TEST REPORT

Applicant:	Unicair Korea
Address:	803, [KSIA]182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Equipment Type:	PTT mobile device
Model Name:	IM-530
Brand Name:	iMesh
FCC ID:	2BHGN-IM-530
Test Standard:	FCC 47 CFR Part 2.1093 (refer to section 3.1)
Maximum SAR:	Head (1 g@0mm): 1.14 W/kg Body-worn (1 g@10mm): 1.16 W/kg Hotspot (1 g@10mm): 1.16 W/kg
Sample Arrival Date:	May 31, 2024
Test Date:	Jun. 05, 2024 - Jul. 01, 2024
Date of Issue:	Jul. 19, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Xiong Lining **Checked by:** Xu Rui **Approved by:** Tolan Tu

(Testing Director)

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Jul. 19, 2024	Initial Issue

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☑ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

1.3 Test Environment Condition

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

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Unicair Korea
Address	803, [KSIA]182, Pangyoyeok-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

2.2 Manufacturer Information

Manufacturer	Shenzhen Unicair Communication Technology Co., Ltd.
Address	8-9/F, Block1, Wutong Island, Shunchang Rd., Xixiang, Bao'an District, Shenzhen China.

2.3 General Description for Equipment under Test (EUT)

EUT Name	PTT mobile device
Model Name Under Test	IM-530
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	RevA
Software Version	PMC DL01G 240514
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	LONGTIGER
	Model No.	IM530G
	Serial No.	N/A
	Capacity	2180mAh
	Rated Voltage	3.80 V
	Limit Charge Voltage	4.35 V
	Limit Charge Voltage	Shenzhen Longtiger Technolgy Co., Ltd

2.5 Technical Information

Network and Wireless connectivity	4G Network FDD LTE Band 2/4/5/12/13/26 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20) GPS

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

Operating Mode	LTE, 2.4G WIFI, Bluetooth		
Frequency Range	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 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
	802.11b/g /n(HT20)	2412 ~ 2462 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna WIFI: PIFA Antenna 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	☒ Production unit	☐ 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 D06 v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
6	KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
7	KDB 865664 D02 v01r02	RF Exposure Reporting
8	KDB 648474 D04 v01r03	SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS
9	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/ Uncontrolled Exposure	Occupational/ ControlledExposure
Whole-Body SAR (averaged over the entire body)	0.08	0.4
Partial-Body SAR (averaged over any 1 gram of tissue)	1.60	8.0
SAR for hands, wrists, feet and ankles (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

Equipment Class	Band	Maximum Scaled SAR (W/kg)			Maximum Report SAR (W/kg)		
		Head (0mm)	Body-worn (10mm)	Hotspot (10mm)	Head (0mm)	Body-worn (10mm)	Hotspot (10mm)
		1g SAR			1g SAR		
	LTE Band 2	0.82	**1.16**	**1.16**	1.14	1.16	1.16
	LTE Band 4	0.96	1.15	1.15			
	LTE Band 5	**1.14**	0.92	0.92			
	LTE Band 12	0.63	0.57	0.57			
	LTE Band 13	0.68	0.82	0.82			
	LTE Band 26	0.70	0.71	0.71			
DTS	2.4G WIFI	0.08	0.10	0.10			
DSS	Bluetooth	0.01	0.02	0.02			
Limit (W/kg)		1.6			1.6		
Verdict		PASS					

3.3.2 Highest Simultaneous Transmission SAR Values

Equipment Class	Maximum Scaled SAR (W/kg)		
	Head 1g (0mm)	Body-worn 1g (10mm)	Hotspot 1g (10mm)
PCE	1.22	1.27	1.27
DTS	1.22	1.27	1.27
DSS	1.22	1.27	1.27
Limit (W/Kg)	1.60		
Verdict	Pass		
Note: The highest simultaneous SAR please refer section 12.2			

3.4 Test Uncertainty

According to KDB 865664 D01, When the highest measured 1 g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis is not required in SAR reports submitted for equipment approval.

The maximum 1 g SAR for the EUT in this report is 1.16 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

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 (ρ). The equation description is as below:

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

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

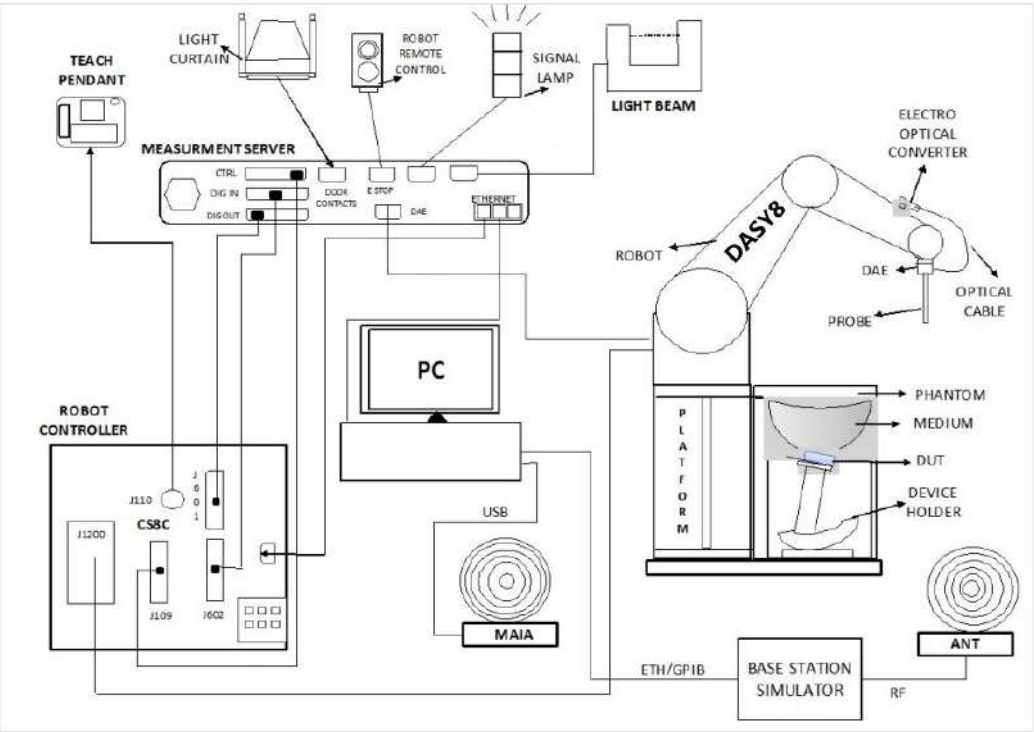
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma E^2}}{\boldsymbol{\rho}}$$

Where: σ is the conductivity of the tissue,

ρ 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

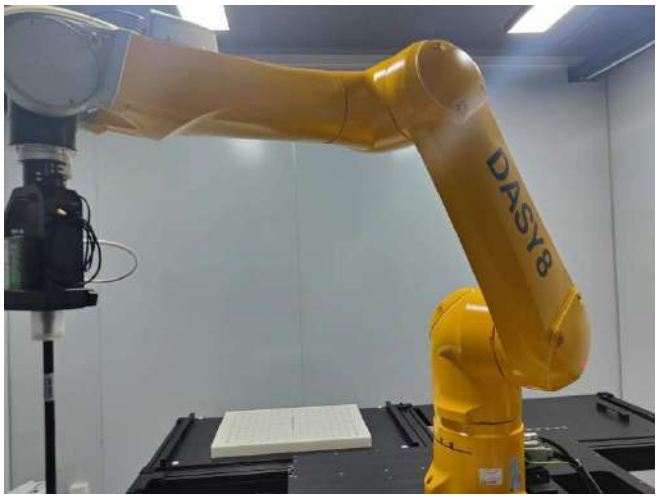


The DASY system for performing compliance tests consists of the following items:

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 DASY 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 ±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-SN: 7607 with following specifications is used.

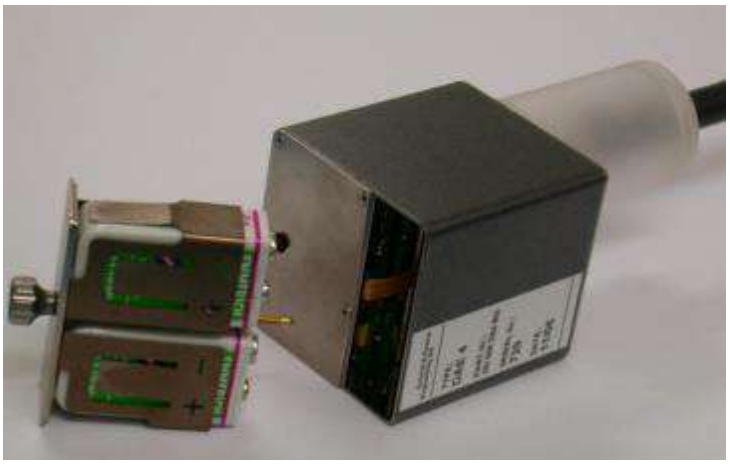
Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	ISO/IEC 17025 calibration service available
Frequency	4 MHz to 10 GHz; Linearity: ± 0.2 dB
Directivity	± 0.2 dB in HSL (rotation around probe axis) ; ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic range	5 µW/g to > 100 mW/g; Linearity: ± 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

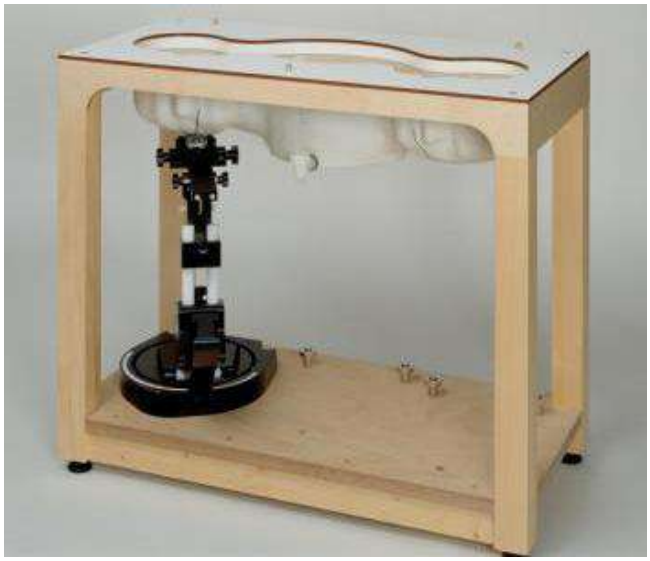
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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



- Input Impedance: 200MOhm
- The Inputs: Symmetrical and Floating
- Commom Mode Rejection: Above 80dB

4.2.5 Phantoms

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.



- Left head
- Right head
- Flat phantom

Photo of Phantom SN1859

Serial Number	Material	Length	Height
SN 1859 SAM	Vinylester, glass fiber reinforced	1000	500

4.2.6 Device Holder

The DASY 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°. 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.

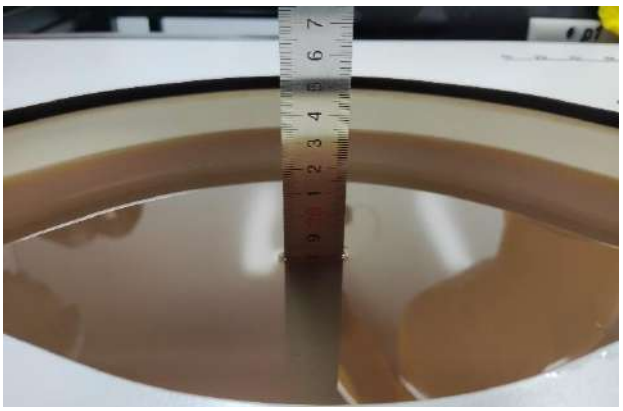
The positioning system allows obtaining cheek and tilting position with a very good accuracy. Incompliance with CENELEC, the tilt angle uncertainty is lower than 1°.

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

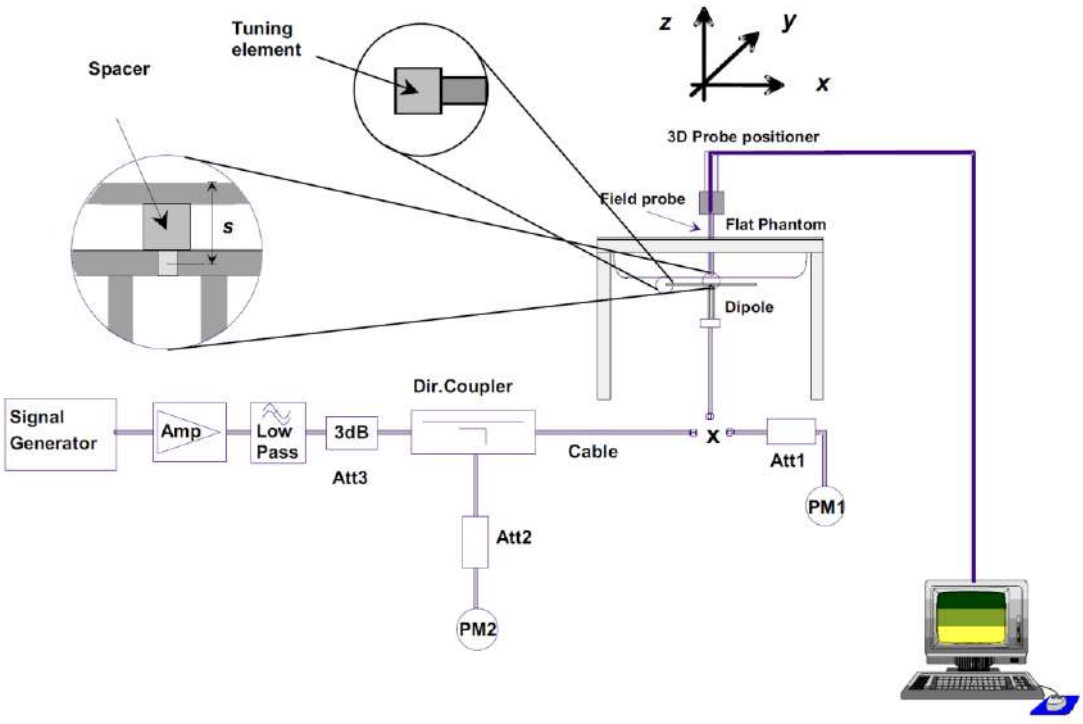
5 SYSTEM VERIFICATION

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

According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

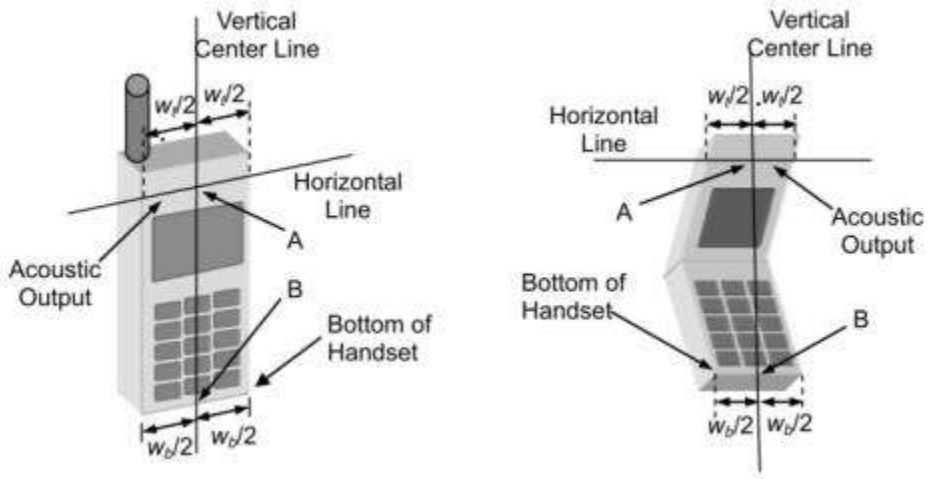
Head exposure is limited to next to the ear voice mode operations. Head SAR compliance is tested according to the test positions defined in IEEE Std 1528-2013 using the SAM phantom illustrated as below.

6.1.1 Two Imaginary Lines on the Handset

(a) The vertical center line passes through two points on the front side of the handset - the midpoint of the width w t of the handset at the level of the acoustic output, and the midpoint of the width w b of the bottom of the handset.

(b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

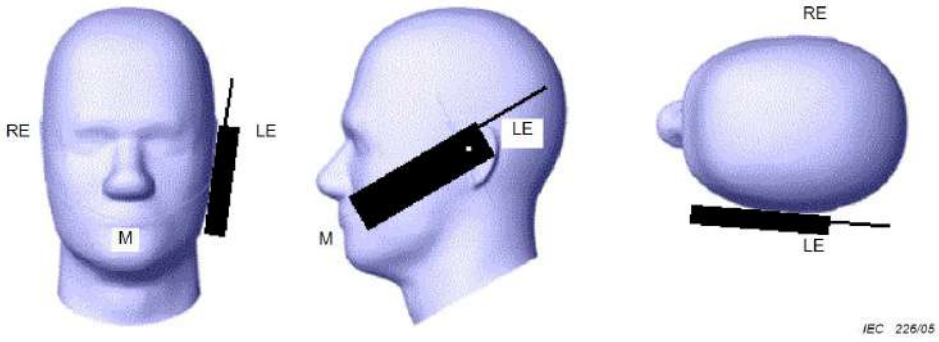
(c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical center line is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



6.1.2 Cheek Position

(a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



6.1.3 Tilted Position

(a) To position the device in the “cheek” position described above.

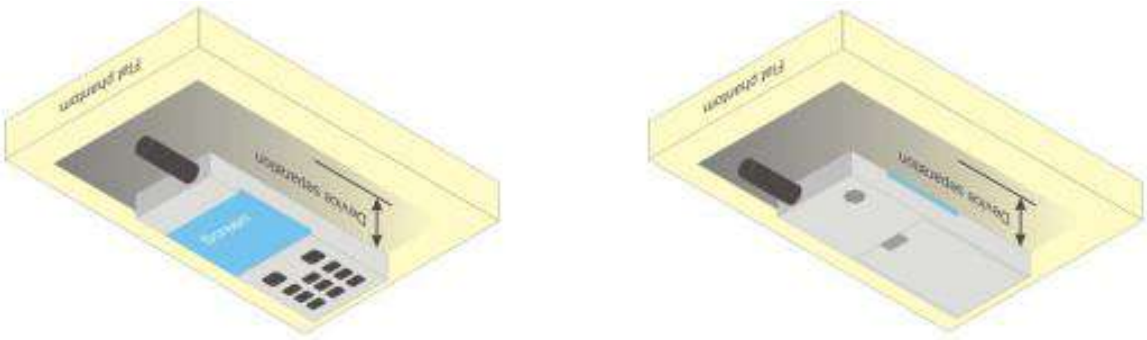
(b) While maintaining the device the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.

6.2 Body-worn Position Conditions

Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB 447498 are used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. When the reported SAR for a body-worn accessory.

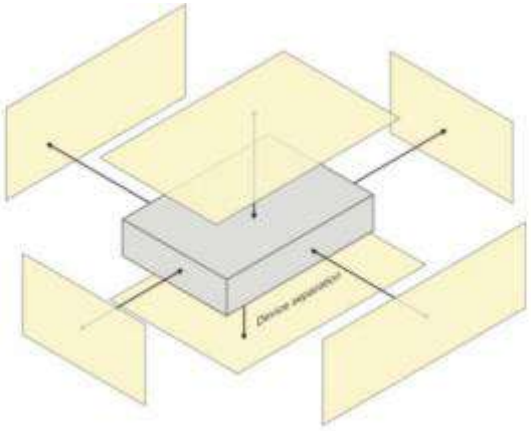
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. All body-worn accessories containing metallic components are tested in conjunction with the host device.

Body-worn accessory SAR compliance is based on a single minimum test separation distance for all wireless and operating modes applicable to each body-worn accessory used by the host, and according to the relevant voice and/or data mode transmissions and operations. If a body-worn accessory supports voice only operations in its normal and expected use conditions, testing of data mode for body-worn compliance is not required. A conservative minimum test separation distance for supporting off-the-shelf body-worn accessories that may be acquired by users of consumer handsets is used to test for body-worn accessory SAR compliance. This distance is determined by the handset manufacturer, according to the requirements of Supplement C 01-01. Devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, will be tested using a conservative minimum test separation distance <= 5 mm to support compliance.



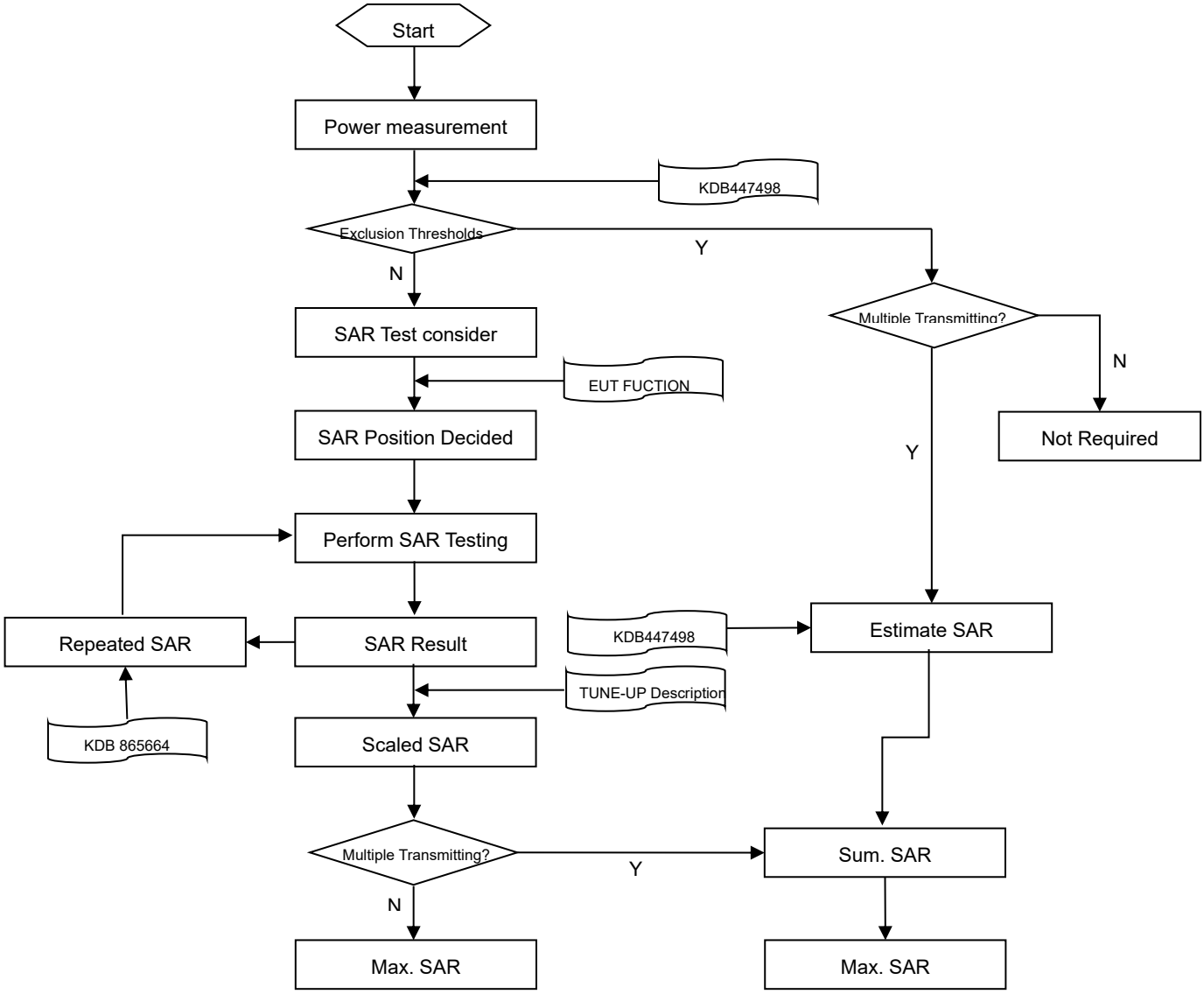
6.3 Hotspot Mode Exposure Position Conditions

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing functions, the relevant hand and body exposure conditions are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm x 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



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.

<table>
<tr><th colspan="3"></th><th>≤3GHz</th><th>>3GHz</th></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>½·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx Area , Δy Area</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3–4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx Zoom , Δy Zoom</td><td>≤ 2 GHz: ≤ 8 mm
2 –3 GHz: ≤ 5 mm*</td><td>3–4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="7">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2" rowspan="3">uniform grid: Δz Zoom (n)</td><td rowspan="3">≤ 5 mm</td><td>3–4 GHz: ≤ 4 mm</td></tr>
<tr><td>4–5 GHz: ≤ 3 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="4">graded grid</td><td rowspan="3">Δz Zoom (1): between 1st two points closest to phantom surface</td><td rowspan="3">≤ 4 mm</td><td>3–4 GHz: ≤ 3 mm</td></tr>
<tr><td>4–5 GHz: ≤ 2.5 mm</td></tr>
<tr><td>5–6 GHz: ≤ 2 mm</td></tr>
<tr><td>Δz Zoom (n>1): between subsequent points</td><td colspan="2">≤ 1.5·Δz Zoom (n-1)</td></tr>
<tr><td rowspan="3">Minimum zoom scan volume</td><td colspan="2" rowspan="3">x, y, z</td><td rowspan="3">≥30 mm</td><td>3–4 GHz: ≥ 28 mm</td></tr>
<tr><td>4–5 GHz: ≥ 25 mm</td></tr>
<tr><td>5–6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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.</td></tr>
</table>

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 to16 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.

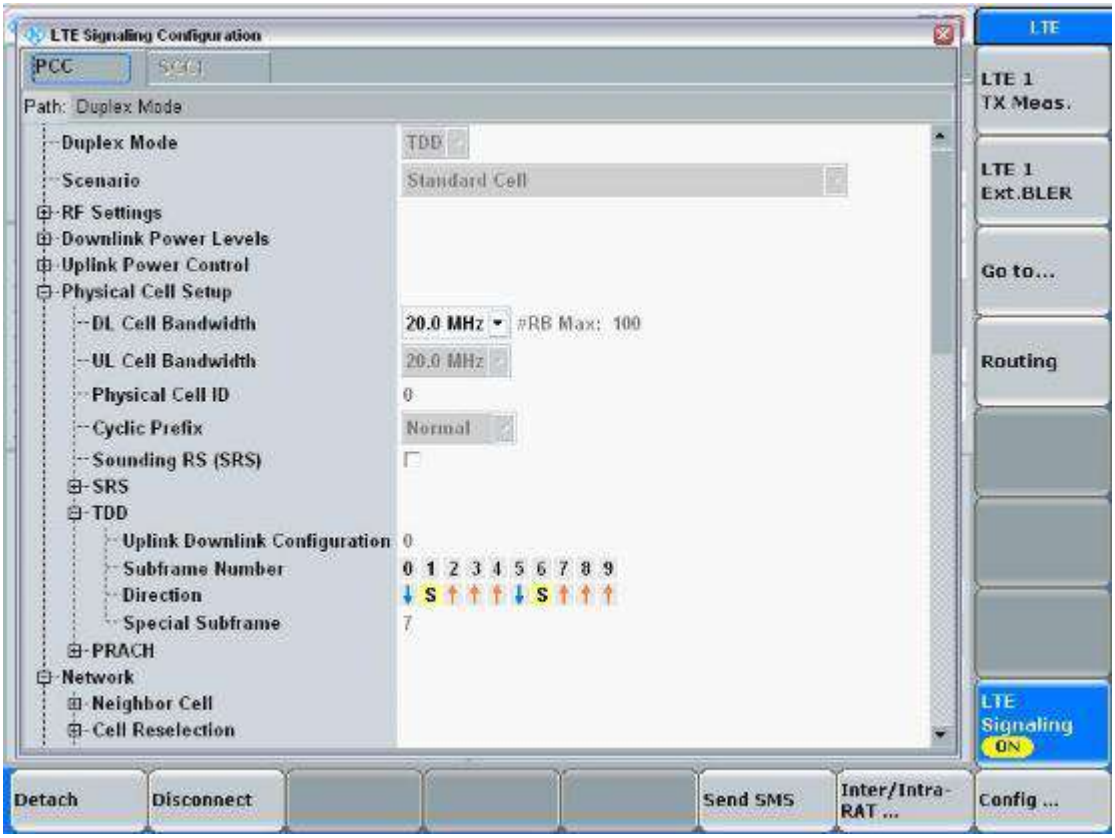
7.4 Area & Zoom Scan Procedure

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.

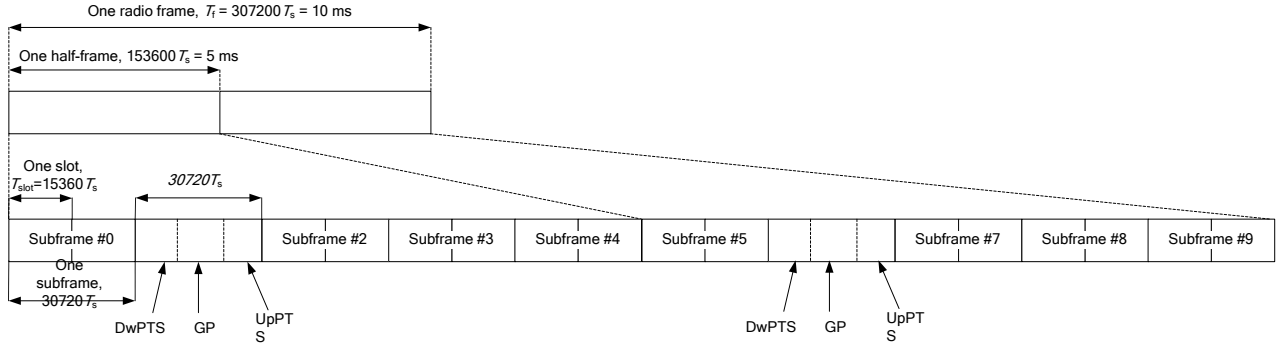
When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7.5 LTE (TDD) Considerations

During TDD-LTE SAR testing, the EUT was commanded to transmit on maximum output power and maximum transmitting bandwidth. The uplink and downlink slot configuration as below in one radio frame.



According to 3GPP Per 3GPP TS 36.211. Each radio frame of length (Tf=307200*TS =10ms) of two half-frames of length (153600*TS =5ms). Each half-frame consists of five sub-frames of length (30720*TS =1ms)



And the special sub-frame with the three fields DwPTS, GP and UpPTS.

The length of DwPTS and UpPTS is given by below table subject to the total length of DwPTS, GP and UpPTS being equal to 30720*T_S =1ms.

Configuration of special sub-frame (lengths of DwPTS/GP/UpPTS)

Special sub-frame configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592·T_s	2192·T_s	2560·T_s	7680·T_s	2192·T_s	2560·T_s
1	19760·T_s			20480·T_s		
2	21592·T_s			23040·T_s		
3	24144·T_s			25600·T_s		
4	26336·T_s			7680·T_s	2560·T_s	5120·T_s
5	6592·T_s	4384·T_s	5120·T_s	20480·T_s		
6	19760·T_s			23040·T_s		
7	21592·T_s			12800·T_s		
8	24144·T_s			-	-	-
9	13168·T_s			-	-	-

For special sub-frame uplink time we used the largest cyclic prefix for duty cycle calculate;

Maximum uplink time of one special sub-frame=(largest cyclic prefix)/(one sub-frame of length)* time of one sub-frame=5120.Ts/30720.Ts*1ms=0.167ms

One radio frame with 6 uplink sub-frames and two special sub-frame,
there for the maximum Uplink time in one radio frame is: **6*1 ms+2*0.167 ms=6.334ms**
So, the duty cycle for TDD-LTE is: **6.334ms/10ms =1: 1.58**

8 CONDUCTED RF OUPUT POWER

8.1 LTE

Please refer the document “BL-SZ2460026-AP Power List.pdf”.

8.2 WIFI

8.2.1 2.4G WIFI

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	17.03	18.00	Yes
		6	2437	**17.64**	18.00	Yes
		11	2462	17.02	18.00	Yes
	802.11g	1	2412	13.98	15.00	No
		6	2437	14.46	15.00	No
		11	2462	14.26	15.00	No
	802.11n(HT20)	1	2412	12.24	13.00	No
		6	2437	12.76	13.00	No
		11	2462	12.45	13.00	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 $\leqslant$ 1.2 W/kg, OFDM SAR test is not required.

Adjusted SAR = 0.098 * (31.62mW/63.10mW) = 0.049 W/Kg, so 2.4G OFDM SAR test is not required.

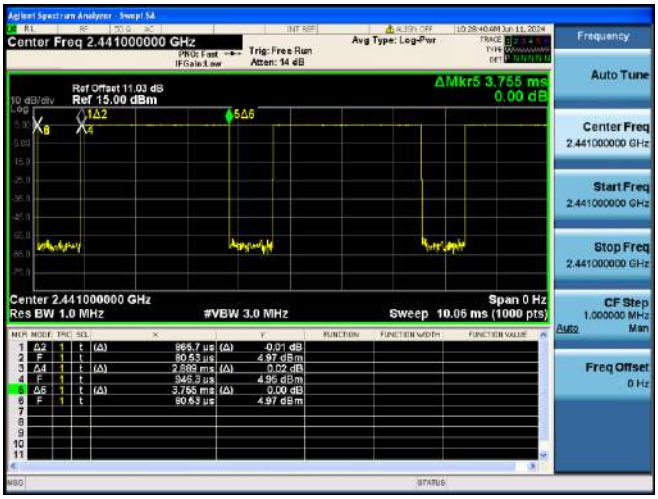
8.3 Bluetooth

Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Average Power (dBm)	4.09	**4.99**	3.38	2.21	3.15	1.55
Tune-Up Limit (dBm)	5.00	5.00	5.00	4.00	4.00	2.00
SAR Test Require	YES	YES	YES	NO	NO	NO
Mode	8-DPSK			BLE-1Mbps		
Channel	0	39	78	0	19	39
Frequency (MHz)	2402	2441	2480	2402	2440	2480
Average Power (dBm)	2.18	3.11	1.55	0.03	1.01	-0.61
Tune-Up Limit (dBm)	4.00	4.00	2.00	1.50	1.50	0.00
SAR Test Require	NO	NO	NO	NO	NO	NO
Note 1: 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 ≤ ¼ dB higher than the primary mode.						

Note: The Bluetooth duty cycle is 76.94 % 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

GFSK



9 TEST EXCLUSION CONSIDERATION

For antenna location and support bands please refer the document “BL-SZ2460026-AI EUT internal photo.pdf”.

Antenna	Front Side(mm)	Back Side(mm)	Left Edge(mm)	Right Edge(mm)	Top Edge(mm)	Bottom Edge(mm)
Ant.0	<25	<25	<25	<25	>25	<25
Ant.1	<25	<25	<25	<25	<25	>25
Note: 1.Per KDB 941225 D06,When the overall length and width of a device is > 9 cm *5 cm, a test separation distance of 10 mm is required for hotspot mode SAR measurements and hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.						

10 TEST RESULT

10.1 LTE Band 2 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	18700	1860	1	Low	-0.11	0.469	23.16	24.00	1.213	0.569	/
Ant.0	QPSK	Left Tilt	0	18700	1860	1	Low	0.11	0.322	23.16	24.00	1.213	0.391	/
Ant.0	QPSK	Right Cheek	0	18700	1860	1	Low	-0.03	0.672	23.16	24.00	1.213	**0.815**	1#
Ant.0	QPSK	Right Tilt	0	18700	1860	1	Low	0.17	0.313	23.16	24.00	1.213	0.380	/
Ant.0	QPSK	Left Cheek	0	18700	1860	50	Mid	-0.12	0.367	21.64	23.00	1.368	0.502	/
Ant.0	QPSK	Left Tilt	0	18700	1860	50	Mid	0.12	0.255	21.64	23.00	1.368	0.349	/
Ant.0	QPSK	Right Cheek	0	18700	1860	50	Mid	-0.08	0.521	21.64	23.00	1.368	0.713	/
Ant.0	QPSK	Right Tilt	0	18700	1860	50	Mid	0.10	0.259	21.64	23.00	1.368	0.354	/
Ant.0	QPSK	Right Cheek	0	18900	1880	1	Low	0.19	0.622	23.02	24.00	1.253	0.779	/
Ant.0	QPSK	Right Cheek	0	19100	1900	1	Low	-0.10	0.603	22.71	24.00	1.346	0.812	/
Ant.0	QPSK	Right Cheek	0	18900	1880	50	Low	0.08	0.518	21.46	23.00	1.426	0.739	/
Ant.0	QPSK	Right Cheek	0	19100	1900	50	Low	-0.18	0.515	21.50	23.00	1.413	0.728	/
Ant.0	QPSK	Right Cheek	0	18700	1860	100	Low	-0.01	0.523	21.64	23.00	1.368	0.715	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	18700	1860	1	Low	0.10	0.380	23.16	24.00	1.213	0.461	/
Ant.0	QPSK	Back Side	10	18700	1860	1	Low	0.01	0.956	23.16	24.00	1.213	**1.160**	2#
Ant.0	QPSK	Left Edge	10	18700	1860	1	Low	0.09	0.450	23.16	24.00	1.213	0.546	/
Ant.0	QPSK	Right Edge	10	18700	1860	1	Low	-0.11	0.135	23.16	24.00	1.213	0.164	/
Ant.0	QPSK	Bottom Edge	10	18700	1860	1	Low	-0.12	0.758	23.16	24.00	1.213	0.919	/
Ant.0	QPSK	Front Side	10	18700	1860	50	Mid	0.04	0.276	21.64	23.00	1.368	0.378	/
Ant.0	QPSK	Back Side	10	18700	1860	50	Mid	0.09	0.565	21.64	23.00	1.368	0.773	/
Ant.0	QPSK	Left Edge	10	18700	1860	50	Mid	-0.13	0.350	21.64	23.00	1.368	0.479	/
Ant.0	QPSK	Right Edge	10	18700	1860	50	Mid	0.14	0.055	21.64	23.00	1.368	0.075	/
Ant.0	QPSK	Bottom Edge	10	18700	1860	50	Mid	-0.12	0.433	21.64	23.00	1.368	0.592	/
Ant.0	QPSK	Back Side	10	18900	1880	1	Low	0.02	0.873	23.02	24.00	1.253	1.094	/
Ant.0	QPSK	Back Side	10	19100	1900	1	Low	-0.19	0.842	22.71	24.00	1.346	1.133	/
Ant.0	QPSK	Back Side	10	18900	1880	50	Low	0.16	0.531	21.46	23.00	1.426	0.757	/
Ant.0	QPSK	Back Side	10	19100	1900	50	Low	0.00	0.542	21.50	23.00	1.413	0.766	/
Ant.0	QPSK	Back Side	10	18700	1860	100	Low	-0.16	0.521	21.64	23.00	1.368	0.713	/

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

10.2 LTE Band 4 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	20175	1732.5	1	Mid	0.12	0.405	23.39	24.00	1.151	0.466	/
Ant.0	QPSK	Left Tilt	0	20175	1732.5	1	Mid	0.08	0.210	23.39	24.00	1.151	0.242	/
Ant.0	QPSK	Right Cheek	0	20175	1732.5	1	Mid	-0.02	0.590	23.39	24.00	1.151	0.679	/
Ant.0	QPSK	Right Tilt	0	20175	1732.5	1	Mid	-0.15	0.258	23.39	24.00	1.151	0.297	/
Ant.0	QPSK	Left Cheek	0	20300	1745	50	Low	0.17	0.327	22.01	23.00	1.256	0.411	/
Ant.0	QPSK	Left Tilt	0	20300	1745	50	Low	0.05	0.168	22.01	23.00	1.256	0.211	/
Ant.0	QPSK	Right Cheek	0	20300	1745	50	Low	0.02	0.495	22.01	23.00	1.256	0.622	/
Ant.0	QPSK	Right Tilt	0	20300	1745	50	Low	0.06	0.206	22.01	23.00	1.256	0.259	/
Ant.0	QPSK	Right Cheek	0	20050	1720	1	High	-0.03	0.558	23.29	24.00	1.178	0.657	/
Ant.0	QPSK	Right Cheek	0	20300	1745	1	Low	-0.02	0.788	23.16	24.00	1.213	0.956	3#
Ant.0	QPSK	Right Cheek	0	20050	1720	50	Mid	0.03	0.454	21.91	23.00	1.285	0.583	/
Ant.0	QPSK	Right Cheek	0	20175	1732.5	50	High	0.06	0.563	21.97	23.00	1.268	0.714	/
Ant.0	QPSK	Right Cheek	0	20175	1732.5	100	Low	-0.07	0.509	21.91	23.00	1.285	0.654	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	20175	1732.5	1	Mid	-0.10	0.267	23.39	24.00	1.151	0.307	/
Ant.0	QPSK	Back Side	10	20175	1732.5	1	Mid	0.17	0.997	23.39	24.00	1.151	1.148	4#
Ant.0	QPSK	Left Edge	10	20175	1732.5	1	Mid	-0.02	0.346	23.39	24.00	1.151	0.398	/
Ant.0	QPSK	Right Edge	10	20175	1732.5	1	Mid	-0.01	0.044	23.39	24.00	1.151	0.051	/
Ant.0	QPSK	Bottom Edge	10	20175	1732.5	1	Mid	-0.01	0.778	23.39	24.00	1.151	0.895	/
Ant.0	QPSK	Front Side	10	20300	1745	50	Low	-0.02	0.206	22.01	23.00	1.256	0.259	/
Ant.0	QPSK	Back Side	10	20300	1745	50	Low	0.08	0.559	22.01	23.00	1.256	0.702	/
Ant.0	QPSK	Left Edge	10	20300	1745	50	Low	-0.15	0.288	22.01	23.00	1.256	0.362	/
Ant.0	QPSK	Right Edge	10	20300	1745	50	Low	-0.03	0.037	22.01	23.00	1.256	0.046	/
Ant.0	QPSK	Bottom Edge	10	20300	1745	50	Low	0.12	0.579	22.01	23.00	1.256	0.727	/
Ant.0	QPSK	Bottom Edge	10	20050	1720	1	High	-0.14	0.718	23.29	24.00	1.178	0.846	/
Ant.0	QPSK	Bottom Edge	10	20300	1745	1	Low	-0.03	0.734	23.16	24.00	1.213	0.890	/
Ant.0	QPSK	Bottom Edge	10	20050	1720	50	Mid	-0.04	0.567	21.91	23.00	1.285	0.729	/
Ant.0	QPSK	Bottom Edge	10	20175	1732.5	50	High	-0.10	0.567	21.97	23.00	1.268	0.719	/
Ant.0	QPSK	Bottom Edge	10	20175	1732.5	100	Low	0.16	0.625	21.91	23.00	1.285	0.803	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.3 LTE Band 5 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SA R(W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	20525	836.5	1	High	-0.06	0.807	22.78	23.00	1.052	0.849	/
Ant.0	QPSK	Left Tilt	0	20525	836.5	1	High	0.11	0.505	22.78	23.00	1.052	0.531	/
Ant.0	QPSK	Right Cheek	0	20525	836.5	1	High	-0.03	1.080	22.78	23.00	1.052	**1.136**	5#
Ant.0	QPSK	Right Tilt	0	20525	836.5	1	High	-0.17	0.558	22.78	23.00	1.052	0.587	/
Ant.0	QPSK	Left Cheek	0	20525	836.5	25	Low	-0.11	0.668	21.84	22.00	1.038	0.693	/
Ant.0	QPSK	Left Tilt	0	20525	836.5	25	Low	-0.13	0.398	21.84	22.00	1.038	0.413	/
Ant.0	QPSK	Right Cheek	0	20525	836.5	25	Low	-0.06	0.785	21.84	22.00	1.038	0.815	/
Ant.0	QPSK	Right Tilt	0	20525	836.5	25	Low	0.00	0.425	21.84	22.00	1.038	0.441	/
Ant.0	QPSK	Right Cheek	0	20450	874	1	Mid	0.05	0.925	22.61	23.00	1.094	1.012	/
Ant.0	QPSK	Right Cheek	0	20600	889	1	Low	0.12	0.933	22.71	23.00	1.069	0.997	/
Ant.0	QPSK	Right Cheek	0	20450	874	25	Mid	0.15	0.755	21.62	22.00	1.091	0.824	/
Ant.0	QPSK	Right Cheek	0	20600	889	25	Low	-0.03	0.743	21.66	22.00	1.081	0.803	/
Ant.0	QPSK	Right Cheek	0	20525	836.5	50	Low	0.05	0.767	21.83	22.00	1.040	0.798	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	20525	836.5	1	High	0.02	0.871	22.78	23.00	1.052	**0.916**	6#
Ant.0	QPSK	Back Side	10	20525	836.5	1	High	0.12	0.860	22.78	23.00	1.052	0.905	/
Ant.0	QPSK	Left Edge	10	20525	836.5	1	High	-0.09	0.479	22.78	23.00	1.052	0.504	/
Ant.0	QPSK	Right Edge	10	20525	836.5	1	High	0.09	0.181	22.78	23.00	1.052	0.190	/
Ant.0	QPSK	Bottom Edge	10	20525	836.5	1	High	-0.16	0.062	22.78	23.00	1.052	0.065	/
Ant.0	QPSK	Front Side	10	20525	836.5	25	Low	-0.14	0.672	21.84	22.00	1.038	0.698	/
Ant.0	QPSK	Back Side	10	20525	836.5	25	Low	-0.05	0.691	21.84	22.00	1.038	0.717	/
Ant.0	QPSK	Left Edge	10	20525	836.5	25	Low	0.12	0.319	21.84	22.00	1.038	0.331	/
Ant.0	QPSK	Right Edge	10	20525	836.5	25	Low	0.07	0.150	21.84	22.00	1.038	0.156	/
Ant.0	QPSK	Bottom Edge	10	20525	836.5	25	Low	-0.14	0.046	21.84	22.00	1.038	0.048	/
Ant.0	QPSK	Front Side	10	20450	874	1	Mid	0.15	0.816	22.61	23.00	1.094	0.893	/
Ant.0	QPSK	Front Side	10	20600	889	1	Low	-0.03	0.821	22.71	23.00	1.069	0.878	/
Ant.0	QPSK	Front Side	10	20450	874	25	Mid	0.02	0.681	21.62	22.00	1.091	0.743	/
Ant.0	QPSK	Front Side	10	20600	889	25	Low	-0.06	0.673	21.66	22.00	1.081	0.728	/
Ant.0	QPSK	Front Side	10	20525	836.5	50	Low	-0.11	0.662	21.83	22.00	1.040	0.688	/

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

10.4 LTE Band 12 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	23130	741	1	Low	-0.05	0.489	22.59	23.00	1.099	0.537	/
Ant.0	QPSK	Left Tilt	0	23130	741	1	Low	-0.13	0.225	22.59	23.00	1.099	0.247	/
Ant.0	QPSK	Right Cheek	0	23130	741	1	Low	0.00	0.576	22.59	23.00	1.099	**0.633**	7#
Ant.0	QPSK	Right Tilt	0	23130	741	1	Low	0.16	0.264	22.59	23.00	1.099	0.290	/
Ant.0	QPSK	Left Cheek	0	23130	741	25	Low	0.02	0.402	21.33	22.00	1.167	0.469	/
Ant.0	QPSK	Left Tilt	0	23130	741	25	Low	0.07	0.185	21.33	22.00	1.167	0.216	/
Ant.0	QPSK	Right Cheek	0	23130	741	25	Low	-0.16	0.489	21.33	22.00	1.167	0.571	/
Ant.0	QPSK	Right Tilt	0	23130	741	25	Low	0.00	0.220	21.33	22.00	1.167	0.257	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	23130	741	1	Low	0.07	0.504	22.59	23.00	1.099	0.554	/
Ant.0	QPSK	Back Side	10	23130	741	1	Low	0.05	0.516	22.59	23.00	1.099	**0.567**	8#
Ant.0	QPSK	Left Edge	10	23130	741	1	Low	-0.17	0.317	22.59	23.00	1.099	0.348	/
Ant.0	QPSK	Right Edge	10	23130	741	1	Low	0.15	0.142	22.59	23.00	1.099	0.156	/
Ant.0	QPSK	Bottom Edge	10	23130	741	1	Low	-0.03	0.077	22.59	23.00	1.099	0.085	/
Ant.0	QPSK	Front Side	10	23130	741	25	High	0.09	0.412	21.33	22.00	1.167	0.481	/
Ant.0	QPSK	Back Side	10	23130	741	25	High	-0.19	0.423	21.33	22.00	1.167	0.494	/
Ant.0	QPSK	Left Edge	10	23130	741	25	High	-0.01	0.237	21.33	22.00	1.167	0.277	/
Ant.0	QPSK	Right Edge	10	23130	741	25	High	-0.01	0.133	21.33	22.00	1.167	0.155	/
Ant.0	QPSK	Bottom Edge	10	23130	741	25	High	-0.05	0.053	21.33	22.00	1.167	0.062	/

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

10.5 LTE Band 13 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	23230	782	1	Low	0.18	0.522	22.64	23.00	1.086	0.567	/
Ant.0	QPSK	Left Tilt	0	23230	782	1	Low	-0.02	0.339	22.64	23.00	1.086	0.368	/
Ant.0	QPSK	Right Cheek	0	23230	782	1	Low	0.00	0.622	22.64	23.00	1.086	**0.675**	9#
Ant.0	QPSK	Right Tilt	0	23230	782	1	Low	0.02	0.400	22.64	23.00	1.086	0.434	/
Ant.0	QPSK	Left Cheek	0	23230	782	25	Low	0.09	0.447	21.65	22.00	1.084	0.485	/
Ant.0	QPSK	Left Tilt	0	23230	782	25	Low	0.14	0.292	21.65	22.00	1.084	0.317	/
Ant.0	QPSK	Right Cheek	0	23230	782	25	Low	0.16	0.515	21.65	22.00	1.084	0.558	/
Ant.0	QPSK	Right Tilt	0	23230	782	25	Low	0.15	0.325	21.65	22.00	1.084	0.352	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	23230	782	1	Low	0.11	0.465	22.64	23.00	1.086	0.505	/
Ant.0	QPSK	Back Side	10	23230	782	1	Low	0.06	0.755	22.64	23.00	1.086	**0.820**	10#
Ant.0	QPSK	Left Edge	10	23230	782	1	Low	-0.03	0.318	22.64	23.00	1.086	0.345	/
Ant.0	QPSK	Right Edge	10	23230	782	1	Low	-0.15	0.106	22.64	23.00	1.086	0.115	/
Ant.0	QPSK	Bottom Edge	10	23230	782	1	Low	0.12	0.092	22.64	23.00	1.086	0.100	/
Ant.0	QPSK	Front Side	10	23230	782	25	Low	0.04	0.369	21.65	22.00	1.084	0.400	/
Ant.0	QPSK	Back Side	10	23230	782	25	Low	-0.04	0.581	21.65	22.00	1.084	0.630	/
Ant.0	QPSK	Left Edge	10	23230	782	25	Low	0.12	0.245	21.65	22.00	1.084	0.266	/
Ant.0	QPSK	Right Edge	10	23230	782	25	Low	0.11	0.083	21.65	22.00	1.084	0.090	/
Ant.0	QPSK	Bottom Edge	10	23230	782	25	Low	0.01	0.061	21.65	22.00	1.084	0.066	/

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

10.6 LTE Band 26 (15MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	26965	841.5	1	Low	0.17	0.468	22.67	24.00	1.358	0.636	/
Ant.0	QPSK	Left Tilt	0	26965	841.5	1	Low	-0.10	0.292	22.67	24.00	1.358	0.397	/
Ant.0	QPSK	Right Cheek	0	26965	841.5	1	Low	-0.01	0.512	22.67	24.00	1.358	**0.695**	11#
Ant.0	QPSK	Right Tilt	0	26965	841.5	1	Low	0.08	0.327	22.67	24.00	1.358	0.444	/
Ant.0	QPSK	Left Cheek	0	26865	831.5	36	Low	0.11	0.348	21.50	23.00	1.413	0.492	/
Ant.0	QPSK	Left Tilt	0	26865	831.5	36	Low	-0.15	0.224	21.50	23.00	1.413	0.317	/
Ant.0	QPSK	Right Cheek	0	26865	831.5	36	Low	0.01	0.431	21.50	23.00	1.413	0.609	/
Ant.0	QPSK	Right Tilt	0	26865	831.5	36	Low	0.18	0.250	21.50	23.00	1.413	0.353	/
Body-Worn&Hotspot														
Ant.0	QPSK	Front Side	10	26965	841.5	1	Low	-0.13	0.501	22.67	24.00	1.358	0.680	/
Ant.0	QPSK	Back Side	10	26965	841.5	1	Low	-0.04	0.525	22.67	24.00	1.358	**0.713**	12#
Ant.0	QPSK	Left Edge	10	26965	841.5	1	Low	0.14	0.197	22.67	24.00	1.358	0.268	/
Ant.0	QPSK	Right Edge	10	26965	841.5	1	Low	0.19	0.104	22.67	24.00	1.358	0.141	/
Ant.0	QPSK	Bottom Edge	10	26965	841.5	1	Low	0.07	0.035	22.67	24.00	1.358	0.048	/
Ant.0	QPSK	Front Side	10	26865	831.5	36	Mid	0.03	0.430	21.50	23.00	1.413	0.608	/
Ant.0	QPSK	Back Side	10	26865	831.5	36	Mid	-0.02	0.442	21.50	23.00	1.413	0.625	/
Ant.0	QPSK	Left Edge	10	26865	831.5	36	Mid	0.18	0.243	21.50	23.00	1.413	0.343	/
Ant.0	QPSK	Right Edge	10	26865	831.5	36	Mid	-0.19	0.091	21.50	23.00	1.413	0.129	/
Ant.0	QPSK	Bottom Edge	10	26865	831.5	36	Mid	-0.01	0.035	21.50	23.00	1.413	0.049	/

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

10.7 WIFI 2.4GHz

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.1	802.11 b	Left Cheek	0	6	2437	-0.08	0.054	17.64	18.00	1.086	97.42	1.026	0.060	/
Ant.1	802.11 b	Left Tilt	0	6	2437	0.19	0.049	17.64	18.00	1.086	97.42	1.026	0.055	/
Ant.1	802.11 b	Right Cheek	0	6	2437	0.05	0.070	17.64	18.00	1.086	97.42	1.026	**0.078**	13#
Ant.1	802.11 b	Right Tilt	0	6	2437	0.08	0.055	17.64	18.00	1.086	97.42	1.026	0.061	/
Body-Worn&Hotspot														
Ant.1	802.11 b	Front Side	10	6	2437	0.01	0.035	17.64	18.00	1.086	97.42	1.026	0.039	/
Ant.1	802.11 b	Back Side	10	6	2437	0.01	0.088	17.64	18.00	1.086	97.42	1.026	**0.098**	14#
Ant.1	802.11 b	Left Edge	10	6	2437	-0.01	0.022	17.64	18.00	1.086	97.42	1.026	0.025	/
Ant.1	802.11 b	Right Edge	10	6	2437	-0.04	0.049	17.64	18.00	1.086	97.42	1.026	0.055	/
Ant.1	802.11 b	Top Edge	10	6	2437	-0.07	0.052	17.64	18.00	1.086	97.42	1.026	0.058	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.9 Bluetooth

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.1	DH5	Left Cheek	0	39	2441	0.01	0.004	4.99	5.00	1.002	76.94	1.300	0.005	/
Ant.1	DH5	Left Tilt	0	39	2441	0.00	0.003	4.99	5.00	1.002	76.94	1.300	0.004	/
Ant.1	DH5	Right Cheek	0	39	2441	0.03	0.006	4.99	5.00	1.002	76.94	1.300	**0.008**	15#
Ant.1	DH5	Right Tilt	0	39	2441	0.07	0.005	4.99	5.00	1.002	76.94	1.300	0.007	/
Body-worn&Hotspot														
Ant.1	DH5	Front Side	10	39	2441	0.03	0.007	4.99	5.00	1.002	76.94	1.300	0.007	/
Ant.1	DH5	Back Side	10	39	2441	0.06	0.015	4.99	5.00	1.002	76.94	1.300	**0.015**	16#
Ant.1	DH5	Left Edge	10	39	2441	-0.05	0.006	4.99	5.00	1.002	76.94	1.300	0.006	/
Ant.1	DH5	Right Edge	10	39	2441	0.16	0.009	4.99	5.00	1.002	76.94	1.300	0.009	/
Ant.1	DH5	Top Edge	10	39	2441	0.11	0.013	4.99	5.00	1.002	76.94	1.300	0.013	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

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 ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 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 >= 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 >= 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 >= 1.5 W/kg, perform a third repeated measurement.

Frequency Band (MHz)	Wireless Band	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Repeated^{1th} Measured SAR (W/kg)	Largest to Smallest SAR Radio
1860	LTE Band2	Body	Back Side	0.956	Yes	0.933	1.02
1880	LTE Band2	Body	Back Side	0.873	Yes	0.866	1.01
1900	LTE Band2	Body	Back Side	0.842	Yes	0.835	1.01
1732.5	LTE Band4	Body	Back Side	0.997	Yes	0.948	1.05
836.5	LTE Band5	Head	Right Cheek	1.080	Yes	1.020	1.06
874	LTE Band5	Head	Right Cheek	0.925	Yes	0.908	1.02
889	LTE Band5	Head	Right Cheek	0.933	Yes	0.917	1.02
836.5	LTE Band5	Body	Front Side	0.871	Yes	0.832	1.05
874	LTE Band5	Body	Front Side	0.816	Yes	0.801	1.02
889	LTE Band5	Body	Front Side	0.821	Yes	0.805	1.02
Note: The ratio of largest to smallest SAR for the original and first repeated measurements is < 1.20, the second 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	Head	Body-worn	Hotspot
1	WWAN+WIFI2.4G+Bluetooth	Yes	Yes	Yes

Note:

1. When stand-alone SAR is not required for a transmitter or antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.

2. The maximum SAR summation is calculated based on the same configuration and test position.

12.2 Sum SAR of Simultaneous Transmission

12.2.1 Head Simultaneous Transmission SAR Evaluation for WWAN and WLAN

Band	Position	Stand alone SAR			SUM SAR
		1	2	3	
		WWAN	2.4GWIFI	Bluetooth	1+2+3
LTE B2	Left Cheek	0.569	0.060	0.005	0.634
	Left Tilt	0.391	0.055	0.004	0.450
	Right Cheek	0.815	0.078	0.008	0.901
	Right Tilt	0.380	0.061	0.007	0.448
LTE B4	Left Cheek	0.466	0.060	0.005	0.531
	Left Tilt	0.242	0.055	0.004	0.301
	Right Cheek	0.956	0.078	0.008	1.042
	Right Tilt	0.297	0.061	0.007	0.365
LTE B5	Left Cheek	0.849	0.060	0.005	0.914
	Left Tilt	0.531	0.055	0.004	0.590
	Right Cheek	1.136	0.078	0.008	**1.222**
	Right Tilt	0.587	0.061	0.007	0.655
LTE B12	Left Cheek	0.537	0.060	0.005	0.602
	Left Tilt	0.247	0.055	0.004	0.306
	Right Cheek	0.633	0.078	0.008	0.719
	Right Tilt	0.290	0.061	0.007	0.358
LTE B13	Left Cheek	0.567	0.060	0.005	0.632
	Left Tilt	0.368	0.055	0.004	0.427
	Right Cheek	0.675	0.078	0.008	0.761
	Right Tilt	0.434	0.061	0.007	0.502
LTE B26	Left Cheek	0.636	0.060	0.005	0.701
	Left Tilt	0.397	0.055	0.004	0.456
	Right Cheek	0.695	0.078	0.008	0.781
	Right Tilt	0.444	0.061	0.007	0.512

Note:

1: 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.

2: The highest Summed 1g SAR is 1.222 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.2 Body Simultaneous Transmission SAR Evaluation for WWAN and WLAN

Band	Position	Stand alone SAR			SUM SAR
		1	2	3	
		WWAN	2.4GWIFI	Bluetooth	1+2+3
LTE B2	Front Side 10mm	0.461	0.039	0.007	0.507
	Back Side 10mm	1.160	0.098	0.015	**1.273**
	Left Side 10mm	0.546	0.025	0.006	0.577
	Right Side 10mm	0.164	0.055	0.009	0.228
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.919	0.000	0.004	0.923
LTE B4	Front Side 10mm	0.307	0.039	0.007	0.353
	Back Side 10mm	1.148	0.098	0.015	1.261
	Left Side 10mm	0.398	0.025	0.006	0.429
	Right Side 10mm	0.051	0.055	0.009	0.115
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.895	0.000	0.004	0.899
LTE B5	Front Side 10mm	0.916	0.039	0.007	0.962
	Back Side 10mm	0.905	0.098	0.015	1.018
	Left Side 10mm	0.504	0.025	0.006	0.535
	Right Side 10mm	0.190	0.055	0.009	0.254
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.065	0.000	0.004	0.069
LTE B12	Front Side 10mm	0.554	0.039	0.007	0.600
	Back Side 10mm	0.567	0.098	0.015	0.680
	Left Side 10mm	0.348	0.025	0.006	0.379
	Right Side 10mm	0.156	0.055	0.009	0.220
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.085	0.000	0.004	0.089
LTE B13	Front Side 10mm	0.505	0.039	0.007	0.551
	Back Side 10mm	0.820	0.098	0.015	0.933
	Left Side 10mm	0.345	0.025	0.006	0.376
	Right Side 10mm	0.115	0.055	0.009	0.179
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.100	0.000	0.004	0.104
LTE B26	Front Side 10mm	0.680	0.039	0.007	0.726
	Back Side 10mm	0.713	0.098	0.015	0.826
	Left Side 10mm	0.268	0.025	0.006	0.299
	Right Side 10mm	0.141	0.055	0.009	0.205
	Top Side 10mm	0.000	0.058	0.013	0.071
	Bottom Side 10mm	0.048	0.000	0.004	0.052

Note:

1: 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.

2: The highest Summed 1g SAR is 1.273 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

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	DASY8	16.2.2.1588	N/A	N/A
750MHz Validation Dipole	Speag	D750V3	SN: 1208	2021/07/05	2024/07/05
835MHz Validation Dipole	Speag	D835V2	SN: 4d277	2021/09/09	2024/09/09
1750MHz Validation Dipole	Speag	D1750V2	SN: 1183	2021/07/06	2024/07/06
1950MHz Validation Dipole	Speag	D1950V3	SN: 1240	2021/09/13	2024/09/13
2450MHz Validation Dipole	Speag	D2450V2	SN: 1062	2021/07/05	2024/07/05
E-Field Probe	Speag	EX3DV4	SN: 7607	2023/07/04	2024/07/04
Data Acquisition Electronicsr	Speag	DAE4	SN: 1711	2024/03/18	2025/03/18
Signal Generator	R&S	SMB100A	177746	2024/04/24	2025/04/24
Power Meter	R&S	NRVD-B2	835843/014	2023/09/05	2024/09/05
Power Sensor	R&S	NRV-Z4	100381	2023/09/05	2024/09/05
Power Sensor	R&S	NRV-Z2	100211	2023/09/05	2024/09/05
Wireless Communication Test Set	R&S	CMW500	104946	2023/09/01	2024/09/01
Network Analyzer	Agilent	E5071C	MY46103472	2023/11/14	2024/11/14
Thermometer	Elitech	RC-4	EF5238001628	2023/10/09	2024/10/09
Thermometer	Elitech	RC-4HC	EF7239002652	2023/11/17	2024/11/17
Power Amplifier	SATIMO	6552B	22374	N/A	N/A
Dielectric Probe Kit	Speag	DAK3.5	SN: 1312	N/A	N/A
Phantom	Speag	SAM	SN: 1859	N/A	N/A
Attenuator	COM-MW	ZA-S1-31	1305003187	N/A	N/A
Directional coupler	AA-MCS	AAMCS-UDC	000272	N/A	N/A

Note: For dipole antennas, BALUN 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 a DAK3.5 Dielectric Probe Kit.

Head Liquid

Date	Liquid Type	Fre. (MHz)	Temp. (℃)	Meas. Conductivity (σ) (S/m)	Meas. Permittivity (ε)	Target Conductivity (σ) (S/m)	Target Permittivity (ε)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2024.06.05	Head	750	21.2	0.89	43.20	0.89	41.94	0.00	3.00
2024.06.28	Head	835	21.6	0.90	42.22	0.90	41.50	0.00	1.73
2024.06.07	Head	1750	21.3	1.36	39.45	1.37	40.08	-0.73	-1.57
2024.07.01	Head	1950	21.7	1.38	40.43	1.40	40.00	-1.43	1.08
2024.06.18	Head	2450	21.4	1.80	39.46	1.80	39.20	0.00	0.66
Note: The tolerance limit of Conductivity and Permittivity is± 5%.									

ANNEX B SYSTEM CHECK RESULT

Comparing to the original SAR value provided by SPEAG, the validation data should be within itsspecification 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 (%)
2024.06.05	Head	750	100	0.87	8.66	8.51	1.76
2024.06.28	Head	835	100	0.96	9.56	9.72	-1.65
2024.06.07	Head	1750	100	3.57	35.70	36.50	-2.19
2024.07.01	Head	1950	100	4.16	41.60	41.40	0.48
2024.06.18	Head	2450	100	5.39	53.90	54.20	-0.55
Note: The tolerance limit of System validation ±10%.							

System Performance Check Data (750MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D750V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL		CD700	CW, 0--	750.0, 100	10.31	0.885	43.2	22.4	21.2

Hardware Setup

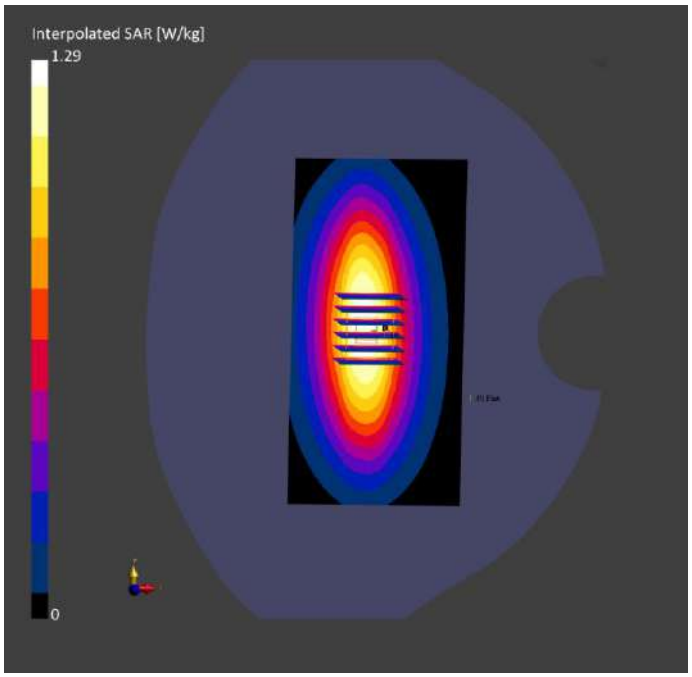
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 160.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-05	2024-06-05
psSAR1g [W/kg]	0.845	0.866
psSAR10g [W/kg]	0.568	0.557
Power Drift [dB]	-0.09	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.0
Dist 3dB Peak [mm]		20.4


Interpolated SAR [W/kg]
1.29
0

System Performance Check Data (835MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D835V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL		CD835	CW, 0--	835.0, 50	9.96	0.902	42.2	22.5	21.6

Hardware Setup

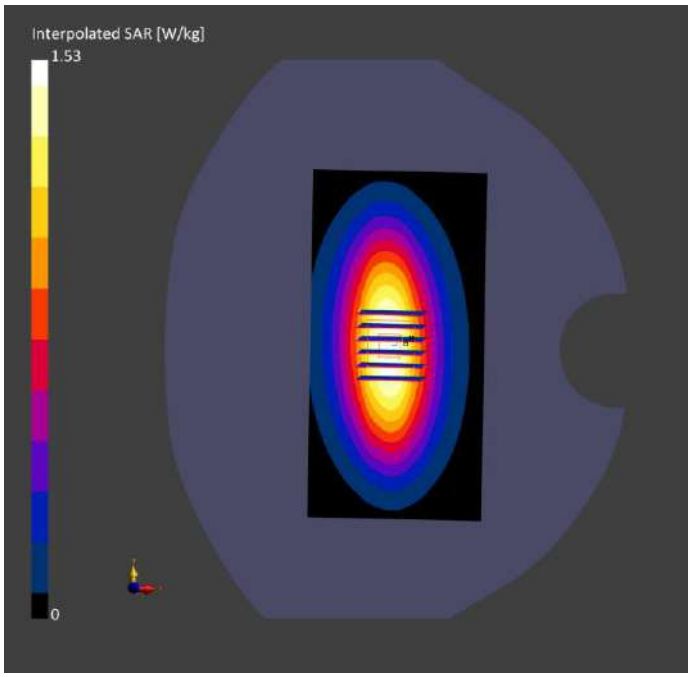
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 160.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-28	2024-06-28
psSAR1g [W/kg]	1.05	0.956
psSAR10g [W/kg]	0.645	0.622
Power Drift [dB]	-0.09	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.8
Dist 3dB Peak [mm]		13.2


Interpolated SAR [W/kg]
1.53
0

System Performance Check Data (1750MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D1750V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL		D1750	CW, 0--	1750.0, 50	8.52	1.36	39.4	22.7	21.3

Hardware Setup

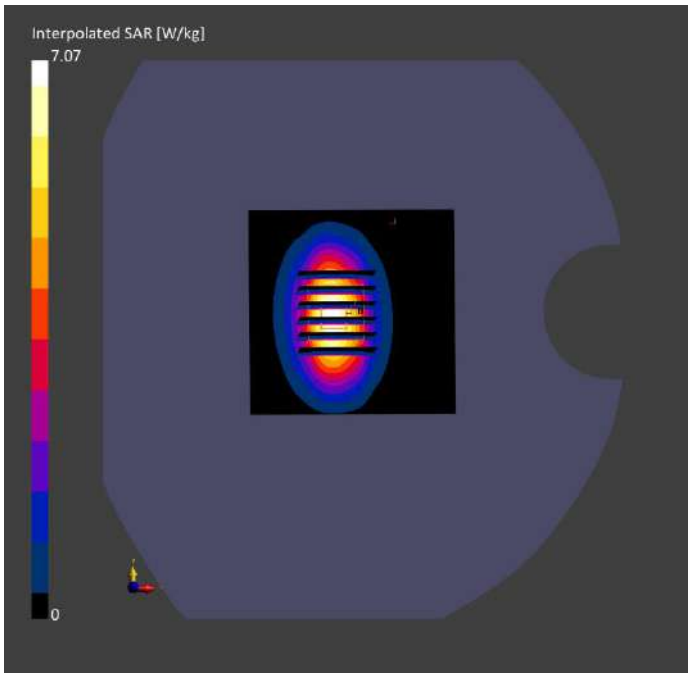
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-07	2024-06-07
psSAR1g [W/kg]	3.74	3.57
psSAR10g [W/kg]	2.05	1.86
Power Drift [dB]	-0.08	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.9
Dist 3dB Peak [mm]		10.7


Interpolated SAR [W/kg]
7.07
0

System Performance Check Data (1950MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D1900V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL		D1950	CW, 0--	1950.0, 50	7.87	1.38	40.4	22.6	21.7

Hardware Setup

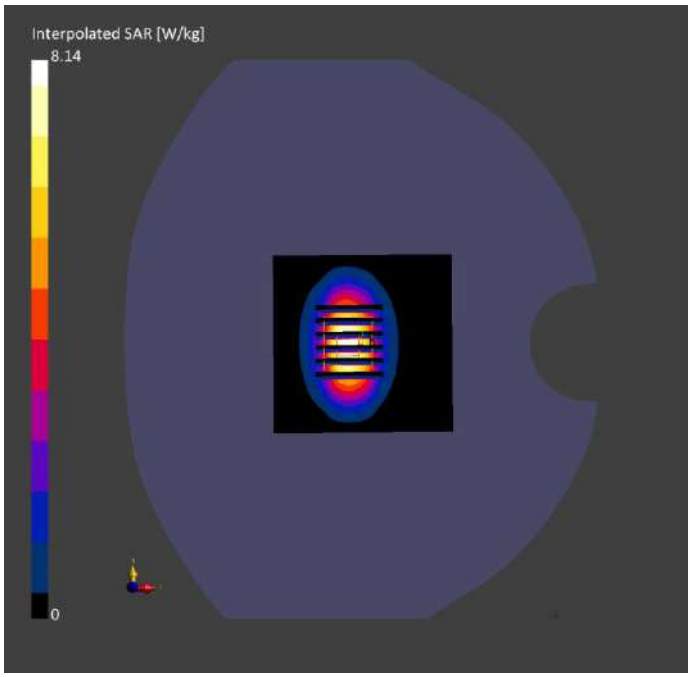
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-15	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-15	2024-06-15
psSAR1g [W/kg]	4.42	4.16
psSAR10g [W/kg]	2.25	2.14
Power Drift [dB]	-0.04	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.1
Dist 3dB Peak [mm]		9.6


Interpolated SAR [W/kg]
8.14
0

System Performance Check Data (2450MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D2450V2, SPEAG	40.0 x 8.0 x 8.0	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL		D2450	CW, 0--	2450.0, 50	7.47	1.8	39.5	22.5	21.4

Hardware Setup

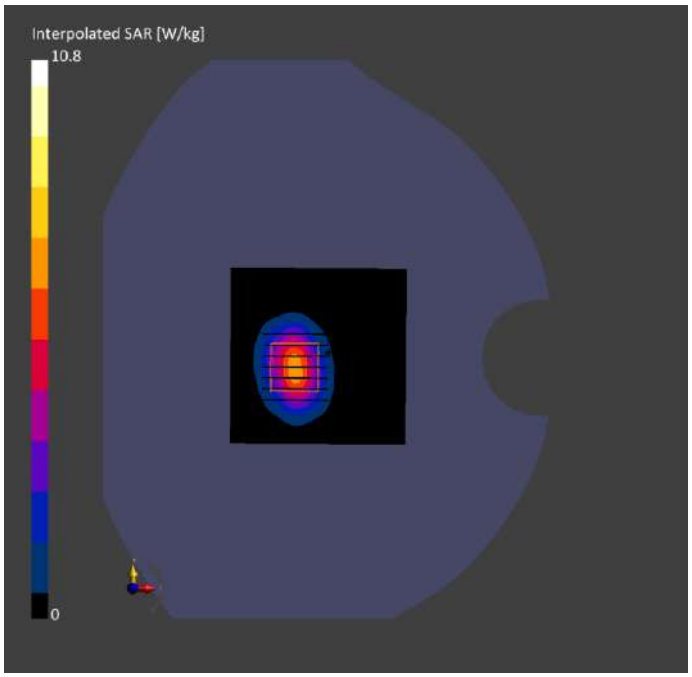
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-18	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-18	2024-06-18
psSAR1g [W/kg]	5.22	5.39
psSAR10g [W/kg]	2.29	2.52
Power Drift [dB]	-0.02	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.2
Dist 3dB Peak [mm]		9.1


Interpolated SAR [W/kg]
10.8
0

ANNEX C TEST DATA

Meas.1 Right Head with Cheek on Low Channel in LTE Band2 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 2	LTE - FDD, 10169-CAF	1860.0, 18700	7.98	1.35	40.8	22.6	21.7

Hardware Setup

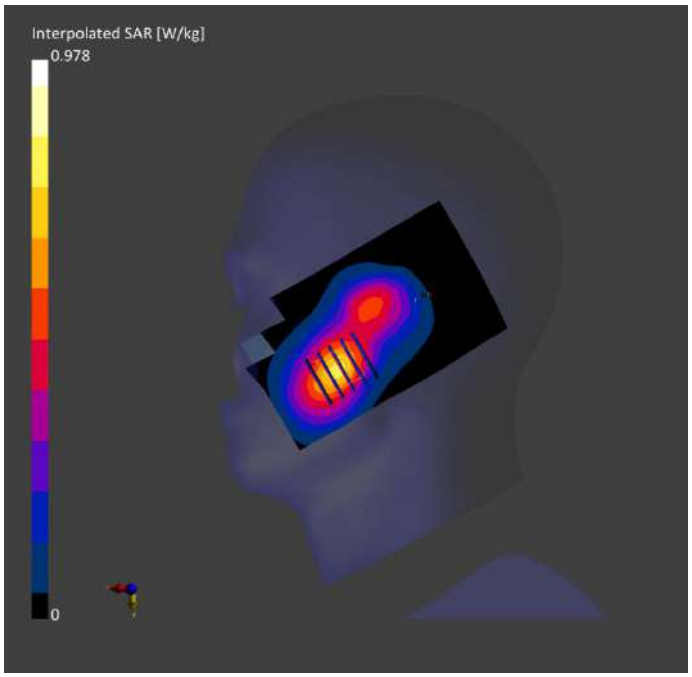
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-07-01	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	All points	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-07-01	2024-07-01
psSAR1g [W/kg]	0.630	0.672
psSAR10g [W/kg]	0.362	0.418
Power Drift [dB]	-0.10	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		69.7
Dist 3dB Peak [mm]		15.6


Interpolated SAR [W/kg]
0.978
0

Meas.2 Body Plane with Back Side 10mm on Low Channel in LTE Band2 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	Band 2	LTE - FDD, 10169-CAF	1860.0, 18700	7.98	1.35	40.8	22.6	21.7

Hardware Setup

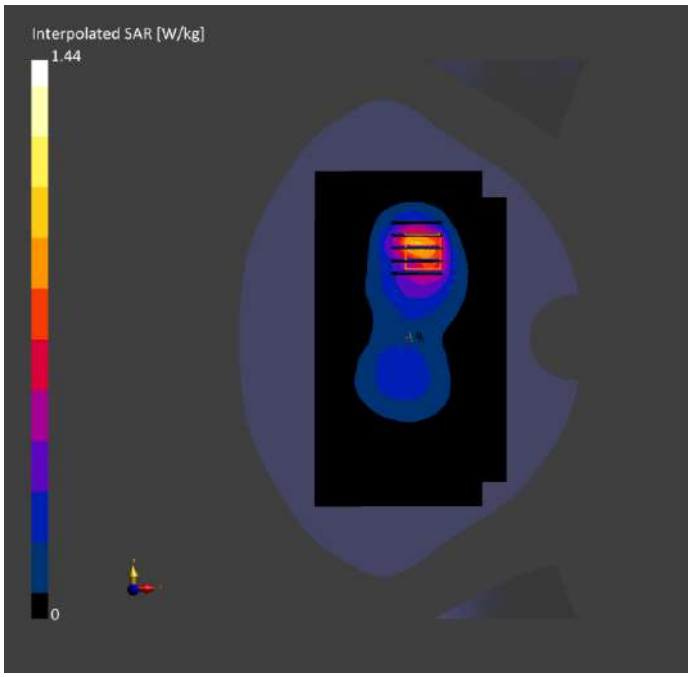
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-07-01	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 210.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-07-01	2024-07-01
psSAR1g [W/kg]	0.904	0.956
psSAR10g [W/kg]	0.506	0.527
Power Drift [dB]	-0.16	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		59.8
Dist 3dB Peak [mm]		10.7


Interpolated SAR [W/kg]
1.44
0

Meas.3 Right Head with Cheek on Low Channel in LTE Band4 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 4	LTE - FDD, 10169-CAF	1745.0, 20300	8.52	1.36	39.5	22.7	21.3

Hardware Setup

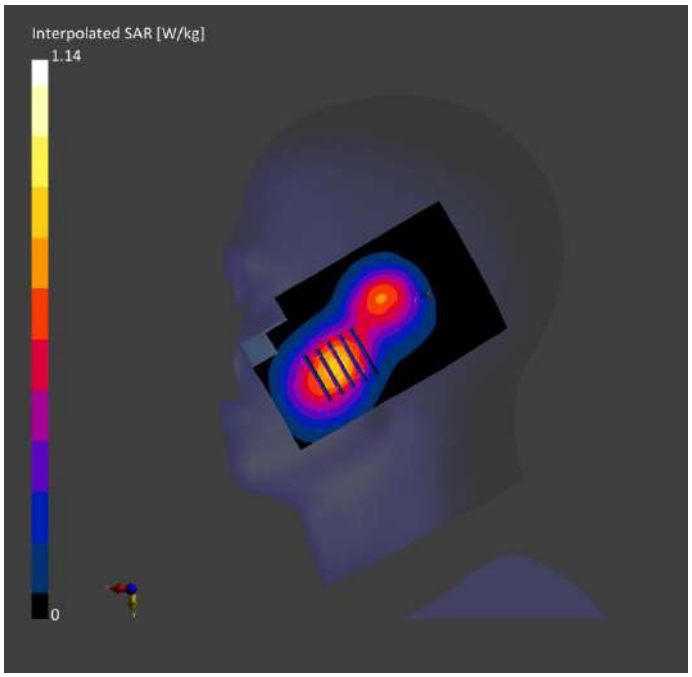
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-07	2024-06-07
psSAR1g [W/kg]	0.705	0.788
psSAR10g [W/kg]	0.416	0.497
Power Drift [dB]	0.11	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		75.0
Dist 3dB Peak [mm]		13.6


Interpolated SAR [W/kg]
1.14
0

Meas.4 Body Plane with Back Side 10mm on Middle Channel in LTE Band4 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	Band 4	LTE - FDD, 10169-CAF	1732.5, 20175	8.52	1.35	39.7	22.7	21.3

Hardware Setup

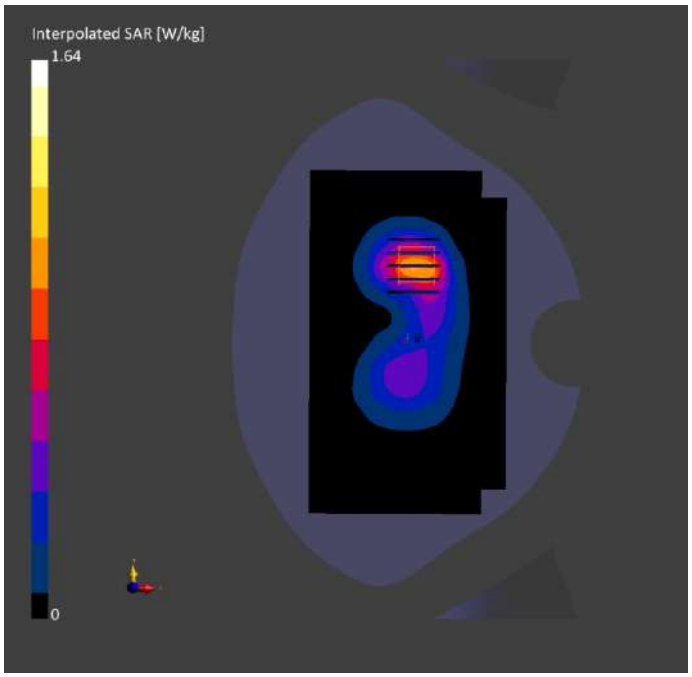
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 120.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-07	2024-06-07
psSAR1g [W/kg]	0.923	0.997
psSAR10g [W/kg]	0.523	0.564
Power Drift [dB]	-0.03	0.17
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		59.8
Dist 3dB Peak [mm]		12.5


Interpolated SAR [W/kg]
1.64
0

Meas.5 Right Head with Cheek on Middle Channel in LTE Band5 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 5	LTE - FDD, 10175-CAH	836.5, 20525	9.96	0.905	42.1	22.5	21.6

Hardware Setup

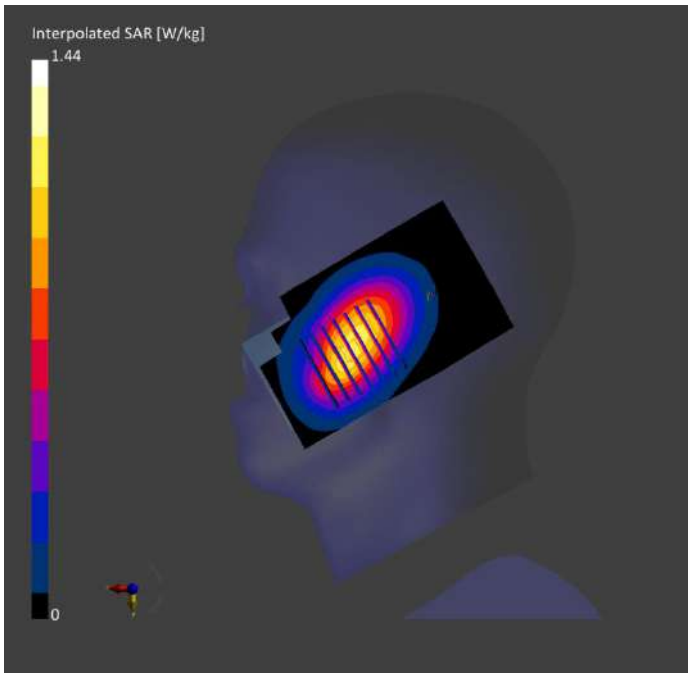
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-28	2024-06-28
psSAR1g [W/kg]	1.01	1.08
psSAR10g [W/kg]	0.686	0.784
Power Drift [dB]	0.22	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		74.4
Dist 3dB Peak [mm]		17.0


Interpolated SAR [W/kg]
1.44
0

Meas.6 Body Plane with Front Side 10mm on Middle Channel in LTE Band5 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	FRONT, 10.00	Band 5	LTE - FDD, 10175-CAH	836.5, 20525	9.96	0.905	42.1	22.5	21.6

Hardware Setup

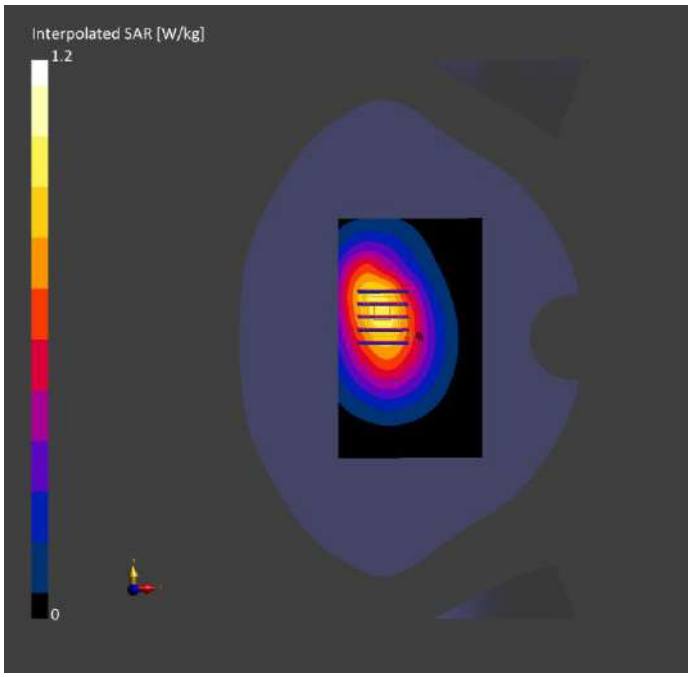
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-28	2024-06-28
psSAR1g [W/kg]	0.850	0.871
psSAR10g [W/kg]	0.581	0.610
Power Drift [dB]	0.00	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		72.1
Dist 3dB Peak [mm]		> 16.0


Interpolated SAR [W/kg]
1.2
0

Meas.7 Right Head with Cheek on Middle Channel in LTE Band12 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 12	LTE - FDD, 10175-CAH	741, 23130	10.31	0.876	43.4	22.4	21.2

Hardware Setup

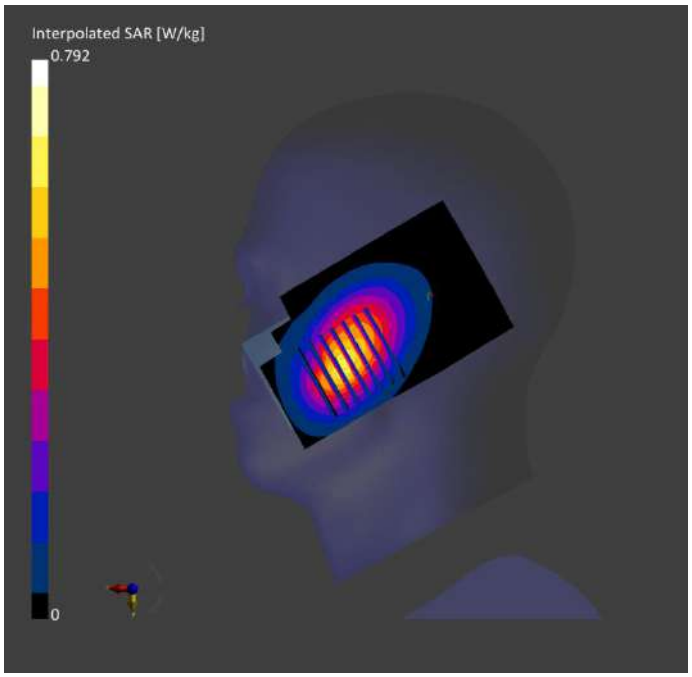
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-05	2024-06-05
psSAR1g [W/kg]	0.562	0.576
psSAR10g [W/kg]	0.371	0.393
Power Drift [dB]	-0.00	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		73.8
Dist 3dB Peak [mm]		16.5


Interpolated SAR [W/kg]
0.792
0

Meas.8 Body Plane with Back Side 10mm on Middle Channel in LTE Band12 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	Band 12	LTE - FDD, 10175-CAH	741, 23130	10.31	0.876	43.4	22.4	21.2

Hardware Setup

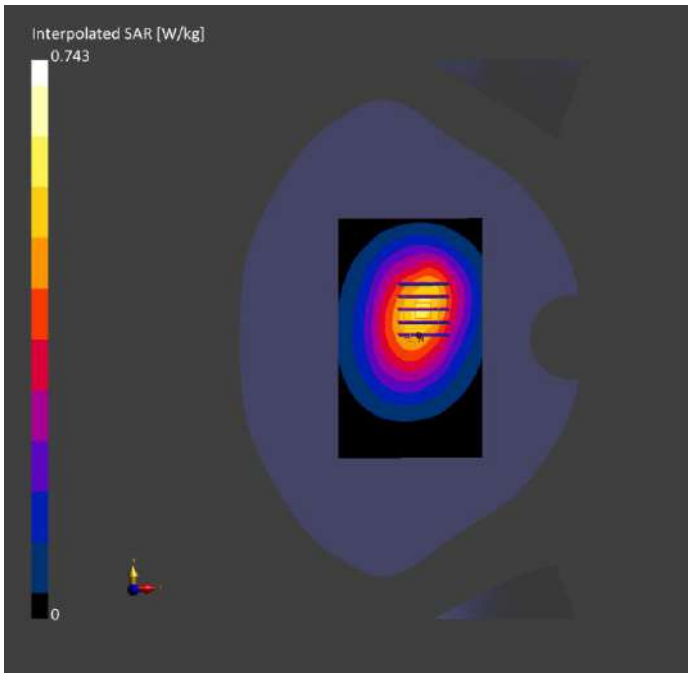
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-05	2024-06-05
psSAR1g [W/kg]	0.507	0.516
psSAR10g [W/kg]	0.352	0.344
Power Drift [dB]	-0.05	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		68.3
Dist 3dB Peak [mm]		> 16.0


Interpolated SAR [W/kg]
0.743
0

Meas.9 Right Head with Cheek on Middle Channel in LTE Band13 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 13	LTE - FDD, 10175-CAH	782.0, 23230	10.31	0.896	43.0	22.4	21.2

Hardware Setup

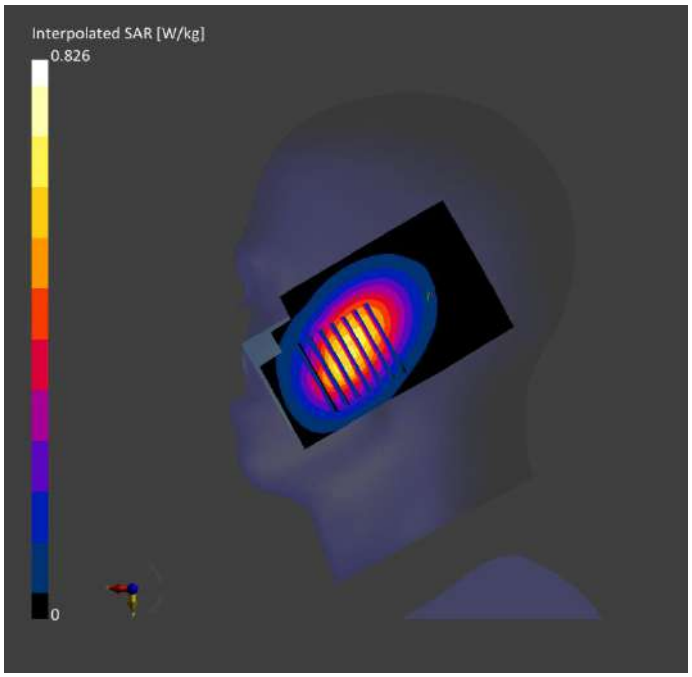
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-05	2024-06-05
psSAR1g [W/kg]	0.589	0.622
psSAR10g [W/kg]	0.401	0.444
Power Drift [dB]	0.11	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		74.1
Dist 3dB Peak [mm]		17.4


Interpolated SAR [W/kg]
0.826
0

Meas.10 Body Plane with Back Side 10mm on Middle Channel in LTE Band13 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	Band 13	LTE - FDD, 10175-CAH	782.0, 23230	10.31	0.896	43.0	22.4	21.2

Hardware Setup

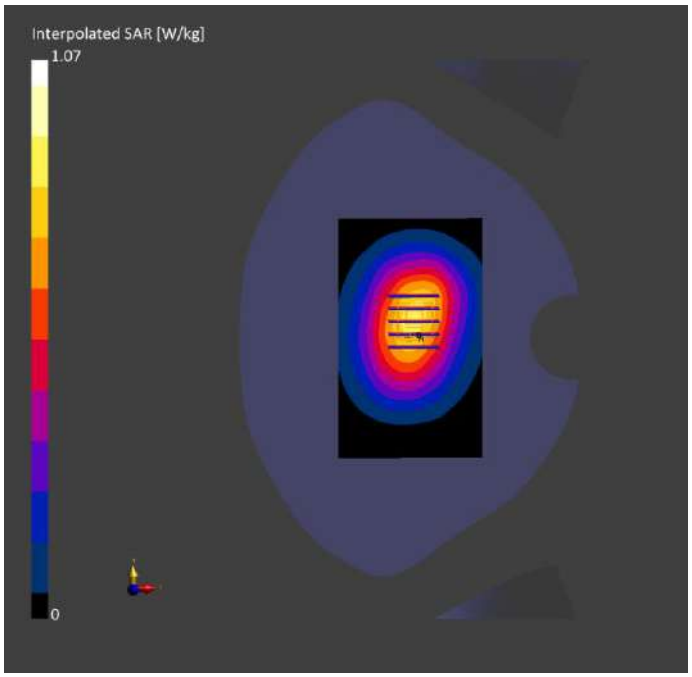
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-05	2024-06-05
psSAR1g [W/kg]	0.748	0.755
psSAR10g [W/kg]	0.517	0.547
Power Drift [dB]	-0.00	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		70.3
Dist 3dB Peak [mm]		> 16.0


Interpolated SAR [W/kg]
1.07
0

Meas.11 Right Head with Cheek on Middle Channel in LTE Band26 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	Band 26	LTE - FDD, 10181-CAF	841.5, 26965	9.96	0.934	41.8	22.5	21.6

Hardware Setup

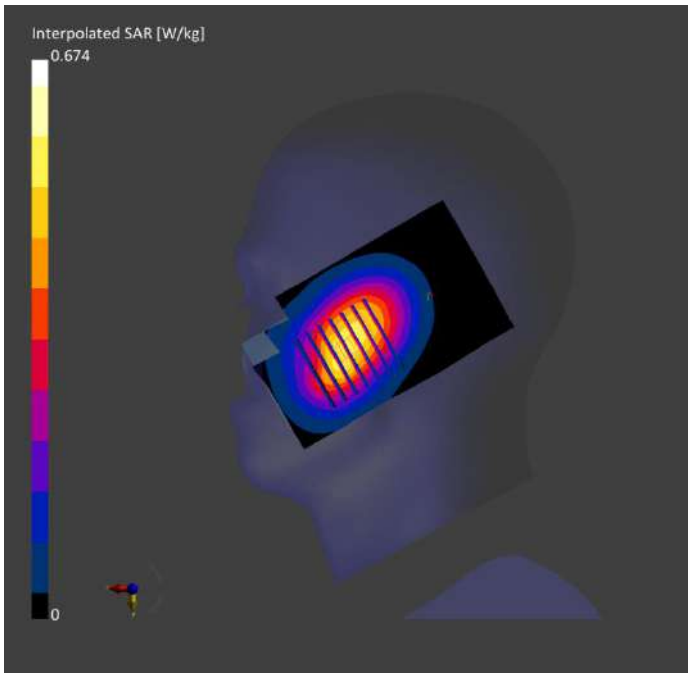
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	All points	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-28	2024-06-28
psSAR1g [W/kg]	0.482	0.512
psSAR10g [W/kg]	0.330	0.372
Power Drift [dB]	-0.04	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		74.5
Dist 3dB Peak [mm]		19.6


Interpolated SAR [W/kg]
0.674
0

Meas.12 Body Plane with Back Side 10mm on Middle Channel in LTE Band26 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	Band 26	LTE - FDD, 10181-CAF	831.5, 26865	9.96	0.891	42.4	22.5	21.6

Hardware Setup

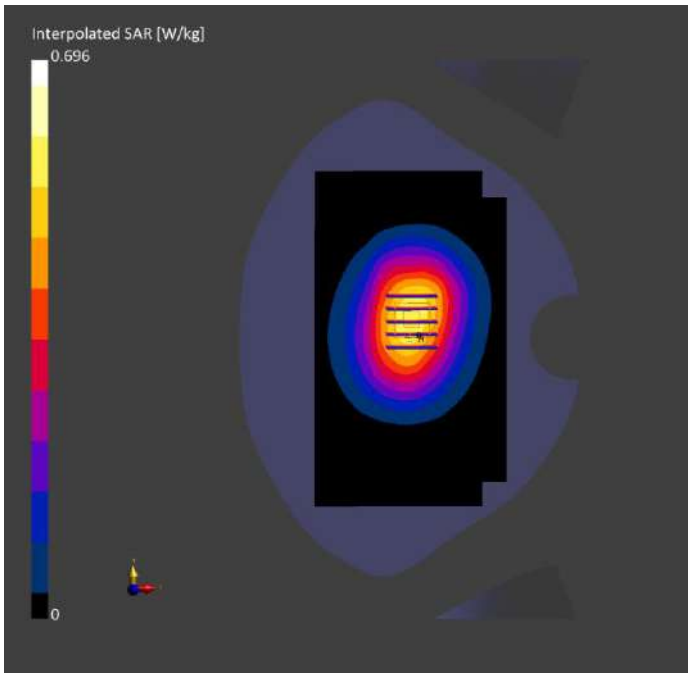
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 210.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-28	2024-06-28
psSAR1g [W/kg]	0.508	0.525
psSAR10g [W/kg]	0.351	0.374
Power Drift [dB]	-0.14	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		75.9
Dist 3dB Peak [mm]		> 16.0


Interpolated SAR [W/kg]
0.696
0

Meas.13 Right Head with Cheek on 6 Channel in IEEE802.11b mode with Antenna 1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Right Head, HSL	CHEEK, 0.00	WLAN 2.4GHz	WLAN, 10012-CAB	2437.0, 6	7.47	1.76	38.9	22.4	21.3

Hardware Setup

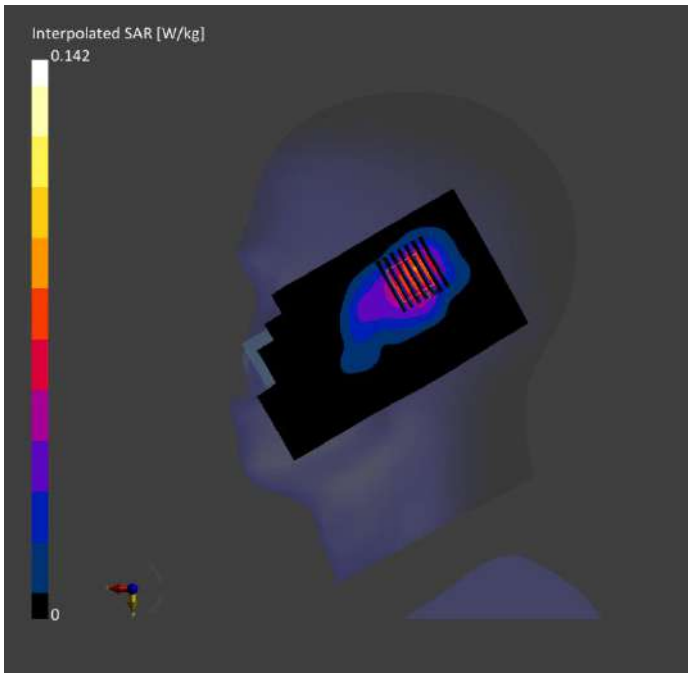
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 168.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-10	2024-06-10
psSAR1g [W/kg]	0.068	0.070
psSAR10g [W/kg]	0.037	0.037
Power Drift [dB]	-0.13	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.3
Dist 3dB Peak [mm]		9.5


Interpolated SAR [W/kg]
0.142
0

Meas.14 Body Plane with Back Side 10mm on 6 Channel in IEEE802.11b mode with Antenna 1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	WLAN 2.4GHz	WLAN, 10012-CAB	2437.0, 6	7.47	1.76	38.9	22.4	21.3

Hardware Setup

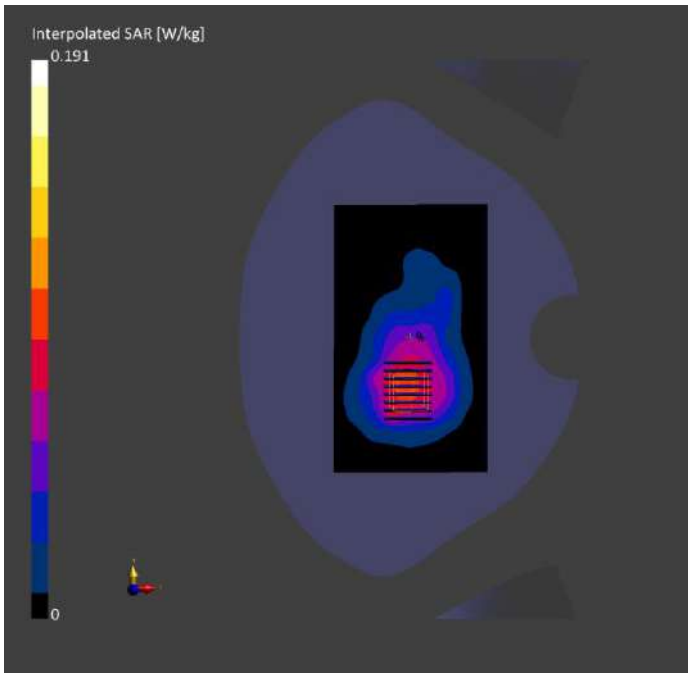
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 168.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-10	2024-06-10
psSAR1g [W/kg]	0.086	0.088
psSAR10g [W/kg]	0.050	0.051
Power Drift [dB]	0.18	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		38.7
Dist 3dB Peak [mm]		10.0


Interpolated SAR [W/kg]
0.191
0

Meas.15 Right Head with Cheek on 39 Channel in Bluetooth mode with Antenna 1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
RightHead, HSL	CHEEK, 0.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2441.0, 39	7.47	1.76	38.8	22.4	21.3

Hardware Setup

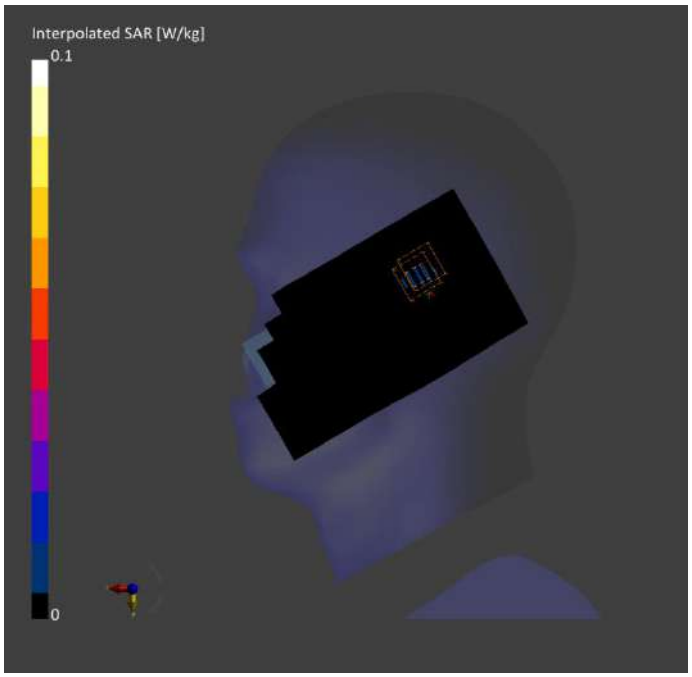
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 168.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-10	2024-06-10
psSAR1g [W/kg]	0.008	0.006
psSAR10g [W/kg]	0.004	0.002
Power Drift [dB]	0.07	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		59.4
Dist 3dB Peak [mm]		> 15.0


Interpolated SAR [W/kg]
0.1
0

Meas.16 Body Plane with Back Side 10mm on 39 Channel in Bluetooth mode with Antenna 1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
IM530G	120.0 x 60.0 x 15.0	Phone

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [℃]	Liquid Temperature [℃]
Flat, HSL	BACK, 10.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2441.0, 39	7.47	1.76	38.8	22.4	21.3

Hardware Setup

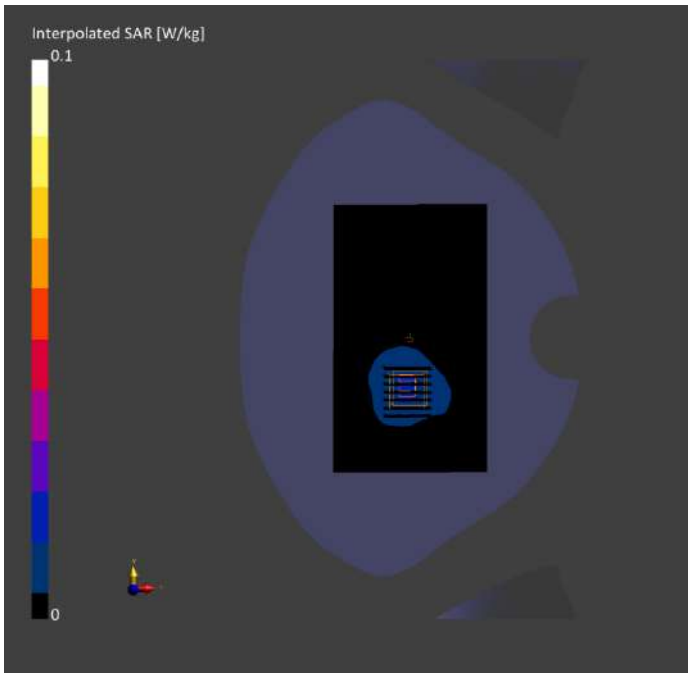
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-06-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn1711, 2024-03-18

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 168.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-06-10	2024-06-10
psSAR1g [W/kg]	0.015	0.015
psSAR10g [W/kg]	0.008	0.008
Power Drift [dB]	-0.03	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.5
Dist 3dB Peak [mm]		> 15.0


Interpolated SAR [W/kg]
0.1
0

ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2460026-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SZ2460026-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “BL-SZ2460026-AC.pdf”.

ANNEX G TUNE-UP PROCEDURE

Please refer the document “BL-SZ2460026-AT.pdf”.

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