

# TEST REPORT

**Applicant:** SEUIC Technologies Co., Ltd.  
**Address:** NO.15 Xinghuo Road, Nanjing New & High  
Technology Industry Development Zone,210061,  
Nanjing City, Jiangsu Province, China  
**Equipment Type:** Portable Data Collection Terminal  
**Model Name:** CRUISE2 (refer to section 2.3)  
**Brand Name:** Seuic  
**FCC ID:** 2AC68-CRUISE2U  
**Test Standard:** FCC 47 CFR Part 2.1093  
(refer to section 3.1)  
**Maximum SAR:** Head (1 g@0mm): 1.19 W/kg  
Body-worn (1 g@10mm): 0.29 W/kg  
Hotspot (1 g@10mm): 0.52 W/kg  
Extremity (10 g@0mm): 1.34 W/kg  
**Sample Arrival Date:** Oct. 31, 2023  
**Test Date:** Nov. 05, 2023 - Dec. 31, 2023  
**Date of Issue:** Jan. 12, 2024

## ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

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<b>Revision History</b>		
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<u>Rev. 01</u>	<u>Jan. 12, 2024</u>	<u>Initial Issue</u>

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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	<input checked="" type="checkbox"/> Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	<input type="checkbox"/> 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°C to 25°C
Ambient Relative Humidity	30% to 70%

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	SEUIC Technologies Co., Ltd.
Address	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China

### 2.2 Manufacturer Information

Manufacturer	SEUIC Technologies Co., Ltd.
Address	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, 210061, Nanjing City, Jiangsu Province, China

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

EUT Name	Portable Data Collection Terminal
Model Name Under Test	CRUISE2
Series Model Name	CRUISE2U, CRUISE2S, CRUISE2C, AUTOID UTouch 2, AUTOID UTouch 2-S, AUTOID UTouch 2-C
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model names and appearance colors. (this information provided by the customer)
Hardware Version	10110
Software Version	D730_G_V1.2.3
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

## 2.4 Ancillary Equipment

Ancillary Equipment 1	Battery 1	
	Brand Name	N/A
	Model No.	BT01R108UTOUCH2
	Serial No.	N/A
	Capacity	5000 mAh
	Rated Voltage	3.85 V
	Limit Charge Voltage	4.40 V
Ancillary Equipment 2	Battery 2	
	Brand Name	N/A
	Model No.	BT02R108UTOUCH2
	Serial No.	N/A
	Capacity	6300 mAh
	Rated Voltage	3.60 V
	Limit Charge Voltage	4.20 V

## 2.5 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/13/17/25/26/66/71 LTE TDD Band 38/41 Bluetooth (BR+EDR+BLE) 2.4G WIFI 802.11b, 802.11g, 802.11n(HT20), VHT20, 802.11ax(HE20) 5G WIFI 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80), 802.11ax(HE20/40/80) U-NII-1/2A/2C/3, GPS, GLONASS, BDS, AGPS, NFC, RFID
<b>Note:</b> The EUT is a mobile phone, which supports dual SIM card under the same transceiver. Each SIM supports GSM, WCDMA and LTE, and both SIM share the same transmitting electro circuit, NV parameters, so only SIM1 was tested in this report.	

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

Operating Mode	GSM, WCDMA, LTE, 2.4G WLAN, 5G WLAN, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE B12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE B13	TX: 777 ~ 787 MHz	RX: 746 ~ 756 MHz
	LTE B17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE B25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz
	LTE B26	TX: 814 ~ 824 MHz	RX: 859 ~ 869 MHz
		TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE B66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2180 MHz
	LTE B71	TX: 663 ~ 698 MHz	RX: 617 ~ 652 MHz
	LTE Band 38	TX: 2570 ~ 2620 MHz	RX: 2570 ~ 2620 MHz
	LTE Band 41	TX: 2496 ~ 2690 MHz	RX: 2496 ~ 2690 MHz
	802.11b/g /n(HT20)/VHT20	2412 ~ 2462 MHz	
802.11ax(HE20)	2412 ~ 2462 MHz		
802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40)	5150 ~ 5250 MHz		
	5250 ~ 5350 MHz		
	5470 ~ 5725 MHz		



	/VHT80)	5725 ~ 5850 MHz
	802.11ax (HE20/40/80)	5150 ~ 5250 MHz
		5250 ~ 5350 MHz
		5470 ~ 5725 MHz
		5725 ~ 5850 MHz
	Bluetooth	2402 ~ 2480 MHz
	RFID	902 ~ 928 MHz
NFC	13.56MHz	
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna NFC: Coil Antenna RFID: PCB Antenna	
DTM	N/A	
Hotspot Function	Support	
Power Reduction	Support	
Exposure Category	General Population/Uncontrolled exposure	
Product Type	Portable Device	
EUT Type	<input checked="" type="checkbox"/> Production unit	<input type="checkbox"/> Identical prototype

### 3 SUMMARY OF TEST RESULT

#### 3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	ANSI C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01
5	KDB 941225 D01 v03r01	3G SAR MEAUREMENT PROCEDURES
6	KDB 941225 D05 v02r05	SAR Evaluation Considerations for LTE Devices
7	KDB 941225 D05A v01r02	REL. 10 LTE SAR TEST GUIDANCE AND KDB INQUIRIES
7	KDB 941225 D06 v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
8	KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
9	KDB 865664 D02 v01r02	RF Exposure Reporting
10	KDB 648474 D04 v01r03	SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS
11	KDB 248227 D01 v02r02	SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

### 3.2 Device Category and SAR Limit

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

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

Table of Exposure Limits:

Body Position	SAR Value (W/Kg)	
	General Population/ Uncontrolled Exposure	Occupational/ Controlled Exposure
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)	Extremity (0mm)	Head (0mm)	Body-worn (10mm)	Hotspot (10mm)	Extremity (0mm)
		1g SAR		10g SAR		1g SAR		10g SAR	
PCE	GSM 850	0.01	0.06	0.08	0.24	1.19	0.29	0.52	1.34
	GSM 1900	0.02	0.11	0.14	0.44				
	WCDMA Band 2	0.18	0.18	0.23	0.68				
	WCDMA Band 4	0.18	0.14	0.22	0.61				
	WCDMA Band 5	0.01	0.05	0.07	0.18				
	Band 7	0.13	0.17	<b>0.52</b>	1.18				
	Band 12	0.01	0.01	0.02	0.05				
	Band 13	0.00	0.00	0.01	0.04				
	Band 25	0.20	0.18	0.22	0.70				
	Band 26	0.07	0.02	0.07	0.17				
	Band 66	0.12	0.10	0.17	0.46				
	Band 71	0.01	0.01	0.01	0.05				
	Band 41	0.17	0.15	0.26	0.79				
DTS	2.4 G	0.89	<b>0.29</b>	0.47	1.11				
NII	5.2G	/	/	0.20	/				
	5.3G	<b>1.19</b>	0.25	/	0.56				
	5.6 G	1.16	0.28	/	0.52				
	5.8 G	1.11	0.25	0.25	0.52				
DSSS	Bluetooth	0.19	0.03	0.05	0.13				
	RFID	/	/	/	1.34				
	Limit (W/kg)	1.6		4.0		1.6		4.0	
	Verdict	PASS							

Note: This device supports both LTE Band 2/4/5/17/38 and Band 25/66/26/12/41. Since the supported frequency span for LTE Band 2/4/5/17/38 falls completely within the supports frequency span for LTE Band 25/66/26/12/41, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE Band 25/66/26/12/41.

## 3.3.2 Highest Simultaneous Transmission SAR Values

Equipment Class	Maximum Scaled SAR (W/kg)			
	Head 1g (0mm)	Body-worn 1g (0mm)	Hotspot 1g (10mm)	Extremity 10g (0mm)
PCE	<b>1.57</b>	<b>0.50</b>	<b>0.76</b>	<b>1.85</b>
DTS	1.27	<b>0.50</b>	<b>0.76</b>	<b>1.85</b>
NII	<b>1.57</b>	0.48	0.52	1.65
DSSS	<b>1.57</b>	<b>0.50</b>	<b>0.76</b>	<b>1.85</b>
Limit (W/Kg)	1.60	1.60	1.60	4.00
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 1.19 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

The maximum 10 g SAR for the EUT in this report is 1.34 W/kg, which is lower than 3.75 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 ( $\rho$ ). The equation description is as below:

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

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

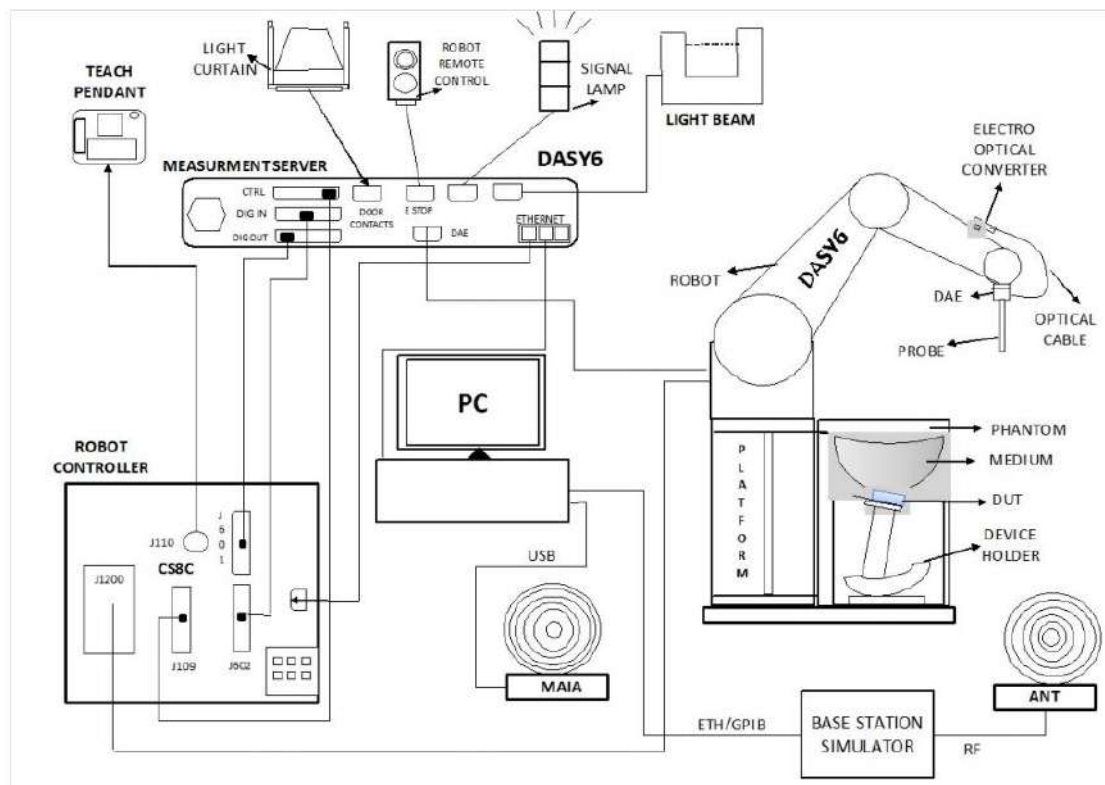
$$\mathbf{SAR} = \frac{\sigma E^2}{\rho}$$

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

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

## 4.2 DASY SAR System

### 4.2.1 DASY SAR System Diagram



The 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 DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.
7. DASY5 software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.



## 4.2.2 Robot

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



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

### 4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4-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: $\pm 0.2$ dB
Directivity	$\pm 0.2$ dB in HSL (rotation around probe axis) ; $\pm 0.4$ dB in HSL (rotation normal to probe axis)
Dynamic range	5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB
Dimensions	Overall length: 337 mm (Tip: 9 mm) Tip diameter: 2.5 mm (Body: 10 mm) Distance from probe tip to dipole centers: 1.0 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms (EX3DV4)



#### E-Field Probe Calibration Process

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

#### 4.2.4 Data Acquisition Electronics

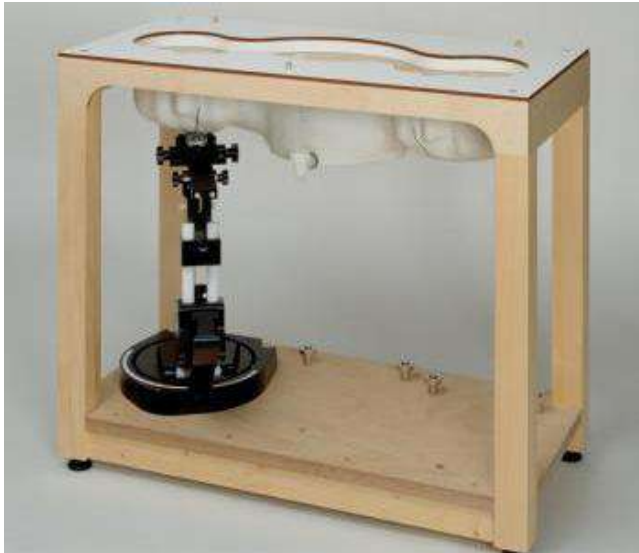
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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



- Input Impedance: 200M $\Omega$ m
- 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 SAM2	Vinylester, glass fiber reinforced	1000	500

#### 4.2.6 Device Holder

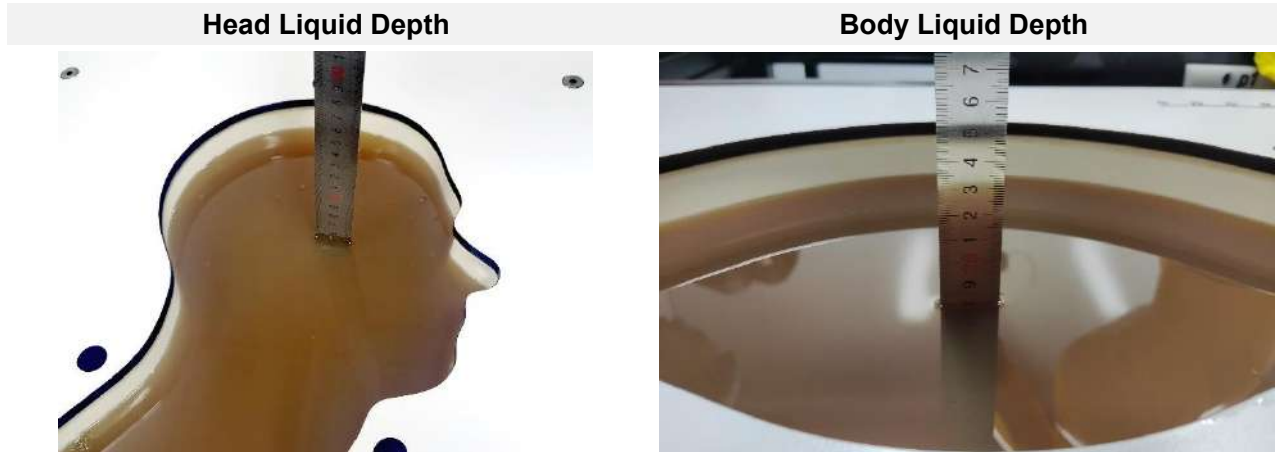
The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of  $65^\circ$ . The bottom plate contains three pair of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



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

#### 4.2.7 Simulating Liquid

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



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	Ethenediol, Sodium petroleum sulfonate, Hexylene Glycol / 2-Methyl-pentane-2.4-diol, Alkoxylated alcohol

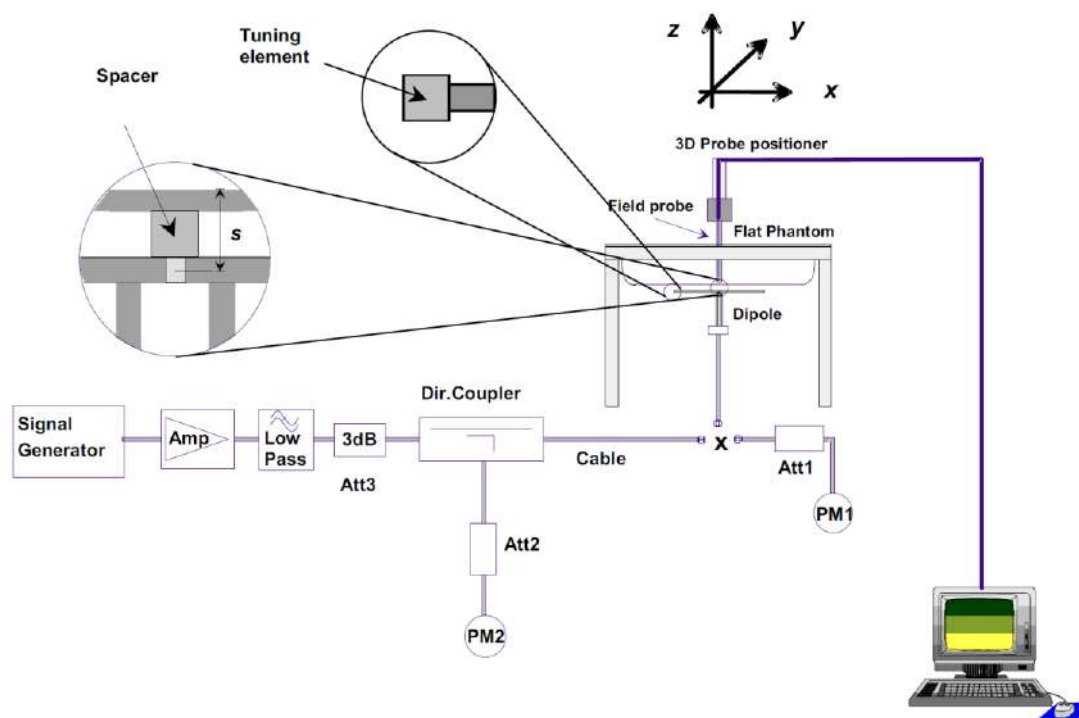
## 5 SYSTEM VERIFICATION

### 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

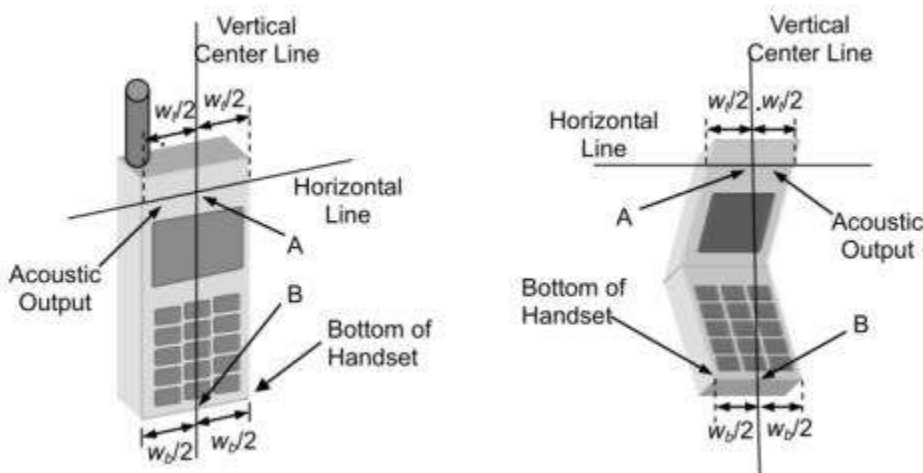
According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

### 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

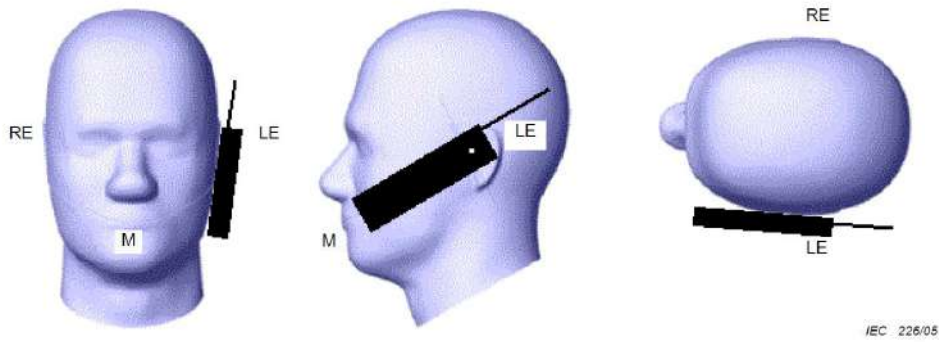
- The vertical center line passes through two points on the front side of the handset - the midpoint of the width  $w_t$  of the handset at the level of the acoustic output, and the midpoint of the width  $w_b$  of the bottom of the handset.
- The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
- 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

- 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.
- 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.

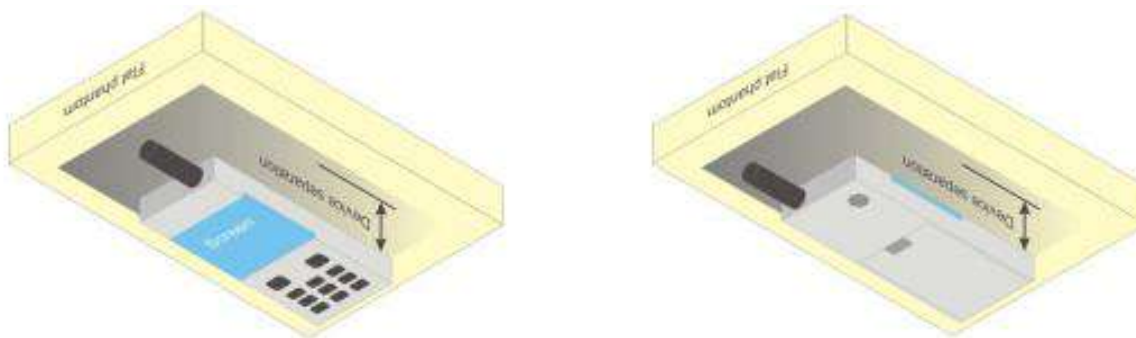


## 6.2 Body-worn Position Conditions

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.

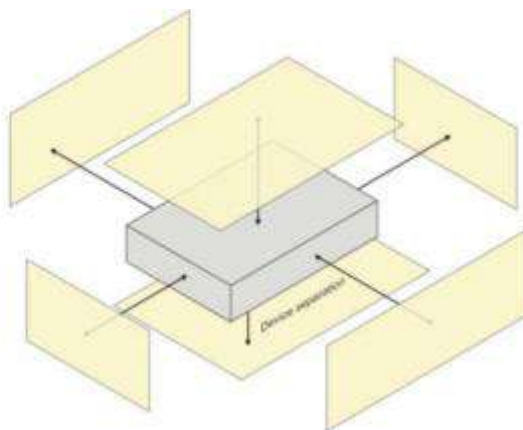
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics. 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  $\leq 5$  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).



### 6.4 Product Specific 10g Exposure Consideration

According with FCC KDB 648474 D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance;

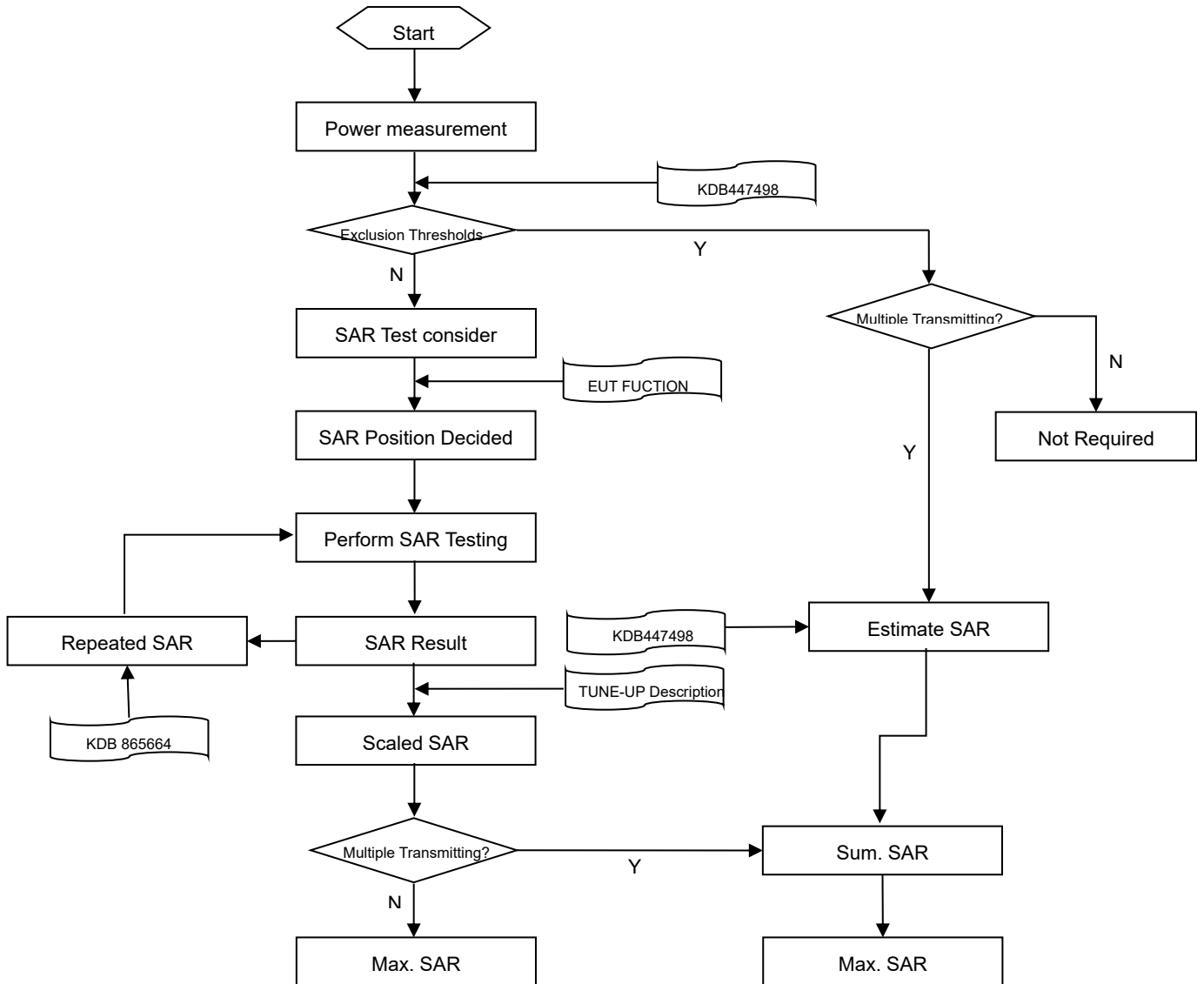
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at  $\leq 25$  mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

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## 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.

		$\leq 3\text{GHz}$	$> 3\text{GHz}$
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		$5 \pm 1 \text{ mm}$	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x \text{ Area}$ , $\Delta y \text{ Area}$		$\leq 2 \text{ GHz}: \leq 15 \text{ mm}$ $2 - 3 \text{ GHz}: \leq 12 \text{ mm}$	$3-4 \text{ GHz}: \leq 12 \text{ mm}$ $4 - 6 \text{ GHz}: \leq 10 \text{ mm}$
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x \text{ Zoom}$ , $\Delta y \text{ Zoom}$		$\leq 2 \text{ GHz}: \leq 8 \text{ mm}$ $2 - 3 \text{ GHz}: \leq 5 \text{ mm}^*$	$3-4 \text{ GHz}: \leq 5 \text{ mm}^*$ $4 - 6 \text{ GHz}: \leq 4 \text{ mm}^*$
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z \text{ Zoom} (n)$	$\leq 5 \text{ mm}$	$3-4 \text{ GHz}: \leq 4 \text{ mm}$
			$4-5 \text{ GHz}: \leq 3 \text{ mm}$
			$5-6 \text{ GHz}: \leq 2 \text{ mm}$
	graded grid	$\Delta z \text{ Zoom} (1)$ : between 1st two points closest to phantom surface	$\leq 4 \text{ mm}$
$4-5 \text{ GHz}: \leq 2.5 \text{ mm}$			
	$\Delta z \text{ Zoom} (n > 1)$ : between subsequent points		$\leq 1.5 \cdot \Delta z \text{ Zoom} (n-1)$
Minimum zoom scan volume	x, y, z	$\geq 30 \text{ mm}$	$3-4 \text{ GHz}: \geq 28 \text{ mm}$
			$4-5 \text{ GHz}: \geq 25 \text{ mm}$
			$5-6 \text{ GHz}: \geq 22 \text{ mm}$

### Note:

- $\delta$  is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
- \* When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is  $\leq 1.4 \text{ W/kg}$ ,  $\leq 8 \text{ mm}$ ,  $\leq 7 \text{ mm}$  and  $\leq 5 \text{ mm}$  zoom scan resolution may be applied, respectively, for 2 GHz to 3GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

### 7.3 Measurement Procedure

The following steps are used for each test position

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

### 7.4 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r04 quoted below. When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

## **8 CONDUCTED RF OUPUT POWER**

### **8.1 GSM**

Please refer the document "BL-SZ23A1194-AP Power List.pdf".

### **8.2 WCDMA**

Please refer the document "BL-SZ23A1194-AP Power List.pdf".

### **8.3 LTE**

Please refer the document "BL-SZ23A1194-AP Power List.pdf".

## 8.4 WIFI

### 8.4.1 2.4G WLAN-Full power-Ant.0

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	17.86	18.50	Yes
		6	2437	18.21	18.50	Yes
		11	2462	<b>18.40</b>	18.50	Yes
	802.11g	1	2412	16.19	16.50	No
		6	2437	16.12	16.50	No
		11	2462	16.25	16.50	No
	802.11n(HT20)	1	2412	16.14	16.50	No
		6	2437	16.16	16.50	No
		11	2462	15.88	16.50	No
	VHT20	1	2412	16.27	16.50	No
		6	2437	16.12	16.50	No
		11	2462	15.87	16.50	No
	802.11ax(HE20)	1	2412	16.02	16.50	No
		6	2437	16.00	16.50	No
		11	2462	16.21	16.50	No

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

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n/VHT/ax) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg, OFDM SAR test is not required.  
Adjusted SAR =  $0.885 * (44.67\text{mW}/70.79\text{mW}) = 0.558$  W/Kg, so 2.4G OFDM SAR test is not required.



## 8.4.2 2.4G WLAN-Full power-Ant.1

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	<b>17.96</b>	18.50	Yes
		6	2437	17.74	18.50	No
		11	2462	17.82	18.50	No
	802.11g	1	2412	15.92	16.50	No
		6	2437	15.76	16.50	No
		11	2462	16.13	16.50	No
	802.11n(HT20)	1	2412	15.93	16.50	No
		6	2437	16.32	16.50	No
		11	2462	16.39	16.50	No
	VHT20	1	2412	15.98	16.50	No
		6	2437	16.22	16.50	No
		11	2462	16.02	16.50	No
	802.11ax(HE20)	1	2412	16.43	16.50	No
		6	2437	16.12	16.50	No
		11	2462	15.95	16.50	No

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

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n/VHT/ax) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg, OFDM SAR test is not required.  
Adjusted SAR =  $0.001 * (44.67\text{mW}/70.79\text{mW}) = 0.001$  W/Kg, so 2.4G OFDM SAR test is not required.

### 8.4.3 2.4G WLAN-Full power-MIMO

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11n(HT20)	1	2412	19.27	19.50	No
		6	2437	<b>19.27</b>	19.50	Yes
		11	2462	19.06	19.50	No
	VHT20	1	2412	19.29	19.50	No
		6	2437	19.14	19.50	No
		11	2462	19.05	19.50	No
	802.11ax(HE20)	1	2412	19.16	19.50	No
		6	2437	19.11	19.50	No
		11	2462	19.41	19.50	No

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

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n/VHT/ax) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2$  W/kg, OFDM SAR test is not required.  
Adjusted SAR =  $0.621 * (44.67\text{mW}/70.79\text{mW}) = 0.392$  W/Kg, so 2.4G OFDM SAR test is not required.

## 8.4.4 5G WLAN-Full power-Ant.0

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.84	15.50	No
		44	5220	15.11	15.50	No
		48	5240	15.38	15.50	No
	802.11n(HT20)	36	5180	15.10	15.50	No
		44	5220	15.28	15.50	No
		48	5240	15.11	15.50	No
	802.11n(HT40)	38	5190	15.10	15.50	No
		46	5230	15.32	15.50	No
	802.11ac(VHT20)	36	5180	15.11	15.50	No
		44	5220	14.94	15.50	No
		48	5240	15.15	15.50	No
	802.11ac(VHT40)	38	5190	15.16	15.50	No
		46	5230	15.41	15.50	No
	802.11ac(VHT80)	42	5210	<b>15.06</b>	15.50	Yes
	802.11ax(HE20)	36	5180	15.48	15.50	No
		44	5220	15.19	15.50	No
		48	5240	15.31	15.50	No
	802.11ax(HE40)	38	5190	15.10	15.50	No
46		5230	15.45	15.50	No	
802.11ax(HE80)	42	5210	15.15	15.50	No	
5.3 (5.25~5.35)	802.11a	52	5260	15.28	15.50	No
		60	5300	15.12	15.50	No
		64	5320	15.27	15.50	No
	802.11n(HT20)	52	5260	15.06	15.50	No
		60	5300	15.27	15.50	No
		64	5320	15.05	15.50	No
	802.11n(HT40)	54	5270	15.40	15.50	No
		62	5310	15.10	15.50	No
	802.11ac(VHT20)	52	5260	15.03	15.50	No
		60	5300	15.05	15.50	No
		64	5320	15.17	15.50	No
	802.11ac(VHT40)	54	5270	15.36	15.50	No
		62	5310	14.97	15.50	No
	802.11ac(VHT80)	58	5290	<b>15.33</b>	15.50	Yes
	802.11ax(HE20)	52	5260	15.34	15.50	No
		60	5300	15.28	15.50	No

		64	5320	15.16	15.50	No	
	802.11ax(HE40)	54	5270	14.98	15.50	No	
		62	5310	15.16	15.50	No	
	802.11ax(HE80)	58	5290	15.09	15.50	No	
5.6 (5.47~5.725)	802.11a	100	5500	15.24	15.50	No	
		116	5580	15.26	15.50	No	
		140	5700	15.06	15.50	No	
		144	5720	15.24	15.50	No	
	802.11n(HT20)	100	5500	15.08	15.50	No	
		116	5580	14.92	15.50	No	
		140	5700	15.43	15.50	No	
		144	5720	14.99	15.50	No	
	802.11n(HT40)	102	5510	15.11	15.50	No	
		118	5590	15.25	15.50	No	
		134	5670	15.17	15.50	No	
		142	5710	15.17	15.50	No	
	802.11ac(VHT20)	100	5500	15.20	15.50	No	
		116	5580	15.17	15.50	No	
		140	5700	15.00	15.50	No	
		144	5720	15.07	15.50	No	
	802.11ac(VHT40)	102	5510	15.10	15.50	No	
		118	5590	15.20	15.50	No	
		134	5670	15.15	15.50	No	
		142	5710	15.22	15.50	No	
	802.11ac(VHT80)	106	5530	<b>15.39</b>	15.50	Yes	
		122	5610	15.25	15.50	Yes	
		138	5690	15.07	15.50	Yes	
	802.11ax(HE20)	100	5500	15.25	15.50	No	
		116	5580	15.06	15.50	No	
		140	5700	15.05	15.50	No	
		144	5720	15.25	15.50	No	
	802.11ax(HE40)	102	5510	15.24	15.50	No	
		118	5590	15.27	15.50	No	
		134	5670	15.26	15.50	No	
		142	5710	15.28	15.50	No	
	802.11ax(HE80)	106	5530	15.42	15.50	No	
		122	5610	15.23	15.50	No	
		138	5690	14.90	15.50	No	
	5.8	802.11a	149	5745	15.34	15.50	No

(5.725~5.850)		157	5785	15.32	15.50	No
		165	5825	15.35	15.50	No
	802.11n(HT20)	149	5745	15.13	15.50	No
		157	5785	14.98	15.50	No
		165	5825	15.20	15.50	No
	802.11n(HT40)	151	5755	15.24	15.50	No
		159	5795	15.23	15.50	No
	802.11ac(VHT20)	149	5745	15.09	15.50	No
		157	5785	15.10	15.50	No
		165	5825	15.18	15.50	No
	802.11ac(VHT40)	151	5755	15.32	15.50	No
		159	5795	15.43	15.50	No
	802.11ac(VHT80)	155	5775	<b>15.10</b>	15.50	Yes
	802.11ax(HE20)	149	5745	14.98	15.50	No
		157	5785	15.24	15.50	No
		165	5825	15.48	15.50	No
	802.11ax(HE40)	151	5755	15.47	15.50	No
		159	5795	15.02	15.50	No
	802.11ax(HE80)	155	5775	15.34	15.50	No

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

## 8.4.5 5G WLAN-Full power-Ant.1

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11a	36	5180	14.75	15.50	No
		44	5220	14.92	15.50	No
		48	5240	14.99	15.50	No
	802.11n(HT20)	36	5180	15.25	15.50	No
		44	5220	15.25	15.50	No
		48	5240	15.31	15.50	No
	802.11n(HT40)	38	5190	15.05	15.50	No
		46	5230	15.10	15.50	No
	802.11ac(VHT20)	36	5180	15.18	15.50	No
		44	5220	15.19	15.50	No
		48	5240	15.31	15.50	No
	802.11ac(VHT40)	38	5190	15.18	15.50	No
		46	5230	15.17	15.50	No
	802.11ac(VHT80)	42	5210	<b>15.18</b>	15.50	Yes
	802.11ax(HE20)	36	5180	15.41	15.50	No
		44	5220	15.05	15.50	No
		48	5240	15.09	15.50	No
	802.11ax(HE40)	38	5190	15.25	15.50	No
46		5230	15.25	15.50	No	
802.11ax(HE80)	42	5210	15.05	15.50	No	
5.3 (5.25~5.35)	802.11a	52	5260	14.73	15.50	No
		60	5300	15.03	15.50	No
		64	5320	15.14	15.50	No
	802.11n(HT20)	52	5260	15.16	15.50	No
		60	5300	15.36	15.50	No
		64	5320	15.48	15.50	No
	802.11n(HT40)	54	5270	15.11	15.50	No
		62	5310	15.24	15.50	No
	802.11ac(VHT20)	52	5260	15.12	15.50	No
		60	5300	15.33	15.50	No
		64	5320	15.09	15.50	No
	802.11ac(VHT40)	54	5270	15.11	15.50	No
		62	5310	15.34	15.50	No
	802.11ac(VHT80)	58	5290	<b>15.07</b>	15.50	Yes
	802.11ax(HE20)	52	5260	15.12	15.50	No
		60	5300	15.27	15.50	No

		64	5320	15.36	15.50	No
	802.11ax(HE40)	54	5270	15.12	15.50	No
		62	5310	15.25	15.50	No
	802.11ax(HE80)	58	5290	15.29	15.50	No
5.6 (5.47~5.725)	802.11a	100	5500	15.02	15.50	No
		116	5580	15.24	15.50	No
		140	5700	15.21	15.50	No
		144	5720	15.38	15.50	No
	802.11n(HT20)	100	5500	15.36	15.50	No
		116	5580	15.37	15.50	No
		140	5700	15.48	15.50	No
		144	5720	15.13	15.50	No
	802.11n(HT40)	102	5510	15.26	15.50	No
		118	5590	15.16	15.50	No
		134	5670	15.24	15.50	No
		142	5710	15.40	15.50	No
	802.11ac(VHT20)	100	5500	15.35	15.50	No
		116	5580	15.46	15.50	No
		140	5700	15.47	15.50	No
		144	5720	15.12	15.50	No
	802.11ac(VHT40)	102	5510	15.04	15.50	No
		118	5590	15.20	15.50	No
		134	5670	15.40	15.50	No
		142	5710	15.38	15.50	No
	802.11ac(VHT80)	106	5530	<b>15.35</b>	15.50	Yes
		122	5610	15.26	15.50	Yes
		138	5690	15.13	15.50	Yes
	802.11ax(HE20)	100	5500	15.12	15.50	No
		116	5580	15.10	15.50	No
		140	5700	15.32	15.50	No
		144	5720	14.89	15.50	No
	802.11ax(HE40)	102	5510	15.02	15.50	No
		118	5590	15.05	15.50	No
		134	5670	15.02	15.50	No
		142	5710	15.14	15.50	No
	802.11ax(HE80)	106	5530	15.47	15.50	No
122		5610	15.46	15.50	No	
138		5690	15.16	15.50	No	
5.8	802.11a	149	5745	15.44	15.50	No

(5.725~5.850)		157	5785	15.10	15.50	No
		165	5825	15.03	15.50	No
	802.11n(HT20)	149	5745	15.03	15.50	No
		157	5785	15.37	15.50	No
		165	5825	15.23	15.50	No
	802.11n(HT40)	151	5755	15.38	15.50	No
		159	5795	15.18	15.50	No
	802.11ac(VHT20)	149	5745	15.16	15.50	No
		157	5785	15.33	15.50	No
		165	5825	15.15	15.50	No
	802.11ac(VHT40)	151	5755	15.47	15.50	No
		159	5795	15.09	15.50	No
	802.11ac(VHT80)	155	5775	<b>15.19</b>	15.50	Yes
	802.11ax(HE20)	149	5745	15.49	15.50	No
		157	5785	15.35	15.50	No
		165	5825	15.22	15.50	No
	802.11ax(HE40)	151	5755	14.93	15.50	No
		159	5795	14.86	15.50	No
	802.11ax(HE80)	155	5775	15.41	15.50	No

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



## 8.4.6 5G WLAN-Full power-MIMO

Band (GHz)	Mode	Channel	Freq. (MHz)	Conducted Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2 (5.15~5.25)	802.11n(HT20)	36	5180	18.09	18.50	No
		44	5220	18.16	18.50	No
		48	5240	18.24	18.50	No
	802.11n(HT40)	38	5190	18.27	18.50	No
		46	5230	18.16	18.50	No
	802.11ac(VHT20)	36	5180	18.10	18.50	No
		44	5220	18.17	18.50	No
		48	5240	18.30	18.50	No
	802.11ac(VHT40)	38	5190	18.32	18.50	No
		46	5230	18.01	18.50	No
	802.11ac(VHT80)	42	5210	<b>18.22</b>	18.50	Yes
	802.11ax(HE20)	36	5180	18.20	18.50	No
		44	5220	18.35	18.50	No
		48	5240	18.42	18.50	No
	802.11ax(HE40)	38	5190	18.16	18.50	No
46		5230	18.10	18.50	No	
802.11ax(HE80)	42	5210	18.20	18.50	No	
5.3 (5.25~5.35)	802.11n(HT20)	52	5260	18.12	18.50	No
		60	5300	18.17	18.50	No
		64	5320	18.23	18.50	No
	802.11n(HT40)	54	5270	18.03	18.50	No
		62	5310	18.29	18.50	No
	802.11ac(VHT20)	52	5260	18.23	18.50	No
		60	5300	18.43	18.50	No
		64	5320	18.25	18.50	No
	802.11ac(VHT40)	54	5270	18.09	18.50	No
		62	5310	18.21	18.50	No
	802.11ac(VHT80)	58	5290	<b>18.16</b>	18.50	Yes
	802.11ax(HE20)	52	5260	18.14	18.50	No
		60	5300	18.21	18.50	No
		64	5320	18.30	18.50	No
	802.11ax(HE40)	54	5270	18.26	18.50	No
62		5310	18.37	18.50	No	
802.11ax(HE80)	58	5290	18.42	18.50	No	
5.6 (5.47~5.725)	802.11n(HT20)	100	5500	18.13	18.50	No
		116	5580	18.35	18.50	No

		140	5700	18.24	18.50	No	
		144	5720	18.32	18.50	No	
	802.11n(HT40)	102	5510	18.03	18.50	No	
		118	5590	18.07	18.50	No	
		134	5670	18.07	18.50	No	
		142	5710	18.39	18.50	No	
	802.11ac(VHT20)	100	5500	18.28	18.50	No	
		116	5580	18.19	18.50	No	
		140	5700	18.28	18.50	No	
		144	5720	18.04	18.50	No	
	802.11ac(VHT40)	102	5510	18.03	18.50	No	
		118	5590	18.18	18.50	No	
		134	5670	18.45	18.50	No	
		142	5710	18.33	18.50	No	
	802.11ac(VHT80)	106	5530	<b>18.20</b>	18.50	Yes	
		122	5610	18.17	18.50	Yes	
		138	5690	18.12	18.50	Yes	
	802.11ax(HE20)	100	5500	18.27	18.50	No	
		116	5580	18.26	18.50	No	
		140	5700	18.23	18.50	No	
		144	5720	18.22	18.50	No	
	802.11ax(HE40)	102	5510	18.11	18.50	No	
		118	5590	18.11	18.50	No	
		134	5670	18.26	18.50	No	
		142	5710	18.37	18.50	No	
	802.11ax(HE80)	106	5530	18.26	18.50	No	
		122	5610	18.21	18.50	No	
		138	5690	18.15	18.50	No	
	5.8 (5.725~5.850)	802.11n(HT20)	149	5745	18.26	18.50	No
			157	5785	18.10	18.50	No
			165	5825	17.98	18.50	No
		802.11n(HT40)	151	5755	18.30	18.50	No
159			5795	18.25	18.50	No	
802.11ac(VHT20)		149	5745	18.32	18.50	No	
		157	5785	18.13	18.50	No	
		165	5825	18.24	18.50	No	
802.11ac(VHT40)		151	5755	18.35	18.50	No	
		159	5795	18.24	18.50	No	
802.11ac(VHT80)		155	5775	<b>18.37</b>	18.50	Yes	

	802.11ax(HE20)	149	5745	18.12	18.50	No
		157	5785	18.20	18.50	No
		165	5825	18.14	18.50	No
	802.11ax(HE40)	151	5755	18.39	18.50	No
		159	5795	18.30	18.50	No
	802.11ax(HE80)	155	5775	18.36	18.50	No

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

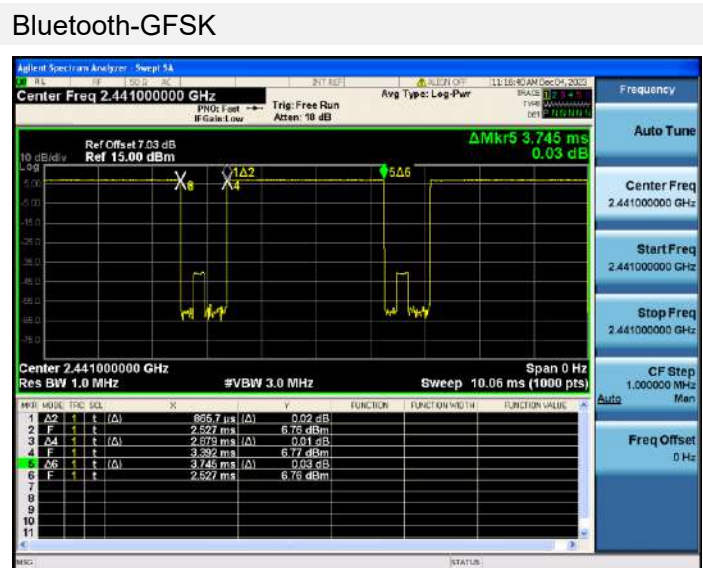
### 8.5 Bluetooth

Mode	GFSK			π/4-DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
Conducted Power(dBm)	<b>9.18</b>	7.64	8.38	8.32	9.01	7.94
Tune-Up Limit (dBm)	10.50	9.50	10.00	10.00	10.50	9.50
SAR Test Require	YES	YES	YES	NO	NO	NO
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
Conducted Power(dBm)	8.50	9.23	8.33	/	/	/
Tune-Up Limit (dBm)	10.50	10.50	10.00	/	/	/
SAR Test Require	NO	NO	NO	/	/	/
Mode	BLE-1Mbps			BLE-2Mbps		
Channel	0	19	39	1	19	38
Frequency (MHz)	2402	2440	2480	2404	2440	2478
Conducted Power(dBm)	7.50	6.70	7.21	7.77	7.92	8.42
Tune-Up Limit (dBm)	9.00	8.50	9.00	9.00	9.00	9.00
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.

The Bluetooth duty cycle is 76.88 % 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.

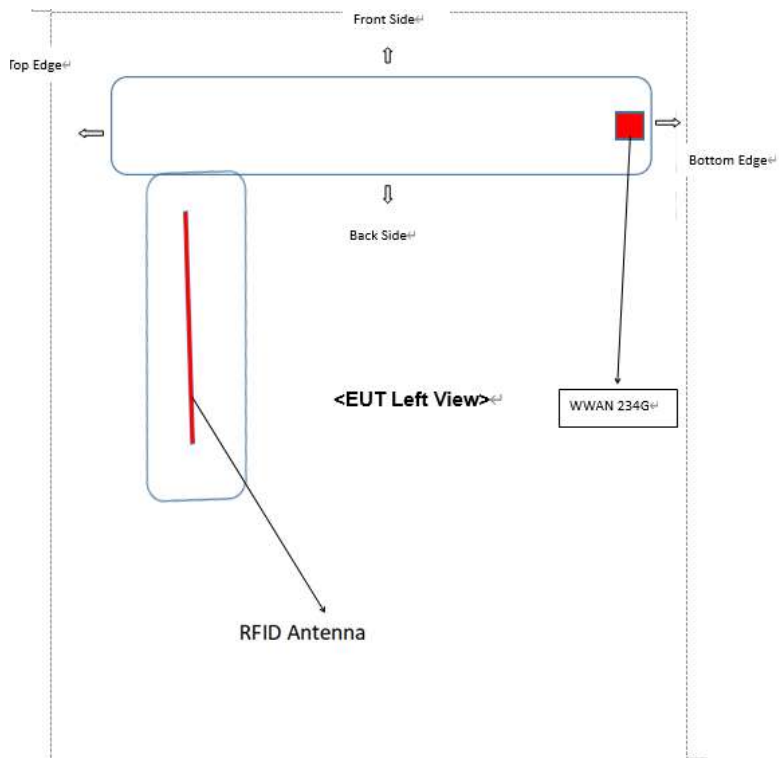
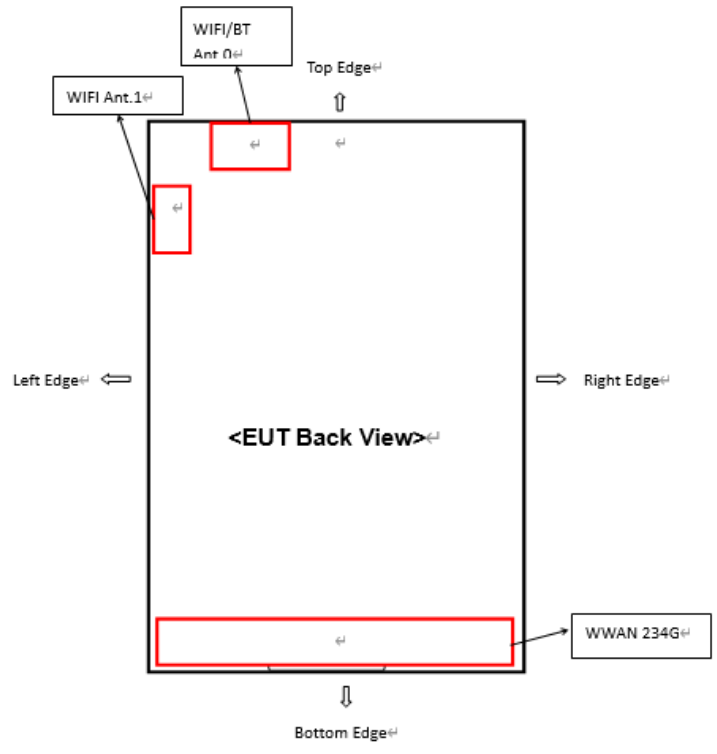
#### Duty Cycle



## 8.7 RFID

Mode	Channel	Freq.	Conducted Power(dBm )	Tune-up Power(dBm)	SAR Required
RFID	1	902.75	27.17	28.00	No
	2	914.75	27.08	28.00	No
	3	927.25	<b>27.17</b>	28.00	Yes

# 9 TEST EXCLUSION CONSIDERATION



## 9.1 SAR Test Exclusion Consideration Table

Antenna	Front Side(mm)	Back Side(mm)	Left Edge(mm)	Right Edge(mm)	Top Edge(mm)	Bottom Edge(mm)
WWAN	<25	<25	<25	<25	>25	<25
Bluetooth	<25	<25	<25	<25	<25	>25
WIFI Ant.0	<25	<25	<25	<25	<25	>25
WIFI Ant.1	<25	<25	<25	<25	<25	>25

Note: 1.Per KDB 941225 DO6,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.

RF exposure Position RF exposure scenarios	RF exposure scenarios
Front Side	Extremity
Back Side	Extremity
Left Side	Extremity
Right Side	Extremity
Top Side	Extremity

Test Position Configurations	Mode	RFID
Calculated Frequency(MHz)		2480
Front Side	Distance to User (mm)	25
	Max. Peak Power (dBm)	28.00
	Max. Peak Power (mW)	630.96
	Exclusion Threshold (mW)	86.74
	SAR Test Required	Yes
Back Side	Distance to User (mm)	0
	Max. Peak Power (dBm)	28.00
	Max. Peak Power (mW)	630.96
	Exclusion Threshold (mW)	0
	SAR Test Required	Yes
Left Edge	Distance to User (mm)	0
	Max. Peak Power (dBm)	28.00
	Max. Peak Power (mW)	630.96
	Exclusion Threshold (mW)	0
	SAR Test Required	Yes
Right Edge	Distance to User (mm)	0
	Max. Peak Power (dBm)	28.00
	Max. Peak Power (mW)	630.96
	Exclusion Threshold (mW)	0
	SAR Test Required	Yes
Top Edge	Distance to User (mm)	0
	Max. Peak Power (dBm)	28.00
	Max. Peak Power (mW)	630.96
	Exclusion Threshold (mW)	0
	SAR Test Required	Yes



# 10 TEST RESULT

## 10.1 GSM 850

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	1 g Scaled SAR (W/kg)	Meas. No.
<b>Head</b>											
DATA 3slots	Left Cheek	0	251	848.8	-0.11	0.012	28.31	29.00	1.172	<b>0.014</b>	1#
DATA 3slots	Left Tilt	0	251	848.8	-0.01	0.001	28.31	29.00	1.172	0.001	/
DATA 3slots	Right Cheek	0	251	848.8	0.09	0.008	28.31	29.00	1.172	0.009	/
DATA 3slots	Right Tilt	0	251	848.8	0.07	0.000	28.31	29.00	1.172	0.000	/
<b>Body-Wron&amp;Hotspot</b>											
DATA 3slots	Front Side	10	251	848.8	0.10	0.051	28.31	29.00	1.172	0.060	/
DATA 3slots	Back Side	10	251	848.8	-0.05	0.000	28.31	29.00	1.172	0.000	/
DATA 3slots	Left Edge	10	251	848.8	-0.10	0.048	28.31	29.00	1.172	0.056	/
DATA 3slots	Right Edge	10	251	848.8	-0.01	0.055	28.31	29.00	1.172	0.064	/
DATA 3slots	Bottom Edge	10	251	848.8	0.00	0.065	28.31	29.00	1.172	<b>0.076</b>	2#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>											
DATA 3slots	Front Side	0	251	848.8	0.07	0.102	28.31	29.00	1.172	0.120	/
DATA 3slots	Back Side	0	251	848.8	-0.10	0.000	28.31	29.00	1.172	0.000	/
DATA 3slots	Left Edge	0	251	848.8	0.01	0.049	28.31	29.00	1.172	0.057	/
DATA 3slots	Right Edge	0	251	848.8	0.05	0.065	28.31	29.00	1.172	0.076	/
DATA 3slots	Bottom Edge	0	251	848.8	0.01	0.208	28.31	29.00	1.172	<b>0.244</b>	3#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

## 10.2 GSM 1900

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	1 g Scaled SAR (W/kg)	Meas. No.
<b>Head</b>											
DATA 3slots	Left Cheek	0	810	1909.8	0.14	0.020	26.52	27.00	1.117	<b>0.022</b>	4#
DATA 3slots	Left Tilt	0	810	1909.8	-0.12	0.005	26.52	27.00	1.117	0.006	/
DATA 3slots	Right Cheek	0	810	1909.8	-0.12	0.012	26.52	27.00	1.117	0.013	/
DATA 3slots	Right Tilt	0	810	1909.8	0.10	0.002	26.52	27.00	1.117	0.002	/
<b>Body-Wron&amp;Hotspot</b>											
DATA 3slots	Front Side	10	810	1909.8	0.06	0.095	26.52	27.00	1.117	0.106	/
DATA 3slots	Back Side	10	810	1909.8	0.04	0.000	26.52	27.00	1.117	0.000	/
DATA 3slots	Left Edge	10	810	1909.8	-0.14	0.047	26.52	27.00	1.117	0.052	/
DATA 3slots	Right Edge	10	810	1909.8	0.12	0.120	26.52	27.00	1.117	0.134	/
DATA 3slots	Bottom Edge	10	810	1909.8	0.00	0.125	26.52	27.00	1.117	<b>0.140</b>	5#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>											
DATA 3slots	Front Side	0	810	1909.8	-0.02	0.202	26.52	27.00	1.117	0.226	/
DATA 3slots	Back Side	0	810	1909.8	0.13	0.000	26.52	27.00	1.117	0.000	/
DATA 3slots	Left Edge	0	810	1909.8	0.12	0.053	26.52	27.00	1.117	0.059	/
DATA 3slots	Right Edge	0	810	1909.8	-0.06	0.264	26.52	27.00	1.117	0.295	/
DATA 3slots	Bottom Edge	0	810	1909.8	0.04	0.394	26.52	27.00	1.117	<b>0.440</b>	6#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

## 10.3WCDMA Band 2

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	1 g Scaled SAR (W/kg)	Meas. No.
<b>Head</b>											
RMC	Left Cheek	0	9538	1907.6	-0.11	0.160	23.06	23.50	1.107	<b>0.177</b>	7#
RMC	Left Tilt	0	9538	1907.6	0.10	0.056	23.06	23.50	1.107	0.062	/
RMC	Right Cheek	0	9538	1907.6	0.08	0.065	23.06	23.50	1.107	0.072	/
RMC	Right Tilt	0	9538	1907.6	-0.13	0.042	23.06	23.50	1.107	0.046	/
<b>Body-Wron&amp;Hotspot</b>											
RMC	Front Side	10	9538	1907.6	-0.10	0.158	23.06	23.50	1.107	0.175	/
RMC	Back Side	10	9538	1907.6	0.06	0.000	23.06	23.50	1.107	0.000	/
RMC	Left Edge	10	9538	1907.6	0.06	0.078	23.06	23.50	1.107	0.086	/
RMC	Right Edge	10	9538	1907.6	0.09	0.199	23.06	23.50	1.107	0.220	/
RMC	Bottom Edge	10	9538	1907.6	-0.02	0.204	23.06	23.50	1.107	<b>0.226</b>	8#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>											
RMC	Front Side	0	9538	1907.6	0.05	0.294	23.06	23.50	1.107	0.325	/
RMC	Back Side	0	9538	1907.6	0.07	0.000	23.06	23.50	1.107	0.000	/
RMC	Left Edge	0	9538	1907.6	0.03	0.077	23.06	23.50	1.107	0.085	/
RMC	Right Edge	0	9538	1907.6	-0.12	0.394	23.06	23.50	1.107	0.436	/
RMC	Bottom Edge	0	9538	1907.6	0.01	0.616	23.06	23.50	1.107	<b>0.682</b>	9#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

## 10.4WCDMA Band 4

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	1 g Scaled SAR (W/kg)	Meas. No.
<b>Head</b>											
RMC	Left Cheek	0	1412	1732.4	-0.01	0.123	21.90	23.50	1.445	<b>0.178</b>	10#
RMC	Left Tilt	0	1412	1732.4	-0.07	0.046	21.90	23.50	1.445	0.066	/
RMC	Right Cheek	0	1412	1732.4	0.06	0.089	21.90	23.50	1.445	0.129	/
RMC	Right Tilt	0	1412	1732.4	0.14	0.035	21.90	23.50	1.445	0.051	/
<b>Body-Wron&amp;Hotspot</b>											
RMC	Front Side	10	1412	1732.4	0.13	0.099	21.90	23.50	1.445	0.143	/
RMC	Back Side	10	1412	1732.4	-0.05	0.000	21.90	23.50	1.445	0.000	/
RMC	Left Edge	10	1412	1732.4	0.00	0.057	21.90	23.50	1.445	0.082	/
RMC	Right Edge	10	1412	1732.4	0.10	0.133	21.90	23.50	1.445	0.192	/
RMC	Bottom Edge	10	1412	1732.4	0.01	0.154	21.90	23.50	1.445	<b>0.223</b>	11#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>											
RMC	Front Side	0	1412	1732.4	0.01	0.217	21.90	23.50	1.445	0.314	/
RMC	Back Side	0	1412	1732.4	-0.05	0.000	21.90	23.50	1.445	0.000	/
RMC	Left Edge	0	1412	1732.4	0.07	0.058	21.90	23.50	1.445	0.084	/
RMC	Right Edge	0	1412	1732.4	-0.05	0.290	21.90	23.50	1.445	0.419	/
RMC	Bottom Edge	0	1412	1732.4	0.01	0.424	21.90	23.50	1.445	<b>0.613</b>	12#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

## 10.5WCDMA Band 5

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	1 g Scaled SAR (W/kg)	Meas. No.
<b>Head</b>											
RMC	Left Cheek	0	4182	836.4	-0.05	0.012	23.29	23.50	1.050	<b>0.013</b>	13#
RMC	Left Tilt	0	4182	836.4	-0.08	0.000	23.29	23.50	1.050	0.000	/
RMC	Right Cheek	0	4182	836.4	-0.07	0.009	23.29	23.50	1.050	0.009	/
RMC	Right Tilt	0	4182	836.4	-0.05	0.000	23.29	23.50	1.050	0.000	/
<b>Body-Wron&amp;Hotspot</b>											
RMC	Front Side	10	4182	836.4	0.04	0.048	23.29	23.50	1.050	0.050	/
RMC	Back Side	10	4182	836.4	-0.09	0.000	23.29	23.50	1.050	0.000	/
RMC	Left Edge	10	4182	836.4	-0.14	0.000	23.29	23.50	1.050	0.000	/
RMC	Right Edge	10	4182	836.4	0.14	0.055	23.29	23.50	1.050	0.058	/
RMC	Bottom Edge	10	4182	836.4	0.00	0.065	23.29	23.50	1.050	<b>0.068</b>	14#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>											
RMC	Front Side	0	4182	836.4	0.00	0.097	23.29	23.50	1.050	0.102	/
RMC	Back Side	0	4182	836.4	0.14	0.000	23.29	23.50	1.050	0.000	/
RMC	Left Edge	0	4182	836.4	0.08	0.051	23.29	23.50	1.050	0.054	/
RMC	Right Edge	0	4182	836.4	-0.04	0.069	23.29	23.50	1.050	0.072	/
RMC	Bottom Edge	0	4182	836.4	-0.01	0.169	23.29	23.50	1.050	<b>0.177</b>	15#
Note: Refer to ANNEX C for the detailed test data for each test configuration.											

### 10.6LTE Band 7 (20MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	21100	2535	1	Mid	-0.01	0.115	23.48	24.00	1.127	<b>0.130</b>	16#
QPSK	Left Tilt	0	21100	2535	1	Mid	0.17	0.045	23.48	24.00	1.127	0.051	/
QPSK	Right Cheek	0	21100	2535	1	Mid	0.00	0.068	23.48	24.00	1.127	0.077	/
QPSK	Right Tilt	0	21100	2535	1	Mid	0.01	0.039	23.48	24.00	1.127	0.044	/
QPSK	Left Cheek	0	20850	2510	50	Low	-0.08	0.103	22.13	23.00	1.222	0.126	/
QPSK	Left Tilt	0	20850	2510	50	Mid	0.07	0.040	22.13	23.00	1.222	0.049	/
QPSK	Right Cheek	0	20850	2510	50	Low	-0.03	0.058	22.13	23.00	1.222	0.071	/
QPSK	Right Tilt	0	20850	2510	50	Low	-0.15	0.030	22.13	23.00	1.222	0.037	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	21100	2535	1	Mid	-0.19	0.148	23.48	24.00	1.127	0.167	/
QPSK	Back Side	10	21100	2535	1	Mid	-0.16	0.000	23.48	24.00	1.127	0.000	/
QPSK	Left Edge	10	21100	2535	1	Mid	0.12	0.061	23.48	24.00	1.127	0.069	/
QPSK	Right Edge	10	21100	2535	1	Mid	-0.13	0.182	23.48	24.00	1.127	0.205	/
QPSK	Bottom Edge	10	21100	2535	1	Mid	0.00	0.462	23.48	24.00	1.127	<b>0.521</b>	17#
QPSK	Front Side	10	20850	2510	50	Low	0.18	0.116	22.13	23.00	1.222	0.142	/
QPSK	Back Side	10	20850	2510	50	Low	-0.02	0.000	22.13	23.00	1.222	0.000	/
QPSK	Left Edge	10	20850	2510	50	Low	-0.01	0.045	22.13	23.00	1.222	0.055	/
QPSK	Right Edge	10	20850	2510	50	Low	0.03	0.141	22.13	23.00	1.222	0.172	/
QPSK	Bottom Edge	10	20850	2510	50	Low	0.02	0.361	22.13	23.00	1.222	0.441	/

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

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	21100	2535	1	Mid	0.03	0.550	23.48	24.00	1.127	0.620	/
QPSK	Back Side	0	21100	2535	1	Mid	-0.01	0.050	23.48	24.00	1.127	0.056	/
QPSK	Left Edge	0	21100	2535	1	Mid	-0.09	0.121	23.48	24.00	1.127	0.136	/
QPSK	Right Edge	0	21100	2535	1	Mid	-0.14	0.366	23.48	24.00	1.127	0.412	/
QPSK	Bottom Edge	0	21100	2535	1	Mid	0.01	1.050	23.48	24.00	1.127	<b>1.183</b>	<b>18#</b>
QPSK	Front Side	0	20850	2510	50	Low	-0.12	0.434	22.13	23.00	1.222	0.530	/
QPSK	Back Side	0	20850	2510	50	Low	0.17	0.030	22.13	23.00	1.222	0.037	/
QPSK	Left Edge	0	20850	2510	50	Low	0.11	0.099	22.13	23.00	1.222	0.121	/
QPSK	Right Edge	0	20850	2510	50	Low	-0.19	0.309	22.13	23.00	1.222	0.378	/
QPSK	Bottom Edge	0	20850	2510	50	Low	-0.10	0.863	22.13	23.00	1.222	1.055	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.7LTE Band 12 (10MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	23095	707.5	1	High	-0.05	0.007	23.65	24.00	1.084	<b>0.008</b>	19#
QPSK	Left Tilt	0	23095	707.5	1	High	-0.12	0.000	23.65	24.00	1.084	0.000	/
QPSK	Right Cheek	0	23095	707.5	1	High	0.08	0.004	23.65	24.00	1.084	0.004	/
QPSK	Right Tilt	0	23095	707.5	1	High	0.12	0.000	23.65	24.00	1.084	0.000	/
QPSK	Left Cheek	0	23095	707.5	25	High	0.14	0.001	22.51	23.50	1.256	0.001	/
QPSK	Left Tilt	0	23095	707.5	25	High	0.16	0.000	22.51	23.50	1.256	0.000	/
QPSK	Right Cheek	0	23095	707.5	25	High	-0.17	0.000	22.51	23.50	1.256	0.000	/
QPSK	Right Tilt	0	23095	707.5	25	High	0.01	0.000	22.51	23.50	1.256	0.000	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	23095	707.5	1	High	0.15	0.005	23.65	24.00	1.084	0.005	/
QPSK	Back Side	10	23095	707.5	1	High	0.09	0.000	23.65	24.00	1.084	0.000	/
QPSK	Left Edge	10	23095	707.5	1	High	0.15	0.000	23.65	24.00	1.084	0.000	/
QPSK	Right Edge	10	23095	707.5	1	High	0.12	0.000	23.65	24.00	1.084	0.000	/
QPSK	Bottom Edge	10	23095	707.5	1	High	0.04	0.014	23.65	24.00	1.084	<b>0.015</b>	20#
QPSK	Front Side	10	23095	707.5	25	High	0.11	0.002	22.51	23.50	1.256	0.003	/
QPSK	Back Side	10	23095	707.5	25	High	-0.10	0.004	22.51	23.50	1.256	0.005	/
QPSK	Left Edge	10	23095	707.5	25	High	0.09	0.000	22.51	23.50	1.256	0.000	/
QPSK	Right Edge	10	23095	707.5	25	High	-0.16	0.000	22.51	23.50	1.256	0.000	/
QPSK	Bottom Edge	10	23095	707.5	25	High	0.18	0.011	22.51	23.50	1.256	0.014	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													



Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	23095	707.5	1	High	-0.13	0.010	23.65	24.00	1.084	0.011	/
QPSK	Back Side	0	23095	707.5	1	High	-0.11	0.000	23.65	24.00	1.084	0.000	/
QPSK	Left Edge	0	23095	707.5	1	High	-0.11	0.003	23.65	24.00	1.084	0.003	/
QPSK	Right Edge	0	23095	707.5	1	High	0.17	0.003	23.65	24.00	1.084	0.003	/
QPSK	Bottom Edge	0	23095	707.5	1	High	-0.04	0.046	23.65	24.00	1.084	<b>0.050</b>	21#
QPSK	Front Side	0	23095	707.5	25	High	0.08	0.008	22.51	23.50	1.256	0.010	/
QPSK	Back Side	0	23095	707.5	25	High	0.01	0.014	22.51	23.50	1.256	0.018	/
QPSK	Left Edge	0	23095	707.5	25	High	-0.03	0.002	22.51	23.50	1.256	0.003	/
QPSK	Right Edge	0	23095	707.5	25	High	-0.06	0.002	22.51	23.50	1.256	0.003	/
QPSK	Bottom Edge	0	23095	707.5	25	High	-0.13	0.038	22.51	23.50	1.256	0.048	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.8LTE Band 13 (10MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	23230	782	1	Low	0.02	0.004	23.68	24.00	1.076	<b>0.004</b>	22#
QPSK	Left Tilt	0	23230	782	1	Low	0.00	0.000	23.68	24.00	1.076	0.000	/
QPSK	Right Cheek	0	23230	782	1	Low	-0.12	0.002	23.68	24.00	1.076	0.002	/
QPSK	Right Tilt	0	23230	782	1	Low	0.13	0.000	23.68	24.00	1.076	0.000	/
QPSK	Left Cheek	0	23230	782	25	Low	-0.13	0.001	22.76	23.50	1.186	0.001	/
QPSK	Left Tilt	0	23230	782	25	Low	0.04	0.000	22.76	23.50	1.186	0.000	/
QPSK	Right Cheek	0	23230	782	25	Low	0.00	0.001	22.76	23.50	1.186	0.001	/
QPSK	Right Tilt	0	23230	782	25	Low	-0.19	0.000	22.76	23.50	1.186	0.000	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	23230	782	1	Low	0.11	0.000	23.68	24.00	1.076	0.000	/
QPSK	Back Side	10	23230	782	1	Low	-0.13	0.000	23.68	24.00	1.076	0.000	/
QPSK	Left Edge	10	23230	782	1	Low	0.03	0.000	23.68	24.00	1.076	0.000	/
QPSK	Right Edge	10	23230	782	1	Low	0.02	0.000	23.68	24.00	1.076	0.000	/
QPSK	Bottom Edge	10	23230	782	1	Low	0.05	0.011	23.68	24.00	1.076	<b>0.012</b>	23#
QPSK	Front Side	10	23230	782	25	Low	-0.17	0.000	22.76	23.50	1.186	0.000	/
QPSK	Back Side	10	23230	782	25	Low	-0.15	0.000	22.76	23.50	1.186	0.000	/
QPSK	Left Edge	10	23230	782	25	Low	0.01	0.000	22.76	23.50	1.186	0.000	/
QPSK	Right Edge	10	23230	782	25	Low	-0.03	0.000	22.76	23.50	1.186	0.000	/
QPSK	Bottom Edge	10	23230	782	25	Low	0.14	0.005	22.76	23.50	1.186	0.006	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	23230	782	1	Low	-0.02	0.023	23.68	24.00	1.076	0.025	/
QPSK	Back Side	0	23230	782	1	Low	-0.15	0.000	23.68	24.00	1.076	0.000	/
QPSK	Left Edge	0	23230	782	1	Low	-0.19	0.000	23.68	24.00	1.076	0.000	/
QPSK	Right Edge	0	23230	782	1	Low	0.14	0.000	23.68	24.00	1.076	0.000	/
QPSK	Bottom Edge	0	23230	782	1	Low	0.01	0.040	23.68	24.00	1.076	<b>0.043</b>	24#
QPSK	Front Side	0	23230	782	25	Low	0.16	0.019	22.76	23.50	1.186	0.023	/
QPSK	Back Side	0	23230	782	25	Low	0.03	0.000	22.76	23.50	1.186	0.000	/
QPSK	Left Edge	0	23230	782	25	Low	-0.07	0.000	22.76	23.50	1.186	0.000	/
QPSK	Right Edge	0	23230	782	25	Low	-0.11	0.000	22.76	23.50	1.186	0.000	/
QPSK	Bottom Edge	0	23230	782	25	Low	-0.11	0.030	22.76	23.50	1.186	0.036	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

## 10.9LTE Band 25 (20MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	26590	1905	1	Mid	-0.08	0.168	23.34	24.00	1.164	<b>0.196</b>	25#
QPSK	Left Tilt	0	26590	1905	1	Mid	0.11	0.110	23.34	24.00	1.164	0.128	/
QPSK	Right Cheek	0	26590	1905	1	Mid	0.15	0.133	23.34	24.00	1.164	0.155	/
QPSK	Right Tilt	0	26590	1905	1	Mid	0.17	0.097	23.34	24.00	1.164	0.113	/
QPSK	Left Cheek	0	26590	1905	50	Mid	-0.08	0.125	22.45	23.00	1.135	0.142	/
QPSK	Left Tilt	0	26590	1905	50	Mid	-0.15	0.089	22.45	23.00	1.135	0.101	/
QPSK	Right Cheek	0	26590	1905	50	Mid	0.02	0.076	22.45	23.00	1.135	0.086	/
QPSK	Right Tilt	0	26590	1905	50	Mid	-0.12	0.038	22.45	23.00	1.135	0.043	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	26590	1905	1	Mid	0.13	0.153	23.34	24.00	1.164	0.178	/
QPSK	Back Side	10	26590	1905	1	Mid	0.03	0.000	23.34	24.00	1.164	0.000	/
QPSK	Left Edge	10	26590	1905	1	Mid	0.03	0.068	23.34	24.00	1.164	0.079	/
QPSK	Right Edge	10	26590	1905	1	Mid	0.11	0.179	23.34	24.00	1.164	0.208	/
QPSK	Bottom Edge	10	26590	1905	1	Mid	0.04	0.191	23.34	24.00	1.164	<b>0.222</b>	26#
QPSK	Front Side	10	26590	1905	50	Mid	0.17	0.122	22.45	23.00	1.135	0.138	/
QPSK	Back Side	10	26590	1905	50	Mid	0.01	0.000	22.45	23.00	1.135	0.000	/
QPSK	Left Edge	10	26590	1905	50	Mid	-0.11	0.054	22.45	23.00	1.135	0.061	/
QPSK	Right Edge	10	26590	1905	50	Mid	-0.03	0.154	22.45	23.00	1.135	0.175	/
QPSK	Bottom Edge	10	26590	1905	50	Mid	0.13	0.170	22.45	23.00	1.135	0.193	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	26590	1905	1	Mid	-0.09	0.353	23.34	24.00	1.164	0.411	/
QPSK	Back Side	0	26590	1905	1	Mid	0.03	0.000	23.34	24.00	1.164	0.000	/
QPSK	Left Edge	0	26590	1905	1	Mid	-0.01	0.081	23.34	24.00	1.164	0.094	/
QPSK	Right Edge	0	26590	1905	1	Mid	-0.12	0.511	23.34	24.00	1.164	0.595	/
QPSK	Bottom Edge	0	26590	1905	1	Mid	-0.07	0.604	23.34	24.00	1.164	<b>0.703</b>	<b>27#</b>
QPSK	Front Side	0	26590	1905	50	Mid	0.14	0.275	22.45	23.00	1.135	0.312	/
QPSK	Back Side	0	26590	1905	50	Mid	-0.19	0.000	22.45	23.00	1.135	0.000	/
QPSK	Left Edge	0	26590	1905	50	Mid	-0.12	0.065	22.45	23.00	1.135	0.074	/
QPSK	Right Edge	0	26590	1905	50	Mid	-0.10	0.404	22.45	23.00	1.135	0.459	/
QPSK	Bottom Edge	0	26590	1905	50	Mid	0.07	0.506	22.45	23.00	1.135	0.574	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.10 LTE Band 26 (15MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	26965	841.5	1	High	0.05	0.066	23.98	24.00	1.005	<b>0.066</b>	28#
QPSK	Left Tilt	0	26965	841.5	1	High	0.17	0.012	23.98	24.00	1.005	0.012	/
QPSK	Right Cheek	0	26965	841.5	1	High	-0.03	0.034	23.98	24.00	1.005	0.034	/
QPSK	Right Tilt	0	26965	841.5	1	High	-0.14	0.008	23.98	24.00	1.005	0.008	/
QPSK	Left Cheek	0	26965	841.5	36	Low	-0.12	0.046	22.67	23.00	1.079	0.050	/
QPSK	Left Tilt	0	26965	841.5	36	Low	0.03	0.005	22.67	23.00	1.079	0.005	/
QPSK	Right Cheek	0	26965	841.5	36	Low	0.05	0.021	22.67	23.00	1.079	0.023	/
QPSK	Right Tilt	0	26965	841.5	36	Low	0.02	0.005	22.67	23.00	1.079	0.005	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	26965	841.5	1	High	0.04	0.024	23.98	24.00	1.005	0.024	/
QPSK	Back Side	10	26965	841.5	1	High	-0.12	0.000	23.98	24.00	1.005	0.000	/
QPSK	Left Edge	10	26965	841.5	1	High	0.06	0.000	23.98	24.00	1.005	0.000	/
QPSK	Right Edge	10	26965	841.5	1	High	0.01	0.000	23.98	24.00	1.005	0.000	/
QPSK	Bottom Edge	10	26965	841.5	1	High	-0.01	0.065	23.98	24.00	1.005	<b>0.065</b>	29#
QPSK	Front Side	10	26965	841.5	36	Low	-0.16	0.015	22.67	23.00	1.079	0.016	/
QPSK	Back Side	10	26965	841.5	36	Low	-0.05	0.000	22.67	23.00	1.079	0.000	/
QPSK	Left Edge	10	26965	841.5	36	Low	0.02	0.000	22.67	23.00	1.079	0.000	/
QPSK	Right Edge	10	26965	841.5	36	Low	0.02	0.000	22.67	23.00	1.079	0.000	/
QPSK	Bottom Edge	10	26965	841.5	36	Low	0.07	0.050	22.67	23.00	1.079	0.054	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	26965	841.5	1	High	0.09	0.088	23.98	24.00	1.005	0.088	/
QPSK	Back Side	0	26965	841.5	1	High	0.08	0.000	23.98	24.00	1.005	0.000	/
QPSK	Left Edge	0	26965	841.5	1	High	-0.13	0.058	23.98	24.00	1.005	0.058	/
QPSK	Right Edge	0	26965	841.5	1	High	-0.02	0.086	23.98	24.00	1.005	0.086	/
QPSK	Bottom Edge	0	26965	841.5	1	High	0.00	0.170	23.98	24.00	1.005	<b>0.171</b>	30#
QPSK	Front Side	0	26965	841.5	36	Low	-0.07	0.061	22.67	23.00	1.079	0.066	/
QPSK	Back Side	0	26965	841.5	36	Low	0.05	0.000	22.67	23.00	1.079	0.000	/
QPSK	Left Edge	0	26965	841.5	36	Low	-0.15	0.047	22.67	23.00	1.079	0.051	/
QPSK	Right Edge	0	26965	841.5	36	Low	0.16	0.069	22.67	23.00	1.079	0.074	/
QPSK	Bottom Edge	0	26965	841.5	36	Low	-0.05	0.110	22.67	23.00	1.079	0.119	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.11 LTE Band 66 (20MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	132572	1770	1	High	-0.11	0.101	22.23	23.00	1.194	<b>0.121</b>	31#
QPSK	Left Tilt	0	132572	1770	1	High	-0.05	0.012	22.23	23.00	1.194	0.014	/
QPSK	Right Cheek	0	132572	1770	1	High	0.14	0.057	22.23	23.00	1.194	0.068	/
QPSK	Right Tilt	0	132572	1770	1	High	0.08	0.000	22.23	23.00	1.194	0.000	/
QPSK	Left Cheek	0	132572	1770	50	High	-0.04	0.088	21.05	22.00	1.245	0.110	/
QPSK	Left Tilt	0	132572	1770	50	High	0.07	0.000	21.05	22.00	1.245	0.000	/
QPSK	Right Cheek	0	132572	1770	50	High	-0.02	0.043	21.05	22.00	1.245	0.054	/
QPSK	Right Tilt	0	132572	1770	50	High	-0.14	0.000	21.05	22.00	1.245	0.000	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	132572	1770	1	High	-0.04	0.086	22.23	23.00	1.194	0.103	/
QPSK	Back Side	10	132572	1770	1	High	0.06	0.000	22.23	23.00	1.194	0.000	/
QPSK	Left Edge	10	132572	1770	1	High	-0.05	0.055	22.23	23.00	1.194	0.066	/
QPSK	Right Edge	10	132572	1770	1	High	0.06	0.138	22.23	23.00	1.194	<b>0.165</b>	32#
QPSK	Bottom Edge	10	132572	1770	1	High	-0.08	0.127	22.23	23.00	1.194	0.152	/
QPSK	Front Side	10	132572	1770	50	High	-0.14	0.072	21.05	22.00	1.245	0.090	/
QPSK	Back Side	10	132572	1770	50	High	0.12	0.000	21.05	22.00	1.245	0.000	/
QPSK	Left Edge	10	132572	1770	50	High	-0.11	0.049	21.05	22.00	1.245	0.061	/
QPSK	Right Edge	10	132572	1770	50	High	0.03	0.108	21.05	22.00	1.245	0.134	/
QPSK	Bottom Edge	10	132572	1770	50	High	-0.02	0.107	21.05	22.00	1.245	0.133	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													



Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	132572	1770	1	High	0.05	0.259	22.23	23.00	1.194	0.309	/
QPSK	Back Side	0	132572	1770	1	High	0.04	0.000	22.23	23.00	1.194	0.000	/
QPSK	Left Edge	0	132572	1770	1	High	0.12	0.067	22.23	23.00	1.194	0.080	/
QPSK	Right Edge	0	132572	1770	1	High	-0.11	0.345	22.23	23.00	1.194	0.412	/
QPSK	Bottom Edge	0	132572	1770	1	High	0.01	0.386	22.23	23.00	1.194	<b>0.461</b>	33#
QPSK	Front Side	0	132572	1770	50	High	-0.11	0.219	21.05	22.00	1.245	0.273	/
QPSK	Back Side	0	132572	1770	50	High	-0.08	0.000	21.05	22.00	1.245	0.000	/
QPSK	Left Edge	0	132572	1770	50	High	0.01	0.056	21.05	22.00	1.245	0.070	/
QPSK	Right Edge	0	132572	1770	50	High	-0.15	0.292	21.05	22.00	1.245	0.364	/
QPSK	Bottom Edge	0	132572	1770	50	High	-0.06	0.331	21.05	22.00	1.245	0.412	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

## 10.12 LTE Band 71 (20MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	133222	673	1	Low	-0.03	0.007	23.35	24.00	1.161	<b>0.008</b>	34#
QPSK	Left Tilt	0	133222	673	1	Low	0.06	0.000	23.35	24.00	1.161	0.000	/
QPSK	Right Cheek	0	133222	673	1	Low	0.08	0.003	23.35	24.00	1.161	0.003	/
QPSK	Right Tilt	0	133222	673	1	Low	0.04	0.000	23.35	24.00	1.161	0.000	/
QPSK	Left Cheek	0	133222	673	50	Low	-0.01	0.005	22.06	23.00	1.242	0.006	/
QPSK	Left Tilt	0	133222	673	50	Low	0.05	0.000	22.06	23.00	1.242	0.000	/
QPSK	Right Cheek	0	133222	673	50	Low	0.01	0.000	22.06	23.00	1.242	0.000	/
QPSK	Right Tilt	0	133222	673	50	Low	-0.01	0.000	22.06	23.00	1.242	0.000	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	10	133222	673	1	Low	0.15	0.009	23.35	24.00	1.161	0.010	/
QPSK	Back Side	10	133222	673	1	Low	0.15	0.000	23.35	24.00	1.161	0.000	/
QPSK	Left Edge	10	133222	673	1	Low	0.00	0.000	23.35	24.00	1.161	0.000	/
QPSK	Right Edge	10	133222	673	1	Low	0.09	0.000	23.35	24.00	1.161	0.000	/
QPSK	Bottom Edge	10	133222	673	1	Low	0.04	0.012	23.35	24.00	1.161	<b>0.014</b>	35#
QPSK	Front Side	10	133222	673	50	Low	0.03	0.006	22.06	23.00	1.242	0.007	/
QPSK	Back Side	10	133222	673	50	Low	-0.03	0.000	22.06	23.00	1.242	0.000	/
QPSK	Left Edge	10	133222	673	50	Low	0.05	0.000	22.06	23.00	1.242	0.000	/
QPSK	Right Edge	10	133222	673	50	Low	-0.06	0.000	22.06	23.00	1.242	0.000	/
QPSK	Bottom Edge	10	133222	673	50	Low	0.16	0.008	22.06	23.00	1.242	0.010	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	133222	673	1	Low	0.01	0.023	23.35	24.00	1.161	0.027	/
QPSK	Back Side	0	133222	673	1	Low	-0.10	0.000	23.35	24.00	1.161	0.000	/
QPSK	Left Edge	0	133222	673	1	Low	0.07	0.000	23.35	24.00	1.161	0.000	/
QPSK	Right Edge	0	133222	673	1	Low	0.08	0.000	23.35	24.00	1.161	0.000	/
QPSK	Bottom Edge	0	133222	673	1	Low	0.06	0.042	23.35	24.00	1.161	<b>0.049</b>	36#
QPSK	Front Side	0	133222	673	50	Low	0.09	0.015	22.06	23.00	1.242	0.019	/
QPSK	Back Side	0	133222	673	50	Low	-0.01	0.000	22.06	23.00	1.242	0.000	/
QPSK	Left Edge	0	133222	673	50	Low	-0.01	0.000	22.06	23.00	1.242	0.000	/
QPSK	Right Edge	0	133222	673	50	Low	-0.07	0.000	22.06	23.00	1.242	0.000	/
QPSK	Bottom Edge	0	133222	673	50	Low	-0.05	0.030	22.06	23.00	1.242	0.037	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.13 LTE Band 41 (20MHz Bandwidth)

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.
<b>Head</b>													
QPSK	Left Cheek	0	39750	2506	1	Low	-0.03	0.160	23.72	24.00	1.067	<b>0.171</b>	37#
QPSK	Left Tilt	0	39750	2506	1	Low	-0.05	0.087	23.72	24.00	1.067	0.093	/
QPSK	Right Cheek	0	39750	2506	1	Low	0.12	0.131	23.72	24.00	1.067	0.140	/
QPSK	Right Tilt	0	39750	2506	1	Low	-0.08	0.067	23.72	24.00	1.067	0.071	/
QPSK	Left Cheek	0	39750	2506	50	Low	0.03	0.135	22.57	23.00	1.104	0.149	/
QPSK	Left Tilt	0	39750	2506	50	Low	-0.01	0.062	22.57	23.00	1.104	0.068	/
QPSK	Right Cheek	0	39750	2506	50	Low	0.07	0.042	22.57	23.00	1.104	0.046	/
QPSK	Right Tilt	0	39750	2506	50	Low	0.00	0.012	22.57	23.00	1.104	0.013	/
<b>Body-Wron&amp;Hotspot</b>													
QPSK	Front Side	0	39750	2506	1	Low	-0.06	0.138	23.72	24.00	1.067	0.147	/
QPSK	Back Side	0	39750	2506	1	Low	-0.05	0.000	23.72	24.00	1.067	0.000	/
QPSK	LeftEdge	0	39750	2506	1	Low	0.13	0.000	23.72	24.00	1.067	0.000	/
QPSK	Right Edge	0	39750	2506	1	Low	0.01	0.193	23.72	24.00	1.067	0.206	/
QPSK	Bottom Edge	0	39750	2506	1	Low	0.04	0.246	23.72	24.00	1.067	<b>0.262</b>	38#
QPSK	Front Side	0	39750	2506	50	Low	0.01	0.099	22.57	23.00	1.104	0.109	/
QPSK	Back Side	0	39750	2506	50	Low	0.04	0.000	22.57	23.00	1.104	0.000	/
QPSK	Left Edge	0	39750	2506	50	Low	0.17	0.000	22.57	23.00	1.104	0.000	/
QPSK	Right Edge	0	39750	2506	50	Low	-0.07	0.147	22.57	23.00	1.104	0.162	/
QPSK	Bottom Edge	0	39750	2506	50	Low	-0.05	0.215	22.57	23.00	1.104	0.237	/

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

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
QPSK	Front Side	0	39750	2506	1	Low	-0.14	0.439	23.72	24.00	1.067	0.468	/
QPSK	Back Side	0	39750	2506	1	Low	0.08	0.000	23.72	24.00	1.067	0.000	/
QPSK	LeftEdge	0	39750	2506	1	Low	0.11	0.066	23.72	24.00	1.067	0.070	/
QPSK	Right Edge	0	39750	2506	1	Low	-0.05	0.434	23.72	24.00	1.067	0.463	/
QPSK	Bottom Edge	0	39750	2506	1	Low	0.12	0.736	23.72	24.00	1.067	<b>0.785</b>	39#
QPSK	Front Side	0	39750	2506	50	Low	0.05	0.336	22.57	23.00	1.104	0.371	/
QPSK	Back Side	0	39750	2506	50	Low	0.08	0.000	22.57	23.00	1.104	0.000	/
QPSK	Left Edge	0	39750	2506	50	Low	0.12	0.043	22.57	23.00	1.104	0.047	/
QPSK	Right Edge	0	39750	2506	50	Low	0.08	0.331	22.57	23.00	1.104	0.365	/
QPSK	Bottom Edge	0	39750	2506	50	Low	0.05	0.560	22.57	23.00	1.104	0.618	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

## 10.14 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.
<b>Head</b>														
Ant.0	802.11 b	Left Cheek	0	11	2462	0.01	0.847	18.40	18.50	1.023	97.95	1.021	<b>0.885</b>	40#
	802.11 b	Left Tilt	0	11	2462	0.14	0.324	18.28	18.50	1.052	97.95	1.021	0.348	/
	802.11 b	Right Cheek	0	11	2462	-0.02	0.237	18.28	18.50	1.052	97.95	1.021	0.255	/
	802.11 b	Right Tilt	0	11	2462	0.03	0.122	18.28	18.50	1.052	97.95	1.021	0.131	/
	802.11 b	Left Cheek	0	1	2412	0.10	0.609	18.01	18.50	1.119	97.95	1.021	0.696	/
	802.11 b	Left Cheek	0	6	2437	0.00	0.511	18.40	18.50	1.023	97.95	1.021	0.534	/
Ant.1	802.11 b	Left Cheek	0	6	2437	0.14	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Left Tilt	0	6	2437	0.02	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Right Cheek	0	6	2437	-0.12	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Right Tilt	0	6	2437	-0.12	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
MIMO	802.11 n HT20	Left Cheek	0	11	2462	0.15	0.526	19.27	19.50	1.054	89.23	1.121	0.621	/
	802.11 n HT20	Left Tilt	0	11	2462	-0.02	0.350	19.27	19.50	1.054	89.23	1.121	0.414	/
	802.11 n HT20	Right Cheek	0	11	2462	-0.08	0.291	19.27	19.50	1.054	89.23	1.121	0.344	/
	802.11 n HT20	Right Tilt	0	11	2462	0.00	0.174	19.27	19.50	1.054	89.23	1.121	0.206	/
<b>Body-Wron&amp;Hotspot</b>														
Ant.0	802.11 b	Front Side	10	11	2462	-0.15	0.277	18.40	18.50	1.023	97.95	1.021	0.289	/
	802.11 b	Back Side	10	11	2462	-0.03	0.000	18.40	18.50	1.023	97.95	1.021	0.000	/
	802.11 b	Left Edge	10	11	2462	0.01	0.445	18.40	18.50	1.023	97.95	1.021	<b>0.465</b>	41#
	802.11 b	Right Edge	10	11	2462	-0.06	0.000	18.40	18.50	1.023	97.95	1.021	0.000	/
	802.11 b	Top Edge	10	11	2462	0.02	0.230	18.40	18.50	1.023	97.95	1.021	0.240	/
Ant.1	802.11 b	Front Side	10	6	2437	-0.08	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Back Side	10	6	2437	-0.03	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Left Edge	10	6	2437	0.02	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Right Edge	10	6	2437	-0.06	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Top Edge	10	6	2437	0.00	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
MIMO	802.11 n HT20	Front Side	10	11	2462	0.00	0.120	19.27	19.50	1.054	89.23	1.121	0.142	/
	802.11 n HT20	Back Side	10	11	2462	0.05	0.000	19.27	19.50	1.054	89.23	1.121	0.000	/
	802.11 n HT20	Left Edge	10	11	2462	0.02	0.230	19.27	19.50	1.054	89.23	1.121	0.272	/
	802.11 n HT20	Right Edge	10	11	2462	-0.15	0.000	19.27	19.50	1.054	89.23	1.121	0.000	/
	802.11 n HT20	Top Edge	10	11	2462	-0.10	0.104	19.27	19.50	1.054	89.23	1.121	0.123	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>														
Ant.0	802.11 b	Front Side	0	11	2462	0.08	0.679	18.40	18.50	1.023	97.95	1.021	0.709	/
	802.11 b	Back Side	0	11	2462	0.02	0.000	18.40	18.50	1.023	97.95	1.021	0.000	/
	802.11 b	Left Edge	0	11	2462	0.02	1.060	18.40	18.50	1.023	97.95	1.021	<b>1.107</b>	<b>42#</b>
	802.11 b	Right Edge	0	11	2462	0.09	0.005	18.40	18.50	1.023	97.95	1.021	0.005	/
	802.11 b	Top Edge	0	11	2462	0.14	0.230	18.40	18.50	1.023	97.95	1.021	0.240	/
Ant.1	802.11 b	Front Side	0	6	2437	0.05	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Back Side	0	6	2437	0.10	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Left Edge	0	6	2437	-0.06	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Right Edge	0	6	2437	-0.08	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
	802.11 b	Top Edge	0	6	2437	-0.09	0.001	17.96	18.50	1.132	97.95	1.021	0.001	/
MIMO	802.11 n HT20	Front Side	0	6	2437	-0.07	0.485	19.27	19.50	1.054	89.23	1.121	0.573	/
	802.11 n HT20	Back Side	0	6	2437	0.04	0.000	19.27	19.50	1.054	89.23	1.121	0.000	/
	802.11 n HT20	Left Edge	0	6	2437	0.03	0.636	19.27	19.50	1.054	89.23	1.121	0.751	/
	802.11 n HT20	Right Edge	0	6	2437	0.08	0.000	19.27	19.50	1.054	89.23	1.121	0.000	/
	802.11 n HT20	Top Edge	0	6	2437	-0.04	0.157	19.27	19.50	1.054	89.23	1.121	0.186	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

### 10.15 WIFI 5GHZ

Antenna	Band	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.
<b>Head</b>															
Ant.0	5.3G	802.11 ac VHT80	Left Cheek	0	58	5290	-0.15	0.893	15.33	15.50	1.040	89.85	1.113	1.034	/
	5.3G	802.11 ac VHT80	Left Tilt	0	58	5290	0.13	0.571	15.33	15.50	1.040	89.85	1.113	0.661	/
	5.3G	802.11 ac VHT80	Right Cheek	0	58	5290	0.12	0.753	15.33	15.50	1.040	89.85	1.113	0.872	/
	5.3G	802.11 ac VHT80	Right Tilt	0	58	5290	-0.15	0.617	15.33	15.50	1.040	89.85	1.113	0.714	/
Ant.1	5.3G	802.11 ac VHT80	Left Cheek	0	58	5290	-0.06	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Left Tilt	0	58	5290	-0.07	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Right Cheek	0	58	5290	0.12	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Right Tilt	0	58	5290	0.06	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
MIMO	5.3G	802.11 ac VHT80	Left Cheek	0	58	5290	0.09	0.991	18.16	18.50	1.081	89.85	1.113	<b>1.192</b>	43#
	5.3G	802.11 ac VHT80	Left Tilt	0	58	5290	-0.06	0.640	18.16	18.50	1.081	89.85	1.113	0.770	/
	5.3G	802.11 ac VHT80	Right Cheek	0	58	5290	0.01	0.843	18.16	18.50	1.081	89.85	1.113	1.014	/
	5.3G	802.11 ac VHT80	Right Tilt	0	58	5290	-0.02	0.691	18.16	18.50	1.081	89.85	1.113	0.831	/
Ant.0	5.6G	802.11 ac VHT80	Left Cheek	0	106	5530	0.10	0.865	15.39	15.50	1.026	89.85	1.113	0.988	/
	5.6G	802.11 ac VHT80	Left Tilt	0	106	5530	-0.02	0.629	15.39	15.50	1.026	89.85	1.113	0.718	/
	5.6G	802.11 ac VHT80	Right Cheek	0	106	5530	0.06	0.793	15.39	15.50	1.026	89.85	1.113	0.906	/
	5.6G	802.11 ac VHT80	Right Tilt	0	106	5530	-0.13	0.684	15.39	15.50	1.026	89.85	1.113	0.781	/
	5.6G	802.11 ac VHT80	Left Cheek	0	122	5610	-0.04	0.688	15.25	15.50	1.059	89.85	1.113	0.811	/
	5.6G	802.11 ac VHT80	Left Cheek	0	138	5690	0.13	0.905	15.07	15.50	1.104	89.85	1.113	1.112	/
	5.6G	802.11 ac VHT80	Right Cheek	0	122	5610	-0.08	0.613	15.25	15.50	1.059	89.85	1.113	0.723	/
	5.6G	802.11 ac VHT80	Right Cheek	0	138	5690	0.07	0.802	15.07	15.50	1.104	89.85	1.113	0.985	/
Ant.1	5.6G	802.11 ac VHT80	Left Cheek	0	106	5530	0.11	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Left Tilt	0	106	5530	-0.13	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Right Cheek	0	106	5530	0.05	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Right Tilt	0	106	5530	0.01	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
MIMO	5.6G	802.11 ac VHT80	Left Cheek	0	106	5530	0.12	0.965	18.20	18.50	1.072	89.85	1.113	1.151	/
	5.6G	802.11 ac VHT80	Left Tilt	0	106	5530	-0.03	0.634	18.20	18.50	1.072	89.85	1.113	0.756	/
	5.6G	802.11 ac VHT80	Right Cheek	0	106	5530	0.01	0.756	18.20	18.50	1.072	89.85	1.113	0.902	/
	5.6G	802.11 ac VHT80	Right Tilt	0	106	5530	-0.02	0.668	18.20	18.50	1.072	89.85	1.113	0.797	/
	5.6G	802.11 ac VHT80	Left Cheek	0	122	5610	0.03	0.930	18.17	18.50	1.079	89.85	1.113	1.117	/
	5.6G	802.11 ac VHT80	Left Cheek	0	138	5690	0.11	0.956	18.12	18.50	1.091	89.85	1.113	<b>1.161</b>	44#
	5.6G	802.11 ac VHT80	Right Cheek	0	122	5610	-0.01	0.734	18.17	18.50	1.079	89.85	1.113	0.881	/
	5.6G	802.11 ac VHT80	Right Cheek	0	138	5690	-0.13	0.769	18.12	18.50	1.091	89.85	1.113	0.934	/
Ant.0	5.8G	802.11 ac VHT80	Left Cheek	0	155	5775	0.00	0.866	15.10	15.50	1.096	89.85	1.113	1.056	/
	5.8G	802.11 ac VHT80	Left Tilt	0	155	5775	0.12	0.597	15.10	15.50	1.096	89.85	1.113	0.728	/
	5.8G	802.11 ac VHT80	Right Cheek	0	155	5775	0.00	0.580	15.10	15.50	1.096	89.85	1.113	0.708	/
	5.8G	802.11 ac VHT80	Right Tilt	0	155	5775	0.01	0.595	15.10	15.50	1.096	89.85	1.113	0.726	/



Ant.1	5.8G	802.11 ac VHT80	Left Cheek	0	155	5775	0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Left Tilt	0	155	5775	-0.13	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Right Cheek	0	155	5775	-0.06	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Right Tilt	0	155	5775	-0.08	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
MIMO	5.8G	802.11 ac VHT80	Left Cheek	0	155	5775	0.02	0.970	18.37	18.50	1.030	89.85	1.113	<b>1.112</b>	45#
	5.8G	802.11 ac VHT80	Left Tilt	0	155	5775	0.08	0.647	18.37	18.50	1.030	89.85	1.113	0.742	/
	5.8G	802.11 ac VHT80	Right Cheek	0	155	5775	0.15	0.753	18.37	18.50	1.030	89.85	1.113	0.863	/
	5.8G	802.11 ac VHT80	Right Tilt	0	155	5775	0.07	0.637	18.37	18.50	1.030	89.85	1.113	0.730	/
<b>Body-worn</b>															
Ant.0	5.3G	802.11 ac VHT80	Front Side	10	58	5290	-0.02	0.189	15.33	15.50	1.040	89.85	1.113	0.219	/
	5.3G	802.11 ac VHT80	Back Side	10	58	5290	-0.11	0.040	15.33	15.50	1.040	89.85	1.113	0.046	/
Ant.1	5.3G	802.11 ac VHT80	Front Side	10	58	5290	0.02	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Back Side	10	58	5290	-0.15	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
MIMO	5.3G	802.11 ac VHT80	Front Side	10	58	5290	0.03	0.209	18.16	18.50	1.081	89.85	1.113	<b>0.251</b>	46#
	5.3G	802.11 ac VHT80	Back Side	10	58	5290	-0.06	0.051	18.16	18.50	1.081	89.85	1.113	0.061	/
Ant.0	5.6G	802.11 ac VHT80	Front Side	10	106	5530	-0.07	0.220	15.39	15.50	1.026	89.85	1.113	0.251	/
	5.6G	802.11 ac VHT80	Back Side	10	106	5530	0.10	0.041	15.39	15.50	1.026	89.85	1.113	0.047	/
Ant.1	5.6G	802.11 ac VHT80	Front Side	10	106	5530	0.15	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Back Side	10	106	5530	-0.05	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
MIMO	5.6G	802.11 ac VHT80	Front Side	10	106	5530	-0.18	0.233	18.20	18.50	1.072	89.85	1.113	<b>0.278</b>	47#
	5.6G	802.11 ac VHT80	Back Side	10	106	5530	-0.02	0.041	18.20	18.50	1.072	89.85	1.113	0.049	/
Ant.0	5.8G	802.11 ac VHT80	Front Side	10	155	5775	0.12	0.197	15.10	15.50	1.096	89.85	1.113	0.240	/
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	-0.02	0.034	15.10	15.50	1.096	89.85	1.113	0.041	/
Ant.1	5.8G	802.11 ac VHT80	Front Side	10	155	5775	0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	0.02	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
MIMO	5.8G	802.11 ac VHT80	Front Side	10	155	5775	-0.08	0.216	18.37	18.50	1.030	89.85	1.113	<b>0.248</b>	48#
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	-0.13	0.030	18.37	18.50	1.030	89.85	1.113	0.034	/
<b>Hotspot</b>															
Ant.0	5.2G	802.11 ac VHT80	Front Side	10	42	5210	-0.15	0.162	15.06	15.50	1.107	89.85	1.113	0.200	/
	5.2G	802.11 ac VHT80	Back Side	10	42	5210	0.04	0.029	15.06	15.50	1.107	89.85	1.113	0.036	/
	5.2G	802.11 ac VHT80	Left Edge	10	42	5210	0.01	0.082	15.06	15.50	1.107	89.85	1.113	0.101	/
	5.2G	802.11 ac VHT80	Right Edge	10	42	5210	-0.07	0.015	15.06	15.50	1.107	89.85	1.113	0.018	/
	5.2G	802.11 ac VHT80	Top Edge	10	42	5210	0.04	0.116	15.06	15.50	1.107	89.85	1.113	0.143	/
Ant.1	5.2G	802.11 ac VHT80	Front Side	10	42	5210	-0.03	0.001	15.18	15.50	1.076	89.85	1.113	0.001	/
	5.2G	802.11 ac VHT80	Back Side	10	42	5210	-0.09	0.001	15.18	15.50	1.076	89.85	1.113	0.001	/
	5.2G	802.11 ac VHT80	Left Edge	10	42	5210	0.08	0.001	15.18	15.50	1.076	89.85	1.113	0.001	/
	5.2G	802.11 ac VHT80	Right Edge	10	42	5210	-0.01	0.001	15.18	15.50	1.076	89.85	1.113	0.001	/
	5.2G	802.11 ac VHT80	Top Edge	10	42	5210	0.02	0.001	15.18	15.50	1.076	89.85	1.113	0.001	/
MIMO	5.2G	802.11 ac VHT80	Front Side	10	42	5210	-0.06	0.170	18.22	18.50	1.067	89.85	1.113	<b>0.202</b>	49#
	5.2G	802.11 ac VHT80	Back Side	10	42	5210	0.14	0.030	18.22	18.50	1.067	89.85	1.113	0.036	/
	5.2G	802.11 ac VHT80	Left Edge	10	42	5210	0.11	0.083	18.22	18.50	1.067	89.85	1.113	0.099	/
	5.2G	802.11 ac VHT80	Right Edge	10	42	5210	0.10	0.035	18.22	18.50	1.067	89.85	1.113	0.042	/
	5.2G	802.11 ac VHT80	Top Edge	10	42	5210	-0.09	0.119	18.22	18.50	1.067	89.85	1.113	0.141	/

Ant.0	5.8G	802.11 ac VHT80	Front Side	10	155	5775	0.12	0.197	15.10	15.50	1.096	89.85	1.113	0.240	/
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	-0.02	0.034	15.10	15.50	1.096	89.85	1.113	0.041	/
	5.8G	802.11 ac VHT80	Left Edge	10	155	5775	-0.11	0.094	15.10	15.50	1.096	89.85	1.113	0.115	/
	5.8G	802.11 ac VHT80	Right Edge	10	155	5775	0.08	0.034	15.10	15.50	1.096	89.85	1.113	0.041	/
	5.8G	802.11 ac VHT80	Top Edge	10	155	5775	-0.11	0.124	15.10	15.50	1.096	89.85	1.113	0.151	/
Ant.1	5.8G	802.11 ac VHT80	Front Side	10	155	5775	0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	0.02	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Left Edge	10	155	5775	0.02	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Right Edge	10	155	5775	-0.01	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Top Edge	10	155	5775	0.00	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
MIMO	5.8G	802.11 ac VHT80	Front Side	10	155	5775	-0.08	0.216	18.37	18.50	1.030	89.85	1.113	<b>0.248</b>	50#
	5.8G	802.11 ac VHT80	Back Side	10	155	5775	-0.13	0.030	18.37	18.50	1.030	89.85	1.113	0.034	/
	5.8G	802.11 ac VHT80	Left Edge	10	155	5775	-0.13	0.115	18.37	18.50	1.030	89.85	1.113	0.132	/
	5.8G	802.11 ac VHT80	Right Edge	10	155	5775	-0.12	0.028	18.37	18.50	1.030	89.85	1.113	0.032	/
	5.8G	802.11 ac VHT80	Top Edge	10	155	5775	-0.03	0.130	18.37	18.50	1.030	89.85	1.113	0.149	/

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

Antenna	Band	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>															
Ant.0	5.3G	802.11 ac VHT80	Front Side	0	58	5290	-0.14	0.403	15.33	15.50	1.040	89.85	1.113	0.466	/
	5.3G	802.11 ac VHT80	Back Side	0	58	5290	-0.09	0.029	15.33	15.50	1.040	89.85	1.113	0.034	/
	5.3G	802.11 ac VHT80	Left Edge	0	58	5290	-0.04	0.182	15.33	15.50	1.040	89.85	1.113	0.211	/
	5.3G	802.11 ac VHT80	Right Edge	0	58	5290	0.03	0.022	15.33	15.50	1.040	89.85	1.113	0.025	/
	5.3G	802.11 ac VHT80	Top Edge	0	58	5290	-0.12	0.229	15.33	15.50	1.040	89.85	1.113	0.265	/
Ant.1	5.3G	802.11 ac VHT80	Front Side	0	58	5290	-0.15	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Back Side	0	58	5290	0.15	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Left Edge	0	58	5290	0.08	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Right Edge	0	58	5290	0.14	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
	5.3G	802.11 ac VHT80	Top Edge	0	58	5290	-0.08	0.001	15.07	15.50	1.104	89.85	1.113	0.001	/
MIMO	5.3G	802.11 ac VHT80	Front Side	0	58	5290	0.07	0.469	18.16	18.50	1.081	89.85	1.113	<b>0.564</b>	51#
	5.3G	802.11 ac VHT80	Back Side	0	58	5290	0.14	0.032	18.16	18.50	1.081	89.85	1.113	0.039	/
	5.3G	802.11 ac VHT80	Left Edge	0	58	5290	0.06	0.219	18.16	18.50	1.081	89.85	1.113	0.263	/
	5.3G	802.11 ac VHT80	Right Edge	0	58	5290	0.00	0.027	18.16	18.50	1.081	89.85	1.113	0.032	/
	5.3G	802.11 ac VHT80	Top Edge	0	58	5290	0.11	0.285	18.16	18.50	1.081	89.85	1.113	0.343	/
Ant.0	5.6G	802.11 ac VHT80	Front Side	0	106	5530	0.10	0.420	15.39	15.50	1.026	89.85	1.113	0.480	/
	5.6G	802.11 ac VHT80	Back Side	0	106	5530	0.04	0.031	15.39	15.50	1.026	89.85	1.113	0.035	/
	5.6G	802.11 ac VHT80	Left Edge	0	106	5530	-0.13	0.209	15.39	15.50	1.026	89.85	1.113	0.239	/
	5.6G	802.11 ac VHT80	Right Edge	0	106	5530	0.14	0.026	15.39	15.50	1.026	89.85	1.113	0.030	/
	5.6G	802.11 ac VHT80	Top Edge	0	106	5530	-0.12	0.297	15.39	15.50	1.026	89.85	1.113	0.339	/
Ant.1	5.6G	802.11 ac VHT80	Front Side	0	106	5530	0.09	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Back Side	0	106	5530	0.01	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Left Edge	0	106	5530	-0.10	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Right Edge	0	106	5530	-0.04	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
	5.6G	802.11 ac VHT80	Top Edge	0	106	5530	-0.13	0.001	15.35	15.50	1.035	89.85	1.113	0.001	/
MIMO	5.6G	802.11 ac VHT80	Front Side	0	106	5530	0.05	0.435	18.20	18.50	1.072	89.85	1.113	<b>0.519</b>	52#
	5.6G	802.11 ac VHT80	Back Side	0	106	5530	-0.10	0.029	18.20	18.50	1.072	89.85	1.113	0.035	/
	5.6G	802.11 ac VHT80	Left Edge	0	106	5530	-0.08	0.199	18.20	18.50	1.072	89.85	1.113	0.237	/
	5.6G	802.11 ac VHT80	Right Edge	0	106	5530	-0.08	0.023	18.20	18.50	1.072	89.85	1.113	0.027	/
	5.6G	802.11 ac VHT80	Top Edge	0	106	5530	-0.01	0.267	18.20	18.50	1.072	89.85	1.113	0.319	/
Ant.0	5.8G	802.11 ac VHT80	Front Side	0	155	5775	-0.10	0.421	15.10	15.50	1.096	89.85	1.113	0.514	/
	5.8G	802.11 ac VHT80	Back Side	0	155	5775	-0.13	0.026	15.10	15.50	1.096	89.85	1.113	0.032	/
	5.8G	802.11 ac VHT80	Left Edge	0	155	5775	-0.06	0.175	15.10	15.50	1.096	89.85	1.113	0.213	/
	5.8G	802.11 ac VHT80	Right Edge	0	155	5775	-0.04	0.023	15.10	15.50	1.096	89.85	1.113	0.028	/
	5.8G	802.11 ac VHT80	Top Edge	0	155	5775	0.10	0.241	15.10	15.50	1.096	89.85	1.113	0.294	/
Ant.1	5.8G	802.11 ac VHT80	Front Side	0	155	5775	-0.02	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Back Side	0	155	5775	-0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/

	5.8G	802.11 ac VHT80	Left Edge	0	155	5775	-0.01	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Right Edge	0	155	5775	-0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
	5.8G	802.11 ac VHT80	Top Edge	0	155	5775	0.05	0.001	15.19	15.50	1.074	89.85	1.113	0.001	/
MIMO	5.8G	802.11 ac VHT80	Front Side	0	155	5775	0.09	0.452	18.37	18.50	1.030	89.85	1.113	<b>0.518</b>	53#
	5.8G	802.11 ac VHT80	Back Side	0	155	5775	-0.15	0.031	18.37	18.50	1.030	89.85	1.113	0.036	/
	5.8G	802.11 ac VHT80	Left Edge	0	155	5775	0.12	0.209	18.37	18.50	1.030	89.85	1.113	0.240	/
	5.8G	802.11 ac VHT80	Right Edge	0	155	5775	-0.03	0.027	18.37	18.50	1.030	89.85	1.113	0.031	/
	5.8G	802.11 ac VHT80	Top Edge	0	155	5775	-0.03	0.268	18.37	18.50	1.030	89.85	1.113	0.307	/

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

## 10.16 Bluetooth

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.
<b>Head</b>													
DH5	Left Cheek	0	0	2402	0.03	0.105	9.18	10.50	1.355	76.88	1.301	<b>0.185</b>	54#
DH5	Left Tilt	0	0	2402	0.13	0.038	9.18	10.50	1.355	76.88	1.301	0.067	/
DH5	Right Cheek	0	0	2402	0.06	0.027	9.18	10.50	1.355	76.88	1.301	0.048	/
DH5	Right Tilt	0	0	2402	-0.02	0.014	9.18	10.50	1.355	76.88	1.301	0.025	/
<b>Body-Wron&amp;Hotspot</b>													
DH5	Front Side	10	0	2402	-0.08	0.021	9.18	10.50	1.355	76.88	1.301	0.028	/
DH5	Back Side	10	0	2402	-0.06	0.000	9.18	10.50	1.355	76.88	1.301	0.000	/
DH5	Left Edge	10	0	2402	0.01	0.036	9.18	10.50	1.355	76.88	1.301	<b>0.049</b>	55#
DH5	Right Edge	10	0	2402	-0.01	0.000	9.18	10.50	1.355	76.88	1.301	0.000	/
DH5	Top Edge	10	0	2402	0.07	0.019	9.18	10.50	1.355	76.88	1.301	0.026	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	10 g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
DH5	Front Side	0	0	2402	-0.10	0.061	9.18	10.50	1.355	76.88	1.301	0.083	/
DH5	Back Side	0	0	2402	-0.04	0.000	9.18	10.50	1.355	76.88	1.301	0.000	/
DH5	Left Edge	0	0	2402	0.03	0.099	9.18	10.50	1.355	76.88	1.301	<b>0.134</b>	56#
DH5	Right Edge	0	0	2402	-0.10	0.000	9.18	10.50	1.355	76.88	1.301	0.000	/
DH5	Top Edge	0	0	2402	0.06	0.019	9.18	10.50	1.355	76.88	1.301	0.026	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.													

### 10.17 RFID

Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Duty cycle (%)	Duty cycle Factor	10g Scaled SAR (W/kg)	Meas. No.
<b>Extremity</b>													
RFID	Front Side	0	3	927.25	0.01	0.150	27.17	28.00	1.211	46.96	2.129	0.387	/
	Back Side	0	3	927.25	-0.04	0.015	27.17	28.00	1.211	46.96	2.129	0.039	/
	Left Edge	0	3	927.25	0.04	0.182	27.17	28.00	1.211	46.96	2.129	0.469	/
	Right Edge	0	3	927.25	-0.07	0.185	27.17	28.00	1.211	46.96	2.129	0.477	/
	Top Edge	0	3	927.25	0.03	0.518	27.17	28.00	1.211	46.96	2.129	<b>1.336</b>	<b>57#</b>
<p>Note1: RFID is only available for hand use according to the manual.</p> <p>Note2: Refer to ANNEX C for the detailed test data for each test configuration.</p>													

### 10.18 NFC SAR

1. According to the 2022.04 TCBC Workshop meeting, the power threshold is  $\leq 100\text{MHz}$ , refer to P6s.

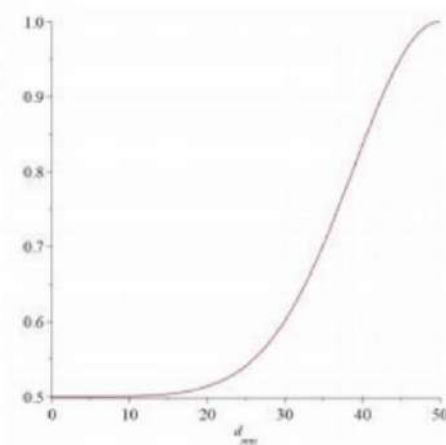
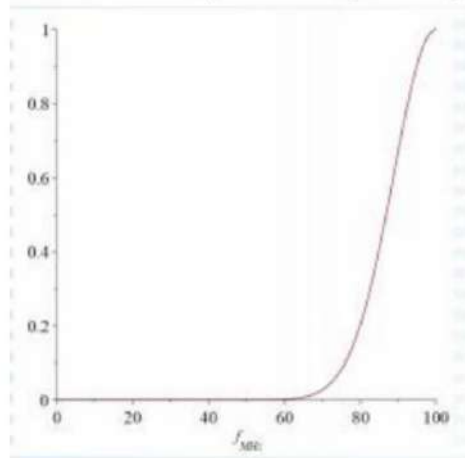
$$P_{7X}(d_{mm}, f_{MHz}) := \begin{cases} P_{6S}(d_{mm}, f_{MHz}) & f_{MHz} \leq 100 \\ P_{6to7}(d_{mm}, f_{MHz}) & 100 < f_{MHz} \leq 300 \\ P_7(d_{mm}, f_{MHz}) & 300 < f_{MHz} \end{cases}$$

2. For portable products, when using a distance of  $\leq 50\text{mm}$ , such as mobile phone NFC, P6s is calculated with the following formula calculate.

$$S_f(f_{MHz}) \cdot P_{431a}(d_{mm}, f_{MHz}) + (1 - S_f(f_{MHz})) \cdot S_d(d_{mm}) \cdot P_{431b1}(50., 100.) \cdot \left( 1. + \log_{10} \left( \frac{100.}{f_{MHz}} \right) \right) \quad d_{mm} \leq 50 \text{ and } f_{MHz} \leq 100$$

3. The smoothing functions Sf and Sd in P6s calculate the limits based on KDB 447498 V06 and are calculated as follows.

$$S_f(f_{MHz}) := \exp\left(-10 \frac{(f_{MHz} - f_{max})^2}{\Delta f^2}\right) \quad S_d(d_{mm}) := 0.5 + 0.5 \cdot \exp\left(-10 \frac{(d_{mm} - d_{max})^2}{\Delta d^2}\right)$$



d≤50mm			
f Max(MHz)	100	d Max(mm)	50
f MHz	13.56	d(mm)	5
Δf(MHz)	100	Δd	50
S <sub>f</sub> (f <sub>MHz</sub> )	0.000568861	S <sub>d</sub> (d <sub>mm</sub> )	0.50015177
P6s(mW)	443.1257378		
Note: SAR testing is required when the distance is 5mm and the power is greater than 443.13mW.			

#### 4. According to the ANSI C63.10 clause 11.12.2.2:

The value of maximum peak output power is according to the method described in ANSI C63.10 clause 11.12.2.2 General procedure for conducted measurements in restricted bands:

a) Measure the conducted output power (in dBm) using the detector specified (see guidance regarding measurement procedures for determining quasi-peak, peak, and average conducted output power, respectively).

b) Add the maximum transmit antenna gain (in dBi) to the measured output power level to determine the ERP level (see guidance on determining the applicable antenna gain)

c) Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies  $\leq$  30 MHz, 4.7 dB for frequencies between 30 MHz and 1000 MHz, inclusive and 0 dB for frequencies  $>$  1000 MHz).

d) For devices with multiple antenna-ports, measure the power of each individual chain and sum the ERP of all chains in linear terms (e.g., Watts, mW).

e) Convert the resultant ERP level to an equivalent electric field strength using the following relationship:  $E = \text{EIRP} - 20\log D + 104.8$

where:

E = electric field strength in dB $\mu$ V/m,

ERP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

Mode	f (MHz)	Max. E-Field strength (dBuV/m)	D (m)	Ground reflection factor (dB)	EIRP (dBm)
NFC (13.56MHz)	13.56	54.04	10	6	-24.76

Note:

1. Add the appropriate maximum ground reflection factor to the EIRP level (6 dB for frequencies  $\leq$  30 MHz).

2.  $\text{EIRP} = 54.04 + 20 \cdot \log(10) - 104.8 + 6 = -24.76$  (dBm)

According to the FCC KDB 447498 D04

Estimated SAR:  $\text{SAR}_{\text{test}} = 1.6 \cdot \text{P}_{\text{ant}} / \text{P}_{\text{th}}$  [W/kg]

Estimated SAR	1.6 · P <sub>ant</sub> / P <sub>th</sub> [W/kg]		
P <sub>meas.</sub> (dBm)	-24.76	P <sub>meas.</sub> (mW)	0.00334
P <sub>th.</sub> (mW)	443.13		
NFC Estimated 1g SAR [W/kg]	<0.001		



### 10.18.1 Highest Total Exposure Ratio of Simultaneous Transmission

NFC multi-transmit requires the use of the TER formula:

$$TER = \sum_{k=1}^{N_s} \left( \frac{SAR_k}{SAR_{lim}} \right) + \sum_{k=1}^{N_f} \left( \frac{MPE_{field, k}}{MPE_{field, lim}} \right)^2 + \sum_{k=1}^{N_{PD}} \left( \frac{MPE_{PD, k}}{MPE_{PD, lim}} \right)$$

The maximum 1g SAR value for Simultaneous Transmission is 1.573 [W/kg]. Therefore, the worst TER = (1.573+0.001)/1.6 = 0.984 < 1, the NFC SAR transmit simultaneously Pass.

## 11 SAR Measurement Variability

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

SAR repeated measurement procedure:

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

Frequency Band (MHz)	Wireless Band	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Repeated <sup>1st</sup> Measured SAR (W/kg)	Largest to Smallest SAR Ratio
2462	802.11 b	Head	Left Cheek	0.847	Yes	0.830	1.02
5290	802.11 ac VHT80	Head	Left Cheek	0.991	Yes	0.951	1.04
5690	802.11 ac VHT80	Head	Left Cheek	0.956	Yes	0.923	1.04
5775	802.11 ac VHT80	Head	Left Cheek	0.970	Yes	0.945	1.03

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.

Note: For product specific 10g SAR, the highest measured 10g SAR is  $0.61 < 2.0$  W/kg, repeated measurement is not required.

## 12 SIMULTANEOUS TRANSMISSION

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

### 12.1 Simultaneous Transmission Mode Consider

No.	Simultaneous Tx Combination	Head	Body-worn	Hotspot	Extremity
1	WLAN 2.4G Antenna1+BT+RFID	Yes	Yes	Yes	Yes
2	WLAN 5G Antenna0+BT+RFID	Yes	Yes	Yes	Yes
3	WLAN 5G Antenna1+BT+RFID	Yes	Yes	Yes	Yes
4	WLAN 5G MIMO+BT+RFID	Yes	Yes	Yes	Yes
5	WWAN+WLAN 2.4G Antenna0+RFID	Yes	Yes	Yes	Yes
6	WWAN+WLAN 2.4G Antenna1+RFID	Yes	Yes	Yes	Yes
7	WWAN+WLAN 2.4G MIMO+RFID	Yes	Yes	Yes	Yes
8	WWAN+WLAN 5G Antenna0+RFID	Yes	Yes	Yes	Yes
9	WWAN+WLAN 5G Antenna1+RFID	Yes	Yes	Yes	Yes
10	WWAN+WLAN 5G MIMO+RFID	Yes	Yes	Yes	Yes
11	WWAN+BT+RFID	Yes	Yes	Yes	Yes
12	WWAN+RFID	Yes	Yes	Yes	Yes
13	WWAN+WLAN 2.4G Antenna1+BT+RFID	Yes	Yes	Yes	Yes
14	WWAN+WLAN 5G Antenna0+BT+RFID	Yes	Yes	Yes	Yes
15	WWAN+WLAN 5G Antenna1+BT+RFID	Yes	Yes	Yes	Yes
16	WWAN+WLAN 5G MIMO+BT+RFID	Yes	Yes	Yes	Yes

Note:

1. WLAN 2.4G and Bluetooth share the same antenna, and can't transmit simultaneously.
2. 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.
3. The maximum SAR summation is calculated based on the same configuration and test position.
4. The simultaneous transmission combinations of the more antennas contain combinations of less antennas, so only the worst simultaneous transmission combinations is shown in this report.
5. RFID is only available for hand use according to the manual.

## 12.2 Sum SAR of Simultaneous Transmission

### 12.2.1 Head Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

Band	Position	Stand alone SAR				SUM SAR	
		1	2	3	4	Sum SAR (1+2+4)	Sum SAR (1+3+4)
		WWAN	Max.2.4GWIFI	Max.5GWIFI	Bluetooth		
GSM850	Left Cheek	0.014	0.885	1.192	0.185	1.084	1.391
	Left Tilt	0.001	0.414	0.770	0.067	0.482	0.838
	Right Cheek	0.009	0.344	1.014	0.048	0.401	1.071
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
GSM1900	Left Cheek	0.022	0.885	1.192	0.185	1.092	1.399
	Left Tilt	0.006	0.414	0.770	0.067	0.487	0.843
	Right Cheek	0.013	0.344	1.014	0.048	0.405	1.075
	Right Tilt	0.002	0.206	0.831	0.025	0.233	0.858
WCDMA B2	Left Cheek	0.177	0.885	1.192	0.185	1.247	1.554
	Left Tilt	0.062	0.414	0.770	0.067	0.543	0.899
	Right Cheek	0.072	0.344	1.014	0.048	0.464	1.134
	Right Tilt	0.046	0.206	0.831	0.025	0.277	0.902
WCDMA B4	Left Cheek	0.178	0.885	1.192	0.185	1.248	1.555
	Left Tilt	0.066	0.414	0.770	0.067	0.547	0.903
	Right Cheek	0.129	0.344	1.014	0.048	0.521	1.191
	Right Tilt	0.051	0.206	0.831	0.025	0.282	0.907
WCDMA B5	Left Cheek	0.013	0.885	1.192	0.185	1.083	1.390
	Left Tilt	0.000	0.414	0.770	0.067	0.481	0.837
	Right Cheek	0.009	0.344	1.014	0.048	0.401	1.071
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
LTE B7	Left Cheek	0.130	0.885	1.192	0.185	1.200	1.507
	Left Tilt	0.051	0.414	0.770	0.067	0.532	0.888
	Right Cheek	0.077	0.344	1.014	0.048	0.469	1.139
	Right Tilt	0.044	0.206	0.831	0.025	0.275	0.900
LTE B12	Left Cheek	0.008	0.885	1.192	0.185	1.078	1.385
	Left Tilt	0.000	0.414	0.770	0.067	0.481	0.837
	Right Cheek	0.004	0.344	1.014	0.048	0.396	1.066
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
LTE B13	Left Cheek	0.004	0.885	1.192	0.185	1.074	1.381
	Left Tilt	0.000	0.414	0.770	0.067	0.481	0.837
	Right Cheek	0.002	0.344	1.014	0.048	0.394	1.064
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
LTE B25	Left Cheek	0.196	0.885	1.192	0.185	1.266	<b>1.573</b>
	Left Tilt	0.128	0.414	0.770	0.067	0.609	0.965
	Right Cheek	0.155	0.344	1.014	0.048	0.547	1.217

	Right Tilt	0.113	0.206	0.831	0.025	0.344	0.969
LTE B26	Left Cheek	0.066	0.885	1.192	0.185	1.136	1.443
	Left Tilt	0.012	0.414	0.770	0.067	0.493	0.849
	Right Cheek	0.034	0.344	1.014	0.048	0.426	1.096
	Right Tilt	0.008	0.206	0.831	0.025	0.239	0.864
LTE B66	Left Cheek	0.121	0.885	1.192	0.185	1.191	1.498
	Left Tilt	0.014	0.414	0.770	0.067	0.495	0.851
	Right Cheek	0.068	0.344	1.014	0.048	0.460	1.130
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
LTE B71	Left Cheek	0.008	0.885	1.192	0.185	1.078	1.385
	Left Tilt	0.000	0.414	0.770	0.067	0.481	0.837
	Right Cheek	0.003	0.344	1.014	0.048	0.395	1.065
	Right Tilt	0.000	0.206	0.831	0.025	0.231	0.856
LTE B41	Left Cheek	0.171	0.885	1.192	0.185	1.241	1.548
	Left Tilt	0.093	0.414	0.770	0.067	0.574	0.930
	Right Cheek	0.140	0.344	1.014	0.048	0.532	1.202
	Right Tilt	0.071	0.206	0.831	0.025	0.302	0.927

Note:

1: The highest Summed 1g SAR is 1.573 W/Kg &lt; 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

## 12.2.2 Body-worn&Hotspot Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

Band	Position	Stand alone SAR				SUM SAR	
		1	2	3	4	Sum SAR (1+2+4)	Sum SAR (1+3+4)
		WWAN	Max.2.4GWIFI	Max.5GWIFI	Bluetooth		
GSM850	Front Side 10mm	0.060	0.289	0.278	0.028	0.377	0.366
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.056	0.465	0.132	0.049	0.570	0.237
	Right Edge 10mm	0.064	0.001	0.042	0.000	0.065	0.106
	Bottom Edge 10mm	0.076	0.240	0.000	0.000	0.316	0.076
GSM1900	Front Side 10mm	0.106	0.289	0.278	0.028	0.423	0.412
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.052	0.465	0.132	0.049	0.566	0.233
	Right Edge 10mm	0.134	0.001	0.042	0.000	0.135	0.176
	Bottom Edge 10mm	0.140	0.240	0.000	0.000	0.380	0.140
WCDMA B2	Front Side 10mm	0.175	0.289	0.278	0.028	0.492	0.481
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.086	0.465	0.132	0.049	0.600	0.267
	Right Edge 10mm	0.220	0.001	0.042	0.000	0.221	0.262
	Bottom Edge 10mm	0.226	0.240	0.000	0.000	0.466	0.226
WCDMA B4	Front Side 10mm	0.143	0.289	0.278	0.028	0.460	0.449
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.082	0.465	0.132	0.049	0.596	0.263
	Right Edge 10mm	0.192	0.001	0.042	0.000	0.193	0.234
	Bottom Edge 10mm	0.223	0.240	0.000	0.000	0.463	0.223
WCDMA B5	Front Side 10mm	0.050	0.289	0.278	0.028	0.367	0.356
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.058	0.001	0.042	0.000	0.059	0.100
	Bottom Edge 10mm	0.068	0.240	0.000	0.000	0.308	0.068
LTE B7	Front Side 10mm	0.167	0.289	0.278	0.028	0.484	0.473
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.069	0.465	0.132	0.049	0.583	0.250
	Right Edge 10mm	0.205	0.001	0.042	0.000	0.206	0.247
	Bottom Edge 10mm	0.521	0.240	0.000	0.000	<b>0.761</b>	0.521
LTE B12	Front Side 10mm	0.005	0.289	0.278	0.028	0.322	0.311
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.000	0.001	0.042	0.000	0.001	0.042
	Bottom Edge 10mm	0.015	0.240	0.000	0.000	0.255	0.015
LTE B13	Front Side 10mm	0.000	0.289	0.278	0.028	0.317	0.306

	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.000	0.001	0.042	0.000	0.001	0.042
	Bottom Edge 10mm	0.012	0.240	0.000	0.000	0.252	0.012
LTE B25	Front Side 10mm	0.178	0.289	0.278	0.028	0.495	0.484
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.079	0.465	0.132	0.049	0.593	0.260
	Right Edge 10mm	0.208	0.001	0.042	0.000	0.209	0.250
	Bottom Edge 10mm	0.222	0.240	0.000	0.000	0.462	0.222
LTE B26	Front Side 10mm	0.024	0.289	0.278	0.028	0.341	0.330
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.000	0.001	0.042	0.000	0.001	0.042
	Bottom Edge 10mm	0.065	0.240	0.000	0.000	0.305	0.065
LTE B66	Front Side 10mm	0.103	0.289	0.278	0.028	0.420	0.409
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.066	0.465	0.132	0.049	0.580	0.247
	Right Edge 10mm	0.165	0.001	0.042	0.000	0.166	0.207
	Bottom Edge 10mm	0.152	0.240	0.000	0.000	0.392	0.152
LTE B71	Front Side 10mm	0.010	0.289	0.278	0.028	0.327	0.316
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.000	0.001	0.042	0.000	0.001	0.042
	Bottom Edge 10mm	0.014	0.240	0.000	0.000	0.254	0.014
LTE B41	Front Side 10mm	0.147	0.289	0.278	0.028	0.464	0.453
	Back Side 10mm	0.000	0.001	0.061	0.000	0.001	0.061
	Left Edge 10mm	0.000	0.465	0.132	0.049	0.514	0.181
	Right Edge 10mm	0.206	0.001	0.042	0.000	0.207	0.248
	Bottom Edge 10mm	0.262	0.240	0.000	0.000	0.502	0.262

## Note:

1: The highest Summed 1g SAR is 0.761 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

### 12.2.3 Extremity Simultaneous Transmission SAR Evaluation for WWAN Antenna with WLAN and Bluetooth

Band	Position	Stand alone SAR					SUM SAR	
		1	2	3	4	5	Sum SAR (1+2+4)	Sum SAR (1+3+4)
		WWAN	Max.2.4GWIFI	Max.5GWIFI	Bluetooth	RFID		
GSM850	Front Side 0mm	0.120	0.709	0.564	0.083	0.387	1.299	1.154
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.057	1.107	0.263	0.134	0.469	1.767	0.923
	Right Edge 0mm	0.076	0.005	0.032	0.000	0.477	0.558	0.585
	Bottom Edge 0mm	0.244	0.000	0.000	0.000	0.000	0.244	0.244
GSM1900	Front Side 0mm	0.226	0.709	0.564	0.083	0.387	1.405	1.260
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.059	1.107	0.263	0.134	0.469	1.769	0.925
	Right Edge 0mm	0.295	0.005	0.032	0.000	0.477	0.777	0.804
	Bottom Edge 0mm	0.440	0.000	0.000	0.000	0.000	0.440	0.440
WCDMA B2	Front Side 0mm	0.325	0.709	0.564	0.083	0.387	1.504	1.359
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.085	1.107	0.263	0.134	0.469	1.795	0.951
	Right Edge 0mm	0.436	0.005	0.032	0.000	0.477	0.918	0.945
	Bottom Edge 0mm	0.682	0.000	0.000	0.000	0.000	0.682	0.682
WCDMA B4	Front Side 0mm	0.314	0.709	0.564	0.083	0.387	1.493	1.348
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.084	1.107	0.263	0.134	0.469	1.794	0.950
	Right Edge 0mm	0.419	0.005	0.032	0.000	0.477	0.901	0.928
	Bottom Edge 0mm	0.613	0.000	0.000	0.000	0.000	0.613	0.613
WCDMA B5	Front Side 0mm	0.102	0.709	0.564	0.083	0.387	1.281	1.136
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.054	1.107	0.263	0.134	0.469	1.764	0.920
	Right Edge 0mm	0.072	0.005	0.032	0.000	0.477	0.554	0.581
	Bottom Edge 0mm	0.177	0.000	0.000	0.000	0.000	0.177	0.177
LTE B7	Front Side 0mm	0.620	0.709	0.564	0.083	0.387	1.799	1.654
	Back Side 0mm	0.056	0.001	0.039	0.000	0.039	0.096	0.134
	Left Edge 0mm	0.136	1.107	0.263	0.134	0.469	<b>1.846</b>	1.002
	Right Edge 0mm	0.412	0.005	0.032	0.000	0.477	0.894	0.921
	Bottom Edge 0mm	1.183	0.000	0.000	0.000	0.000	1.183	1.183
LTE B12	Front Side 0mm	0.011	0.709	0.564	0.083	0.387	1.190	1.045
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.003	1.107	0.263	0.134	0.469	1.713	0.869
	Right Edge 0mm	0.003	0.005	0.032	0.000	0.477	0.485	0.512
	Bottom Edge 0mm	0.050	0.000	0.000	0.000	0.000	0.050	0.050
LTE B13	Front Side 0mm	0.025	0.709	0.564	0.083	0.387	1.204	1.059



	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.000	1.107	0.263	0.134	0.469	1.710	0.866
	Right Edge 0mm	0.000	0.005	0.032	0.000	0.477	0.482	0.509
	Bottom Edge 0mm	0.043	0.000	0.000	0.000	0.000	0.043	0.043
LTE B25	Front Side 0mm	0.411	0.709	0.564	0.083	0.387	1.590	1.445
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.094	1.107	0.263	0.134	0.469	1.804	0.960
	Right Edge 0mm	0.595	0.005	0.032	0.000	0.477	1.077	1.104
	Bottom Edge 0mm	0.703	0.000	0.000	0.000	0.000	0.703	0.703
LTE B26	Front Side 0mm	0.088	0.709	0.564	0.083	0.387	1.267	1.122
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.058	1.107	0.263	0.134	0.469	1.768	0.924
	Right Edge 0mm	0.086	0.005	0.032	0.000	0.477	0.568	0.595
	Bottom Edge 0mm	0.111	0.000	0.000	0.000	0.000	0.111	0.111
LTE B66	Front Side 0mm	0.309	0.709	0.564	0.083	0.387	1.488	1.343
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.080	1.107	0.263	0.134	0.469	1.790	0.946
	Right Edge 0mm	0.412	0.005	0.032	0.000	0.477	0.894	0.921
	Bottom Edge 0mm	0.461	0.000	0.000	0.000	0.000	0.461	0.461
LTE B71	Front Side 0mm	0.027	0.709	0.564	0.083	0.387	1.206	1.061
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.000	1.107	0.263	0.134	0.469	1.710	0.866
	Right Edge 0mm	0.000	0.005	0.032	0.000	0.477	0.482	0.509
	Bottom Edge 0mm	0.049	0.000	0.000	0.000	0.000	0.049	0.049
LTE B41	Front Side 0mm	0.468	0.709	0.564	0.083	0.387	1.647	1.502
	Back Side 0mm	0.000	0.001	0.039	0.000	0.039	0.040	0.078
	Left Edge 0mm	0.070	1.107	0.263	0.134	0.469	1.780	0.936
	Right Edge 0mm	0.463	0.005	0.032	0.000	0.477	0.945	0.972
	Bottom Edge 0mm	0.785	0.000	0.000	0.000	0.000	0.785	0.785

## Note:

1: The highest Summed 10g SAR is 1.846 W/Kg < 4.0 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	DASY6	16.0.0.116	N/A	N/A
750MHz Validation Dipole	Speag	D750V3	SN: 1208	2021/07/05	2024/07/05
835MHz Validation Dipole	Speag	D835V2	SN: 4d187	2021/05/17	2024/05/17
1750MHz Validation Dipole	Speag	D1750V2	SN: 1130	2021/05/17	2024/05/17
1900MHz Validation Dipole	Speag	D1900V2	SN: 5d193	2021/05/20	2024/05/20
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2021/05/19	2024/05/19
2600MHz Validation Dipole	Speag	D2600V2	SN: 1095	2021/05/19	2024/05/19
5GHz Validation Dipole	Speag	D5GHzV2	SN: 1200	2021/05/18	2024/05/18
E-Field Probe	Speag	EX3DV4	SN: 7607	2023/07/04	2024/07/04
Data Acquisition Electronicsr	Speag	DAE4	SN: 878	2023/03/23	2024/03/23
Signal Generator	R&S	SMB100A	177746	2023/05/10	2024/05/10
Signal Generator	R&S	SMB100A	182396	2023/09/05	2024/09/05
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	Anritsu	MT8820C	6201144551	2023/06/29	2024/06/29
Network Analyzer	Agilent	E5071B	MY42404001	2023/03/26	2024/03/26
Thermometer	Elitech	RC-4HC	EF7225003029	2023/07/14	2024/07/14
Thermometer	Elitech	RC-4	EF5238001629	2023/10/09	2024/10/09
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. (°C)	Meas. Conductivity ( $\sigma$ ) (S/m)	Meas. Permittivity ( $\epsilon$ )	Target Conductivity ( $\sigma$ ) (S/m)	Target Permittivity ( $\epsilon$ )	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2023.11.05	Head	750	21.5	0.92	42.46	0.89	41.94	3.15	1.24
2023.11.06	Head	750	21.5	0.90	42.53	0.89	41.94	1.35	1.40
2023.11.07	Head	835	21.5	0.88	42.81	0.90	41.50	-2.11	3.16
2023.11.08	Head	835	21.4	0.88	42.53	0.90	41.50	-2.67	2.47
2023.11.09	Head	1750	21.6	1.37	39.29	1.37	40.08	0.07	-1.98
2023.11.10	Head	1900	21.3	1.38	40.31	1.40	40.00	-1.14	0.78
2023.11.11	Head	1900	21.2	1.42	40.67	1.40	40.00	1.36	1.68
2023.12.24	Head	2450	21.4	1.82	38.06	1.80	39.20	1.17	-2.92
2023.12.25	Head	2450	21.6	1.81	38.94	1.80	39.20	0.28	-0.65
2023.11.12	Head	2600	21.4	1.98	38.06	1.96	39.01	1.12	-2.44
2023.12.26	Head	5250	21.2	4.68	35.89	4.71	35.93	-0.72	-0.12
2023.12.27	Head	5250	21.5	4.71	35.60	4.71	35.93	-0.02	-0.92
2023.12.28	Head	5600	21.4	5.05	35.84	5.07	35.53	-0.37	0.88
2023.12.29	Head	5600	21.5	5.16	35.64	5.07	35.53	1.74	0.32
2023.12.30	Head	5750	21.3	5.15	35.82	5.22	35.36	-1.42	1.31
2023.12.31	Head	5750	21.2	5.16	35.69	5.22	35.36	-1.07	0.93

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

## ANNEX B SYSTEM CHECK RESULT

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

Head liquid 1g

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2023.11.05	Head	750	100	0.85	8.52	8.29	2.77
2023.11.06	Head	750	100	0.85	8.46	8.29	2.05
2023.11.07	Head	835	100	0.95	9.54	9.76	-2.25
2023.11.08	Head	835	100	0.97	9.67	9.76	-0.92
2023.11.09	Head	1750	100	3.68	36.80	36.70	0.27
2023.11.10	Head	1900	100	3.97	39.70	40.30	-1.49
2023.11.11	Head	1900	100	3.89	38.90	40.30	-3.47
2023.12.24	Head	2450	100	5.34	53.40	53.00	0.75
2023.12.25	Head	2450	100	5.45	54.50	53.00	2.83
2023.11.12	Head	2600	100	5.75	57.50	56.80	1.23
2023.12.26	Head	5250	100	7.76	77.60	77.80	-0.26
2023.12.27	Head	5250	100	7.68	76.80	77.80	-1.29
2023.12.28	Head	5600	100	8.20	82.00	81.20	0.99
2023.12.29	Head	5600	100	8.27	82.70	81.20	1.85
2023.12.30	Head	5750	100	7.78	77.80	77.20	0.78
2023.12.31	Head	5750	100	7.67	76.70	77.20	-0.65

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

## Head liquid 10g

Date	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2023.11.05	750	100	0.55	5.54	5.38	2.97
2023.11.06	750	100	0.55	5.47	5.38	1.67
2023.11.07	835	100	0.62	6.19	6.34	-2.37
2023.11.08	835	100	0.62	6.22	6.34	-1.89
2023.11.09	1750	100	1.92	19.20	19.10	0.52
2023.11.10	1900	100	2.06	20.60	20.30	1.48
2023.11.11	1900	100	2.02	20.20	20.30	-0.49
2023.12.24	2450	100	2.38	23.80	24.10	-1.24
2023.12.25	2450	100	2.40	24.00	24.10	-0.41
2023.11.12	2600	100	2.50	25.00	24.80	0.81
2023.12.26	5250	100	2.24	22.40	22.10	1.36
2023.12.27	5250	100	2.18	21.80	22.10	-1.36
2023.12.28	5600	100	2.28	22.80	23.10	-1.30
2023.12.29	5600	100	2.32	23.20	23.10	0.43
2023.12.30	5750	100	2.18	21.80	21.70	0.46
2023.12.31	5750	100	2.09	20.90	21.70	-3.69

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

# System Performance Check Data (750MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD750V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		CD750	CW, 0--	750.0, 100	10.31	0.918	42.5	22.4	21.5

## Hardware Setup

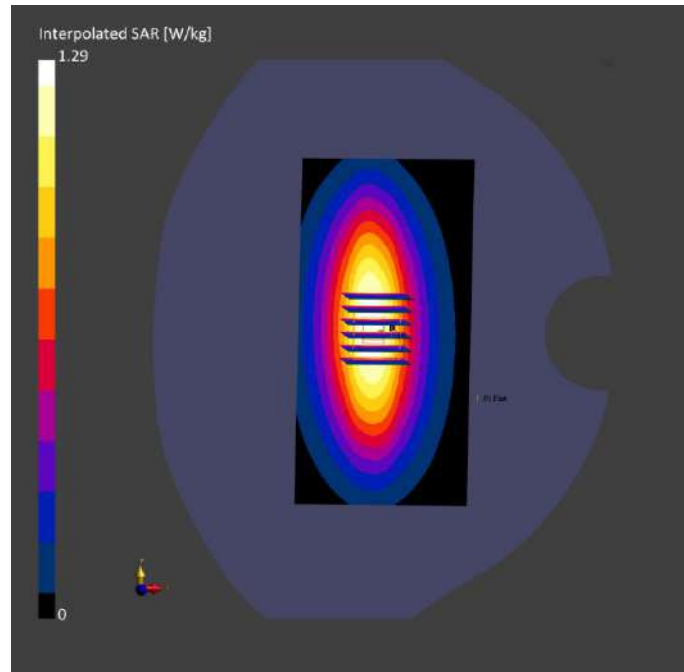
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.843	0.852
psSAR10g [W/kg]	0.546	0.554
Power Drift [dB]	-0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.7
Dist 3dB Peak [mm]		20.3



# System Performance Check Data (750MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD750V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		CD750	CW, 0--	750.0, 100	10.31	0.902	42.5	22.6	21.5

## Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-06	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

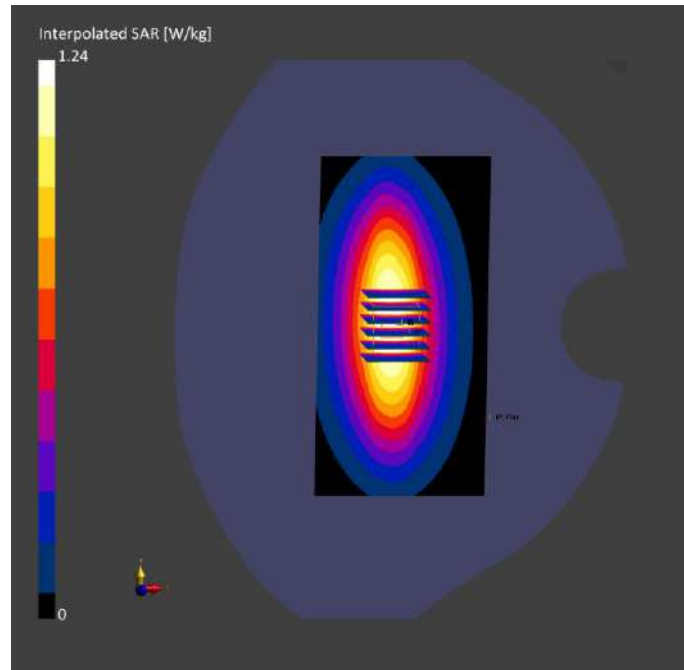
## Scan Setup

	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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-06	2023-11-06
psSAR1g [W/kg]	0.833	0.846
psSAR10g [W/kg]	0.537	0.547
Power Drift [dB]	0.06	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.3
Dist 3dB Peak [mm]		20.1





# System Performance Check Data (835MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD835V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		CD835	CW, 0--	835.0, 50	9.96	0.881	42.8	22.4	21.5

## Hardware Setup

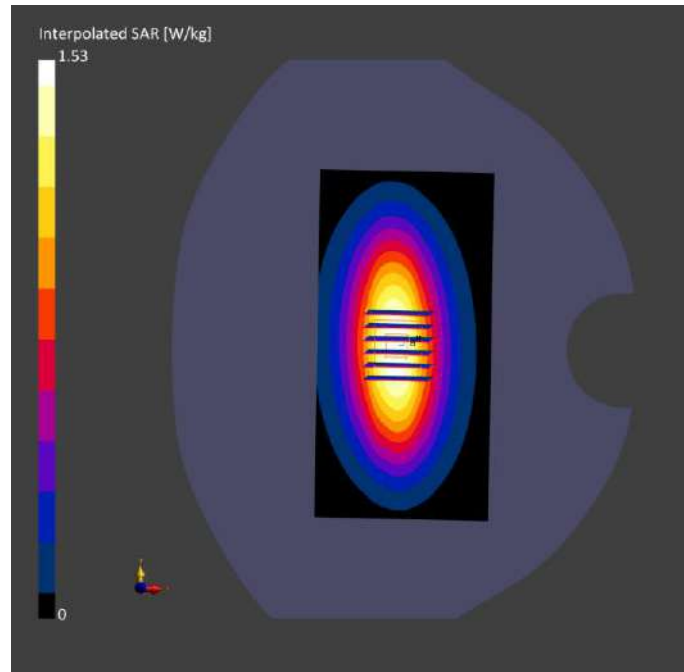
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.942	0.954
psSAR10g [W/kg]	0.605	0.619
Power Drift [dB]	-0.02	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.7
Dist 3dB Peak [mm]		13.1



# System Performance Check Data (835MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD835V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		CD835	CW, 0--	835.0, 50	9.96	0.876	42.5	22.7	21.4

## Hardware Setup

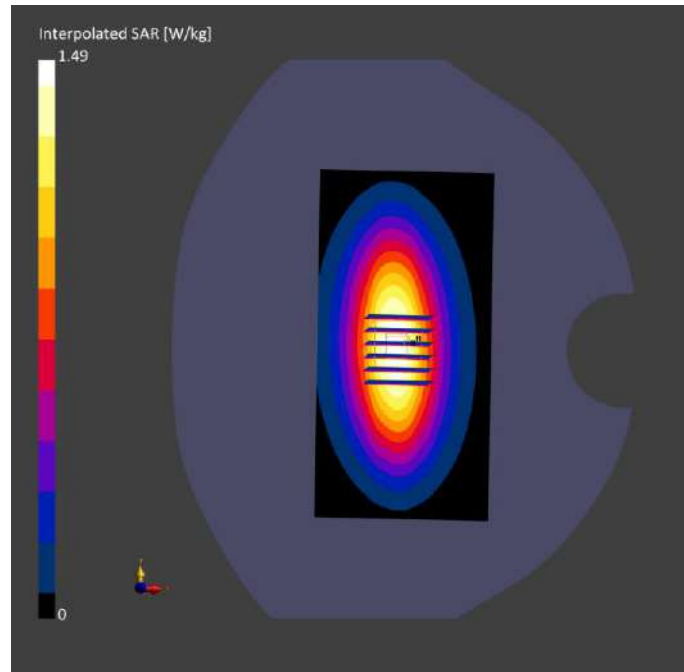
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-08	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-08	2023-11-08
psSAR1g [W/kg]	0.954	0.967
psSAR10g [W/kg]	0.616	0.622
Power Drift [dB]	0.03	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.1
Dist 3dB Peak [mm]		13.2



# 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	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D1750	CW, 0--	1750.0, 50	8.52	1.37	39.3	22.6	21.6

## Hardware Setup

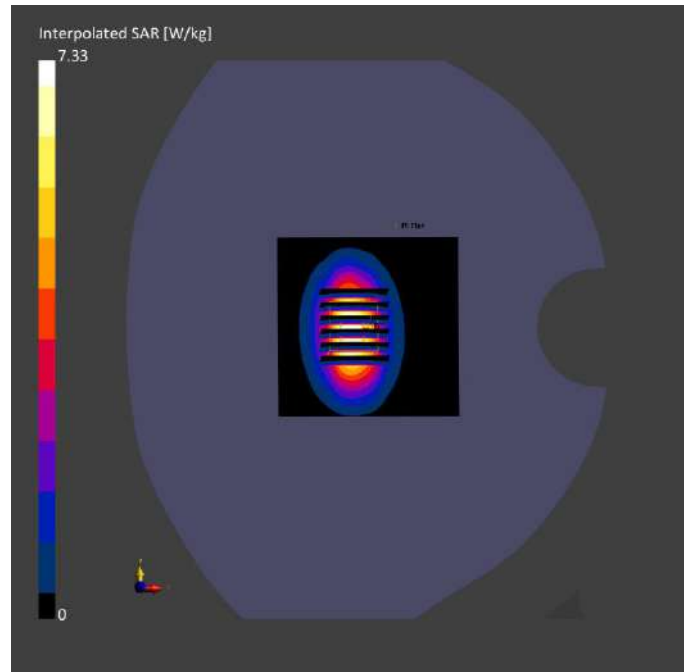
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	3.57	3.68
psSAR10g [W/kg]	1.84	1.92
Power Drift [dB]	-0.03	-0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.3
Dist 3dB Peak [mm]		9.9



# System Performance Check Data (1900MHz)

## Device under Test Properties

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

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D1900	CW, 0--	1900.0, 50	7.98	1.38	40.3	22.5	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 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

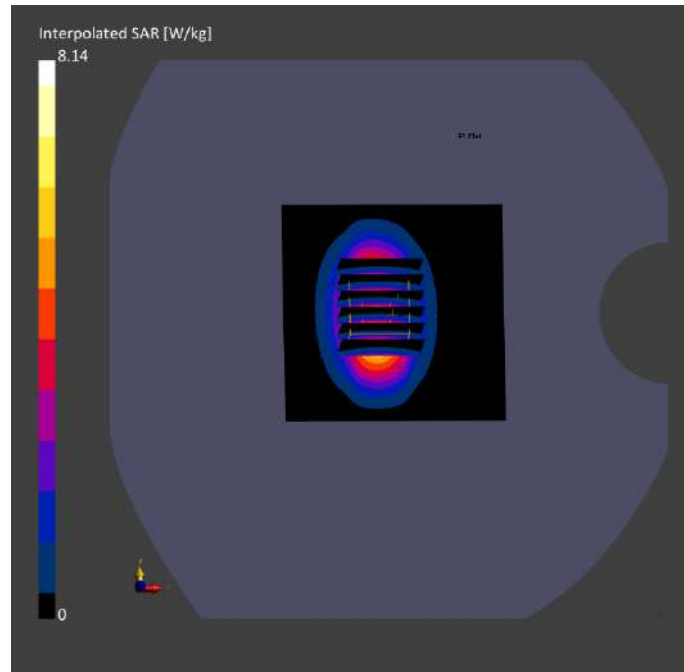
## Scan Setup

	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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	3.78	3.97
psSAR10g [W/kg]	2.01	2.06
Power Drift [dB]	-0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.1
Dist 3dB Peak [mm]		9.6





# System Performance Check Data (1900MHz)

## Device under Test Properties

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

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D1900	CW, 0--	1900.0, 50	7.98	1.42	40.7	22.6	21.2

## Hardware Setup

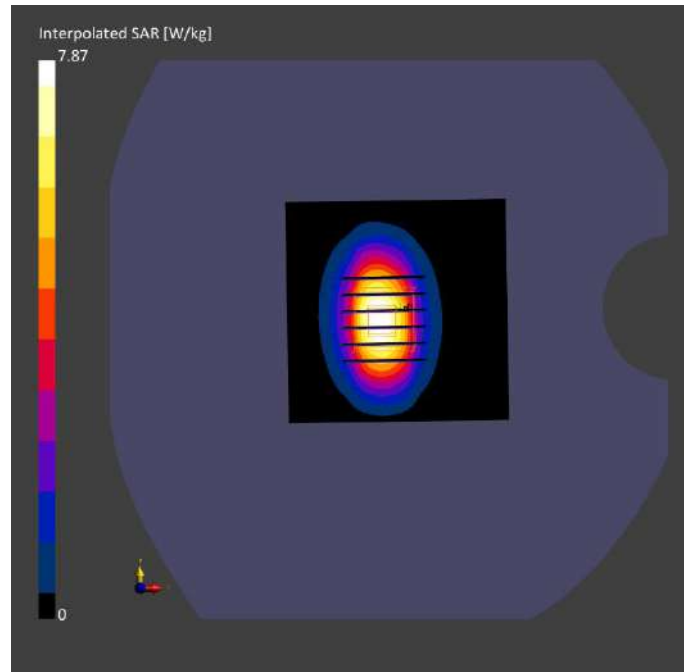
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-11	2023-11-11
psSAR1g [W/kg]	3.70	3.89
psSAR10g [W/kg]	1.89	2.02
Power Drift [dB]	0.04	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		80.1
Dist 3dB Peak [mm]		9.1



# System Performance Check Data (2600MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD2600V3, 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 [°C]	Liquid Temperature [°C]
Flat, HSL		CD2600V3	CW, 0--	2600.0, 50	7.41	1.98	38.1	22.4	21.4

## Hardware Setup

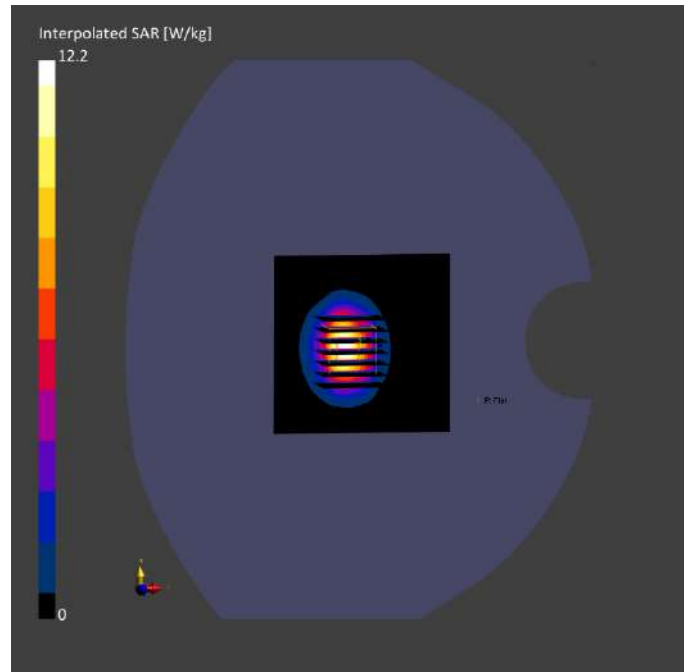
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	5.71	5.75
psSAR10g [W/kg]	2.46	2.50
Power Drift [dB]	0.00	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		79.6
Dist 3dB Peak [mm]		9.0



# System Performance Check Data (2450MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D2450V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D2450	CW, 0--	2450.0, 50	7.47	1.82	38.1	22.5	21.4

## Hardware Setup

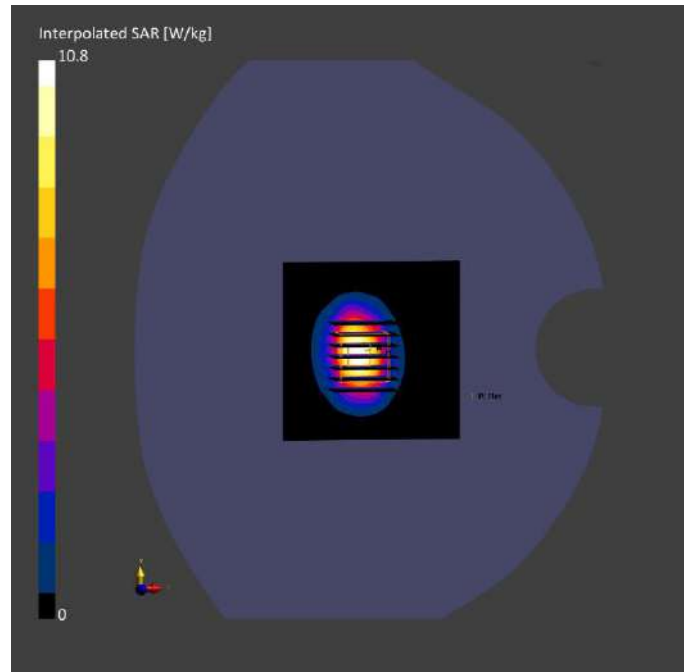
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## 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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	5.35	5.34
psSAR10g [W/kg]	2.31	2.38
Power Drift [dB]	-0.02	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		80.5
Dist 3dB Peak [mm]		9.0



# System Performance Check Data (2450MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D2450V2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D2450	CW, 0--	2450.0, 50	7.47	1.81	38.9	22.7	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 2023-12-25	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

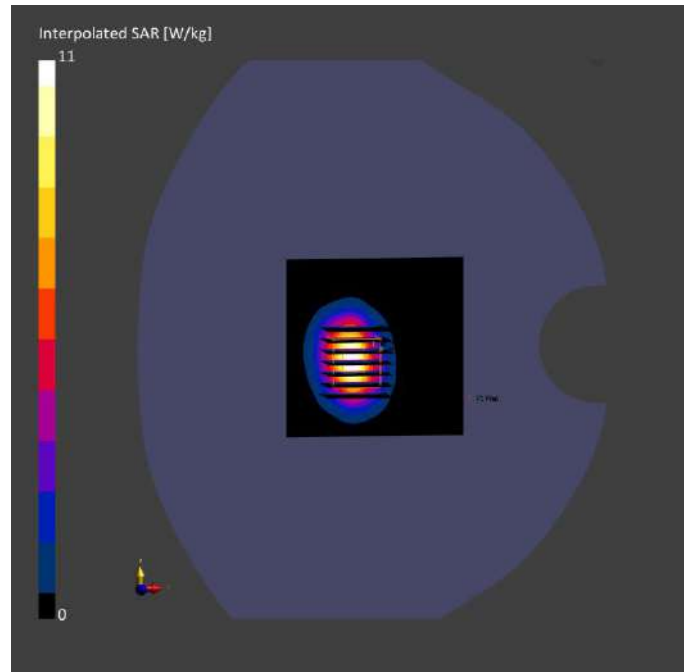
## Scan Setup

	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 Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-25	2023-12-25
psSAR1g [W/kg]	5.30	5.45
psSAR10g [W/kg]	2.31	2.40
Power Drift [dB]	-0.10	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.5
Dist 3dB Peak [mm]		9.3





# System Performance Check Data (5250MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHZ	CW, 0--	5250.0, 25	5.41	4.68	35.9	22.3	21.2

## Hardware Setup

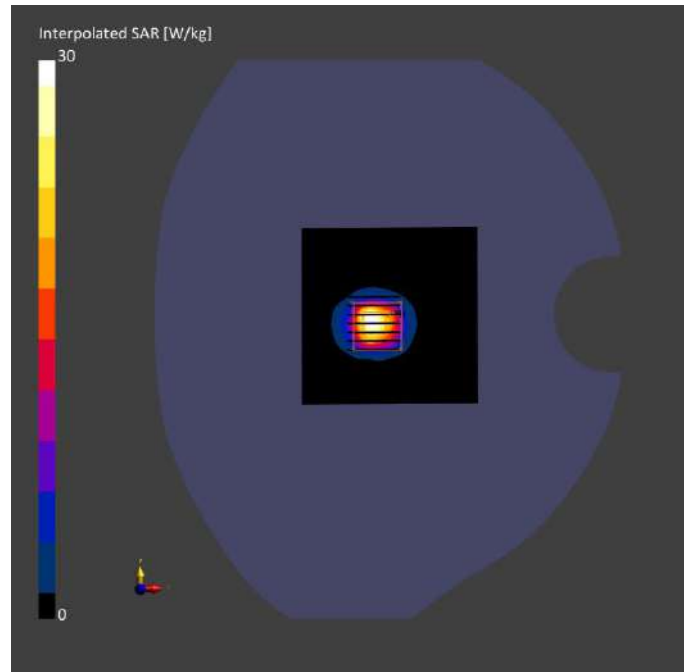
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-26	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-26	2023-12-26
psSAR1g [W/kg]	6.84	7.76
psSAR10g [W/kg]	2.16	2.24
Power Drift [dB]	-0.04	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		64.6
Dist 3dB Peak [mm]		6.8



# System Performance Check Data (5250MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Section, Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHZ	CW, 0--	5250.0, 25	5.41	4.71	35.6	22.4	21.5

## Hardware Setup

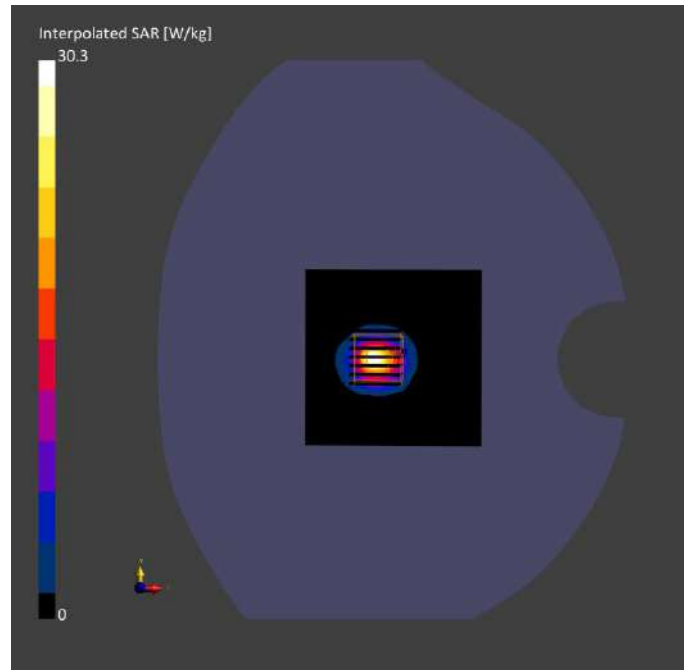
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-27	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-27	2023-12-27
psSAR1g [W/kg]	6.94	7.68
psSAR10g [W/kg]	2.01	2.18
Power Drift [dB]	-0.05	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		64.1
Dist 3dB Peak [mm]		6.5



# System Performance Check Data (5600MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHZ	CW, 0--	5600.0, 60	4.58	5.05	35.8	22.4	21.4

## Hardware Setup

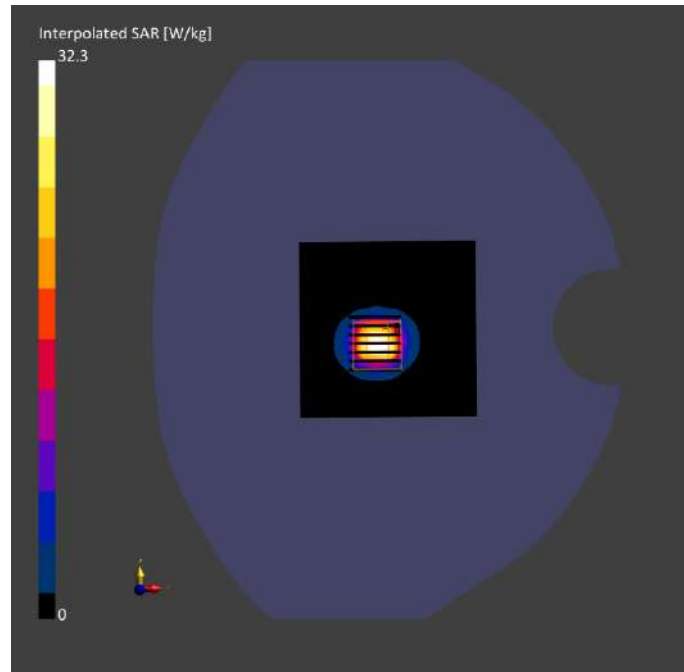
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-28	2023-12-28
psSAR1g [W/kg]	7.83	8.20
psSAR10g [W/kg]	2.15	2.28
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		64.2
Dist 3dB Peak [mm]		7.4



# System Performance Check Data (5600MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHZ	CW, 0--	5600.0, 60	4.58	5.16	35.6	22.3	21.5

## Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-29	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

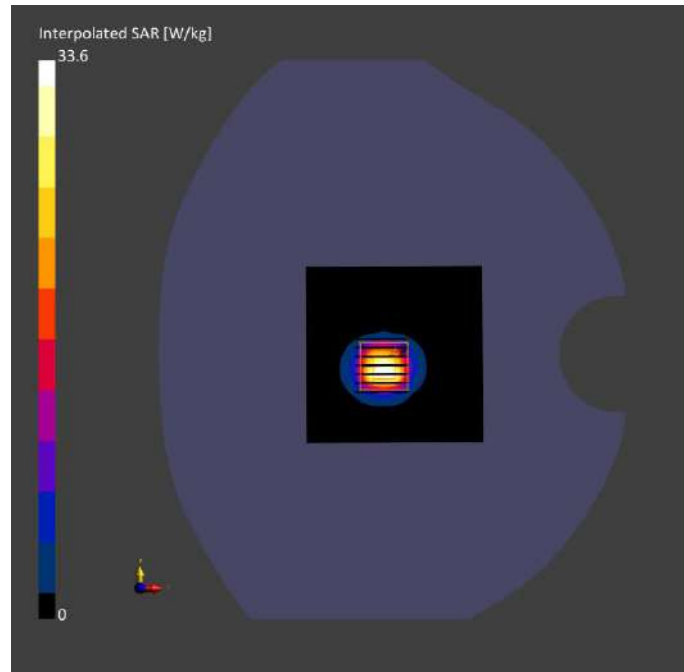
## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-29	2023-12-29
psSAR1g [W/kg]	7.64	8.27
psSAR10g [W/kg]	2.15	2.32
Power Drift [dB]	-0.02	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		63.2
Dist 3dB Peak [mm]		7.1





# System Performance Check Data (5750MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, SPEAG	10.0 x 10.0 x 3.0	Dipole

## Exposure Conditions

Phantom	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHZ	CW, 0--	5750.0, 75	4.78	5.15	35.8	22.2	21.3

## Hardware Setup

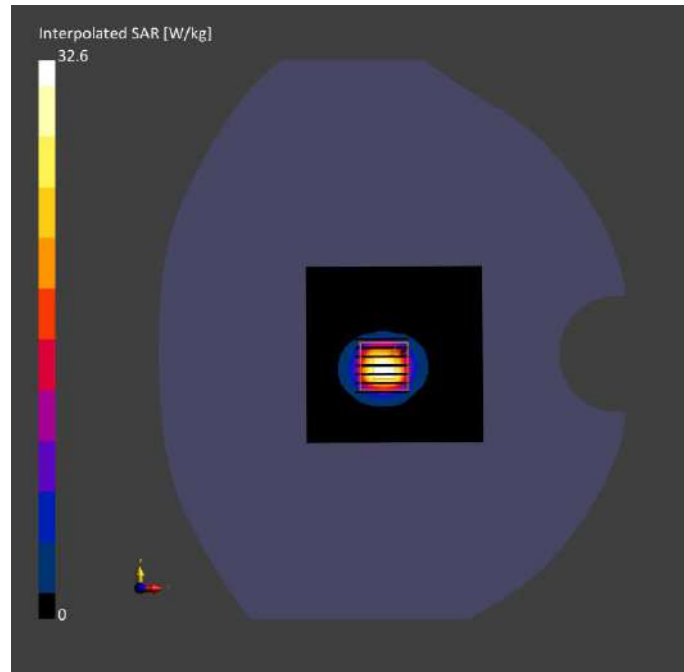
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-30	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA Surface	N/A	N/A
Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-30	2023-12-30
psSAR1g [W/kg]	6.83	7.78
psSAR10g [W/kg]	2.10	2.18
Power Drift [dB]	-0.01	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		61.4
Dist 3dB Peak [mm]		7.4



# System Performance Check Data (5750MHz)

## Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D5GHZV2, 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 [°C]	Liquid Temperature [°C]
Flat, HSL		D5GHz	CW, 0--	5750.0, 75	4.78	5.16	35.7	22.1	21.2

## Hardware Setup

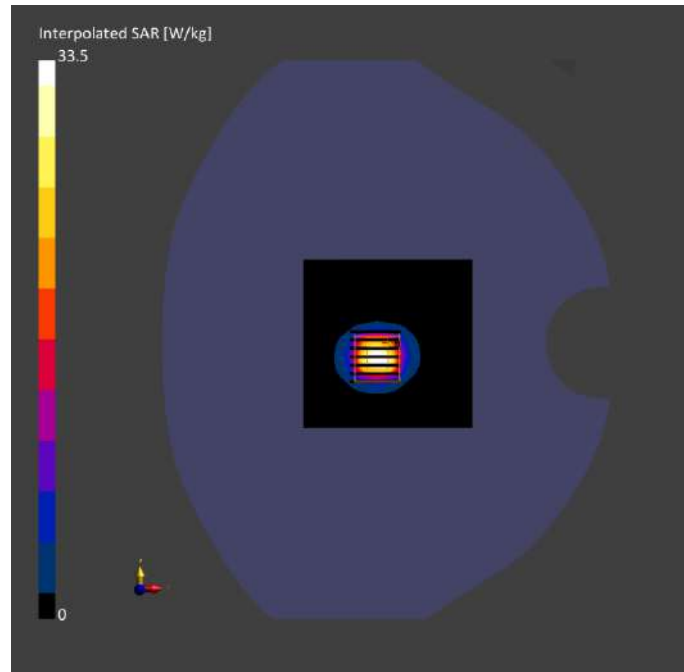
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2023-12-31	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

## Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

## Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-31	2023-12-31
psSAR1g [W/kg]	6.73	7.67
psSAR10g [W/kg]	2.01	2.09
Power Drift [dB]	0.01	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		61.2
Dist 3dB Peak [mm]		7.1



## ANNEX C TEST DATA

### Meas.1 Left Head with Cheek on High Channel in GPRS850 3Slots mode

#### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	GSM 850	GSM, 10028-DAC	848.8, 251	9.96	0.927	40.9	22.4	21.5

#### Hardware Setup

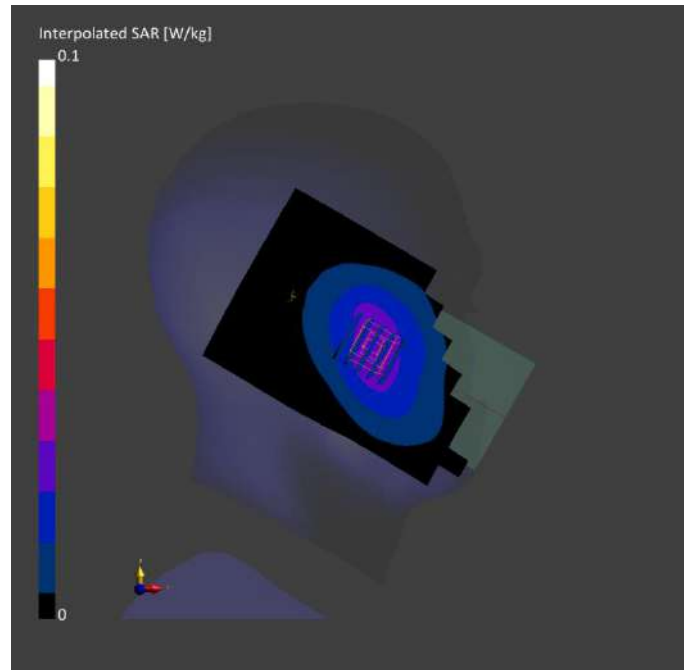
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

#### 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	Y	Y
Surface Detection	VMS + 6p	All points
Scan Method	Measured	Measured

#### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.018	0.012
psSAR10g [W/kg]	0.011	0.009
Power Drift [dB]	-0.10	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.2
Dist 3dB Peak [mm]		> 16.0



## Meas.2 Body Plane with Bottom Edge 10mm on High Channel in GPRS850 3Slots mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	GSM, 850	GSM, 10024-DAC	848.8, 251	9.96	0.927	40.9	22.4	21.5

### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

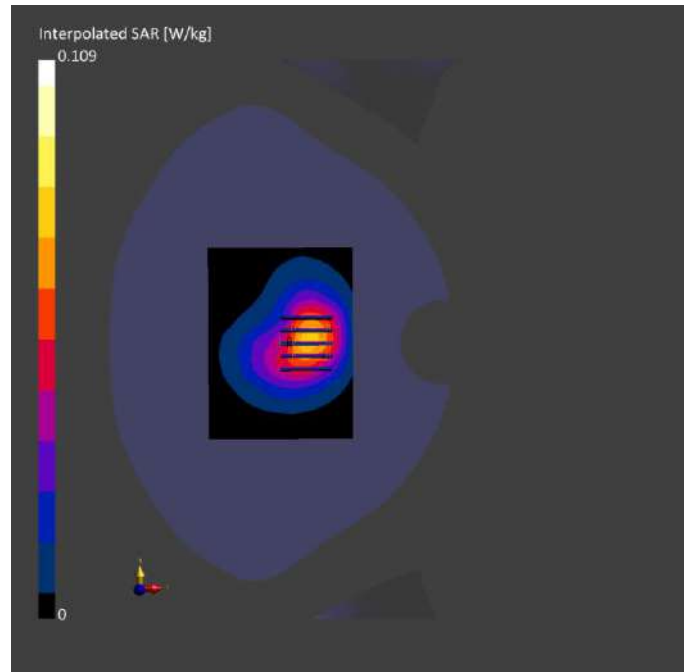
### Scan Setup

	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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.062	0.065
psSAR10g [W/kg]	0.041	0.039
Power Drift [dB]	-0.08	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		58.2
Dist 3dB Peak [mm]		> 16.0





### Meas.3 Body Plane with Bottom Edge 0mm on High Channel in GPRS850 3Slots mode

#### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM	GSM, 850	GSM, 10024-DAC	848.8, 251	9.96	0.927	40.9	22.4	21.5
	0.00								

#### Hardware Setup

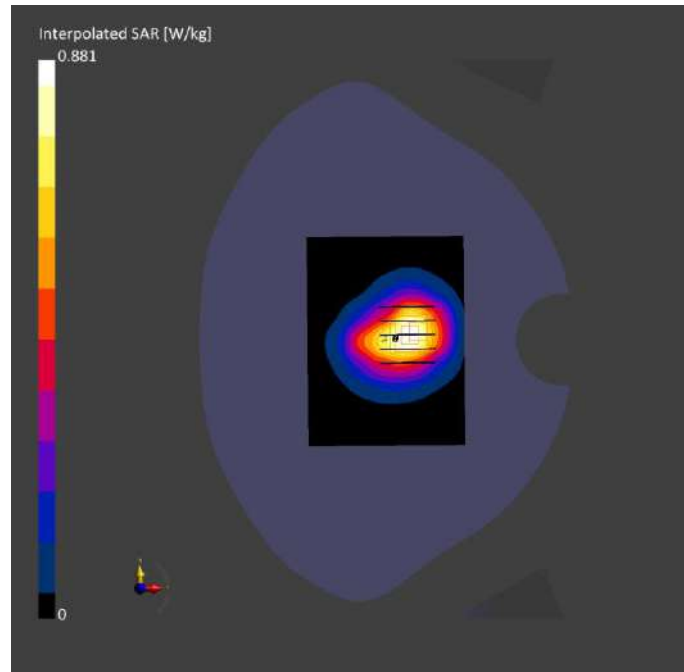
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

#### 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	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.353	0.413
psSAR10g [W/kg]	0.225	0.208
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		43.3
Dist 3dB Peak [mm]		10.7



**Meas.4 Left Head with Cheek on High Channel in GPRS1900 3Slots mode**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	PCS 1900	GSM, 10028-	1909.8, 810	7.98	1.44	39.1	22.5	21.3
			DAC						

**Hardware Setup**

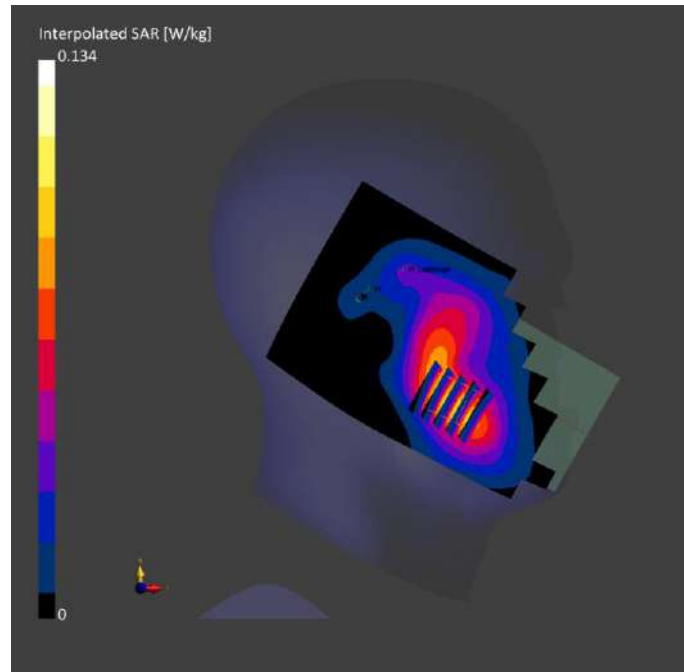
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**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	Y	Y
Surface	VMS + 6p	All points
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	0.019	0.020
psSAR10g [W/kg]	0.011	0.012
Power Drift [dB]	0.12	0.14
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		67.5
Dist 3dB Peak [mm]		15.7



## Meas.5 Body Plane with Bottom Edge 10mm on High Channel in GPRS1900 3Slots mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	PCS 1900	GSM, 10024-DAC	1909.8, 810	7.98	1.44	39.1	22.5	21.3

### Hardware Setup

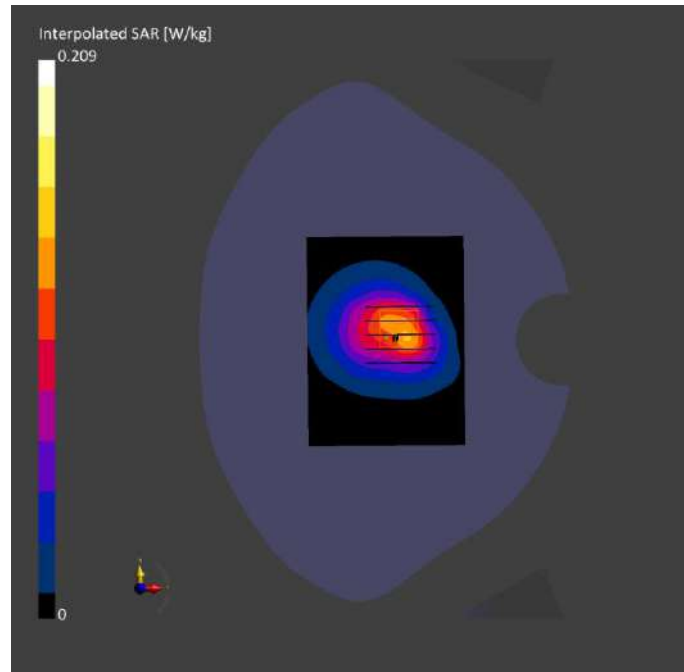
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	0.118	0.125
psSAR10g [W/kg]	0.069	0.073
Power Drift [dB]	0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.0
Dist 3dB Peak [mm]		13.6



## Meas.6 Body Plane with Bottom Edge 0mm on High Channel in GPRS1900 3Slots mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	PCS, 1900	GSM, 10024-DAC	1909.8, 810	7.98	1.44	39.1	22.5	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 , 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

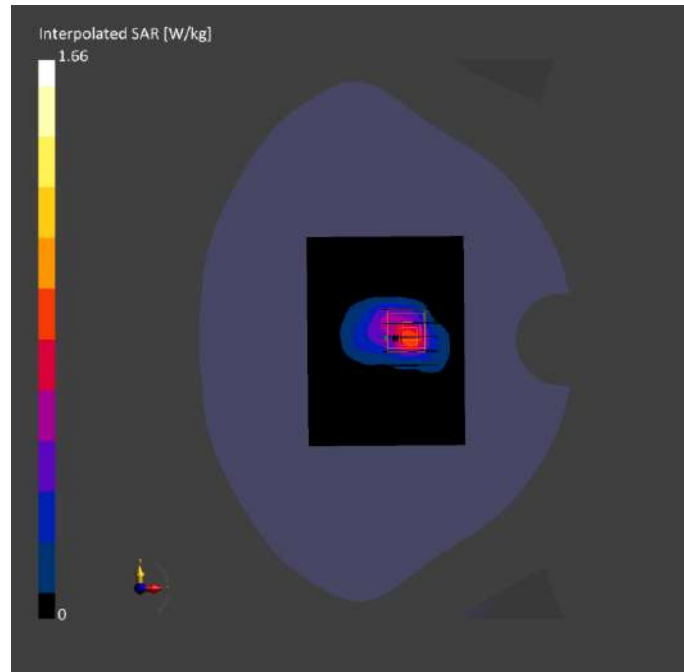
### Scan Setup

	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	0.731	0.840
psSAR10g [W/kg]	0.373	0.394
Power Drift [dB]	0.03	0.04
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.8
Dist 3dB Peak [mm]		8.0





**Meas.7 Left Head with Cheek on High Channel in WCDMA Band2 mode**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 2	WCDMA, 10011-CAC	1907.6, 9538	7.98	1.41	39.5	22.5	21.3

**Hardware Setup**

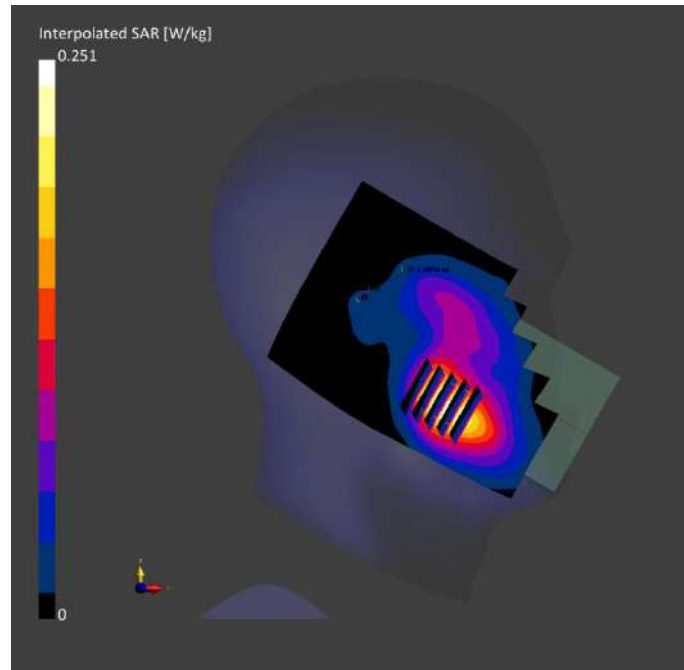
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**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	Y	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	0.155	0.160
psSAR10g [W/kg]	0.089	0.099
Power Drift [dB]	0.03	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		63.5
Dist 3dB Peak [mm]		14.1



**Meas.8 Body Plane with Bottom Edge 10mm on High Channel in WCDMA Band2 mode**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE BOTTOM, 10.00	Band 2	WCDMA, 10011-CAC	1907.6, 9538	7.98	1.41	39.5	22.5	21.3

**Hardware Setup**

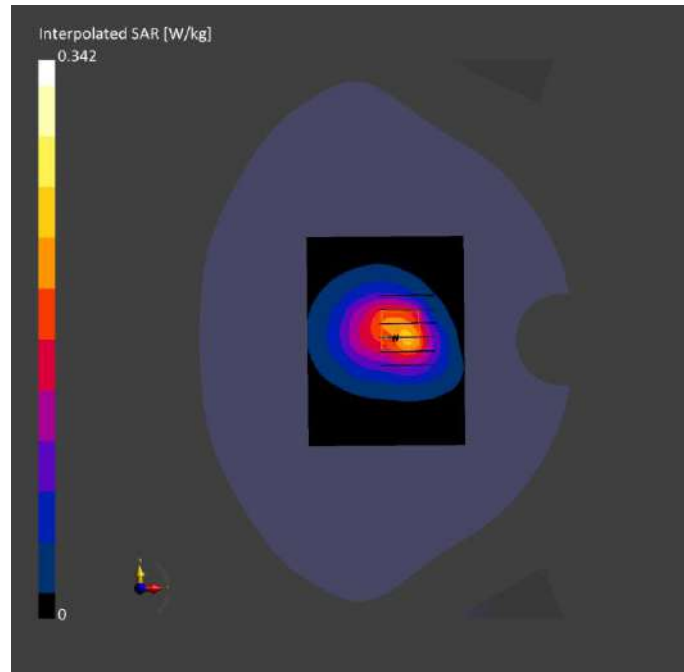
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	0.196	0.204
psSAR10g [W/kg]	0.114	0.118
Power Drift [dB]	-0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.2
Dist 3dB Peak [mm]		12.5



## Meas.9 Body Plane with Bottom Edge 0mm on High Channel in WCDMA Band2 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE BOTTOM, 0.00	Band 2	WCDMA, 10011-CAC	1907.6, 9538	7.98	1.41	39.5	22.5	21.3

### Hardware Setup

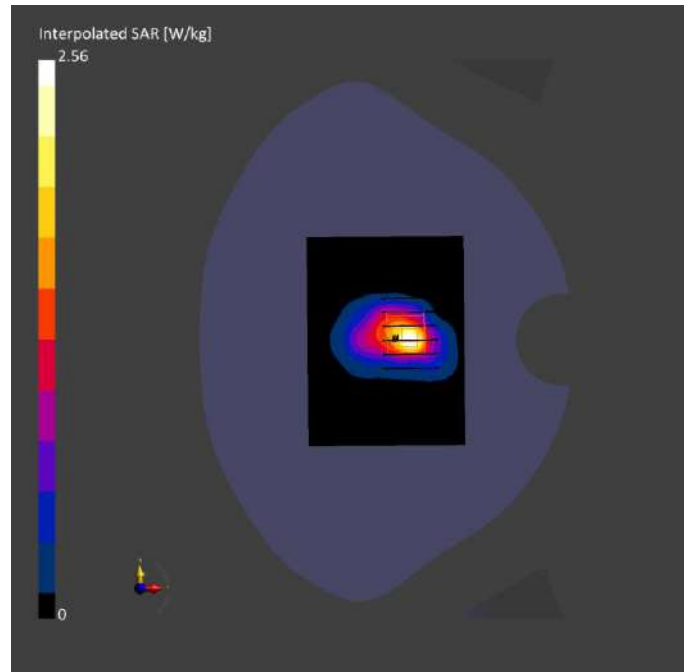
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-11-10	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-10	2023-11-10
psSAR1g [W/kg]	1.21	1.30
psSAR10g [W/kg]	0.605	0.616
Power Drift [dB]	0.00	0.01
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		43.4
Dist 3dB Peak [mm]		8.0



## Meas.10 Left Head with Cheek on Middle Channel in WCDMA Band4 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 4	WCDMA, 10011-CAC	1732.4, 1412	8.52	1.34	40.5	22.6	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 , 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

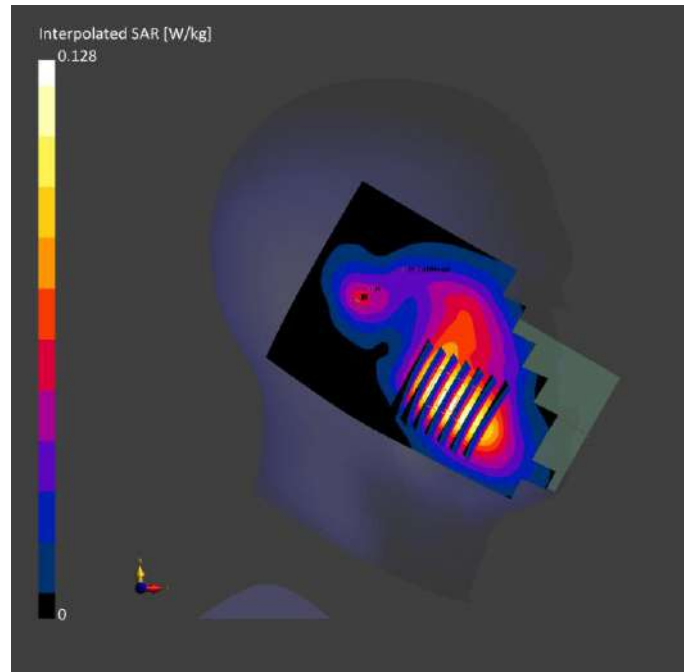
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 210.0	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	VMS + 6p	All points
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.108	0.123
psSAR10g [W/kg]	0.064	0.078
Power Drift [dB]	-0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		68.0
Dist 3dB Peak [mm]		14.4





## Meas.11 Body Plane with Bottom Edge 10mm on Middle Channel in WCDMA Band4 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 4	WCDMA, 10011-CAC	1732.4, 1412	8.52	1.34	40.5	22.6	21.6

### Hardware Setup

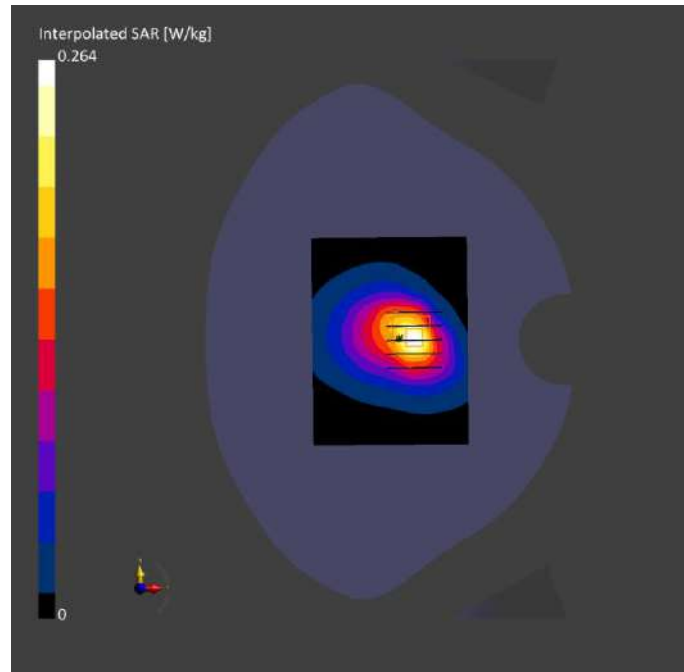
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.148	0.154
psSAR10g [W/kg]	0.082	0.086
Power Drift [dB]	-0.00	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.8
Dist 3dB Peak [mm]		13.7



## Meas.12 Body Plane with Bottom Edge 0mm on Middle Channel in WCDMA Band4 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 4	WCDMA, 10011-CAC	1732.4, 1412	8.52	1.34	40.5	22.6	21.6

### Hardware Setup

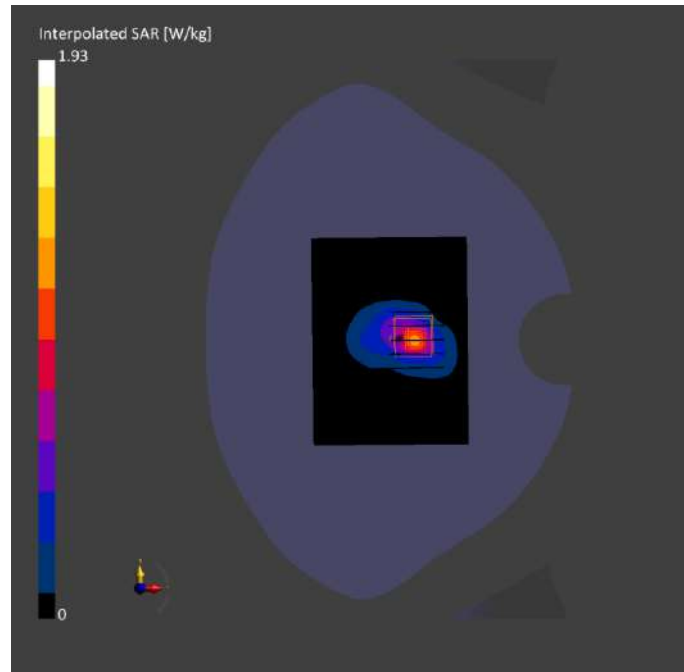
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.892	0.925
psSAR10g [W/kg]	0.434	0.424
Power Drift [dB]	0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.5
Dist 3dB Peak [mm]		8.0



## Meas.13 Left Head with Cheek on Middle Channel in WCDMA Band5 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 5	WCDMA, 10011-CAC	836.4, 4182	9.96	0.907	42.6	22.4	21.5

### Hardware Setup

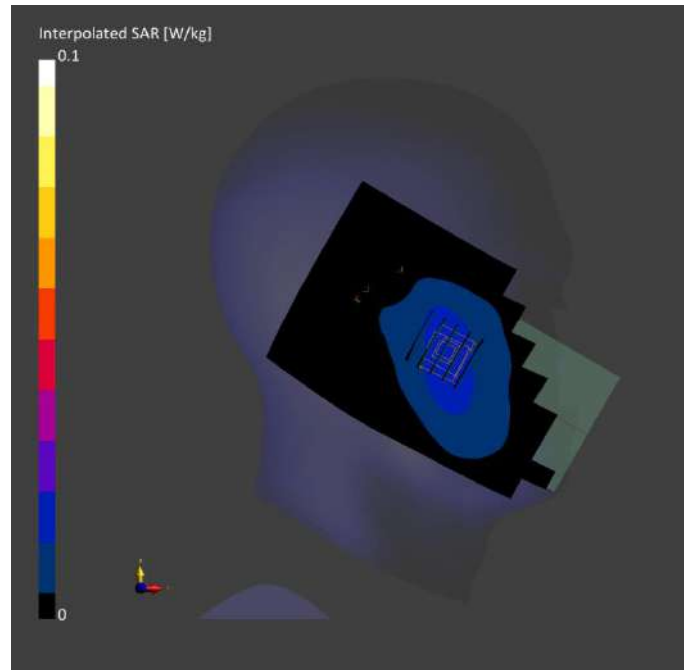
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface	VMS + 6p	All points
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.013	0.012
psSAR10g [W/kg]	0.009	0.009
Power Drift [dB]	-0.06	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.5
Dist 3dB Peak [mm]		> 16.0



## Meas.14 Body Plane with Bottom Edge 10mm on Middle Channel in WCDMA Band5 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 5	WCDMA, 10011-CAC	836.4, 4182	9.96	0.907	42.6	22.4	21.5

### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

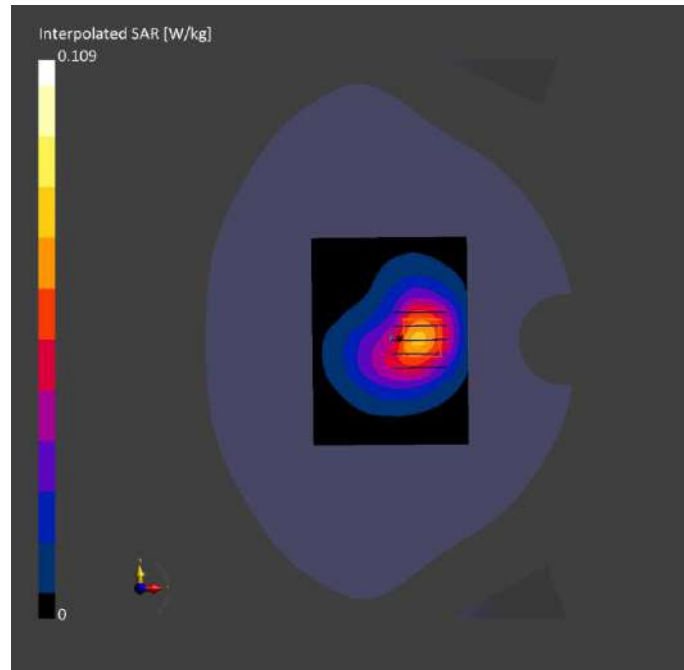
### Scan Setup

	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	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.060	0.065
psSAR10g [W/kg]	0.039	0.039
Power Drift [dB]	0.07	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.6
Dist 3dB Peak [mm]		> 16.0





## Meas.15 Body Plane with Bottom Edge 0mm on Middle Channel in WCDMA Band5 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 5	WCDMA, 10011-CAC	836.4, 4182	9.96	0.907	42.6	22.4	21.5

### Hardware Setup

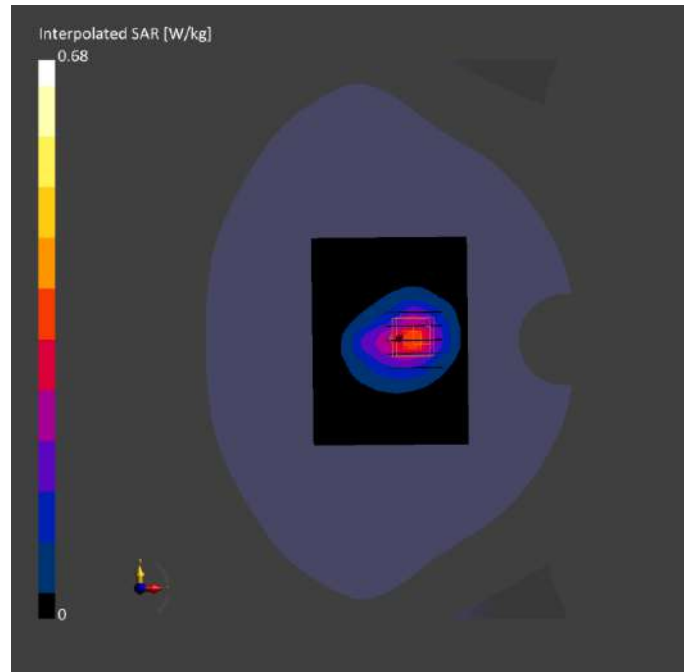
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-07	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	2023-11-07	2023-11-07
psSAR1g [W/kg]	0.317	0.330
psSAR10g [W/kg]	0.193	0.169
Power Drift [dB]	0.01	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.4
Dist 3dB Peak [mm]		8.6



## Meas.16 Left Head with Cheek on Middle Channel in LTE Band7 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 7	LTE-FDD, 10169-CAF	2535.0, 21100	7.41	1.90	38.7	22.4	21.4

### Hardware Setup

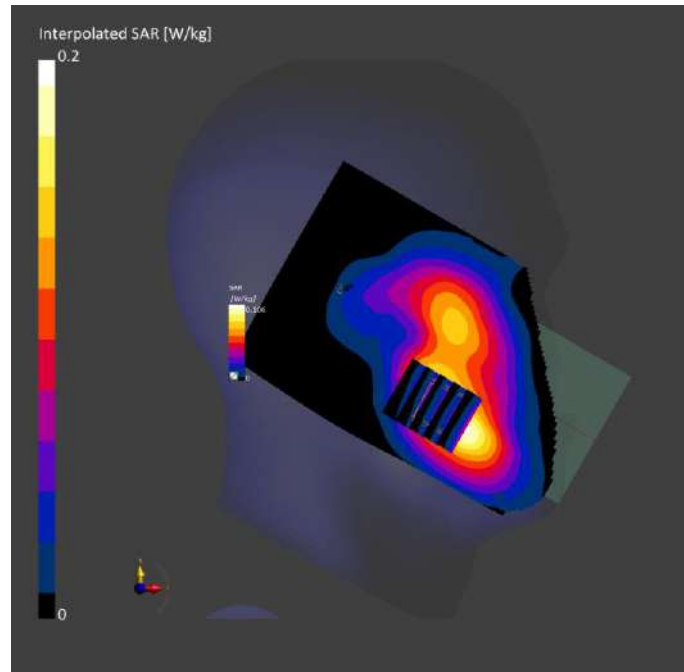
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 210.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	0.114	0.115
psSAR10g [W/kg]	0.061	0.064
Power Drift [dB]	0.09	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.0
Dist 3dB Peak [mm]		14.9



## Meas.17 Body Plane with Bottom Edge 10mm on Middle Channel in LTE Band7 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 7	LTE-FDD, 10169-CAF	2535.0, 21100	7.41	1.90	38.7	22.4	21.4

### Hardware Setup

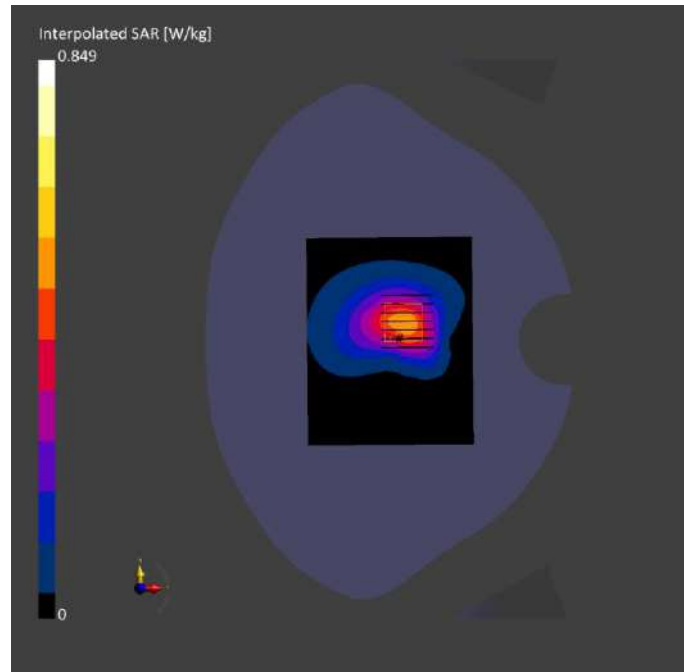
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 120.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	0.448	0.462
psSAR10g [W/kg]	0.237	0.246
Power Drift [dB]	0.02	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.8
Dist 3dB Peak [mm]		13.0



## Meas.18 Body Plane with Bottom Edge 0mm on Middle Channel in LTE Band7 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 7	LTE-FDD, 10169-CAF	2535.0, 21100	7.41	1.90	38.7	22.4	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, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

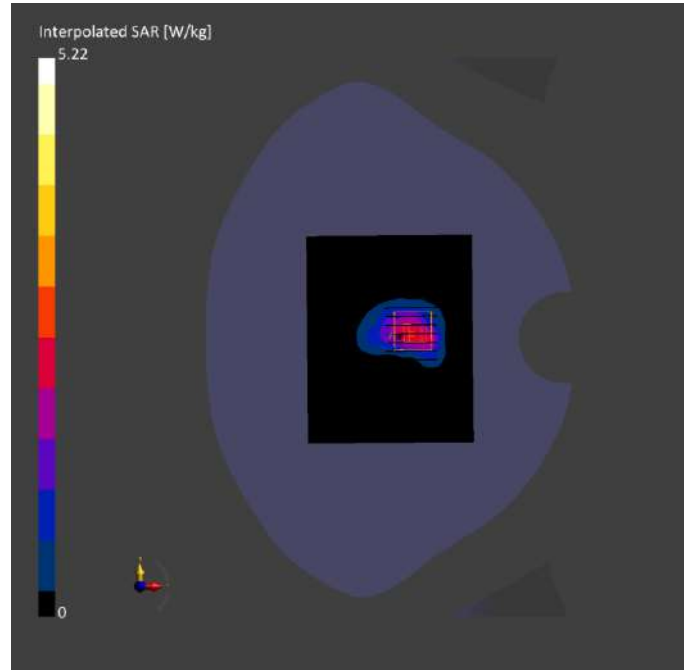
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 120.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	2.09	2.40
psSAR10g [W/kg]	0.996	1.05
Power Drift [dB]	-0.00	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.6
Dist 3dB Peak [mm]		7.6





## Meas.19 Left Head with Cheek on Middle Channel in LTE Band12 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 12	LTE-FDD, 10175-CAH	707.5, 23095	10.31	0.901	43.2	22.4	21.5

### Hardware Setup

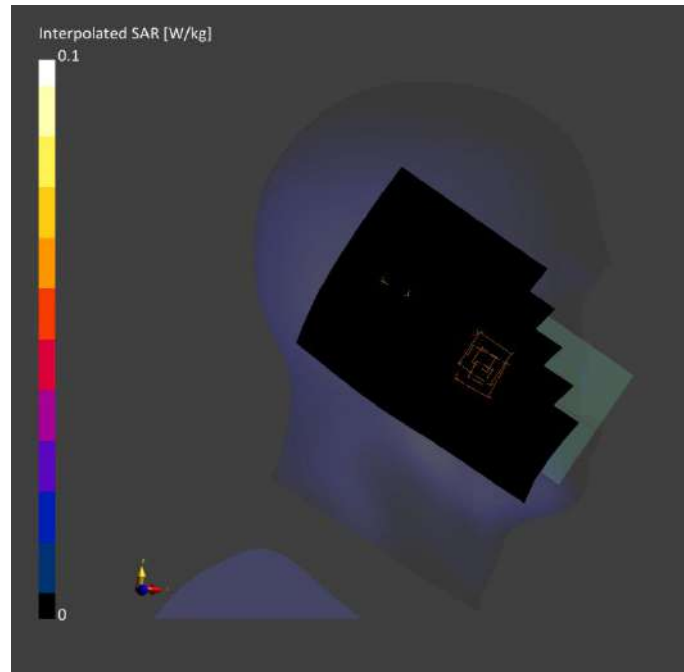
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.007	0.007
psSAR10g [W/kg]	0.005	0.006
Power Drift [dB]	-0.10	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.6
Dist 3dB Peak [mm]		> 16.0



## Meas.20 Body Plane with Bottom Edge 10mm on Middle Channel in LTE Band12 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 12	LTE-FDD, 10175-CAH	707.5, 23095	10.31	0.901	43.2	22.4	21.5

### Hardware Setup

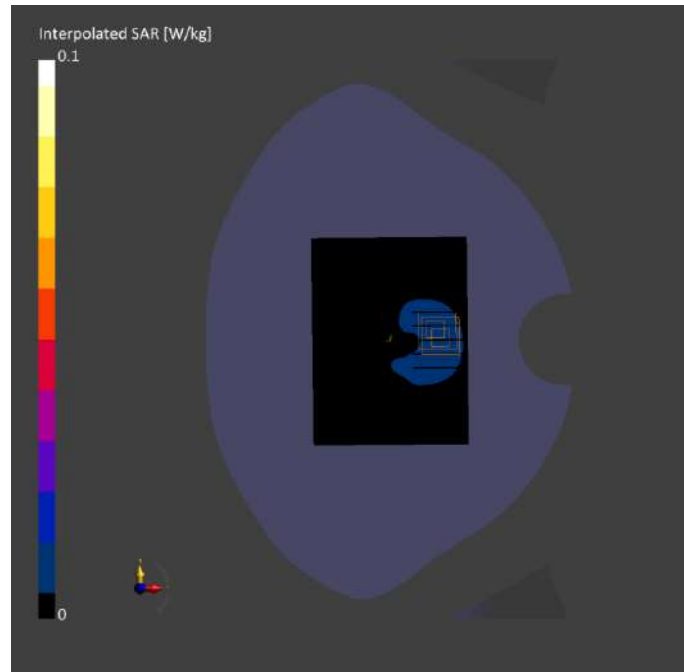
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.013	0.014
psSAR10g [W/kg]	0.009	0.008
Power Drift [dB]	0.04	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.4
Dist 3dB Peak [mm]		> 16.0



## Meas.21 Body Plane with Bottom Edge 0mm on Middle Channel in LTE Band12 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 12	LTE-FDD, 10175-CAH	707.5, 23095	10.31	0.901	43.2	22.4	21.5

### Hardware Setup

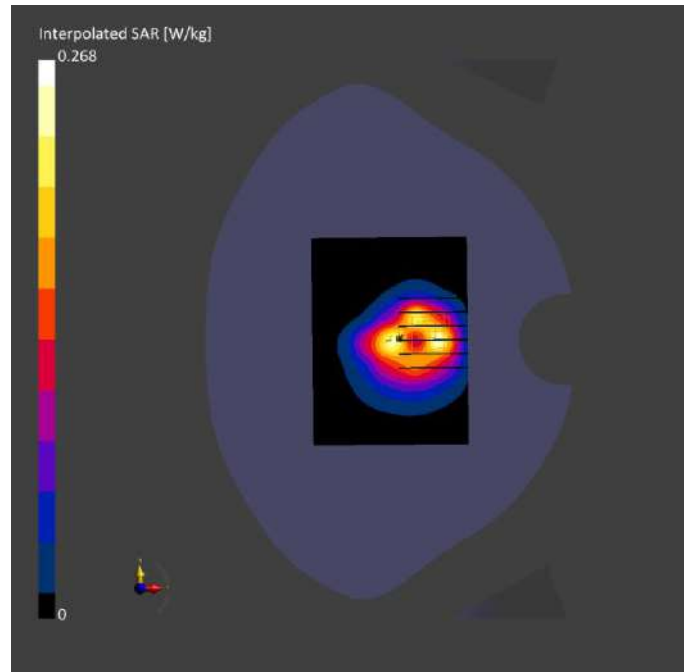
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.071	0.105
psSAR10g [W/kg]	0.044	0.046
Power Drift [dB]	-0.04	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		34.0
Dist 3dB Peak [mm]		8.0



## Meas.22 Left Head with Cheek on Middle Channel in LTE Band13 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 13	LTE-FDD, 10175-CAH	782.0, 23230	10.31	0.925	41.9	22.4	21.5

### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

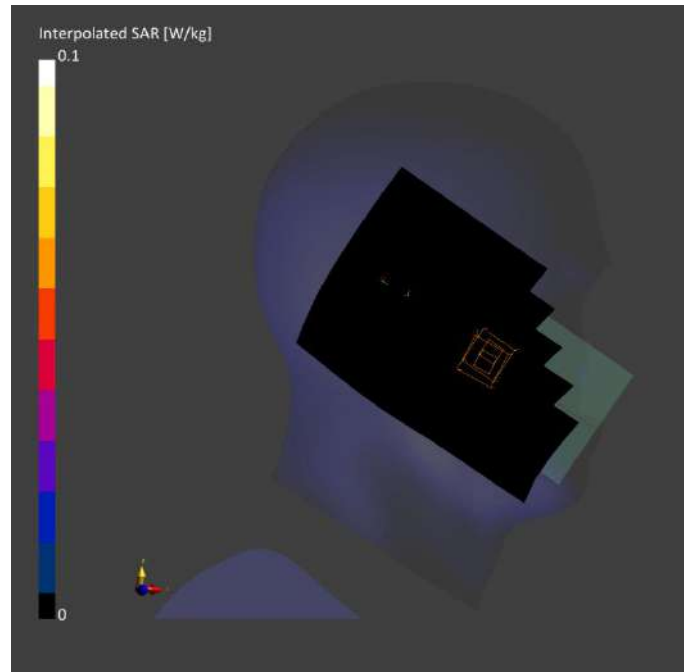
### Scan Setup

	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	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.004	0.004
psSAR10g [W/kg]	0.003	0.003
Power Drift [dB]	-0.08	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		93.0
Dist 3dB Peak [mm]		> 16.0





## Meas.23 Body Plane with Bottom Edge 10mm on Middle Channel in LTE Band13 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 13	LTE-FDD, 10175-CAH	782.0, 23230	10.31	0.925	41.9	22.4	21.5

### Hardware Setup

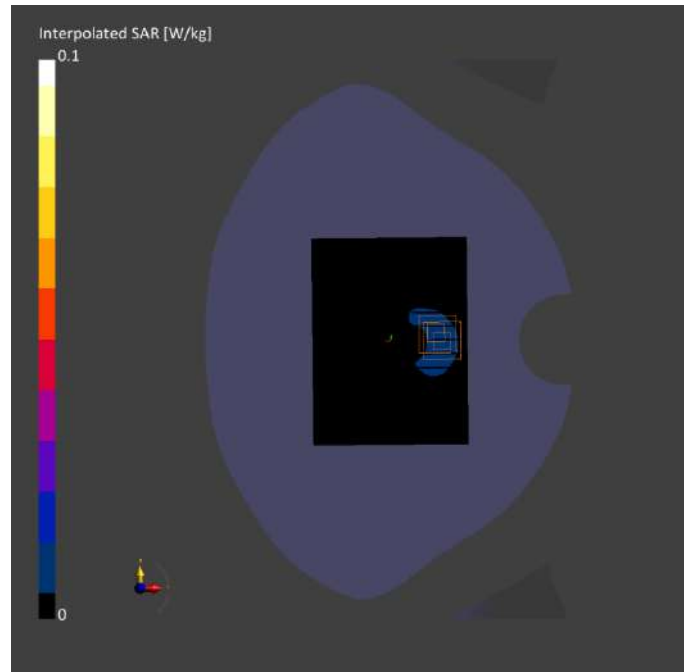
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.011	0.011
psSAR10g [W/kg]	0.007	0.006
Power Drift [dB]	-0.05	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.3
Dist 3dB Peak [mm]		> 16.0



## Meas.24 Body Plane with Bottom Edge 0mm on Middle Channel in LTE Band13 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 13	LTE-FDD, 10175-CAH	782.0, 23230	10.31	0.925	41.9	22.4	21.5

### Hardware Setup

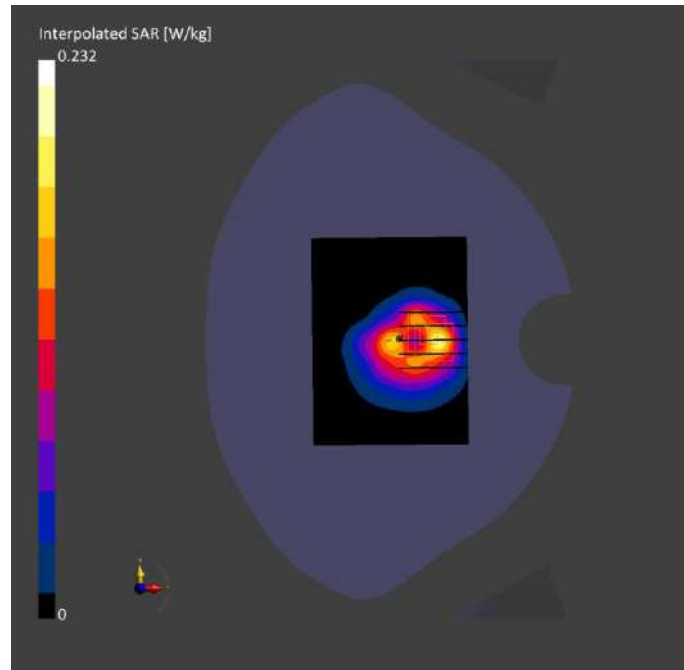
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-05	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-05	2023-11-05
psSAR1g [W/kg]	0.065	0.092
psSAR10g [W/kg]	0.039	0.040
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		28.1
Dist 3dB Peak [mm]		6.4



## Meas.25 Left Head with Cheek on High Channel in LTE Band25 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 25	LTE-FDD, 10169-CAF	1905.0, 26590	7.98	1.44	39.7	22.6	21.2

### Hardware Setup

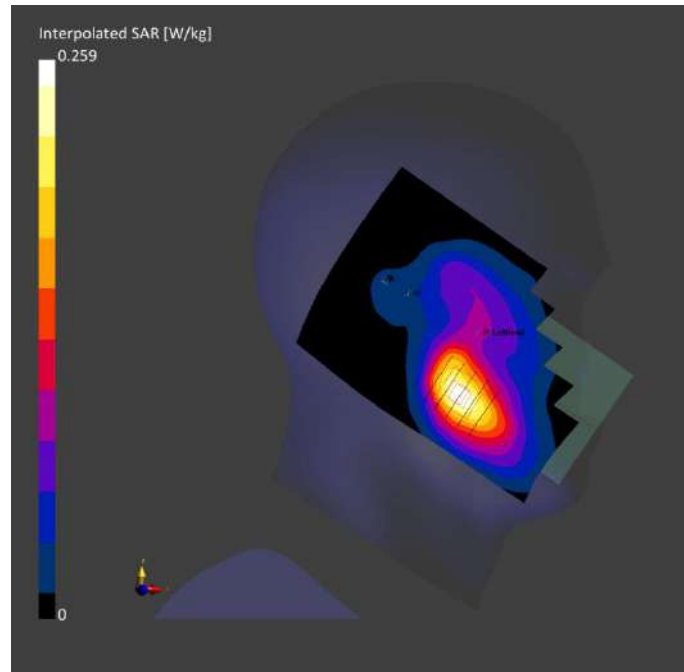
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-11	2023-11-11
psSAR1g [W/kg]	0.161	0.168
psSAR10g [W/kg]	0.092	0.104
Power Drift [dB]	-0.03	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		64.9
Dist 3dB Peak [mm]		12.6



## Meas.26 Body Plane with Bottom Edge 10mm on High Channel in LTE Band25 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 25	LTE-FDD, 10169-CAF	1905.0, 26590	7.98	1.44	39.7	22.6	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, 2023-11-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

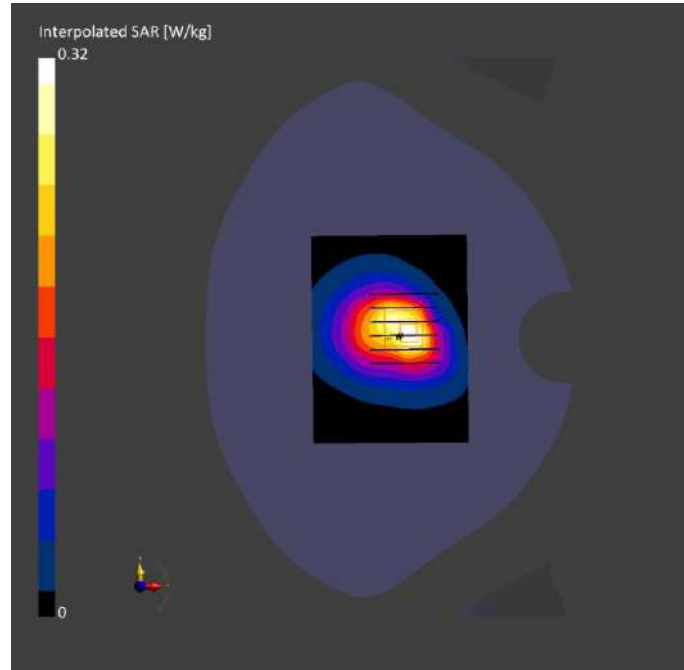
### Scan Setup

	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	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-11	2023-11-11
psSAR1g [W/kg]	0.180	0.191
psSAR10g [W/kg]	0.104	0.110
Power Drift [dB]	0.01	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.9
Dist 3dB Peak [mm]		12.5





## Meas.27 Body Plane with Bottom Edge 0mm on High Channel in LTE Band25 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 25	LTE-FDD, 10169-CAF	1905.0, 26590	7.98	1.44	39.7	22.6	21.2

### Hardware Setup

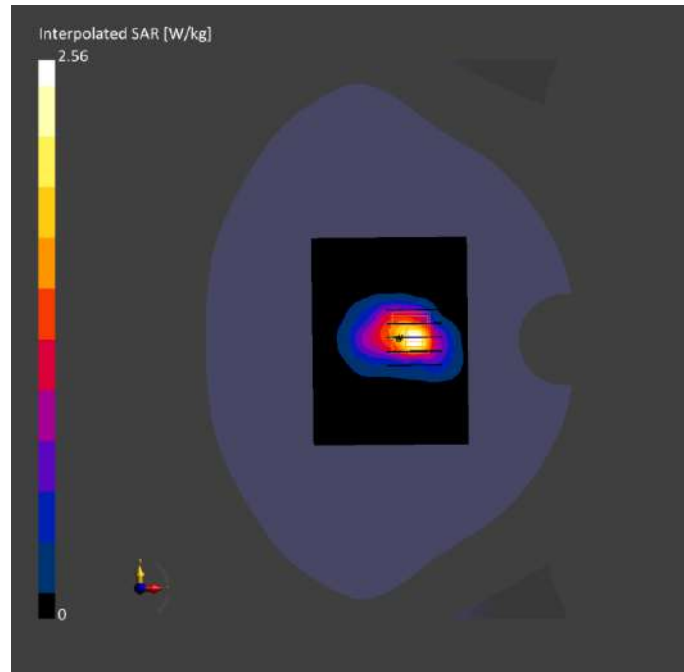
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-11	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	2023-11-11	2023-11-11
psSAR1g [W/kg]	1.19	1.28
psSAR10g [W/kg]	0.597	0.604
Power Drift [dB]	-0.18	-0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		46.7
Dist 3dB Peak [mm]		6.6



## Meas.28 Left Head with Cheek on High Channel in LTE Band26 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 26	LTE-FDD, 10181-CAF	841.5, 26965	9.96	0.920	41.3	22.7	21.4

### Hardware Setup

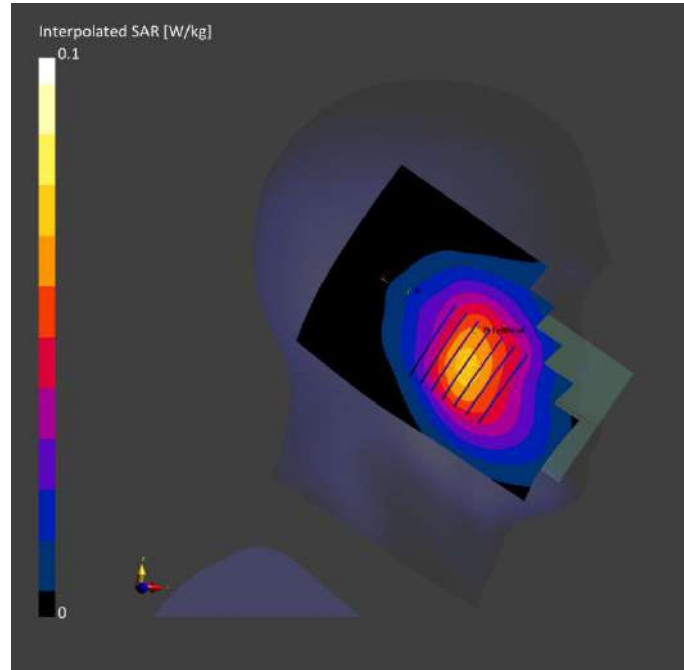
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-08	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-08	2023-11-08
psSAR1g [W/kg]	0.062	0.066
psSAR10g [W/kg]	0.042	0.050
Power Drift [dB]	-0.01	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		75.2
Dist 3dB Peak [mm]		> 16.0



## Meas.29 Body Plane with Bottom Edge 10mm on High Channel in LTE Band26 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 26	LTE-FDD, 10181-CAF	841.5, 26965	9.96	0.920	41.3	22.7	21.4

### Hardware Setup

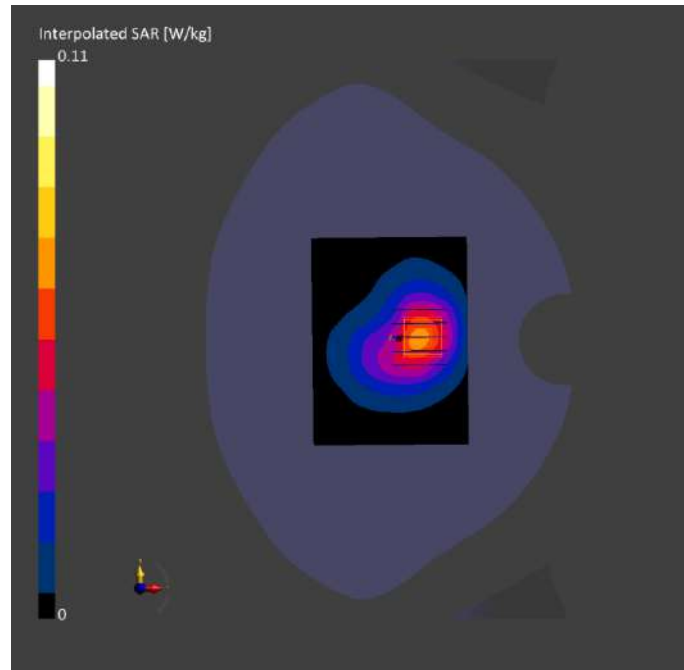
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-08	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-08	2023-11-08
psSAR1g [W/kg]	0.059	0.065
psSAR10g [W/kg]	0.039	0.038
Power Drift [dB]	-0.05	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.0
Dist 3dB Peak [mm]		> 16.0



## Meas.30 Body Plane with Bottom Edge 0mm on High Channel in LTE Band26 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 26	LTE-FDD, 10181-CAF	841.5, 26965	9.96	0.920	41.3	22.7	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, 2023-11-08	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

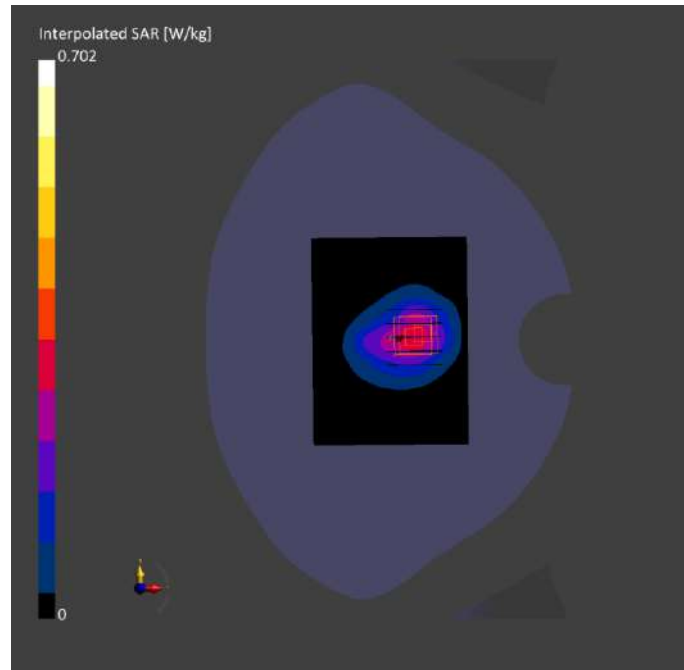
### Scan Setup

	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	2023-11-08	2023-11-08
psSAR1g [W/kg]	0.296	0.335
psSAR10g [W/kg]	0.185	0.170
Power Drift [dB]	-0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.1
Dist 3dB Peak [mm]		9.3





## Meas.31 Left Head with Cheek on High Channel in LTE Band66 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 66	LTE-FDD, 10169-CAF	1770.0, 132572	8.52	1.39	38.9	22.6	21.6

### Hardware Setup

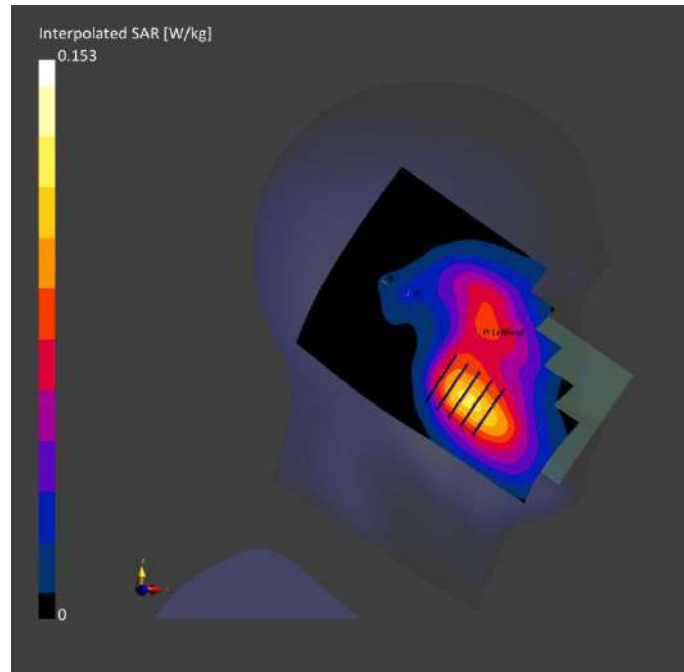
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.098	0.101
psSAR10g [W/kg]	0.059	0.066
Power Drift [dB]	0.01	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		67.8
Dist 3dB Peak [mm]		15.7



## Meas.32 Body Plane with Right Edge 10mm on High Channel in LTE Band66 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, RIGHT, 10.00	Band 66	LTE-FDD, 10169-CAF	1770.0, 132572	8.52	1.39	38.9	22.6	21.6

### Hardware Setup

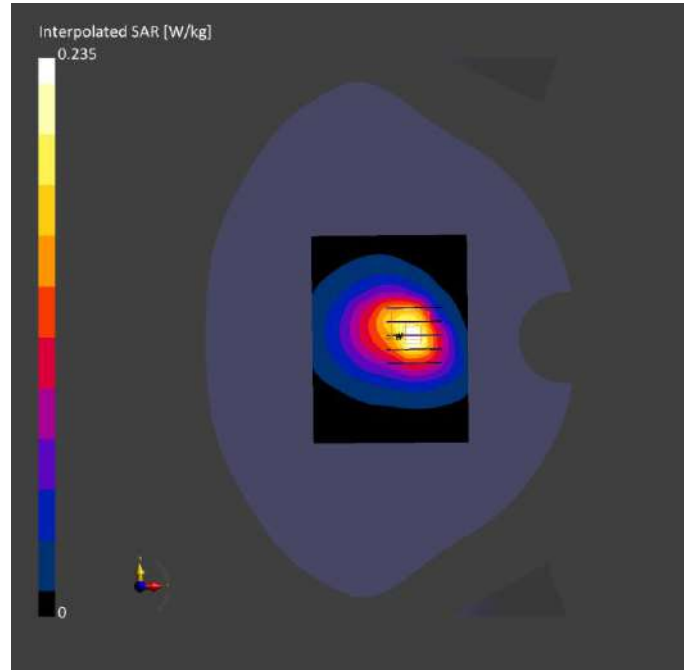
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.130	0.138
psSAR10g [W/kg]	0.074	0.077
Power Drift [dB]	-0.02	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.4
Dist 3dB Peak [mm]		13.7



## Meas.33 Body Plane with Bottom Edge 0mm on High Channel in LTE Band66 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 66	LTE-FDD, 10169-CAF	1770.0, 132572	8.52	1.39	38.9	22.6	21.6

### Hardware Setup

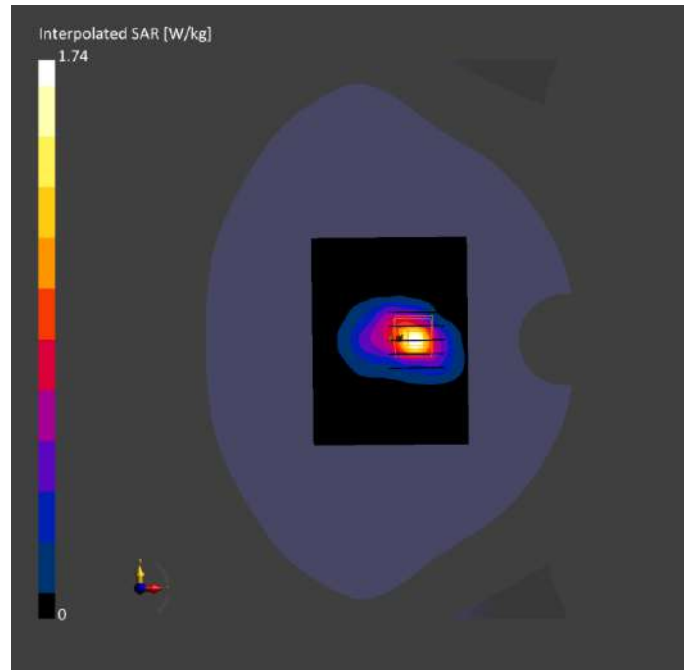
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-09	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	2023-11-09	2023-11-09
psSAR1g [W/kg]	0.811	0.839
psSAR10g [W/kg]	0.396	0.386
Power Drift [dB]	-0.02	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		45.0
Dist 3dB Peak [mm]		8.0



## Meas.34 Left Head with Cheek on Middle Channel in LTE Band71 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 71	LTE-FDD, 10169-CAF	673.0, 133222	10.31	0.879	43.7	22.6	21.5

### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-06	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

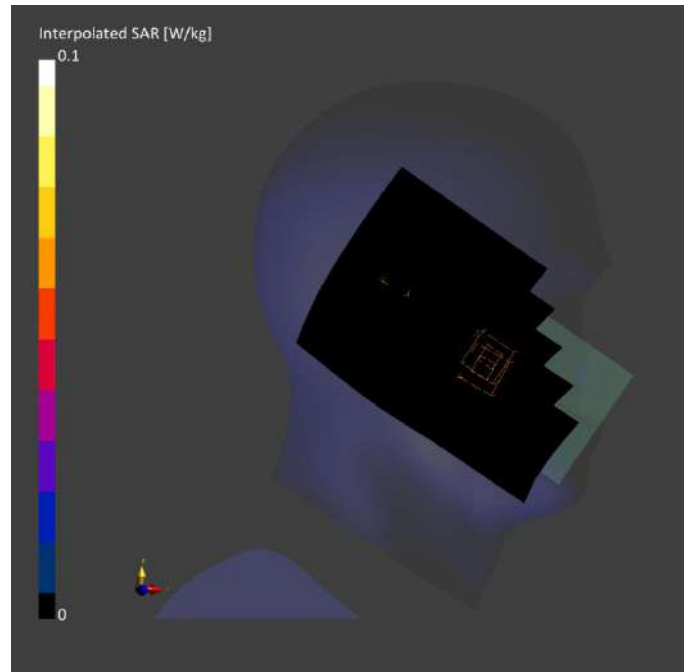
### Scan Setup

	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	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-06	2023-11-06
psSAR1g [W/kg]	0.007	0.007
psSAR10g [W/kg]	0.005	0.005
Power Drift [dB]	0.06	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.0
Dist 3dB Peak [mm]		> 16.0





## Meas.35 Body Plane with Bottom Edge 10mm on Middle Channel in LTE Band71 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 71	LTE-FDD, 10169-CAF	673.0, 133222	10.31	0.879	43.7	22.6	21.5

### Hardware Setup

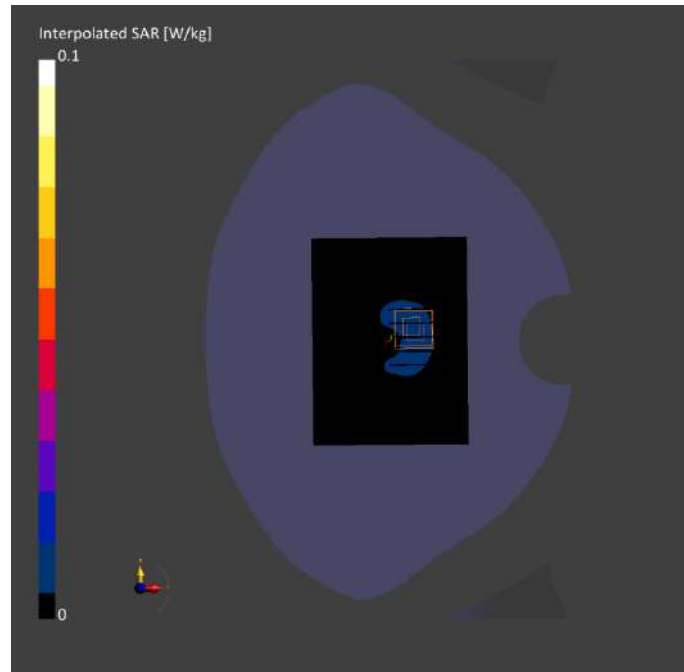
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-06	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-06	2023-11-06
psSAR1g [W/kg]	0.012	0.012
psSAR10g [W/kg]	0.007	0.007
Power Drift [dB]	-0.04	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.4
Dist 3dB Peak [mm]		> 16.0



## Meas.36 Body Plane with Bottom Edge 0mm on Middle Channel in LTE Band71 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 71	LTE-FDD, 10169-CAF	673.0, 133222	10.31	0.879	43.7	22.6	21.5

### Hardware Setup

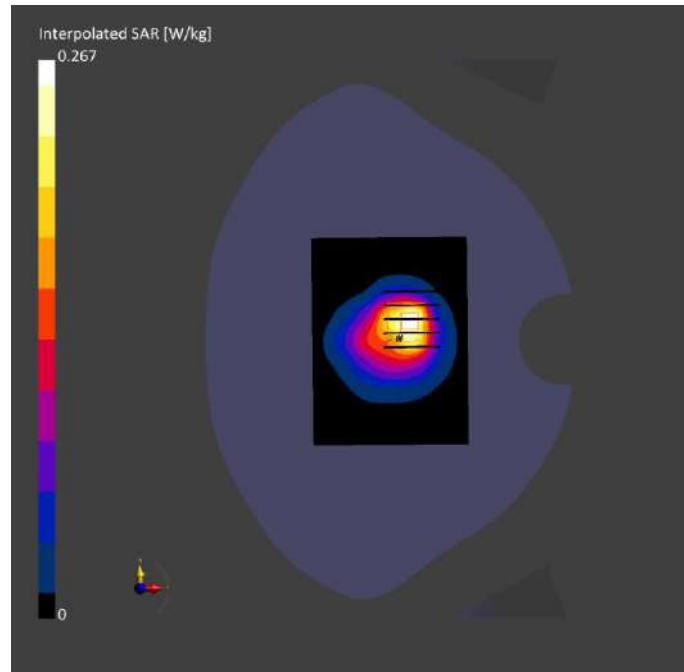
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-06	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### 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	2023-11-06	2023-11-06
psSAR1g [W/kg]	0.091	0.097
psSAR10g [W/kg]	0.056	0.042
Power Drift [dB]	-0.01	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		32.4
Dist 3dB Peak [mm]		6.8



## Meas.37 Left Head with Cheek on Low Channel in LTE Band41 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	Band 41	LTE-TDD, 10172-CAH	2506.0, 39750	7.41	1.82	39.8	22.4	21.4

### Hardware Setup

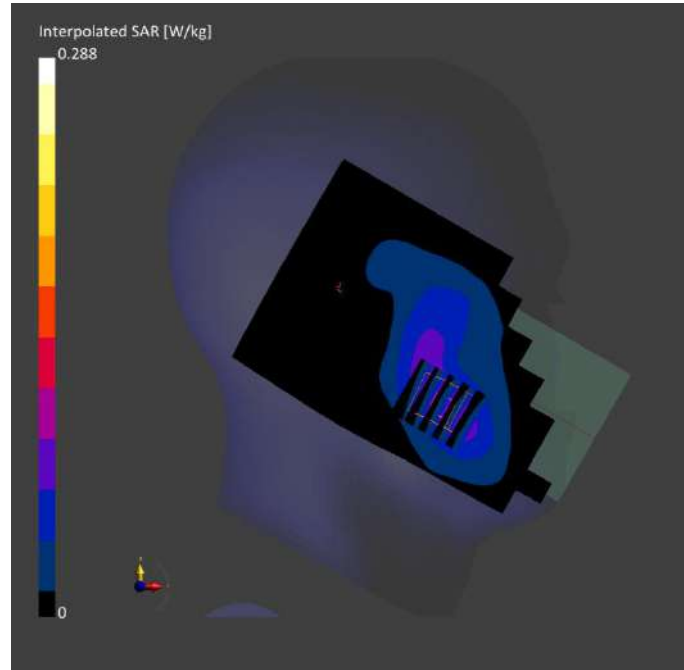
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 210.0	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	2023-11-12	2023-11-12
psSAR1g [W/kg]	0.154	0.160
psSAR10g [W/kg]	0.079	0.086
Power Drift [dB]	0.00	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.8
Dist 3dB Peak [mm]		11.8



## Meas.38 Body Plane with Bottom Edge 10mm on Low Channel in LTE Band41 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 10.00	Band 41	LTE-TDD, 10172-CAH	2506.0, 39750	7.41	1.82	39.8	22.4	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, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

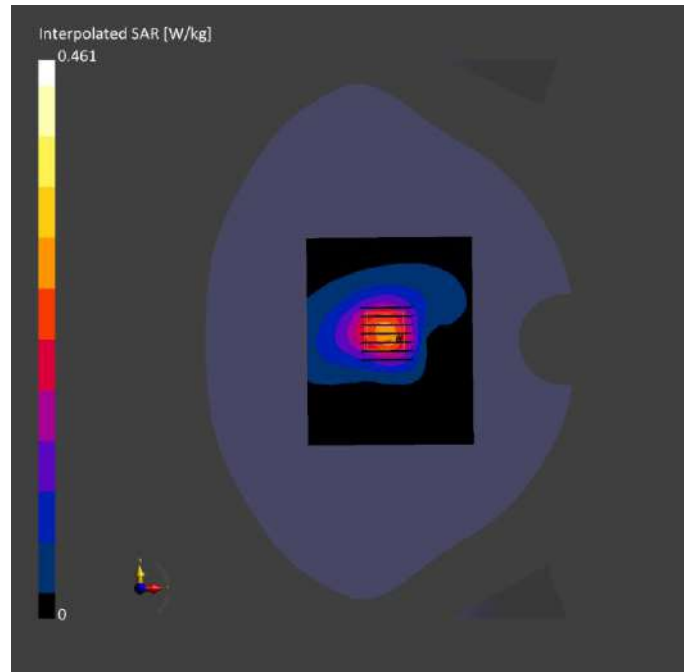
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 120.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	0.240	0.246
psSAR10g [W/kg]	0.127	0.130
Power Drift [dB]	0.01	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.0
Dist 3dB Peak [mm]		14.9





## Meas.39 Body Plane with Bottom Edge 0mm on Low Channel in LTE Band41 mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, BOTTOM, 0.00	Band 41	LTE-TDD, 10172-CAH	2506.0, 39750	7.41	1.82	39.8	22.4	21.4

### Hardware Setup

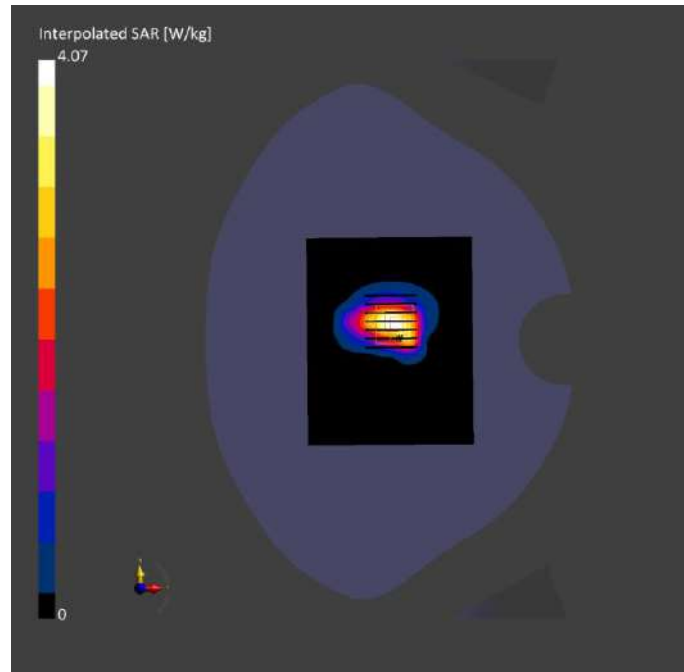
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-11-12	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 120.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-12	2023-11-12
psSAR1g [W/kg]	1.51	1.72
psSAR10g [W/kg]	0.716	0.736
Power Drift [dB]	0.00	0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		40.4
Dist 3dB Peak [mm]		7.1



## Meas.40 Left Head with Cheek on 11 Channel in IEEE802.11b mode with Antenna.0

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	162.0 x 74.0 x 9.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	WLAN, 2.4GHZ	WLAN, 10012-CAB	2462.0, 11	7.47	1.84	37.9	22.5	21.4

### Hardware Setup

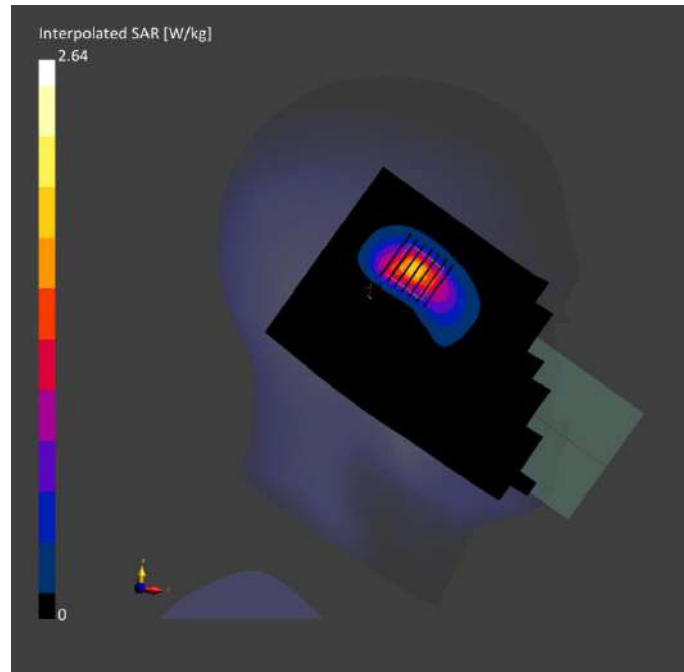
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 192.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	0.744	0.847
psSAR10g [W/kg]	0.384	0.416
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		59.6
Dist 3dB Peak [mm]		10.4



## Meas.41 Body Plane with Left Edge 10mm on 11 Channel in IEEE802.11b mode with Antenna.0

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, LEFT, 10.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2462.0, 11	7.47	1.84	37.9	22.5	21.4

### Hardware Setup

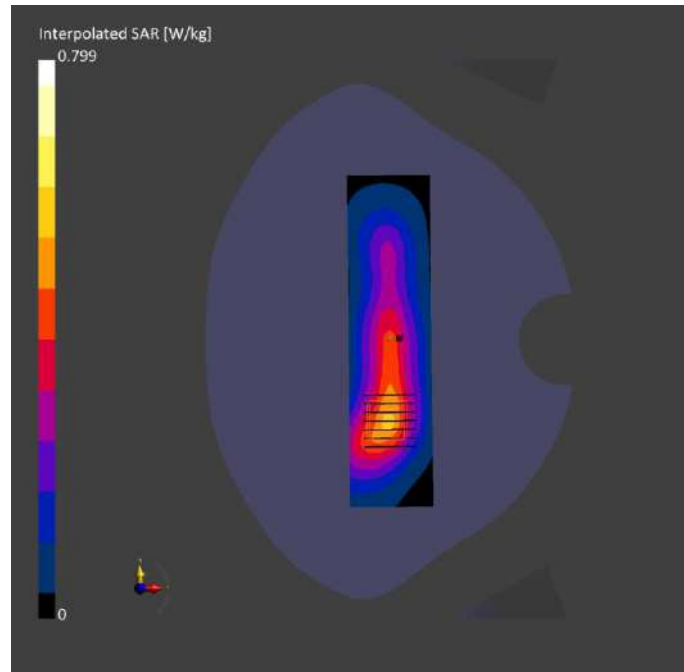
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 192.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	0.447	0.445
psSAR10g [W/kg]	0.243	0.246
Power Drift [dB]	-0.05	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.9
Dist 3dB Peak [mm]		14.3



## Meas.42 Body Plane with Left Edge 0mm on 11 Channel in IEEE802.11b mode with Antenna.0

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, LEFT, 0.00	WLAN, 2.4GHz	WLAN, 10012-CAB	2462.0, 11	7.47	1.84	37.9	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, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

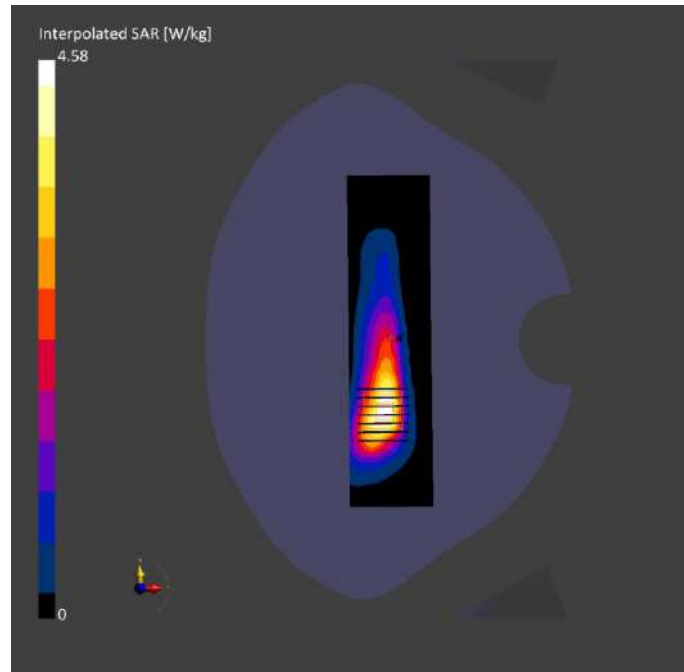
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 192.0	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	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	2.08	2.26
psSAR10g [W/kg]	1.06	1.06
Power Drift [dB]	-0.14	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		48.1
Dist 3dB Peak [mm]		8.0





## Meas.43 Left Head with Cheek on 58 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	162.0 x 74.0 x 9.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	WLAN, N	WLAN, 10544-	5290.0, 58	5.41	4.76	35.7	22.3	21.2
		5GHz	AAC						

### Hardware Setup

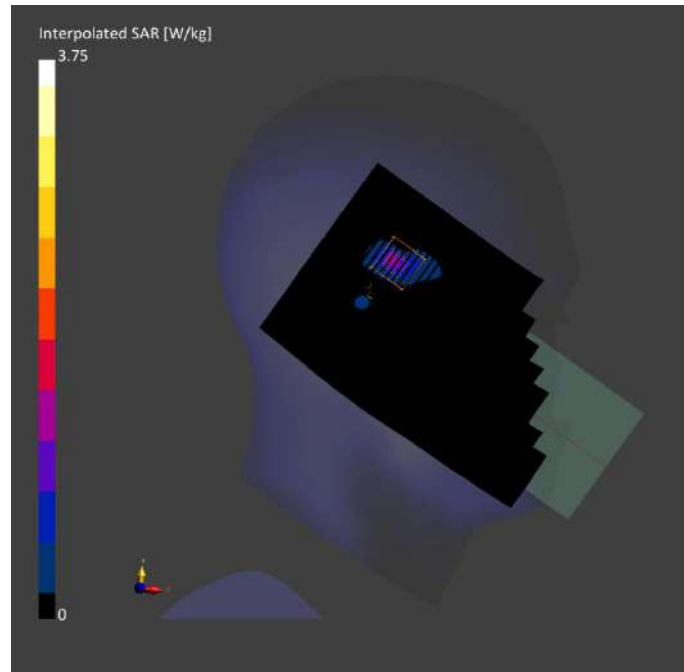
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-26	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-26	2023-12-26
psSAR1g [W/kg]	0.844	0.991
psSAR10g [W/kg]	0.263	0.296
Power Drift [dB]	0.03	0.09
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.9
Dist 3dB Peak [mm]		5.6



## Meas.44 Left Head with Cheek on 138 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	162.0 x 74.0 x 9.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	WLAN, N	WLAN, 10544-	5690.0, 138	4.78	5.22	35.3	22.4	21.4
		5GHz	AAC						

### Hardware Setup

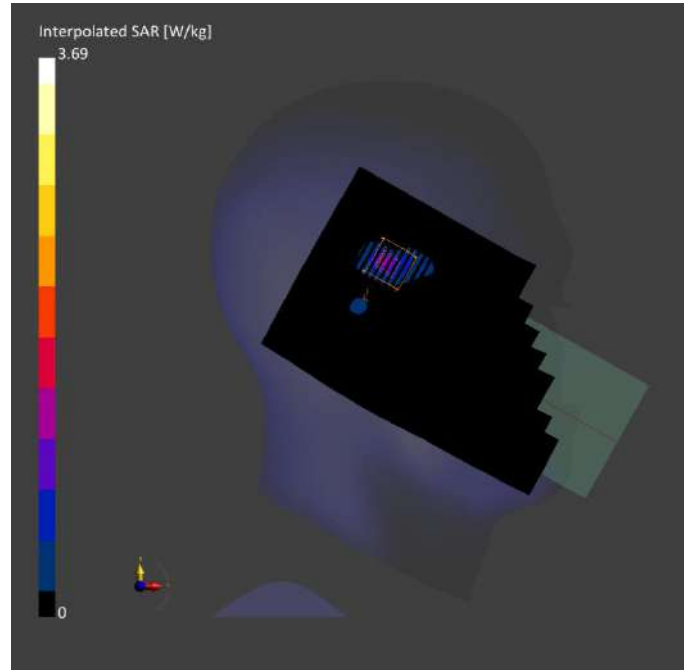
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-28	2023-12-28
psSAR1g [W/kg]	0.866	0.956
psSAR10g [W/kg]	0.267	0.299
Power Drift [dB]	0.04	0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.7
Dist 3dB Peak [mm]		5.4



## Meas.45 Left Head with Cheek on 155 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	162.0 x 74.0 x 9.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	WLAN, N	WLAN, 10544- AAC	5775.0, 155	4.78	5.34	35.4	22.2	21.3

### Hardware Setup

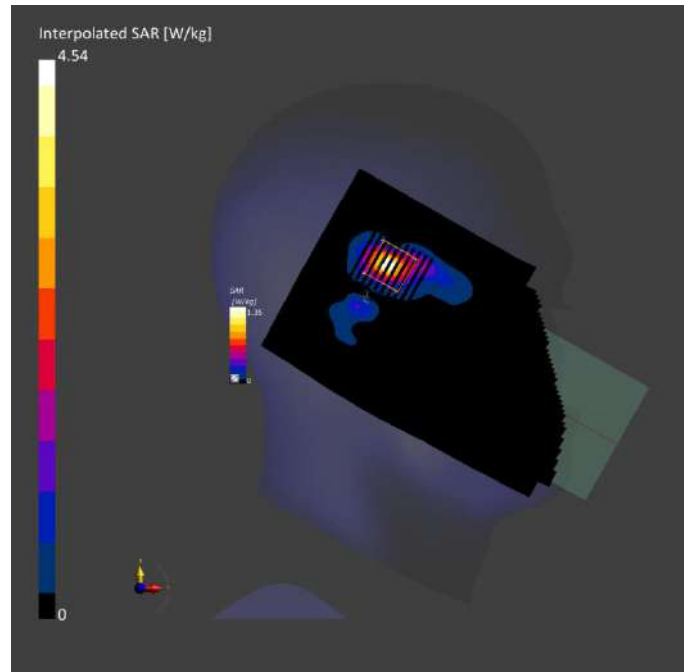
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-30	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-30	2023-12-30
psSAR1g [W/kg]	0.958	0.970
psSAR10g [W/kg]	0.331	0.372
Power Drift [dB]	-0.03	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.3
Dist 3dB Peak [mm]		5.4



## Meas.46 Body Plane with Front Side 10mm on 58 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 10.00	WLAN, N	5290.0, 10544-58	5.41	4.76	35.7	22.3	21.2	
		5GHz	AAC						

### Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-26	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

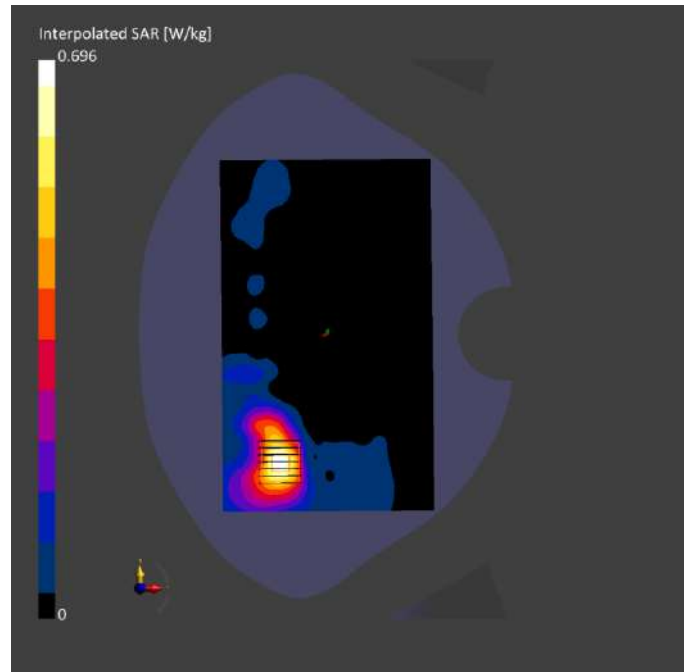
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-26	2023-12-26
psSAR1g [W/kg]	0.203	0.209
psSAR10g [W/kg]	0.080	0.079
Power Drift [dB]	-0.04	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.1
Dist 3dB Peak [mm]		8.8





## Meas.47 Body Plane with Front Side 10mm on 106 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 0.00	WLAN, 5GHz	WLAN, 10544-AAC	5530.0, 106	4.58	4.92	36.1	22.4	21.4

### Hardware Setup

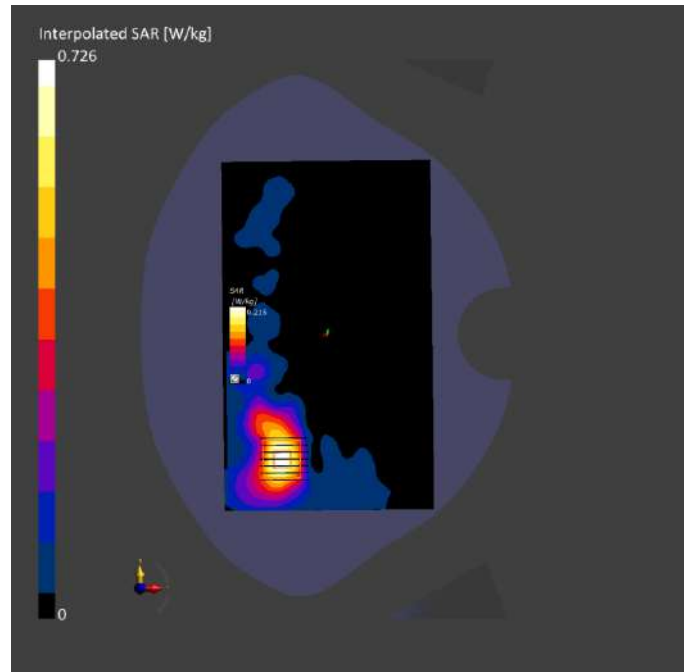
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-28	2023-12-28
psSAR1g [W/kg]	0.220	0.233
psSAR10g [W/kg]	0.084	0.084
Power Drift [dB]	0.07	-0.18
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.4
Dist 3dB Peak [mm]		8.6



**Meas.48 Body Plane with Front Side 10mm on 155 Channel in IEEE802.11ac80 mode with MIMO**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

**Exposure Conditions**

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 0.00	WLAN, 5GHz	WLAN, 10544-AAC	5775.0, 155	4.78	5.34	35.4	22.2	21.3

**Hardware Setup**

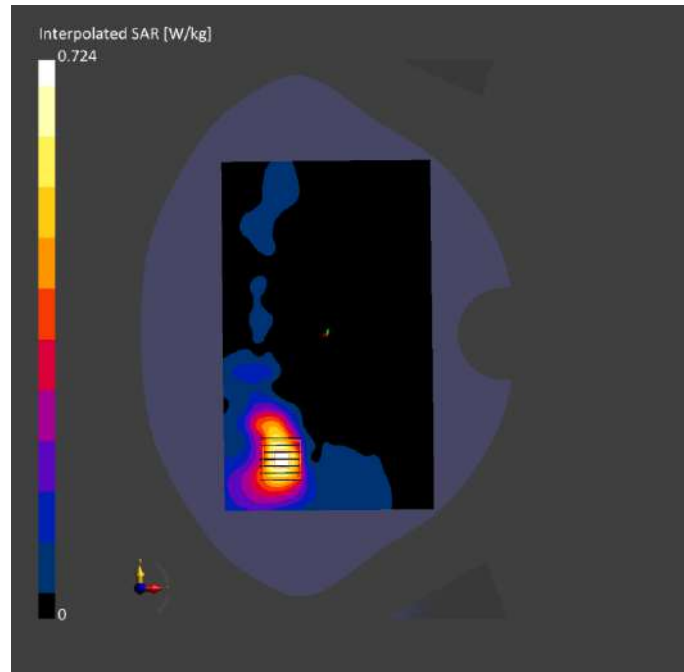
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-30	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-30	2023-12-30
psSAR1g [W/kg]	0.223	0.216
psSAR10g [W/kg]	0.085	0.082
Power Drift [dB]	-0.02	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.4
Dist 3dB Peak [mm]		8.6



**Meas.49 Body Plane with Front Side 10mm on 42 Channel in IEEE802.11ac80 mode with MIMO**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 10.00	WLAN, N	WLAN, 10544- AAC	5210.0, 42	5.41	4.61	36.1	22.3	21.2

**Hardware Setup**

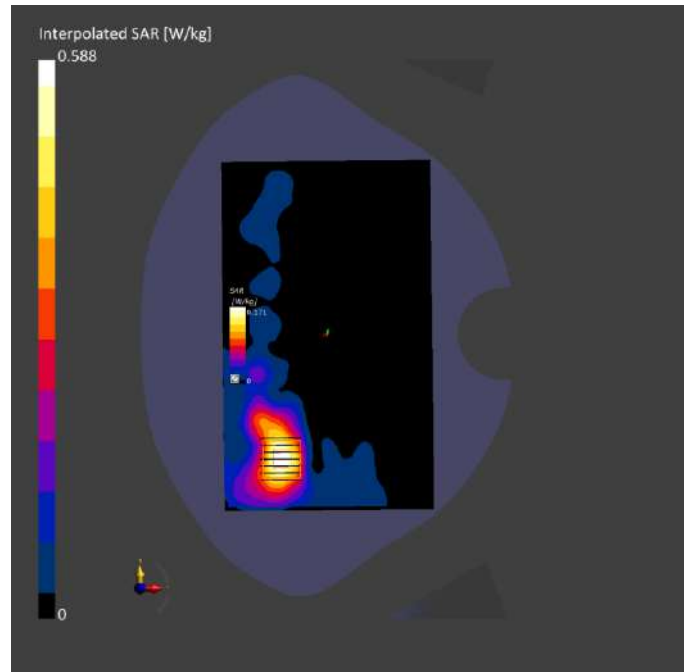
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-12-26	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-26	2023-12-26
psSAR1g [W/kg]	0.171	0.170
psSAR10g [W/kg]	0.067	0.064
Power Drift [dB]	-0.01	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.1
Dist 3dB Peak [mm]		8.0



## Meas.50 Body Plane with Front Side 10mm on 155 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 10.00	WLAN, 5GHz	WLAN, 10544-AAC	5775.0, 155	4.78	5.34	35.4	22.2	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, 2023-12-30	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

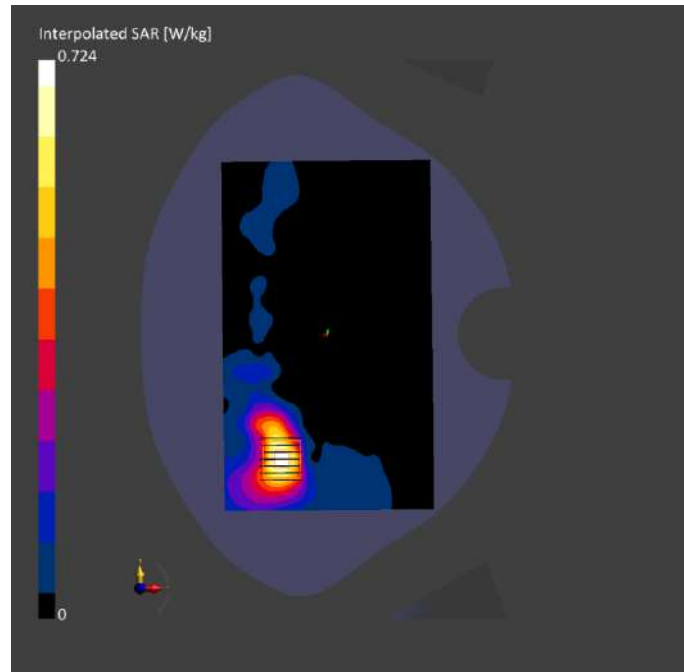
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-30	2023-12-30
psSAR1g [W/kg]	0.223	0.216
psSAR10g [W/kg]	0.085	0.082
Power Drift [dB]	-0.02	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.4
Dist 3dB Peak [mm]		8.6





**Meas.51 Body Plane with Front Side 0mm on 58 Channel in IEEE802.11ac80 mode with MIMO**

**Device under Test Properties**

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 0.00	WLAN, N	WLAN, 10544-58 AAC	5290.0, 58	5.41	4.76	35.7	22.3	21.2

**Hardware Setup**

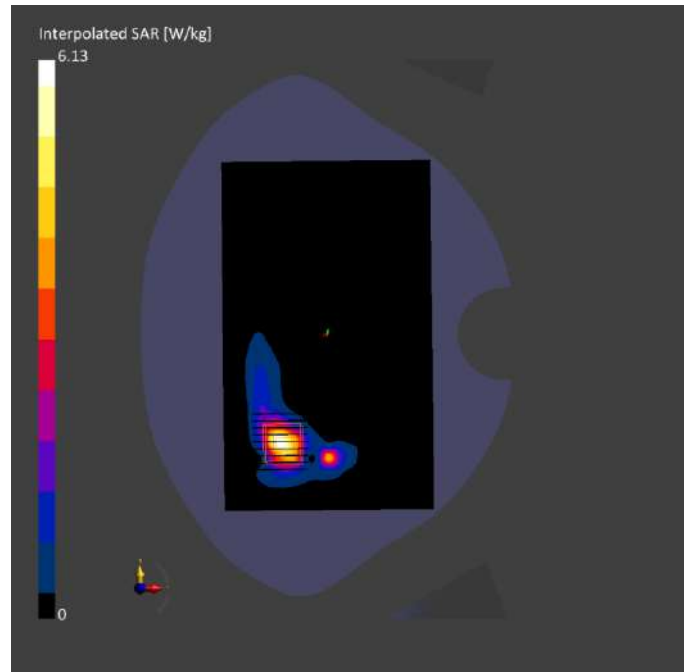
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-12-26	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

**Scan Setup**

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

**Measurement Results**

	Area Scan	Zoom Scan
Date	2023-12-26	2023-12-26
psSAR1g [W/kg]	1.33	1.57
psSAR10g [W/kg]	0.444	0.469
Power Drift [dB]	0.06	0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.7
Dist 3dB Peak [mm]		4.0



## Meas.52 Body Plane with Front Side 0mm on 106 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band, Distance [mm]	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 0.00	WLAN, 5GHz	WLAN, 10544-AAC	5530.0, 106	4.58	4.92	36.1	22.4	21.4

### Hardware Setup

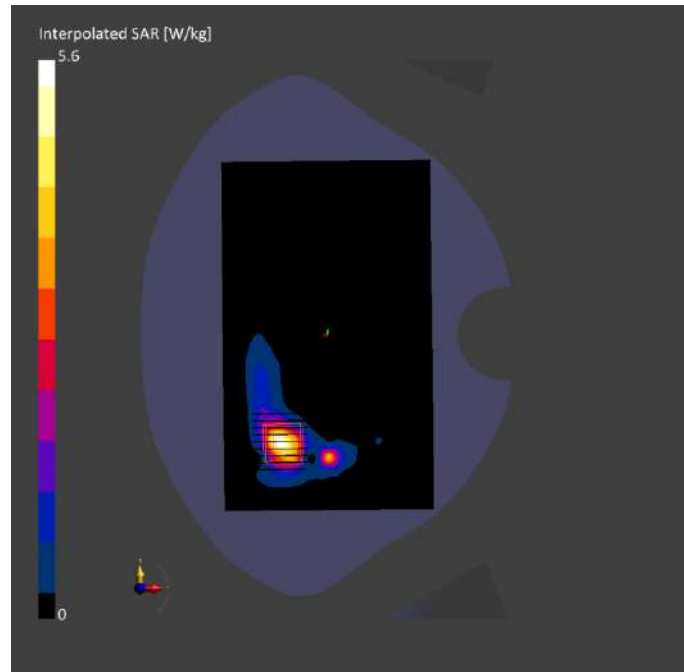
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-28	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-28	2023-12-28
psSAR1g [W/kg]	1.30	1.46
psSAR10g [W/kg]	0.427	0.435
Power Drift [dB]	-0.01	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.6
Dist 3dB Peak [mm]		3.2



## Meas.53 Body Plane with Front Side 0mm on 155 Channel in IEEE802.11ac80 mode with MIMO

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	Phone

### Exposure Conditions

Phantom	Position, Test Section, TSL	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 0.00	WLAN, N	WLAN, 10544-5GHz AAC	5775.0, 155	4.78	5.34	35.4	22.2	21.3

### Hardware Setup

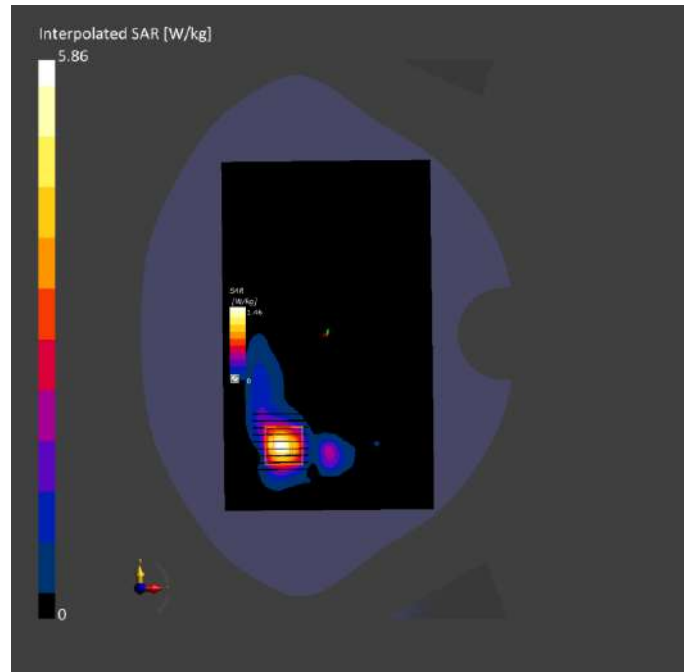
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-30	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 200.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-30	2023-12-30
psSAR1g [W/kg]	1.34	1.54
psSAR10g [W/kg]	0.442	0.452
Power Drift [dB]	-0.11	0.09
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.5
Dist 3dB Peak [mm]		3.2



## Meas.54 Left Head with Cheek on 0 Channel in Bluetooth mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
LeftHead, HSL	CHEEK, 0.00	ISM, 2.4	Bluetooth, 10032-Band CAA	2402.0, 0	7.47	1.71	39.7	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, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

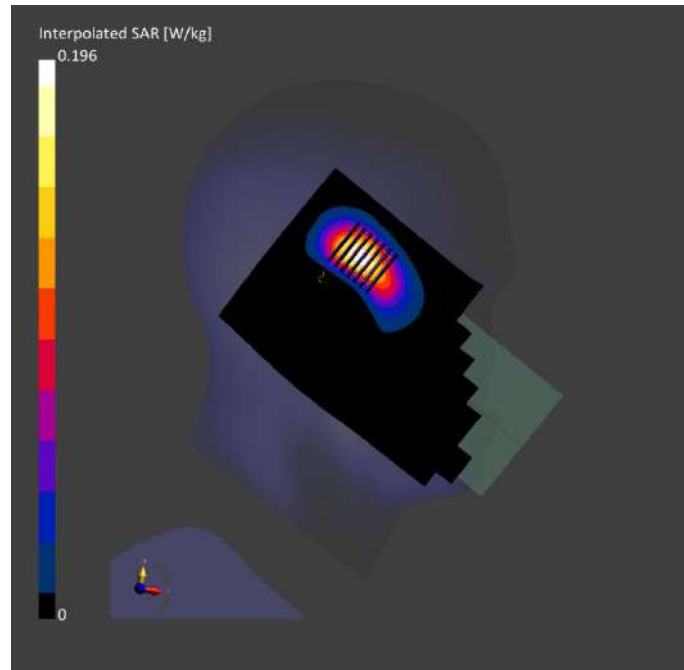
### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 192.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	0.098	0.105
psSAR10g [W/kg]	0.049	0.050
Power Drift [dB]	-0.05	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.4
Dist 3dB Peak [mm]		9.9





## Meas.55 Body Plane with Left Edge 10mm on 0 Channel in Bluetooth mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE LEFT, 10.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2402.0, 0	7.47	1.71	39.7	22.5	21.4

### Hardware Setup

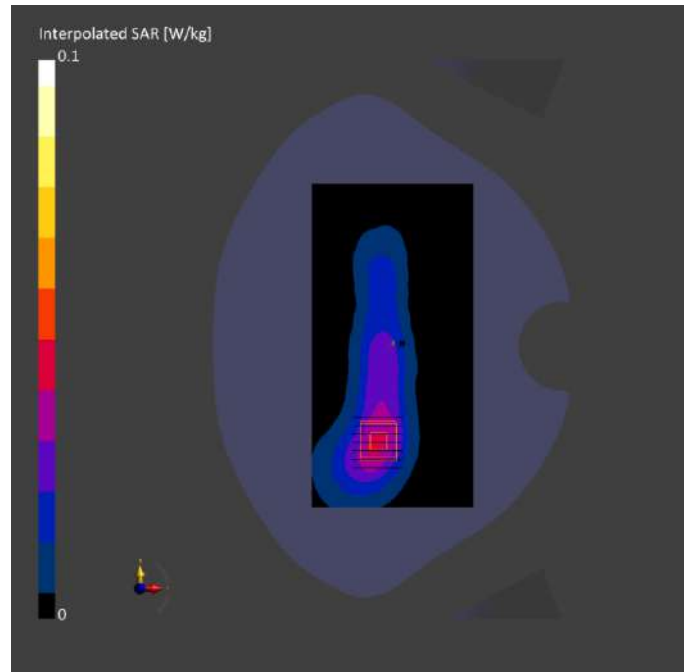
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 192.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	0.036	0.036
psSAR10g [W/kg]	0.020	0.020
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.0
Dist 3dB Peak [mm]		> 15.0



## Meas.56 Body Plane with Left Edge 0mm on 0 Channel in Bluetooth mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	157.0 x 75.0 x 18.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE LEFT, 0.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2402.0, 0	7.47	1.71	39.7	22.5	21.4

### Hardware Setup

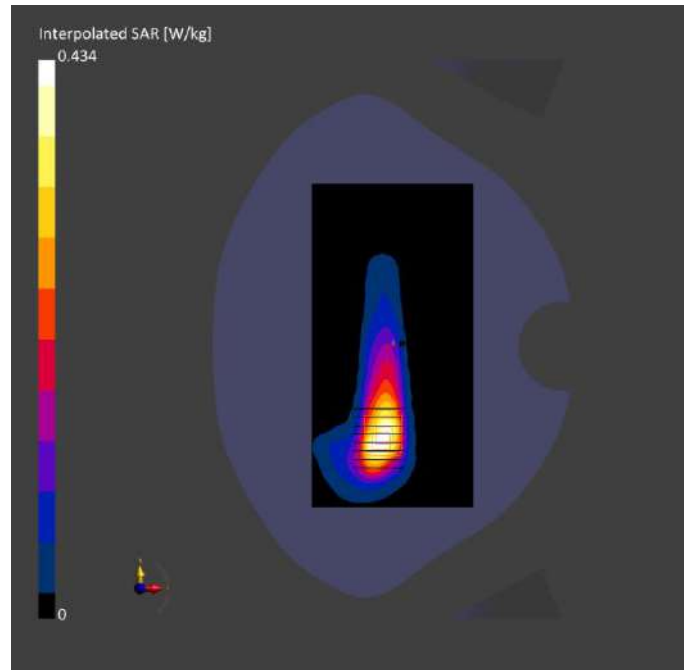
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000, 2023-12-24	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	96.0 x 192.0	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	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-24	2023-12-24
psSAR1g [W/kg]	0.195	0.209
psSAR10g [W/kg]	0.10	0.099
Power Drift [dB]	-0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		44.9
Dist 3dB Peak [mm]		8.0



## Meas.57 Body Plane with Top Edge 0mm on 3 Channel in RFID Mode

### Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
AUTOID UTouch2 4G	130.0 x 95.0 x 25.0	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 [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE, TOP, 0.00	Custo, m	CW, 0--	927.25, 927250	9.96	1.01	40.9	22.7	21.4

### Hardware Setup

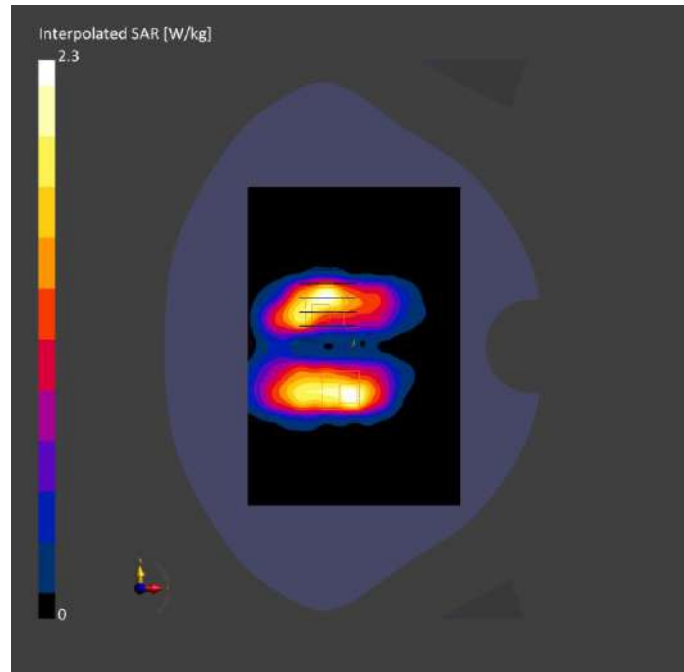
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 , 2023-11-08	EX3DV4 - SN7607, 2023-07-04	DAE4 Sn878, 2023-03-23

### Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 180.0	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	VMS + 6p	VMS + 6p
Detection		
Scan Method	Measured	Measured

### Measurement Results

	Area Scan	Zoom Scan
Date	2023-11-08	2023-11-08
psSAR1g [W/kg]	1.16	1.03
psSAR10g [W/kg]	0.685	0.518
Power Drift [dB]	0.07	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		41.6
Dist 3dB Peak [mm]		6.6



## **ANNEX D EUT EXTERNAL PHOTOS**

Please refer the document “BL-SZ23A1194-AW.pdf”.

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

Please refer the document “BL-SZ23A1194-AS.pdf”.

## **ANNEX F CALIBRATION REPORT**

Please refer the document “BL-SZ23A1194-AC.pdf”.

## **ANNEX G TUNE-UP PROCEDURE**

Please refer the document “BL-SZ23A1194-AT.pdf”.



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