | 39        | 21.42                      | 21.33  | 21.67  |
|                        |           | 1               | 78        | 21.20                      | 21.67  | 21.46  |
|                        |           | 39              | 0         | 21.52                      | 21.31  | 21.37  |
|                        |           | 39              | 19        | 21.52                      | 21.54  | 21.45  |
|                        |           | 39              | 40        | 21.57                      | 21.26  | 21.08  |
|                        |           | 79              | 0         | 21.23                      | 21.35  | 21.63  |
|                        | 64QAM     | 1               | 0         | 20.15                      | 20.47  | 20.31  |
|                        |           | 1               | 39        | 20.13                      | 20.82  | 20.76  |
|                        |           | 1               | 78        | 20.60                      | 20.85  | 20.16  |
|                        |           | 39              | 0         | 20.68                      | 20.67  | 20.19  |
|                        |           | 39              | 19        | 20.03                      | 20.60  | 20.48  |
|                        |           | 39              | 40        | 20.36                      | 20.38  | 20.32  |
|                        |           | 79              | 0         | 20.55                      | 20.33  | 20.60  |
|                        | 256QAM    | 1               | 0         | 19.68                      | 19.73  | 19.66  |
|                        |           | 1               | 39        | 19.56                      | 19.60  | 19.53  |
| 1                      |           | 78              | 19.48     | 19.55                      | 19.45  |        |
| 39                     |           | 0               | 19.41     | 19.43                      | 19.37  |        |
| 39                     |           | 19              | 19.26     | 19.32                      | 19.25  |        |
| 39                     |           | 40              | 19.29     | 19.33                      | 19.27  |        |
| 79                     |           | 0               | 19.16     | 19.17                      | 19.13  |        |

| NR Band 38 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 515000                     | 523000 | 515500 |
|                        |           | Frequency (MHz) |           | 2575                       | 2595   | 2615   |
| 10 MHz                 | pi/2 BPSK | 1               | 0         | 22.63                      | 22.90  | 22.61  |
|                        |           | 1               | 26        | 22.59                      | 22.60  | 22.56  |
|                        |           | 1               | 51        | 22.48                      | 22.50  | 22.44  |
|                        |           | 26              | 0         | 22.36                      | 22.39  | 22.34  |
|                        |           | 26              | 13        | 22.26                      | 22.29  | 22.24  |
|                        |           | 26              | 26        | 22.25                      | 22.27  | 22.21  |
|                        |           | 52              | 0         | 22.15                      | 22.19  | 22.13  |
|                        | QPSK      | 1               | 0         | 22.46                      | 22.87  | 22.81  |
|                        |           | 1               | 26        | 22.23                      | 22.49  | 22.77  |
|                        |           | 1               | 51        | 22.71                      | 22.13  | 22.22  |
|                        |           | 26              | 0         | 22.51                      | 22.46  | 22.68  |
|                        |           | 26              | 13        | 22.72                      | 22.89  | 22.29  |
|                        |           | 26              | 26        | 22.15                      | 22.28  | 22.09  |
|                        |           | 52              | 0         | 22.44                      | 22.41  | 22.12  |
|                        | 16QAM     | 1               | 0         | 21.60                      | 21.53  | 21.15  |
|                        |           | 1               | 26        | 21.64                      | 21.68  | 21.07  |
|                        |           | 1               | 51        | 21.76                      | 21.71  | 21.14  |
|                        |           | 26              | 0         | 21.45                      | 21.25  | 21.55  |
|                        |           | 26              | 13        | 21.43                      | 21.68  | 21.03  |
|                        |           | 26              | 26        | 21.70                      | 21.75  | 21.23  |
|                        |           | 52              | 0         | 21.14                      | 21.59  | 21.28  |
|                        | 64QAM     | 1               | 0         | 20.08                      | 20.70  | 20.56  |
|                        |           | 1               | 26        | 20.47                      | 20.37  | 20.50  |
|                        |           | 1               | 51        | 20.80                      | 20.47  | 20.58  |
|                        |           | 26              | 0         | 20.58                      | 20.42  | 20.46  |
|                        |           | 26              | 13        | 20.76                      | 20.26  | 20.14  |
|                        |           | 26              | 26        | 20.55                      | 20.42  | 20.25  |
|                        |           | 52              | 0         | 20.11                      | 20.52  | 20.46  |
| 256QAM                 | 1         | 0               | 19.51     | 19.53                      | 19.50  |        |
|                        | 1         | 26              | 19.40     | 19.43                      | 19.36  |        |
|                        | 1         | 51              | 19.26     | 19.28                      | 19.23  |        |
|                        | 26        | 0               | 19.17     | 19.26                      | 19.21  |        |
|                        | 26        | 13              | 19.09     | 19.11                      | 19.07  |        |
|                        | 26        | 26              | 19.13     | 19.15                      | 19.10  |        |
|                        | 52        | 0               | 19.01     | 19.04                      | 18.97  |        |

| NR Band 38 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 514500                     | 519000 | 523500 |
|                        |           | Frequency (MHz) |           | 2572.5                     | 2595   | 2617.5 |
| 5 MHz                  | pi/2 BPSK | 1               | 0         | 22.53                      | 22.71  | 22.55  |
|                        |           | 1               | 12        | 22.42                      | 22.47  | 22.40  |
|                        |           | 1               | 24        | 22.34                      | 22.36  | 22.33  |
|                        |           | 12              | 0         | 22.20                      | 22.24  | 22.23  |
|                        |           | 12              | 6         | 22.16                      | 22.18  | 22.15  |
|                        |           | 12              | 13        | 22.14                      | 22.19  | 22.16  |
|                        |           | 25              | 0         | 22.09                      | 22.12  | 22.07  |
|                        | QPSK      | 1               | 0         | 22.57                      | 22.40  | 22.08  |
|                        |           | 1               | 12        | 22.60                      | 22.86  | 22.69  |
|                        |           | 1               | 24        | 22.34                      | 22.17  | 22.73  |
|                        |           | 12              | 0         | 22.35                      | 22.79  | 22.11  |
|                        |           | 12              | 6         | 22.61                      | 22.29  | 22.14  |
|                        |           | 12              | 13        | 22.21                      | 22.72  | 22.70  |
|                        |           | 25              | 0         | 22.59                      | 22.19  | 22.25  |
|                        | 16QAM     | 1               | 0         | 21.26                      | 21.47  | 21.31  |
|                        |           | 1               | 12        | 21.06                      | 21.72  | 21.62  |
|                        |           | 1               | 24        | 21.68                      | 21.74  | 21.34  |
|                        |           | 12              | 0         | 21.73                      | 21.25  | 21.05  |
|                        |           | 12              | 6         | 21.63                      | 21.40  | 21.18  |
|                        |           | 12              | 13        | 21.73                      | 21.58  | 21.04  |
|                        |           | 25              | 0         | 21.28                      | 21.43  | 21.31  |
|                        | 64QAM     | 1               | 0         | 20.70                      | 20.58  | 20.58  |
|                        |           | 1               | 12        | 20.31                      | 20.62  | 20.40  |
|                        |           | 1               | 24        | 20.51                      | 20.81  | 20.69  |
|                        |           | 12              | 0         | 20.71                      | 20.45  | 20.33  |
|                        |           | 12              | 6         | 20.14                      | 20.56  | 20.36  |
|                        |           | 12              | 13        | 20.35                      | 20.54  | 20.70  |
|                        |           | 25              | 0         | 20.07                      | 20.23  | 20.63  |
|                        | 256QAM    | 1               | 0         | 19.50                      | 19.54  | 19.52  |
|                        |           | 1               | 12        | 19.37                      | 19.44  | 19.40  |
| 1                      |           | 24              | 19.25     | 19.28                      | 19.23  |        |
| 12                     |           | 0               | 19.19     | 19.22                      | 19.16  |        |
| 12                     |           | 6               | 19.08     | 19.13                      | 19.09  |        |
| 12                     |           | 13              | 19.09     | 19.10                      | 19.07  |        |
| 25                     |           | 0               | 18.97     | 19.01                      | 18.99  |        |

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| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |        |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High   |
|                        |           | Channel         |           | 509202                     | 518598  | 528000 |
|                        |           | Frequency (MHz) |           | 2546.01                    | 2592.99 | 2640   |
| 100 MHz                | pi/2 BPSK | 1               | 0         | 23.61                      | 23.79   | 23.75  |
|                        |           | 1               | 136       | 23.37                      | 23.22   | 23.12  |
|                        |           | 1               | 272       | 23.31                      | 23.45   | 23.62  |
|                        |           | 136             | 0         | 23.34                      | 23.51   | 23.49  |
|                        |           | 136             | 68        | 23.13                      | 23.56   | 23.67  |
|                        |           | 136             | 136       | 23.23                      | 23.24   | 23.52  |
|                        |           | 273             | 0         | 23.34                      | 23.75   | 23.28  |
|                        | QPSK      | 1               | 0         | 22.29                      | 22.83   | 22.72  |
|                        |           | 1               | 136       | 22.15                      | 22.52   | 22.65  |
|                        |           | 1               | 272       | 22.64                      | 22.59   | 22.19  |
|                        |           | 136             | 0         | 22.36                      | 22.39   | 22.09  |
|                        |           | 136             | 68        | 22.72                      | 22.50   | 22.47  |
|                        |           | 136             | 136       | 22.56                      | 22.41   | 22.58  |
|                        |           | 273             | 0         | 22.68                      | 22.60   | 22.35  |
|                        | 16QAM     | 1               | 0         | 21.38                      | 21.85   | 21.81  |
|                        |           | 1               | 136       | 21.26                      | 21.76   | 21.51  |
|                        |           | 1               | 272       | 21.56                      | 21.68   | 21.60  |
|                        |           | 136             | 0         | 21.64                      | 21.51   | 21.83  |
|                        |           | 136             | 68        | 21.74                      | 21.45   | 21.52  |
|                        |           | 136             | 136       | 21.68                      | 21.83   | 21.03  |
|                        |           | 273             | 0         | 21.17                      | 21.48   | 21.14  |
|                        | 64QAM     | 1               | 0         | 20.19                      | 20.79   | 20.28  |
|                        |           | 1               | 136       | 20.73                      | 20.76   | 20.72  |
|                        |           | 1               | 272       | 20.47                      | 20.58   | 20.80  |
|                        |           | 136             | 0         | 20.01                      | 20.56   | 20.18  |
|                        |           | 136             | 68        | 20.31                      | 20.29   | 20.74  |
|                        |           | 136             | 136       | 20.25                      | 20.41   | 20.21  |
|                        |           | 273             | 0         | 20.14                      | 20.35   | 20.82  |
|                        | 256QAM    | 1               | 0         | 19.43                      | 19.64   | 19.19  |
|                        |           | 1               | 136       | 19.62                      | 19.82   | 19.54  |
| 1                      |           | 272             | 19.74     | 19.71                      | 19.45   |        |
| 136                    |           | 0               | 19.32     | 19.31                      | 19.71   |        |
| 136                    |           | 68              | 19.70     | 19.80                      | 19.52   |        |
| 136                    |           | 136             | 19.41     | 19.98                      | 19.15   |        |
| 273                    |           | 0               | 19.68     | 19.87                      | 19.38   |        |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 508200                     | 518598  | 528996  |
|                        |           | Frequency (MHz) |           | 2541                       | 2592.99 | 2644.98 |
| 90 MHz                 | pi/2 BPSK | 1               | 0         | 23.69                      | 23.18   | 23.50   |
|                        |           | 1               | 122       | 23.52                      | 23.16   | 23.37   |
|                        |           | 1               | 244       | 23.20                      | 23.22   | 23.28   |
|                        |           | 122             | 0         | 23.43                      | 23.10   | 23.39   |
|                        |           | 122             | 61        | 23.77                      | 23.63   | 23.30   |
|                        |           | 122             | 122       | 23.73                      | 23.25   | 23.22   |
|                        |           | 245             | 0         | 23.47                      | 23.21   | 23.12   |
|                        | QPSK      | 1               | 0         | 22.12                      | 22.64   | 22.60   |
|                        |           | 1               | 122       | 22.44                      | 22.69   | 22.66   |
|                        |           | 1               | 244       | 22.25                      | 22.53   | 22.69   |
|                        |           | 122             | 0         | 22.18                      | 22.37   | 22.13   |
|                        |           | 122             | 61        | 22.57                      | 22.57   | 22.77   |
|                        |           | 122             | 122       | 22.48                      | 22.59   | 22.27   |
|                        |           | 245             | 0         | 22.39                      | 22.66   | 22.12   |
|                        | 16QAM     | 1               | 0         | 21.25                      | 21.52   | 21.45   |
|                        |           | 1               | 122       | 21.30                      | 21.98   | 21.46   |
|                        |           | 1               | 244       | 21.31                      | 21.27   | 21.49   |
|                        |           | 122             | 0         | 21.69                      | 21.49   | 21.07   |
|                        |           | 122             | 61        | 21.13                      | 21.55   | 21.16   |
|                        |           | 122             | 122       | 21.64                      | 21.71   | 21.57   |
|                        |           | 245             | 0         | 21.42                      | 21.76   | 21.66   |
|                        | 64QAM     | 1               | 0         | 20.07                      | 20.56   | 20.55   |
|                        |           | 1               | 122       | 20.18                      | 20.53   | 20.21   |
|                        |           | 1               | 244       | 20.36                      | 20.21   | 20.24   |
|                        |           | 122             | 0         | 20.36                      | 20.16   | 20.62   |
|                        |           | 122             | 61        | 20.69                      | 20.58   | 20.41   |
|                        |           | 122             | 122       | 20.28                      | 20.31   | 20.24   |
|                        |           | 245             | 0         | 20.45                      | 20.85   | 20.33   |
|                        | 256QAM    | 1               | 0         | 19.50                      | 19.30   | 19.28   |
|                        |           | 1               | 122       | 19.39                      | 19.85   | 19.37   |
| 1                      |           | 244             | 19.65     | 19.30                      | 19.36   |         |
| 122                    |           | 0               | 19.61     | 19.57                      | 19.57   |         |
| 122                    |           | 61              | 19.67     | 19.85                      | 19.65   |         |
| 122                    |           | 122             | 19.28     | 19.74                      | 19.66   |         |
| 245                    |           | 0               | 19.60     | 19.78                      | 19.38   |         |



| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 507204                     | 518598  | 529998  |
|                        |           | Frequency (MHz) |           | 2536.02                    | 2592.99 | 2649.99 |
| 80 MHz                 | pi/2 BPSK | 1               | 0         | 23.18                      | 23.36   | 23.21   |
|                        |           | 1               | 108       | 23.40                      | 23.66   | 23.58   |
|                        |           | 1               | 216       | 23.74                      | 23.76   | 23.61   |
|                        |           | 108             | 0         | 23.45                      | 23.58   | 23.76   |
|                        |           | 108             | 54        | 23.28                      | 23.55   | 23.13   |
|                        |           | 108             | 108       | 23.25                      | 23.65   | 23.12   |
|                        |           | 217             | 0         | 23.68                      | 23.49   | 23.53   |
|                        | QPSK      | 1               | 0         | 22.75                      | 22.58   | 22.17   |
|                        |           | 1               | 108       | 22.62                      | 22.10   | 22.50   |
|                        |           | 1               | 216       | 22.14                      | 22.33   | 22.22   |
|                        |           | 108             | 0         | 22.71                      | 22.80   | 22.45   |
|                        |           | 108             | 54        | 22.14                      | 22.07   | 22.51   |
|                        |           | 108             | 108       | 22.38                      | 22.48   | 22.22   |
|                        |           | 217             | 0         | 22.21                      | 22.69   | 22.16   |
|                        | 16QAM     | 1               | 0         | 21.35                      | 21.97   | 21.15   |
|                        |           | 1               | 108       | 21.53                      | 21.19   | 21.53   |
|                        |           | 1               | 216       | 21.51                      | 21.17   | 21.21   |
|                        |           | 108             | 0         | 21.42                      | 21.18   | 21.66   |
|                        |           | 108             | 54        | 21.44                      | 21.72   | 21.44   |
|                        |           | 108             | 108       | 21.16                      | 21.46   | 21.24   |
|                        |           | 217             | 0         | 21.62                      | 21.37   | 21.09   |
|                        | 64QAM     | 1               | 0         | 20.69                      | 20.35   | 20.11   |
|                        |           | 1               | 108       | 20.36                      | 20.50   | 20.54   |
|                        |           | 1               | 216       | 20.46                      | 20.81   | 20.71   |
|                        |           | 108             | 0         | 20.50                      | 20.30   | 20.19   |
|                        |           | 108             | 54        | 20.48                      | 20.55   | 20.86   |
|                        |           | 108             | 108       | 20.18                      | 20.56   | 20.13   |
|                        |           | 217             | 0         | 20.61                      | 20.48   | 20.94   |
|                        | 256QAM    | 1               | 0         | 19.30                      | 19.44   | 19.62   |
|                        |           | 1               | 108       | 19.82                      | 19.79   | 19.33   |
| 1                      |           | 216             | 19.39     | 19.26                      | 19.15   |         |
| 108                    |           | 0               | 19.34     | 19.80                      | 19.12   |         |
| 108                    |           | 54              | 19.32     | 19.97                      | 19.21   |         |
| 108                    |           | 108             | 19.62     | 19.99                      | 19.70   |         |
| 217                    |           | 0               | 19.44     | 19.70                      | 19.21   |         |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 505200                     | 518598  | 531996  |
|                        |           | Frequency (MHz) |           | 2526                       | 2592.99 | 2659.98 |
| 60 MHz                 | pi/2 BPSK | 1               | 0         | 23.60                      | 23.27   | 23.67   |
|                        |           | 1               | 81        | 23.21                      | 23.27   | 23.62   |
|                        |           | 1               | 161       | 23.14                      | 23.51   | 23.24   |
|                        |           | 81              | 0         | 23.29                      | 23.40   | 23.35   |
|                        |           | 81              | 40        | 23.20                      | 23.20   | 23.48   |
|                        |           | 81              | 81        | 23.47                      | 23.22   | 23.74   |
|                        |           | 162             | 0         | 23.40                      | 23.16   | 23.45   |
|                        | QPSK      | 1               | 0         | 22.30                      | 22.34   | 22.28   |
|                        |           | 1               | 81        | 22.55                      | 22.13   | 22.43   |
|                        |           | 1               | 161       | 22.59                      | 22.79   | 22.27   |
|                        |           | 81              | 0         | 22.12                      | 22.21   | 22.34   |
|                        |           | 81              | 40        | 22.40                      | 22.11   | 22.30   |
|                        |           | 81              | 81        | 22.49                      | 22.13   | 22.34   |
|                        |           | 162             | 0         | 22.11                      | 22.35   | 22.07   |
|                        | 16QAM     | 1               | 0         | 21.41                      | 21.34   | 21.46   |
|                        |           | 1               | 81        | 21.26                      | 21.68   | 21.21   |
|                        |           | 1               | 161       | 21.61                      | 21.72   | 21.79   |
|                        |           | 81              | 0         | 21.61                      | 21.44   | 21.10   |
|                        |           | 81              | 40        | 21.64                      | 21.79   | 21.12   |
|                        |           | 81              | 81        | 21.53                      | 21.43   | 21.56   |
|                        |           | 162             | 0         | 21.28                      | 21.66   | 21.80   |
|                        | 64QAM     | 1               | 0         | 20.55                      | 20.73   | 20.66   |
|                        |           | 1               | 81        | 20.54                      | 20.79   | 20.68   |
|                        |           | 1               | 161       | 20.04                      | 20.41   | 20.98   |
|                        |           | 81              | 0         | 20.31                      | 20.74   | 20.78   |
|                        |           | 81              | 40        | 20.23                      | 20.17   | 20.15   |
|                        |           | 81              | 81        | 20.46                      | 20.57   | 20.70   |
|                        |           | 162             | 0         | 20.13                      | 20.14   | 20.89   |
|                        | 256QAM    | 1               | 0         | 19.57                      | 19.55   | 19.14   |
|                        |           | 1               | 81        | 19.36                      | 19.97   | 19.58   |
| 1                      |           | 161             | 19.76     | 19.92                      | 19.44   |         |
| 81                     |           | 0               | 19.76     | 19.37                      | 19.46   |         |
| 81                     |           | 40              | 19.56     | 19.60                      | 19.24   |         |
| 81                     |           | 81              | 19.66     | 19.75                      | 19.61   |         |
| 162                    |           | 0               | 19.42     | 19.63                      | 19.71   |         |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 504204                     | 518598  | 532998  |
|                        |           | Frequency (MHz) |           | 2521.02                    | 2592.99 | 2664.99 |
| 50 MHz                 | pi/2 BPSK | 1               | 0         | 23.49                      | 23.26   | 23.53   |
|                        |           | 1               | 66        | 23.28                      | 23.37   | 23.27   |
|                        |           | 1               | 132       | 23.24                      | 23.43   | 23.21   |
|                        |           | 66              | 0         | 23.12                      | 23.49   | 23.10   |
|                        |           | 66              | 33        | 23.39                      | 23.53   | 23.35   |
|                        |           | 66              | 66        | 23.37                      | 23.45   | 23.42   |
|                        |           | 133             | 0         | 23.18                      | 23.25   | 23.31   |
|                        | QPSK      | 1               | 0         | 22.54                      | 22.47   | 22.33   |
|                        |           | 1               | 66        | 22.80                      | 22.68   | 22.12   |
|                        |           | 1               | 132       | 22.52                      | 22.60   | 22.40   |
|                        |           | 66              | 0         | 22.27                      | 22.38   | 22.76   |
|                        |           | 66              | 33        | 22.65                      | 22.46   | 22.69   |
|                        |           | 66              | 66        | 22.34                      | 22.84   | 22.22   |
|                        |           | 133             | 0         | 22.24                      | 22.21   | 22.30   |
|                        | 16QAM     | 1               | 0         | 21.28                      | 21.19   | 21.45   |
|                        |           | 1               | 66        | 21.51                      | 21.32   | 21.23   |
|                        |           | 1               | 132       | 21.26                      | 21.81   | 21.65   |
|                        |           | 66              | 0         | 21.30                      | 21.80   | 21.05   |
|                        |           | 66              | 33        | 21.54                      | 21.18   | 21.69   |
|                        |           | 66              | 66        | 21.24                      | 21.53   | 21.76   |
|                        |           | 133             | 0         | 21.73                      | 21.56   | 21.84   |
|                        | 64QAM     | 1               | 0         | 20.23                      | 20.75   | 20.70   |
|                        |           | 1               | 66        | 20.30                      | 20.75   | 20.27   |
|                        |           | 1               | 132       | 20.36                      | 20.40   | 20.74   |
|                        |           | 66              | 0         | 20.47                      | 20.67   | 20.42   |
|                        |           | 66              | 33        | 20.41                      | 20.43   | 20.15   |
|                        |           | 66              | 66        | 20.64                      | 20.48   | 20.52   |
|                        |           | 133             | 0         | 20.26                      | 20.73   | 20.17   |
|                        | 256QAM    | 1               | 0         | 19.65                      | 19.50   | 19.36   |
|                        |           | 1               | 66        | 19.64                      | 19.49   | 19.37   |
| 1                      |           | 132             | 19.54     | 19.66                      | 19.14   |         |
| 66                     |           | 0               | 19.28     | 19.94                      | 19.64   |         |
| 66                     |           | 33              | 19.29     | 19.50                      | 19.70   |         |
| 66                     |           | 66              | 19.41     | 19.73                      | 19.58   |         |
| 133                    |           | 0               | 19.24     | 19.55                      | 19.50   |         |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |        |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High   |
|                        |           | Channel         |           | 503202                     | 518598  | 534000 |
|                        |           | Frequency (MHz) |           | 2516.01                    | 2592.99 | 2670   |
| 40 MHz                 | pi/2 BPSK | 1               | 0         | 23.73                      | 23.32   | 23.55  |
|                        |           | 1               | 53        | 23.61                      | 23.59   | 23.18  |
|                        |           | 1               | 105       | 23.15                      | 23.15   | 23.43  |
|                        |           | 53              | 0         | 23.21                      | 23.11   | 23.55  |
|                        |           | 53              | 26        | 23.53                      | 23.18   | 23.67  |
|                        |           | 53              | 53        | 23.15                      | 23.19   | 23.18  |
|                        |           | 106             | 0         | 23.12                      | 23.51   | 23.15  |
|                        | QPSK      | 1               | 0         | 22.26                      | 22.40   | 22.49  |
|                        |           | 1               | 53        | 22.73                      | 22.08   | 22.21  |
|                        |           | 1               | 105       | 22.53                      | 22.75   | 22.51  |
|                        |           | 53              | 0         | 22.52                      | 22.20   | 22.33  |
|                        |           | 53              | 26        | 22.35                      | 22.13   | 22.24  |
|                        |           | 53              | 53        | 22.47                      | 22.65   | 22.08  |
|                        |           | 106             | 0         | 22.26                      | 22.22   | 22.67  |
|                        | 16QAM     | 1               | 0         | 21.28                      | 21.16   | 21.78  |
|                        |           | 1               | 53        | 21.46                      | 21.36   | 21.35  |
|                        |           | 1               | 105       | 21.18                      | 21.47   | 21.59  |
|                        |           | 53              | 0         | 21.51                      | 21.85   | 21.51  |
|                        |           | 53              | 26        | 21.39                      | 21.39   | 21.66  |
|                        |           | 53              | 53        | 21.51                      | 21.18   | 21.33  |
|                        |           | 106             | 0         | 21.49                      | 21.92   | 21.74  |
|                        | 64QAM     | 1               | 0         | 20.72                      | 20.22   | 20.34  |
|                        |           | 1               | 53        | 20.20                      | 20.25   | 20.16  |
|                        |           | 1               | 105       | 20.51                      | 20.22   | 20.59  |
|                        |           | 53              | 0         | 20.21                      | 20.43   | 20.45  |
|                        |           | 53              | 26        | 20.62                      | 20.46   | 20.57  |
|                        |           | 53              | 53        | 20.14                      | 20.52   | 20.43  |
|                        |           | 106             | 0         | 20.24                      | 20.17   | 20.77  |
| 256QAM                 | 1         | 0               | 19.69     | 19.48                      | 19.14   |        |
|                        | 1         | 53              | 19.62     | 19.33                      | 19.35   |        |
|                        | 1         | 105             | 19.64     | 19.95                      | 19.23   |        |
|                        | 53        | 0               | 19.46     | 19.95                      | 19.58   |        |
|                        | 53        | 26              | 19.81     | 19.92                      | 19.34   |        |
|                        | 53        | 53              | 19.37     | 19.42                      | 19.69   |        |
|                        | 106       | 0               | 19.67     | 19.30                      | 19.30   |        |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 501204                     | 518598  | 535998  |
|                        |           | Frequency (MHz) |           | 2506.02                    | 2592.99 | 2679.99 |
| 20 MHz                 | pi/2 BPSK | 1               | 0         | 23.30                      | 23.13   | 23.13   |
|                        |           | 1               | 25        | 23.38                      | 23.36   | 23.59   |
|                        |           | 1               | 50        | 23.54                      | 23.43   | 23.28   |
|                        |           | 25              | 0         | 23.32                      | 23.46   | 23.38   |
|                        |           | 25              | 12        | 23.33                      | 23.46   | 23.57   |
|                        |           | 25              | 25        | 23.42                      | 23.21   | 23.26   |
|                        |           | 51              | 0         | 23.14                      | 23.49   | 23.67   |
|                        | QPSK      | 1               | 0         | 22.34                      | 22.64   | 22.23   |
|                        |           | 1               | 25        | 22.71                      | 22.09   | 22.61   |
|                        |           | 1               | 50        | 22.67                      | 22.41   | 22.50   |
|                        |           | 25              | 0         | 22.72                      | 22.73   | 22.72   |
|                        |           | 25              | 12        | 22.44                      | 22.25   | 22.28   |
|                        |           | 25              | 25        | 22.45                      | 22.67   | 22.60   |
|                        |           | 51              | 0         | 22.22                      | 22.51   | 22.71   |
|                        | 16QAM     | 1               | 0         | 21.15                      | 21.92   | 21.55   |
|                        |           | 1               | 25        | 21.66                      | 21.69   | 21.48   |
|                        |           | 1               | 50        | 21.15                      | 21.63   | 21.24   |
|                        |           | 25              | 0         | 21.25                      | 21.46   | 21.53   |
|                        |           | 25              | 12        | 21.43                      | 21.82   | 21.11   |
|                        |           | 25              | 25        | 21.45                      | 21.93   | 21.28   |
|                        |           | 51              | 0         | 21.59                      | 21.41   | 21.30   |
|                        | 64QAM     | 1               | 0         | 20.51                      | 20.57   | 20.62   |
|                        |           | 1               | 25        | 20.15                      | 20.41   | 20.78   |
|                        |           | 1               | 50        | 20.57                      | 20.23   | 20.32   |
|                        |           | 25              | 0         | 20.20                      | 20.37   | 20.14   |
|                        |           | 25              | 12        | 20.16                      | 20.80   | 20.34   |
|                        |           | 25              | 25        | 20.43                      | 20.43   | 20.87   |
|                        |           | 51              | 0         | 20.54                      | 20.45   | 20.19   |
|                        | 256QAM    | 1               | 0         | 19.66                      | 19.69   | 19.47   |
|                        |           | 1               | 25        | 19.39                      | 19.81   | 19.62   |
| 1                      |           | 50              | 19.64     | 19.54                      | 19.32   |         |
| 25                     |           | 0               | 19.47     | 19.61                      | 19.24   |         |
| 25                     |           | 12              | 19.31     | 19.30                      | 19.15   |         |
| 25                     |           | 25              | 19.37     | 19.61                      | 19.56   |         |
| 51                     |           | 0               | 19.47     | 19.61                      | 19.49   |         |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |         |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|---------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High    |
|                        |           | Channel         |           | 505200                     | 518598  | 531996  |
|                        |           | Frequency (MHz) |           | 2526                       | 2592.99 | 2659.98 |
| 15 MHz                 | pi/2 BPSK | 1               | 0         | 23.19                      | 23.55   | 23.21   |
|                        |           | 1               | 19        | 23.23                      | 23.52   | 23.42   |
|                        |           | 1               | 37        | 23.68                      | 23.21   | 23.36   |
|                        |           | 19              | 0         | 23.43                      | 23.60   | 23.58   |
|                        |           | 19              | 9         | 23.64                      | 23.62   | 23.24   |
|                        |           | 19              | 20        | 23.29                      | 23.76   | 23.22   |
|                        |           | 38              | 0         | 23.48                      | 23.50   | 23.61   |
|                        | QPSK      | 1               | 0         | 22.57                      | 22.47   | 22.60   |
|                        |           | 1               | 19        | 22.51                      | 22.06   | 22.18   |
|                        |           | 1               | 37        | 22.16                      | 22.23   | 22.16   |
|                        |           | 19              | 0         | 22.46                      | 22.28   | 22.28   |
|                        |           | 19              | 9         | 22.41                      | 22.14   | 22.61   |
|                        |           | 19              | 20        | 22.66                      | 22.21   | 22.42   |
|                        |           | 38              | 0         | 22.70                      | 22.39   | 22.51   |
|                        | 16QAM     | 1               | 0         | 21.14                      | 21.45   | 21.55   |
|                        |           | 1               | 19        | 21.27                      | 21.20   | 21.12   |
|                        |           | 1               | 37        | 21.29                      | 21.73   | 21.12   |
|                        |           | 19              | 0         | 21.75                      | 21.33   | 21.48   |
|                        |           | 19              | 9         | 21.29                      | 21.92   | 21.08   |
|                        |           | 19              | 20        | 21.14                      | 21.58   | 21.32   |
|                        |           | 38              | 0         | 21.70                      | 21.48   | 21.36   |
|                        | 64QAM     | 1               | 0         | 20.16                      | 20.26   | 20.48   |
|                        |           | 1               | 19        | 20.50                      | 20.32   | 20.16   |
|                        |           | 1               | 37        | 20.47                      | 20.83   | 20.14   |
|                        |           | 19              | 0         | 20.69                      | 20.82   | 20.56   |
|                        |           | 19              | 9         | 20.33                      | 20.69   | 20.94   |
|                        |           | 19              | 20        | 20.08                      | 20.14   | 20.21   |
|                        |           | 38              | 0         | 20.70                      | 20.24   | 20.90   |
| 256QAM                 | 1         | 0               | 19.60     | 19.26                      | 19.41   |         |
|                        | 1         | 19              | 19.29     | 19.49                      | 19.64   |         |
|                        | 1         | 37              | 19.83     | 19.35                      | 19.29   |         |
|                        | 19        | 0               | 19.42     | 19.28                      | 19.63   |         |
|                        | 19        | 9               | 19.59     | 19.47                      | 19.22   |         |
|                        | 19        | 20              | 19.32     | 19.62                      | 19.24   |         |
|                        | 38        | 0               | 19.29     | 19.34                      | 19.68   |         |

| NR Band 41 (SCS 30kHz) |           |                 |           | Average Output Power (dBm) |         |        |
|------------------------|-----------|-----------------|-----------|----------------------------|---------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid     | High   |
|                        |           | Channel         |           | 500202                     | 518598  | 537000 |
|                        |           | Frequency (MHz) |           | 2501.01                    | 2592.99 | 2685   |
| 10 MHz                 | pi/2 BPSK | 1               | 0         | 23.59                      | 23.39   | 23.59  |
|                        |           | 1               | 12        | 23.67                      | 23.63   | 23.25  |
|                        |           | 1               | 23        | 23.40                      | 23.71   | 23.50  |
|                        |           | 12              | 0         | 23.13                      | 23.26   | 23.38  |
|                        |           | 12              | 6         | 23.54                      | 23.72   | 23.40  |
|                        |           | 12              | 12        | 23.69                      | 23.33   | 23.65  |
|                        |           | 24              | 0         | 23.65                      | 23.80   | 23.40  |
|                        | QPSK      | 1               | 0         | 22.47                      | 22.74   | 22.59  |
|                        |           | 1               | 12        | 22.16                      | 22.56   | 22.66  |
|                        |           | 1               | 23        | 22.17                      | 22.09   | 22.62  |
|                        |           | 12              | 0         | 22.53                      | 22.32   | 22.51  |
|                        |           | 12              | 6         | 22.28                      | 22.36   | 22.13  |
|                        |           | 12              | 12        | 22.51                      | 22.23   | 22.21  |
|                        |           | 24              | 0         | 22.32                      | 22.45   | 22.69  |
|                        | 16QAM     | 1               | 0         | 21.49                      | 21.22   | 21.45  |
|                        |           | 1               | 12        | 21.72                      | 21.68   | 21.70  |
|                        |           | 1               | 23        | 21.57                      | 21.95   | 21.33  |
|                        |           | 12              | 0         | 21.28                      | 21.81   | 21.16  |
|                        |           | 12              | 6         | 21.37                      | 21.87   | 21.25  |
|                        |           | 12              | 12        | 21.69                      | 21.82   | 21.66  |
|                        |           | 24              | 0         | 21.74                      | 21.84   | 21.35  |
|                        | 64QAM     | 1               | 0         | 20.41                      | 20.15   | 20.14  |
|                        |           | 1               | 12        | 20.07                      | 20.60   | 20.72  |
|                        |           | 1               | 23        | 20.51                      | 20.24   | 20.66  |
|                        |           | 12              | 0         | 20.63                      | 20.64   | 20.93  |
|                        |           | 12              | 6         | 20.72                      | 20.36   | 20.75  |
|                        |           | 12              | 12        | 20.74                      | 20.83   | 20.86  |
|                        |           | 24              | 0         | 20.72                      | 20.16   | 20.60  |
| 256QAM                 | 1         | 0               | 19.66     | 19.34                      | 19.67   |        |
|                        | 1         | 12              | 19.78     | 19.73                      | 19.35   |        |
|                        | 1         | 23              | 19.39     | 19.54                      | 19.49   |        |
|                        | 12        | 0               | 19.85     | 19.72                      | 19.69   |        |
|                        | 12        | 6               | 19.76     | 19.48                      | 19.51   |        |
|                        | 12        | 12              | 19.40     | 19.29                      | 19.51   |        |
|                        | 24        | 0               | 19.75     | 19.58                      | 19.81   |        |

- **n66**

| NR Band 66 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 346000                     | 349000 | 352000 |
|                        |           | Frequency (MHz) |           | 1730                       | 1745   | 1760   |
| 40 MHz                 | pi/2 BPSK | 1               | 0         | 23.64                      | 23.59  | 23.65  |
|                        |           | 1               | 108       | 24.08                      | 24.00  | 23.95  |
|                        |           | 1               | 215       | 24.01                      | 23.93  | 24.10  |
|                        |           | 108             | 0         | 23.94                      | 23.92  | 23.95  |
|                        |           | 108             | 53        | 23.87                      | 23.82  | 23.98  |
|                        |           | 108             | 107       | 23.93                      | 23.81  | 23.87  |
|                        |           | 216             | 0         | 23.95                      | 23.96  | 23.89  |
|                        | QPSK      | 1               | 0         | 20.53                      | 20.66  | 20.53  |
|                        |           | 1               | 108       | 21.09                      | 20.94  | 21.04  |
|                        |           | 1               | 215       | 21.00                      | 20.93  | 21.01  |
|                        |           | 108             | 0         | 21.00                      | 20.98  | 20.91  |
|                        |           | 108             | 53        | 20.98                      | 20.86  | 20.87  |
|                        |           | 108             | 107       | 20.98                      | 20.88  | 20.85  |
|                        |           | 216             | 0         | 20.94                      | 20.90  | 20.86  |
|                        | 16QAM     | 1               | 0         | 20.65                      | 20.63  | 20.59  |
|                        |           | 1               | 108       | 21.06                      | 21.08  | 21.07  |
|                        |           | 1               | 215       | 21.09                      | 20.92  | 21.01  |
|                        |           | 108             | 0         | 20.91                      | 20.91  | 20.80  |
|                        |           | 108             | 53        | 20.93                      | 20.93  | 20.83  |
|                        |           | 108             | 107       | 20.97                      | 21.00  | 20.92  |
|                        |           | 216             | 0         | 20.97                      | 20.88  | 20.98  |
|                        | 64QAM     | 1               | 0         | 20.19                      | 20.19  | 20.07  |
|                        |           | 1               | 108       | 20.41                      | 20.54  | 20.50  |
|                        |           | 1               | 215       | 20.44                      | 20.59  | 20.60  |
|                        |           | 108             | 0         | 20.35                      | 20.31  | 20.32  |
|                        |           | 108             | 53        | 20.46                      | 20.48  | 20.31  |
|                        |           | 108             | 107       | 20.38                      | 20.50  | 20.37  |
|                        |           | 216             | 0         | 20.35                      | 20.50  | 20.43  |
|                        | 256QAM    | 1               | 0         | 17.00                      | 17.16  | 17.04  |
|                        |           | 1               | 108       | 17.57                      | 17.60  | 17.60  |
| 1                      |           | 215             | 17.56     | 17.47                      | 17.47  |        |
| 108                    |           | 0               | 17.46     | 17.35                      | 17.37  |        |
| 108                    |           | 53              | 17.32     | 17.48                      | 17.30  |        |
| 108                    |           | 107             | 17.44     | 17.30                      | 17.45  |        |
| 216                    |           | 0               | 17.32     | 17.41                      | 17.34  |        |



| NR Band 66 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 344000                     | 349000 | 354000 |
|                        |           | Frequency (MHz) |           | 1720                       | 1745   | 1770   |
| 20 MHz                 | pi/2 BPSK | 1               | 0         | 23.69                      | 23.67  | 23.58  |
|                        |           | 1               | 53        | 24.10                      | 23.92  | 23.97  |
|                        |           | 1               | 105       | 23.99                      | 24.02  | 23.90  |
|                        |           | 53              | 0         | 23.89                      | 23.93  | 23.81  |
|                        |           | 53              | 27        | 23.98                      | 23.81  | 23.93  |
|                        |           | 53              | 53        | 23.97                      | 23.82  | 23.92  |
|                        |           | 106             | 0         | 23.80                      | 23.99  | 23.99  |
|                        | QPSK      | 1               | 0         | 20.54                      | 20.60  | 20.64  |
|                        |           | 1               | 53        | 20.95                      | 20.95  | 21.08  |
|                        |           | 1               | 105       | 21.02                      | 20.92  | 20.95  |
|                        |           | 53              | 0         | 20.92                      | 20.85  | 20.81  |
|                        |           | 53              | 27        | 20.84                      | 20.99  | 20.97  |
|                        |           | 53              | 53        | 20.95                      | 20.97  | 20.93  |
|                        |           | 106             | 0         | 20.98                      | 20.90  | 20.98  |
|                        | 16QAM     | 1               | 0         | 20.55                      | 20.53  | 20.54  |
|                        |           | 1               | 53        | 20.93                      | 20.99  | 20.93  |
|                        |           | 1               | 105       | 21.07                      | 20.91  | 20.94  |
|                        |           | 53              | 0         | 20.83                      | 20.80  | 20.98  |
|                        |           | 53              | 27        | 20.86                      | 21.00  | 20.82  |
|                        |           | 53              | 53        | 20.81                      | 20.95  | 20.80  |
|                        |           | 106             | 0         | 20.98                      | 20.97  | 20.87  |
|                        | 64QAM     | 1               | 0         | 20.17                      | 20.16  | 20.08  |
|                        |           | 1               | 53        | 20.41                      | 20.44  | 20.49  |
|                        |           | 1               | 105       | 20.47                      | 20.51  | 20.53  |
|                        |           | 53              | 0         | 20.33                      | 20.48  | 20.50  |
|                        |           | 53              | 27        | 20.46                      | 20.48  | 20.33  |
|                        |           | 53              | 53        | 20.49                      | 20.35  | 20.47  |
|                        |           | 106             | 0         | 20.37                      | 20.50  | 20.31  |
|                        | 256QAM    | 1               | 0         | 17.12                      | 17.05  | 17.13  |
|                        |           | 1               | 53        | 17.45                      | 17.41  | 17.51  |
| 1                      |           | 105             | 17.60     | 17.40                      | 17.52  |        |
| 53                     |           | 0               | 17.41     | 17.45                      | 17.37  |        |
| 53                     |           | 27              | 17.44     | 17.31                      | 17.37  |        |
| 53                     |           | 53              | 17.39     | 17.48                      | 17.44  |        |
| 106                    |           | 0               | 17.35     | 17.44                      | 17.42  |        |

| NR Band 66 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 343500                     | 349000 | 354500 |
|                        |           | Frequency (MHz) |           | 1717.5                     | 1745   | 1772.5 |
| 15 MHz                 | pi/2 BPSK | 1               | 0         | 23.57                      | 23.66  | 23.68  |
|                        |           | 1               | 39        | 24.05                      | 23.96  | 23.94  |
|                        |           | 1               | 78        | 24.04                      | 23.93  | 23.96  |
|                        |           | 39              | 0         | 23.97                      | 23.81  | 23.89  |
|                        |           | 39              | 19        | 23.88                      | 23.87  | 23.83  |
|                        |           | 39              | 40        | 23.81                      | 23.84  | 23.94  |
|                        |           | 79              | 0         | 23.81                      | 23.88  | 23.82  |
|                        | QPSK      | 1               | 0         | 20.56                      | 20.54  | 20.68  |
|                        |           | 1               | 39        | 20.95                      | 21.08  | 21.09  |
|                        |           | 1               | 78        | 21.06                      | 21.03  | 20.90  |
|                        |           | 39              | 0         | 20.92                      | 20.96  | 20.89  |
|                        |           | 39              | 19        | 20.93                      | 20.88  | 20.89  |
|                        |           | 39              | 40        | 20.93                      | 20.91  | 20.85  |
|                        |           | 79              | 0         | 20.97                      | 20.88  | 20.85  |
|                        | 16QAM     | 1               | 0         | 20.70                      | 20.64  | 20.60  |
|                        |           | 1               | 39        | 21.06                      | 20.95  | 21.08  |
|                        |           | 1               | 78        | 20.91                      | 21.09  | 20.98  |
|                        |           | 39              | 0         | 20.83                      | 20.98  | 20.85  |
|                        |           | 39              | 19        | 20.86                      | 20.92  | 20.81  |
|                        |           | 39              | 40        | 21.00                      | 20.83  | 20.96  |
|                        |           | 79              | 0         | 20.81                      | 20.85  | 20.92  |
|                        | 64QAM     | 1               | 0         | 20.17                      | 20.03  | 20.02  |
|                        |           | 1               | 39        | 20.54                      | 20.48  | 20.40  |
|                        |           | 1               | 78        | 20.58                      | 20.60  | 20.41  |
|                        |           | 39              | 0         | 20.40                      | 20.49  | 20.34  |
|                        |           | 39              | 19        | 20.31                      | 20.48  | 20.46  |
|                        |           | 39              | 40        | 20.43                      | 20.49  | 20.41  |
|                        |           | 79              | 0         | 20.49                      | 20.44  | 20.45  |
|                        | 256QAM    | 1               | 0         | 17.11                      | 17.01  | 17.01  |
|                        |           | 1               | 39        | 17.57                      | 17.59  | 17.43  |
| 1                      |           | 78              | 17.49     | 17.52                      | 17.58  |        |
| 39                     |           | 0               | 17.43     | 17.42                      | 17.35  |        |
| 39                     |           | 19              | 17.31     | 17.46                      | 17.40  |        |
| 39                     |           | 40              | 17.32     | 17.46                      | 17.42  |        |
| 79                     |           | 0               | 17.30     | 17.37                      | 17.46  |        |

| NR Band 66 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 343000                     | 349000 | 355000 |
|                        |           | Frequency (MHz) |           | 1715                       | 1745   | 1775   |
| 10 MHz                 | pi/2 BPSK | 1               | 0         | 23.59                      | 23.56  | 23.62  |
|                        |           | 1               | 26        | 24.01                      | 23.98  | 24.06  |
|                        |           | 1               | 51        | 24.06                      | 23.99  | 23.92  |
|                        |           | 26              | 0         | 23.97                      | 23.88  | 23.80  |
|                        |           | 26              | 13        | 23.89                      | 23.89  | 23.92  |
|                        |           | 26              | 26        | 23.89                      | 23.94  | 23.86  |
|                        |           | 52              | 0         | 23.97                      | 23.85  | 23.92  |
|                        | QPSK      | 1               | 0         | 20.70                      | 20.63  | 20.60  |
|                        |           | 1               | 26        | 21.03                      | 20.90  | 20.99  |
|                        |           | 1               | 51        | 20.96                      | 20.90  | 20.98  |
|                        |           | 26              | 0         | 20.89                      | 20.83  | 20.86  |
|                        |           | 26              | 13        | 20.97                      | 20.94  | 20.81  |
|                        |           | 26              | 26        | 20.92                      | 20.92  | 20.96  |
|                        |           | 52              | 0         | 20.81                      | 21.00  | 20.85  |
|                        | 16QAM     | 1               | 0         | 20.57                      | 20.55  | 20.59  |
|                        |           | 1               | 26        | 21.05                      | 21.09  | 20.94  |
|                        |           | 1               | 51        | 20.92                      | 21.10  | 20.96  |
|                        |           | 26              | 0         | 20.91                      | 20.82  | 20.90  |
|                        |           | 26              | 13        | 20.92                      | 20.92  | 20.96  |
|                        |           | 26              | 26        | 20.99                      | 20.93  | 20.90  |
|                        |           | 52              | 0         | 20.84                      | 20.88  | 20.90  |
|                        | 64QAM     | 1               | 0         | 20.05                      | 20.11  | 20.08  |
|                        |           | 1               | 26        | 20.47                      | 20.48  | 20.49  |
|                        |           | 1               | 51        | 20.43                      | 20.44  | 20.49  |
|                        |           | 26              | 0         | 20.40                      | 20.42  | 20.45  |
|                        |           | 26              | 13        | 20.30                      | 20.43  | 20.32  |
|                        |           | 26              | 26        | 20.35                      | 20.33  | 20.47  |
|                        |           | 52              | 0         | 20.49                      | 20.38  | 20.46  |
|                        | 256QAM    | 1               | 0         | 17.08                      | 17.12  | 17.01  |
|                        |           | 1               | 26        | 17.56                      | 17.54  | 17.57  |
| 1                      |           | 51              | 17.40     | 17.53                      | 17.50  |        |
| 26                     |           | 0               | 17.41     | 17.43                      | 17.36  |        |
| 26                     |           | 13              | 17.45     | 17.42                      | 17.35  |        |
| 26                     |           | 26              | 17.35     | 17.41                      | 17.50  |        |
| 52                     |           | 0               | 17.41     | 17.34                      | 17.42  |        |

| NR Band 66 (SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|------------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                     | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                        |           | Channel         |           | 342500                     | 349000 | 355500 |
|                        |           | Frequency (MHz) |           | 1712.5                     | 1745   | 1777.5 |
| 5 MHz                  | pi/2 BPSK | 1               | 0         | 23.70                      | 23.59  | 23.52  |
|                        |           | 1               | 12        | 23.98                      | 23.90  | 23.97  |
|                        |           | 1               | 24        | 23.93                      | 23.92  | 24.07  |
|                        |           | 12              | 0         | 23.92                      | 23.87  | 23.99  |
|                        |           | 12              | 6         | 23.91                      | 23.96  | 23.87  |
|                        |           | 12              | 13        | 23.85                      | 23.90  | 23.80  |
|                        |           | 25              | 0         | 23.89                      | 23.80  | 23.97  |
|                        | QPSK      | 1               | 0         | 20.61                      | 20.67  | 20.58  |
|                        |           | 1               | 12        | 20.95                      | 20.99  | 21.04  |
|                        |           | 1               | 24        | 20.99                      | 21.02  | 20.92  |
|                        |           | 12              | 0         | 20.82                      | 20.88  | 20.84  |
|                        |           | 12              | 6         | 20.92                      | 20.90  | 20.94  |
|                        |           | 12              | 13        | 20.93                      | 20.92  | 20.84  |
|                        |           | 25              | 0         | 21.00                      | 20.95  | 20.87  |
|                        | 16QAM     | 1               | 0         | 20.52                      | 20.68  | 20.62  |
|                        |           | 1               | 12        | 20.93                      | 20.99  | 20.94  |
|                        |           | 1               | 24        | 20.93                      | 21.10  | 21.09  |
|                        |           | 12              | 0         | 20.89                      | 20.93  | 20.82  |
|                        |           | 12              | 6         | 20.80                      | 20.96  | 20.81  |
|                        |           | 12              | 13        | 20.84                      | 20.92  | 20.93  |
|                        |           | 25              | 0         | 20.82                      | 20.96  | 20.83  |
|                        | 64QAM     | 1               | 0         | 20.19                      | 20.19  | 20.14  |
|                        |           | 1               | 12        | 20.59                      | 20.40  | 20.43  |
|                        |           | 1               | 24        | 20.55                      | 20.41  | 20.57  |
|                        |           | 12              | 0         | 20.36                      | 20.35  | 20.39  |
|                        |           | 12              | 6         | 20.41                      | 20.45  | 20.35  |
|                        |           | 12              | 13        | 20.37                      | 20.46  | 20.31  |
|                        |           | 25              | 0         | 20.50                      | 20.36  | 20.37  |
|                        | 256QAM    | 1               | 0         | 17.20                      | 17.06  | 17.14  |
|                        |           | 1               | 12        | 17.40                      | 17.43  | 17.51  |
| 1                      |           | 24              | 17.52     | 17.54                      | 17.59  |        |
| 12                     |           | 0               | 17.39     | 17.40                      | 17.43  |        |
| 12                     |           | 6               | 17.49     | 17.33                      | 17.32  |        |
| 12                     |           | 13              | 17.47     | 17.41                      | 17.46  |        |
| 25                     |           | 0               | 17.48     | 17.35                      | 17.48  |        |

- n71

| NR Band 71(SCS 15kHz) |           |                 |           | Average Output Power (dBm) |        |        |
|-----------------------|-----------|-----------------|-----------|----------------------------|--------|--------|
| BW                    | MCS Index | RB Size         | RB Offset | Low                        | Mid    | High   |
|                       |           | Channel         |           | 134600                     | 136100 | 137600 |
|                       |           | Frequency (MHz) |           | 673                        | 680.5  | 688    |
| 20 MHz                | pi/2 BPSK | 1               | 0         | 24.26                      | 24.24  | 24.27  |
|                       |           | 1               | 53        | 23.96                      | 23.97  | 24.06  |
|                       |           | 1               | 105       | 23.92                      | 24.08  | 23.95  |
|                       |           | 53              | 0         | 24.05                      | 24.09  | 24.10  |
|                       |           | 53              | 27        | 24.09                      | 23.95  | 24.09  |
|                       |           | 53              | 53        | 23.91                      | 24.02  | 24.03  |
|                       |           | 106             | 0         | 24.01                      | 23.92  | 24.10  |
|                       | QPSK      | 1               | 0         | 21.19                      | 21.24  | 21.22  |
|                       |           | 1               | 53        | 20.90                      | 21.05  | 21.03  |
|                       |           | 1               | 105       | 21.01                      | 21.10  | 20.95  |
|                       |           | 53              | 0         | 21.01                      | 20.95  | 20.97  |
|                       |           | 53              | 27        | 20.98                      | 21.10  | 20.96  |
|                       |           | 53              | 53        | 20.92                      | 21.08  | 20.95  |
|                       |           | 106             | 0         | 20.90                      | 20.99  | 21.06  |
|                       | 16QAM     | 1               | 0         | 21.28                      | 21.10  | 21.16  |
|                       |           | 1               | 53        | 21.09                      | 21.01  | 21.09  |
|                       |           | 1               | 105       | 20.94                      | 21.04  | 20.98  |
|                       |           | 53              | 0         | 20.96                      | 21.04  | 20.97  |
|                       |           | 53              | 27        | 20.99                      | 21.10  | 20.93  |
|                       |           | 53              | 53        | 20.90                      | 21.10  | 21.00  |
|                       |           | 106             | 0         | 21.04                      | 21.05  | 20.91  |
|                       | 64QAM     | 1               | 0         | 20.62                      | 20.62  | 20.63  |
|                       |           | 1               | 53        | 20.41                      | 20.48  | 20.45  |
|                       |           | 1               | 105       | 20.44                      | 20.41  | 20.52  |
|                       |           | 53              | 0         | 20.56                      | 20.50  | 20.46  |
|                       |           | 53              | 27        | 20.60                      | 20.59  | 20.51  |
|                       |           | 53              | 53        | 20.40                      | 20.44  | 20.57  |
|                       |           | 106             | 0         | 20.47                      | 20.40  | 20.57  |
|                       | 256QAM    | 1               | 0         | 17.75                      | 17.75  | 17.78  |
|                       |           | 1               | 53        | 17.52                      | 17.52  | 17.47  |
| 1                     |           | 105             | 17.45     | 17.47                      | 17.49  |        |
| 53                    |           | 0               | 17.48     | 17.41                      | 17.48  |        |
| 53                    |           | 27              | 17.57     | 17.54                      | 17.41  |        |
| 53                    |           | 53              | 17.45     | 17.59                      | 17.56  |        |
| 106                   |           | 0               | 17.45     | 17.45                      | 17.59  |        |