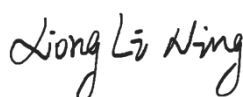


TEST REPORT

Applicant: COOSEA GROUP (HK) COMPANY LIMITED
Address: UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT
AVENUE TSIMSHATSUI KL
Equipment Type: SmartPhone
Model Name: SP545C
Brand Name: Artia
FCC ID: 2A28USL003AS
Test Standard: FCC 47 CFR Part 2.1093
(refer section 3.1)
Maximum SAR: Head (1 g@0mm): 1.16 W/kg
Body-worn (1 g@15mm): 0.59 W/kg
Hotspot (1 g@10mm): 1.19 W/kg
Sample Arrival Date: Nov. 25, 2024
Test Date: Dec. 06, 2024 - Dec. 12, 2024
Date of Issue: Dec. 18, 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>Dec. 18, 2024</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

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

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ 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	COOSEA GROUP (HK) COMPANY LIMITED
Address	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL

2.2 Manufacturer Information

Manufacturer	COOSEA GROUP (HK) COMPANY LIMITED
Address	UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL

2.3 General Description for Equipment under Test (EUT)

EUT Name	SmartPhone
Model Name Under Test	SP545C
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	1.0
Software Version	SP545C10004
Dimensions (Approx.)	150.7x73.7x10.6mm
Weight (Approx.)	N/A

2.4 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	N/A
	Model No.	BL-A86CT
	Serial No.	N/A
	Capacity	2000 mAh
	Nominal Voltage	3.7 V
	Manufacturer	Shenzhen Aerospace Electronic Co., Ltd.

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 FDD LTE Band 2/4/5/12/17/25/26/66/71 Bluetooth (BR+EDR+BLE) WIFI 802.11b, 802.11g, 802.11n
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, 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 12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE Band 17	TX: 704 ~ 716 MHz	RX: 734 ~ 746 MHz
	LTE Band 25	TX: 1850 ~ 1915 MHz	RX: 1930 ~ 1995 MHz
	LTE Band 26	TX: 814~ 849 MHz	RX: 859 ~ 894 MHz
	LTE Band 66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2180 MHz
	LTE Band 71	TX: 663 ~ 698 MHz	RX: 617~ 652 MHz
	802.11b/g /n(HT20)	2412 ~ 2462 MHz	
	Bluetooth	2402 ~ 2480 MHz	
Antenna Type	WWAN: PIFA Antenna WIFI: PIFA Antenna Bluetooth: PIFA Antenna		
DTM	N/A		
Hotspot Function	Support		
Power Reduction	Support		
Exposure Category	General Population/Uncontrolled exposure		
Product Type	Portable Device		
EUT Type	☒ Production unit	☐ Identical prototype	
Note: 1. The device utilizes independent power reduction mechanisms for SAR compliance for the 2/3/4G transmitter for held-to-ear exposure conditions.			

2. The device utilizes independent power reduction mechanisms for SAR compliance for the 2/3/4G transmitter for near to body exposure conditions.
3. The reduction power details please refer section 8.6.

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 D06 v02r01	SAR EVALUATION PROCEDURES FOR PORTABLE DEVICES WITH WIRELESS ROUTER CAPABILITIES
8	KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
9	KDB 865664 D02 v01r02	RF Exposure Reporting
10	KDB 648474 D04 v01r03	SAR EVALUATION CONSIDERATIONS FOR WIRELESS HANDSETS
11	KDB 248227 D01 v02r02	SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

3.2 Device Category and SAR Limit

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

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

Table of Exposure Limits:

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

NOTE:

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

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

3.3 Test Result Summary

3.3.1 Highest SAR Values

Equipment Class	Band	Maximum Scaled SAR (W/kg)			Maximum Report SAR (W/kg)		
		Head (0mm)	Body-worn (15mm)	Hotspot (10mm)	Head (0mm)	Body-worn (15mm)	Hotspot (10mm)
		1g SAR			1g SAR		
PCE	GSM 850	0.35	0.35	0.35	1.16	0.59	1.19
	GSM 1900	0.16	0.59	1.19			
	WCDMA Band 2	0.10	0.44	0.90			
	WCDMA Band 4	0.13	0.22	0.32			
	WCDMA Band 5	0.12	0.15	0.17			
	LTE Band 12	0.08	0.12	0.13			
	LTE Band 25	0.09	0.27	0.43			
	LTE Band 26	0.11	0.14	0.15			
	LTE Band 66	0.14	0.15	0.28			
	LTE Band 71	0.13	0.11	0.10			
DTS	2.4G WIFI	1.16	0.34	0.36			
DSS	Bluetooth	0.22	0.01	0.04			
Limit (W/kg)		1.6			1.6		
Verdict		PASS					

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

3.3.2 Highest Simultaneous Transmission SAR Values

Equipment Class	Maximum Scaled SAR (W/kg)		
	Head 1g (0mm)	Body-worn 1g (15mm)	Hotspot 1g (10mm)
PCE	1.48	0.93	1.55
DTS	1.48	0.93	1.55
DSS	0.45	0.60	1.22
Limit (W/Kg)	1.60		
Verdict	Pass		

Note: The highest simultaneous SAR please refer section 12.2

3.4 Test Uncertainty

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

The maximum 1 g SAR for the EUT in this report is 1.19 W/kg, which is lower than 1.5 W/kg, so the extensive SAR measurement uncertainty analysis is not required in this report.

4 MEASUREMENT SYSTEM

4.1 Specific Absorption Rate (SAR) Definition

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

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

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

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

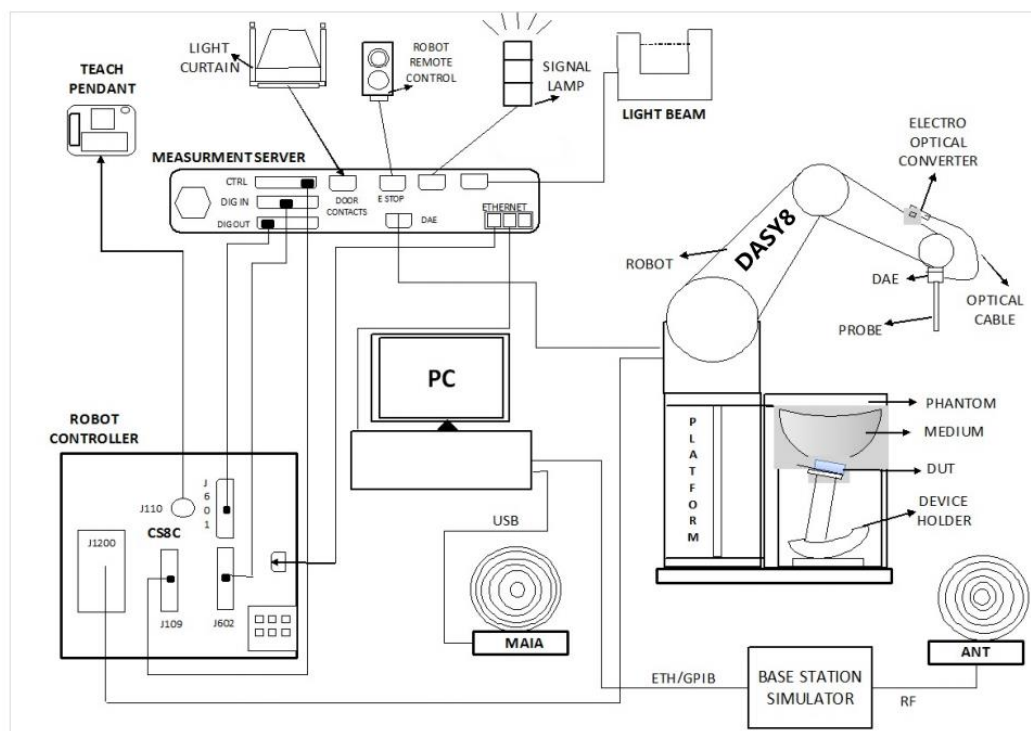
$$SAR = \frac{\sigma E^2}{\rho}$$

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

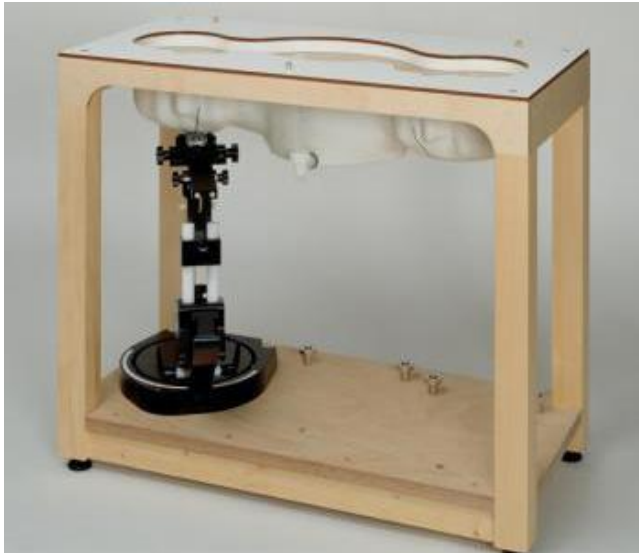
The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an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

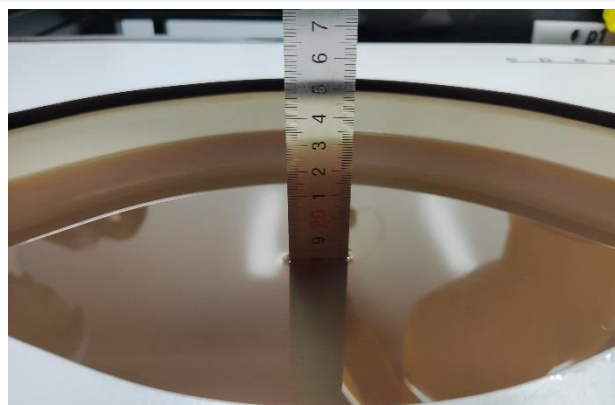
The DASY device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65° . The bottom plate contains three pair of bolts for 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

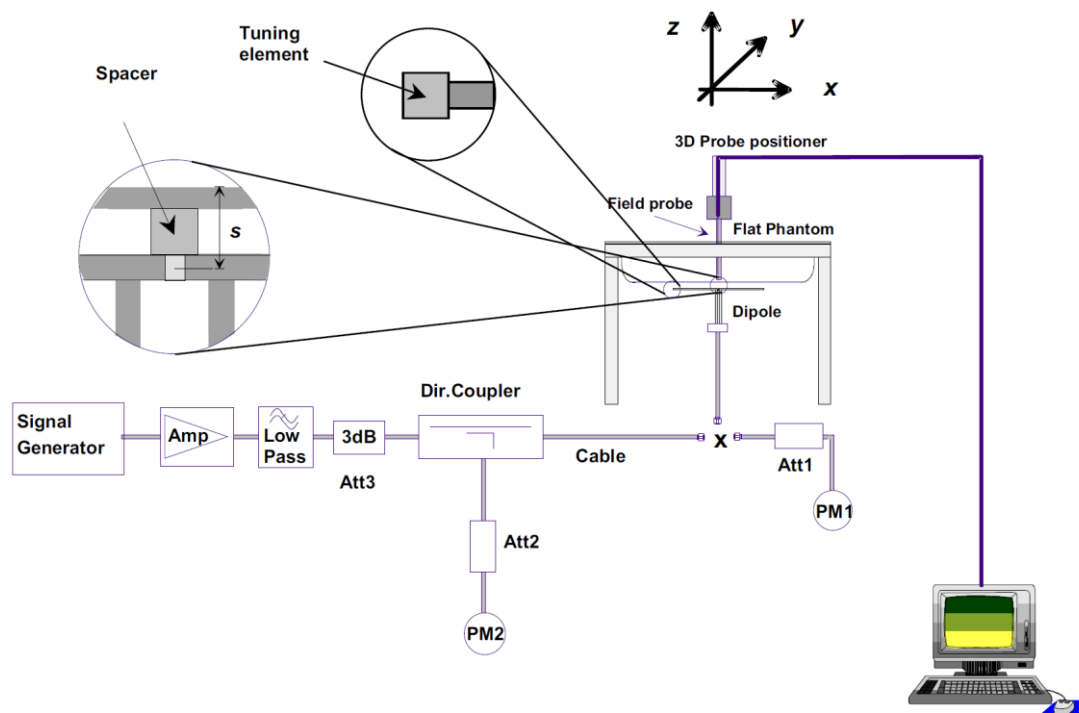
5 SYSTEM VERIFICATION

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

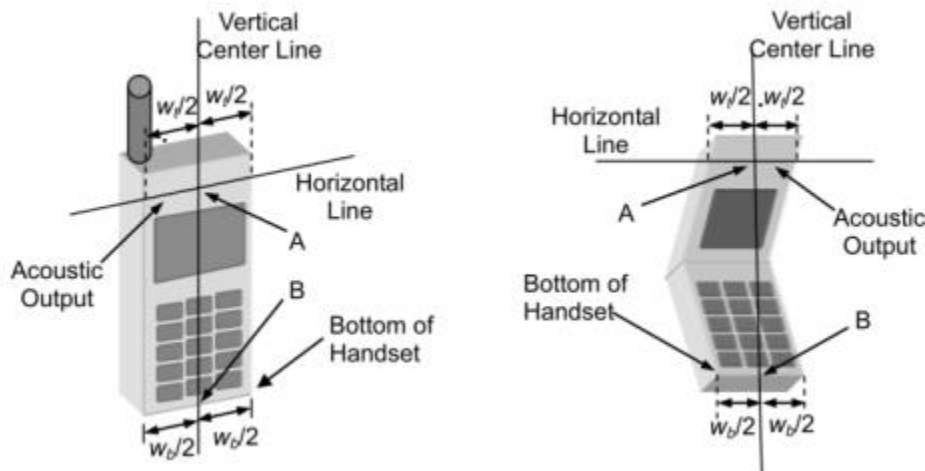
According to KDB 648474 D04 Handset, handsets are tested for SAR compliance in head, body-worn accessory and other use configurations described in the following subsections.

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.

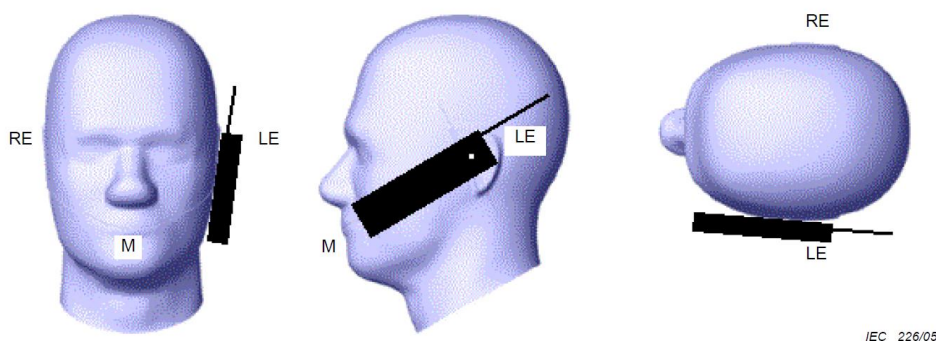
6.1.1 Two Imaginary Lines on the Handset

- 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.

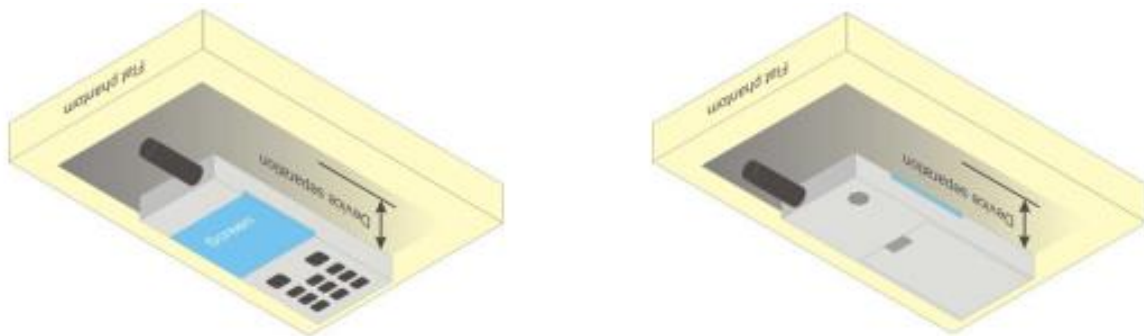


6.2 Body-worn Position Conditions

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.

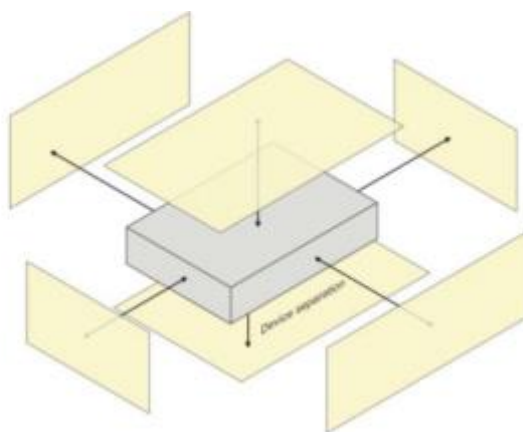
Body-worn accessories that do not contain metallic or conductive components may be tested according to worst-case exposure configurations, typically according to the smallest test separation distance required for the group of body-worn accessories with similar operating and exposure characteristics.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



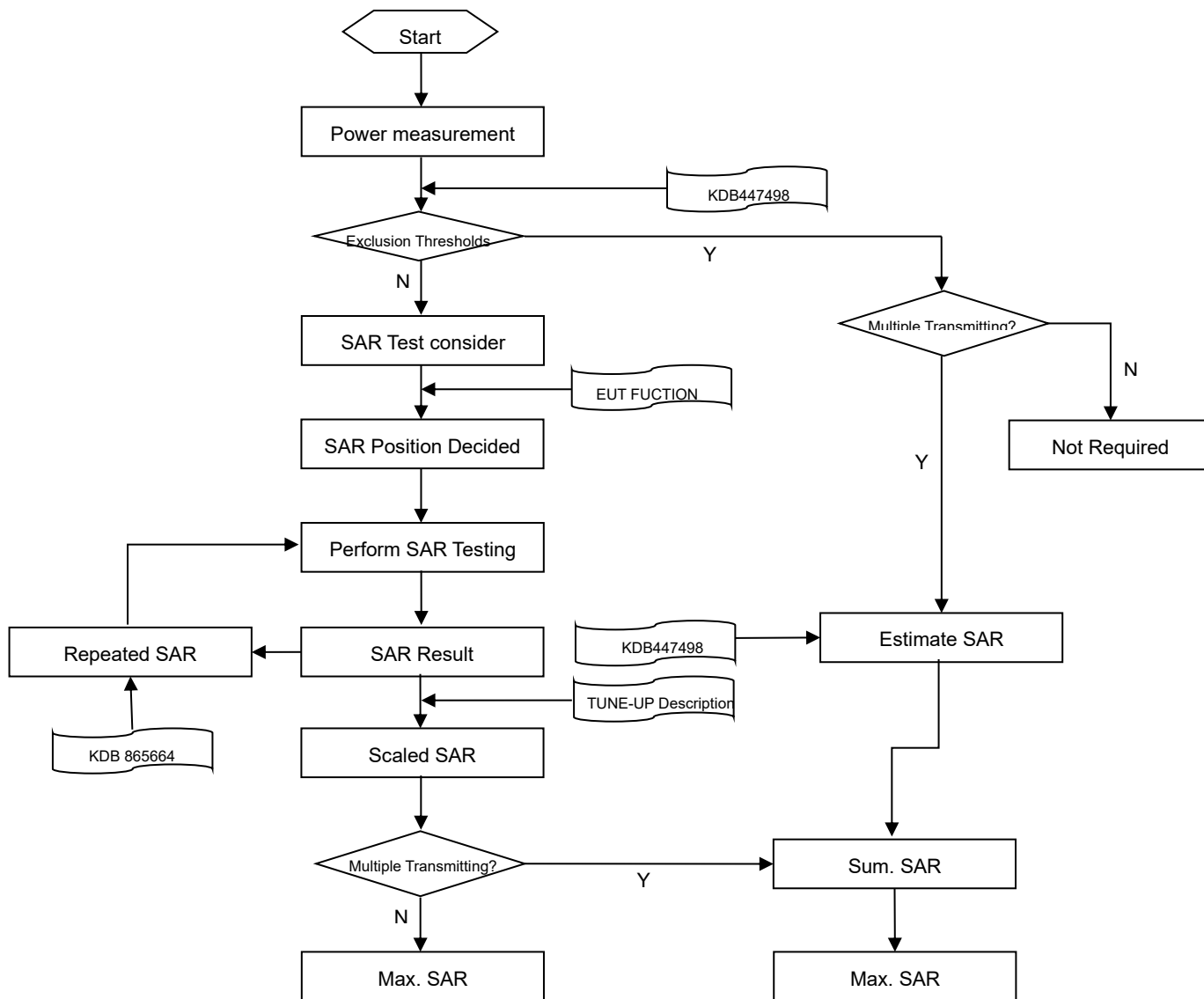
6.3 Hotspot Mode Exposure Position Conditions

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).



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:

- δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
- * When zoom scan is required and the reported SAR from the area scan based 1 g SAR estimation procedures of KDB 447498 is ≤ 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.

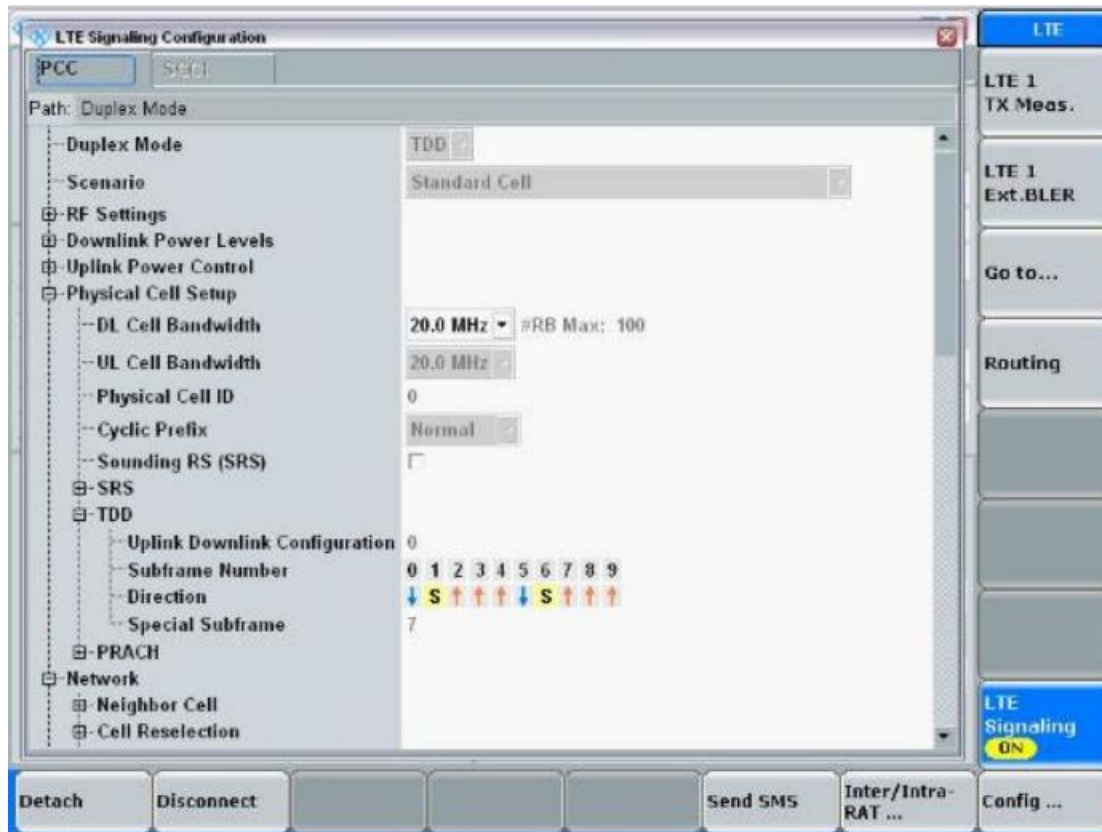
7.4 Area & Zoom Scan Procedure

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.

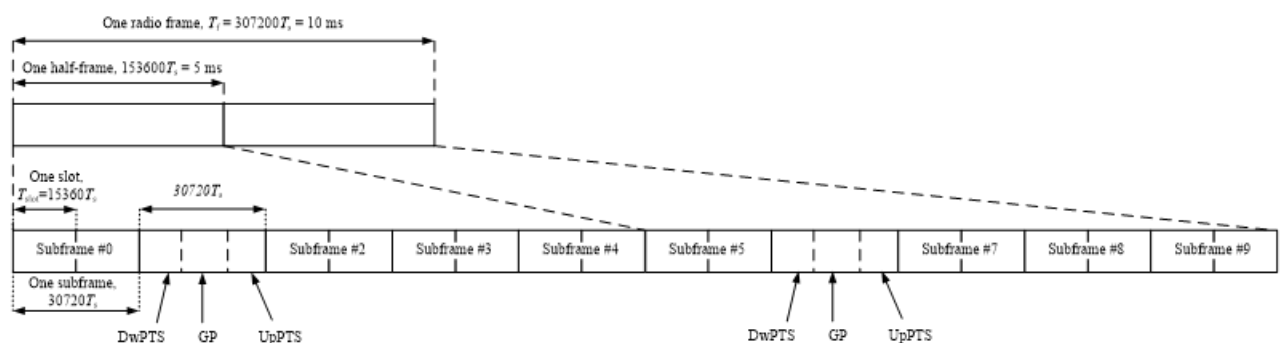
When the 1 g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7.5 Area & Zoom Scan Procedure

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-SH24B0867-AP Power List.pdf”.

8.2 WCDMA

Please refer the document “BL-SH24B0867-AP Power List.pdf”.

8.3 LTE

Please refer the document “BL-SH24B0867-AP Power List.pdf”.

8.4 WIFI

8.4.1 2.4G WIFI-Full Power

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4	802.11b	1	2412	19.09	20.00	Yes
		6	2437	18.84	20.00	Yes
		11	2462	18.86	20.00	Yes
	802.11g	1	2412	16.86	18.00	No
		6	2437	16.83	18.00	No
		11	2462	16.91	18.00	No
	802.11n(HT20)	1	2412	16.85	18.00	No
		6	2437	17.02	18.00	No
		11	2462	16.49	17.50	No

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

- 1) The largest channel bandwidth configuration is selected between the multiple configurations in a frequency band with the same maximum tune-up output power.
- 2) When multiple transmission modes (802.11b/g/n) have the same maximum tune-up output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11b is chosen over 802.11g, and 802.11g chosen over 802.11n.
- 3) According KDB 247228, when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, OFDM SAR test is not required.
Adjusted SAR = $0.336 * (63.10\text{mW}/100.00\text{mW}) = 0.212$ W/Kg, so 2.4G OFDM SAR test is not required.

8.4.2 2.4G WIFI-Level1&2

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4	802.11b	1	2412	13.28	15.00	Yes
		6	2437	13.25	15.00	Yes
		11	2462	13.02	15.00	Yes
	802.11g	1	2412	11.25	13.00	No
		6	2437	11.39	13.00	No
		11	2462	11.27	13.00	No
	802.11n(HT20)	1	2412	11.37	13.00	No
		6	2437	11.52	13.00	No
		11	2462	11.33	12.50	No

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

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

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

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

Adjusted SAR = $1.164 * (19.95\text{mW}/31.62\text{mW}) = 0.734$ W/Kg, so 2.4G OFDM SAR test is not required.

8.4.3 2.4G WIFI-Level3&4

Band (GHz)	Mode	Channel	Freq. (MHz)	AV Power (dBm)	Tune-up Limit (dBm)	SAR Test Require.
2.4	802.11b	1	2412	15.28	17.00	Yes
		6	2437	15.12	17.00	Yes
		11	2462	15.15	17.00	Yes
	802.11g	1	2412	12.96	15.00	No
		6	2437	13.04	15.00	No
		11	2462	13.06	15.00	No
	802.11n(HT20)	1	2412	12.87	15.00	No
		6	2437	12.94	15.00	No
		11	2462	12.85	14.50	No

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

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

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

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

Adjusted SAR = $0.362 * (31.62\text{mW}/50.12\text{mW}) = 0.228$ W/Kg, so 2.4G OFDM SAR test is not required.

8.5 Bluetooth

Mode	GFSK			$\pi/4$ -DQPSK		
Channel	0	39	78	0	39	78
Frequency (MHz)	2402	2441	2480	2402	2441	2480
AV Power (dBm)	6.60	7.56	6.96	4.38	5.27	4.35
Tune-Up Limit (dBm)	7.50	8.50	8.00	5.50	6.50	5.50
SAR Test Require	YES	YES	YES	NO	NO	NO
Mode	8-DPSK			/		
Channel	0	39	78	/	/	/
Frequency (MHz)	2402	2441	2480	/	/	/
AV Power (dBm)	4.61	5.43	4.74	/	/	/
Tune-Up Limit (dBm)	5.50	6.50	5.50	/	/	/
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)	6.52	7.31	5.57	6.93	7.20	6.90
Tune-Up Limit (dBm)	7.50	8.50	7.50	8.00	8.00	8.00
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.						

8.6 Power Reduction List

1. This mobile phone device supports the receiver detection mechanism .This device uses the receiver to indicate whether the user is making a call in head.
2. When device is making call in head, and the receiver will work, the power reduction will applied for SAR compliance.
3. When there is a voice call (including VOIP), the audio is actively routed through the headset or speaker, and the receiver will not work, which indicating the body exposure conditions will trigger the body/Limbs exposure reduced the power.
4. When this device used data mode only, and the receiver will not work too, the reduced the power are same as body exposure.

WLAN Reduced power level table

Reduced level	Receiver state	Transmitting	Antenna	Position
		conditions		
Level 1	On (head scenario)	Only 2.4GWLAN	Ant.1	Head
Level 2	On (head scenario)	BT+WWAN; 2.4G WLAN+WWAN	Ant.1	Head
Level 3	Off (Body scenario)	Only 2.4GWLAN	Ant.1	Front Side;Back Side; Left Edge;Right Edge;Top Edge;Bottom Edge
Level 4	Off (Body scenario)	BT+WWAN; 2.4G WLAN+WWAN	Ant.1	Front Side;Back Side; Left Edge;Right Edge;Top Edge;Bottom Edge

Mode	Antenna	WLAN Antenna 1		
		Full Power	Level1&2	Level3&4
2.4G WLAN 802.11b	ANT1	20.00	15.00	17.00
2.4G WLAN 802.11g	ANT1	18.00	13.00	15.00
2.4G WLAN 802.11n20	ANT1	18.00	13.00	15.00

9 TEST EXCLUSION CONSIDERATION

For antenna location and support bands please refer the document “BL-SH24B0867-AI EUT internal photo.pdf”.

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

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

10 TEST RESULT

10.1GSM 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.0	DATA 4slots	Left Cheek	0	251	848.8	-0.06	0.244	28.83	30.00	1.309	0.319	/
		Left Tilt	0	251	848.8	0.14	0.152	28.83	30.00	1.309	0.199	/
		Right Cheek	0	251	848.8	0.00	0.269	28.83	30.00	1.309	0.352	1#
		Right Tilt	0	251	848.8	-0.01	0.158	28.83	30.00	1.309	0.207	/
Body-worn												
Ant.0	DATA 4slots	Front Side	15	251	848.8	0.04	0.155	28.83	30.00	1.309	0.203	/
		Back Side	15	251	848.8	-0.01	0.264	28.83	30.00	1.309	0.346	2#
Hotspot												
Ant.0	DATA 4slots	Front Side	10	251	848.8	-0.07	0.184	28.83	30.00	1.309	0.241	/
		Back Side	10	251	848.8	0.00	0.267	28.83	30.00	1.309	0.350	3#
		Left Edge	10	251	848.8	0.17	0.104	28.83	30.00	1.309	0.136	/
		Right Edge	10	251	848.8	-0.04	0.094	28.83	30.00	1.309	0.123	/
		Bottom Edge	10	251	848.8	-0.16	0.044	28.83	30.00	1.309	0.058	/
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.0	DATA 4slots	Left Cheek	0	661	1880	-0.20	0.127	25.88	27.00	1.294	0.164	4#
		Left Tilt	0	661	1880	0.05	0.050	25.88	27.00	1.294	0.065	/
		Right Cheek	0	661	1880	0.12	0.069	25.88	27.00	1.294	0.089	/
		Right Tilt	0	661	1880	-0.02	0.036	25.88	27.00	1.294	0.047	/
Body-worn												
Ant.0	DATA 4slots	Front Side	15	661	1880	-0.15	0.248	25.88	27.00	1.294	0.321	/
		Back Side	15	661	1880	-0.03	0.457	25.88	27.00	1.294	0.591	5#
Hotspot												
Ant.0	DATA 4slots	Front Side	10	661	1880	-0.09	0.526	25.88	27.00	1.294	0.681	/
		Back Side	10	661	1880	0.05	0.916	25.88	27.00	1.294	1.185	6#
		Left Edge	10	661	1880	0.15	0.072	25.88	27.00	1.294	0.093	/
		Right Edge	10	661	1880	0.04	0.124	25.88	27.00	1.294	0.160	/
		Bottom Edge	10	661	1880	0.03	0.754	25.88	27.00	1.294	0.976	/
		Back Side	10	512	1850.2	0.10	0.655	25.66	27.00	1.361	0.891	/
		Back Side	10	810	1909.8	-0.04	0.803	25.52	27.00	1.406	1.129	/
		Bottom Edge	10	512	1850.2	-0.16	0.728	25.66	27.00	1.361	0.991	/
		Bottom Edge	10	810	1909.8	-0.18	0.692	25.52	27.00	1.406	0.973	/
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.0	RMC	Left Cheek	0	9400	1880	-0.03	0.077	23.49	24.50	1.262	0.097	7#
		Left Tilt	0	9400	1880	-0.11	0.031	23.49	24.50	1.262	0.039	/
		Right Cheek	0	9400	1880	-0.01	0.057	23.49	24.50	1.262	0.072	/
		Right Tilt	0	9400	1880	0.17	0.011	23.49	24.50	1.262	0.014	/
Body-worn												
Ant.0	RMC	Front Side	15	9400	1880	-0.09	0.226	23.49	24.50	1.262	0.285	/
		Back Side	15	9400	1880	-0.19	0.349	23.49	24.50	1.262	0.440	8#
Hotspot												
Ant.0	RMC	Front Side	10	9400	1880	0.07	0.412	23.49	24.50	1.262	0.520	/
		Back Side	10	9400	1880	0.01	0.593	23.49	24.50	1.262	0.748	/
		Left Edge	10	9400	1880	-0.13	0.108	23.49	24.50	1.262	0.136	/
		Right Edge	10	9400	1880	0.14	0.044	23.49	24.50	1.262	0.056	/
		Bottom Edge	10	9400	1880	0.03	0.713	23.49	24.50	1.262	0.900	9#
		Bottom Edge	10	9262	1852.4	-0.08	0.673	23.30	24.50	1.318	0.887	/
		Bottom Edge	10	9538	1907.6	-0.18	0.676	23.31	24.50	1.315	0.889	/
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.0	RMC	Left Cheek	0	1312	1712.4	0.18	0.113	23.83	24.50	1.167	0.132	10#
		Left Tilt	0	1312	1712.4	-0.17	0.071	23.83	24.50	1.167	0.083	/
		Right Cheek	0	1312	1712.4	0.03	0.098	23.83	24.50	1.167	0.114	/
		Right Tilt	0	1312	1712.4	-0.19	0.058	23.83	24.50	1.167	0.068	/
Body-worn												
Ant.0	RMC	Front Side	15	1312	1712.4	-0.04	0.173	23.83	24.50	1.167	0.202	/
		Back Side	15	1312	1712.4	-0.08	0.190	23.83	24.50	1.167	0.222	11#
Hotspot												
Ant.0	RMC	Front Side	10	1312	1712.4	0.11	0.266	23.83	24.50	1.167	0.310	/
		Back Side	10	1312	1712.4	0.06	0.278	23.83	24.50	1.167	0.324	12#
		Left Edge	10	1312	1712.4	-0.13	0.150	23.83	24.50	1.167	0.175	/
		Right Edge	10	1312	1712.4	0.02	0.062	23.83	24.50	1.167	0.072	/
		Bottom Edge	10	1312	1712.4	-0.11	0.198	23.83	24.50	1.167	0.231	/
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. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head												
Ant.0	RMC	Left Cheek	0	4182	836.4	0.08	0.094	23.81	24.50	1.172	0.110	/
		Left Tilt	0	4182	836.4	-0.05	0.062	23.81	24.50	1.172	0.073	/
		Right Cheek	0	4182	836.4	-0.11	0.099	23.81	24.50	1.172	0.116	13#
		Right Tilt	0	4182	836.4	-0.09	0.060	23.81	24.50	1.172	0.070	/
Body-worn												
Ant.0	RMC	Front Side	15	4182	836.4	-0.12	0.073	23.81	24.50	1.172	0.086	/
		Back Side	15	4182	836.4	0.03	0.124	23.81	24.50	1.172	0.145	14#
Hotspot												
Ant.0	RMC	Front Side	10	4182	836.4	-0.04	0.077	23.81	24.50	1.172	0.090	/
		Back Side	10	4182	836.4	-0.02	0.144	23.81	24.50	1.172	0.169	15#
		Left Edge	10	4182	836.4	-0.15	0.048	23.81	24.50	1.172	0.056	/
		Right Edge	10	4182	836.4	0.19	0.071	23.81	24.50	1.172	0.083	/
		Bottom Edge	10	4182	836.4	-0.14	0.011	23.81	24.50	1.172	0.013	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.												

10.6LTE Band 12 (10MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SA R(W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	23095	707.5	1	Low	0.09	0.066	23.73	24.50	1.194	0.079	16#
		Left Tilt	0	23095	707.5	1	Low	-0.09	0.028	23.73	24.50	1.194	0.033	/
		Right Cheek	0	23095	707.5	1	Low	0.14	0.054	23.73	24.50	1.194	0.064	/
		Right Tilt	0	23095	707.5	1	Low	-0.09	0.012	23.73	24.50	1.194	0.014	/
		Left Cheek	0	23095	707.5	25	Low	-0.02	0.058	22.50	23.50	1.259	0.073	/
		Left Tilt	0	23095	707.5	25	Low	0.04	0.022	22.50	23.50	1.259	0.028	/
		Right Cheek	0	23095	707.5	25	Low	0.09	0.049	22.50	23.50	1.259	0.062	/
		Right Tilt	0	23095	707.5	25	Low	0.19	0.018	22.50	23.50	1.259	0.023	/
Body-worn														
Ant.0	QPSK	Front Side	15	23095	707.5	1	Low	0.11	0.076	23.73	24.50	1.194	0.091	/
		Back Side	15	23095	707.5	1	Low	0.00	0.096	23.73	24.50	1.194	0.115	17#
		Front Side	15	23095	707.5	25	Low	0.13	0.071	22.50	23.50	1.259	0.089	/
		Back Side	15	23095	707.5	25	Low	-0.12	0.090	22.50	23.50	1.259	0.113	/
Hotspot														
Ant.0	QPSK	Front Side	10	23095.000	707.500	1	Low	-0.08	0.079	23.73	24.50	1.194	0.094	/
		Back Side	10	23095.000	707.500	1	Low	0.01	0.107	23.73	24.50	1.194	0.128	18#
		Left Edge	10	23095.000	707.500	1	Low	-0.03	0.063	23.73	24.50	1.194	0.075	/
		Right Edge	10	23095.000	707.500	1	Low	0.04	0.073	23.73	24.50	1.194	0.087	/
		Bottom Edge	10	23095.000	707.500	1	Low	-0.09	0.006	23.73	24.50	1.194	0.007	/
		Front Side	10	23095.000	707.500	25	Low	-0.18	0.073	22.50	23.50	1.259	0.092	/
		Back Side	10	23095.000	707.500	25	Low	-0.05	0.099	22.50	23.50	1.259	0.125	/
		Left Edge	10	23095.000	707.500	25	Low	0.18	0.057	22.50	23.50	1.259	0.072	/
		Right Edge	10	23095.000	707.500	25	Low	-0.17	0.068	22.50	23.50	1.259	0.086	/
		Bottom Edge	10	23095.000	707.500	25	Low	0.03	0.008	22.50	23.50	1.259	0.010	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.7LTE Band 25 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	26365	1882.5	1	Low	-0.04	0.077	23.69	24.50	1.205	0.093	19#
		Left Tilt	0	26365	1882.5	1	Low	0.19	0.022	23.69	24.50	1.205	0.027	/
		Right Cheek	0	26365	1882.5	1	Low	-0.19	0.053	23.69	24.50	1.205	0.064	/
		Right Tilt	0	26365	1882.5	1	Low	-0.01	0.011	23.69	24.50	1.205	0.013	/
		Left Cheek	0	26365	1882.5	50	Low	-0.11	0.057	22.38	23.50	1.294	0.074	/
		Left Tilt	0	26365	1882.5	50	Low	0.07	0.021	22.38	23.50	1.294	0.027	/
		Right Cheek	0	26365	1882.5	50	Low	0.03	0.048	22.38	23.50	1.294	0.062	/
		Right Tilt	0	26365	1882.5	50	Low	0.15	0.016	22.38	23.50	1.294	0.021	/
Body-worn														
Ant.0	QPSK	Front Side	15	26365	1882.5	1	Low	-0.18	0.158	23.69	24.50	1.205	0.190	/
		Back Side	15	26365	1882.5	1	Low	-0.10	0.225	23.69	24.50	1.205	0.271	20#
		Front Side	15	26365	1882.5	50	Low	-0.10	0.136	22.38	23.50	1.294	0.176	/
		Back Side	15	26365	1882.5	50	Low	0.17	0.200	22.38	23.50	1.294	0.259	/
Hotspot														
Ant.0	QPSK	Front Side	10	26365	1882.5	1	Low	0.06	0.232	23.69	24.50	1.205	0.280	/
		Back Side	10	26365	1882.5	1	Low	0.17	0.330	23.69	24.50	1.205	0.398	/
		Left Edge	10	26365	1882.5	1	Low	-0.14	0.063	23.69	24.50	1.205	0.076	/
		Right Edge	10	26365	1882.5	1	Low	0.10	0.039	23.69	24.50	1.205	0.047	/
		Bottom Edge	10	26365	1882.5	1	Low	0.08	0.355	23.69	24.50	1.205	0.428	21#
		Front Side	10	26365	1882.5	50	Low	0.15	0.198	22.38	23.50	1.294	0.256	/
		Back Side	10	26365	1882.5	50	Low	0.16	0.284	22.38	23.50	1.294	0.367	/
		Left Edge	10	26365	1882.5	50	Low	0.16	0.055	22.38	23.50	1.294	0.071	/
		Right Edge	10	26365	1882.5	50	Low	0.02	0.035	22.38	23.50	1.294	0.045	/
		Bottom Edge	10	26365	1882.5	50	Low	-0.01	0.279	22.38	23.50	1.294	0.361	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.8LTE Band 26 (15MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	26865	831.5	1	Low	0.17	0.094	23.82	24.50	1.169	0.110	22#
		Left Tilt	0	26865	831.5	1	Low	0.18	0.067	23.82	24.50	1.169	0.078	/
		Right Cheek	0	26865	831.5	1	Low	0.03	0.092	23.82	24.50	1.169	0.108	/
		Right Tilt	0	26865	831.5	1	Low	-0.16	0.063	23.82	24.50	1.169	0.074	/
		Left Cheek	0	26865	831.5	36	Low	-0.16	0.082	22.71	23.50	1.199	0.098	/
		Left Tilt	0	26865	831.5	36	Low	0.10	0.057	22.71	23.50	1.199	0.068	/
		Right Cheek	0	26865	831.5	36	Low	0.15	0.086	22.71	23.50	1.199	0.103	/
		Right Tilt	0	26865	831.5	36	Low	-0.03	0.054	22.71	23.50	1.199	0.065	/
Body-worn														
Ant.0	QPSK	Front Side	15	26865	831.5	1	Low	0.12	0.083	23.82	24.50	1.169	0.097	/
		Back Side	15	26865	831.5	1	Low	-0.04	0.123	23.82	24.50	1.169	0.144	23#
		Front Side	15	26865	831.5	36	Low	-0.02	0.065	22.71	23.50	1.199	0.078	/
		Back Side	15	26865	831.5	36	Low	0.18	0.085	22.71	23.50	1.199	0.102	/
Hotspot														
Ant.0	QPSK	Front Side	10	26865	831.5	1	Low	-0.10	0.082	23.82	24.50	1.169	0.096	/
		Back Side	10	26865	831.5	1	Low	-0.04	0.129	23.82	24.50	1.169	0.151	24#
		Left Edge	10	26865	831.5	1	Low	0.13	0.060	23.82	24.50	1.169	0.070	/
		Right Edge	10	26865	831.5	1	Low	-0.03	0.090	23.82	24.50	1.169	0.105	/
		Bottom Edge	10	26865	831.5	1	Low	0.07	0.018	23.82	24.50	1.169	0.021	/
		Front Side	10	26865	831.5	36	Low	0.10	0.068	22.71	23.50	1.199	0.082	/
		Back Side	10	26865	831.5	36	Low	0.02	0.095	22.71	23.50	1.199	0.114	/
		Left Edge	10	26865	831.5	36	Low	-0.04	0.049	22.71	23.50	1.199	0.059	/
		Right Edge	10	26865	831.5	36	Low	0.04	0.069	22.71	23.50	1.199	0.083	/
		Bottom Edge	10	26865	831.5	36	Low	0.14	0.012	22.71	23.50	1.199	0.014	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.9LTE 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.0	QPSK	Left Cheek	0	132322	1745	1	Low	-0.06	0.115	23.79	24.50	1.178	0.135	25#
		Left Tilt	0	132322	1745	1	Low	0.07	0.061	23.79	24.50	1.178	0.072	/
		Right Cheek	0	132322	1745	1	Low	-0.15	0.094	23.79	24.50	1.178	0.111	/
		Right Tilt	0	132322	1745	1	Low	-0.19	0.045	23.79	24.50	1.178	0.053	/
		Left Cheek	0	132322	1745	50	Low	-0.12	0.095	22.57	23.50	1.239	0.118	/
		Left Tilt	0	132322	1745	50	Low	0.12	0.050	22.57	23.50	1.239	0.062	/
		Right Cheek	0	132322	1745	50	Low	-0.04	0.078	22.57	23.50	1.239	0.097	/
		Right Tilt	0	132322	1745	50	Low	-0.08	0.016	22.57	23.50	1.239	0.020	/
Body-worn														
Ant.0	QPSK	Front Side	15	132322	1745	1	Low	-0.20	0.123	23.79	24.50	1.178	0.145	26#
		Back Side	15	132322	1745	1	Low	0.02	0.114	23.79	24.50	1.178	0.134	/
		Front Side	15	132322	1745	50	Low	0.16	0.107	22.57	23.50	1.239	0.133	/
		Back Side	15	132322	1745	50	Low	-0.17	0.101	22.57	23.50	1.239	0.125	/
Hotspot														
Ant.0	QPSK	Front Side	10	132322	1745	1	Low	-0.11	0.229	23.79	24.50	1.178	0.270	/
		Back Side	10	132322	1745	1	Low	-0.08	0.234	23.79	24.50	1.178	0.276	27#
		Left Edge	10	132322	1745	1	Low	-0.06	0.117	23.79	24.50	1.178	0.138	/
		Right Edge	10	132322	1745	1	Low	-0.06	0.068	23.79	24.50	1.178	0.080	/
		Bottom Edge	10	132322	1745	1	Low	0.03	0.195	23.79	24.50	1.178	0.230	/
		Front Side	10	132322	1745	50	Low	0.13	0.195	22.57	23.50	1.239	0.242	/
		Back Side	10	132322	1745	50	Low	0.17	0.196	22.57	23.50	1.239	0.243	/
		Left Edge	10	132322	1745	50	Low	0.09	0.106	22.57	23.50	1.239	0.131	/
		Right Edge	10	132322	1745	50	Low	0.14	0.055	22.57	23.50	1.239	0.068	/
		Bottom Edge	10	132322	1745	50	Low	-0.11	0.177	22.57	23.50	1.239	0.219	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.10 LTE Band 71 (20MHz Bandwidth)

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	RB Num.	RB Start	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.0	QPSK	Left Cheek	0	133322	683	1	Low	-0.14	0.112	23.74	24.50	1.191	0.133	28#
		Left Tilt	0	133322	683	1	Low	0.03	0.045	23.74	24.50	1.191	0.054	/
		Right Cheek	0	133322	683	1	Low	0.04	0.066	23.74	24.50	1.191	0.079	/
		Right Tilt	0	133322	683	1	Low	0.05	0.011	23.74	24.50	1.191	0.013	/
		Left Cheek	0	133322	683	50	Low	-0.08	0.062	22.58	23.50	1.236	0.077	/
		Left Tilt	0	133322	683	50	Low	-0.11	0.007	22.58	23.50	1.236	0.009	/
		Right Cheek	0	133322	683	50	Low	0.15	0.053	22.58	23.50	1.236	0.066	/
		Right Tilt	0	133322	683	50	Low	0.19	0.003	22.58	23.50	1.236	0.004	/
Body-worn														
Ant.0	QPSK	Front Side	15	133322	683	1	Low	0.19	0.085	23.74	24.50	1.191	0.101	/
		Back Side	15	133322	683	1	Low	-0.01	0.088	23.74	24.50	1.191	0.105	29#
		Front Side	15	133322	683	50	Low	0.05	0.063	22.58	23.50	1.236	0.078	/
		Back Side	15	133322	683	50	Low	-0.03	0.078	22.58	23.50	1.236	0.096	/
Hotspot														
Ant.0	QPSK	Front Side	10	133322	683	1	Low	-0.03	0.070	23.74	24.50	1.191	0.083	/
		Back Side	10	133322	683	1	Low	0.13	0.085	23.74	24.50	1.191	0.101	/
		Left Edge	10	133322	683	1	Low	0.15	0.049	23.74	24.50	1.191	0.058	/
		Right Edge	10	133322	683	1	Low	-0.03	0.087	23.74	24.50	1.191	0.104	30#
		Bottom Edge	10	133322	683	1	Low	-0.04	0.006	23.74	24.50	1.191	0.007	/
		Front Side	10	133322	683	50	Low	0.04	0.055	22.58	23.50	1.236	0.068	/
		Back Side	10	133322	683	50	Low	0.15	0.071	22.58	23.50	1.236	0.088	/
		Left Edge	10	133322	683	50	Low	0.10	0.037	22.58	23.50	1.236	0.046	/
		Right Edge	10	133322	683	50	Low	0.15	0.074	22.58	23.50	1.236	0.091	/
		Bottom Edge	10	133322	683	50	Low	0.15	0.004	22.58	23.50	1.236	0.005	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

10.11 WIFI 2.4GHZ

Antenna	Power Reduction	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head															
Ant.1	Level1&2	802.11 b	Left Cheek	0	1	2412	-0.11	0.648	13.28	15.00	1.486	98.00	1.020	0.982	/
	Level1&2	802.11 b	Left Tilt	0	1	2412	-0.16	0.433	13.28	15.00	1.486	98.00	1.020	0.656	/
	Level1&2	802.11 b	Right Cheek	0	1	2412	-0.16	0.122	13.28	15.00	1.486	98.00	1.020	0.185	/
	Level1&2	802.11 b	Right Tilt	0	1	2412	-0.07	0.113	13.28	15.00	1.486	98.00	1.020	0.171	/
	Level1&2	802.11 b	Left Cheek	0	6	2437	-0.16	0.763	13.25	15.00	1.496	98.00	1.020	1.164	31#
	Level1&2	802.11 b	Left Cheek	0	11	2462	-0.06	0.666	13.02	15.00	1.578	98.00	1.020	1.072	/
Body-worn															
Ant.1	Full Power	802.11 b	Front Side	15	1	2412	0.11	0.135	19.09	20.00	1.233	98.00	1.020	0.170	/
	Full Power	802.11 b	Back Side	15	1	2412	-0.03	0.267	19.09	20.00	1.233	98.00	1.020	0.336	32#
Hotspot															
Ant.1	Level3&4	802.11 b	Front Side	10	1	2412	-0.08	0.155	15.28	17.00	1.486	98.00	1.020	0.235	/
	Level3&4	802.11 b	Back Side	10	1	2412	-0.04	0.239	15.28	17.00	1.486	98.00	1.020	0.362	33#
	Level3&4	802.11 b	Right Edge	10	1	2412	0.19	0.229	15.28	17.00	1.486	98.00	1.020	0.347	/
	Level3&4	802.11 b	Top Edge	10	1	2412	-0.10	0.100	15.28	17.00	1.486	98.00	1.020	0.152	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.															

10.13 Bluetooth

Antenna	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	1 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune- power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	1 g Scaled SAR (W/kg)	Meas. No.
Head														
Ant.1	DH5	Left Cheek	0	39	2441	-0.13	0.081	7.56	8.50	1.242	46.06	2.171	0.218	34#
	DH5	Left Tilt	0	39	2441	0.19	0.046	7.56	8.50	1.242	46.06	2.171	0.124	/
	DH5	Right Cheek	0	39	2441	0.09	0.022	7.56	8.50	1.242	46.06	2.171	0.059	/
	DH5	Right Tilt	0	39	2441	0.16	0.013	7.56	8.50	1.242	46.06	2.171	0.035	/
Body-worn														
Ant.1	DH5	Front Side	15	39	2441	-0.02	0.003	7.56	8.50	1.242	46.06	2.171	0.008	/
	DH5	Back Side	15	39	2441	0.18	0.005	7.56	8.50	1.242	46.06	2.171	0.013	35#
Hotspot														
Ant.1	DH5	Front Side	10	39	2441	-0.11	0.008	7.56	8.50	1.242	46.06	2.171	0.022	/
	DH5	Back Side	10	39	2441	0.19	0.013	7.56	8.50	1.242	46.06	2.171	0.035	36#
	DH5	Right Edge	10	39	2441	-0.17	0.006	7.56	8.50	1.242	46.06	2.171	0.016	/
	DH5	Top Edge	10	39	2441	-0.16	0.009	7.56	8.50	1.242	46.06	2.171	0.024	/
Note: Refer to ANNEX C for the detailed test data for each test configuration.														

11 SAR Measurement Variability

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

SAR repeated measurement procedure:

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

Frequency Band (MHz)	Wireless Band	RF Exposure Conditions	Test Position	Highest Measured SAR (W/kg)	Repeated SAR (Yes/No)	Repeated ^{1st} Measured SAR (W/kg)	Largest to Smallest SAR Radio
1900	GSM	Hotspot	Back Side	0.916	Yes	0.902	1.02
1900	GSM	Hotspot	Back Side	0.803	Yes	0.790	1.02
Note: The ratio of largest to smallest SAR for the original and first repeated measurements is < 1.20 , the second repeated measurement. is not required.							

12 SIMULTANEOUS TRANSMISSION

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

12.1 Simultaneous Transmission Mode Consider

No.	Simultaneous Tx Combination	Head	Body-worn	Hotspot
1	WWAN+WIFI2.4G	Yes	Yes	Yes
2	WWAN+Bluetooth	Yes	Yes	Yes

Note:

- WiFi 2.4G and Bluetooth share the same antenna, and can't transmit simultaneously.
- When stand-alone SAR is not required for a side of antenna, its SAR is considered zero in the SAR summing process to assess Multi-band transmission SAR compliance.
- The maximum SAR summation is calculated based on the same configuration and test position.

12.2 Sum SAR of Simultaneous Transmission

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

Band	Antenna	Position	Stand alone SAR			SUM SAR	
			1	2	3	1+2	1+3
			WWAN	2.4GWIFI	Bluetooth		
GSM 850	Ant.0	Left Cheek	0.319	1.164	0.218	1.483	0.537
		Left Tilt	0.199	0.656	0.124	0.855	0.323
		Right Cheek	0.352	0.185	0.059	0.537	0.411
		Right Tilt	0.207	0.171	0.035	0.378	0.242
GSM 1900	Ant.0	Left Cheek	0.164	1.164	0.218	1.328	0.382
		Left Tilt	0.065	0.656	0.124	0.721	0.189
		Right Cheek	0.089	0.185	0.059	0.274	0.148
		Right Tilt	0.047	0.171	0.035	0.218	0.082
WCDMA B2	Ant.0	Left Cheek	0.097	1.164	0.218	1.261	0.315
		Left Tilt	0.039	0.656	0.124	0.695	0.163
		Right Cheek	0.072	0.185	0.059	0.257	0.131
		Right Tilt	0.014	0.171	0.035	0.185	0.049
WCDMA B4	Ant.0	Left Cheek	0.132	1.164	0.218	1.296	0.350
		Left Tilt	0.083	0.656	0.124	0.739	0.207
		Right Cheek	0.114	0.185	0.059	0.299	0.173
		Right Tilt	0.068	0.171	0.035	0.239	0.103
WCDMA B5	Ant.0	Left Cheek	0.110	1.164	0.218	1.274	0.328
		Left Tilt	0.073	0.656	0.124	0.729	0.197
		Right Cheek	0.116	0.185	0.059	0.301	0.175
		Right Tilt	0.070	0.171	0.035	0.241	0.105
LTE B12	Ant.0	Left Cheek	0.079	1.164	0.218	1.243	0.297
		Left Tilt	0.033	0.656	0.124	0.689	0.157
		Right Cheek	0.064	0.185	0.059	0.249	0.123
		Right Tilt	0.023	0.171	0.035	0.194	0.058
LTE B25	Ant.0	Left Cheek	0.093	1.164	0.218	1.257	0.311
		Left Tilt	0.027	0.656	0.124	0.683	0.151
		Right Cheek	0.064	0.185	0.059	0.249	0.123
		Right Tilt	0.021	0.171	0.035	0.192	0.056
LTE B26	Ant.0	Left Cheek	0.110	1.164	0.218	1.274	0.328
		Left Tilt	0.078	0.656	0.124	0.734	0.202
		Right Cheek	0.108	0.185	0.059	0.293	0.167
		Right Tilt	0.074	0.171	0.035	0.245	0.109
LTE B66	Ant.0	Left Cheek	0.135	1.164	0.218	1.299	0.353
		Left Tilt	0.072	0.656	0.124	0.728	0.196
		Right Cheek	0.111	0.185	0.059	0.296	0.170

		Right Tilt	0.053	0.171	0.035	0.224	0.088
LTE B71	Ant.0	Left Cheek	0.133	1.164	0.218	1.297	0.351
		Left Tilt	0.054	0.656	0.124	0.710	0.178
		Right Cheek	0.079	0.185	0.059	0.264	0.138
		Right Tilt	0.013	0.171	0.035	0.184	0.048

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 1.483 W/Kg <1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.2 Body Simultaneous Transmission SAR Evaluation for WWAN Antenna with WIFI and Bluetooth

Band	Antenna	Position	Stand alone SAR			SUM SAR	
			1	2	3	1+2	1+3
			WWAN	2.4GWIFI	Bluetooth		
GSM 850	Ant.0	Front Side 15mm	0.203	0.170	0.008	0.373	0.211
		Back Side 15mm	0.346	0.336	0.013	0.682	0.359
GSM 1900	Ant.0	Front Side 15mm	0.321	0.170	0.008	0.491	0.329
		Back Side 15mm	0.591	0.336	0.013	0.927	0.604
WCDMA B2	Ant.0	Front Side 15mm	0.285	0.170	0.008	0.455	0.293
		Back Side 15mm	0.440	0.336	0.013	0.776	0.453
WCDMA B4	Ant.0	Front Side 15mm	0.202	0.170	0.008	0.372	0.210
		Back Side 15mm	0.222	0.336	0.013	0.558	0.235
WCDMA B5	Ant.0	Front Side 15mm	0.086	0.170	0.008	0.256	0.094
		Back Side 15mm	0.145	0.336	0.013	0.481	0.158
LTE B12	Ant.0	Front Side 15mm	0.091	0.170	0.008	0.261	0.099
		Back Side 15mm	0.115	0.336	0.013	0.451	0.128
LTE B25	Ant.0	Front Side 15mm	0.190	0.170	0.008	0.360	0.198
		Back Side 15mm	0.271	0.336	0.013	0.607	0.284
LTE B26	Ant.0	Front Side 15mm	0.097	0.170	0.008	0.267	0.105
		Back Side 15mm	0.144	0.336	0.013	0.480	0.157
LTE B66	Ant.0	Front Side 15mm	0.145	0.170	0.008	0.315	0.153
		Back Side 15mm	0.134	0.336	0.013	0.470	0.147
LTE B71	Ant.0	Front Side 15mm	0.101	0.170	0.008	0.271	0.109
		Back Side 15mm	0.105	0.336	0.013	0.441	0.118

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 Combined 1g SAR is 0.927W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

12.2.3 Hotspot Simultaneous Transmission SAR Evaluation for WWAN Antenna with WIFI and Bluetooth

Band	Antenna	Position	Stand alone SAR			SUM SAR	
			1	2	3	1+2	1+3
			WWAN	2.4GWIFI	Bluetooth		
GSM 850	Ant.0	Front Side 10mm	0.241	0.235	0.022	0.476	0.263
		Back Side 10mm	0.350	0.362	0.035	0.712	0.385
		Left Edge 10mm	0.136	0.000	0.000	0.136	0.136
		Right Edge 10mm	0.123	0.347	0.016	0.470	0.139
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.058	0.000	0.000	0.058	0.058
GSM 1900	Ant.0	Front Side 10mm	0.681	0.235	0.022	0.916	0.703
		Back Side 10mm	1.185	0.362	0.035	1.547	1.220
		Left Edge 10mm	0.093	0.000	0.000	0.093	0.093
		Right Edge 10mm	0.160	0.347	0.016	0.507	0.176
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.991	0.000	0.000	0.991	0.991
WCDMA B2	Ant.0	Front Side 10mm	0.520	0.235	0.022	0.755	0.542
		Back Side 10mm	0.748	0.362	0.035	1.110	0.783
		Left Edge 10mm	0.136	0.000	0.000	0.136	0.136
		Right Edge 10mm	0.056	0.347	0.016	0.403	0.072
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.900	0.000	0.000	0.900	0.900
WCDMA B4	Ant.0	Front Side 10mm	0.310	0.235	0.022	0.545	0.332
		Back Side 10mm	0.324	0.362	0.035	0.686	0.359
		Left Edge 10mm	0.175	0.000	0.000	0.175	0.175
		Right Edge 10mm	0.072	0.347	0.016	0.419	0.088
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.231	0.000	0.000	0.231	0.231
WCDMA B5	Ant.0	Front Side 10mm	0.090	0.235	0.022	0.325	0.112
		Back Side 10mm	0.169	0.362	0.035	0.531	0.204
		Left Edge 10mm	0.056	0.000	0.000	0.056	0.056
		Right Edge 10mm	0.083	0.347	0.016	0.430	0.099
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.013	0.000	0.000	0.013	0.013
LTE B12	Ant.0	Front Side 10mm	0.094	0.235	0.022	0.329	0.116
		Back Side 10mm	0.128	0.362	0.035	0.490	0.163
		Left Edge 10mm	0.075	0.000	0.000	0.075	0.075
		Right Edge 10mm	0.087	0.347	0.016	0.434	0.103
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.010	0.000	0.000	0.010	0.010

LTE B25	Ant.0	Front Side 10mm	0.280	0.235	0.022	0.515	0.302
		Back Side 10mm	0.398	0.362	0.035	0.760	0.433
		Left Edge 10mm	0.076	0.000	0.000	0.076	0.076
		Right Edge 10mm	0.047	0.347	0.016	0.394	0.063
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.428	0.000	0.000	0.428	0.428
LTE B26	Ant.0	Front Side 10mm	0.096	0.235	0.022	0.331	0.118
		Back Side 10mm	0.151	0.362	0.035	0.513	0.186
		Left Edge 10mm	0.070	0.000	0.000	0.070	0.070
		Right Edge 10mm	0.105	0.347	0.016	0.452	0.121
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.021	0.000	0.000	0.021	0.021
LTE B66	Ant.0	Front Side 10mm	0.270	0.235	0.022	0.505	0.292
		Back Side 10mm	0.276	0.362	0.035	0.638	0.311
		Left Edge 10mm	0.138	0.000	0.000	0.138	0.138
		Right Edge 10mm	0.080	0.347	0.016	0.427	0.096
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.230	0.000	0.000	0.230	0.230
LTE B71	Ant.0	Front Side 10mm	0.083	0.235	0.022	0.318	0.105
		Back Side 10mm	0.101	0.362	0.035	0.463	0.136
		Left Edge 10mm	0.058	0.000	0.000	0.058	0.058
		Right Edge 10mm	0.104	0.347	0.016	0.451	0.120
		Top Edge 10mm	0.000	0.152	0.024	0.152	0.024
		Bottom Edge 10mm	0.007	0.000	0.000	0.007	0.007

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 Combined 1g SAR is 1.547 W/Kg < 1.6 W/kg, so Simultaneous Transmission SAR test is not required.

13 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
Test Software	Speag	DASY8	16.2.2.1588	N/A	N/A
750MHz Validation Dipole	Speag	D750V3	SN: 1208	2024/08/19	2027/08/18
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	2024/08/22	2027/08/21
2450MHz Validation Dipole	Speag	D2450V2	SN: 952	2024/05/07	2027/05/06
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	2024/08/08	2025/08/07
Power Sensor	R&S	NRV-Z4	100381	2024/08/08	2025/08/07
Power Sensor	R&S	NRV-Z2	100211	2024/08/08	2025/08/07
Wireless Communication Test Set	Anritsu	MT8820C	6201144551	2024/05/14	2025/05/13
Network Analyzer	Agilent	E5071C	MY46103472	2024/09/11	2025/09/10
Thermometer	Elitech	RC-4HC	EF7216002985	2024/10/31	2025/10/30
Thermometer	Elitech	RC-4HC	EF720B004811	2024/10/31	2025/10/30
Power Amplifier	Mini-Circuits	ZVA-183W-S+	932502132	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 (%)
2024.12.6	Head	750	21.3	0.91	41.75	0.89	41.94	2.25	-0.45
2024.12.7	Head	835	21.5	0.90	41.90	0.90	41.50	0.00	0.96
2024.12.9	Head	1750	21.4	1.38	40.03	1.37	40.08	0.73	-0.12
2024.12.10	Head	1950	21.2	1.41	39.05	1.40	40.00	0.71	-2.38
2024.12.11	Head	1950	21.3	1.42	39.25	1.40	40.00	1.43	-1.88
2024.12.12	Head	2450	21.3	1.80	39.53	1.80	39.20	0.00	0.84

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 (%)
2024.12.6	Head	750	100	0.83	8.34	8.46	-1.42
2024.12.7	Head	835	100	0.98	9.83	9.74	0.92
2024.12.9	Head	1750	100	3.73	37.30	37.00	0.81
2024.12.10	Head	1950	100	4.18	41.80	41.70	0.24
2024.12.11	Head	1950	100	4.20	42.00	41.70	0.72
2024.12.12	Head	2450	100	5.34	53.40	52.60	1.52
Note: The tolerance limit of System validation $\pm 10\%$.							

System Performance Check Data (750MHz)

Exposure Conditions

Phantom	Position,	Band	Group,	Frequency	Conversion	TSL	TSL	Ambient	Liquid
Section,	Test		UID	[MHz],	Factor	Conductivit	Permittivity	Temperatur	Temperatur
TSL	Distance			Channel		y [S/m]		e	e
	[mm]			Number				[°C]	[°C]
Flat,	FRONT,	CD750	CW,	750.0,	10.29	0.91	41.8	22.4	21.3
HSL	5.00		0--	100					

Hardware Setup

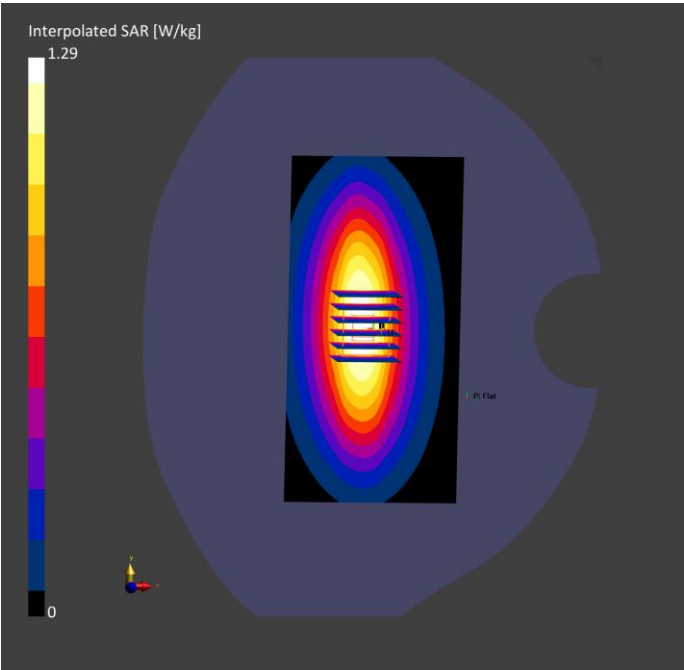
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 160.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 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	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.840	0.834
psSAR10g [W/kg]	0.562	0.549
Power Drift [dB]	-0.06	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.0
Dist 3dB Peak [mm]		20.4



System Performance Check Data (835MHz)

Exposure Conditions

Phantom	Position,	Band	Group,	Frequency	Conversion	TSL	TSL	Ambient	Liquid
Section,	Test		UID	[MHz],	Factor	Conductivit	Permittivity	Temperatur	Temperatur
TSL	Distance			Channel		y [S/m]		e	e
	[mm]			Number				[°C]	[°C]
Flat,	FRONT,	CD835	CW,	835.0,	9.99	0.90	41.9	22.3	21.5
HSL	5.00		0--	50					

Hardware Setup

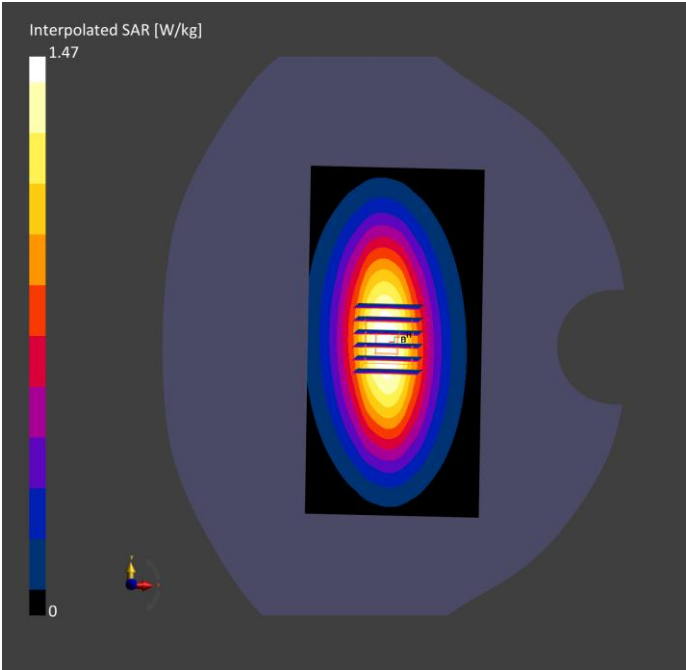
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.992	0.983
psSAR10g [W/kg]	0.631	0.603
Power Drift [dB]	-0.00	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.8
Dist 3dB Peak [mm]		13.2



System Performance Check Data (1750MHz)

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	FRONT, 5.00	D1750	CW, 0--	1750.0, 50	8.67	1.38	40.0	22.8	21.4

Hardware Setup

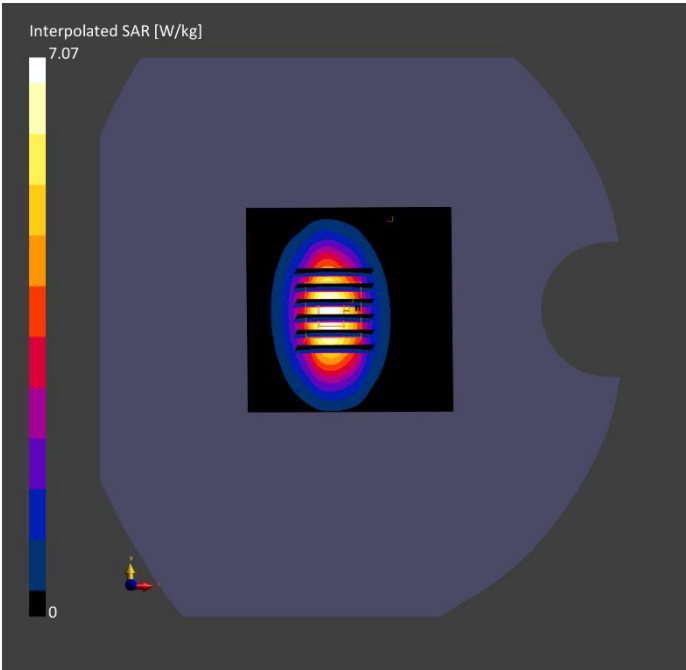
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 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	2024-12-09	2024-12-09
psSAR1g [W/kg]	3.77	3.73
psSAR10g [W/kg]	2.05	1.98
Power Drift [dB]	-0.06	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.9
Dist 3dB Peak [mm]		10.7



System Performance Check Data (1950MHz)

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	FRONT, 5.00	D1950	CW, 0--	1950.0, 50	8.33	1.41	39.1	22.5	21.2

Hardware Setup

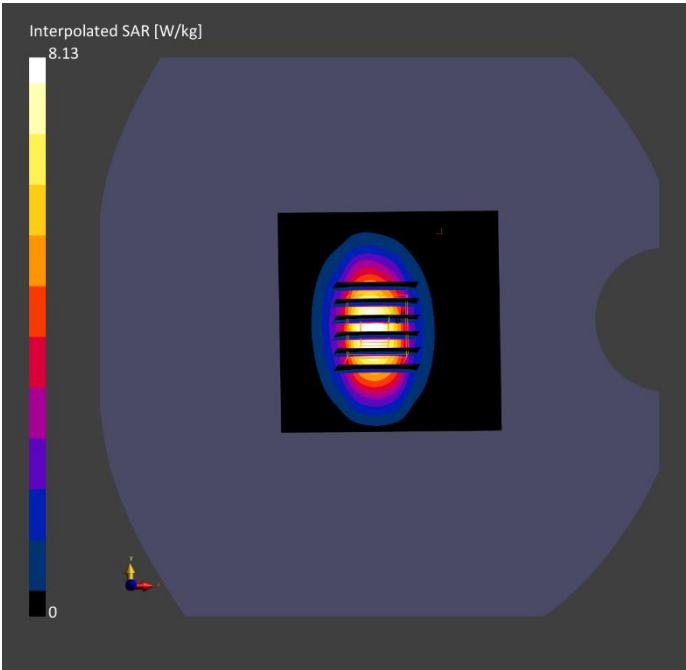
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-10	2024-12-10
psSAR1g [W/kg]	4.21	4.18
psSAR10g [W/kg]	2.24	2.15
Power Drift [dB]	-0.16	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.6
Dist 3dB Peak [mm]		9.6



System Performance Check Data (1950MHz)

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	FRONT, 5.00	D1950	CW, 0--	1950.0, 50	8.33	1.42	39.2	22.6	21.3

Hardware Setup

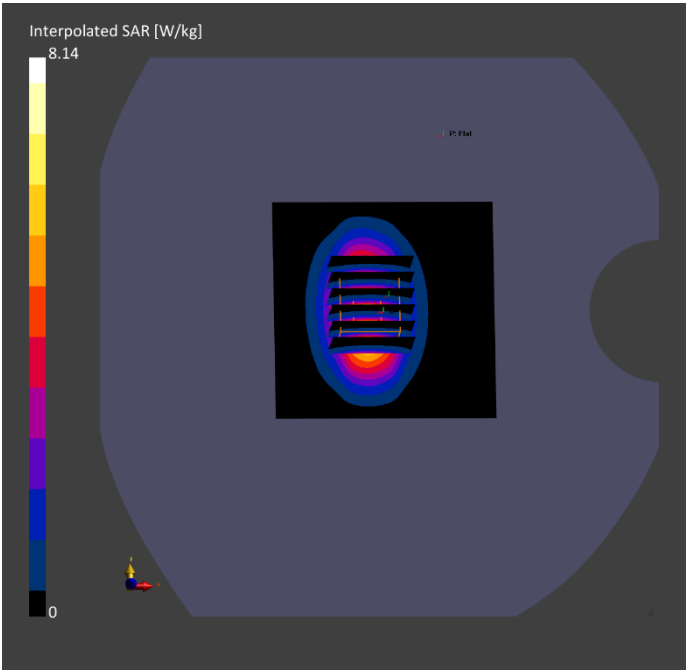
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 80.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 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	2024-12-11	2024-12-11
psSAR1g [W/kg]	4.44	4.20
psSAR10g [W/kg]	2.36	2.16
Power Drift [dB]	-0.34	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor		
[dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.1
Dist 3dB Peak [mm]		9.6



System Performance Check Data (2450MHz)

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 5.00	D2450	CW, 0--	2450.0, 50	7.75	1.80	39.5	22.7	21.3

Hardware Setup

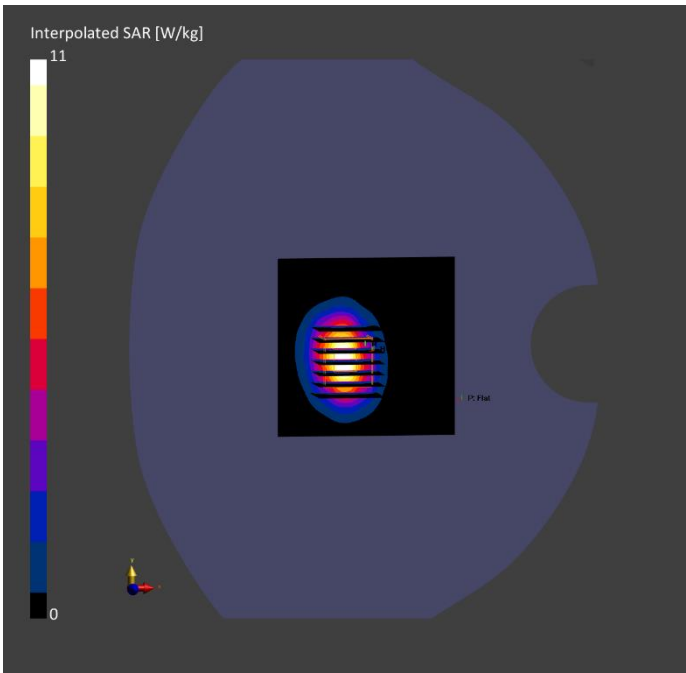
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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]	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	5.33	5.34
psSAR10g [W/kg]	2.49	2.49
Power Drift [dB]	-0.02	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		80.8
Dist 3dB Peak [mm]		8.9



ANNEX C TEST DATA

Meas.1 Head Right Cheek GSM 850 Ch251

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]
Right Head, HSL	CHEEK, 0.00	GSM 850	GSM, 10021-DAC	848.8, 251	9.99	0.91	41.5	22.3	21.5

Hardware Setup

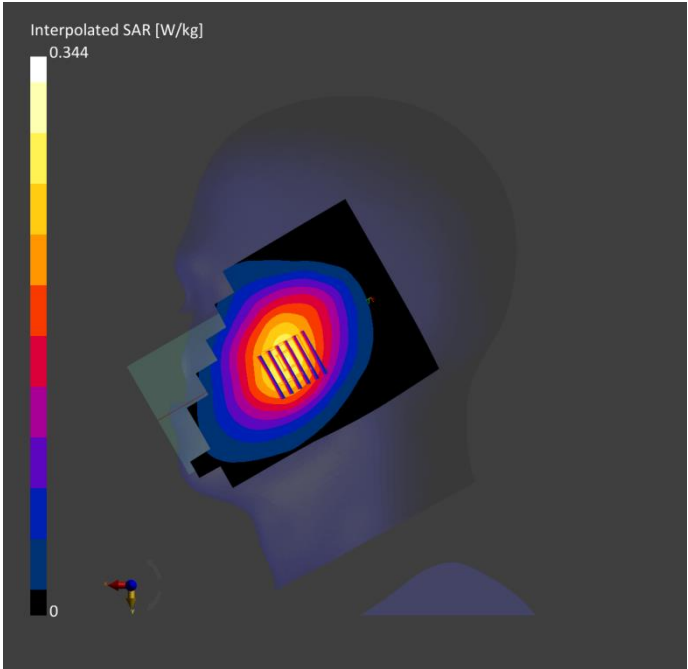
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.251	0.269
psSAR10g [W/kg]	0.173	0.204
Power Drift [dB]	-0.09	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		92.8
Dist 3dB Peak [mm]		> 15.0



Meas.2 Body Back Side 15mm GSM850 CH251

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	BACK, 15.00	GSM 850	GSM, 10021-DAC	848.8, 251	9.99	0.91	41.5	22.3	21.5

Hardware Setup

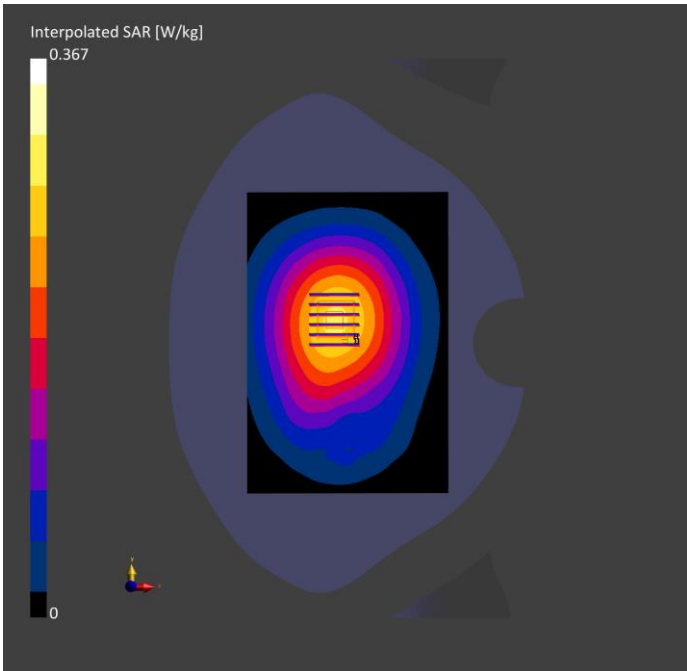
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.250	0.264
psSAR10g [W/kg]	0.175	0.200
Power Drift [dB]	0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.9
Dist 3dB Peak [mm]		> 15.0



Meas.3 Hotspot Back Side 10mm GSM850 CH251

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	BACK, 10.00	GSM 850	GSM, 10021-DAC	848.8, 251	9.99	0.91	41.5	22.3	21.5

Hardware Setup

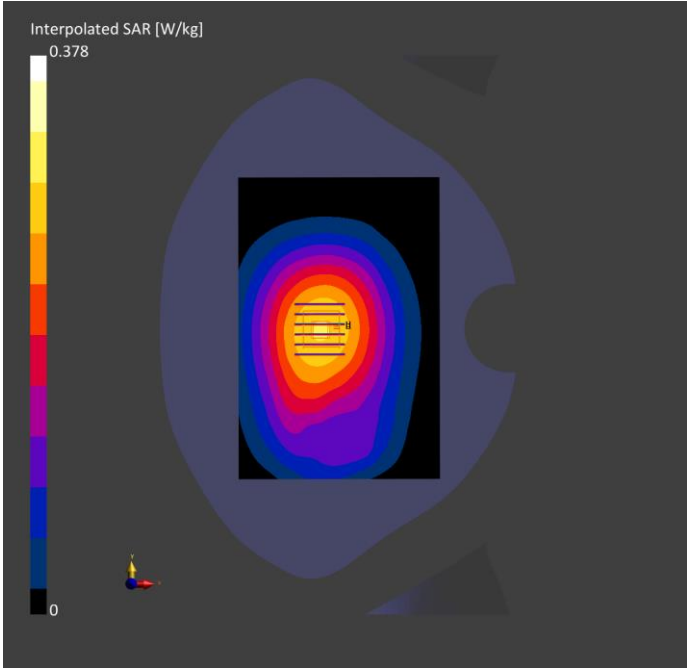
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.253	0.267
psSAR10g [W/kg]	0.178	0.203
Power Drift [dB]	0.06	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.9
Dist 3dB Peak [mm]		> 15.0



Meas.4 Head Left Cheek GSM 1900 Ch661

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]
Left Head, HSL	CHEEK, 0.00	PCS 1900	GSM, 10021-DAC	1880.0, 661	8.33	1.38	40.0	22.5	21.2

Hardware Setup

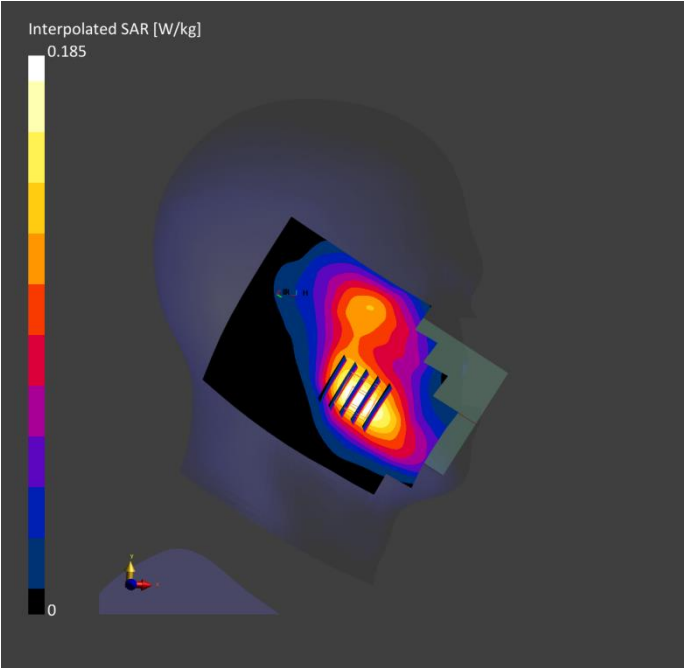
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.128	0.127
psSAR10g [W/kg]	0.076	0.082
Power Drift [dB]	-0.11	-0.20
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		66.7
Dist 3dB Peak [mm]		15.6



Meas.5 Body Back Side 15mm GSM1900 CH661

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	BACK, 15.00	PCS 1900	GSM, 10021-DAC	1880.0, 661	8.33	1.38	40.0	22.5	21.2

Hardware Setup

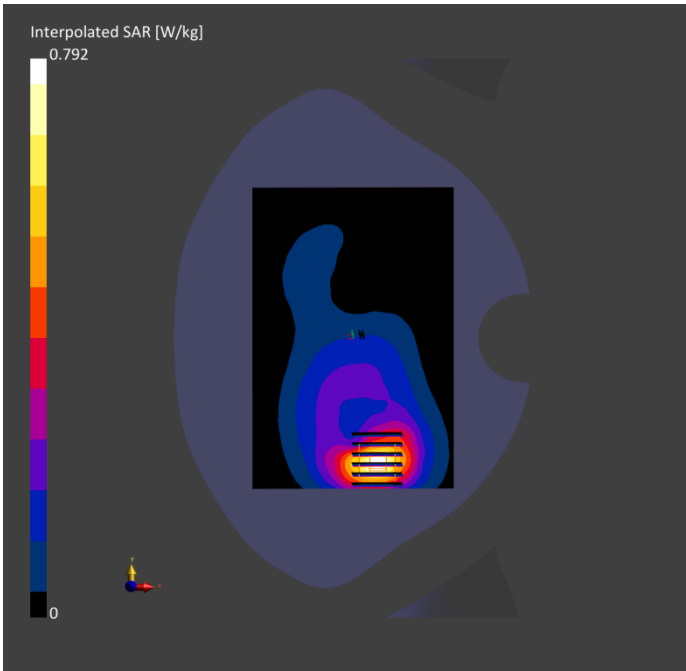
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.448	0.457
psSAR10g [W/kg]	0.246	0.252
Power Drift [dB]	0.11	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.5
Dist 3dB Peak [mm]		11.8



Meas.6 Hotspot Back Side 10mm GSM1900 CH661.

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	BACK, 10.00	PCS 1900	GSM, 10021-DAC	1880.0, 661	8.33	1.38	40.0	22.5	21.2

Hardware Setup

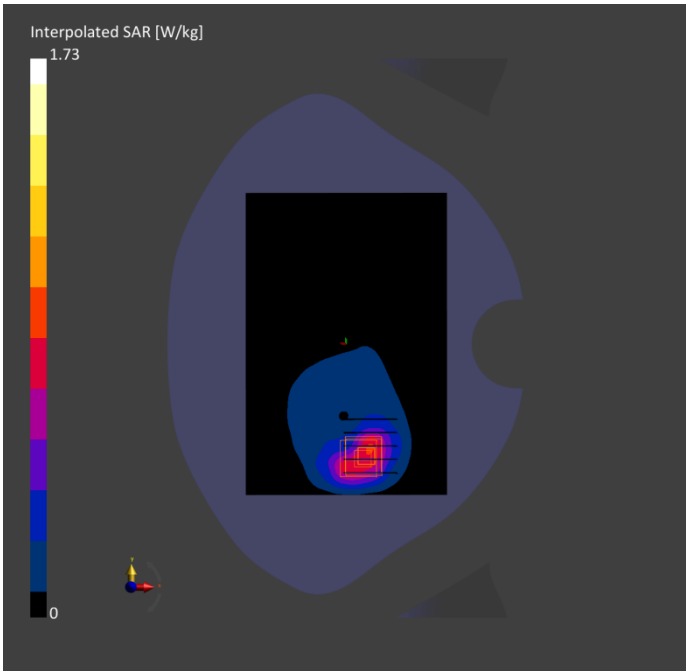
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.725	0.916
psSAR10g [W/kg]	0.407	0.445
Power Drift [dB]	0.16	0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.8
Dist 3dB Peak [mm]		8.6



Meas.7 Head Left Cheek WCDMA B2 Ch9400

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]
Left Head, HSL	CHEEK, 0.00	Band 2, UTRA/FD D	WCDMA, 10274-CAB	1880.0, 9400	8.33	1.38	40.0	22.5	21.2

Hardware Setup

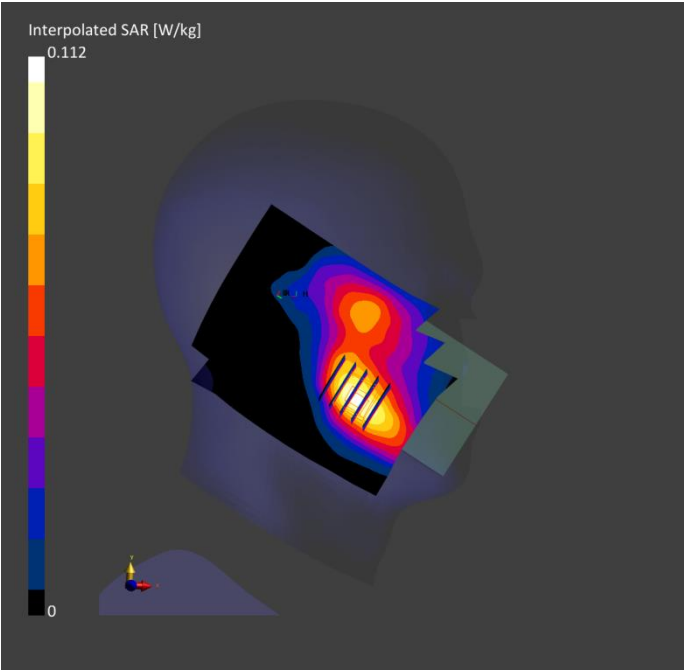
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	All points	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.078	0.077
psSAR10g [W/kg]	0.047	0.051
Power Drift [dB]	0.13	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		68.9
Dist 3dB Peak [mm]		18.2



Meas.8 Body Back Side 15mm WCDMA B2 CH9400

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	BACK, 15.00	Band 2, UTRA/F DD	WCDMA, 10274-CAB	1880.0, 9400	8.33	1.38	40.0	22.5	21.2

Hardware Setup

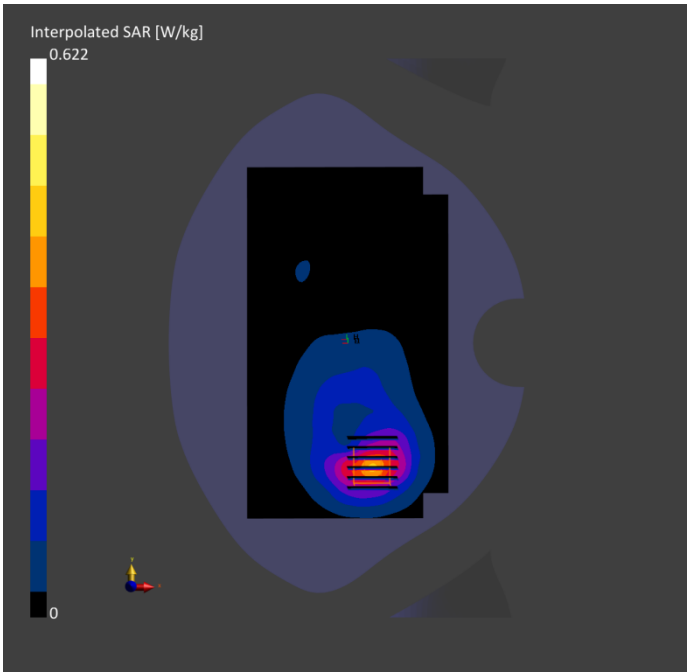
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.337	0.349
psSAR10g [W/kg]	0.182	0.192
Power Drift [dB]	-0.13	-0.19
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.6
Dist 3dB Peak [mm]		11.8



Meas.9 Hotspot Bottom Side 10mm WCDMA B2 CH9400.

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE BOTTOM, 10.00	Band 2, UTRA/FD D	WCDMA, 10274-CAB	1880.0, 9400	8.33	1.38	40.0	22.5	21.2

Hardware Setup

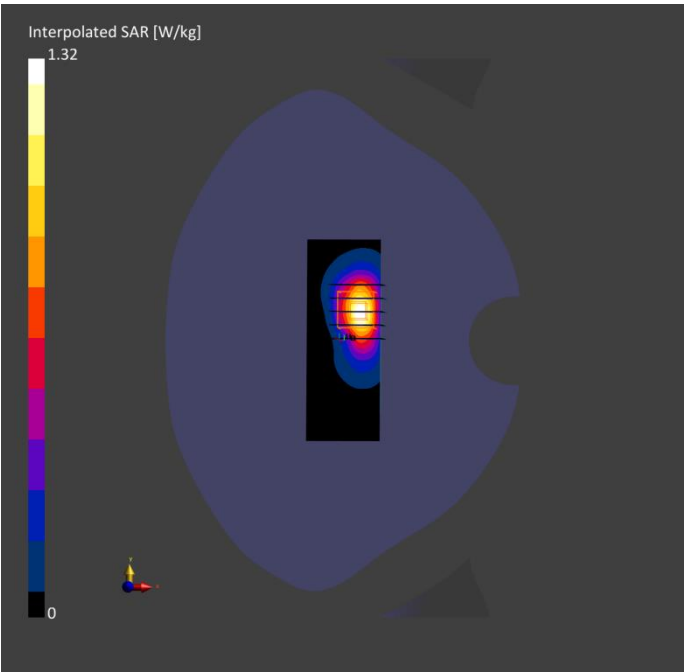
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-10	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	44.0 x 120.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-10	2024-12-10
psSAR1g [W/kg]	0.688	0.713
psSAR10g [W/kg]	0.345	0.354
Power Drift [dB]	0.10	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		53.9
Dist 3dB Peak [mm]		8.6



Meas.10 Head Left Cheek WCDMA B4 Ch1312

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]
Left Head, HSL	CHEEK, 0.00	Band 4, UTRA/FDD	WCDMA, 10274-CAB	1712.4, 1312	8.67	1.34	40.6	22.8	21.4

Hardware Setup

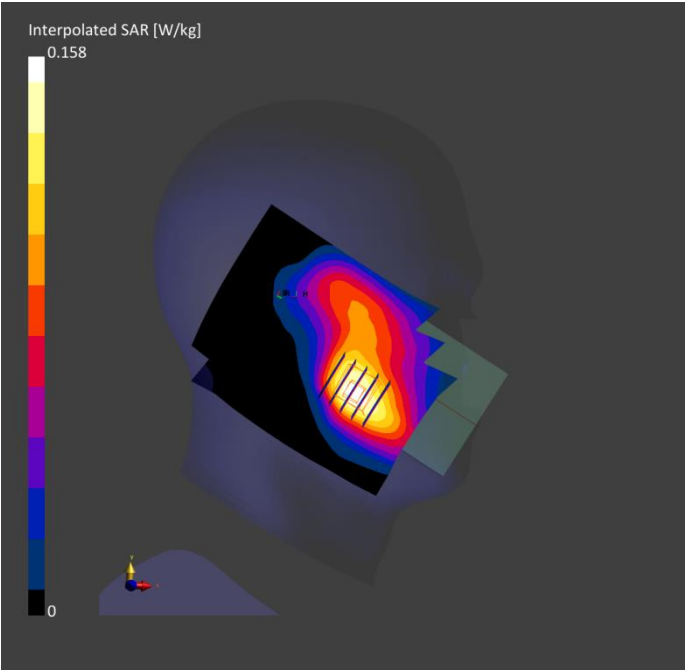
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	All points	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.111	0.113
psSAR10g [W/kg]	0.068	0.076
Power Drift [dB]	0.09	0.18
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		70.2
Dist 3dB Peak [mm]		19.5



Meas.11 Body Back Side 15mm WCDMA B4 CH1312

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	BACK, 15.00	Band 4, UTRA/FDD	WCDMA, 10274-CAB	1712.4, 1312	8.67	1.34	40.6	22.8	21.4

Hardware Setup

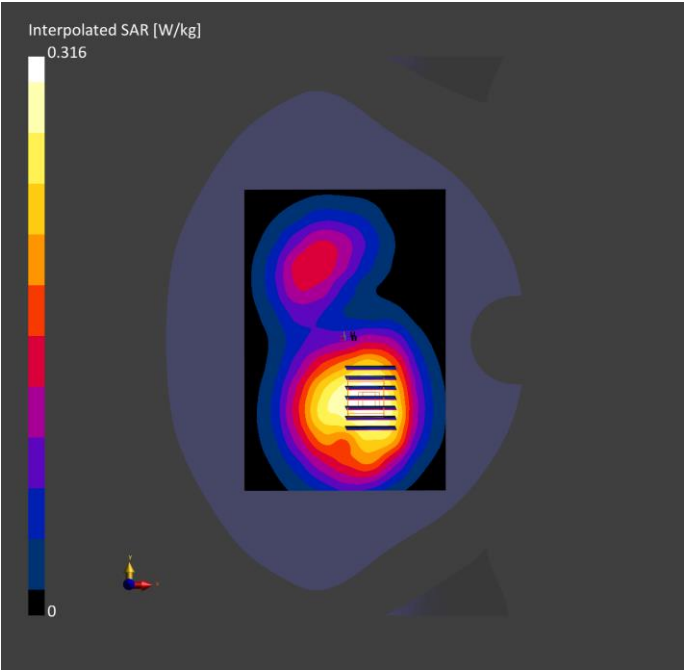
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.185	0.190
psSAR10g [W/kg]	0.118	0.123
Power Drift [dB]	0.05	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.2
Dist 3dB Peak [mm]		> 15.0



Meas.12 Hotspot Back Side 10mm WCDMA B4 CH1312

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	BACK, 10.00	Band 4, UTRA/F DD	WCDMA, 10274-CAB	1712.4, 1312	8.67	1.34	40.6	22.8	21.4

Hardware Setup

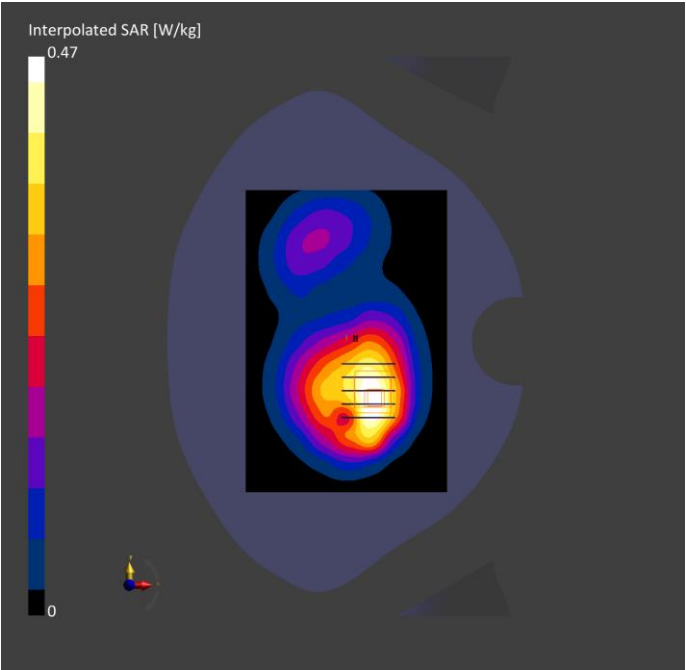
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.271	0.278
psSAR10g [W/kg]	0.166	0.169
Power Drift [dB]	0.13	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		57.7
Dist 3dB Peak [mm]		19.3



Meas.13 Head Right Cheek WCDMA B5 Ch4182

Exposure Conditions

Phantom	Position, Test	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Right Head, HSL	CHEEK, 0.00	Band 5, UTRA/FDD	WCDMA, 10274-CAB	836.4, 4182	9.99	0.90	41.9	22.3	21.5

Hardware Setup

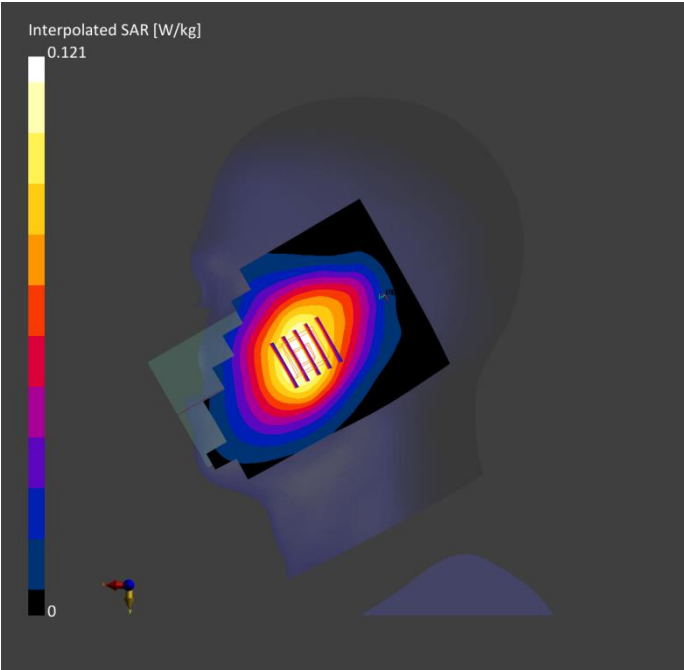
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.095	0.099
psSAR10g [W/kg]	0.065	0.077
Power Drift [dB]	-0.14	-0.11
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.6
Dist 3dB Peak [mm]		> 16.0



Meas.14 Body Back Side 15mm WCDMA B5 CH4182

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	BACK, 15.00	Band 5, UTRA/FD D	WCDMA, 10274-CAB	836.4, 4182	9.99	0.90	41.9	22.3	21.5

Hardware Setup

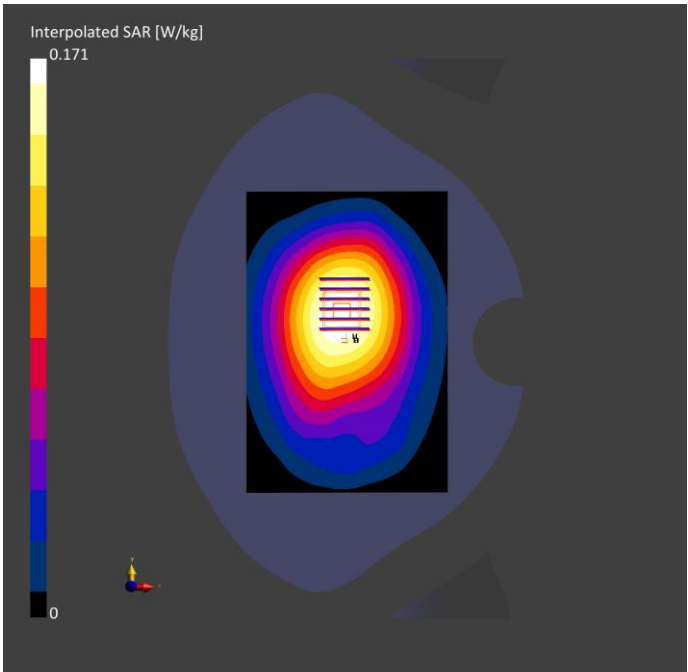
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.117	0.124
psSAR10g [W/kg]	0.082	0.095
Power Drift [dB]	0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		89.2
Dist 3dB Peak [mm]		> 15.0



Meas.15 Hotspot Back Side 10mm WCDMA B5 CH4182

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	BACK, 10.00	Band 5, UTRA/FD D	WCDMA, 10274-CAB	836.4, 4182	9.99	0.90	41.9	22.3	21.5

Hardware Setup

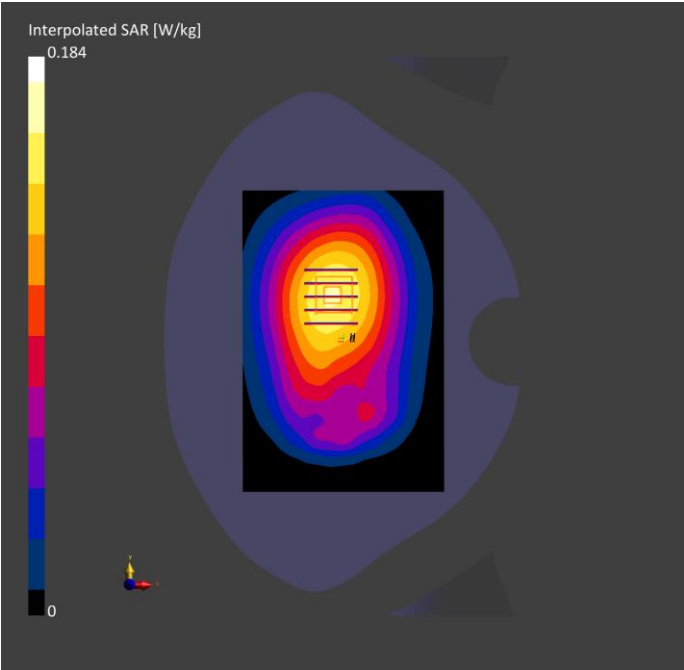
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.137	0.144
psSAR10g [W/kg]	0.097	0.110
Power Drift [dB]	0.05	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		77.9
Dist 3dB Peak [mm]		> 16.0



Meas.16 Head Left Cheek LTE B12 Ch23095

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]
Left Head, HSL	CHEEK, 0.00	Band 12, E- UTRA/F DD	LTE-FDD, 10175-CAG	707.5, 23095	10.29	0.89	42.3	22.4	21.3

Hardware Setup

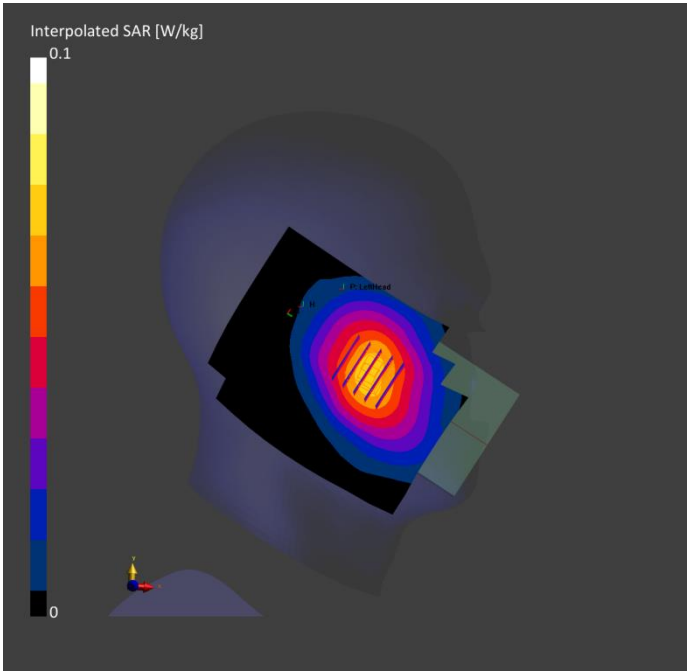
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.063	0.066
psSAR10g [W/kg]	0.044	0.053
Power Drift [dB]	0.13	0.09
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.5
Dist 3dB Peak [mm]		> 16.0



Meas.17 Body Back Side 15mm LTE B12 CH23095

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	BACK, 15.00	Band 12, E- UTRA/F DD	LTE-FDD, 10175-CAG	707.5, 23095	10.29	0.89	42.3	22.4	21.3

Hardware Setup

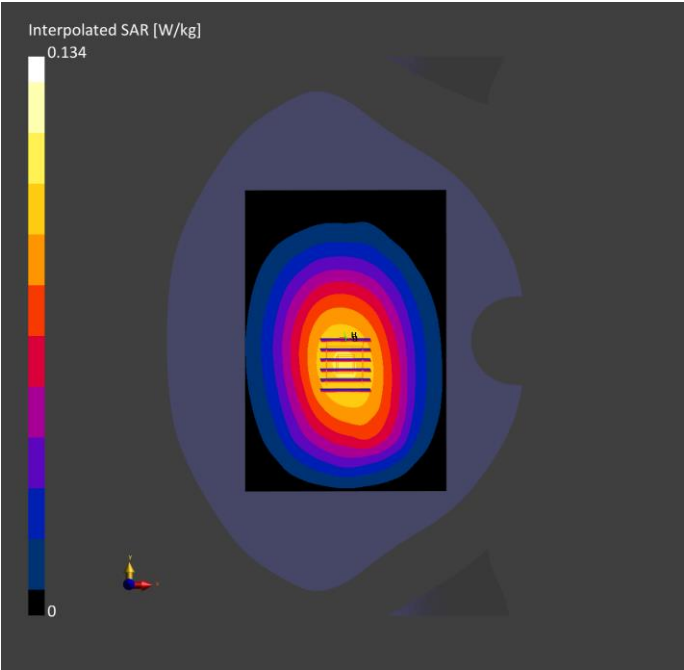
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.091	0.096
psSAR10g [W/kg]	0.065	0.074
Power Drift [dB]	0.04	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.7
Dist 3dB Peak [mm]		> 15.0



Meas.18 Hotspot Back Side 10mm LTE B12 CH23095.

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	BACK, 10.00	Band 12, E- UTRA/F DD	LTE-FDD, 10175-CAG	707.5, 23095	10.29	0.89	42.3	22.4	21.3

Hardware Setup

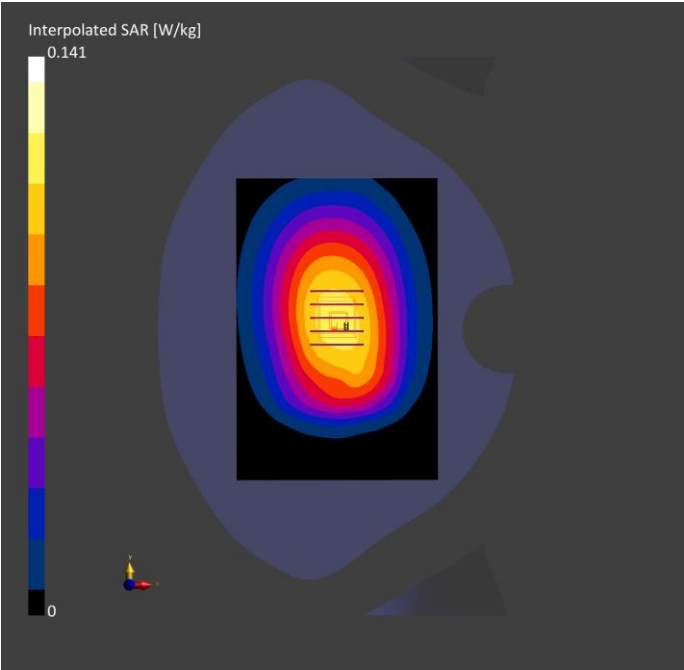
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.101	0.107
psSAR10g [W/kg]	0.072	0.082
Power Drift [dB]	0.07	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		77.0
Dist 3dB Peak [mm]		> 16.0



Meas.19 Head Left Cheek LTE B25 Ch26365

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]
Left Head, HSL	CHEEK, 0.00	Band 25, E- UTRA/F DD	LTE-FDD, 10169-CAE	1882.5, 26365	8.33	1.40	39.5	22.6	21.3

Hardware Setup

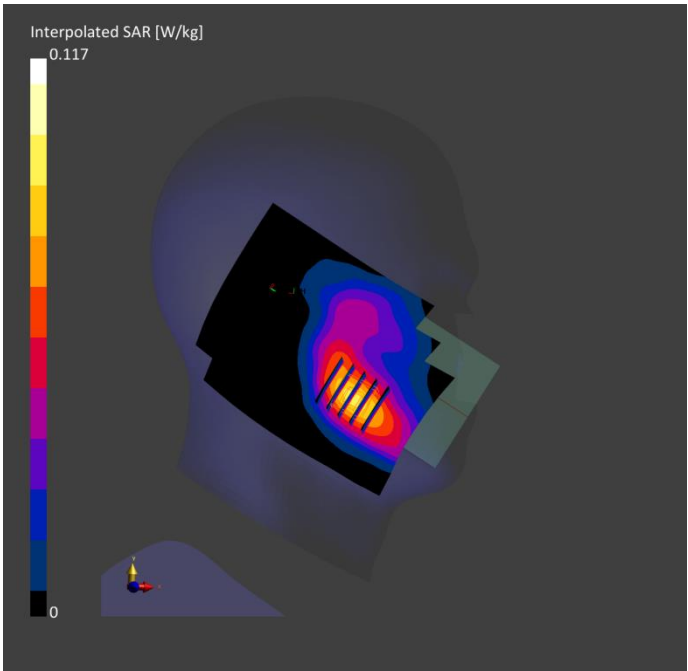
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-11	2024-12-11
psSAR1g [W/kg]	0.076	0.077
psSAR10g [W/kg]	0.045	0.049
Power Drift [dB]	-0.11	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		64.3
Dist 3dB Peak [mm]		15.7



Meas.20 Body Back Side 15mm LTE B25 CH26365

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	BACK, 15.00	Band 25, E- UTRA/F DD	LTE-FDD, 10169-CAE	1882.5, 26365	8.33	1.40	39.5	22.6	21.3

Hardware Setup

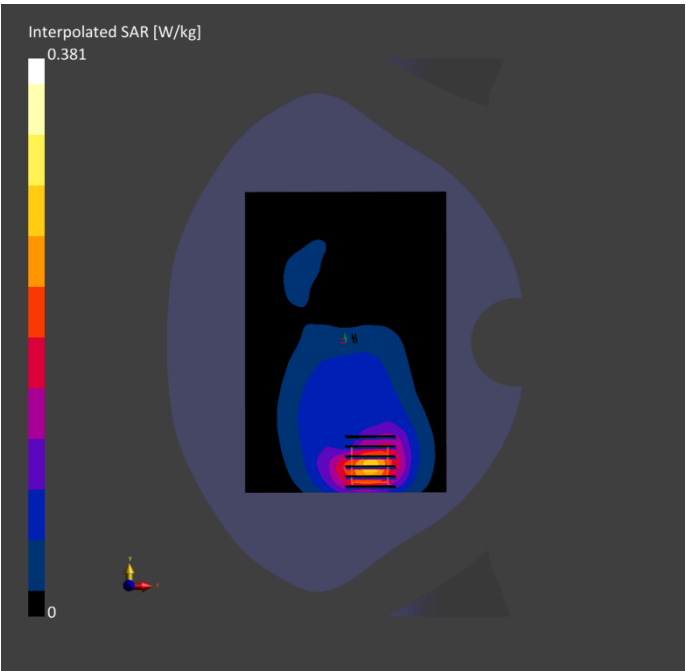
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 180.0	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	2024-12-11	2024-12-11
psSAR1g [W/kg]	0.222	0.225
psSAR10g [W/kg]	0.122	0.125
Power Drift [dB]	0.12	-0.10
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.7
Dist 3dB Peak [mm]		12.4



Meas.21 Hotspot Bottom Side 10mm LTE B25 Ch26365

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE BOTTOM, 10.00	Band 25, E- UTRA/F DD	LTE-FDD, 10169-CAE	1882.5, 26365	8.33	1.40	39.5	22.6	21.3

Hardware Setup

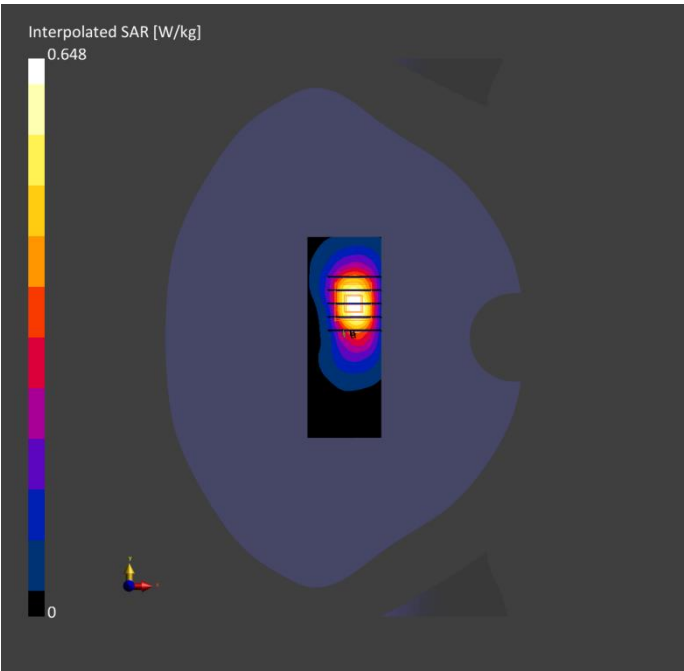
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-11	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	44.0 x 120.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-11	2024-12-11
psSAR1g [W/kg]	0.316	0.355
psSAR10g [W/kg]	0.172	0.181
Power Drift [dB]	0.11	0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		54.7
Dist 3dB Peak [mm]		9.6



Meas.22 Head Left Cheek LTE B26 Ch26865

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]
Left Head, HSL	CHEEK, 0.00	Band 26 E- UTRA/F DD	LTE-FDD, 10181-CAE	831.5, 26865	9.99	0.89	42.0	22.3	21.5

Hardware Setup

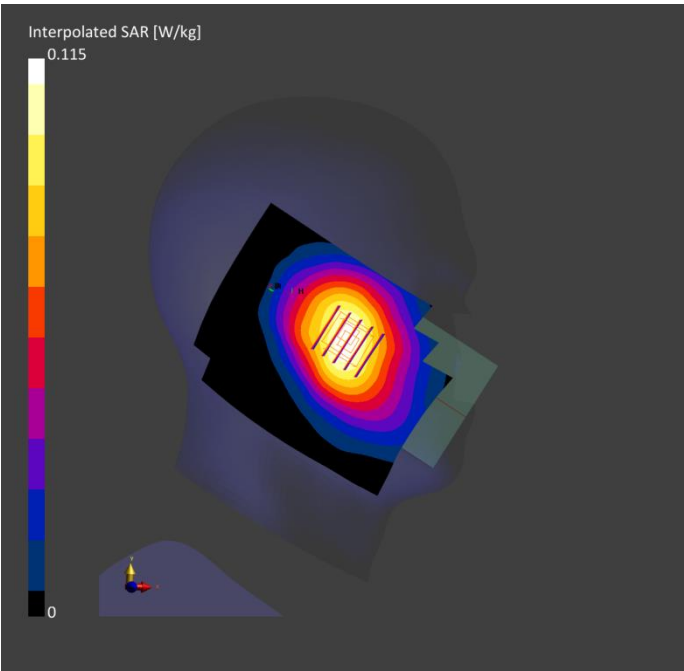
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.090	0.094
psSAR10g [W/kg]	0.062	0.074
Power Drift [dB]	-0.18	0.17
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.0
Dist 3dB Peak [mm]		> 16.0



Meas.23 Body Back Side 15mm LTE B26 Ch26865

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	BACK, 15.00	Band 26 E- UTRA/F DD	LTE-FDD, 10181-CAE	831.5, 26865	9.99	0.89	42.0	22.3	21.5

Hardware Setup

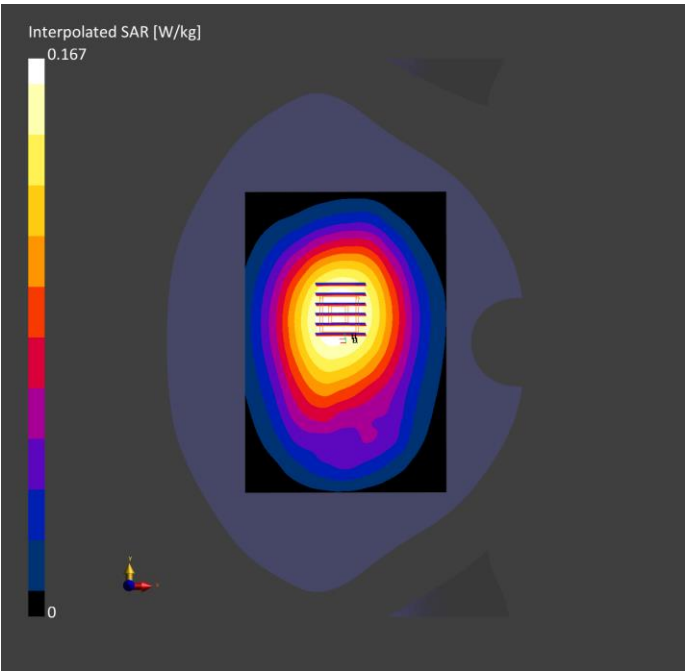
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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

Measurement Results

	Area Scan	Zoom Scan
Date	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.116	0.123
psSAR10g [W/kg]	0.082	0.093
Power Drift [dB]	0.02	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		90.1
Dist 3dB Peak [mm]		> 15.0



Meas.24 Hotspot Back Side 10mm LTE B26 Ch26865

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	BACK, 10.00	Band 26 E- UTRA/F DD	LTE-FDD, 10181-CAE	831.5, 26865	9.99	0.89	42.0	22.3	21.5

Hardware Setup

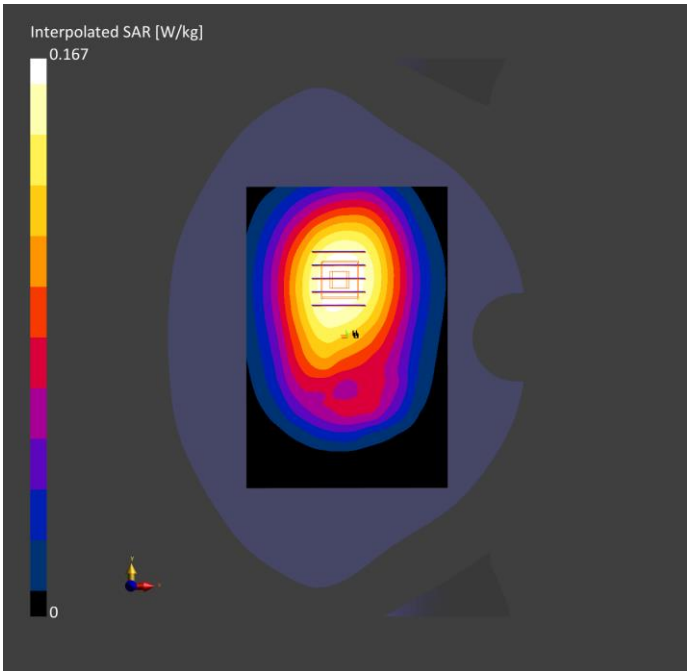
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-07	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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	2024-12-07	2024-12-07
psSAR1g [W/kg]	0.122	0.129
psSAR10g [W/kg]	0.086	0.099
Power Drift [dB]	0.08	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		77.5
Dist 3dB Peak [mm]		> 16.0



Meas.25 Head Left Cheek LTE B66 Ch132322

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]
Left Head, HSL	CHEEK, 0.00	Band 66, E- UTRA/F DD	LTE-FDD, 10169-CAE	1745.0, 132322	8.67	1.37	40.1	22.8	21.4

Hardware Setup

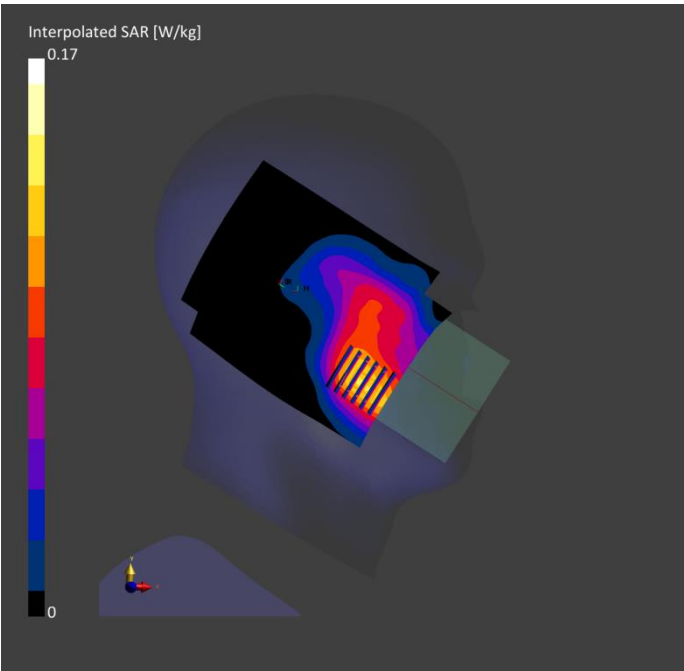
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.109	0.115
psSAR10g [W/kg]	0.068	0.076
Power Drift [dB]	-0.05	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.8
Dist 3dB Peak [mm]		16.3



Meas.26 Body Front Side 15mm LTE B66 Ch132322

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	FRONT, 15.00	Band 66, E- UTRA/F DD	LTE-FDD, 10169-CAE	1745.0, 132322	8.67	1.37	40.1	22.8	21.4

Hardware Setup

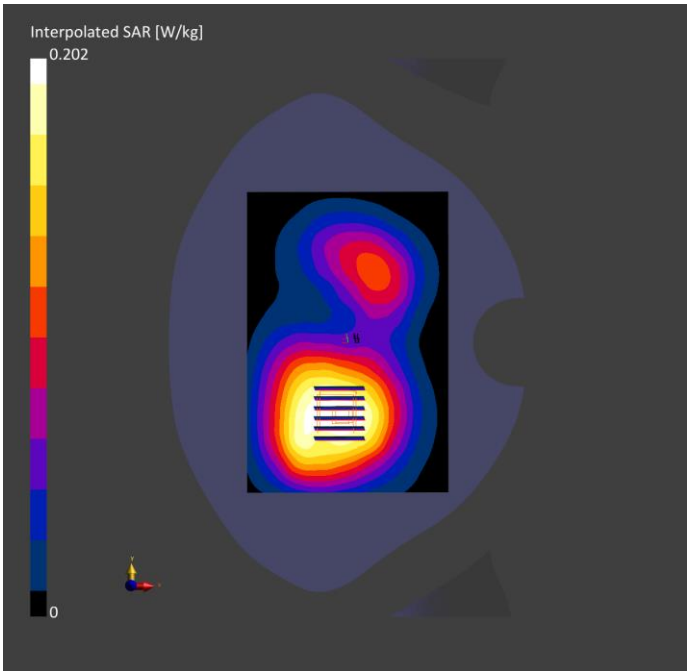
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.121	0.123
psSAR10g [W/kg]	0.077	0.082
Power Drift [dB]	0.15	-0.20
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.7
Dist 3dB Peak [mm]		> 15.0



Meas.27 Hotspot Back Side 10mm LTE B66 Ch132322

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	BACK, 10.00	Band 66, E- UTRA/F DD	LTE-FDD, 10169-CAE	1745.0, 132322	8.67	1.37	40.1	22.8	21.4

Hardware Setup

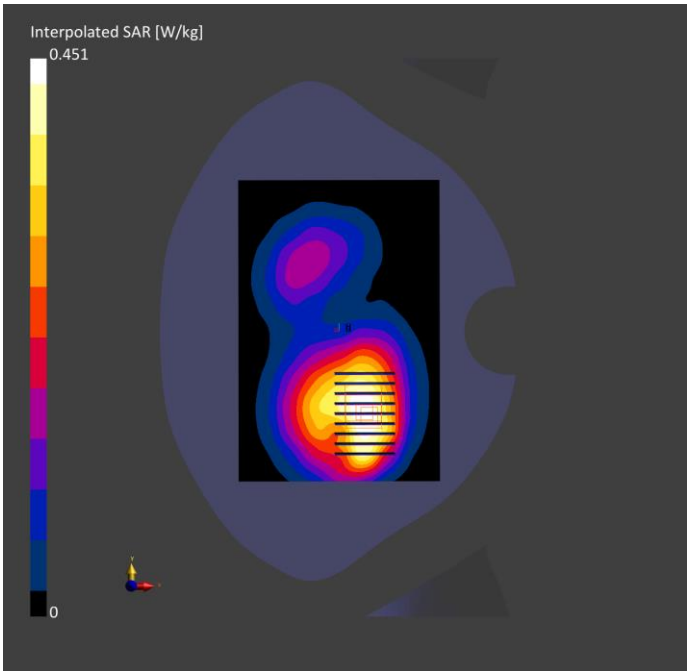
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-09	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-09	2024-12-09
psSAR1g [W/kg]	0.224	0.234
psSAR10g [W/kg]	0.140	0.146
Power Drift [dB]	0.12	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		78.4
Dist 3dB Peak [mm]		15.0



Meas.28 Head Left Cheek LTE B71 Ch133322

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]
Left Head, HSL	CHEEK, 0.00	Band 71, E- UTRA/F DD	LTE-FDD, 10169-CAE	683.0, 133322	10.29	0.87	42.4	22.4	21.3

Hardware Setup

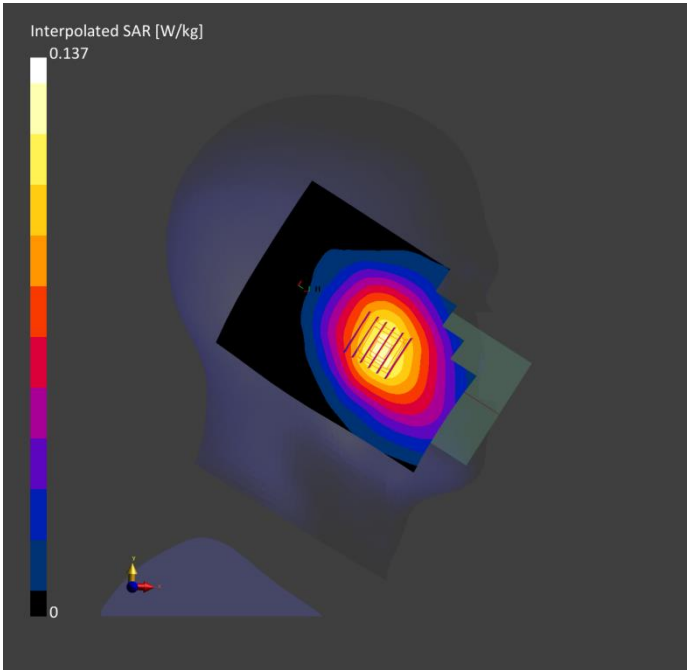
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 150.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.105	0.112
psSAR10g [W/kg]	0.074	0.088
Power Drift [dB]	0.05	-0.14
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		94.8
Dist 3dB Peak [mm]		> 15.0



Meas.29 Body Back Side 15mm LTE B71 Ch133322

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	BACK, 15.00	Band 71, E- UTRA/F DD	LTE-FDD, 10169-CAE	683.0, 133322	10.29	0.87	42.4	22.4	21.3

Hardware Setup

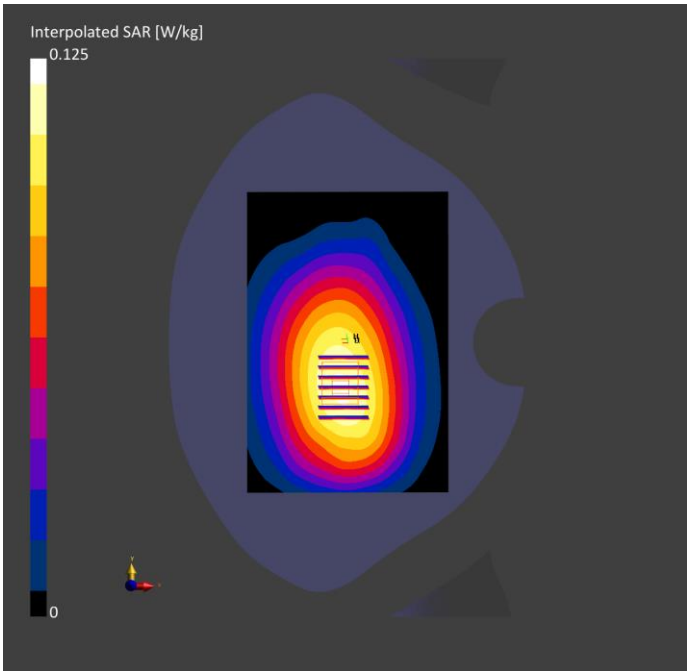
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

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
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	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.083	0.088
psSAR10g [W/kg]	0.059	0.067
Power Drift [dB]	0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.6
Dist 3dB Peak [mm]		> 15.0



Meas.30 Hotspot Right Side 10mm LTE B71 Ch133322

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity	Ambient Temperature [°C]	Liquid Temperature [°C]
Flat, HSL	EDGE RIGHT, 10.00	Band 71, E- UTRA/F DD	LTE-FDD, 10169-CAE	683.0, 133322	10.29	0.87	42.4	22.4	21.3

Hardware Setup

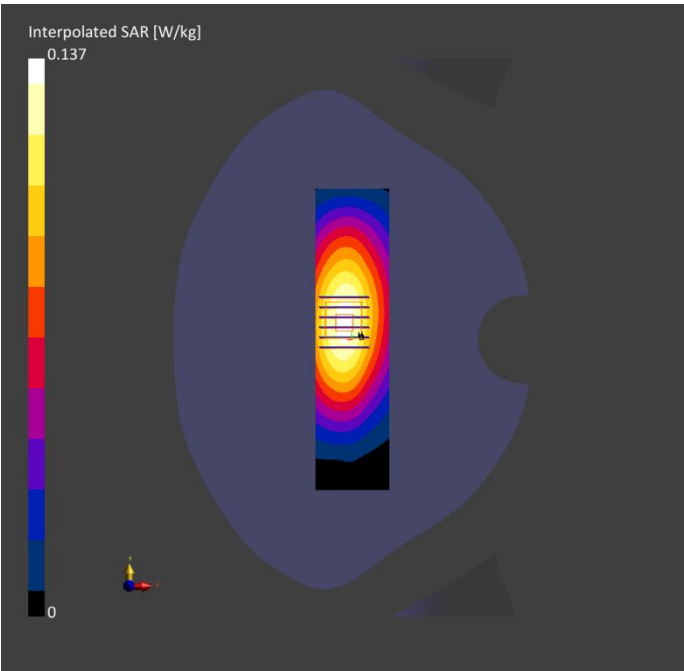
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-06	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	44.0 x 180.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	11.0 x 15.0	8.0 x 8.0 x 5
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	2024-12-06	2024-12-06
psSAR1g [W/kg]	0.085	0.087
psSAR10g [W/kg]	0.059	0.061
Power Drift [dB]	0.02	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.7
Dist 3dB Peak [mm]		> 15.0



Meas.31 Head Left Cheek WLAN2.4G Ch6

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]
Left Head, HSL	CHEEK, 0.00	WLAN 2.4GHz	WLAN, 10315-AAB	2437.0, 6	7.75	1.79	39.6	22.7	21.3

Hardware Setup

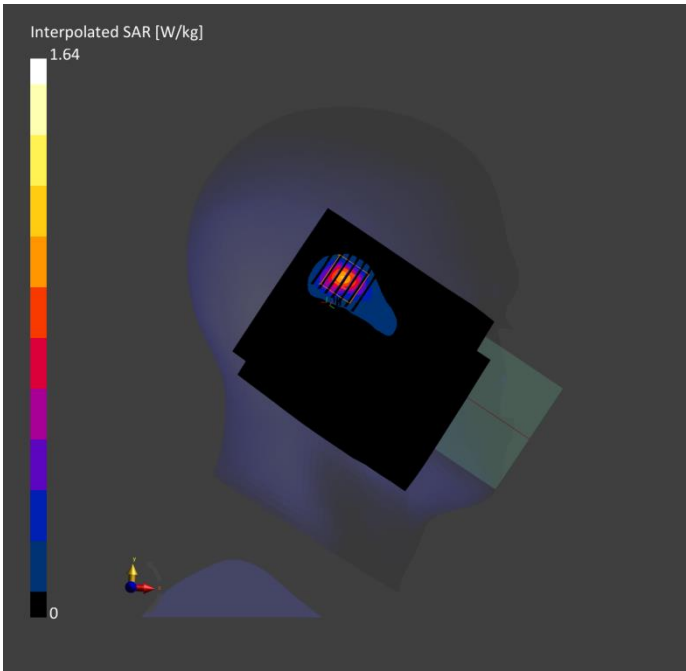
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 140.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.786	0.763
psSAR10g [W/kg]	0.329	0.302
Power Drift [dB]	-0.05	-0.16
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.7
Dist 3dB Peak [mm]		7.0



Meas.32 Body Back Side 15mm WLAN 2.4G Ch1

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	BACK, 15.00	WLAN 2.4GHz	WLAN, 10315-AAB	2412.0, 1	7.75	1.76	39.8	22.7	21.3

Hardware Setup

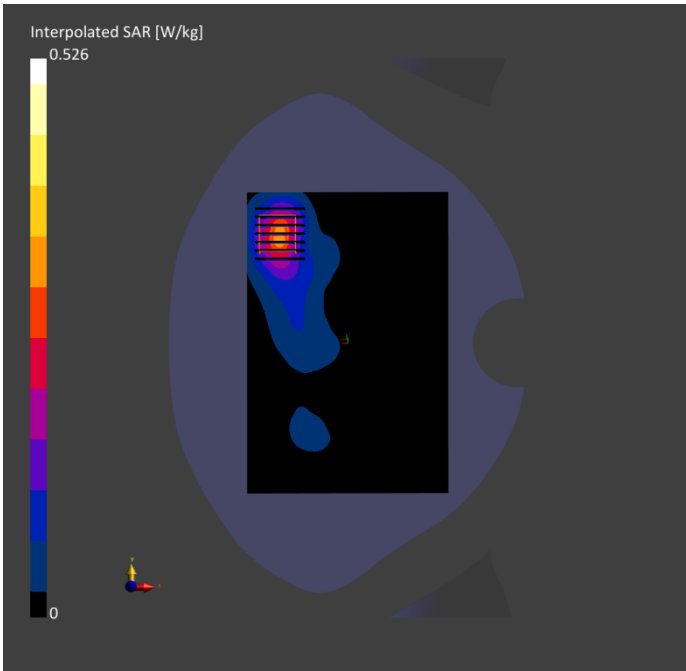
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 180.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.261	0.267
psSAR10g [W/kg]	0.129	0.131
Power Drift [dB]	-0.04	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		80.4
Dist 3dB Peak [mm]		10.0



Meas.33 Hotspot Back Side 10mm WLAN 2.4G Ch1

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	BACK, 10.00	WLAN 2.4GHz	WLAN, 10315-AAB	2412.0, 1	7.75	1.76	39.8	22.7	21.3

Hardware Setup

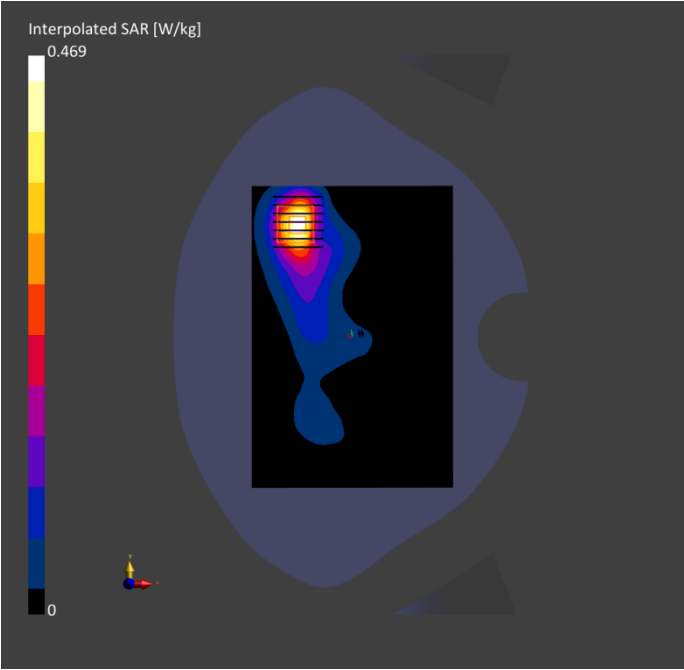
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 180.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.230	0.239
psSAR10g [W/kg]	0.111	0.111
Power Drift [dB]	-0.17	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.5
Dist 3dB Peak [mm]		9.0



Meas.34 Head Left cheek BT Ch39

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]
LeftHead, HSL	CHEEK, 0.00	ISM 2.4 GHz Band	Bluetooth, 10670-AAA	2441.0, 39	7.68	1.79	39.6	22.7	21.3

Hardware Setup

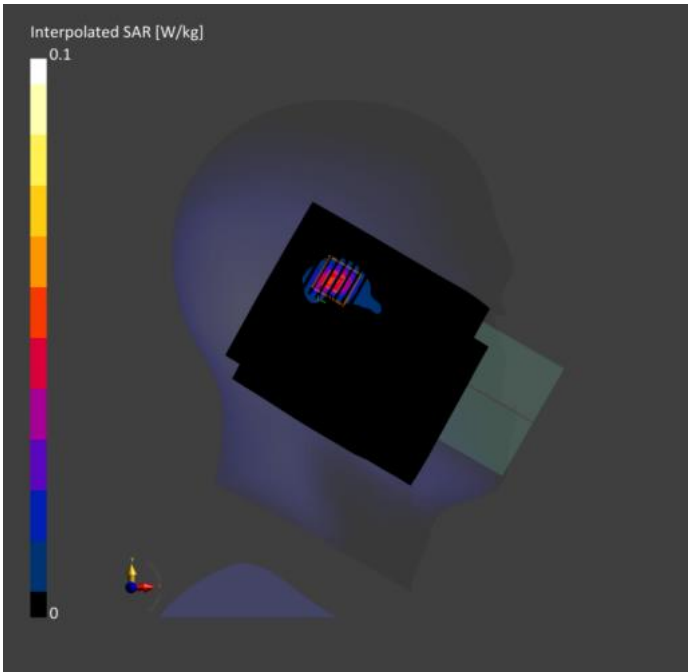
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 140.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.080	0.081
psSAR10g [W/kg]	0.032	0.031
Power Drift [dB]	0.00	-0.13
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		40.7
Dist 3dB Peak [mm]		6.3



Meas.35 Body Back Side 15mm BT CH39

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	BACK, 15.00	ISM 2.4 GHz Band	Bluetooth, 10670-AAA	2441.0, 39	7.68	1.79	39.6	22.7	21.3

Hardware Setup

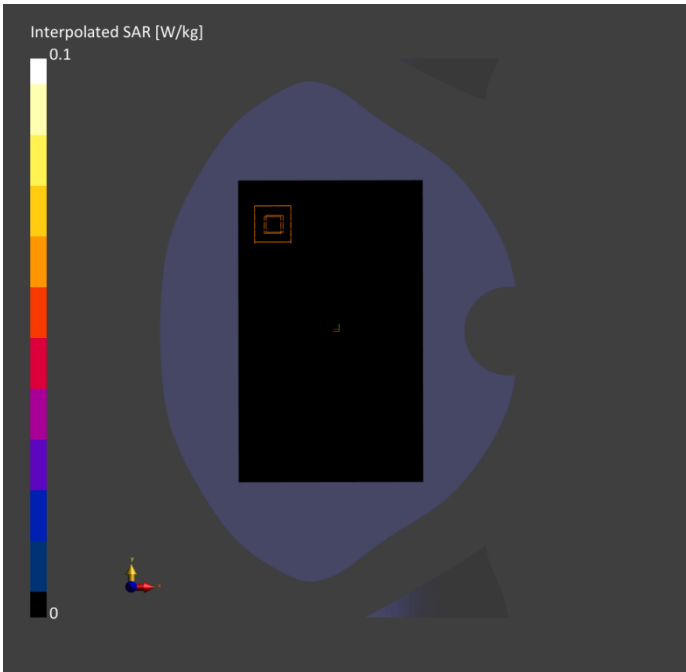
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 180.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.006	0.005
psSAR10g [W/kg]	0.003	0.001
Power Drift [dB]	0.20	0.18
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.7
Dist 3dB Peak [mm]		> 15.0



Meas.36 Hotspot Back Side 10mm BT CH39

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	BACK, 10.00	ISM 2.4 GHz Band	Bluetooth, 10670-AAA	2441.0, 39	7.68	1.79	39.6	22.7	21.3

Hardware Setup

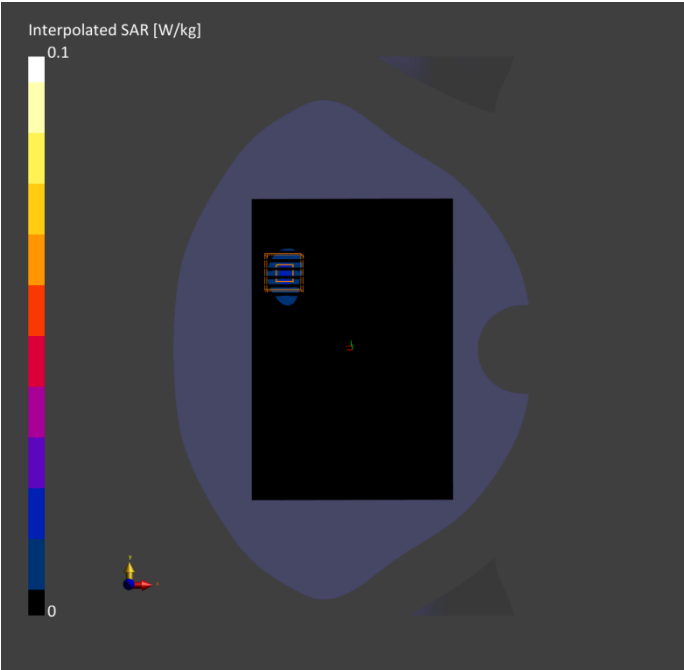
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V5.0 (30deg probe tilt) - 1859	HBBL-600-10000 2024-12-12	EX3DV4 - SN7510, 2024-06-25	DAE4 Sn1710, 2024-01-03

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 180.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	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	2024-12-12	2024-12-12
psSAR1g [W/kg]	0.014	0.013
psSAR10g [W/kg]	0.007	0.005
Power Drift [dB]	0.17	0.19
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		50.3
Dist 3dB Peak [mm]		> 15.0



ANNEX D EUT EXTERNAL PHOTOS

Please refer the document “BL-SH24B0867-AW.pdf”.

ANNEX E SAR TEST SETUP PHOTOS

Please refer the document “BL-SH24B0867-AS.pdf”.

ANNEX F CALIBRATION REPORT

Please refer the document “BL-SH24B0867-AC.pdf”.

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