

# TEST REPORT

**Applicant:** TECNO MOBILE LIMITED  
**Address:** FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL  
CENTRE 19-25 SHAN MEI STREET FOTAN NT  
HONGKONG  
**Equipment Type:** Tablet  
**Model Name:** T1002  
**Brand Name:** TECNO  
**FCC ID:** 2ADYY-T1002  
**Test Standard:** FCC 47 CFR Part 2.1093  
(refer section 3.1)  
**Maximum SAR:** Body (1 g@0mm): 0.97 W/kg  
**Sample Arrival Date:** Apr. 02, 2026  
**Test Date:** Apr. 22, 2026 - Apr. 30, 2026  
**Date of Issue:** May 20, 2026

**ISSUED BY:**

Shanghai Tejet Communications Technology Co., Ltd. Testing Center

**Prepared by:** Cai Xueguo**Reviewed by:** Huang Xiaojin**Approved by:** Zhang Yanqing  
(Laboratory Manager)*Cai Xueguo**Huang Xiaojin**Zhang Yanqing*

### Revision History

| Version        | Issue Date          | Revisions Content                                                                            |
|----------------|---------------------|----------------------------------------------------------------------------------------------|
| <u>Rev. 01</u> | <u>May 12, 2026</u> | <u>Initial Issue</u>                                                                         |
| <u>Rev. 02</u> | <u>May 20, 2026</u> | <u>Updated the equipment class in Chapter 3.3.</u><br><u>The original report is invalid.</u> |

## TABLE OF CONTENTS

|          |                                                    |           |
|----------|----------------------------------------------------|-----------|
| <b>1</b> | <b>GENERAL INFORMATION</b>                         | <b>4</b>  |
| 1.1      | Test Laboratory                                    | 4         |
| 1.2      | Test Location                                      | 4         |
| 1.3      | Test Environment Condition                         | 4         |
| <b>2</b> | <b>PRODUCT INFORMATION</b>                         | <b>5</b>  |
| 2.1      | Applicant Information                              | 5         |
| 2.2      | Manufacturer Information                           | 5         |
| 2.3      | General Description for Equipment under Test (EUT) | 5         |
| 2.4      | Technical Information                              | 5         |
| <b>3</b> | <b>SUMMARY OF TEST RESULT</b>                      | <b>7</b>  |
| 3.1      | Test Standards                                     | 7         |
| 3.2      | Device Category and SAR Limit                      | 8         |
| 3.3      | Test Result Summary                                | 9         |
| 3.4      | Test Uncertainty                                   | 10        |
| <b>4</b> | <b>MEASUREMENT SYSTEM</b>                          | <b>13</b> |
| 4.1      | Specific Absorption Rate (SAR) Definition          | 13        |
| 4.2      | DASY SAR System                                    | 14        |
| <b>5</b> | <b>SYSTEM VERIFICATION</b>                         | <b>21</b> |
| 5.1      | Purpose of System Check                            | 21        |
| 5.2      | System Check Setup                                 | 21        |
| <b>6</b> | <b>TEST POSITION CONFIGURATIONS</b>                | <b>22</b> |
| <b>7</b> | <b>MEASUREMENT PROCEDURE</b>                       | <b>23</b> |
| 7.1      | Measurement Process Diagram                        | 23        |

|         |                                               |    |
|---------|-----------------------------------------------|----|
| 7.2     | SAR Scan General Requirement.....             | 24 |
| 7.3     | Measurement Procedure .....                   | 25 |
| 7.4     | Area & Zoom Scan Procedure.....               | 25 |
| 8       | CONDUCTED RF OUPUT POWER.....                 | 26 |
| 8.1     | GSM .....                                     | 26 |
| 8.2     | WCDMA .....                                   | 26 |
| 8.3     | LTE.....                                      | 26 |
| 8.4     | WIFI.....                                     | 26 |
| 8.5     | Bluetooth.....                                | 29 |
| 9       | TEST EXCLUSION CONSIDERATION .....            | 30 |
| 10      | TEST RESULT .....                             | 31 |
| 11      | SAR Measurement Variability.....              | 36 |
| 12      | SIMULTANEOUS TRANSMISSION .....               | 37 |
| 12.1    | Simultaneous Transmission Mode Consider ..... | 37 |
| 12.2    | Sum SAR of Simultaneous Transmission.....     | 38 |
| 13      | TEST EQUIPMENTS LIST .....                    | 40 |
| ANNEX A | SIMULATING LIQUID VERIFICATION RESULT .....   | 41 |
| ANNEX B | SYSTEM CHECK RESULT .....                     | 41 |
| ANNEX C | TEST DATA .....                               | 42 |
| ANNEX D | EUT EXTERNAL PHOTOS.....                      | 42 |
| ANNEX E | SAR TEST SETUP PHOTOS .....                   | 42 |
| ANNEX F | CALIBRATION REPORT.....                       | 42 |

# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

|         |                                                                                          |
|---------|------------------------------------------------------------------------------------------|
| Name    | Shanghai Tejet Communications Technology Co., Ltd. Testing Center                        |
| Address | 1-2/F., Building 1, No.222, Xuanlan Road, Xuanqiao, Pudong New District, Shanghai, China |

## 1.2 Test Location

|                           |                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name                      | Shanghai Tejet Communications Technology Co., Ltd. Testing Center                                                                                                                                                                                                                                               |
| Location                  | 1-2/F., Building 1, No.222, Xuanlan Road, Xuanqiao, Pudong New District, Shanghai, China                                                                                                                                                                                                                        |
| Accreditation Certificate | <p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1352.</p> <p>The laboratory is a testing organization accredited by ISED as a accredited testing laboratory. The company number is 29671 and CAB identifier number is CN0142.</p> |

## 1.3 Test Environment Condition

|                           |            |
|---------------------------|------------|
| Ambient Temperature       | 18℃ to 25℃ |
| Ambient Relative Humidity | 30% to 70% |

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

|           |                                                                                            |
|-----------|--------------------------------------------------------------------------------------------|
| Applicant | TECNO MOBILE LIMITED                                                                       |
| Address   | FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25<br>SHAN MEI STREET FOTAN NT HONGKONG |

### 2.2 Manufacturer Information

|              |                                                                                            |
|--------------|--------------------------------------------------------------------------------------------|
| Manufacturer | TECNO MOBILE LIMITED                                                                       |
| Address      | FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25<br>SHAN MEI STREET FOTAN NT HONGKONG |

### 2.3 General Description for Equipment under Test (EUT)

|                                           |        |
|-------------------------------------------|--------|
| EUT Name                                  | Tablet |
| Model Name Under Test                     | T1002  |
| Series Model Name                         | N/A    |
| Description of Model name differentiation | N/A    |
| Hardware Version                          | N/A    |
| Software Version                          | N/A    |
| Dimensions (Approx.)                      | N/A    |
| Weight (Approx.)                          | N/A    |

### 2.4 Technical Information

|                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Network and Wireless connectivity                                                                                                                                                                                                                   | 2G Network<br>GSM/GPRS/EDGE 850/1900 MHz<br>3G Network<br>WCDMA/HSDPA/HSUPA Band 2/4/5<br>4G Network LTE FDD Band 2/4/5/7/12/13/17/26/66<br>LTE TDD Band 38/41<br>Bluetooth (BR+EDR+BLE1M&2M)<br>2.4G WIFI 802.11b, 802.11g, 802.11n HT20,<br>5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80),<br>GPS, Beidou, Galileo, Glonass |
| Note:<br>The EUT is a mobile phone, which supports dual SIM card under the same transceiver. Each SIM supports GSM, WCDMA and LTE, and both SIM share the same transmitting electro circuit, NV parameters, so only SIM1 was tested in this report. |                                                                                                                                                                                                                                                                                                                                          |

The requirement for the following technical information of the EUT was tested in this report:

|                   |                                                                     |                                              |                     |
|-------------------|---------------------------------------------------------------------|----------------------------------------------|---------------------|
| Operating Mode    | GSM, WCDMA, LTE, 2.4G WLAN, 5G WLAN, Bluetooth                      |                                              |                     |
| Frequency Range   | GSM 850                                                             | TX: 824 ~ 849 MHz                            | RX: 869 ~ 894 MHz   |
|                   | GSM 1900                                                            | TX: 1850 ~ 1910 MHz                          | RX: 1930 ~ 1990 MHz |
|                   | WCDMA Band 2                                                        | TX: 1850 ~ 1910 MHz                          | RX: 1930 ~ 1990 MHz |
|                   | WCDMA Band 4                                                        | TX: 1710 ~ 1755 MHz                          | RX: 2110 ~ 2155 MHz |
|                   | WCDMA Band 5                                                        | TX: 824 ~ 849 MHz                            | RX: 869 ~ 894 MHz   |
|                   | LTE Band 2                                                          | TX: 1850 ~ 1910 MHz                          | RX: 1930 ~ 1990 MHz |
|                   | LTE Band 4                                                          | TX: 1710 ~ 1755 MHz                          | RX: 2110 ~ 2155 MHz |
|                   | LTE Band 5                                                          | TX: 824 ~ 849 MHz                            | RX: 869 ~ 894 MHz   |
|                   | LTE Band 7                                                          | TX: 2500 ~ 2570 MHz                          | RX: 2620 ~ 2690 MHz |
|                   | LTE Band 12                                                         | TX: 699 ~ 716 MHz                            | RX: 729 ~ 746 MHz   |
|                   | LTE Band 13                                                         | TX: 777 ~ 787 MHz                            | RX: 746 ~ 756 MHz   |
|                   | LTE Band 26                                                         | TX: 814 ~ 849 MHz                            | RX: 859 ~ 894 MHz   |
|                   | LTE Band 17                                                         | TX: 704 ~ 716 MHz                            | RX: 734 ~ 746 MHz   |
|                   | LTE Band 66                                                         | TX: 1710 ~ 1780 MHz                          | RX: 2110 ~ 2180 MHz |
|                   | LTE Band 38                                                         | TX: 2570 ~ 2620 MHz                          | RX: 2570 ~ 2620 MHz |
|                   | LTE Band 41                                                         | TX: 2496 ~ 2690 MHz                          | RX: 2496 ~ 2690 MHz |
|                   | 2.4G WIFI                                                           | 2412 ~ 2462 MHz                              |                     |
|                   | 5G WIFI                                                             | 5150 ~ 5250 MHz                              |                     |
|                   |                                                                     | 5250 ~ 5350 MHz                              |                     |
|                   |                                                                     | 5470 ~ 5725 MHz                              |                     |
| 5725 ~ 5850 MHz   |                                                                     |                                              |                     |
| Bluetooth         | 2402 ~ 2480 MHz                                                     |                                              |                     |
| Antenna Type      | WWAN: PIFA Antenna<br>WLAN: PIFA Antenna<br>Bluetooth: PIFA Antenna |                                              |                     |
| DTM               | N/A                                                                 |                                              |                     |
| Hotspot Function  | Support                                                             |                                              |                     |
| Power Reduction   | N/A                                                                 |                                              |                     |
| Exposure Category | General Population/Uncontrolled exposure                            |                                              |                     |
| Product Type      | Portable Device                                                     |                                              |                     |
| EUT Type          | <input checked="" type="checkbox"/> Production unit                 | <input type="checkbox"/> Identical prototype |                     |

### 3 SUMMARY OF TEST RESULT

#### 3.1 Test Standards

| No. | Identity               | Document Title                                                                                                                                                                  |
|-----|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | 47 CFR Part 2.1093     | Radiofrequency radiation exposure evaluation: portable devices                                                                                                                  |
| 2   | ANSI C95.1-1992        | IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz                                                      |
| 3   | IEEE Std. 1528-2013    | IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques |
| 4   | KDB 447498 D04 v01     | 447498 D04 Interim General RF Exposure Guidance v01                                                                                                                             |
| 5   | KDB 941225 D01 v03r01  | 3G SAR MEAUREMENT PROCEDURES                                                                                                                                                    |
| 6   | KDB 941225 D05 v02r05  | SAR Evaluation Considerations for LTE Devices                                                                                                                                   |
| 7   | KDB 941225 D05A v01r02 | REL. 10 LTE SAR TEST GUIDANCE AND KDB INQUIRIES                                                                                                                                 |
| 8   | KDB 865664 D01 v01r04  | SAR Measurement 100 MHz to 6 GHz                                                                                                                                                |
| 9   | KDB 865664 D02 v01r02  | RF Exposure Reporting                                                                                                                                                           |
| 10  | KDB 616217 D04 v01r02  | SAR for laptop and tablets                                                                                                                                                      |
| 11  | KDB 248227 D01 v02r02  | SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS                                                                                                                               |

### 3.2 Device Category and SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

Table of Exposure Limits:

| Body Position                                                                       | SAR Value (W/Kg)                             |                                      |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------|
|                                                                                     | General Population/<br>Uncontrolled Exposure | Occupational/<br>Controlled Exposure |
| Whole-Body SAR<br>(averaged over the entire body)                                   | 0.08                                         | 0.4                                  |
| Partial-Body SAR<br>(averaged over any 1 gram of tissue)                            | 1.60                                         | 8.0                                  |
| SAR for hands, wrists, feet and<br>ankles<br>(averaged over any 10 grams of tissue) | 4.0                                          | 20.0                                 |

**NOTE:**

**General Population/Uncontrolled Exposure:** Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

**Occupational/Controlled Exposure:** Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure. In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

### 3.3 Test Result Summary

#### 3.3.1 Highest SAR Values

| Frequency Band                                                                                                                                                                                                                                                                                                                                                                                           |           | Maximum Scaled SAR | Maximum Report SAR (W/kg) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|---------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                          |           | 1 g(W/kg)          | 1 g(W/kg)                 |
|                                                                                                                                                                                                                                                                                                                                                                                                          |           | Body               | Body                      |
|                                                                                                                                                                                                                                                                                                                                                                                                          |           | (Separation 0 mm)  | (Separation 0 mm)         |
| PCB                                                                                                                                                                                                                                                                                                                                                                                                      | GSM850    | 0.97               | 0.97                      |
|                                                                                                                                                                                                                                                                                                                                                                                                          | GSM1900   | 0.94               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | WCDMA B2  | 0.77               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | WCDMA B4  | 0.31               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | WCDMA B5  | 0.74               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B2    | 0.79               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B7    | 0.86               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B12   | 0.71               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B13   | 0.68               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B26   | 0.78               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B66   | 0.41               |                           |
|                                                                                                                                                                                                                                                                                                                                                                                                          | LTE B41   | 0.71               |                           |
| DTS                                                                                                                                                                                                                                                                                                                                                                                                      | 2.4G WIFI | 0.50               |                           |
| NII                                                                                                                                                                                                                                                                                                                                                                                                      | 5G WIFI   | 0.45               |                           |
| DSS                                                                                                                                                                                                                                                                                                                                                                                                      | Bluetooth | 0.45               |                           |
| Limits (W/kg)                                                                                                                                                                                                                                                                                                                                                                                            |           | 1.6                |                           |
| Test Verdict                                                                                                                                                                                                                                                                                                                                                                                             |           | Pass               |                           |
| Note: This device supports LTE B4/B5/B17/B38 and LTE B66/26/B12/B41. Since the supported frequency span for LTE B2/B4/B5/B17/B38 falls completely within the supports frequency span for LTE B66/26/B12/B41, these LTE bands share the same transmission path, and LTE B4/B5/B17/B38 have lower or the same target power as LTE B66/26/B12/B41; Therefore, SAR was only assessed for LTE B66/26/B12/B41. |           |                    |                           |

#### 3.3.2 Highest Simultaneous Transmission SAR Values

| Equipment Class                                              | Maximum Scaled SAR (W/kg) |
|--------------------------------------------------------------|---------------------------|
|                                                              | Body                      |
|                                                              | 1g (0mm)                  |
| PCB                                                          | 1.57                      |
| Limit (W/kg)                                                 | 1.6                       |
| Note: The highest simultaneous SAR please refer section 12.2 |                           |

### 3.4 Test Uncertainty

#### 3.4.1 Measurement uncertainty evaluation for SAR test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEC/IEEE 62209-1528. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

##### 1) System Measurement Uncertainty (Frequency range from 300 MHz to 3 GHz)

| <b>DASY5 Uncertainty Budget</b><br><b>(Frequency band: 300 MHz - 3 GHz range)</b> |                                     |               |             |            |              |               |                |                 |
|-----------------------------------------------------------------------------------|-------------------------------------|---------------|-------------|------------|--------------|---------------|----------------|-----------------|
| Symbol                                                                            | Error Description                   | Uncert. value | Prob. Dist. | Div.       | ( $c_i$ ) 1g | ( $c_i$ ) 10g | Std. Unc. (1g) | Std. Unc. (10g) |
| <b>Measurement System Errors</b>                                                  |                                     |               |             |            |              |               |                |                 |
| CF                                                                                | Probe Calibration                   | $\pm 12.0\%$  | N           | 2          | 1            | 1             | $\pm 6.0\%$    | $\pm 6.0\%$     |
| CF <sub>drift</sub>                                                               | Probe Calibration Drift             | $\pm 1.0\%$   | N           | 1          | 1            | 1             | $\pm 1.0\%$    | $\pm 1.0\%$     |
| LIN                                                                               | Probe Linearity                     | $\pm 4.7\%$   | R           | $\sqrt{3}$ | 1            | 1             | $\pm 2.7\%$    | $\pm 2.7\%$     |
| BBS                                                                               | Broadband Signal                    | $\pm 3.0\%$   | N           | 2          | 1            | 1             | $\pm 1.5\%$    | $\pm 1.5\%$     |
| ISO                                                                               | Probe Isotropy                      | $\pm 7.6\%$   | R           | $\sqrt{3}$ | 1            | 1             | $\pm 4.4\%$    | $\pm 4.4\%$     |
| DAE                                                                               | Data Acquisition                    | $\pm 0.3\%$   | N           | 1          | 1            | 1             | $\pm 0.3\%$    | $\pm 0.3\%$     |
| AMB                                                                               | RF Ambient                          | $\pm 1.8\%$   | N           | 1          | 1            | 1             | $\pm 1.8\%$    | $\pm 1.8\%$     |
| $\Delta_{sys}$                                                                    | Probe Positioning                   | $\pm 0.2\%$   | N           | 1          | 0.14         | 0.14          | $\pm 0\%$      | $\pm 0\%$       |
| DAT                                                                               | Data Processing                     | $\pm 1.2\%$   | N           | 1          | 1            | 1             | $\pm 1.2\%$    | $\pm 1.2\%$     |
| <b>Phantom and Device Errors</b>                                                  |                                     |               |             |            |              |               |                |                 |
| LIQ( $\sigma$ )                                                                   | Conductivity (meas.) <sup>DAK</sup> | $\pm 2.5\%$   | N           | 1          | 0.78         | 0.71          | $\pm 2.0\%$    | $\pm 1.8\%$     |
| LIQ( $T_\sigma$ )                                                                 | Conductivity (temp.) <sup>BB</sup>  | $\pm 3.3\%$   | R           | $\sqrt{3}$ | 0.78         | 0.71          | $\pm 1.5\%$    | $\pm 1.4\%$     |
| EPS                                                                               | Phantom Permittivity                | $\pm 14.0\%$  | R           | $\sqrt{3}$ | 0            | 0             | $\pm 0\%$      | $\pm 0\%$       |
| DAS                                                                               | Distance DUT - TSL                  | $\pm 2.1\%$   | N           | 1          | 2            | 2             | $\pm 4.2\%$    | $\pm 4.2\%$     |
| H                                                                                 | Device Holder                       | $\pm 3.8\%$   | N           | 1          | 1            | 1             | $\pm 3.8\%$    | $\pm 3.8\%$     |
| MOD                                                                               | DUT Modulation <sup>m</sup>         | $\pm 2.4\%$   | R           | $\sqrt{3}$ | 1            | 1             | $\pm 1.4\%$    | $\pm 1.4\%$     |
| TAS                                                                               | Time-average SAR                    | $\pm 2.6\%$   | R           | $\sqrt{3}$ | 1            | 1             | $\pm 1.5\%$    | $\pm 1.5\%$     |
| RF <sub>drift</sub>                                                               | DUT drift                           | $\pm 5.0\%$   | R           | $\sqrt{3}$ | 1            | 1             | $\pm 2.9\%$    | $\pm 2.9\%$     |
| <b>Correction to the SAR results</b>                                              |                                     |               |             |            |              |               |                |                 |
| C( $\epsilon, \sigma$ )                                                           | Deviation to Target                 | $\pm 1.9\%$   | N           | 1          | 1            | 0.84          | $\pm 1.9\%$    | $\pm 1.6\%$     |
| C(R)                                                                              | SAR scaling <sup>p</sup>            | $\pm 0\%$     | R           | $\sqrt{3}$ | 1            | 1             | $\pm 0\%$      | $\pm 0\%$       |
| u( $\Delta$ SAR)                                                                  | Combined Uncertainty                |               |             |            |              |               | $\pm 11.2\%$   | $\pm 11.0\%$    |
| U                                                                                 | <b>Expanded Uncertainty</b>         |               |             |            |              |               | $\pm 22.3\%$   | $\pm 22.2\%$    |

## 2) System Measurement Uncertainty (Frequency range from 3 GHz to 6 GHz)

| <b>DASY5 Uncertainty Budget</b><br><b>(Frequency band: 3 GHz - 6 GHz range)</b> |                                     |                  |               |     |                         |                          |                   |                    |
|---------------------------------------------------------------------------------|-------------------------------------|------------------|---------------|-----|-------------------------|--------------------------|-------------------|--------------------|
| Symbol                                                                          | Error Description                   | Uncert.<br>value | Prob<br>Dist. | Div | (c <sub>i</sub> )<br>1g | (c <sub>i</sub> )<br>10g | Std. Unc.<br>(1g) | Std. Unc.<br>(10g) |
| <b>Measurement System Errors</b>                                                |                                     |                  |               |     |                         |                          |                   |                    |
| CF                                                                              | Probe Calibration                   | ±14.0%           | N             | 2   | 1                       | 1                        | ±7.0%             | ±7.0%              |
| CF <sub>drift</sub>                                                             | Probe Calibration Drift             | ±1.0%            | N             | 1   | 1                       | 1                        | ±1.0%             | ±1.0%              |
| LIN                                                                             | Probe Linearity                     | ±4.7%            | R             | √3  | 1                       | 1                        | ±2.7%             | ±2.7%              |
| BBS                                                                             | Broadband Signal                    | ±3.0%            | N             | 2   | 1                       | 1                        | ±1.5%             | ±1.5%              |
| ISO                                                                             | Probe Isotropy                      | ±7.6%            | R             | √3  | 1                       | 1                        | ±4.4%             | ±4.4%              |
| DAE                                                                             | Data Acquisition                    | ±0.3%            | N             | 1   | 1                       | 1                        | ±0.3%             | ±0.3%              |
| AMB                                                                             | RF Ambient                          | ±1.8%            | N             | 1   | 1                       | 1                        | ±1.8%             | ±1.8%              |
| Δ <sub>sys</sub>                                                                | Probe Positioning                   | ±0.2%            | N             | 1   | 0.3<br>3                | 0.33                     | ±0.1%             | ±0.1%              |
| DAT                                                                             | Data Processing                     | ±2.3%            | N             | 1   | 1                       | 1                        | ±2.3%             | ±2.3%              |
| <b>Phantom and Device Errors</b>                                                |                                     |                  |               |     |                         |                          |                   |                    |
| LIQ(σ)                                                                          | Conductivity (meas.) <sup>DAK</sup> | ±2.5%            | N             | 1   | 0.7<br>8                | 0.71                     | ±2.0%             | ±1.8%              |
| LIQ(T <sub>σ</sub> )                                                            | Conductivity (temp.) <sup>BB</sup>  | ±3.4%            | R             | √3  | 0.7<br>8                | 0.71                     | ±1.5%             | ±1.4%              |
| EPS                                                                             | Phantom Permittivity                | ±14.0%           | R             | √3  | 0.2<br>5                | 0.25                     | ±2.0%             | ±2.0%              |
| DAS                                                                             | Distance DUT - TSL                  | ±2.1%            | N             | 1   | 2                       | 2                        | ±4.2%             | ±4.2%              |
| H                                                                               | Device Holder                       | ±3.8%            | N             | 1   | 1                       | 1                        | ±3.8%             | ±3.8%              |
| MOD                                                                             | DUT Modulation <sup>m</sup>         | ±2.4%            | R             | √3  | 1                       | 1                        | ±1.4%             | ±1.4%              |
| TAS                                                                             | Time-average SAR                    | ±2.6%            | R             | √3  | 1                       | 1                        | ±1.5%             | ±1.5%              |
| RF <sub>drift</sub>                                                             | DUT drift                           | ±5.0%            | R             | √3  | 1                       | 1                        | ±2.9%             | ±2.9%              |
| <b>Correction to the SAR results</b>                                            |                                     |                  |               |     |                         |                          |                   |                    |
| C(ε, σ)                                                                         | Deviation to Target                 | ±1.9%            | N             | 1   | 1                       | 0.84                     | ±1.9%             | ±1.6%              |
| C(R)                                                                            | SAR scaling <sup>p</sup>            | ±0%              | R             | √3  | 1                       | 1                        | ±0%               | ±0%                |
| u(ΔSAR)                                                                         | Combined Uncertainty                |                  |               |     |                         |                          | ±12.1%            | ±12.0%             |
| U                                                                               | <b>Expanded Uncertainty</b>         |                  |               |     |                         |                          | ±24.2%            | ±24.0%             |

### 3.4.2 Measurement uncertainty evaluation for system check

This measurement uncertainty budget is suggested by IEC/IEEE 62209-1528. The breakdown of the individual uncertainties is as follows:

| <b>DASY5 Uncertainty Budget</b><br><b>(Frequency band: 300 MHz - 6 GHz range)</b> |                                     |               |             |      |                      |                       |                |                 |
|-----------------------------------------------------------------------------------|-------------------------------------|---------------|-------------|------|----------------------|-----------------------|----------------|-----------------|
| Symbol                                                                            | Error Description                   | Uncert. value | Prob. Dist. | Div. | (c <sub>i</sub> ) 1g | (c <sub>i</sub> ) 10g | Std. Unc. (1g) | Std. Unc. (10g) |
| <b>Measurement System Errors</b>                                                  |                                     |               |             |      |                      |                       |                |                 |
| CF                                                                                | Probe Calibration                   | ±14.0%        | N           | 2    | 1                    | 1                     | ±7.0%          | ±7.0%           |
| CF <sub>drift</sub>                                                               | Probe Calibration Drift             | ±1.0%         | N           | 1    | 1                    | 1                     | ±1.0%          | ±1.0%           |
| LIN                                                                               | Probe Linearity                     | ±4.7%         | R           | √3   | 1                    | 1                     | ±2.7%          | ±2.7%           |
| BBS                                                                               | Broadband Signal                    | ±0.0%         | N           | 2    | 1                    | 1                     | ±0.0%          | ±0.0%           |
| ISO                                                                               | Probe Isotropy                      | ±7.6%         | R           | √3   | 1                    | 1                     | ±4.4%          | ±4.4%           |
| DAE                                                                               | Data Acquisition                    | ±0.3%         | N           | 1    | 1                    | 1                     | ±0.3%          | ±0.3%           |
| AMB                                                                               | RF Ambient                          | ±1.8%         | N           | 1    | 1                    | 1                     | ±1.8%          | ±1.8%           |
| Δ <sub>sys</sub>                                                                  | Probe Positioning                   | ±0.2%         | N           | 1    | 0.33                 | 0.33                  | ±0%            | ±0%             |
| <b>Phantom and Device Errors</b>                                                  |                                     |               |             |      |                      |                       |                |                 |
| LIQ(σ)                                                                            | Conductivity (meas.) <sup>DAK</sup> | ±2.5%         | N           | 1    | 0.78                 | 0.71                  | ±2.0%          | ±1.8%           |
| LIQ(T <sub>σ</sub> )                                                              | Conductivity (temp.) <sup>BB</sup>  | ±3.4%         | R           | √3   | 0.78                 | 0.71                  | ±1.5%          | ±1.4%           |
| EPS                                                                               | Phantom Permittivity                | ±14.0%        | R           | √3   | 0.25                 | 0.25                  | ±2.0%          | ±2.0%           |
| DAS                                                                               | Distance DUT - TSL                  | ±1.0%         | N           | 1    | 2                    | 2                     | ±2.0%          | ±2.0%           |
| VAL                                                                               | Validation antenna                  | ±0.0%         | R           | √3   | 1                    | 1                     | ±0.0%          | ±0.0%           |
| P <sub>in</sub>                                                                   | Accepted power                      | ±1.2%         | N           | 1    | 1                    | 1                     | ±1.2%          | ±1.2%           |
| RF <sub>drift</sub>                                                               | DUT drift                           | ±5.0%         | R           | √3   | 1                    | 1                     | ±2.9%          | ±2.9%           |
| <b>Correction to the SAR results</b>                                              |                                     |               |             |      |                      |                       |                |                 |
| C(ε, σ)                                                                           | Deviation to Target                 | ±1.9%         | N           | 1    | 1                    | 0.84                  | ±1.9%          | ±1.6%           |
| u(ΔSAR)                                                                           | Combined Uncertainty                |               |             |      |                      |                       | ±10.4%         | ±10.3%          |
| U                                                                                 | <b>Expanded Uncertainty</b>         |               |             |      |                      |                       | ±20.7%         | ±20.5%          |

## 4 MEASUREMENT SYSTEM

### 4.1 Specific Absorption Rate (SAR) Definition

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density ( $\rho$ ). The equation description is as below:

$$\text{SAR} = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dv} \right)$$

SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

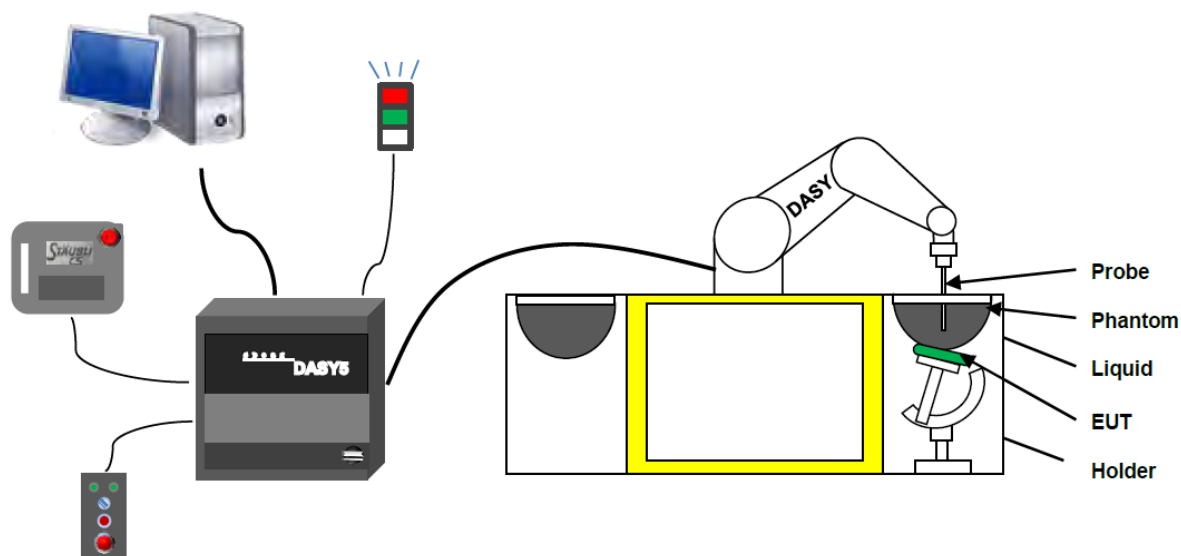
$$\text{SAR} = \frac{\sigma E^2}{\rho}$$

Where:  $\sigma$  is the conductivity of the tissue,

$\rho$  is the mass density of the tissue and E is the RMS electrical field strength.

## 4.2 DASY SAR System

### 4.2.1 DASY SAR System Diagram

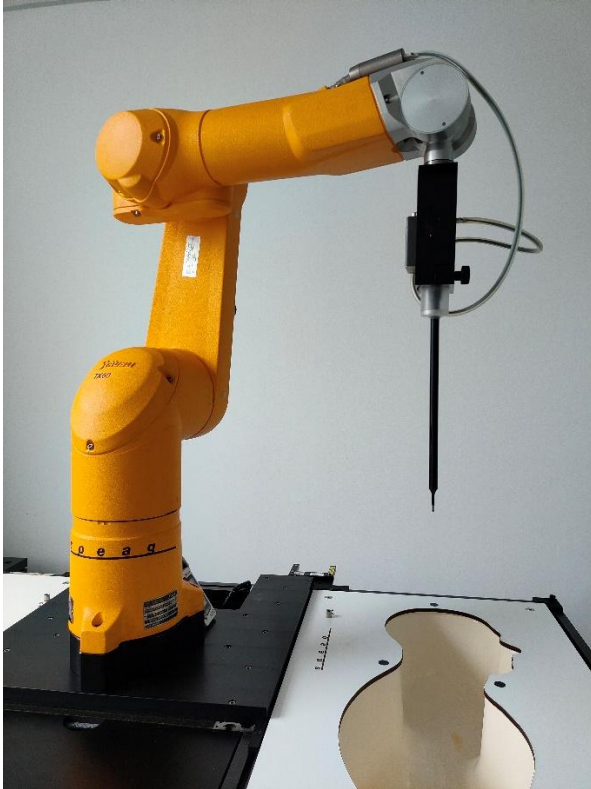


The DASY5 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (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.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
6. The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

#### 4.2.2 Robot

The Dasy SAR system uses the high precision robots. Symmetrical design with triangular core Built-in optical fiber for surface detection system For the 6-axis controller system, Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents). The robot series have many features that are important for our application:



- High precision  
(repeatability  $\pm 0.02$  mm)
- High reliability  
(industrial design)
- Low maintenance costs  
(virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements  
(brush less synchron motors; no stepper motors)
- Low ELF interference  
(motor control \_elds shielded via the closed metallic construction shields)

### 4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4 with following specifications is used.

|               |                                                                                                                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction  | Symmetrical design with triangular core Built-in optical fiber for surface detection system<br>Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether) |
| Calibration   | ISO/IEC 17025 calibration service available                                                                                                                                                                         |
| Frequency     | 4 MHz to 10 GHz; Linearity: $\pm 0.2$ dB                                                                                                                                                                            |
| Directivity   | $\pm 0.2$ dB in HSL (rotation around probe axis) ; $\pm 0.4$ dB in HSL (rotation normal to probe axis)                                                                                                              |
| Dynamic range | 5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB                                                                                                                                                                  |
| Dimensions    | Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm                                                                                             |
| Application   | General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)                                                                                              |



#### E-Field Probe Calibration Process

Probe calibration is realized, in compliance with IEC/IEEE 62209-1528 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the IEC/IEEE 62209-1528 annexe technique using reference guide at the five frequencies.

#### 4.2.4 Data Acquisition Electronics

The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.



- Input Impedance: 200M Ohm
- The Inputs: Symmetrical and Floating
- Common Mode Rejection: Above 80dB

#### 4.2.5 Phantoms

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209 Part II and all known tissue simulating liquids. ELI4 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.



• Flat phantom

**Photo of Phantom**



#### 4.2.6 Device Holder

The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of  $65^\circ$ . The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard mobile phones or PDA's only. If necessary an additional support of polystyrene material is used. Larger DUT's (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots with maximum SAR values. Therefore those devices are normally only tested at the flat part of the SAM.

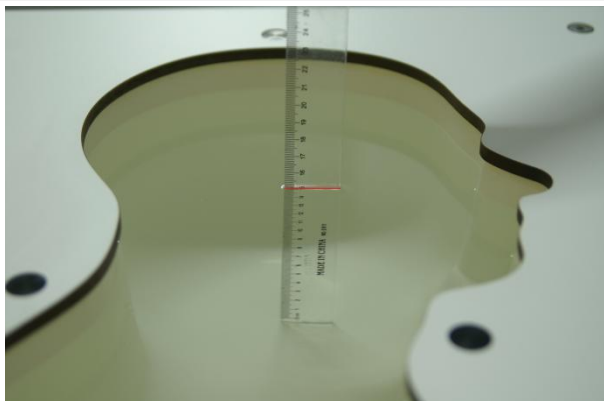


The positioning system allows obtaining cheek and tilting position with a very good accuracy. Incompliance with CENELEC, the tilt angle uncertainty is lower than  $1^\circ$ .

#### 4.2.7 Simulating Liquid

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5%.

**Head Liquid Depth**



**Body Liquid Depth**



The following table gives the recipes for tissue simulating liquid.

| TSL           | Manufacturer / Model  | Freq Range (MHz) | Main Ingredients                                                                                         |
|---------------|-----------------------|------------------|----------------------------------------------------------------------------------------------------------|
| Head WideBand | SPEAG HBBL600-10000V6 | 600-10000        | Ethanediol, Sodium petroleum sulfonate, Hexylene Glycol / 2-Methyl-pentane-2.4-diol, Alkoxylated alcohol |

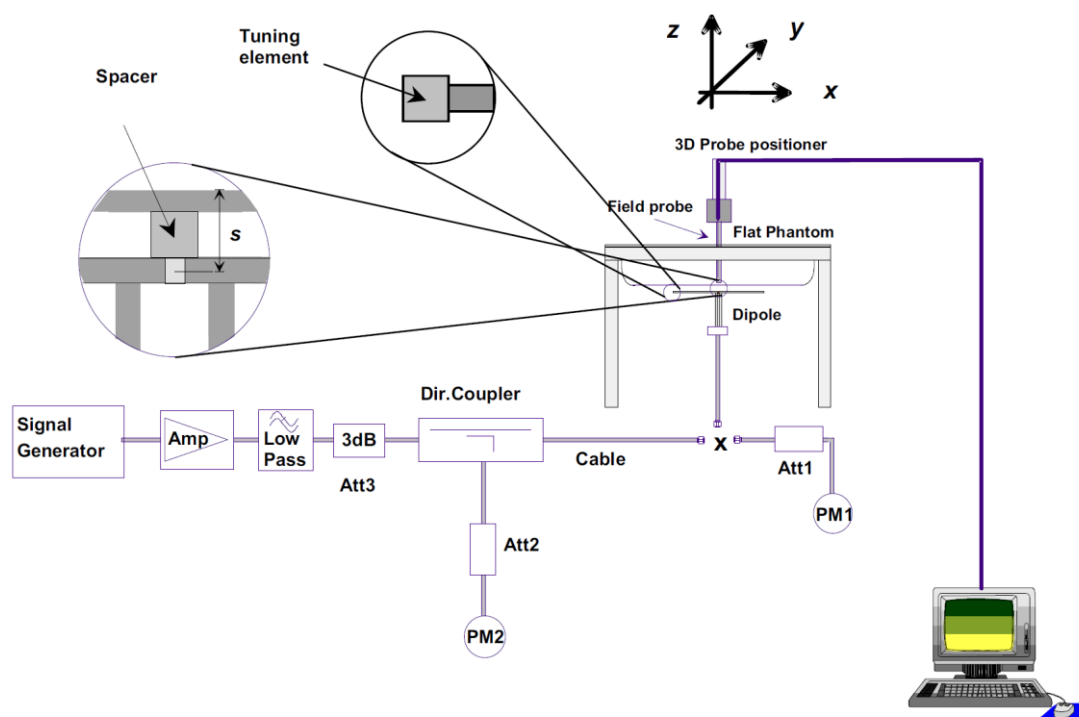
## 5 SYSTEM VERIFICATION

### 5.1 Purpose of System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

### 5.2 System Check Setup

In the simplified setup for system evaluation, the EUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



## 6 TEST POSITION CONFIGURATIONS

This DUT was tested in five different positions. They are back side, left edge, right edge, top edge and Bottom edge in these positions, the surface of DUT is touching with phantom 0mm.

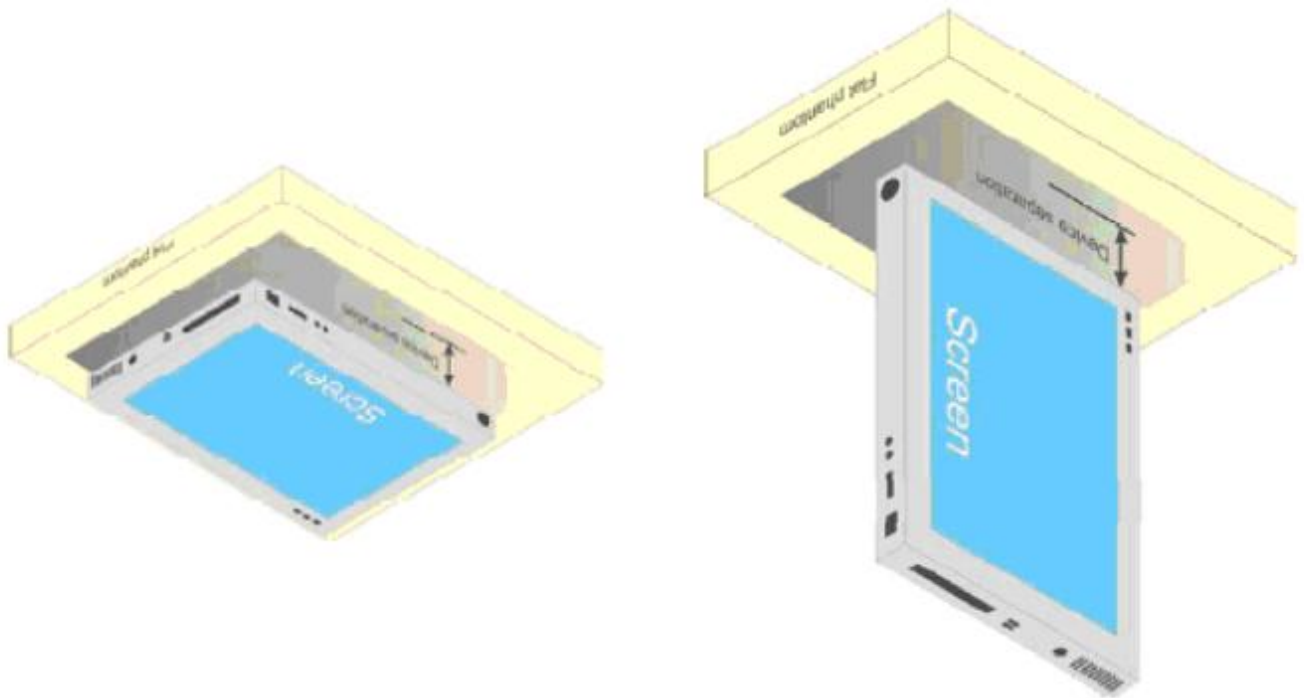
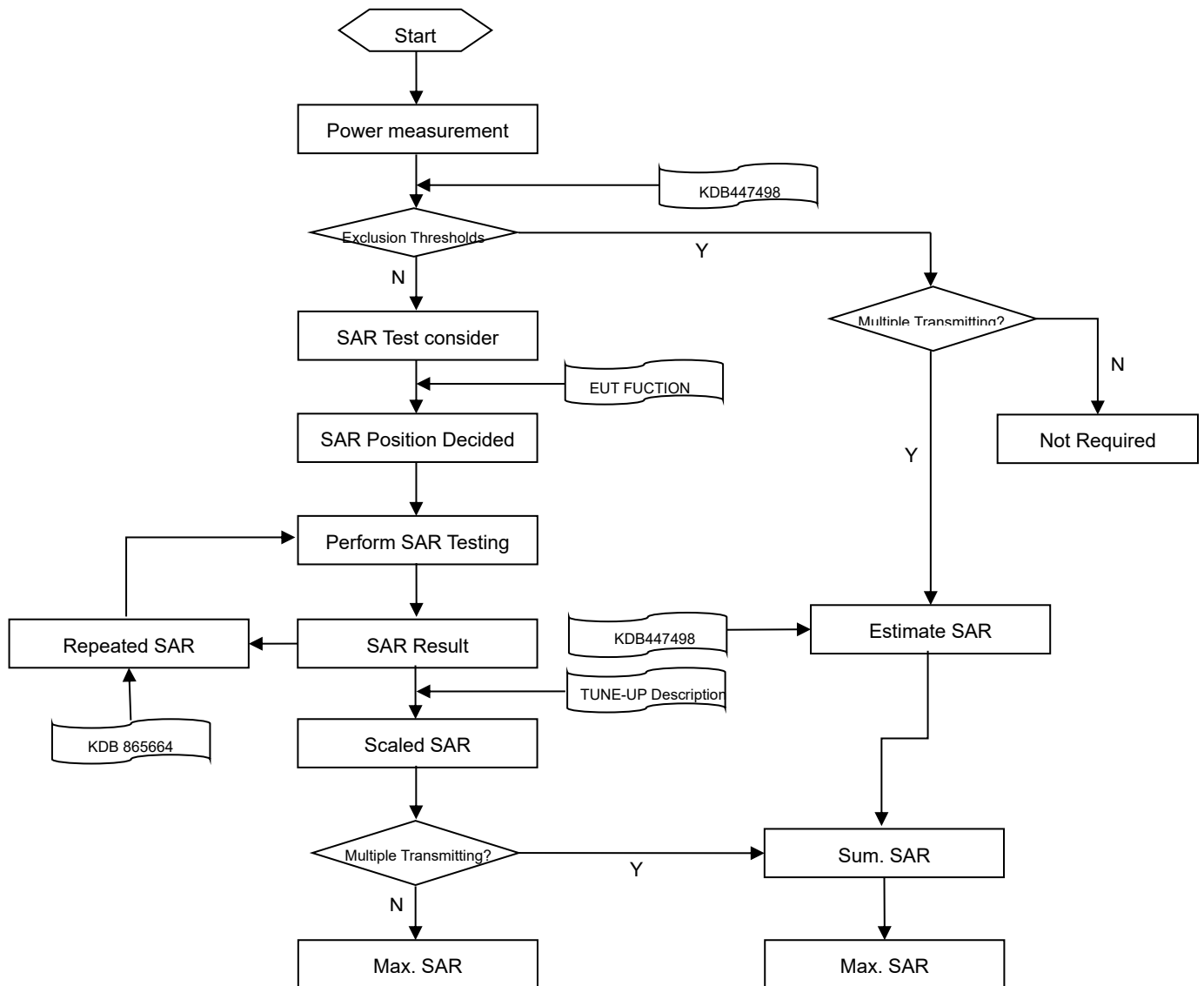


**Fig** Illustration for Lap-touching Position

## 7 MEASUREMENT PROCEDURE

### 7.1 Measurement Process Diagram



## 7.2 SAR Scan General Requirement

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1 g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013.

|                                                                                                                                                                                                                                                                             |                           |                                                                | ≤3GHz                                                                                                                                                                                                                                                             | >3GHz                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface                                                                                                                                                                      |                           |                                                                | 5±1 mm                                                                                                                                                                                                                                                            | ½·δ·ln(2)±0.5 mm                       |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location                                                                                                                                                                                   |                           |                                                                | 30°±1°                                                                                                                                                                                                                                                            | 20°±1°                                 |
| Maximum area scan spatial resolution: Δx Area , Δy Area                                                                                                                                                                                                                     |                           |                                                                | ≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm                                                                                                                                                                                                                            | 3–4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 10 mm |
|                                                                                                                                                                                                                                                                             |                           |                                                                | When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device. |                                        |
| Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom                                                                                                                                                                                                                     |                           |                                                                | ≤ 2 GHz: ≤ 8 mm<br>2 –3 GHz: ≤ 5 mm*                                                                                                                                                                                                                              | 3–4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm* |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                             | uniform grid: Δz Zoom (n) |                                                                | ≤ 5 mm                                                                                                                                                                                                                                                            | 3–4 GHz: ≤ 4 mm                        |
|                                                                                                                                                                                                                                                                             |                           |                                                                |                                                                                                                                                                                                                                                                   | 4–5 GHz: ≤ 3 mm                        |
|                                                                                                                                                                                                                                                                             |                           |                                                                |                                                                                                                                                                                                                                                                   | 5–6 GHz: ≤ 2 mm                        |
|                                                                                                                                                                                                                                                                             | graded grid               | Δz Zoom (1): between 1st two points closest to phantom surface | ≤ 4 mm                                                                                                                                                                                                                                                            | 3–4 GHz: ≤ 3 mm                        |
|                                                                                                                                                                                                                                                                             |                           |                                                                |                                                                                                                                                                                                                                                                   | 4–5 GHz: ≤ 2.5 mm                      |
|                                                                                                                                                                                                                                                                             |                           | Δz Zoom (n>1): between subsequent points                       | ≤ 1.5·Δz Zoom (n-1)                                                                                                                                                                                                                                               |                                        |
| Minimum zoom scan volume                                                                                                                                                                                                                                                    | x, y, z                   |                                                                | ≥30 mm                                                                                                                                                                                                                                                            | 3–4 GHz: ≥ 28 mm                       |
|                                                                                                                                                                                                                                                                             |                           |                                                                |                                                                                                                                                                                                                                                                   | 4–5 GHz: ≥ 25 mm                       |
|                                                                                                                                                                                                                                                                             |                           |                                                                |                                                                                                                                                                                                                                                                   | 5–6 GHz: ≥ 22 mm                       |
| Note:                                                                                                                                                                                                                                                                       |                           |                                                                |                                                                                                                                                                                                                                                                   |                                        |
| 1. δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.                                                                                                                                     |                           |                                                                |                                                                                                                                                                                                                                                                   |                                        |
| 2. * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                           |                                                                |                                                                                                                                                                                                                                                                   |                                        |

### 7.3 Measurement Procedure

The following steps are used for each test position

- a. Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- b. Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- c. Measurement of the SAR distribution with a grid of 8 to 16mm \* 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- d. Around this point, a cube of 30 \* 30 \* 30 mm or 32 \* 32 \* 32 mm is assessed by measuring 5 or 8 \* 5 or 8\*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

### 7.4 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below.

When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

## 8 CONDUCTED RF OUTPUT POWER

### 8.1 GSM

Please refer the document "Ti-CC26040015-AP.pdf".

### 8.2 WCDMA

Please refer the document "Ti-CC26040015-AP.pdf".

### 8.3 LTE

Please refer the document "Ti-CC26040015-AP.pdf".

### 8.4 WIFI

#### 8.4.1 2.4G WIFI-ANT0

| Band (GHz)          | Mode          | Channel | Freq. (MHz) | Conducted Power (dBm) | Tune-up Limit (dBm) | SAR Test Require. |
|---------------------|---------------|---------|-------------|-----------------------|---------------------|-------------------|
| 2.4<br>(2.4~2.4835) | 802.11b       | 1       | 2412        | 9.53                  | 10.00               | Yes               |
|                     |               | 6       | 2437        | 9.09                  | 10.00               | No                |
|                     |               | 11      | 2462        | 8.79                  | 10.00               | No                |
|                     | 802.11g       | 1       | 2412        | 8.28                  | 9.00                | No                |
|                     |               | 6       | 2437        | 7.57                  | 9.00                | No                |
|                     |               | 11      | 2462        | 6.98                  | 8.50                | No                |
|                     | 802.11n(HT20) | 1       | 2412        | 9.13                  | 10.00               | No                |
|                     |               | 6       | 2437        | 8.56                  | 10.00               | No                |
|                     |               | 11      | 2462        | 8.17                  | 9.50                | No                |

Note: When multiple channel bandwidth configurations in a frequency band have the same maximum tune-up output power, the test configuration is determined by applying the following steps sequentially.

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg, OFDM SAR test is not required.  
Adjusted SAR =  $0.502 * (10.00\text{mW}/7.94\text{mW}) = 0.399$  W/Kg, so 2.4G OFDM SAR test is not required.

## 8.4.2 5G WIFI-ANT2

| Band (GHz)          | Mode            | Channel | Freq. (MHz) | Conducted Power (dBm) | Tune-up Limit (dBm) | SAR Test Require. |
|---------------------|-----------------|---------|-------------|-----------------------|---------------------|-------------------|
| 5.2<br>(5.15~5.25)  | 802.11a         | 36      | 5180        | 6.60                  | 7.50                | No                |
|                     |                 | 44      | 5220        | 6.52                  | 7.50                | No                |
|                     |                 | 48      | 5240        | 6.02                  | 7.50                | No                |
|                     | 802.11n(HT20)   | 36      | 5180        | 8.28                  | 9.00                | No                |
|                     |                 | 44      | 5220        | 8.37                  | 9.00                | Yes               |
|                     |                 | 48      | 5240        | 7.76                  | 8.50                | No                |
|                     | 802.11n(HT40)   | 38      | 5190        | 8.00                  | 8.50                | No                |
|                     |                 | 46      | 5230        | 7.85                  | 8.50                | No                |
|                     | 802.11ac(VHT20) | 36      | 5180        | 6.91                  | 7.50                | No                |
|                     |                 | 44      | 5220        | 6.83                  | 7.50                | No                |
|                     |                 | 48      | 5240        | 6.68                  | 7.50                | No                |
|                     | 802.11ac(VHT40) | 38      | 5190        | 6.95                  | 7.50                | No                |
|                     |                 | 46      | 5230        | 6.77                  | 7.50                | No                |
|                     | 802.11ac(VHT80) | 42      | 5210        | 6.81                  | 7.50                | No                |
| 5.3<br>(5.25~5.35)  | 802.11a         | 52      | 5260        | 5.29                  | 6.00                | No                |
|                     |                 | 60      | 5300        | 5.29                  | 6.00                | No                |
|                     |                 | 64      | 5320        | 4.83                  | 6.00                | No                |
|                     | 802.11n(HT20)   | 52      | 5260        | 6.49                  | 7.50                | No                |
|                     |                 | 60      | 5300        | 7.04                  | 8.00                | No                |
|                     |                 | 64      | 5320        | 7.06                  | 8.00                | No                |
|                     | 802.11n(HT40)   | 54      | 5270        | 7.00                  | 8.00                | No                |
|                     |                 | 62      | 5310        | 6.53                  | 7.50                | No                |
|                     | 802.11ac(VHT20) | 52      | 5260        | 5.33                  | 6.00                | No                |
|                     |                 | 60      | 5300        | 5.29                  | 6.00                | No                |
|                     |                 | 64      | 5320        | 5.27                  | 6.00                | No                |
|                     | 802.11ac(VHT40) | 54      | 5270        | 5.58                  | 6.50                | No                |
|                     |                 | 62      | 5310        | 5.47                  | 6.50                | No                |
|                     | 802.11ac(VHT80) | 58      | 5290        | 5.75                  | 6.50                | No                |
| 5.6<br>(5.47~5.725) | 802.11a         | 100     | 5500        | 6.03                  | 7.00                | No                |
|                     |                 | 116     | 5580        | 6.48                  | 7.00                | No                |
|                     |                 | 140     | 5700        | 6.24                  | 7.00                | No                |
|                     | 802.11n(HT20)   | 100     | 5500        | 7.65                  | 8.50                | No                |
|                     |                 | 116     | 5580        | 7.44                  | 8.50                | No                |
|                     |                 | 140     | 5700        | 7.42                  | 8.50                | No                |
|                     | 802.11n(HT40)   | 102     | 5510        | 7.05                  | 8.50                | No                |

|                      |                 |     |      |      |      |     |
|----------------------|-----------------|-----|------|------|------|-----|
|                      |                 | 118 | 5590 | 7.26 | 8.50 | No  |
|                      |                 | 134 | 5670 | 7.45 | 8.50 | Yes |
|                      | 802.11ac(VHT20) | 100 | 5500 | 5.39 | 6.50 | No  |
|                      |                 | 116 | 5580 | 5.90 | 7.00 | No  |
|                      |                 | 140 | 5700 | 6.16 | 7.00 | No  |
|                      | 802.11ac(VHT40) | 102 | 5510 | 6.28 | 7.00 | No  |
|                      |                 | 118 | 5590 | 6.60 | 7.50 | No  |
|                      |                 | 134 | 5670 | 6.08 | 7.00 | No  |
|                      | 802.11ac(VHT80) | 106 | 5530 | 5.67 | 6.50 | No  |
|                      |                 | 122 | 5610 | 5.91 | 6.50 | No  |
| 5.8<br>(5.725~5.850) | 802.11a         | 149 | 5745 | 6.09 | 7.00 | No  |
|                      |                 | 157 | 5785 | 5.72 | 6.50 | No  |
|                      |                 | 165 | 5825 | 5.75 | 6.50 | No  |
|                      | 802.11n(HT20)   | 149 | 5745 | 7.13 | 8.00 | No  |
|                      |                 | 157 | 5785 | 7.03 | 8.00 | No  |
|                      |                 | 165 | 5825 | 7.08 | 8.00 | No  |
|                      | 802.11n(HT40)   | 151 | 5755 | 7.23 | 8.50 | No  |
|                      |                 | 159 | 5795 | 7.27 | 8.50 | Yes |
|                      | 802.11ac(VHT20) | 149 | 5745 | 5.15 | 6.00 | No  |
|                      |                 | 157 | 5785 | 5.81 | 6.50 | No  |
|                      |                 | 165 | 5825 | 5.86 | 6.50 | No  |
|                      | 802.11ac(VHT40) | 151 | 5755 | 5.80 | 6.50 | No  |
|                      |                 | 159 | 5795 | 5.93 | 7.00 | No  |
|                      | 802.11ac(VHT80) | 155 | 5775 | 5.77 | 6.50 | No  |

Note: When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is  $\leq 1.2$  W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

Adjusted SAR =  $0.189 * (7.94\text{mW}/7.08\text{mW}) = 0.168$  W/Kg, so U-NII-2A SAR test is not required.

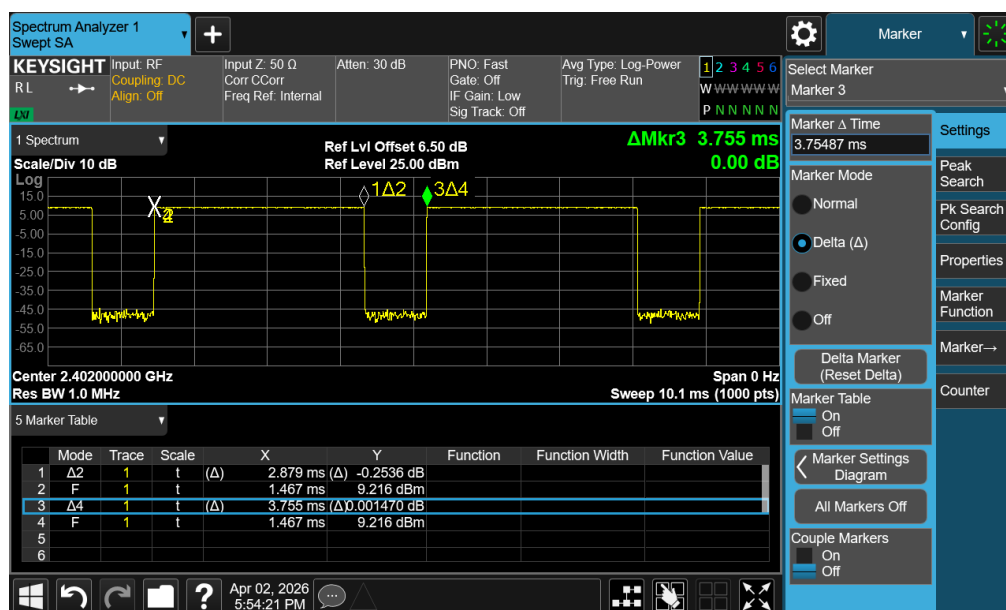
## 8.5 Bluetooth

| Bluetooth-ANT0 |            |                |                |                       |                     |                  |
|----------------|------------|----------------|----------------|-----------------------|---------------------|------------------|
| Test Mode      | Modulation | Channel number | Frequency(MHz) | Conducted Power (dBm) | Tune-Up Limit (dBm) | SAR Test Require |
| BT             | DH5        | 0              | 2402           | 6.20                  | 7.00                | No               |
|                |            | 39             | 2441           | 8.63                  | 9.00                | No               |
|                |            | 78             | 2480           | 10.61                 | 11.00               | Yes              |
|                | 2DH5       | 0              | 2402           | 6.06                  | 7.00                | No               |
|                |            | 39             | 2441           | 8.53                  | 9.00                | No               |
|                |            | 78             | 2480           | 9.91                  | 10.50               | No               |
|                | 3DH5       | 0              | 2402           | 6.12                  | 7.00                | No               |
|                |            | 39             | 2441           | 8.55                  | 9.00                | No               |
|                |            | 78             | 2480           | 9.92                  | 10.50               | No               |
|                | BLE-1M     | 0              | 2402           | -3.96                 | -3.00               | No               |
|                |            | 19             | 2440           | -2.35                 | -2.00               | No               |
|                |            | 39             | 2480           | -3.89                 | -3.00               | No               |
|                | BLE-2M     | 1              | 2404           | -3.69                 | -3.00               | No               |
|                |            | 19             | 2440           | -2.31                 | -2.00               | No               |
|                |            | 38             | 2478           | -3.67                 | -3.00               | No               |

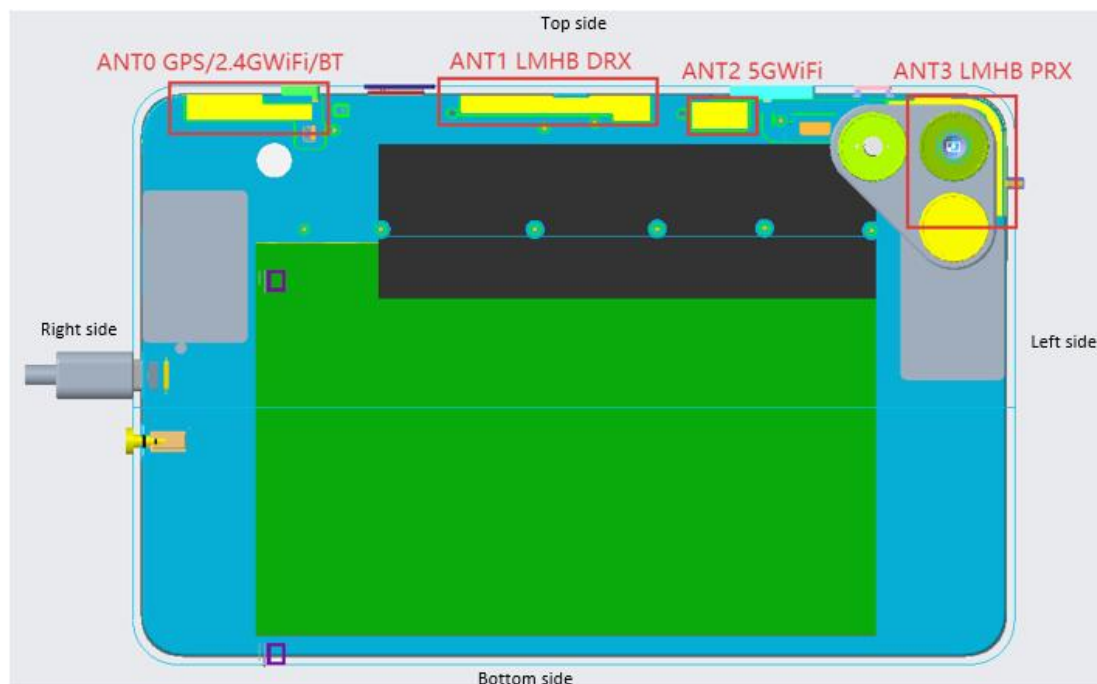
Note: Since bluetooth BR mode is the maximum output power mode, SAR measurements were performed with test software using DH5 modulation, and SAR measurement is not required for the EDR and LE. When the secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode.

The Bluetooth duty cycle is 76.67% as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.

Duty Cycle



## 9 TEST EXCLUSION CONSIDERATION



EUT Back view

Dimensions: 227.85×149.91×8mm

| Antenna | Support Band                                    |
|---------|-------------------------------------------------|
| Ant 0   | GPS                                             |
|         | WIFI2.4G,Bluetooth                              |
| Ant 1   | RX Only                                         |
| Ant 2   | WIFI5G                                          |
| Ant 3   | GSM 850/1900 PRX                                |
|         | WCDMA B2/B4/B5 PRX                              |
|         | LTE B2/B4/B5/B7/B12/B13/B17/B26/B66/B38/B41 PRX |

### SAR Test Exclusion Consideration Table

| SAR Test Required |            |           |           |            |          |             |
|-------------------|------------|-----------|-----------|------------|----------|-------------|
| Antenna           | Front Side | Back Side | Left Edge | Right Edge | Top Edge | Bottom Edge |
| Ant 0             | N/A        | Yes       | Yes       | Yes        | Yes      | Yes         |
| Ant 2             | N/A        | Yes       | Yes       | Yes        | Yes      | Yes         |
| Ant 3             | N/A        | Yes       | Yes       | Yes        | Yes      | Yes         |

# 10 TEST RESULT

Note: Refer to ANNEX C for the detailed test data for each test configuration.

| Band     | Antenna | Mode        | Position    | Dist.<br>(mm) | Band<br>width | Ch.  | Freq.<br>(MHz) | RB<br>Size | RB<br>offset | Power<br>Drift<br>(dB) | 1 g<br>Meas<br>SAR<br>(W/kg) | Meas.<br>Power<br>(dBm) | Max.<br>tune-up<br>power<br>(dBm) | Scaling<br>Factor | 1g<br>Scaled<br>SAR<br>(W/kg) | Meas.<br>No. |
|----------|---------|-------------|-------------|---------------|---------------|------|----------------|------------|--------------|------------------------|------------------------------|-------------------------|-----------------------------------|-------------------|-------------------------------|--------------|
| Body     |         |             |             |               |               |      |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| GSM850   | ANT3    | GPRS 2Slots | Back Side   | 0             | /             | 190  | 836.6          | /          | /            | -0.17                  | 0.479                        | 23.36                   | 24.50                             | 1.300             | 0.622                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 190  | 836.6          | /          | /            | -0.14                  | 0.696                        | 23.36                   | 24.50                             | 1.300             | 0.905                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Right Edge  | 0             | /             | 190  | 836.6          | /          | /            | 0.02                   | 0.020                        | 23.36                   | 24.50                             | 1.300             | 0.026                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Top Edge    | 0             | /             | 190  | 836.6          | /          | /            | -0.10                  | 0.341                        | 23.36                   | 24.50                             | 1.300             | 0.444                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Bottom Edge | 0             | /             | 190  | 836.6          | /          | /            | 0.06                   | 0.019                        | 23.36                   | 24.50                             | 1.300             | 0.024                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 128  | 824.2          | /          | /            | 0.13                   | 0.702                        | 23.15                   | 24.50                             | 1.365             | 0.958                         | /            |
| GSM850   | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 251  | 848.8          | /          | /            | -0.12                  | 0.728                        | 23.26                   | 24.50                             | 1.330             | 0.969                         | #1           |
|          |         |             |             |               |               |      |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| GSM1900  | ANT3    | GPRS 2Slots | Back Side   | 0             | /             | 661  | 1880           | /          | /            | 0.01                   | 0.539                        | 20.28                   | 21.00                             | 1.180             | 0.636                         | /            |
| GSM1900  | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 661  | 1880           | /          | /            | -0.07                  | 0.798                        | 20.28                   | 21.00                             | 1.180             | 0.942                         | #2           |
| GSM1900  | ANT3    | GPRS 2Slots | Right Edge  | 0             | /             | 661  | 1880           | /          | /            | 0.13                   | 0.027                        | 20.28                   | 21.00                             | 1.180             | 0.032                         | /            |
| GSM1900  | ANT3    | GPRS 2Slots | Top Edge    | 0             | /             | 661  | 1880           | /          | /            | 0.16                   | 0.615                        | 20.28                   | 21.00                             | 1.180             | 0.726                         | /            |
| GSM1900  | ANT3    | GPRS 2Slots | Bottom Edge | 0             | /             | 661  | 1880           | /          | /            | -0.14                  | 0.019                        | 20.28                   | 21.00                             | 1.180             | 0.022                         | /            |
| GSM1900  | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 512  | 1850.2         | /          | /            | 0.12                   | 0.768                        | 20.16                   | 21.00                             | 1.213             | 0.932                         | /            |
| GSM1900  | ANT3    | GPRS 2Slots | Left Edge   | 0             | /             | 810  | 1909.8         | /          | /            | -0.12                  | 0.715                        | 20.22                   | 21.00                             | 1.197             | 0.856                         | /            |
|          |         |             |             |               |               |      |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| WCDMA B2 | ANT3    | RMC         | Back Side   | 0             | /             | 9400 | 1880           | /          | /            | 0.02                   | 0.536                        | 14.66                   | 15.50                             | 1.213             | 0.650                         | /            |
| WCDMA B2 | ANT3    | RMC         | Left Edge   | 0             | /             | 9400 | 1880           | /          | /            | 0.01                   | 0.636                        | 14.66                   | 15.50                             | 1.213             | 0.771                         | #3           |
| WCDMA B2 | ANT3    | RMC         | Right Edge  | 0             | /             | 9400 | 1880           | /          | /            | -0.11                  | 0.035                        | 14.66                   | 15.50                             | 1.213             | 0.043                         | /            |
| WCDMA B2 | ANT3    | RMC         | Top Edge    | 0             | /             | 9400 | 1880           | /          | /            | 0.06                   | 0.565                        | 14.66                   | 15.50                             | 1.213             | 0.686                         | /            |
| WCDMA B2 | ANT3    | RMC         | Bottom Edge | 0             | /             | 9400 | 1880           | /          | /            | -0.15                  | 0.035                        | 14.66                   | 15.50                             | 1.213             | 0.043                         | /            |
|          |         |             |             |               |               |      |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| WCDMA B4 | ANT3    | RMC         | Back Side   | 0             | /             | 1412 | 1732.4         | /          | /            | -0.19                  | 0.253                        | 14.62                   | 15.50                             | 1.225             | 0.310                         | #4           |
| WCDMA B4 | ANT3    | RMC         | Left Edge   | 0             | /             | 1412 | 1732.4         | /          | /            | -0.10                  | 0.195                        | 14.62                   | 15.50                             | 1.225             | 0.239                         | /            |
| WCDMA B4 | ANT3    | RMC         | Right Edge  | 0             | /             | 1412 | 1732.4         | /          | /            | -0.03                  | 0.029                        | 14.62                   | 15.50                             | 1.225             | 0.036                         | /            |
| WCDMA B4 | ANT3    | RMC         | Top Edge    | 0             | /             | 1412 | 1732.4         | /          | /            | 0.07                   | 0.214                        | 14.62                   | 15.50                             | 1.225             | 0.262                         | /            |
| WCDMA B4 | ANT3    | RMC         | Bottom Edge | 0             | /             | 1412 | 1732.4         | /          | /            | -0.02                  | 0.022                        | 14.62                   | 15.50                             | 1.225             | 0.027                         | /            |

| Band     | Antenna | Mode | Position    | Dist.<br>(mm) | Band<br>width | Ch.   | Freq.<br>(MHz) | RB<br>Size | RB<br>offset | Power<br>Drift<br>(dB) | 1 g<br>Meas<br>SAR<br>(W/kg) | Meas.<br>Power<br>(dBm) | Max.<br>tune-up<br>power<br>(dBm) | Scaling<br>Factor | 1g<br>Scaled<br>SAR<br>(W/kg) | Meas.<br>No. |
|----------|---------|------|-------------|---------------|---------------|-------|----------------|------------|--------------|------------------------|------------------------------|-------------------------|-----------------------------------|-------------------|-------------------------------|--------------|
| WCDMA B5 | ANT3    | RMC  | Back Side   | 0             | /             | 4183  | 836.6          | /          | /            | 0.08                   | 0.409                        | 18.49                   | 19.00                             | 1.125             | 0.460                         | /            |
| WCDMA B5 | ANT3    | RMC  | Left Edge   | 0             | /             | 4183  | 836.6          | /          | /            | -0.17                  | 0.658                        | 18.49                   | 19.00                             | 1.125             | 0.740                         | #5           |
| WCDMA B5 | ANT3    | RMC  | Right Edge  | 0             | /             | 4183  | 836.6          | /          | /            | -0.10                  | 0.035                        | 18.49                   | 19.00                             | 1.125             | 0.039                         | /            |
| WCDMA B5 | ANT3    | RMC  | Top Edge    | 0             | /             | 4183  | 836.6          | /          | /            | -0.10                  | 0.493                        | 18.49                   | 19.00                             | 1.125             | 0.555                         | /            |
| WCDMA B5 | ANT3    | RMC  | Bottom Edge | 0             | /             | 4183  | 836.6          | /          | /            | 0.20                   | 0.024                        | 18.49                   | 19.00                             | 1.125             | 0.027                         | /            |
|          |         |      |             |               |               |       |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B2   | ANT3    | QPSK | Back Side   | 0             | 20            | 18900 | 1880           | 1          | 0            | 0.06                   | 0.500                        | 15.09                   | 16.00                             | 1.233             | 0.616                         | /            |
| LTE B2   | ANT3    | QPSK | Left Edge   | 0             | 20            | 18900 | 1880           | 1          | 0            | 0.07                   | 0.642                        | 15.09                   | 16.00                             | 1.233             | 0.792                         | #6           |
| LTE B2   | ANT3    | QPSK | Right Edge  | 0             | 20            | 18900 | 1880           | 1          | 0            | -0.08                  | 0.038                        | 15.09                   | 16.00                             | 1.233             | 0.047                         | /            |
| LTE B2   | ANT3    | QPSK | Top Edge    | 0             | 20            | 18900 | 1880           | 1          | 0            | 0.09                   | 0.607                        | 15.09                   | 16.00                             | 1.233             | 0.749                         | /            |
| LTE B2   | ANT3    | QPSK | Bottom Edge | 0             | 20            | 18900 | 1880           | 1          | 0            | 0.16                   | 0.034                        | 15.09                   | 16.00                             | 1.233             | 0.041                         | /            |
| LTE B2   | ANT3    | QPSK | Back Side   | 0             | 20            | 18900 | 1880           | 50         | 0            | -0.07                  | 0.412                        | 14.08                   | 15.00                             | 1.236             | 0.509                         | /            |
| LTE B2   | ANT3    | QPSK | Left Edge   | 0             | 20            | 18900 | 1880           | 50         | 0            | -0.06                  | 0.533                        | 14.08                   | 15.00                             | 1.236             | 0.659                         | /            |
| LTE B2   | ANT3    | QPSK | Right Edge  | 0             | 20            | 18900 | 1880           | 50         | 0            | -0.15                  | 0.040                        | 14.08                   | 15.00                             | 1.236             | 0.049                         | /            |
| LTE B2   | ANT3    | QPSK | Top Edge    | 0             | 20            | 18900 | 1880           | 50         | 0            | 0.16                   | 0.479                        | 14.08                   | 15.00                             | 1.236             | 0.592                         | /            |
| LTE B2   | ANT3    | QPSK | Bottom Edge | 0             | 20            | 18900 | 1880           | 50         | 0            | 0.03                   | 0.037                        | 14.08                   | 15.00                             | 1.236             | 0.046                         | /            |
|          |         |      |             |               |               |       |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B7   | ANT3    | QPSK | Back Side   | 0             | 20            | 21100 | 2535           | 1          | 0            | -0.10                  | 0.720                        | 15.03                   | 15.50                             | 1.114             | 0.802                         | /            |
| LTE B7   | ANT3    | QPSK | Left Edge   | 0             | 20            | 21100 | 2535           | 1          | 0            | -0.16                  | 0.385                        | 15.03                   | 15.50                             | 1.114             | 0.429                         | /            |
| LTE B7   | ANT3    | QPSK | Right Edge  | 0             | 20            | 21100 | 2535           | 1          | 0            | 0.00                   | 0.032                        | 15.03                   | 15.50                             | 1.114             | 0.035                         | /            |
| LTE B7   | ANT3    | QPSK | Top Edge    | 0             | 20            | 21100 | 2535           | 1          | 0            | 0.08                   | 0.253                        | 15.03                   | 15.50                             | 1.114             | 0.282                         | /            |
| LTE B7   | ANT3    | QPSK | Bottom Edge | 0             | 20            | 21100 | 2535           | 1          | 0            | 0.12                   | 0.031                        | 15.03                   | 15.50                             | 1.114             | 0.034                         | /            |
| LTE B7   | ANT3    | QPSK | Back Side   | 0             | 20            | 20850 | 2510           | 1          | 0            | -0.03                  | 0.763                        | 14.99                   | 15.5                              | 1.125             | 0.858                         | #7           |
| LTE B7   | ANT3    | QPSK | Back Side   | 0             | 20            | 21350 | 2560           | 1          | 0            | -0.15                  | 0.650                        | 14.96                   | 15.5                              | 1.132             | 0.735                         | /            |
| LTE B7   | ANT3    | QPSK | Back Side   | 0             | 20            | 21100 | 2535           | 50         | 0            | -0.13                  | 0.506                        | 14.00                   | 14.50                             | 1.122             | 0.567                         | /            |
| LTE B7   | ANT3    | QPSK | Left Edge   | 0             | 20            | 21100 | 2535           | 50         | 0            | -0.19                  | 0.322                        | 14.00                   | 14.50                             | 1.122             | 0.361                         | /            |
| LTE B7   | ANT3    | QPSK | Right Edge  | 0             | 20            | 21100 | 2535           | 50         | 0            | 0.13                   | 0.039                        | 14.00                   | 14.50                             | 1.122             | 0.044                         | /            |
| LTE B7   | ANT3    | QPSK | Top Edge    | 0             | 20            | 21100 | 2535           | 50         | 0            | 0.12                   | 0.216                        | 14.00                   | 14.50                             | 1.122             | 0.242                         | /            |
| LTE B7   | ANT3    | QPSK | Bottom Edge | 0             | 20            | 21100 | 2535           | 50         | 0            | -0.11                  | 0.032                        | 14.00                   | 14.50                             | 1.122             | 0.035                         | /            |
| LTE B7   | ANT3    | QPSK | Back Side   | 0             | 20            | 21100 | 2535           | 100        | 0            | -0.16                  | 0.485                        | 13.99                   | 14.50                             | 1.125             | 0.546                         | /            |
|          |         |      |             |               |               |       |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B12  | ANT3    | QPSK | Back Side   | 0             | 10            | 23095 | 707.5          | 1          | 0            | -0.02                  | 0.273                        | 16.63                   | 17.50                             | 1.222             | 0.334                         | /            |
| LTE B12  | ANT3    | QPSK | Left Edge   | 0             | 10            | 23095 | 707.5          | 1          | 0            | -0.06                  | 0.578                        | 16.63                   | 17.50                             | 1.222             | 0.706                         | #8           |

| Band    | Antenna | Mode | Position    | Dist.<br>(mm) | Band<br>width | Ch.    | Freq.<br>(MHz) | RB<br>Size | RB<br>offset | Power<br>Drift<br>(dB) | 1 g<br>Meas<br>SAR<br>(W/kg) | Meas.<br>Power<br>(dBm) | Max.<br>tune-up<br>power<br>(dBm) | Scaling<br>Factor | 1g<br>Scaled<br>SAR<br>(W/kg) | Meas.<br>No. |
|---------|---------|------|-------------|---------------|---------------|--------|----------------|------------|--------------|------------------------|------------------------------|-------------------------|-----------------------------------|-------------------|-------------------------------|--------------|
| LTE B12 | ANT3    | QPSK | Right Edge  | 0             | 10            | 23095  | 707.5          | 1          | 0            | 0.15                   | 0.043                        | 16.63                   | 17.50                             | 1.222             | 0.052                         | /            |
| LTE B12 | ANT3    | QPSK | Top Edge    | 0             | 10            | 23095  | 707.5          | 1          | 0            | -0.09                  | 0.274                        | 16.63                   | 17.50                             | 1.222             | 0.335                         | /            |
| LTE B12 | ANT3    | QPSK | Bottom Edge | 0             | 10            | 23095  | 707.5          | 1          | 0            | 0.04                   | 0.033                        | 16.63                   | 17.50                             | 1.222             | 0.041                         | /            |
| LTE B12 | ANT3    | QPSK | Back Side   | 0             | 10            | 23095  | 707.5          | 25         | 0            | -0.04                  | 0.196                        | 15.62                   | 16.50                             | 1.225             | 0.240                         | /            |
| LTE B12 | ANT3    | QPSK | Left Edge   | 0             | 10            | 23095  | 707.5          | 25         | 0            | 0.14                   | 0.406                        | 15.62                   | 16.50                             | 1.225             | 0.497                         | /            |
| LTE B12 | ANT3    | QPSK | Right Edge  | 0             | 10            | 23095  | 707.5          | 25         | 0            | 0.06                   | 0.036                        | 15.62                   | 16.50                             | 1.225             | 0.044                         | /            |
| LTE B12 | ANT3    | QPSK | Top Edge    | 0             | 10            | 23095  | 707.5          | 25         | 0            | -0.08                  | 0.233                        | 15.62                   | 16.50                             | 1.225             | 0.285                         | /            |
| LTE B12 | ANT3    | QPSK | Bottom Edge | 0             | 10            | 23095  | 707.5          | 25         | 0            | 0.11                   | 0.027                        | 15.62                   | 16.50                             | 1.225             | 0.033                         | /            |
|         |         |      |             |               |               |        |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B13 | ANT3    | QPSK | Back Side   | 0             | 10            | 23230  | 782            | 1          | 0            | 0.16                   | 0.246                        | 17.67                   | 18.50                             | 1.211             | 0.298                         | /            |
| LTE B13 | ANT3    | QPSK | Left Edge   | 0             | 10            | 23230  | 782            | 1          | 0            | -0.05                  | 0.565                        | 17.67                   | 18.50                             | 1.211             | 0.684                         | #9           |
| LTE B13 | ANT3    | QPSK | Right Edge  | 0             | 10            | 23230  | 782            | 1          | 0            | 0.02                   | 0.030                        | 17.67                   | 18.50                             | 1.211             | 0.036                         | /            |
| LTE B13 | ANT3    | QPSK | Top Edge    | 0             | 10            | 23230  | 782            | 1          | 0            | 0.05                   | 0.236                        | 17.67                   | 18.50                             | 1.211             | 0.286                         | /            |
| LTE B13 | ANT3    | QPSK | Bottom Edge | 0             | 10            | 23230  | 782            | 1          | 0            | -0.06                  | 0.028                        | 17.67                   | 18.50                             | 1.211             | 0.034                         | /            |
| LTE B13 | ANT3    | QPSK | Back Side   | 0             | 10            | 23230  | 782            | 25         | 0            | -0.16                  | 0.208                        | 16.64                   | 17.50                             | 1.219             | 0.254                         | /            |
| LTE B13 | ANT3    | QPSK | Left Edge   | 0             | 10            | 23230  | 782            | 25         | 0            | 0.06                   | 0.484                        | 16.64                   | 17.50                             | 1.219             | 0.590                         | /            |
| LTE B13 | ANT3    | QPSK | Right Edge  | 0             | 10            | 23230  | 782            | 25         | 0            | 0.00                   | 0.030                        | 16.64                   | 17.50                             | 1.219             | 0.037                         | /            |
| LTE B13 | ANT3    | QPSK | Top Edge    | 0             | 10            | 23230  | 782            | 25         | 0            | 0.02                   | 0.371                        | 16.64                   | 17.50                             | 1.219             | 0.452                         | /            |
| LTE B13 | ANT3    | QPSK | Bottom Edge | 0             | 10            | 23230  | 782            | 25         | 0            | -0.19                  | 0.027                        | 16.64                   | 17.50                             | 1.219             | 0.033                         | /            |
|         |         |      |             |               |               |        |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B26 | ANT3    | QPSK | Back Side   | 0             | 15            | 26865  | 831.5          | 1          | 0            | 0.05                   | 0.370                        | 18.67                   | 19.50                             | 1.211             | 0.448                         | /            |
| LTE B26 | ANT3    | QPSK | Left Edge   | 0             | 15            | 26865  | 831.5          | 1          | 0            | -0.09                  | 0.647                        | 18.67                   | 19.50                             | 1.211             | 0.784                         | #10          |
| LTE B26 | ANT3    | QPSK | Right Edge  | 0             | 15            | 26865  | 831.5          | 1          | 0            | -0.01                  | 0.036                        | 18.67                   | 19.50                             | 1.211             | 0.044                         | /            |
| LTE B26 | ANT3    | QPSK | Top Edge    | 0             | 15            | 26865  | 831.5          | 1          | 0            | 0.09                   | 0.385                        | 18.67                   | 19.50                             | 1.211             | 0.466                         | /            |
| LTE B26 | ANT3    | QPSK | Bottom Edge | 0             | 15            | 26865  | 831.5          | 1          | 0            | 0.18                   | 0.032                        | 18.67                   | 19.50                             | 1.211             | 0.039                         | /            |
| LTE B26 | ANT3    | QPSK | Back Side   | 0             | 15            | 26865  | 831.5          | 36         | 0            | -0.04                  | 0.282                        | 17.63                   | 18.50                             | 1.222             | 0.345                         | /            |
| LTE B26 | ANT3    | QPSK | Left Edge   | 0             | 15            | 26865  | 831.5          | 36         | 0            | 0.14                   | 0.454                        | 17.63                   | 18.50                             | 1.222             | 0.555                         | /            |
| LTE B26 | ANT3    | QPSK | Right Edge  | 0             | 15            | 26865  | 831.5          | 36         | 0            | 0.05                   | 0.026                        | 17.63                   | 18.50                             | 1.222             | 0.032                         | /            |
| LTE B26 | ANT3    | QPSK | Top Edge    | 0             | 15            | 26865  | 831.5          | 36         | 0            | -0.01                  | 0.277                        | 17.63                   | 18.50                             | 1.222             | 0.338                         | /            |
| LTE B26 | ANT3    | QPSK | Bottom Edge | 0             | 15            | 26865  | 831.5          | 36         | 0            | 0.11                   | 0.024                        | 17.63                   | 18.50                             | 1.222             | 0.029                         | /            |
|         |         |      |             |               |               |        |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B66 | ANT3    | QPSK | Back Side   | 0             | 20            | 132322 | 1745           | 1          | 0            | 0.05                   | 0.321                        | 15.89                   | 17.00                             | 1.291             | 0.414                         | #11          |
| LTE B66 | ANT3    | QPSK | Left Edge   | 0             | 20            | 132322 | 1745           | 1          | 0            | -0.12                  | 0.316                        | 15.89                   | 17.00                             | 1.291             | 0.408                         | /            |

| Band    | Antenna | Mode | Position    | Dist.<br>(mm) | Band<br>width | Ch.    | Freq.<br>(MHz) | RB<br>Size | RB<br>offset | Power<br>Drift<br>(dB) | 1 g<br>Meas<br>SAR<br>(W/kg) | Meas.<br>Power<br>(dBm) | Max.<br>tune-up<br>power<br>(dBm) | Scaling<br>Factor | 1g<br>Scaled<br>SAR<br>(W/kg) | Meas.<br>No. |
|---------|---------|------|-------------|---------------|---------------|--------|----------------|------------|--------------|------------------------|------------------------------|-------------------------|-----------------------------------|-------------------|-------------------------------|--------------|
| LTE B66 | ANT3    | QPSK | Right Edge  | 0             | 20            | 132322 | 1745           | 1          | 0            | 0.17                   | 0.032                        | 15.89                   | 17.00                             | 1.291             | 0.041                         | /            |
| LTE B66 | ANT3    | QPSK | Top Edge    | 0             | 20            | 132322 | 1745           | 1          | 0            | -0.01                  | 0.280                        | 15.89                   | 17.00                             | 1.291             | 0.361                         | /            |
| LTE B66 | ANT3    | QPSK | Bottom Edge | 0             | 20            | 132322 | 1745           | 1          | 0            | -0.01                  | 0.028                        | 15.89                   | 17.00                             | 1.291             | 0.036                         | /            |
| LTE B66 | ANT3    | QPSK | Back Side   | 0             | 20            | 132322 | 1745           | 50         | 0            | 0.07                   | 0.295                        | 14.88                   | 16.00                             | 1.294             | 0.382                         | /            |
| LTE B66 | ANT3    | QPSK | Left Edge   | 0             | 20            | 132322 | 1745           | 50         | 0            | 0.13                   | 0.254                        | 14.88                   | 16.00                             | 1.294             | 0.329                         | /            |
| LTE B66 | ANT3    | QPSK | Right Edge  | 0             | 20            | 132322 | 1745           | 50         | 0            | -0.16                  | 0.026                        | 14.88                   | 16.00                             | 1.294             | 0.034                         | /            |
| LTE B66 | ANT3    | QPSK | Top Edge    | 0             | 20            | 132322 | 1745           | 50         | 0            | -0.02                  | 0.256                        | 14.88                   | 16.00                             | 1.294             | 0.331                         | /            |
| LTE B66 | ANT3    | QPSK | Bottom Edge | 0             | 20            | 132322 | 1745           | 50         | 0            | -0.01                  | 0.024                        | 14.88                   | 16.00                             | 1.294             | 0.031                         | /            |
|         |         |      |             |               |               |        |                |            |              |                        |                              |                         |                                   |                   |                               |              |
| LTE B41 | ANT3    | QPSK | Back Side   | 0             | 20            | 40620  | 2593           | 1          | 0            | 0.08                   | 0.557                        | 16.98                   | 18.00                             | 1.265             | 0.705                         | #12          |
| LTE B41 | ANT3    | QPSK | Left Edge   | 0             | 20            | 40620  | 2593           | 1          | 0            | 0.07                   | 0.342                        | 16.98                   | 18.00                             | 1.265             | 0.433                         | /            |
| LTE B41 | ANT3    | QPSK | Right Edge  | 0             | 20            | 40620  | 2593           | 1          | 0            | 0.12                   | 0.028                        | 16.98                   | 18.00                             | 1.265             | 0.035                         | /            |
| LTE B41 | ANT3    | QPSK | Top Edge    | 0             | 20            | 40620  | 2593           | 1          | 0            | -0.10                  | 0.170                        | 16.98                   | 18.00                             | 1.265             | 0.215                         | /            |
| LTE B41 | ANT3    | QPSK | Bottom Edge | 0             | 20            | 40620  | 2593           | 1          | 0            | 0.02                   | 0.020                        | 16.98                   | 18.00                             | 1.265             | 0.025                         | /            |
| LTE B41 | ANT3    | QPSK | Back Side   | 0             | 20            | 40620  | 2593           | 50         | 0            | 0.08                   | 0.385                        | 15.94                   | 17.00                             | 1.276             | 0.491                         | /            |
| LTE B41 | ANT3    | QPSK | Left Edge   | 0             | 20            | 40620  | 2593           | 50         | 0            | 0.08                   | 0.262                        | 15.94                   | 17.00                             | 1.276             | 0.334                         | /            |
| LTE B41 | ANT3    | QPSK | Right Edge  | 0             | 20            | 40620  | 2593           | 50         | 0            | -0.14                  | 0.027                        | 15.94                   | 17.00                             | 1.276             | 0.034                         | /            |
| LTE B41 | ANT3    | QPSK | Top Edge    | 0             | 20            | 40620  | 2593           | 50         | 0            | 0.09                   | 0.118                        | 15.94                   | 17.00                             | 1.276             | 0.151                         | /            |
| LTE B41 | ANT3    | QPSK | Bottom Edge | 0             | 20            | 40620  | 2593           | 50         | 0            | 0.16                   | 0.025                        | 15.94                   | 17.00                             | 1.276             | 0.032                         | /            |

| Band      | Antenna | Mode  | Position    | Dist.(mm) | Ch. | Freq.<br>(MHz) | Power<br>Drift<br>(dB) | 1 g<br>Meas<br>SAR<br>(W/kg) | Meas.<br>Power<br>(dBm) | Max.<br>tune-up<br>power<br>(dBm) | Scaling<br>Factor | Duty<br>cycle<br>(%) | Duty<br>Factor | 1g<br>Scaled<br>SAR<br>(W/kg) | Meas.<br>No. |
|-----------|---------|-------|-------------|-----------|-----|----------------|------------------------|------------------------------|-------------------------|-----------------------------------|-------------------|----------------------|----------------|-------------------------------|--------------|
| Body      |         |       |             |           |     |                |                        |                              |                         |                                   |                   |                      |                |                               |              |
| Bluetooth | ANT0    | DH5   | Back Side   | 0         | 78  | 2480           | 0.02                   | 0.182                        | 10.61                   | 11.00                             | 1.094             | 76.67                | 1.304          | 0.260                         | /            |
| Bluetooth | ANT0    | DH5   | Left Edge   | 0         | 78  | 2480           | 0.15                   | 0.025                        | 10.61                   | 11.00                             | 1.094             | 76.67                | 1.304          | 0.036                         | /            |
| Bluetooth | ANT0    | DH5   | Right Edge  | 0         | 78  | 2480           | 0.11                   | 0.096                        | 10.61                   | 11.00                             | 1.094             | 76.67                | 1.304          | 0.137                         | /            |
| Bluetooth | ANT0    | DH5   | Top Edge    | 0         | 78  | 2480           | 0.09                   | 0.312                        | 10.61                   | 11.00                             | 1.094             | 76.67                | 1.304          | 0.445                         | #13          |
| Bluetooth | ANT0    | DH5   | Bottom Edge | 0         | 78  | 2480           | 0.05                   | 0.027                        | 10.61                   | 11.00                             | 1.094             | 76.67                | 1.304          | 0.039                         | /            |
|           |         |       |             |           |     |                |                        |                              |                         |                                   |                   |                      |                |                               |              |
| 2.4G WIFI | ANT0    | 11b   | Back Side   | 0         | 1   | 2412           | -0.09                  | 0.258                        | 9.53                    | 10.00                             | 1.114             | 100.00               | 1.000          | 0.287                         | /            |
| 2.4G WIFI | ANT0    | 11b   | Left Edge   | 0         | 1   | 2412           | -0.07                  | 0.030                        | 9.53                    | 10.00                             | 1.114             | 100.00               | 1.000          | 0.033                         | /            |
| 2.4G WIFI | ANT0    | 11b   | Right Edge  | 0         | 1   | 2412           | 0.13                   | 0.152                        | 9.53                    | 10.00                             | 1.114             | 100.00               | 1.000          | 0.169                         | /            |
| 2.4G WIFI | ANT0    | 11b   | Top Edge    | 0         | 1   | 2412           | -0.18                  | 0.451                        | 9.53                    | 10.00                             | 1.114             | 100.00               | 1.000          | 0.502                         | #14          |
| 2.4G WIFI | ANT0    | 11b   | Bottom Edge | 0         | 1   | 2412           | -0.04                  | 0.028                        | 9.53                    | 10.00                             | 1.114             | 100.00               | 1.000          | 0.031                         | /            |
|           |         |       |             |           |     |                |                        |                              |                         |                                   |                   |                      |                |                               |              |
| 5.2G WIFI | ANT2    | 11n20 | Back Side   | 0         | 44  | 5220           | 0.11                   | 0.158                        | 8.37                    | 9.00                              | 1.156             | 96.65                | 1.035          | 0.189                         | #15          |
| 5.2G WIFI | ANT2    | 11n20 | Left Edge   | 0         | 44  | 5220           | -0.12                  | 0.070                        | 8.37                    | 9.00                              | 1.156             | 96.65                | 1.035          | 0.084                         | /            |
| 5.2G WIFI | ANT2    | 11n20 | Right Edge  | 0         | 44  | 5220           | -0.04                  | 0.058                        | 8.37                    | 9.00                              | 1.156             | 96.65                | 1.035          | 0.069                         | /            |
| 5.2G WIFI | ANT2    | 11n20 | Top Edge    | 0         | 44  | 5220           | 0.04                   | 0.122                        | 8.37                    | 9.00                              | 1.156             | 96.65                | 1.035          | 0.146                         | /            |
| 5.2G WIFI | ANT2    | 11n20 | Bottom Edge | 0         | 44  | 5220           | 0.13                   | 0.036                        | 8.37                    | 9.00                              | 1.156             | 96.65                | 1.035          | 0.043                         | /            |
|           |         |       |             |           |     |                |                        |                              |                         |                                   |                   |                      |                |                               |              |
| 5.6G WIFI | ANT2    | 11n40 | Back Side   | 0         | 134 | 5670           | -0.19                  | 0.334                        | 7.45                    | 8.50                              | 1.274             | 93.68                | 1.067          | 0.454                         | #16          |
| 5.6G WIFI | ANT2    | 11n40 | Left Edge   | 0         | 134 | 5670           | 0.06                   | 0.032                        | 7.45                    | 8.50                              | 1.274             | 93.68                | 1.067          | 0.043                         | /            |
| 5.6G WIFI | ANT2    | 11n40 | Right Edge  | 0         | 134 | 5670           | 0.09                   | 0.030                        | 7.45                    | 8.50                              | 1.274             | 93.68                | 1.067          | 0.041                         | /            |
| 5.6G WIFI | ANT2    | 11n40 | Top Edge    | 0         | 134 | 5670           | 0.11                   | 0.268                        | 7.45                    | 8.50                              | 1.274             | 93.68                | 1.067          | 0.364                         | /            |
| 5.6G WIFI | ANT2    | 11n40 | Bottom Edge | 0         | 134 | 5670           | 0.05                   | 0.028                        | 7.45                    | 8.50                              | 1.274             | 93.68                | 1.067          | 0.038                         | /            |
|           |         |       |             |           |     |                |                        |                              |                         |                                   |                   |                      |                |                               |              |
| 5.8G WIFI | ANT2    | 11n40 | Back Side   | 0         | 159 | 5795           | 0.04                   | 0.223                        | 7.27                    | 8.50                              | 1.327             | 93.68                | 1.067          | 0.316                         | /            |
| 5.8G WIFI | ANT2    | 11n40 | Left Edge   | 0         | 159 | 5795           | 0.07                   | 0.052                        | 7.27                    | 8.50                              | 1.327             | 93.68                | 1.067          | 0.074                         | /            |
| 5.8G WIFI | ANT2    | 11n40 | Right Edge  | 0         | 159 | 5795           | -0.12                  | 0.042                        | 7.27                    | 8.50                              | 1.327             | 93.68                | 1.067          | 0.059                         | /            |
| 5.8G WIFI | ANT2    | 11n40 | Top Edge    | 0         | 159 | 5795           | -0.17                  | 0.252                        | 7.27                    | 8.50                              | 1.327             | 93.68                | 1.067          | 0.357                         | #17          |
| 5.8G WIFI | ANT2    | 11n40 | Bottom Edge | 0         | 159 | 5795           | -0.11                  | 0.088                        | 7.27                    | 8.50                              | 1.327             | 93.68                | 1.067          | 0.125                         | /            |

## 11 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are  $\leq 1.45$  W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is  $\leq 1.10$ , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

1. When the highest measured SAR is  $< 0.80$  W/kg, repeated measurement is not required.
2. When the highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
3. If the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$ , or when the original or repeated measurement is  $\geq 1.45$  W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ , and the original, first or second repeated measurement is  $\geq 1.5$  W/kg, perform a third repeated measurement.

Note: For product Body 1g SAR, the highest measured 1g SAR  $< 0.8$  W/kg, repeated measurement is not required.

## 12 SIMULTANEOUS TRANSMISSION

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR 1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR 1g 1.6 W/kg), SAR test exclusion is determined by the SAR to Peak Location Ratio (SPLSR).

### 12.1 Simultaneous Transmission Mode Consider

| No. | Simultaneous Tx Combination | Body |
|-----|-----------------------------|------|
| 1   | WWAN + 2.4G WIFI            | Yes  |
| 2   | WWAN + 5G WIFI              | Yes  |
| 3   | WWAN + 5G WIFI + BT         | Yes  |

Note:

1. WiFi 2.4G and Bluetooth share the same antenna, and can't transmit simultaneously.
2. When stand-alone SAR is not required for a side of antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
3. The maximum SAR summation is calculated based on the same configuration and test position.
4. The simultaneous transmission combinations of the more antennas contain combinations of less antennas, so only the worst simultaneous transmission combinations is shown in this report.

## 12.2 Sum SAR of Simultaneous Transmission

### 12.2.1 Sum Body SAR of Simultaneous Transmission

| Band     | Position    | Dist. | Stand alone SAR |           |         |           | SUM SAR |       |
|----------|-------------|-------|-----------------|-----------|---------|-----------|---------|-------|
|          |             |       | 1               | 2         | 3       | 4         |         |       |
|          |             |       | WWAN            | 2.4G WIFI | 5G WIFI | Bluetooth | 1+2     | 1+3+4 |
| GSM850   | Back Side   | 0     | 0.622           | 0.287     | 0.454   | 0.260     | 0.909   | 1.336 |
| GSM850   | Left Edge   | 0     | 0.969           | 0.033     | 0.084   | 0.036     | 1.002   | 1.089 |
| GSM850   | Right Edge  | 0     | 0.026           | 0.169     | 0.069   | 0.137     | 0.195   | 0.232 |
| GSM850   | Top Edge    | 0     | 0.444           | 0.502     | 0.364   | 0.445     | 0.946   | 1.253 |
| GSM850   | Bottom Edge | 0     | 0.024           | 0.031     | 0.125   | 0.039     | 0.055   | 0.188 |
| GSM1900  | Back Side   | 0     | 0.636           | 0.287     | 0.454   | 0.260     | 0.923   | 1.350 |
| GSM1900  | Left Edge   | 0     | 0.942           | 0.033     | 0.084   | 0.036     | 0.975   | 1.062 |
| GSM1900  | Right Edge  | 0     | 0.032           | 0.169     | 0.069   | 0.137     | 0.201   | 0.238 |
| GSM1900  | Top Edge    | 0     | 0.726           | 0.502     | 0.364   | 0.445     | 1.228   | 1.535 |
| GSM1900  | Bottom Edge | 0     | 0.022           | 0.031     | 0.125   | 0.039     | 0.053   | 0.186 |
| WCDMA B2 | Back Side   | 0     | 0.650           | 0.287     | 0.454   | 0.260     | 0.937   | 1.364 |
| WCDMA B2 | Left Edge   | 0     | 0.771           | 0.033     | 0.084   | 0.036     | 0.804   | 0.891 |
| WCDMA B2 | Right Edge  | 0     | 0.043           | 0.169     | 0.069   | 0.137     | 0.212   | 0.249 |
| WCDMA B2 | Top Edge    | 0     | 0.686           | 0.502     | 0.364   | 0.445     | 1.188   | 1.495 |
| WCDMA B2 | Bottom Edge | 0     | 0.043           | 0.031     | 0.125   | 0.039     | 0.074   | 0.207 |
| WCDMA B4 | Back Side   | 0     | 0.310           | 0.287     | 0.454   | 0.260     | 0.597   | 1.024 |
| WCDMA B4 | Left Edge   | 0     | 0.239           | 0.033     | 0.084   | 0.036     | 0.272   | 0.359 |
| WCDMA B4 | Right Edge  | 0     | 0.036           | 0.169     | 0.069   | 0.137     | 0.205   | 0.242 |
| WCDMA B4 | Top Edge    | 0     | 0.262           | 0.502     | 0.364   | 0.445     | 0.764   | 1.071 |
| WCDMA B4 | Bottom Edge | 0     | 0.027           | 0.031     | 0.125   | 0.039     | 0.058   | 0.191 |
| WCDMA B5 | Back Side   | 0     | 0.460           | 0.287     | 0.454   | 0.260     | 0.747   | 1.174 |
| WCDMA B5 | Left Edge   | 0     | 0.740           | 0.033     | 0.084   | 0.036     | 0.773   | 0.860 |
| WCDMA B5 | Right Edge  | 0     | 0.039           | 0.169     | 0.069   | 0.137     | 0.208   | 0.245 |
| WCDMA B5 | Top Edge    | 0     | 0.555           | 0.502     | 0.364   | 0.445     | 1.057   | 1.364 |
| WCDMA B5 | Bottom Edge | 0     | 0.027           | 0.031     | 0.125   | 0.039     | 0.058   | 0.191 |
| LTE B2   | Back Side   | 0     | 0.616           | 0.287     | 0.454   | 0.260     | 0.903   | 1.330 |
| LTE B2   | Left Edge   | 0     | 0.792           | 0.033     | 0.084   | 0.036     | 0.825   | 0.912 |
| LTE B2   | Right Edge  | 0     | 0.049           | 0.169     | 0.069   | 0.137     | 0.218   | 0.255 |
| LTE B2   | Top Edge    | 0     | 0.749           | 0.502     | 0.364   | 0.445     | 1.251   | 1.558 |
| LTE B2   | Bottom Edge | 0     | 0.046           | 0.031     | 0.125   | 0.039     | 0.077   | 0.210 |
| LTE B7   | Back Side   | 0     | 0.858           | 0.287     | 0.454   | 0.260     | 1.145   | 1.572 |
| LTE B7   | Left Edge   | 0     | 0.429           | 0.033     | 0.084   | 0.036     | 0.462   | 0.549 |
| LTE B7   | Right Edge  | 0     | 0.044           | 0.169     | 0.069   | 0.137     | 0.213   | 0.250 |
| LTE B7   | Top Edge    | 0     | 0.282           | 0.502     | 0.364   | 0.445     | 0.784   | 1.091 |
| LTE B7   | Bottom Edge | 0     | 0.035           | 0.031     | 0.125   | 0.039     | 0.066   | 0.199 |

| Band                                                                                                                                                                                                                                                                                                                              | Position    | Dist. | Stand alone SAR |           |         |           | SUM SAR |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|-----------------|-----------|---------|-----------|---------|-------|
|                                                                                                                                                                                                                                                                                                                                   |             |       | 1               | 2         | 3       | 4         |         |       |
|                                                                                                                                                                                                                                                                                                                                   |             |       | WWAN            | 2.4G WIFI | 5G WIFI | Bluetooth | 1+2     | 1+3+4 |
| LTE B12                                                                                                                                                                                                                                                                                                                           | Back Side   | 0     | 0.334           | 0.287     | 0.454   | 0.260     | 0.621   | 1.048 |
| LTE B12                                                                                                                                                                                                                                                                                                                           | Left Edge   | 0     | 0.706           | 0.033     | 0.084   | 0.036     | 0.739   | 0.826 |
| LTE B12                                                                                                                                                                                                                                                                                                                           | Right Edge  | 0     | 0.052           | 0.169     | 0.069   | 0.137     | 0.221   | 0.258 |
| LTE B12                                                                                                                                                                                                                                                                                                                           | Top Edge    | 0     | 0.335           | 0.502     | 0.364   | 0.445     | 0.837   | 1.144 |
| LTE B12                                                                                                                                                                                                                                                                                                                           | Bottom Edge | 0     | 0.041           | 0.031     | 0.125   | 0.039     | 0.072   | 0.205 |
| LTE B13                                                                                                                                                                                                                                                                                                                           | Back Side   | 0     | 0.298           | 0.287     | 0.454   | 0.260     | 0.585   | 1.012 |
| LTE B13                                                                                                                                                                                                                                                                                                                           | Left Edge   | 0     | 0.684           | 0.033     | 0.084   | 0.036     | 0.717   | 0.804 |
| LTE B13                                                                                                                                                                                                                                                                                                                           | Right Edge  | 0     | 0.037           | 0.169     | 0.069   | 0.137     | 0.206   | 0.243 |
| LTE B13                                                                                                                                                                                                                                                                                                                           | Top Edge    | 0     | 0.452           | 0.502     | 0.364   | 0.445     | 0.954   | 1.261 |
| LTE B13                                                                                                                                                                                                                                                                                                                           | Bottom Edge | 0     | 0.034           | 0.031     | 0.125   | 0.039     | 0.065   | 0.198 |
| LTE B26                                                                                                                                                                                                                                                                                                                           | Back Side   | 0     | 0.448           | 0.287     | 0.454   | 0.260     | 0.735   | 1.162 |
| LTE B26                                                                                                                                                                                                                                                                                                                           | Left Edge   | 0     | 0.784           | 0.033     | 0.084   | 0.036     | 0.817   | 0.904 |
| LTE B26                                                                                                                                                                                                                                                                                                                           | Right Edge  | 0     | 0.044           | 0.169     | 0.069   | 0.137     | 0.213   | 0.250 |
| LTE B26                                                                                                                                                                                                                                                                                                                           | Top Edge    | 0     | 0.466           | 0.502     | 0.364   | 0.445     | 0.968   | 1.275 |
| LTE B26                                                                                                                                                                                                                                                                                                                           | Bottom Edge | 0     | 0.039           | 0.031     | 0.125   | 0.039     | 0.070   | 0.203 |
| LTE B66                                                                                                                                                                                                                                                                                                                           | Back Side   | 0     | 0.414           | 0.287     | 0.454   | 0.260     | 0.701   | 1.128 |
| LTE B66                                                                                                                                                                                                                                                                                                                           | Left Edge   | 0     | 0.408           | 0.033     | 0.084   | 0.036     | 0.441   | 0.528 |
| LTE B66                                                                                                                                                                                                                                                                                                                           | Right Edge  | 0     | 0.041           | 0.169     | 0.069   | 0.137     | 0.210   | 0.247 |
| LTE B66                                                                                                                                                                                                                                                                                                                           | Top Edge    | 0     | 0.361           | 0.502     | 0.364   | 0.445     | 0.863   | 1.170 |
| LTE B66                                                                                                                                                                                                                                                                                                                           | Bottom Edge | 0     | 0.036           | 0.031     | 0.125   | 0.039     | 0.067   | 0.200 |
| LTE B41                                                                                                                                                                                                                                                                                                                           | Back Side   | 0     | 0.705           | 0.287     | 0.454   | 0.260     | 0.992   | 1.419 |
| LTE B41                                                                                                                                                                                                                                                                                                                           | Left Edge   | 0     | 0.433           | 0.033     | 0.084   | 0.036     | 0.466   | 0.553 |
| LTE B41                                                                                                                                                                                                                                                                                                                           | Right Edge  | 0     | 0.035           | 0.169     | 0.069   | 0.137     | 0.204   | 0.241 |
| LTE B41                                                                                                                                                                                                                                                                                                                           | Top Edge    | 0     | 0.215           | 0.502     | 0.364   | 0.445     | 0.717   | 1.024 |
| LTE B41                                                                                                                                                                                                                                                                                                                           | Bottom Edge | 0     | 0.032           | 0.031     | 0.125   | 0.039     | 0.063   | 0.196 |
| <p>Note:</p> <p>1: The simultaneous transmission combinations of the antennas contain combinations of two antennas, so only the worst simultaneous transmission combinations was shown in this table.</p> <p>2: The highest Summed 1g SAR is 1.572 W/Kg &lt; 1.6 W/kg, so Simultaneous Transmission SAR test is not required.</p> |             |       |                 |           |         |           |         |       |

## 13 TEST EQUIPMENTS LIST

| Description                     | Manufacturer | Model     | Serial No./Version | Cal. Date  | Cal. Due   |
|---------------------------------|--------------|-----------|--------------------|------------|------------|
| PC                              | Dell         | N/A       | N/A                | N/A        | N/A        |
| Test Software                   | Speag        | DASY5     | 52.10.4.15.35      | N/A        | N/A        |
| 750MHz Validation Dipole        | Speag        | D750V3    | 1201               | 2024/09/03 | 2027/09/03 |
| 835MHz Validation Dipole        | Speag        | D835V2    | 4d277              | 2024/08/30 | 2027/08/30 |
| 1750MHz Validation Dipole       | Speag        | D1750V2   | 1183               | 2024/09/03 | 2027/09/03 |
| 1900MHz Validation Dipole       | Speag        | D1900V2   | 5d155              | 2024/09/02 | 2027/09/02 |
| 2450MHz Validation Dipole       | Speag        | D2450V2   | 1065               | 2024/09/05 | 2027/09/05 |
| 2600MHz Validation Dipole       | Speag        | D2600V2   | 1184               | 2024/08/30 | 2027/08/30 |
| 5GHz Validation Dipole          | Speag        | D5GHZV2   | 1333               | 2024/09/04 | 2027/09/04 |
| Data Acquisition Electronicsr   | Speag        | DAE4      | SN: 1423           | 2025/06/05 | 2026/06/04 |
| E-Field Probe                   | Speag        | EX3DV4    | SN: 3974           | 2025/06/05 | 2026/06/04 |
| Signal Generator                | R&S          | SMB100A   | 182635             | 2026/02/03 | 2027/02/03 |
| Power Meter                     | Agilent      | E4419B    | MY45104512         | 2026/02/03 | 2027/02/03 |
| Power Sensor                    | Agilent      | E9304A    | MY41499059         | 2026/02/03 | 2027/02/03 |
| Power Sensor                    | Agilent      | E9304A    | MY41499060         | 2026/02/03 | 2027/02/03 |
| Wireless Communication Test Set | Anritsu      | MT8820C   | 6201061029         | 2026/02/05 | 2027/02/05 |
| Network Analyzer                | Agilent      | E5071C    | MY56301409         | 2026/02/03 | 2027/02/03 |
| Thermometer                     | CEM          | DT-322    | 220718792          | 2026/01/28 | 2027/01/28 |
| Thermometer                     | Elitech      | RC-4HC    | EF7247001260       | 2026/01/28 | 2027/01/28 |
| Power Amplifier                 | COM-MW       | PAO.4     | 201704001          | N/A        | N/A        |
| Dielectric Probe Kit            | Keysight     | 85070E    | MY44300524         | N/A        | N/A        |
| Phantom                         | Speag        | ELI V4.0  | 1086               | N/A        | N/A        |
| Attenuator                      | COM-MW       | ZA-S1-31  | 1305003187         | N/A        | N/A        |
| Directional coupler             | AA-MCS       | AAMCS-UDC | /                  | N/A        | N/A        |

Note: For dipole antennas, Tejet has adopted 3 years as calibration intervals, and on annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss in within 20% of calibrated measurement.
4. Impedance (real or imaginary parts) in within 5 Ohms of calibrated measurement.

## ANNEX A SIMULATING LIQUID VERIFICATION RESULT

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an 85070E Dielectric Probe Kit.

Head Liquid

| Date      | Liquid Type | Fre. (MHz) | Temp. (°C) | Meas. Conductivity ( $\sigma$ ) (S/m) | Meas. Permittivity ( $\epsilon$ ) | Target Conductivity ( $\sigma$ ) (S/m) | Target Permittivity ( $\epsilon$ ) | Conductivity Tolerance (%) | Permittivity Tolerance (%) |
|-----------|-------------|------------|------------|---------------------------------------|-----------------------------------|----------------------------------------|------------------------------------|----------------------------|----------------------------|
| 2026.4.22 | Head        | 750        | 21.4       | 0.90                                  | 43.67                             | 0.89                                   | 41.94                              | 1.12                       | 4.12                       |
| 2026.4.23 | Head        | 835        | 21.2       | 0.94                                  | 43.06                             | 0.90                                   | 41.50                              | 4.44                       | 3.76                       |
| 2026.4.24 | Head        | 1750       | 20.8       | 1.41                                  | 40.04                             | 1.37                                   | 40.08                              | 2.92                       | -0.10                      |
| 2026.4.25 | Head        | 1900       | 20.6       | 1.43                                  | 39.71                             | 1.40                                   | 40.00                              | 2.14                       | -0.73                      |
| 2026.4.26 | Head        | 2450       | 20.3       | 1.86                                  | 38.78                             | 1.80                                   | 39.20                              | 3.33                       | -1.07                      |
| 2026.4.27 | Head        | 2600       | 20.6       | 2.00                                  | 38.48                             | 1.96                                   | 39.01                              | 2.04                       | -1.36                      |
| 2026.4.28 | Head        | 5200       | 21.3       | 4.67                                  | 34.97                             | 4.66                                   | 35.99                              | 0.21                       | -2.83                      |
| 2026.4.29 | Head        | 5600       | 21.2       | 5.11                                  | 34.34                             | 5.07                                   | 35.53                              | 0.79                       | -3.35                      |
| 2026.4.30 | Head        | 5800       | 21.5       | 5.33                                  | 33.98                             | 5.27                                   | 35.30                              | 1.14                       | -3.74                      |

Note: The tolerance limit of Conductivity and Permittivity is  $\pm 5\%$ .

## ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by Speag, the validation data should be within its specification of 10 % (for 1 g).

Head liquid 1g

| Date      | Liquid Type | Freq. (MHz) | Power (mW) | Measured SAR (W/kg) | Normalized SAR (W/kg) | Dipole SAR (W/kg) | Tolerance (%) |
|-----------|-------------|-------------|------------|---------------------|-----------------------|-------------------|---------------|
| 2026.4.22 | Head        | 750         | 100        | 0.849               | 8.49                  | 8.46              | 0.35          |
| 2026.4.23 | Head        | 835         | 100        | 0.941               | 9.41                  | 9.59              | -1.88         |
| 2026.4.24 | Head        | 1750        | 100        | 3.500               | 35.00                 | 36.50             | -4.11         |
| 2026.4.25 | Head        | 1900        | 100        | 3.670               | 36.70                 | 39.90             | -8.02         |
| 2026.4.26 | Head        | 2450        | 100        | 5.160               | 51.60                 | 52.60             | -1.90         |
| 2026.4.27 | Head        | 2600        | 100        | 5.910               | 59.10                 | 55.90             | 5.72          |
| 2026.4.28 | Head        | 5200        | 100        | 8.420               | 84.20                 | 77.80             | 8.23          |
| 2026.4.29 | Head        | 5600        | 100        | 8.200               | 82.00                 | 82.80             | -0.97         |
| 2026.4.30 | Head        | 5800        | 100        | 8.310               | 83.10                 | 78.50             | 5.86          |

Note: The tolerance limit of System validation  $\pm 10\%$ .

Please refer the document "Ti-CC26040015-ASC.pdf".

## **ANNEX C TEST DATA**

Please refer the document “Ti-CC26040015-ATD.pdf”.

## **ANNEX D EUT EXTERNAL PHOTOS**

Please refer the document “Ti-CC26040015-AW.pdf”.

## **ANNEX E SAR TEST SETUP PHOTOS**

Please refer the document “Ti-CC26040015-AS.pdf”.

## **ANNEX F CALIBRATION REPORT**

Please refer the document “Ti-CC26040015-AC.pdf”.

## Statement

1. The Testing Center guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. For the report with Accreditation Symbol, the items marked with "☆" are not within the accredited scope.
3. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the test report stamp.
4. The test data and results are only valid for the tested samples provided by the customer.
5. This report shall not be partially reproduced without the written permission of the Testing Center.
6. Any objection shall be raised to the Testing Center within 30 days after receiving the report.

--END OF REPORT--