

# TEST REPORT

FCC SAR Part 0 Test for SM-X526B  
Certification

**APPLICANT**  
SAMSUNG Electronics Co., Ltd.

**REPORT NO.**  
HCT-SR-2502-FC010

**DATE OF ISSUE**  
February 17, 2025

**Tested by**  
Dong Seon Kim



**Technical Manager**  
Yun Jeang Heo



**HCT CO., LTD.**  
*Bongjai Huh*  
BongJai Huh / CEO

**HCT CO.,LTD.**

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA  
Tel. +82 31 645 6300 Fax. +82 31 645 6401

# TEST REPORT

PART 0 RF Exposure  
Test for  
certification

REPORT NO.  
HCT-SR-2502-FC010

DATE OF ISSUE  
Feb. 17, 2025

FCC ID  
A3LSMX526B

**Applicant** SAMSUNG Electronics Co., Ltd  
129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea

**Product Name** Mobile Phone  
**Model Name** SM-X526B

**Date of Test** Jan. 13, 2025~ Jan. 25, 2025

**Location of Test** ☒ Permanent Testing Lab ☐ On Site Testing Lab  
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si,  
Gyeonggi-do, 17383 KOREA)

**FCC Rule Part(s)** CFR § 2.1093

**Test Results** Pass (SAR limit : 1.6 W/kg)

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.  
This test results were applied only to the test methods required by the standard.

## REVISION HISTORY

The revision history for this test report is shown in table.

| Revision No. | Date of Issue | Description     |
|--------------|---------------|-----------------|
| 0            | Feb. 17, 2025 | Initial Release |

## Notice

---

### Content

---

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked \*.

Information provided by the applicant is marked \*\*.

Test results provided by external providers are marked \*\*\*.

When confirmation of authenticity of this test report is required, please contact [www.hct.co.kr](http://www.hct.co.kr)

The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

---

## CONTENTS

|                                                             |    |
|-------------------------------------------------------------|----|
| 1. Test Location .....                                      | 5  |
| 2. DEVICE UNDER TEST DESCRIPTION .....                      | 6  |
| 3. SAR MEASUREMENTS.....                                    | 9  |
| 4. SAR CHARACTERIZATION .....                               | 11 |
| 5. Equipment List.....                                      | 13 |
| 6. Measurement Uncertainty .....                            | 16 |
| Appendix A: SAR Test Results For P limit CALCULATIONS ..... | 17 |

## 1. Test Location

### 1.1 Test Laboratory

|              |                                                                                 |
|--------------|---------------------------------------------------------------------------------|
| Company Name | HCT Co., Ltd.                                                                   |
| Address      | 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA |
| Telephone    | 031-645-6300                                                                    |
| Fax.         | 031-645-6401                                                                    |

### 1.2 Test Facilities

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

|       |                                                         |
|-------|---------------------------------------------------------|
| Korea | National Radio Research Agency (Designation No. KR0032) |
|       | KOLAS (Testing No. KT197)                               |

### 1.3 General Information of the EUT

|                  |                               |
|------------------|-------------------------------|
| Model Name       | SM-X526B                      |
| Equipment Type   | Tablet                        |
| FCC ID           | A3LSMX526B                    |
| Application Type | Certification                 |
| Applicant        | SAMSUNG Electronics Co., Ltd. |

## 2. DEVICE UNDER TEST DESCRIPTION

### 2.1 General Information of the EUT

| Device Wireless specification overview |                |                                   |
|----------------------------------------|----------------|-----------------------------------|
| Band & Mode                            | Operating Mode | Tx Frequency                      |
| GSM850                                 | Data           | 824.2 MHz ~ 848.8 MHz             |
| GSM1900                                | Data           | 1 850.2 MHz ~ 1 909.8 MHz         |
| UMTS Band 2                            | Data           | 1 852.4 MHz ~ 1 907.6 MHz         |
| UMTS Band 4                            | Data           | 1 712.4 MHz ~ 1 752.6 MHz         |
| UMTS Band 5                            | Data           | 826.4 MHz ~ 846.6 MHz             |
| LTE FDD Band 2 (PCS)                   | Data           | 1 850.7 MHz ~ 1 909.3 MHz         |
| LTE FDD Band 4 (AWS)                   | Data           | 1 710.7 MHz ~ 1 754.3 MHz         |
| LTE FDD Band 5 (Cell)                  | Data           | 824.7 MHz ~ 848.3 MHz             |
| LTE FDD Band 12                        | Data           | 699.7 MHz ~ 715.3 MHz             |
| LTE FDD Band 13                        | Data           | 779.5 MHz ~ 784.5 MHz             |
| LTE FDD Band 17                        | Data           | 706.5 MHz ~ 713.5 MHz             |
| LTE FDD Band 25                        | Data           | 1 850.7 MHz ~ 1 914.3 MHz         |
| LTE FDD Band 26                        | Data           | 814.7 MHz ~ 848.3 MHz             |
| LTE TDD Band 41                        | Data           | 2 498.5 MHz ~ 2 687.5 MHz         |
| LTE FDD Band 66 (AWS)                  | Data           | 1 710.7 MHz ~ 1 779.3 MHz         |
| NR FDD Band n5                         | Data           | 826.5 MHz ~ 846.5 MHz             |
| NR TDD Band n41                        | Data           | 2 501.01 MHz ~ 2 685 MHz          |
| NR FDD Band n66                        | Data           | 1 712.5 MHz ~ 1 777.5 MHz         |
| NR TDD Band n77                        | Data           | 3 705 MHz ~ 3 975 MHz             |
| NR TDD Band n77 DoD                    | Data           | 3 445.01 MHz ~ 3 544.98 MHz       |
| NR TDD Band n78                        | Data           | 3 705 MHz ~ 3 795 MHz             |
| NR TDD Band n78 DoD                    | Data           | 3 455.01 MHz ~ 3 544.98 MHz       |
| U-NII-1                                | Data           | 5 180 MHz ~ 5 240 MHz             |
| U-NII-2A                               | Data           | 5 260 MHz ~ 5 320 MHz             |
| U-NII-2C                               | Data           | 5 500 MHz ~ 5 720 MHz             |
| U-NII-3                                | Data           | 5 745 MHz ~ 5 825 MHz             |
| U-NII-4                                | Data           | 5 845 MHz ~ 5 885 MHz             |
| 2.4 GHz WLAN                           | Data           | 2 412 MHz ~ 2 462 MHz             |
| Bluetooth / LE 5.3                     | Data           | 2 402 MHz ~ 2 480 MHz             |
| S-Pen                                  | Data           | 531.25 kHz, 562.5 kHz, 593.75 kHz |

## 2.2 Time-Averaging for SAR

This WWAN Mode of DUT is equipped with an S.LSI chipset to which the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm is applied except WLAN/BT mode.

This DUT is enabled with the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm for WWAN Mode and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement

FCC RF exposure limit is based on time averaged RF exposure. The SAR regulatory specification is defined over certain measurement duration allowing for time-averaging. The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power to satisfy the performance of the system.

This feature performs time averaging SAR algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

The Samsung S.LSI TAS algorithm allow the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit NV settings and maximum tune up output power Pmax configured for this DUT for various transmit conditions (Radio SAR indicator RSI for body SAR of WWAN Mode).

The purpose of this report is to demonstrate that the DUT meets FCC SAR limits when transmitting in static transmission configurations at Plimit specified by manufacturer.

SAR Characterization confirms that Plimit in the 4G/5G/WLAN/WLAN/BT communication mode declared by the manufacturer satisfies SAR\_Design\_target.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reported in SAR report for WWAN/WLAN/BT. The validation of The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm and compliance under the time-varying transmission scenario for WWAN technologies are reported in A3LSMA566E\_SAR Part 2 Report\_Main report.

## 2.3 Nomenclature for Part 0 Report

| Technology              | Term              | Description                                                                                                                                 |
|-------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 2G/3G/4G/5G<br>Sub 6 NR | Plimit            | Power level that corresponds to the exposure design target (SAR_design_target) after accounting for all device design related uncertainties |
|                         | Pmax              | Maximum tune up output power                                                                                                                |
|                         | SAR_design_target | Target SAR level < FCC SAR limit after accounting for all device design related uncertainties.                                              |
|                         | SAR Char          | Table containing Plimit for all technologies and bands                                                                                      |

### 3. SAR MEASUREMENTS

#### 3.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy ( $dU$ ) absorbed by (dissipated in) an incremental mass ( $dm$ ) contained in a volume element ( $dV$ ) of a given density ( $\rho$ ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body

$$SAR = \frac{d}{dt} \left( \frac{dU}{dm} \right)$$

SAR Mathematical Equation

SAR is expressed in units of Watts per Kilogram (W/kg).

$$SAR = \sigma E^2 / \rho$$

Where:

$\sigma$  = conductivity of the tissue-simulant material (S/m)

$\rho$  = mass density of the tissue-simulant material (kg/m<sup>3</sup>)

$E$  = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

### 3.2 SAR Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 (see table 3-1) & IEEE 1528-2013.
2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.
3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)
  - a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 mm away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
  - b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.
  - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

**Table 3-1**

| Frequency | Maximum Area Scan Resolution(mm)<br>(Δxarea, Δyarea) | Maximum Zoom Scan Resolution (mm)<br>(Δxzoom, Δyzoom) | Maximum Zoom Scan Spatial Resolution (mm) |             |                  | Minimum Zoom Scan Volume (mm)<br>(x,y,z) |
|-----------|------------------------------------------------------|-------------------------------------------------------|-------------------------------------------|-------------|------------------|------------------------------------------|
|           |                                                      |                                                       | Uniform Grid                              | Graded Grid |                  |                                          |
|           |                                                      |                                                       |                                           | Δzzoom(n)   | Δz zoom(1)*      |                                          |
| ≤2 GHz    | ≤15                                                  | ≤8                                                    | ≤5                                        | ≤4          | ≤1.5*Δzzoom(n-1) | ≥30                                      |
| 2-3 GHz   | ≤12                                                  | ≤5                                                    | ≤5                                        | ≤4          | ≤1.5*Δzzoom(n-1) | ≥30                                      |
| 3-4 GHz   | ≤12                                                  | ≤5                                                    | ≤4                                        | ≤3          | ≤1.5*Δzzoom(n-1) | ≥28                                      |
| 4-5 GHz   | ≤10                                                  | ≤4                                                    | ≤3                                        | ≤2.5        | ≤1.5*Δzzoom(n-1) | ≥25                                      |
| 5-6 GHz   | ≤10                                                  | ≤4                                                    | ≤2                                        | ≤2          | ≤1.5*Δzzoom(n-1) | ≥22                                      |

**Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04\***

## 4. SAR CHARACTERIZATION

### 4.1 Exposure Index and SAR Determination

This device uses different Radio SAR Index (RSI) to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the smartphone, the worst-case SAR was determined by measurements for the relevant exposure conditions for that RSI. Detailed descriptions of the detection mechanisms are included in the operational description.

When 1g SAR and 10g SAR exposure comparison is needed, the worst-case was determined from SAR normalized to 1g or 10g SAR limit.

The Radio SAR Index (RSI) conditions used in Table 4-1 represent different exposure scenarios.

**Table 4-1 RSI and Corresponding Exposure Scenarios**

| Scenario          | Description                                               | SAR Test Cases             |
|-------------------|-----------------------------------------------------------|----------------------------|
| Free Power(RSI=0) | Distance grip sensor not triggered.                       | KDB Publication 616217 D04 |
| Grip On(RSI=1)    | Device is held with hand and Grip Sensor #1 is triggered. | KDB Publication 616217 D04 |
| Grip On(RSI=2)    | Device is held with hand and Grip Sensor #2 is triggered. | KDB Publication 616217 D04 |
| Grip On(RSI=3)    | Device is held with hand and Grip Sensor #3 is triggered. | KDB Publication 616217 D04 |
| Grip On(RSI=4)    | Device is held with hand and Grip Sensor #4 is triggered. | KDB Publication 616217 D04 |
| Grip On(RSI=5)    | Device is held with hand and Grip Sensor #5 is triggered. | KDB Publication 616217 D04 |

## 4.2 SAR Design Target

SAR\_design\_target is determined by ensuring that it is less than FCC SAR limit after accounting for total device designed related uncertainties specified by the manufacturer (see Table 4-2).

| <i>SAR_design_target</i>                                                         |          |                             |          |
|----------------------------------------------------------------------------------|----------|-----------------------------|----------|
| $SAR\_design\_target < SAR\_regulatory\_limit \times 10^{Total\ Uncertainty/10}$ |          |                             |          |
| 1g SAR (W/kg)                                                                    |          | 10g SAR (W/kg)              |          |
| <i>Total Uncertainty</i>                                                         | 1.0 dB   | <i>Total Uncertainty</i>    | 1.0 dB   |
| <i>SAR_regulatory_limit</i>                                                      | 1.6 W/kg | <i>SAR_regulatory_limit</i> | 4.0 W/kg |
| <i>SAR_design_target</i>                                                         | 1.0 W/kg | <i>SAR_design_target</i>    | 2.5 W/kg |

Table 4-2 *SAR\_design\_target* Calculations for WWAN Bands

| Plim values in green indicate Plimit < Pmax           |                  |         | Plim values in green indicate Plimit > Pmax |                         |                         |                         |                         |                         |                                                                                 |
|-------------------------------------------------------|------------------|---------|---------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------------------------------------------------------------------|
| Plimit corresponding to 1 W/kg (1g) SAR_Design_target |                  |         |                                             |                         |                         |                         |                         |                         | Pmax                                                                            |
| SAR Exposure Position                                 |                  |         | Free<br>RSI = 0                             | Grip<br>(#1)<br>RSI = 1 | Grip<br>(#2)<br>RSI = 2 | Grip<br>(#3)<br>RSI = 3 | Grip<br>(#4)<br>RSI = 4 | Grip<br>(#5)<br>RSI = 5 | Maximum<br>Tune-up<br>Output<br>Power<br><br>(Frame Averaged<br>Power)<br>[dBm] |
| Averaging volume                                      |                  |         | 1g                                          | 1g                      | 1g                      | 1g                      | 1g                      | 1g                      |                                                                                 |
| seperation Distance                                   |                  |         | 0,10,18,19mm                                | 0                       | 0                       | 0                       | 0                       | 0                       |                                                                                 |
| Mode                                                  | Band             | Antenna | Free                                        | Grip                    | Grip                    | Grip                    | Grip                    | Grip                    |                                                                                 |
| GSM/GPRS/EDGE                                         | 850              | Main1   | 27.4                                        | 23.3                    | 15.1                    | 23.3                    | N/A                     | N/A                     |                                                                                 |
| GSM/GPRS/EDGE                                         | 1900             | Main1   | 25.9                                        | 18.6                    | 12.8                    | 18.6                    | N/A                     | N/A                     | 21.1                                                                            |
| UMTS                                                  | 2                | Main1   | 26.0                                        | 18.5                    | 12.0                    | 18.5                    | N/A                     | N/A                     | 24.0                                                                            |
| UMTS                                                  | 4                | Main1   | 26.6                                        | 20.0                    | 12.5                    | 20.0                    | N/A                     | N/A                     | 24.0                                                                            |
| UMTS                                                  | 5                | Main1   | 30.6                                        | 21.5                    | 14.5                    | 21.5                    | N/A                     | N/A                     | 24.0                                                                            |
| LTE FDD                                               | 2,25             | Main1   | 27.3                                        | 18.0                    | 12.0                    | 18.0                    | N/A                     | N/A                     | 24.0                                                                            |
| LTE FDD                                               | 2                | Sub1    | 29.9                                        | N/A                     | N/A                     | N/A                     | N/A                     | 10.5                    | 23.0                                                                            |
| LTE FDD                                               | 4,66             | Main1   | 26.8                                        | 20.0                    | 12.0                    | 20.0                    | N/A                     | N/A                     | 24.0                                                                            |
| LTE FDD                                               | 4,66             | Sub1    | 31.1                                        | N/A                     | N/A                     | N/A                     | N/A                     | 11.0                    | 23.0                                                                            |
| LTE FDD                                               | 12,17            | Main1   | 28.1                                        | N/A                     | 15.0                    | N/A                     | N/A                     | N/A                     | 24.0                                                                            |
| LTE FDD                                               | 13               | Main1   | 26.2                                        | N/A                     | 13.5                    | N/A                     | N/A                     | N/A                     | 24.0                                                                            |
| LTE FDD                                               | 5,26             | Main1   | 27.0                                        | 22.0                    | 14.0                    | 22.0                    | N/A                     | N/A                     | 24.0                                                                            |
| LTE TDD                                               | 41               | Main1   | 28.0                                        | N/A                     | 10.5                    | N/A                     | N/A                     | N/A                     | 22.0                                                                            |
| NR FDD                                                | n5               | Main1   | 27.5                                        | 22.0                    | 14.0                    | 22.0                    | N/A                     | N/A                     | 24.0                                                                            |
| NR FDD                                                | n66              | Main1   | 25.1                                        | 20.0                    | 12.0                    | 20.0                    | N/A                     | N/A                     | 24.0                                                                            |
| NR TDD                                                | n41 SRS0         | Main1   | 18.0                                        | N/A                     | 10.5                    | N/A                     | N/A                     | N/A                     | 24.0                                                                            |
| NR TDD                                                | n41 SRS1         | Sub1    | 20.0                                        | N/A                     | 14.0                    | N/A                     | N/A                     | 14.0                    | 24.0                                                                            |
| NR TDD                                                | n41 SRS2         | Sub3    | 14.0                                        | 14.0                    | 14.0                    | 14.0                    | 14.0                    | 14.0                    | 15.0                                                                            |
| NR TDD                                                | n41 SRS3         | Sub2    | 17.0                                        | 17.0                    | 17.0                    | 17.0                    | 17.0                    | 17.0                    | 17.0                                                                            |
| NR TDD                                                | n77 (78) PC3     | Main2   | 18.0                                        | N/A                     | N/A                     | N/A                     | 8.5                     | N/A                     | 24.0                                                                            |
| NR TDD                                                | n77 DoD (78) PC3 | Main2   | 18.0                                        | N/A                     | N/A                     | N/A                     | 8.5                     | N/A                     | 24.0                                                                            |
| NR TDD                                                | n77 (78) PC2     | Main2   | 18.0                                        | N/A                     | N/A                     | N/A                     | 8.5                     | N/A                     | 27.0                                                                            |
| NR TDD                                                | n77 DoD (78) PC2 | Main2   | 18.0                                        | N/A                     | N/A                     | N/A                     | 8.5                     | N/A                     | 27.0                                                                            |

Table 4-4 SAR Characterization

Note:

1. Compared with the Plimit(Tune up Powers) declared in each RSI by manufacturer and the plimit(calculation) calculated by the SAR measurement of each RSI, the lower power were applied to the plimit at each RSI configurations.
2. When  $P_{max} < Plimit$ , the DUT will operate at a power level up to  $P_{max}$ .
3. Maximum Tune up Power, Pmax is configured in Nv settings in EUT to limit maximum transmitting power. This power is converted into peak power in NV setting for TDD schemes. (GPRS, LTE TDD)

## 5. Equipment List

| Manufacturer | Type / Model                           | S/N                | Calib. Date | Calib.Interval | Calib.Due  |
|--------------|----------------------------------------|--------------------|-------------|----------------|------------|
| SPEAG        | SAM Phantom                            | -                  | N/A         | N/A            | N/A        |
| SPEAG        | ELI Phantom                            | -                  | N/A         | N/A            | N/A        |
| HP           | SAR System Control PC                  | -                  | N/A         | N/A            | N/A        |
| Staubli #1-R | CS8Cspeag-TX90                         | F12/ 5K9GA1/ C/ 01 | N/A         | N/A            | N/A        |
| Staubli #3   | CS9spe-TX2-90                          | F/24/0058554/C/001 | N/A         | N/A            | N/A        |
| TESTO 1-R    | 175-H1/Thermometer                     | 40331936309        | 12/26/2024  | Annual         | 12/26/2025 |
| TESTO 3      | 175-H1/Thermometer                     | 40331939309        | 12/26/2024  | Annual         | 12/26/2025 |
| N/A 1-R      | Teach Pendant (Joystick)               | D2114210603        | N/A         | N/A            | N/A        |
| N/A 3        | Teach Pendant (Joystick)               | D21144508          | N/A         | N/A            | N/A        |
| SPEAG        | E-Field Probe EX3DV4                   | 7751               | 09/19/2024  | Annual         | 09/19/2025 |
| SPEAG        | E-Field Probe EX3DV4                   | 7309               | 06/19/2024  | Annual         | 06/19/2025 |
| SPEAG        | E-Field Probe ES3DV3                   | 3076               | 07/17/2024  | Annual         | 07/17/2025 |
| SPEAG        | DAE4                                   | 1866               | 05/02/2024  | Annual         | 05/02/2025 |
| SPEAG        | DAE4                                   | 868                | 09/19/2024  | Annual         | 09/19/2025 |
| SPEAG        | Dipole D750V3                          | 1014               | 05/20/2024  | Annual         | 05/20/2025 |
| SPEAG        | Dipole D835V2                          | 441                | 04/18/2024  | Annual         | 04/18/2025 |
| SPEAG        | Dipole D1800V2                         | 2d007              | 04/15/2024  | Annual         | 04/15/2025 |
| SPEAG        | Dipole D1900V2                         | 5d032              | 01/18/2024  | Annual         | 01/18/2025 |
| SPEAG        | Dipole D2450V2                         | 743                | 03/14/2024  | Annual         | 03/14/2025 |
| SPEAG        | Dipole D2600V2                         | 1015               | 04/22/2024  | Annual         | 04/22/2025 |
| SPEAG        | Dipole D3500V2                         | 1132               | 01/23/2024  | Annual         | 01/23/2025 |
| SPEAG        | Dipole D3700V2                         | 1105               | 09/18/2024  | Annual         | 09/18/2025 |
| SPEAG        | Dipole D3900V2                         | 1086               | 05/21/2024  | Annual         | 05/21/2025 |
| SPEAG        | Dipole D5 GHz V2                       | 1107               | 04/19/2024  | Annual         | 04/19/2025 |
| Agilent      | Power Meter E4419B                     | MY41291386         | 09/11/2024  | Annual         | 09/11/2025 |
| Agilent      | Power Meter N1911A                     | MY45101406         | 05/21/2024  | Annual         | 05/21/2025 |
| Agilent      | Power Sensor 8481A                     | SG1091286          | 09/12/2024  | Annual         | 09/12/2025 |
| H.P          | Power Sensor 8481A                     | MY41090675         | 09/12/2024  | Annual         | 09/12/2025 |
| Agilent      | Wideband Power Sensor N1921A           | MY55220026         | 07/30/2024  | Annual         | 07/30/2025 |
| Agilent      | 11636B/Power Divider                   | 58698              | 01/13/2025  | Annual         | 01/13/2026 |
| SPEAG        | DAKS 3.5                               | 1031               | 04/22/2024  | Annual         | 04/22/2025 |
| SPEAG        | Vector Reflectometer                   | 0050813            | 04/15/2024  | Annual         | 04/15/2025 |
| SPEAG        | DAKS 12                                | 1048               | 03/20/2024  | Annual         | 03/20/2025 |
| KEYSIGHT     | MXA Signal Analyzer                    | MY49100108         | 01/07/2025  | Annual         | 01/07/2026 |
| H.P          | Network Analyzer /8753ES               | JP39240221         | 12/23/2024  | Annual         | 12/23/2025 |
| Agilent      | WIRELESS COMMUNICATION E5515C          | MY48360252         | 07/29/2024  | Annual         | 07/29/2025 |
| Agilent      | WIRELESS COMMUNICATION E5515C          | MY50260992         | 05/22/2024  | Annual         | 05/22/2025 |
| R&S          | Wireless Communication Test Set CMW500 | 115733             | 03/19/2024  | Annual         | 03/19/2025 |
| Agilent      | SIGNAL GENERATOR N5182A                | MY47070230         | 03/19/2024  | Annual         | 03/19/2025 |

| Manufacturer  | Type / Model                             | S/N         | Calib. Date | Calib.Interval | Calib.Due  |
|---------------|------------------------------------------|-------------|-------------|----------------|------------|
| EMPOWER       | RF Power Amplifier                       | 1084        | 05/21/2024  | Annual         | 05/21/2025 |
| EMPOWER       | RF Power Amplifier                       | 1041D/C0508 | 05/21/2024  | Annual         | 05/21/2025 |
| EMPOWER       | RF Power Amplifier                       | 1011        | 09/11/2024  | Annual         | 09/11/2025 |
| MICRO LAB     | LP Filter / LA-15N                       | 10453       | 09/11/2024  | Annual         | 09/11/2025 |
| MICRO LAB     | LP Filter / LA-30N                       | -           | 09/11/2024  | Annual         | 09/11/2025 |
| MICRO LAB     | LP Filter / LA-60N                       | 32011       | 09/11/2024  | Annual         | 09/11/2025 |
| Agilent       | Attenuator (3dB) 8693B                   | MY39260298  | 08/20/2024  | Annual         | 08/20/2025 |
| HP            | Attenuator (20dB) 8493C                  | 09271       | 08/20/2024  | Annual         | 08/20/2025 |
| Agilent       | Directional Bridge 86205A                | 3140A04581  | 04/22/2024  | Annual         | 04/22/2025 |
| Agilent       | MXA Signal Analyzer N9020A               | MY50510407  | 06/04/2024  | Annual         | 06/04/2025 |
| KEYSIGHT      | EXG Vector Signal Generator              | MY50350097  | 03/05/2024  | Annual         | 03/05/2025 |
| HP            | Dual Directional Coupler                 | 16072       | 09/11/2024  | Annual         | 09/11/2025 |
| Anritsu       | Radio Communication Test Station MT8000A | 6262036812  | 11/27/2024  | Annual         | 11/27/2025 |
| Anritsu       | Radio Communication Tester MT8820C       | 6201074225  | 01/13/2025  | Annual         | 01/13/2026 |
| Anritsu       | Radio Communication Tester MT8820C       | 6200695605  | 03/19/2024  | Annual         | 03/19/2025 |
| Anritsu       | Radio Communication Tester MT8821C       | 6201502997  | 05/21/2024  | Annual         | 05/21/2025 |
| Anritsu       | Radio Communication Tester MT8821C       | 6262044720  | 11/27/2024  | Annual         | 11/27/2025 |
| ROHDE&SCHWARZ | BLUETOOTH TESTER CBT                     | 100272      | 01/13/2025  | Annual         | 01/13/2026 |

\* The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

## 6. Measurement Uncertainty

The measured SAR was  $<1.5$  W/Kg for 1g SAR and  $<3.75$  W/Kg For 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

## Appendix A: SAR Test Results for Plimit CALCULATIONS

Table A-1 *PLimit* Calculations – 2G/3G Free SAR

| MEASUREMENT RESULTS |      |             |          |                |               |          |            |               |        |                |
|---------------------|------|-------------|----------|----------------|---------------|----------|------------|---------------|--------|----------------|
| Frequency           |      | Mode/ Band  | Ant.     | Frame Averaged | Test Position | Distance | Duty Cycle | Meas. SAR(1g) | PLimit | Minimum PLimit |
| MHz                 | Ch.  |             |          | (dBm)          |               |          |            | (W/kg)        |        |                |
| 836.6               | 190  | GSM 850     | GPRS 4Tx | M1             | Rear          | 19       | 1:2.07     | 0.425         | 28.7   | 27.4           |
| 836.6               | 190  | GSM 850     |          | M1             | Left          | 10       | 1:2.07     | 0.038         | 29.2   |                |
| 836.6               | 190  | GSM 850     |          | M1             | Right         | 10       | 1:2.07     | 0.039         | 39.1   |                |
| 836.6               | 190  | GSM 850     |          | M1             | Top           | 19       | 1:2.07     | 0.577         | 27.4   |                |
| 1 880               | 661  | GSM 1900    | GPRS 3Tx | M1             | Rear          | 19       | 1:2.77     | 0.211         | 28.0   | 25.9           |
| 1 880               | 661  | GSM 1900    |          | M1             | Left          | 10       | 1:2.77     | 0.036         | 35.7   |                |
| 1 880               | 661  | GSM 1900    |          | M1             | Right         | 10       | 1:2.77     | 0.071         | 32.7   |                |
| 1 880               | 661  | GSM 1900    |          | M1             | Top           | 19       | 1:2.77     | 0.343         | 25.9   |                |
| 836.6               | 4183 | UMTS Band 5 | RMC      | M1             | Rear          | 19       | 1:1        | 0.242         | 30.6   | 30.6           |
| 836.6               | 4183 | UMTS Band 5 |          | M1             | Left          | 10       | 1:1        | 0.023         | 40.8   |                |
| 836.6               | 4183 | UMTS Band 5 |          | M1             | Right         | 10       | 1:1        | 0.023         | 40.8   |                |
| 836.6               | 4183 | UMTS Band 5 |          | M1             | Top           | 19       | 1:1        | 0.083         | 35.2   |                |
| 1 732.4             | 1412 | UMTS Band 4 | RMC      | M1             | Rear          | 19       | 1:1        | 0.415         | 27.7   | 26.6           |
| 1 732.4             | 1412 | UMTS Band 4 |          | M1             | Left          | 10       | 1:1        | 0.087         | 34.5   |                |
| 1 732.4             | 1412 | UMTS Band 4 |          | M1             | Right         | 10       | 1:1        | 0.122         | 33.0   |                |
| 1 732.4             | 1412 | UMTS Band 4 |          | M1             | Top           | 19       | 1:1        | 0.532         | 26.6   |                |
| 1 880               | 9400 | UMTS Band 2 | RMC      | M1             | Rear          | 19       | 1:1        | 0.402         | 27.8   | 26.0           |
| 1 880               | 9400 | UMTS Band 2 |          | M1             | Left          | 10       | 1:1        | 0.075         | 35.1   |                |
| 1 880               | 9400 | UMTS Band 2 |          | M1             | Right         | 10       | 1:1        | 0.153         | 32.0   |                |
| 1 880               | 9400 | UMTS Band 2 |          | M1             | Top           | 19       | 1:1        | 0.614         | 26.0   |                |

Table A-2 *PLimit* Calculations – 4G Free SAR

| MEASUREMENT RESULTS |        |                 |      |            |                                |               |          |      |         |           |            |               |        |                |
|---------------------|--------|-----------------|------|------------|--------------------------------|---------------|----------|------|---------|-----------|------------|---------------|--------|----------------|
| Frequency           |        | Mode            | Ant. | Band width | Frame Averaged Conducted Power | Test Position | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR(1g) | PLimit | Minimum PLimit |
| MHz                 | Ch.    |                 |      | (dBm)      | (dBm)                          |               | (m)      | (dB) |         |           |            | (W/kg)        | (dBm)  | (dBm)          |
| 1905                | 26590  | LTE Band 25     | M1   | 20         | 23.95                          | Rear          | 19       | 0    | 1       | 49        | 1:1        | 0.288         | 29.4   | 27.3           |
| 1905                | 26590  | LTE Band 25     | M1   | 20         | 23.95                          | Left          | 10       | 0    | 1       | 49        | 1:1        | 0.011         | 43.5   |                |
| 1905                | 26590  | LTE Band 25     | M1   | 20         | 23.95                          | Right         | 10       | 0    | 1       | 49        | 1:1        | 0.127         | 32.9   |                |
| 1905                | 26590  | LTE Band 25     | M1   | 20         | 23.95                          | Top           | 19       | 0    | 1       | 49        | 1:1        | 0.460         | 27.3   |                |
| 1880                | 18900  | LTE Band 2      | S1   | 20         | 23.11                          | Rear          | 18       | 0    | 1       | 0         | 1:1        | 0.053         | 35.9   | 29.9           |
| 1880                | 18900  | LTE Band 2      | S1   | 20         | 23.11                          | Left          | 10       | 0    | 1       | 0         | 1:1        | 0.208         | 29.9   |                |
| 1880                | 18900  | LTE Band 2      | S1   | 20         | 23.11                          | Bottom        | 18       | 0    | 1       | 0         | 1:1        | 0.038         | 37.3   |                |
| 1770                | 132572 | LTE Band 66     | M1   | 20         | 24.20                          | Rear          | 19       | 0    | 1       | 49        | 1:1        | 0.476         | 27.4   | 26.8           |
| 1770                | 132572 | LTE Band 66     | M1   | 20         | 24.20                          | Left          | 10       | 0    | 1       | 49        | 1:1        | 0.078         | 35.3   |                |
| 1770                | 132572 | LTE Band 66     | M1   | 20         | 24.20                          | Right         | 10       | 0    | 1       | 49        | 1:1        | 0.125         | 33.2   |                |
| 1770                | 132572 | LTE Band 66     | M1   | 20         | 24.20                          | Top           | 19       | 0    | 1       | 49        | 1:1        | 0.544         | 26.8   |                |
| 1745                | 132322 | LTE Band 66     | S1   | 20         | 23.09                          | Rear          | 18       | 0    | 1       | 0         | 1:1        | 0.057         | 35.5   | 31.1           |
| 1745                | 132322 | LTE Band 66     | S1   | 20         | 23.09                          | Left          | 10       | 0    | 1       | 0         | 1:1        | 0.157         | 31.1   |                |
| 1745                | 132322 | LTE Band 66     | S1   | 20         | 23.09                          | Bottom        | 18       | 0    | 1       | 0         | 1:1        | 0.066         | 34.9   |                |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 23.86                          | Rear          | 19       | 0    | 1       | 24        | 1:1        | 0.369         | 28.2   | 28.1           |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 23.86                          | Left          | 0        | 0    | 1       | 24        | 1:1        | 0.150         | 32.1   |                |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 23.86                          | Right         | 0        | 0    | 1       | 24        | 1:1        | 0.169         | 31.6   |                |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 23.86                          | Top           | 19       | 0    | 1       | 24        | 1:1        | 0.381         | 28.1   |                |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 23.55                          | Rear          | 19       | 0    | 1       | 24        | 1:1        | 0.453         | 27.0   | 26.2           |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 23.55                          | Left          | 0        | 0    | 1       | 24        | 1:1        | 0.164         | 31.4   |                |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 23.55                          | Right         | 0        | 0    | 1       | 24        | 1:1        | 0.142         | 32.0   |                |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 23.55                          | Top           | 19       | 0    | 1       | 24        | 1:1        | 0.547         | 26.2   |                |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 24.53                          | Rear          | 19       | 0    | 1       | 0         | 1:1        | 0.539         | 27.2   | 27.0           |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 24.53                          | Left          | 10       | 0    | 1       | 0         | 1:1        | 0.024         | 40.7   |                |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 24.53                          | Right         | 10       | 0    | 1       | 0         | 1:1        | 0.032         | 39.5   |                |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 24.53                          | Top           | 19       | 0    | 1       | 0         | 1:1        | 0.571         | 27.0   |                |
| 2593                | 40620  | LTE Band41(PC3) | M1   | 20         | 21.63                          | Rear          | 19       | 0    | 1       | 99        | 1:1.58     | 0.143         | 30.1   | 28.0           |
| 2593                | 40620  | LTE Band41(PC3) | M1   | 20         | 21.63                          | Left          | 10       | 0    | 1       | 99        | 1:1.58     | 0.171         | 29.3   |                |
| 2593                | 40620  | LTE Band41(PC3) | M1   | 20         | 21.63                          | Right         | 10       | 0    | 1       | 99        | 1:1.58     | 0.232         | 28.0   |                |
| 2593                | 40620  | LTE Band41(PC3) | M1   | 20         | 21.63                          | Top           | 19       | 0    | 1       | 99        | 1:1.58     | 0.232         | 28.0   |                |

**Table A-3 *PLimit* Calculations – NR Free SAR**

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the *PLimit* were calculated as the Frame average power to which the duty factor was applied to the burst power.

SAR measurements of TDD NR bands were measured in FTM Mode.

| MEASUREMENT RESULTS |        |                  |     |            |                                |                     |                 |          |      |         |           |            |                |        |                |  |
|---------------------|--------|------------------|-----|------------|--------------------------------|---------------------|-----------------|----------|------|---------|-----------|------------|----------------|--------|----------------|--|
| Frequency           |        | Mode             | Ant | Band width | Frame Averaged Conducted Power | Test Configurations |                 | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR (1g) | Plimit | Minimum Plimit |  |
|                     |        |                  |     | (dBm)      | (dBm)                          |                     |                 | (mm)     | (dB) | (W/kg)  | (dBm)     | (dBm)      |                |        |                |  |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 24.28                          | Rear                | DFT-s OFDM QPSK | 19       | 0    | 1       | 1         | 1:1        | 0.417          | 28.1   | 27.5           |  |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 24.28                          | Left                | DFT-s OFDM QPSK | 10       | 0    | 1       | 1         | 1:1        | 0.053          | 37.0   |                |  |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 24.28                          | Right               | DFT-s OFDM QPSK | 10       | 0    | 1       | 1         | 1:1        | 0.075          | 35.5   |                |  |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 24.28                          | Top                 | DFT-s OFDM QPSK | 19       | 0    | 1       | 1         | 1:1        | 0.476          | 27.5   |                |  |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 24.32                          | Rear                | DFT-s OFDM QPSK | 19       | 0    | 1       | 108       | 1:1        | 0.324          | 29.2   | 25.1           |  |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 24.32                          | Left                | DFT-s OFDM QPSK | 10       | 0    | 1       | 108       | 1:1        | 0.127          | 33.3   |                |  |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 24.32                          | Right               | DFT-s OFDM QPSK | 10       | 0    | 1       | 108       | 1:1        | 0.090          | 34.8   |                |  |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 24.32                          | Top                 | DFT-s OFDM QPSK | 19       | 0    | 1       | 108       | 1:1        | 0.839          | 25.1   |                |  |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 18.94                          | Rear                | DFT-s OFDM QPSK | 18       | 0    | 1       | 137       | 1:1        | 0.091          | 29.3   | 27.6           |  |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 18.94                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 137       | 1:1        | 0.060          | 31.2   |                |  |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 18.94                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 137       | 1:1        | 0.120          | 28.1   |                |  |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 18.94                          | Top                 | DFT-s OFDM QPSK | 18       | 0    | 1       | 137       | 1:1        | 0.137          | 27.6   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 40         | 19.84                          | Rear                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 18         | 0.028          | 35.4   | 31.5           |  |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 40         | 19.84                          | Left                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 10         | 0.069          | 31.5   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 40         | 19.84                          | Bottom              | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 18         | 0.001          | 49.8   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 40         | 14.41                          | Rear                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.286          | 19.8   | 19.4           |  |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 40         | 14.41                          | Left                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.052          | 27.3   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 40         | 14.41                          | Right               | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.004          | 38.4   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 40         | 14.41                          | Bottom              | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.314          | 19.4   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 40         | 16.84                          | Rear                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.388          | 21.0   | 20.4           |  |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 40         | 16.84                          | Left                | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.001          | 46.8   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 40         | 16.84                          | Right               | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.060          | 29.1   |                |  |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 40         | 16.84                          | Bottom              | DFT-s OFDM QPSK | 0        | 1    | 1       | 1:1       | 0          | 0.436          | 20.4   |                |  |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 18.91                          | Rear                | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 18         | 0.049          | 32.0   | 23.9           |  |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 18.91                          | Right               | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 10         | 0.315          | 23.9   |                |  |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 18.91                          | Bottom              | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 18         | 0.039          | 33.0   |                |  |

**Table A-4  $P_{Limit}$  Calculations – 2G/3G Grip 2,4,5 SAR**

For some bands/modes, a lower  $P_{Limit}$  was selected as a more conservative evaluation.

| MEASUREMENT RESULTS |      |            |          |              |                                                  |                  |                 |            |                  |        |                   |
|---------------------|------|------------|----------|--------------|--------------------------------------------------|------------------|-----------------|------------|------------------|--------|-------------------|
| Frequency           |      | Mode/ Band |          | Ant .<br>No. | Frame<br>Averaged<br>Conducted<br>Power<br>(dBm) | Test<br>Position | Spacing<br>(mm) | Duty Cycle | Meas.<br>SAR(1g) | Plimit | Minimum<br>Plimit |
|                     |      |            |          |              |                                                  |                  |                 |            | (W/kg)           | (dBm)  | (dBm)             |
| MHz                 | Ch.  |            |          |              |                                                  |                  |                 |            |                  |        |                   |
| 836.6               | 190  | GSM 850    | GPRS 3Tx | M1           | 15.27                                            | Rear             | 0               | 1:2.77     | 0.441            | 18.8   | 17.7              |
| 836.6               | 190  | GSM 850    | GPRS 3Tx | M1           | 15.27                                            | Top              | 0               | 1:2.77     | 0.577            | 17.7   |                   |
| 1 880.0             | 661  | GSM 1900   | GPRS 4Tx | M1           | 13.00                                            | Rear             | 0               | 1:2.07     | 0.421            | 16.8   | 16.4              |
| 1 880.0             | 661  | GSM 1900   | GPRS 4Tx | M1           | 13.00                                            | Bottom           | 0               | 1:2.07     | 0.455            | 16.4   |                   |
| 836.6               | 4183 | UMTS 5     | RMC      | M1           | 14.85                                            | Rear             | 0               | 1:1        | 0.419            | 18.6   | 17.1              |
| 836.6               | 4183 | UMTS 5     | RMC      | M1           | 14.85                                            | Bottom           | 0               | 1:1        | 0.596            | 17.1   |                   |
| 1 732.4             | 1412 | UMTS 4     | RMC      | M1           | 12.60                                            | Rear             | 0               | 1:1        | 0.493            | 15.7   | 15.7              |
| 1 732.4             | 1412 | UMTS 4     | RMC      | M1           | 12.60                                            | Bottom           | 0               | 1:1        | 0.406            | 16.5   |                   |
| 1 880               | 9400 | UMTS 2     | RMC      | M1           | 12.01                                            | Rear             | 0               | 1:1        | 0.366            | 16.4   | 15.5              |
| 1 880               | 9400 | UMTS 2     | RMC      | M1           | 12.01                                            | Bottom           | 0               | 1:1        | 0.451            | 15.5   |                   |

**Table A-5  $P_{Limit}$  Calculations – 4G Grip 2,4,5 SAR**

For some bands/modes, a lower  $P_{Limit}$  was selected as a more conservative evaluation.

| MEASUREMENT RESULTS |        |                 |      |            |                                |               |          |      |         |           |            |               |             |                     |
|---------------------|--------|-----------------|------|------------|--------------------------------|---------------|----------|------|---------|-----------|------------|---------------|-------------|---------------------|
| Frequency           |        | Mode            | Ant. | Band width | Frame Averaged Conducted Power | Test Position | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR(1g) | $P_{Limit}$ | Minimum $P_{Limit}$ |
| MHz                 | Ch.    |                 |      | (dBm)      | (dBm)                          |               | (m)      | (dB) |         |           |            | (W/kg)        |             |                     |
| 1 905               | 26590  | LTE Band 25     | M1   | 20         | 12.12                          | Rear          | 0        | 0    | 1       | 49        | 1:1        | 0.347         | 16.7        | 16.0                |
| 1 905               | 26590  | LTE Band 25     | M1   | 20         | 12.12                          | Top           | 0        | 0    | 1       | 49        | 1:1        | 0.410         | 16.0        |                     |
| 1 880               | 18900  | LTE Band 2      | S1   | 20         | 10.30                          | Rear          | 0        | 0    | 1       | 0         | 1:1        | 0.115         | 19.7        | 16.8                |
| 1 880               | 18900  | LTE Band 2      | S1   | 20         | 10.30                          | Left          | 0        | 0    | 1       | 0         | 1:1        | 0.225         | 16.8        |                     |
| 1 880               | 18900  | LTE Band 2      | S1   | 20         | 10.30                          | Bottom        | 0        | 0    | 1       | 0         | 1:1        | 0.084         | 21.1        |                     |
| 1 770               | 132572 | LTE Band 66     | M1   | 20         | 12.29                          | Rear          | 0        | 0    | 1       | 49        | 1:1        | 0.407         | 16.2        | 16.2                |
| 1 770               | 132572 | LTE Band 66     | M1   | 20         | 12.29                          | Top           | 0        | 0    | 1       | 49        | 1:1        | 0.310         | 17.4        |                     |
| 1 745               | 132322 | LTE Band 66     | S1   | 20         | 11.09                          | Rear          | 0        | 0    | 1       | 0         | 1:1        | 0.166         | 18.9        | 17.8                |
| 1 745               | 132322 | LTE Band 66     | S1   | 20         | 11.09                          | Left          | 0        | 0    | 1       | 0         | 1:1        | 0.213         | 17.8        |                     |
| 1 745               | 132322 | LTE Band 66     | S1   | 20         | 11.09                          | Bottom        | 0        | 0    | 1       | 0         | 1:1        | 0.132         | 19.9        |                     |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 15.32                          | Rear          | 0        | 0    | 1       | 24        | 1:1        | 0.387         | 19.4        | 19.4                |
| 707.5               | 23095  | LTE Band 12     | M1   | 10         | 15.32                          | Top           | 0        | 0    | 1       | 24        | 1:1        | 0.318         | 20.3        |                     |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 13.65                          | Rear          | 0        | 0    | 1       | 24        | 1:1        | 0.353         | 18.2        | 17.5                |
| 782                 | 23230  | LTE Band 13     | M1   | 10         | 13.65                          | Top           | 0        | 0    | 1       | 24        | 1:1        | 0.412         | 17.5        |                     |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 14.64                          | Rear          | 0        | 0    | 1       | 0         | 1:1        | 0.383         | 18.8        | 18.8                |
| 831.5               | 26865  | LTE Band 26     | M1   | 15         | 14.64                          | Top           | 0        | 0    | 1       | 0         | 1:1        | 0.352         | 19.2        |                     |
| 2 593               | 40620  | LTE Band41(PC3) | M1   | 20         | 10.37                          | Rear          | 0        | 0    | 1       | 99        | 1:1.58     | 0.399         | 14.4        | 14.4                |
| 2 593               | 40620  | LTE Band41(PC3) | M1   | 20         | 10.37                          | Top           | 0        | 0    | 1       | 99        | 1:1.58     | 0.338         | 15.1        |                     |

**Table A-6 *PLimit* Calculations – NR Grip 2,4,5 SAR**

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the *PLimit* were calculated as the Frame average power to which the duty factor was applied to the burst power.0

SAR measurements of TDD NR bands were measured in FTM Mode.

| MEASUREMENT RESULTS |        |                  |     |            |                                |                     |                 |          |      |         |           |            |                |        |                |
|---------------------|--------|------------------|-----|------------|--------------------------------|---------------------|-----------------|----------|------|---------|-----------|------------|----------------|--------|----------------|
| Frequency           |        | Mode             | Ant | Band width | Frame Averaged Conducted Power | Test Configurations |                 | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR (1g) | Plimit | Minimum Plimit |
| MHz                 | Ch.    |                  |     | (dBm)      | (dBm)                          |                     |                 | (mm)     | (dB) |         |           |            | (W/kg)         | (dBm)  | (dBm)          |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 14.32                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 53        | 1:1        | 0.432          | 18.0   | 18.0           |
| 836.5               | 167300 | NR Band n5       | M1  | 20         | 14.32                          | Top                 | DFT-s OFDM QPSK | 0        | 0    | 1       | 53        | 1:1        | 0.378          | 18.5   |                |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 11.83                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 108       | 1:1        | 0.356          | 16.3   | 16.3           |
| 1 745               | 349000 | NR Band n66      | M1  | 40         | 11.83                          | Top                 | DFT-s OFDM QPSK | 0        | 0    | 1       | 108       | 1:1        | 0.275          | 17.4   |                |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 10.33                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 137       | 1:1        | 0.471          | 13.6   | 13.5           |
| 2 592.99            | 518598 | NR Band n41      | M1  | 100        | 10.33                          | Top                 | DFT-s OFDM QPSK | 0        | 0    | 1       | 137       | 1:1        | 0.480          | 13.5   |                |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 100        | 14.10                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.382          | 18.3   | 17.8           |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 100        | 14.10                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.427          | 17.8   |                |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 100        | 14.10                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.01           | 44.1   |                |
| 2 592.99            | 518598 | NR Band n41 SRS1 | S1  | 100        | 14.10                          | Bottom              | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.186          | 21.4   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 100        | 14.41                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.286          | 19.8   | 19.4           |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 100        | 14.41                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.052          | 27.3   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 100        | 14.41                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.004          | 38.4   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3  | 100        | 14.41                          | Bottom              | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.314          | 19.4   |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 100        | 16.84                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.388          | 21.0   | 20.4           |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 100        | 16.84                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.000          | -      |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 100        | 16.84                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.060          | 29.1   |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2  | 100        | 16.84                          | Bottom              | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.436          | 20.4   |                |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 8.40                           | Rear                | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 1:1        | 0.282          | 13.9   | 12.7           |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 8.40                           | Right               | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 1:1        | 0.368          | 12.7   |                |
| 3 750               | 650000 | NR Band n77      | M2  | 100        | 8.40                           | Bottom              | DFT-s OFDM QPSK | 0        | 1    | 137     | 1:1       | 1:1        | 0.097          | 18.5   |                |
| 3 500.01            | 633334 | NR Band n77 DoD  | M2  | 100        | 8.17                           | Right               | DFT-s OFDM QPSK | 0        | 1    | 271     | 1:1       | 1:1        | 0.434          | 11.8   | 11.8           |

**Table A-7  $P_{Limit}$  Calculations – 2G/3G Grip 1,3 SAR**

For some bands/modes, a lower  $P_{Limit}$  was selected as a more conservative evaluation.

| MEASUREMENT RESULTS |      |            |          |            |                                                  |                  |                 |            |                  |        |                   |
|---------------------|------|------------|----------|------------|--------------------------------------------------|------------------|-----------------|------------|------------------|--------|-------------------|
| Frequency           |      | Mode/ Band |          | Ant<br>No. | Frame<br>Averaged<br>Conducted<br>Power<br>(dBm) | Test<br>Position | Spacing<br>(mm) | Duty Cycle | Meas.<br>SAR(1g) | Plimit | Minimum<br>Plimit |
|                     |      |            |          |            |                                                  |                  |                 |            | (W/kg)           | (dBm)  | (dBm)             |
| MHz                 | Ch.  |            |          |            |                                                  |                  |                 |            |                  |        |                   |
| 836.6               | 190  | GSM 850    | GPRS 4Tx | M1         | 22.94                                            | Left             | 0               | 1:2.07     | 0.100            | 32.9   | 32.9              |
| 836.6               | 190  | GSM 850    | GPRS 4Tx | M1         | 22.94                                            | Right            | 0               | 1:2.07     | 0.099            | 33.0   |                   |
| 1 880.0             | 661  | GSM 1900   | GPRS 3Tx | M1         | 18.88                                            | Left             | 0               | 1:2.77     | 0.071            | 30.4   | 26.5              |
| 1 880.0             | 661  | GSM 1900   | GPRS 3Tx | M1         | 18.88                                            | Right            | 0               | 1:2.77     | 0.172            | 26.5   |                   |
| 836.6               | 4183 | UMTS 5     | RMC      | M1         | 21.57                                            | Left             | 0               | 1:1        | 0.157            | 29.6   | 29.6              |
| 836.6               | 4183 | UMTS 5     | RMC      | M1         | 21.57                                            | Right            | 0               | 1:1        | 0.095            | 31.8   |                   |
| 1 732.4             | 1412 | UMTS 4     | RMC      | M1         | 20.03                                            | Left             | 0               | 1:1        | 0.123            | 29.1   | 26.3              |
| 1 732.4             | 1412 | UMTS 4     | RMC      | M1         | 20.03                                            | Right            | 0               | 1:1        | 0.237            | 26.3   |                   |
| 1 880               | 9400 | UMTS 2     | RMC      | M1         | 18.40                                            | Left             | 0               | 1:1        | 0.094            | 28.7   | 24.9              |
| 1 880               | 9400 | UMTS 2     | RMC      | M1         | 18.40                                            | Right            | 0               | 1:1        | 0.224            | 24.9   |                   |

**Table A-8  $P_{Limit}$  Calculations – 4G Grip1, 3 SAR**

For some bands/modes, a lower  $P_{Limit}$  was selected as a more conservative evaluation.

| MEASUREMENT RESULTS |        |             |      |            |                                |               |          |      |         |           |            |               |             |                     |
|---------------------|--------|-------------|------|------------|--------------------------------|---------------|----------|------|---------|-----------|------------|---------------|-------------|---------------------|
| Frequency           |        | Mode        | Ant. | Band width | Frame Averaged Conducted Power | Test Position | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR(1g) | $P_{Limit}$ | Minimum $P_{Limit}$ |
| MHz                 | Ch.    |             |      | (dBm)      | (dBm)                          |               | (m)      | (dB) |         |           |            | (W/kg)        |             |                     |
| 1 905               | 26590  | LTE Band 25 | M1   | 20         | 18.21                          | Left          | 0        | 0    | 1       | 49        | 1:1        | 0.055         | 30.8        | 27.3                |
| 1 905               | 26590  | LTE Band 25 | M1   | 20         | 18.21                          | Right         | 0        | 0    | 1       | 49        | 1:1        | 0.123         | 27.3        |                     |
| 1 770               | 132572 | LTE Band 66 | M1   | 20         | 20.59                          | Left          | 0        | 0    | 1       | 49        | 1:1        | 0.014         | 39.1        | 27.4                |
| 1 770               | 132572 | LTE Band 66 | M1   | 20         | 20.59                          | Right         | 0        | 0    | 1       | 49        | 1:1        | 0.205         | 27.4        |                     |
| 831.5               | 26865  | LTE Band 26 | M1   | 15         | 22.72                          | Left          | 0        | 0    | 1       | 0         | 1:1        | 0.115         | 32.1        | 32.1                |
| 831.5               | 26865  | LTE Band 26 | M1   | 15         | 22.72                          | Right         | 0        | 0    | 1       | 0         | 1:1        | 0.111         | 32.3        |                     |

**Table A-9 *PLimit* Calculations – NR Grip 1,3 SAR**

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the *PLimit* were calculated as the Frame average power to which the duty factor was applied to the burst power.0

SAR measurements of TDD NR bands were measured in FTM Mode.

| MEASUREMENT RESULTS |        |                  |      |            |                                |                     |                 |          |      |         |           |            |                |        |                |
|---------------------|--------|------------------|------|------------|--------------------------------|---------------------|-----------------|----------|------|---------|-----------|------------|----------------|--------|----------------|
| Frequency           |        | Mode             | Ant. | Band width | Frame Averaged Conducted Power | Test Configurations |                 | Distance | MPR  | RB Size | RB offset | Duty Cycle | Meas. SAR (1g) | Plimit | Minimum Plimit |
| MHz                 | Ch.    |                  |      | (dBm)      | (dBm)                          |                     |                 | (mm)     | (dB) |         |           |            | (W/kg)         | (dBm)  | (dBm)          |
| 836.5               | 167300 | NR Band n5       | M1   | 20         | 22.18                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.217          | 28.8   | 28.8           |
| 836.5               | 167300 | NR Band n5       | M1   | 20         | 22.18                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.102          | 32.1   |                |
| 1 745               | 349000 | NR Band n66      | M1   | 40         | 20.09                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 108       | 1:1        | 0.188          | 27.3   | 24.9           |
| 1 745               | 349000 | NR Band n66      | M1   | 40         | 20.09                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 108       | 1:1        | 0.329          | 24.9   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3   | 100        | 14.41                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.286          | 19.8   | 19.4           |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3   | 100        | 14.41                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.052          | 27.3   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3   | 100        | 14.41                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.004          | 38.4   |                |
| 2 592.99            | 518598 | NR Band n41 SRS2 | S3   | 100        | 14.41                          | Bottom              | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.314          | 19.4   |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2   | 100        | 16.84                          | Rear                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.388          | 21.0   | 20.4           |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2   | 100        | 16.84                          | Left                | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.000          | -      |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2   | 100        | 16.84                          | Right               | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.060          | 29.1   |                |
| 2 592.99            | 518598 | NR Band n41 SRS3 | S2   | 100        | 16.84                          | Bottom              | DFT-s OFDM QPSK | 0        | 0    | 1       | 1         | 1:1        | 0.436          | 20.4   |                |