

TEST REPORT

Applicant: TECNO MOBILE LIMITED
Address: FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL
CENTRE 19-25 SHAN MEI STREET FOTAN NT
HONGKONG
Equipment Type: Mobile phone
Model Name: KL7
Brand Name: TECNO
FCC ID: 2ADYY-KL7
Test Standard: FCC 47 CFR Part 2.1093
(refer to section 3.1)
Maximum SAR: Head (1 g@0mm): 0.93 W/kg
Body-worn (1 g@10mm): 0.34 W/kg
Hotspot (1 g@10mm): 0.39 W/kg
Specific (10 g@0mm): 0.82 W/kg
Sample Arrival Date: Jun. 27, 2024
Test Date: Aug. 07, 2024 - Aug. 16, 2024
Date of Issue: Aug. 21, 2024

ISSUED BY:

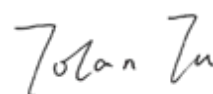
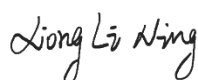
Shenzhen BALUN Technology Co., Ltd.

Tested by: Xiong Lining

Checked by: Xu Rui

Approved by: Tolan Tu

(Testing Director)



Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>Aug. 21, 2024</u>	<u>Initial Issue</u>

TABLE OF CONTENTS

1	GENERAL INFORMATION.....	5
1.1	Test Laboratory	5
1.2	Test Location	5
1.3	Test Environment Condition.....	5
2	PRODUCT INFORMATION	6
2.1	Applicant Information	6
2.2	Manufacturer Information.....	6
2.3	General Description for Equipment under Test (EUT).....	6
2.4	Ancillary Equipment.....	6
2.5	Technical Information	7
3	SUMMARY OF TEST RESULT	9
3.1	Test Standards	9
3.2	Device Category and SAR Limit	10
3.3	Test Result Summary	11
3.4	Test Uncertainty	13
4	MEASUREMENT SYSTEM	14
4.1	Specific Absorption Rate (SAR) Definition	14
4.2	DASY SAR System	15
5	SYSTEM VERIFICATION	22
5.1	Purpose of System Check	22
5.2	System Check Setup	22
6	TEST POSITION CONFIGURATIONS	23
6.1	Head Exposure Conditions	23
6.2	Body-worn Position Conditions	25

6.3	Hotspot Mode Exposure Position Conditions	26
6.4	Product Specific 10g Exposure Consideration	26
7	MEASUREMENT PROCEDURE	27
7.1	Measurement Process Diagram	27
7.2	SAR Scan General Requirement	28
7.3	Measurement Procedure	29
7.4	Area & Zoom Scan Procedure	29
7.5	LTE (TDD) Considerations.....	30
8	CONDUCTED RF OUPUT POWER	32
8.1	GSM	32
8.2	WCDMA	32
8.3	LTE.....	32
8.4	Intra-Band Uplink CA Normal Power.....	32
8.5	WIFI.....	33
8.6	Bluetooth-ANT13	39
8.7	Bluetooth-ANT14	40
9	TEST EXCLUSION CONSIDERATION	41
10	TEST RESULT	42
10.1	GSM 850	42
10.2	GSM 1900	43
10.3	WCDMA Band 2	44
10.4	WCDMA Band 4	45
10.5	WCDMA Band 5	46
10.6	LTE Band 2 (20MHz Bandwidth)	47
10.7	LTE Band 2 Worse case for CA Test	48
10.8	LTE Band 4 (20MHz Bandwidth)	49
10.9	LTE Band 5 (10MHz Bandwidth)	50
10.10	LTE Band 5 Worse case for CA Test	51
10.11	LTE Band 7 (20MHz Bandwidth)	52
10.12	LTE Band 7 Worse case for CA Test	53

10.13	LTE Band 12 (10MHz Bandwidth).....	54
10.14	LTE Band 17 (10MHz Bandwidth).....	55
10.15	LTE Band 66 (20MHz Bandwidth).....	56
10.16	LTE Band 66 Worse case for CA Test	57
10.17	LTE Band 38 (20MHz Bandwidth).....	58
10.18	LTE Band 38 Worse case for CA Test	59
10.19	LTE Band 41 (20MHz Bandwidth).....	60
10.20	LTE Band 41 Worse case for CA Test	61
10.21	WIFI 2.4GHz.....	62
10.22	WIFI 5GHz.....	63
10.23	Bluetooth	65
10.24	NFC SAR.....	66
11	SAR Measurement Variability	69
12	SIMULTANEOUS TRANSMISSION.....	70
12.1	Simultaneous Transmission Mode Consider	70
12.2	Sum SAR of Simultaneous Transmission	71
13	TEST EQUIPMENTS LIST	79
ANNEX A	SIMULATING LIQUID VERIFICATION RESULT	80
ANNEX B	SYSTEM CHECK RESULT	81
ANNEX C	TEST DATA.....	105
ANNEX D	EUT EXTERNAL PHOTOS.....	187
ANNEX E	SAR TEST SETUP PHOTOS	187
ANNEX F	CALIBRATION REPORT	187

1 GENERAL INFORMATION

1.1 Test Laboratory

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

1.2 Test Location

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

1.3 Test Environment Condition

Ambient Temperature	18°C to 25°C
Ambient Relative Humidity	30% to 70%

2 PRODUCT INFORMATION

2.1 Applicant Information

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

2.2 Manufacturer Information

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

2.3 General Description for Equipment under Test (EUT)

EUT Name	Mobile phone
Model Name Under Test	KL7
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	TECNO
	Model No.	BL-49JT
	Serial No.	N/A
	Capacity	Rated: 4900mAh/18.96Wh Typical: 5000mAh/19.35Wh
	Rated Voltage	3.87 V
	Limit Charge Voltage	4.45 V
Ancillary Equipment 2	Headset	
	Length (Approx.)	1.2m

2.5 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/1900 3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network LTE FDD Band 2/4/5/7/12/17/66 LTE TDD Band 38/41 LTE CA Uplink (UL): CA_2C, CA_5B, CA_7C, CA_38C, CA_41C, CA_66C Bluetooth (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n(HT20/40) and 802.11ac(VHT20/40/80) GPS, GLONASS, BDS, Galileo, SBAS, FM Receiver, NFC
Note: 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 WIFI, 5G WIFI, Bluetooth		
Frequency Range	GSM 850	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	GSM 1900	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	WCDMA Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	WCDMA Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE Band 4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE Band 5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE Band 7	TX: 2500 ~ 2570 MHz	RX: 2620 ~ 2690 MHz
	LTE Band 12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2180 MHz
	LTE Band 38	TX: 2570 ~ 2620 MHz	RX: 2570 ~ 2620 MHz
	LTE Band 41	TX: 2535 ~2655 MHz	RX: 2535 ~2655 MHz
	802.11b/g /n(HT20)	2412 ~ 2462 MHz	
	802.11a/ /n(HT20/HT40) /ac(VHT20/VHT40/ VHT80)	5150 ~ 5250 MHz	
		5250 ~ 5350 MHz	
		5470 ~ 5725 MHz	
		5725 ~ 5850 MHz	
	Bluetooth	2402 ~ 2480 MHz	
NFC	13.56 MHz		
Antenna Type	WWAN: PIFA Antenna		
	WIFI: PIFA Antenna		
	Bluetooth: PIFA Antenna		
	NFC: Coil Antenna		

DTM	N/A	
Hotspot Function	Support	
Power Reduction	Support	
Exposure Category	General Population/Uncontrolled exposure	
Product Type	Portable Device	
EUT Type	☒ Production unit	☐ Identical prototype

3 SUMMARY OF TEST RESULT

3.1 Test Standards

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

3.2 Device Category and SAR Limit

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

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

Table of Exposure Limits:

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

NOTE:

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

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

3.3 Test Result Summary

3.3.1 Highest SAR Values

Equipment Class	Band	Maximum Scaled SAR (W/kg)				Maximum Report SAR (W/kg)			
		Head (0mm)	Body-worn (10mm)	Hotspot (10mm)	Specific (0mm)	Head (0mm)	Body-worn (10mm)	Hotspot (10mm)	Specific (0mm)
		1g SAR			10g SAR	1g SAR			10g SAR
PCE	GSM 850	0.93	0.20	0.22	/	0.93	0.34	0.39	0.82
	GSM 1900	0.93	0.31	0.31	/				
	WCDMA Band 2	0.67	0.18	0.26	/				
	WCDMA Band 4	0.72	0.27	0.28	/				
	WCDMA Band 5	0.73	0.15	0.17	/				
	LTE Band 2	0.72	0.20	0.26	/				
	LTE Band 4	0.70	0.20	0.25	/				
	LTE Band 5	0.45	0.07	0.08	/				
	LTE Band 7	0.72	0.31	0.33	/				
	LTE Band 12	0.76	0.20	0.20	/				
	LTE Band 17	0.70	0.19	0.19	/				
	LTE Band 66	0.70	0.21	0.22	/				
	LTE Band 38	0.75	0.31	0.36	/				
	LTE Band 41	0.75	0.34	0.39	/				
DTS	2.4G WIFI	0.63	0.14	0.14	/	0.93	0.34	0.39	0.82
NII	5.2G WIFI	/	/	0.24	/				
	5.3G WIFI	0.50	0.21	/	0.82				
	5.6G WIFI	0.32	0.16	/	0.36				
	5.8G WIFI	0.31	0.10	0.10	/				
DSS	Bluetooth	0.43	0.11	0.11	/	0.93	0.34	0.39	0.82
Limit (W/kg)		1.6			4.0				
Verdict		PASS							

3.3.2 Highest Simultaneous Transmission SAR Values

Equipment Class	Maximum Scaled SAR (W/kg)		
	Head 1g (0mm)	Body-worn 1g (10mm)	Hotspot 1g (10mm)
PCE	1.54	0.78	0.88
DTS	1.41	0.48	0.50
NII	1.54	0.78	0.88
DSS	1.54	0.78	0.88
Limit (W/Kg)	1.60		
Verdict	Pass		
Note: The highest simultaneous SAR please refer section 12.2			

3.4 Test Uncertainty

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

The maximum 1 g SAR for the EUT in this report is 0.93 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 0.82 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 (ρ). The equation description is as below:

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

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

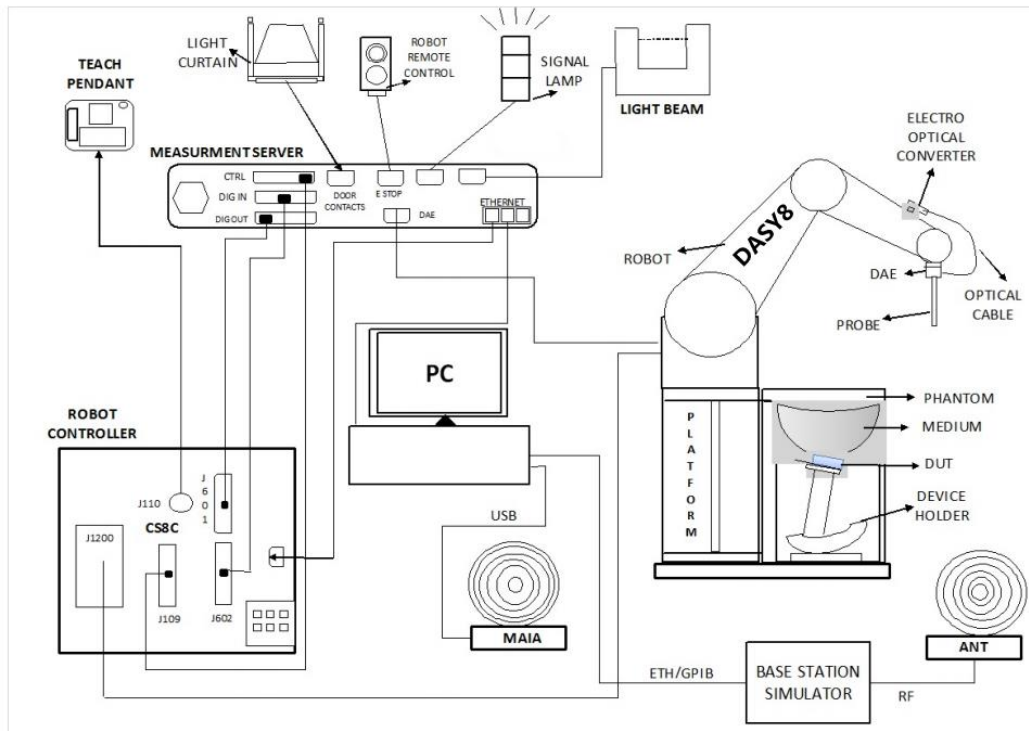
$$SAR = \frac{\sigma E^2}{\rho}$$

Where: σ is the conductivity of the tissue,

ρ is the mass density of the tissue and E is the RMS electrical field strength.

4.2 DASY SAR System

4.2.1 DASY SAR System Diagram



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

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

4.2.2 Robot

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



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

4.2.3 E-Field Probe

The probe is specially designed and calibrated for use in liquids with high permittivities for the measurements the Specific Dosimetric E-Field Probe EX3DV4-SN:7510 with following specifications is used.

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



E-Field Probe Calibration Process

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

4.2.4 Data Acquisition Electronics

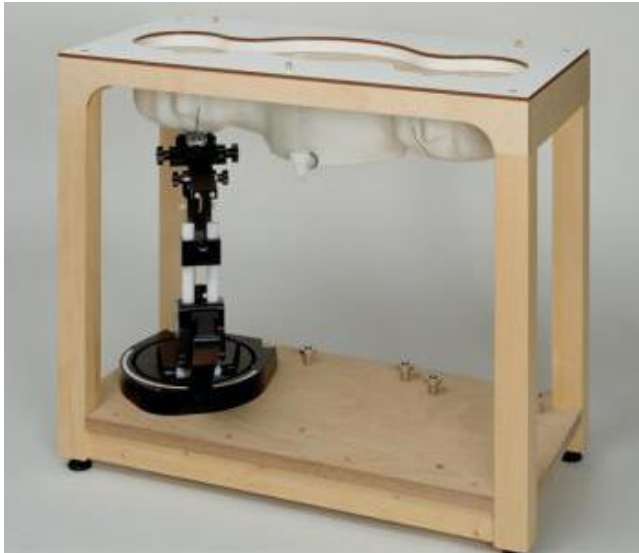
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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



- Input Impedance: 200M Ω 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 SAM	Vinylester, glass fiber reinforced	1000	500

4.2.6 Device Holder

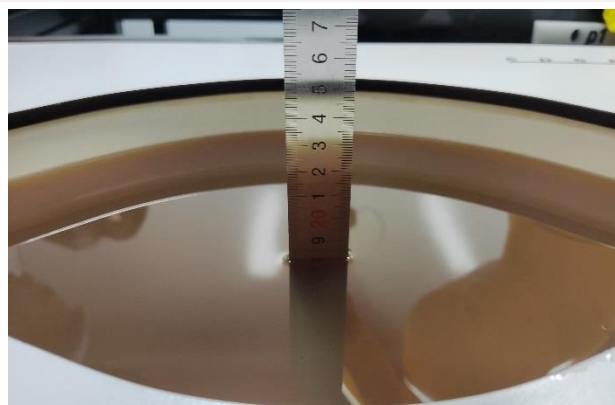
The DASY device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65° . The bottom plate contains three pair of bolts for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



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

4.2.7 Simulating Liquid

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

Head Liquid Depth**Body Liquid Depth**

The following table gives the recipes for tissue simulating liquid.

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

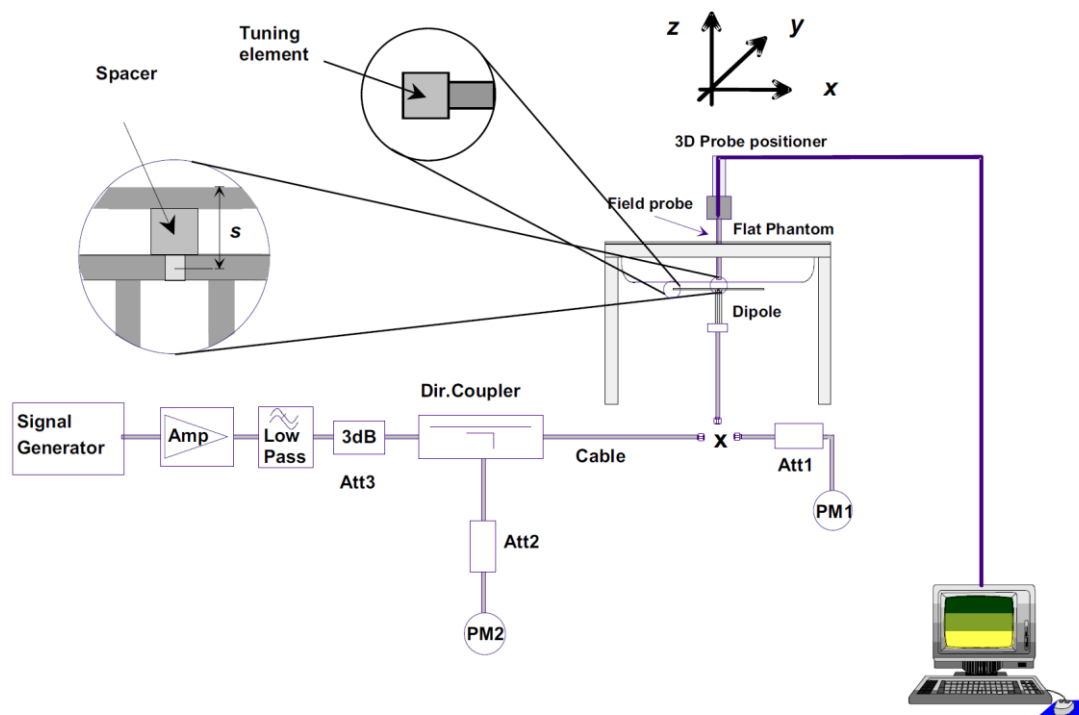
5 SYSTEM VERIFICATION

5.1 Purpose of System Check

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

5.2 System Check Setup

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



6 TEST POSITION CONFIGURATIONS

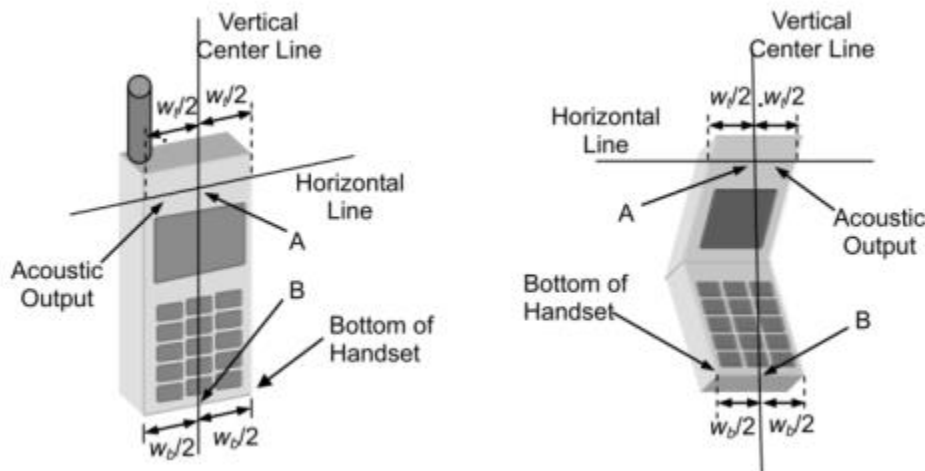
According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

6.1 Head Exposure Conditions

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

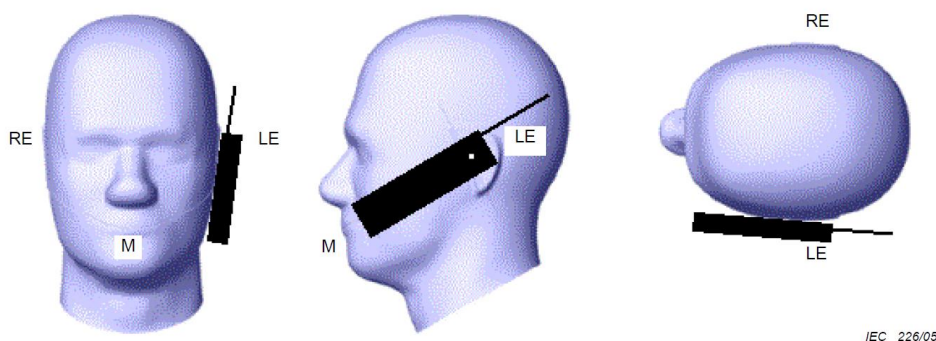
6.1.1 Two Imaginary Lines on the Handset

- 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

- (a) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the three ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
- (b) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.



6.1.3 Tilted Position

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

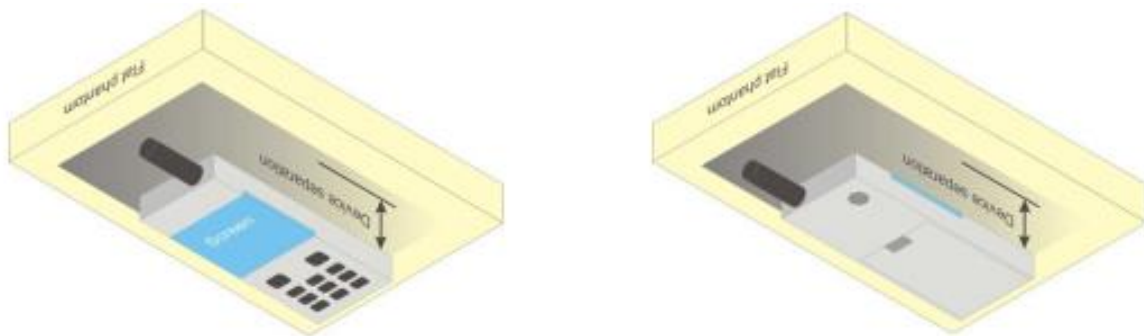


6.2 Body-worn Position Conditions

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

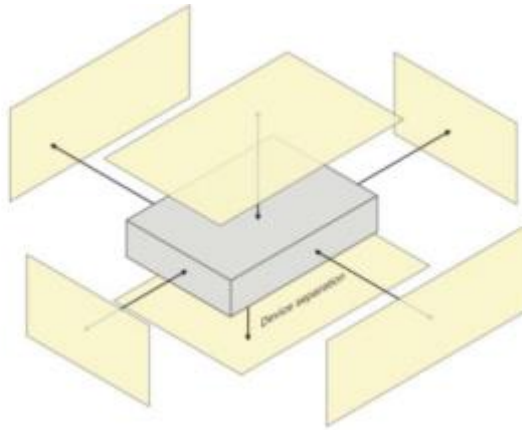
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.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

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



6.3 Hotspot Mode Exposure Position Conditions

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



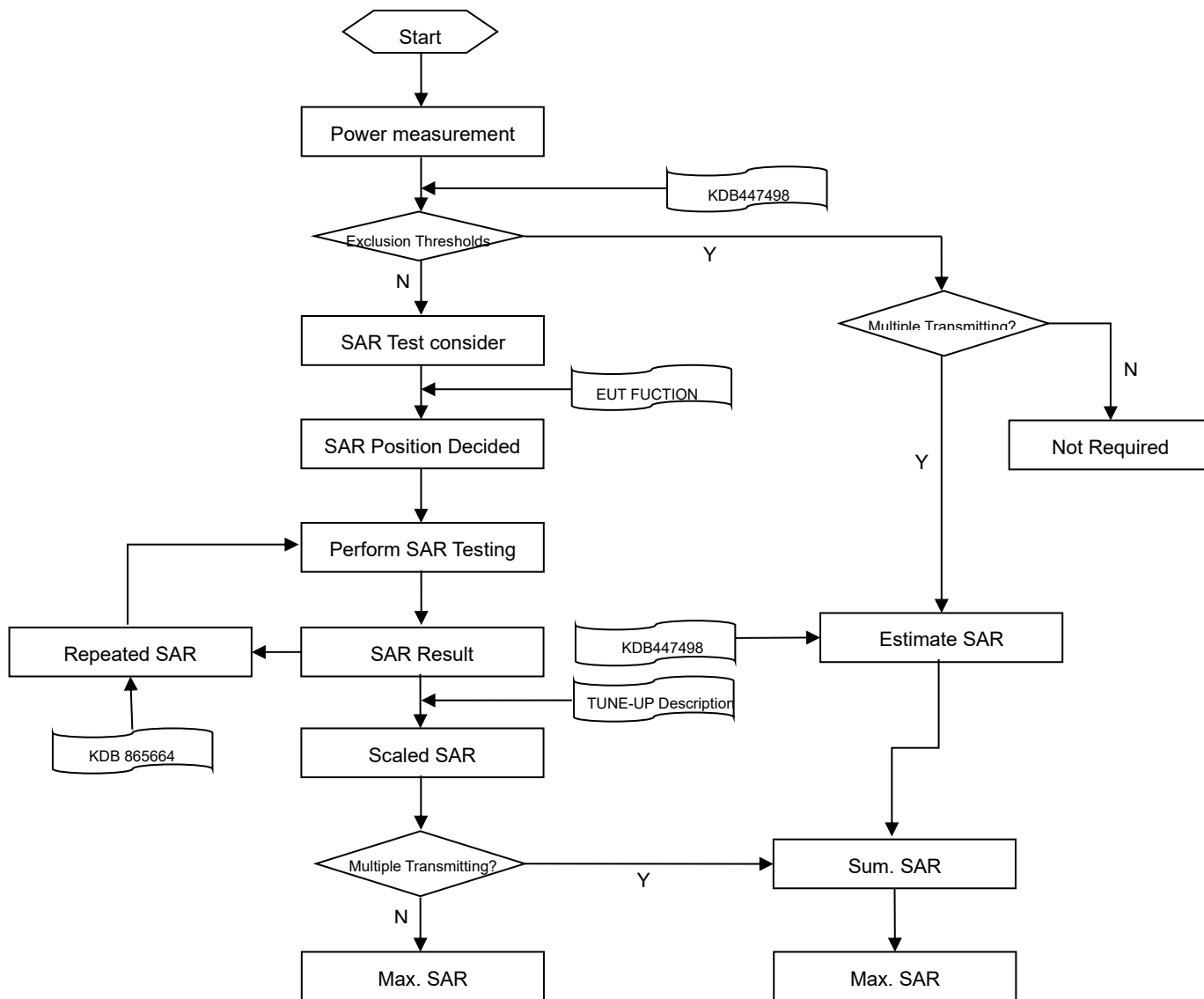
6.4 Product Specific 10g Exposure Consideration

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 ≤ 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.

7 MEASUREMENT PROCEDURE

7.1 Measurement Process Diagram



7.2 SAR Scan General Requirement

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

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

Note:

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

7.3 Measurement Procedure

The following steps are used for each test position

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

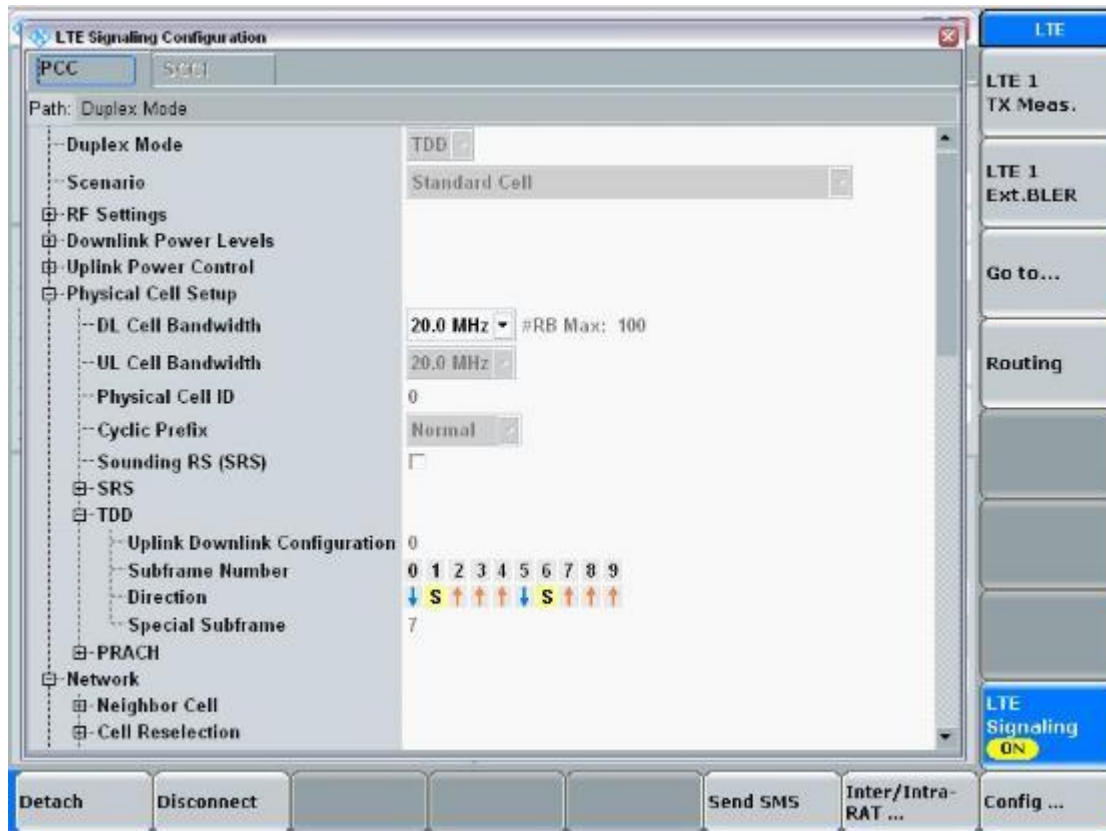
7.4 Area & Zoom Scan Procedure

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

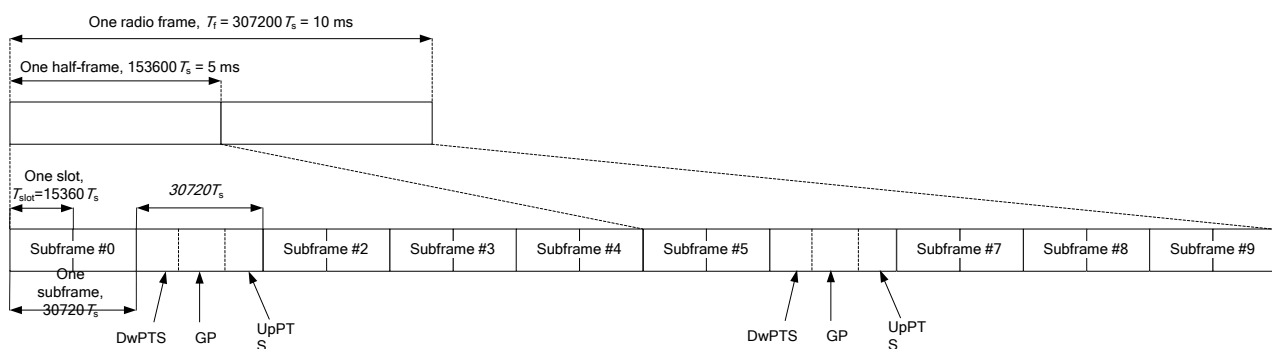
When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7.5 LTE (TDD) Considerations

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



According to 3GPP Per 3GPP TS 36.211. Each radio frame of length ($T_f = 307200 \cdot T_s = 10\text{ms}$) of two half-frames of length ($153600 \cdot T_s = 5\text{ms}$). Each half-frame consists of five sub-frames of length ($30720 \cdot T_s = 1\text{ms}$)



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

The length of DwPTS and UpPTS is given by below table subject to the total length of DwPTS, GP and UpPTS being equal to $30720 \cdot T_s = 1\text{ms}$.

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

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

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

Maximum uplink time of one special sub-frame=(largest cyclic prefix)/(one sub-frame of length)* time of one sub-frame= $5120 \cdot T_s / 30720 \cdot T_s \cdot 1\text{ms} = 0.167\text{ms}$

One radio frame with 6 uplink sub-frames and two special sub-frame,

there for the maximum Uplink time in one radio frame is: $6 \cdot 1\text{ ms} + 2 \cdot 0.167\text{ ms} = 6.334\text{ms}$

So, the duty cycle for TDD-LTE is: $6.334\text{ms} / 10\text{ms} = 1: 1.58$

8 CONDUCTED RF OUPUT POWER

8.1 GSM

Please refer the document “BL-SZ2470699-AP Power List.pdf”.

8.2 WCDMA

Please refer the document “BL-SZ2470699-AP Power List.pdf”.

8.3 LTE

Please refer the document “BL-SZ2470699-AP Power List.pdf”.

8.4 Intra-Band Uplink CA Normal Power

Note:

1. This devices supports intra-band uplink CA of 2C/5B/7C/38C/41C/66C.
2. For intra-band uplink carrier aggregation power verification and measurement is selected highest PCC and SCC bandwidth combination to do and was according to 3GPP 36.52101 sectino6.2.2A.1 and section 6.2.2A.2 test procedure.
3. For intra-band uplink CA output power was measured high / middle / low channel combination, and for SAR verification is selected highest output power combination with each exposure condition in each frequency band using the highest SAR configuration test in standalone LTE mode.

Please refer the document “BL-SZ2470699-AP Power List.pdf”.

8.5 WIFI

8.5.1 2.4G WIFI-Ant.13

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	15.27	16.00	No
		6	2437	15.35	16.00	Yes
		11	2462	15.47	16.00	No
	802.11g	1	2412	15.70	16.00	No
		6	2437	15.81	16.00	No
		11	2462	15.69	16.00	No
	802.11n(HT20)	1	2412	15.76	16.00	No
		6	2437	15.56	16.00	No
		11	2462	15.90	16.00	No

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

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, OFDM SAR test is not required.
Adjusted SAR = $0.432 * (39.81\text{mW}/39.81\text{mW}) = 0.432$ W/Kg, so 2.4G OFDM SAR test is not required.

8.5.2 2.4G WIFI-Ant.14

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4 (2.4~2.4835)	802.11b	1	2412	14.92	16.00	No
		6	2437	15.36	16.00	Yes
		11	2462	15.28	16.00	No
	802.11g	1	2412	14.20	16.00	No
		6	2437	14.89	16.00	No
		11	2462	15.11	16.00	No
	802.11n(HT20)	1	2412	14.55	16.00	No
		6	2437	15.49	16.00	No
		11	2462	15.25	16.00	No

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

1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.

2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.

3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, OFDM SAR test is not required.

Adjusted SAR = $0.629 * (39.81\text{mW}/39.81\text{mW}) = 0.629$ W/Kg, so 2.4G OFDM SAR test is not required.

8.5.3 5G WIFI-Ant.13

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2~5.6 (5.15~5.725)	802.11a	36	5180	15.01	16.00	No
		44	5220	15.41	16.00	No
		48	5240	15.38	16.00	No
		52	5260	15.44	16.00	No
		60	5300	15.54	16.00	No
		64	5320	15.00	16.00	No
		100	5500	15.38	16.00	No
		116	5580	15.45	16.00	No
		140	5700	13.65	14.00	No
	802.11n(HT20)	36	5180	15.92	16.00	No
		44	5220	15.88	16.00	No
		48	5240	16.26	17.00	Yes
		52	5260	15.83	16.00	No
		60	5300	15.45	16.00	No
		64	5320	15.90	16.00	No
		100	5500	15.23	16.00	No
		116	5580	15.28	16.00	No
		140	5700	15.52	16.00	No
	802.11n(HT40)	38	5190	15.44	16.00	No
		46	5230	15.73	16.00	No
		54	5270	16.21	17.00	Yes
		62	5310	15.43	16.00	No
		102	5510	15.67	16.00	No
		118	5590	15.38	16.00	No
		134	5670	15.61	16.00	No
	802.11ac(VHT20)	36	5180	15.97	16.00	No
		44	5220	16.28	17.00	No
		48	5240	15.86	16.00	No
		52	5260	15.85	16.00	No
		60	5300	15.43	16.00	No
		64	5320	15.38	16.00	No
		100	5500	15.74	16.00	No
		116	5580	15.73	16.00	No
		140	5700	12.97	14.00	No
	802.11ac(VHT40)	38	5190	15.48	16.00	No
		46	5230	15.76	16.00	No

		54	5270	15.79	16.00	No
		62	5310	15.42	16.00	No
		102	5510	14.26	16.00	No
		118	5590	15.83	16.00	No
		134	5670	15.62	16.00	No
	802.11ac(VHT80)	42	5210	14.86	15.00	No
		58	5290	13.85	15.00	No
		106	5530	13.10	14.00	No
		122	5610	15.33	16.00	Yes
	802.11a	149	5745	15.43	17.00	No
		157	5785	15.21	17.00	No
		165	5825	15.21	17.00	No
5.8 (5.725~5.850)	802.11n(HT20)	149	5745	15.84	17.00	No
		157	5785	16.16	17.00	No
		165	5825	16.05	17.00	No
	802.11n(HT40)	151	5755	15.95	17.00	No
		159	5795	16.17	17.00	No
	802.11ac(VHT20)	149	5745	15.84	17.00	No
		157	5785	16.13	17.00	No
		165	5825	16.06	17.00	No
	802.11ac(VHT40)	151	5755	15.49	17.00	No
		159	5795	16.16	17.00	No
	802.11ac(VHT80)	155	5775	16.43	17.00	Yes

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 ≤ 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.

8.5.4 5G WIFI-Ant.14

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
5.2~5.6 (5.15~5.725)	802.11a	36	5180	15.12	16.00	No
		44	5220	15.03	16.00	No
		48	5240	14.52	16.00	No
		52	5260	15.02	16.00	No
		60	5300	15.03	16.00	No
		64	5320	14.94	16.00	No
		100	5500	15.67	16.00	No
		116	5580	15.68	16.00	No
		140	5700	14.72	16.00	No
	802.11n(HT20)	36	5180	15.01	16.00	No
		44	5220	14.33	16.00	No
		48	5240	14.84	16.00	No
		52	5260	14.86	16.00	No
		60	5300	14.91	16.00	No
		64	5320	14.86	16.00	No
		100	5500	15.95	16.00	No
		116	5580	15.94	16.00	No
		140	5700	15.07	16.00	No
	802.11n(HT40)	38	5190	15.07	16.00	No
		46	5230	14.38	16.00	No
		54	5270	14.39	16.00	No
		62	5310	14.93	16.00	No
		102	5510	15.49	16.00	No
		118	5590	15.50	16.00	No
		134	5670	15.63	16.00	No
	802.11ac(VHT20)	36	5180	14.94	16.00	No
		44	5220	14.87	16.00	No
		48	5240	14.82	16.00	No
		52	5260	14.83	16.00	No
		60	5300	14.87	16.00	No
		64	5320	15.30	16.00	No
		100	5500	15.97	16.00	No
		116	5580	15.86	16.00	No
		140	5700	15.03	16.00	No
	802.11ac(VHT40)	38	5190	14.46	16.00	No
		46	5230	14.32	16.00	No

		54	5270	14.81	16.00	No
		62	5310	14.35	16.00	No
		102	5510	12.84	14.00	No
		118	5590	14.41	16.00	No
		134	5670	15.50	16.00	No
	802.11ac(VHT80)	42	5210	14.16	16.00	Yes
		58	5290	14.41	16.00	Yes
		106	5530	13.68	15.00	No
		122	5610	15.53	16.00	Yes
5.8 (5.725~5.850)	802.11a	149	5745	15.16	16.00	No
		157	5785	15.70	16.00	No
		165	5825	15.39	16.00	No
	802.11n(HT20)	149	5745	14.80	16.00	No
		157	5785	14.61	16.00	No
		165	5825	14.99	16.00	No
	802.11n(HT40)	151	5755	14.94	16.00	No
		159	5795	15.29	16.00	No
	802.11ac(VHT20)	149	5745	14.76	16.00	No
		157	5785	15.57	16.00	No
		165	5825	15.45	16.00	No
	802.11ac(VHT40)	151	5755	15.40	16.00	No
		159	5795	14.88	16.00	No
	802.11ac(VHT80)	155	5775	15.17	16.00	Yes
	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 ≤ 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.					

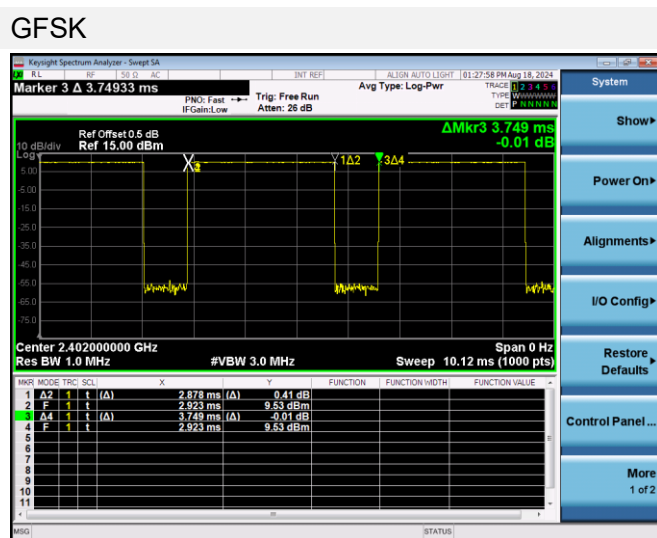
8.6 Bluetooth-ANT13

Mode	GFSK			$\pi/4$ -DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
AV Power (dBm)	15.52	16.42	15.49	14.94	15.47	14.96
Tune-Up Limit (dBm)	17.00	17.00	17.00	16.00	16.00	16.00
SAR Test Require	NO	YES	NO	NO	NO	NO
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
AV Power (dBm)	14.80	15.35	14.81	/	/	/
Tune-Up Limit (dBm)	16.00	16.00	16.00	/	/	/
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
AV Power (dBm)	-3.92	-3.19	-3.47	-3.94	-3.36	-3.41
Tune-Up Limit (dBm)	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
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 $\leq \frac{1}{4}$ dB higher than the primary mode.

The Bluetooth BT DH5 duty cycle is 76.77 % 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



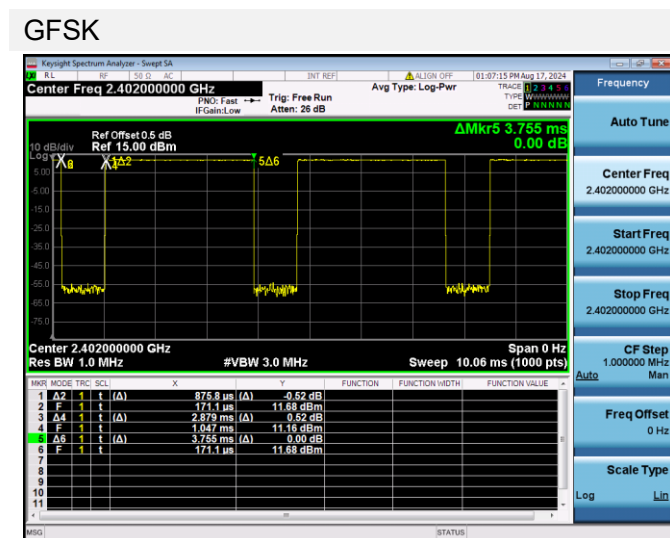
8.7 Bluetooth-ANT14

Mode	GFSK			$\pi/4$ -DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
AV Power (dBm)	11.31	10.19	9.88	10.40	9.30	9.24
Tune-Up Limit (dBm)	12.00	12.00	10.00	11.00	11.00	11.00
SAR Test Require	YES	NO	NO	NO	NO	NO
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
AV Power (dBm)	10.37	9.25	9.05	/	/	/
Tune-Up Limit (dBm)	11.00	11.00	11.00	/	/	/
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
AV Power (dBm)	-5.53	-3.29	-4.54	-5.79	-3.42	-4.28
Tune-Up Limit (dBm)	-4.00	-3.00	-4.00	-4.00	-3.00	-3.00
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 $\leq \frac{1}{4}$ dB higher than the primary mode.

The Bluetooth BT DH5 duty cycle is 76.67 % as following figure, according to 2016 Oct. TCB workshop for Bluetooth SAR scaling need further consideration and the maximum duty cycle is 100%, therefore the actual duty cycle will be scaled up to 100% for Bluetooth reported SAR calculation.

Duty Cycle



9 TEST EXCLUSION CONSIDERATION

For antenna location and support bands please refer the document “BL-SZ2470699-AI EUT internal photo.pdf”.

Antenna	Front Side(mm)	Back Side(mm)	Left Edge(mm)	Right Edge(mm)	Top Edge(mm)	Bottom Edge(mm)
Ant.0	<25	<25	<25	<25	>25	<25
Ant.2	<25	<25	>25	<25	<25	>25
Ant.13	<25	<25	<25	>25	<25	>25
Ant.14	<25	<25	<25	>25	<25	>25

Note: 1. Per KDB 941225 D06, When the overall length and width of a device is > 9 cm *5 cm, a test separation distance of 10 mm is required for hotspot mode SAR measurements and hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

10 TEST RESULT

10.1GSM 850

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	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.2	DATA 2slots	Left Cheek	0	190	836.6	-0.05	0.668	30.34	31.00	1.164	0.778	/
		Left Tilt	0	190	836.6	0.14	0.646	30.34	31.00	1.164	0.752	/
		Right Cheek	0	190	836.6	-0.04	0.799	30.34	31.00	1.164	0.930	1#
		Right Tilt	0	190	836.6	-0.08	0.574	30.34	31.00	1.164	0.668	/
		Right Cheek	0	128	824.2	0.12	0.722	30.05	31.00	1.245	0.899	/
		Right Cheek	0	251	848.8	-0.01	0.722	30.17	31.00	1.211	0.874	/
Ant.0	DATA 2slots	Left Cheek	0	190	836.6	-0.14	0.076	29.75	30.00	1.059	0.080	/
		Left Tilt	0	190	836.6	-0.09	0.039	29.75	30.00	1.059	0.041	/
		Right Cheek	0	190	836.6	-0.04	0.069	29.75	30.00	1.059	0.073	/
		Right Tilt	0	190	836.6	0.09	0.025	29.75	30.00	1.059	0.026	/
Body-worn&Hotspot												
Ant.2	DATA 2slots	Front Side	10	190	836.6	0.13	0.166	30.34	31.00	1.164	0.193	/
		Back Side	10	190	836.6	-0.07	0.172	30.34	31.00	1.164	0.200	/
		Right Edge	10	190	836.6	-0.07	0.094	30.34	31.00	1.164	0.109	
		Top Edge	10	190	836.6	-0.07	0.186	30.34	31.00	1.164	0.217	2#
Ant.0	DATA 2slots	Front Side	10	190	836.6	0.12	0.108	29.75	30.00	1.059	0.114	/
		Back Side	10	190	836.6	0.18	0.144	29.75	30.00	1.059	0.152	/
		Left Edge	10	190	836.6	-0.06	0.079	29.75	30.00	1.059	0.084	/
		Right Edge	10	190	836.6	0.18	0.050	29.75	30.00	1.059	0.053	
		Bottom Edge	10	190	836.6	0.09	0.127	29.75	30.00	1.059	0.134	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.2GSM 1900

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	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.2	DATA 4slots	Left Cheek	0	810	1909.8	0.14	0.681	22.54	23.00	1.112	0.757	/
		Left Tilt	0	810	1909.8	-0.15	0.692	22.54	23.00	1.112	0.770	/
		Right Cheek	0	810	1909.8	0.16	0.657	22.54	23.00	1.112	0.731	/
		Right Tilt	0	810	1909.8	0.02	0.837	22.54	23.00	1.112	0.931	3#
		Right Tilt	0	512	1850.2	0.07	0.697	22.30	23.00	1.175	0.819	/
		Right Tilt	0	661	1880	-0.08	0.661	22.45	23.00	1.135	0.750	/
Ant.0	DATA 4slots	Left Cheek	0	810	1909.8	0.09	0.014	23.20	25.00	1.514	0.021	/
		Left Tilt	0	810	1909.8	0.10	0.008	23.20	25.00	1.514	0.012	/
		Right Cheek	0	810	1909.8	0.07	0.018	23.20	25.00	1.514	0.027	/
		Right Tilt	0	810	1909.8	-0.19	0.009	23.20	25.00	1.514	0.014	/
Body-worn&Hotspot												
Ant.2	DATA 4slots	Front Side	10	810	1909.8	-0.04	0.132	22.54	23.00	1.112	0.147	/
		Back Side	10	810	1909.8	0.02	0.274	22.54	23.00	1.112	0.305	4#
		Right Edge	10	810	1909.8	-0.14	0.033	22.54	23.00	1.112	0.037	/
		Top Edge	10	810	1909.8	-0.01	0.182	22.54	23.00	1.112	0.202	/
Ant.0	DATA 4slots	Front Side	10	810	1909.8	0.08	0.013	23.20	25.00	1.514	0.020	/
		Back Side	10	810	1909.8	0.05	0.038	23.20	25.00	1.514	0.058	/
		Left Edge	10	810	1909.8	0.18	0.011	23.20	25.00	1.514	0.017	/
		Right Edge	10	810	1909.8	-0.03	0.006	23.20	25.00	1.514	0.009	/
		Bottom Edge	10	810	1909.8	0.16	0.018	23.20	25.00	1.514	0.027	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.3WCDMA Band 2

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	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.2	RMC	Left Cheek	0	9400	1880	0.12	0.239	15.57	16.50	1.239	0.296	/
		Left Tilt	0	9400	1880	-0.08	0.284	15.57	16.50	1.239	0.352	/
		Right Cheek	0	9400	1880	-0.08	0.400	15.57	16.50	1.239	0.496	/
		Right Tilt	0	9400	1880	-0.03	0.544	15.57	16.50	1.239	0.674	5#
Ant.0	RMC	Left Cheek	0	9262	1852.4	-0.05	0.016	14.99	16.50	1.416	0.023	/
		Left Tilt	0	9262	1852.4	-0.11	0.014	14.99	16.50	1.416	0.020	/
		Right Cheek	0	9262	1852.4	-0.03	0.015	14.99	16.50	1.416	0.021	/
		Right Tilt	0	9262	1852.4	-0.15	0.012	14.99	16.50	1.416	0.017	/
Body-worn&Hotspot												
Ant.2	RMC	Front Side	10	9400	1880	0.06	0.099	15.57	16.50	1.239	0.123	/
		Back Side	10	9400	1880	0.10	0.147	15.57	16.50	1.239	0.182	/
		Right Edge	10	9400	1880	0.18	0.032	15.57	16.50	1.239	0.040	/
		Top Edge	10	9400	1880	-0.06	0.209	15.57	16.50	1.239	0.259	6#
Ant.0	RMC	Front Side	10	9262	1852.4	-0.13	0.030	14.99	16.50	1.416	0.042	/
		Back Side	10	9262	1852.4	-0.19	0.070	14.99	16.50	1.416	0.099	/
		Left Edge	10	9262	1852.4	0.03	0.011	14.99	16.50	1.416	0.016	/
		Right Edge	10	9262	1852.4	0.18	0.018	14.99	16.50	1.416	0.025	/
		Bottom Edge	10	9262	1852.4	-0.10	0.039	14.99	16.50	1.416	0.055	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.4WCDMA Band 4

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	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.2	RMC	Left Cheek	0	1513	1752.6	0.15	0.365	16.61	18.00	1.377	0.503	/
		Left Tilt	0	1513	1752.6	-0.18	0.385	16.61	18.00	1.377	0.530	/
		Right Cheek	0	1513	1752.6	0.00	0.526	16.61	18.00	1.377	0.724	7#
		Right Tilt	0	1513	1752.6	-0.16	0.493	16.61	18.00	1.377	0.679	/
Ant.0	RMC	Left Cheek	0	1513	1752.6	-0.15	0.016	16.01	17.00	1.256	0.020	/
		Left Tilt	0	1513	1752.6	0.18	0.008	16.01	17.00	1.256	0.010	/
		Right Cheek	0	1513	1752.6	-0.13	0.015	16.01	17.00	1.256	0.019	/
		Right Tilt	0	1513	1752.6	0.14	0.007	16.01	17.00	1.256	0.009	/
Body-worn&Hotspot												
Ant.2	RMC	Front Side	10	1513	1752.6	0.17	0.139	16.61	18.00	1.377	0.191	/
		Back Side	10	1513	1752.6	-0.13	0.197	16.61	18.00	1.377	0.271	/
		Right Edge	10	1513	1752.6	-0.05	0.040	16.61	18.00	1.377	0.055	/
		Top Edge	10	1513	1752.6	-0.01	0.200	16.61	18.00	1.377	0.275	8#
Ant.0	RMC	Front Side	10	1513	1752.6	-0.18	0.014	16.01	17.00	1.256	0.018	/
		Back Side	10	1513	1752.6	-0.18	0.039	16.01	17.00	1.256	0.049	/
		Left Edge	10	1513	1752.6	-0.15	0.016	16.01	17.00	1.256	0.020	/
		Right Edge	10	1513	1752.6	-0.12	0.017	16.01	17.00	1.256	0.021	/
		Bottom Edge	10	1513	1752.6	-0.03	0.025	16.01	17.00	1.256	0.031	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.5WCDMA Band 5

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Powe r(dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.2	RMC	Left Cheek	0	4233	846.6	0.05	0.370	21.32	23.00	1.472	0.545	/
		Left Tilt	0	4233	846.6	0.02	0.331	21.32	23.00	1.472	0.487	/
		Right Cheek	0	4233	846.6	0.00	0.495	21.32	23.00	1.472	0.729	9#
		Right Tilt	0	4233	846.6	-0.11	0.293	21.32	23.00	1.472	0.431	/
Ant.0	RMC	Left Cheek	0	4182	836.4	0.00	0.056	20.79	22.00	1.321	0.074	/
		Left Tilt	0	4182	836.4	-0.10	0.029	20.79	22.00	1.321	0.038	/
		Right Cheek	0	4182	836.4	0.17	0.063	20.79	22.00	1.321	0.083	/
		Right Tilt	0	4182	836.4	-0.19	0.042	20.79	22.00	1.321	0.055	/
Body-worn&Hotspot												
Ant.2	RMC	Front Side	10	4233	846.6	0.10	0.081	21.32	23.00	1.472	0.119	/
		Back Side	10	4233	846.6	-0.01	0.103	21.32	23.00	1.472	0.152	/
		Right Edge	10	4233	846.6	0.11	0.041	21.32	23.00	1.472	0.060	/
		Top Edge	10	4233	846.6	0.07	0.112	21.32	23.00	1.472	0.165	10#
Ant.0	RMC	Front Side	10	4182	836.4	0.19	0.069	20.79	22.00	1.321	0.091	/
		Back Side	10	4182	836.4	-0.19	0.091	20.79	22.00	1.321	0.120	/
		Left Edge	10	4182	836.4	0.06	0.047	20.79	22.00	1.321	0.062	/
		Right Edge	10	4182	836.4	-0.17	0.016	20.79	22.00	1.321	0.021	/
		Bottom Edge	10	4182	836.4	-0.06	0.079	20.79	22.00	1.321	0.104	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.6LTE Band 2 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	18900	1880	1	MID	0.16	0.252	15.83	17.00	1.309	0.330	/
		Left Tilt	0	18900	1880	1	MID	0.01	0.285	15.83	17.00	1.309	0.373	/
		Right Cheek	0	18900	1880	1	MID	-0.02	0.509	15.83	17.00	1.309	0.666	/
		Right Tilt	0	18900	1880	1	MID	-0.16	0.553	15.83	17.00	1.309	0.724	11#
		Left Cheek	0	18900	1880	50	MID	0.05	0.197	14.75	16.00	1.334	0.263	/
		Left Tilt	0	18900	1880	50	MID	-0.03	0.227	14.75	16.00	1.334	0.303	/
		Right Cheek	0	18900	1880	50	MID	0.06	0.398	14.75	16.00	1.334	0.531	/
		Right Tilt	0	18900	1880	50	MID	-0.09	0.433	14.75	16.00	1.334	0.578	/
Ant.0	QPSK	Left Cheek	0	18700	1860	1	MID	0.15	0.013	15.36	16.00	1.159	0.015	/
		Left Tilt	0	18700	1860	1	MID	0.07	0.013	15.36	16.00	1.159	0.015	/
		Right Cheek	0	18700	1860	1	MID	-0.07	0.010	15.36	16.00	1.159	0.012	/
		Right Tilt	0	18700	1860	1	MID	-0.04	0.008	15.36	16.00	1.159	0.009	/
		Left Cheek	0	18700	1860	50	MID	0.09	0.011	14.23	15.00	1.194	0.013	/
		Left Tilt	0	18700	1860	50	MID	-0.17	0.010	14.23	15.00	1.194	0.012	/
		Right Cheek	0	18700	1860	50	MID	0.16	0.009	14.23	15.00	1.194	0.011	/
		Right Tilt	0	18700	1860	50	MID	0.12	0.007	14.23	15.00	1.194	0.008	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	18900	1880	1	MID	-0.13	0.104	15.83	17.00	1.309	0.136	/
		Back Side	10	18900	1880	1	MID	0.05	0.153	15.83	17.00	1.309	0.200	/
		Right Edge	10	18900	1880	1	MID	-0.05	0.029	15.83	17.00	1.309	0.038	/
		Top Edge	10	18900	1880	1	MID	-0.01	0.200	15.83	17.00	1.309	0.262	12#
		Front Side	10	18900	1880	50	MID	0.00	0.083	14.75	16.00	1.334	0.111	/
		Back Side	10	18900	1880	50	MID	0.14	0.127	14.75	16.00	1.334	0.169	/
		Right Edge	10	18900	1880	50	MID	0.01	0.023	14.75	16.00	1.334	0.031	/
		Top Edge	10	18900	1880	50	MID	-0.17	0.153	14.75	16.00	1.334	0.204	/
Ant.0	QPSK	Front Side	10	18700	1860	1	MID	-0.15	0.032	15.36	16.00	1.159	0.037	/
		Back Side	10	18700	1860	1	MID	0.19	0.080	15.36	16.00	1.159	0.093	/
		Left Edge	10	18700	1860	1	MID	0.15	0.016	15.36	16.00	1.159	0.019	/
		Right Edge	10	18700	1860	1	MID	0.18	0.021	15.36	16.00	1.159	0.024	/
		Bottom Edge	10	18700	1860	1	MID	-0.05	0.036	15.36	16.00	1.159	0.042	/
		Front Side	10	18700	1860	50	MID	0.18	0.027	14.23	15.00	1.194	0.032	/
		Back Side	10	18700	1860	50	MID	-0.07	0.062	14.23	15.00	1.194	0.074	/
		Left Edge	10	18700	1860	50	MID	0.18	0.014	14.23	15.00	1.194	0.017	/
		Right Edge	10	18700	1860	50	MID	0.13	0.018	14.23	15.00	1.194	0.021	/
		Bottom Edge	10	18700	1860	50	MID	0.02	0.029	14.23	15.00	1.194	0.035	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.7LTE Band 2 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.2	QPSK	Right Tilt	0	18900+19098	1880+1979.8	1+1	High +Low	0.05	0.492	15.34	17.00	1.466	0.721	/
Body-worn&Hotspot-CA														
Ant.2	QPSK	Top Edge	10	18900+19098	1880+1979.8	1+1	High +Low	0.05	0.167	15.34	17.00	1.466	0.245	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.8LTE Band 4 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	20300	1745	1	MID	-0.16	0.323	16.67	18.00	1.358	0.439	/
		Left Tilt	0	20300	1745	1	MID	-0.16	0.325	16.67	18.00	1.358	0.441	/
		Right Cheek	0	20300	1745	1	MID	-0.01	0.513	16.67	18.00	1.358	0.697	13#
		Right Tilt	0	20300	1745	1	MID	-0.05	0.485	16.67	18.00	1.358	0.659	/
		Left Cheek	0	20300	1745	50	MID	-0.11	0.267	15.59	17.00	1.384	0.370	/
		Left Tilt	0	20300	1745	50	MID	0.04	0.275	15.59	17.00	1.384	0.381	/
		Right Cheek	0	20300	1745	50	MID	0.09	0.291	15.59	17.00	1.384	0.403	/
		Right Tilt	0	20300	1745	50	MID	0.06	0.297	15.59	17.00	1.384	0.411	/
Ant.0	QPSK	Left Cheek	0	20300	1745	1	MID	-0.18	0.020	16.15	17.00	1.216	0.024	/
		Left Tilt	0	20300	1745	1	MID	-0.02	0.016	16.15	17.00	1.216	0.019	/
		Right Cheek	0	20300	1745	1	MID	-0.09	0.020	16.15	17.00	1.216	0.024	/
		Right Tilt	0	20300	1745	1	MID	-0.16	0.018	16.15	17.00	1.216	0.022	/
		Left Cheek	0	20300	1745	50	MID	0.12	0.013	15.08	16.00	1.236	0.016	/
		Left Tilt	0	20300	1745	50	MID	-0.02	0.015	15.08	16.00	1.236	0.019	/
		Right Cheek	0	20300	1745	50	MID	0.07	0.014	15.08	16.00	1.236	0.017	/
		Right Tilt	0	20300	1745	50	MID	0.01	0.011	15.08	16.00	1.236	0.014	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	20300	1745	1	MID	-0.12	0.104	16.67	18.00	1.358	0.141	/
		Back Side	10	20300	1745	1	MID	-0.05	0.149	16.67	18.00	1.358	0.202	/
		Right Edge	10	20300	1745	1	MID	0.11	0.028	16.67	18.00	1.358	0.038	/
		Top Edge	10	20300	1745	1	MID	-0.02	0.181	16.67	18.00	1.358	0.246	14#
		Front Side	10	20300	1745	50	MID	0.09	0.081	15.59	17.00	1.384	0.112	/
		Back Side	10	20300	1745	50	MID	-0.04	0.122	15.59	17.00	1.384	0.169	/
		Right Edge	10	20300	1745	50	MID	0.10	0.024	15.59	17.00	1.384	0.033	/
		Top Edge	10	20300	1745	50	MID	-0.04	0.124	15.59	17.00	1.384	0.172	/
Ant.0	QPSK	Front Side	10	20300	1745	1	MID	0.02	0.013	23.58	25.00	1.387	0.018	/
		Back Side	10	20300	1745	1	MID	0.00	0.033	23.58	25.00	1.387	0.046	/
		Left Edge	10	20300	1745	1	MID	-0.13	0.016	23.58	25.00	1.387	0.022	/
		Right Edge	10	20300	1745	1	MID	-0.07	0.011	23.58	25.00	1.387	0.015	/
		Bottom Edge	10	20300	1745	1	MID	-0.16	0.016	23.58	25.00	1.387	0.022	/
		Front Side	10	20300	1745	50	MID	-0.03	0.009	22.54	24.00	1.400	0.013	/
		Back Side	10	20300	1745	50	MID	0.12	0.026	22.54	24.00	1.400	0.036	/
		Left Edge	10	20300	1745	50	MID	-0.14	0.013	22.54	24.00	1.400	0.018	/
		Right Edge	10	20300	1745	50	MID	0.03	0.005	22.54	24.00	1.400	0.007	/
		Bottom Edge	10	20300	1745	50	MID	0.01	0.014	22.54	24.00	1.400	0.020	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.9LTE Band 5 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	20525	836.5	1	MID	-0.08	0.279	20.57	21.00	1.104	0.308	/
		Left Tilt	0	20525	836.5	1	MID	0.18	0.239	20.57	21.00	1.104	0.264	/
		Right Cheek	0	20525	836.5	1	MID	-0.14	0.403	20.57	21.00	1.104	0.445	15#
		Right Tilt	0	20525	836.5	1	MID	-0.02	0.277	20.57	21.00	1.104	0.306	/
		Left Cheek	0	20525	836.5	25	MID	-0.10	0.235	19.57	20.00	1.104	0.259	/
		Left Tilt	0	20525	836.5	25	MID	-0.18	0.192	19.57	20.00	1.104	0.212	/
		Right Cheek	0	20525	836.5	25	MID	-0.10	0.328	19.57	20.00	1.104	0.362	/
		Right Tilt	0	20525	836.5	25	MID	0.11	0.318	19.57	20.00	1.104	0.351	/
Ant.0	QPSK	Left Cheek	0	20525	836.5	1	HIGH	-0.16	0.044	20.15	21.00	1.216	0.054	/
		Left Tilt	0	20525	836.5	1	HIGH	0.19	0.023	20.15	21.00	1.216	0.028	/
		Right Cheek	0	20525	836.5	1	HIGH	0.05	0.034	20.15	21.00	1.216	0.041	/
		Right Tilt	0	20525	836.5	1	HIGH	0.06	0.028	20.15	21.00	1.216	0.034	/
		Left Cheek	0	20525	836.5	25	MID	-0.01	0.036	19.11	20.00	1.227	0.044	/
		Left Tilt	0	20525	836.5	25	MID	0.08	0.019	19.11	20.00	1.227	0.023	/
		Right Cheek	0	20525	836.5	25	MID	0.15	0.027	19.11	20.00	1.227	0.033	/
		Right Tilt	0	20525	836.5	25	MID	0.07	0.019	19.11	20.00	1.227	0.023	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	20525	844	1	MID	0.00	0.049	20.57	21.00	1.104	0.054	/
		Back Side	10	20525	844	1	MID	0.08	0.061	20.57	21.00	1.104	0.067	/
		Right Edge	10	20525	844	1	MID	0.03	0.025	20.57	21.00	1.104	0.028	/
		Top Edge	10	20525	844	1	MID	-0.03	0.069	20.57	21.00	1.104	0.076	16#
		Front Side	10	20525	844	25	MID	0.01	0.040	19.57	20.00	1.104	0.044	/
		Back Side	10	20525	844	25	MID	-0.05	0.057	19.57	20.00	1.104	0.063	/
		Right Edge	10	20525	844	25	MID	0.01	0.015	19.57	20.00	1.104	0.017	/
		Top Edge	10	20525	844	25	MID	-0.08	0.051	19.57	20.00	1.104	0.056	/
Ant.0	QPSK	Front Side	10	20525	836.5	1	HIGH	0.11	0.049	20.15	21.00	1.216	0.060	/
		Back Side	10	20525	836.5	1	HIGH	0.01	0.059	20.15	21.00	1.216	0.072	/
		Left Edge	10	20525	836.5	1	HIGH	-0.16	0.039	20.15	21.00	1.216	0.047	/
		Right Edge	10	20525	836.5	1	HIGH	0.01	0.024	20.15	21.00	1.216	0.029	/
		Bottom Edge	10	20525	836.5	1	HIGH	0.05	0.054	20.15	21.00	1.216	0.066	/
		Front Side	10	20525	836.5	25	MID	0.09	0.041	19.11	20.00	1.227	0.050	/
		Back Side	10	20525	836.5	25	MID	-0.02	0.049	19.11	20.00	1.227	0.060	/
		Left Edge	10	20525	836.5	25	MID	0.09	0.031	19.11	20.00	1.227	0.038	/
		Right Edge	10	20525	836.5	25	MID	-0.07	0.019	19.11	20.00	1.227	0.023	/
		Bottom Edge	10	20525	836.5	25	MID	0.05	0.044	19.11	20.00	1.227	0.054	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.10 LTE Band 5 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.1	QPSK	Right Cheek	0	20476 +20575	831.6 +841.5	1+1	High +Low	-0.10	0.326	19.85	21.00	1.303	0.425	/
Body-worn&Hotspot-CA														
Ant.1	QPSK	Top Edge	10	20476 +20575	831.6 +841.5	1+1	High +Low	0.09	0.055	19.85	21.00	1.303	0.072	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.11 LTE Band 7 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	21100	2535	1	MID	0.01	0.186	17.52	19.00	1.406	0.262	/
		Left Tilt	0	21100	2535	1	MID	0.18	0.224	17.52	19.00	1.406	0.315	/
		Right Cheek	0	21100	2535	1	MID	0.03	0.435	17.52	19.00	1.406	0.612	/
		Right Tilt	0	21100	2535	1	MID	-0.03	0.509	17.52	19.00	1.406	0.716	17#
		Left Cheek	0	21100	2535	50	MID	0.10	0.158	16.52	18.00	1.406	0.222	/
		Left Tilt	0	21100	2535	50	MID	0.08	0.189	16.52	18.00	1.406	0.266	/
		Right Cheek	0	21100	2535	50	MID	0.07	0.339	16.52	18.00	1.406	0.477	/
		Right Tilt	0	21100	2535	50	MID	0.00	0.372	16.52	18.00	1.406	0.523	/
Ant.0	QPSK	Left Cheek	0	21100	2535	1	MID	0.03	0.036	16.92	18.00	1.282	0.046	/
		Left Tilt	0	21100	2535	1	MID	-0.07	0.012	16.92	18.00	1.282	0.015	/
		Right Cheek	0	21100	2535	1	MID	0.02	0.033	16.92	18.00	1.282	0.042	/
		Right Tilt	0	21100	2535	1	MID	0.02	0.014	16.92	18.00	1.282	0.018	/
		Left Cheek	0	21100	2535	50	MID	-0.09	0.029	15.92	17.00	1.282	0.037	/
		Left Tilt	0	21100	2535	50	MID	-0.06	0.006	15.92	17.00	1.282	0.008	/
		Right Cheek	0	21100	2535	50	MID	-0.07	0.031	15.92	17.00	1.282	0.040	/
		Right Tilt	0	21100	2535	50	MID	0.13	0.004	15.92	17.00	1.282	0.005	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	21100	2535	1	MID	-0.11	0.090	17.52	19.00	1.406	0.127	/
		Back Side	10	21100	2535	1	MID	-0.16	0.221	17.52	19.00	1.406	0.311	/
		Right Edge	10	21100	2535	1	MID	-0.19	0.049	17.52	19.00	1.406	0.069	/
		Top Edge	10	21100	2535	1	MID	0.03	0.235	17.52	19.00	1.406	0.330	18#
		Front Side	10	21100	2535	50	MID	0.17	0.078	16.52	18.00	1.406	0.110	/
		Back Side	10	21100	2535	50	MID	0.17	0.203	16.52	18.00	1.406	0.285	/
		Right Edge	10	21100	2535	50	MID	0.14	0.041	16.52	18.00	1.406	0.058	/
		Top Edge	10	21100	2535	50	MID	0.06	0.224	16.52	18.00	1.406	0.315	/
Ant.0	QPSK	Front Side	10	21100	2535	1	MID	-0.19	0.062	16.92	18.00	1.282	0.079	/
		Back Side	10	21100	2535	1	MID	-0.17	0.093	16.92	18.00	1.282	0.119	/
		Left Edge	10	21100	2535	1	MID	0.13	0.023	16.92	18.00	1.282	0.029	/
		Right Edge	10	21100	2535	1	MID	-0.11	0.050	16.92	18.00	1.282	0.064	/
		Bottom Edge	10	21100	2535	1	MID	0.00	0.162	16.92	18.00	1.282	0.208	/
		Front Side	10	21100	2535	50	MID	-0.02	0.052	15.92	17.00	1.282	0.067	/
		Back Side	10	21100	2535	50	MID	-0.01	0.079	15.92	17.00	1.282	0.101	/
		Left Edge	10	21100	2535	50	MID	0.15	0.019	15.92	17.00	1.282	0.024	/
		Right Edge	10	21100	2535	50	MID	0.00	0.042	15.92	17.00	1.282	0.054	/
		Bottom Edge	10	21100	2535	50	MID	-0.02	0.140	15.92	17.00	1.282	0.179	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.12 LTE Band 7 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.2	QPSK	Right Tilt	0	21100+21298	2535+2554	1+1	High +Low	-0.12	0.483	17.41	19.00	1.442	0.696	/
Body-worn&Hotspot-CA														
Ant.2	QPSK	Top Edge	10	21100+21298	2535+2554	1+1	High +Low	0.06	0.224	17.41	19.00	1.442	0.323	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.13 LTE Band 12 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	23060	704	1	HIGH	0.10	0.415	23.68	25.00	1.355	0.562	/
		Left Tilt	0	23060	704	1	HIGH	0.01	0.366	23.68	25.00	1.355	0.496	/
		Right Cheek	0	23060	704	1	HIGH	0.01	0.559	23.68	25.00	1.355	0.757	19#
		Right Tilt	0	23060	704	1	HIGH	0.05	0.307	23.68	25.00	1.355	0.416	/
		Left Cheek	0	23060	704	25	HIGH	0.12	0.290	22.72	24.00	1.343	0.389	/
		Left Tilt	0	23060	704	25	HIGH	-0.07	0.252	22.72	24.00	1.343	0.338	/
		Right Cheek	0	23060	704	25	HIGH	-0.04	0.426	22.72	24.00	1.343	0.572	/
		Right Tilt	0	23060	704	25	HIGH	0.06	0.231	22.72	24.00	1.343	0.310	/
Ant.0	QPSK	Left Cheek	0	23095	707.5	1	MID	-0.01	0.062	22.99	24.00	1.262	0.078	/
		Left Tilt	0	23095	707.5	1	MID	-0.06	0.026	22.99	24.00	1.262	0.033	/
		Right Cheek	0	23095	707.5	1	MID	-0.17	0.046	22.99	24.00	1.262	0.058	/
		Right Tilt	0	23095	707.5	1	MID	0.02	0.031	22.99	24.00	1.262	0.039	/
		Left Cheek	0	23095	707.5	25	MID	-0.02	0.046	21.98	23.00	1.265	0.058	/
		Left Tilt	0	23095	707.5	25	MID	0.13	0.020	21.98	23.00	1.265	0.025	/
		Right Cheek	0	23095	707.5	25	MID	0.15	0.036	21.98	23.00	1.265	0.046	/
		Right Tilt	0	23095	707.5	25	MID	0.14	0.023	21.98	23.00	1.265	0.029	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	23060	704	1	HIGH	-0.06	0.082	23.68	25.00	1.355	0.111	/
		Back Side	10	23060	704	1	HIGH	-0.13	0.125	23.68	25.00	1.355	0.169	/
		Right Edge	10	23060	704	1	HIGH	0.12	0.143	23.68	25.00	1.355	0.194	/
		Top Edge	10	23060	704	1	HIGH	-0.10	0.104	23.68	25.00	1.355	0.141	/
		Front Side	10	23060	704	25	HIGH	0.14	0.075	22.72	24.00	1.343	0.101	/
		Back Side	10	23060	704	25	HIGH	0.10	0.100	22.72	24.00	1.343	0.134	/
		Right Edge	10	23060	704	25	HIGH	-0.06	0.116	22.72	24.00	1.343	0.156	/
		Top Edge	10	23060	704	25	HIGH	0.15	0.085	22.72	24.00	1.343	0.114	/
Ant.0	QPSK	Front Side	10	23095	707.5	1	MID	0.18	0.091	22.99	24.00	1.262	0.115	/
		Back Side	10	23095	707.5	1	MID	-0.04	0.157	22.99	24.00	1.262	0.198	20#
		Left Edge	10	23095	707.5	1	MID	0.00	0.142	22.99	24.00	1.262	0.179	/
		Right Edge	10	23095	707.5	1	MID	0.15	0.088	22.99	24.00	1.262	0.111	/
		Bottom Edge	10	23095	707.5	1	MID	-0.12	0.091	22.99	24.00	1.262	0.115	/
		Front Side	10	23095	707.5	25	MID	-0.17	0.075	21.98	23.00	1.265	0.095	/
		Back Side	10	23095	707.5	25	MID	0.17	0.126	21.98	23.00	1.265	0.159	/
		Left Edge	10	23095	707.5	25	MID	0.00	0.113	21.98	23.00	1.265	0.143	/
		Right Edge	10	23095	707.5	25	MID	0.16	0.071	21.98	23.00	1.265	0.090	/
		Bottom Edge	10	23095	707.5	25	MID	0.14	0.063	21.98	23.00	1.265	0.080	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.14 LTE Band 17 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	23780	709	1	MID	-0.06	0.375	23.77	25.00	1.327	0.498	/
		Left Tilt	0	23780	709	1	MID	-0.06	0.362	23.77	25.00	1.327	0.480	/
		Right Cheek	0	23780	709	1	MID	0.02	0.527	23.77	25.00	1.327	0.699	21#
		Right Tilt	0	23780	709	1	MID	0.10	0.335	23.77	25.00	1.327	0.445	/
		Left Cheek	0	23780	709	25	MID	-0.18	0.297	22.75	24.00	1.334	0.396	/
		Left Tilt	0	23780	709	25	MID	-0.15	0.263	22.75	24.00	1.334	0.351	/
		Right Cheek	0	23780	709	25	MID	-0.16	0.415	22.75	24.00	1.334	0.554	/
		Right Tilt	0	23780	709	25	MID	0.13	0.261	22.75	24.00	1.334	0.348	/
Ant.0	QPSK	Left Cheek	0	23780	709	1	MID	0.03	0.063	23.13	24.00	1.222	0.077	/
		Left Tilt	0	23780	709	1	MID	0.07	0.042	23.13	24.00	1.222	0.051	/
		Right Cheek	0	23780	709	1	MID	-0.19	0.057	23.13	24.00	1.222	0.070	/
		Right Tilt	0	23780	709	1	MID	-0.19	0.044	23.13	24.00	1.222	0.054	/
		Left Cheek	0	23780	709	25	MID	0.16	0.052	22.08	23.00	1.236	0.064	/
		Left Tilt	0	23780	709	25	MID	0.09	0.028	22.08	23.00	1.236	0.035	/
		Right Cheek	0	23780	709	25	MID	0.18	0.041	22.08	23.00	1.236	0.051	/
		Right Tilt	0	23780	709	25	MID	0.04	0.029	22.08	23.00	1.236	0.036	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	23780	709	1	MID	-0.04	0.092	23.77	25.00	1.327	0.122	/
		Back Side	10	23780	709	1	MID	0.09	0.124	23.77	25.00	1.327	0.165	/
		Right Edge	10	23780	709	1	MID	-0.03	0.126	23.77	25.00	1.327	0.167	/
		Top Edge	10	23780	709	1	MID	-0.11	0.092	23.77	25.00	1.327	0.122	/
		Front Side	10	23780	709	25	MID	-0.13	0.076	22.75	24.00	1.334	0.101	/
		Back Side	10	23780	709	25	MID	-0.03	0.099	22.75	24.00	1.334	0.132	/
		Left Edge	10	23780	709	25	MID	-0.03	0.072	22.75	24.00	1.334	0.096	/
		Right Edge	10	23780	709	25	MID	0.00	0.115	22.75	24.00	1.334	0.153	/
		Top Edge	10	23780	709	25	MID	-0.17	0.074	22.75	24.00	1.334	0.099	/
Ant.0	QPSK	Front Side	10	23780	709	1	MID	-0.14	0.091	23.13	24.00	1.222	0.111	/
		Back Side	10	23780	709	1	MID	-0.02	0.154	23.13	24.00	1.222	0.188	22#
		Left Edge	10	23780	709	1	MID	-0.15	0.143	23.13	24.00	1.222	0.175	/
		Right Edge	10	23780	709	1	MID	0.09	0.090	23.13	24.00	1.222	0.110	/
		Bottom Edge	10	23780	709	1	MID	0.17	0.068	23.13	24.00	1.222	0.083	/
		Front Side	10	23780	709	25	MID	0.03	0.076	22.08	23.00	1.236	0.094	/
		Back Side	10	23780	709	25	MID	0.03	0.126	22.08	23.00	1.236	0.156	/
		Left Edge	10	23780	709	25	MID	0.14	0.113	22.08	23.00	1.236	0.140	/
		Right Edge	10	23780	709	25	MID	-0.18	0.071	22.08	23.00	1.236	0.088	/
		Bottom Edge	10	23780	709	25	MID	0.16	0.057	22.08	23.00	1.236	0.070	/

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

10.15 LTE Band 66 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	132322	1745	1	MID	0.04	0.302	15.69	17.00	1.352	0.408	/
		Left Tilt	0	132322	1745	1	MID	0.00	0.311	15.69	17.00	1.352	0.420	/
		Right Cheek	0	132322	1745	1	MID	-0.11	0.466	15.69	17.00	1.352	0.630	/
		Right Tilt	0	132322	1745	1	MID	-0.06	0.518	15.69	17.00	1.352	0.700	23#
		Left Cheek	0	132322	1745	50	MID	-0.13	0.256	14.66	16.00	1.361	0.348	/
		Left Tilt	0	132322	1745	50	MID	0.02	0.265	14.66	16.00	1.361	0.361	/
		Right Cheek	0	132322	1745	50	MID	-0.02	0.347	14.66	16.00	1.361	0.472	/
		Right Tilt	0	132322	1745	50	MID	0.02	0.397	14.66	16.00	1.361	0.540	/
Ant.0	QPSK	Left Cheek	0	132322	1745	1	MID	0.00	0.010	15.14	16.00	1.219	0.012	/
		Left Tilt	0	132322	1745	1	MID	0.13	0.006	15.14	16.00	1.219	0.007	/
		Right Cheek	0	132322	1745	1	MID	-0.07	0.013	15.14	16.00	1.219	0.016	/
		Right Tilt	0	132322	1745	1	MID	-0.05	0.007	15.14	16.00	1.219	0.009	/
		Left Cheek	0	132322	1745	50	MID	-0.01	0.006	14.06	15.00	1.242	0.007	/
		Left Tilt	0	132322	1745	50	MID	0.04	0.004	14.06	15.00	1.242	0.005	/
		Right Cheek	0	132322	1745	50	MID	0.02	0.011	14.06	15.00	1.242	0.014	/
		Right Tilt	0	132322	1745	50	MID	0.18	0.007	14.06	15.00	1.242	0.009	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	132322	1745	1	MID	0.01	0.119	15.69	17.00	1.352	0.161	/
		Back Side	10	132322	1745	1	MID	0.15	0.153	15.69	17.00	1.352	0.207	/
		Right Edge	10	132322	1745	1	MID	0.04	0.034	15.69	17.00	1.352	0.046	/
		Top Edge	10	132322	1745	1	MID	-0.04	0.163	15.69	17.00	1.352	0.220	24#
		Front Side	10	132322	1745	50	MID	-0.01	0.103	14.66	16.00	1.361	0.140	/
		Back Side	10	132322	1745	50	MID	0.00	0.150	14.66	16.00	1.361	0.204	/
		Right Edge	10	132322	1745	50	MID	0.19	0.029	14.66	16.00	1.361	0.039	/
		Top Edge	10	132322	1745	50	MID	-0.01	0.142	14.66	16.00	1.361	0.193	/
Ant.0	QPSK	Front Side	10	132572	1770	1	MID	-0.05	0.014	15.14	16.00	1.219	0.017	/
		Back Side	10	132572	1770	1	MID	-0.13	0.043	15.14	16.00	1.219	0.052	/
		Left Edge	10	132572	1770	1	MID	-0.03	0.012	15.14	16.00	1.219	0.015	/
		Right Edge	10	132572	1770	1	MID	-0.18	0.009	15.14	16.00	1.219	0.011	/
		Bottom Edge	10	132572	1770	1	MID	-0.06	0.019	15.14	16.00	1.219	0.023	/
		Front Side	10	132572	1770	50	MID	0.12	0.016	14.06	15.00	1.242	0.020	/
		Back Side	10	132572	1770	50	MID	0.08	0.035	14.06	15.00	1.242	0.043	/
		Left Edge	10	132572	1770	50	MID	0.09	0.008	14.06	15.00	1.242	0.010	/
		Right Edge	10	132572	1770	50	MID	-0.14	0.007	14.06	15.00	1.242	0.009	/

		Bottom Edge	10	132572	1770	50	MID	0.13	0.018	14.06	15.00	1.242	0.022	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.16 LTE Band 66 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.2	QPSK	Right Tilt	0	132322+132520	1745+1764	1+1	Low+High	-0.01	0.476	15.36	17.00	1.459	0.694	/
Body-worn&Hotspot-CA														
Ant.2	QPSK	Top Edge	10	132322+132520	1745+1764	1+1	Low+High	-0.03	0.146	15.36	17.00	1.459	0.213	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.17 LTE Band 38 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	38000	2595	1	MID	0.07	0.194	20.73	22.00	1.340	0.260	/
		Left Tilt	0	38000	2595	1	MID	0.15	0.236	20.73	22.00	1.340	0.316	/
		Right Cheek	0	38000	2595	1	MID	-0.10	0.531	20.73	22.00	1.340	0.712	/
		Right Tilt	0	38000	2595	1	MID	-0.07	0.563	20.73	22.00	1.340	0.754	25#
		Left Cheek	0	38000	2595	50	MID	0.08	0.157	19.65	21.00	1.365	0.214	/
		Left Tilt	0	38000	2595	50	MID	0.15	0.193	19.65	21.00	1.365	0.263	/
		Right Cheek	0	38000	2595	50	MID	-0.09	0.041	19.65	21.00	1.365	0.056	/
		Right Tilt	0	38000	2595	50	MID	0.11	0.456	19.65	21.00	1.365	0.622	/
Ant.0	QPSK	Left Cheek	0	37850	2580	1	MID	0.17	0.020	20.14	21.00	1.219	0.024	/
		Left Tilt	0	37850	2580	1	MID	0.07	0.011	20.14	21.00	1.219	0.013	/
		Right Cheek	0	37850	2580	1	MID	-0.07	0.018	20.14	21.00	1.219	0.022	/
		Right Tilt	0	37850	2580	1	MID	0.14	0.014	20.14	21.00	1.219	0.017	/
		Left Cheek	0	38150	2610	50	MID	-0.03	0.017	19.05	20.00	1.245	0.021	/
		Left Tilt	0	38150	2610	50	MID	-0.02	0.013	19.05	20.00	1.245	0.016	/
		Right Cheek	0	38150	2610	50	MID	0.03	0.011	19.05	20.00	1.245	0.014	/
		Right Tilt	0	38150	2610	50	MID	-0.10	0.008	19.05	20.00	1.245	0.010	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	38000	2595	1	MID	0.01	0.074	20.73	22.00	1.340	0.099	/
		Back Side	10	38000	2595	1	MID	-0.04	0.232	20.73	22.00	1.340	0.311	/
		Right Edge	10	38000	2595	1	MID	-0.12	0.055	20.73	22.00	1.340	0.074	/
		Top Edge	10	38000	2595	1	MID	-0.03	0.272	20.73	22.00	1.340	0.364	26#
		Front Side	10	38000	2595	50	MID	0.12	0.061	19.65	21.00	1.365	0.083	/
		Back Side	10	38000	2595	50	MID	-0.03	0.191	19.65	21.00	1.365	0.261	/
		Right Edge	10	38000	2595	50	MID	0.14	0.046	19.65	21.00	1.365	0.063	/
		Top Edge	10	38000	2595	50	MID	-0.09	0.205	19.65	21.00	1.365	0.280	/
Ant.0	QPSK	Front Side	10	37850	2580	1	MID	0.10	0.086	20.14	21.00	1.219	0.105	/
		Back Side	10	37850	2580	1	MID	0.02	0.132	20.14	21.00	1.219	0.161	/
		Left Edge	10	37850	2580	1	MID	0.08	0.038	20.14	21.00	1.219	0.046	/
		Right Edge	10	37850	2580	1	MID	-0.12	0.027	20.14	21.00	1.219	0.033	/
		Bottom Edge	10	37850	2580	1	MID	-0.09	0.197	20.14	21.00	1.219	0.240	/
		Front Side	10	38150	2610	50	MID	0.15	0.072	19.05	20.00	1.245	0.090	/
		Back Side	10	38150	2610	50	MID	0.01	0.110	19.05	20.00	1.245	0.137	/
		Left Edge	10	38150	2610	50	MID	-0.11	0.023	19.05	20.00	1.245	0.029	/
		Right Edge	10	38150	2610	50	MID	-0.19	0.031	19.05	20.00	1.245	0.039	/
		Bottom Edge	10	38150	2610	50	MID	-0.12	0.167	19.05	20.00	1.245	0.208	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.18 LTE Band 38 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.2	QPSK	Right Tilt	0	38000+38198	2595+2614	1+1	Low+High	0.07	0.531	20.65	22.00	1.365	0.725	/
Body-worn&Hotspot-CA														
Ant.2	QPSK	Top Edge	10	38000+38198	2595+2614	1+1	Low+High	0.10	0.256	20.65	22.00	1.365	0.349	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.19 LTE Band 41 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.2	QPSK	Left Cheek	0	40140	2545	1	MID	0.03	0.194	20.72	22.00	1.343	0.261	/
		Left Tilt	0	40140	2545	1	MID	0.06	0.232	20.72	22.00	1.343	0.312	/
		Right Cheek	0	40140	2545	1	MID	-0.08	0.477	20.72	22.00	1.343	0.641	/
		Right Tilt	0	40140	2545	1	MID	-0.03	0.558	20.72	22.00	1.343	0.749	27#
		Left Cheek	0	40140	2545	50	HIGH	0.01	0.158	19.71	21.00	1.346	0.213	/
		Left Tilt	0	40140	2545	50	HIGH	-0.04	0.193	19.71	21.00	1.346	0.260	/
		Right Cheek	0	40140	2545	50	HIGH	-0.17	0.368	19.71	21.00	1.346	0.495	/
		Right Tilt	0	40140	2545	50	HIGH	-0.09	0.429	19.71	21.00	1.346	0.577	/
Ant.0	QPSK	Left Cheek	0	40140	2545	1	MID	0.06	0.021	20.05	21.00	1.245	0.026	/
		Left Tilt	0	40140	2545	1	MID	0.04	0.013	20.05	21.00	1.245	0.016	/
		Right Cheek	0	40140	2545	1	MID	0.08	0.034	20.05	21.00	1.245	0.042	/
		Right Tilt	0	40140	2545	1	MID	-0.08	0.016	20.05	21.00	1.245	0.020	/
		Left Cheek	0	40140	2545	50	MID	-0.18	0.018	19.02	20.00	1.253	0.023	/
		Left Tilt	0	40140	2545	50	MID	0.14	0.009	19.02	20.00	1.253	0.011	/
		Right Cheek	0	40140	2545	50	MID	-0.19	0.028	19.02	20.00	1.253	0.035	/
		Right Tilt	0	40140	2545	50	MID	-0.05	0.013	19.02	20.00	1.253	0.016	/
Body-worn&Hotspot														
Ant.2	QPSK	Front Side	10	40140	2545	1	Low	-0.06	0.105	20.72	22.00	1.343	0.141	/
		Back Side	10	40140	2545	1	Low	0.06	0.251	20.72	22.00	1.343	0.337	/
		Right Edge	10	40140	2545	1	Low	-0.01	0.077	20.72	22.00	1.343	0.103	/
		Top Edge	10	40140	2545	1	Low	0.00	0.288	20.72	22.00	1.343	0.387	28#
		Front Side	10	40140	2545	50	Low	-0.17	0.086	19.71	21.00	1.346	0.116	/
		Back Side	10	40140	2545	50	Low	0.18	0.243	19.71	21.00	1.346	0.327	/
		Right Edge	10	40140	2545	50	Low	-0.03	0.061	19.71	21.00	1.346	0.082	/
		Top Edge	10	40140	2545	50	Low	-0.09	0.248	19.71	21.00	1.346	0.334	/
Ant.0	QPSK	Front Side	10	40140	2545	1	Low	0.12	0.088	23.64	25.00	1.368	0.120	/
		Back Side	10	40140	2545	1	Low	-0.18	0.122	23.64	25.00	1.368	0.167	/
		Left Edge	10	40140	2545	1	Low	0.00	0.026	23.64	25.00	1.368	0.036	/
		Right Edge	10	40140	2545	1	Low	-0.17	0.036	23.64	25.00	1.368	0.049	/
		Bottom Edge	10	40140	2545	1	Low	-0.11	0.204	23.64	25.00	1.368	0.279	/
		Front Side	10	40140	2545	50	Low	0.01	0.074	22.63	24.00	1.371	0.101	/
		Back Side	10	40140	2545	50	Low	0.13	0.102	22.63	24.00	1.371	0.140	/
		Left Edge	10	40140	2545	50	Low	0.10	0.021	22.63	24.00	1.371	0.029	/
		Right Edge	10	40140	2545	50	Low	0.07	0.028	22.63	24.00	1.371	0.038	/
		Bottom Edge	10	40140	2545	50	Low	-0.18	0.170	22.63	24.00	1.371	0.233	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.20 LTE Band 41 Worse case for CA Test

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head-CA														
Ant.2	QPSK	Left Cheek	0	40140+40338	2545+2564	1+1	High+Low	0.06	0.494	20.23	22.00	1.503	0.742	/
Body-worn&Hotspot-CA														
Ant.2	QPSK	Left Cheek	0	40140+40338	2545+2564	1+1	High+Low	-0.09	0.263	20.23	22.00	1.503	0.395	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.21 WIFI 2.4GHz

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.13	802.11 b	Left Cheek	0	6	2437	-0.10	0.370	15.35	16.00	1.161	99.54	1.005	0.432	/
	802.11 b	Left Tilt	0	6	2437	0.04	0.140	15.35	16.00	1.161	99.54	1.005	0.163	/
	802.11 b	Right Cheek	0	6	2437	-0.08	0.150	15.35	16.00	1.161	99.54	1.005	0.175	/
	802.11 b	Right Tilt	0	6	2437	0.11	0.060	15.35	16.00	1.161	99.54	1.005	0.070	/
Ant.14	802.11 b	Left Cheek	0	6	2437	-0.01	0.540	15.36	16.00	1.159	99.54	1.005	0.629	29#
	802.11 b	Left Tilt	0	6	2437	-0.06	0.450	15.36	16.00	1.159	99.54	1.005	0.524	/
	802.11 b	Right Cheek	0	6	2437	0.11	0.350	15.36	16.00	1.159	99.54	1.005	0.408	/
	802.11 b	Right Tilt	0	6	2437	-0.09	0.310	15.36	16.00	1.159	99.54	1.005	0.361	/
Body-worn&Hotspot														
Ant.13	802.11 b	Front Side	10	6	2437	0.11	0.064	15.35	16.00	1.161	99.54	1.005	0.075	/
	802.11 b	Back Side	10	6	2437	0.17	0.095	15.35	16.00	1.161	99.54	1.005	0.111	/
	802.11 b	Left Edge	10	6	2437	0.03	0.074	15.35	16.00	1.161	99.54	1.005	0.086	/
	802.11 b	Top Edge	10	6	2437	-0.14	0.032	15.35	16.00	1.161	99.54	1.005	0.037	/
Ant.14	802.11 b	Front Side	10	6	2437	-0.09	0.086	15.36	16.00	1.159	99.54	1.005	0.100	/
	802.11 b	Back Side	10	6	2437	0.04	0.122	15.36	16.00	1.159	99.54	1.005	0.142	30#
	802.11 b	Left Edge	10	6	2437	-0.12	0.042	15.36	16.00	1.159	99.54	1.005	0.049	/
	802.11 b	Top Edge	10	6	2437	0.12	0.093	15.36	16.00	1.159	99.54	1.005	0.108	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.22 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.
Head															
Ant.13	5.3G	802.11 n40	Left Cheek	0	54	5270	0.08	0.210	16.21	17.00	1.199	94.80	1.055	0.266	/
	5.3G	802.11 n40	Left Tilt	0	54	5270	0.10	0.101	16.21	17.00	1.199	94.80	1.055	0.128	/
	5.3G	802.11 n40	Right Cheek	0	54	5270	0.09	0.060	16.21	17.00	1.199	94.80	1.055	0.076	/
	5.3G	802.11 n40	Right Tilt	0	54	5270	-0.07	0.044	16.21	17.00	1.199	94.80	1.055	0.056	/
Ant.14	5.3G	802.11 ac80	Left Cheek	0	58	5290	-0.19	0.210	14.41	16.00	1.442	92.50	1.081	0.327	/
	5.3G	802.11 ac80	Left Tilt	0	58	5290	-0.01	0.319	14.41	16.00	1.442	92.50	1.081	0.497	31#
	5.3G	802.11 ac80	Right Cheek	0	58	5290	-0.15	0.157	14.41	16.00	1.442	92.50	1.081	0.245	/
	5.3G	802.11 ac80	Right Tilt	0	58	5290	0.15	0.209	14.41	16.00	1.442	92.50	1.081	0.326	/
Ant.13	5.6G	802.11 ac80	Left Cheek	0	122	5610	-0.04	0.135	15.33	16.00	1.167	92.50	1.081	0.170	/
	5.6G	802.11 ac80	Left Tilt	0	122	5610	-0.12	0.057	15.33	16.00	1.167	92.50	1.081	0.072	/
	5.6G	802.11 ac80	Right Cheek	0	122	5610	0.09	0.034	15.33	16.00	1.167	92.50	1.081	0.043	/
	5.6G	802.11 ac80	Right Tilt	0	122	5610	-0.03	0.018	15.33	16.00	1.167	92.50	1.081	0.023	/
Ant.14	5.6G	802.11 ac80	Left Cheek	0	122	5610	0.14	0.205	15.53	16.00	1.114	92.50	1.081	0.247	/
	5.6G	802.11 ac80	Left Tilt	0	122	5610	-0.04	0.266	15.53	16.00	1.114	92.50	1.081	0.320	32#
	5.6G	802.11 ac80	Right Cheek	0	122	5610	-0.12	0.187	15.53	16.00	1.114	92.50	1.081	0.225	/
	5.6G	802.11 ac80	Right Tilt	0	122	5610	-0.19	0.160	15.53	16.00	1.114	92.50	1.081	0.193	/
Ant.13	5.8G	802.11 ac80	Left Cheek	0	155	5775	0.15	0.153	16.43	17.00	1.140	92.50	1.081	0.189	/
	5.8G	802.11 ac80	Left Tilt	0	155	5775	-0.14	0.081	16.43	17.00	1.140	92.50	1.081	0.100	/
	5.8G	802.11 ac80	Right Cheek	0	155	5775	-0.06	0.032	16.43	17.00	1.140	92.50	1.081	0.039	/
	5.8G	802.11 ac80	Right Tilt	0	155	5775	0.18	0.021	16.43	17.00	1.140	92.50	1.081	0.026	/
Ant.14	5.8G	802.11 ac80	Left Cheek	0	155	5775	-0.09	0.221	15.17	16.00	1.211	92.50	1.081	0.289	/
	5.8G	802.11 ac80	Left Tilt	0	155	5775	-0.01	0.233	15.17	16.00	1.211	92.50	1.081	0.305	33#
	5.8G	802.11 ac80	Right Cheek	0	155	5775	0.15	0.164	15.17	16.00	1.211	92.50	1.081	0.215	/
	5.8G	802.11 ac80	Right Tilt	0	155	5775	0.01	0.171	15.17	16.00	1.211	92.50	1.081	0.224	/
Body-worn															
Ant.13	5.3G	802.11 n40	Front Side	10	54	5270	-0.15	0.023	16.21	17.00	1.199	94.80	1.055	0.029	/
	5.3G	802.11 n40	Back Side	10	54	5270	0.00	0.122	16.21	17.00	1.199	94.80	1.055	0.154	/
Ant.14	5.3G	802.11 ac80	Front Side	10	58	5290	-0.07	0.056	14.41	16.00	1.442	92.50	1.081	0.087	/
	5.3G	802.11 ac80	Back Side	10	58	5290	-0.08	0.137	14.41	16.00	1.442	92.50	1.081	0.214	34#
Ant.13	5.6G	802.11 ac80	Front Side	10	122	5610	0.18	0.041	15.33	16.00	1.167	92.50	1.081	0.052	/
	5.6G	802.11 ac80	Back Side	10	122	5610	-0.06	0.124	15.33	16.00	1.167	92.50	1.081	0.156	/
Ant.14	5.6G	802.11 ac80	Front Side	10	122	5610	0.00	0.052	15.53	16.00	1.114	92.50	1.081	0.063	/
	5.6G	802.11 ac80	Back Side	10	122	5610	-0.01	0.132	15.53	16.00	1.114	92.50	1.081	0.159	35#
Ant.13	5.8G	802.11 ac80	Front Side	10	155	5775	0.11	0.024	16.43	17.00	1.140	92.50	1.081	0.030	/
	5.8G	802.11 ac80	Back Side	10	155	5775	0.01	0.061	16.43	17.00	1.140	92.50	1.081	0.075	/
Ant.14	5.8G	802.11 ac80	Front Side	10	155	5775	-0.11	0.050	15.17	16.00	1.211	92.50	1.081	0.065	/

	5.8G	802.11 ac80	Back Side	10	155	5775	-0.05	0.076	15.17	16.00	1.211	92.50	1.081	0.099	36#
Hotspot															
Ant.13	5.2G	802.11 n20	Front Side	10	48	5240	0.12	0.047	16.26	17.00	1.186	97.20	1.029	0.057	/
	5.2G	802.11 n20	Back Side	10	48	5240	0.00	0.118	16.26	17.00	1.186	97.20	1.029	0.144	/
	5.2G	802.11 n20	Left Edge	10	48	5240	0.06	0.088	16.26	17.00	1.186	97.20	1.029	0.107	/
	5.2G	802.11 n20	Top Edge	10	48	5240	0.15	0.035	16.26	17.00	1.186	97.20	1.029	0.043	/
Ant.14	5.2G	802.11 ac80	Front Side	10	42	5210	0.14	0.033	14.16	16.00	1.528	92.50	1.081	0.055	/
	5.2G	802.11 ac80	Back Side	10	42	5210	-0.11	0.081	14.16	16.00	1.528	92.50	1.081	0.134	/
	5.2G	802.11 ac80	Left Edge	10	42	5210	0.06	0.012	14.16	16.00	1.528	92.50	1.081	0.020	/
	5.2G	802.11 ac80	Top Edge	10	42	5210	0.03	0.145	14.16	16.00	1.528	92.50	1.081	0.240	37#
Ant.13	5.8G	802.11 ac80	Front Side	10	155	5775	0.11	0.024	16.43	17.00	1.140	92.50	1.081	0.030	/
	5.8G	802.11 ac80	Back Side	10	155	5775	0.01	0.061	16.43	17.00	1.140	92.50	1.081	0.075	/
	5.8G	802.11 ac80	Left Edge	10	155	5775	-0.03	0.062	16.43	17.00	1.140	92.50	1.081	0.076	/
	5.8G	802.11 ac80	Top Edge	10	155	5775	0.19	0.010	16.43	17.00	1.140	92.50	1.081	0.012	/
Ant.14	5.8G	802.11 ac80	Front Side	10	155	5775	-0.11	0.050	15.17	16.00	1.211	92.50	1.081	0.065	/
	5.8G	802.11 ac80	Back Side	10	155	5775	-0.05	0.076	15.17	16.00	1.211	92.50	1.081	0.099	36#
	5.8G	802.11 ac80	Left Edge	10	155	5775	0.04	0.016	15.17	16.00	1.211	92.50	1.081	0.021	/
	5.8G	802.11 ac80	Top Edge	10	155	5775	0.15	0.071	15.17	16.00	1.211	92.50	1.081	0.093	/
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.
Specific															
Ant.13	5.3G	802.11 n40	Front Side	0	54	5270	0.08	0.100	16.21	17.00	1.199	94.80	1.055	0.126	/
	5.3G	802.11 n40	Back Side	0	54	5270	0.11	0.165	16.21	17.00	1.199	94.80	1.055	0.209	/
	5.3G	802.11 n40	Left Edge	0	54	5270	0.14	0.345	16.21	17.00	1.199	94.80	1.055	0.436	/
	5.3G	802.11 n40	Top Edge	0	54	5270	-0.01	0.041	16.21	17.00	1.199	94.80	1.055	0.052	/
Ant.14	5.3G	802.11 ac80	Front Side	0	58	5290	-0.14	0.148	14.41	16.00	1.442	92.50	1.081	0.231	/
	5.3G	802.11 ac80	Back Side	0	58	5290	-0.11	0.198	14.41	16.00	1.442	92.50	1.081	0.309	/
	5.3G	802.11 ac80	Left Edge	0	58	5290	0.04	0.045	14.41	16.00	1.442	92.50	1.081	0.070	/
	5.3G	802.11 ac80	Top Edge	0	58	5290	0.06	0.524	14.41	16.00	1.442	92.50	1.081	0.817	38#
Ant.13	5.6G	802.11 ac80	Front Side	0	122	5610	-0.06	0.065	15.33	16.00	1.167	92.50	1.081	0.082	/
	5.6G	802.11 ac80	Back Side	0	122	5610	-0.04	0.104	15.33	16.00	1.167	92.50	1.081	0.131	/
	5.6G	802.11 ac80	Left Edge	0	122	5610	0.15	0.255	15.33	16.00	1.167	92.50	1.081	0.322	/
	5.6G	802.11 ac80	Top Edge	0	122	5610	-0.11	0.018	15.33	16.00	1.167	92.50	1.081	0.023	/
Ant.14	5.6G	802.11 ac80	Front Side	0	122	5610	-0.16	0.108	15.53	16.00	1.114	92.50	1.081	0.130	/
	5.6G	802.11 ac80	Back Side	0	122	5610	0.11	0.147	15.53	16.00	1.114	92.50	1.081	0.177	/
	5.6G	802.11 ac80	Left Edge	0	122	5610	-0.17	0.027	15.53	16.00	1.114	92.50	1.081	0.033	/
	5.6G	802.11 ac80	Top Edge	0	122	5610	0.05	0.296	15.53	16.00	1.114	92.50	1.081	0.356	39#
Note: Refer to ANNEX C for the detailed test data for each test configuration.															

10.23 Bluetooth

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.13	DH5	Left Cheek	0	39	2441	0.02	0.252	16.42	17.00	1.143	76.77	1.303	0.375	/
Ant.13	DH5	Left Tilt	0	39	2441	0.14	0.086	16.42	17.00	1.143	76.77	1.303	0.128	/
Ant.13	DH5	Right Cheek	0	39	2441	-0.11	0.086	16.42	17.00	1.143	76.77	1.303	0.128	/
Ant.13	DH5	Right Tilt	0	39	2441	-0.05	0.028	16.42	17.00	1.143	76.77	1.303	0.042	/
Ant.14	DH5	Left Cheek	0	0	2402	-0.02	0.283	11.31	12.00	1.172	76.67	1.304	0.433	40#
Ant.14	DH5	Left Tilt	0	0	2402	0.09	0.173	11.31	12.00	1.172	76.67	1.304	0.264	/
Ant.14	DH5	Right Cheek	0	0	2402	-0.12	0.157	11.31	12.00	1.172	76.67	1.304	0.240	/
Ant.14	DH5	Right Tilt	0	0	2402	0.09	0.139	11.31	12.00	1.172	76.67	1.304	0.212	/
Body-worn&Hotspot														
Ant.13	DH5	Front Side	10	39	2441	0.19	0.047	16.42	17.00	1.143	76.77	1.303	0.070	/
Ant.13	DH5	Back Side	10	39	2441	0.01	0.075	16.42	17.00	1.143	76.77	1.303	0.112	41#
Ant.13	DH5	Left Edge	10	39	2441	-0.07	0.065	16.42	17.00	1.143	76.77	1.303	0.097	/
Ant.13	DH5	Top Edge	10	39	2441	-0.16	0.009	16.42	17.00	1.143	76.77	1.303	0.013	/
Ant.14	DH5	Front Side	10	0	2402	0.08	0.054	11.31	12.00	1.172	76.67	1.304	0.083	/
Ant.14	DH5	Back Side	10	0	2402	-0.03	0.062	11.31	12.00	1.172	76.67	1.304	0.095	/
Ant.14	DH5	Left Edge	10	0	2402	0.13	0.011	11.31	12.00	1.172	76.67	1.304	0.017	/
Ant.14	DH5	Top Edge	10	0	2402	0.11	0.051	11.31	12.00	1.172	76.67	1.304	0.078	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.24 NFC SAR

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

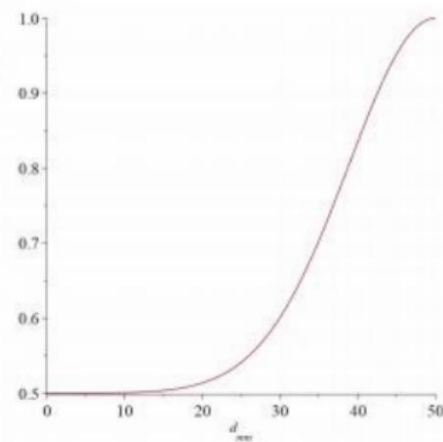
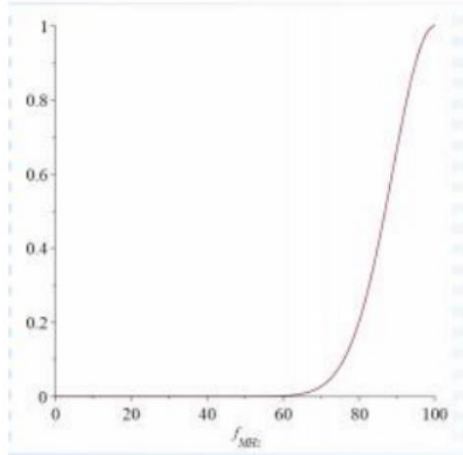
$$P_{7X}(d_{mm}, f_{MHz}) := \begin{cases} P_{6S}(d_{mm}, f_{MHz}) & f_{MHz} \leq 100 \\ P_{6to7}(d_{mm}, f_{MHz}) & 100 < f_{MHz} \leq 300 \\ P_7(d_{mm}, f_{MHz}) & 300 < f_{MHz} \end{cases}$$

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.

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

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
△f(MHz)	100		△d	50
Sf(fMHz)	0.000568861		Sd (dmm)	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 ERP level (6 dB for frequencies ≤ 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: $E = ERP - 20\log D + 104.8$

where:

E = electric field strength in dB μ V/m,

ERP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

Mode	f (MHz)	Max. E-Field strength (dB μ V/m)	D (m)	Ground reflection factor (dB)	ERP (dBm)
NFC (13.56MHz)	13.56	53.37	3	6	-33.74
Note: 1. Add the appropriate maximum ground reflection factor to the ERP level (6 dB for frequencies ≤ 30 MHz). 2.ERP= 53.37+20*Log(3) - 104.8 + 6 =-33.74 (dBm)					

According to the FCC KDB 447498 D04

Estimated SAR: SAR test =1.6 · Pant / Pth [W/kg]

Estimated SAR	1.6 · Pant / Pth [W/kg]		
Pmeas.(dBm)	-33.74	Pmeas.(mW)	0.0003
Pth.(mW)	443.13		
NFC Estimated 1g SAR [W/kg]	<0.001		

10.24.1 Highest Total Exposure Ratio of Simultaneous Transmission

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

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

maximum SAR value for Simultaneous Transmission is 1.538 [W/kg], SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds. Therefore, the worst TER $= (1.538 + 0.001) / 1.6 = 0.962 < 1$, 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 ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10 , the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR repeated measurement procedure:

When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.

When the highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

If the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 , or when the original or repeated measurement is ≥ 1.45 W/kg, perform a second repeated measurement.

If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 , and the original, first or second repeated measurement is ≥ 1.5 W/kg, perform a third repeated measurement.

Frequency Band (MHz)	Wireless Band	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Repeated ^{1st} Measured SAR (W/kg)	Largest to Smallest SAR Radio
1909.8	GSM	Head	Right Tilt	0.837	Yes	0.820	1.02

Note: The ratio of largest to smallest SAR for the original and first repeated measurements is < 1.20 , the second repeated measurement. is not required.

12 SIMULTANEOUS TRANSMISSION

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

12.1 Simultaneous Transmission Mode Consider

No.	Simultaneous Tx Combination	Head	Body-Worn	Hotspot	Specific
1	WWAN + WLAN 2.4GHz(Ant.13)	Yes	Yes	Yes	Yes
2	WWAN + WLAN 2.4GHz(Ant.14)	Yes	Yes	Yes	Yes
3	WWAN + BT(Ant.13)	Yes	Yes	Yes	Yes
4	WWAN + BT(Ant.14)	Yes	Yes	Yes	Yes
5	WWAN + WLAN 5GHz(Ant.13)	Yes	Yes	Yes	Yes
6	WWAN + WLAN 5GHz(Ant.14)	Yes	Yes	Yes	Yes
7	WLAN 5GHz(Ant.13) + BT(Ant.13)	Yes	Yes	Yes	Yes
8	WLAN 5GHz(Ant.14) + BT(Ant.14)	Yes	Yes	Yes	Yes
9	WWAN + WLAN 5GHz(Ant.13) + BT(Ant.13)	Yes	Yes	Yes	Yes
10	WWAN + WLAN 5GHz(Ant.14) + BT(Ant.14)	Yes	Yes	Yes	Yes

Note:

1. WWAN antennas can switch automatically, the standards supported by WWAN are(GSM Voice/GPRS/EDGE/WCDMA/LTE).
2. The maximum SAR summation is calculated based on the same configuration and test position.
- 3.WLAN 2.4GHz and Bluetooth will not be transmitting at same time, WLAN 2.4GHz and WLAN 5GHz will not be transmitting at same time.
4. The Bluetooth support dual antennas, and can't transmit simultaneously, the WLAN 2.4G support dual antennas, but does not support MIMO.

12.2 Sum SAR of Simultaneous Transmission

12.2.1 Head Simultaneous Transmission SAR Evaluation for WWAN and WLAN and BT

Band	Antenna	Position	Stand alone SAR							SUM SAR			
			1	2	3	4	5	6	7				
			WWAN	2.4GWIFI Ant.13	2.4GWIFI Ant.14	5GWIFI Ant.13	5GWIFI Ant.14	Bluetooth Ant.13	Bluetooth Ant.14	1+2	1+3	1+4+6	1+5+7
GSM850	Ant.1	Left Cheek	0.778	0.432	0.629	0.266	0.327	0.375	0.433	1.210	1.407	1.419	1.538
		Left Tilt	0.752	0.163	0.524	0.128	0.497	0.128	0.264	0.915	1.276	1.008	1.513
		Right Cheek	0.930	0.175	0.408	0.076	0.245	0.128	0.240	1.105	1.338	1.134	1.415
		Right Tilt	0.668	0.070	0.361	0.056	0.326	0.042	0.212	0.738	1.029	0.766	1.206
GSM850	Ant.0	Left Cheek	0.080	0.432	0.629	0.266	0.327	0.375	0.433	0.512	0.709	0.721	0.840
		Left Tilt	0.041	0.163	0.524	0.128	0.497	0.128	0.264	0.204	0.565	0.297	0.802
		Right Cheek	0.073	0.175	0.408	0.076	0.245	0.128	0.240	0.248	0.481	0.277	0.558
		Right Tilt	0.026	0.070	0.361	0.056	0.326	0.042	0.212	0.096	0.387	0.124	0.564
GSM1900	Ant.2	Left Cheek	0.757	0.432	0.629	0.266	0.327	0.375	0.433	1.189	1.386	1.398	1.517
		Left Tilt	0.770	0.163	0.524	0.128	0.497	0.128	0.264	0.933	1.294	1.026	1.531
		Right Cheek	0.731	0.175	0.408	0.076	0.245	0.128	0.240	0.906	1.139	0.935	1.216
		Right Tilt	0.931	0.070	0.361	0.056	0.326	0.042	0.212	1.001	1.292	1.029	1.469
GSM1900	Ant.0	Left Cheek	0.021	0.432	0.629	0.266	0.327	0.375	0.433	0.453	0.650	0.662	0.781
		Left Tilt	0.012	0.163	0.524	0.128	0.497	0.128	0.264	0.175	0.536	0.268	0.773
		Right Cheek	0.027	0.175	0.408	0.076	0.245	0.128	0.240	0.202	0.435	0.231	0.512
		Right Tilt	0.014	0.070	0.361	0.056	0.326	0.042	0.212	0.084	0.375	0.112	0.552
WCDMA B2	Ant.2	Left Cheek	0.296	0.432	0.629	0.266	0.327	0.375	0.433	0.728	0.925	0.937	1.056
		Left Tilt	0.352	0.163	0.524	0.128	0.497	0.128	0.264	0.515	0.876	0.608	1.113
		Right Cheek	0.496	0.175	0.408	0.076	0.245	0.128	0.240	0.671	0.904	0.700	0.981
		Right Tilt	0.674	0.070	0.361	0.056	0.326	0.042	0.212	0.744	1.035	0.772	1.212
WCDMA B2	Ant.0	Left Cheek	0.023	0.432	0.629	0.266	0.327	0.375	0.433	0.455	0.652	0.664	0.783
		Left Tilt	0.020	0.163	0.524	0.128	0.497	0.128	0.264	0.183	0.544	0.276	0.781
		Right Cheek	0.021	0.175	0.408	0.076	0.245	0.128	0.240	0.196	0.429	0.225	0.506
		Right Tilt	0.017	0.070	0.361	0.056	0.326	0.042	0.212	0.087	0.378	0.115	0.555
WCDMA B4	Ant.2	Left Cheek	0.503	0.432	0.629	0.266	0.327	0.375	0.433	0.935	1.132	1.144	1.263
		Left Tilt	0.530	0.163	0.524	0.128	0.497	0.128	0.264	0.693	1.054	0.786	1.291
		Right Cheek	0.724	0.175	0.408	0.076	0.245	0.128	0.240	0.899	1.132	0.928	1.209
		Right Tilt	0.679	0.070	0.361	0.056	0.326	0.042	0.212	0.749	1.040	0.777	1.217
WCDMA B4	Ant.0	Left Cheek	0.020	0.432	0.629	0.266	0.327	0.375	0.433	0.452	0.649	0.661	0.780
		Left Tilt	0.010	0.163	0.524	0.128	0.497	0.128	0.264	0.173	0.534	0.266	0.771
		Right Cheek	0.019	0.175	0.408	0.076	0.245	0.128	0.240	0.194	0.427	0.223	0.504
		Right Tilt	0.009	0.070	0.361	0.056	0.326	0.042	0.212	0.079	0.370	0.107	0.547
WCDMA B5	Ant.1	Left Cheek	0.545	0.432	0.629	0.266	0.327	0.375	0.433	0.977	1.174	1.186	1.305
		Left Tilt	0.487	0.163	0.524	0.128	0.497	0.128	0.264	0.650	1.011	0.743	1.248
		Right Cheek	0.729	0.175	0.408	0.076	0.245	0.128	0.240	0.904	1.137	0.933	1.214
		Right Tilt	0.431	0.070	0.361	0.056	0.326	0.042	0.212	0.501	0.792	0.529	0.969

WCDMA B5	Ant.0	Left Cheek	0.074	0.432	0.629	0.266	0.327	0.375	0.433	0.506	0.703	0.715	0.834
		Left Tilt	0.038	0.163	0.524	0.128	0.497	0.128	0.264	0.201	0.562	0.294	0.799
		Right Cheek	0.083	0.175	0.408	0.076	0.245	0.128	0.240	0.258	0.491	0.287	0.568
		Right Tilt	0.055	0.070	0.361	0.056	0.326	0.042	0.212	0.125	0.416	0.153	0.593
LTE B2	Ant.2	Left Cheek	0.330	0.432	0.629	0.266	0.327	0.375	0.433	0.762	0.959	0.971	1.090
		Left Tilt	0.373	0.163	0.524	0.128	0.497	0.128	0.264	0.536	0.897	0.629	1.134
		Right Cheek	0.666	0.175	0.408	0.076	0.245	0.128	0.240	0.841	1.074	0.870	1.151
		Right Tilt	0.724	0.070	0.361	0.056	0.326	0.042	0.212	0.794	1.085	0.822	1.262
LTE B2	Ant.0	Left Cheek	0.015	0.432	0.629	0.266	0.327	0.375	0.433	0.447	0.644	0.656	0.775
		Left Tilt	0.015	0.163	0.524	0.128	0.497	0.128	0.264	0.178	0.539	0.271	0.776
		Right Cheek	0.012	0.175	0.408	0.076	0.245	0.128	0.240	0.187	0.420	0.216	0.497
		Right Tilt	0.009	0.070	0.361	0.056	0.326	0.042	0.212	0.079	0.370	0.107	0.547
LTE B4	Ant.2	Left Cheek	0.439	0.432	0.629	0.266	0.327	0.375	0.433	0.871	1.068	1.080	1.199
		Left Tilt	0.441	0.163	0.524	0.128	0.497	0.128	0.264	0.604	0.965	0.697	1.202
		Right Cheek	0.697	0.175	0.408	0.076	0.245	0.128	0.240	0.872	1.105	0.901	1.182
		Right Tilt	0.659	0.070	0.361	0.056	0.326	0.042	0.212	0.729	1.020	0.757	1.197
LTE B4	Ant.0	Left Cheek	0.024	0.432	0.629	0.266	0.327	0.375	0.433	0.456	0.653	0.665	0.784
		Left Tilt	0.019	0.163	0.524	0.128	0.497	0.128	0.264	0.182	0.543	0.275	0.780
		Right Cheek	0.024	0.175	0.408	0.076	0.245	0.128	0.240	0.199	0.432	0.228	0.509
		Right Tilt	0.022	0.070	0.361	0.056	0.326	0.042	0.212	0.092	0.383	0.120	0.560
LTE B5	Ant.1	Left Cheek	0.308	0.432	0.629	0.266	0.327	0.375	0.433	0.740	0.937	0.949	1.068
		Left Tilt	0.264	0.163	0.524	0.128	0.497	0.128	0.264	0.427	0.788	0.520	1.025
		Right Cheek	0.445	0.175	0.408	0.076	0.245	0.128	0.240	0.620	0.853	0.649	0.930
		Right Tilt	0.306	0.070	0.361	0.056	0.326	0.042	0.212	0.376	0.667	0.404	0.844
LTE B5	Ant.0	Left Cheek	0.054	0.432	0.629	0.266	0.327	0.375	0.433	0.486	0.683	0.695	0.814
		Left Tilt	0.028	0.163	0.524	0.128	0.497	0.128	0.264	0.191	0.552	0.284	0.789
		Right Cheek	0.041	0.175	0.408	0.076	0.245	0.128	0.240	0.216	0.449	0.245	0.526
		Right Tilt	0.034	0.070	0.361	0.056	0.326	0.042	0.212	0.104	0.395	0.132	0.572
LTE B7	Ant.2	Left Cheek	0.262	0.432	0.629	0.266	0.327	0.375	0.433	0.694	0.891	0.903	1.022
		Left Tilt	0.315	0.163	0.524	0.128	0.497	0.128	0.264	0.478	0.839	0.571	1.076
		Right Cheek	0.612	0.175	0.408	0.076	0.245	0.128	0.240	0.787	1.020	0.816	1.097
		Right Tilt	0.716	0.070	0.361	0.056	0.326	0.042	0.212	0.786	1.077	0.814	1.254
LTE B7	Ant.0	Left Cheek	0.046	0.432	0.629	0.266	0.327	0.375	0.433	0.478	0.675	0.687	0.806
		Left Tilt	0.015	0.163	0.524	0.128	0.497	0.128	0.264	0.178	0.539	0.271	0.776
		Right Cheek	0.042	0.175	0.408	0.076	0.245	0.128	0.240	0.217	0.450	0.246	0.527
		Right Tilt	0.018	0.070	0.361	0.056	0.326	0.042	0.212	0.088	0.379	0.116	0.556
LTE B12	Ant.2	Left Cheek	0.562	0.432	0.629	0.266	0.327	0.375	0.433	0.994	1.191	1.203	1.322
		Left Tilt	0.496	0.163	0.524	0.128	0.497	0.128	0.264	0.659	1.020	0.752	1.257
		Right Cheek	0.757	0.175	0.408	0.076	0.245	0.128	0.240	0.932	1.165	0.961	1.242
		Right Tilt	0.416	0.070	0.361	0.056	0.326	0.042	0.212	0.486	0.777	0.514	0.954
LTE B12	Ant.0	Left Cheek	0.078	0.432	0.629	0.266	0.327	0.375	0.433	0.510	0.707	0.719	0.838
		Left Tilt	0.033	0.163	0.524	0.128	0.497	0.128	0.264	0.196	0.557	0.289	0.794
		Right Cheek	0.058	0.175	0.408	0.076	0.245	0.128	0.240	0.233	0.466	0.262	0.543

		Right Tilt	0.039	0.070	0.361	0.056	0.326	0.042	0.212	0.109	0.400	0.137	0.577
LTE B17	Ant.2	Left Cheek	0.498	0.432	0.629	0.266	0.327	0.375	0.433	0.930	1.127	1.139	1.258
		Left Tilt	0.480	0.163	0.524	0.128	0.497	0.128	0.264	0.643	1.004	0.736	1.241
		Right Cheek	0.699	0.175	0.408	0.076	0.245	0.128	0.240	0.874	1.107	0.903	1.184
		Right Tilt	0.445	0.070	0.361	0.056	0.326	0.042	0.212	0.515	0.806	0.543	0.983
LTE B17	Ant.0	Left Cheek	0.077	0.432	0.629	0.266	0.327	0.375	0.433	0.509	0.706	0.718	0.837
		Left Tilt	0.051	0.163	0.524	0.128	0.497	0.128	0.264	0.214	0.575	0.307	0.812
		Right Cheek	0.070	0.175	0.408	0.076	0.245	0.128	0.240	0.245	0.478	0.274	0.555
		Right Tilt	0.054	0.070	0.361	0.056	0.326	0.042	0.212	0.124	0.415	0.152	0.592
LTE B66	Ant.2	Left Cheek	0.408	0.432	0.629	0.266	0.327	0.375	0.433	0.840	1.037	1.049	1.168
		Left Tilt	0.420	0.163	0.524	0.128	0.497	0.128	0.264	0.583	0.944	0.676	1.181
		Right Cheek	0.630	0.175	0.408	0.076	0.245	0.128	0.240	0.805	1.038	0.834	1.115
		Right Tilt	0.700	0.070	0.361	0.056	0.326	0.042	0.212	0.770	1.061	0.798	1.238
LTE B66	Ant.0	Left Cheek	0.012	0.432	0.629	0.266	0.327	0.375	0.433	0.444	0.641	0.653	0.772
		Left Tilt	0.007	0.163	0.524	0.128	0.497	0.128	0.264	0.170	0.531	0.263	0.768
		Right Cheek	0.016	0.175	0.408	0.076	0.245	0.128	0.240	0.191	0.424	0.220	0.501
		Right Tilt	0.009	0.070	0.361	0.056	0.326	0.042	0.212	0.079	0.370	0.107	0.547
LTE B38	Ant.2	Left Cheek	0.260	0.432	0.629	0.266	0.327	0.375	0.433	0.692	0.889	0.901	1.020
		Left Tilt	0.316	0.163	0.524	0.128	0.497	0.128	0.264	0.479	0.840	0.572	1.077
		Right Cheek	0.712	0.175	0.408	0.076	0.245	0.128	0.240	0.887	1.120	0.916	1.197
		Right Tilt	0.754	0.070	0.361	0.056	0.326	0.042	0.212	0.824	1.115	0.852	1.292
LTE B38	Ant.0	Left Cheek	0.024	0.432	0.629	0.266	0.327	0.375	0.433	0.456	0.653	0.665	0.784
		Left Tilt	0.013	0.163	0.524	0.128	0.497	0.128	0.264	0.176	0.537	0.269	0.774
		Right Cheek	0.022	0.175	0.408	0.076	0.245	0.128	0.240	0.197	0.430	0.226	0.507
		Right Tilt	0.017	0.070	0.361	0.056	0.326	0.042	0.212	0.087	0.378	0.115	0.555
LTE B41	Ant.2	Left Cheek	0.261	0.432	0.629	0.266	0.327	0.375	0.433	0.693	0.890	0.902	1.021
		Left Tilt	0.312	0.163	0.524	0.128	0.497	0.128	0.264	0.475	0.836	0.568	1.073
		Right Cheek	0.641	0.175	0.408	0.076	0.245	0.128	0.240	0.816	1.049	0.845	1.126
		Right Tilt	0.749	0.070	0.361	0.056	0.326	0.042	0.212	0.819	1.110	0.847	1.287
LTE B41	Ant.0	Left Cheek	0.026	0.432	0.629	0.266	0.327	0.375	0.433	0.458	0.655	0.667	0.786
		Left Tilt	0.016	0.163	0.524	0.128	0.497	0.128	0.264	0.179	0.540	0.272	0.777
		Right Cheek	0.042	0.175	0.408	0.076	0.245	0.128	0.240	0.217	0.450	0.246	0.527
		Right Tilt	0.020	0.070	0.361	0.056	0.326	0.042	0.212	0.090	0.381	0.118	0.558

Note:

1: The simultaneous transmission combinations of the antennas contain combinations of two antennas, so only the worst simultaneous transmission combinations was shown in this table.

2: The highest Summed 1g SAR is 1.538 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.2 Body-worn&Hotspot Simultaneous Transmission SAR Evaluation for WWAN and WLAN and BT

Band	Antenna	Position	Stand alone SAR							SUM SAR			
			1	2	3	4	5	6	7				
			WWAN	2.4GWIFI Ant.13	2.4GWIFI Ant.14	5GWIFI Ant.13	5GWIFI Ant.14	Bluetooth Ant.13	Bluetooth Ant.14	1+2	1+3	1+4+6	1+5+7
GSM850	Ant.2	Front Side 10mm	0.193	0.075	0.100	0.057	0.087	0.070	0.083	0.268	0.293	0.320	0.363
		Back Side 10mm	0.200	0.111	0.142	0.156	0.214	0.112	0.095	0.311	0.342	0.468	0.509
		Left Edge 10mm	0.000	0.086	0.049	0.107	0.021	0.097	0.017	0.086	0.049	0.204	0.038
		Right Edge 10mm	0.109	0.000	0.000	0.000	0.000	0.000	0.000	0.109	0.109	0.109	0.109
		Top Edge 10mm	0.217	0.037	0.108	0.043	0.240	0.013	0.078	0.254	0.325	0.273	0.535
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GSM850	Ant.0	Front Side 10mm	0.114	0.075	0.100	0.057	0.087	0.070	0.083	0.189	0.214	0.241	0.284
		Back Side 10mm	0.152	0.111	0.142	0.156	0.214	0.112	0.095	0.263	0.294	0.420	0.461
		Left Edge 10mm	0.084	0.086	0.049	0.107	0.021	0.097	0.017	0.170	0.133	0.288	0.122
		Right Edge 10mm	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.053	0.053	0.053
		Top Edge 10mm	0.000	0.037	0.108	0.043	0.240	0.013	0.078	0.037	0.108	0.056	0.318
		Bottom Edge 10mm	0.134	0.000	0.000	0.000	0.000	0.000	0.000	0.134	0.134	0.134	0.134
GSM1900	Ant.2	Front Side 10mm	0.147	0.075	0.100	0.057	0.087	0.070	0.083	0.222	0.247	0.274	0.317
		Back Side 10mm	0.305	0.111	0.142	0.156	0.214	0.112	0.095	0.416	0.447	0.573	0.614
		Left Edge 10mm	0.000	0.086	0.049	0.107	0.021	0.097	0.017	0.086	0.049	0.204	0.038
		Right Edge 10mm	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.037	0.037	0.037
		Top Edge 10mm	0.202	0.037	0.108	0.043	0.240	0.013	0.078	0.239	0.310	0.258	0.520
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GSM1900	Ant.0	Front Side 10mm	0.020	0.075	0.100	0.057	0.087	0.070	0.083	0.095	0.120	0.147	0.190
		Back Side 10mm	0.058	0.111	0.142	0.156	0.214	0.112	0.095	0.169	0.200	0.326	0.367
		Left Edge 10mm	0.017	0.086	0.049	0.107	0.021	0.097	0.017	0.103	0.066	0.221	0.055
		Right Edge 10mm	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.009	0.009	0.009
		Top Edge 10mm	0.000	0.037	0.108	0.043	0.240	0.013	0.078	0.037	0.108	0.056	0.318
		Bottom Edge 10mm	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.027	0.027	0.027
WCDMA B2	Ant.2	Front Side 10mm	0.123	0.075	0.100	0.057	0.087	0.070	0.083	0.198	0.223	0.250	0.293
		Back Side 10mm	0.182	0.111	0.142	0.156	0.214	0.112	0.095	0.293	0.324	0.450	0.491
		Left Edge 10mm	0.000	0.086	0.049	0.107	0.021	0.097	0.017	0.086	0.049	0.204	0.038
		Right Edge 10mm	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.040	0.040	0.040
		Top Edge 10mm	0.259	0.037	0.108	0.043	0.240	0.013	0.078	0.296	0.367	0.315	0.577
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA B2	Ant.0	Front Side 10mm	0.042	0.075	0.100	0.057	0.087	0.070	0.083	0.117	0.142	0.169	0.212
		Back Side 10mm	0.099	0.111	0.142	0.156	0.214	0.112	0.095	0.210	0.241	0.367	0.408
		Left Edge 10mm	0.016	0.086	0.049	0.107	0.021	0.097	0.017	0.102	0.065	0.220	0.054
		Right Edge 10mm	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.025	0.025	0.025	0.025
		Top Edge 10mm	0.000	0.037	0.108	0.043	0.240	0.013	0.078	0.037	0.108	0.056	0.318

		Bottom Edge 10mm	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.055	0.055	0.055
WCDMA B4	Ant.2	Front Side 10mm	0.191	0.075	0.100	0.057	0.087	0.070	0.083	0.266	0.291	0.318	0.361
		Back Side 10mm	0.271	0.111	0.142	0.156	0.214	0.112	0.095	0.382	0.413	0.539	0.580
		Left Edge 10mm	0.000	0.086	0.049	0.107	0.021	0.097	0.017	0.086	0.049	0.204	0.038
		Right Edge 10mm	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.055	0.055	0.055	0.055
		Top Edge 10mm	0.275	0.037	0.108	0.043	0.240	0.013	0.078	0.312	0.383	0.331	0.593
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA B4	Ant.0	Front Side 10mm	0.018	0.075	0.100	0.057	0.087	0.070	0.083	0.093	0.118	0.145	0.188
		Back Side 10mm	0.049	0.111	0.142	0.156	0.214	0.112	0.095	0.160	0.191	0.317	0.358
		Left Edge 10mm	0.020	0.086	0.049	0.107	0.021	0.097	0.017	0.106	0.069	0.224	0.058
		Right Edge 10mm	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.021	0.021	0.021
		Top Edge 10mm	0.000	0.037	0.108	0.043	0.240	0.013	0.078	0.037	0.108	0.056	0.318
		Bottom Edge 10mm	0.031	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.031	0.031	0.031
WCDMA B5	Ant.2	Front Side 10mm	0.119	0.075	0.100	0.057	0.087	0.070	0.083	0.194	0.219	0.246	0.289
		Back Side 10mm	0.152	0.111	0.142	0.156	0.214	0.112	0.095	0.263	0.294	0.420	0.461
		Left Edge 10mm	0.000	0.086	0.049	0.107	0.021	0.097	0.017	0.086	0.049	0.204	0.038
		Right Edge 10mm	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.060	0.060	0.060
		Top Edge 10mm	0.165	0.037	0.108	0.043	0.240	0.013	0.078	0.202	0.273	0.221	0.483
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
WCDMA B5	Ant.0	Front Side 10mm	0.091	0.075	0.100	0.057	0.087	0.070	0.083	0.166	0.191	0.218	0.261
		Back Side 10mm	0.120	0.111	0.142	0.156	0.214	0.112	0.095	0.231	0.262	0.388	0.429
		Left Edge 10mm	0.062	0.086	0.049	0.107	0.021	0.097	0.017	0.148	0.111	0.266	0.100
		Right Edge 10mm	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.021	0.021	0.021
		Top Edge 10mm	0.000	0.037	0.108	0.043	0.240	0.013	0.078	0.037	0.108	0.056	0.318
		Bottom Edge 10mm	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.104	0.104	0.104
LTE B2	Ant.2	Front Side 10mm	0.136	0.075	0.100	0.152	0.216	0.069	0.059	0.211	0.236	0.357	0.411
		Back Side 10mm	0.200	0.111	0.142	0.285	0.340	0.152	0.116	0.311	0.342	0.637	0.656
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.038	0.000	0.000	0.000	0.000	0.000	0.022	0.038	0.038	0.038	0.060
		Top Edge 10mm	0.262	0.037	0.108	0.129	0.392	0.024	0.096	0.299	0.370	0.415	0.750
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B2	Ant.0	Front Side 10mm	0.037	0.075	0.100	0.152	0.216	0.069	0.059	0.112	0.137	0.258	0.312
		Back Side 10mm	0.093	0.111	0.142	0.285	0.340	0.152	0.116	0.204	0.235	0.530	0.549
		Left Edge 10mm	0.019	0.086	0.049	0.273	0.083	0.159	0.019	0.105	0.068	0.451	0.121
		Right Edge 10mm	0.024	0.000	0.000	0.000	0.000	0.000	0.022	0.024	0.024	0.024	0.046
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.042	0.042	0.042	0.042
LTE B4	Ant.2	Front Side 10mm	0.141	0.075	0.100	0.152	0.216	0.069	0.059	0.216	0.241	0.362	0.416
		Back Side 10mm	0.202	0.111	0.142	0.285	0.340	0.152	0.116	0.313	0.344	0.639	0.658
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.038	0.000	0.000	0.000	0.000	0.000	0.022	0.038	0.038	0.038	0.060
		Top Edge 10mm	0.246	0.037	0.108	0.129	0.392	0.024	0.096	0.283	0.354	0.399	0.734
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

LTE B4	Ant.0	Front Side 10mm	0.018	0.075	0.100	0.152	0.216	0.069	0.059	0.093	0.118	0.239	0.293
		Back Side 10mm	0.046	0.111	0.142	0.285	0.340	0.152	0.116	0.157	0.188	0.483	0.502
		Left Edge 10mm	0.022	0.086	0.049	0.273	0.083	0.159	0.019	0.108	0.071	0.454	0.124
		Right Edge 10mm	0.015	0.000	0.000	0.000	0.000	0.000	0.022	0.015	0.015	0.015	0.037
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.022	0.022	0.022
LTE B5	Ant.2	Front Side 10mm	0.054	0.075	0.100	0.152	0.216	0.069	0.059	0.129	0.154	0.275	0.329
		Back Side 10mm	0.067	0.111	0.142	0.285	0.340	0.152	0.116	0.178	0.209	0.504	0.523
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.028	0.000	0.000	0.000	0.000	0.000	0.022	0.028	0.028	0.028	0.050
		Top Edge 10mm	0.076	0.037	0.108	0.129	0.392	0.024	0.096	0.113	0.184	0.229	0.564
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B5	Ant.0	Front Side 10mm	0.060	0.075	0.100	0.152	0.216	0.069	0.059	0.135	0.160	0.281	0.335
		Back Side 10mm	0.072	0.111	0.142	0.285	0.340	0.152	0.116	0.183	0.214	0.509	0.528
		Left Edge 10mm	0.047	0.086	0.049	0.273	0.083	0.159	0.019	0.133	0.096	0.479	0.149
		Right Edge 10mm	0.029	0.000	0.000	0.000	0.000	0.000	0.022	0.029	0.029	0.029	0.051
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.066	0.000	0.000	0.000	0.000	0.000	0.000	0.066	0.066	0.066	0.066
LTE B7	Ant.2	Front Side 10mm	0.127	0.075	0.100	0.152	0.216	0.069	0.059	0.202	0.227	0.348	0.402
		Back Side 10mm	0.311	0.111	0.142	0.285	0.340	0.152	0.116	0.422	0.453	0.748	0.767
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.069	0.000	0.000	0.000	0.000	0.000	0.022	0.069	0.069	0.069	0.091
		Top Edge 10mm	0.330	0.037	0.108	0.129	0.392	0.024	0.096	0.367	0.438	0.483	0.818
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B7	Ant.0	Front Side 10mm	0.079	0.075	0.100	0.152	0.216	0.069	0.059	0.154	0.179	0.300	0.354
		Back Side 10mm	0.119	0.111	0.142	0.285	0.340	0.152	0.116	0.230	0.261	0.556	0.575
		Left Edge 10mm	0.029	0.086	0.049	0.273	0.083	0.159	0.019	0.115	0.078	0.461	0.131
		Right Edge 10mm	0.064	0.000	0.000	0.000	0.000	0.000	0.022	0.064	0.064	0.064	0.086
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.208	0.000	0.000	0.000	0.000	0.000	0.000	0.208	0.208	0.208	0.208
LTE B12	Ant.2	Front Side 10mm	0.111	0.075	0.100	0.152	0.216	0.069	0.059	0.186	0.211	0.332	0.386
		Back Side 10mm	0.169	0.111	0.142	0.285	0.340	0.152	0.116	0.280	0.311	0.606	0.625
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.194	0.000	0.000	0.000	0.000	0.000	0.022	0.194	0.194	0.194	0.216
		Top Edge 10mm	0.141	0.037	0.108	0.129	0.392	0.024	0.096	0.178	0.249	0.294	0.629
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B12	Ant.0	Front Side 10mm	0.115	0.075	0.100	0.152	0.216	0.069	0.059	0.190	0.215	0.336	0.390
		Back Side 10mm	0.198	0.111	0.142	0.285	0.340	0.152	0.116	0.309	0.340	0.635	0.654
		Left Edge 10mm	0.179	0.086	0.049	0.273	0.083	0.159	0.019	0.265	0.228	0.611	0.281
		Right Edge 10mm	0.111	0.000	0.000	0.000	0.000	0.000	0.022	0.111	0.111	0.111	0.133
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.115	0.000	0.000	0.000	0.000	0.000	0.000	0.115	0.115	0.115	0.115
LTE B17	Ant.2	Front Side 10mm	0.122	0.075	0.100	0.152	0.216	0.069	0.059	0.197	0.222	0.343	0.397

		Back Side 10mm	0.165	0.111	0.142	0.285	0.340	0.152	0.116	0.276	0.307	0.602	0.621
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.167	0.000	0.000	0.000	0.000	0.000	0.022	0.167	0.167	0.167	0.189
		Top Edge 10mm	0.122	0.037	0.108	0.129	0.392	0.024	0.096	0.159	0.230	0.275	0.610
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B17	Ant.0	Front Side 10mm	0.111	0.075	0.100	0.152	0.216	0.069	0.059	0.186	0.211	0.332	0.386
		Back Side 10mm	0.188	0.111	0.142	0.285	0.340	0.152	0.116	0.299	0.330	0.625	0.644
		Left Edge 10mm	0.175	0.086	0.049	0.273	0.083	0.159	0.019	0.261	0.224	0.607	0.277
		Right Edge 10mm	0.110	0.000	0.000	0.000	0.000	0.000	0.022	0.110	0.110	0.110	0.132
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.083	0.000	0.000	0.000	0.000	0.000	0.000	0.083	0.083	0.083	0.083
LTE B66	Ant.2	Front Side 10mm	0.161	0.075	0.100	0.152	0.216	0.069	0.059	0.236	0.261	0.382	0.436
		Back Side 10mm	0.207	0.111	0.142	0.285	0.340	0.152	0.116	0.318	0.349	0.644	0.663
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.046	0.000	0.000	0.000	0.000	0.000	0.022	0.046	0.046	0.046	0.068
		Top Edge 10mm	0.220	0.037	0.108	0.129	0.392	0.024	0.096	0.257	0.328	0.373	0.708
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B66	Ant.0	Front Side 10mm	0.017	0.075	0.100	0.152	0.216	0.069	0.059	0.092	0.117	0.238	0.292
		Back Side 10mm	0.052	0.111	0.142	0.285	0.340	0.152	0.116	0.163	0.194	0.489	0.508
		Left Edge 10mm	0.015	0.086	0.049	0.273	0.083	0.159	0.019	0.101	0.064	0.447	0.117
		Right Edge 10mm	0.011	0.000	0.000	0.000	0.000	0.000	0.022	0.011	0.011	0.011	0.033
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.023	0.023	0.023
LTE B38	Ant.2	Front Side 10mm	0.099	0.075	0.100	0.152	0.216	0.069	0.059	0.174	0.199	0.320	0.374
		Back Side 10mm	0.311	0.111	0.142	0.285	0.340	0.152	0.116	0.422	0.453	0.748	0.767
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.074	0.000	0.000	0.000	0.000	0.000	0.022	0.074	0.074	0.074	0.096
		Top Edge 10mm	0.364	0.037	0.108	0.129	0.392	0.024	0.096	0.401	0.472	0.517	0.852
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B38	Ant.0	Front Side 10mm	0.105	0.075	0.100	0.152	0.216	0.069	0.059	0.180	0.205	0.326	0.380
		Back Side 10mm	0.161	0.111	0.142	0.285	0.340	0.152	0.116	0.272	0.303	0.598	0.617
		Left Edge 10mm	0.046	0.086	0.049	0.273	0.083	0.159	0.019	0.132	0.095	0.478	0.148
		Right Edge 10mm	0.033	0.000	0.000	0.000	0.000	0.000	0.022	0.033	0.033	0.033	0.055
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.240	0.000	0.000	0.000	0.000	0.000	0.000	0.240	0.240	0.240	0.240
LTE B41	Ant.2	Front Side 10mm	0.141	0.075	0.100	0.152	0.216	0.069	0.059	0.216	0.241	0.362	0.416
		Back Side 10mm	0.337	0.111	0.142	0.285	0.340	0.152	0.116	0.448	0.479	0.774	0.793
		Left Edge 10mm	0.000	0.086	0.049	0.273	0.083	0.159	0.019	0.086	0.049	0.432	0.102
		Right Edge 10mm	0.103	0.000	0.000	0.000	0.000	0.000	0.022	0.103	0.103	0.103	0.125
		Top Edge 10mm	0.387	0.037	0.108	0.129	0.392	0.024	0.096	0.424	0.495	0.540	0.875
		Bottom Edge 10mm	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE B41	Ant.0	Front Side 10mm	0.120	0.075	0.100	0.152	0.216	0.069	0.059	0.195	0.220	0.341	0.395
		Back Side 10mm	0.167	0.111	0.142	0.285	0.340	0.152	0.116	0.278	0.309	0.604	0.623

		Left Edge 10mm	0.036	0.086	0.049	0.273	0.083	0.159	0.019	0.122	0.085	0.468	0.138
		Right Edge 10mm	0.049	0.000	0.000	0.000	0.000	0.000	0.022	0.049	0.049	0.049	0.071
		Top Edge 10mm	0.000	0.037	0.108	0.129	0.392	0.024	0.096	0.037	0.108	0.153	0.488
		Bottom Edge 10mm	0.279	0.000	0.000	0.000	0.000	0.000	0.000	0.279	0.279	0.279	0.279

Note:

1: The simultaneous transmission combinations of the antennas antennas contain combinations of two antennas, so only the worst simultaneous transmission combinations was shown in this table.

2: The highest Summed 1g SAR is 0.875 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

13 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
Test Software	Speag	DASY8	16.2.2.1588	N/A	N/A
750MHz Validation Dipole	Speag	D750V3	SN: 1109	2024/06/07	2027/06/06
835MHz Validation Dipole	Speag	D835V2	SN: 4d187	2024/05/08	2027/05/07
1750MHz Validation Dipole	Speag	D1750V2	SN: 1130	2024/05/08	2027/05/07
1950MHz Validation Dipole	Speag	D1950V3	SN: 1240	2021/09/13	2024/09/12
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2024/05/07	2027/05/06
2600MHz Validation Dipole	Speag	D2600V2	SN: 1095	2024/05/08	2027/05/07
5GHz Validation Dipole	Speag	D5GHZV2	SN: 1200	2024/05/09	2027/05/08
Data Acquisition Electronicsr	Speag	DAE4	SN: 1710	2024/01/03	2025/01/02
E-Field Probe	Speag	EX3DV4	SN: 7510	2024/06/25	2025/06/24
Signal Generator	R&S	SMB100A	177746	2024/04/24	2025/04/23
Power Meter	R&S	NRVD-B2	835843/014	2023/09/05	2024/09/04
Power Sensor	R&S	NRV-Z4	100381	2023/09/05	2024/09/04
Power Sensor	R&S	NRV-Z2	100211	2023/09/05	2024/09/04
Wireless Communication Test Set	Anritsu	MT8820C	6201502991	2023/11/14	2024/11/13
Network Analyzer	Agilent	E5071C	MY46103472	2023/11/14	2024/11/14
Thermometer	Elitech	RC-4	EF5238001628	2023/10/09	2024/10/08
Thermometer	Elitech	RC-4HC	EF7239002652	2023/11/17	2024/11/16
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 (σ) (S/m)	Meas. Permittivity (ϵ)	Target Conductivity (σ) (S/m)	Target Permittivity (ϵ)	Conductivity Tolerance (%)	Permittivity Tolerance (%)
2024.08.07	Head	750	21.5	0.90	41.75	0.89	41.94	1.12	-0.45
2024.08.09	Head	835	21.3	0.90	41.80	0.90	41.50	0.00	0.72
2024.08.10	Head	1750	21.3	1.38	40.14	1.37	40.08	0.73	0.15
2024.08.11	Head	1750	21.5	1.37	40.13	1.37	40.08	0.00	0.12
2024.08.12	Head	1950	21.3	1.42	39.32	1.40	40.00	1.43	-1.70
2024.08.16	Head	2450	21.4	1.81	39.48	1.80	39.20	0.56	0.71
2024.08.14	Head	2600	21.1	1.97	38.40	1.96	39.01	0.51	-1.56
2024.08.15	Head	2600	21.5	1.98	38.59	1.96	39.01	1.02	-1.08
2024.08.13	Head	5250	21.7	4.70	35.74	4.71	35.93	-0.21	-0.53
2024.08.11	Head	5600	21.7	5.05	35.23	5.07	35.53	-0.39	-0.84
2024.08.14	Head	5750	21.1	5.17	35.59	5.22	35.36	-0.96	0.65

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 (%)
2024.08.07	Head	750	100	0.87	8.66	8.51	1.76
2024.08.09	Head	835	100	0.98	9.75	9.74	0.10
2024.08.10	Head	1750	100	3.65	36.50	37.00	-1.35
2024.08.11	Head	1750	100	3.73	37.30	37.00	0.81
2024.08.12	Head	1950	100	4.14	41.40	41.40	0.00
2024.08.16	Head	2450	100	5.36	53.60	52.60	1.90
2024.08.14	Head	2600	100	5.63	56.30	55.90	0.72
2024.08.15	Head	2600	100	5.52	55.20	55.90	-1.25
2024.08.13	Head	5250	100	7.87	78.70	77.70	1.29
2024.08.11	Head	5600	100	8.27	82.70	81.30	1.72
2024.08.14	Head	5750	100	7.73	77.30	77.60	-0.39

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

Head liquid 10g

Date	Liquid Type	Freq. (MHz)	Power (mW)	Measured SAR (W/kg)	Normalized SAR (W/kg)	Dipole SAR (W/kg)	Tolerance (%)
2024.08.13	Head	5250	100	2.19	21.90	22.00	-0.45
2024.08.11	Head	5600	100	2.34	23.40	23.10	1.30

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

System Performance Check Data (750MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
CD750V3, 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 Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		CD700	CW, 0--	750.0, 100	10.29	0.902	41.7	22.7	21.5

Hardware Setup

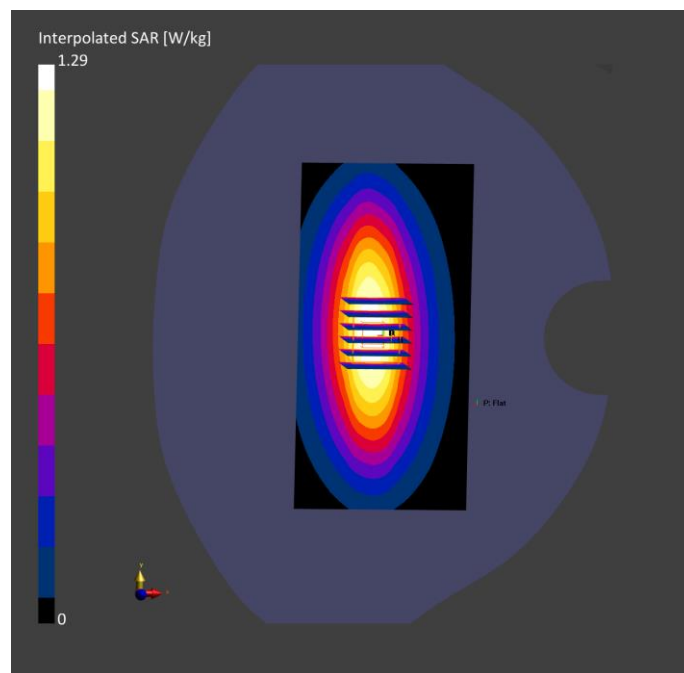
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-07	2024-08-07
psSAR1g [W/kg]	0.845	0.866
psSAR10g [W/kg]	0.556	0.568
Power Drift [dB]	-0.01	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.4
Dist 3dB Peak [mm]		20.3



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 Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		CD835	CW, 0--	835.0, 50	9.99	0.904	41.8	22.7	21.3

Hardware Setup

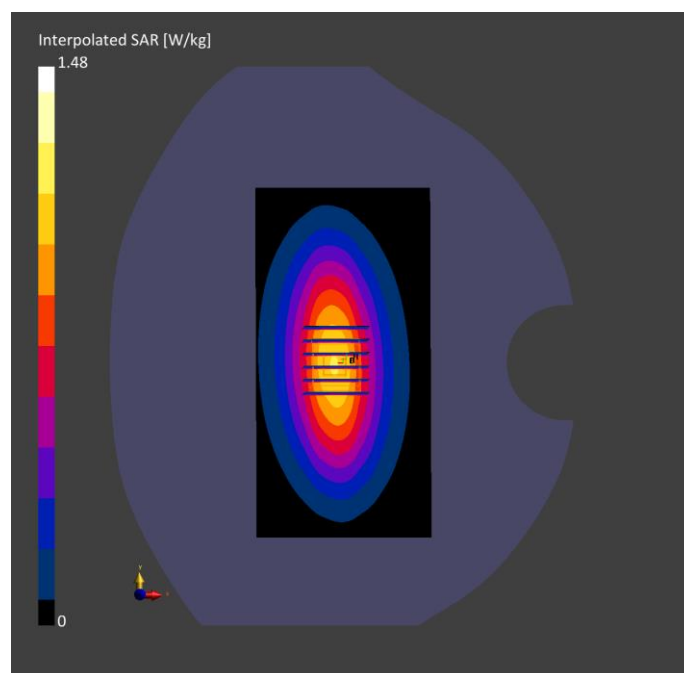
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-09	2024-08-09
psSAR1g [W/kg]	0.959	0.975
psSAR10g [W/kg]	0.622	0.631
Power Drift [dB]	-0.04	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.2
Dist 3dB Peak [mm]		13.0



System Performance Check Data (1750MHz)

Device under Test Properties

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

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D1750	CW, 0--	1750.0, 50	8.67	1.38	40.1	22.3	21.3

Hardware Setup

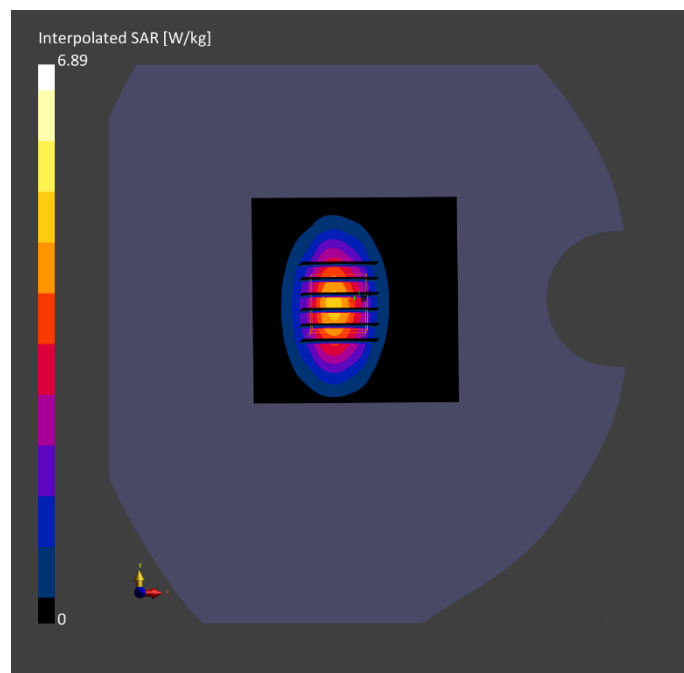
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-10	2024-08-10
psSAR1g [W/kg]	3.52	3.65
psSAR10g [W/kg]	1.92	1.97
Power Drift [dB]	0.03	0.07
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.5
Dist 3dB Peak [mm]		10.3



System Performance Check Data (1750MHz)

Device under Test Properties

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

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D1750	CW, 0--	1750.0, 50	8.67	1.37	40.1	22.4	21.5

Hardware Setup

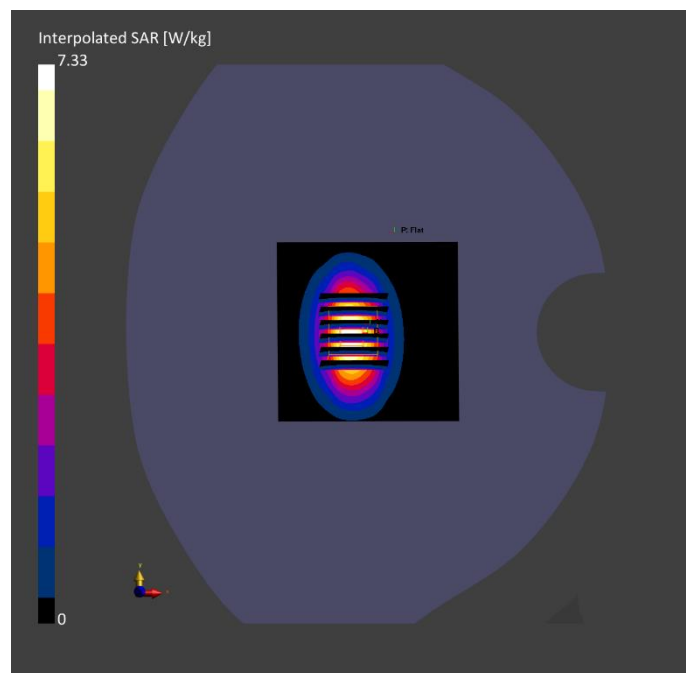
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1711, 2024-03-18

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-11	2024-08-11
psSAR1g [W/kg]	3.46	3.73
psSAR10g [W/kg]	1.85	2.03
Power Drift [dB]	-0.09	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.9
Dist 3dB Peak [mm]		9.6



System Performance Check Data (1950MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
D1950V3, 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 Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D1950	CW, 0--	1950.0, 50	8.33	1.42	39.3	22.6	21.3

Hardware Setup

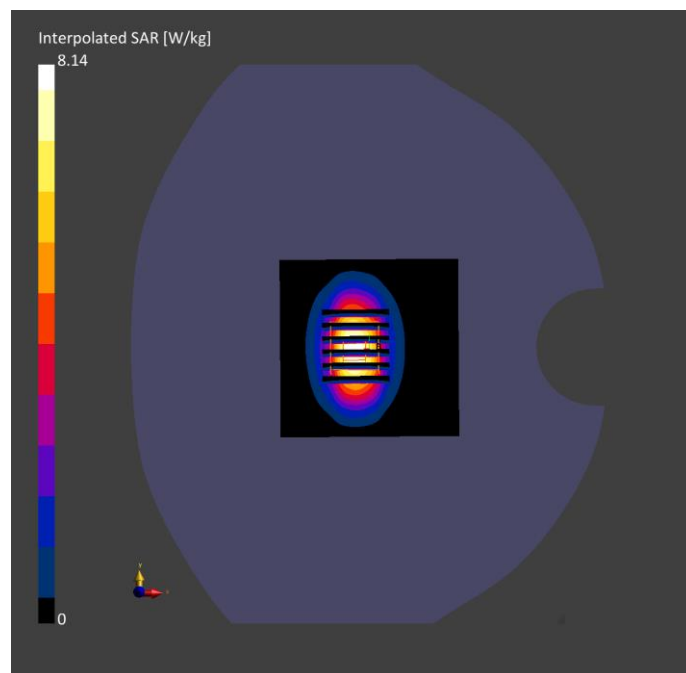
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-12	2024-08-12
psSAR1g [W/kg]	3.92	4.14
psSAR10g [W/kg]	1.93	2.12
Power Drift [dB]	0.14	0.07
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 (2450MHz)

Device under Test Properties

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

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D2450	CW, 0--	2450.0, 50	7.75	1.81	39.5	22.1	21.4

Hardware Setup

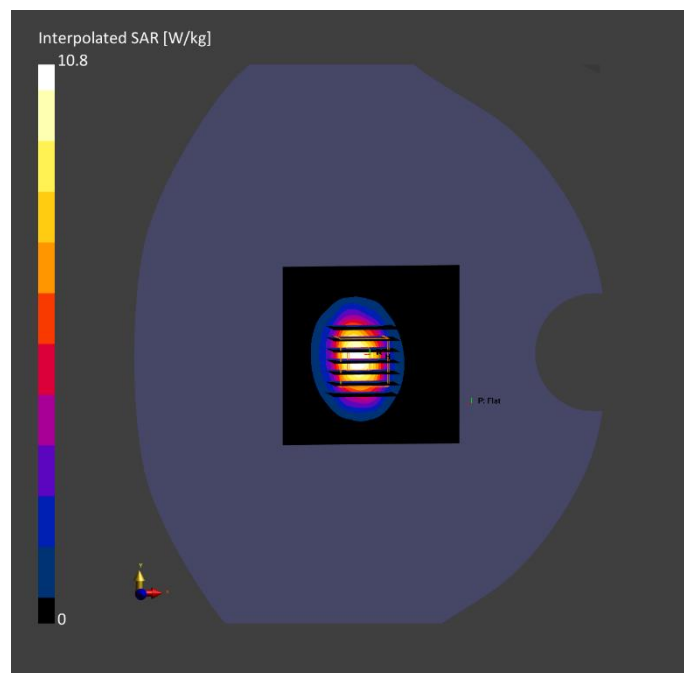
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-16	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-16	2024-08-16
psSAR1g [W/kg]	5.28	5.36
psSAR10g [W/kg]	2.23	2.47
Power Drift [dB]	-0.02	0.06
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 (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		CD2600 V3	CW, 0--	2600.0, 50	7.59	1.97	38.4	22.6	21.1

Hardware Setup

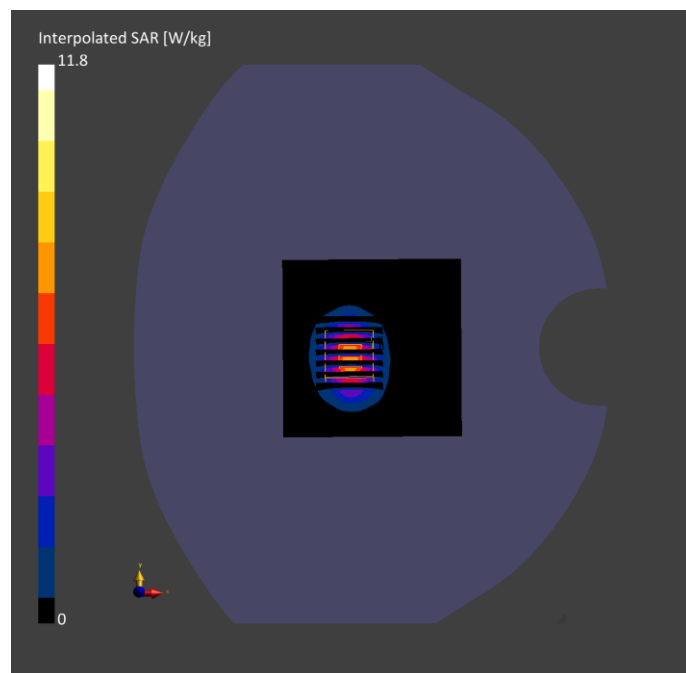
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-14	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-14	2024-08-14
psSAR1g [W/kg]	5.55	5.63
psSAR10g [W/kg]	2.42	2.49
Power Drift [dB]	0.09	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		80.4
Dist 3dB Peak [mm]		9.3



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		CD2600 V3	CW, 0--	2600.0, 50	7.59	1.96	38.6	22.6	21.5

Hardware Setup

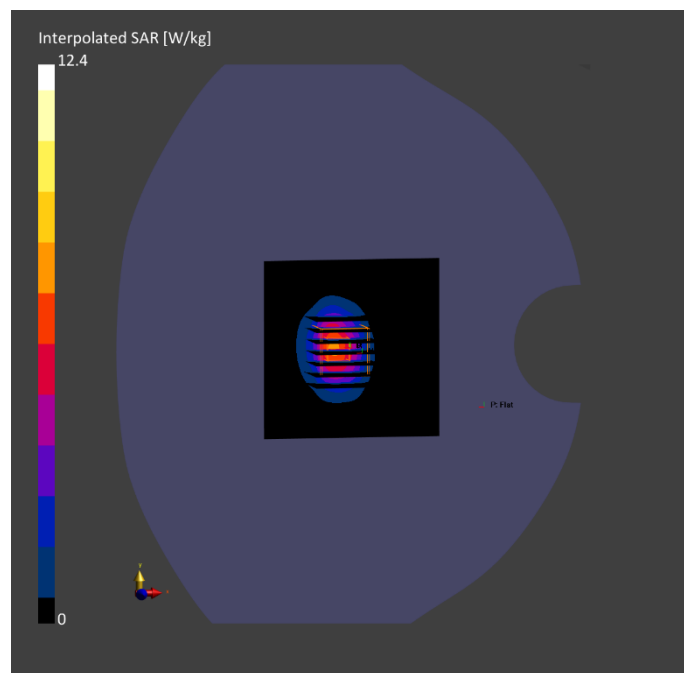
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-15	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-15	2024-08-15
psSAR1g [W/kg]	5.46	5.52
psSAR10g [W/kg]	2.48	2.57
Power Drift [dB]	0.07	0.03
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 (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 Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D5GHz	CW, 0--	5250.0, 30	5.50	4.57	35.1	22.5	21.7

Hardware Setup

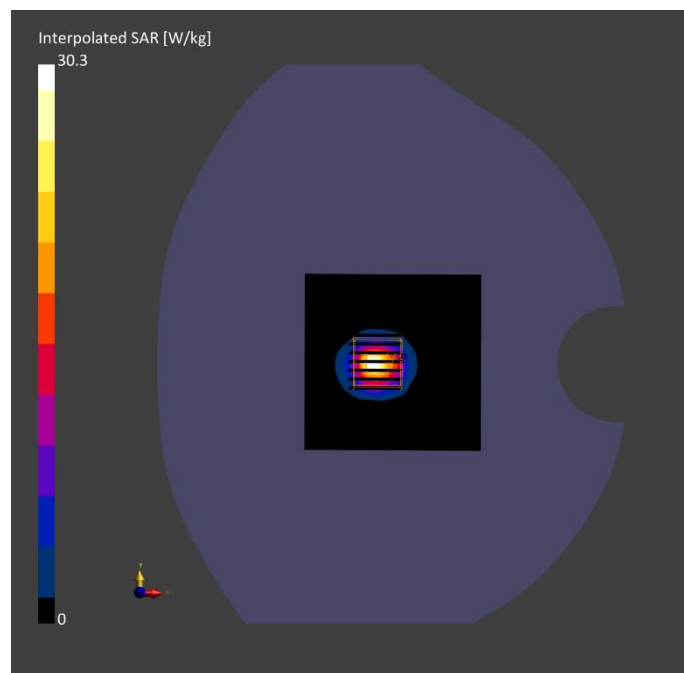
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-13	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-13	2024-08-13
psSAR1g [W/kg]	7.62	7.87
psSAR10g [W/kg]	2.26	2.19
Power Drift [dB]	-0.04	0.02
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		66.5
Dist 3dB Peak [mm]		6.9



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 Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D5GHz	CW, 0--	5600.0, 60	5.00	5.05	35.2	22.2	21.7

Hardware Setup

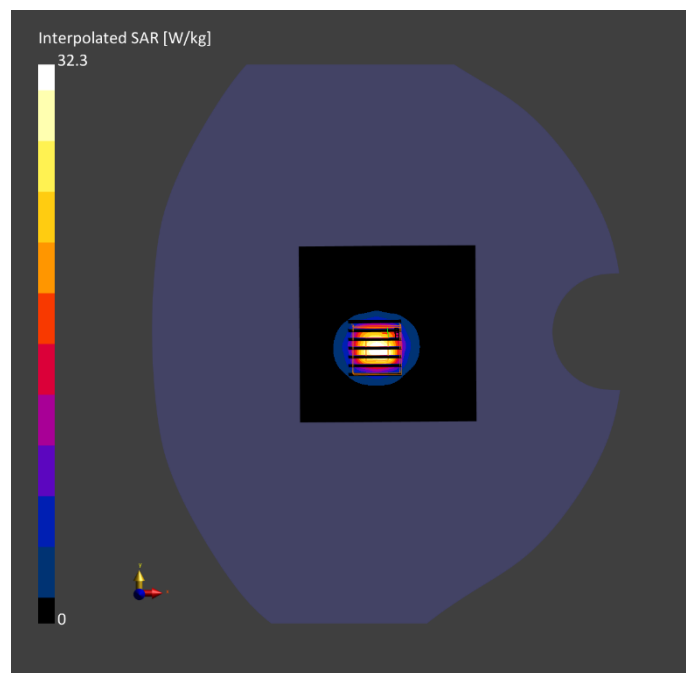
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-11	2024-08-11
psSAR1g [W/kg]	7.62	8.27
psSAR10g [W/kg]	2.25	2.34
Power Drift [dB]	0.01	0.08
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 (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 Conductivit y [S/m]	TSL Permittivity	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
Flat, HSL		D5GHz	CW, 0--	5750.0, 80	5.04	5.17	35.6	22.6	21.1

Hardware Setup

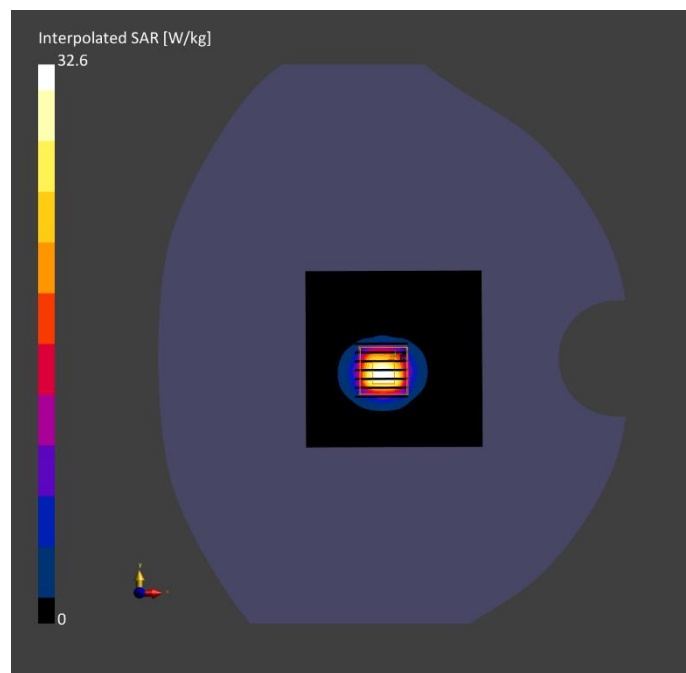
Phantom	TSL, Measured Date		Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-14	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-14	2024-08-14
psSAR1g [W/kg]	7.71	7.73
psSAR10g [W/kg]	2.08	2.21
Power Drift [dB]	0.08	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		61.8
Dist 3dB Peak [mm]		7.6



ANNEX C TEST DATA

Meas.1 Right Head with Cheek on Middle Channel in GPRS850 2Slots mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position	Band	Group	Frequency [MHz]	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Section, TSL	, Test Distance [mm]	d	, UID	Channel Number					
RightHead, HSL	CHEEK, 0.00	GSM 850	GSM, 10024-DAC	836.6, 190	9.99	0.906	41.7	22.7	21.3

Hardware Setup

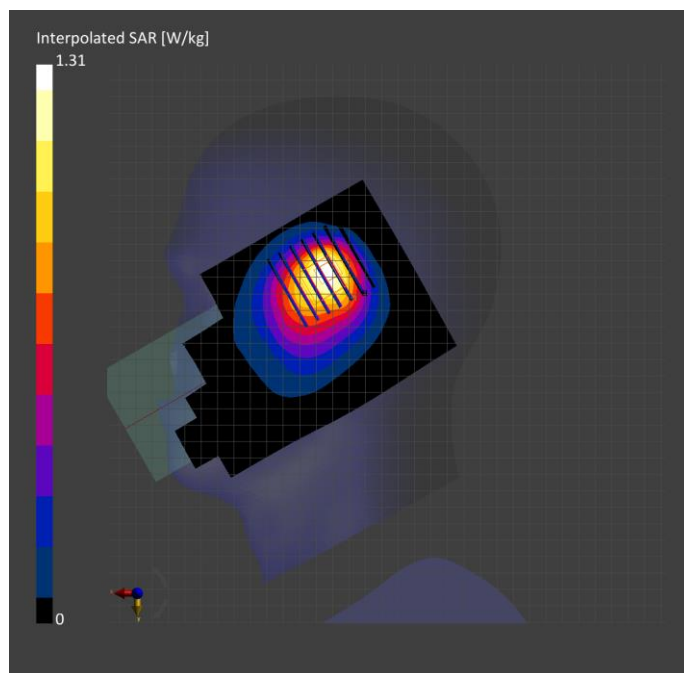
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM probe tilt) - 1859	V5.0 (30deg	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-09	2024-08-09
psSAR1g [W/kg]	0.819	0.799
psSAR10g [W/kg]	0.541	0.537
Power Drift [dB]	-0.03	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.8
Dist 3dB Peak [mm]		8.6



Meas.2 Body Plane with Top Edge 10mm on Middle Channel in GPRS850 2Slots mode with Antenna 2
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position	Band	Group	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature
Section, TSL	Distance [mm]		UID						
Flat, HSL	EDGE TOP, 10.00	GSM 850	GSM, 10024-DAC	836.6, 190	9.99	0.906	41.7	22.7	21.3

Hardware Setup

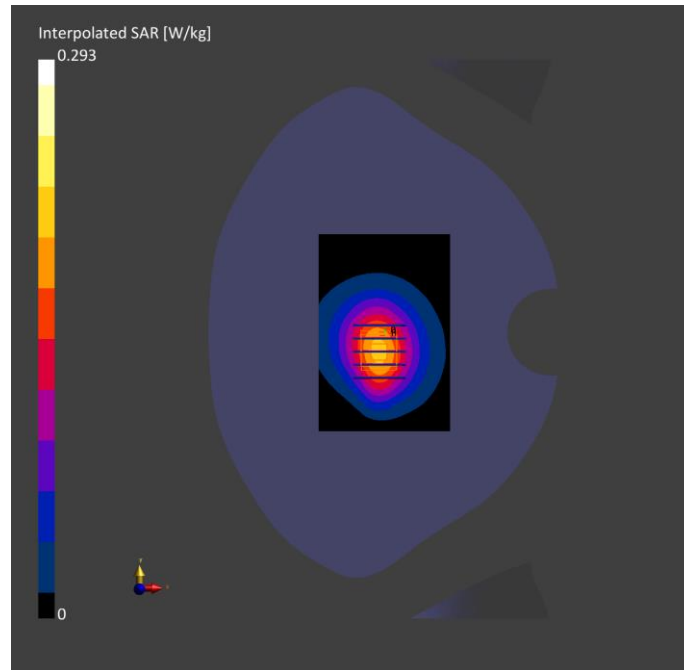
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM probe tilt) - 1859	V5.0 (30deg	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]		80.0 x 120.0	32.0 x 32.0 x 30.0
Grid Steps [mm]		8.0 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		2024-08-09	2024-08-09
psSAR1g [W/kg]		0.178	0.186
psSAR10g [W/kg]		0.117	0.119
Power Drift [dB]		-0.04	-0.07
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			63.7
Dist 3dB Peak [mm]			16.7



Meas.3 Right Head with Tilt on High Channel in GPRS1900 4Slots mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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]
RightHead , HSL	TILT, 0.00	PCS 1900	GSM, 10024-DAC	1909.8, 810	8.33	1.40	39.8	22.6	21.3

Hardware Setup

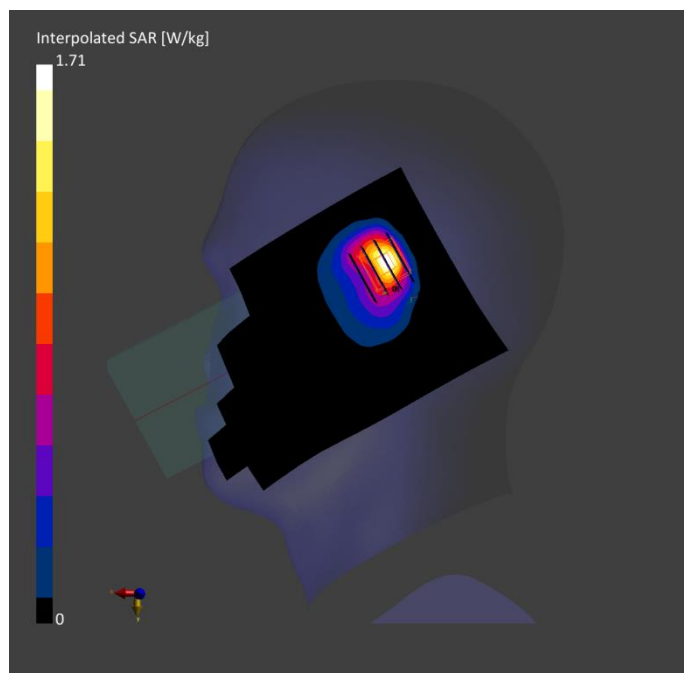
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM probe tilt) - 1859	V5.0 (30deg	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid [mm]	Extents	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 [mm]	Surface	3.0	1.4
Graded Grid	Yes		Yes
Grading Ratio	1.5		1.5
MAIA	N/A		N/A
Surface Detection	VMS + 6p		VMS + 6p
Scan Method	Measured		Measured

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-12	2024-08-12
psSAR1g [W/kg]		0.687	0.837
psSAR10g [W/kg]		0.337	0.393
Power Drift [dB]		0.01	0.02
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			54.0
Dist 3dB Peak [mm]			8.0



Meas.4 Body Plane with Back Side 10mm on High Channel in GPRS1900 4Slots mode with Antenna 2
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	BACK, 10.00	PCS 1900	GSM, 10024-DAC	1909.8, 810	8.33	1.40	39.8	22.6	21.3

Hardware Setup

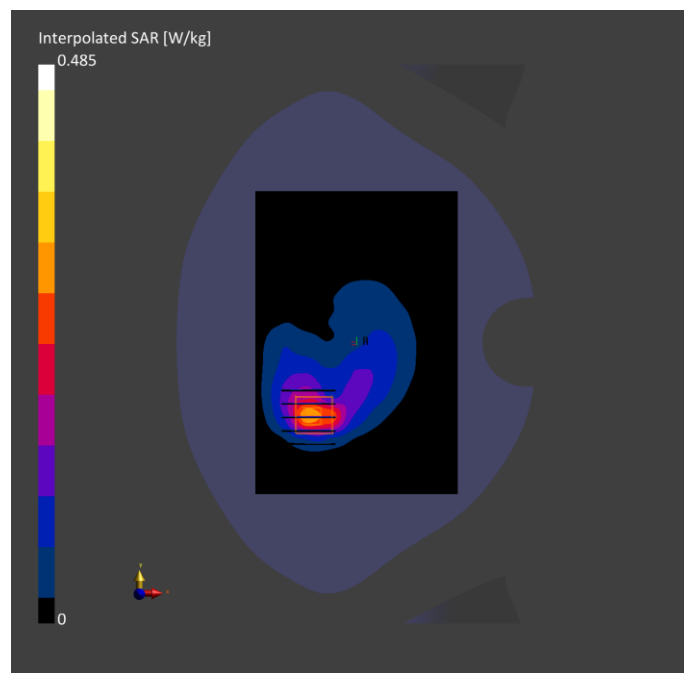
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM probe tilt) - 1859	V5.0 (30deg	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03	

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

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-12	2024-08-12
psSAR1g [W/kg]		0.253	0.274
psSAR10g [W/kg]		0.133	0.142
Power Drift [dB]	0.06		0.02
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			55.6
Dist 3dB Peak [mm]			9.3



Meas.5 Right Head with Tilt on Middle Channel in WCDMA Band2 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
RightHead, HSL	TILT, 0.00	Band 2	WCDMA , 10011-CAC	1880.0, 9400	8.33	1.38	40.3	22.6	21.3

Hardware Setup

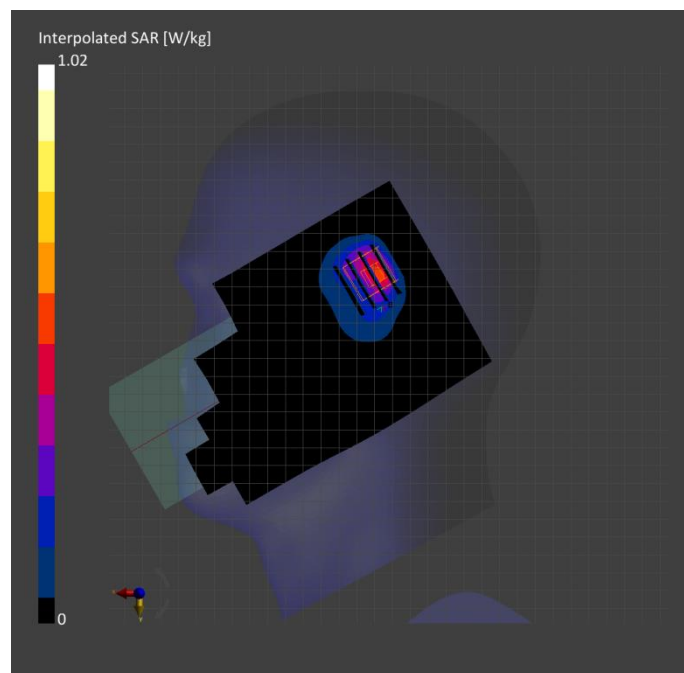
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-12	Date	2024-08-12
psSAR1g [W/kg]	0.416	psSAR1g [W/kg]	0.544
psSAR10g [W/kg]	0.211	psSAR10g [W/kg]	0.255
Power Drift [dB]	0.00	Power Drift [dB]	-0.03
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	54.2
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	8.0



Meas.6 Body Plane with Top Edge 10mm on Middle Channel in WCDMA Band2 mode with Antenna 2
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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 TOP, 10.00	Band 2	WCDMA , 10011-CAC	1880.0, 9400	8.33	1.38	40.3	22.6	21.3

Hardware Setup

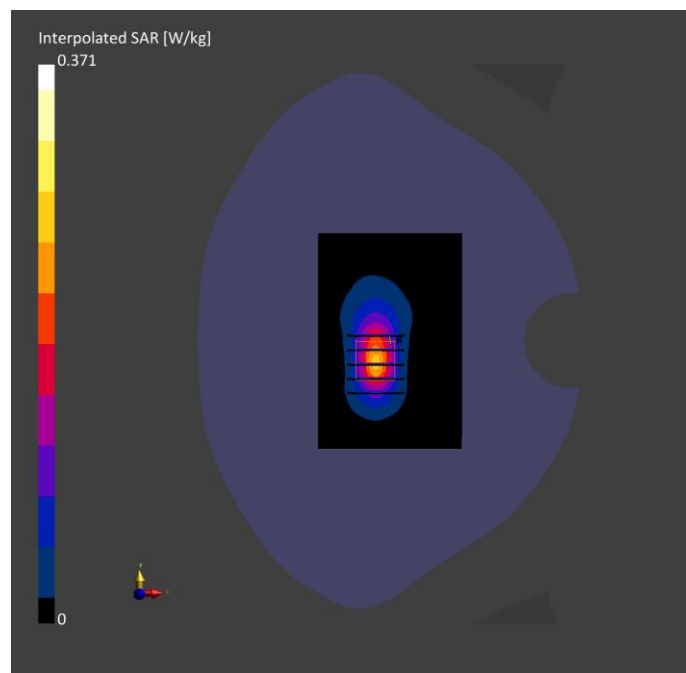
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 120.0	32.0 x 32.0 x 30.0	
Grid Steps [mm]	8.0 x 15.0	8.0 x 8.0 x 5.0	
Sensor Surface [mm]	3.0	1.4	
Graded Grid	Yes	Yes	
Grading Ratio	1.5	1.5	
MAIA	N/A	N/A	
Surface Detection	VMS + 6p	VMS + 6p	
Scan Method	Measured	Measured	

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-12	2024-08-12
psSAR1g [W/kg]		0.198	0.209
psSAR10g [W/kg]		0.099	0.106
Power Drift [dB]		-0.00	-0.06
Power Scaling	Disabled	Disabled	Disabled
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]			56.9
Dist 3dB Peak [mm]			8.6



Meas.7 Right Head with Cheek on High Channel in WCDMA Band4 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group, UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead, HSL	CHEEK, 0.00	Ban d 4	WCDMA , 10011-CAC	1752.6, 1513	8.67	1.39	40.1	22.3	21.3

Hardware Setup

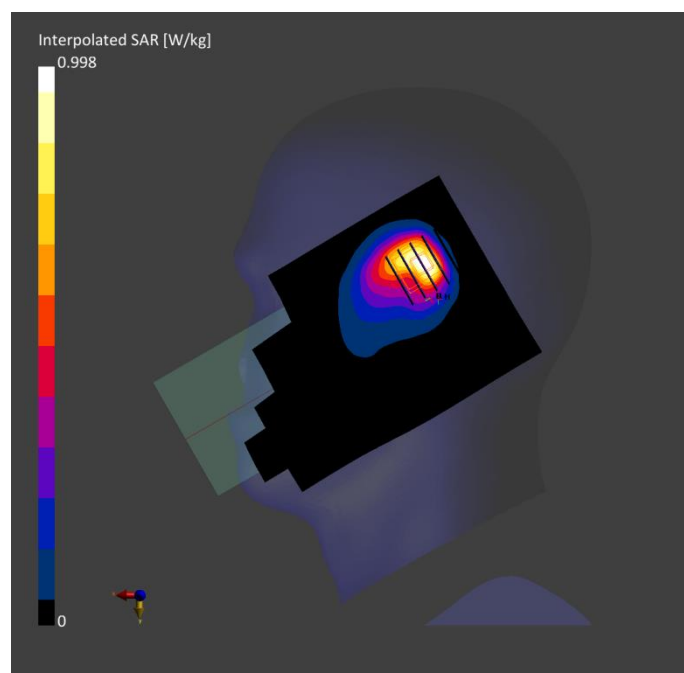
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-10	EX3DV4 - SN7510,	2024-06-25	DAE4 Sn1710,	2024-01-03

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

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-10	2024-08-10	
psSAR1g [W/kg]	0.428	0.526	
psSAR10g [W/kg]	0.236	0.261	
Power Drift [dB]	-0.03	-0.00	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		53.1	
Dist 3dB Peak [mm]		8.0	



Meas.8 Body Plane with Top Edge 10mm on High Channel in WCDMA Band4 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position, Test Section, TSL	Band, UID	Group, WCDMA	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE TOP, 10.00	Band 4	WCDMA, 10011-CAC	1752.6, 1513	8.67	1.39	40.1	22.3	21.3

Hardware Setup

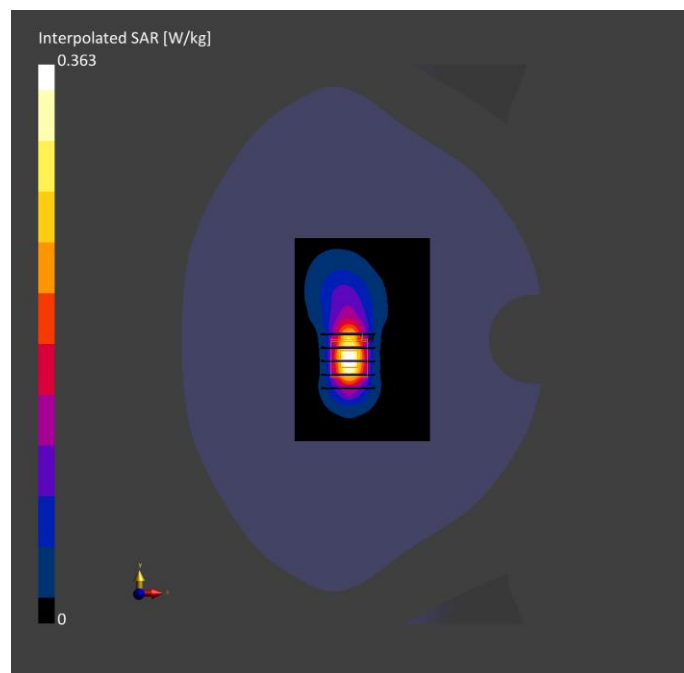
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-10	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	80.0 x 120.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	8.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-10	Date	2024-08-10
psSAR1g [W/kg]	0.191	psSAR1g [W/kg]	0.200
psSAR10g [W/kg]	0.094	psSAR10g [W/kg]	0.099
Power Drift [dB]	-0.02	Power Drift [dB]	-0.01
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	55.5
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	8.0



Meas.9 Right Head with Cheek on High Channel in WCDMA Band5 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
RightHead, HSL	CHEEK, 0.00	Band 5	WCDMA , 10011-CAC	846.6, 4233	9.99	0.915	41.5	22.7	21.3

Hardware Setup

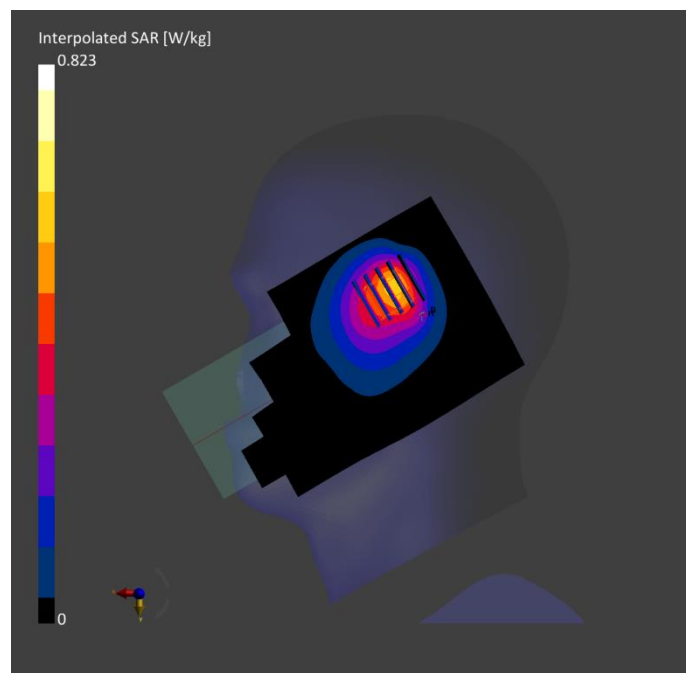
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-09	Date	2024-08-09
psSAR1g [W/kg]	0.499	psSAR1g [W/kg]	0.495
psSAR10g [W/kg]	0.324	psSAR10g [W/kg]	0.319
Power Drift [dB]	-0.01	Power Drift [dB]	-0.00
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	57.6
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	14.7



Meas.10 Body Plane with Back Side 10mm on High Channel in WCDMA Band5 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 5	WCDMA, 10011-CAC	846.6, 4233	9.99	0.915	41.5	22.7	21.3

Hardware Setup

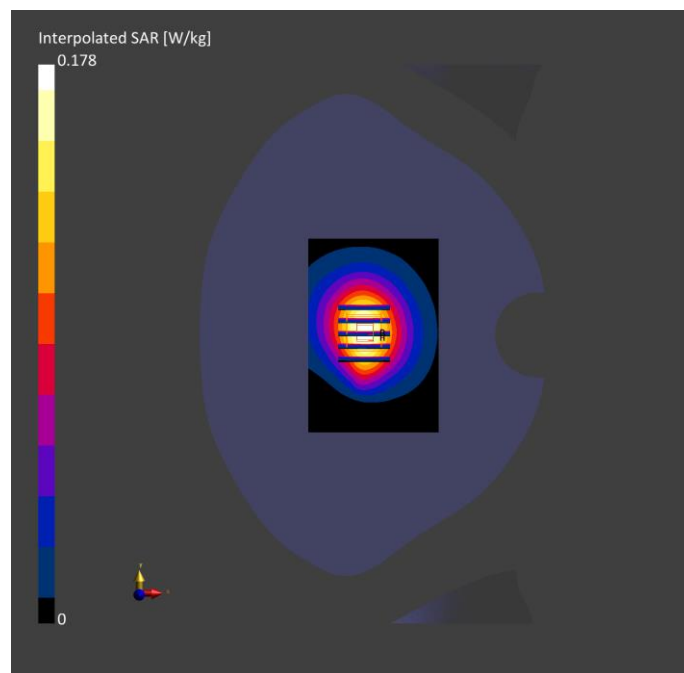
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 120.0	32.0 x 32.0 x 30.0	
Grid Steps [mm]	8.0 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		2024-08-09	2024-08-09
psSAR1g [W/kg]		0.103	0.112
psSAR10g [W/kg]		0.067	0.071
Power Drift [dB]		-0.03	0.07
Power Scaling	Disabled	Disabled	Disabled
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]			63.1
Dist 3dB Peak [mm]			16.1



Meas.11 Right Head with Tilt on Middle Channel in LTE Band2 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	TILT, 0.00	Ban d 2	LTE-FDD, 10169-CAF	1880.0, 18900	8.33	1.38	40.3	22.6	21.3

Hardware Setup

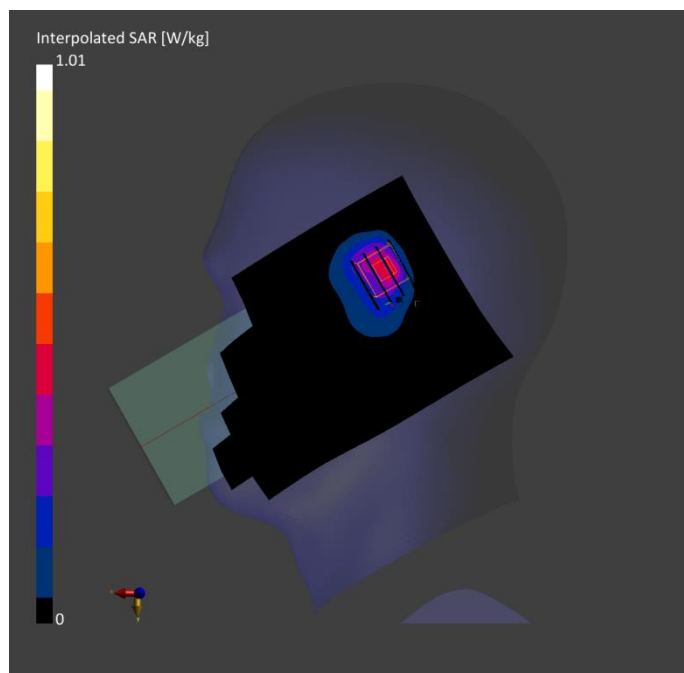
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-12	Date	2024-08-12
psSAR1g [W/kg]	0.374	psSAR1g [W/kg]	0.553
psSAR10g [W/kg]	0.198	psSAR10g [W/kg]	0.262
Power Drift [dB]	-0.01	Power Drift [dB]	-0.16
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	56.6
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	6.6



Meas.12 Body Plane with Back Side 10mm on Middle Channel in LTE Band2 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 2	LTE-FDD, 10169-CAF	1880.0, 18900	8.33	1.38	40.3	22.6	21.3

Hardware Setup

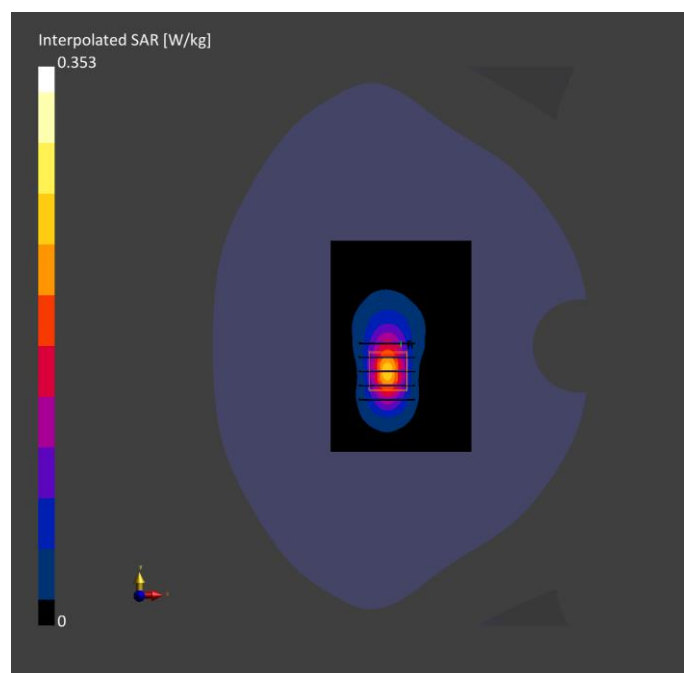
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-12	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid [mm]	Extents	80.0 x 120.0	32.0 x 32.0 x 30.0
Grid Steps [mm]		8.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]		3.0	1.4
Graded Grid	Yes		Yes
Grading Ratio	1.5		1.5
MAIA	N/A		N/A
Surface Detection	VMS + 6p		VMS + 6p
Scan Method	Measured		Measured

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-12	2024-08-12
psSAR1g [W/kg]		0.194	0.200
psSAR10g [W/kg]		0.095	0.101
Power Drift [dB]		0.01	-0.01
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			57.7
Dist 3dB Peak [mm]			9.3



Meas.13 Right Head with Cheek on Low Channel in LTE Band4 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	CHEEK, 0.00	Ban d 4	LTE- FDD, 10169- CAF	1745, 20300	8.67	1.38	40.2	22.3	21.3

Hardware Setup

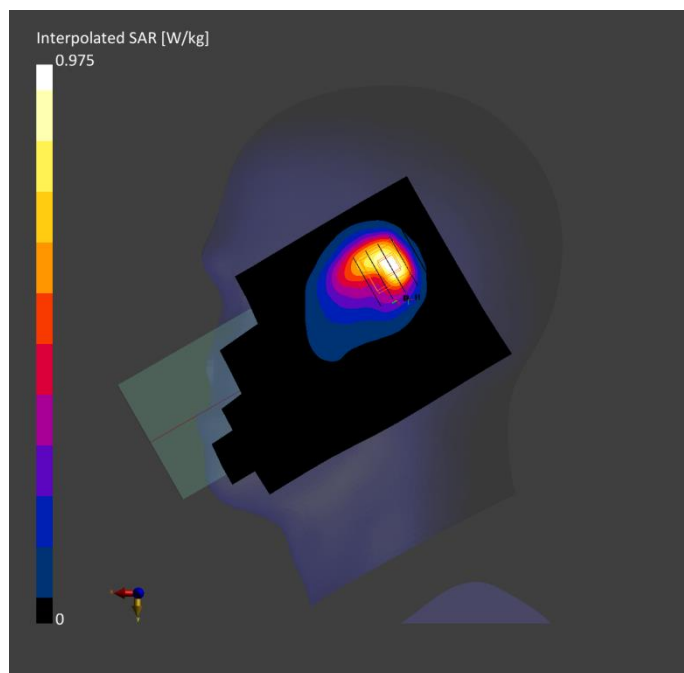
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-10	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-10	Date	2024-08-10
psSAR1g [W/kg]	0.429	psSAR1g [W/kg]	0.513
psSAR10g [W/kg]	0.234	psSAR10g [W/kg]	0.254
Power Drift [dB]	-0.01	Power Drift [dB]	-0.01
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	52.7
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	6.4



Meas.14 Body Plane with Top Edge 10mm on Low Channel in LTE Band4 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 4	LTE-FDD, 10169-CAF	1745, 20300	8.67	1.38	40.2	22.3	21.3

Hardware Setup

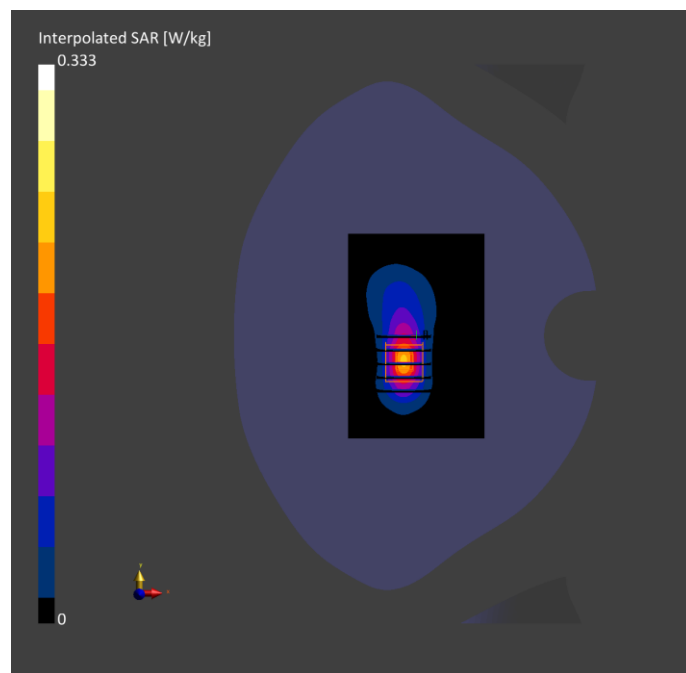
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-10	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	80.0 x 120.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	8.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-10	Date	2024-08-10
psSAR1g [W/kg]	0.174	psSAR1g [W/kg]	0.181
psSAR10g [W/kg]	0.086	psSAR10g [W/kg]	0.090
Power Drift [dB]	-0.00	Power Drift [dB]	-0.02
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	55.1
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	8.0



Meas.15 Right Head with Cheek on Middle Channel in LTE Band5 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	CHEEK, 0.00	Ban d 5	LTE-FDD, 10175-CAH	836.5, 20525	9.99	0.906	41.7	22.7	21.3

Hardware Setup

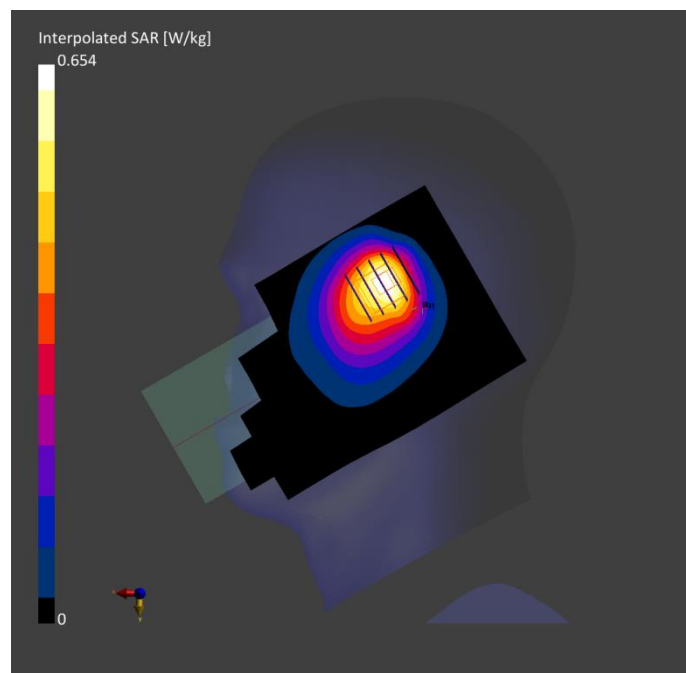
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-09	Date	2024-08-09
psSAR1g [W/kg]	0.401	psSAR1g [W/kg]	0.403
psSAR10g [W/kg]	0.262	psSAR10g [W/kg]	0.264
Power Drift [dB]	-0.04	Power Drift [dB]	-0.14
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	58.7
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	14.7



Meas.16 Body Plane with Top Edge 10mm on Middle Channel in LTE Band5 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position	Band	Group	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature
Section, TSL	Distance [mm]		UID						
Flat, HSL	EDGE TOP, 10.00	Band 5	LTE-FDD, 10175-CAH	836.5, 20525	9.99	0.906	41.7	22.7	21.3

Hardware Setup

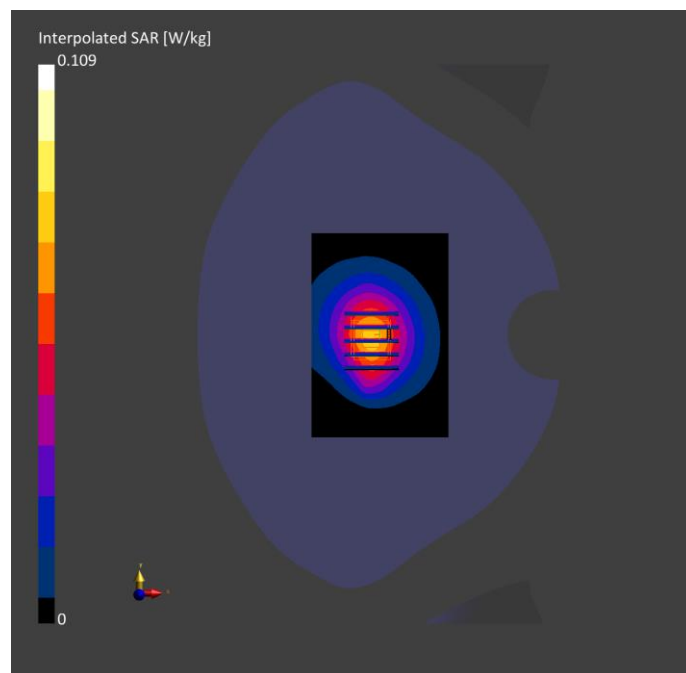
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-09	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	80.0 x 120.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	8.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	Y	MAIA	Y
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-09	Date	2024-08-09
psSAR1g [W/kg]	0.067	psSAR1g [W/kg]	0.069
psSAR10g [W/kg]	0.044	psSAR10g [W/kg]	0.044
Power Drift [dB]	-0.06	Power Drift [dB]	-0.03
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	62.5
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	> 16.0



Meas.17 Right Head with Tilt on Middle Channel in LTE Band7 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	TILT, 0.00	Ban d 7	LTE-FDD, 10169-CAF	2535.0, 21100	7.75	1.90	39.1	22.6	21.5

Hardware Setup

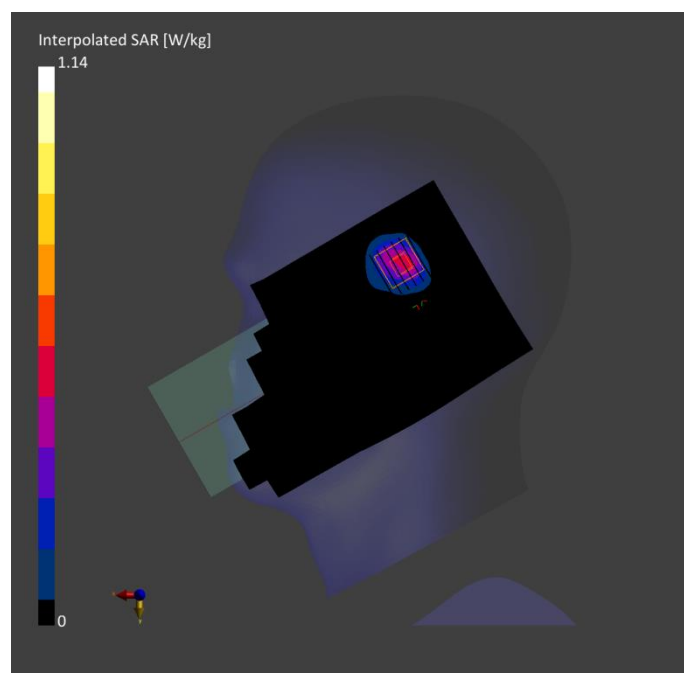
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-15		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

		Area Scan	Zoom Scan
Grid [mm]	Extents	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		2024-08-15	2024-08-15
psSAR1g [W/kg]		0.401	0.509
psSAR10g [W/kg]		0.189	0.203
Power Drift [dB]		-0.04	-0.03
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			47.6
Dist 3dB Peak [mm]			6.0



Meas.18 Body Plane with Top Edge 10mm on Low Channel in LTE Band7 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 7	LTE-FDD, 10169-CAF	2535.0, 21100	7.75	1.90	39.1	22.6	21.5

Hardware Setup

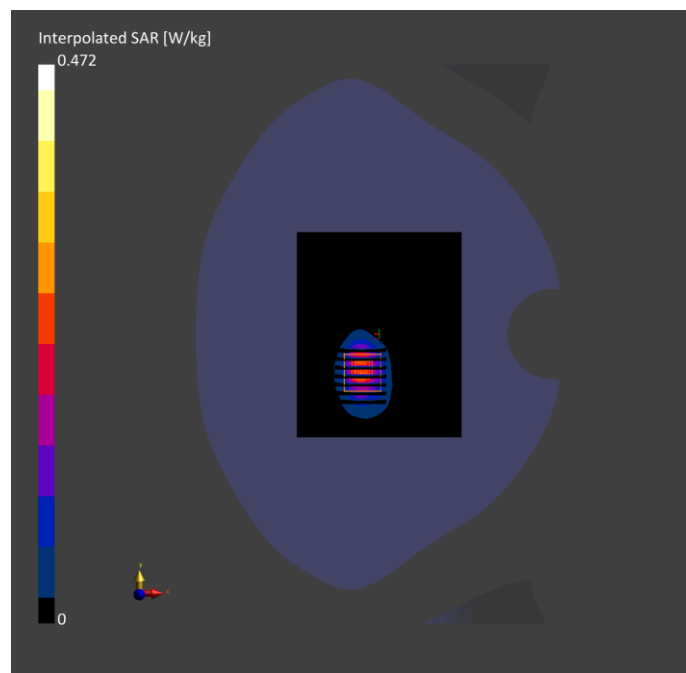
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-15	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	96.0 x 120.0	Grid Extents [mm]	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	Grid Steps [mm]	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	Y	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-15	Date	2024-08-15
psSAR1g [W/kg]	0.212	psSAR1g [W/kg]	0.235
psSAR10g [W/kg]	0.095	psSAR10g [W/kg]	0.103
Power Drift [dB]	-0.01	Power Drift [dB]	0.03
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	50.6
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	8.0



Meas.19 Right Head with Cheek on Low Channel in LTE Band12 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	CHEEK, 0.00	Ban d 12	LTE-FDD, 10175-CAH	704, 23060	10.29	0.880	42.4	22.7	21.5

Hardware Setup

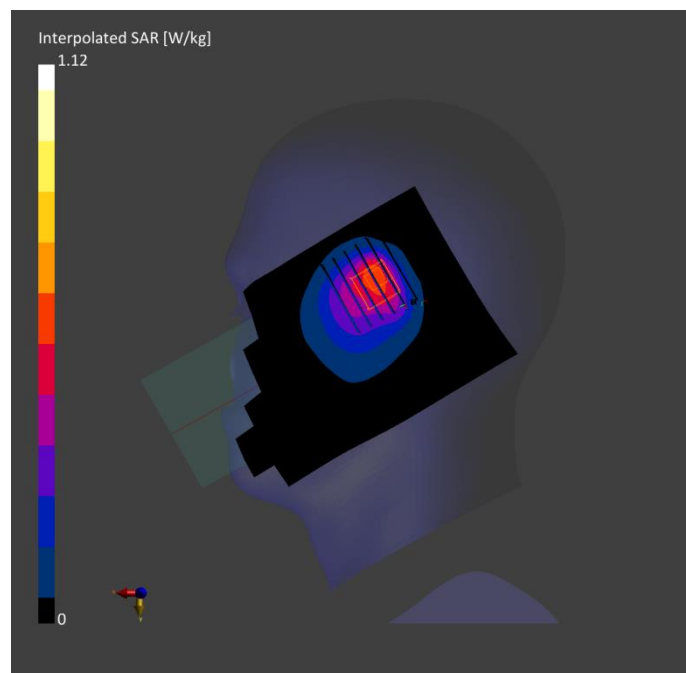
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-07	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-07	Date	2024-08-07
psSAR1g [W/kg]	0.544	psSAR1g [W/kg]	0.559
psSAR10g [W/kg]	0.351	psSAR10g [W/kg]	0.339
Power Drift [dB]	0.01	Power Drift [dB]	0.01
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	44.7
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	9.6



Meas.20 Body Plane with Back Side 10mm on Middle Channel in LTE Band12 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	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
Flat, HSL	BACK, 10.00	Band 12	LTE-FDD, 10175-CAH	707.5, 23095	10.29	0.883	42.3	22.7	21.5

Hardware Setup

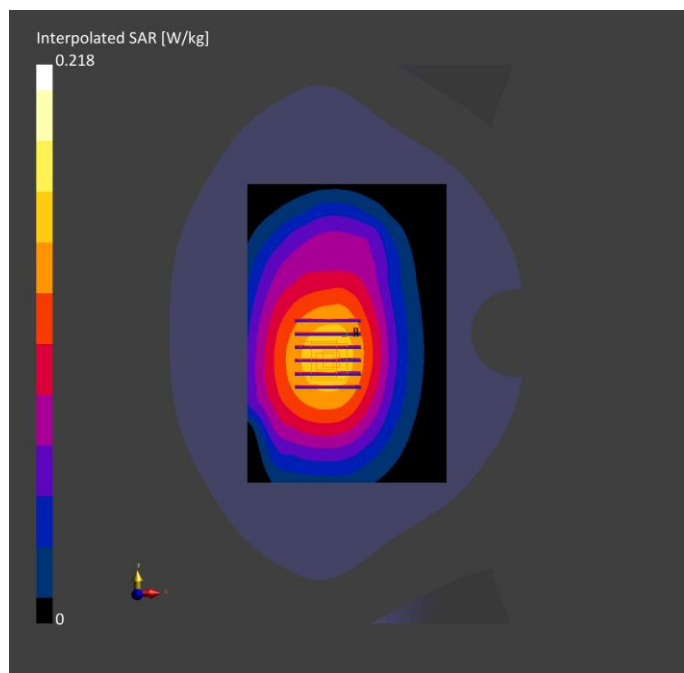
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-07	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-07	Date	2024-08-07
psSAR1g [W/kg]	0.142	psSAR1g [W/kg]	0.157
psSAR10g [W/kg]	0.102	psSAR10g [W/kg]	0.118
Power Drift [dB]	0.01	Power Drift [dB]	-0.04
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	75.0
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	5.8



Meas.21 Right Head with Cheek on Low Channel in LTE Band17 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	CHEEK, 0.00	Ban d 17	LTE-FDD, 10175-CAH	709.0, 23780	10.29	0.894	42.1	22.7	21.5

Hardware Setup

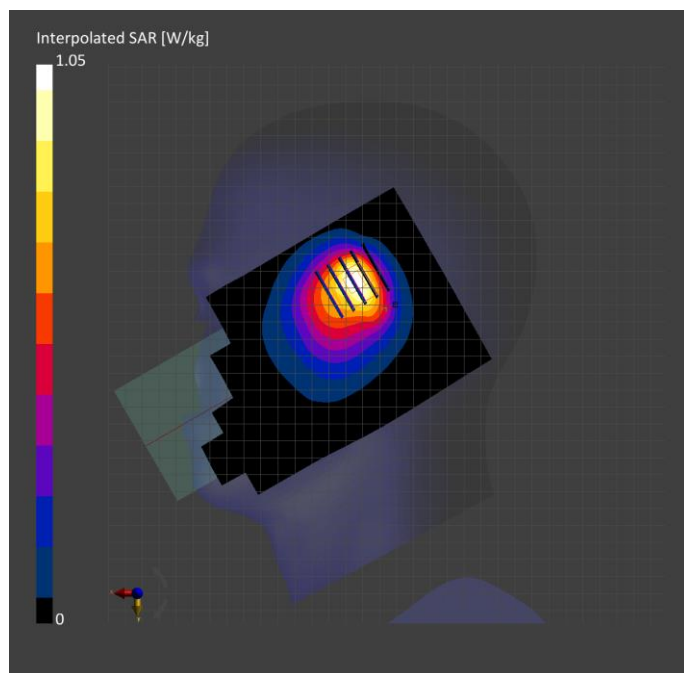
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-07	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

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

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-07	2024-08-07	
psSAR1g [W/kg]	0.518	0.527	
psSAR10g [W/kg]	0.336	0.322	
Power Drift [dB]	-0.01	0.02	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		44.3	
Dist 3dB Peak [mm]		9.6	



Meas.22 Body Plane with Back Side 10mm on Low Channel in LTE Band17 mode with Antenna 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	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
Flat, HSL	BACK, 10.00	Band 17	LTE-FDD, 10175-CAH	709.0, 23780	10.29	0.894	42.1	22.7	21.5

Hardware Setup

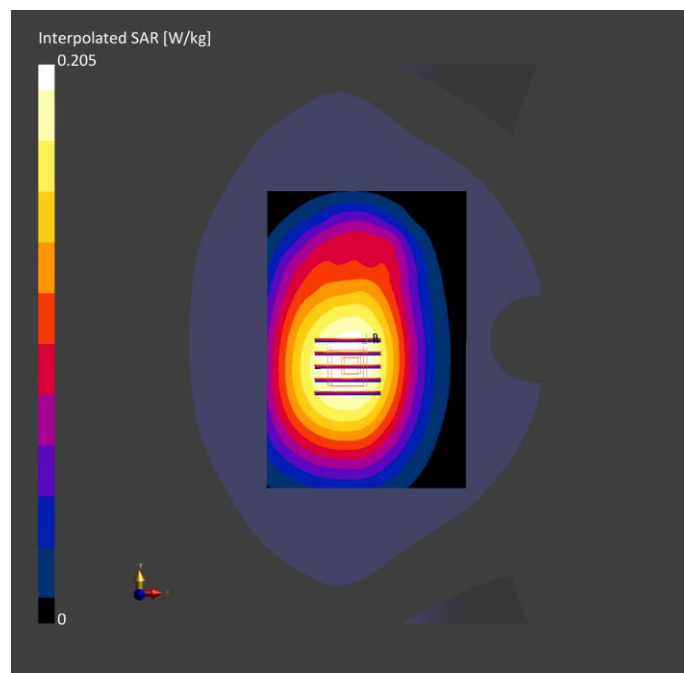
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-07	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-07	Date	2024-08-07
psSAR1g [W/kg]	0.143	psSAR1g [W/kg]	0.154
psSAR10g [W/kg]	0.102	psSAR10g [W/kg]	0.119
Power Drift [dB]	-0.01	Power Drift [dB]	-0.02
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	74.7
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	> 16.0



Meas.23 Right Head with Tilt on Middle Channel in LTE Band66 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	TILT, 0.00	Ban d 66	LTE-FDD, 10169-CAF	1745.0, 132322	8.67	1.37	40.2	22.4	21.5

Hardware Setup

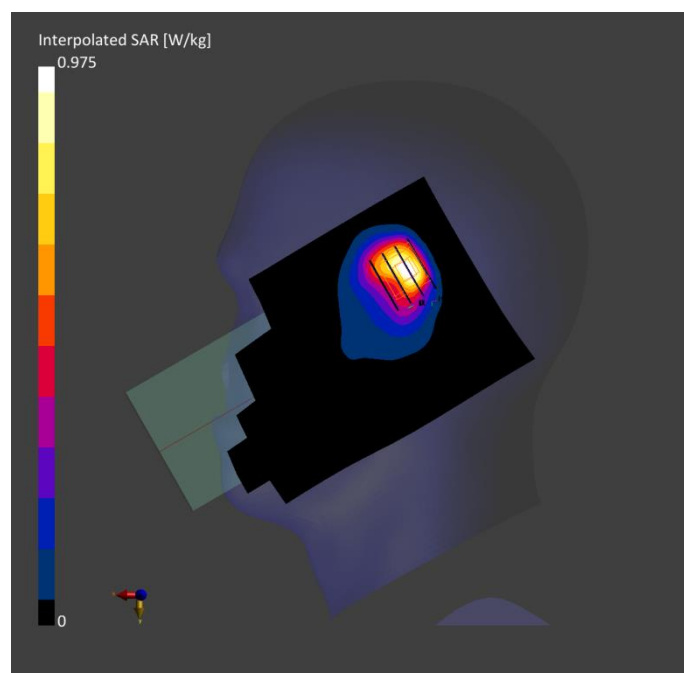
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

Area Scan		Zoom Scan	
Grid Extents [mm]	120.0 x 180.0	Grid Extents [mm]	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	Grid Steps [mm]	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	Sensor Surface [mm]	1.4
Graded Grid	Yes	Graded Grid	Yes
Grading Ratio	1.5	Grading Ratio	1.5
MAIA	N/A	MAIA	N/A
Surface Detection	VMS + 6p	Surface Detection	VMS + 6p
Scan Method	Measured	Scan Method	Measured

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-11	Date	2024-08-11
psSAR1g [W/kg]	0.370	psSAR1g [W/kg]	0.518
psSAR10g [W/kg]	0.199	psSAR10g [W/kg]	0.244
Power Drift [dB]	0.00	Power Drift [dB]	-0.06
Power Scaling	Disabled	Power Scaling	Disabled
Scaling Factor [dB]		Scaling Factor [dB]	
TSL Correction	No correction	TSL Correction	No correction
M2/M1 [%]		M2/M1 [%]	55.1
Dist 3dB Peak [mm]		Dist 3dB Peak [mm]	6.6



Meas.24 Body Plane with Top Edge 10mm on Middle Channel in LTE Band66 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position	Band	Group	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature
Section, TSL	Distance [mm]		UID						
Flat, HSL	EDGE TOP, 10.00	Band 66	LTE-FDD, 10169-CAF	1745.0, 132322	8.67	1.37	40.2	22.4	21.5

Hardware Setup

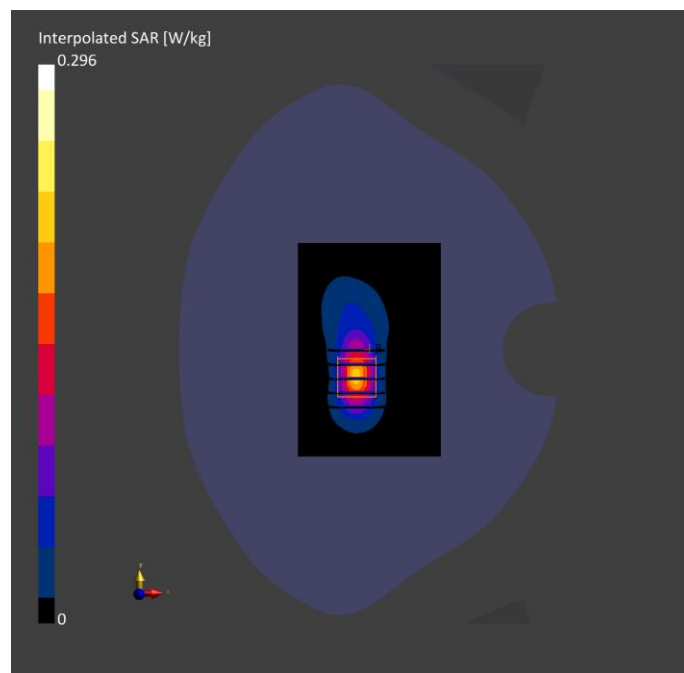
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 120.0	32.0 x 32.0 x 30.0	
Grid Steps [mm]	8.0 x 15.0	8.0 x 8.0 x 5.0	
Sensor Surface [mm]	3.0	1.4	
Graded Grid	Yes	Yes	
Grading Ratio	1.5	1.5	
MAIA	N/A	N/A	
Surface Detection	VMS + 6p	VMS + 6p	
Scan Method	Measured	Measured	

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-11	2024-08-11
psSAR1g [W/kg]		0.159	0.163
psSAR10g [W/kg]		0.077	0.081
Power Drift [dB]		-0.02	-0.04
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]			55.9
Dist 3dB Peak [mm]			8.0



Meas.25 Right Head with Cheek on Middle Channel in LTE Band38 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	CHEEK, 0.00	Ban d 38	LTE- TDD, 10172-CAH	2595.0, 38000	7.59	1.97	38.7	22.6	21.5

Hardware Setup

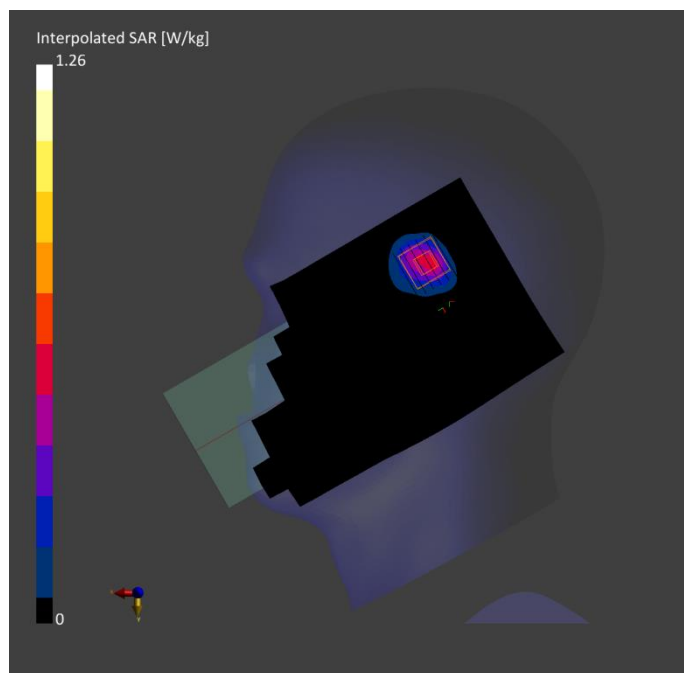
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-15		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

		Area Scan	Zoom Scan
Grid [mm]	Extents	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		2024-08-15	2024-08-15
psSAR1g [W/kg]		0.445	0.563
psSAR10g [W/kg]		0.209	0.224
Power Drift [dB]		0.02	-0.07
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			47.2
Dist 3dB Peak [mm]			7.0



Meas.26 Body Plane with Top Edge 10mm on Middle Channel in LTE Band38 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 38	LTE-TDD, 10172-CAH	2595.0, 38000	7.59	1.97	38.7	22.6	21.5

Hardware Setup

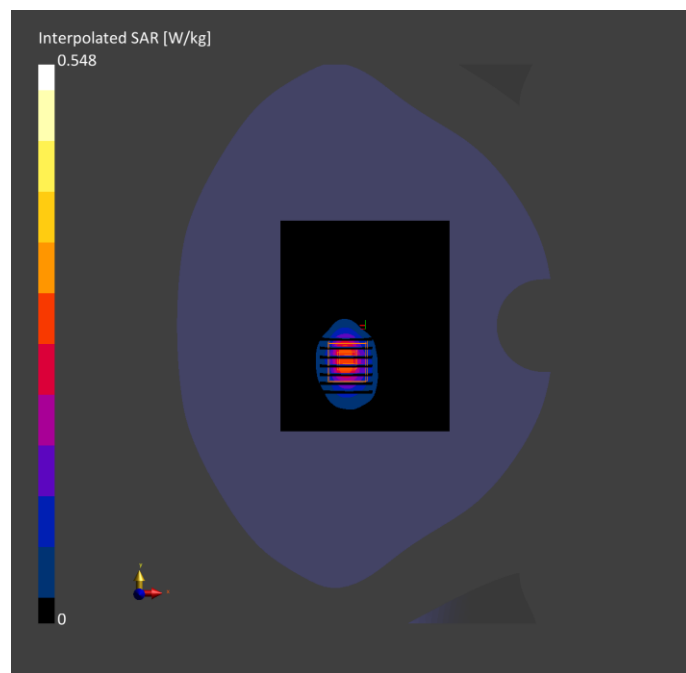
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-15	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-15	2024-08-15	
psSAR1g [W/kg]	0.249	0.272	
psSAR10g [W/kg]	0.111	0.119	
Power Drift [dB]	-0.04	-0.03	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		49.9	
Dist 3dB Peak [mm]		8.9	



Meas.27 Right Head with Tilt on Low Channel in LTE Band41 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
RightHead , HSL	TILT, 0.00	Ban d 41	LTE-TDD, 10172-CAH	2545.0, 40140	7.75	1.90	38.7	22.6	21.1

Hardware Setup

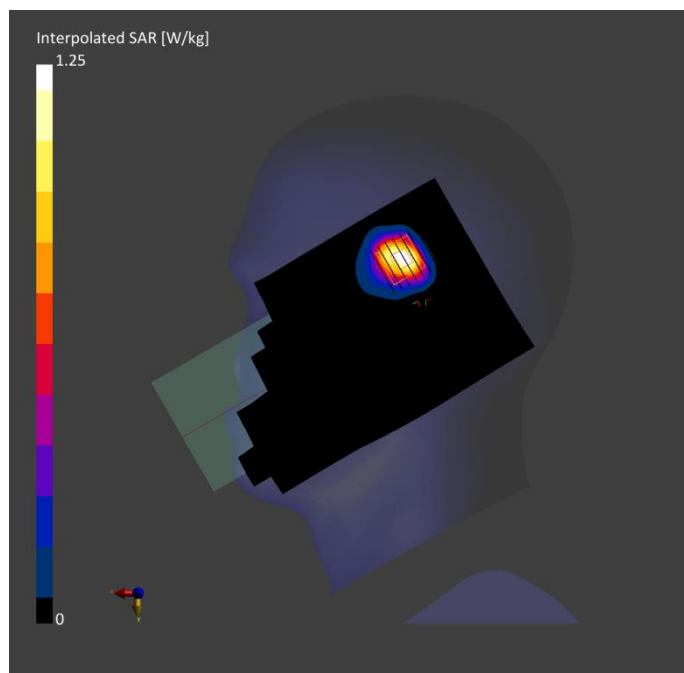
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-14	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

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	2024-08-14	2024-08-14	
psSAR1g [W/kg]	0.442	0.558	
psSAR10g [W/kg]	0.208	0.222	
Power Drift [dB]	0.02	-0.03	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		47.2	
Dist 3dB Peak [mm]		7.0	



Meas.28 Body Plane with Top Edge 10mm on Low Channel in LTE Band41 mode with Antenna 2

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	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
Flat, HSL	EDGE TOP, 10.00	Band 41	LTE-TDD, 10172-CAH	2545.0, 40140	7.75	1.90	38.7	22.6	21.1

Hardware Setup

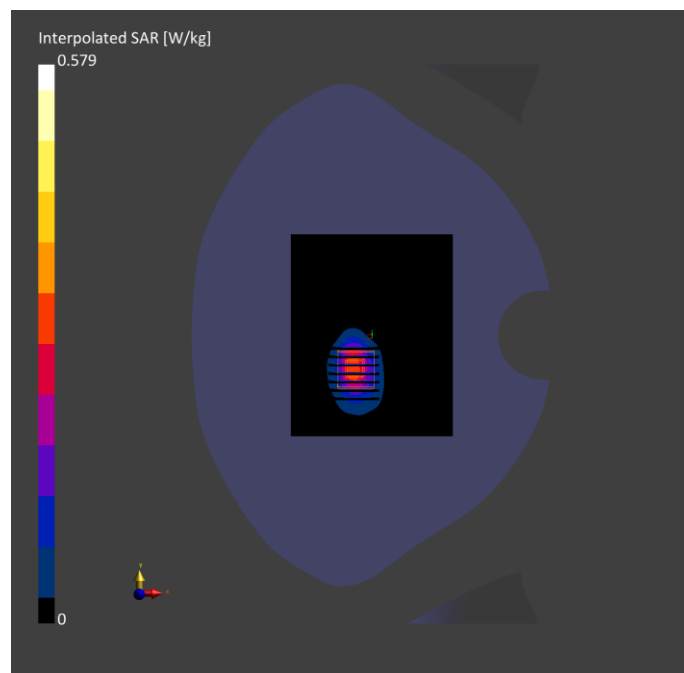
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-14	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03	

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

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-14	2024-08-14
psSAR1g [W/kg]		0.253	0.288
psSAR10g [W/kg]		0.113	0.126
Power Drift [dB]		-0.03	-0.00
Power Scaling Factor [dB]		Disabled	Disabled
TSL Correction		No correction	No correction
M2/M1 [%]			50.4
Dist 3dB Peak [mm]			8.0



Meas.29 Left Head with Cheek on 6 Channel in IEEE802.11b mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	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
LeftHead , HSL	CHEEK, 0.00	WLAN 2.4GH z	WLAN , 10012-CAB	2437.0, 6	7.75	1.79	39.5	22.1	21.4

Hardware Setup

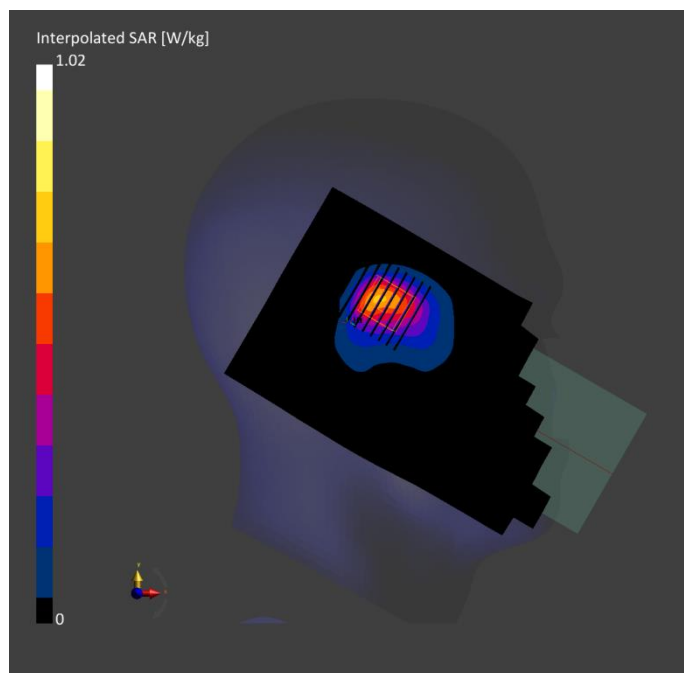
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-16	EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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	2024-08-16	2024-08-16	
psSAR1g [W/kg]	0.545	0.540	
psSAR10g [W/kg]	0.283	0.286	
Power Drift [dB]	-0.03	-0.01	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		54.4	
Dist 3dB Peak [mm]		9.4	



Meas.30 Body Plane with Left Edge 10mm on 6 Channel in IEEE802.11b mode with Antenna 13

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	Phone

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
Flat, HSL	BACK, 10.00	WLAN 2.4GHz	WLAN , 10012-CAB	2437.0, 6	7.75	1.79	39.5	22.1	21.4

Hardware Setup

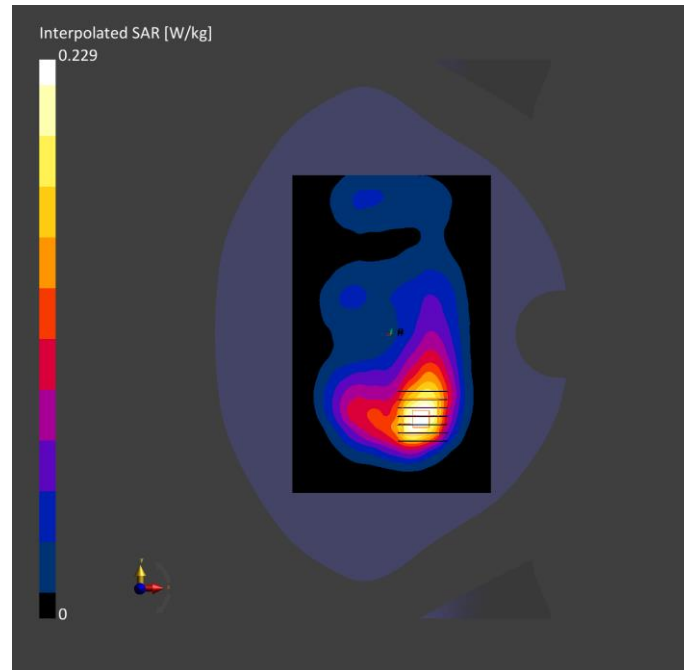
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-16	EX3DV4 - SN7510,	2024-06-25	DAE4 Sn1710,	2024-01-03

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

Measurement Results

Area Scan		Zoom Scan	
Date	2024-08-16	2024-08-16	
psSAR1g [W/kg]	0.113	0.122	
psSAR10g [W/kg]	0.062	0.063	
Power Drift [dB]	0.02	0.04	
Power Scaling	Disabled	Disabled	
Scaling Factor [dB]			
TSL Correction	No correction	No correction	
M2/M1 [%]		52.6	
Dist 3dB Peak [mm]		12.5	



Meas.31 Left Head with Tilt on 58 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distanc e [mm]	Band	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
LeftHead , HSL	TILT, 0.00	WLAN	WLAN , 10402-AAF	5290.0, 58	5.50	4.78	35.2	22.5	21.7

Hardware Setup

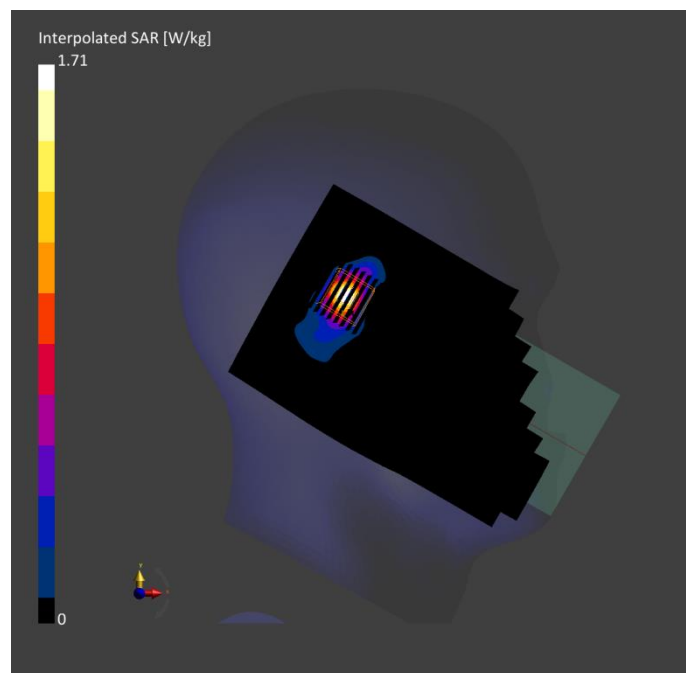
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-13		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

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

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-13	2024-08-13
psSAR1g [W/kg]		0.316	0.319
psSAR10g [W/kg]		0.10	0.079
Power Drift [dB]		0.05	-0.01
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			52.0
Dist 3dB Peak [mm]			4.8



Meas.32 Left Head with Tilt on 122 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distanc e [mm]	Band	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
LeftHead , HSL	TILT, 0.00	WLAN	WLAN , 10544-AAD	5610.0, 122	5.00	5.07	35.1	22.2	21.7

Hardware Setup

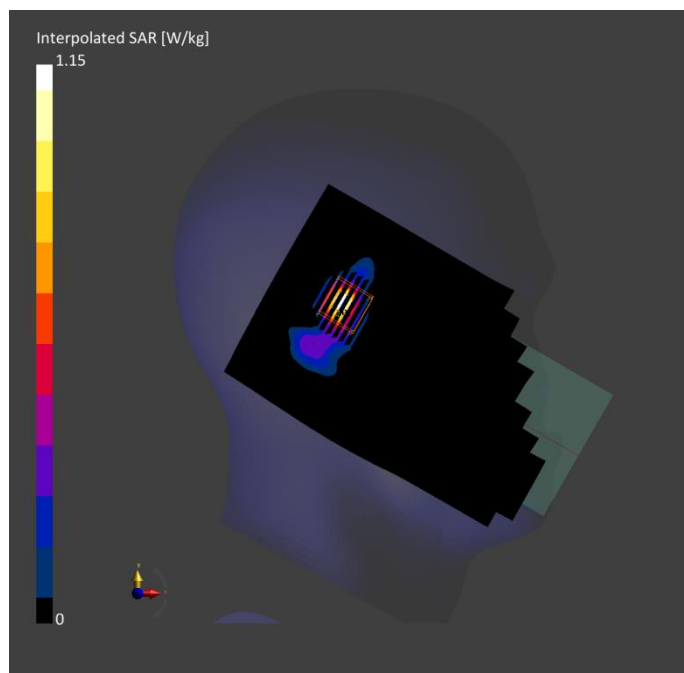
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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		2024-08-11	2024-08-11
psSAR1g [W/kg]		0.248	0.266
psSAR10g [W/kg]		0.076	0.070
Power Drift [dB]		0.03	-0.04
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			53.4
Dist 3dB Peak [mm]			5.6



Meas.33 Left Head with Tilt on 155 Channel in IEEE802.11 ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom Section, TSL	Position , Test Distanc e [mm]	Band	Group , UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
LeftHead , HSL	TILT, 0.00	WLAN	WLAN , 10544-AAD	5775.0, 155	5.04	5.22	35.3	22.6	21.1

Hardware Setup

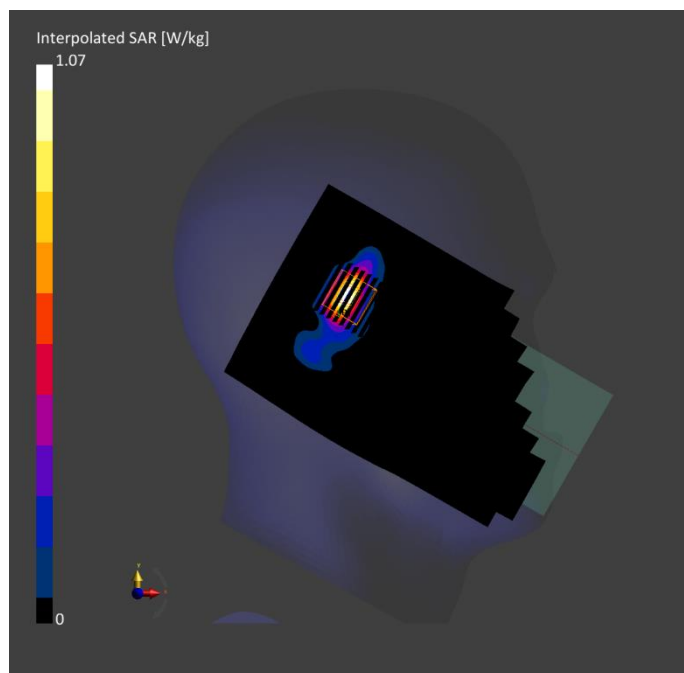
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-14		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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		2024-08-14	2024-08-14
psSAR1g [W/kg]		0.229	0.233
psSAR10g [W/kg]		0.073	0.063
Power Drift [dB]		0.10	-0.01
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			49.7
Dist 3dB Peak [mm]			5.6



Meas.34 Body Plane with Back Side 10mm on 58 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	BACK, 10.00	WLAN, 5GHz	WLAN, 10402-AAF	5290.0, 58	5.50	4.78	35.2	22.5	21.7

Hardware Setup

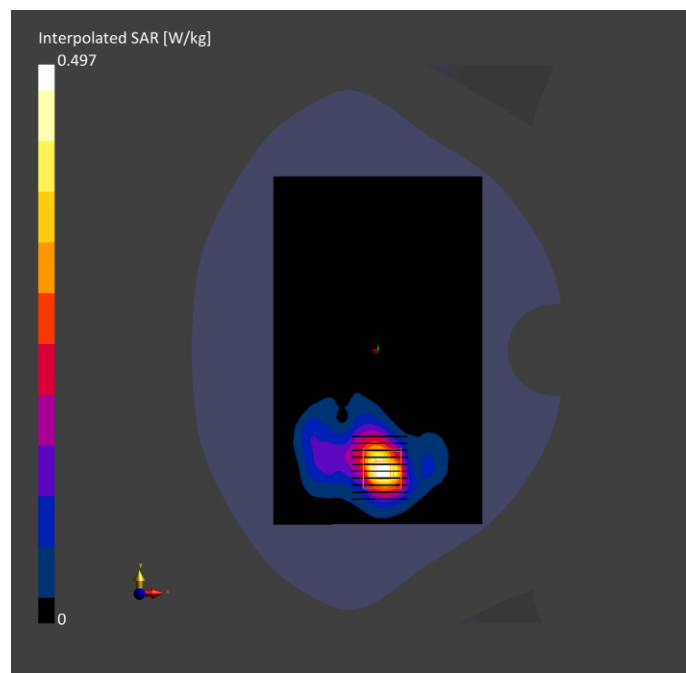
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-13		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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		2024-08-13	2024-08-13
psSAR1g [W/kg]		0.135	0.137
psSAR10g [W/kg]		0.050	0.043
Power Drift [dB]		0.13	-0.08
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			53.9
Dist 3dB Peak [mm]			8.6



Meas.35 Body Plane with Back Side 10mm on 122 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	BACK, 10.00	WLAN N 5GHz	WLAN , 10544-AAD	5610.0, 122	5.00	5.07	35.1	22.2	21.7

Hardware Setup

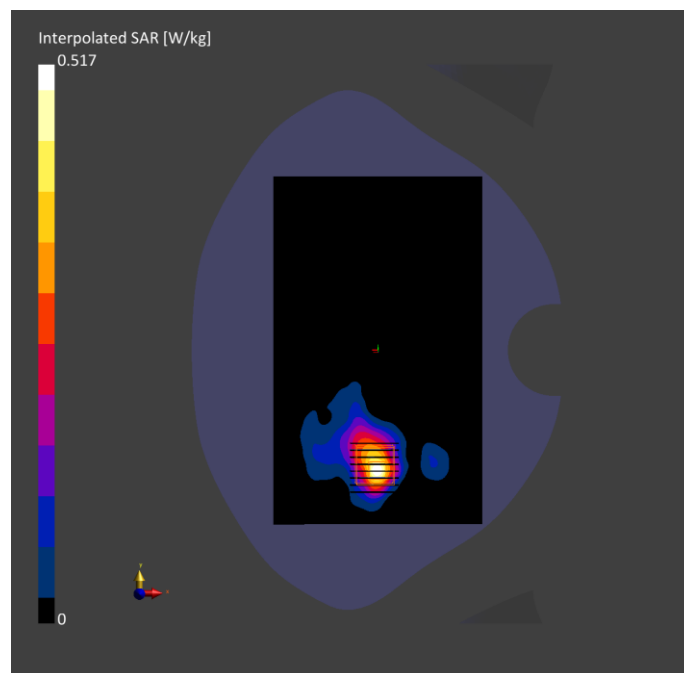
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-11	2024-08-11
psSAR1g [W/kg]		0.137	0.132
psSAR10g [W/kg]		0.049	0.041
Power Drift [dB]		-0.06	-0.01
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			45.0
Dist 3dB Peak [mm]			9.3



Meas.36 Body Plane with Back Side 10mm on 155 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	BACK, 10.00	WLAN N 5GHz	WLAN , 10402-AAF	5775.0, 155	5.04	5.22	35.3	22.6	21.1

Hardware Setup

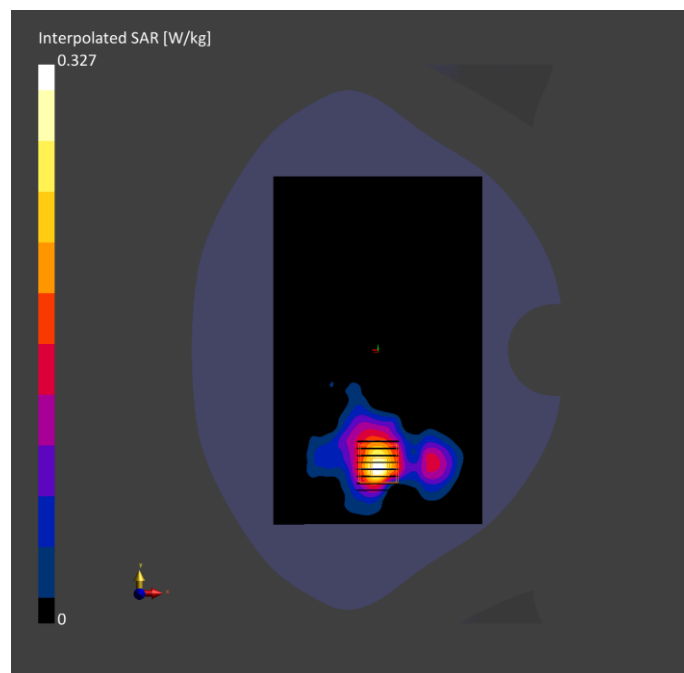
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

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

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-11	2024-08-11
psSAR1g [W/kg]		0.085	0.076
psSAR10g [W/kg]		0.031	0.021
Power Drift [dB]		-0.07	-0.05
Power Scaling	Disabled		Disabled
Scaling Factor [dB]			
TSL Correction	No correction		No correction
M2/M1 [%]			49.2
Dist 3dB Peak [mm]			7.5



Meas.37 Body Plane with Back Side 10mm on 42 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	EDGE TOP, 10.00	WLAN 5GHz	WLAN , 10402-AAF	5210.0, 42	5.74	4.62	36.2	22.5	21.7

Hardware Setup

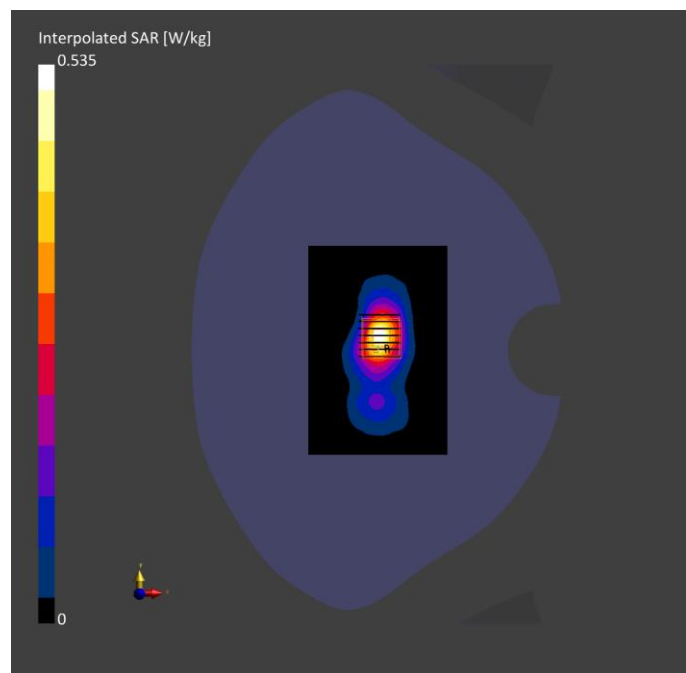
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-13		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]		80.0 x 120.0	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 Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-13	2024-08-13
psSAR1g [W/kg]		0.134	0.145
psSAR10g [W/kg]		0.048	0.046
Power [dB]	Drift	0.16	0.03
Power Scaling		Disabled	Disabled
Scaling Factor [dB]			
TSL Correction		No correction	No correction
M2/M1 [%]			51.9
Dist 3dB Peak [mm]			8.6



Meas.38 Body Plane with Top Edge 10mm on 58 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	EDGE TOP, 10.00	WLAN 5GHz	WLAN 10402-AAF	5290.0, 58	5.50	4.78	35.2	22.5	21.7

Hardware Setup

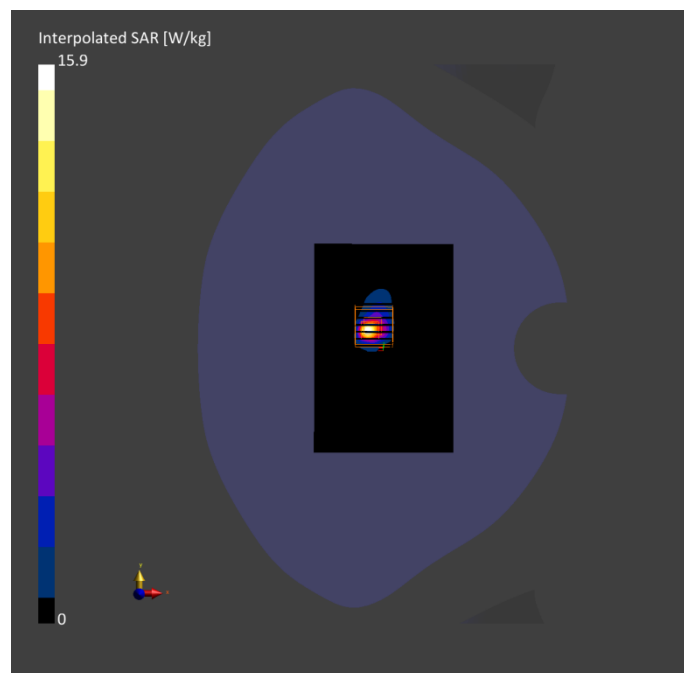
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-13		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

		Area Scan	Zoom Scan
Grid Extents [mm]		80.0 x 120.0	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 Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-13	2024-08-13
psSAR1g [W/kg]		1.69	2.95
psSAR10g [W/kg]		0.402	0.524
Power [dB]	Drift	0.02	0.06
Power Scaling		Disabled	Disabled
Scaling Factor [dB]			
TSL Correction		No correction	No correction
M2/M1 [%]			48.5
Dist 3dB Peak [mm]			4.0



Meas.39 Body Plane with Top Edge 10mm on 122 Channel in IEEE802.11ac80 mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	165.0 x 75.0 x 8.0	Phone

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
Flat, HSL	EDGE TOP, 10.00	WLAN 5GHz	WLAN 10402-AAF	5610.0, 122	4.58	5.07	35.1	22.2	21.7

Hardware Setup

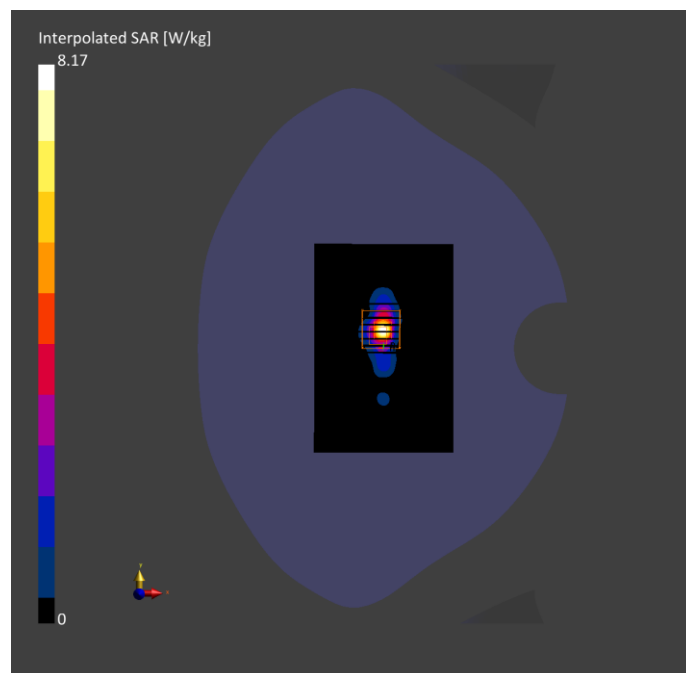
Phantom	TSL, Measured Date			Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-11		EX3DV4 - SN7510, 2024-06-25		DAE4 Sn1710, 2024-01-03

Scan Setup

		Area Scan	Zoom Scan
Grid	Extents	80.0 x 120.0	24.0 x 8.0 x 22.0
[mm]			
Grid Steps [mm]		10.0 x 10.0	4.0 x 4.0 x 2.0
Sensor	Surface	3.0	1.4
[mm]			
Graded Grid		Yes	Yes
Grading Ratio		1.5	1.4
MAIA		N/A	N/A
Surface		VMS + 6p	All points
Detection			
Scan Method		Measured	Measured

Measurement Results

		Area Scan	Zoom Scan
Date		2024-08-11	2024-08-11
psSAR1g [W/kg]		1.20	1.51
psSAR10g [W/kg]		0.296	0.296
Power [dB]	Drift	0.04	0.05
Power Scaling		Disabled	Disabled
Scaling Factor [dB]			
TSL Correction		No correction	No correction
M2/M1 [%]			47.6
Dist 3dB Peak [mm]			4.0



Meas.40 Left Head with Cheek on 0 Channel in Bluetooth mode with Antenna 14

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	Phone

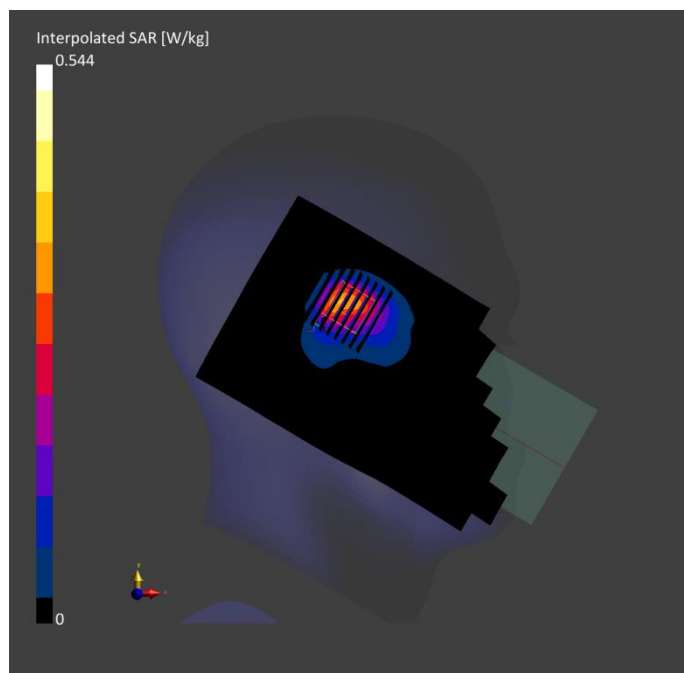
Exposure Conditions

Phantom Section, TSL	Position , Test Distance [mm]	Ban d	Group, UID	Frequenc y [MHz], Channel Number	Conversio n Factor	TSL Conductivit y [S/m]	TSL Permittivit y	Ambient Temperatur e [°C]	Liquid Temperatur e [°C]
LeftHead , HSL	CHEEK, 0.00	ISM 2.4 GHz Ban d	Bluetoot h, 10032-CAA	2402.0, 0	7.75	1.75	39.8	22.1	21.4

Hardware Setup

Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-16	EX3DV4 - SN7510,	2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup				Measurement Results		
		Area Scan	Zoom Scan			
Grid Extents [mm]		120.0 x 192.0	30.0 x 30.0 x 30.0	Date	2024-08-16	2024-08-16
Grid Steps [mm]		12.0 x 12.0	5.0 x 5.0 x 5.0	psSAR1g [W/kg]	0.285	0.283
Sensor Surface [mm]		3.0	1.4	psSAR10g [W/kg]	0.147	0.148
Graded Grid	Yes		Yes	Power Drift [dB]	0.10	-0.02
Grading Ratio	1.5		1.5	Power Scaling	Disabled	Disabled
MAIA Surface Detection	N/A		N/A	Scaling Factor [dB]		
	VMS + 6p		VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured		Measured	M2/M1 [%]		46.5
				Dist 3dB Peak [mm]		9.1



Meas.41 Body Plane with Back Side 10mm on 39 Channel in Bluetooth mode with Antenna 13

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
KL7	166.0 x 75.0 x 8.0	Phone

Exposure Conditions

Phantom	Position	Ban	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature
Flat, HSL	BACK, 10.00	ISM 2.4 GHz Band	Bluetooth , 10032-CAA	2441.0, 39	7.75	1.80	39.6	22.1	21.4

Hardware Setup

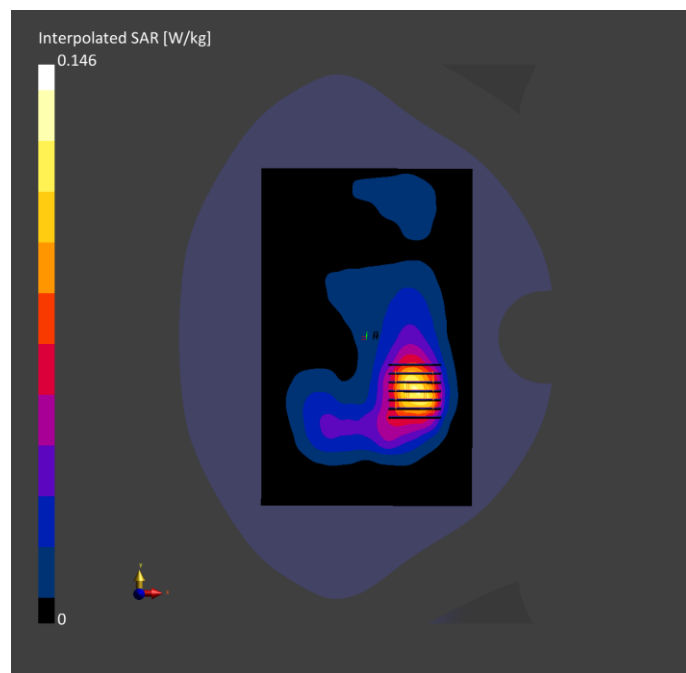
Phantom	TSL, Measured Date		Probe, Calibration Date		DAE, Calibration Date	
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000	2024-08-16	EX3DV4 - SN7510,	2024-06-25	DAE4 Sn1710,	2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-08-16	2024-08-16
psSAR1g [W/kg]	0.069	0.075
psSAR10g [W/kg]	0.036	0.037
Power Drift [dB]	0.03	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		49.8
Dist 3dB Peak [mm]		10.4



ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2470699-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SZ2470699-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “BL-SZ2470699-AC.pdf”.

Statement

1. The laboratory guarantees the scientificity, accuracy and impartiality of the test, and is responsible for all the information in the report, except the information provided by the customer. The customer is responsible for the impact of the information provided on the validity of the results.
2. The report without China inspection body and laboratory Mandatory Approval (CMA) mark has no effect of proving to the society.
3. For the report with CNAS mark or A2LA mark, the items marked with "☆" are not within the accredited scope.
4. This report is invalid if it is altered, without the signature of the testing and approval personnel, or without the "inspection and testing dedicated stamp" or test report stamp.
5. The test data and results are only valid for the tested samples provided by the customer.
6. This report shall not be partially reproduced without the written permission of the laboratory.
7. Any objection shall be raised to the laboratory within 30 days after receiving the report.

--END OF REPORT--