



# TEST REPORT

Applicant Name : MAXWEST COMMUNICATION LIMITED  
Address : ROOM 1802B FORTRESS TOWER 250 KING' S ROAD, NORTH  
POINT HONG KONG  
Report Number : DG1211222-66466E-SA  
FCC ID: 2ASP8ASTRO5T

## Test Standard (s)

FCC Part 2.1093

## Sample Description

Product Type: Phone  
Model No.: ASTRO 5T  
Trade Mark: N/A  
Date Received: 2022/1/4  
Date of Test: 2022/1/6~2022/1/9  
Report Date: 2022/1/18

Test Result:	Pass*
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\* In the configuration tested, the EUT complied with the standards above.

## Prepared and Checked By:

Lance Li  
EMC Engineer

## Approved By:

Candy Li  
EMC Engineer

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Attestation of Test Results			
MODE		Max. SAR Level(s) Reported(W/kg)	Limit (W/kg)
GSM 850	1g Head SAR	0.39	1.6
	1g Body SAR	0.79	
PCS 1900	1g Head SAR	0.15	
	1g Body SAR	0.63	
WCDMA Band 2	1g Head SAR	0.26	
	1g Body SAR	1.24	
WCDMA Band 5	1g Head SAR	0.40	
	1g Body SAR	0.70	
LTE Band 2	1g Head SAR	0.23	
	1g Body SAR	0.78	
LTE Band 4	1g Head SAR	0.37	
	1g Body SAR	0.79	
LTE Band 5	1g Head SAR	<b>0.40</b>	
	1g Body SAR	0.73	
LTE Band 7	1g Head SAR	0.10	
	1g Body SAR	<b>1.32</b>	
2.4G Wi-Fi	1g Head SAR	0.45	
	1g Body SAR	0.18	
Simultaneous	1g Head SAR	<b>0.85</b>	
	1g Body SAR	<b>1.50</b>	
	1g Body SAR	<b>1.50 (Hotspot)</b>	

<b>Applicable Standards</b>	<b>FCC 47 CFR part 2.1093</b> Radiofrequency radiation exposure evaluation: portable devices
	<b>RF Exposure Procedures: TCB Workshop April 2015</b>
	<b>IEEE1528:2013</b> IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
	<b>IEC 62209-1:2016</b> Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz)
	<b>KDB procedures</b> KDB 447498 D01 General RF Exposure Guidance v06 KDB 648474 D04 Handset SAR v01r03 KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04 KDB 865664 D02 RF Exposure Reporting v01r02 KDB 941225 D01 3G SAR Procedures v03r01 KDB 941225 D05 SAR for LTE Devices v02r05 KDB 941225 D06 Hotspot Mode v02r01
<p><b>Note:</b> This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in <b>FCC 47 CFR part 2.1093</b> and has been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and RF exposure KDB procedures.</p> <p><b>The results and statements contained in this report pertain only to the device(s) evaluated.</b></p>	

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## DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	DG1211222-66466E-SA	Original Report	2022/1/18

## EUT DESCRIPTION

This report has been prepared on behalf of **MAXWEST COMMUNICATION LIMITED**, and their product **Phone**, Model: **ASTRO 5T**, FCC ID: **2ASP8ASTRO5T** or the EUT (Equipment under Test) as referred to in the rest of this report.

### Technical Specification

<b>Device Type:</b>	Portable
<b>Exposure Category:</b>	Population / Uncontrolled
<b>Antenna Type(s):</b>	Internal Antenna
<b>DTM Type:</b>	Class B
<b>Multi-slot Class:</b>	GPRS(Class 12); EDGE(Class 12)
<b>Body-Worn Accessories:</b>	Headset
<b>Face-Head Accessories:</b>	None
<b>Operation Mode :</b>	GSM Voice, GPRS/EDGE Data, WCDMA( R99 (Voice+Data), HSDPA/HSUPA/ HSPA+), FDD-LTE, Wi-Fi and Bluetooth
<b>Frequency Band:</b>	GSM 850: 824-849 MHz(TX); 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) LTE Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX) LTE Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 7: 2500-2570 MHz(TX); 2620-2690 MHz(RX) Wi-Fi 2.4G: 2412 -2462 MHz Bluetooth: 2402 -2480 MHz BLE: 2402 -2480 MHz
<b>Conducted RF Power:</b>	GSM 850: 33.69 dBm; PCS 1900: 28.49 dBm WCDMA Band 2: 22.91 dBm WCDMA Band 5: 22.17 dBm LTE Band 2: 24.02 dBm; LTE Band 4: 23.99 dBm LTE Band 5: 23.55 dBm; LTE Band 7: 23.70 dBm Wi-Fi 2.4G: 12.84 dbm Bluetooth(BDR/EDR): 6.70 dBm BLE: 0.09 dBm
<b>Power Source:</b>	Rechargeable Battery
<b>Normal Operation:</b>	Head and Body-worn

## REFERENCE, STANDARDS, AND GUIDELINES

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### FCC:

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1-1992 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 "Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

### CE:

The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 2 mW/g as recommended by EN62209-1 for an uncontrolled environment. According to the Standard, the device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in Europe is 2 mW/g average over 10 gram of tissue mass.

The test configurations were laid out on a specially designed test fixture to ensure the reproducibility of measurements. Each configuration was scanned for SAR. Analysis of each scan was carried out to characterize the above effects in the device.

**SAR Limits****FCC Limit(1g Tissue)**

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	<b>1.60</b>	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

**CE Limit(10g Tissue)**

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 10 g of tissue)	2.0	10
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg (FCC) & 2 W/kg (CE) applied to the EUT.



## **FACILITIES**

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The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

The test site has been registered with ISED Canada under ISED Canada Registration Number CN0016.

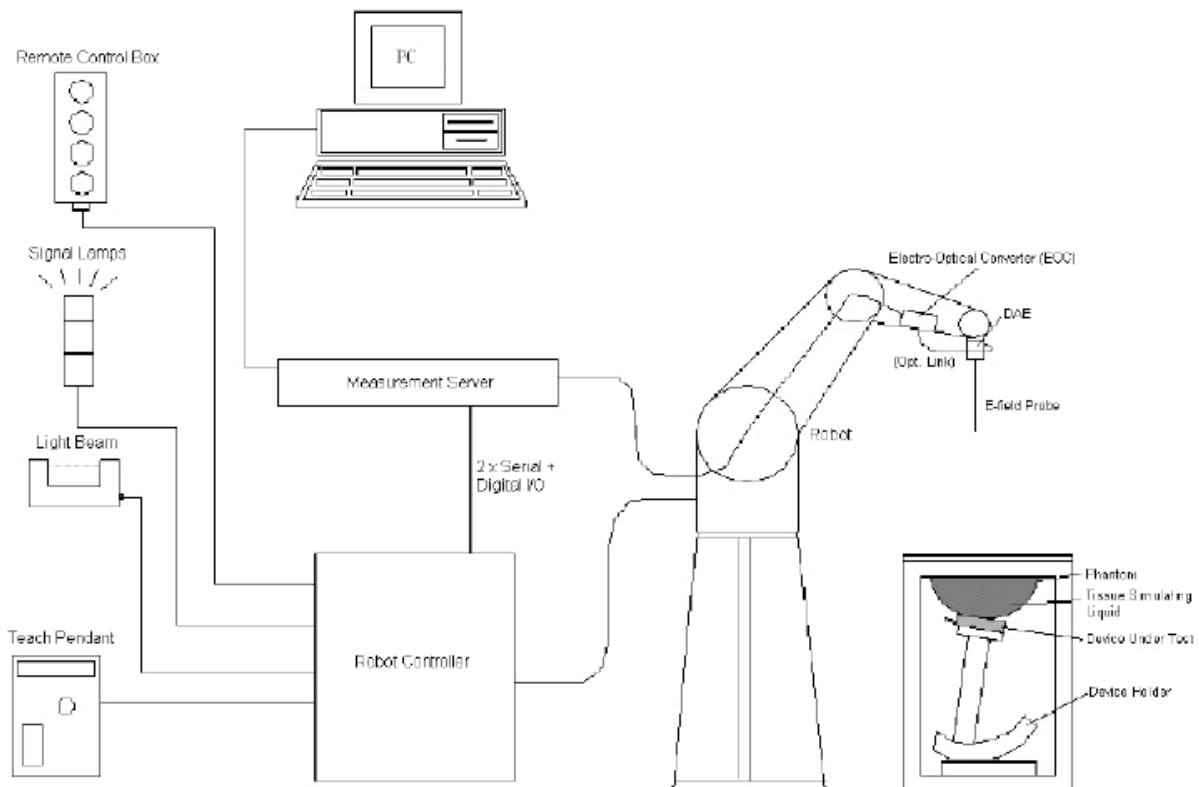
## DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:



### DASY5 System Description

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



- A standard high precision 6-axis robot (Staubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, 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.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

### **DASY5 Measurement Server**

The DASY5 measurement server is based on a PC/104 CPU board with a 400 MHz Intel ULV Celeron, 128 MB chip-disk and 128 MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16-bit AD converter system for optical detection and digital I/O interface are contained on the DASY6 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluations of field measurements and surface detection, controls robot movements, and handles safety operations. The PC operating system cannot interfere with these time-critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program- controlled robot movements. Furthermore, the measurement server is equipped with an expansion port, which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Connection of devices from any other supplier could seriously damage the measurement server.

### **Data Acquisition Electronics**

The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter 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.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of both the DAE4 as well as of the DAE3 box is 200M $\Omega$ ; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

**EX3DV4 E-Field Probes**

<b>Frequency</b>	10 MHz to > 6 GHz Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)
<b>Directivity</b>	$\pm 0.3$ dB in TSL (rotation around probe axis) $\pm 0.5$ dB in TSL (rotation normal to probe axis)
<b>Dynamic Range</b>	10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)
<b>Dimensions</b>	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
<b>Application</b>	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
<b>Compatibility</b>	DASY3, DASY4, DASY52 SAR and higher, EASY4/MRI

**SAM Twin Phantom**

The SAM Twin Phantom (shown in front of DASY5) is a fiberglass shell phantom with shell thickness 2 mm, except in the ear region where the thickness is increased to 6 mm..

When the phantom is mounted inside allocated slot of the DASY5 platform, phantom reference points can be taught directly in the DASY5 V5.2 software. When the DASY5 platform is used to mount the

Phantom, some of the phantom teaching points cannot be reached by the robot in DASY5 V5.2. A special tool called P1a-P2aX-Former is provided to transform two of the three points, P1 and P2, to reachable locations. To use these new teaching points, a revised phantom configuration file is required.

In addition to our standard broadband liquids, the phantom can be used with the following tissue simulating liquids:

Sugar-water-based liquids can be left permanently in the phantom.

Always cover the liquid when the system is not in use to prevent changes in liquid parameters due to water evaporation.

DGBE-based liquids should be used with care. As DGBE is a softener for most plastics, the liquid should be taken out of the phantom, and the phantom should be dried when the system is not in use (desirable at least once a week).

Do not use other organic solvents without previously testing the solvent resistivity of the phantom. Approximately 25 liters of liquid is required to fill the SAM Twin phantom.



**Calibration Frequency Points for EX3DV4 E-Field Probes SN: 7441 Calibrated: 2021/02/23**

Calibration Frequency Point(MHz)	Frequency Range(MHz)		Conversion Factor		
	From	To	X	Y	Z
750 Head	650	850	10.28	10.28	10.28
900 Head	850	1000	9.80	9.80	9.80
1450 Head	1350	1550	8.61	8.61	8.61
1750 Head	1650	1850	8.39	8.39	8.39
1900 Head	1850	1950	8.02	8.02	8.02
2000 Head	1950	2100	8.07	8.07	8.07
2300 Head	2200	2400	7.92	7.92	7.92
2450 Head	2400	2550	7.63	7.63	7.63
2600 Head	2550	2700	7.33	7.33	7.33
3300 Head	3200	3400	7.21	7.21	7.21
3500 Head	3400	3600	6.96	6.96	6.96
3700 Head	3600	3800	6.65	6.65	6.65
3900 Head	3800	4000	6.66	6.66	6.66
4400 Head	4300	4500	6.45	6.45	6.45
4600 Head	4500	4700	6.30	6.30	6.30
4800 Head	4700	4900	6.24	6.24	6.24
4950 Head	4900	5050	5.95	5.95	5.95

**Area Scans**

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm 2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

**Zoom Scan (Cube Scan Averaging)**

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m<sup>3</sup> is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm, with the side length of the 10g cube is 21.5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x 7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

## Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEC 62209-1:2016

### Recommended Tissue Dielectric Parameters for Head

Table A.3 – Dielectric properties of the head tissue-equivalent liquid

Frequency MHz	Relative permittivity $\epsilon_r$	Conductivity ( $\sigma$ ) S/m
300	45,3	0,87
450	43,5	0,87
<i>750</i>	<i>41,9</i>	<i>0,89</i>
835	41,5	0,90
900	41,5	0,97
1 450	40,5	1,20
<i>1 500</i>	<i>40,4</i>	<i>1,23</i>
<i>1 640</i>	<i>40,2</i>	<i>1,31</i>
<i>1 750</i>	<i>40,1</i>	<i>1,37</i>
1 800	40,0	1,40
1 900	40,0	1,40
2 000	40,0	1,40
<i>2 100</i>	<i>39,8</i>	<i>1,49</i>
<i>2 300</i>	<i>39,5</i>	<i>1,67</i>
<i>2 450</i>	<i>39,2</i>	<i>1,80</i>
<i>2 600</i>	<i>39,0</i>	<i>1,96</i>
3 000	38,5	2,40
<i>3 500</i>	<i>37,9</i>	<i>2,91</i>
<i>4 000</i>	<i>37,4</i>	<i>3,43</i>
<i>4 500</i>	<i>36,8</i>	<i>3,94</i>
<i>5 000</i>	<i>36,2</i>	<i>4,45</i>
<i>5 200</i>	<i>36,0</i>	<i>4,66</i>
<i>5 400</i>	<i>35,8</i>	<i>4,86</i>
<i>5 600</i>	<i>35,5</i>	<i>5,07</i>
<i>5 800</i>	<i>35,3</i>	<i>5,27</i>
6 000	35,1	5,48

NOTE For convenience, permittivity and conductivity values at those frequencies which are not part of the original data provided by Drossos et al. [33] or the extension to 5 800 MHz are provided (i.e. the values shown *in italics*). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6 000 MHz that were linearly extrapolated from the values at 3 000 MHz and 5 800 MHz.

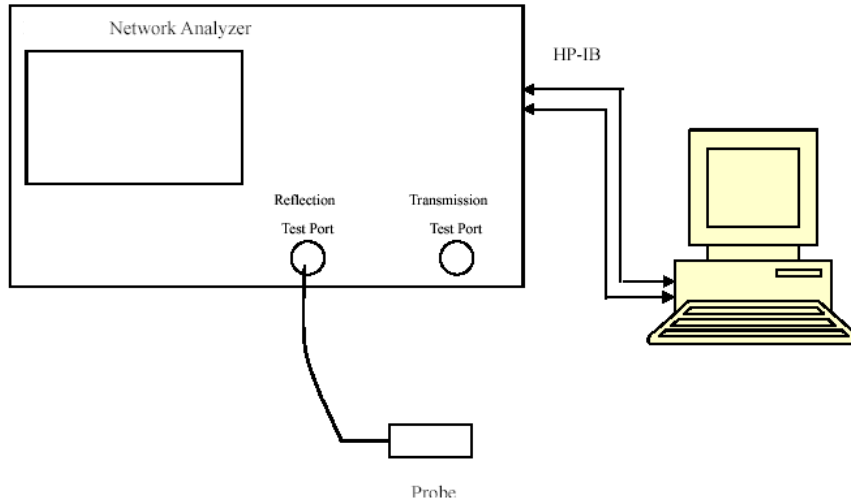
## EQUIPMENT LIST AND CALIBRATION

### Equipments List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52 52.10.4	N/A	NCR	NCR
DASY5 Measurement Server	DASY5 6.0.31	N/A	NCR	NCR
Data Acquisition Electronics	DAE4	1562	2021/01/19	2022/01/18
E-Field Probe	EX3DV4	7441	2021/02/23	2022/02/22
Mounting Device	MD4HHTV5	SD 000 H01 KA	NCR	NCR
SAM Twin Phantom	SAM-Twin V5.0	1744	NCR	NCR
Dipole,835MHz	D835V2	4d103	2021/10/27	2024/10/26
Dipole,1800MHz	D1800V2	2d018	2020/10/15	2023/10/14
Dipole,1900MHz	D1900V2	5d128	2021/10/27	2024/10/26
Dipole,2450MHz	D2450V2	751	2020/10/13	2023/10/12
Dipole,2600MHz	D2600V2	1162	2019/10/2	2022/10/1
Simulated Tissue Liquid Head(500-9500MHz)	HBBL600-10000V6	180622-2	Each Time	/
Network Analyzer	8753D	3410A08288	2021/7/07	2022/7/06
Dielectric Assessment Kit	DAK-3.5	1248	NCR	NCR
Signal Generator	SMB100A	108362	2021/12/23	2022/12/22
USB wideband power sensor	U2021XA	MY52350001	2021/12/23	2022/12/22
Power Amplifier	CBA 1G-070	T44328	2021/12/23	2022/12/22
Linear Power Amplifier	AS0860-40/45	1060913	2021/12/23	2022/12/22
Directional Coupler	4223-20	3.113.277	2021/12/23	2022/12/22
6dB Attenuator	8493B 6dB Attenuator	2708A 04769	2021/12/23	2022/12/22
Wideband Radio Communication Tester	CMW500	143458	2021/03/03	2022/03/02

# SAR MEASUREMENT SYSTEM VERIFICATION

## Liquid Verification



Liquid Verification Setup Block Diagram

## Liquid Verification Results

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
824.2	Simulated Tissue Liquid	41.641	0.899	41.55	0.9	0.22	-0.11	$\pm 5$
826.4	Simulated Tissue Liquid	41.449	0.907	41.54	0.9	-0.22	0.78	$\pm 5$
829	Simulated Tissue Liquid	41.65	0.92	41.53	0.9	0.29	2.22	$\pm 5$
835	Simulated Tissue Liquid	41.247	0.913	41.5	0.9	-0.61	1.44	$\pm 5$
836.5	Simulated Tissue Liquid	41.722	0.921	41.5	0.9	0.53	2.33	$\pm 5$
836.6	Simulated Tissue Liquid	42.102	0.925	41.5	0.9	1.45	2.78	$\pm 5$
846.6	Simulated Tissue Liquid	41.828	0.939	41.5	0.91	0.79	3.19	$\pm 5$
844	Simulated Tissue Liquid	41.532	0.942	41.5	0.91	0.08	3.52	$\pm 5$
848.8	Simulated Tissue Liquid	41.453	0.934	41.5	0.91	-0.11	2.64	$\pm 5$

\*Liquid Verification above was performed on 2022/1/6.



Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
1720	Simulated Tissue Liquid	40.828	1.373	40.13	1.35	1.74	1.7	$\pm 5$
1732.5	Simulated Tissue Liquid	39.676	1.37	40.12	1.36	-1.11	0.74	$\pm 5$
1745	Simulated Tissue Liquid	39.753	1.379	40.1	1.37	-0.87	0.66	$\pm 5$
1800	Simulated Tissue Liquid	39.249	1.381	40	1.4	-1.88	-1.36	$\pm 5$

\*Liquid Verification above was performed on 2022/1/8.

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
1850.2	Simulated Tissue Liquid	40.086	1.394	40	1.4	0.21	-0.43	$\pm 5$
1852.4	Simulated Tissue Liquid	40.152	1.393	40	1.4	0.38	-0.5	$\pm 5$
1860	Simulated Tissue Liquid	39.741	1.413	40	1.4	-0.65	0.93	$\pm 5$
1880	Simulated Tissue Liquid	40.107	1.414	40	1.4	0.27	1	$\pm 5$
1900	Simulated Tissue Liquid	39.582	1.434	40	1.4	-1.05	2.43	$\pm 5$
1907.6	Simulated Tissue Liquid	39.671	1.433	40	1.4	-0.82	2.36	$\pm 5$
1909.8	Simulated Tissue Liquid	39.777	1.44	40	1.4	-0.56	2.86	$\pm 5$

\*Liquid Verification above was performed on 2022/1/7.

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$	
2412	Simulated Tissue Liquid Head	38.689	1.811	39.28	1.77	-1.5	2.32	$\pm 5$
2437	Simulated Tissue Liquid Head	38.545	1.838	39.22	1.79	-1.72	2.68	$\pm 5$
2450	Simulated Tissue Liquid Head	38.596	1.846	39.20	1.80	-1.54	2.56	$\pm 5$
2462	Simulated Tissue Liquid Head	38.251	1.856	39.17	1.82	-2.35	1.98	$\pm 5$

\*Liquid Verification above was performed on 2022/1/8.

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		$\epsilon_r$	$\sigma$ (S/m)	$\epsilon_r$	$\sigma$ (S/m)	$\Delta\epsilon_r$	$\Delta\sigma$ (S/m)	
2510	Simulated Tissue Liquid Head	38.752	1.866	39.12	1.86	-0.94	0.32	$\pm 5$
2535	Simulated Tissue Liquid Head	38.572	1.883	39.09	1.89	-1.33	-0.37	$\pm 5$
2560	Simulated Tissue Liquid	39.888	1.915	39.05	1.92	2.15	-0.26	$\pm 5$
2600	Simulated Tissue Liquid	39.713	1.94	39	1.96	1.83	-1.02	$\pm 5$

\*Liquid Verification above was performed on 2022/1/9..

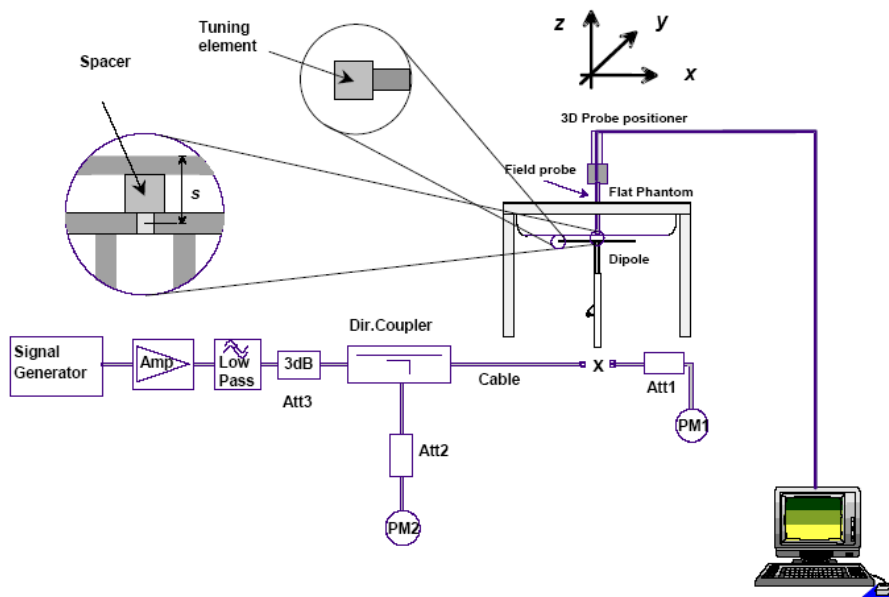
### System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of  $\pm 10\%$ . The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

The spacing distances in the **System Verification Setup Block Diagram** is given by the following:

- a)  $s = 15 \text{ mm} \pm 0,2 \text{ mm}$  for  $300 \text{ MHz} \leq f \leq 1 \text{ 000 MHz}$ ;
- b)  $s = 10 \text{ mm} \pm 0,2 \text{ mm}$  for  $1 \text{ 000 MHz} < f \leq 3 \text{ 000 MHz}$ ;
- c)  $s = 10 \text{ mm} \pm 0,2 \text{ mm}$  for  $3 \text{ 000 MHz} < f \leq 6 \text{ 000 MHz}$ .

### System Verification Setup Block Diagram



### System Accuracy Check Results

Date	Frequency Band	Liquid Type	Input Power (mW)	Measured SAR (W/kg)		Normalized to 1W (W/kg)	Target Value (W/kg)	Delta (%)	Tolerance (%)
2022/1/6	835 MHz	Head	100	1g	0.923	9.23	9.65	-4.352	$\pm 10$
2022/1/8	1800 MHz	Head	100	1g	4.25	42.5	39.3	8.142	$\pm 10$
2022/1/7	1900 MHz	Head	100	1g	4.01	40.1	40.0	0.250	$\pm 10$
2022/1/8	2450 MHz	Head	100	1g	4.95	49.5	53	-6.604	$\pm 10$
2022/1/9	2600 MHz	Head	100	1g	5.97	59.7	55.4	7.762	$\pm 10$

\*The SAR values above are normalized to 1 Watt forward power.

## SAR SYSTEM VALIDATION DATA

### System Performance 835 MHz

**DUT: Dipole 835V3; Type: D835MHz; Serial: 4d013**

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.913 \text{ S/m}$ ;  $\epsilon_r = 41.247$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 835MHz/d=15mm, Pin=100mw/Area Scan (71x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.969 W/kg

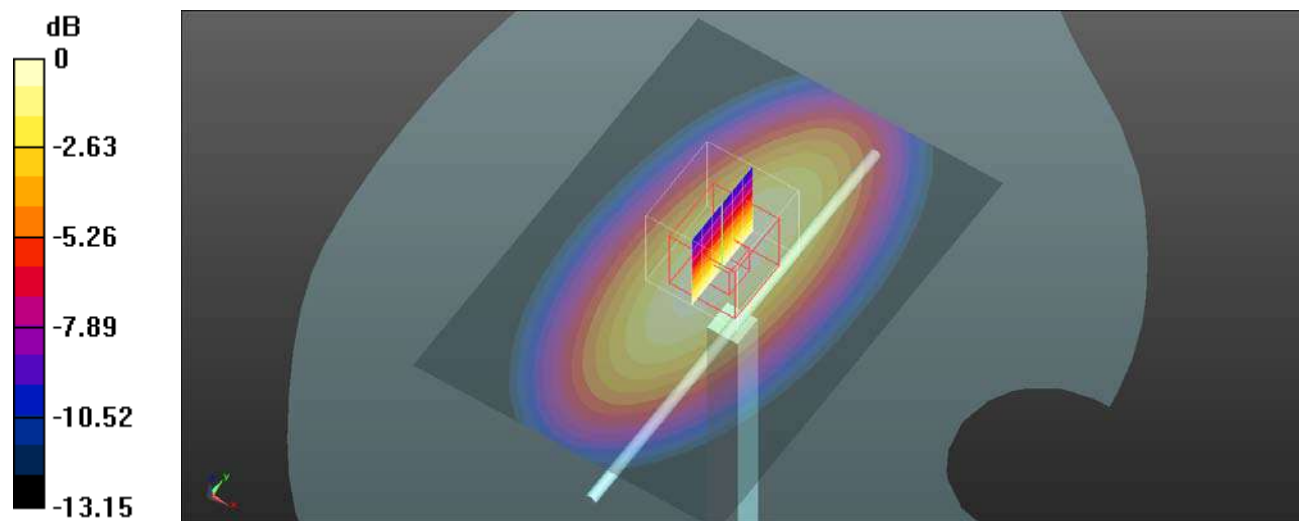
**System Performance Check at 835MHz/d=15mm, Pin=100mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 33.16 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.37 W/kg

**SAR(1 g) = 0.923 W/kg; SAR(10 g) = 0.601 W/kg**

Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg = 0.64 dBW/kg

**System Performance 1800 MHz****DUT: D1800V2; Type: 1800MHz; Serial: 2d018**

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1800 \text{ MHz}$ ;  $\sigma = 1.381 \text{ S/m}$ ;  $\epsilon_r = 39.249$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 1800MHz/d=10mm, Pin=100mw/Area Scan (71x111x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 4.64 W/kg

**System Performance Check at 1800MHz/d=10mm, Pin=100mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:

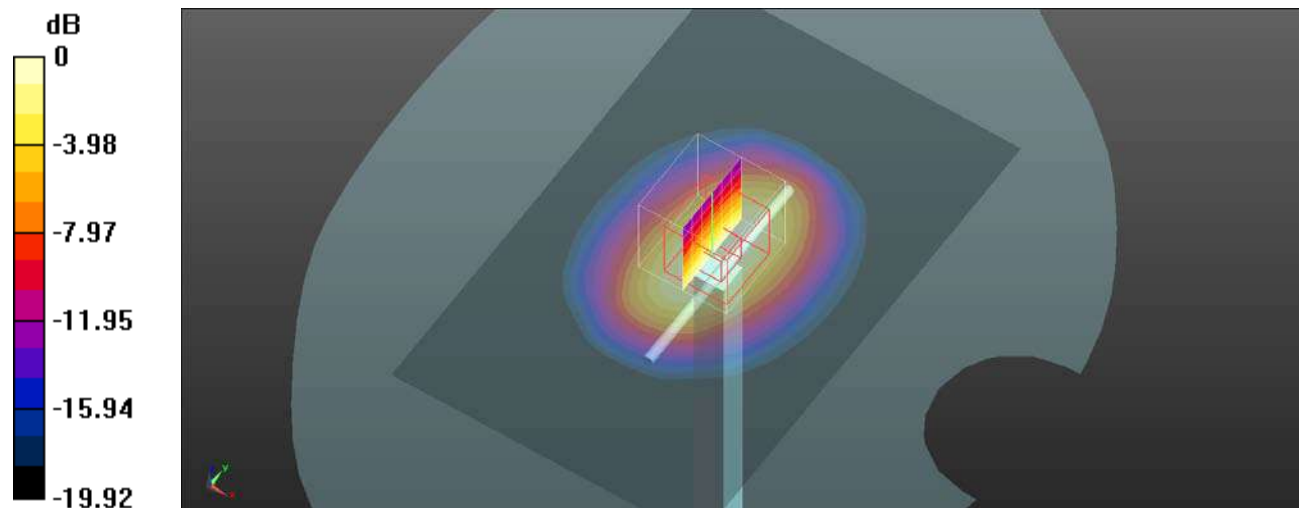
 $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$ 

Reference Value = 60.16 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 6.16 W/kg

**SAR(1 g) = 4.25 W/kg; SAR(10 g) = 2.31 W/kg**

Maximum value of SAR (measured) = 4.54 W/kg



0 dB = 4.54 W/kg = 6.57 dBW/kg

**System Performance 1900MHz****DUT: D1900V2; Type: 1900 MHz; Serial: 5d128**

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.434$  S/m;  $\epsilon_r = 39.582$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 1900MHz/d=10mm, Pin=100mw/Area Scan (71x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 4.37 W/kg

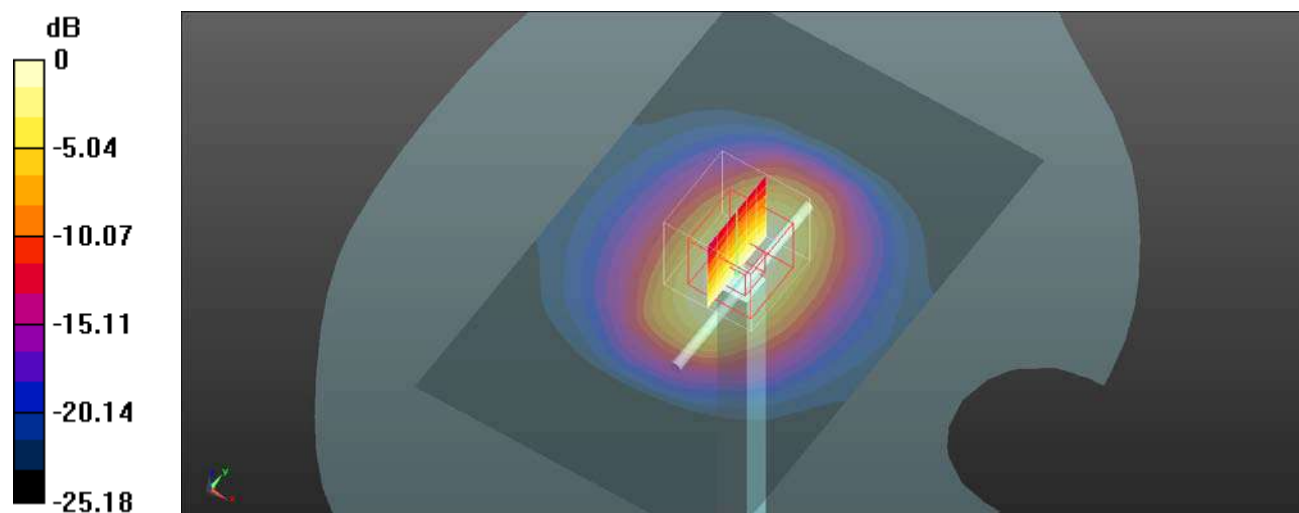
**System Performance Check at 1900MHz/d=10mm, Pin=100mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 60.59 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 5.45 W/kg

**SAR(1 g) = 4.01 W/kg; SAR(10 g) = 2.17 W/kg**

Maximum value of SAR (measured) = 4.64 W/kg



0 dB = 4.64 W/kg = 6.67 dBW/kg

**System Performance 2450MHz****DUT: D2450V2; Type: 2450 MHz; Serial: 751**

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.846$  S/m;  $\epsilon_r = 38.596$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 2450MHz/d=10mm, Pin=100mw/Area Scan (101x111x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 5.58 W/kg

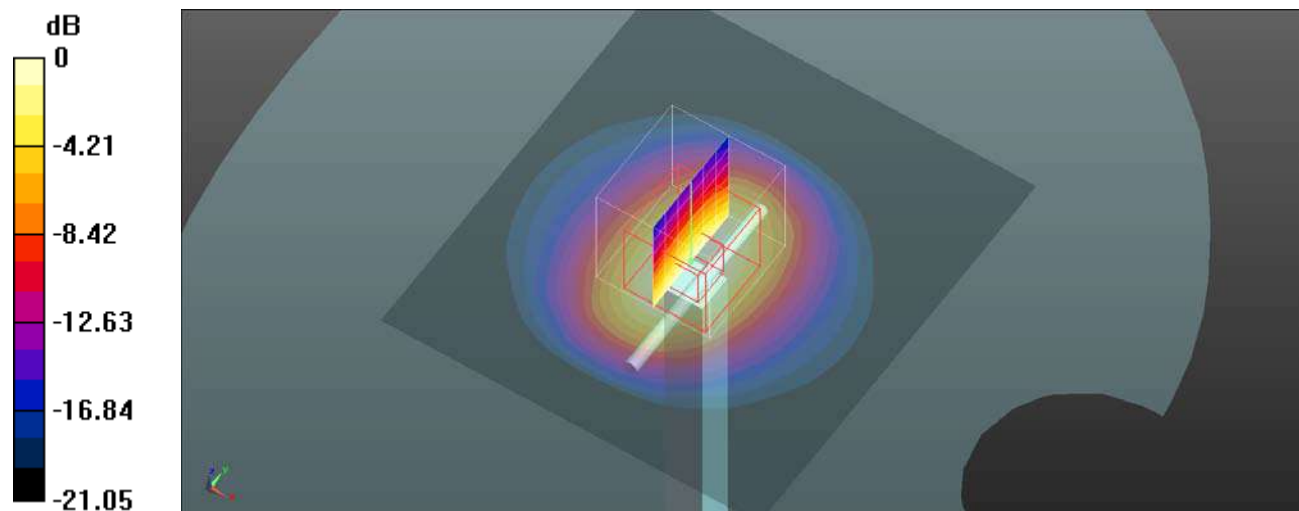
**System Performance Check at 2450MHz/d=10mm, Pin=100mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.72 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 7.49 W/kg

**SAR(1 g) = 4.95 W/kg; SAR(10 g) = 2.47 W/kg**

Maximum value of SAR (measured) = 5.47 W/kg



0 dB = 5.47 W/kg = 7.38 dBW/kg

**System Performance 2600MHz****DUT: D2600V2; Type: 2600 MHz; Serial: 1162**

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2600 \text{ MHz}$ ;  $\sigma = 1.94 \text{ S/m}$ ;  $\epsilon_r = 39.713$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.33, 7.33, 7.33); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check at 2600MHz/d=10mm, Pin=100mw/Area Scan (101x131x1):** Interpolated grid:  $dx=1.000 \text{ mm}$ ,  $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 7.01 W/kg

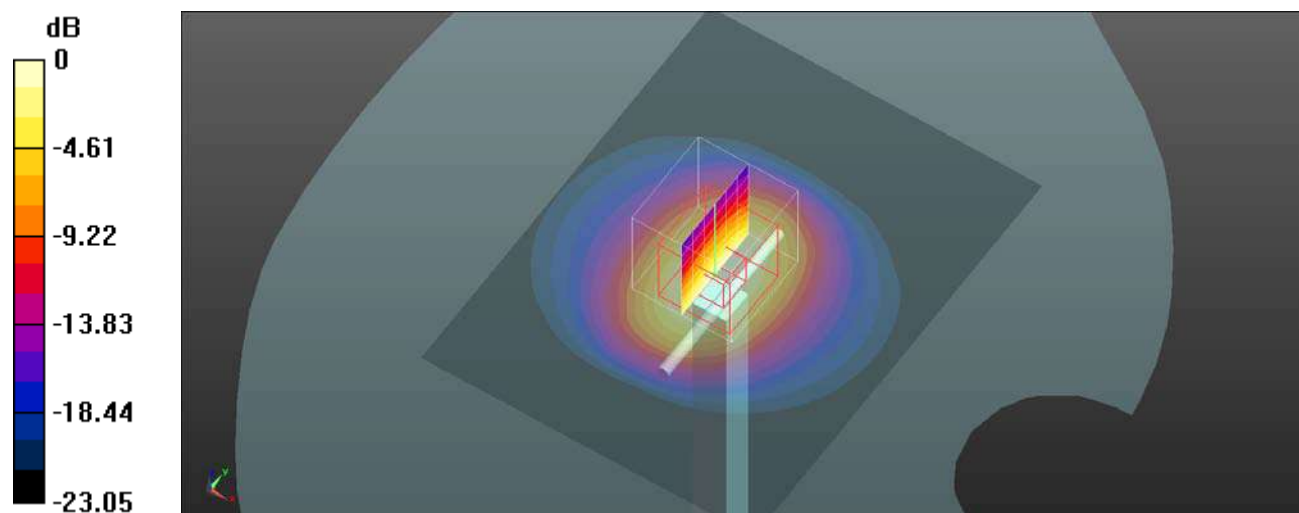
**System Performance Check at 2600MHz/d=10mm, Pin=100mw/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 62.31 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 12.1 W/kg

**SAR(1 g) = 5.97 W/kg; SAR(10 g) = 2.47 W/kg**

Maximum value of SAR (measured) = 7.47 W/kg



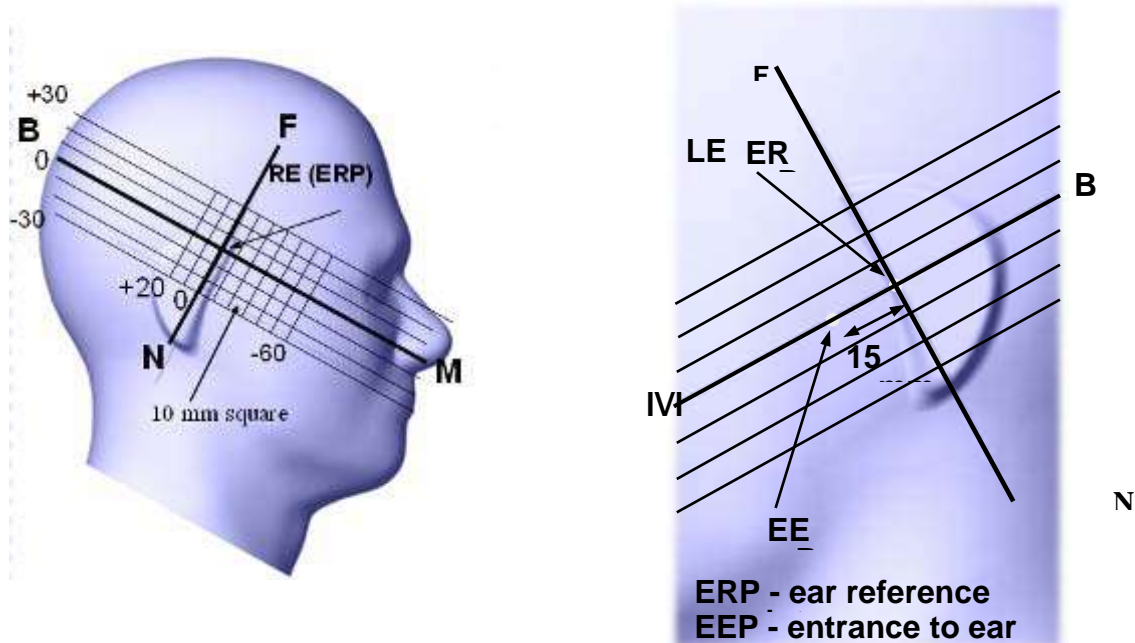
0 dB = 7.47 W/kg = 8.73 dBW/kg

## EUT TEST STRATEGY AND METHODOLOGY

### Test Positions for Device Operating Next to a Person's Ear

This category includes most wireless handsets with fixed, retractable or internal antennas located toward the top half of the device, with or without a foldout, sliding or similar keypad cover. The handset should have its earpiece located within the upper ¼ of the device, either along the centerline or off-centered, as perceived by its users. This type of handset should be positioned in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point". The "test device reference point" should be located at the same level as the center of the earpiece region. The "vertical centerline" should bisect the front surface of the handset at its top and bottom edges. A "ear reference point" is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the "phantom reference plane" defined by the three lines joining the center of each "ear reference point" (left and right) and the tip of the mouth.

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom. For the SCC-34/SC-2 head phantom, the device should be positioned parallel to the "N-F" line defined along the base of the ear spacer that contains the "ear reference point". For interim head phantoms, the device should be positioned parallel to the cheek for maximum RF energy coupling. The "test device reference point" is aligned to the "ear reference point" on the head phantom and the "vertical centerline" is aligned to the "phantom reference plane". This is called the "initial ear position". While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:





## Cheek/Touch Position

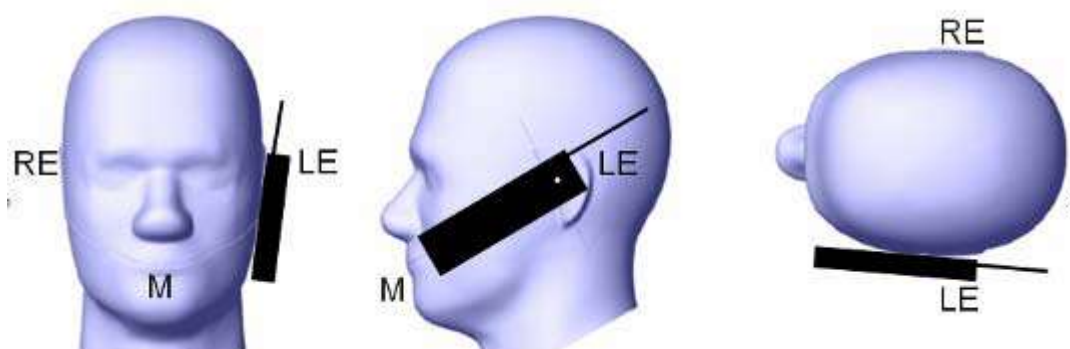
The device is brought toward the mouth of the head phantom by pivoting against the “ear reference point” or along the “N-F” line for the SCC-34/SC-2 head phantom.

This test position is established:

When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.  
(or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

For existing head phantoms – when the handset loses contact with the phantom at the pivoting point, rotation should continue until the device touches the cheek of the phantom or breaks its last contact from the ear spacer.

### Cheek /Touch Position



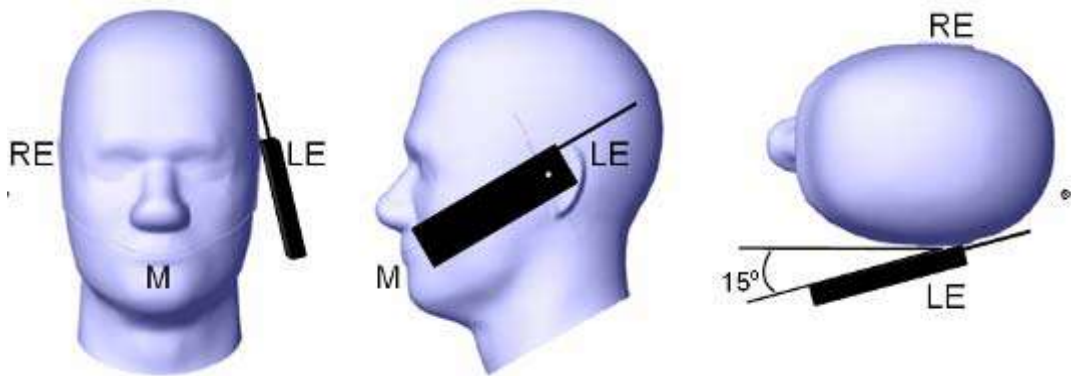
## Ear/Tilt Position

With the handset aligned in the “Cheek/Touch Position”:

1) If the earpiece of the handset is not in full contact with the phantom’s ear spacer (in the “Cheek/Touch position”) and the peak SAR location for the “Cheek/Touch” position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the “initial ear position” by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

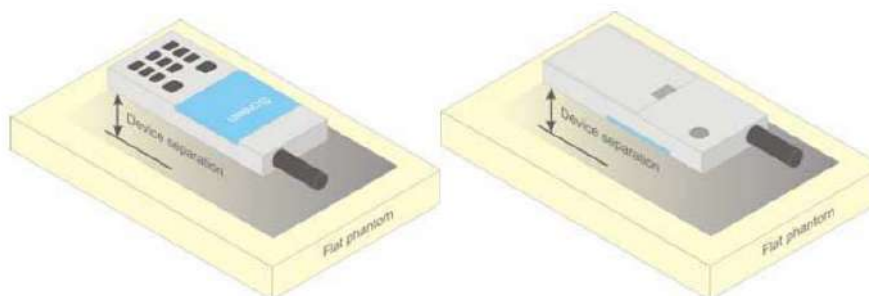
2) (otherwise) The handset should be moved (translated) away from the cheek perpendicular to the line passes through both “ear reference points” (note: one of these ear reference points may not physically exist on a split head model) for approximate 2-3 cm. While it is in this position, the device handset is tilted away from the mouth with respect to the “test device reference point” until the inside angle between the vertical centerline on the front surface of the phone and the horizontal line passing through the ear reference point is by 15° to 80°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both “ear reference points” until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously. This test position may require a device holder or positioner to achieve the translation and tilting with acceptable positioning repeatability.

If a device is also designed to transmit with its keypad cover closed for operating in the head position, such positions should also be considered in the SAR evaluation. The device should be tested on the left and right side of the head phantom in the “Cheek/Touch” and “Ear/Tilt” positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tilt/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional.

**Ear /Tilt 15° Position****Test positions for body-worn and other configurations**

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.



**Figure 5 – Test positions for body-worn devices**

**Test Distance for SAR Evaluation**

For this case the EUT(Equipment Under Test) is set 10mm away from the phantom, the test distance is 10mm.

## SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

- 1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.
- 2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the "Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

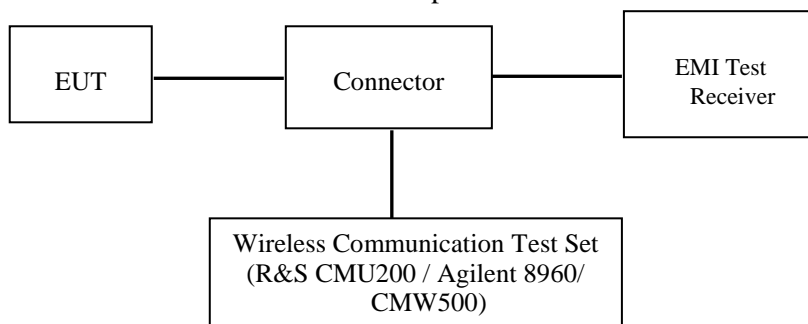
## CONDUCTED OUTPUT POWER MEASUREMENT

### Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

### Test Procedure

The RF output of the transmitter was connected to the input of the EMI Test Receiver through Connector.



### GSM/WCDMA/LTE

#### Radio Configuration

The power measurement was configured by the Wireless Communication Test Set.

#### GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

> 27 dBm for EGPRS 850

> 26 dBm for EGPRS 1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desired test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 > 4 dB

Slot Config > Unchanged (if already set under MS signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3

Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal on to turn on the signal and change settings

**WCDMA Release 99**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

<b>WCDMA General Settings</b>	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	$\beta_c/\beta_d$	8/15

**HSDPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
<b>WCDMA General Settings</b>	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	$\beta_c$	2/15	12/15	15/15	15/15
	$\beta_d$	15/15	15/15	8/15	4/15
	$\beta_d$ (SF)	64			
	$\beta_c/\beta_d$	2/15	12/15	15/8	15/4
	$\beta_{hs}$	4/15	24/15	30/15	30/15
MPR(dB)	0	0	0.5	0.5	
<b>HSDPA Specifi c Setting s</b>	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	$A_{hs}=\beta_{hs}/\beta_c$	30/15			

**HSUPA**

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
<b>WCDMA General Settings</b>	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	$\beta_c$	11/15	6/15	15/15	2/15	15/15
	$\beta_d$	15/15	15/15	9/15	15/15	0
	$\beta_{ec}$	209/225	12/15	30/15	2/15	5/15
	$\beta_c/\beta_d$	11/15	6/15	15/9	2/15	-
	$\beta_{hs}$	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
MPR(dB)	0	2	1	2	0	
<b>HSDPA Specific Settings</b>	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	$A_{hs}=\beta_{hs}/\beta_c$	30/15				
<b>HSUPA Specific Settings</b>	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCIs	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	

**HSPA+**

Sub-test	$\beta_c$ (Note3)	$\beta_d$	$\beta_{HS}$ (Note1)	$\beta_{ec}$	$\beta_{ed}$ (2xSF2) (Note 4)	$\beta_{ed}$ (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed1}$ : 30/15 $\beta_{ed2}$ : 30/15	$\beta_{ed3}$ : 24/15 $\beta_{ed4}$ : 24/15	3.5	2.5	14	105	105

Note 1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 30/15$  with  $\beta_{hs} = 30/15 * \beta_c$ .

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the  $\beta_c$  is set to 1 and  $\beta_d = 0$  by default.

Note 4:  $\beta_{ed}$  can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

**FDD-LTE**

For UE Power Class 1 and 3, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2-1 due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1.

**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1 and 3**

Modulation	Channel bandwidth / Transmission bandwidth ( $N_{RB}$ )						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	$\leq 1$
16 QAM	$\leq 5$	$\leq 4$	$\leq 8$	$\leq 12$	$\leq 16$	$\leq 18$	$\leq 1$
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	$\leq 2$

For UE Power Class 1 and 3 the specific requirements and identified sub clauses are specified in Table 6.2.4-1 along with the allowed A-MPR values that may be used to meet these requirements. The allowed A-MPR values specified below in Table 6.2.4.-1 to 6.2.4-15 are in addition to the allowed MPR requirements specified in sub clause 6.2.3.

**Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)**

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks ( $N_{RB}$ )	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	$\leq 1$
			5	>6	$\leq 1$
			10	>6	$\leq 1$
			15	>8	$\leq 1$
			20	>10	$\leq 1$
NS_04	6.6.2.2.2	41	5	>6	$\leq 1$
NS_05	6.6.3.3.1	1	10, 15, 20	Table 6.2.4-4	
NS_06	6.6.2.2.3	12, 13, 14, 17	10, 15, 20	$\geq 50$	$\leq 1$
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	
6.6.3.3.2					
NS_08	6.6.3.3.3	19	10, 15	> 44	$\leq 3$
NS_09	6.6.3.3.4	21	10, 15	> 40	$\leq 1$
				> 55	$\leq 2$
				Table 6.2.4-3	
NS_11	6.6.2.2.1	23	1.4, 3, 5, 10, 15, 20	Table 6.2.4-5	
NS_12	6.6.3.3.5	26	1.4, 3, 5	Table 6.2.4-6	
NS_13	6.6.3.3.6	26	5	Table 6.2.4-7	
NS_14	6.6.3.3.7	26	10, 15	Table 6.2.4-8	
NS_15	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4-9 Table 6.2.4-10	
NS_16	6.6.3.3.9	27	3, 5, 10	Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13	
NS_17	6.6.3.3.10	28	5, 10	Table 5.6-1	N/A
NS_18	6.6.3.3.11	28	5	$\geq 2$	$\leq 1$
			10, 15, 20	$\geq 1$	$\leq 4$
NS_19	6.6.3.3.12	44	10, 15, 20	Table 6.2.4-14	
NS_20	6.2.2 6.6.2.2.1 6.6.3.2	23	5, 10, 15, 20	Table 6.2.4-15	
...					
NS_32	-	-	-	-	-



**Maximum Target Output Power**

<b>Max Target Power(dBm)</b>			
<b>Mode/Band</b>	<b>Channel</b>		
	<b>Low</b>	<b>Middle</b>	<b>High</b>
GSM 850	34.0	34.0	34.0
GPRS 1 TX Slot	33.0	33.0	33.0
GPRS 2 TX Slot	32.0	32.0	32.0
GPRS 3 TX Slot	30.0	30.0	30.0
GPRS 4 TX Slot	29.0	29.0	29.0
EDGE 1 TX Slot	27.5	27.5	27.5
EDGE 2 TX Slot	26.0	26.0	26.0
EDGE 3 TX Slot	25.5	25.5	25.5
EDGE 4 TX Slot	24.0	24.0	24.0
PCS 1900	28.5	28.5	28.5
GPRS 1 TX Slot	28.5	28.5	28.5
GPRS 2 TX Slot	27.5	27.5	27.5
GPRS 3 TX Slot	27.0	27.0	27.0
GPRS 4 TX Slot	25.5	25.5	25.5
EDGE 1 TX Slot	28.0	28.0	28.0
EDGE 2 TX Slot	27.0	27.0	27.0
EDGE 3 TX Slot	26.0	26.0	26.0
EDGE 4 TX Slot	25.0	25.0	25.0
WCDMA Band 2	23.0	23.0	23.0
HSDPA	23.0	23.0	23.0
HSUPA	23.0	23.0	23.0
HSPA+	22.0	22.0	22.0
WCDMA Band 5	22.5	22.5	22.5
HSDPA	22.5	22.5	22.5
HSUPA	22.5	22.5	22.5
HSPA+	22.0	22.0	22.0
LTE Band 2	24.5	24.5	24.5
LTE Band 4	24.0	24.0	24.0
LTE Band 5	24.0	24.0	24.0
LTE Band 7	24.0	24.0	24.0
WLAN 2.4G	13.0	13.0	13.0
Bluetooth BDR/EDR	7.0	7.0	7.0
BLE	0.5	0.5	0.5

## Test Results:

**GSM:**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	<b>33.69</b>
	190	836.6	33.13
	251	848.8	33.10
PCS 1900	512	1850.2	28.20
	661	1880	28.25
	810	1909.8	<b>28.49</b>

**GPRS:**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	32.88	31.66	29.76	28.52
	190	836.6	32.65	31.48	29.46	28.37
	251	848.8	32.58	31.43	29.20	28.30
PCS 1900	512	1850.2	28.15	27.25	26.20	25.09
	661	1880	28.29	27.19	26.19	25.08
	810	1909.8	28.43	27.43	26.53	25.26

**EDGE:**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	27.22	25.00	25.05	23.82
	190	836.6	27.18	25.93	24.85	23.75
	251	848.8	27.02	25.66	24.73	23.54
PCS 1900	512	1850.2	27.73	26.57	25.54	24.54
	661	1880	26.14	25.96	24.82	24.10
	810	1909.8	26.82	25.54	24.59	23.64

For SAR, the time based average power is relevant, the difference in between depends on the duty cycle of the TDMA signal.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.25 dB	-3 dB
Crest Factor	8	4	2.66	2

**The time based average power for GPRS**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	23.88	<b>25.66</b>	25.51	25.52
	190	836.6	23.65	25.48	25.21	25.37
	251	848.8	23.58	25.43	24.95	25.30
PCS 1900	512	1850.2	19.15	21.25	21.95	22.09
	661	1880	19.29	21.19	21.94	22.08
	810	1909.8	19.43	21.43	22.28	<b>22.26</b>

**The time based average power for EDGE**

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	18.22	19.00	20.80	20.82
	190	836.6	18.18	19.93	20.60	20.75
	251	848.8	18.02	19.66	20.48	20.54
PCS 1900	512	1850.2	18.73	20.57	21.29	21.54
	661	1880	17.14	19.96	20.57	21.10
	810	1909.8	17.82	19.54	20.34	20.64

**Note:**

1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.
2. For GSM voice, 1 timeslot has been activated with power level 5 (850 MHz band) and 0 (1900 MHz band).
3. For GPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 3(850 MHz band) and 3(1900 MHz band).

**WCDMA Band 2:**

Test Condition	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
Normal	RMC12.2k		21.94	22.90	<b>22.91</b>
	HSDPA	1	<b>22.60</b>	22.28	22.29
		2	22.58	22.29	22.35
		3	22.51	22.15	22.33
		4	22.03	22.58	22.20
	HSUPA	1	<b>22.03</b>	21.91	21.67
		2	21.70	21.57	21.57
		3	21.91	21.71	21.67
		4	21.91	21.78	21.74
		5	21.82	21.71	21.67
	HSPA+	1	21.82	21.65	21.61

**WCDMA Band 5:**

Test Condition	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
Normal	RMC12.2k		21.56	<b>21.64</b>	21.54
	HSDPA	1	22.08	<b>22.17</b>	22.11
		2	22.09	22.14	22.12
		3	21.85	21.83	22.10
		4	21.85	22.17	22.09
	HSUPA	1	21.57	21.75	21.78
		2	21.55	21.63	22.01
		3	21.75	21.53	21.52
		4	21.53	21.82	21.68
		5	21.57	21.63	<b>22.04</b>
	HSPA+	1	21.79	21.62	21.59

**Note:**

1. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model 1.
2. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/ HSPA+ when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

**LTE Band 2:**

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	23.64	23.58	23.58
		RB1#2	0	0	23.80	23.65	23.69
		RB1#5	0	0	23.72	23.73	23.64
		RB3#0	1	1	23.83	23.41	23.89
		RB3#1	1	1	23.89	23.63	23.86
		RB3#2	1	1	22.83	22.44	22.70
		RB6#0	1	1	22.76	22.96	23.36
	16-QAM	RB1#0	1	1	22.83	22.90	23.32
		RB1#2	1	1	22.70	22.80	23.37
		RB1#5	1	1	22.87	22.51	22.71
		RB3#0	2	2	22.90	22.57	22.75
		RB3#1	2	2	22.02	21.78	21.92
		RB3#2	2	2	23.68	23.64	23.64
		RB6#0	2	2	23.83	23.63	23.63
3M	QPSK	RB1#0	0	0	23.60	23.38	23.61
		RB1#7	0	0	23.74	23.37	23.74
		RB1#14	0	0	23.64	23.38	23.77
		RB8#0	1	1	22.69	22.46	22.74
		RB8#4	1	1	22.50	22.46	22.63
		RB8#7	1	1	22.85	22.52	22.67
		RB15#0	1	1	23.68	23.41	23.75
	16-QAM	RB1#0	1	1	23.14	23.12	22.59
		RB1#7	1	1	23.14	23.07	22.75
		RB1#14	1	1	22.94	23.04	22.64
		RB8#0	2	2	22.12	21.68	22.03
		RB8#4	2	2	21.91	21.64	22.08
		RB8#7	2	2	21.95	21.60	21.90
		RB15#0	2	2	23.11	22.97	22.70
5M	QPSK	RB1#0	0	0	23.71	23.52	23.63
		RB1#12	0	0	23.65	23.68	23.76
		RB1#24	0	0	23.65	23.74	23.38
		RB12#0	1	1	22.95	22.46	22.81
		RB12#6	1	1	22.74	22.49	22.84
		RB12#11	1	1	22.62	22.46	22.82
		RB25#0	1	1	22.29	22.76	22.31
	16-QAM	RB1#0	1	1	22.07	22.62	22.45
		RB1#12	1	1	21.95	22.72	22.52
		RB1#24	1	1	21.94	21.41	21.80
		RB12#0	2	2	21.93	21.52	21.92
		RB12#6	2	2	21.87	21.66	21.68
		RB12#11	2	2	23.67	23.65	23.72
		RB25#0	2	2	23.61	23.72	23.74

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	23.70	23.54	23.57
		RB1#24	0	0	23.63	23.38	23.58
		RB1#49	0	0	23.61	23.45	23.83
		RB25#0	1	1	22.71	22.49	22.59
		RB25#12	1	1	22.66	22.56	22.72
		RB25#24	1	1	22.80	22.44	22.68
		RB50#0	1	1	23.27	22.69	22.02
	16-QAM	RB1#0	1	1	23.17	22.74	22.30
		RB1#24	1	1	23.07	22.75	22.30
		RB1#49	1	1	21.84	21.82	21.84
		RB25#0	2	2	21.88	21.76	21.97
		RB25#12	2	2	21.78	21.68	21.83
		RB25#24	2	2	23.73	23.53	23.61
		RB50#0	2	2	23.59	23.37	23.64
15M	QPSK	RB1#0	0	0	23.75	23.55	23.52
		RB1#37	0	0	23.63	23.46	23.51
		RB1#74	0	0	23.37	23.36	23.64
		RB36#0	1	1	22.67	22.47	22.55
		RB36#18	1	1	22.66	22.51	22.65
		RB36#37	1	1	22.82	22.56	22.69
		RB75#0	1	1	23.26	22.84	22.95
	16-QAM	RB1#0	1	1	23.16	22.87	23.00
		RB1#37	1	1	23.04	22.76	23.13
		RB1#74	1	1	21.78	21.67	21.66
		RB36#0	2	2	21.84	21.68	21.88
		RB36#18	2	2	21.81	21.67	21.83
		RB36#37	2	2	23.65	23.49	23.41
		RB75#0	2	2	23.55	23.37	23.57
20M	QPSK	RB1#0	0	0	23.96	23.65	23.58
		RB1#49	0	0	23.49	23.42	23.64
		RB1#99	0	0	23.79	23.51	23.84
		RB50#0	1	1	22.66	22.49	22.59
		RB50#24	1	1	22.56	22.71	22.78
		RB50#49	1	1	22.73	22.51	22.63
		RB100#0	1	1	23.06	22.70	23.25
	16-QAM	RB1#0	1	1	22.68	22.53	23.38
		RB1#49	1	1	22.69	22.48	23.36
		RB1#99	1	1	21.93	21.83	21.68
		RB50#0	2	2	21.80	21.77	21.79
		RB50#24	2	2	21.84	21.63	21.83
		RB50#49	2	2	24.02	23.58	23.61
		RB100#0	2	2	23.55	23.45	23.76

**LTE Band 4:**

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	23.67	23.61	23.92
		RB1#2	0	0	23.78	23.60	23.92
		RB1#5	0	0	23.66	23.53	23.80
		RB3#0	1	1	23.82	23.69	23.90
		RB3#1	1	1	23.85	23.70	23.79
		RB3#2	1	1	22.69	22.69	22.70
		RB6#0	1	1	23.32	22.58	23.68
	16-QAM	RB1#0	1	1	23.40	22.72	23.82
		RB1#2	1	1	23.35	22.54	23.71
		RB1#5	1	1	22.77	22.81	22.94
		RB3#0	2	2	22.78	22.88	23.05
		RB3#1	2	2	21.91	21.89	21.90
		RB3#2	2	2	23.75	23.65	23.94
		RB6#0	2	2	23.64	23.58	23.93
3M	QPSK	RB1#0	0	0	23.65	23.55	23.74
		RB1#7	0	0	23.65	23.45	23.65
		RB1#14	0	0	23.66	23.51	23.76
		RB8#0	1	1	22.64	22.52	22.81
		RB8#4	1	1	22.67	22.58	22.93
		RB8#7	1	1	22.68	22.61	22.70
		RB15#0	1	1	22.57	22.97	23.57
	16-QAM	RB1#0	1	1	22.57	23.11	23.57
		RB1#7	1	1	22.58	23.11	23.60
		RB1#14	1	1	21.92	21.69	21.87
		RB8#0	2	2	22.05	21.68	21.98
		RB8#4	2	2	21.81	21.65	22.03
		RB8#7	2	2	23.69	23.46	23.74
		RB15#0	2	2	23.75	23.42	23.71
5M	QPSK	RB1#0	0	0	23.57	23.43	23.85
		RB1#12	0	0	23.55	23.47	23.91
		RB1#24	0	0	23.59	23.55	23.87
		RB12#0	1	1	22.69	22.59	22.71
		RB12#6	1	1	22.67	22.73	22.81
		RB12#11	1	1	22.56	22.56	22.64
		RB25#0	1	1	22.34	22.00	22.87
	16-QAM	RB1#0	1	1	22.31	21.92	22.93
		RB1#12	1	1	22.36	21.99	23.00
		RB1#24	1	1	21.78	21.72	21.81
		RB12#0	2	2	21.78	21.83	21.88
		RB12#6	2	2	21.71	21.89	21.96
		RB12#11	2	2	23.64	23.52	23.76
		RB25#0	2	2	23.48	23.43	23.77

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	23.57	23.62	23.99
		RB1#24	0	0	23.63	23.48	23.98
		RB1#49	0	0	23.65	23.54	23.98
		RB25#0	1	1	22.70	22.65	22.78
		RB25#12	1	1	22.65	22.53	22.89
		RB25#24	1	1	22.82	22.75	22.77
		RB50#0	1	1	22.95	22.68	22.37
	16-QAM	RB1#0	1	1	22.84	22.81	22.56
		RB1#24	1	1	22.80	22.84	22.51
		RB1#49	1	1	21.79	21.90	22.02
		RB25#0	2	2	21.79	21.83	22.02
		RB25#12	2	2	21.74	21.81	22.05
		RB25#24	2	2	23.56	23.61	23.85
		RB50#0	2	2	23.69	23.50	23.94
15M	QPSK	RB1#0	0	0	23.65	23.59	23.87
		RB1#37	0	0	23.64	23.66	23.87
		RB1#74	0	0	23.63	23.66	23.87
		RB36#0	1	1	22.74	22.52	22.82
		RB36#18	1	1	22.54	22.66	22.72
		RB36#37	1	1	22.63	22.72	22.79
		RB75#0	1	1	22.88	22.80	23.13
	16-QAM	RB1#0	1	1	22.90	22.74	23.19
		RB1#37	1	1	22.92	22.88	23.37
		RB1#74	1	1	21.89	21.76	21.79
		RB36#0	2	2	21.81	21.93	21.98
		RB36#18	2	2	21.85	21.86	21.98
		RB36#37	2	2	23.56	23.59	23.85
		RB75#0	2	2	23.51	23.56	23.91
20M	QPSK	RB1#0	0	0	23.78	23.58	23.66
		RB1#49	0	0	23.72	23.56	23.82
		RB1#99	0	0	23.86	23.62	23.97
		RB50#0	1	1	22.75	22.75	22.80
		RB50#24	1	1	22.74	22.75	22.80
		RB50#49	1	1	22.74	22.64	22.75
		RB100#0	1	1	22.63	23.11	23.20
	16-QAM	RB1#0	1	1	22.67	23.04	23.35
		RB1#49	1	1	22.63	23.21	23.58
		RB1#99	1	1	22.02	21.91	21.74
		RB50#0	2	2	21.92	21.85	22.01
		RB50#24	2	2	21.80	21.75	21.92
		RB50#49	2	2	23.88	23.68	23.62
		RB100#0	2	2	23.72	23.59	23.72



**LTE Band 5:**

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	23.23	23.28	23.33
		RB1#2	0	0	23.22	23.33	23.25
		RB1#5	0	0	23.30	23.30	23.28
		RB3#0	1	1	23.29	23.33	23.40
		RB3#1	1	1	23.36	23.49	23.31
		RB3#2	1	1	22.17	22.19	22.32
		RB6#0	1	1	22.85	22.88	23.11
	16-QAM	RB1#0	1	1	22.71	22.82	23.12
		RB1#2	1	1	22.73	22.80	23.19
		RB1#5	1	1	22.48	22.35	22.06
		RB3#0	2	2	22.50	22.41	22.10
		RB3#1	2	2	21.34	21.48	21.24
		RB3#2	2	2	23.25	23.32	23.28
		RB6#0	2	2	23.21	23.38	23.25
3M	QPSK	RB1#0	0	0	23.24	23.21	23.43
		RB1#7	0	0	23.19	23.23	23.49
		RB1#14	0	0	23.22	23.30	23.50
		RB8#0	1	1	22.24	22.23	22.41
		RB8#4	1	1	22.30	22.25	22.44
		RB8#7	1	1	22.42	22.34	22.40
		RB15#0	1	1	22.51	23.15	22.07
	16-QAM	RB1#0	1	1	22.41	23.02	21.93
		RB1#7	1	1	22.32	22.97	22.00
		RB1#14	1	1	21.42	21.28	21.53
		RB8#0	2	2	21.40	21.25	21.59
		RB8#4	2	2	21.27	21.35	21.45
		RB8#7	2	2	23.24	23.29	23.55
		RB15#0	2	2	23.15	23.19	23.45
5M	QPSK	RB1#0	0	0	23.26	23.42	23.34
		RB1#12	0	0	23.18	23.32	23.33
		RB1#24	0	0	23.23	23.41	23.33
		RB12#0	1	1	22.30	22.27	22.40
		RB12#6	1	1	22.30	22.24	22.21
		RB12#11	1	1	22.33	22.26	22.30
		RB25#0	1	1	21.60	22.44	21.92
	16-QAM	RB1#0	1	1	21.53	22.35	21.97
		RB1#12	1	1	21.61	22.36	22.02
		RB1#24	1	1	21.27	21.06	21.31
		RB12#0	2	2	21.30	21.07	21.30
		RB12#6	2	2	21.47	21.16	21.20
		RB12#11	2	2	23.29	23.37	23.22
		RB25#0	2	2	23.12	23.29	23.36

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	23.35	23.26	23.30
		RB1#24	0	0	23.30	23.18	23.26
		RB1#49	0	0	23.21	23.28	23.41
		RB25#0	1	1	22.31	22.29	22.21
		RB25#12	1	1	22.36	22.15	22.29
		RB25#24	1	1	22.34	22.31	22.30
		RB50#0	1	1	21.85	22.47	22.38
	16-QAM	RB1#0	1	1	21.79	22.47	22.33
		RB1#24	1	1	21.71	22.51	22.47
		RB1#49	1	1	21.47	21.32	21.44
		RB25#0	2	2	21.39	21.21	21.37
		RB25#12	2	2	21.30	21.24	21.39
		RB25#24	2	2	23.22	23.25	23.45
		RB50#0	2	2	23.27	23.17	23.32

**LTE Band 7:**

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	RB1#0	0	0	22.42	22.72	21.93
		RB1#12	0	0	23.12	23.31	23.56
		RB1#24	0	0	23.21	23.22	23.69
		RB12#0	1	1	23.15	23.26	23.64
		RB12#6	1	1	22.35	22.32	22.36
		RB12#11	1	1	22.33	22.24	22.64
		RB25#0	1	1	22.40	22.31	22.70
	16-QAM	RB1#0	1	1	23.23	23.25	23.56
		RB1#12	1	1	22.55	22.58	22.14
		RB1#24	1	1	22.60	22.59	22.13
		RB12#0	2	2	21.41	21.47	21.59
		RB12#6	2	2	21.43	21.41	21.71
		RB12#11	2	2	21.47	21.50	21.63
		RB25#0	2	2	23.06	23.33	23.46
10M	QPSK	RB1#0	0	0	23.23	23.29	23.45
		RB1#24	0	0	23.19	23.31	23.70
		RB1#49	0	0	23.23	23.21	23.70
		RB25#0	1	1	22.41	22.37	22.45
		RB25#12	1	1	22.20	22.25	22.65
		RB25#24	1	1	22.30	22.32	22.70
		RB50#0	1	1	22.47	22.72	21.94
	16-QAM	RB1#0	1	1	22.58	22.56	22.05
		RB1#24	1	1	22.60	22.52	22.12
		RB1#49	1	1	21.36	21.55	21.61
		RB25#0	2	2	21.51	21.55	21.74
		RB25#12	2	2	21.59	21.48	21.69
		RB25#24	2	2	23.13	23.33	23.56
		RB50#0	2	2	23.22	23.21	23.63
15M	QPSK	RB1#0	0	0	23.40	23.22	23.33
		RB1#37	0	0	23.40	23.17	23.32
		RB1#74	0	0	23.44	23.11	23.40
		RB36#0	1	1	22.27	22.37	22.44
		RB36#18	1	1	22.37	22.39	22.42
		RB36#37	1	1	22.33	22.35	22.38
		RB75#0	1	1	22.69	22.63	22.84
	16-QAM	RB1#0	1	1	22.79	22.64	22.92
		RB1#37	1	1	23.00	22.60	22.99
		RB1#74	1	1	21.42	21.58	21.50
		RB36#0	2	2	21.60	21.51	21.60
		RB36#18	2	2	21.57	21.42	21.65
		RB36#37	2	2	23.41	23.15	23.35
		RB75#0	2	2	23.30	23.11	23.46

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
20M	QPSK	RB1#0	0	0	23.46	23.45	23.55
		RB1#49	0	0	23.34	23.45	23.61
		RB1#99	0	0	23.66	23.37	23.69
		RB50#0	1	1	22.32	22.44	22.40
		RB50#24	1	1	22.51	22.32	22.49
		RB50#49	1	1	22.30	22.32	22.43
		RB100#0	1	1	22.26	22.95	22.86
	16-QAM	RB1#0	1	1	22.36	22.95	23.06
		RB1#49	1	1	22.57	22.88	23.11
		RB1#99	1	1	21.58	21.70	21.54
		RB50#0	2	2	21.63	21.69	21.72
		RB50#24	2	2	21.41	21.50	21.60
		RB50#49	2	2	23.42	23.37	23.51
		RB100#0	2	2	23.45	23.31	23.53

**Wi-Fi 2.4G:**

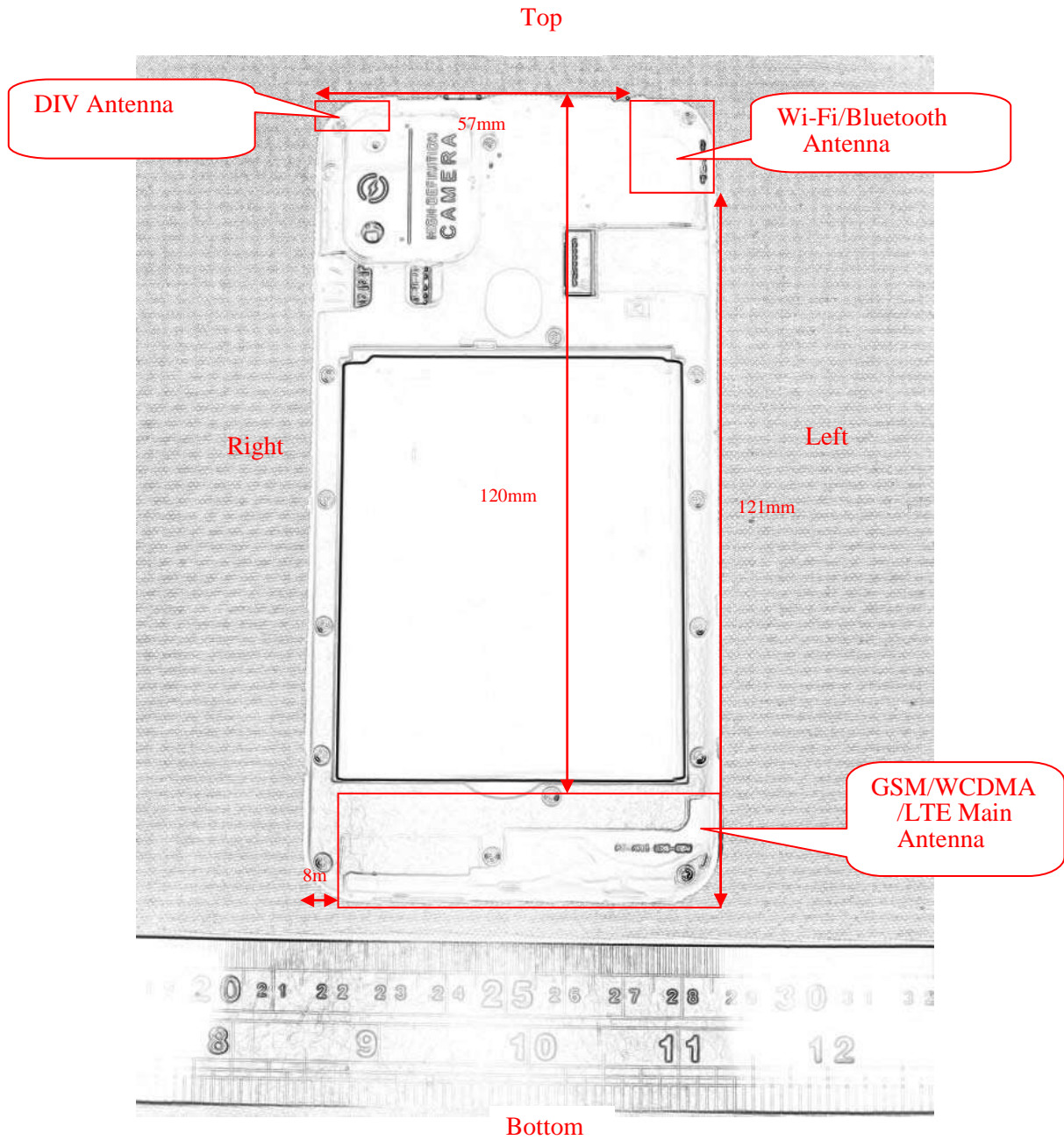
Mode	Channel frequency (MHz)	Data Rate	Conducted Average Output
802.11b	2412	1Mbps	<b>12.84</b>
	2437		11.82
	2462		12.55
802.11g	2412	6Mbps	12.13
	2437		12.12
	2462		12.56
802.11n HT20	2412	MCS0	10.72
	2437		11.53
	2462		12.40

**Bluetooth:**

Mode	Channel frequency (MHz)	RF Output Power (dBm)
BDR(GFSK)	2402	6.00
	2441	5.57
	2480	3.80
EDR( $\pi/4$ -DQPSK)	2402	6.66
	2441	5.45
	2480	3.83
EDR(8DPSK)	2402	<b>6.70</b>
	2441	5.54
	2480	3.91
BLE_1M	2402	<b>0.09</b>
	2440	-0.16
	2480	-1.88

## Standalone SAR test exclusion considerations

### Antennas Location:



### Back View

*Note: The DIV antenna can only receive.*

**Antenna Distance To Edge**

Antenna Distance To Edge(mm)					
Antenna	Back	Left	Right	Top	Bottom
Wi-Fi/Bluetooth	< 5	< 5	57	< 5	121
Main ant(GSM/WCDMA/LTE)	< 5	< 5	8	120	< 5

**Standalone SAR test exclusion considerations**

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
Bluetooth	2480	7.0	5.01	0	1.6	3	Yes
2.4G WLAN	2462	13.0	19.95	0	6.3	3	No

**NOTE:**

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot$

$[\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

1.  $f(\text{GHz})$  is the RF channel transmit frequency in GHz.

2. Power and distance are rounded to the nearest mW and mm before calculation.

3. The result is rounded to one decimal place for comparison.

4. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test Exclusion.

**Standalone SAR estimation:**

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Estimated 1-g (W/kg)
BT Head	2480	7.0	5.01	0	0.21
BT Body	2480	7.0	5.01	10	0.11

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})} / x]$$

W/kg for test separation distances  $\leq 50$  mm;

where  $x = 7.5$  for 1-g SAR.

When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test Exclusion

**SAR test exclusion for the EUT edge considerations Result**

Antenna Distance To Edge(mm)					
Mode	Back	Left	Right	Top	Bottom
Bluetooth	Exclusion*	Exclusion*	Exclusion*	Exclusion*	Exclusion*
2.4G Wi-Fi	<b>Required</b>	<b>Required</b>	Exclusion	<b>Required</b>	Exclusion
Main ANT(GSM/WCDMA/LTE)	<b>Required</b>	<b>Required</b>	<b>Required</b>	Exclusion	<b>Required</b>

**Note:**

**Required:** The distance to Edge is less than 25mm, testing is required.

**Exclusion\*:** SAR test exclusion evaluation has been done above.

**Exclusion:** The distance to Edge is more than 25 mm, testing is not required.



## SAR MEASUREMENT RESULTS

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This page summarizes the results of the performed dosimetric evaluation.

### SAR Test Data

#### Environmental Conditions

<b>Temperature:</b>	22.1-23.9 °C	22.6-23.9 °C	22.0-23.6 °C	22.1-23.9 °C
<b>Relative Humidity:</b>	44-63%	45-62 %	44-58 %	40-55 %
<b>ATM Pressure:</b>	101.2 kPa	101.5 kPa	101.3 kPa	101.8 kPa
<b>Test Date:</b>	2022/1/6	2022/1/7	2022/1/8	2022/1/9

*Testing was performed by Seven Liang, Jacky Yang, Fake ou.*

**GSM 850 :**

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	824.2	GSM	/	/	/	/	/	/
	836.6	GSM	33.39	34.0	1.151	0.343	0.39	1#
	848.8	GSM	/	/	/	/	/	/
Head Left Tilt	824.2	GSM	/	/	/	/	/	/
	836.6	GSM	33.39	34.0	1.151	0.219	0.25	2#
	848.8	GSM	/	/	/	/	/	/
Head Right Cheek	824.2	GSM	/	/	/	/	/	/
	836.6	GSM	33.39	34.0	1.151	0.338	0.39	3#
	848.8	GSM	/	/	/	/	/	/
Head Right Tilt	824.2	GSM	/	/	/	/	/	/
	836.6	GSM	33.39	34.0	1.151	0.198	0.23	4#
	848.8	GSM	/	/	/	/	/	/
Body Worn Back (10mm)	824.2	GSM	/	/	/	/	/	/
	836.6	GSM	33.39	34.0	1.151	0.683	0.79	5#
	848.8	GSM	/	/	/	/	/	/
Body Back (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	31.48	32.0	1.127	0.589	0.66	6#
	848.8	GPRS	/	/	/	/	/	/
Body Left (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	31.48	32.0	1.127	0.350	0.39	7#
	848.8	GPRS	/	/	/	/	/	/
Body Right (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	31.48	32.0	1.127	0.007	0.01	8#
	848.8	GPRS	/	/	/	/	/	/
Body Bottom (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	31.48	32.0	1.127	0.070	0.08	9#
	848.8	GPRS	/	/	/	/	/	/

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is  $> 0.5$  dB, instead of the middle channel, the highest output power channel must be used.
5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 3DL+2UL is the worst case.

## PCS 1900 :

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	1850.2	GSM	/	/	/	/	/	/
	1880	GSM	28.25	28.5	1.059	0.115	0.12	10#
	1909.8	GSM	/	/	/	/	/	/
Head Left Tilt	1850.2	GSM	/	/	/	/	/	/
	1880	GSM	28.25	28.5	1.059	0.060	0.06	11#
	1909.8	GSM	/	/	/	/	/	/
Head Right Cheek	1850.2	GSM	/	/	/	/	/	/
	1880	GSM	28.25	28.5	1.059	0.145	0.15	12#
	1909.8	GSM	/	/	/	/	/	/
Head Right Tilt	1850.2	GSM	/	/	/	/	/	/
	1880	GSM	28.25	28.5	1.059	0.024	0.03	13#
	1909.8	GSM	/	/	/	/	/	/
Body Worn Back (10mm)	1850.2	GSM	/	/	/	/	/	/
	1880	GSM	28.25	28.5	1.059	0.458	0.49	14#
	1909.8	GSM	/	/	/	/	/	/
Body Back (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	25.08	25.5	1.102	0.442	0.49	15#
	1909.8	GPRS	/	/	/	/	/	/
Body Left (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	25.08	25.5	1.102	0.094	0.10	16#
	1909.8	GPRS	/	/	/	/	/	/
Body Right (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	25.08	25.5	1.102	0.065	0.07	17#
	1909.8	GPRS	/	/	/	/	/	/
Body Bottom (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	25.08	25.5	1.102	0.571	0.63	18#
	1909.8	GPRS	/	/	/	/	/	/

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the maximum output power variation across the required test channels is  $> 0.5\text{ dB}$ , instead of the middle channel, the highest output power channel must be used.
5. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 1DL+4UL is the worst case.

## WCDMA Band 2 :

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.171	0.17	19#
	1907.6	RMC	/	/	/	/	/	/
Head Left Tilt	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.088	0.09	20#
	1907.6	RMC	/	/	/	/	/	/
Head Right Cheek	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.251	0.26	21#
	1907.6	RMC	/	/	/	/	/	/
Head Right Tilt	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.054	0.06	22#
	1907.6	RMC	/	/	/	/	/	/
Body Back (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.749	0.77	23#
	1907.6	RMC	/	/	/	/	/	/
Body Left (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.148	0.15	24#
	1907.6	RMC	/	/	/	/	/	/
Body Right (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.90	23.0	1.023	0.149	0.15	25#
	1907.6	RMC	/	/	/	/	/	/
Body Bottom (10mm)	1852.4	RMC	21.94	23.0	1.276	0.971	1.24	26#
	1880	RMC	22.90	23.0	1.023	0.932	0.95	27#
	1907.6	RMC	22.91	23.0	1.021	1.13	1.15	28#

**WCDMA Band 5 :**

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.312	0.38	29#
	846.6	RMC	/	/	/	/	/	/
Head Left Tilt	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.195	0.24	30#
	846.6	RMC	/	/	/	/	/	/
Head Right Cheek	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.329	0.40	31#
	846.6	RMC	/	/	/	/	/	/
Head Right Tilt	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.145	0.18	32#
	846.6	RMC	/	/	/	/	/	/
Body Back (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.571	0.70	33#
	846.6	RMC	/	/	/	/	/	/
Body Left (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.308	0.38	34#
	846.6	RMC	/	/	/	/	/	/
Body Right (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.368	0.45	35#
	846.6	RMC	/	/	/	/	/	/
Body Bottom (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.64	22.5	1.219	0.073	0.09	36#
	846.6	RMC	/	/	/	/	/	/

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. The EUT transmit and receive through the same antenna while testing SAR.
3. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model.
4. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/ HSPA+ when the maximum average output of each RF channel is less than  $\frac{1}{4}$  dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is  $< 75\%$  of SAR limit.
5. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.

**LTE Band 2 :**

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.180	0.22	37#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.141	0.22	38#
Head Left Tilt	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.068	0.08	39#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.051	0.08	40#
Head Right Cheek	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.187	0.23	41#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.144	0.23	42#
Head Right Tilt	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.041	0.05	43#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.028	0.04	44#
Body Back (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.506	0.62	45#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.398	0.63	46#
Body Left (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.122	0.15	47#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.094	0.15	48#
Body Right (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.085	0.10	49#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.066	0.10	50#
Body Bottom (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.65	24.5	1.216	0.623	0.76	51#
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.49	24.5	1.589	0.491	0.78	52#

**LTE Band 4 :**

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.196	0.21	53#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.148	0.20	54#
Head Left Tilt	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.148	0.16	55#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.108	0.14	56#
Head Right Cheek	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.347	0.37	57#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.267	0.36	58#
Head Right Tilt	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.154	0.16	59#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.114	0.15	60#
Body Back (10mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.652	0.69	61#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.499	0.67	62#
Body Left (10mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.172	0.18	63#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.103	0.14	64#
Body Right (10mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.226	0.24	65#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.175	0.23	66#
Body Bottom (10mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	23.78	24.0	1.052	0.753	0.79	67#
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	22.75	24.0	1.334	0.588	0.78	68#

**LTE Band 5 :**

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.336	0.40	69#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.273	0.40	70#
Head Left Tilt	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.206	0.24	71#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.166	0.25	72#
Head Right Cheek	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.333	0.39	73#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.268	0.40	74#
Head Right Tilt	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.155	0.18	75#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.122	0.18	76#
Body Back (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.613	0.73	77#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.478	0.71	78#
Body Left (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.318	0.38	79#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.256	0.38	80#
Body Right (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.351	0.42	81#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.285	0.42	82#
Body Bottom (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.26	24.0	1.186	0.103	0.12	83#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.29	24.0	1.483	0.083	0.12	84#



## LTE Band 7 :

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.092	0.10	85#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.074	0.09	86#
Head Left Tilt	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.032	0.03	87#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.020	0.02	88#
Head Right Cheek	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.045	0.05	89#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.035	0.04	90#
Head Right Tilt	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.054	0.06	91#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.039	0.05	92#
Body Back (10mm)	2510	20	1RB	23.46	24.0	1.132	1.06	1.20	93#
	2535	20	1RB	23.85	24.0	1.035	1.20	1.24	94#
	2560	20	1RB	23.95	24.0	1.012	1.30	1.32	95#
	2510	20	50%RB	22.32	24.0	1.472	0.891	1.31	96#
	2535	20	50%RB	23.34	24.0	1.164	1.11	1.29	97#
	2560	20	50%RB	23.30	24.0	1.175	1.09	1.28	98#
	2535	20	100%RB	22.95	24.0	1.274	1.03	1.31	99#
Body Left (10mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.123	0.13	100#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.100	0.12	101#
Body Right (10mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.85	24.0	1.035	0.035	0.04	102#
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.34	24.0	1.164	0.084	0.10	103#
Body Bottom (10mm)	2510	20	1RB	23.46	24.0	1.132	0.811	0.92	104#
	2535	20	1RB	23.85	24.0	1.035	1.12	1.16	105#
	2560	20	1RB	23.95	24.0	1.012	1.11	1.12	106#
	2510	20	50%RB	22.32	24.0	1.472	0.756	1.11	107#
	2535	20	50%RB	23.34	24.0	1.164	0.849	0.99	108#
	2560	20	50%RB	23.30	24.0	1.175	0.779	0.92	109#
	2535	20	100%RB	22.95	24.0	1.274	0.950	1.21	110#

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02.
3. KDB941225D05-SAR for higher order modulation is required only when the highest maximum output power for the configuration in the higher order modulation is  $> 0.5$  dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is  $> 1.45$  W/kg
4. KDB941225D05-For QPSK with 100% RB allocation, when the reported SAR measured for the Highest output power channel is  $< 1.45$  W/kg, tests for the remaining required test channels are optional.
5. KDB941225D05- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8$  W/kg.
6. KDB941225D05- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offset the upper edge, middle and lower edge of each required test channel.
7. KDB941225D05- other channel bandwidths SAR test is required when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> 0.5$  dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is  $> 1.45$  W/kg.
8. Worst case SAR for 50% RB allocation is selected to be tested.
9. KDB 648474 D04-When the peak SAR located in regions that probe is unable to access, a flat phantom is used for SAR measurement.

**WLAN 2.4G:**

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	2412	802.11b	12.84	13.0	1.038	0.181	0.19	111#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Head Left Tilt	2412	802.11b	12.84	13.0	1.038	0.117	0.12	112#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Head Right Cheek	2412	802.11b	12.84	13.0	1.038	0.432	0.45	113#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Head Right Tilt	2412	802.11b	12.84	13.0	1.038	0.244	0.25	114#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Body Back (10mm)	2412	802.11b	12.84	13.0	1.038	0.170	0.18	115#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Body Left (10mm)	2412	802.11b	12.84	13.0	1.038	0.150	0.16	116#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/
Body Top (10mm)	2412	802.11b	12.84	13.0	1.038	0.039	0.04	117#
	2437	802.11b	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. When the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $\leq 1.2\text{ W/kg}$ , OFDM SAR is not required.
3. When SAR or MPE is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance.
4. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11b/g/n mode is use for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

## SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. 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

- 1) Repeated measurement is not required when the original highest measured SAR is  $< 0.80$  W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is  $\geq 0.80$  W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is  $> 1.20$  or when the original or repeated measurement is  $\geq 1.45$  W/kg (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is  $\geq 1.5$  W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $> 1.20$ .

### The Highest Measured SAR Configuration in Each Frequency Band

#### Head

SAR probe calibration point	Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
				Original	Repeated	
/	/	/	/	/	/	/

#### Body

SAR probe calibration point	Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
				Original	Repeated	
1900MHz (1850-2000MHz)	WCDMA Band 2	1907.6	Body Back	1.13	1.11	1.02
2600MHz (2550-2700MHz)	LTE Band 7	2560	Body Back	1.30	1.29	1.00

#### Note:

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not  $> 1.20$ .
2. The measured SAR results **do not** have to be scaled to the maximum tune-up tolerance to determine if repeated measurements are required.
3. SAR measurement variability must be assessed for each frequency band, which is determined by the **SAR probe calibration point and tissue-equivalent medium** used for the device measurements..

## SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

### Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities		
Transmitter Combination	Simultaneous?	Hotspot?
WWAN(GSM/WCDMA/LTE) + Bluetooth	√	×
WWAN(GSM/WCDMA/LTE) + WLAN	√	√
WLAN + Bluetooth	×	×

### Simultaneous and Hotspot SAR test exclusion considerations:

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		$\Sigma$ SAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+Bluetooth	Head Left Cheek	0.39	0.21	0.600
	Head Left Tilt	0.25	0.21	0.460
	Head Right Cheek	0.39	0.21	0.600
	Head Right Tilt	0.23	0.21	0.440
	Body Worn Back	0.79	0.11	0.900
	Body Back	0.66	0.11	0.770
PCS 1900+ Bluetooth	Head Left Cheek	0.12	0.21	0.330
	Head Left Tilt	0.06	0.21	0.270
	Head Right Cheek	0.15	0.21	0.360
	Head Right Tilt	0.03	0.21	0.240
	Body Worn Back	0.49	0.11	0.600
	Body Back	0.49	0.11	0.600
WCDMA Band 2+ Bluetooth	Head Left Cheek	0.17	0.21	0.380
	Head Left Tilt	0.09	0.21	0.300
	Head Right Cheek	0.26	0.21	0.470
	Head Right Tilt	0.06	0.21	0.270
	Body Back	0.77	0.11	0.880
WCDMA Band 5+ Bluetooth	Head Left Cheek	0.38	0.21	0.590
	Head Left Tilt	0.24	0.21	0.450
	Head Right Cheek	0.40	0.21	0.610
	Head Right Tilt	0.18	0.21	0.390
	Body Back	0.70	0.11	0.810
LTE Band 2+ Bluetooth	Head Left Cheek	0.22	0.21	0.430
	Head Left Tilt	0.08	0.21	0.290
	Head Right Cheek	0.23	0.21	0.440
	Head Right Tilt	0.05	0.21	0.260
	Body Back	0.63	0.11	0.740
LTE Band 4+ Bluetooth	Head Left Cheek	0.21	0.21	0.420
	Head Left Tilt	0.16	0.21	0.370
	Head Right Cheek	0.37	0.21	0.580
	Head Right Tilt	0.16	0.21	0.370
	Body Back	0.69	0.11	0.800

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		$\Sigma$ SAR < 1.6W/kg
		SAR1	SAR2	
LTE Band 5+ Bluetooth	Head Left Cheek	0.40	0.21	0.610
	Head Left Tilt	0.25	0.21	0.460
	Head Right Cheek	0.40	0.21	0.610
	Head Right Tilt	0.18	0.21	0.390
	Body Back	0.73	0.11	0.840
LTE Band 7+ Bluetooth	Head Left Cheek	0.10	0.21	0.310
	Head Left Tilt	0.03	0.21	0.240
	Head Right Cheek	0.05	0.21	0.260
	Head Right Tilt	0.06	0.21	0.270
	Body Back	1.32	0.11	1.430

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		$\Sigma$ SAR < 1.6W/kg
		SAR1	SAR2	
GSM 850+ Wi-Fi 2.4G	Head Left Cheek	0.39	0.19	0.580
	Head Left Tilt	0.25	0.12	0.370
	Head Right Cheek	0.39	0.45	0.840
	Head Right Tilt	0.23	0.25	0.480
GSM 850+ Wi-Fi 2.4G (Hotspot)	Body Back	0.66	0.18	0.840
	Body Left	0.39	0.16	0.550
	Body Right	0.01	/	0.010
	Body Top	/	/	0.000
	Body Bottom	0.08	0.04	0.120
PCS 1900+ Wi-Fi 2.4G	Head Left Cheek	0.12	0.19	0.310
	Head Left Tilt	0.06	0.12	0.180
	Head Right Cheek	0.15	0.45	0.600
	Head Right Tilt	0.03	0.25	0.280
PCS 1900+ Wi-Fi 2.4G (Hotspot)	Body Back	0.49	0.18	0.670
	Body Left	0.10	0.16	0.260
	Body Right	0.07	/	0.070
	Body Top	/	/	0.000
	Body Bottom	0.63	0.04	0.670
WCDMA Band 2+ Wi-Fi 2.4G	Head Left Cheek	0.17	0.19	0.360
	Head Left Tilt	0.09	0.12	0.210
	Head Right Cheek	0.26	0.45	0.710
	Head Right Tilt	0.06	0.25	0.310
WCDMA Band 2+ Wi-Fi 2.4G (Hotspot)	Body Back	0.77	0.18	0.950
	Body Left	0.15	0.16	0.310
	Body Right	0.15	/	0.150
	Body Top	/	/	0.000
	Body Bottom	1.24	0.04	1.280
WCDMA Band 5+ Wi-Fi 2.4G	Head Left Cheek	0.38	0.19	0.570
	Head Left Tilt	0.24	0.12	0.360
	Head Right Cheek	0.40	0.45	<b>0.850</b>
	Head Right Tilt	0.18	0.25	0.430
WCDMA Band 5+ Wi-Fi 2.4G (Hotspot)	Body Back	0.70	0.18	0.880
	Body Left	0.38	0.16	0.540
	Body Right	0.45	/	0.450
	Body Top	/	/	0.000
	Body Bottom	0.09	0.04	0.130

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		$\Sigma$ SAR < 1.6W/kg
		SAR1	SAR2	
LTE Band 2+ Wi-Fi 2.4G	Head Left Cheek	0.22	0.19	0.410
	Head Left Tilt	0.08	0.12	0.200
	Head Right Cheek	0.23	0.45	0.680
	Head Right Tilt	0.05	0.25	0.300
LTE Band 2+ Wi-Fi 2.4G (Hotspot)	Body Back	0.63	0.18	0.810
	Body Left	0.15	0.16	0.310
	Body Right	0.10	/	0.100
	Body Top	/	/	0.000
	Body Bottom	0.78	0.04	0.820
LTE Band 4+ Wi-Fi 2.4G	Head Left Cheek	0.21	0.19	0.400
	Head Left Tilt	0.16	0.12	0.280
	Head Right Cheek	0.37	0.45	0.820
	Head Right Tilt	0.16	0.25	0.410
LTE Band 4+ Wi-Fi 2.4G (Hotspot)	Body Back	0.69	0.18	0.870
	Body Left	0.18	0.16	0.340
	Body Right	0.24	/	0.240
	Body Top	/	/	0.000
	Body Bottom	0.79	0.04	0.830
LTE Band 5+ Wi-Fi 2.4G	Head Left Cheek	0.40	0.19	0.590
	Head Left Tilt	0.25	0.12	0.370
	Head Right Cheek	0.40	0.45	0.850
	Head Right Tilt	0.18	0.25	0.430
LTE Band 5+ Wi-Fi 2.4G (Hotspot)	Body Back	0.73	0.18	0.910
	Body Left	0.38	0.16	0.540
	Body Right	0.42	/	0.420
	Body Top	/	/	0.000
	Body Bottom	0.12	0.04	0.160
LTE Band 7+ Wi-Fi 2.4G	Head Left Cheek	0.10	0.19	0.290
	Head Left Tilt	0.03	0.12	0.150
	Head Right Cheek	0.05	0.45	0.500
	Head Right Tilt	0.06	0.25	0.310
LTE Band 7+ Wi-Fi 2.4G (Hotspot)	Body Back	1.32	0.18	<b>1.500</b>
	Body Left	0.13	0.16	0.290
	Body Right	0.10	/	0.100
	Body Top	/	/	0.000
	Body Bottom	1.21	0.04	1.250



**Note:**

1. 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; for the data modes, wireless technologies and frequency bands supporting hotspot mode.
2. Hotspot Mode is not feasible during voice calls.

**Conclusion:**

Sum of SAR:  $\Sigma \text{SAR} \leq 1.6 \text{ W/kg}$  therefore simultaneous transmission SAR with Volume Scans is **not required**.

## SAR Plots

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**Please Refer to the Attachment.**

## APPENDIX A MEASUREMENT UNCERTAINTY

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KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is  $< 1.5$  W/kg and the measured 10-g SAR within a frequency band is  $< 3.75$  W/kg. The expanded SAR measurement uncertainty must be  $\leq 30\%$ , for a confidence interval of  $k = 2$ . If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg and highest measured 10-g SAR is less 3.75W/kg. Therefore, the measurement uncertainty table is not required in this report

## **APPENDIX B EUT TEST POSITION PHOTOS**

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**Please Refer to the Attachment.**

## **APPENDIX C PROBE CALIBRATION CERTIFICATES**

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**Please Refer to the Attachment.**

## **APPENDIX D DIPOLE CALIBRATION CERTIFICATES**

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**Please Refer to the Attachment.**

**\*\*\*\*\* END OF REPORT \*\*\*\*\***

**Plot 1#: GSM 850\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.409 W/kg

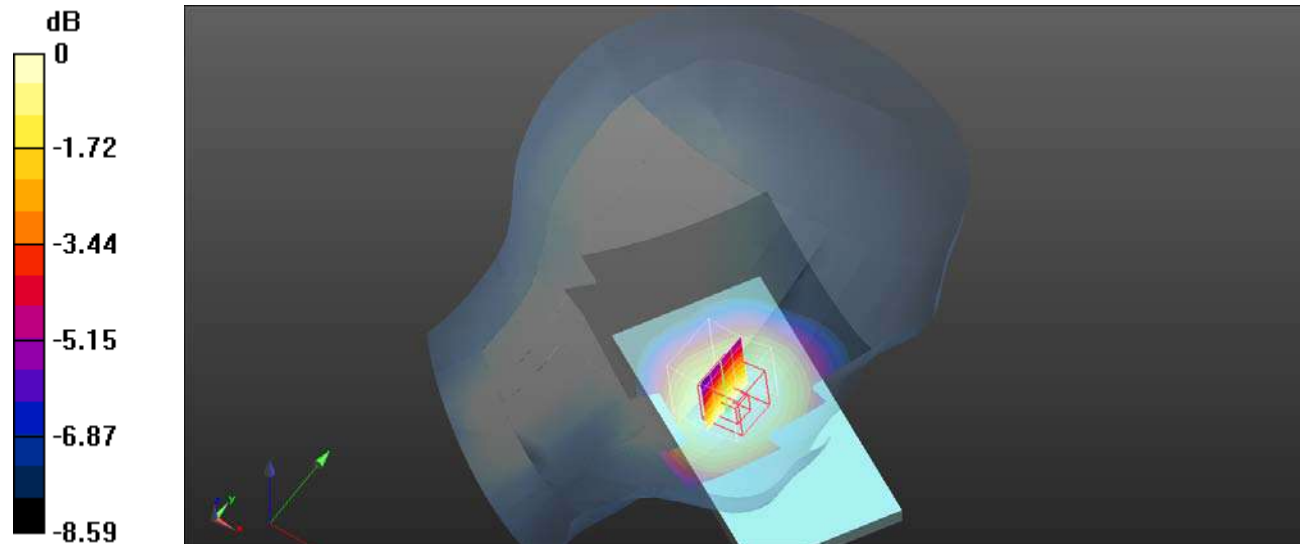
**Head Left Cheek/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.544 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.409 W/kg

**SAR(1 g) = 0.343 W/kg; SAR(10 g) = 0.268 W/kg**

Maximum value of SAR (measured) = 0.355 W/kg



0 dB = 0.355 W/kg = -4.50 dBW/kg

**Plot 2#: GSM 850\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.234 W/kg

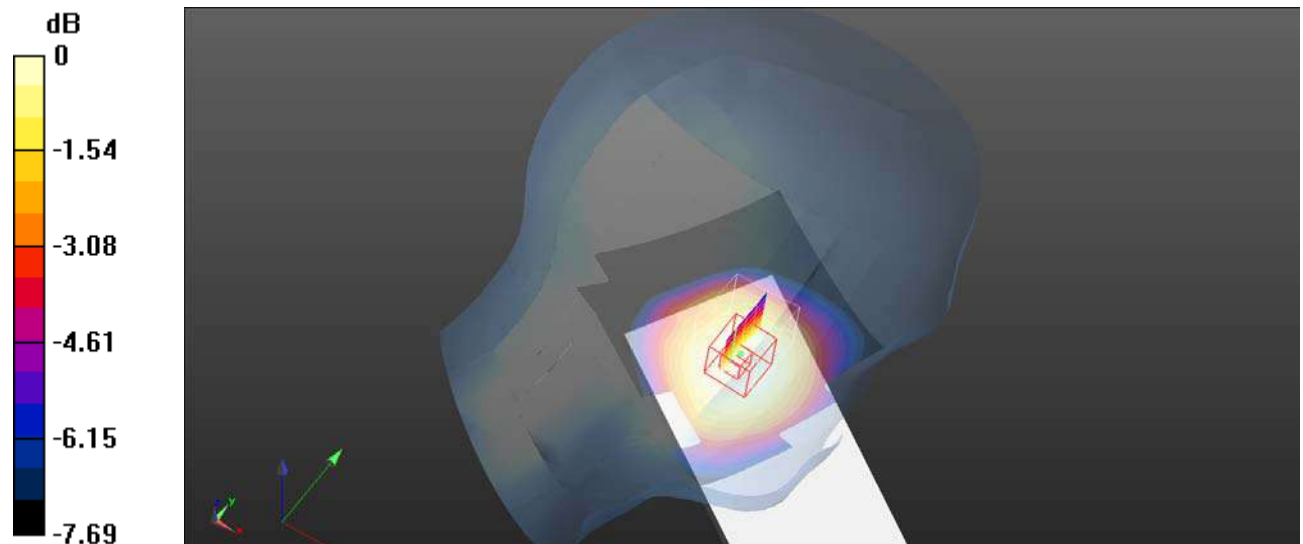
**Head Left Tilt/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.646 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.257 W/kg

**SAR(1 g) = 0.219 W/kg; SAR(10 g) = 0.174 W/kg**

Maximum value of SAR (measured) = 0.226 W/kg



0 dB = 0.226 W/kg = -6.46 dBW/kg



**Plot 3#: GSM 850\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.435 W/kg

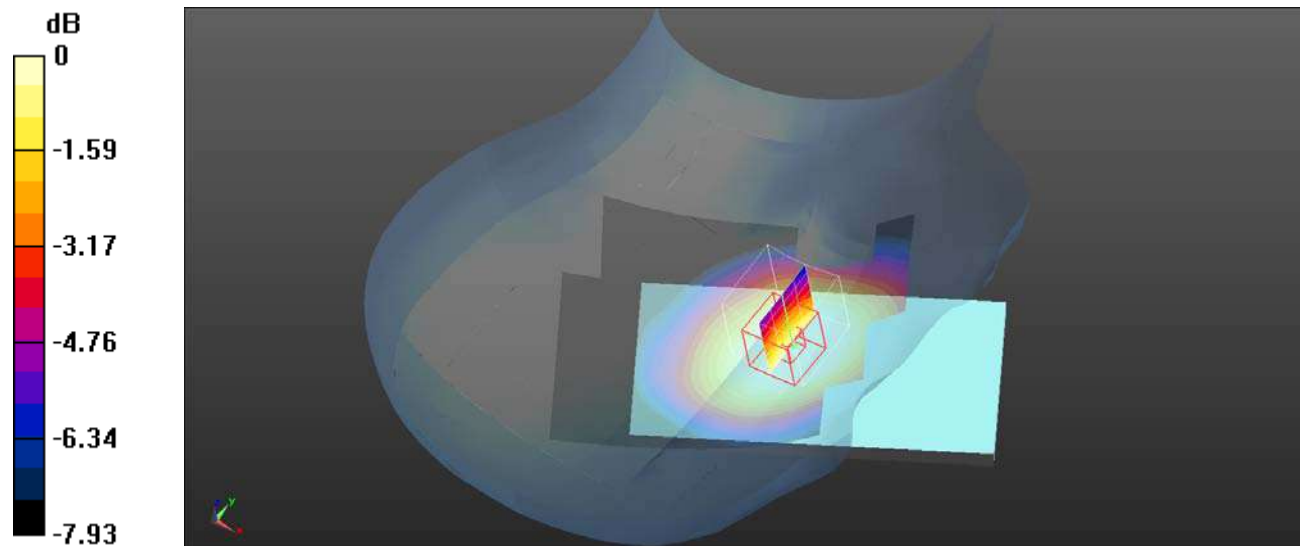
**Head Right Cheek/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.124 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.401 W/kg

**SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.266 W/kg**

Maximum value of SAR (measured) = 0.347 W/kg



0 dB = 0.347 W/kg = -4.60 dBW/kg

**Plot 4#: GSM 850\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.264 W/kg

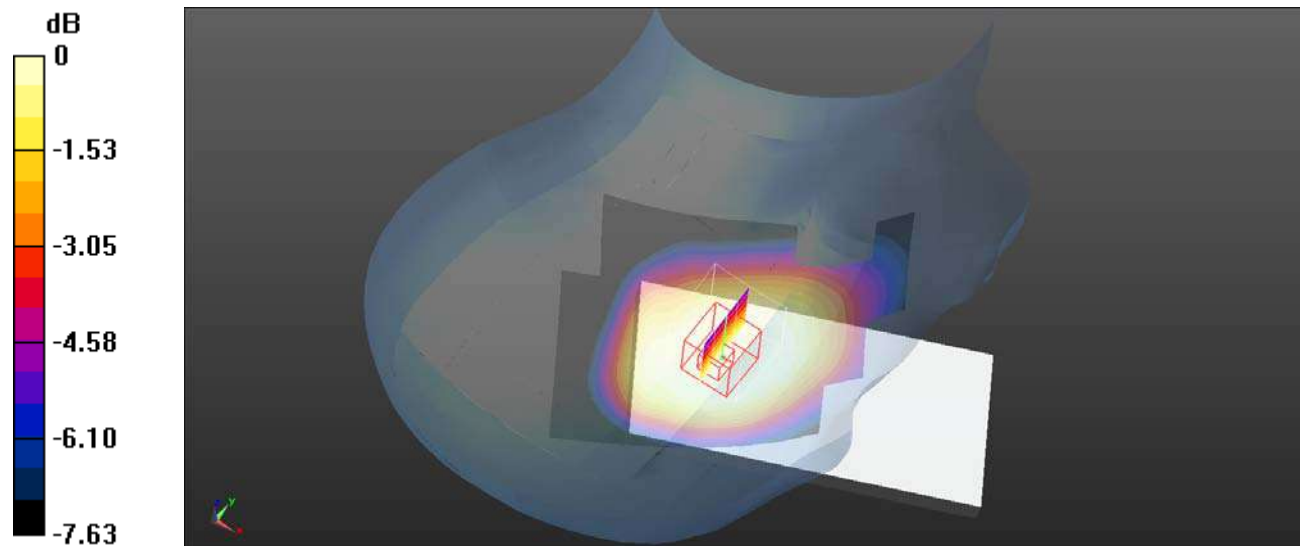
**Head Right Tilt/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.00 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.237 W/kg

**SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.154 W/kg**

Maximum value of SAR (measured) = 0.205 W/kg



0 dB = 0.205 W/kg = -6.88 dBW/kg

**Plot 5#: GSM 850\_Body Worn Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Worn Back/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.722 W/kg

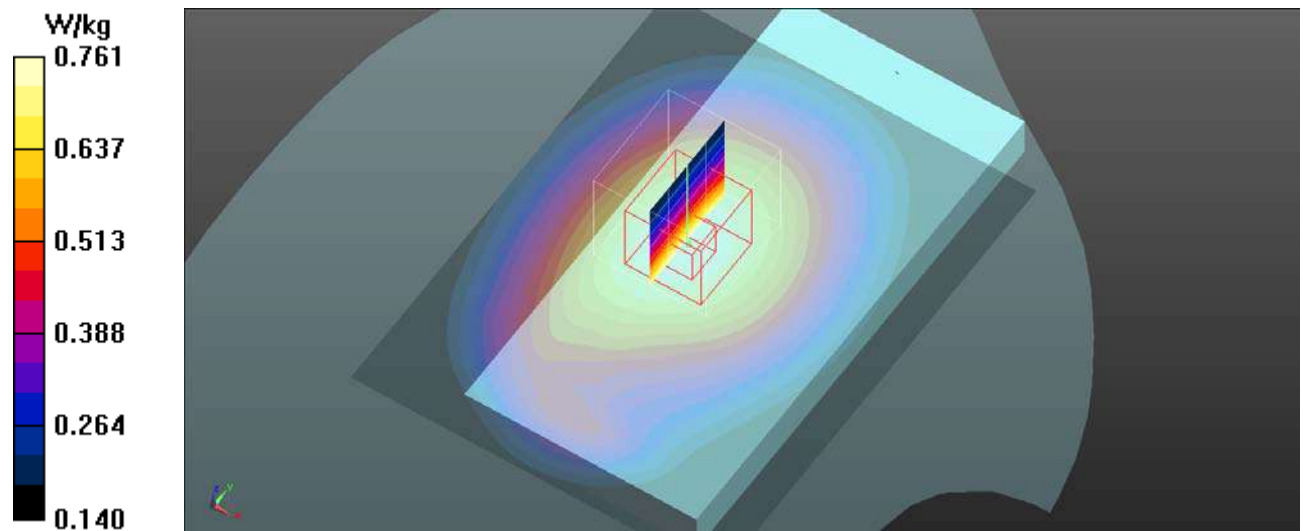
**Body Worn Back/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.89 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.804 W/kg

**SAR(1 g) = 0.683 W/kg; SAR(10 g) = 0.531 W/kg**

Maximum value of SAR (measured) = 0.708 W/kg



0 dB = 0.708 W/kg = -1.50 dBW/kg

**Plot 6#: GSM 850\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-2 slots (0); Frequency: 836.6 MHz; Duty Cycle: 1:4  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/GSM 850 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.622 W/kg

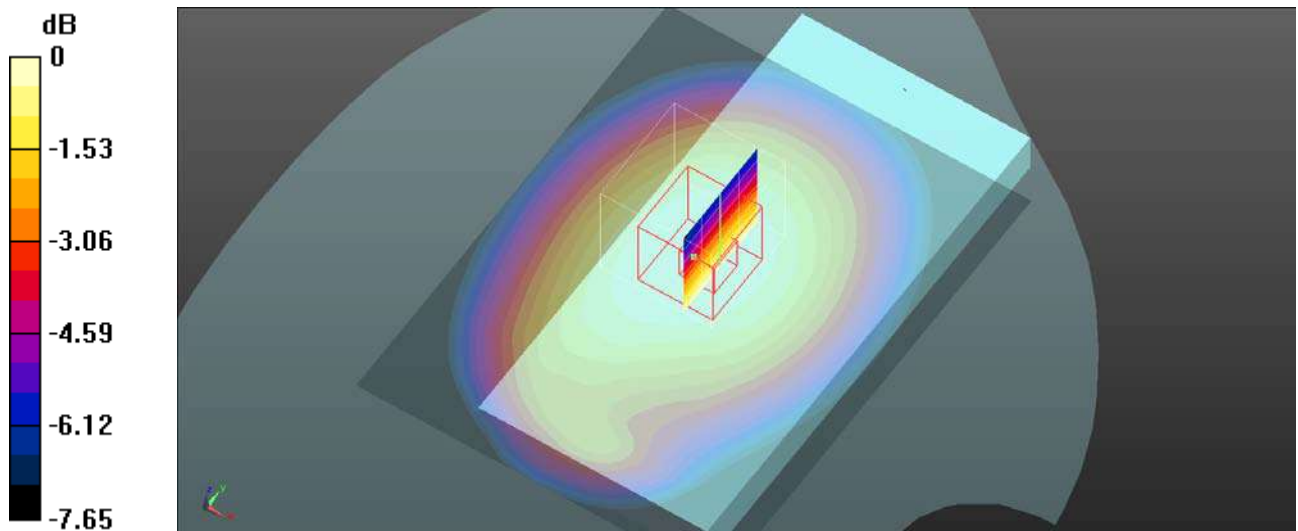
**Body Back/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.63 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.684 W/kg

**SAR(1 g) = 0.589 W/kg; SAR(10 g) = 0.458 W/kg**

Maximum value of SAR (measured) = 0.676 W/kg



0 dB = 0.676 W/kg = -1.70 dBW/kg

**Plot 7#:GSM 850\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-2 slots (0); Frequency: 836.6 MHz;Duty Cycle: 1:4  
Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/GSM 850 Mid/Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.376 W/kg

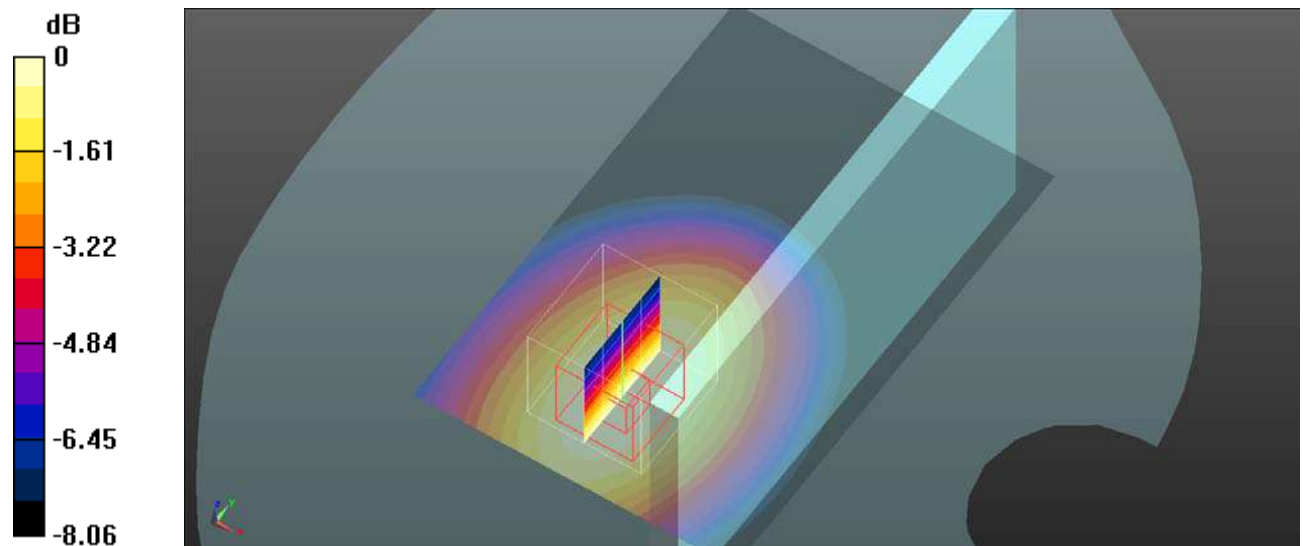
**Body Left/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.68 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.443 W/kg

**SAR(1 g) = 0.350 W/kg; SAR(10 g) = 0.255 W/kg**

Maximum value of SAR (measured) = 0.368 W/kg



0 dB = 0.368 W/kg = -4.34 dBW/kg

**Plot 8#:GSM 850\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-2 slots (0); Frequency: 836.6 MHz;Duty Cycle: 1:4  
 Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/GSM 850 Mid/Area Scan (61x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.00193 W/kg

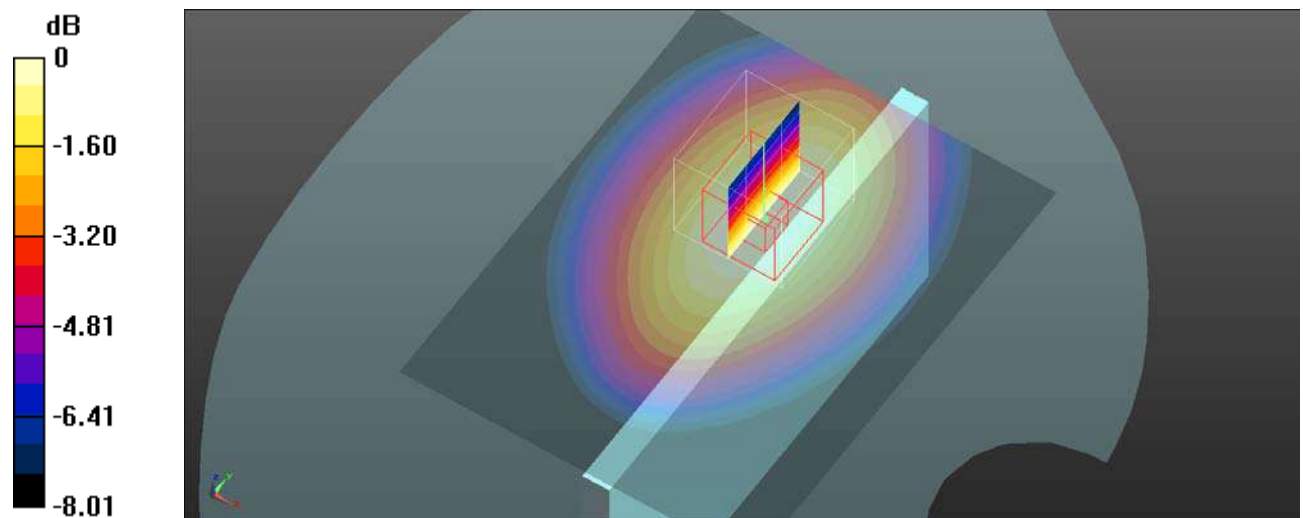
**Body Right/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.0690 W/kg

**SAR(1 g) = 0.00709 W/kg; SAR(10 g) = 0.00248 W/kg**

Maximum value of SAR (measured) = 0.0376 W/kg



0 dB = 0.0376 W/kg = -14.25 dBW/kg

**Plot 9#: GSM 850\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-2 slots (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/GSM 850 Mid/Area Scan (41x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0711 W/kg

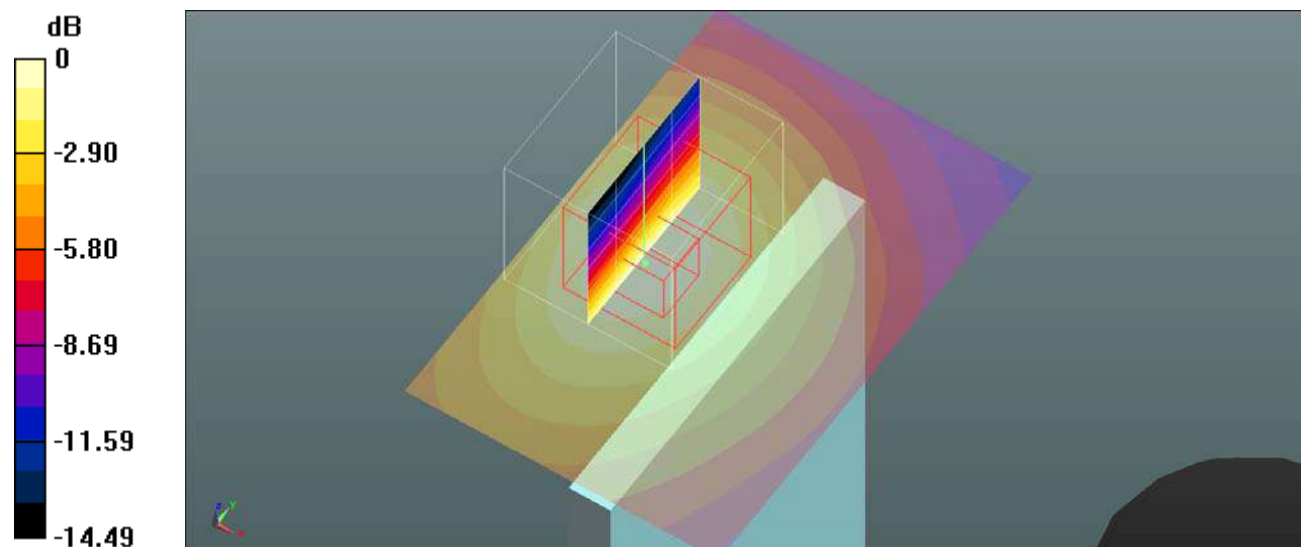
**Body Bottom/GSM 850 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.758 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.144 W/kg

**SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.038 W/kg**

Maximum value of SAR (measured) = 0.0742 W/kg



0 dB = 0.0742 W/kg = -11.30 dBW/kg

**Plot 10#: PCS 1900\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.156 W/kg

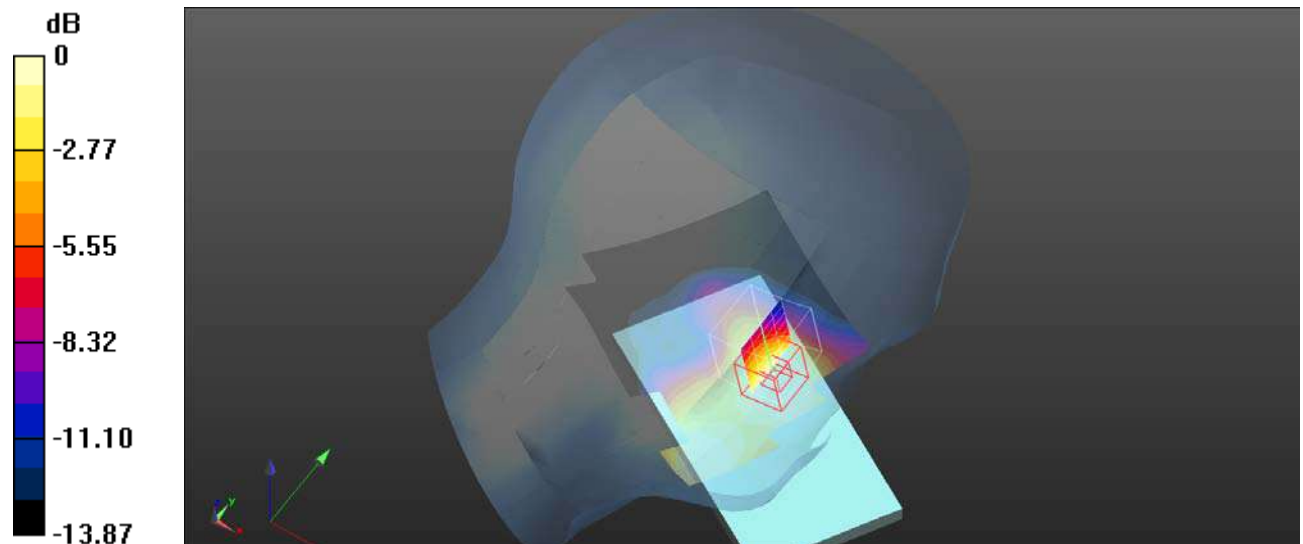
**Head Left Cheek/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.388 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.163 W/kg

**SAR(1 g) = 0.115 W/kg; SAR(10 g) = 0.078 W/kg**

Maximum value of SAR (measured) = 0.122 W/kg



0 dB = 0.122 W/kg = -9.14 dBW/kg



**Plot 11#: PCS 1900\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0724 W/kg

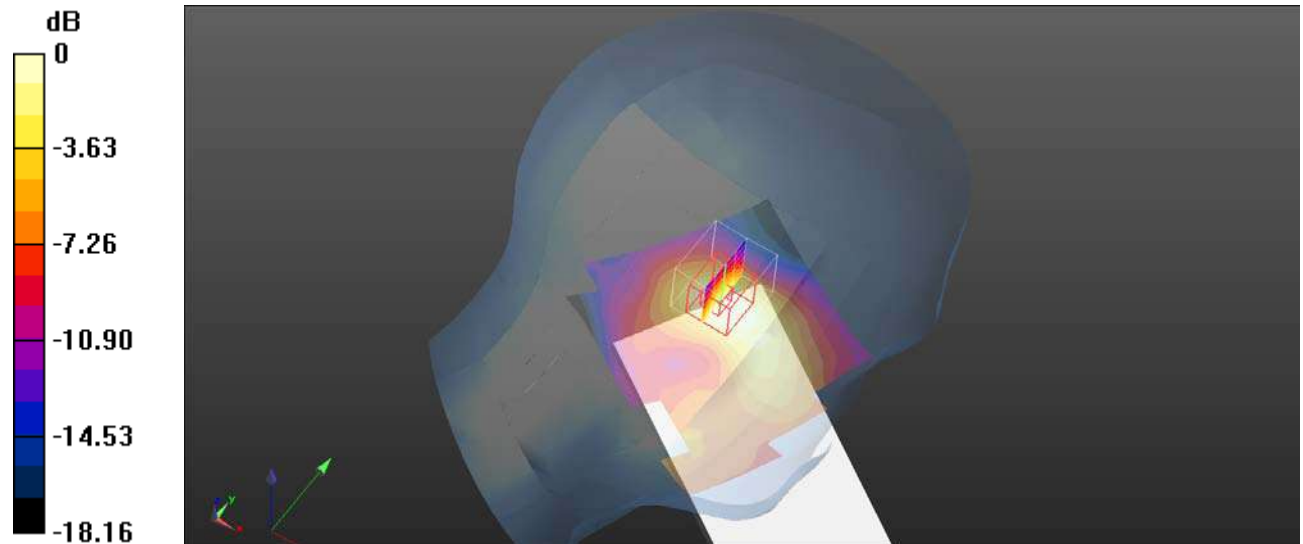
**Head Left Tilt/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.654 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.102 W/kg

**SAR(1 g) = 0.060 W/kg; SAR(10 g) = 0.033 W/kg**

Maximum value of SAR (measured) = 0.0654 W/kg



0 dB = 0.0654 W/kg = -11.84 dBW/kg

**Plot 12#: PCS 1900\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.185 W/kg

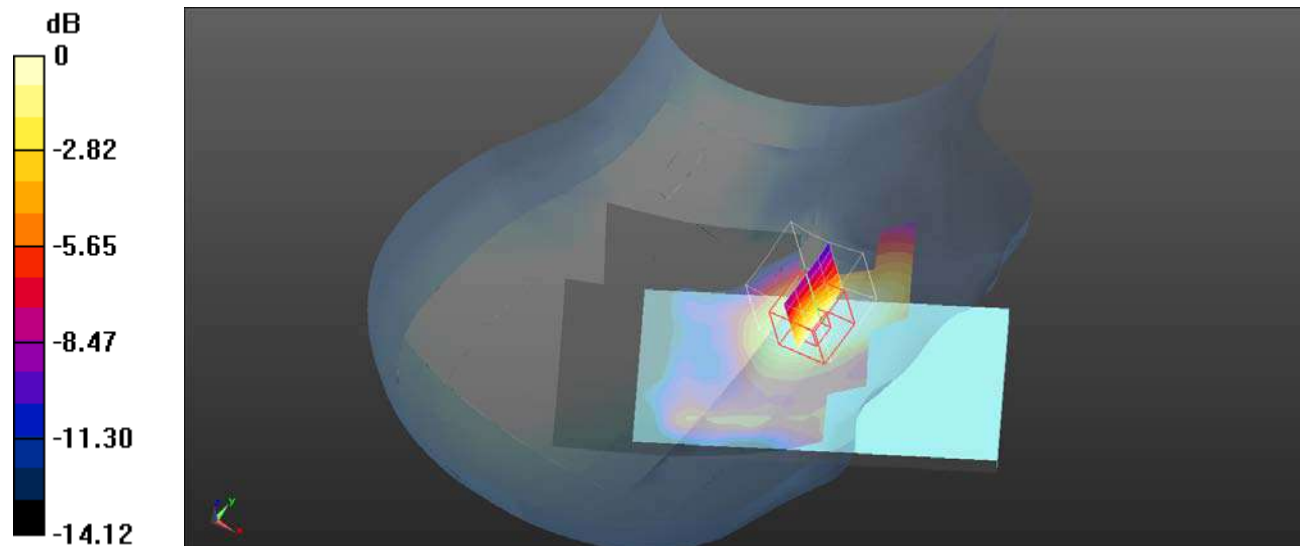
**Head Right Cheek/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.856 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.214 W/kg

**SAR(1 g) = 0.145 W/kg; SAR(10 g) = 0.093 W/kg**

Maximum value of SAR (measured) = 0.153 W/kg



0 dB = 0.153 W/kg = -8.15 dBW/kg

**Plot 13#: PCS 1900\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0608 W/kg

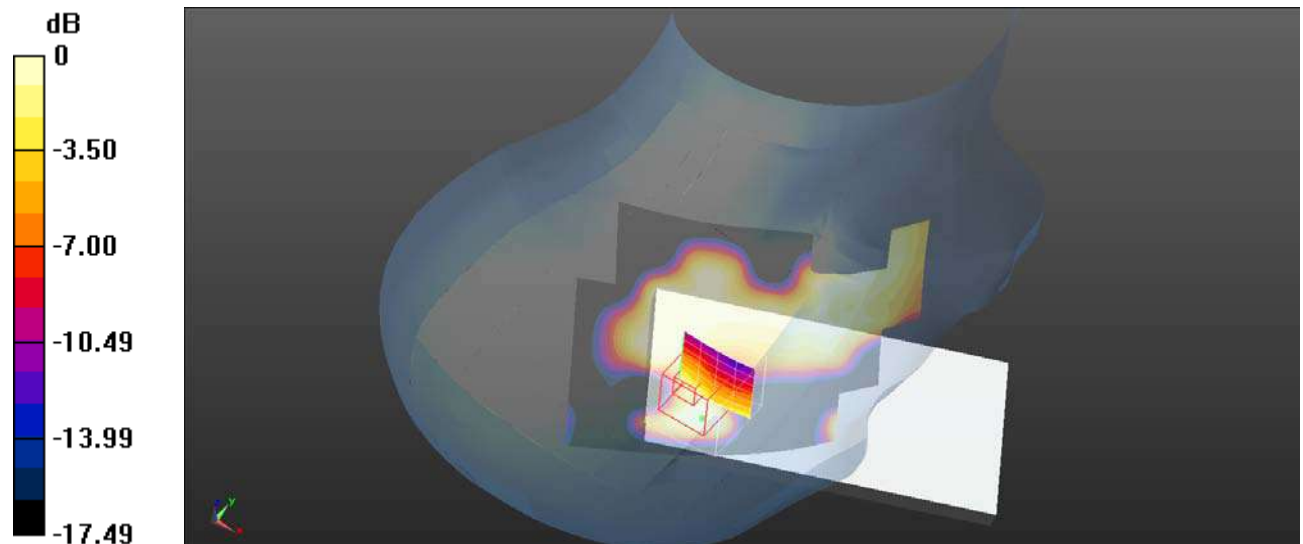
**Head Right Tilt/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.594 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0450 W/kg

**SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.013 W/kg**

Maximum value of SAR (measured) = 0.0315 W/kg



0 dB = 0.0315 W/kg = -15.02 dBW/kg

**Plot 14#: PCS 1900\_Body Worn Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz; Duty Cycle: 1:8

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Worn Back/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.517 W/kg

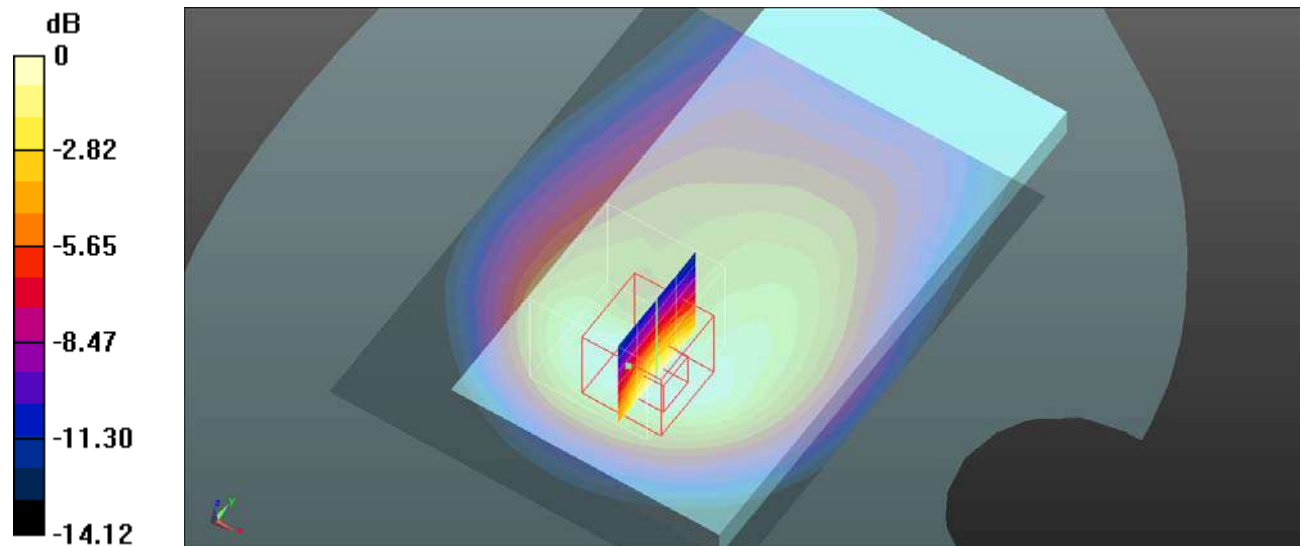
**Body Worn Back/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.08 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.708 W/kg

**SAR(1 g) = 0.458 W/kg; SAR(10 g) = 0.279 W/kg**

Maximum value of SAR (measured) = 0.506 W/kg



0 dB = 0.506 W/kg = -2.96 dBW/kg

**Plot 15#: PCS 1900\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-4 slots (0); Frequency: 1880 MHz; Duty Cycle: 1:2  
Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.502 W/kg

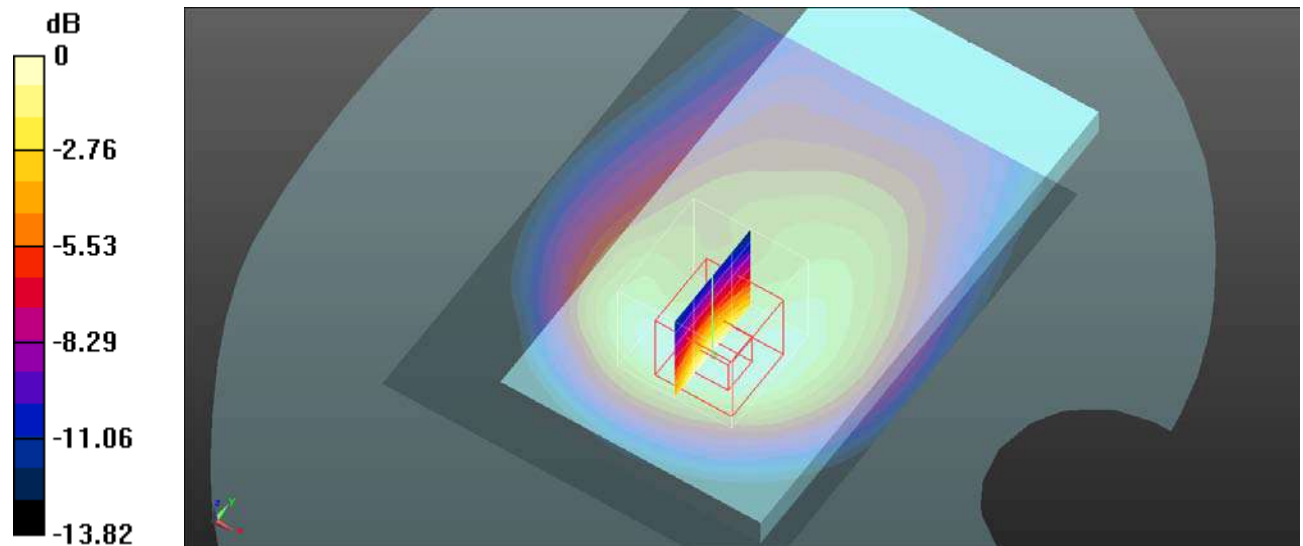
**Body Back/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.07 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.678 W/kg

**SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.270 W/kg**

Maximum value of SAR (measured) = 0.482 W/kg



0 dB = 0.482 W/kg = -3.17 dBW/kg

**Plot 16#: PCS 1900\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-4 slots (0); Frequency: 1880 MHz; Duty Cycle: 1:2  
 Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.104 W/kg

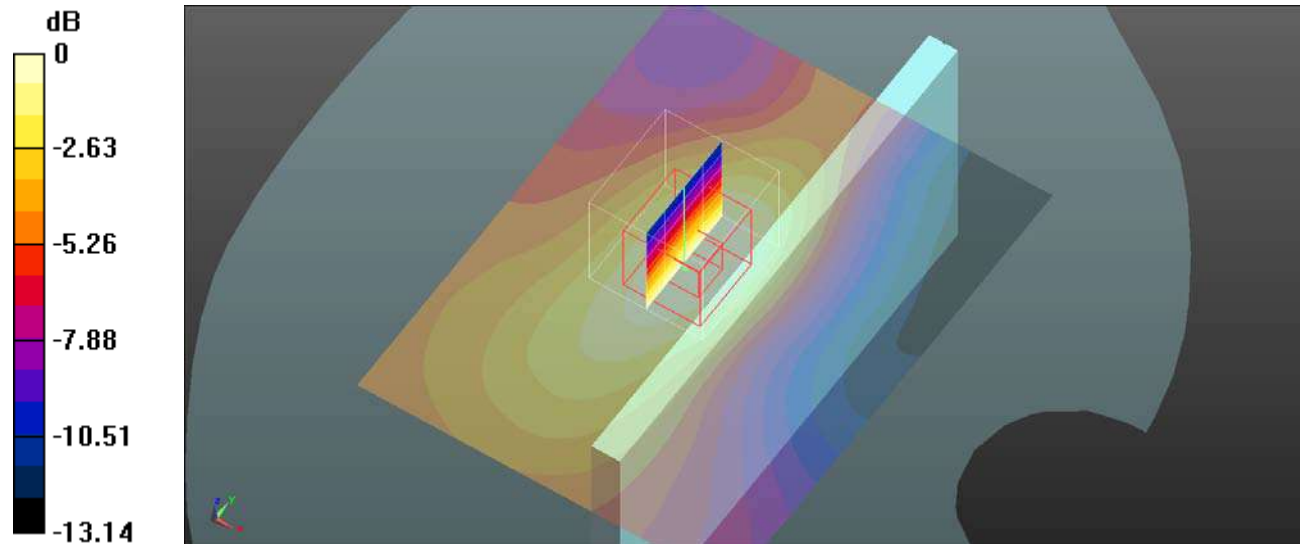
**Body Left/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.974 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.145 W/kg

**SAR(1 g) = 0.094 W/kg; SAR(10 g) = 0.059 W/kg**

Maximum value of SAR (measured) = 0.101 W/kg



0 dB = 0.101 W/kg = -9.96 dBW/kg

**Plot 17#: PCS 1900\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-4 slots (0); Frequency: 1880 MHz; Duty Cycle: 1:2  
 Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0702 W/kg

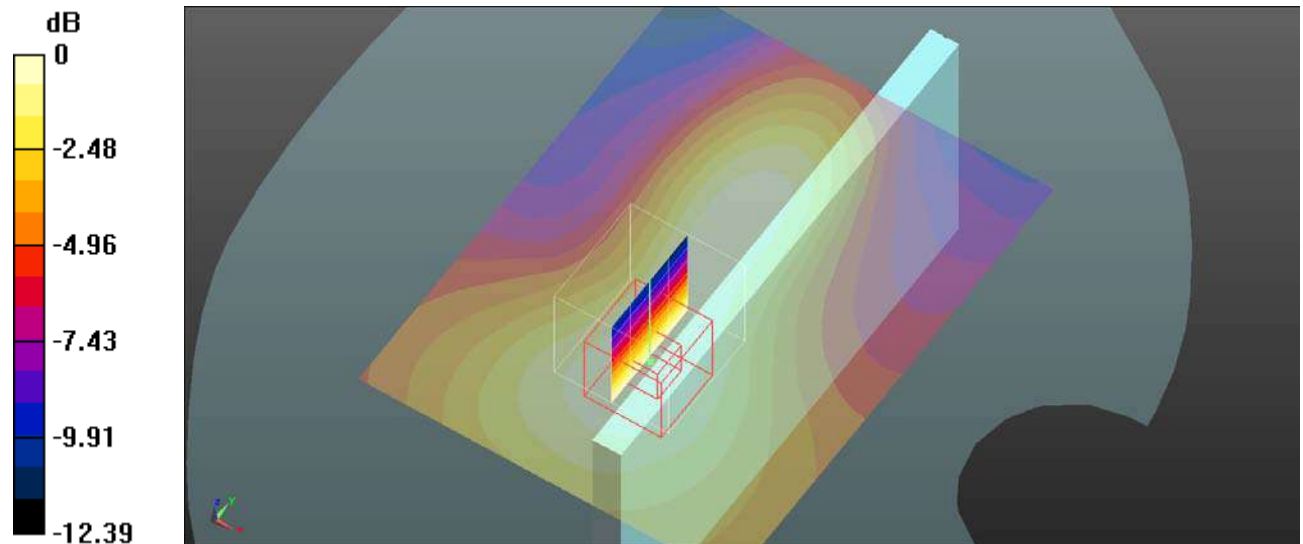
**Body Right/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.882 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.0960 W/kg

**SAR(1 g) = 0.065 W/kg; SAR(10 g) = 0.042 W/kg**

Maximum value of SAR (measured) = 0.0689 W/kg



0 dB = 0.0689 W/kg = -11.62 dBW/kg

**Plot 18#: PCS 1900\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic GPRS-4 slots (0); Frequency: 1880 MHz; Duty Cycle: 1:2  
 Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/GSM 1900 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.655 W/kg

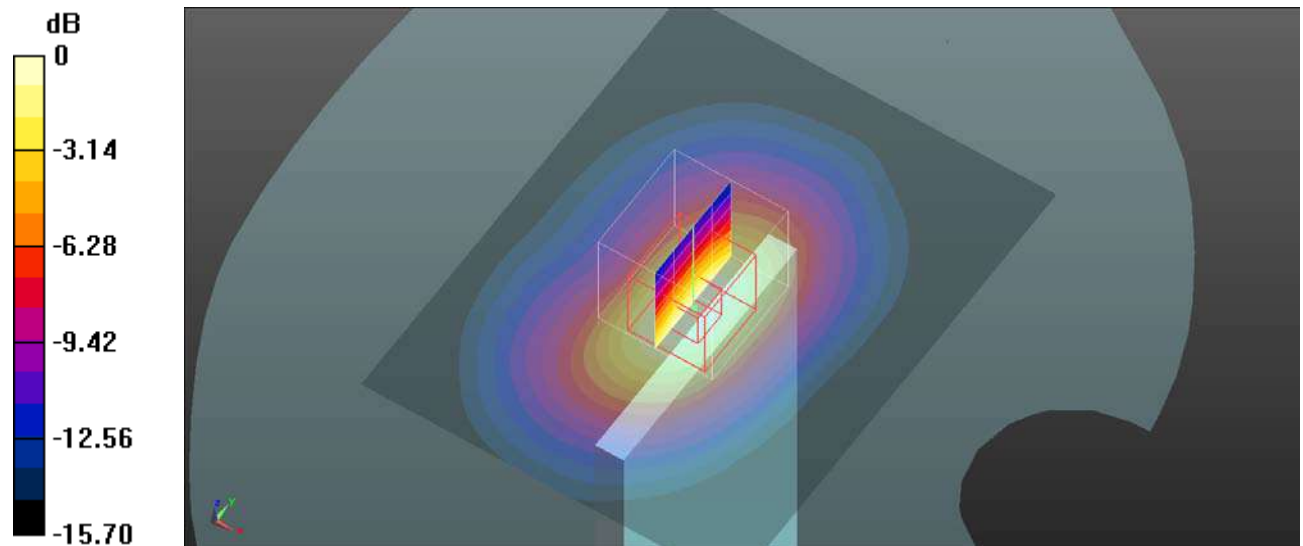
**Body Bottom/GSM 1900 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.87 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.953 W/kg

**SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.319 W/kg**

Maximum value of SAR (measured) = 0.637 W/kg



0 dB = 0.637 W/kg = -1.96 dBW/kg



**Plot 19#: WCDMA Band 2\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.234 W/kg

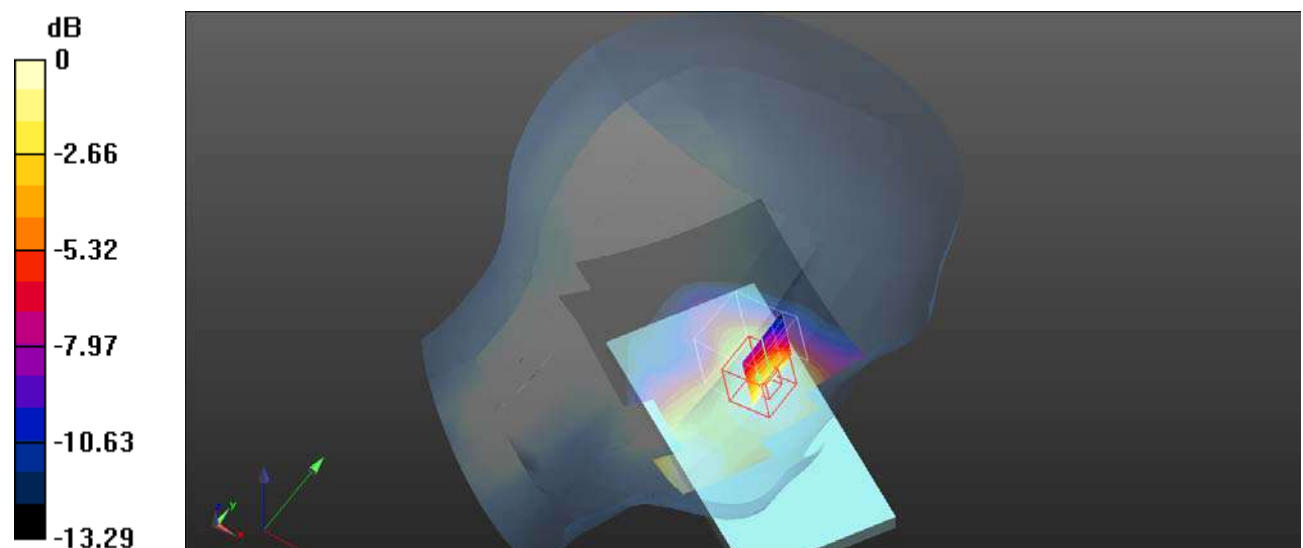
**Head Left Cheek/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.750 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.252 W/kg

**SAR(1 g) = 0.171 W/kg; SAR(10 g) = 0.113 W/kg**

Maximum value of SAR (measured) = 0.182 W/kg



0 dB = 0.182 W/kg = -7.40 dBW/kg

**Plot 20#: WCDMA Band 2\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.106 W/kg

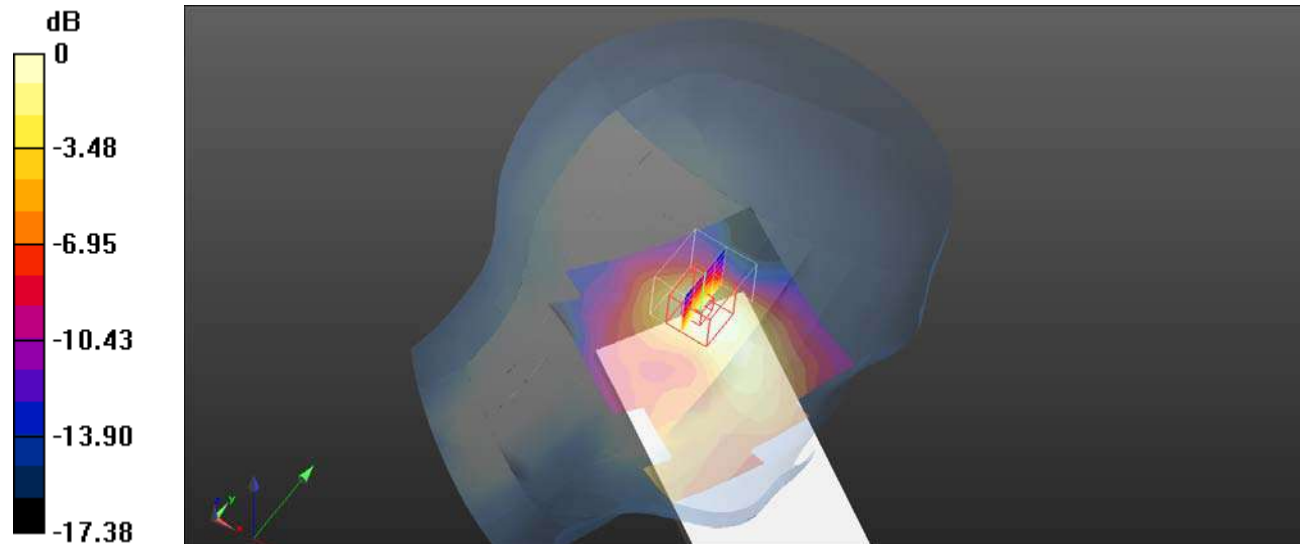
**Head Left Tilt/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.232 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.157 W/kg

**SAR(1 g) = 0.088 W/kg; SAR(10 g) = 0.048 W/kg**

Maximum value of SAR (measured) = 0.0971 W/kg



0 dB = 0.0971 W/kg = -10.13 dBW/kg

**Plot 21#: WCDMA Band 2\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.314 W/kg

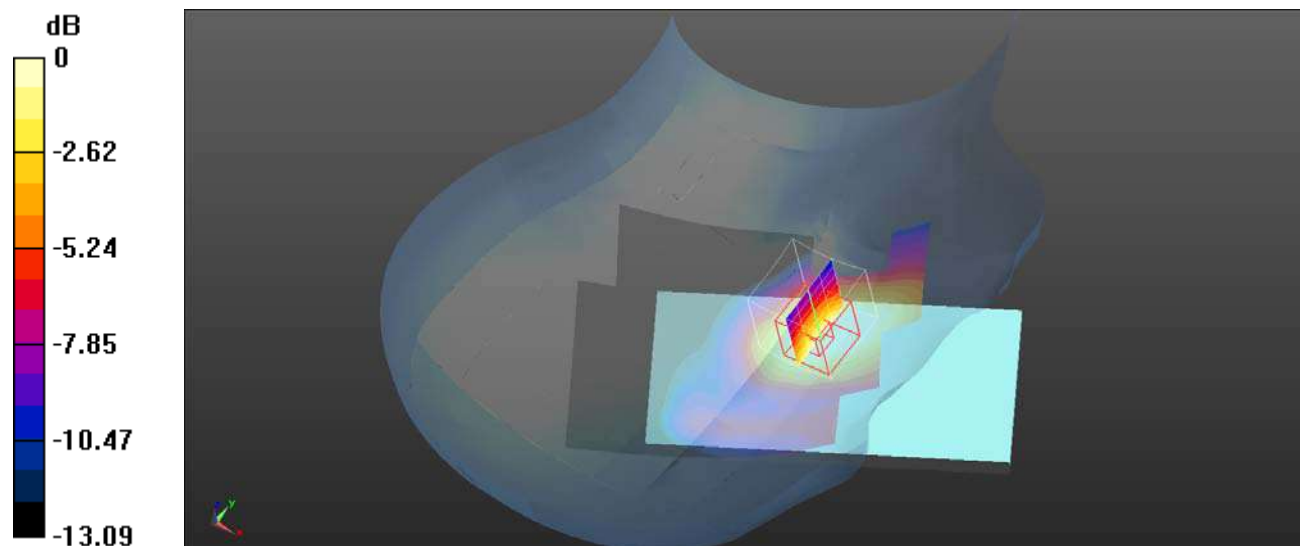
**Head Right Cheek/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.001 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.397 W/kg

**SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.158 W/kg**

Maximum value of SAR (measured) = 0.267 W/kg



0 dB = 0.267 W/kg = -5.73 dBW/kg

**Plot 22#: WCDMA Band 2\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0585 W/kg

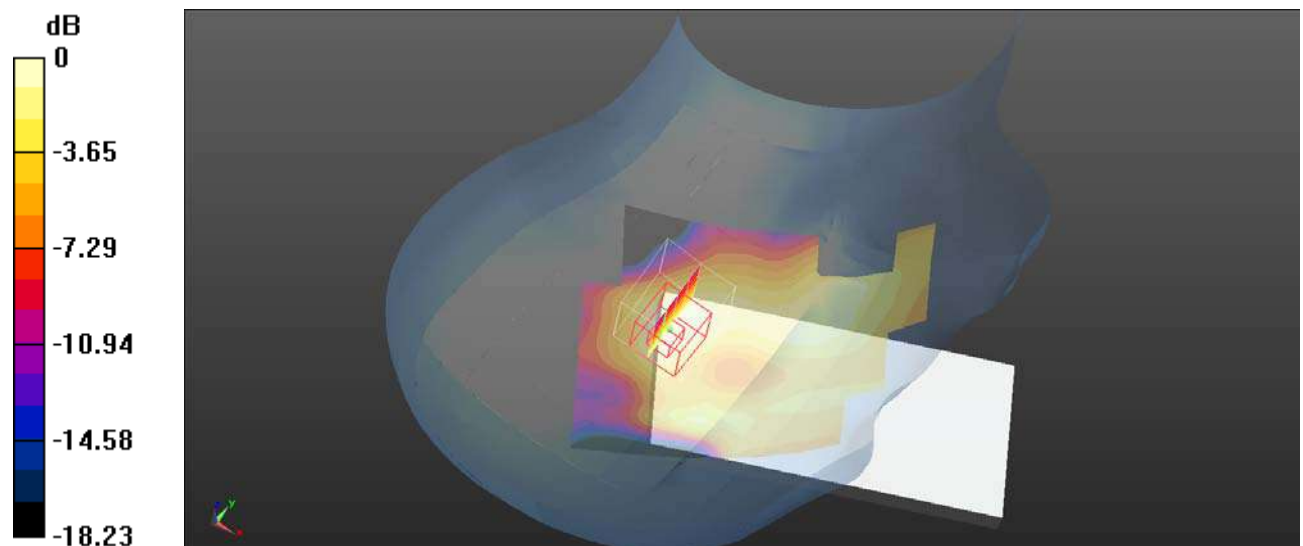
**Head Right Tilt/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.471 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0910 W/kg

**SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.032 W/kg**

Maximum value of SAR (measured) = 0.0586 W/kg



0 dB = 0.0586 W/kg = -12.32 dBW/kg

**Plot 23#: WCDMA Band 2\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.810 W/kg

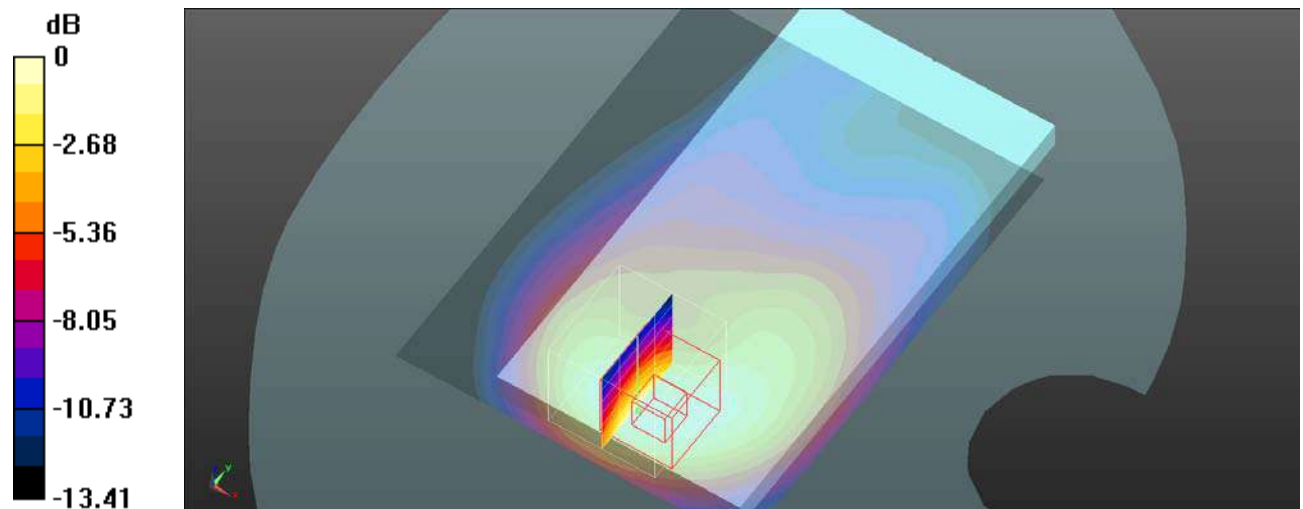
**Body Back/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.70 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.749 W/kg; SAR(10 g) = 0.465 W/kg**

Maximum value of SAR (measured) = 0.820 W/kg



0 dB = 0.820 W/kg = -0.86 dBW/kg

**Plot 24#: WCDMA Band 2\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.166 W/kg

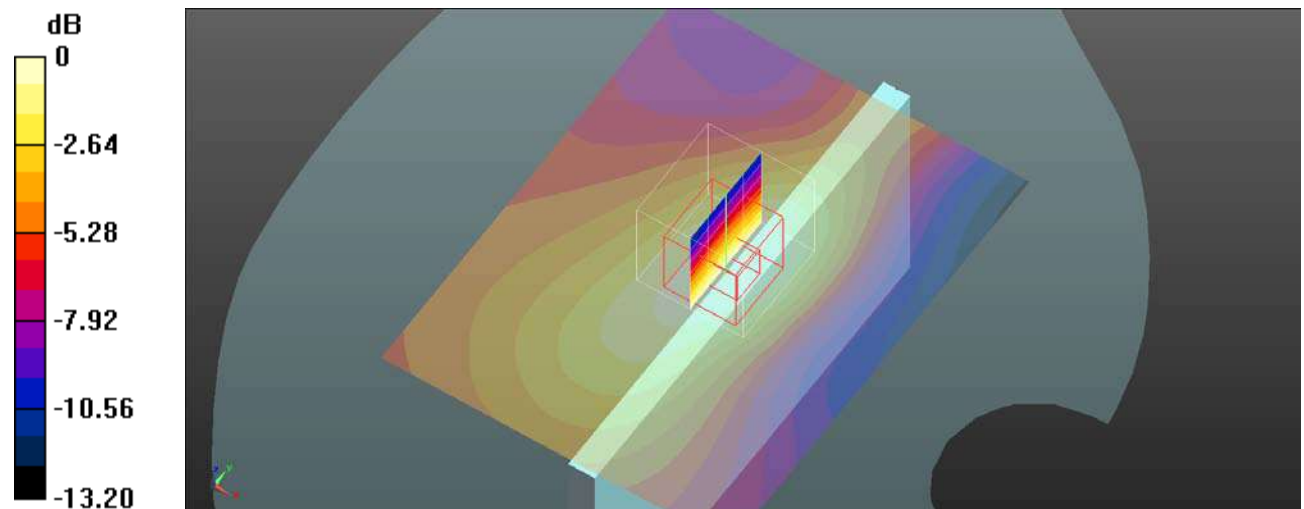
**Body Left/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.45 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.222 W/kg

**SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.095 W/kg**

Maximum value of SAR (measured) = 0.159 W/kg



0 dB = 0.159 W/kg = -7.99 dBW/kg

**Plot 25#: WCDMA Band 2\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.157 W/kg

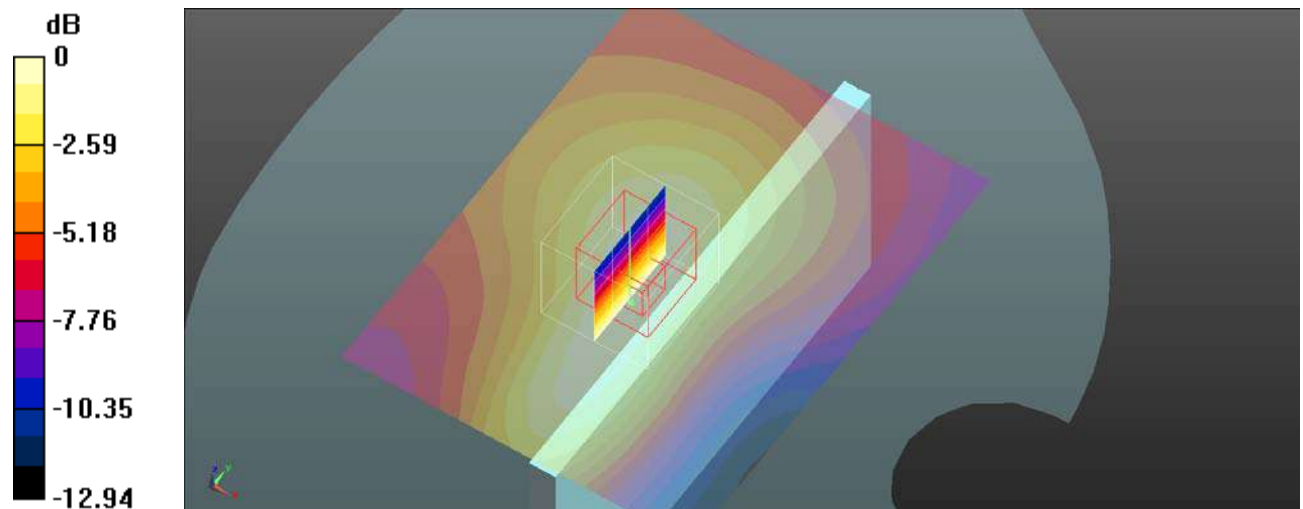
**Body Right/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.32 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.227 W/kg

**SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.096 W/kg**

Maximum value of SAR (measured) = 0.160 W/kg



0 dB = 0.160 W/kg = -7.96 dBW/kg

**Plot 26#: WCDMA Band 2\_Body Bottom\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.393$  S/m;  $\epsilon_r = 40.152$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/WCDMA Band 2 Low/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.10 W/kg

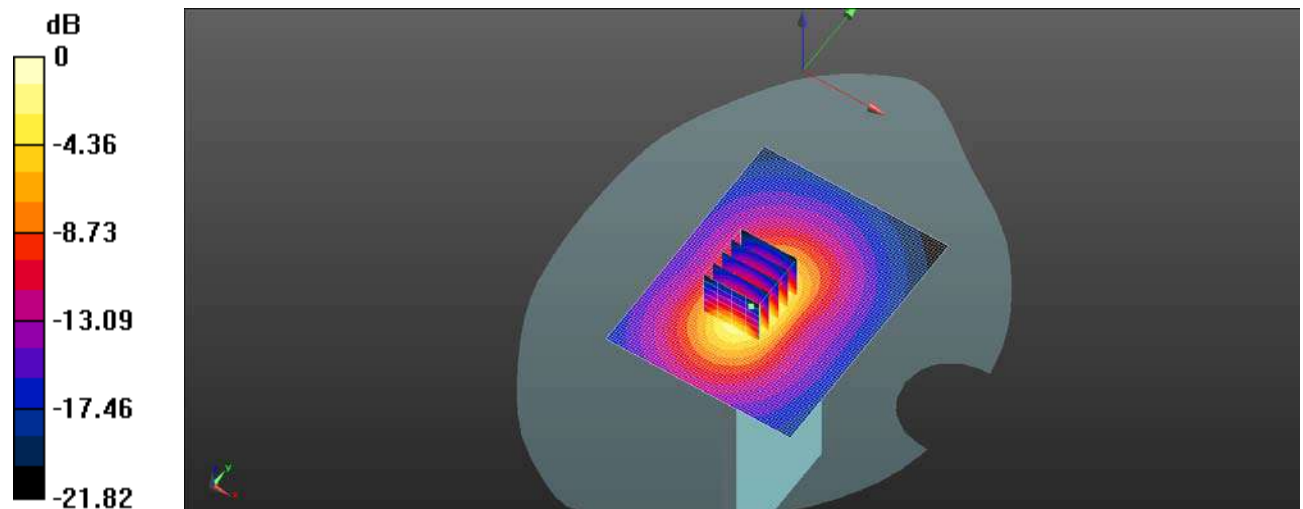
**Body Bottom/WCDMA Band 2 Low/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.74 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.57 W/kg

**SAR(1 g) = 0.971 W/kg; SAR(10 g) = 0.548 W/kg**

Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg



**Plot 27#: WCDMA Band 2\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/WCDMA Band 2 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.12 W/kg

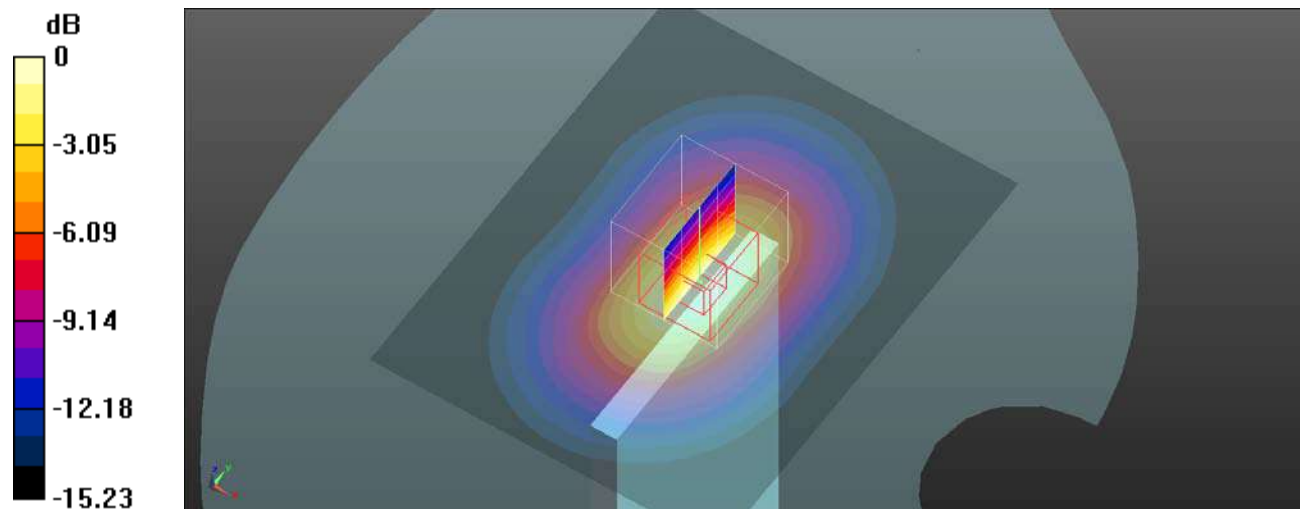
**Body Bottom/WCDMA Band 2 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.76 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.52 W/kg

**SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.525 W/kg**

Maximum value of SAR (measured) = 1.03 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

**Plot 28#: WCDMA Band 2\_Body Bottom\_High****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1907.6$  MHz;  $\sigma = 1.433$  S/m;  $\epsilon_r = 39.671$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/WCDMA Band 2 High/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.28 W/kg

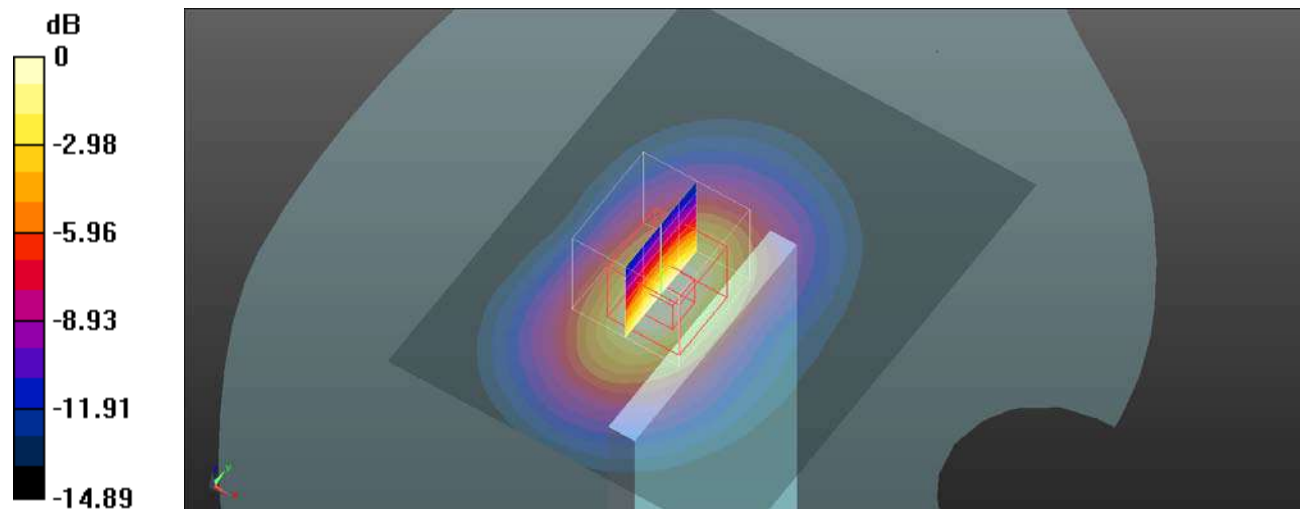
**Body Bottom/WCDMA Band 2 High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.70 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.86 W/kg

**SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.633 W/kg**

Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.25 W/kg = 0.97 dBW/kg

**Plot 29#: WCDMA Band 5\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.379 W/kg

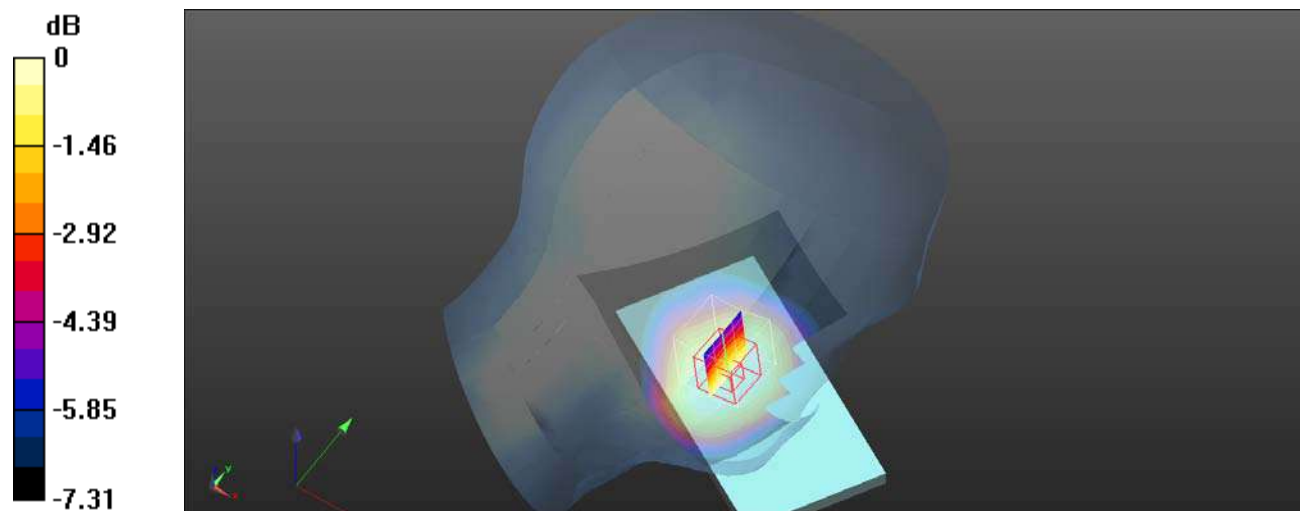
**Head Left Cheek/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.509 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.358 W/kg

**SAR(1 g) = 0.312 W/kg; SAR(10 g) = 0.247 W/kg**

Maximum value of SAR (measured) = 0.325 W/kg



0 dB = 0.325 W/kg = -4.88 dBW/kg

**Plot 30#: WCDMA Band 5\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.219 W/kg

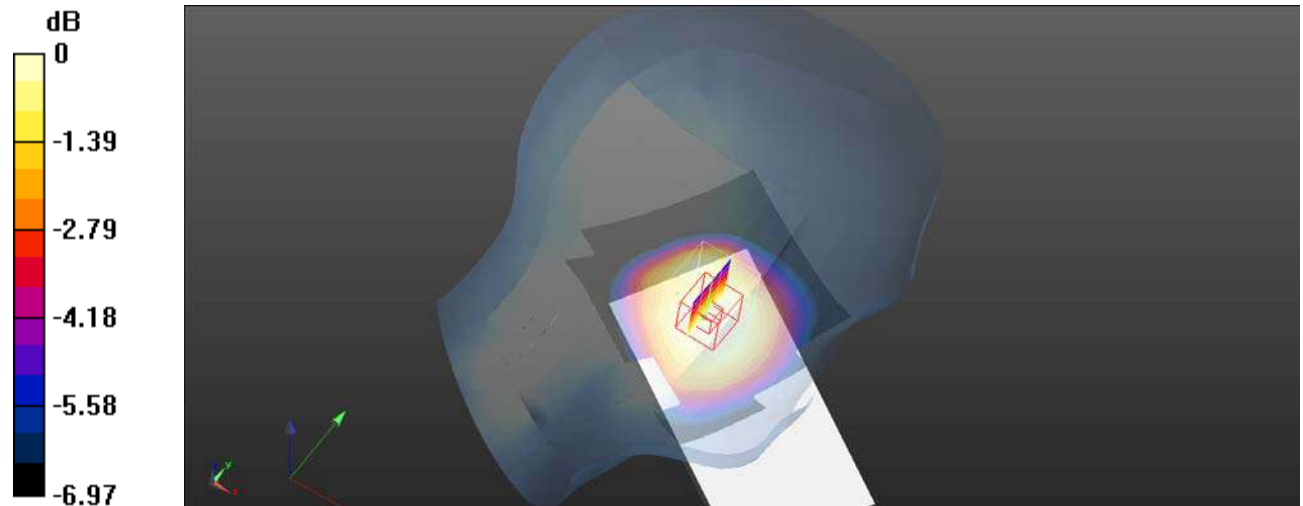
**Head Left Tilt/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.58 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.234 W/kg

**SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.154 W/kg**

Maximum value of SAR (measured) = 0.203 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

**Plot 31#: WCDMA Band 5\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

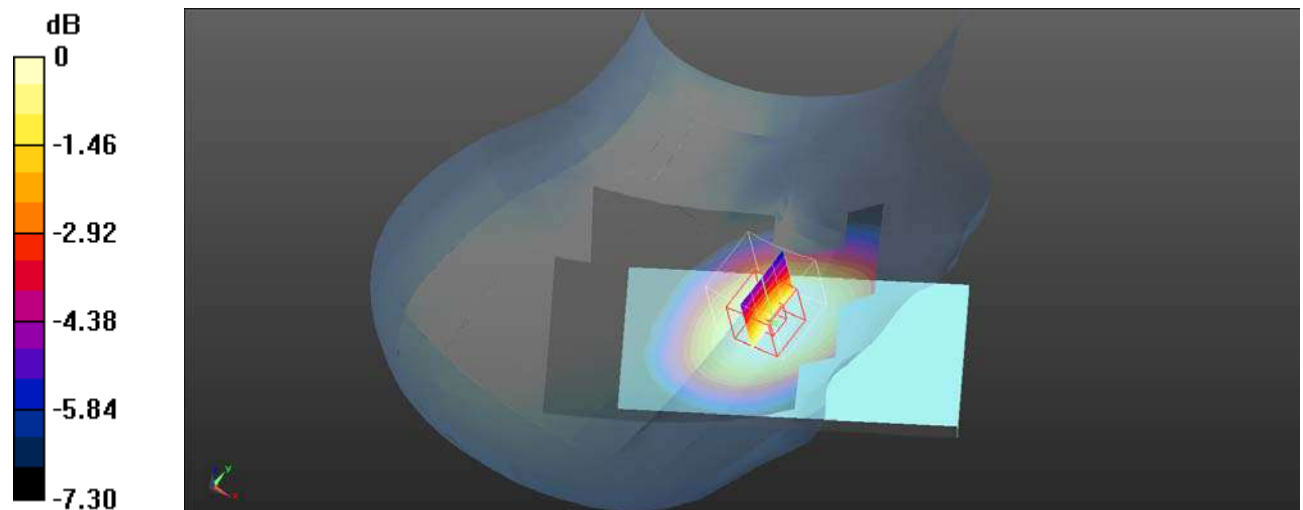
Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6 \text{ MHz}$ ;  $\sigma = 0.925 \text{ S/m}$ ;  $\epsilon_r = 42.102$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid:  $dx=1.500 \text{ mm}$ ,  $dy=1.500 \text{ mm}$ Maximum value of SAR (interpolated) =  $0.410 \text{ W/kg}$ **Head Right Cheek/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid:  $dx=8\text{mm}$ ,  $dy=8\text{mm}$ ,  $dz=5\text{mm}$ Reference Value =  $6.332 \text{ V/m}$ ; Power Drift =  $0.01 \text{ dB}$ Peak SAR (extrapolated) =  $0.400 \text{ W/kg}$ **SAR(1 g) =  $0.329 \text{ W/kg}$ ; SAR(10 g) =  $0.258 \text{ W/kg}$** Maximum value of SAR (measured) =  $0.337 \text{ W/kg}$ 0 dB =  $0.337 \text{ W/kg}$  =  $-4.72 \text{ dBW/kg}$

**Plot 32#: WCDMA Band 5\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.181 W/kg

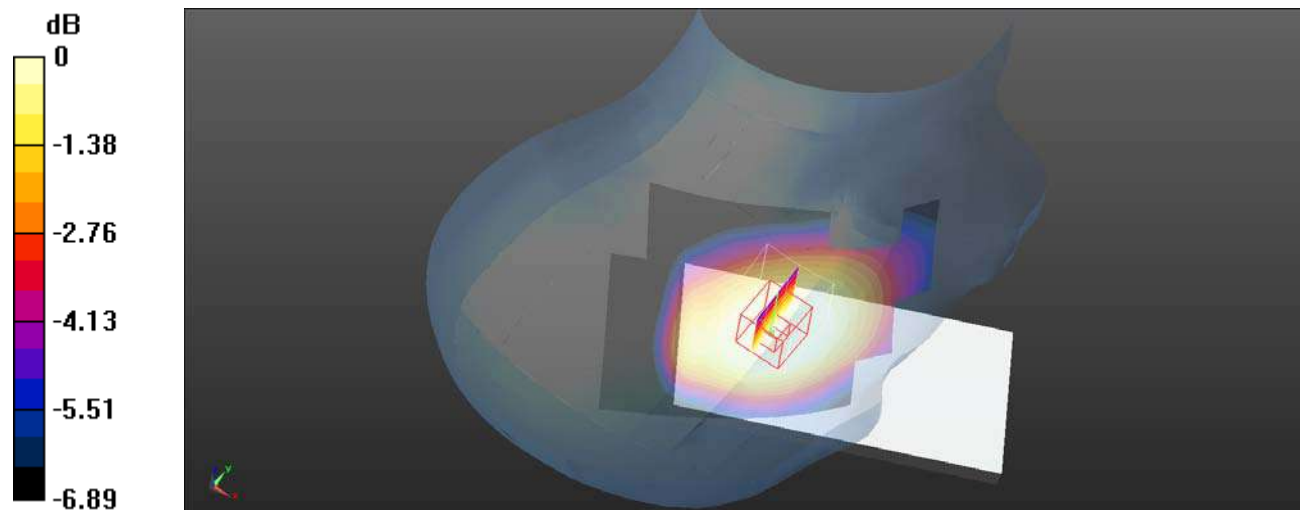
**Head Right Tilt/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.689 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.170 W/kg

**SAR(1 g) = 0.145 W/kg; SAR(10 g) = 0.116 W/kg**

Maximum value of SAR (measured) = 0.151 W/kg



0 dB = 0.151 W/kg = -8.21 dBW/kg

**Plot 33#: WCDMA Band 5\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.590 W/kg

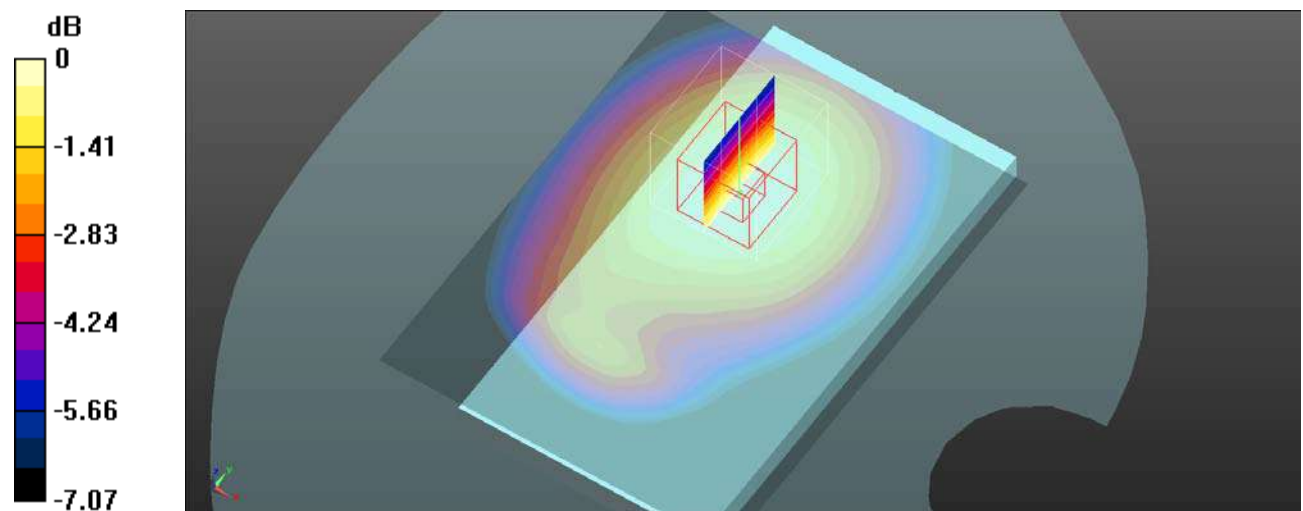
**Body Back/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.01 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.681 W/kg

**SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.442 W/kg**

Maximum value of SAR (measured) = 0.593 W/kg



0 dB = 0.593 W/kg = -2.27 dBW/kg

**Plot 34#: WCDMA Band 5\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.328 W/kg

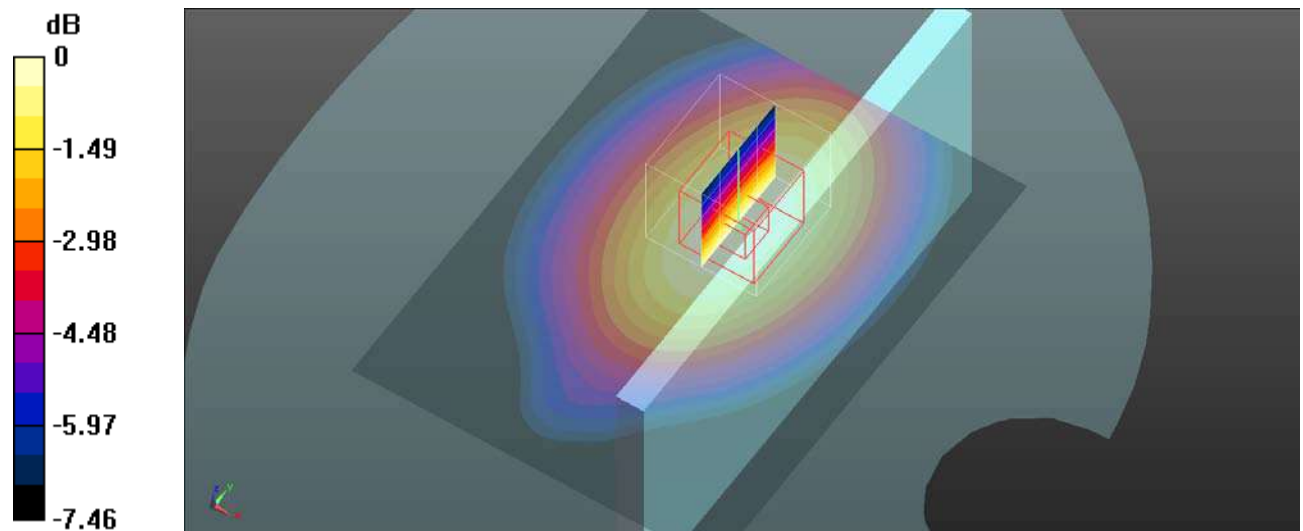
**Body Left/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.826 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.402 W/kg

**SAR(1 g) = 0.308 W/kg; SAR(10 g) = 0.222 W/kg**

Maximum value of SAR (measured) = 0.324 W/kg



0 dB = 0.324 W/kg = -4.89 dBW/kg



**Plot 35#: WCDMA Band 5\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.389 W/kg

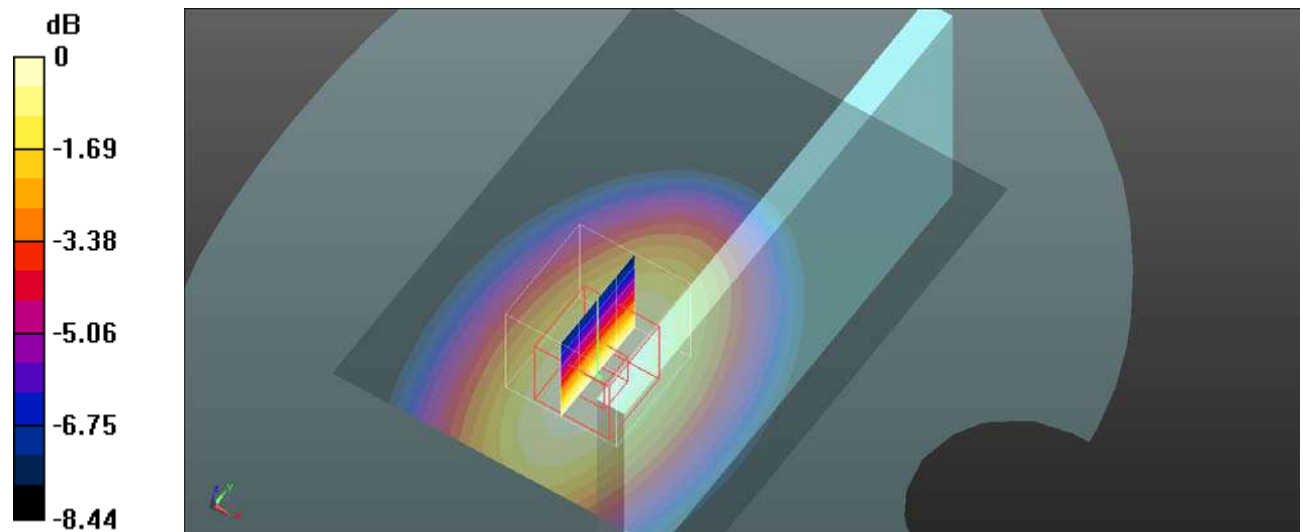
**Body Right/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.15 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.474 W/kg

**SAR(1 g) = 0.368 W/kg; SAR(10 g) = 0.266 W/kg**

Maximum value of SAR (measured) = 0.388 W/kg



0 dB = 0.388 W/kg = -4.11 dBW/kg

**Plot 36#: WCDMA Band 5\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.925$  S/m;  $\epsilon_r = 42.102$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/WCDMA Band 5 Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0726 W/kg

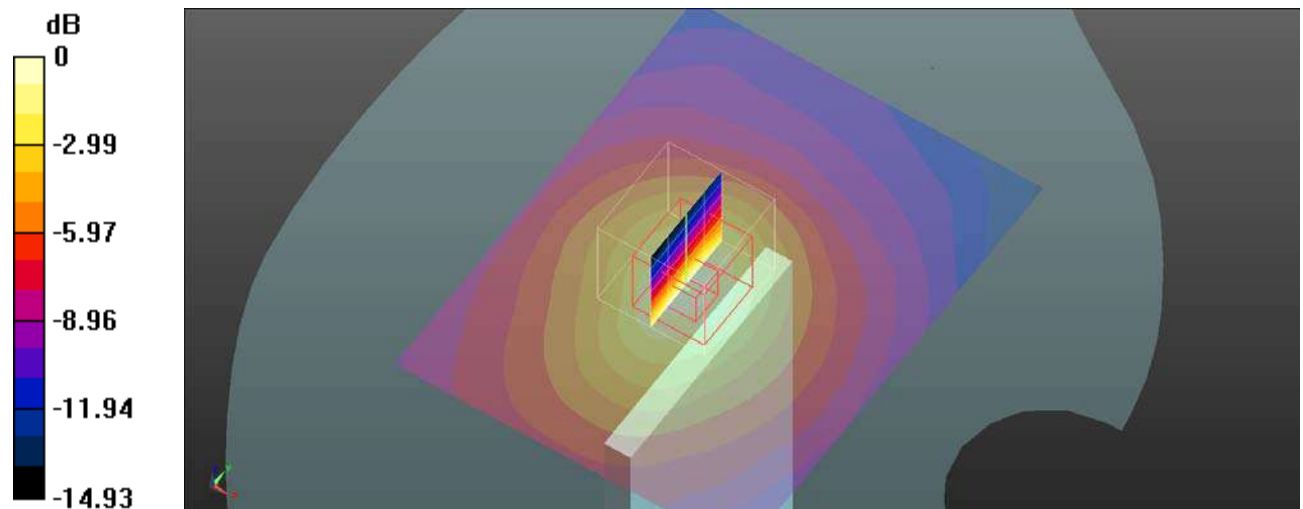
**Body Bottom/WCDMA Band 5 Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.624 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.153 W/kg

**SAR(1 g) = 0.073 W/kg; SAR(10 g) = 0.038 W/kg**

Maximum value of SAR (measured) = 0.0789 W/kg



0 dB = 0.0789 W/kg = -11.03 dBW/kg

**Plot 37#: LTE Band 2\_1RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.173 W/kg

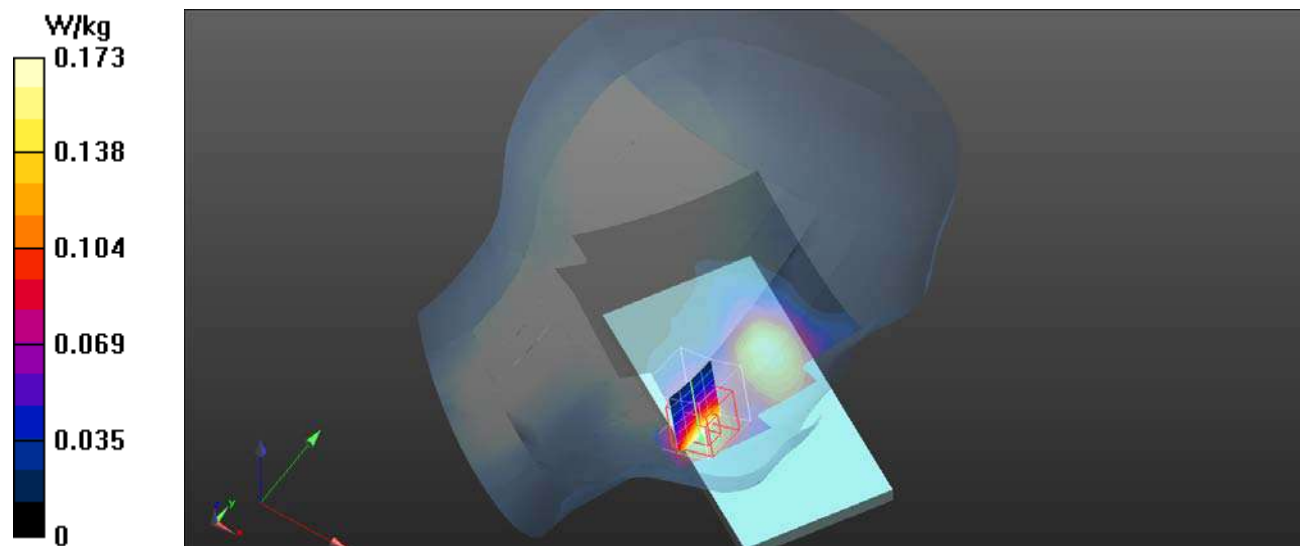
**Head Left Cheek/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.954 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.259 W/kg

**SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.115 W/kg**

Maximum value of SAR (measured) = 0.190 W/kg



0 dB = 0.190 W/kg = -7.21 dBW/kg

**Plot 38#: LTE Band 2\_50%RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.139 W/kg

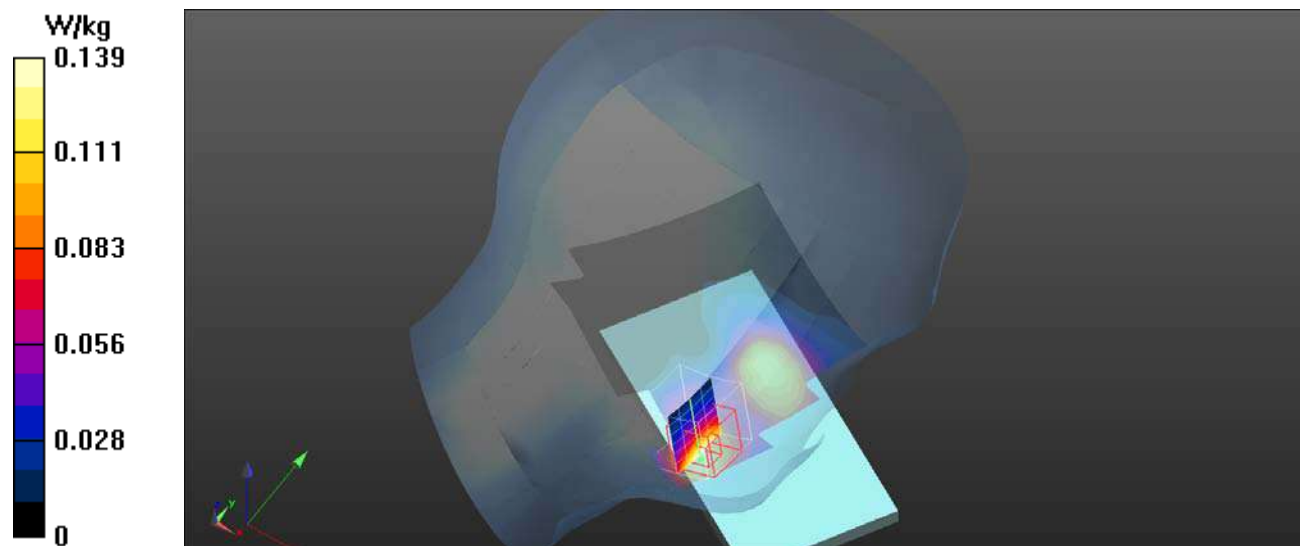
**Head Left Cheek/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.3370 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.201 W/kg

**SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.090 W/kg**

Maximum value of SAR (measured) = 0.149 W/kg



0 dB = 0.149 W/kg = -8.27 dBW/kg

**Plot 39#: LTE Band 2\_1RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0845 W/kg

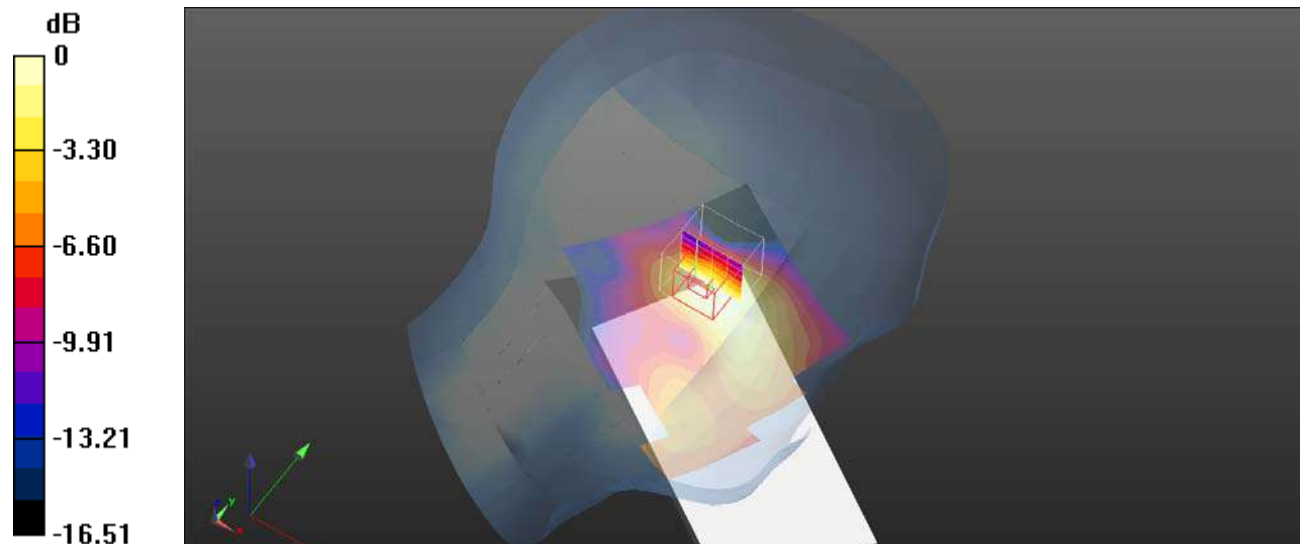
**Head Left Tilt/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.397 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.121 W/kg

**SAR(1 g) = 0.068 W/kg; SAR(10 g) = 0.038 W/kg**

Maximum value of SAR (measured) = 0.0728 W/kg



0 dB = 0.0728 W/kg = -11.38 dBW/kg

**Plot 40#: LTE Band 2\_50%RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0628 W/kg

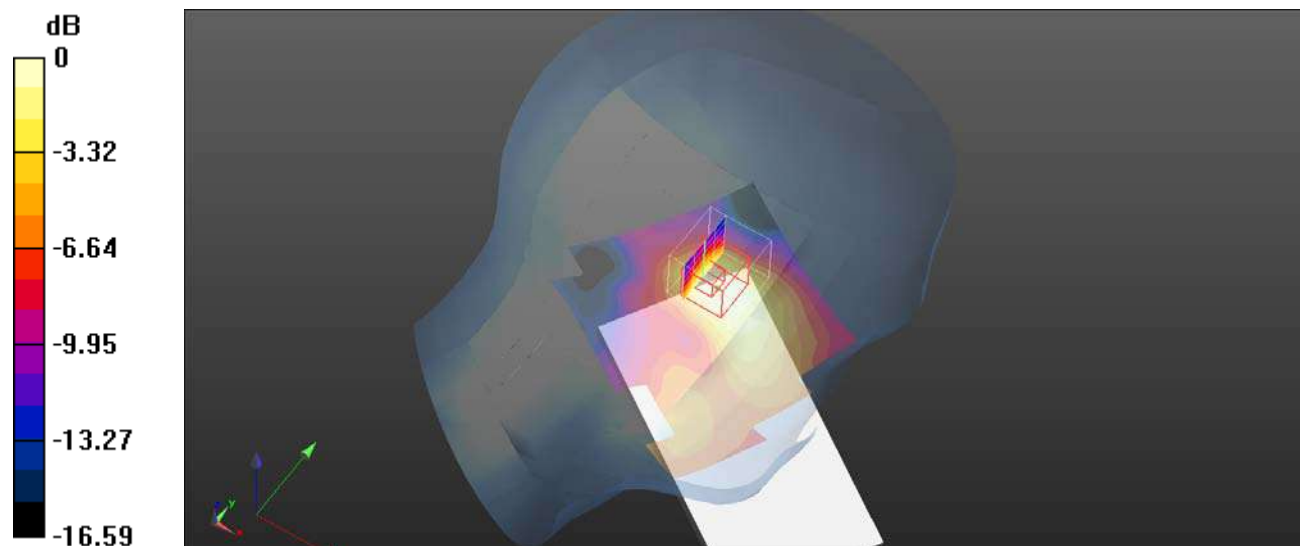
**Head Left Tilt/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.342 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0900 W/kg

**SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.029 W/kg**

Maximum value of SAR (measured) = 0.0563 W/kg



0 dB = 0.0563 W/kg = -12.49 dBW/kg

**Plot 41#: LTE Band 2\_1RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.235 W/kg

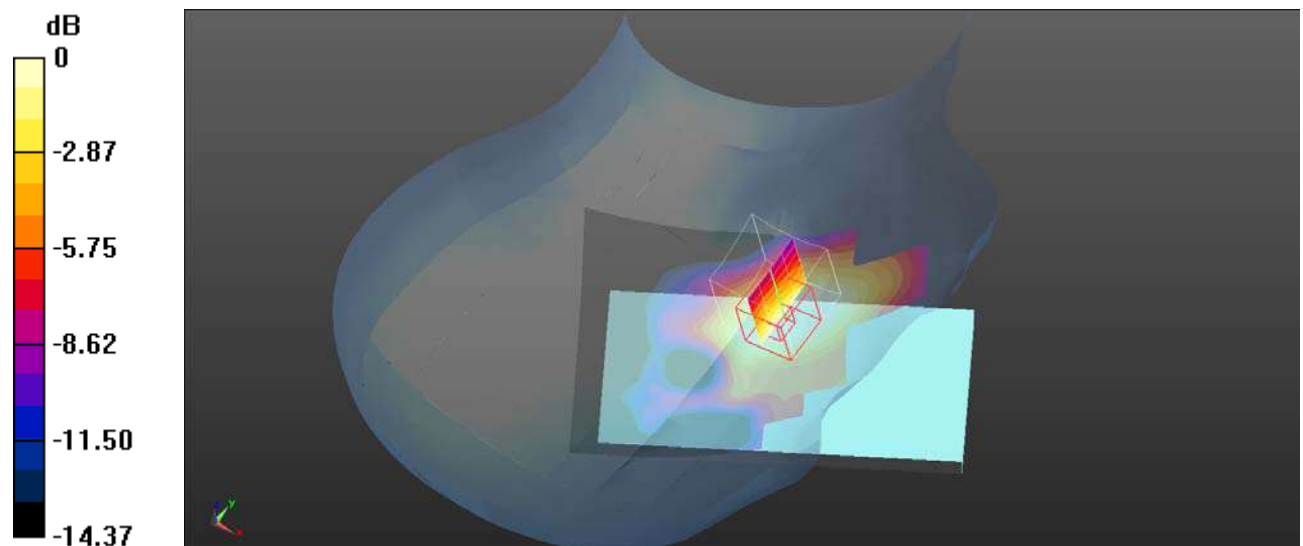
**Head Right Cheek/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.925 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.273 W/kg

**SAR(1 g) = 0.187 W/kg; SAR(10 g) = 0.123 W/kg**

Maximum value of SAR (measured) = 0.195 W/kg



0 dB = 0.195 W/kg = -7.10 dBW/kg

**Plot 42#: LTE Band 2\_50%RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.185 W/kg

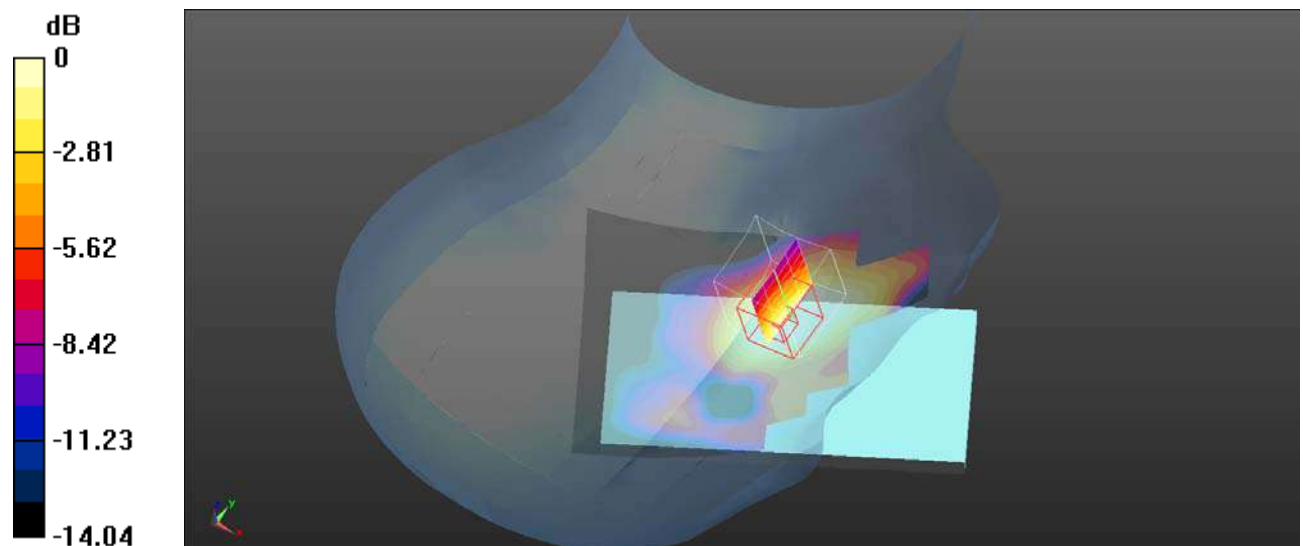
**Head Right Cheek/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.029 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.211 W/kg

**SAR(1 g) = 0.144 W/kg; SAR(10 g) = 0.094 W/kg**

Maximum value of SAR (measured) = 0.150 W/kg



0 dB = 0.150 W/kg = -8.24 dBW/kg



**Plot 43#: LTE Band 2\_1RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0551 W/kg

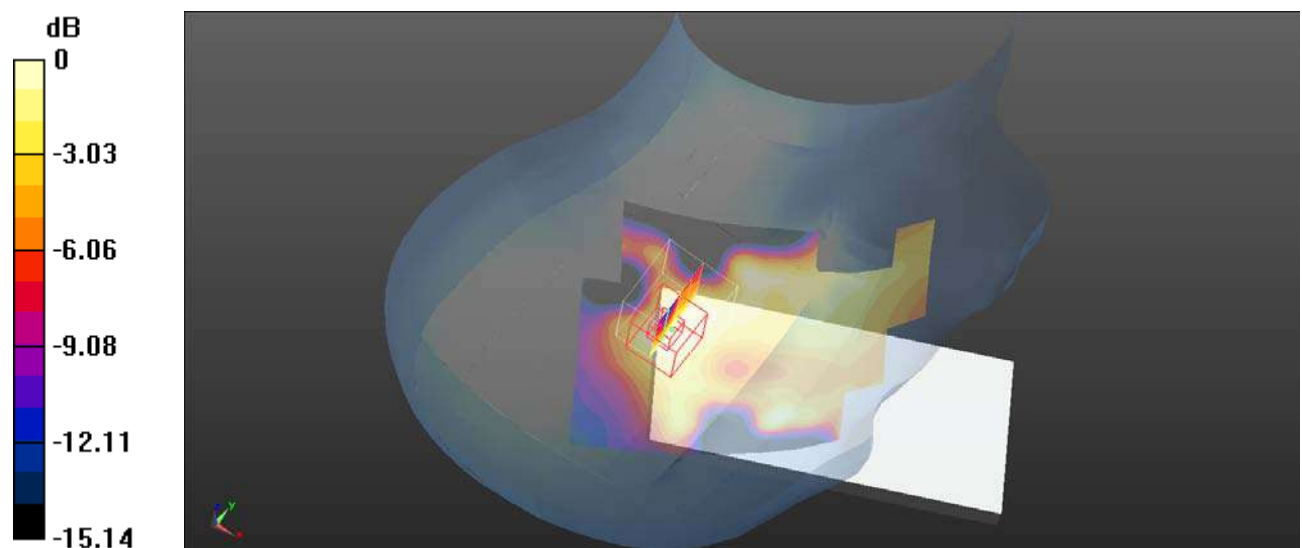
**Head Right Tilt/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.057 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.119 W/kg

**SAR(1 g) = 0.041 W/kg; SAR(10 g) = 0.025 W/kg**

Maximum value of SAR (measured) = 0.0443 W/kg



0 dB = 0.0443 W/kg = -13.54 dBW/kg

**Plot 44#: LTE Band 2\_50%RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0372 W/kg

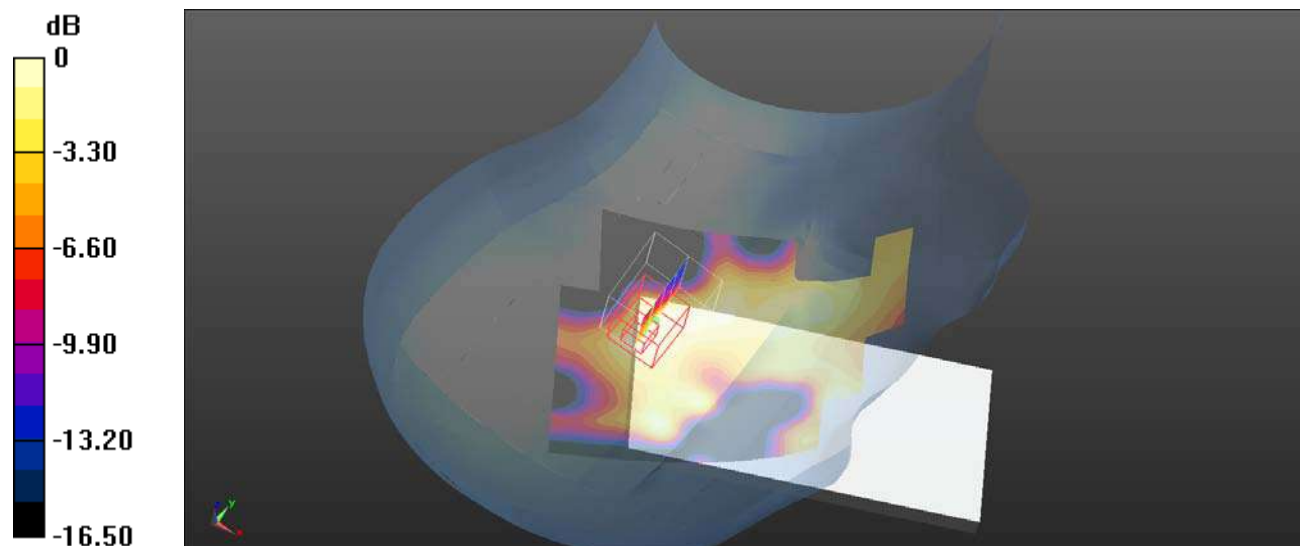
**Head Right Tilt/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.288 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.0480 W/kg

**SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.016 W/kg**

Maximum value of SAR (measured) = 0.0311 W/kg



0 dB = 0.0311 W/kg = -15.07 dBW/kg

**Plot 45#: LTE Band 2\_1RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.563 W/kg

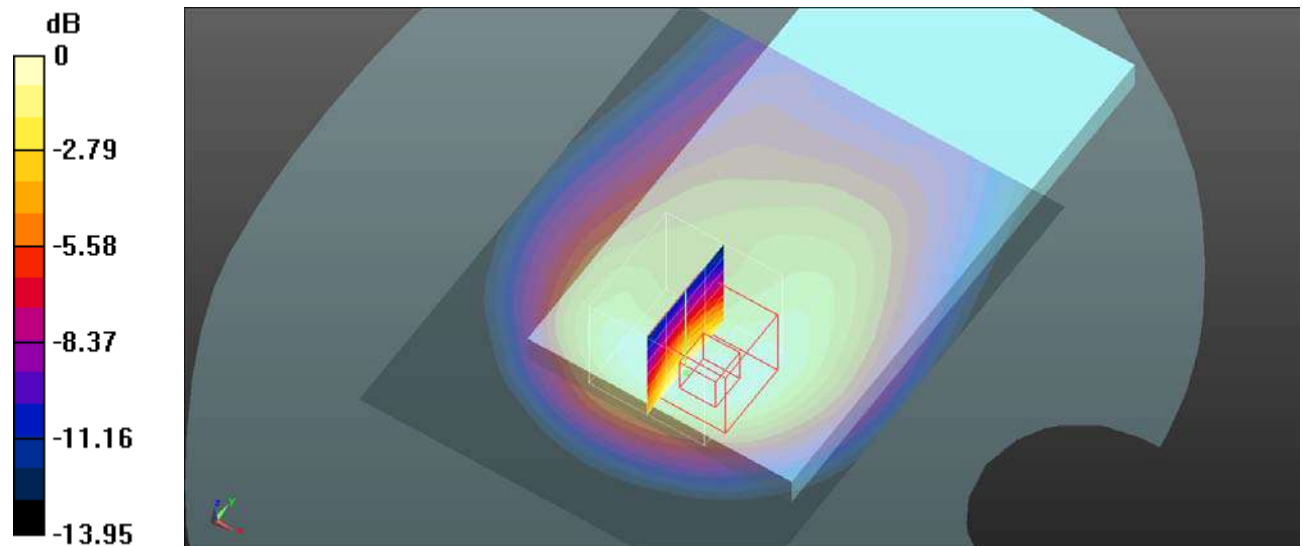
**Body Back/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.59 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.789 W/kg

**SAR(1 g) = 0.506 W/kg; SAR(10 g) = 0.308 W/kg**

Maximum value of SAR (measured) = 0.549 W/kg



0 dB = 0.549 W/kg = -2.60 dBW/kg

**Plot 46#: LTE Band 2\_50%RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.451 W/kg

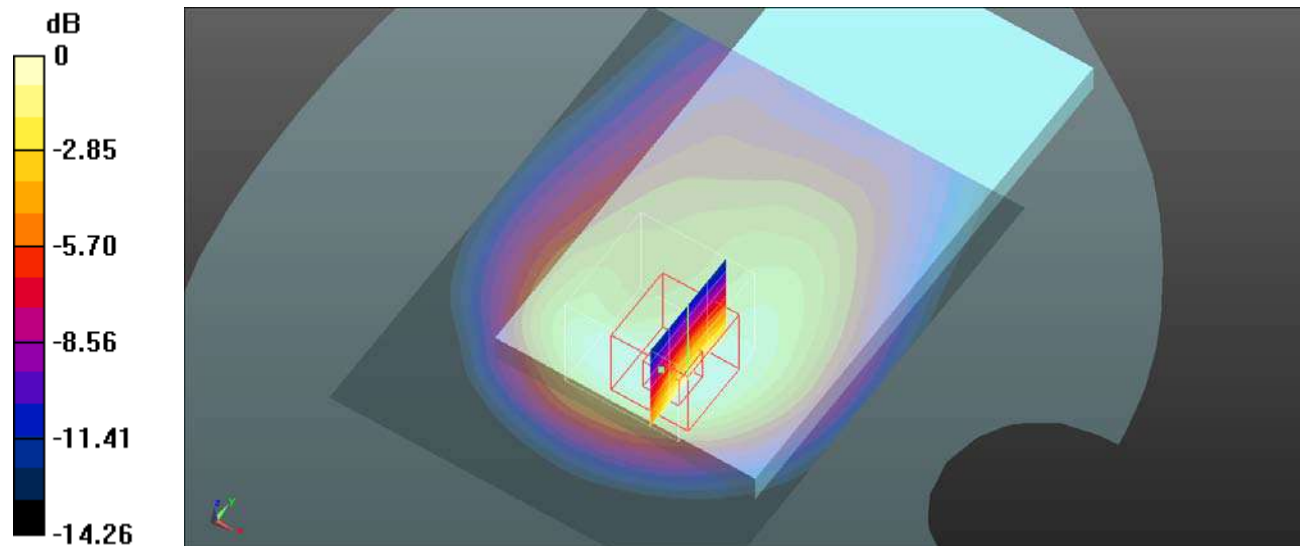
**Body Back/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.44 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.625 W/kg

**SAR(1 g) = 0.398 W/kg; SAR(10 g) = 0.241 W/kg**

Maximum value of SAR (measured) = 0.431 W/kg



0 dB = 0.431 W/kg = -3.66 dBW/kg

**Plot 47#: LTE Band 2\_1RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.134 W/kg

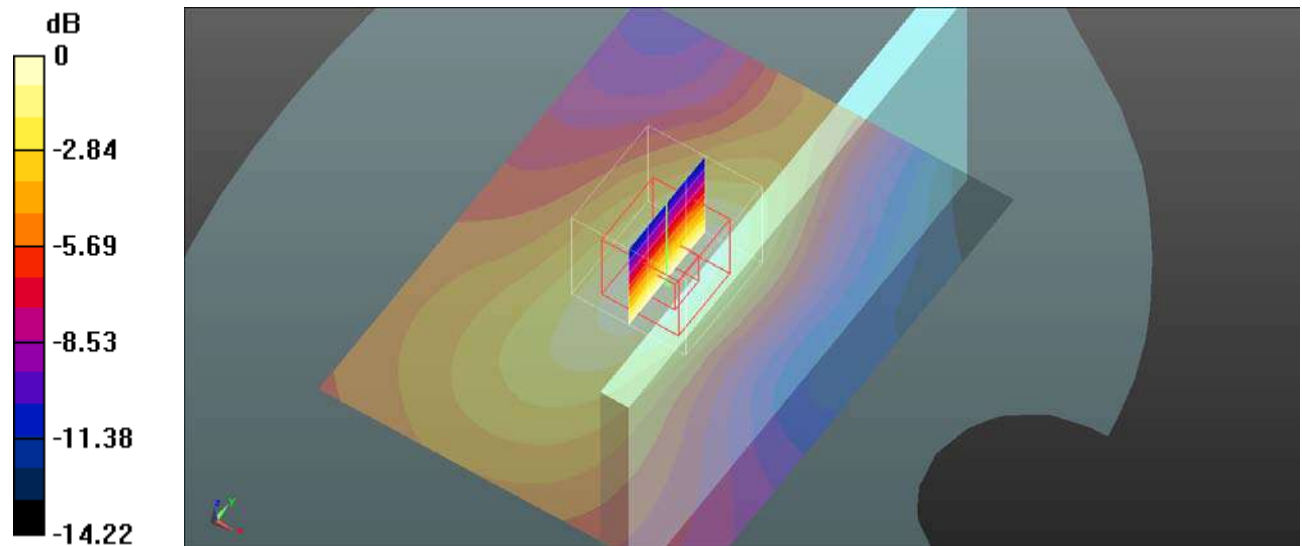
**Body Left/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.493 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.188 W/kg

**SAR(1 g) = 0.122 W/kg; SAR(10 g) = 0.077 W/kg**

Maximum value of SAR (measured) = 0.133 W/kg



0 dB = 0.133 W/kg = -8.76 dBW/kg

**Plot 48#: LTE Band 2\_50%RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.107 W/kg

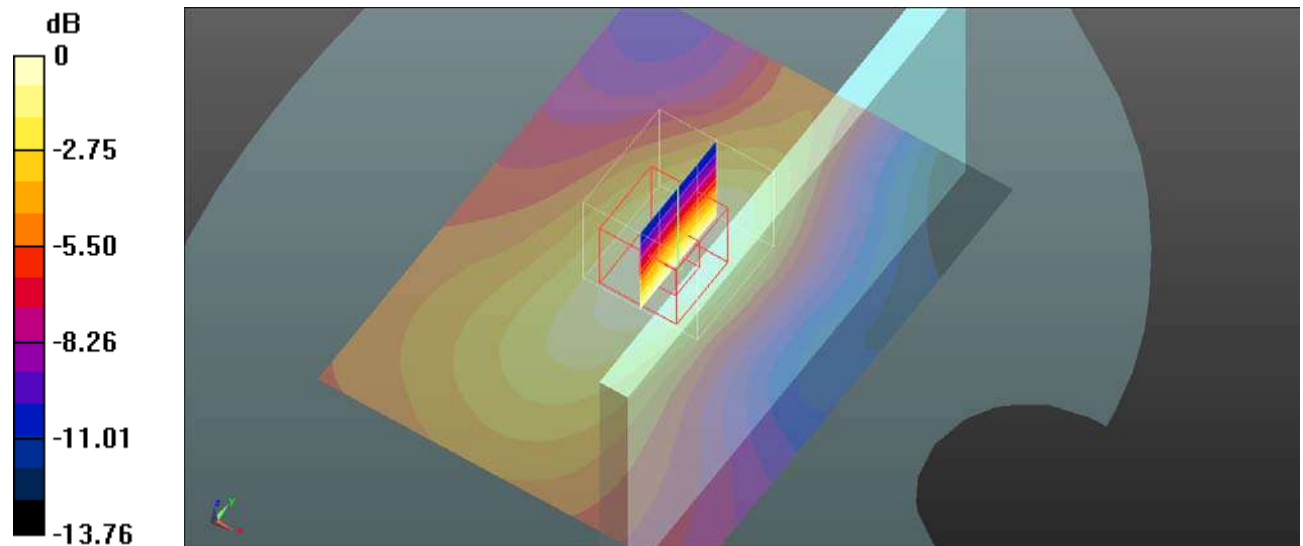
**Body Left/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.515 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.145 W/kg

**SAR(1 g) = 0.094 W/kg; SAR(10 g) = 0.059 W/kg**

Maximum value of SAR (measured) = 0.101 W/kg



0 dB = 0.101 W/kg = -9.96 dBW/kg

**Plot 49#: LTE Band 2\_1RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0912 W/kg

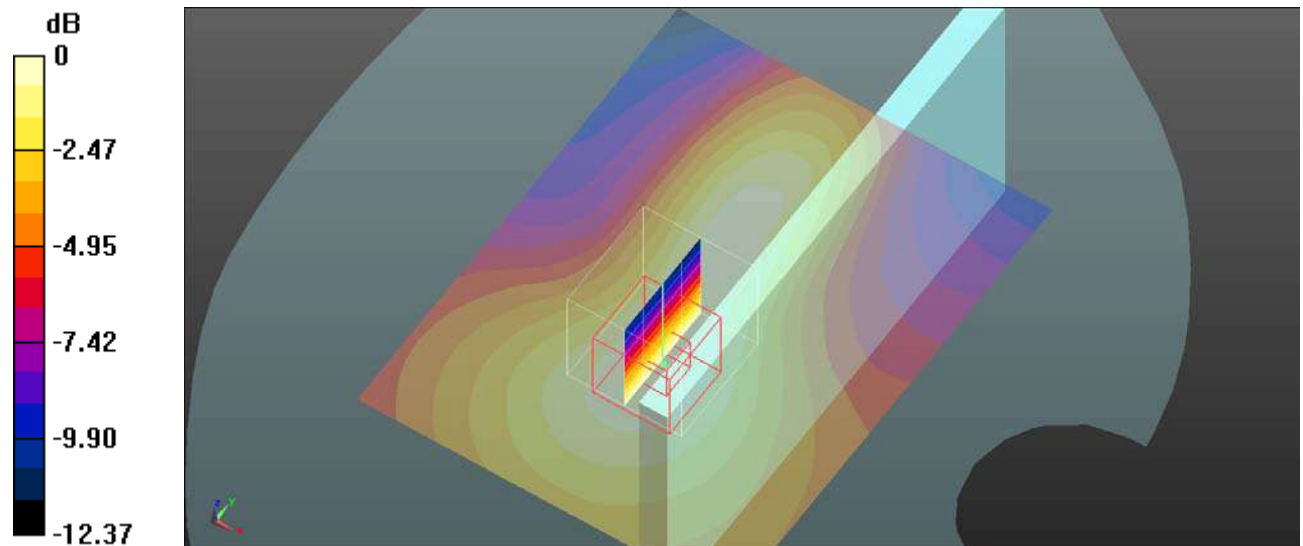
**Body Right/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.839 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.130 W/kg

**SAR(1 g) = 0.085 W/kg; SAR(10 g) = 0.055 W/kg**

Maximum value of SAR (measured) = 0.0919 W/kg



0 dB = 0.0919 W/kg = -10.37 dBW/kg

**Plot 50#: LTE Band 2\_50%RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0699 W/kg

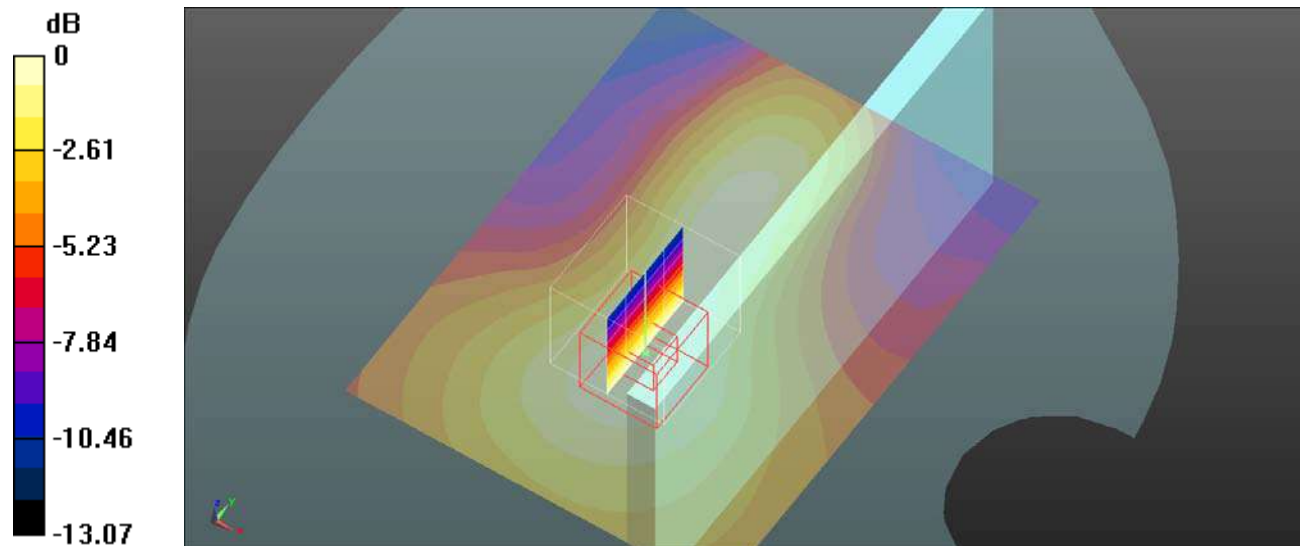
**Body Right/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.846 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.101 W/kg

**SAR(1 g) = 0.066 W/kg; SAR(10 g) = 0.043 W/kg**

Maximum value of SAR (measured) = 0.0701 W/kg



0 dB = 0.0701 W/kg = -11.54 dBW/kg



**Plot 51#: LTE Band 2\_1RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 2 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.716 W/kg

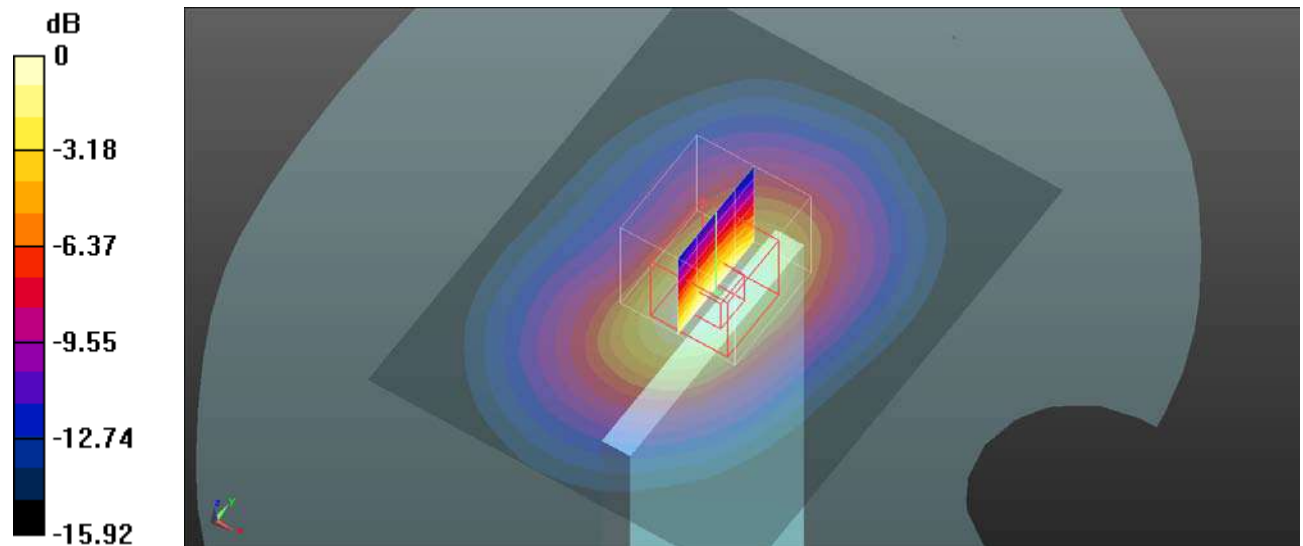
**Body Bottom/LTE Band 2 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.42 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.03 W/kg

**SAR(1 g) = 0.623 W/kg; SAR(10 g) = 0.349 W/kg**

Maximum value of SAR (measured) = 0.693 W/kg



0 dB = 0.693 W/kg = -1.59 dBW/kg

**Plot 52#: LTE Band 2\_50%RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1880$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.107$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.02, 8.02, 8.02); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 2 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.562 W/kg

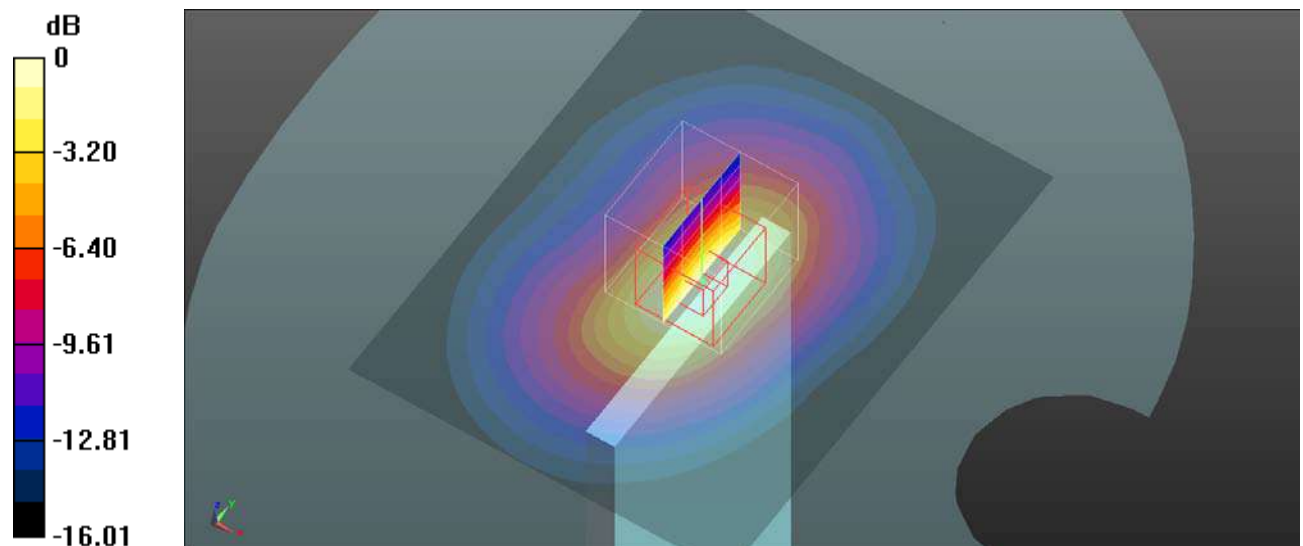
**Body Bottom/LTE Band 2 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.85 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.812 W/kg

**SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.275 W/kg**

Maximum value of SAR (measured) = 0.546 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

**Plot 53#: LTE Band 4\_1RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.252 W/kg

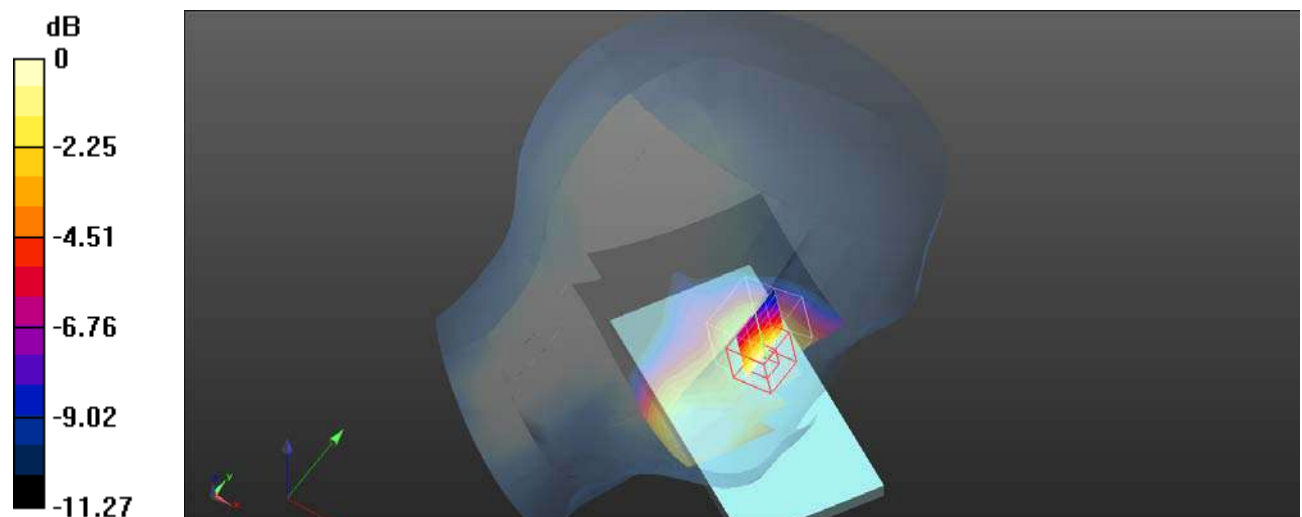
**Head Left Cheek/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.340 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.260 W/kg

**SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.137 W/kg**

Maximum value of SAR (measured) = 0.203 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

**Plot 54#: LTE Band 4\_50%RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.190 W/kg

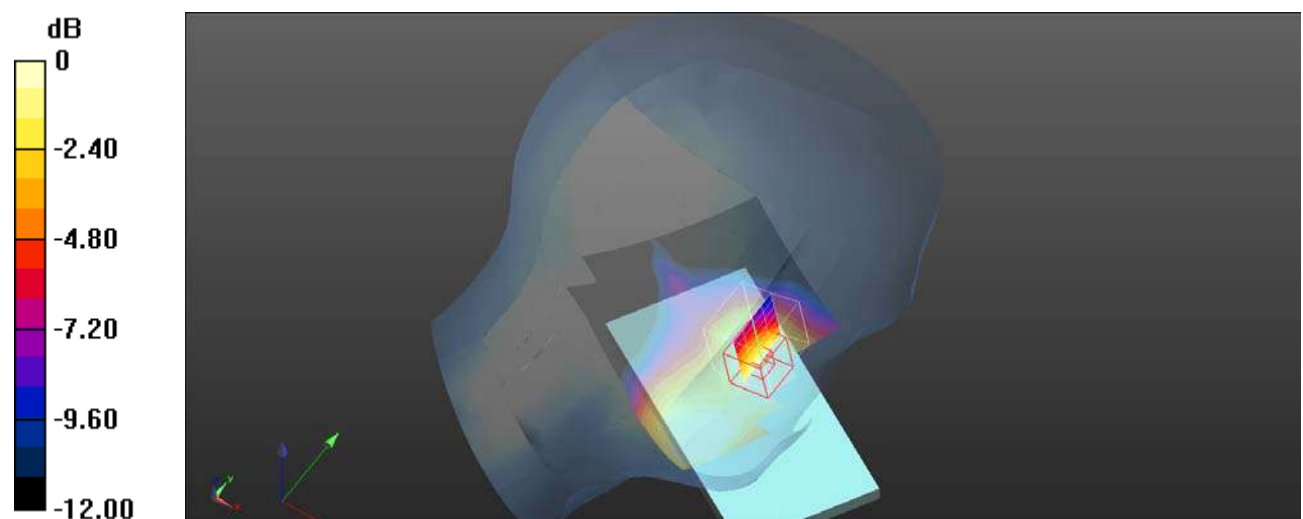
**Head Left Cheek/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.562 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.201 W/kg

**SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.103 W/kg**

Maximum value of SAR (measured) = 0.155 W/kg



**Plot 55#: LTE Band 4\_1RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm.

Maximum value of SAR (interpolated) = 0.147 W/kg

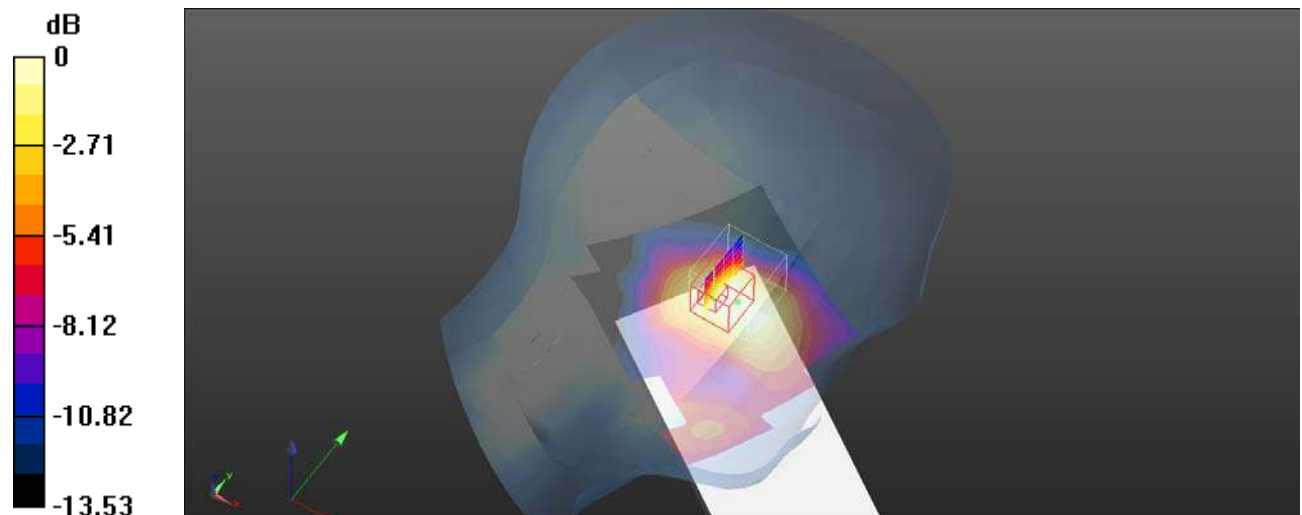
**Head Left Tilt/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.228 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.209 W/kg

**SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.099 W/kg**

Maximum value of SAR (measured) = 0.150 W/kg



0 dB = 0.150 W/kg = -8.24 dBW/kg

**Plot 56#: LTE Band 4\_50%RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.111 W/kg

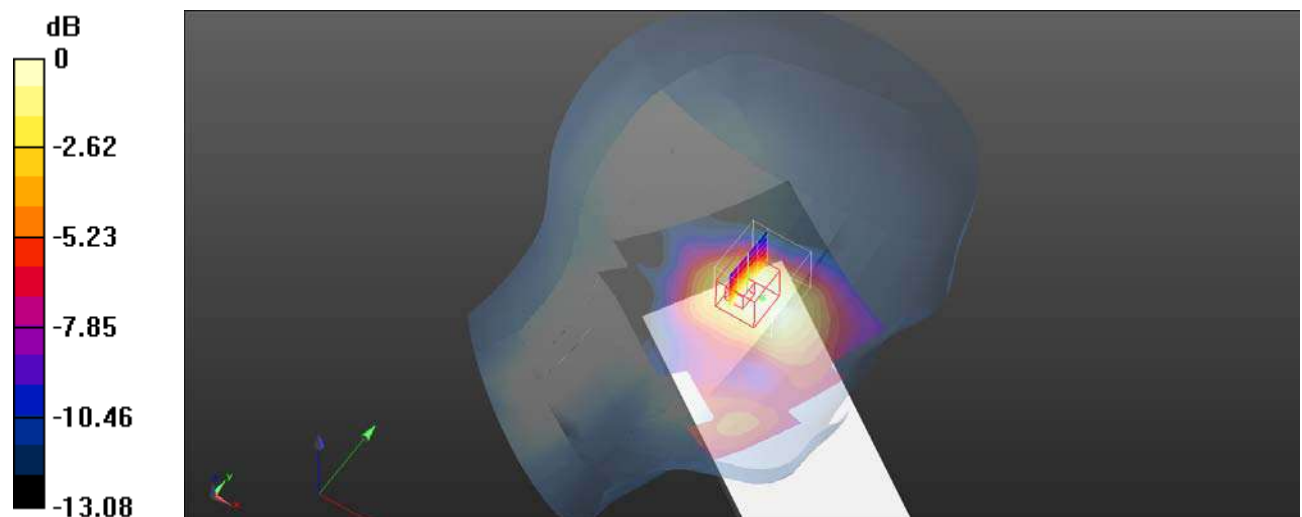
**Head Left Tilt/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.160 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.157 W/kg

**SAR(1 g) = 0.108 W/kg; SAR(10 g) = 0.072 W/kg**

Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

**Plot 57#: LTE Band 4\_1RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.438 W/kg

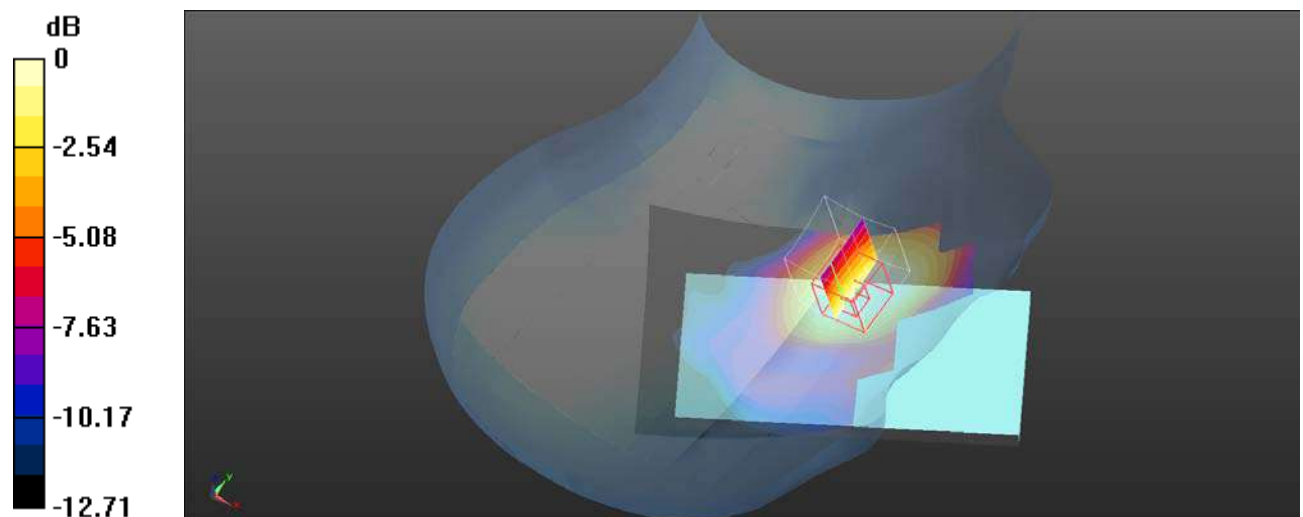
**Head Right Cheek/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.277 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.463 W/kg

**SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.237 W/kg**

Maximum value of SAR (measured) = 0.355 W/kg



0 dB = 0.355 W/kg = -4.50 dBW/kg

**Plot 58#: LTE Band 4\_50%RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.322 W/kg

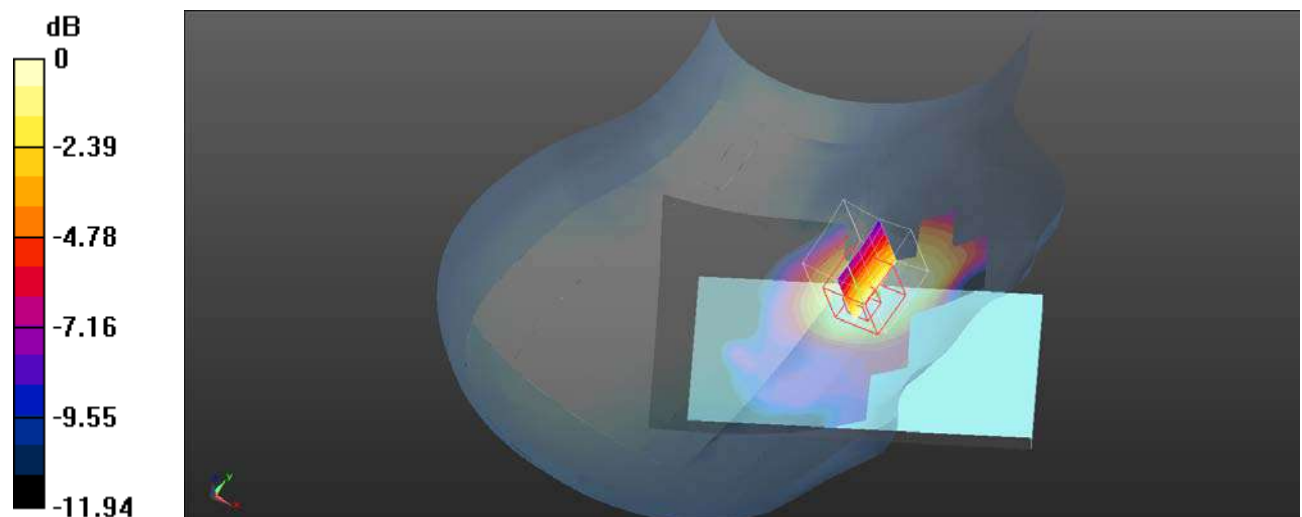
**Head Right Cheek/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.341 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.357 W/kg

**SAR(1 g) = 0.267 W/kg; SAR(10 g) = 0.181 W/kg**

Maximum value of SAR (measured) = 0.278 W/kg



0 dB = 0.278 W/kg = -5.56 dBW/kg



**Plot 59#: LTE Band 4\_1RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.144 W/kg

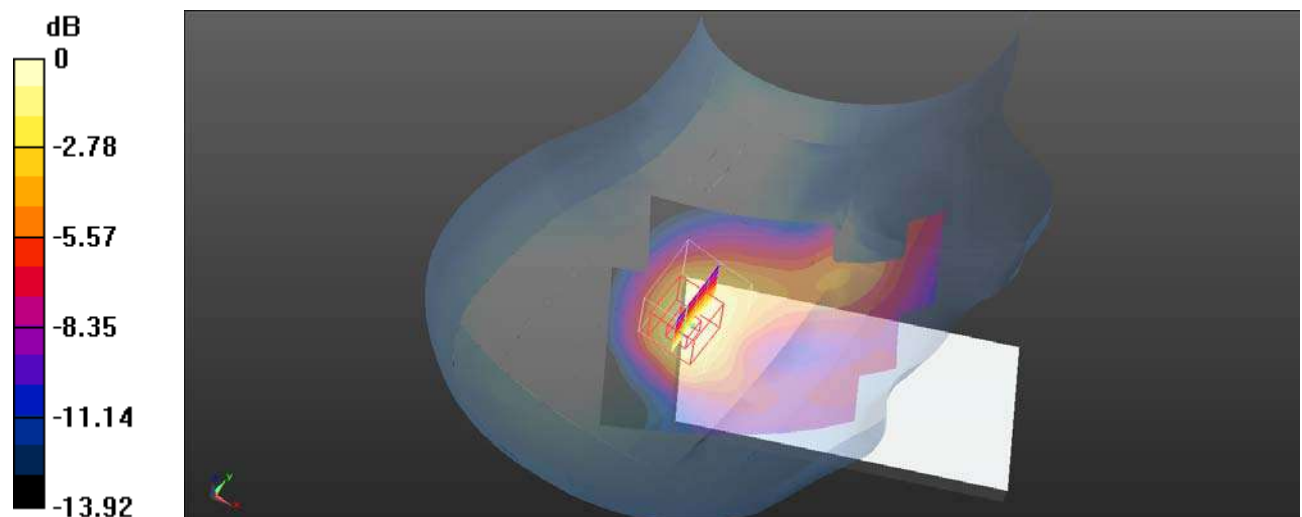
**Head Right Tilt/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.08 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.221 W/kg

**SAR(1 g) = 0.154 W/kg; SAR(10 g) = 0.096 W/kg**

Maximum value of SAR (measured) = 0.159 W/kg



0 dB = 0.159 W/kg = -7.99 dBW/kg

**Plot 60#: LTE Band 4\_50%RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.103 W/kg

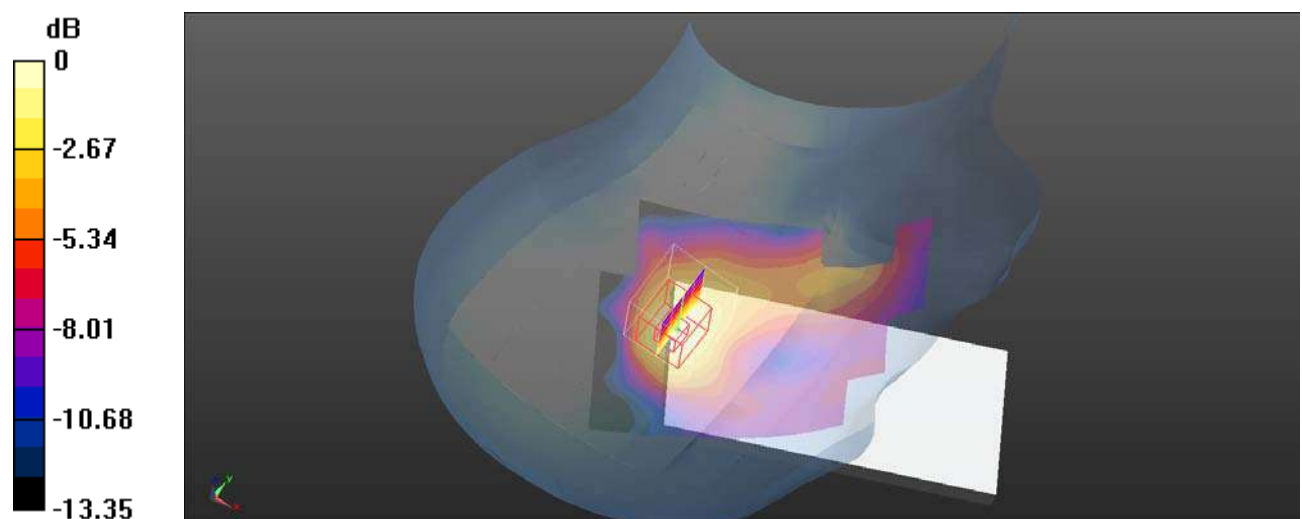
**Head Right Tilt/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.573 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.164 W/kg

**SAR(1 g) = 0.114 W/kg; SAR(10 g) = 0.071 W/kg**

Maximum value of SAR (measured) = 0.117 W/kg



0 dB = 0.117 W/kg = -9.32 dBW/kg

**Plot 61#: LTE Band 4\_1RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.695 W/kg

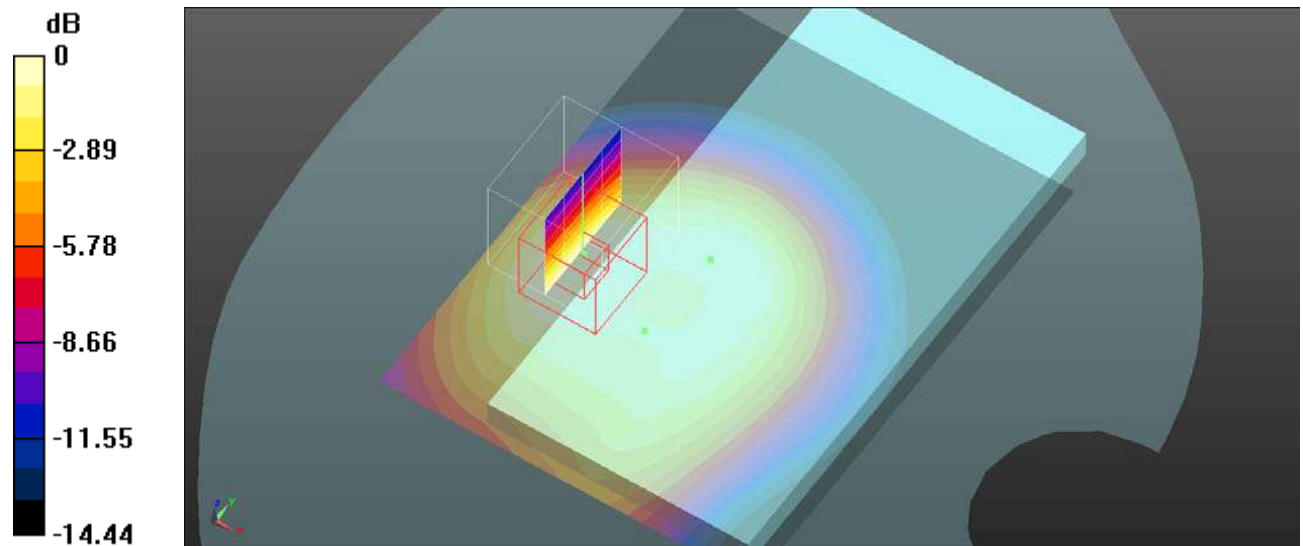
**Body Back/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.76 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.968 W/kg

**SAR(1 g) = 0.652 W/kg; SAR(10 g) = 0.412 W/kg**

Maximum value of SAR (measured) = 0.676 W/kg



0 dB = 0.676 W/kg = -1.70 dBW/kg

**Plot 62#: LTE Band 4\_50%RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.543 W/kg

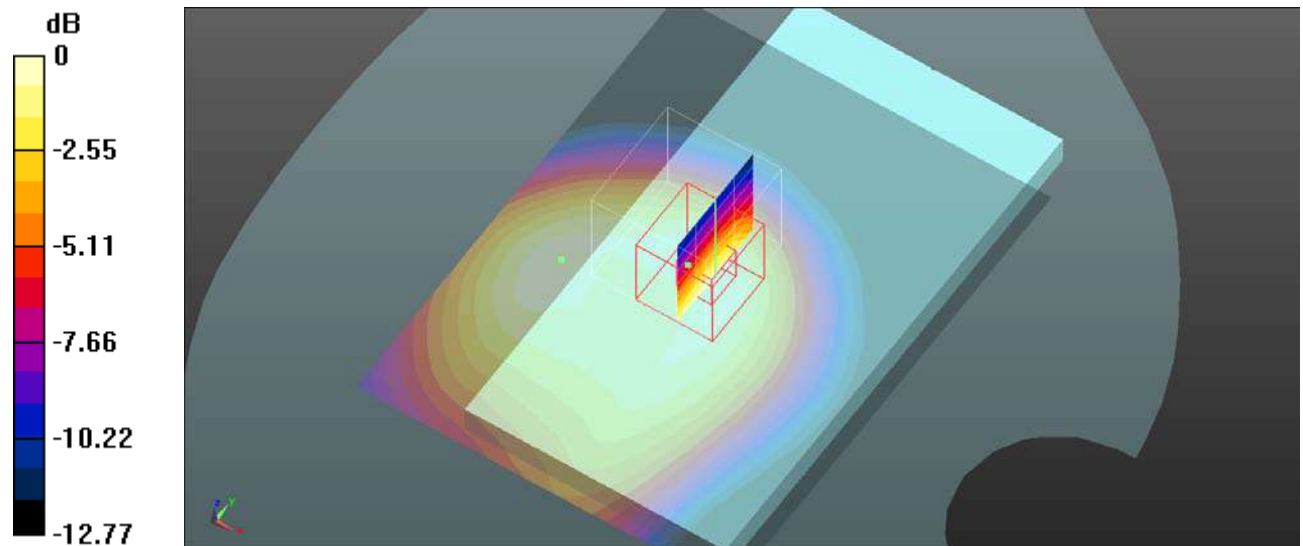
**Body Back/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.03 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.735 W/kg

**SAR(1 g) = 0.499 W/kg; SAR(10 g) = 0.313 W/kg**

Maximum value of SAR (measured) = 0.535 W/kg



0 dB = 0.535 W/kg = -2.72 dBW/kg

**Plot 63#: LTE Band 4\_1RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.192 W/kg

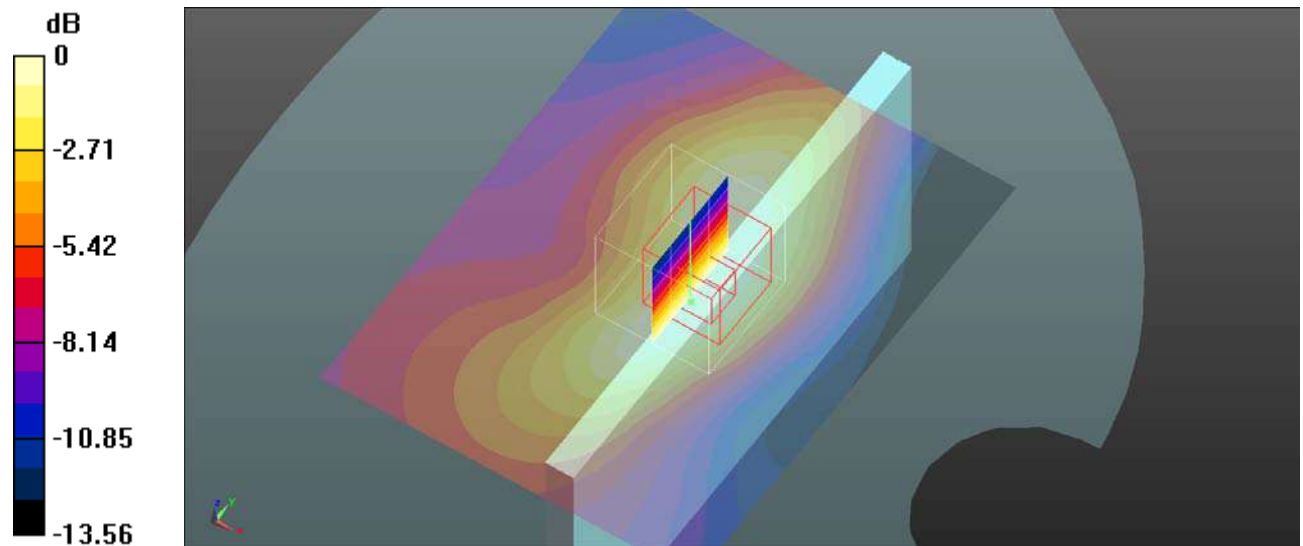
**Body Left/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.45 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.267 W/kg

**SAR(1 g) = 0.172 W/kg; SAR(10 g) = 0.103 W/kg**

Maximum value of SAR (measured) = 0.183 W/kg



0 dB = 0.183 W/kg = -7.38 dBW/kg

**Plot 64#: LTE Band 4\_50%RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.111 W/kg

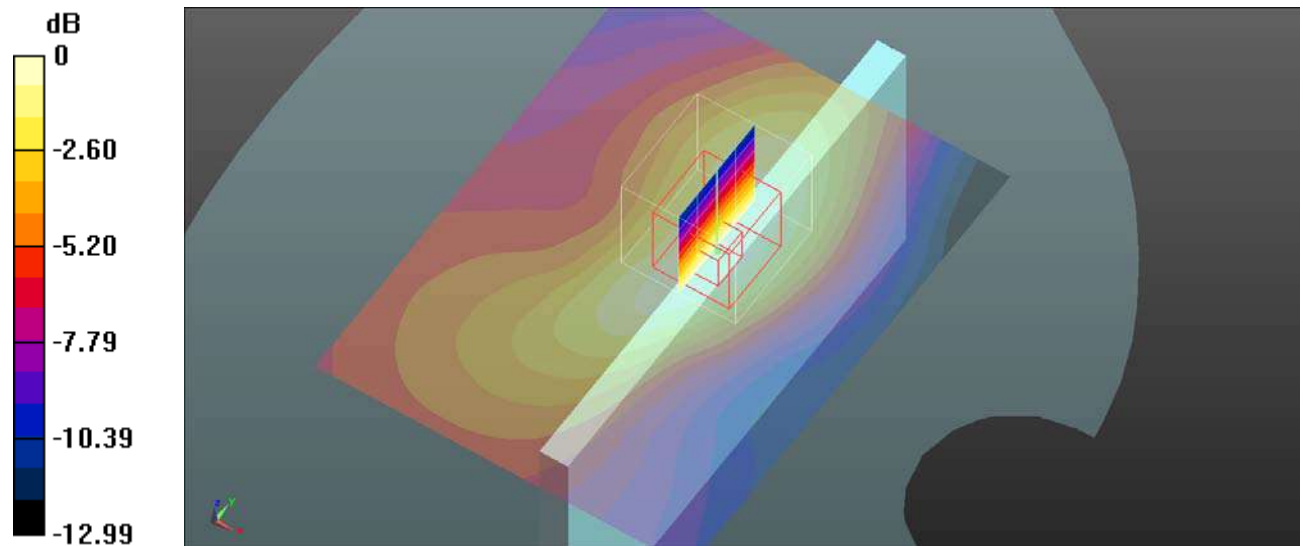
**Body Left/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.541 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.151 W/kg

**SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.064 W/kg**

Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

**Plot 65#: LTE Band 4\_1RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.241 W/kg

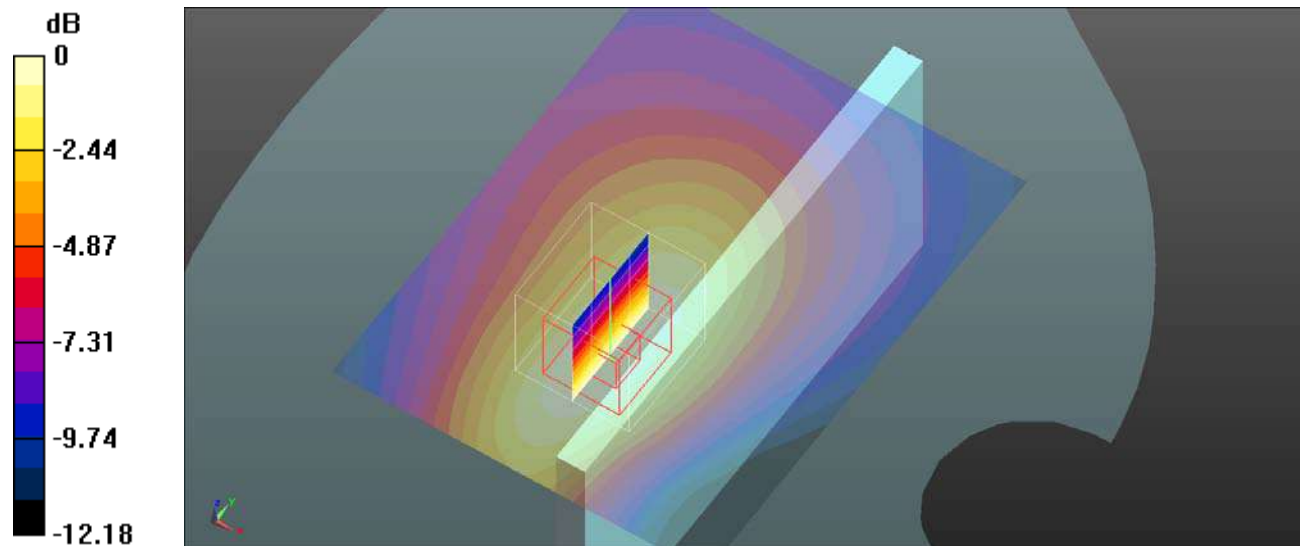
**Body Right/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.57 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.319 W/kg

**SAR(1 g) = 0.226 W/kg; SAR(10 g) = 0.147 W/kg**

Maximum value of SAR (measured) = 0.239 W/kg



0 dB = 0.239 W/kg = -6.22 dBW/kg

**Plot 66#: LTE Band 4\_50%RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.186 W/kg

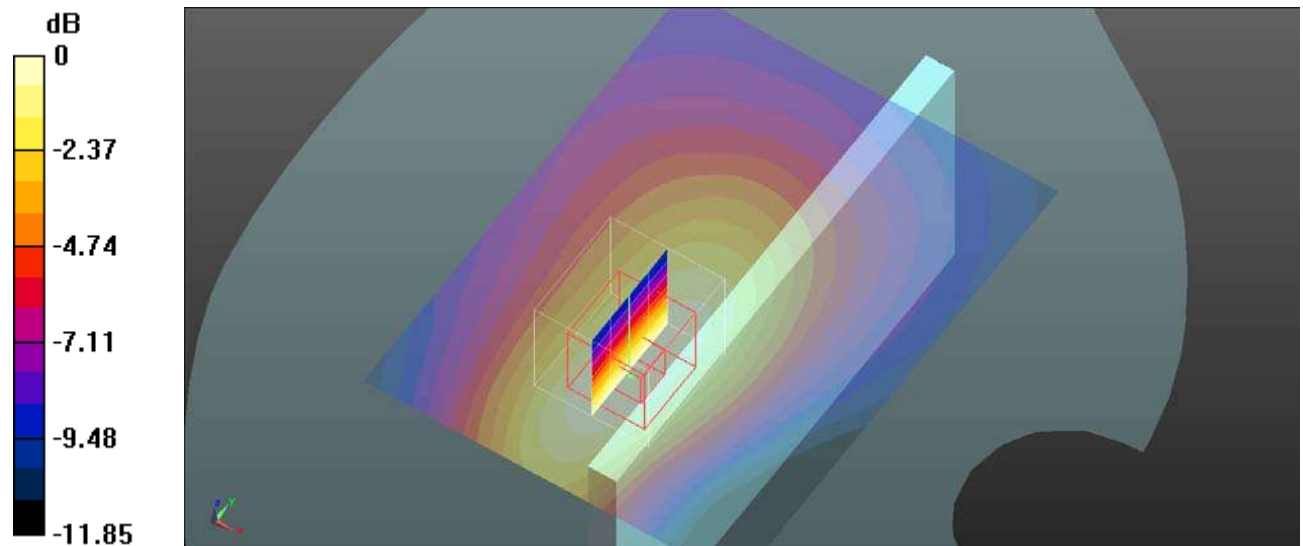
**Body Right/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.14 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.246 W/kg

**SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.114 W/kg**

Maximum value of SAR (measured) = 0.185 W/kg



0 dB = 0.185 W/kg = -7.33 dBW/kg



**Plot 67#: LTE Band 4\_1RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 4 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.766 W/kg

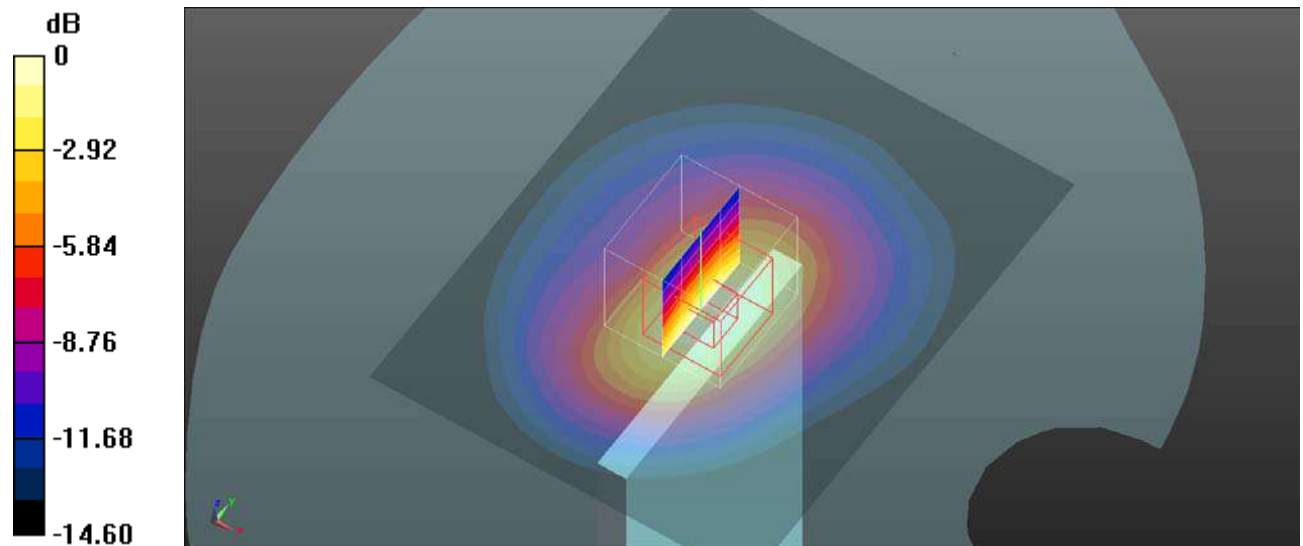
**Body Bottom/LTE Band 4 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.20 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.15 W/kg

**SAR(1 g) = 0.753 W/kg; SAR(10 g) = 0.432 W/kg**

Maximum value of SAR (measured) = 0.817 W/kg



0 dB = 0.817 W/kg = -0.88 dBW/kg

**Plot 68#: LTE Band 4\_50%RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1732.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.5$  MHz;  $\sigma = 1.37$  S/m;  $\epsilon_r = 39.676$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(8.39, 8.39, 8.39); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 4 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.635 W/kg

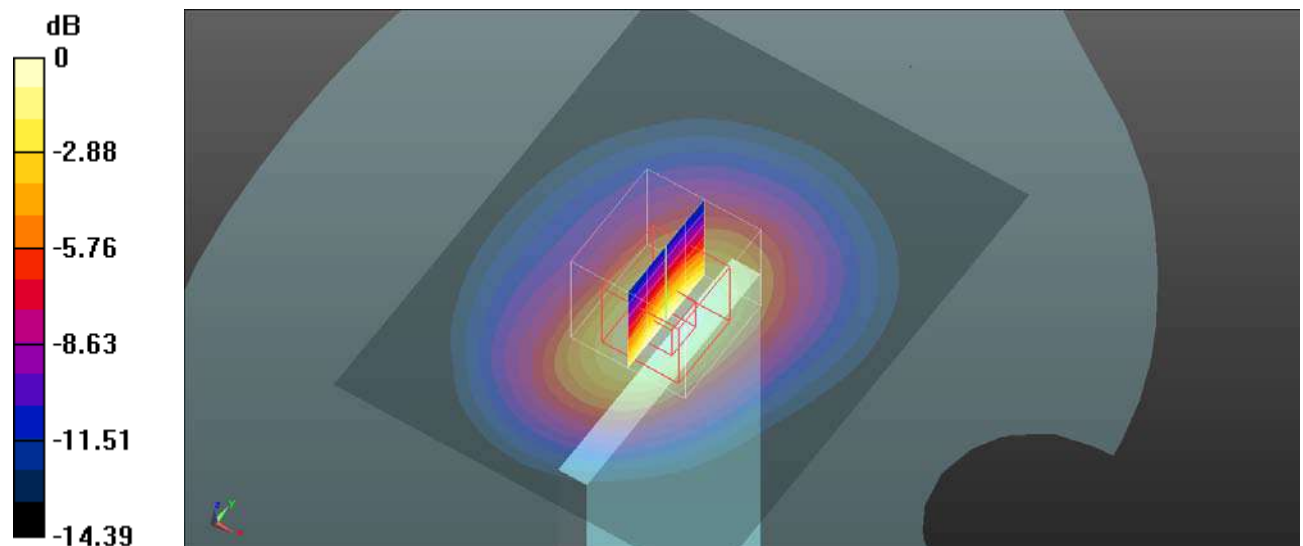
**Body Bottom/LTE Band 4 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.15 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.902 W/kg

**SAR(1 g) = 0.588 W/kg; SAR(10 g) = 0.336 W/kg**

Maximum value of SAR (measured) = 0.645 W/kg



0 dB = 0.645 W/kg = -1.90 dBW/kg

**Plot 69#: LTE Band 5\_1RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.411 W/kg

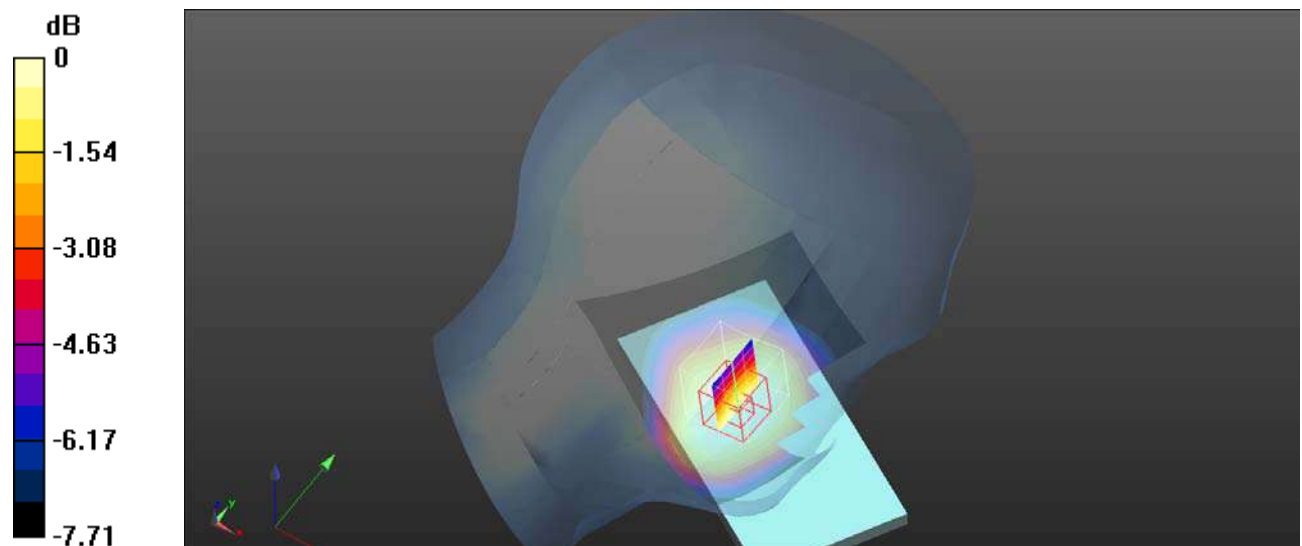
**Head Left Cheek/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.949 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.391 W/kg

**SAR(1 g) = 0.336 W/kg; SAR(10 g) = 0.261 W/kg**

Maximum value of SAR (measured) = 0.352 W/kg



0 dB = 0.352 W/kg = -4.53 dBW/kg

**Plot 70#: LTE Band 5\_50%RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.327 W/kg

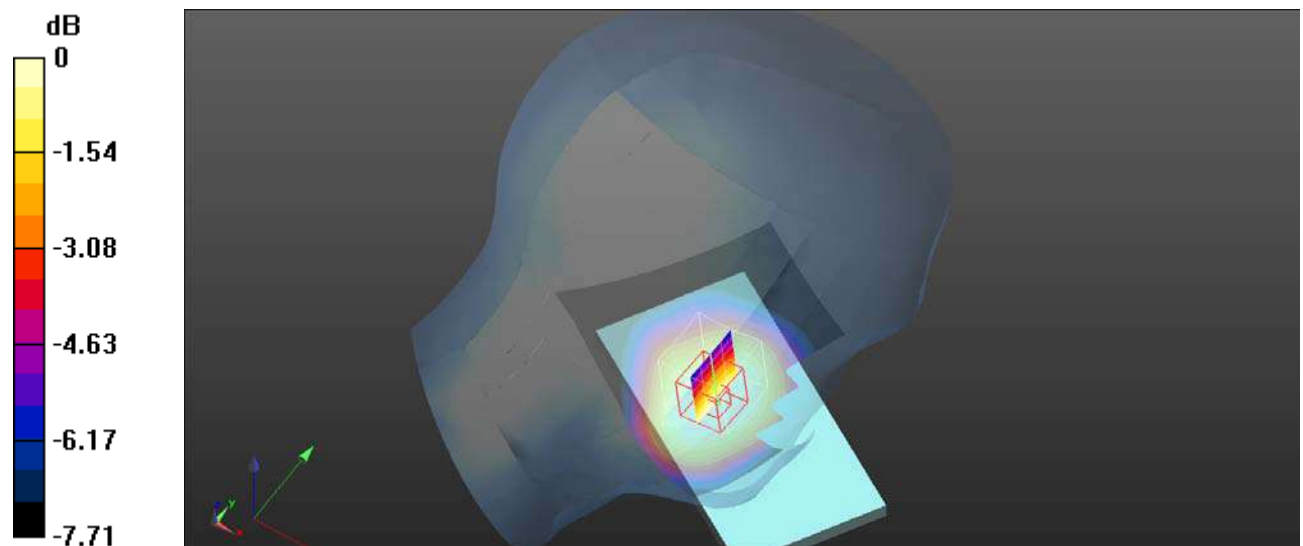
**Head Left Cheek/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.151 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.319 W/kg

**SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.213 W/kg**

Maximum value of SAR (measured) = 0.284 W/kg



0 dB = 0.284 W/kg = -5.47 dBW/kg

**Plot 71#: LTE Band 5\_1RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.236 W/kg

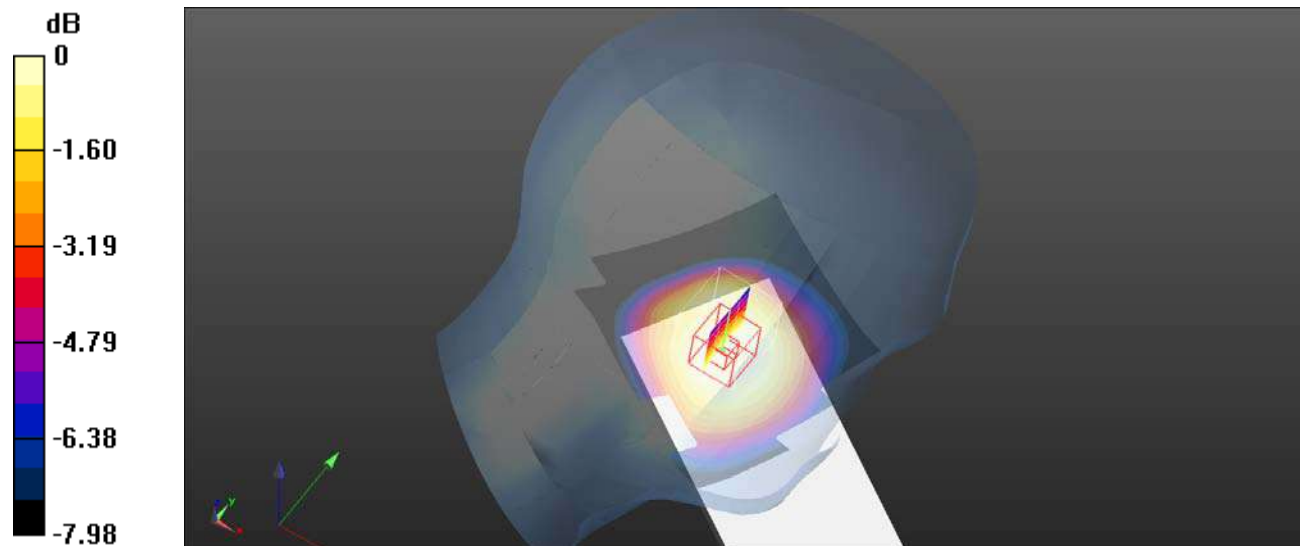
**Head Left Tilt/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.70 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.247 W/kg

**SAR(1 g) = 0.206 W/kg; SAR(10 g) = 0.158 W/kg**

Maximum value of SAR (measured) = 0.216 W/kg



0 dB = 0.216 W/kg = -6.66 dBW/kg

**Plot 72#: LTE Band 5\_50%RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.185 W/kg

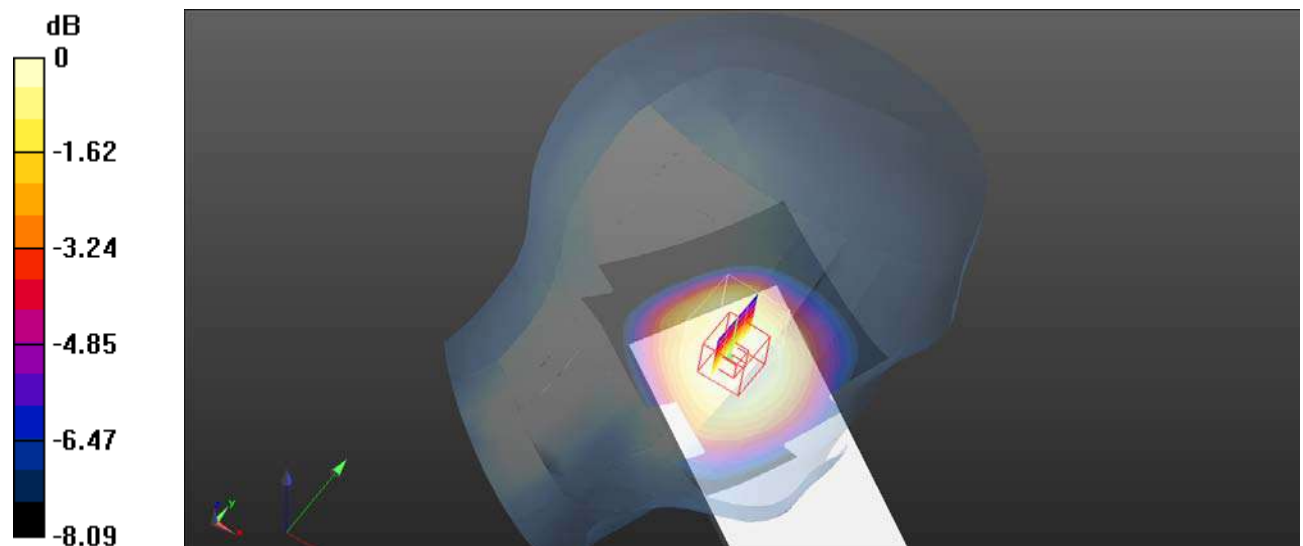
**Head Left Tilt/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.98 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.200 W/kg

**SAR(1 g) = 0.166 W/kg; SAR(10 g) = 0.128 W/kg**

Maximum value of SAR (measured) = 0.173 W/kg



0 dB = 0.173 W/kg = -7.62 dBW/kg

**Plot 73#: LTE Band 5\_1RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.416 W/kg

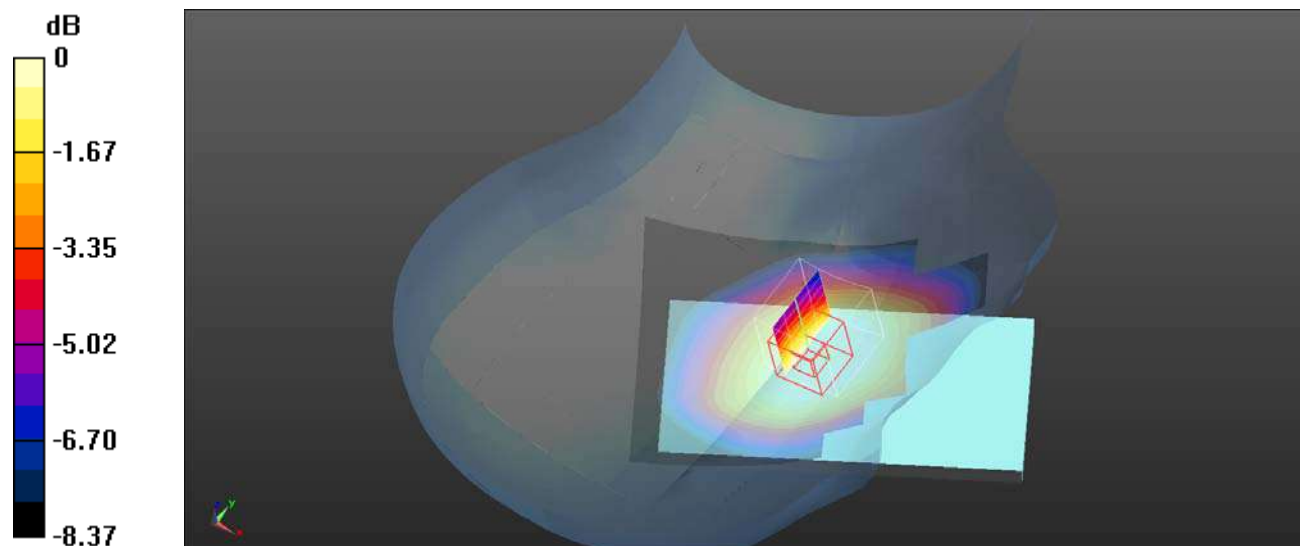
**Head Right Cheek/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.042 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.411 W/kg

**SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.254 W/kg**

Maximum value of SAR (measured) = 0.340 W/kg



0 dB = 0.340 W/kg = -4.69 dBW/kg

**Plot 74#: LTE Band 5\_50%RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.338 W/kg

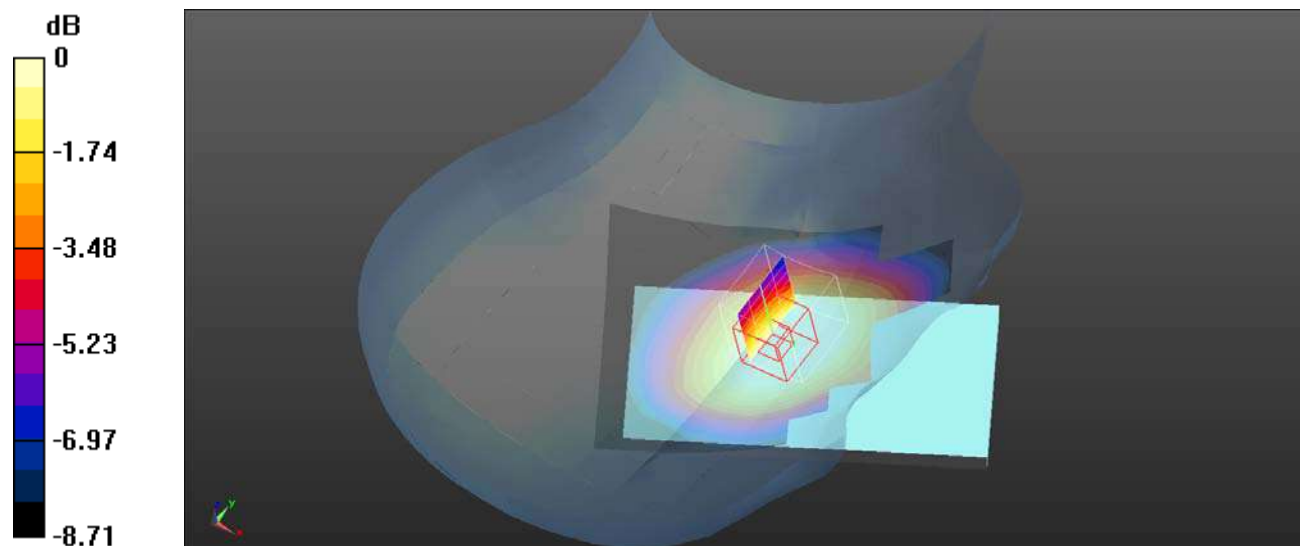
**Head Right Cheek/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.896 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.330 W/kg

**SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.204 W/kg**

Maximum value of SAR (measured) = 0.275 W/kg



0 dB = 0.275 W/kg = -5.61 dBW/kg



**Plot 75#: LTE Band 5\_1RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.204 W/kg

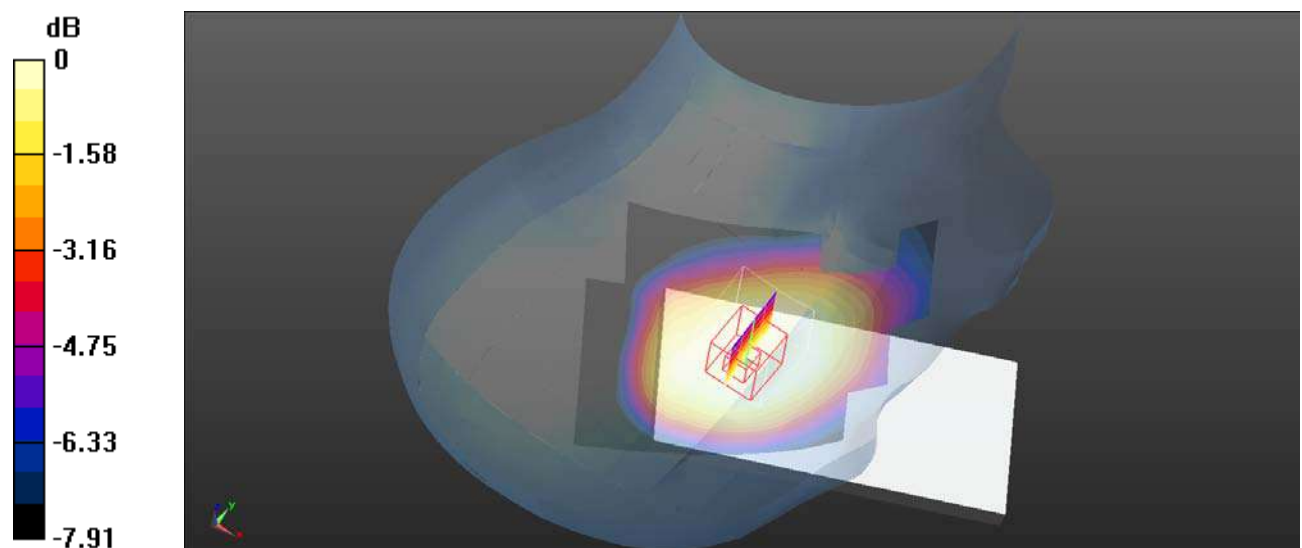
**Head Right Tilt/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.34 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.185 W/kg

**SAR(1 g) = 0.155 W/kg; SAR(10 g) = 0.119 W/kg**

Maximum value of SAR (measured) = 0.163 W/kg



0 dB = 0.163 W/kg = -7.88 dBW/kg

**Plot 76#: LTE Band 5\_50%RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.160 W/kg

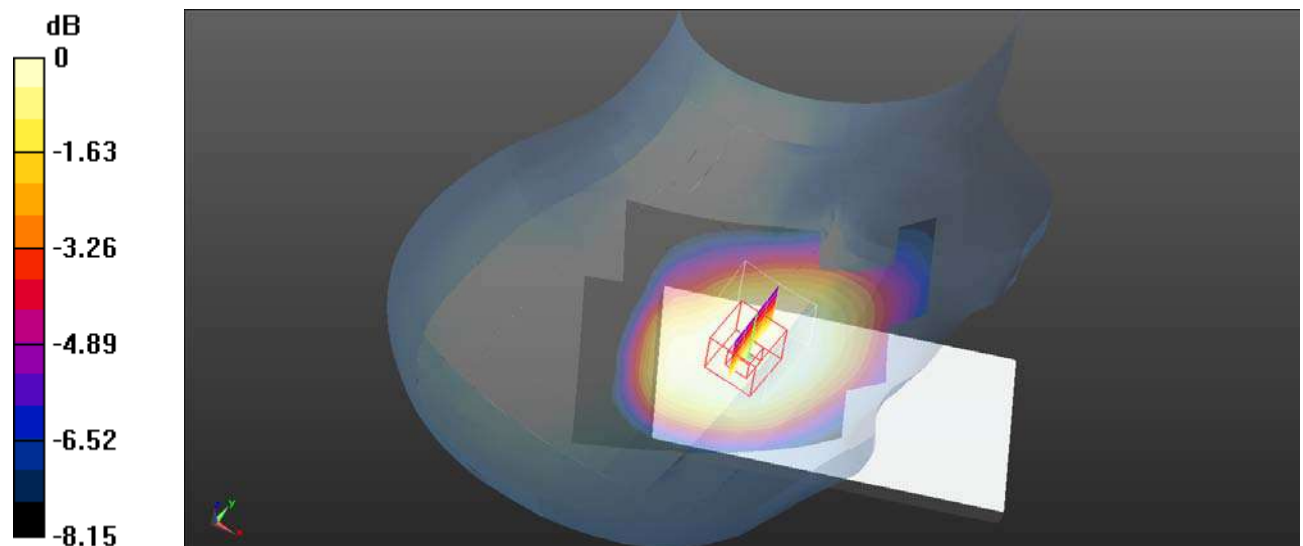
**Head Right Tilt/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.008 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.145 W/kg

**SAR(1 g) = 0.122 W/kg; SAR(10 g) = 0.094 W/kg**

Maximum value of SAR (measured) = 0.128 W/kg



0 dB = 0.128 W/kg = -8.93 dBW/kg

**Plot 77#: LTE Band 5\_1RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.643 W/kg

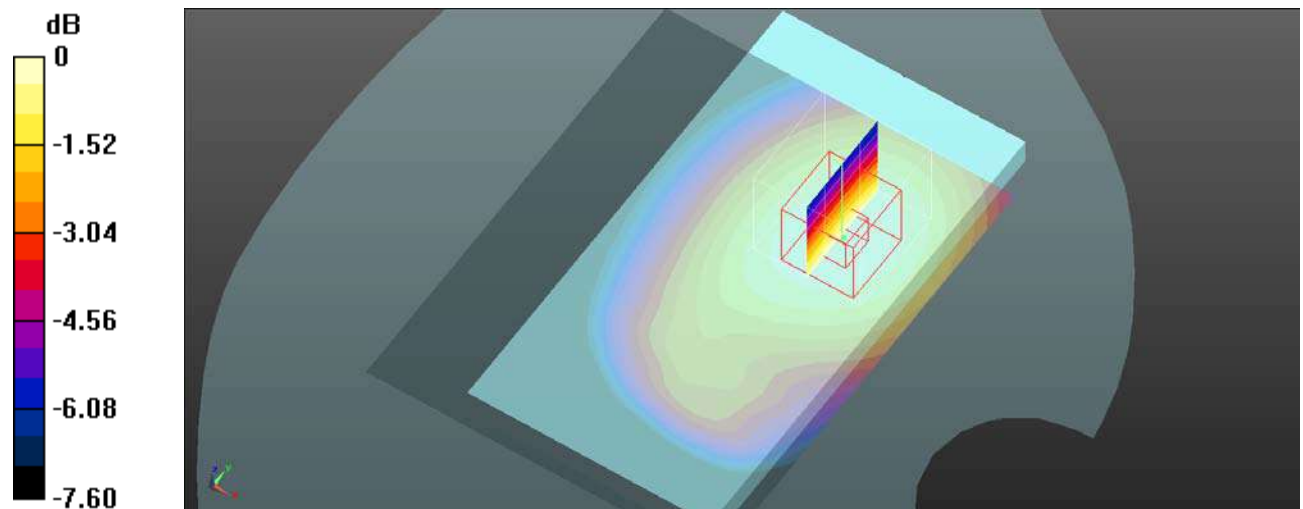
**Body Back/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.63 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.739 W/kg

**SAR(1 g) = 0.613 W/kg; SAR(10 g) = 0.473 W/kg**

Maximum value of SAR (measured) = 0.637 W/kg



0 dB = 0.637 W/kg = -1.96 dBW/kg

**Plot 78#: LTE Band 5\_50%RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.499 W/kg

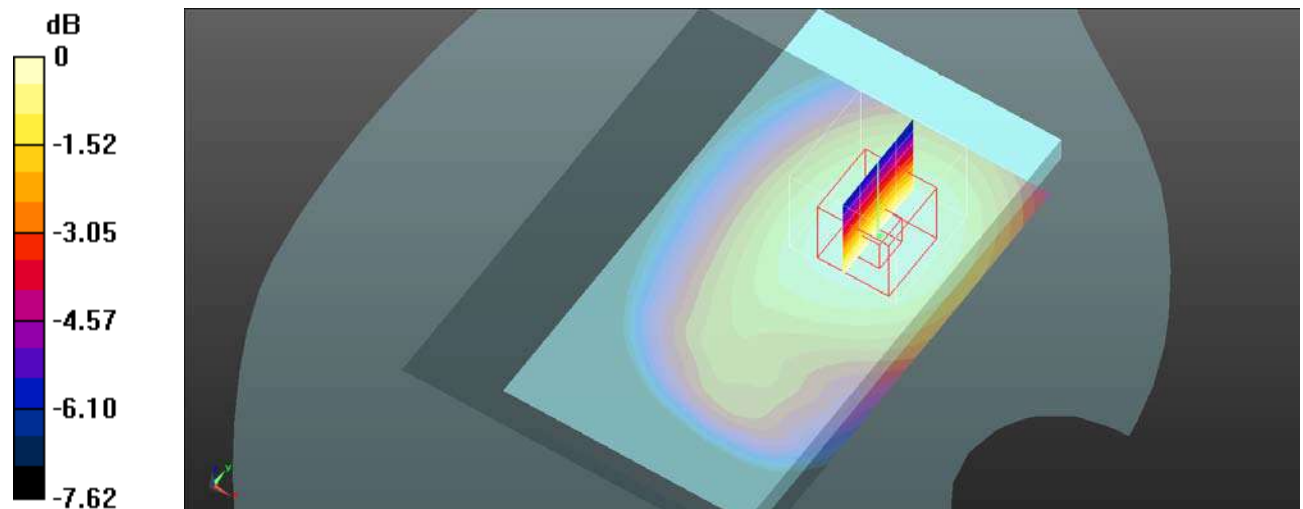
**Body Back/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.69 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.564 W/kg

**SAR(1 g) = 0.478 W/kg; SAR(10 g) = 0.370 W/kg**

Maximum value of SAR (measured) = 0.496 W/kg



0 dB = 0.496 W/kg = -3.05 dBW/kg

**Plot 79#: LTE Band 5\_1RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.331 W/kg

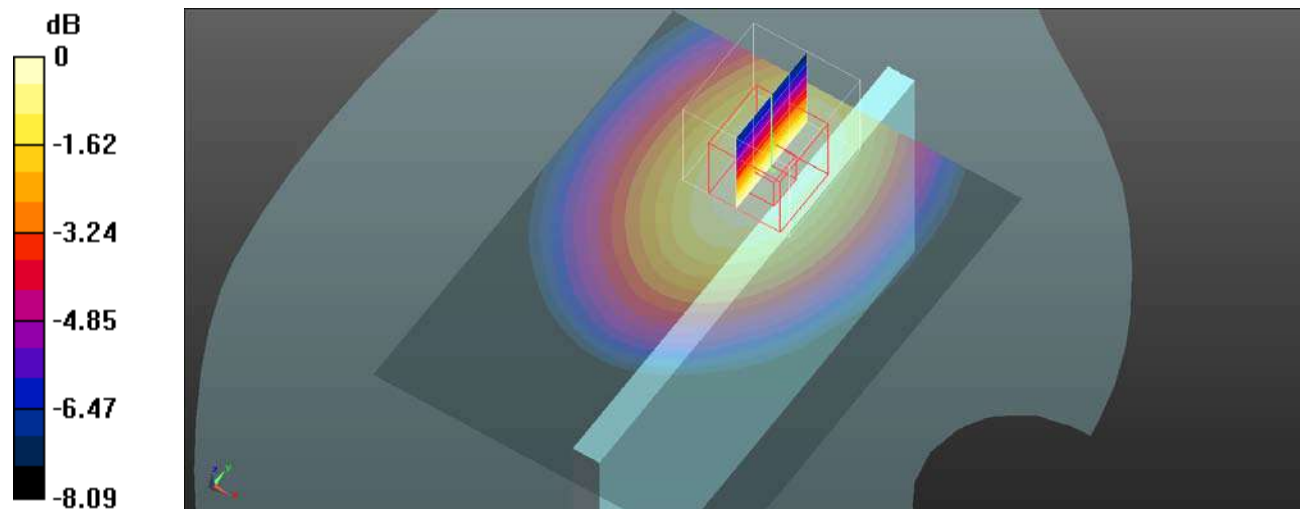
**Body Left/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.13 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.408 W/kg

**SAR(1 g) = 0.318 W/kg; SAR(10 g) = 0.231 W/kg**

Maximum value of SAR (measured) = 0.334 W/kg



0 dB = 0.334 W/kg = -4.76 dBW/kg

**Plot 80#: LTE Band 5\_50%RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.271 W/kg

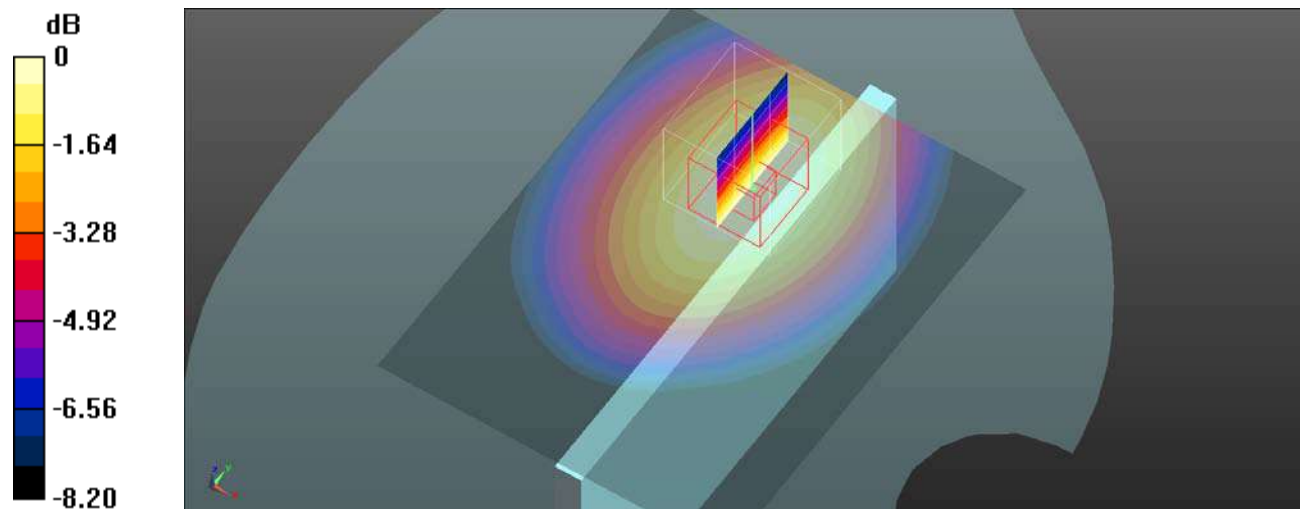
**Body Left/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.61 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.331 W/kg

**SAR(1 g) = 0.256 W/kg; SAR(10 g) = 0.185 W/kg**

Maximum value of SAR (measured) = 0.270 W/kg



0 dB = 0.270 W/kg = -5.69 dBW/kg

**Plot 81#: LTE Band 5\_1RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.379 W/kg

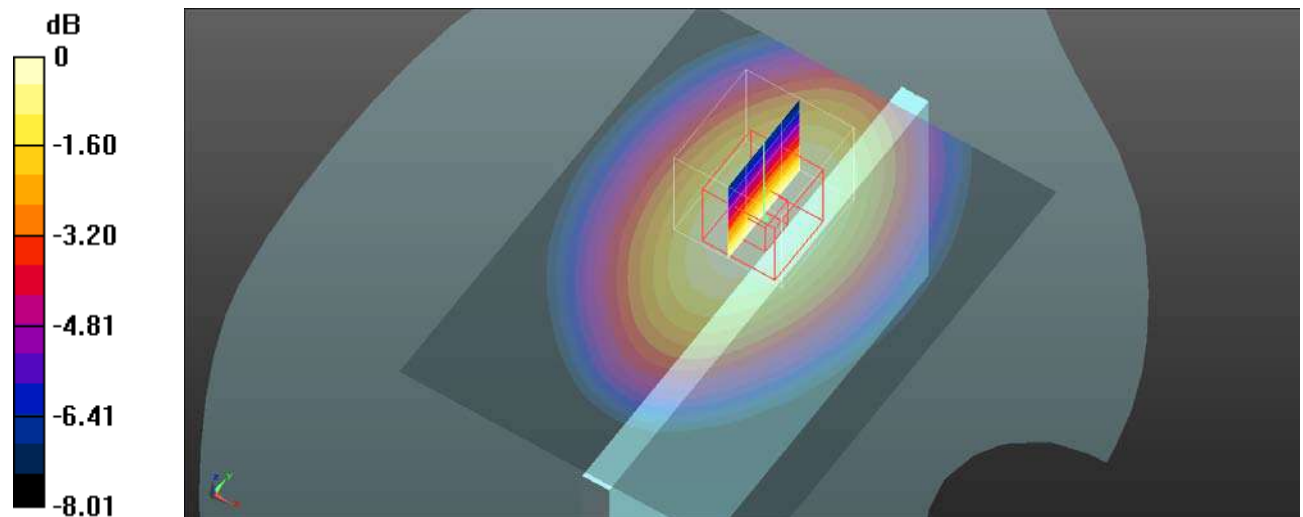
**Body Right/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.96 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.448 W/kg

**SAR(1 g) = 0.351 W/kg; SAR(10 g) = 0.255 W/kg**

Maximum value of SAR (measured) = 0.372 W/kg



**Plot 82#: LTE Band 5\_50%RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.301 W/kg

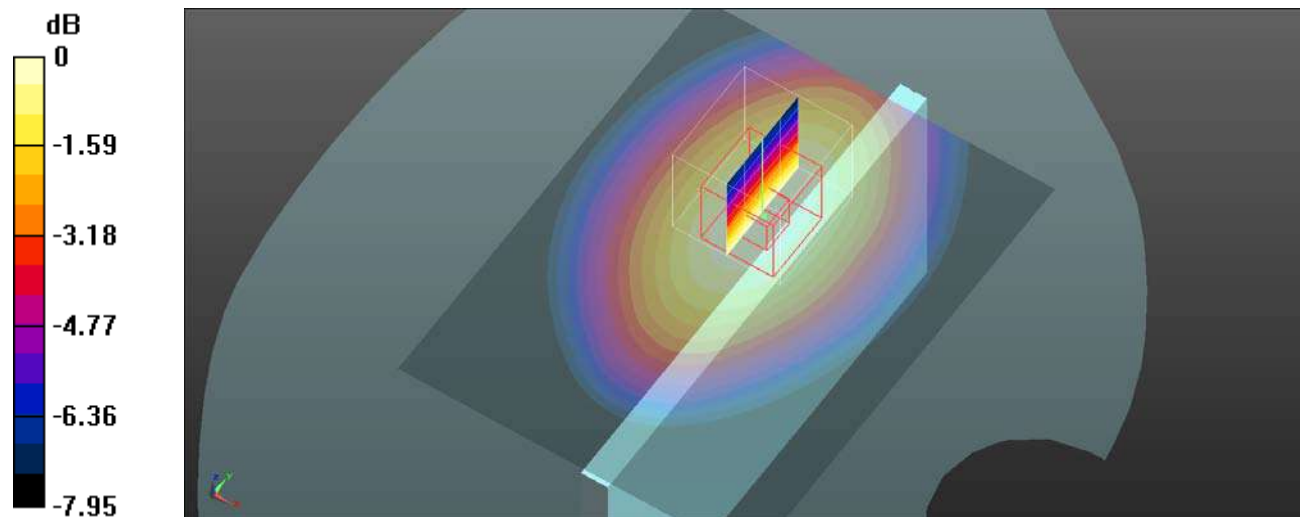
**Body Right/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.40 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.363 W/kg

**SAR(1 g) = 0.285 W/kg; SAR(10 g) = 0.207 W/kg**

Maximum value of SAR (measured) = 0.300 W/kg



0 dB = 0.300 W/kg = -5.23 dBW/kg



**Plot 83#: LTE Band 5\_1RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 5 1RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.101 W/kg

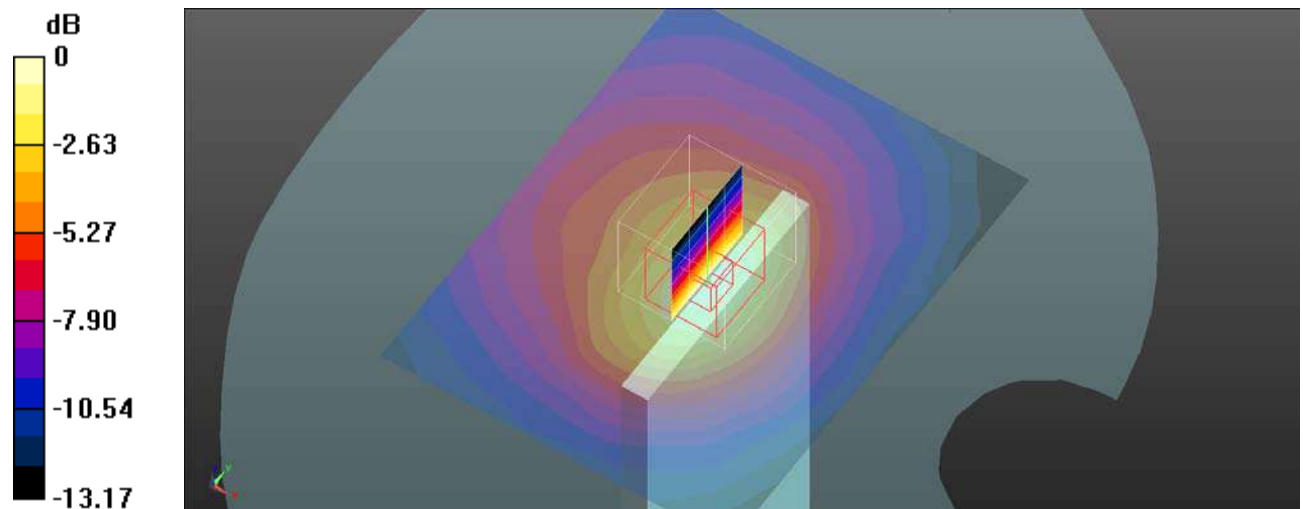
**Body Bottom/LTE Band 5 1RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.30 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.208 W/kg

**SAR(1 g) = 0.103 W/kg; SAR(10 g) = 0.055 W/kg**

Maximum value of SAR (measured) = 0.114 W/kg



0 dB = 0.114 W/kg = -9.43 dBW/kg

**Plot 84#: LTE Band 5\_50%RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 836.5$  MHz;  $\sigma = 0.921$  S/m;  $\epsilon_r = 41.722$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(10.28, 10.28, 10.28); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 5 50%RB Mid/Area Scan (71x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0822 W/kg

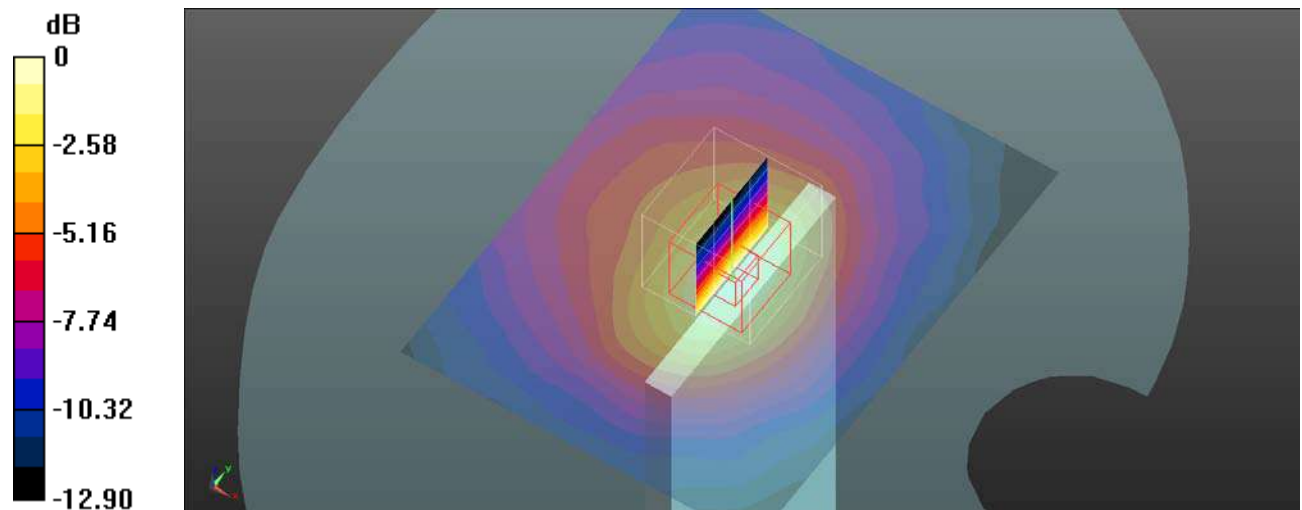
**Body Bottom/LTE Band 5 50%RB Mid/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.15 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.166 W/kg

**SAR(1 g) = 0.083 W/kg; SAR(10 g) = 0.045 W/kg**

Maximum value of SAR (measured) = 0.0917 W/kg



0 dB = 0.0917 W/kg = -10.38 dBW/kg

**Plot 85#: LTE Band 7\_1RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 7 1RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.117 W/kg

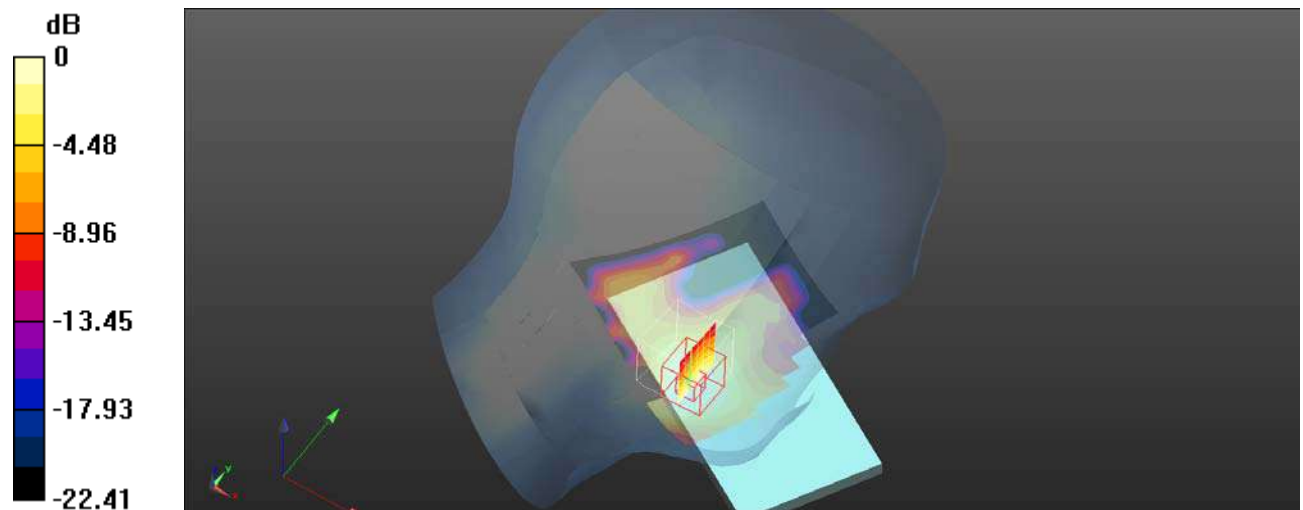
**Head Left Cheek/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.282 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.141 W/kg

**SAR(1 g) = 0.092 W/kg; SAR(10 g) = 0.053 W/kg**

Maximum value of SAR (measured) = 0.0986 W/kg



0 dB = 0.0986 W/kg = -10.06 dBW/kg

**Plot 86#: LTE Band 7\_50%RB\_Head Left Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/LTE Band 7 50%RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0910 W/kg

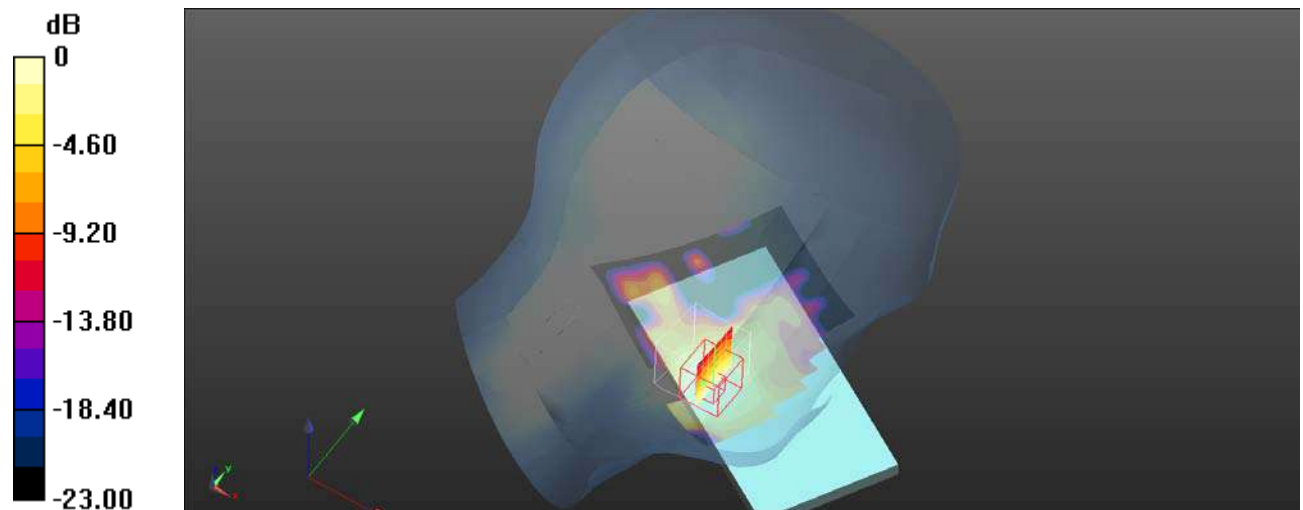
**Head Left Cheek/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.114 W/kg

**SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.042 W/kg**

Maximum value of SAR (measured) = 0.0799 W/kg



0 dB = 0.0799 W/kg = -10.97 dBW/kg

**Plot 87#: LTE Band 7\_1RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 7 1RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0545 W/kg

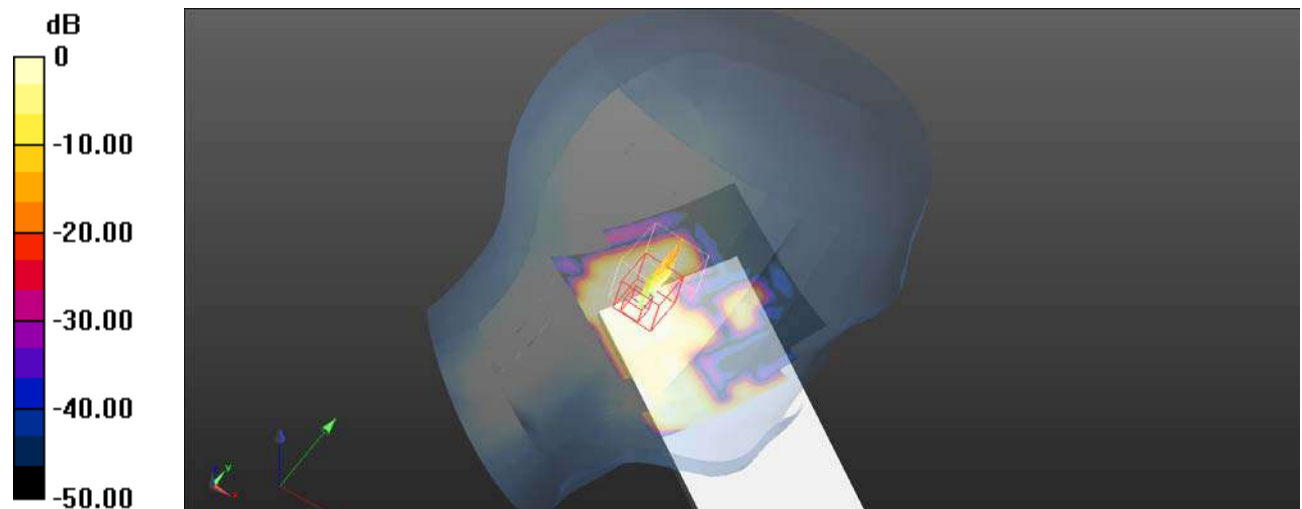
**Head Left Tilt/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.4147 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0550 W/kg

**SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.013 W/kg**

Maximum value of SAR (measured) = 0.0355 W/kg



0 dB = 0.0355 W/kg = -14.50 dBW/kg

**Plot 88#: LTE Band 7\_50%RB\_Head Left Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/LTE Band 7 50%RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0481 W/kg

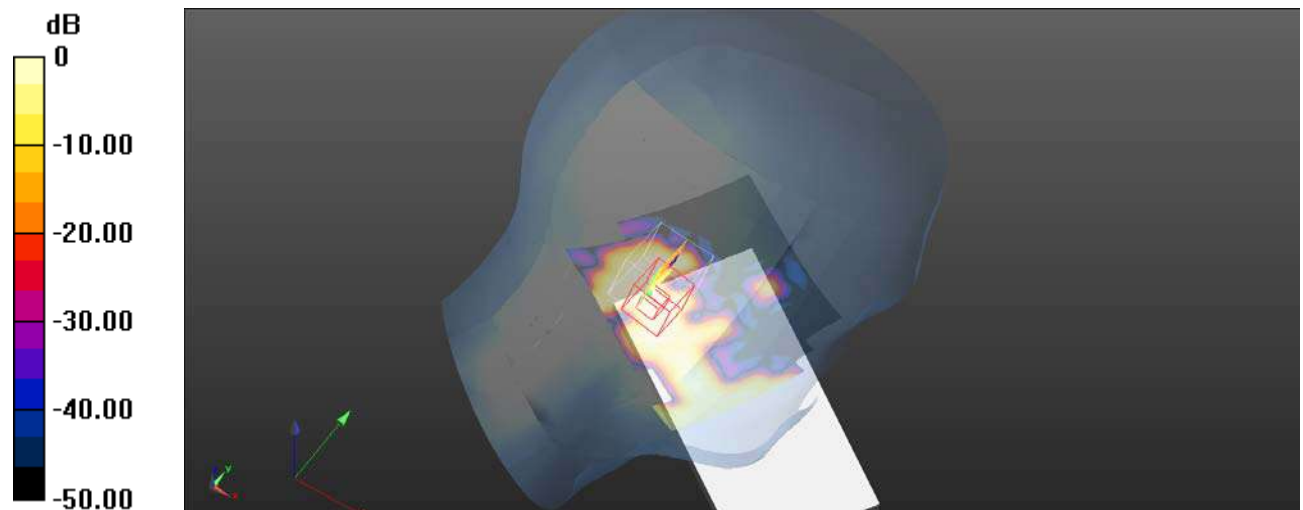
**Head Left Tilt/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.9460 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0920 W/kg

**SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00563 W/kg**

Maximum value of SAR (measured) = 0.0266 W/kg



0 dB = 0.0266 W/kg = -15.75 dBW/kg

**Plot 89#: LTE Band 7\_1RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 7 1RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.126 W/kg

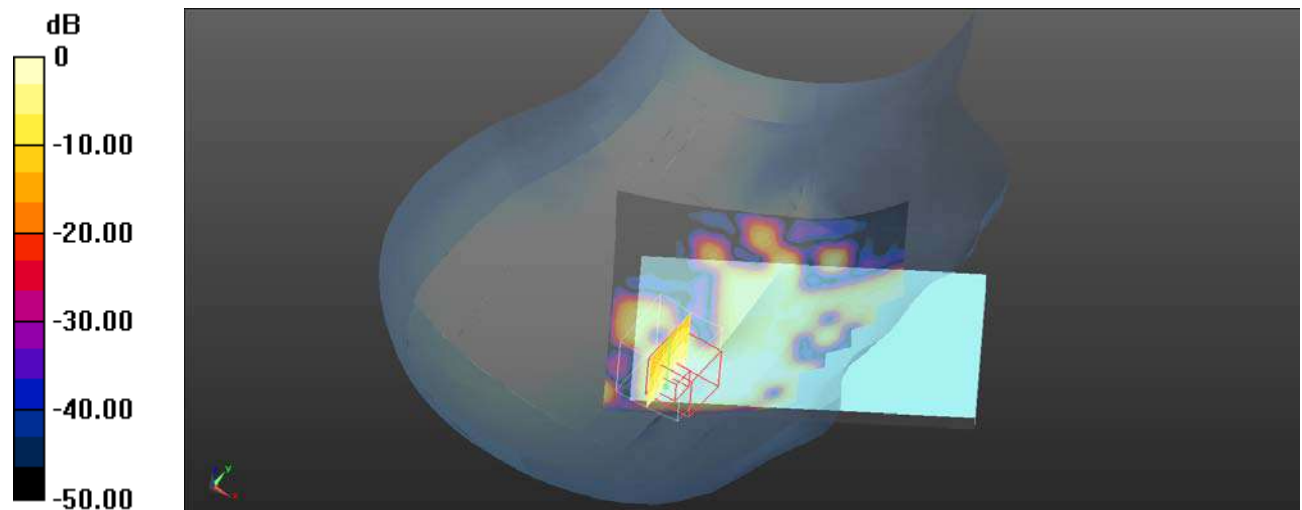
**Head Right Cheek/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.427 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.123 W/kg

**SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.025 W/kg**

Maximum value of SAR (measured) = 0.0495 W/kg



0 dB = 0.0495 W/kg = -13.05 dBW/kg

**Plot 90#: LTE Band 7\_50%RB\_Head Right Cheek\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/LTE Band 7 50%RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0409 W/kg

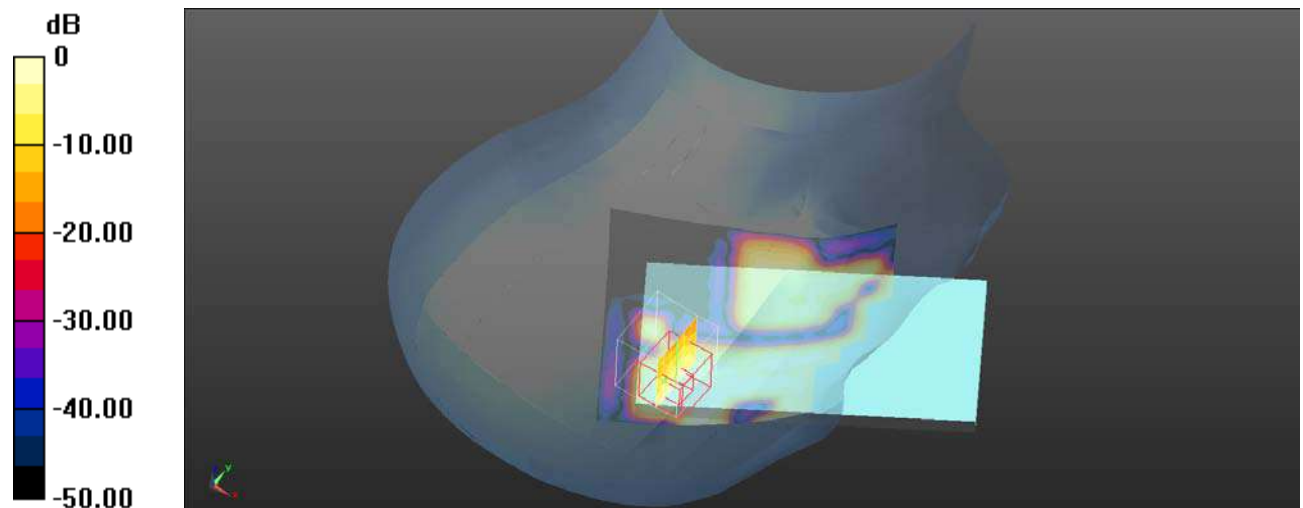
**Head Right Cheek/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.524 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.0590 W/kg

**SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.017 W/kg**

Maximum value of SAR (measured) = 0.0390 W/kg



0 dB = 0.0390 W/kg = -14.09 dBW/kg



**Plot 91#: LTE Band 7\_1RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 7 1RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0558 W/kg

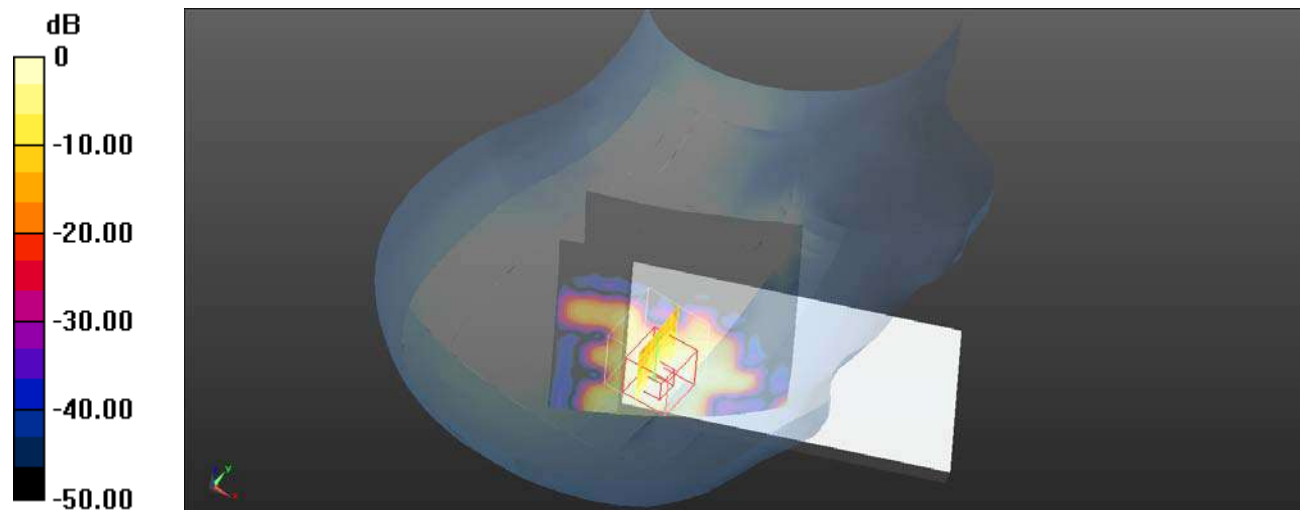
**Head Right Tilt/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.300 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.178 W/kg

**SAR(1 g) = 0.054 W/kg; SAR(10 g) = 0.026 W/kg**

Maximum value of SAR (measured) = 0.0627 W/kg



0 dB = 0.0627 W/kg = -12.03 dBW/kg

**Plot 92#: LTE Band 7\_50%RB\_Head Right Tilt\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/LTE Band 7 50%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0499 W/kg

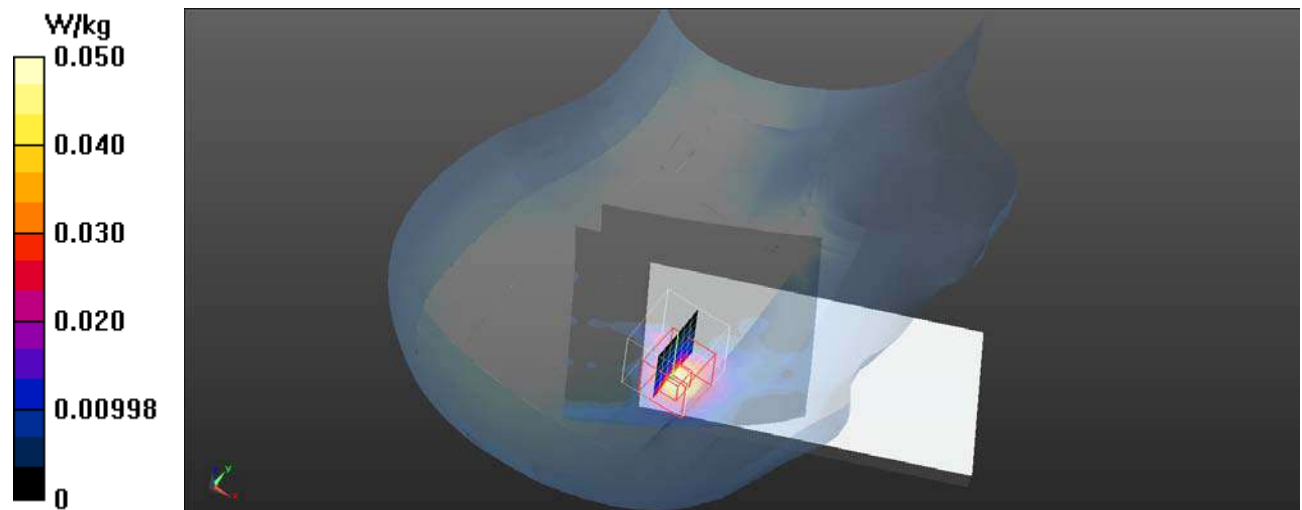
**Head Right Tilt/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.012 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.0720 W/kg

**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.019 W/kg**

Maximum value of SAR (measured) = 0.0455 W/kg



0 dB = 0.0455 W/kg = -13.42 dBW/kg

**Plot 93#: LTE Band 7\_1RB\_Body Back\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2510 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2510$  MHz;  $\sigma = 1.866$  S/m;  $\epsilon_r = 38.752$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 1RB Low/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.18 W/kg

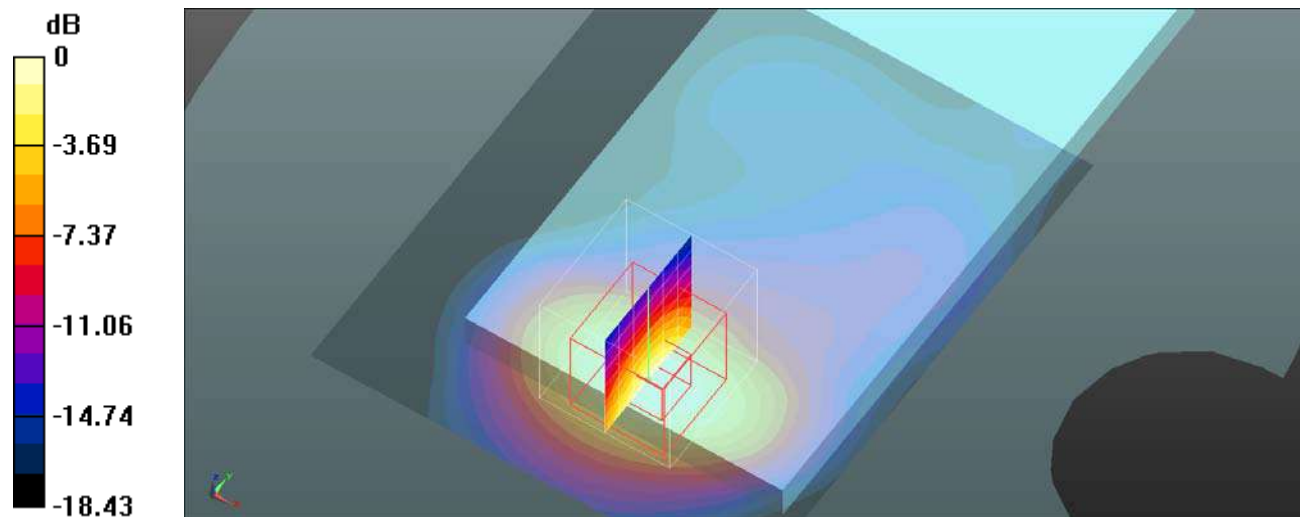
**Body Back/LTE Band 7 1RB Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.654 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.82 W/kg

**SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.548 W/kg**

Maximum value of SAR (measured) = 1.19 W/kg



0 dB = 1.19 W/kg = 0.76 dBW/kg

**Plot 94#: LTE Band 7\_1RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 1RB Mid/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.50 W/kg

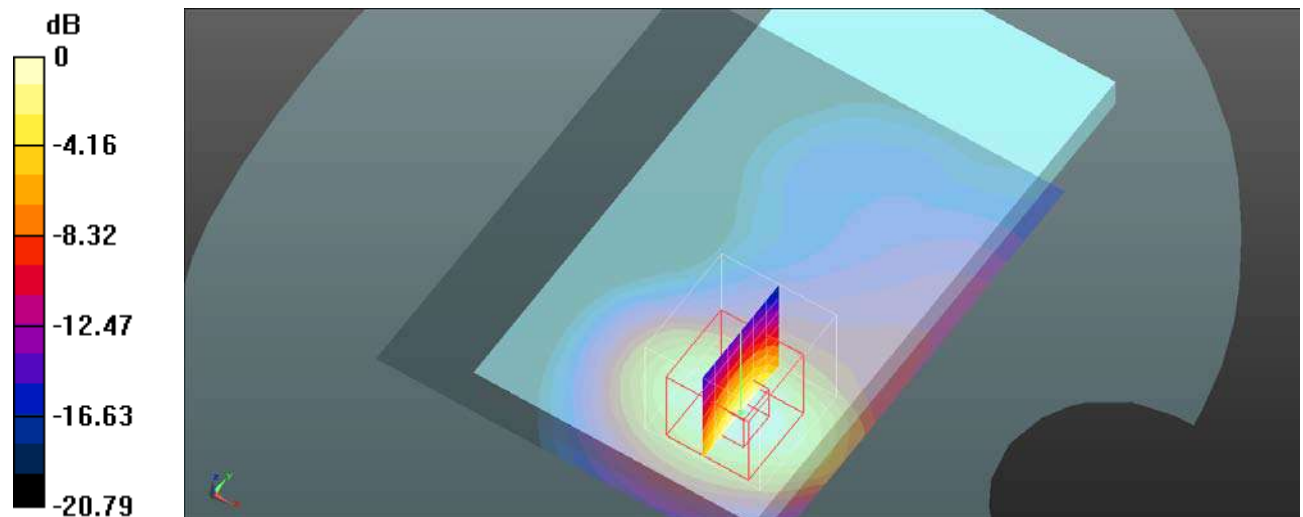
**Body Back/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.949 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 2.35 W/kg

**SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.603 W/kg**

Maximum value of SAR (measured) = 1.48 W/kg



0 dB = 1.48 W/kg = 1.70 dBW/kg

**Plot 95#: LTE Band 7\_1RB\_Body Back\_High****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.915$  S/m;  $\epsilon_r = 39.888$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.33, 7.33, 7.33); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 1RB High/Area Scan (101x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.55 W/kg

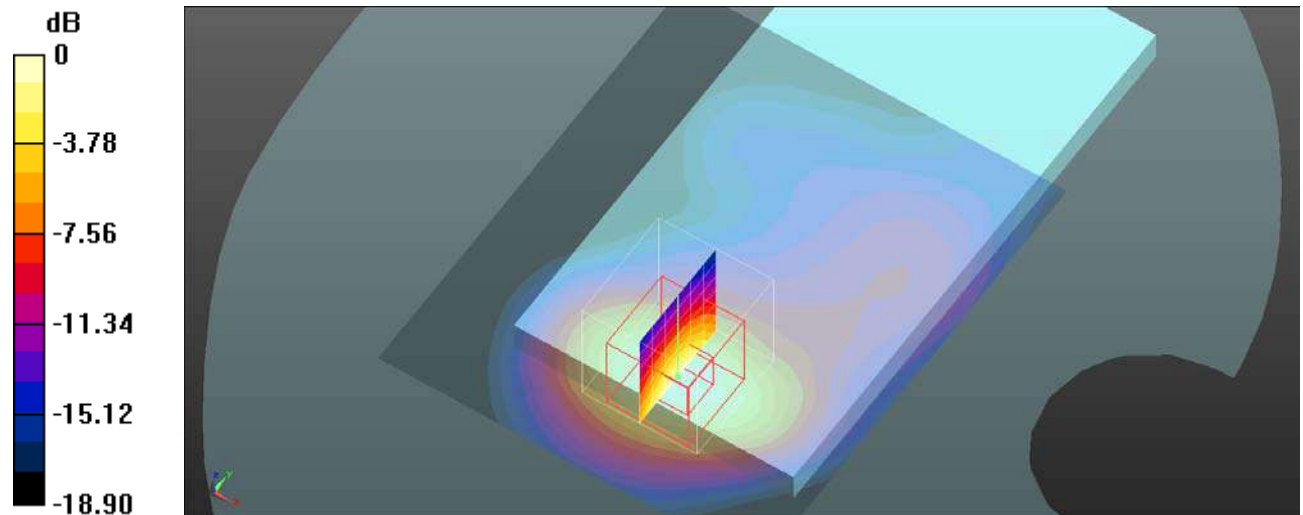
**Body Back/LTE Band 7 1RB High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.231 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 2.45 W/kg

**SAR(1 g) = 1.3 W/kg; SAR(10 g) = 0.661 W/kg**

Maximum value of SAR (measured) = 1.61 W/kg



0 dB = 1.61 W/kg = 2.07 dBW/kg

**Plot 96#: LTE Band 7\_50%RB\_Body Back\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2510 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2510$  MHz;  $\sigma = 1.866$  S/m;  $\epsilon_r = 38.752$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 50%RB Low/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.01 W/kg

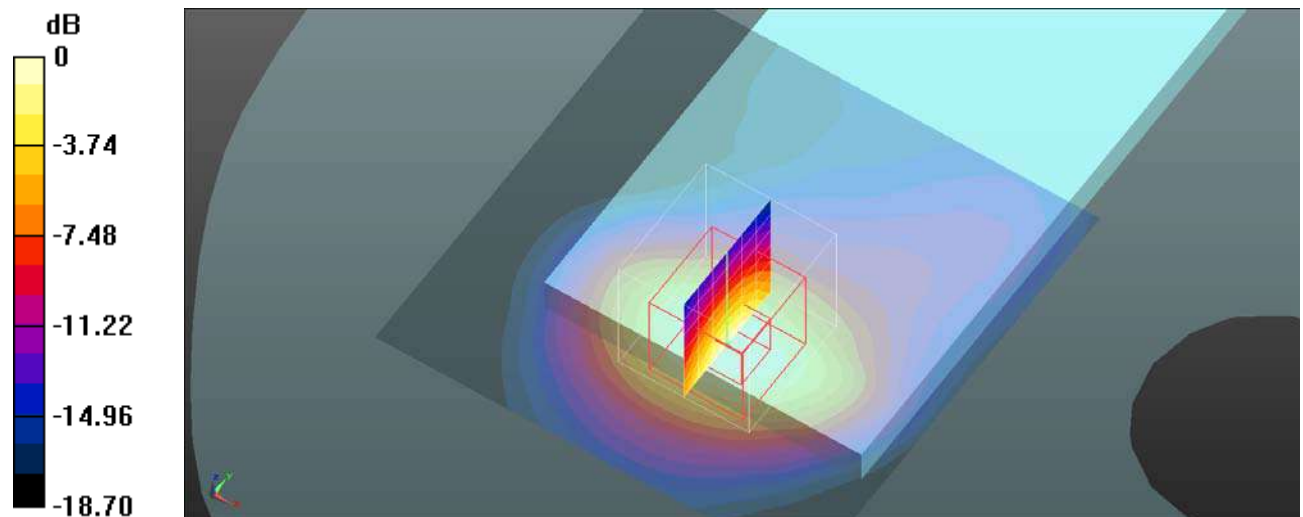
**Body Back/LTE Band 7 50%RB Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.132 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.54 W/kg

**SAR(1 g) = 0.891 W/kg; SAR(10 g) = 0.462 W/kg**

Maximum value of SAR (measured) = 0.999 W/kg



0 dB = 0.999 W/kg = -0.00 dBW/kg

**Plot 97#: LTE Band 7\_50%RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 50%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.25 W/kg

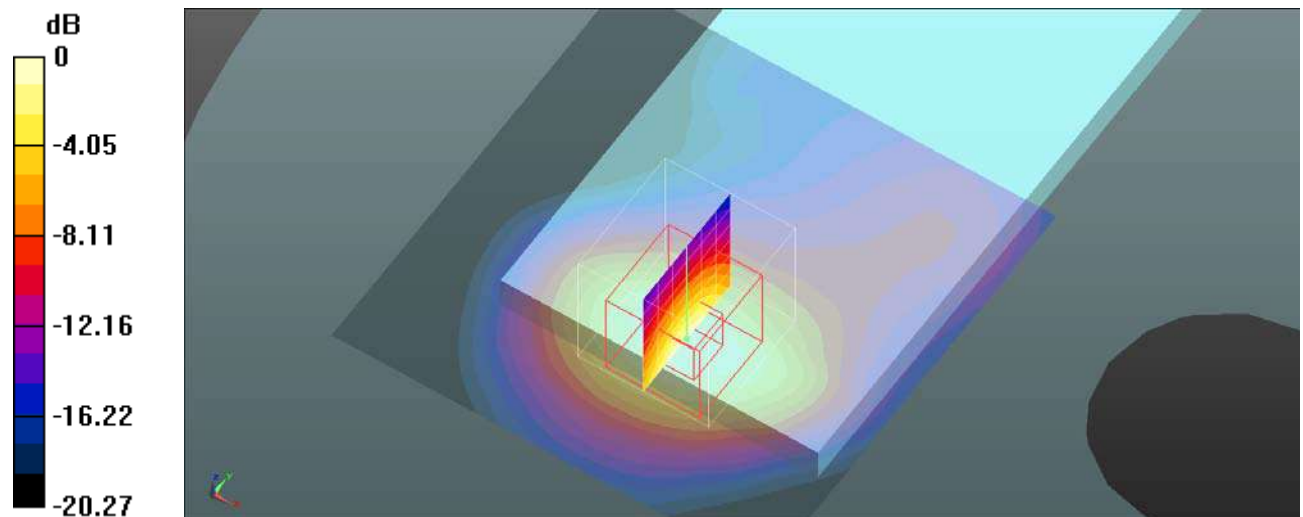
**Body Back/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.865 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.91 W/kg

**SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.571 W/kg**

Maximum value of SAR (measured) = 1.24 W/kg



0 dB = 1.24 W/kg = 0.93 dBW/kg

**Plot 98#: LTE Band 7\_50%RB\_Body Back\_High****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.915$  S/m;  $\epsilon_r = 39.888$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.33, 7.33, 7.33); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 50%RB High/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.25 W/kg

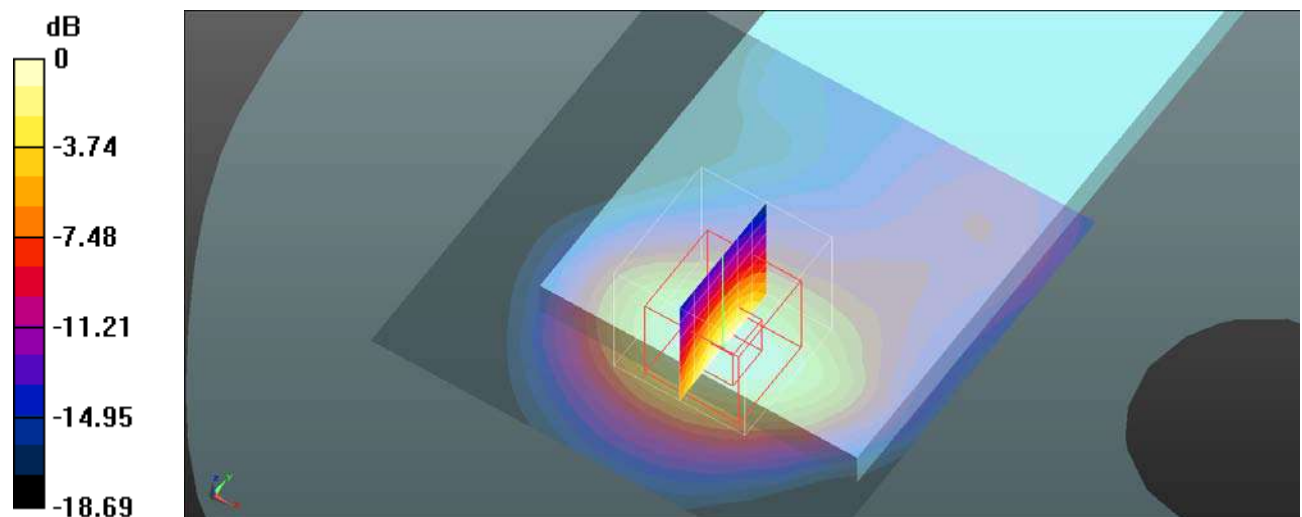
**Body Back/LTE Band 7 50%RB High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.788 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.88 W/kg

**SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.563 W/kg**

Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg



**Plot 99#: LTE Band 7\_100%RB\_Body Back\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/LTE Band 7 100%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.17 W/kg

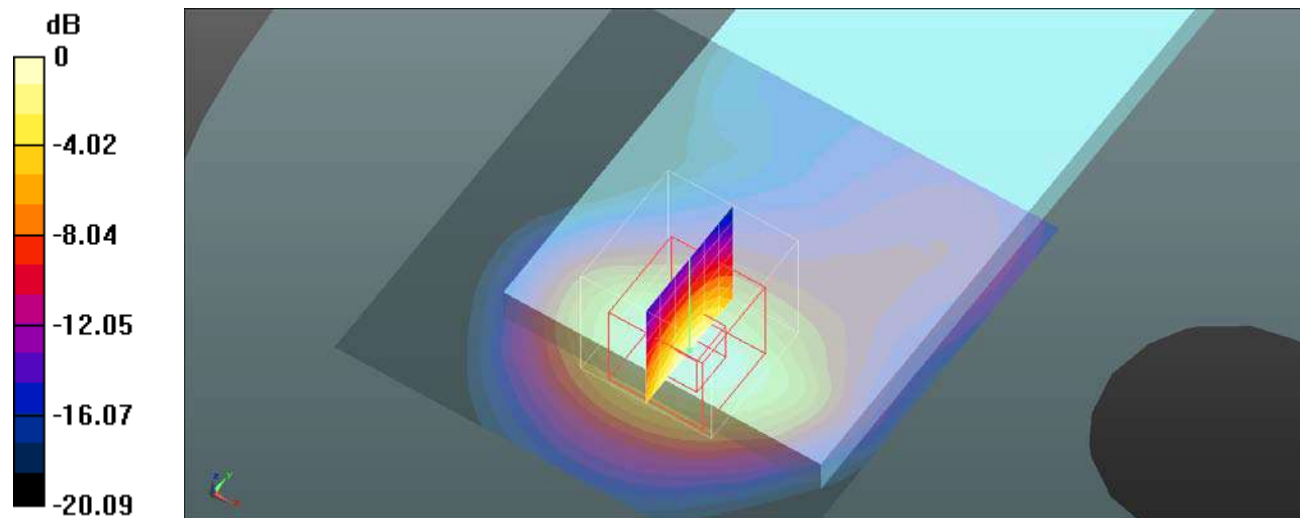
**Body Back/LTE Band 7 100%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.472 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.78 W/kg

**SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.528 W/kg**

Maximum value of SAR (measured) = 1.15 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

**Plot 100#: LTE Band 7\_1RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 7 1RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.131 W/kg

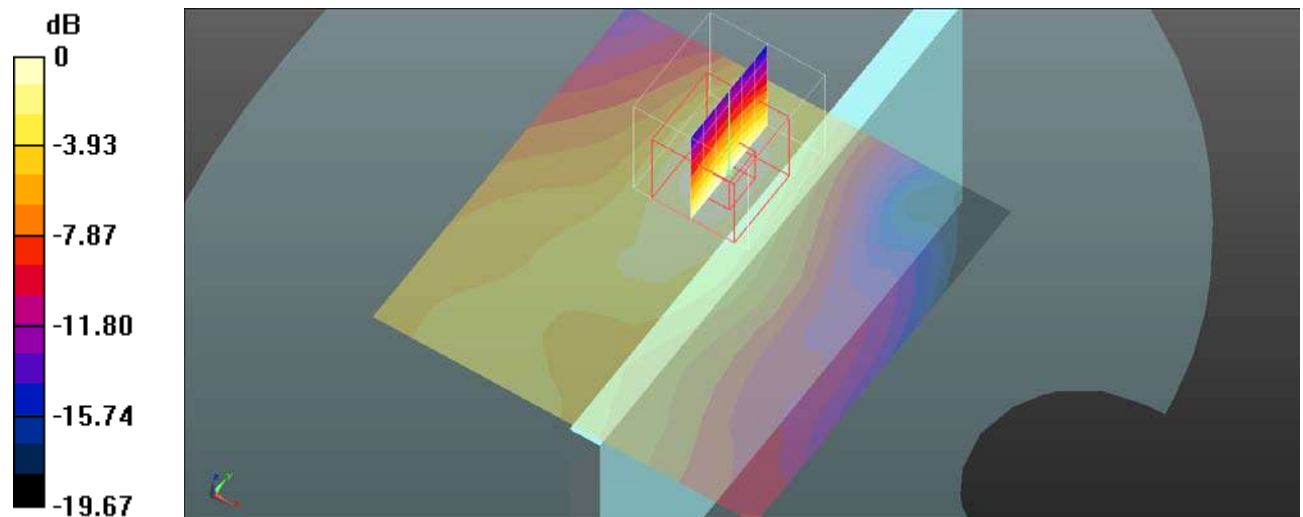
**Body Left/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.066 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.210 W/kg

**SAR(1 g) = 0.123 W/kg; SAR(10 g) = 0.068 W/kg**

Maximum value of SAR (measured) = 0.136 W/kg



0 dB = 0.136 W/kg = -8.66 dBW/kg

**Plot 101#: LTE Band 7\_50%RB\_Body Left\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/LTE Band 7 50%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.110 W/kg

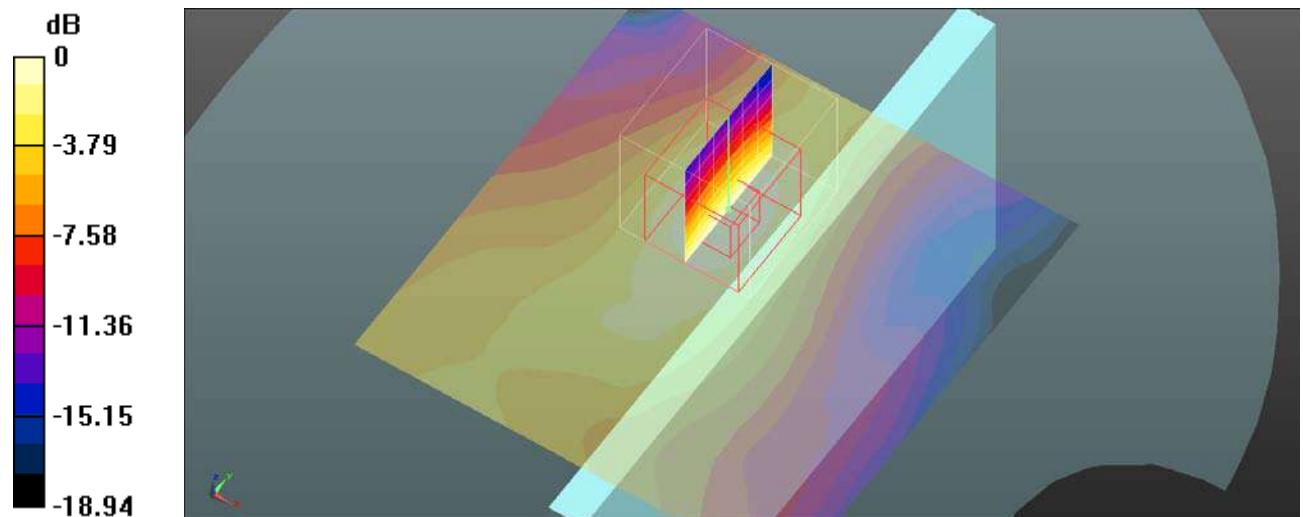
**Body Left/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.925 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.170 W/kg

**SAR(1 g) = 0.100 W/kg; SAR(10 g) = 0.055 W/kg**

Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

**Plot 102#: LTE Band 7\_1RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 7 1RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0381 W/kg

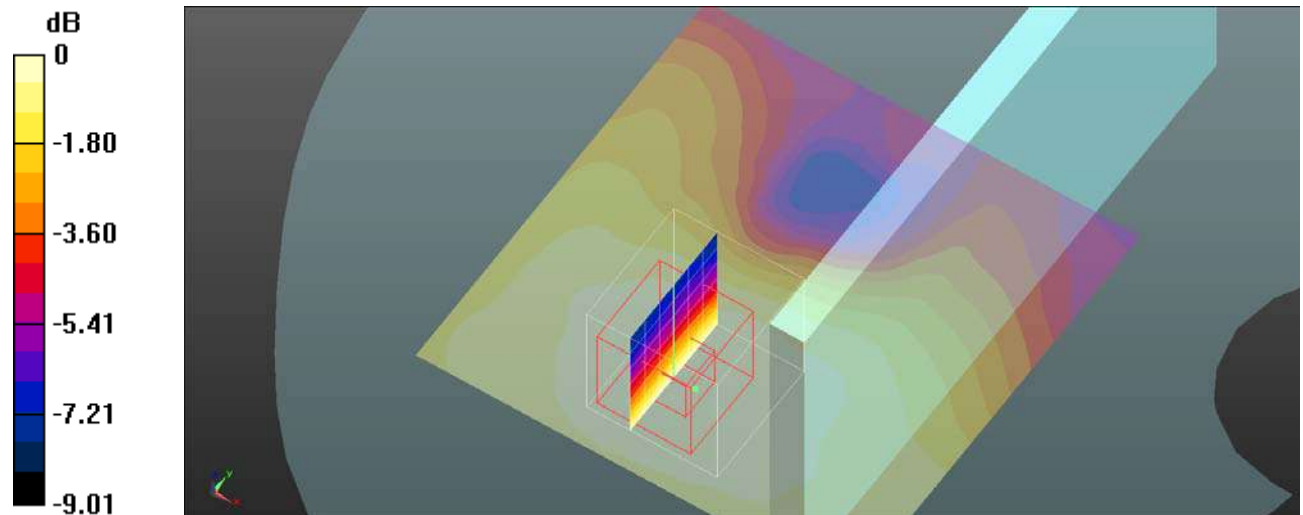
**Body Right/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.815 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.0530 W/kg

**SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.024 W/kg**

Maximum value of SAR (measured) = 0.0369 W/kg



0 dB = 0.0369 W/kg = -14.33 dBW/kg

**Plot 103#: LTE Band 7\_50%RB\_Body Right\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Right/LTE Band 7 50%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0940 W/kg

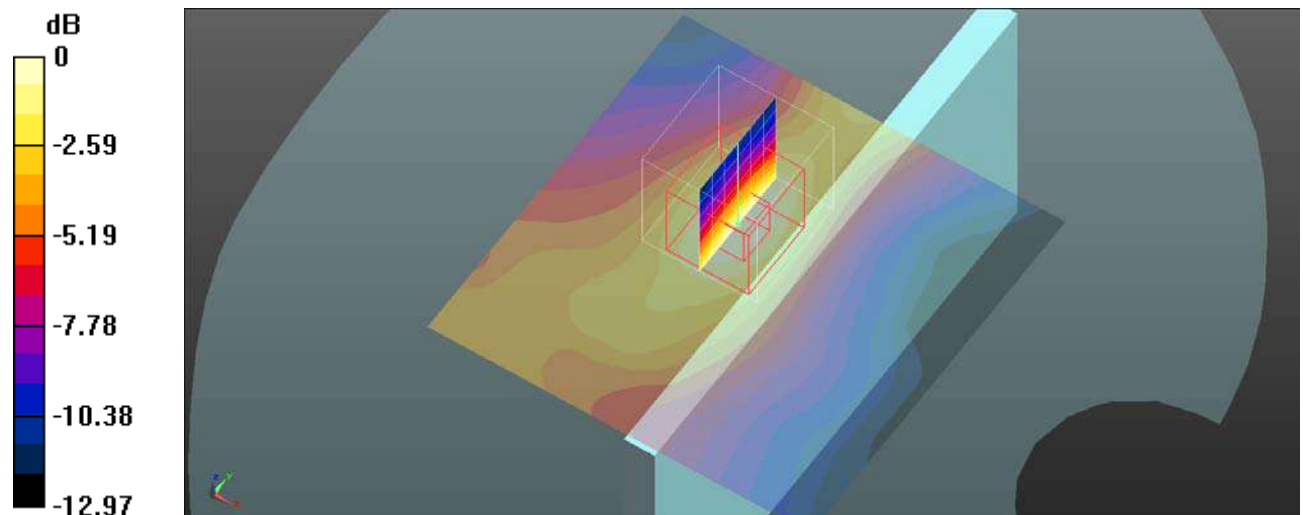
**Body Right/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.658 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.144 W/kg

**SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.047 W/kg**

Maximum value of SAR (measured) = 0.0923 W/kg



0 dB = 0.0923 W/kg = -10.35 dBW/kg

**Plot 104#: LTE Band 7\_1RB\_Body Bottom\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2510 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2510$  MHz;  $\sigma = 1.866$  S/m;  $\epsilon_r = 38.752$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 1RB Low/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.910 W/kg

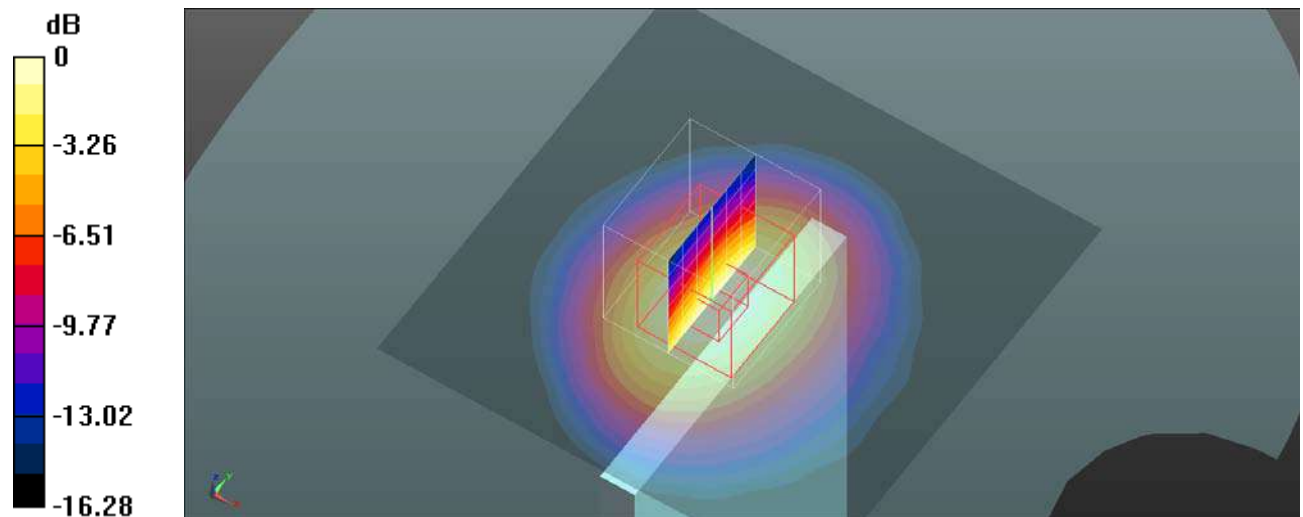
**Body Bottom/LTE Band 7 1RB Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.60 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.36 W/kg

**SAR(1 g) = 0.811 W/kg; SAR(10 g) = 0.442 W/kg**

Maximum value of SAR (measured) = 0.898 W/kg



0 dB = 0.898 W/kg = -0.47 dBW/kg

**Plot 105#: LTE Band 7\_1RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 1RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.27 W/kg

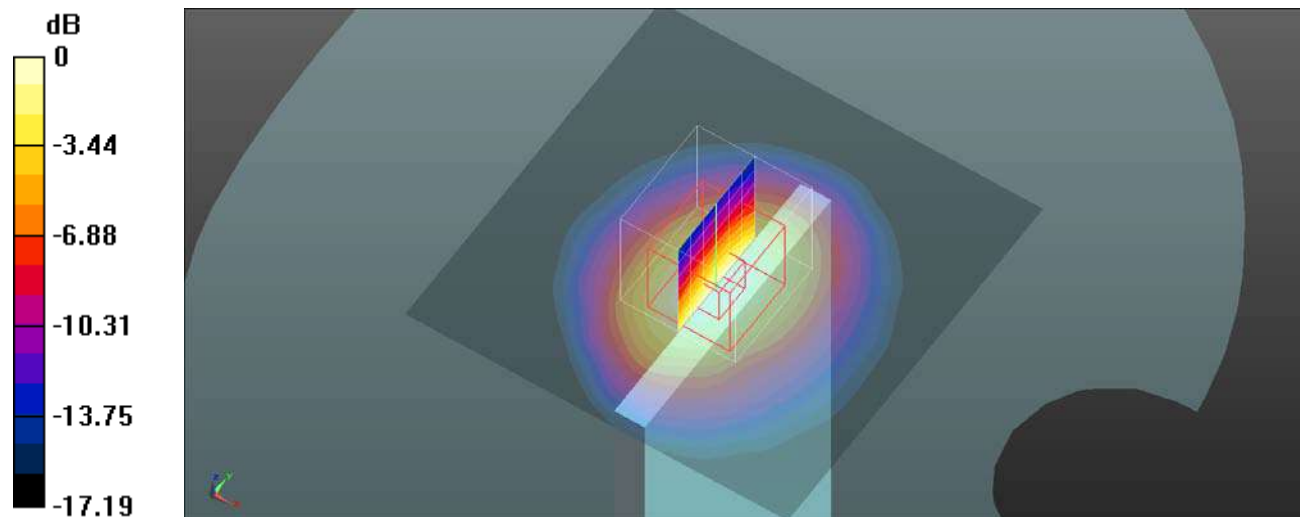
**Body Bottom/LTE Band 7 1RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.75 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.90 W/kg

**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.603 W/kg**

Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.25 W/kg = 0.97 dBW/kg

**Plot 106#: LTE Band 7\_1RB\_Body Bottom\_High****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.915$  S/m;  $\epsilon_r = 39.888$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.33, 7.33, 7.33); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 1RB High/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.30 W/kg

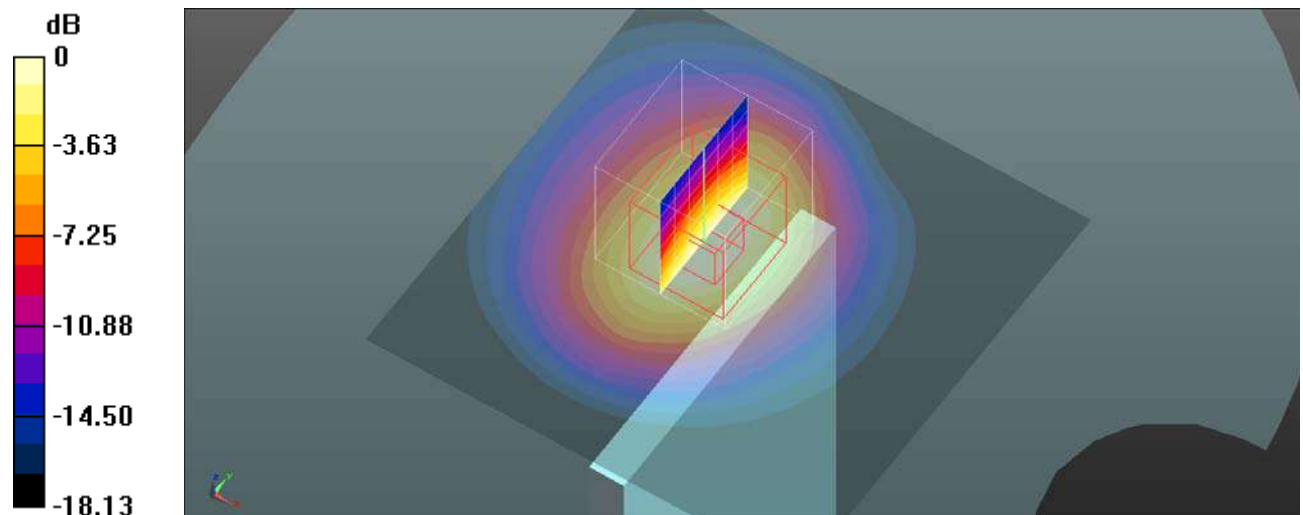
**Body Bottom/LTE Band 7 1RB High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.15 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.585 W/kg**

Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.25 W/kg = 0.97 dBW/kg



**Plot 107#: LTE Band 7\_50%RB\_Body Bottom\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2510 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2510$  MHz;  $\sigma = 1.866$  S/m;  $\epsilon_r = 38.752$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 50%RB Low/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.895 W/kg

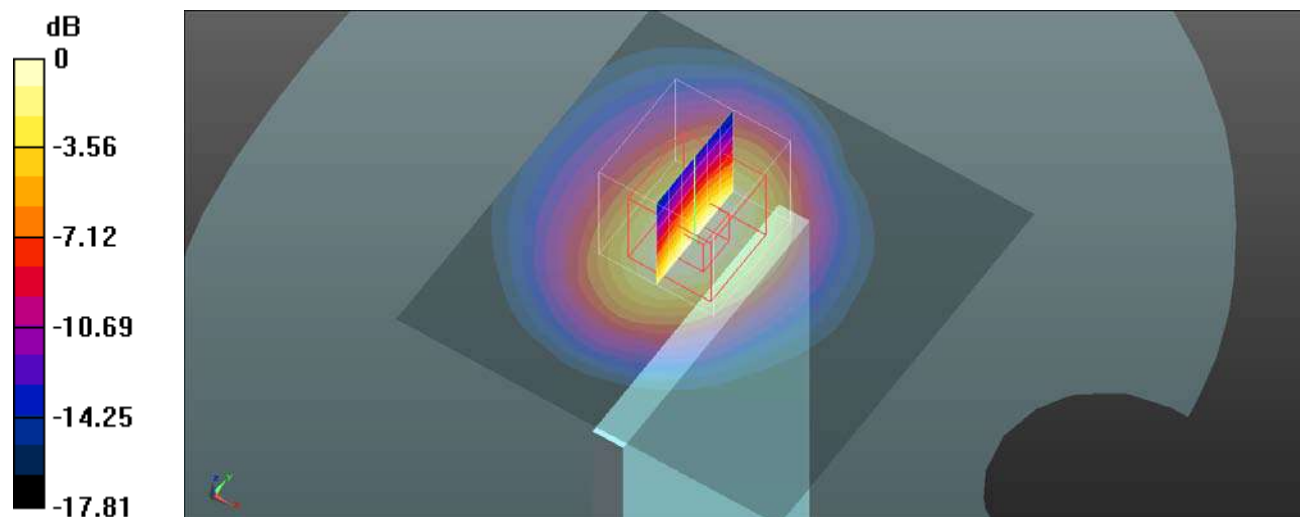
**Body Bottom/LTE Band 7 50%RB Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.13 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.32 W/kg

**SAR(1 g) = 0.756 W/kg; SAR(10 g) = 0.398 W/kg**

Maximum value of SAR (measured) = 0.844 W/kg



0 dB = 0.844 W/kg = -0.74 dBW/kg

**Plot 108#: LTE Band 7\_50%RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 50%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.957 W/kg

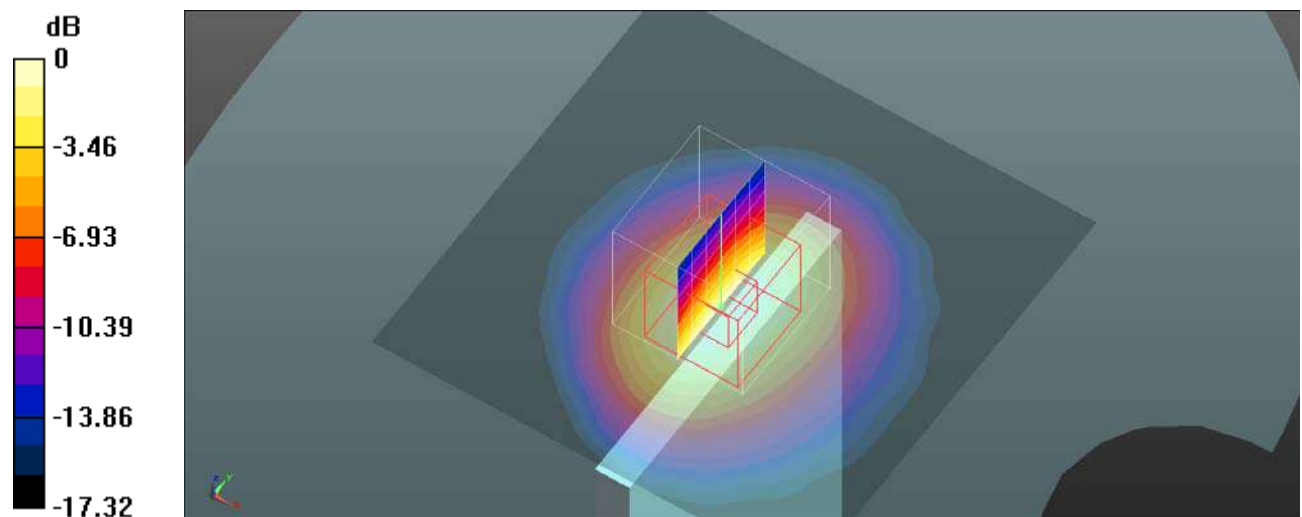
**Body Bottom/LTE Band 7 50%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.85 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 1.45 W/kg

**SAR(1 g) = 0.849 W/kg; SAR(10 g) = 0.456 W/kg**

Maximum value of SAR (measured) = 0.944 W/kg



0 dB = 0.944 W/kg = -0.25 dBW/kg

**Plot 109#: LTE Band 7\_50%RB\_Body Bottom\_High****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2560$  MHz;  $\sigma = 1.915$  S/m;  $\epsilon_r = 39.888$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.33, 7.33, 7.33); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 50%RB High/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.850 W/kg

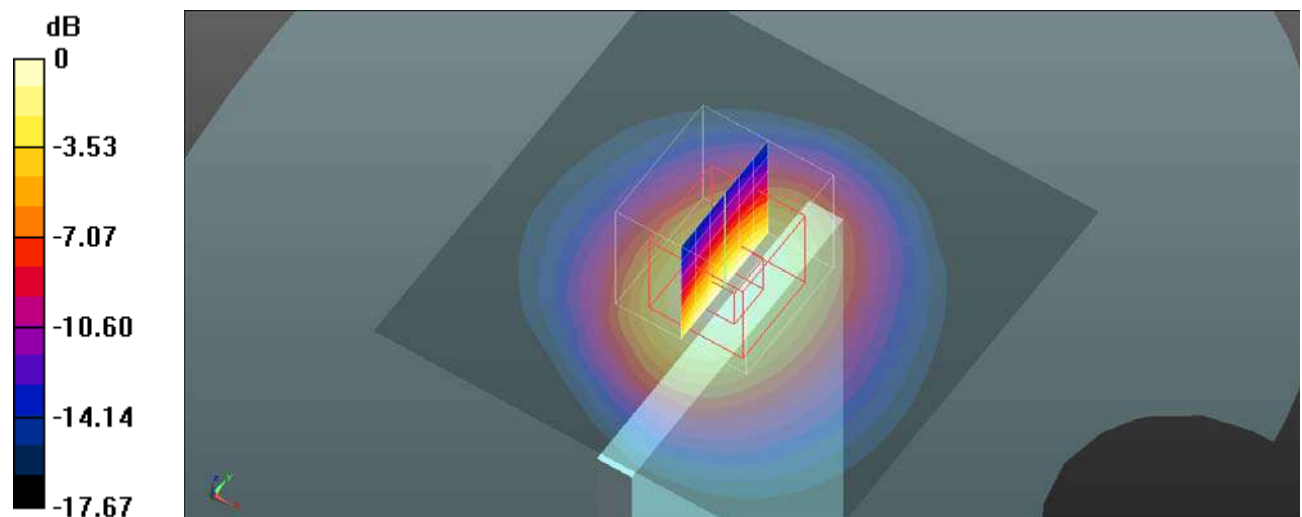
**Body Bottom/LTE Band 7 50%RB High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 20.86 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.37 W/kg

**SAR(1 g) = 0.779 W/kg; SAR(10 g) = 0.409 W/kg**

Maximum value of SAR (measured) = 0.873 W/kg



0 dB = 0.873 W/kg = -0.59 dBW/kg

**Plot 110#: LTE Band 7\_100%RB\_Body Bottom\_Mid****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2535$  MHz;  $\sigma = 1.883$  S/m;  $\epsilon_r = 38.572$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Bottom/LTE Band 7 100%RB Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.06 W/kg

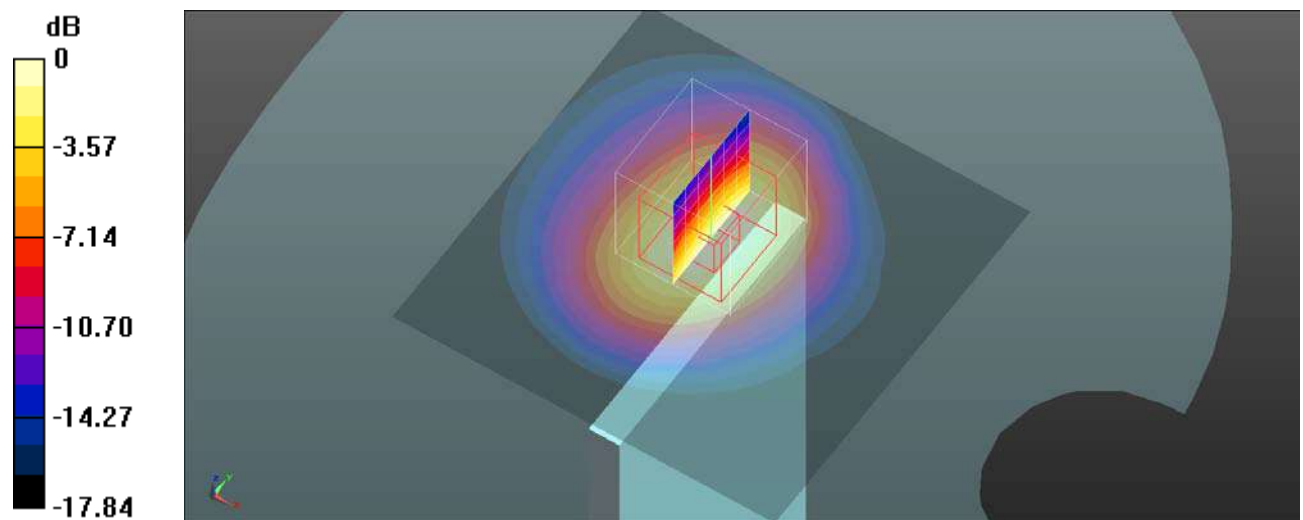
**Body Bottom/LTE Band 7 100%RB Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.24 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.60 W/kg

**SAR(1 g) = 0.950 W/kg; SAR(10 g) = 0.507 W/kg**

Maximum value of SAR (measured) = 1.05 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

**Plot 111#: 2.4Gwifi\_Head Left Cheek\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Cheek/WLAN 802.11b Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.255 W/kg

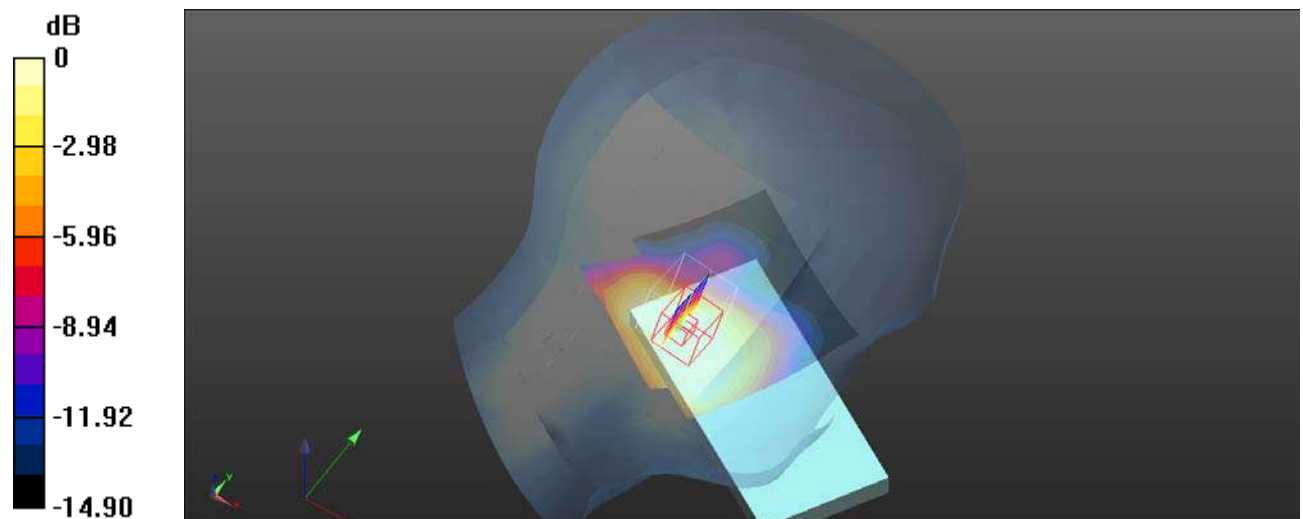
**Head Left Cheek/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.413 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.287 W/kg

**SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.111 W/kg**

Maximum value of SAR (measured) = 0.197 W/kg



0 dB = 0.197 W/kg = -7.06 dBW/kg

**Plot 112#: 2.4Gwifi\_Head Left Tilt\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Left Tilt/WLAN 802.11b Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.146 W/kg

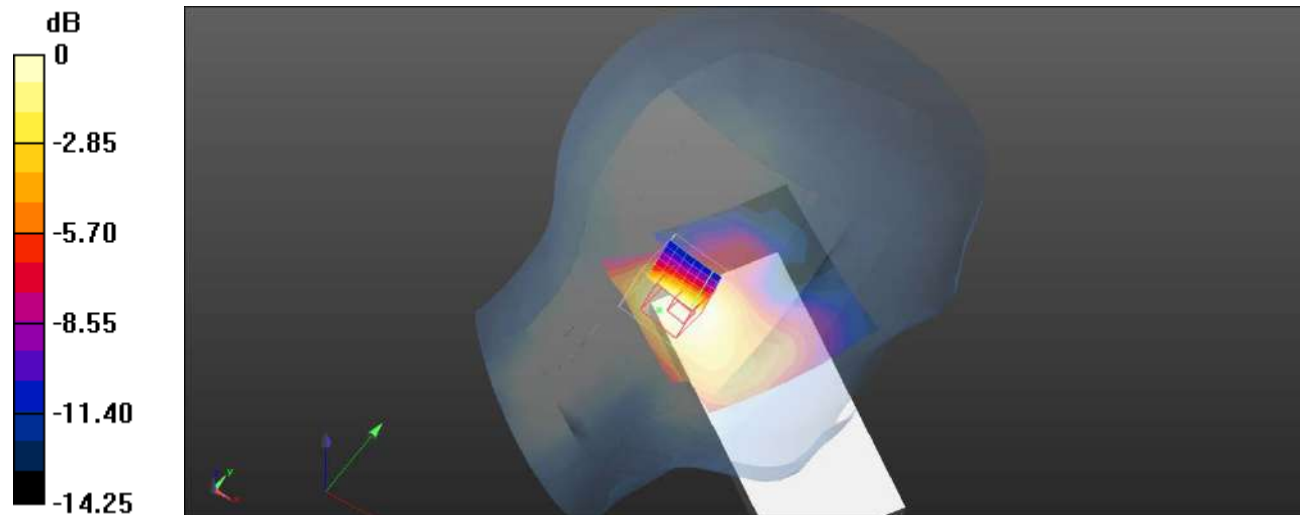
**Head Left Tilt/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.121 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.189 W/kg

**SAR(1 g) = 0.117 W/kg; SAR(10 g) = 0.066 W/kg**

Maximum value of SAR (measured) = 0.126 W/kg



0 dB = 0.126 W/kg = -9.00 dBW/kg

**Plot 113#: 2.4Gwifi\_Head Right Cheek\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Cheek/WLAN 802.11b Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.594 W/kg

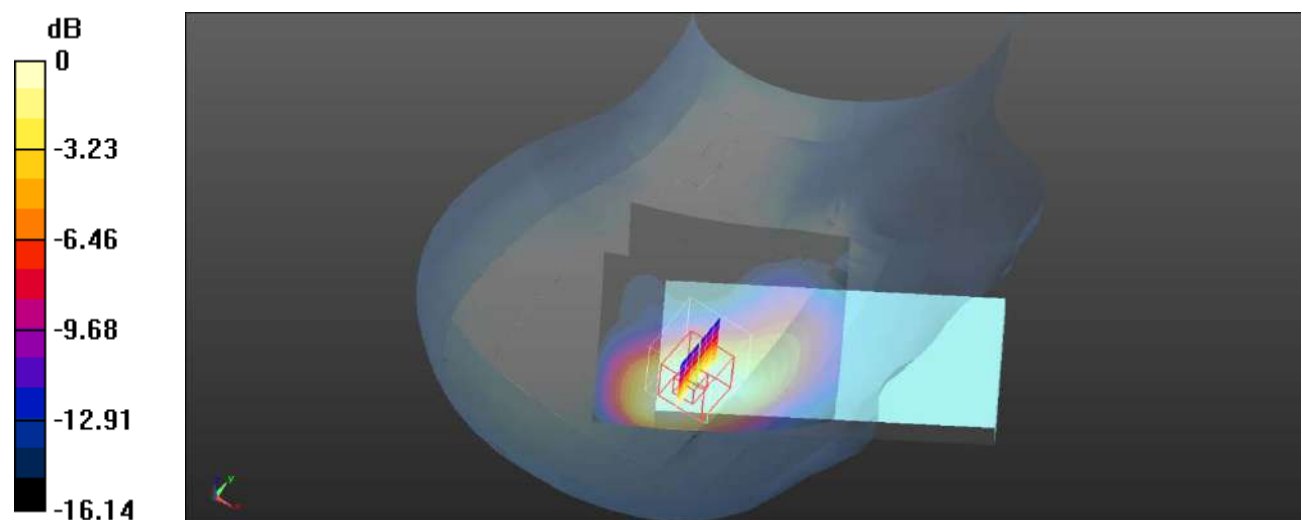
**Head Right Cheek/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.167 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.696 W/kg

**SAR(1 g) = 0.432 W/kg; SAR(10 g) = 0.246 W/kg**

Maximum value of SAR (measured) = 0.470 W/kg



0 dB = 0.470 W/kg = -3.28 dBW/kg

**Plot 114#: 2.4Gwifi\_Head Right Tilt\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Head Right Tilt/WLAN 802.11b Mid/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.316 W/kg

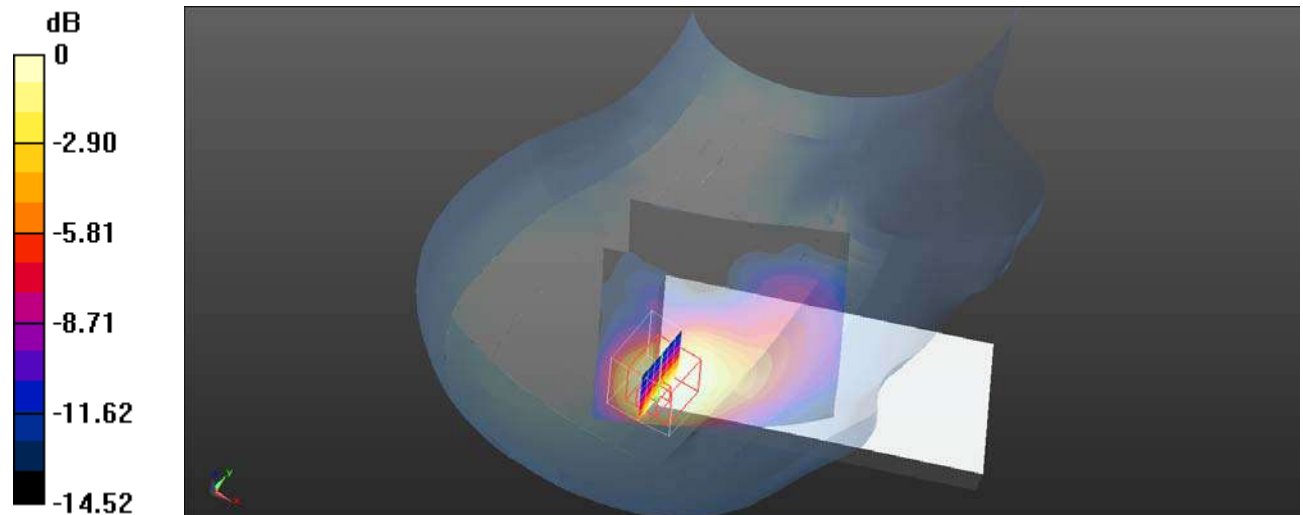
**Head Right Tilt/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.519 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.474 W/kg

**SAR(1 g) = 0.244 W/kg; SAR(10 g) = 0.137 W/kg**

Maximum value of SAR (measured) = 0.273 W/kg



0 dB = 0.273 W/kg = -5.64 dBW/kg



**Plot 115#: 2.4Gwifi\_Body Back\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Back/WLAN 802.11b Mid/Area Scan (91x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.202 W/kg

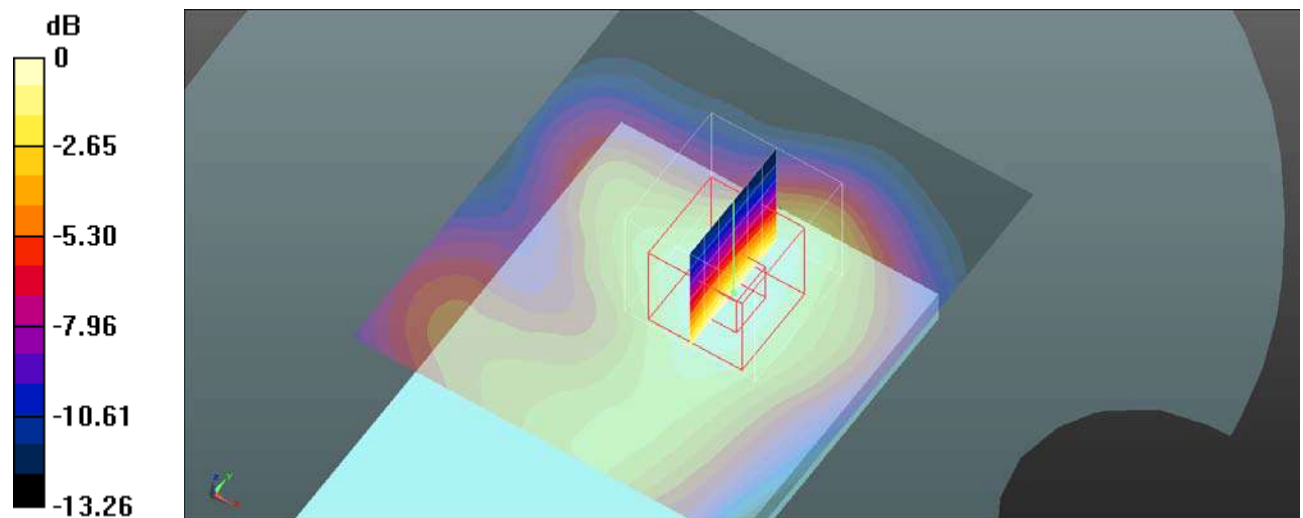
**Body Back/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.070 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.296 W/kg

**SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.097 W/kg**

Maximum value of SAR (measured) = 0.186 W/kg



0 dB = 0.186 W/kg = -7.30 dBW/kg

**Plot 116#: 2.4Gwifi\_Body Left\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Left/WLAN 802.11b High/Area Scan (61x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.172 W/kg

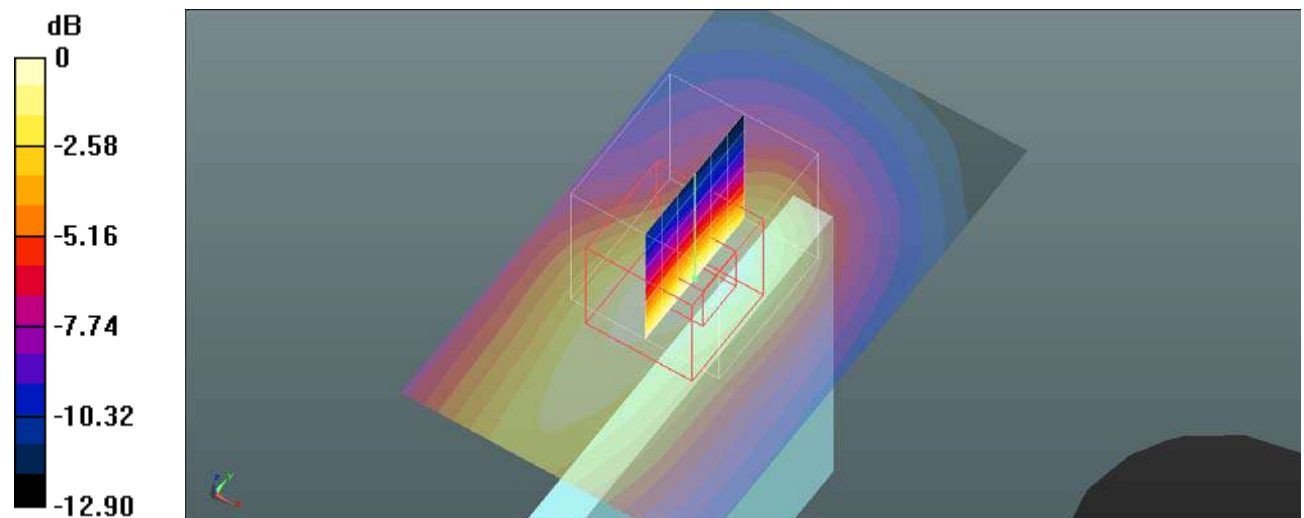
**Body Left/WLAN 802.11b High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.715 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.273 W/kg

**SAR(1 g) = 0.150 W/kg; SAR(10 g) = 0.083 W/kg**

Maximum value of SAR (measured) = 0.167 W/kg



0 dB = 0.167 W/kg = -7.77 dBW/kg

**Plot 117#: 2.4Gwifi\_Body Top\_Low****DUT: Phone; Type: Astro 5T; Serial: DG1211222-66466E-SA-S1**

Communication System: UID 0, 2.4G DTS (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 2412$  MHz;  $\sigma = 1.811$  S/m;  $\epsilon_r = 38.689$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7441; ConvF(7.63, 7.63, 7.63); Calibrated: 2021/02/23
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1562; Calibrated: 2021/01/19
- Phantom: Twin SAM; Type: QD000P40CD; Serial: TP:1744
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Body Top/WLAN 802.11b Mid/Area Scan (61x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0441 W/kg

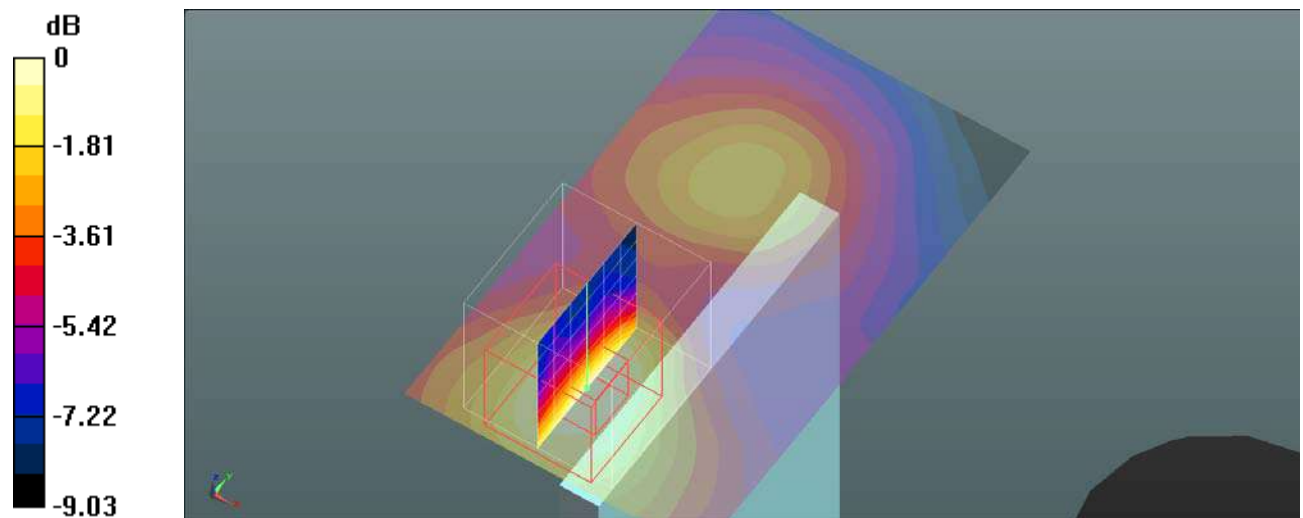
**Body Top/WLAN 802.11b Mid/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.964 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.0650 W/kg

**SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.024 W/kg**

Maximum value of SAR (measured) = 0.0427 W/kg

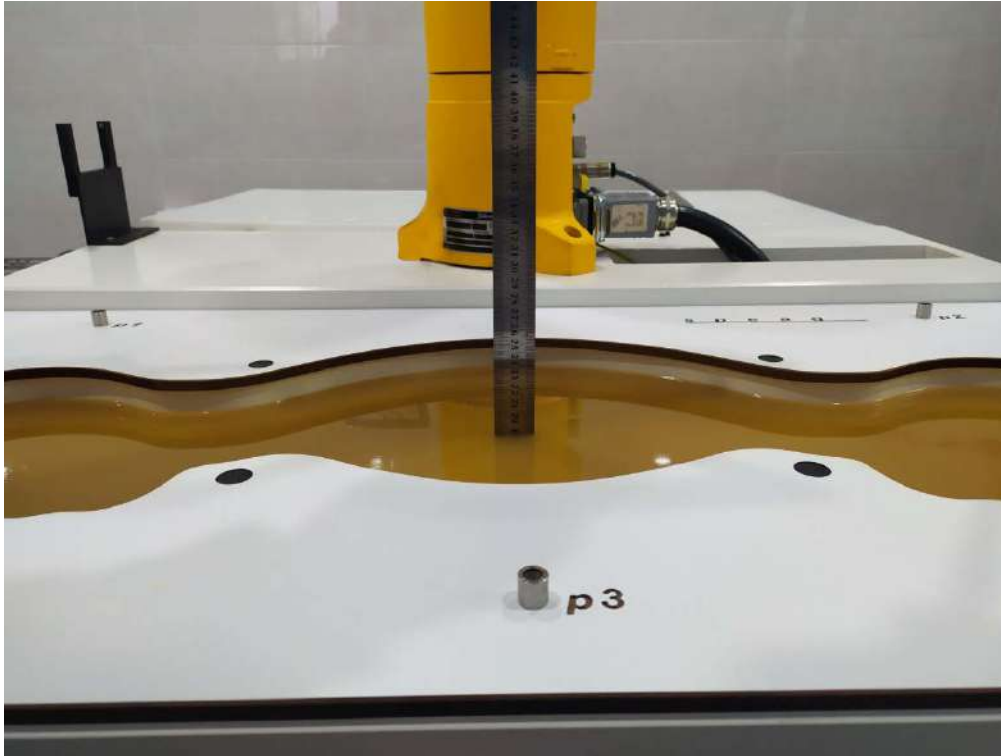


## APPENDIX B EUT TEST POSITION PHOTOS

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### Liquid depth $\geq 15\text{cm}$

Phantom Type: Twin SAM Phantom ; Type: QD000 P40 CD; Serial: TP:1744



**Head Left Cheek Setup Photo**



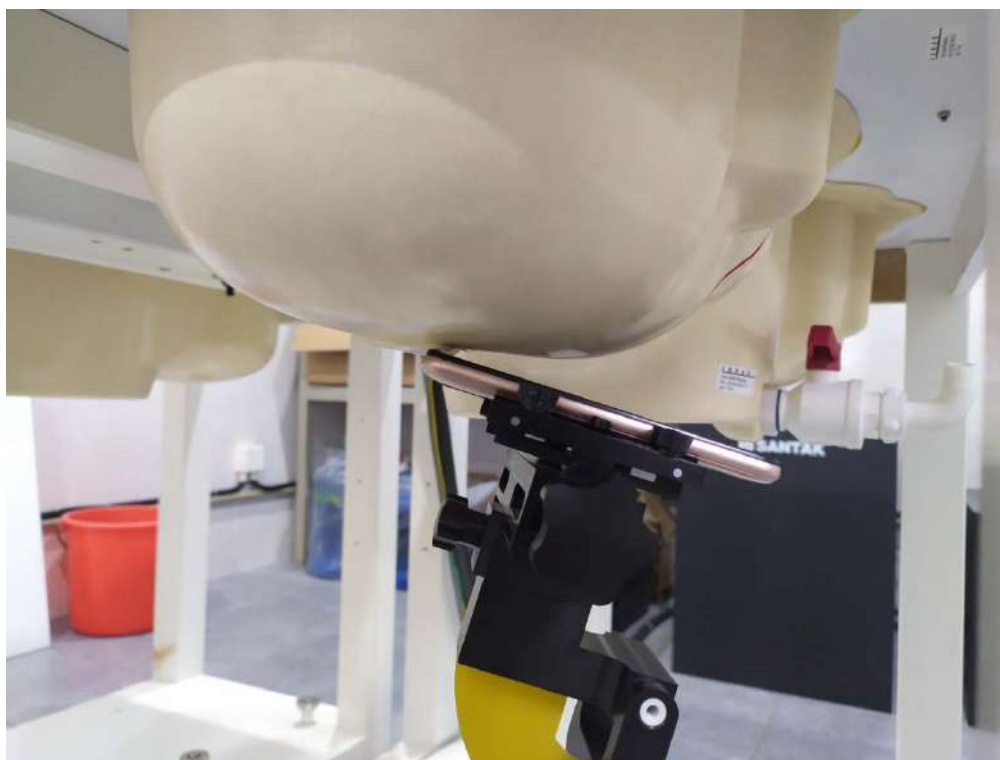
**Head Left Tilt Setup Photo**



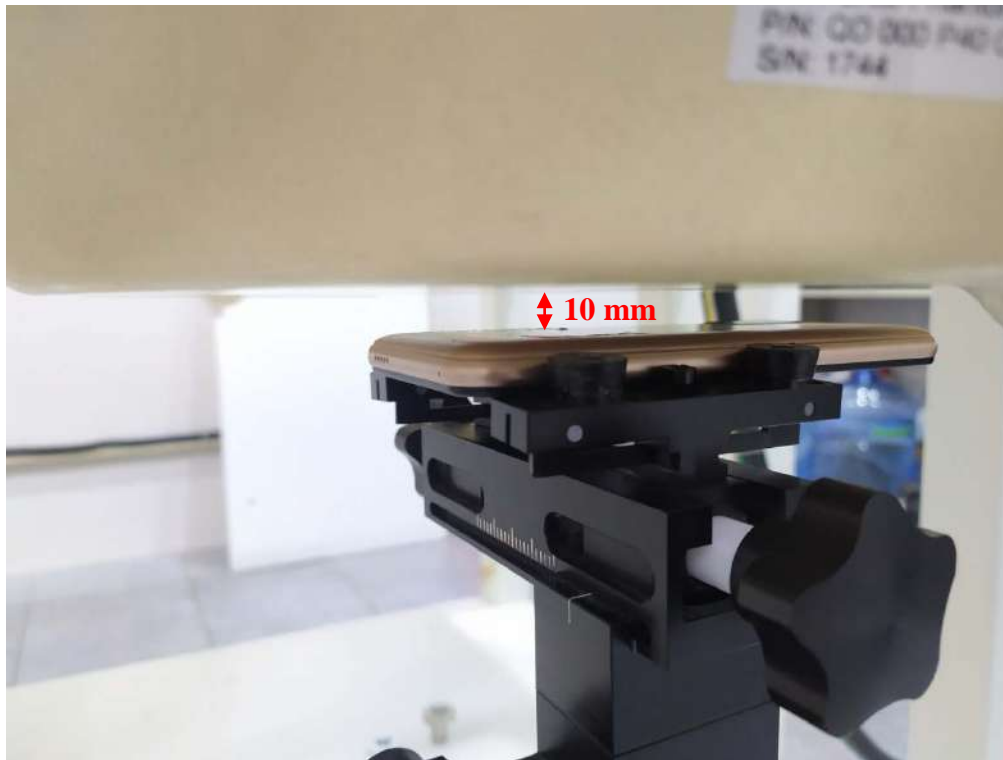
**Head Right Cheek Setup Photo**



**Head Right Tilt Setup Photo**



**Body (Worn) Back Setup Photo (10mm)**



**Body Left Setup Photo (10mm)**



**Body Right Setup Photo (10mm)**

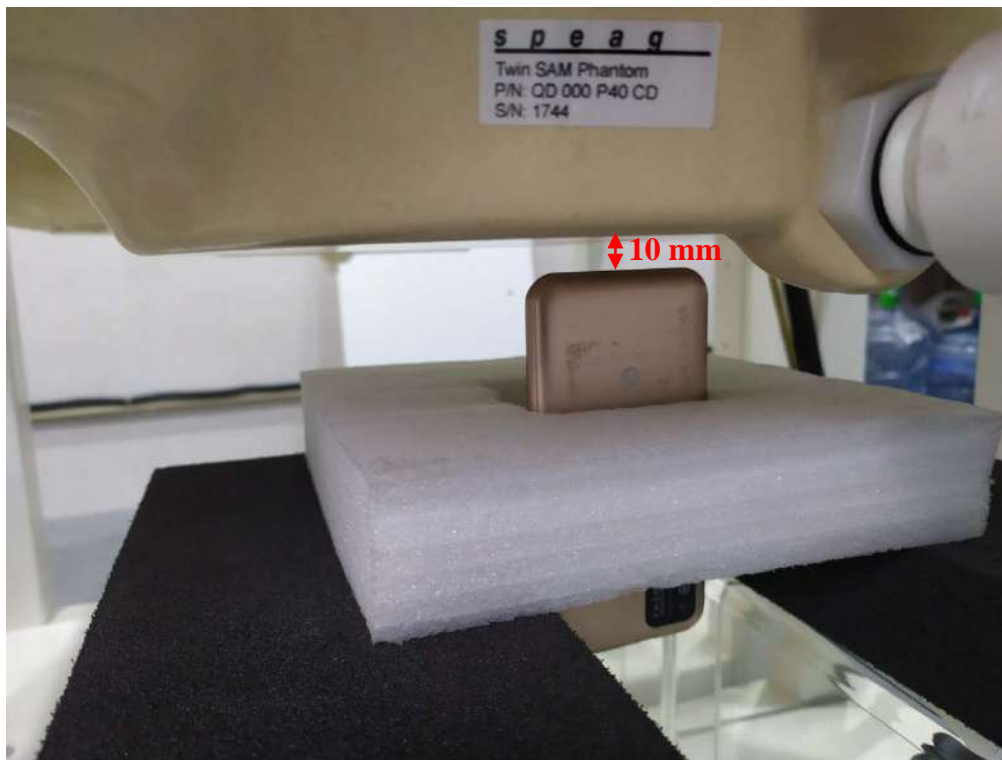


**Body Top Setup Photo (10mm)**





**Body Bottom Setup Photo (10mm)**



# APPENDIX C PROBE CALIBRATION CERTIFICATES



In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY



中国认可  
国际互认  
校准  
CALIBRATION  
CNAS L0570

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
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E-mail: cttl@chinattl.com [Http://www.chinattl.cn](http://www.chinattl.cn)

Client **BACL**

Certificate No: **Z21-60025**

CALIBRATION CERTIFICATE			
Object	EX3DV4 - SN : 7441		
Calibration Procedure(s)	FF-Z11-004-02 Calibration Procedures for Dosimetric E-field Probes		
Calibration date:	February 23, 2021		
This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.			
All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity<70%.			
Calibration Equipment used (M&TE critical for calibration)			
Primary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	101919	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101547	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Power sensor NRP-Z91	101548	16-Jun-20(CTTL, No.J20X04344)	Jun-21
Reference 10dBAttenuator	18N50W-10dB	10-Feb-20(CTTL, No.J20X00525)	Feb-22
Reference 20dBAttenuator	18N50W-20dB	10-Feb-20(CTTL, No.J20X00526)	Feb-22
Reference Probe EX3DV4	SN 7307	29-May-20(SPEAG, No.EX3-7307_May20)	May-21
DAE4	SN 1555	25-Aug-20(SPEAG, No.DAE4-1555_Aug20)	Aug-21
Secondary Standards	ID #	Cal Date(Calibrated by, Certificate No.)	Scheduled Calibration
SignalGenerator MG3700A	6201052605	23-Jun-20(CTTL, No.J20X04343)	Jun-21
Network Analyzer E5071C	MY46110673	21-Jan-21(CTTL, No.J20X00515)	Jan-22
Calibrated by:	Name: Yu Zongying	Function: SAR Test Engineer	Signature:
Reviewed by:	Name: Lin Hao	Function: SAR Test Engineer	Signature:
Approved by:	Name: Qi Dianyuan	Function: SAR Project Leader	Signature:
Issued: February 25, 2021			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

**Glossary:**

TSL	tissue simulating liquid
NORM <sub>x,y,z</sub>	sensitivity in free space
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A,B,C,D	modulation dependent linearization parameters
Polarization $\Phi$	$\Phi$ rotation around probe axis
Polarization $\theta$	$\theta$ rotation around an axis that is in the plane normal to probe axis (at measurement center), $\theta=0$ is normal to probe axis

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

**Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Methods Applied and Interpretation of Parameters:**

- NORM<sub>x,y,z</sub>:** Assessed for E-field polarization  $\theta=0$  ( $f \leq 900\text{MHz}$  in TEM-cell,  $f > 1800\text{MHz}$ : waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not effect the  $E^1$ -field uncertainty inside TSL (see below ConvF).
- NORM( $f$ )<sub>x,y,z</sub> = NORM<sub>x,y,z</sub> \* frequency\_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>:** DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- PAR:** PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics.
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; VR<sub>x,y,z</sub>:** A,B,C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800\text{MHz}$ ) and inside waveguide using analytical field distributions based on power measurements for  $f > 800\text{MHz}$ . The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty valued are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50\text{MHz}$  to  $\pm 100\text{MHz}$ .
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle:** The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).



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### DASY/EASY – Parameters of Probe: EX3DV4 – SN: 7441

#### Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup>	0.39	0.45	0.38	$\pm 10.0\%$
DCP(mV) <sup>B</sup>	93.1	100.5	104.6	

#### Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\mu\text{V}$	C	D dB	VR mV	Max Dev.	Max Unc <sup>E</sup> (k=2)
0	CW	X	0.0	0.0	1.0	0.00	139.3	$\pm 2.4\%$	$\pm 4.7\%$
		Y	0.0	0.0	1.0		153.1		
		Z	0.0	0.0	1.0		141.0		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	4.04	73.52	15.23	10.00	60	$\pm 2.5\%$	$\pm 9.6\%$
		Y	15.00	89.17	21.61		60		
		Z	2.42	64.53	9.92		60		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	2.98	73.02	13.42	6.99	80	$\pm 3.6\%$	$\pm 9.6\%$
		Y	15.00	89.50	20.53		80		
		Z	1.65	63.70	8.48		80		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	0.41	60.19	5.48	3.98	95	$\pm 4.4\%$	$\pm 9.6\%$
		Y	15.00	91.13	19.76		95		
		Z	0.82	61.75	6.50		95		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	0.30	60.00	2.65	2.22	120	$\pm 4.2\%$	$\pm 9.6\%$
		Y	15.00	91.47	18.41		120		
		Z	0.37	60.00	4.77		120		
10387-AAA	QPSK Waveform, 1 MHz	X	1.44	64.79	13.45	1.00	150	$\pm 5.8\%$	$\pm 9.6\%$
		Y	1.91	66.78	16.83		150		
		Z	1.64	66.60	14.97		150		
10388-AAA	QPSK Waveform, 10 MHz	X	2.07	67.05	14.84	0.00	150	$\pm 2.1\%$	$\pm 9.6\%$
		Y	2.63	70.15	16.62		150		
		Z	2.25	68.71	15.88		150		
10396-AAA	64-QAM Waveform, 100 kHz	X	3.84	74.23	20.85	3.01	150	$\pm 1.7\%$	$\pm 9.6\%$
		Y	3.92	75.03	21.44		150		
		Z	3.30	74.68	21.41		150		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.94	65.78	15.89	0.00	150	$\pm 3.2\%$	$\pm 9.6\%$
		Y	5.15	66.05	15.81		150		
		Z	4.80	65.71	15.61		150		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.

<sup>A</sup> The uncertainties of Norm X, Y, Z do not affect the E<sup>2</sup>-field uncertainty inside TSL (see Page 5).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



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## DASY/EASY – Parameters of Probe: EX3DV4 – SN: 7441

### Sensor Model Parameters

	C1 fF	C2 fF	$\alpha$ V <sup>-1</sup>	T1 ms.V <sup>-2</sup>	T2 ms.V <sup>-1</sup>	T3 ms	T4 V <sup>-2</sup>	T5 V <sup>-1</sup>	T6
X	46.12	390.20	44.09	1.81	0.10	5.10	0.50	0.70	1.02
Y	68.53	519.82	36.61	21.71	0.08	5.10	0.33	0.53	1.02
Z	44.97	331.90	34.82	11.23	0.05	4.98	1.08	0.17	1.02

### Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	102.1
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disable
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm



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## DASY/EASY – Parameters of Probe: EX3DV4 – SN:7441

### Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz] <sup>C</sup>	Relative Permittivity <sup>F</sup>	Conductivity (S/m) <sup>F</sup>	ConvF X	ConvF Y	ConvF Z	Alpha <sup>G</sup>	Depth <sup>G</sup> (mm)	Unct. (k=2)
750	41.9	0.89	10.28	10.28	10.28	0.40	0.80	±12.1%
900	41.5	0.97	9.80	9.80	9.80	0.16	1.32	±12.1%
1450	40.5	1.20	8.61	8.61	8.61	0.18	1.04	±12.1%
1750	40.1	1.37	8.39	8.39	8.39	0.22	1.15	±12.1%
1900	40.0	1.40	8.02	8.02	8.02	0.23	1.14	±12.1%
2000	40.0	1.40	8.07	8.07	8.07	0.19	1.21	±12.1%
2300	39.5	1.67	7.92	7.92	7.92	0.65	0.65	±12.1%
2450	39.2	1.80	7.63	7.63	7.63	0.44	0.84	±12.1%
2600	39.0	1.96	7.33	7.33	7.33	0.52	0.75	±12.1%
3300	38.2	2.71	7.21	7.21	7.21	0.49	0.91	±13.3%
3500	37.9	2.91	6.96	6.96	6.96	0.46	0.95	±13.3%
3700	37.7	3.12	6.65	6.65	6.65	0.47	1.02	±13.3%
3900	37.5	3.32	6.66	6.66	6.66	0.40	1.25	±13.3%
4400	36.9	3.84	6.45	6.45	6.45	0.35	1.35	±13.3%
4600	36.7	4.04	6.30	6.30	6.30	0.45	1.25	±13.3%
4800	36.4	4.25	6.24	6.24	6.24	0.40	1.40	±13.3%
4950	36.3	4.40	5.95	5.95	5.95	0.45	1.30	±13.3%

<sup>C</sup> Frequency validity above 300 MHz of ±100MHz only applies for DASY v4.4 and higher (Page 2), else it is restricted to ±50MHz. The uncertainty is the RSS of ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

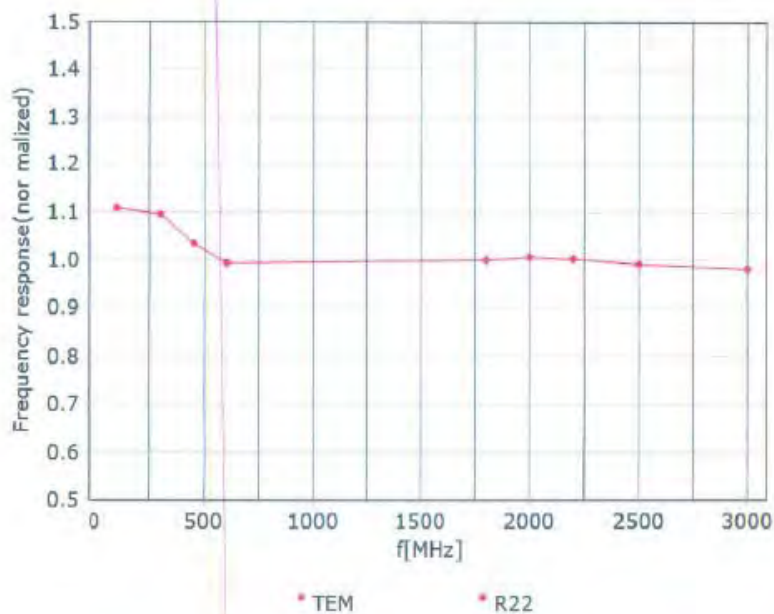
<sup>F</sup> At frequency below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for the frequencies between 3-8 GHz at any distance larger than half the probe tip diameter from the boundary.



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### Frequency Response of E-Field (TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 7.4\%$  ( $k=2$ )

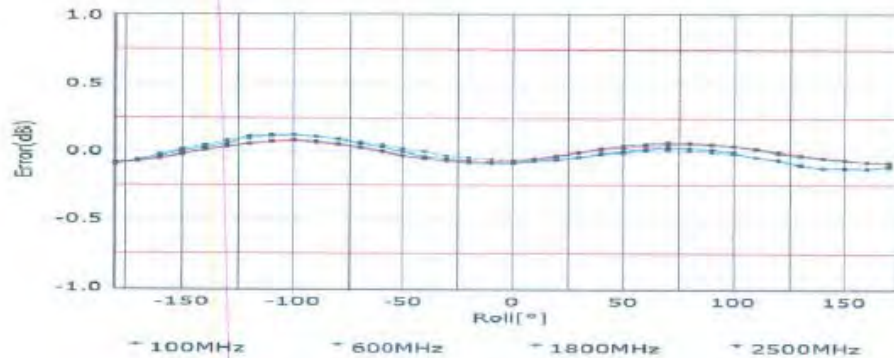
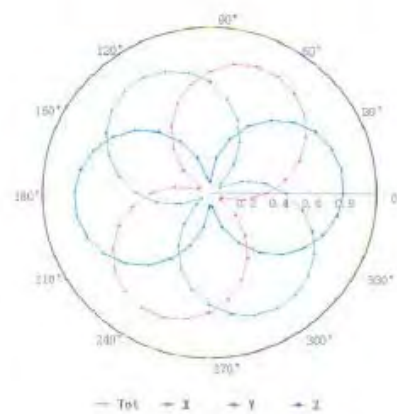
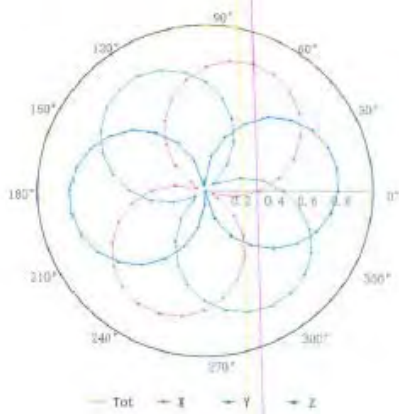


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### Receiving Pattern ( $\Phi$ ), $\theta=0^\circ$

f=600 MHz, TEM

f=1800 MHz, R22



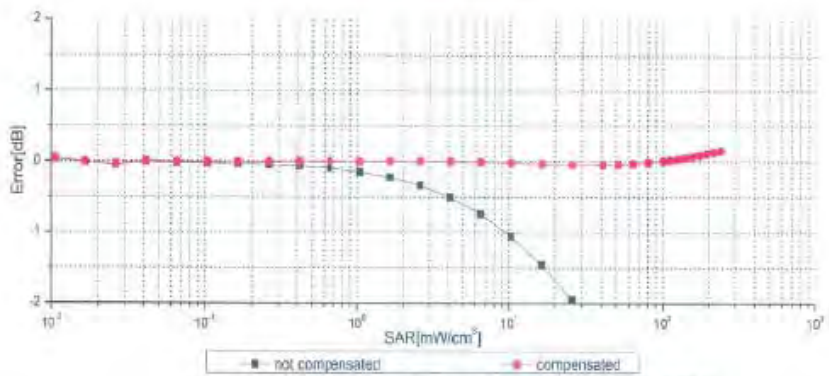
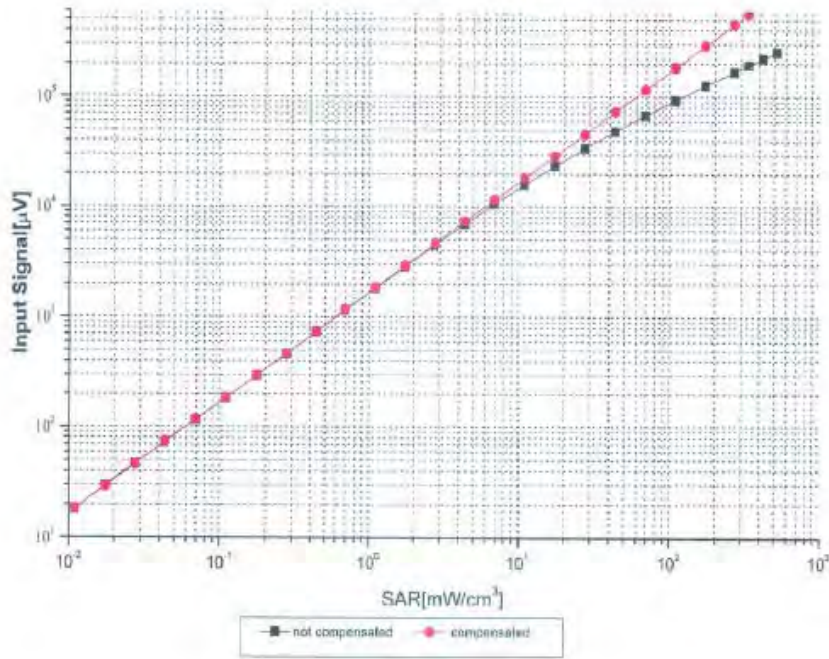
Uncertainty of Axial Isotropy Assessment:  $\pm 1.2\%$  ( $k=2$ )





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### Dynamic Range f(SAR<sub>head</sub>) (TEM cell, f = 900 MHz)



Uncertainty of Linearity Assessment: ±0.9% (k=2)

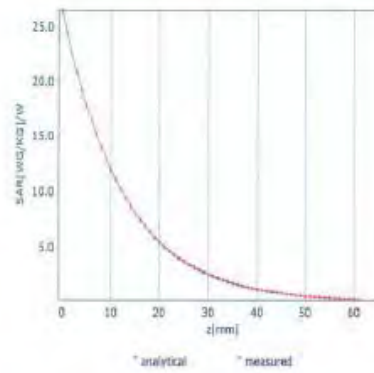
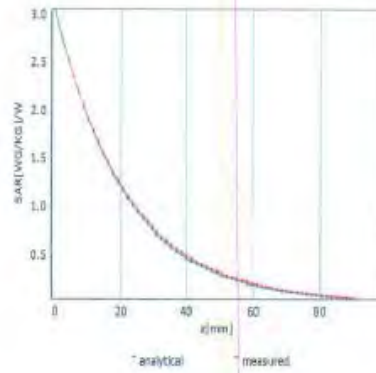


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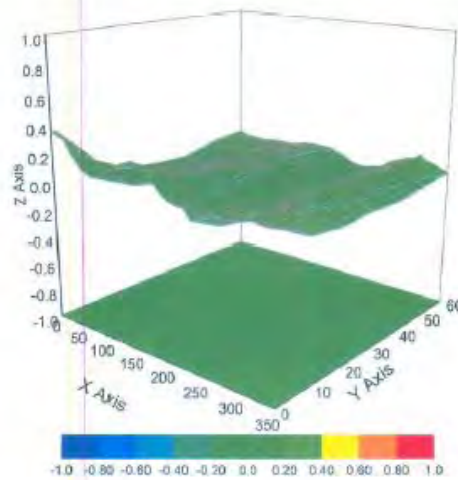
### Conversion Factor Assessment

f=750 MHz,WGLS R9(H\_convF)

f=1750 MHz,WGLS R22(H\_convF)



### Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment:  $\pm 3.2\%$  ( $k=2$ )



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**Appendix: Modulation Calibration Parameters**

UID	Rev	Communication System Name	Group	PAR (dB)	UncE (k=2)
D		CW	CW	0.00	±4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	±9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 5 Mbps)	WLAN	9.46	±9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	8.57	±9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	8.56	±9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	±9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.75	±9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	±9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	±9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	±9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	±9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	±9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6 %
10050	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	±9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	±9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	±9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.80	±9.6 %
10062	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	±9.6 %
10063	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6 %
10064	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	±9.6 %
10065	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6 %
10066	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	±9.6 %
10067	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6 %
10068	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	±9.6 %
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	±9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	±9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	±9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	±9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	±9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	±9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	±9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	±9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	±9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	±9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	8.56	±9.6 %
10097	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6 %
10098	DAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6 %
10099	CAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6 %
10100	CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	±9.6 %
10101	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	8.42	±9.6 %



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10102	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	DAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAG	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAG	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAG	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAG	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAD	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAC	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAF	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10187	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	AAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAI	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %



10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAC	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.92	± 9.6 %
10189	CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAE	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	AAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAE	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAE	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	AAE	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAF	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAF	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
10220	AAF	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAD	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAD	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAD	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	DAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %



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10289	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8 10)	WCDMA	4.87	± 9.6 %
10275	CAD	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8 4)	WCDMA	3.96	± 9.6 %
10277	CAD	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAD	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAG	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	CAG	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	CAG	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	CAG	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	CAG	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	CAG	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.48	± 9.6 %
10297	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %
10300	CAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	CAC	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	CAB	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WiMAX	12.57	± 9.6 %
10303	CAB	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	CAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	CAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	15.24	± 9.6 %
10306	CAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	14.67	± 9.6 %
10307	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WiMAX	14.49	± 9.6 %
10308	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)	WiMAX	14.58	± 9.6 %
10310	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3)	WiMAX	14.57	± 9.6 %
10311	AAB	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAD	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAD	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAD	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.71	± 9.6 %
10316	AAD	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.36	± 9.6 %
10317	AAA	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)	WLAN	8.37	± 9.6 %
10401	AAA	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAA	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAD	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAA	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	AAA	IEEE 802.11a/n WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAE	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAE	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAE	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %



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10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAC	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAG	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAA	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAA	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.58	± 9.6 %
10448	AAA	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAA	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10453	AAC	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
10455	AAC	IEEE 802.11ac WiFi (180MHz, 64-QAM, 99pc dc)	WLAN	8.63	± 9.6 %
10457	AAC	UMTS-FDD (DC-HSDPA)	WCDMA	8.62	± 9.6 %
10458	AAC	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	8.55	± 9.6 %
10459	AAC	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAC	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %
10463	AAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAA	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAA	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %
10488	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10489	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	± 9.6 %
10496	AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10497	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10498	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10499	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 9.6 %
10500	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %



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10503	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, U. Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, U. Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, U. Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, U. Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, U. Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, U. Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAF	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
10525	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10526	AAF	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 %
10527	AAF	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.21	± 9.6 %
10528	AAF	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAF	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAF	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.43	± 9.6 %
10532	AAF	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10533	AAE	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.36	± 9.6 %
10534	AAE	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAE	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAF	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 %
10537	AAF	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	± 9.6 %
10538	AAF	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10546	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10552	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10553	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10564	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10565	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %





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10566	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10569	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10571	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10573	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10575	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10576	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 8 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10578	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10580	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10582	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.80	± 9.6 %
10585	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10593	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10594	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10595	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	WLAN	8.74	± 9.6 %
10596	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10601	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10603	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %
10604	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
10605	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAC	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAC	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAC	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAC	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAC	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10613	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.94	± 9.6 %
10614	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	± 9.6 %
10615	AAC	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.61	± 9.6 %
10618	AAC	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	± 9.6 %
10619	AAC	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	± 9.6 %
10620	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAC	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAC	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.88	± 9.6 %
10623	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %



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10625	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10627	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10628	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9.6 %
10629	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10630	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 %
10631	AAC	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 %
10634	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.88	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.08	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.08	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.98	± 9.6 %
10647	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAC	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAC	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
10655	AAC	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAC	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAC	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAC	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAC	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAC	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAC	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAD	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	± 9.6 %
10672	AAD	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %
10673	AAD	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10674	AAD	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAD	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAD	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAD	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAD	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAD	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAD	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %
10681	AAC	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAF	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10684	AAC	IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10685	AAC	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10686	AAC	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	± 9.6 %
10687	AAE	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6 %
10688	AAE	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6 %
10689	AAD	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6 %
10690	AAE	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10691	AAB	IEEE 802.11ax (20MHz, MCS8, 99pc dc)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN	8.26	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6 %



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10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.58	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAC	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10708	AAC	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAC	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10710	AAC	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
10711	AAC	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10712	AAC	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAC	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
10714	AAC	IEEE 802.11ax (40MHz, MCS7, 99pc dc)	WLAN	8.26	± 9.6 %
10715	AAC	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10716	AAC	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.30	± 9.6 %
10717	AAC	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.48	± 9.6 %
10718	AAC	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	± 9.6 %
10719	AAC	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
10720	AAC	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	± 9.6 %
10721	AAC	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10722	AAC	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAC	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAC	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAC	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAC	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAC	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %
10728	AAC	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.85	± 9.6 %
10729	AAC	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 %
10730	AAC	IEEE 802.11ax (80MHz, MCS11, 90pc dc)	WLAN	8.67	± 9.6 %
10731	AAC	IEEE 802.11ax (80MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10732	AAC	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN	8.46	± 9.6 %
10733	AAC	IEEE 802.11ax (80MHz, MCS2, 99pc dc)	WLAN	8.40	± 9.6 %
10734	AAC	IEEE 802.11ax (80MHz, MCS3, 99pc dc)	WLAN	8.25	± 9.6 %
10735	AAC	IEEE 802.11ax (80MHz, MCS4, 99pc dc)	WLAN	8.33	± 9.6 %
10736	AAC	IEEE 802.11ax (80MHz, MCS5, 99pc dc)	WLAN	8.27	± 9.6 %
10737	AAC	IEEE 802.11ax (80MHz, MCS6, 99pc dc)	WLAN	8.36	± 9.6 %
10738	AAC	IEEE 802.11ax (80MHz, MCS7, 99pc dc)	WLAN	8.42	± 9.6 %
10739	AAC	IEEE 802.11ax (80MHz, MCS8, 99pc dc)	WLAN	8.29	± 9.6 %
10740	AAC	IEEE 802.11ax (80MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10741	AAC	IEEE 802.11ax (80MHz, MCS10, 99pc dc)	WLAN	8.40	± 9.6 %
10742	AAC	IEEE 802.11ax (80MHz, MCS11, 99pc dc)	WLAN	8.43	± 9.6 %
10743	AAC	IEEE 802.11ax (160MHz, MCS0, 90pc dc)	WLAN	8.94	± 9.6 %
10744	AAC	IEEE 802.11ax (160MHz, MCS1, 90pc dc)	WLAN	8.16	± 9.6 %
10745	AAC	IEEE 802.11ax (160MHz, MCS2, 90pc dc)	WLAN	8.93	± 9.6 %
10746	AAC	IEEE 802.11ax (160MHz, MCS3, 90pc dc)	WLAN	9.11	± 9.6 %
10747	AAC	IEEE 802.11ax (160MHz, MCS4, 90pc dc)	WLAN	9.04	± 9.6 %
10748	AAC	IEEE 802.11ax (160MHz, MCS5, 90pc dc)	WLAN	8.93	± 9.6 %
10749	AAC	IEEE 802.11ax (160MHz, MCS6, 90pc dc)	WLAN	8.90	± 9.6 %
10750	AAC	IEEE 802.11ax (160MHz, MCS7, 90pc dc)	WLAN	8.79	± 9.6 %
10751	AAC	IEEE 802.11ax (160MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10752	AAC	IEEE 802.11ax (160MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10753	AAC	IEEE 802.11ax (160MHz, MCS10, 90pc dc)	WLAN	9.00	± 9.6 %
10754	AAC	IEEE 802.11ax (160MHz, MCS11, 90pc dc)	WLAN	8.94	± 9.6 %



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10755	AAC	IEEE 802.11ax (160MHz, MCS0, 99pc dc)	WLAN	8.64	±9.6%
10756	AAC	IEEE 802.11ax (160MHz, MCS1, 99pc dc)	WLAN	8.77	±9.6%
10757	AAC	IEEE 802.11ax (160MHz, MCS2, 99pc dc)	WLAN	8.77	±9.6%
10758	AAC	IEEE 802.11ax (160MHz, MCS3, 99pc dc)	WLAN	8.69	±9.6%
10759	AAC	IEEE 802.11ax (160MHz, MCS4, 99pc dc)	WLAN	8.58	±9.6%
10760	AAC	IEEE 802.11ax (160MHz, MCS5, 99pc dc)	WLAN	8.49	±9.6%
10761	AAC	IEEE 802.11ax (160MHz, MCS6, 99pc dc)	WLAN	8.58	±9.6%
10762	AAC	IEEE 802.11ax (160MHz, MCS7, 99pc dc)	WLAN	8.49	±9.6%
10763	AAC	IEEE 802.11ax (160MHz, MCS8, 99pc dc)	WLAN	8.53	±9.6%
10764	AAC	IEEE 802.11ax (160MHz, MCS9, 99pc dc)	WLAN	8.54	±9.6%
10765	AAC	IEEE 802.11ax (160MHz, MCS10, 99pc dc)	WLAN	8.54	±9.6%
10766	AAC	IEEE 802.11ax (160MHz, MCS11, 99pc dc)	WLAN	8.51	±9.6%
10767	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	±9.6%
10768	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6%
10769	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6%
10770	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6%
10771	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6%
10772	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6%
10773	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	±9.6%
10774	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6%
10775	AAC	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6%
10776	AAC	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6%
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6%
10778	AAC	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	±9.6%
10779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	±9.6%
10780	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6%
10781	AAC	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6%
10782	AAC	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	±9.6%
10783	AAC	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6%
10784	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	±9.6%
10785	AAC	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	±9.6%
10786	AAC	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	±9.6%
10787	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	±9.6%
10788	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	±9.6%
10789	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	±9.6%
10790	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	±9.6%
10791	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	±9.6%
10792	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	±9.6%
10793	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	±9.6%
10794	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6%
10795	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	±9.6%
10796	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6%
10797	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	±9.6%
10798	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6%
10799	AAC	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±9.6%
10801	AAC	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6%
10802	AAC	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	±9.6%
10803	AAC	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±9.6%
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6%
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	±9.6%
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6%
10810	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6%
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6%
10817	AAD	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6%
10818	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6%
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	±9.6%
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	±9.6%
10821	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6%
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6%



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10823	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10824	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10828	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	± 9.6 %
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 %
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	± 9.6 %
10833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.88	± 9.6 %
10839	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10863	AAE	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10864	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10865	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10866	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10866	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	± 9.6 %
10869	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	± 9.6 %
10871	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10872	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10875	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	± 9.6 %
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10879	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	± 9.6 %
10880	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	± 9.6 %
10884	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	± 9.6 %
10885	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAD	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %



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10898	AAD	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 0.6 %
10900	AAD	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10901	AAD	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10902	AAD	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10903	AAD	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10904	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10905	AAD	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10906	AAD	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 0.6 %
10907	AAD	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 0.6 %
10908	AAD	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 0.6 %
10909	AAD	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 0.6 %
10910	AAD	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 0.6 %
10911	AAD	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 0.6 %
10912	AAD	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10913	AAD	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10914	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 0.6 %
10915	AAD	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 0.6 %
10916	AAD	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 0.6 %
10917	AAD	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 0.6 %
10918	AAD	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 0.6 %
10919	AAD	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 0.6 %
10920	AAD	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 0.6 %
10921	AAD	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10922	AAD	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 0.6 %
10923	AAD	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10924	AAD	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10925	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 0.6 %
10926	AAD	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 0.6 %
10927	AAD	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 0.6 %
10928	AAD	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 0.6 %
10929	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 0.6 %
10930	AAD	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 0.6 %
10931	AAD	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 0.6 %
10932	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 0.6 %
10933	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 0.6 %
10934	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 0.6 %
10935	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 0.6 %
10936	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 0.6 %
10937	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 0.6 %
10938	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 0.6 %
10939	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 0.6 %
10940	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 0.6 %
10941	AAB	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 0.6 %
10942	AAB	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 0.6 %
10943	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 0.6 %
10944	AAB	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 0.6 %
10945	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 0.6 %
10946	AAC	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 0.6 %
10947	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 0.6 %
10948	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 0.6 %
10949	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 0.6 %
10950	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 0.6 %
10951	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 0.6 %
10952	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.26	± 0.6 %
10953	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 0.6 %
10954	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 0.6 %
10955	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 0.6 %
10956	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 0.6 %
10957	AAC	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 0.6 %



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10958	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10964	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	± 9.6 %
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 9.6 %
10972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	± 9.6 %
10973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	± 9.6 %
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	± 9.6 %

<sup>±</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

# APPENDIX D DIPOLE CALIBRATION CERTIFICATES



Client **ATC** Certificate No: **Z21-60438**

CALIBRATION CERTIFICATE			
Object	D835V2 - SN: 4d103		
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits		
Calibration date:	October 27, 2021		
This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.			
All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.			
Calibration Equipment used (M&TE critical for calibration)			
Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Reference Probe EX3DV4	SN 7517	03-Feb-21(CTTL-SPEAG,No.Z21-60001)	Feb-22
DAE4	SN 1556	15-Jan-21(SPEAG,No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	01-Feb-21 (CTTL, No.J21X00593)	Jan-22
NetworkAnalyzer E5071C	MY46110673	14-Jan-21 (CTTL, No.J21X00232)	Jan-22
Calibrated by:	Name Zhao Jing	Function SAR Test Engineer	Signature 
Reviewed by:	Name Lin Hač	Function SAR Test Engineer	Signature 
Approved by:	Name Qi Dianyuan	Function SAR Project Leader	Signature 
Issued: October 31, 2021			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			





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#### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

#### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

#### Additional Documentation:

- DASY4/5 System Handbook

#### Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.



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### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.6 $\pm$ 6 %	0.90 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	---	---

### SAR result with Head TSL

SAR averaged over 1 $cm^3$ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.65 W/kg $\pm$ 18.8 % (k=2)
SAR averaged over 10 $cm^3$ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	6.27 W/kg $\pm$ 18.7 % (k=2)



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#### Appendix (Additional assessments outside the scope of CNAS L0570)

##### Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.7Ω- 0.83jΩ
Return Loss	- 21.3dB

##### General Antenna Parameters and Design

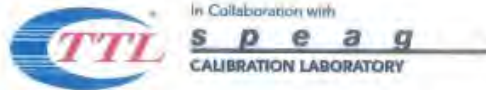
Electrical Delay (one direction)	1.303 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

##### Additional EUT Data

Manufactured by	SPEAG
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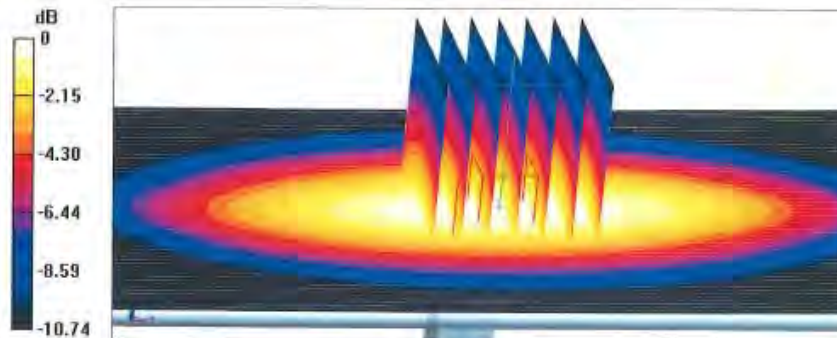
**DASY5 Validation Report for Head TSL**  
 Test Laboratory: CTTL, Beijing, China

Date: 10.27.2021

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d103**  
 Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1  
 Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.904 \text{ S/m}$ ;  $\epsilon_r = 41.62$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Phantom section: Right Section  
 DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(9.81, 9.81, 9.81) @ 835 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
 Reference Value = 58.95 V/m; Power Drift = 0.00 dB  
 Peak SAR (extrapolated) = 3.77 W/kg  
**SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.57 W/kg**  
 Smallest distance from peaks to all points 3 dB below = 19.4 mm  
 Ratio of SAR at M2 to SAR at M1 = 64.3%  
 Maximum value of SAR (measured) = 3.29 W/kg

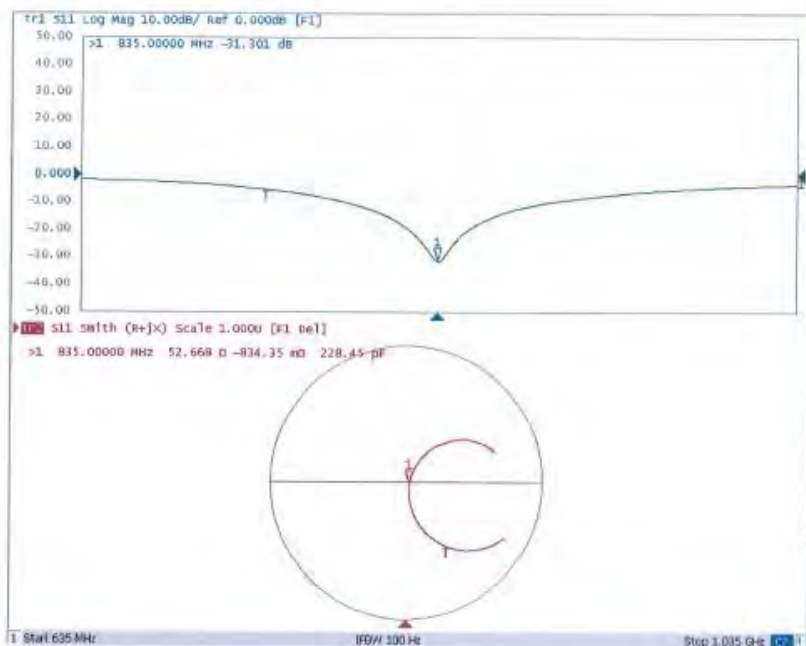


0 dB = 3.29 W/kg = 5.17 dBW/kg



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**Impedance Measurement Plot for Head TSL**





In Collaboration with  
**s p e a g**  
CALIBRATION LABORATORY

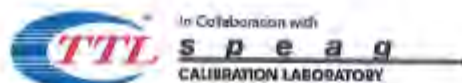


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校准  
CALIBRATION  
CNAS L0570

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Client **BACL** Certificate No: **Z20-60411**

CALIBRATION CERTIFICATE			
Object	D1800V2 - SN: 2d018		
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits		
Calibration date:	October 15, 2020		
<p>This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature:(22±3)°C and humidity&lt;70%.</p> <p>Calibration Equipment used (M&amp;TE critical for calibration)</p>			
<b>Primary Standards</b>	<b>ID #</b>	<b>Cal Date(Calibrated by, Certificate No.)</b>	<b>Scheduled Calibration</b>
Power Meter NRP2	106276	12-May-20 (CTTL, No.J20X02965)	May-21
Power sensor NRP6A	101369	12-May-20 (CTTL, No.J20X02965)	May-21
ReferenceProbe EX3DV4	SN 3817	30-Jan-20(SPEAG,No.EX3-3817_Jan20)	Jan-21
DAE4	SN 771	10-Feb-20(CTTL-SPEAG,No.Z20-60017)	Feb-21
<b>Secondary Standards</b>	<b>ID #</b>	<b>Cal Date(Calibrated by, Certificate No.)</b>	<b>Scheduled Calibration</b>
Signal Generator E4438C	MY49071430	25-Feb-20 (CTTL, No.J20X00516)	Feb-21
NetworkAnalyzer E5071C	MY46110673	10-Feb-20 (CTTL, No.J20X00515)	Feb-21
Calibrated by:	Name Zhao Jing	Function SAR Test Engineer	Signature 
Reviewed by:	Name Lin Hao	Function SAR Test Engineer	Signature 
Approved by:	Name Qi Dianyuan	Function SAR Project Leader	Signature 
Issued: October 22, 2020			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



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 **Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

 **Calibration is Performed According to the Following Standards:**

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

 **Additional Documentation:**

- DASY4/5 System Handbook

 **Methods Applied and Interpretation of Parameters:**

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.



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### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz $\pm$ 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.3 $\pm$ 6 %	1.41 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	-----	-----

### SAR result with Head TSL

SAR averaged over 1 $cm^3$ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.88 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.3 W/kg $\pm$ 18.8 % (k=2)
SAR averaged over 10 $cm^3$ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.15 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.5 W/kg $\pm$ 16.7 % (k=2)





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#### Appendix (Additional assessments outside the scope of CNAS L0570)

##### Antenna Parameters with Head TSL

Impedance, transformed to feed point	47.1Ω- 3.2GΩ
Return Loss	- 27.0dB

##### General Antenna Parameters and Design

Electrical Delay (one direction)	1.070 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.  
 No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

##### Additional EUT Data

Manufactured by	SPEAG
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**DASY5 Validation Report for Head TSL**

Date: 10.15.2020

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN: 2d018**

Communication System: UID 0, CW; Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1800$  MHz;  $\sigma = 1.414$  S/m;  $\epsilon_r = 40.26$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Center Section

**DASY5 Configuration:**

- Probe: EX3DV4 - SN3617; ConvF(8.2, 8.2, 8.2) @ 1800 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn771; Calibrated: 2020-02-10
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**System Performance Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:**

$dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 98.92 V/m; Power Drift = -0.04 dB

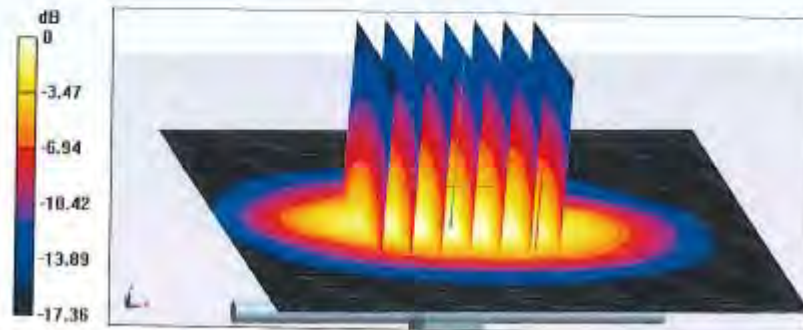
Peak SAR (extrapolated) = 18.7 W/kg

**SAR(1 g) = 9.88 W/kg; SAR(10 g) = 5.15 W/kg**

Smallest distance from peaks to all points 3 dB below = 9.8 mm

Ratio of SAR at M2 to SAR at M1 = 53.4%

Maximum value of SAR (measured) = 15.4 W/kg

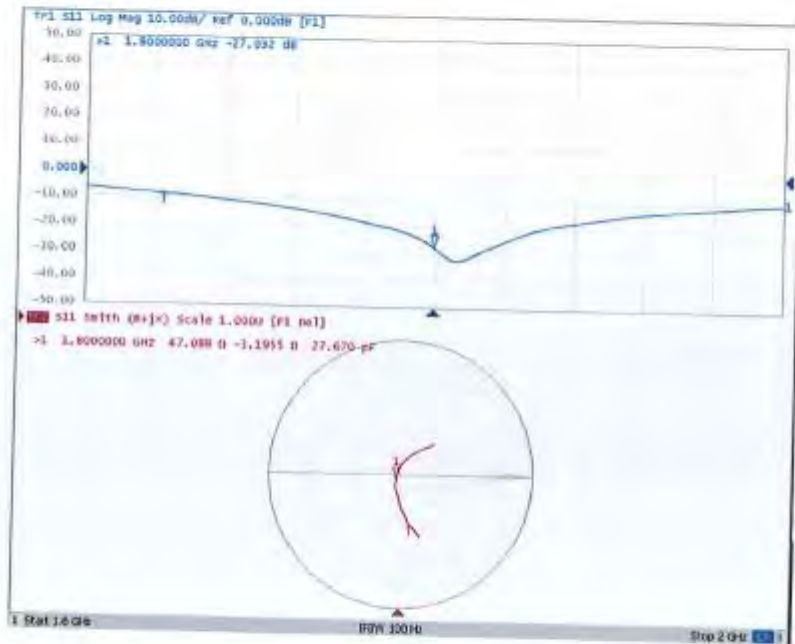


0 dB = 15.4 W/kg = 11.88 dBW/kg



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Impedance Measurement Plot for Head TSL





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Client **ATC**

Certificate No: **Z21-60439**

CALIBRATION CERTIFICATE			
Object	D1900V2 - SN: 5d128		
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits		
Calibration date:	October 27, 2021		
This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.			
All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity<70%.			
Calibration Equipment used (M&TE critical for calibration)			
Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Reference Probe EX3DV4	SN 7517	03-Feb-21(CTTL-SPEAG, No.Z21-S0001)	Feb-22
DAE4	SN 1556	15-Jan-21(SPEAG, No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	01-Feb-21 (CTTL, No.J21X00593)	Jan-22
NetworkAnalyzer E5071C	MY46110673	14-Jan-21 (CTTL, No.J21X00232)	Jan-22
Calibrated by:	Name Zhao Jing	Function SAR Test Engineer	Signature 
Reviewed by:	Name Lin Hao	Function SAR Test Engineer	Signature 
Approved by:	Name Qi Dianyuan	Function SAR Project Leader	Signature 
Issued: October 31, 2021			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



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**Glossary:**

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

**Additional Documentation:**

- e) DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.



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#### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52,10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 1 MHz	

#### Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40,1 $\pm$ 6 %	1,38 mho/m $\pm$ 6 %
Head TSL temperature change during test	<1.0 °C	---	---

#### SAR result with Head TSL

<b>SAR averaged over 1 <math>cm^3</math> (1 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	9.91 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>40.0 W/kg <math>\pm</math> 18.8 % (k=2)</b>
<b>SAR averaged over 10 <math>cm^3</math> (10 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	5.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>20.3 W/kg <math>\pm</math> 18.7 % (k=2)</b>



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**Appendix (Additional assessments outside the scope of CNAS L0570)**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	54.7Ω+ 7.45jΩ
Return Loss	-21.5dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.110 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

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**DASY5 Validation Report for Head TSL**

Date: 10.27.2021

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d128**

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.379$  S/m;  $\epsilon_r = 40.06$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(7.81, 7.81, 7.81) @ 1900 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**System Performance Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 103.6 V/m; Power Drift = -0.01 dB

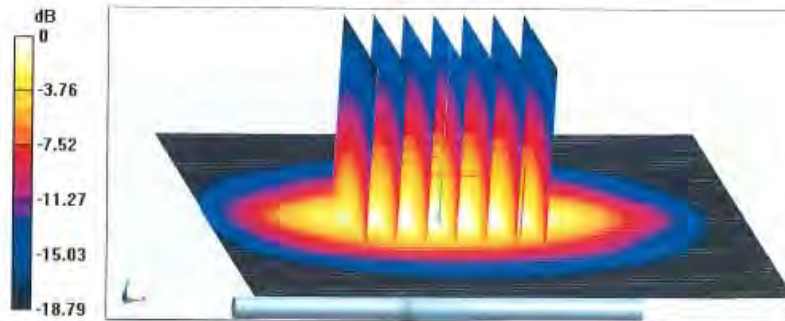
Peak SAR (extrapolated) = 19.3 W/kg

**SAR(1 g) = 9.91 W/kg; SAR(10 g) = 5.05 W/kg**

Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 51.5%

Maximum value of SAR (measured) = 15.8 W/kg



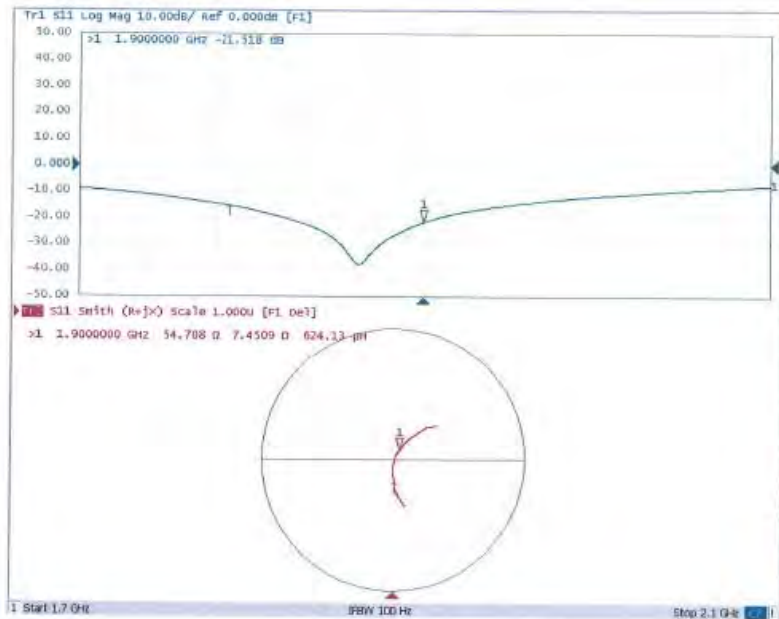
0 dB = 15.8 W/kg = 11.99 dBW/kg

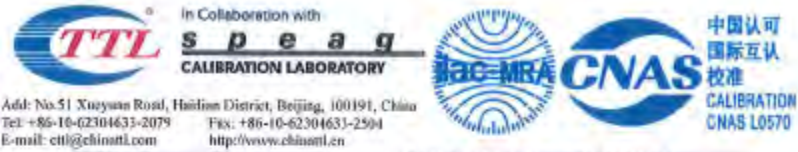




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Impedance Measurement Plot for Head TSL





Client **BACL** Certificate No: **Z20-60412**

CALIBRATION CERTIFICATE			
Object	D2450V2 - SN: 751		
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits		
Calibration date:	October 13, 2020		
<p>This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature(22±3)°C and humidity&lt;70%.</p> <p>Calibration Equipment used (M&amp;TE critical for calibration)</p>			
<b>Primary Standards</b>	<b>ID #</b>	<b>Cal Date(Calibrated by, Certificate No.)</b>	<b>Scheduled Calibration</b>
Power Meter NRP2	106276	12-May-20 (CTTL, No.J20X02965)	May-21
Power sensor NRP6A	101369	12-May-20 (CTTL, No.J20X02965)	May-21
ReferenceProbe EX3DV4	SN 3617	30-Jan-20(SPEAG,No.EX3-3617_Jan20)	Jan-21
D4E4	SN 771	10-Feb-20(CTTL-SPEAG,No.Z20-60017)	Feb-21
<b>Secondary Standards</b>	<b>ID #</b>	<b>Cal Date(Calibrated by, Certificate No.)</b>	<b>Scheduled Calibration</b>
Signal Generator E4438C	MY49071430	25-Feb-20 (CTTL, No.J20X00516)	Feb-21
NetworkAnalyzer E5071C	MY46110673	10-Feb-20 (CTTL, No.J20X00515)	Feb-21
Calibrated by:	Name Zhao Jing	Function SAR Test Engineer	Signature 
Reviewed by:	Name Lin Hao	Function SAR Test Engineer	Signature 
Approved by:	Name QI Dianyuan	Function SAR Project Leader	Signature 
Issued: October 22, 2020			
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#### Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM <sub>x,y,z</sub>
N/A	not applicable or not measured

#### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

#### Additional Documentation:

- DASY4/5 System Handbook

#### Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.



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### Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

### Head TSL parameters

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.0 ± 6 %	1.81 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	---	---

### SAR result with Head TSL

SAR averaged over 1 $cm^3$ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.3 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	53.0 W/kg ± 18.8 % (k=2)
SAR averaged over 10 $cm^3$ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	6.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.4 W/kg ± 18.7 % (k=2)



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#### Appendix (Additional assessments outside the scope of CNAS L0570)

##### Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.6Ω+ 4.03 jΩ
Return Loss	-25.7dB

##### General Antenna Parameters and Design

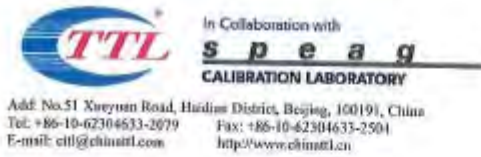
Electrical Delay (one direction)	5.022 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

##### Additional EUT Data

Manufactured by	SPEAG
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**DASY5 Validation Report for Head TSL**

Date: 10.13.2020

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 751**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.809$  S/m;  $\epsilon_0 = 39.02$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Center Section

**DASY5 Configuration:**

- Probe: EX3DV4 - SN3617; ConvF(7.65, 7.65, 7.65) @ 2450 MHz; Calibrated: 2020-01-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn771; Calibrated: 2020-02-10
- Phantom: MFP\_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

**Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm**

Reference Value = 107.1 V/m; Power Drift = -0.04 dB

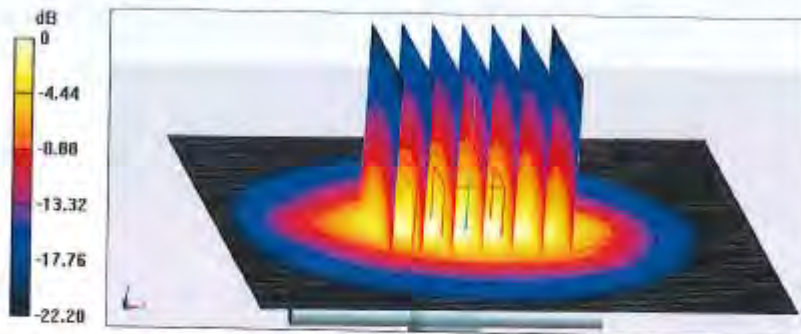
Peak SAR (extrapolated) = 28.1 W/kg

SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.12 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 47.6%

Maximum value of SAR (measured) = 22.7 W/kg

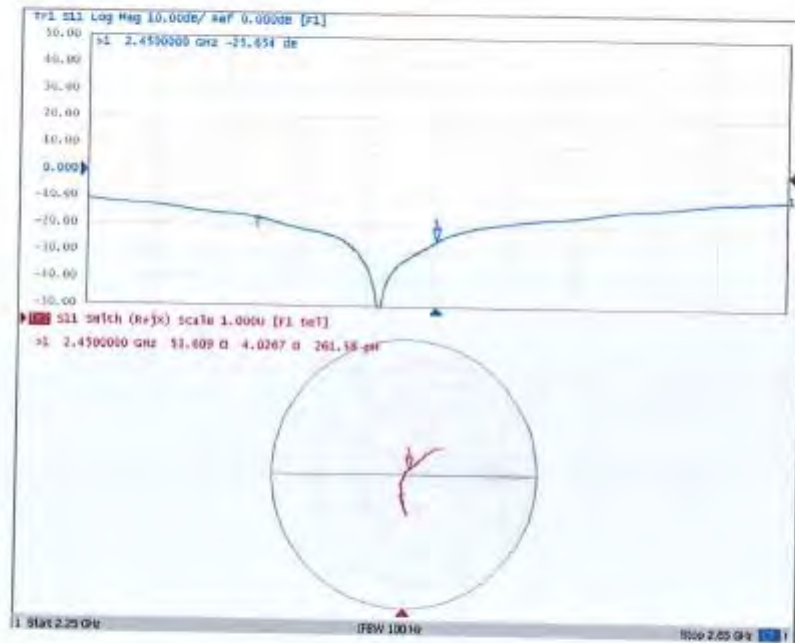


0 dB = 22.7 W/kg = 13.56 dBW/kg



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**Impedance Measurement Plot for Head TSL**



**Calibration Laboratory of  
Schmid & Partner  
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**S** Schweizerischer Kalibrierdienst  
**C** Service suisse d'étalonnage  
**S** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)  
The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **BACL**

Certificate No: **D2600V2-1162\_Oct19**

**CALIBRATION CERTIFICATE**

Object **D2600V2 - SN:1162**

Calibration procedure(s) **QA CAL-05.v11  
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz**

Calibration date: **October 02, 2019**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).  
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	03-Apr-19 (No. 217-02892/02893)	Apr-20
Power sensor NRP-Z91	SN: 103244	03-Apr-19 (No. 217-02892)	Apr-20
Power sensor NRP-Z91	SN: 103245	03-Apr-19 (No. 217-02893)	Apr-20
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-19 (No. 217-02894)	Apr-20
Type-N mismatch combination	SN: 5047.2 / 06327	04-Apr-19 (No. 217-02895)	Apr-20
Reference Probe EX3DV4	SN: 7349	29-May-19 (No. EX3-7349_May19)	May-20
DAE4	SN: 601	30-Apr-19 (No. DAE4-601_Apr19)	Apr-20
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-18)	In house check: Oct-19

Calibrated by:	Name <b>Lelf Klynsner</b>	Function Laboratory Technician	Signature 
Approved by:	Name <b>Katja Pokovic</b>	Function Technical Manager	Signature 

Issued: October 2, 2019

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



**Calibration Laboratory of  
Schmid & Partner  
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**S** Schweizerischer Kalibrierdienst  
**S** Service suisse d'étalonnage  
**C** Servizio svizzero di taratura  
**S** Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

**Glossary:**

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

**Additional Documentation:**

- e) DASY4/5 System Handbook

**Methods Applied and Interpretation of Parameters:**

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.

**Measurement Conditions**

DASY system configuration, as far as not given on page 1.

<b>DASY Version</b>	DASY5	V52.10.2
<b>Extrapolation</b>	Advanced Extrapolation	
<b>Phantom</b>	Modular Flat Phantom	
<b>Distance Dipole Center - TSL</b>	10 mm	with Spacer
<b>Zoom Scan Resolution</b>	dx, dy, dz = 5 mm	
<b>Frequency</b>	2600 MHz $\pm$ 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	<b>Temperature</b>	<b>Permittivity</b>	<b>Conductivity</b>
<b>Nominal Head TSL parameters</b>	22.0 °C	39.0	1.96 mho/m
<b>Measured Head TSL parameters</b>	(22.0 $\pm$ 0.2) °C	37.3 $\pm$ 6 %	2.03 mho/m $\pm$ 6 %
<b>Head TSL temperature change during test</b>	< 0.5 °C	----	----

**SAR result with Head TSL**

<b>SAR averaged over 1 cm<sup>3</sup> (1 g) of Head TSL</b>	Condition	
SAR measured	250 mW input power	14.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>55.4 W/kg <math>\pm</math> 17.0 % (k=2)</b>

<b>SAR averaged over 10 cm<sup>3</sup> (10 g) of Head TSL</b>	condition	
SAR measured	250 mW input power	6.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>24.9 W/kg <math>\pm</math> 16.5 % (k=2)</b>

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL**

Impedance, transformed to feed point	47.4 $\Omega$ - 7.9 j $\Omega$
Return Loss	- 21.4 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.146 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by	SPEAG
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**DASY5 Validation Report for Head TSL**

Date: 02.10.2019

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1162**

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used:  $f = 2600$  MHz;  $\sigma = 2.03$  S/m;  $\epsilon_r = 37.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.69, 7.69, 7.69) @ 2600 MHz; Calibrated: 29.05.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

**Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:**

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 118.6 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 29.0 W/kg

**SAR(1 g) = 14.2 W/kg; SAR(10 g) = 6.31 W/kg**

Maximum value of SAR (measured) = 24.0 W/kg



### Impedance Measurement Plot for Head TSL

