TEST REPORT

Applicant Name:	Shenzhen Youmi Intelligent Technology Co., Ltd.
Address:	406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China
Report Number:	2501P41381E-SAA
FCC ID:	2ATZ4-G9X9863

Test Standard (s)

FCC 47 CFR part 2.1093

Sample Description

Product Type:	Smart phone
Model No.:	PG5FBG9XA
Multiple Model(s) No.:	PG5FBG10X, PG5FBN10X
Trade Mark:	UMIDIGI
Serial Number:	2YHF-1
Date Received:	2025/01/09
Date of Test:	2025/03/17~2025/03/21
Issue Date:	2025/05/07
Test Result:	Pass▲

▲In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Sid Luo

Sid Luo
SAR Engineer

Approved By:

Luke Jiang

Luke Jiang
SAR Engineer

Mode		Max. Reported SAR Level(s) (W/kg)	Limit (W/kg)
GSM 850	1g Head SAR	0.22	1.6
	1g Body SAR	0.25	
GSM 1900	1g Head SAR	0.87	
	1g Body SAR	**0.35**	
WCDMA Band 2	1g Head SAR	0.65	
	1g Body SAR	0.27	
WCDMA Band 5	1g Head SAR	0.23	
	1g Body SAR	0.30	
LTE Band 2	1g Head SAR	0.81	
	1g Body SAR	0.30	
LTE Band 5	1g Head SAR	0.23	
	1g Body SAR	0.30	
LTE Band 7	1g Head SAR	0.67	
	1g Body SAR	0.22	
LTE Band 12	1g Head SAR	0.12	
	1g Body SAR	0.23	
LTE Band 41	1g Head SAR	**1.09**	
	1g Body SAR	0.29	
WIFI 2.4G	1g Head SAR	0.32	
	1g Body SAR	0.08	
Simultaneous	1g Head SAR	**1.41**	
	1g Body SAR	**0.43**	
	1g Body SAR	**0.43(Hotspot)**	

Note:
In this case the EUT(Equipment Under Test) is set 10mm away from the phantom, the test distance is 10mm for body.

<table>
<tr><td rowspan="4">Applicable Standards</td><td>FCC 47 CFR part 2.1093
Radiation exposure evaluation: portable devices</td></tr>
<tr><td>RF Exposure Procedures: TCB WorkshopApril2019</td></tr>
<tr><td>IEEE1528:2013
IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques</td></tr>
<tr><td>KDB procedures
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 SAR test for 3G Devices v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D06 Hotspot Mode v02r01
KDB 248227 D01 802.11 Wi-Fi SAR v02r02</td></tr>
<tr><td colspan="2">Note: 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 FCC 47 CFR part 2.1093 and has been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and RF exposure KDB procedures.
The results and statements contained in this report pertain only to the device(s) evaluated.</td></tr>
</table>

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501P41381E-SAA	Original Report	2025/05/07

EUT DESCRIPTION

This report has been prepared on behalf of **Shenzhen Youmi Intelligent Technology Co., Ltd.** and their product **Smart phone**, Model: **PG5FBG9XA, PG5FBG10X, PG5FBN10X,** Test Model: **PG5FBG9XA,** FCC ID: **2ATZ4-G9X9863** or the EUT (Equipment under Test) as referred to in the rest of this report.

**All measurement and test data in this report was gathered from production sample serial number: 2YHF-1(For Assigned by BACL, Shenzhen).The EUT supplied by the applicant was received on 2025/01/09.*

Technical Specification

EUT Name:	Smart phone
Device Type:	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Body-Worn Accessories:	None
Proximity Sensor:	None
Operation Modes:	GSM Voice, GPRS/EDGE Data WCDMA (R99 (Voice + Data), HSUPA/ HSDPA/HSPA+) FDD-LTE, TDD-LTE, WLAN, Bluetooth
Operation Frequency:	GSM 850:824-849MHz(TX);869-894MHz(RX) GSM 1900:1850-1910MHz(TX);1930-1990MHz(RX) WCDMA Band 2:1850-1910MHz(TX);1930-1990MHz(RX) WCDMA Band 5:824-849MHz(TX);869-894MHz(RX) LTE Band 2:1850-1910MHz(TX);1930-1990MHz(RX) LTE Band 5:824-849MHz(TX);869-894MHz(RX) LTE Band 7:2500-2570MHz(TX);2620-2690MHz(RX) LTE Band 12:699-716MHz(TX);729-746MHz(RX) LTE Band 41:2496-2690MHz(TX);2496-2690MHz(RX) WIFI 2.4G:2412-2462MHz(TX);2412-2462MHz(RX) Bluetooth:2402-2480MHz(TX/RX) BLE_1M:2402-2480MHz(TX/RX)
Dimensions (L*W*H):	167 × 77 × 9 mm (All models)
Rated Input Voltage:	DC3.87V from battery
Normal Operation:	Head and Body
EUT Received Status:	Good
Note: The Multiple models are electrically identical with the test model except for model name and sales channels. Please refer to the declaration letter# for more detail, which was provided by manufacturer.	

REFERENCE, STANDARDS, AND GUILDELINES

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.

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)	**1.6**	8.0
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 maybe 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 for 1g SAR applied to the EUT.

FACILITIES

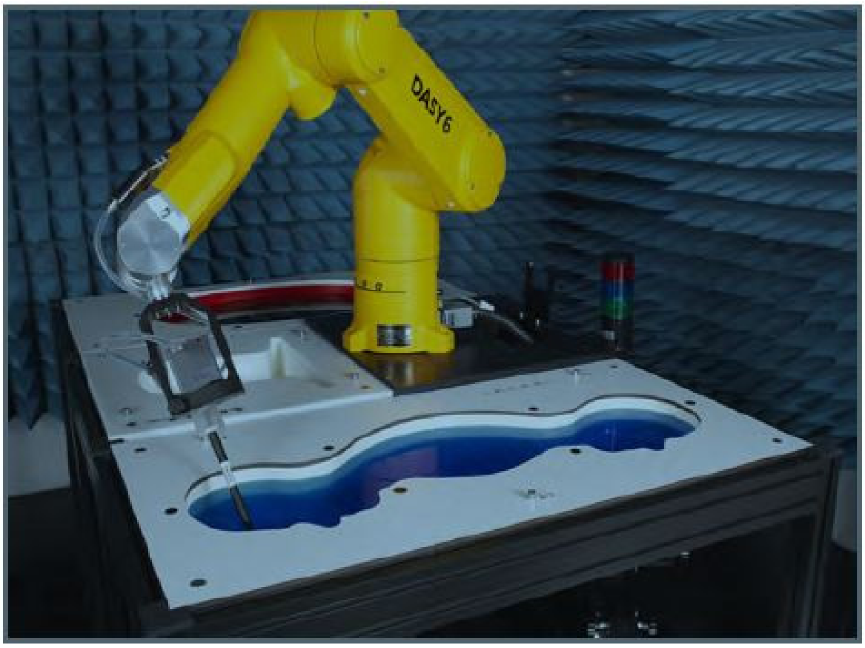
The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect data is located at 5F(B-West) ,6F, 7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 715558, the FCC Designation No.: CN5045.

Each test item follows test standards and with no deviation.

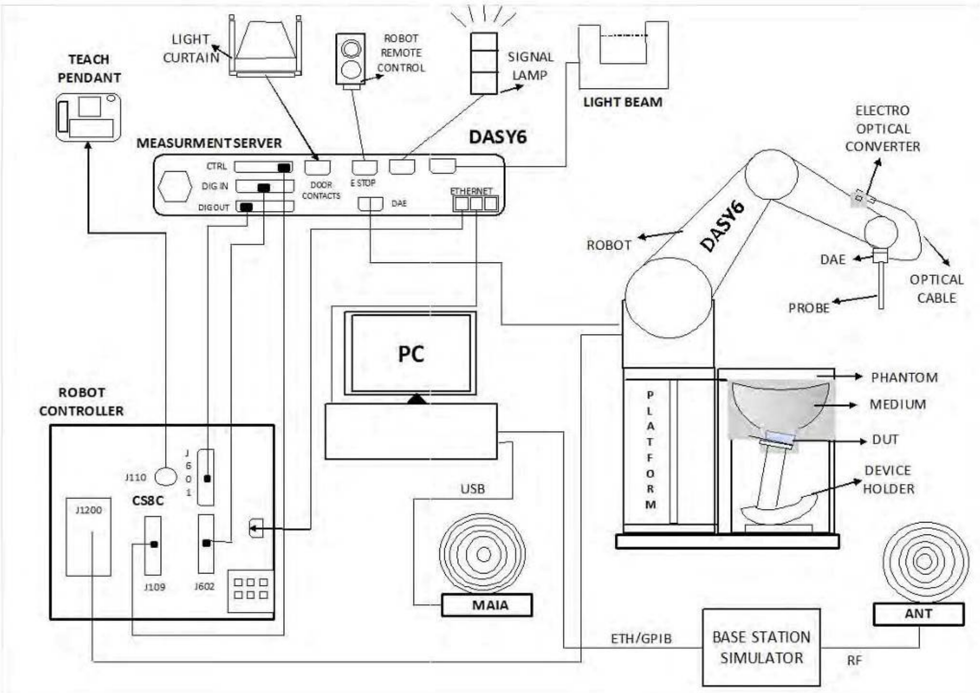
DESCRIPTION OF TEST SYSTEM

These measurements were performed with the automated near-field scanning system DASY6 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:



DASY6 System Description

The DASY6 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.

DASY6 Measurement Server

The DASY6 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.

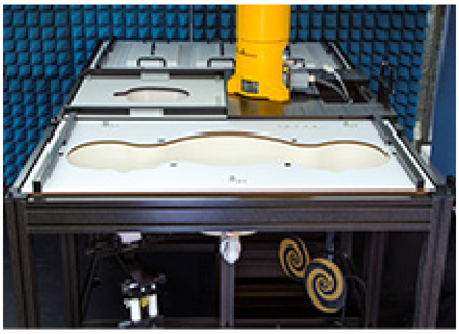
The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

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

EX3DV4 E-Field Probes

Frequency	4 MHz to >10 GHz Linearity: ± 0.2 dB (30 MHz to 10 GHz)
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically< 1 µW/g)
Dimensions	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
Application	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%.
Compatibility	DASY3, DASY4, DASY52 SAR and higher, EASY6, EASY4/MRI

SAM Twin Phantom



The SAM Twin Phantom (shown in front of DASY6) is a fiberglass shell phantom with shell thickness 2 mm, except in the ear region where the thickness is increased to 6 mm. The phantom has three measurement areas: 1) Left Head, 2) Right Head, and 3) Flat Section. For larger devices, the use of the ELI-Phantom (shown behind DASY6) is required. For devices such as glasses with a wireless link, the Face Down Phantom is the most suitable (between the SAM Twin and ELI phantoms).

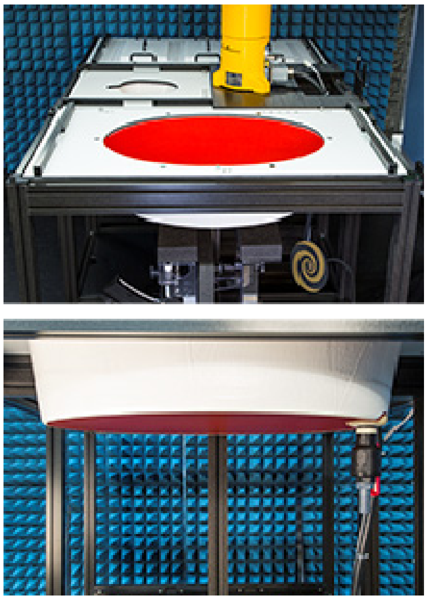
When the phantom is mounted inside allocated slot of the DASY6 platform, phantom reference points can be taught directly in the DASY5 V5.2software. When the DASY6 platform is used to mount the

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.

ELI Phantom



The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30MHz to 6 GHz. ELI is fully compatible with the latest draft of the standard IEEE 1528 and the use of all known tissue simulating liquids. ELI has been optimized for performance and can be integrated into a SPEAG standard phantom table. A cover is provided to prevent evaporation of water and changes in liquid parameters. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points.

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 ELI phantom.

Robots

The DASY6 system uses the high-precision industrial robots TX60L, TX90XL, and RX160L from Staubli SA (France). The TX robot family - the successor of the well-known RX robot family - continues to offer the features important for DASY6 applications:

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

The robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is provided

Calibration Frequency Points for EX3DV4 E-Field Probes SN: 7896 Calibrated: 2024/11/07

Calibration Frequency Point (MHz)	Frequency Range (MHz)		Conversion Factor		
	From	To	X	Y	Z
750 Head	650	810	8.72	9.14	9.15
900 Head	810	1000	8.08	8.47	8.48
1750 Head	1650	1810	7.2	7.55	7.56
1900 Head	1810	2000	6.96	7.29	7.3
2300 Head	2200	2399	6.79	7.12	7.13
2450 Head	2399	2500	6.54	6.85	6.86
2600 Head	2500	2700	6.6	6.92	6.93
3300 Head	3200	3400	5.83	6.12	6.12
3500 Head	3400	3600	5.91	6.19	6.2
3700 Head	3600	3800	5.92	6.2	6.21
3900 Head	3800	4000	5.79	6.07	6.07
5250 Head	5140	5360	4.86	5.09	5.09
5600 Head	5490	5700	4.52	4.74	4.74
5800 Head	5700	5900	4.56	4.78	4.78
6500 Head	5900	7200	4.74	4.96	4.97

SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: 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 15mm2 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.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	$\frac{1}{2}\cdot\delta\cdot\ln(2)$ mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: 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^3 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 5mm,with the side length of the 10g cube is 21.5mm.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details. * When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

Step 4: Power Drift Measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

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 x7 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 IEEE1528:2013

Recommended Tissue Dielectric Parameters for Head liquid

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

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

Equipment's List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52 52.10.4	N/A	NCR	NCR
DASY6 Measurement Server	DASY6 6.0.31	N/A	NCR	NCR
Data Acquisition Electronics	DAE4	1325	2024/10/8	2025/10/7
Dosimetric E-field Probes	EX3DV4	7896	2024/11/7	2025/11/6
Mounting Device	MD4HHTV5	SD 000 H01 KA	NCR	NCR
SAM Twin Phantom	SAM-Twin V8.0	1962	NCR	NCR
Dipole, 750MHz	D750V3	1229	2023/3/24	2026/3/23
Dipole, 900MHz	D900V2	132	2023/9/26	2026/9/25
Dipole, 1900MHz	D1900V2	5d231	2023/2/17	2026/2/16
Dipole, 2450MHz	D2450V2	1103	2023/3/27	2026/3/26
Dipole, 2600MHz	D2600V2	1207	2023/3/27	2026/3/26
Simulated Tissue Liquid Head	HBBL600-10000V6	2200808s-2	Each Time	Each Time
Network Analyzer	E5071C	SER MY46519680	2024/5/21	2025/5/20
Dielectric Assessment Kit	DAK-3.5	1248	NCR	NCR
MXG Analog Signal Generator	N5181A	MY48180408	2024/12/4	2025/12/3
Directional Coupler	855673	3307	NCR	NCR
RF Power Amplifier	5205FE	1014	NCR	NCR
Amplifier	ZVE-8G+	558401902	NCR	NCR
Wideband Radio Communication Tester	CMW500	141718	2024/8/6	2025/8/5
Spectrum Analyzer	FSV40	101942	2024/9/20	2025/9/19
Thermometer	DTM3000	N/A	2024/12/10	2025/12/9
Temperature & Humidity Meter	10316377	N/A	2024/12/10	2025/12/9

Note:

NCR: No Calibration Required.

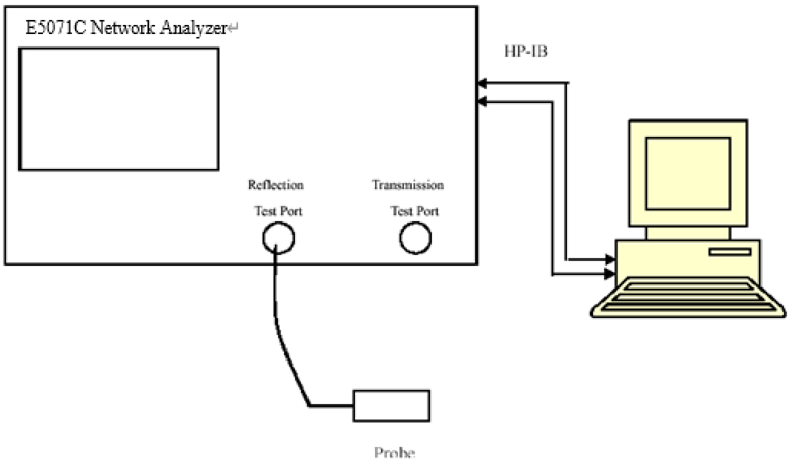
The Dipole calibration methods and procedures used were as detailed in:

FCC KDB Publication Number: "KDB865664 D01 SAR Measurement 100 MHz to 6 GHz"

1. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20dB minimum return-loss requirement.
2. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.
3. The verify result is on APPENDIX E.

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
704	Simulated Tissue Liquid Head	41.861	0.875	42.15	0.89	-0.69	-1.69	±5
707.5	Simulated Tissue Liquid Head	41.838	0.876	42.13	0.89	-0.69	-1.57	±5
711	Simulated Tissue Liquid Head	41.816	0.876	42.11	0.89	-0.70	-1.57	±5
750	Simulated Tissue Liquid Head	41.564	0.881	41.90	0.89	-0.80	-1.01	±5

**Liquid Verification above was performed on2025/03/20*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
824.2	Simulated Tissue Liquid Head	42.547	0.898	41.55	0.90	2.40	-0.22	±5
826.4	Simulated Tissue Liquid Head	42.540	0.900	41.54	0.90	2.41	0.00	±5
836.6	Simulated Tissue Liquid Head	42.511	0.906	41.50	0.90	2.44	0.67	±5
846.6	Simulated Tissue Liquid Head	42.483	0.912	41.50	0.91	2.37	0.22	±5
848.8	Simulated Tissue Liquid Head	42.477	0.913	41.50	0.91	2.35	0.33	±5
900	Simulated Tissue Liquid Head	42.332	0.943	41.50	0.97	2.00	-2.78	±5

**Liquid Verification above was performed on2025/03/17*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
829	Simulated Tissue Liquid Head	41.419	0.904	41.53	0.90	-0.27	0.44	±5
836.5	Simulated Tissue Liquid Head	41.393	0.910	41.50	0.90	-0.26	1.11	±5
844	Simulated Tissue Liquid Head	41.367	0.916	41.50	0.91	-0.32	0.66	±5
900	Simulated Tissue Liquid Head	41.173	0.958	41.50	0.97	-0.79	-1.24	±5

**Liquid Verification above was performed on2025/03/19*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
1850.2	Simulated Tissue Liquid Head	39.329	1.380	40.00	1.40	-1.68	-1.43	±5
1880	Simulated Tissue Liquid Head	39.295	1.380	40.00	1.40	-1.76	-1.43	±5
1900	Simulated Tissue Liquid Head	39.273	1.381	40.00	1.40	-1.82	-1.36	±5
1909.8	Simulated Tissue Liquid Head	39.261	1.381	40.00	1.40	-1.85	-1.36	±5

**Liquid Verification above was performed on2025/03/17*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
1852.4	Simulated Tissue Liquid Head	40.364	1.371	40.00	1.40	0.91	-2.07	±5
1860	Simulated Tissue Liquid Head	40.337	1.371	40.00	1.40	0.84	-2.07	±5
1880	Simulated Tissue Liquid Head	40.263	1.372	40.00	1.40	0.66	-2.00	±5
1900	Simulated Tissue Liquid Head	40.189	1.372	40.00	1.40	0.47	-2.00	±5
1907.6	Simulated Tissue Liquid Head	40.161	1.373	40.00	1.40	0.40	-1.93	±5

**Liquid Verification above was performed on2025/03/18*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
2412	Simulated Tissue Liquid Head	38.338	1.817	39.28	1.77	-2.40	2.66	±5
2437	Simulated Tissue Liquid Head	38.319	1.839	39.23	1.79	-2.32	2.74	±5
2450	Simulated Tissue Liquid Head	38.309	1.850	39.20	1.80	-2.27	2.78	±5
2462	Simulated Tissue Liquid Head	38.300	1.861	39.18	1.81	-2.25	2.82	±5

**Liquid Verification above was performed on2025/03/19*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
2510	Simulated Tissue Liquid Head	39.678	1.807	39.12	1.86	1.43	-2.85	±5
2535	Simulated Tissue Liquid Head	39.662	1.842	39.09	1.89	1.46	-2.54	±5
2560	Simulated Tissue Liquid Head	39.646	1.878	39.05	1.92	1.53	-2.19	±5
2600	Simulated Tissue Liquid Head	39.620	1.936	39.00	1.96	1.59	-1.22	±5

**Liquid Verification above was performed on2025/03/20*

Frequency (MHz)	**Liquid Type**	**Liquid Parameter**		**Target Value**		**Delta (%)**		**Tolerance (%)**
		ε_r	**Ơ (S/m)**	**ε_r**	**Ơ (S/m)**	**$\Delta\varepsilon_r$**	**ΔƠ (S/m)**	
2506	Simulated Tissue Liquid Head	38.634	1.861	39.13	1.86	-1.27	0.05	±5
2549.5	Simulated Tissue Liquid Head	38.615	1.915	39.07	1.91	-1.16	0.26	±5
2593	Simulated Tissue Liquid Head	38.596	1.970	39.01	1.95	-1.06	1.03	±5
2600	Simulated Tissue Liquid Head	38.593	1.978	39.00	1.96	-1.04	0.92	±5
2636.5	Simulated Tissue Liquid Head	38.577	2.024	38.95	2.00	-0.96	1.20	±5
2680	Simulated Tissue Liquid Head	38.558	2.079	38.90	2.05	-0.88	1.41	±5

**Liquid Verification above was performed on2025/03/21*

System Accuracy Verification

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

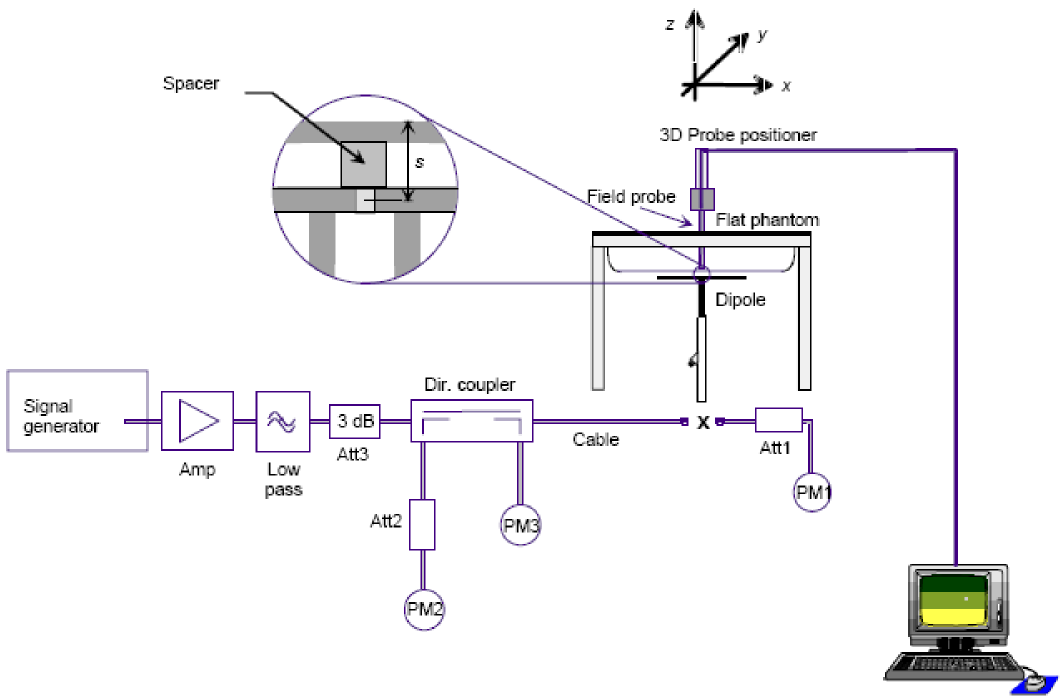
The spacing distance*s* in the **System Verification Setup Block Diagram** is given by the following:

a) s = 15 mm ± 0,2 mm for 300 MHz ≤ f ≤ 1 000 MHz;

b) s = 10 mm ± 0,2 mm for 1 000 MHz < f ≤ 3 000 MHz;

c) s = 10 mm ± 0,2 mm for 3 000 MHz < f ≤ 6 000 MHz.

System Verification Setup Block Diagram



System Accuracy Check Results

Date	Frequency Band (MHz)	Liquid Type	Input Power (mW)	Measured SAR (W/kg)		Normalized to 1W (W/kg)	Target Value (W/Kg)	Delta (%)	Tolerance (%)
2025/03/20	750	Head	100	1g	0.845	8.45	8.41	0.476	±10
2025/03/17	900	Head	100	1g	1.09	10.9	10.8	0.926	±10
2025/03/19	900	Head	100	1g	1.02	10.2	10.8	-5.556	±10
2025/03/17	1900	Head	100	1g	3.86	38.6	39.9	-3.258	±10
2025/03/18	1900	Head	100	1g	3.98	39.8	39.9	-0.251	±10
2025/03/19	2450	Head	100	1g	5.37	53.7	51.7	3.868	±10
2025/03/20	2600	Head	100	1g	5.47	54.7	55.2	-0.906	±10
2025/03/21	2600	Head	100	1g	5.25	52.5	55.2	-4.891	±10

Note:
All the SAR values are normalized to 1Watt forward power.

SAR SYSTEM VALIDATION DATA

System Performance 750 MHz Head was performed on 2025/03/20

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1229

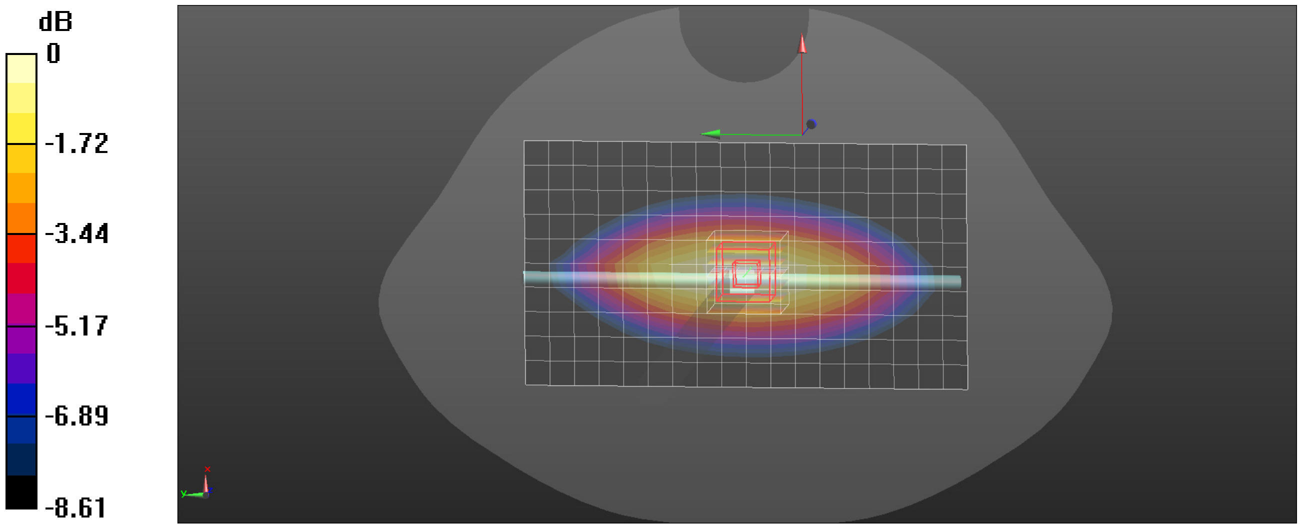
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.881 S/m; ε_r = 41.564; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(8.72, 9.14, 9.15) @ 750 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 750MHz Pin=100mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.02 W/kg

Configuration/Head 750MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 31.81 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.845 W/kg; SAR(10 g) = 0.586 W/kg
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)
Ratio of SAR at M2 to SAR at M1 = 72.7%
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

System Performance 900 MHz Head was performed on 2025/03/17

DUT: Dipole 900 MHz; Type: D900V2; Serial: 132

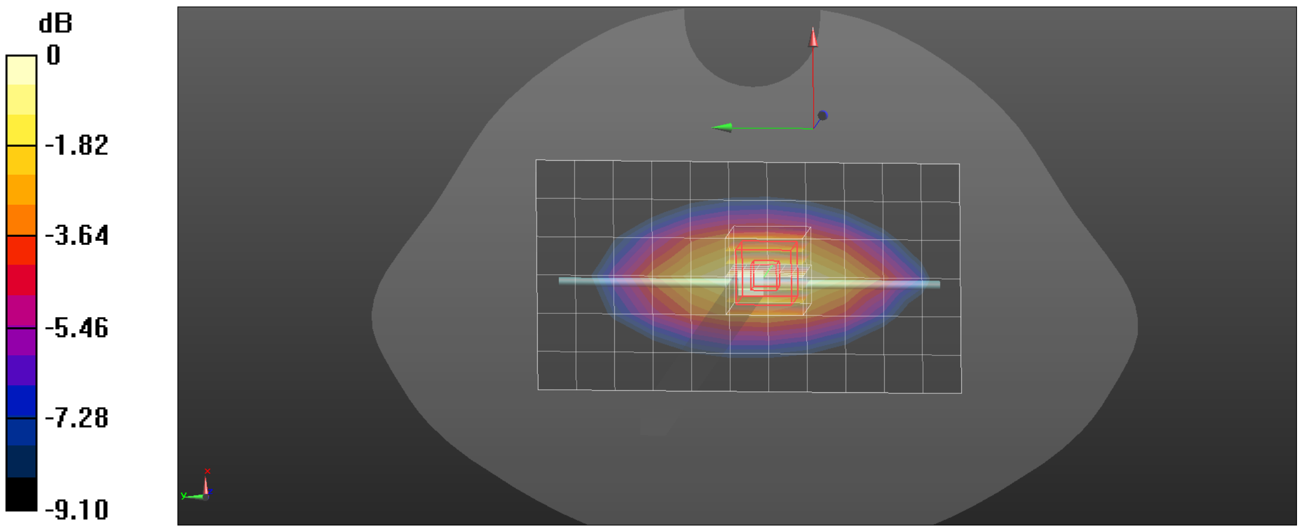
Communication System: UID 0, CW (0); Frequency: 900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.943 S/m; ε_r = 42.332; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(8.08, 8.47, 8.48) @ 900 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 900MHz Pin=100mW/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.33 W/kg

Configuration/Head 900MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 34.72 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.741 W/kg
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)
Ratio of SAR at M2 to SAR at M1 = 72%
Maximum value of SAR (measured) = 1.35 W/kg



0 dB = 1.35 W/kg = 1.30 dBW/kg

System Performance 900 MHz Head was performed on 2025/03/19

DUT: Dipole 900 MHz; Type: D900V2; Serial: 132

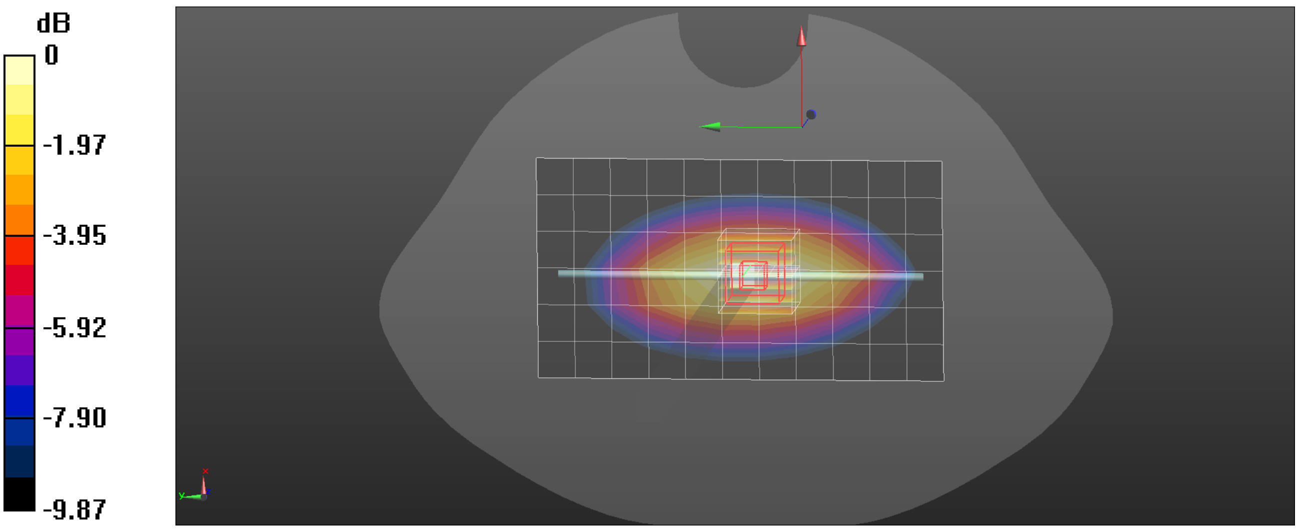
Communication System: UID 0, CW (0); Frequency: 900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.958 S/m; ε_r = 41.173; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(8.08, 8.47, 8.48) @ 900 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 900MHz Pin=100mW/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.39 W/kg

Configuration/Head 900MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 36.02 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.684 W/kg
Smallest distance from peaks to all points 3 dB below = 21.2 mm
Ratio of SAR at M2 to SAR at M1 = 70.5%
Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

System Performance 1900 MHz Head was performed on 2025/03/17

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d231

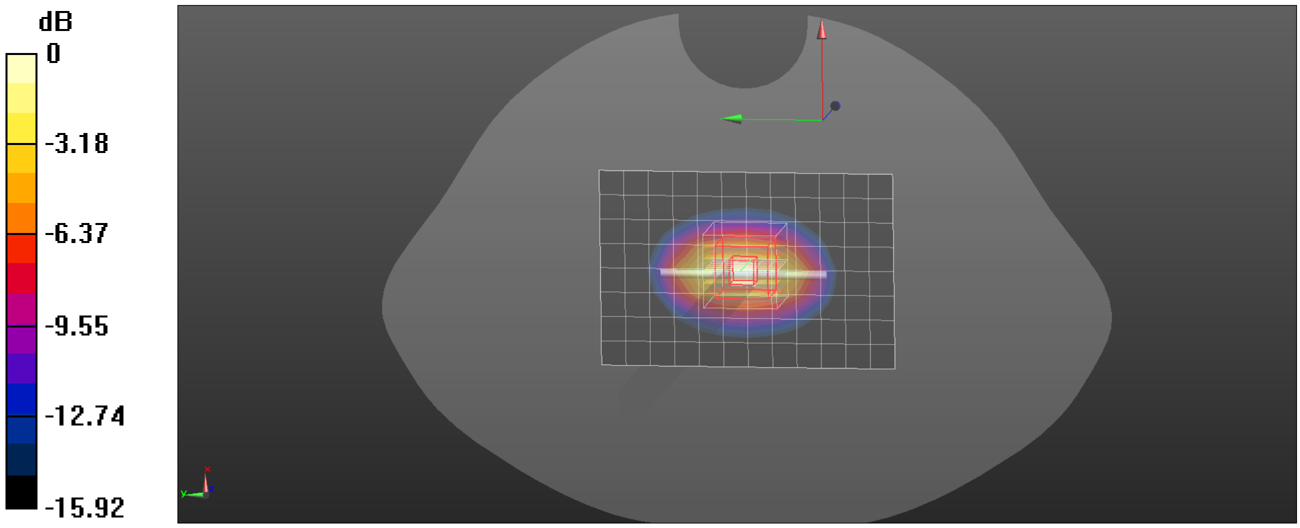
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.381 S/m; ε_r = 39.273; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(6.96, 7.29, 7.3) @ 1900 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 1900MHz Pin=100mW/Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 5.41 W/kg

Configuration/Head 1900MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.26 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 6.69 W/kg
SAR(1 g) = 3.86 W/kg; SAR(10 g) = 2.08 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 58.4%
Maximum value of SAR (measured) = 5.78 W/kg



0 dB = 5.78 W/kg = 7.62 dBW/kg

System Performance 1900 MHz Head was performed on 2025/03/18

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d231

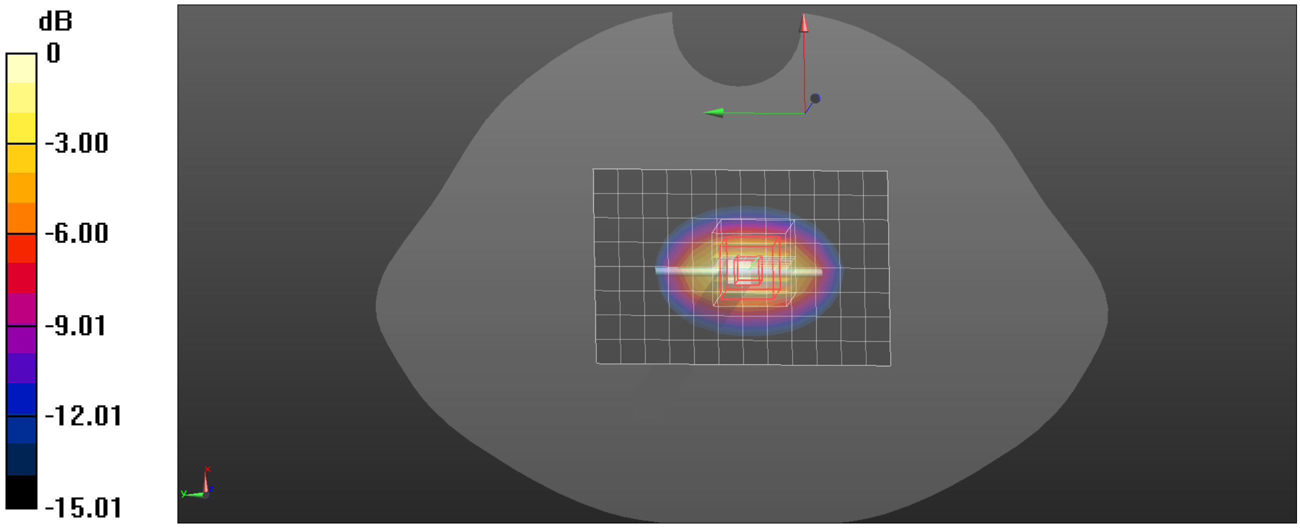
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.372 S/m; ε_r = 40.189; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(6.96, 7.29, 7.3) @ 1900 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 1900MHz Pin=100mW/Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 5.92 W/kg

Configuration/Head 1900MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.78 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 6.43 W/kg
SAR(1 g) = 3.98 W/kg; SAR(10 g) = 2.19 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 61.8%
Maximum value of SAR (measured) = 5.68 W/kg



0 dB = 5.68 W/kg = 7.54 dBW/kg

System Performance 2450 MHz Head was performed on 2025/03/19

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 1103

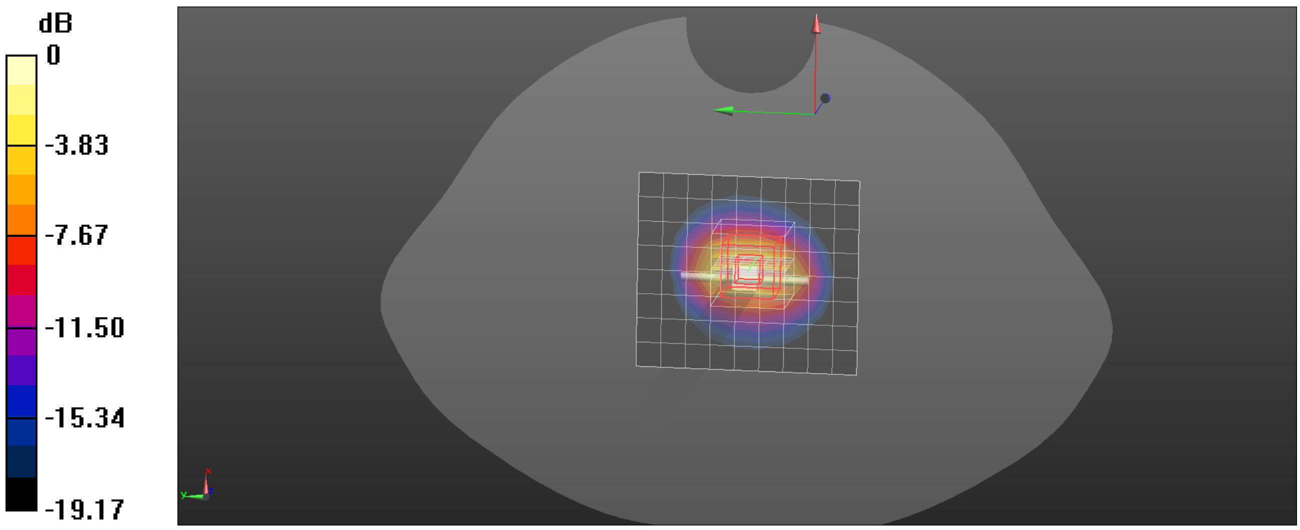
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.85 S/m; ε_r = 38.309; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(6.54, 6.85, 6.86) @ 2450 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 2450MHz Pin=100mW/Area Scan (9x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.32 W/kg

Configuration/Head 2450MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.11 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 9.64 W/kg
SAR(1 g) = 5.37 W/kg; SAR(10 g) = 2.65 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 56.5%
Maximum value of SAR (measured) = 8.32 W/kg



0 dB = 8.32 W/kg = 9.20 dBW/kg

System Performance 2600 MHz Head was performed on 2025/03/20

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1207

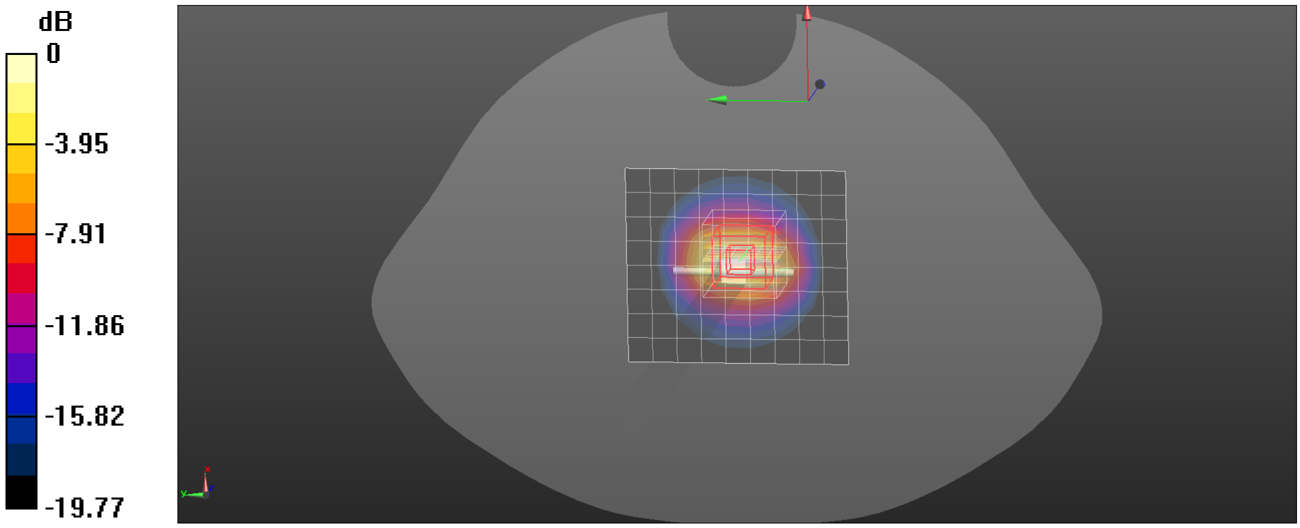
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.936 S/m; ε_r = 39.62; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(6.6, 6.92, 6.93) @ 2600 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 2600MHz Pin=100mW/Area Scan (9x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.26 W/kg

Configuration/Head 2600MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.02 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 10.1 W/kg
SAR(1 g) = 5.47 W/kg; SAR(10 g) = 2.63 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 55%
Maximum value of SAR (measured) = 8.60 W/kg



0 dB = 8.60 W/kg = 9.34 dBW/kg

System Performance 2600 MHz Head was performed on 2025/03/21

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1207

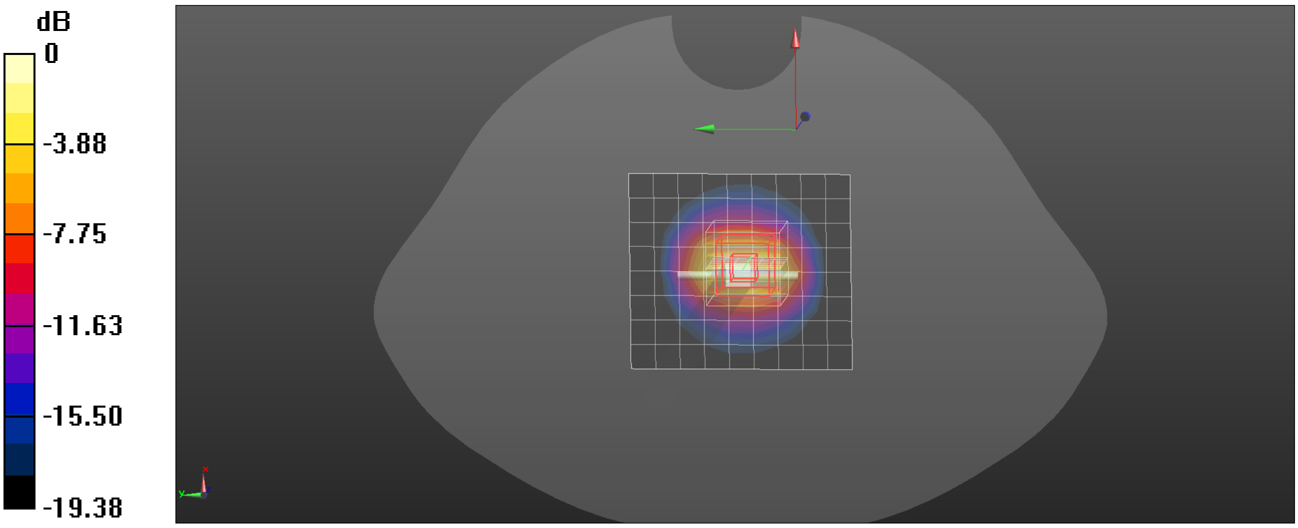
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; $\sigma = 1.978$ S/m; $\varepsilon_r = 38.593$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7896; ConvF(6.6, 6.92, 6.93) @ 2600 MHz; Calibrated: 11/7/2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 10/8/2024
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Head 2600MHz Pin=100mW/Area Scan (9x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.13 W/kg

Configuration/Head 2600MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.24 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 9.57 W/kg
SAR(1 g) = 5.25 W/kg; SAR(10 g) = 2.56 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 55.9%
Maximum value of SAR (measured) = 8.25 W/kg



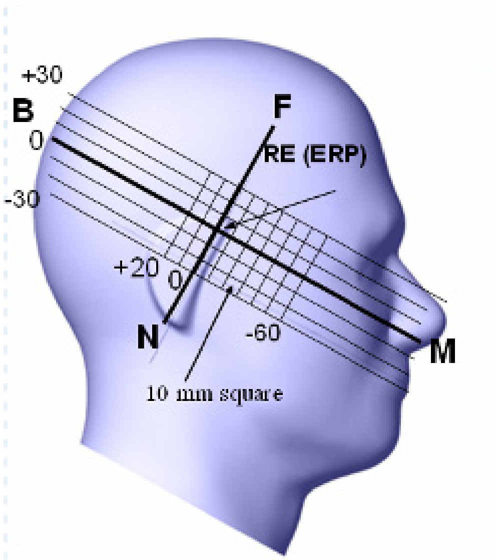
0 dB = 8.25 W/kg = 9.16 dBW/kg

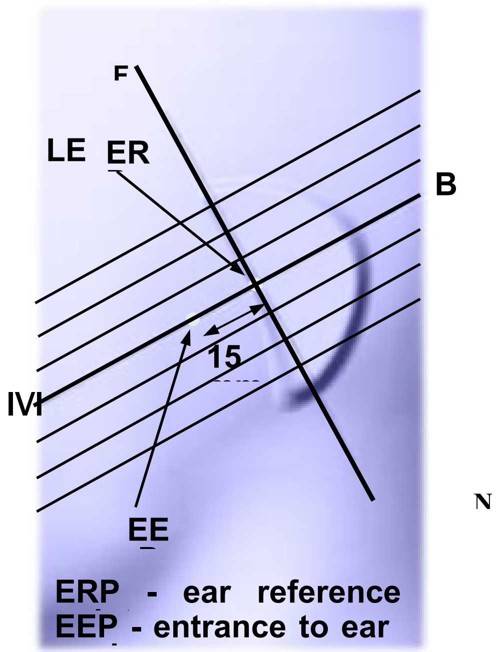
EUT TEST STRATEGY AND METHODOLOGY

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:

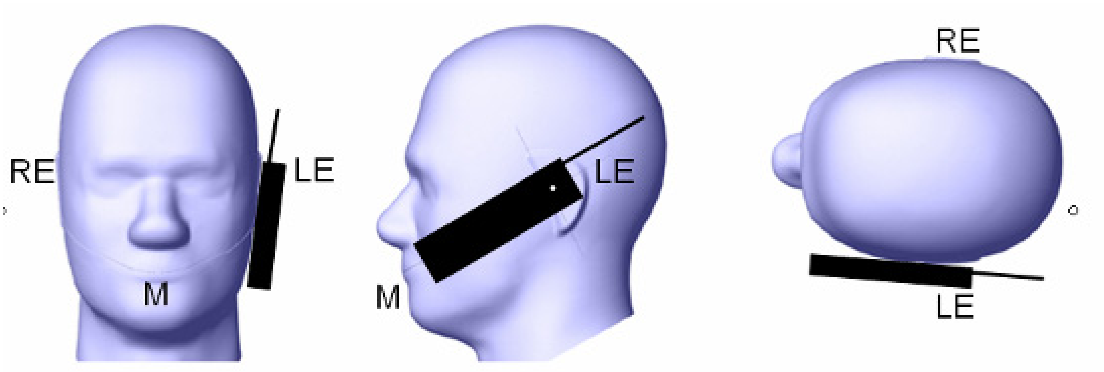




Cheek/Touch Position

1. 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.
2. This test position is established:
    3. When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
    4. (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.
5. 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

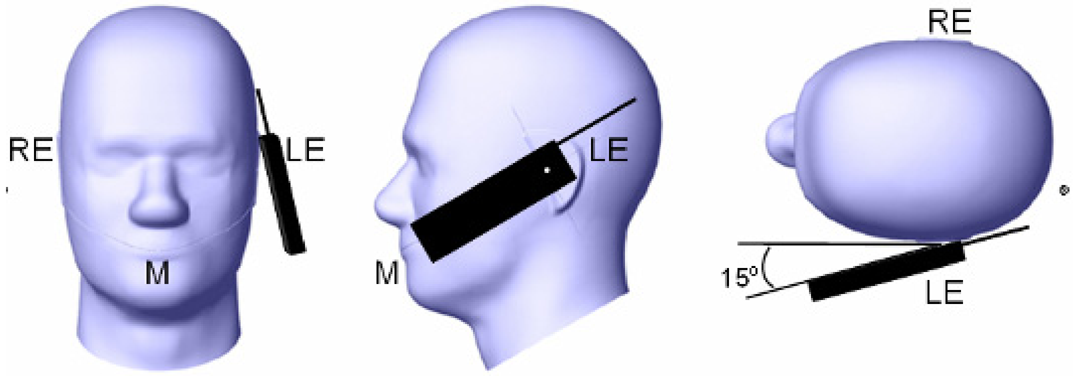
With the handset aligned in the "Cheek/Touch Position":

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 isby 15 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.

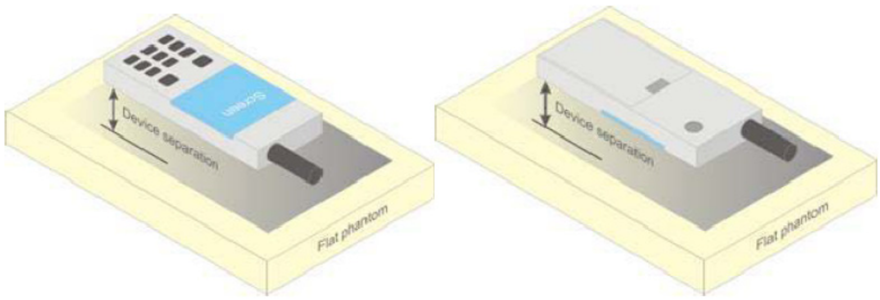


Figure 5 – Test positions for body-worn devices

Test Distance for SAR Evaluation

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

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.

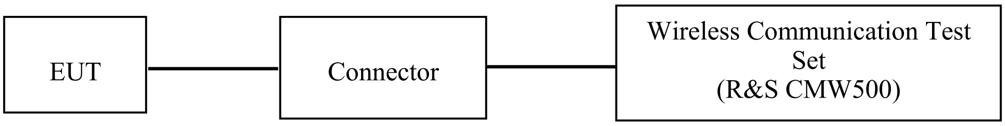
All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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

Test Procedure

The RF output of the transmitter was connected to the input of the Wireless Communication Test Set through Connector.



GSM/WCDMA/LTE

The RF output of the transmitter was connected to the input of the Spectrum Analyzer.

Bluetooth/BLE/WLAN

Description of Test Configuration

EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in each operation mode.
Equipment Modifications:	No
EUT Exercise Software:	No

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 stabe)
BCCH Channel > choose desire 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).

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_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
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d(SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs=βhs/ βc	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**
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{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
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs=β_{hs}/ β_c	30/15				
HSUPA Specific Settings	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_FCls	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 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	β_c *(Note3)*	β_d	β_{HS} *(Note1)*	β_{ec}	β_{ed} ***(2xSF2)*** *(Note 4)*	β_{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	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_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 β_c is set to 1 and β_d = 0 by default.
Note 4: β_{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 6.2.2-1due 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	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 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	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	N/A
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	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	≥ 2	≤ 1
			10, 15, 20	≥ 1	≤ 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	-	-	-	-	-

TDD-LTE

LTE TDD Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

We used configuration 0 for LTE Band 41 SAR test, that is 63.33%(1:1.58)for duty cycle.

Maximum Target Output Power

Max Target Power(dBm)			
Mode/Band	Channel		
	Low	Middle	High
GSM 850	32.5	32.5	32.5
GPRS 1 TX Slot	32.5	32.5	32.5
GPRS 2 TX Slot	30.5	30.5	30.5
GPRS 3 TX Slot	28.5	28.5	28.5
GPRS 4 TX Slot	26.5	26.5	26.5
EDGE 1 TX Slot	24.5	24.5	25
EDGE 2 TX Slot	24	24	24
EDGE 3 TX Slot	22	22	22
EDGE 4 TX Slot	19	19	19.5
GSM 1900	29	29	29
GPRS 1 TX Slot	29	28.5	28.5
GPRS 2 TX Slot	26.5	26.5	26.5
GPRS 3 TX Slot	25	25	25
GPRS 4 TX Slot	23	23	23
EDGE 1 TX Slot	25	25	24.5
EDGE 2 TX Slot	23.5	23.5	23.5
EDGE 3 TX Slot	21	21	21.5
EDGE 4 TX Slot	19.5	19	19
WCDMA Band 2	22.5	22.5	22.5
HSDPA	22	22	22
HSUPA	22.5	22.5	22.5
HSPA+	22	22	22
WCDMA Band 5	22.5	22.5	22.5
HSDPA	21.5	21	21.5
HSUPA	22.5	21.5	22.5
HSPA+	22	21.5	22
LTE Band 2	24	24	24
LTE Band 5	23.5	23.5	23.5
LTE Band 7	23.8	23.8	23.8
LTE Band 12	24.5	24.5	24.5
LTE Band 41	25	25	25
WIFI 2.4G(802.11b)	12	11	11
WIFI 2.4G(802.11g)	7.5	8.5	8.5
WIFI 2.4G(802.11 n20)	9.5	9.5	9.5
BT (GFSK)	-3	0.5	0
BT (π/4-DQPSK)	-1.5	2	1.5
BT (8DPSK)	-1	2	2
BLE 1M	-2	-1	-2

Note: The Maximum Target Power for LTE band corresponds to their maximum power in QPSK modes with maximum bandwidth.

Test Results

GSM:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	32.06
	190	836.6	32.28
	251	848.8	**32.33**
GSM 1900	512	1850.2	28.32
	661	1880	28.51
	810	1909.8	**28.63**

GPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	32.18	30.22	28.32	26.32
	190	836.6	**32.28**	30.19	28.40	26.37
	251	848.8	32.09	30.27	28.32	26.28
GSM 1900	512	1850.2	**28.68**	26.26	24.60	22.66
	661	1880	28.37	26.18	24.65	22.84
	810	1909.8	28.49	26.15	24.59	22.71

EDGE:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	24.45	23.77	21.67	18.91
	190	836.6	24.45	23.63	21.55	18.89
	251	848.8	**24.80**	23.72	21.87	19.22
GSM 1900	512	1850.2	**24.86**	23.26	20.80	19.25
	661	1880	24.83	22.32	20.91	18.73
	810	1909.8	24.46	23.08	21.05	18.68

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 GSM

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	23.06
	190	836.6	23.28
	251	848.8	**23.33**
GSM 1900	512	1850.2	19.32
	661	1880	19.51
	810	1909.8	**19.63**

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	23.18	24.22	24.07	23.32
	190	836.6	23.28	24.19	24.15	23.37
	251	848.8	23.09	**24.27**	24.07	23.28
GSM 1900	512	1850.2	19.68	20.26	20.35	19.66
	661	1880	19.37	20.18	**20.40**	19.84
	810	1909.8	19.49	20.15	20.34	19.71

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	15.45	**17.77**	17.42	15.91
	190	836.6	15.45	17.63	17.30	15.89
	251	848.8	15.80	17.72	17.62	16.22
GSM 1900	512	1850.2	15.86	**17.26**	16.55	16.25
	661	1880	15.83	16.32	16.66	15.73
	810	1909.8	15.46	17.08	16.80	15.68

Note:
1. Rohde & Schwarz Radio Communication Tester (CMW500) 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).
4. For EGPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 6(850 MHz band) and 5(1900 MHz band).
5. According to KDB941225 D01-SAR for EGPRS mode are not required when the source-based time-averaged output power for data mode is lower than that in the normal GPRS mode.

WCDMA:

WCDMA Band 2:

Test Mode	Conducted Average Output Power(dBm)		
	Lowest Channel	Middle Channel	Highest Channel
WCDMA	22.37	22.39	**22.46**
HSDPA Subset 1	21.72	21.40	21.72
HSDPA Subset 2	21.41	21.56	21.36
HSDPA Subset 3	21.63	21.67	21.52
HSDPA Subset 4	21.26	21.40	21.26
HSUPA Subset 1	21.93	22.02	21.78
HSUPA Subset 2	21.86	22.07	21.77
HSUPA Subset 3	21.72	22.00	21.71
HSUPA Subset 4	21.79	21.95	21.84
HSUPA Subset 5	21.87	21.89	21.67
HSPA+	21.73	21.78	21.56

WCDMA Band 5:

Test Mode	Conducted Average Output Power(dBm)		
	Lowest Channel	Middle Channel	Highest Channel
WCDMA	21.61	21.38	**21.96**
HSDPA Subset 1	21.26	20.47	20.94
HSDPA Subset 2	20.91	20.28	21.21
HSDPA Subset 3	20.73	20.18	20.88
HSDPA Subset 4	20.51	20.14	20.85
HSUPA Subset 1	21.87	21.28	21.87
HSUPA Subset 2	21.89	21.10	21.77
HSUPA Subset 3	21.88	21.14	21.92
HSUPA Subset 4	21.89	21.15	21.93
HSUPA Subset 5	21.86	21.27	21.87
HSPA+	21.94	21.14	21.93

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 All 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	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	22.72	22.63	23.05
		RB1#3	22.78	22.53	23.18
		RB1#5	22.90	22.72	23.07
		RB3#0	22.70	22.72	22.94
		RB3#1	22.70	22.75	22.96
		RB3#3	22.71	22.73	23.07
		RB6#0	21.72	21.89	21.94
	16QAM	RB1#0	22.28	22.22	22.83
		RB1#3	22.36	22.24	22.67
		RB1#5	22.28	22.11	22.76
		RB3#0	22.18	21.85	22.12
		RB3#1	22.10	21.86	22.08
		RB3#3	22.11	21.85	22.27
		RB6#0	20.87	20.71	20.98
3M	QPSK	RB1#0	22.78	22.64	22.80
		RB1#8	22.82	22.67	23.69
		RB1#14	23.02	22.69	23.79
		RB8#0	21.81	21.62	22.35
		RB8#4	21.84	21.80	22.54
		RB8#7	21.76	21.71	22.56
		RB15#0	21.87	21.77	22.62
	16QAM	RB1#0	23.24	21.67	23.79
		RB1#8	23.33	21.93	23.71
		RB1#14	23.22	21.85	23.69
		RB8#0	21.08	20.71	21.63
		RB8#4	21.22	20.86	21.70
		RB8#7	21.15	21.40	21.49
		RB15#0	20.82	20.95	21.68
5M	QPSK	RB1#0	23.71	23.35	23.51
		RB1#12	23.62	23.29	23.70
		RB1#24	23.69	23.27	23.52
		RB12#0	22.50	22.36	22.44
		RB12#7	22.53	22.43	22.51
		RB12#13	22.34	22.37	22.54
		RB25#0	22.45	22.43	22.61
	16QAM	RB1#0	23.03	22.44	23.29
		RB1#12	23.03	22.41	23.51
		RB1#24	23.00	22.43	23.58
		RB12#0	21.49	21.44	21.50
		RB12#7	21.56	21.51	21.59
		RB12#13	21.55	21.50	21.64
		RB25#0	21.71	21.79	21.73

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	23.73	23.44	23.64
		RB1#25	23.65	23.35	23.70
		RB1#49	23.72	23.33	23.64
		RB25#0	22.55	22.48	22.39
		RB25#12	22.31	22.38	22.36
		RB25#25	22.33	22.37	22.56
		RB50#0	22.37	22.51	22.44
	16QAM	RB1#0	23.36	22.87	23.74
		RB1#25	23.22	22.91	23.64
		RB1#49	23.23	22.74	23.78
		RB25#0	21.54	21.58	21.72
		RB25#12	21.59	21.63	21.65
		RB25#25	21.56	21.63	21.76
		RB50#0	21.68	21.52	21.58
15M	QPSK	RB1#0	23.72	23.64	23.62
		RB1#37	23.65	23.64	23.58
		RB1#74	23.61	23.46	23.75
		RB36#0	22.42	22.32	22.47
		RB36#20	22.55	22.21	22.43
		RB36#39	22.51	22.40	22.62
		RB75#0	22.34	22.32	22.31
	16QAM	RB1#0	23.32	23.79	23.59
		RB1#37	23.25	23.77	23.65
		RB1#74	23.18	23.65	23.76
		RB36#0	21.62	21.61	21.64
		RB36#20	21.73	21.43	21.64
		RB36#39	21.58	21.56	21.79
		RB75#0	21.50	21.53	21.59
20M	QPSK	RB1#0	23.48	23.44	23.55
		RB1#49	23.45	23.41	23.69
		RB1#99	23.38	23.50	**23.82**
		RB50#0	22.86	22.83	22.85
		RB50#24	22.99	22.81	22.81
		RB50#50	22.72	22.94	22.85
		RB100#0	22.68	22.79	22.75
	16QAM	RB1#0	23.31	22.61	23.43
		RB1#49	23.21	22.56	23.52
		RB1#99	23.22	22.59	23.36
		RB50#0	21.51	21.43	21.67
		RB50#24	21.60	21.51	21.55
		RB50#50	21.52	21.33	21.72
		RB100#0	21.35	21.58	21.59

LTE Band 5:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	22.44	23.13	23.06
		RB1#3	22.30	23.05	23.02
		RB1#5	22.30	22.91	23.03
		RB3#0	22.10	23.16	23.22
		RB3#1	22.26	23.18	23.29
		RB3#3	22.16	22.95	23.09
		RB6#0	21.52	21.91	22.05
	16QAM	RB1#0	22.95	22.42	23.26
		RB1#3	23.07	22.45	23.25
		RB1#5	22.90	22.53	23.28
		RB3#0	21.80	21.83	22.26
		RB3#1	21.68	22.00	22.36
		RB3#3	21.82	21.91	22.17
		RB6#0	20.36	21.23	21.09
3M	QPSK	RB1#0	23.24	23.10	23.04
		RB1#8	23.16	23.12	22.97
		RB1#14	23.15	23.11	22.98
		RB8#0	22.03	21.83	22.08
		RB8#4	22.21	21.90	22.16
		RB8#7	21.98	21.94	21.98
		RB15#0	22.15	22.04	22.01
	16QAM	RB1#0	23.29	22.83	23.20
		RB1#8	23.27	22.80	23.25
		RB1#14	23.30	22.92	23.22
		RB8#0	21.45	20.93	20.88
		RB8#4	21.38	20.99	20.95
		RB8#7	21.18	21.09	21.05
		RB15#0	21.28	21.06	21.15
5M	QPSK	RB1#0	23.26	23.01	23.19
		RB1#12	23.21	23.01	23.09
		RB1#24	23.12	22.95	23.09
		RB12#0	22.23	21.88	21.99
		RB12#7	22.04	21.87	22.01
		RB12#13	22.04	21.90	22.16
		RB25#0	22.01	21.90	22.11
	16QAM	RB1#0	22.64	22.78	22.46
		RB1#12	22.41	22.73	22.46
		RB1#24	22.54	22.65	22.34
		RB12#0	21.12	21.06	21.05
		RB12#7	21.02	21.00	21.20
		RB12#13	20.93	20.98	20.94
		RB25#0	21.15	21.24	21.10

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	23.21	23.01	23.25
		RB1#25	23.13	22.97	23.22
		RB1#49	**23.31**	23.05	**23.31**
		RB25#0	22.68	22.76	22.63
		RB25#12	22.45	22.66	22.56
		RB25#25	22.55	22.64	22.47
		RB50#0	22.08	22.06	22.10
	16QAM	RB1#0	22.84	22.68	23.27
		RB1#25	22.80	22.51	23.11
		RB1#49	22.62	22.63	23.29
		RB25#0	21.09	21.14	20.92
		RB25#12	21.07	21.23	21.19
		RB25#25	21.08	21.11	20.95
		RB50#0	21.02	21.02	21.13

LTE Band 7:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	RB1#0	23.07	23.28	23.27
		RB1#12	23.00	23.22	23.21
		RB1#24	23.11	23.35	22.64
		RB12#0	21.91	22.43	22.34
		RB12#7	22.04	22.39	22.37
		RB12#13	22.14	22.32	22.13
		RB25#0	22.02	22.35	22.37
	16QAM	RB1#0	22.75	23.00	22.38
		RB1#12	22.66	23.03	22.76
		RB1#24	22.71	23.03	22.10
		RB12#0	21.28	21.39	21.35
		RB12#7	21.16	21.55	21.37
		RB12#13	21.22	21.49	21.36
		RB25#0	21.31	21.75	21.56
10M	QPSK	RB1#0	22.82	23.27	23.30
		RB1#25	23.00	23.35	23.34
		RB1#49	23.30	23.34	23.29
		RB25#0	22.05	22.32	22.43
		RB25#12	22.07	22.41	22.42
		RB25#25	21.97	22.37	22.53
		RB50#0	22.24	22.44	22.37
	16QAM	RB1#0	22.73	23.26	22.84
		RB1#25	22.91	23.25	22.89
		RB1#49	23.13	23.23	22.75
		RB25#0	21.13	21.55	21.65
		RB25#12	21.30	21.72	21.51
		RB25#25	21.22	21.58	21.51
		RB50#0	21.41	21.52	21.51
15M	QPSK	RB1#0	23.09	23.34	23.34
		RB1#37	23.21	23.32	23.26
		RB1#74	23.29	23.28	23.19
		RB36#0	22.14	22.27	22.40
		RB36#20	21.96	22.34	22.17
		RB36#39	22.16	22.26	22.19
		RB75#0	22.00	22.46	22.36
	16QAM	RB1#0	23.25	23.14	23.29
		RB1#37	23.28	23.16	23.35
		RB1#74	23.32	23.08	23.08
		RB36#0	21.19	21.55	21.57
		RB36#20	21.36	21.70	21.61
		RB36#39	21.24	21.70	21.52
		RB75#0	21.21	21.45	21.62

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
20M	QPSK	RB1#0	23.14	23.11	23.33
		RB1#49	23.04	23.12	23.35
		RB1#99	23.07	23.22	**23.36**
		RB50#0	22.92	23.02	22.80
		RB50#24	22.84	22.97	22.77
		RB50#50	22.88	22.93	22.84
		RB100#0	22.35	22.40	22.44
	16QAM	RB1#0	22.63	23.23	23.04
		RB1#49	22.59	23.28	23.01
		RB1#99	22.70	23.35	22.97
		RB50#0	21.23	21.63	21.62
		RB50#24	21.34	21.67	21.74
		RB50#50	21.38	21.62	21.60
		RB100#0	21.25	21.46	21.65

LTE Band 12:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	23.73	23.77	23.65
		RB1#3	23.98	23.86	23.72
		RB1#5	23.87	23.72	23.72
		RB3#0	23.76	23.82	23.95
		RB3#1	23.85	23.82	23.75
		RB3#3	23.75	23.84	23.79
		RB6#0	22.76	22.73	22.78
	16QAM	RB1#0	23.51	23.19	23.99
		RB1#3	23.35	23.27	23.45
		RB1#5	23.50	23.27	23.18
		RB3#0	22.81	22.61	22.97
		RB3#1	22.89	22.78	22.99
		RB3#3	22.83	22.75	22.91
		RB6#0	21.82	21.85	21.94
3M	QPSK	RB1#0	23.77	23.87	23.72
		RB1#8	23.80	23.83	23.83
		RB1#14	23.88	23.78	23.87
		RB8#0	22.64	22.78	22.75
		RB8#4	22.67	22.59	22.70
		RB8#7	22.78	22.67	22.70
		RB15#0	22.80	22.72	22.86
	16QAM	RB1#0	23.38	23.25	24.00
		RB1#8	23.48	23.22	23.98
		RB1#14	23.44	23.15	23.51
		RB8#0	21.84	21.65	21.66
		RB8#4	21.97	21.82	21.77
		RB8#7	21.91	21.81	21.74
		RB15#0	21.73	21.69	21.84
5M	QPSK	RB1#0	23.78	23.66	23.65
		RB1#12	23.86	23.41	23.90
		RB1#24	23.79	23.50	23.18
		RB12#0	22.83	22.89	22.83
		RB12#7	22.67	22.75	22.91
		RB12#13	22.67	22.74	22.72
		RB25#0	22.72	22.62	22.84
	16QAM	RB1#0	23.47	23.12	22.94
		RB1#12	23.45	23.03	23.09
		RB1#24	23.45	23.14	22.97
		RB12#0	21.67	21.79	21.65
		RB12#7	21.71	21.83	21.66
		RB12#13	21.68	21.77	21.84
		RB25#0	21.81	21.73	22.05

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	23.77	23.92	23.79
		RB1#25	23.99	23.75	23.94
		RB1#49	**24.03**	23.98	23.87
		RB25#0	23.41	23.41	23.38
		RB25#12	23.28	23.43	23.32
		RB25#25	23.43	23.51	23.27
		RB50#0	23.19	23.16	23.12
	16QAM	RB1#0	24.01	23.42	23.66
		RB1#25	23.49	23.67	23.81
		RB1#49	23.50	23.56	23.49
		RB25#0	21.98	22.00	21.78
		RB25#12	21.95	21.97	21.71
		RB25#25	21.94	21.86	21.87
		RB50#0	21.70	21.72	21.81

LTE Band 41:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	2549.5 MHz	Middle Channel (dBm)	2636.5 MHz	High Channel (dBm)
5M	QPSK	RB1#0	24.50	24.24	23.99	23.73	23.46
		RB1#12	24.69	24.31	23.92	23.66	23.40
		RB1#24	24.62	24.34	24.06	23.74	23.42
		RB12#0	23.46	23.35	23.24	22.84	22.43
		RB12#7	23.40	23.24	23.07	22.78	22.49
		RB12#13	23.46	23.20	22.93	22.66	22.38
		RB25#0	23.34	23.21	23.08	22.71	22.34
	16QAM	RB1#0	24.48	23.93	23.37	23.16	22.94
		RB1#12	24.34	23.71	23.08	23.00	22.92
		RB1#24	24.41	23.76	23.11	22.98	22.85
		RB12#0	22.66	22.49	22.33	21.99	21.66
		RB12#7	22.48	22.34	22.19	21.92	21.64
		RB12#13	22.58	22.37	22.16	21.90	21.63
		RB25#0	22.76	22.53	22.29	21.94	21.58
10M	QPSK	RB1#0	23.87	24.11	24.34	24.12	23.89
		RB1#25	24.09	24.17	24.25	24.13	24.02
		RB1#49	24.02	24.12	24.22	24.02	23.81
		RB25#0	23.48	23.46	23.44	23.03	22.61
		RB25#12	23.45	23.49	23.53	23.15	22.77
		RB25#25	23.05	23.19	23.32	23.04	22.76
		RB50#0	23.12	23.24	23.36	23.10	22.83
	16QAM	RB1#0	24.12	24.17	24.22	23.76	23.30
		RB1#25	24.65	24.45	24.24	23.70	23.15
		RB1#49	24.69	24.44	24.18	23.73	23.28
		RB25#0	22.75	22.62	22.48	22.18	21.87
		RB25#12	22.70	22.53	22.36	22.13	21.91
		RB25#25	22.38	22.40	22.42	22.23	22.03
		RB50#0	22.74	22.70	22.66	22.34	22.02
15M	QPSK	RB1#0	24.14	24.23	24.32	24.06	23.80
		RB1#37	24.19	24.30	24.40	24.10	23.81
		RB1#74	24.25	24.25	24.25	24.08	23.90
		RB36#0	23.11	23.27	23.42	23.12	22.82
		RB36#20	23.10	23.15	23.19	22.93	22.67
		RB36#39	23.13	23.24	23.34	22.98	22.62
		RB75#0	23.00	23.17	23.34	23.01	22.68
	16QAM	RB1#0	23.86	24.15	24.44	23.92	23.40
		RB1#37	23.99	24.05	24.10	23.71	23.32
		RB1#74	23.15	23.59	24.02	23.67	23.31
		RB36#0	22.13	22.37	22.61	22.23	21.85
		RB36#20	22.31	22.40	22.49	22.14	21.79
		RB36#39	22.34	22.41	22.48	22.07	21.66
		RB75#0	22.25	22.38	22.50	22.16	21.82

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	2549.5 MHz	Middle Channel (dBm)	2636.5 MHz	High Channel (dBm)
20M	QPSK	RB1#0	24.36	24.52	24.68	24.24	23.81
		RB1#49	24.54	24.51	24.47	24.16	23.85
		RB1#99	**24.76**	24.53	24.29	24.03	23.77
		RB50#0	23.45	23.38	23.31	23.07	23.07
		RB50#24	23.49	23.47	23.45	23.13	23.01
		RB50#50	23.45	23.37	23.29	23.04	23.07
		RB100#0	23.40	23.34	23.28	23.07	23.01
	16QAM	RB1#0	22.94	23.38	23.82	23.37	22.92
		RB1#49	23.35	23.48	23.60	23.28	22.96
		RB1#99	23.79	23.60	23.41	23.19	22.96
		RB50#0	22.76	22.71	22.66	22.26	21.85
		RB50#24	22.83	22.73	22.63	22.27	21.90
		RB50#50	22.66	22.61	22.55	22.19	21.83
		RB100#0	22.54	22.42	22.31	22.12	21.92

WLAN: 2.4G

Mode	Channel frequency (MHz)	Data Rate	Duty cycle (%)	RF Output Power (dBm)
802.11b	2412	1Mbps	99.30	**11.74**
	2437			10.56
	2462			10.88
802.11g	2412	6Mbps	96.86	6.90
	2437			8.24
	2462			8.21
802.11 n20	2412	MCS0	96.65	9.36
	2437			8.83
	2462			8.57

Note: Duty cycle data for 2.4G WLAN, please refer to FCC ID: 2ATZ4-G9X9863, RF report of 2501P41381E-RFC, issued by Bay Area Compliance Laboratories Corp.(Shenzhen).

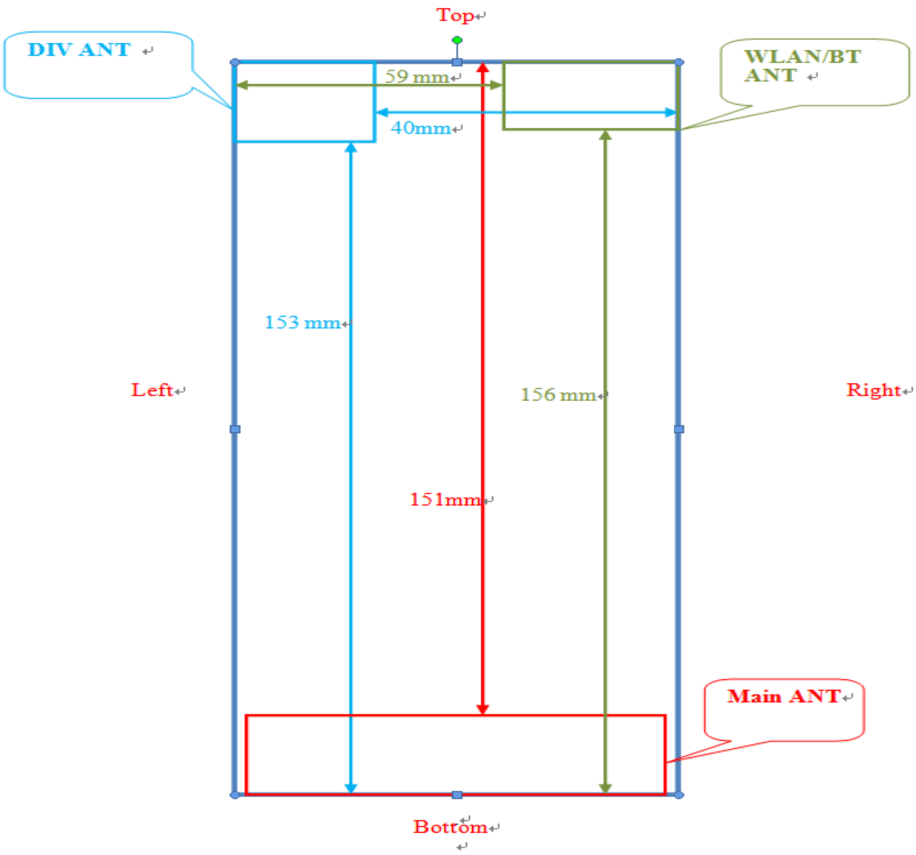
Bluetooth:

Mode	Channel frequency (MHz)	Duty cycle (%)	RF Output Power (dBm)
GFSK	2402	/	-3.30
	2441		0.21
	2480		-0.37
π/4-DQPSK	2402	/	-1.59
	2441		**1.97**
	2480		1.42
8DPSK	2402	/	-1.10
	2441		1.84
	2480		1.59
BLE 1M	2402	86.38	-2.14
	2440		-1.30
	2480		-2.11

Note: Duty cycle data for BLE 1M, please refer to FCC ID: 2ATZ4-G9X9863, RF report of 2501P41381E-RFA issued by Bay Area Compliance Laboratories Corp.(Shenzhen).

STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

Antennas Location:



EUT Front View

Antenna	Description
Main	GSM 850, WCDMA B5 LTE B5/12
DIV	GSM 1900, WCDMA B2 LTE B2/7/41
WLAN/BT	2.4G Wi-Fi Bluetooth, BLE

Antenna Distance To Edge(TRX)

Antenna Distance To Edge(mm)						
Antenna	**Front**	**Back**	**Left**	**Right**	**Top**	**Bottom**
Main	< 5	< 5	< 5	< 5	151	< 5
DIV	< 5	< 5	< 5	40	< 5	153
WLAN/BT	< 5	< 5	59	< 5	< 5	156

Standalone SAR test exclusion considerations

Mode	Frequency (MHz)	Power (dBm)	Power (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
WIFI 2.4G	2462	12	15.85	0	5.0	3	NO
BT	2480	2.0	1.58	0	0.5	3	YES

Note: *The 2.4G Wi-Fi based average power for calculation, The Bluetooth based peak power for calculation.*

NOTE:

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

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·
[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤7.5 for 10-g extremity SAR, where

1. f(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.

According to KDB 447498 D01 General RF Exposure Guidance v06, clause 4.3. General SAR test exclusion guidance:

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

1) For test separation distances> 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/f(MHz))]

2) For test separation distances≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½

3) SAR measurement procedures are not established below 100 MHz.

SAR test exclusion for the EUT edge considerations Result

Mode	Front	Back	Left	Right	Top	Bottom
Main	**Required**	**Required**	**Required**	**Required**	Exclusion	**Required**
DIV	**Required**	**Required**	**Required**	Exclusion	**Required**	Exclusion
WIFI	**Required**	**Required**	Exclusion	**Required**	**Required**	Exclusion

Note:

Required: The distance to Edge is less than 25mm, testing is required.
Exclusion: The distance to Edge is more than 25 mm, testing is not required.
Exclusion*: SAR test exclusion evaluation has been done above.

Standalone SAR estimation:

Mode	Frequency (MHz)	Power (dBm)	Power (dBm)	Distance (mm)	Estimated (W/kg)
BT Head	2480	2.0	1.58	0	0.07@1g
BT Body	2480	2.0	1.58	10	0.03@1g

Note: *The Bluetooth based peak power for calculation.*

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:
[(max. power of channel, including tune-up tolerance , mW)/(min. test separation distance,mm)] ·
[√f(GHz)/x]
W/kg for test separation distances ≤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.

Extremity Exposure Considerations

Per KDB 648474 D04 Handset SAR v01r03, this device is considered a “Phablet” since the diagonal dimension is >160mm and < 200mm, when hotspot mode applies, extremity SAR is required only for the surfaces and edges with hotspot mode scaled to the maximum output power (with tolerance is 1g SAR > 1.2W/kg)

Extremity Exposure Condition		
Worst Mode	**Hotspot SAR value**	**Extremity Condition Test**
GSM 1900	0.35W/kg	Exclusion

SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetry evaluation.

Test Results:

Environmental Conditions

Temperature:	20.9 ~ 21.7℃	19.9 ~ 21.7℃	20.5 ~ 22.1℃	20.2 ~ 22.1℃	20.4 ~ 21.9℃
Relative Humidity:	31 ~ 38%	34 ~ 47%	41 ~ 58%	42 ~ 62%	45 ~ 64%
ATM Pressure:	101.1 kPa	101.4 kPa	100.8 kPa	101.3 kPa	101.6 kPa
Test Date:	*2025/03/17*	*2025/03/18*	*2025/03/19*	*2025/03/20*	*2025/03/21*

** Testing was performed by Bob Lu, Calvin Li and Sid Luo.*

GSM 850 (Main):

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	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.164	0.18	/
	848.8	GPRS	/	/	/	/	/	/
Head Left Tilt	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.096	0.10	/
	848.8	GPRS	/	/	/	/	/	/
Head Right Cheek	824.2	GPRS	30.22	30.5	1.067	0.158	0.17	/
	836.6	GPRS	30.19	30.5	1.074	0.183	0.20	/
	848.8	GPRS	30.27	30.5	1.054	0.208	**0.22**	1#
Head Right Tilt	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.103	0.11	/
	848.8	GPRS	/	/	/	/	/	/
Body Front (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.169	0.18	/
	848.8	GPRS	/	/	/	/	/	/
Body Back (10mm)	824.2	GPRS	30.22	30.5	1.067	0.151	0.16	/
	836.6	GPRS	30.19	30.5	1.074	0.213	0.23	/
	848.8	GPRS	30.27	30.5	1.054	0.233	**0.25**	2#
Body Left (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.126	0.14	/
	848.8	GPRS	/	/	/	/	/	/
Body Right (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.137	0.15	/
	848.8	GPRS	/	/	/	/	/	/
Body Bottom (10mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	30.19	30.5	1.074	0.033	0.04	/
	848.8	GPRS	/	/	/	/	/	/

The data above was performed on2025/03/17

Note:
1. When the 1-g SAR is ≤ 0.8W/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.
6. The max. time based average power of GSM/GPRS/EGPRS mode was selected to SAR testing.

GSM 1900 (DIV):

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	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.401	0.43	/
	1909.8	GPRS	/	/	/	/	/	/
Head Left Tilt	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.446	0.48	/
	1909.8	GPRS	/	/	/	/	/	/
Head Right Cheek	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.614	0.67	/
	1909.8	GPRS	/	/	/	/	/	/
Head Right Tilt	1850.2	GPRS	24.6	25.0	1.096	0.770	0.84	/
	1880	GPRS	24.65	25.0	1.084	0.780	0.85	/
	1909.8	GPRS	24.59	25.0	1.099	0.795	**0.87**	3#
Body Front (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.146	0.16	/
	1909.8	GPRS	/	/	/	/	/	/
Body Back (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.248	0.27	/
	1909.8	GPRS	/	/	/	/	/	/
Body Left (10mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	25.0	1.084	0.055	0.06	/
	1909.8	GPRS	/	/	/	/	/	/
Body Top (10mm)	1850.2	GPRS	24.6	25.0	1.096	0.269	0.29	/
	1880	GPRS	24.65	25.0	1.084	0.297	0.32	/
	1909.8	GPRS	24.59	25.0	1.099	0.321	**0.35**	4#

The data above was performed on2025/03/17

Note:
1. When the 1-g SAR is ≤ 0.8W/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, 2DL+3UL is the worst case.
6. The max. time based average power of GSM/GPRS/EGPRS mode was selected to SAR testing.

WCDMA Band 2 (DIV):

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	22.39	22.5	1.026	0.383	0.39	/
	1907.6	RMC	/	/	/	/	/	/
Head Left Tilt	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.39	22.5	1.026	0.434	0.45	/
	1907.6	RMC	/	/	/	/	/	/
Head Right Cheek	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.39	22.5	1.026	0.478	0.49	/
	1907.6	RMC	/	/	/	/	/	/
Head Right Tilt	1852.4	RMC	22.37	22.5	1.030	0.618	0.64	/
	1880	RMC	22.39	22.5	1.026	0.633	0.65	/
	1907.6	RMC	22.46	22.5	1.009	0.648	**0.65**	5#
Body Front (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.39	22.5	1.026	0.132	0.14	/
	1907.6	RMC	/	/	/	/	/	/
Body Back (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.39	22.5	1.026	0.198	0.20	/
	1907.6	RMC	/	/	/	/	/	/
Body Left (10mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	22.39	22.5	1.026	0.043	0.05	/
	1907.6	RMC	/	/	/	/	/	/
Body Top (10mm)	1852.4	RMC	22.37	22.5	1.030	0.242	0.25	/
	1880	RMC	22.39	22.5	1.026	0.243	0.25	/
	1907.6	RMC	22.46	22.5	1.009	0.267	**0.27**	6#

The data above was performed on2025/03/18

WCDMA Band 5 (Main):

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	21.38	22.5	1.294	0.151	0.20	/
	846.6	RMC	/	/	/	/	/	/
Head Left Tilt	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.094	0.12	/
	846.6	RMC	/	/	/	/	/	/
Head Right Cheek	826.4	RMC	21.61	22.5	1.227	0.184	**0.23**	7#
	836.6	RMC	21.38	22.5	1.294	0.166	0.21	/
	846.6	RMC	21.96	22.5	1.132	0.180	0.20	/
Head Right Tilt	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.096	0.12	/
	846.6	RMC	/	/	/	/	/	/
Body Front (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.161	0.21	/
	846.6	RMC	/	/	/	/	/	/
Body Back (10mm)	826.4	RMC	21.61	22.5	1.227	0.243	**0.30**	8#
	836.6	RMC	21.38	22.5	1.294	0.198	0.26	/
	846.6	RMC	21.96	22.5	1.132	0.211	0.24	/
Body Left (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.161	0.21	/
	846.6	RMC	/	/	/	/	/	/
Body Right (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.174	0.23	/
	846.6	RMC	/	/	/	/	/	/
Body Bottom (10mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	21.38	22.5	1.294	0.041	0.05	/
	846.6	RMC	/	/	/	/	/	/

The data above was performed on2025/03/17

Note:
1. When the 1-g SAR is≤ 0.8W/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 All 1.
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 ¼ 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 (DIV):

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	23.5	24.0	1.122	0.390	0.44	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.316	0.41	/
Head Left Tilt	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.5	24.0	1.122	0.430	0.49	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.343	0.44	/
Head Right Cheek	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.5	24.0	1.122	0.606	0.68	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.481	0.62	/
Head Right Tilt	1860	20	1RB	23.48	24.0	1.127	0.694	0.79	/
	1880	20	1RB	23.5	24.0	1.122	0.719	**0.81**	9#
	1900	20	1RB	23.82	24.0	1.042	0.764	0.80	/
	1880	20	50%RB	22.94	24.0	1.276	0.597	0.77	/
	1880	20	100%RB	22.79	24.0	1.321	0.597	0.79	/
Body Front (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.5	24.0	1.122	0.158	0.18	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.124	0.16	/
Body Back (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.5	24.0	1.122	0.235	0.27	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.190	0.25	/
Body Left (10mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	23.5	24.0	1.122	0.067	0.08	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	22.94	24.0	1.276	0.051	0.07	/
Body Top (10mm)	1860	20	1RB	23.48	24.0	1.127	0.257	0.29	/
	1880	20	1RB	23.5	24.0	1.122	0.262	**0.30**	10#
	1900	20	1RB	23.82	24.0	1.042	0.267	0.28	/
	1880	20	50%RB	22.94	24.0	1.276	0.209	0.27	/

The data above was performed on2025/03/18

LTE Band 5 (Main):

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	23.05	23.5	1.109	0.185	0.21	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.163	0.20	/
Head Left Tilt	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.122	0.14	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.103	0.13	/
Head Right Cheek	829	10	1RB	23.31	23.5	1.045	0.187	0.20	/
	836.5	10	1RB	23.05	23.5	1.109	0.201	**0.23**	11#
	844	10	1RB	23.31	23.5	1.045	0.209	0.22	/
	836.5	10	50%RB	22.76	23.5	1.186	0.174	0.21	/
Head Right Tilt	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.113	0.13	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.106	0.13	/
Body Front (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.185	0.21	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.176	0.21	/
Body Back (10mm)	829	10	1RB	23.31	23.5	1.045	0.261	0.28	/
	836.5	10	1RB	23.05	23.5	1.109	0.259	0.29	/
	844	10	1RB	23.31	23.5	1.045	0.278	**0.30**	12#
	836.5	10	50%RB	22.76	23.5	1.186	0.227	0.27	/
Body Left (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.178	0.20	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.172	0.21	/
Body Right (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.194	0.22	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.179	0.22	/
Body Bottom (10mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	23.05	23.5	1.109	0.043	0.05	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	22.76	23.5	1.186	0.038	0.05	/

The data above was performed on2025/03/19

LTE Band 7 (DIV):

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	23.22	23.8	1.143	0.328	0.38	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.294	0.36	/
Head Left Tilt	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.22	23.8	1.143	0.426	0.49	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.391	0.47	/
Head Right Cheek	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.22	23.8	1.143	0.519	0.60	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.498	0.60	/
Head Right Tilt	2510	20	1RB	23.14	23.8	1.164	0.484	0.57	/
	2535	20	1RB	23.22	23.8	1.143	0.579	**0.67**	13#
	2560	20	1RB	23.36	23.8	1.107	0.428	0.48	/
	2535	20	50%RB	23.02	23.8	1.197	0.539	0.65	/
Body Front (10mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.22	23.8	1.143	0.095	0.11	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.085	0.11	/
Body Back (10mm)	2510	20	1RB	23.14	23.8	1.164	0.181	**0.22**	14#
	2535	20	1RB	23.22	23.8	1.143	0.151	0.18	/
	2560	20	1RB	23.36	23.8	1.107	0.178	0.20	/
	2535	20	50%RB	23.02	23.8	1.197	0.139	0.17	/
Body Left (10mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.22	23.8	1.143	0.013	0.02	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.012	0.02	/
Body Top (10mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	23.22	23.8	1.143	0.151	0.18	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	23.02	23.8	1.197	0.138	0.17	/

The data above was performed on2025/03/20

LTE Band 12 (Main):

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	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.092	0.11	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.079	0.10	/
Head Left Tilt	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.057	0.07	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.051	0.07	/
Head Right Cheek	704	10	1RB	24.03	24.5	1.114	0.089	0.10	/
	707.5	10	1RB	23.98	24.5	1.127	0.092	0.11	/
	711	10	1RB	23.94	24.5	1.138	0.100	**0.12**	15#
	707.5	10	50%RB	23.51	24.5	1.256	0.079	0.10	/
Head Right Tilt	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.050	0.06	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.044	0.06	/
Body Front (10mm)	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.131	0.15	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.063	0.08	/
Body Back (10mm)	704	10	1RB	24.03	24.5	1.114	0.170	0.19	/
	707.5	10	1RB	23.98	24.5	1.127	0.177	0.20	/
	711	10	1RB	23.94	24.5	1.138	0.200	**0.23**	16#
	707.5	10	50%RB	23.51	24.5	1.256	0.124	0.16	/
Body Left (10mm)	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.160	0.19	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.139	0.18	/
Body Right (10mm)	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.154	0.18	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.132	0.17	/
Body Bottom (10mm)	704	10	1RB	/	/	/	/	/	/
	707.5	10	1RB	23.98	24.5	1.127	0.012	0.02	/
	711	10	1RB	/	/	/	/	/	/
	707.5	10	50%RB	23.51	24.5	1.256	0.011	0.02	/

The data above was performed on2025/03/20

LTE Band 41 (DIV):

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	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	24.68	25.0	1.076	0.465	0.50	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	23.45	25.0	1.429	0.333	0.48	/
Head Left Tilt	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	24.68	25.0	1.076	0.503	0.54	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	23.45	25.0	1.429	0.362	0.52	/
Head Right Cheek	2506	20	1RB	24.76	25.0	1.057	0.693	0.73	/
	2549.5	20	1RB	24.53	25.0	1.114	0.692	0.77	/
	2593	20	1RB	24.68	25.0	1.076	0.709	0.76	/
	2636.5	20	1RB	24.24	25.0	1.191	0.812	0.97	/
	2680	20	1RB	23.85	25.0	1.303	0.590	0.77	/
	2506	20	50%RB	23.49	25.0	1.416	0.500	0.71	/
	2549.5	20	50%RB	23.47	25.0	1.422	0.494	0.70	/
	2593	20	50%RB	23.45	25.0	1.429	0.504	0.72	/
	2636.5	20	50%RB	23.13	25.0	1.538	0.569	0.88	/
	2680	20	50%RB	23.07	25.0	1.560	0.421	0.66	/
	2593	20	100%RB	23.28	25.0	1.486	0.557	0.83	/
Head Right Tilt	2506	20	1RB	24.76	25.0	1.057	0.915	0.97	/
	2549.5	20	1RB	24.53	25.0	1.114	0.839	0.93	/
	2593	20	1RB	24.68	25.0	1.076	0.901	0.97	/
	2636.5	20	1RB	24.24	25.0	1.191	0.911	**1.09**	17#
	2680	20	1RB	23.85	25.0	1.303	0.769	1.00	/
	2506	20	50%RB	23.49	25.0	1.416	0.651	0.92	/
	2549.5	20	50%RB	23.47	25.0	1.422	0.599	0.85	/
	2593	20	50%RB	23.45	25.0	1.429	0.641	0.92	/
	2636.5	20	50%RB	23.13	25.0	1.538	0.633	0.97	/
	2680	20	50%RB	23.07	25.0	1.560	0.529	0.83	/
	2506	20	100%RB	23.4	25.0	1.445	0.652	0.94	/
Body Front (10mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	24.68	25.0	1.076	0.150	0.16	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	23.45	25.0	1.429	0.109	0.16	/
Body Back (10mm)	2506	20	1RB	24.76	25.0	1.057	0.228	0.24	/
	2549.5	20	1RB	24.53	25.0	1.114	0.215	0.24	/
	2593	20	1RB	24.68	25.0	1.076	0.241	0.26	/
	2636.5	20	1RB	24.24	25.0	1.191	0.242	**0.29**	18#
	2680	20	1RB	23.85	25.0	1.303	0.204	0.27	/
	2593	20	50%RB	23.45	25.0	1.429	0.170	0.24	/

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
Body Left (10mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	24.68	25.0	1.076	0.032	0.04	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	23.45	25.0	1.429	0.024	0.03	/
Body Top (10mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	24.68	25.0	1.076	0.210	0.23	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	23.45	25.0	1.429	0.150	0.21	/

The data above was performed on2025/03/21

Note:

1.The frequency range of LTE Band 41 is 2496~ 2690MHz. Per KDB 447498 D01, according to the following formula Calculate Nc is 5.

2.KDB procedures *the following should be applied to determine the number of required test channels. The test channels should be evenly spread across the transmission frequency band of each wireless mode.*

$N_c = Round\{[100(f_{high} - f_{low})/f_c]^{0.5} \times (f_c/100)^{0.2}\}$,

where

- N_c is the number of test channels,rounded to nearest integer,
- f_{high} and f_{low} are the highest and lowest channel frequencies within the transmission band,
- f_c is the mid-band channel frequency,
- all frequencies are in MHz.

3. The power class 3 used for LTE Band 41 SAR testing.

Note:

1. When the 1-g SAR is ≤ 0.8W/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 v02r05.
3. KDB 941225 D05 -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. KDB 941225 D05 -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. KDB 941225 D05 - 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 ≤ 0.8 W/kg.
6. KDB 941225 D05 - 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. KDB 941225 D05 - other channel bandwidths SAR test is required when the highest maximum output power of a configuration requiring testing in the smaller hannel 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.

WIFI 2.4G (WIFI):

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)				
					Scaled Factor	Duty cycle Factor	Meas. SAR	Scaled SAR	Plot
Head Left Cheek	2412	802.11b	11.74	12.0	1.062	1.007	0.303	**0.32**	19#
	2437	802.11b	10.56	11.0	1.107	1.007	0.290	0.32	/
	2462	802.11b	10.88	11.0	1.028	1.007	0.182	0.19	/
Head Left Tilt	2412	802.11b	11.74	12.0	1.062	1.007	0.224	0.24	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/
Head Right Cheek	2412	802.11b	11.74	12.0	1.062	1.007	0.111	0.12	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/
Head Right Tilt	2412	802.11b	11.74	12.0	1.062	1.007	0.093	0.10	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/
Body Front (10mm)	2412	802.11b	11.74	12.0	1.062	1.007	0.055	0.06	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/
Body Back (10mm)	2412	802.11b	11.74	12.0	1.062	1.007	0.066	0.07	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/
Body Right (10mm)	2412	802.11b	11.74	12.0	1.062	1.007	0.078	**0.08**	20#
	2437	802.11b	10.56	11.0	1.107	1.007	0.070	0.08	/
	2462	802.11b	10.88	11.0	1.028	1.007	0.055	0.06	/
Body Top (10mm)	2412	802.11b	11.74	12.0	1.062	1.007	0.026	0.03	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	/	/	/	/	/	/	/

The data above was performed on2025/03/19

Note:

1. When the 1-g SAR is≤ 0.8W/kg, testing for other channels are optional.
2. 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.
3. According KDB 248227 D01, for SAR testing of 802.11 WIFI signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”.

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 ≥ 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 ≥ 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 ≥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	
2600 Head	LTE Band 41	2506	Head Right Tilt	0.915	0.886	1.03

Body

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

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 DUT HOLDER PERTURBATIONS

In accordance with TCB workshop October 2016:

1) SAR perturbation due to test device holders, depending on antenna locations, buttons locations on phones or device, form factor (e.g. dongles etc.), the measured SAR could be influenced by the relative positions of the test device and its holder

2) SAR measurement standards have included protocols to evaluate this with a flat phantom, with and without the device holder

3) When the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands in the same exact device and holder positions used for head and body SAR measurements; i.e. same device/button locations in the holder

Per IEEE 1528: 2013/Annex E/E.4.1.1: Device holder perturbation tolerance for a specific test device: Type B When it is unknown if a device holder perturbs the fields of a test device, the SAR uncertainty shall be assessed with a flat phantom (see Clause 5) by comparing the SAR with and without the device holder according to the following tests:

The SAR tolerance for device holder disturbance is computed using Equation (E.21) and entered in the corresponding row of the appropriate uncertainty table with an assumed rectangular probability distribution and $vi = \infty$ degrees of freedom:

$$SAR_{\text{tolerance}}[\%] = 100 \times \left(\frac{SAR_{\text{w/ holder}} - SAR_{\text{w/o holder}}}{SAR_{\text{w/o holder}}} \right) \qquad \text{(E.21)}$$

The Highest Measured SAR Configuration among all applicable Frequency Band

Head

Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		The Device holder perturbation uncertainty
			With holder	Without holder	
/	/	/	/	/	/

Body

Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		The Device holder perturbation uncertainty
			With holder	Without holder	
/	/	/	/	/	/

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities		
Transmitter Combination	**Simultaneous?**	**Hotspot?**
WWAN(GSM/WCDMA/LTE)Antenna + WLAN2.4G	√	√
WWAN(GSM/WCDMA/LTE) Antenna + Bluetooth	√	×
WLAN2.4G + Bluetooth	×	×

Note: In a WWAN antenna, only a single antenna in one band operates at a time.

Simultaneous SAR test exclusion considerations:

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		ΣSAR < 1.6W/kg
		SAR1	SAR2	
WWAN(GSM/WCDMA/LTE)Antenna + WLAN2.4G	Head	1.09	0.32	1.41
	Body	0.35	0.08	0.43
	Body (Hotspot)	0.35	0.08	0.43
WWAN(GSM/WCDMA/LTE) Antenna + Bluetooth	Head	1.09	0.07	1.16
	Body	0.35	0.03	0.38

Conclusion:
Sum of SAR:**ΣSAR ≤1.6 W/kg** therefore simultaneous transmission SAR with Volume Scans is **not required.**

SAR Plots

Please Refer to the Attachment.

APPENDIX A MEASUREMENT UNCERTAINTY

The uncertainty budget has been determined for the measurement system and is given in the following Table.

Measurement uncertainty evaluation for IEEE1528-2013 SAR test

Source of uncertainty	Tolerance/ Uncertainty ± %	Probability distribution	Divisor	ci (1 g)	ci (10 g)	Standard Uncertainty ± %, (1 g)	Standard Uncertainty ± %, (10 g)
Measurement system							
Probe calibration	8.5	N	1	1	1	8.5	8.5
Axial Isotropy	4.7	R	√3	1	1	2.7	2.7
Hemispherical Isotropy	9.6	R	√3	0	0	0.0	0.0
Boundary effect	1.0	R	√3	1	1	0.6	0.6
Linearity	4.7	R	√3	1	1	2.7	2.7
Detection limits	1.0	R	√3	1	1	0.6	0.6
Modulation response	4.0	R	√3	1	1	2.3	2.3
Readout electronics	0.3	N	1	1	1	0.3	0.3
Response time	0.0	R	√3	1	1	0.0	0.0
Integration time	0.0	R	√3	1	1	0.0	0.0
RF ambientconditions – noise	1.0	R	√3	1	1	0.6	0.6
RF ambient conditions–reflections	1.0	R	√3	1	1	0.6	0.6
Probe positioner mech. Restrictions	0.8	R	√3	1	1	0.5	0.5
Probe positioning with respect to phantom shell	6.7	R	√3	1	1	3.9	3.9
Extrapolation, interpolation, and integrations algorithms for max. SAR evaluation	3.9	R	√3	1	1	2.3	2.3
Test sample related							
Test sample positioning	2.8	N	1	1	1	2.8	2.8
Device holder uncertainty	6.3	N	1	1	1	6.3	6.3
Drift of output power	5.0	R	√3	1	1	2.9	2.9
SAR scaling	2.0	R	√3	1	1	1.2	1.2
Phantom and tissue parameters							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	√3	1	1	2.3	2.3
Uncertainty in SAR correction for deviations in permittivity and conductivity	1.9	N	1	1	0.84	1.9	1.6
Liquid conductivity measurement	5.5	N	1	0.78	0.71	4.3	3.9
Liquid permittivity measurement	2.9	N	1	0.23	0.26	0.7	0.8
Liquid conductivity—temperature uncertainty	1.7	R	√3	0.78	0.71	0.8	0.7
Liquid permittivity—temperature uncertainty	2.7	R	√3	0.23	0.26	0.4	0.4
Combined standard uncertainty		RSS				12.2	12.0
Expanded uncertainty 95 % confidence interval)						24.3	23.9

APPENDIX B EUT TEST POSITION PHOTOS

Please Refer to the Attachment.

APPENDIX C PROBE CALIBRATION CERTIFICATES

Please Refer to the Attachment.

APPENDIX D CALIBRATION CERTIFICATES

Please Refer to the Attachment.

APPENDIX E RETURN LOSS&IMPEDANCE MEASUREMENT

Please Refer to the Attachment.

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