TEST REPORT

Applicant Name :	Tractive GmbH
Address :	Poststrasse 4, 4061 Pasching, Austria
Report Number:	SZ2240105-01314E-20A
FCC ID:	2AVE6TG5B

Test Standard (s)

FCC Part 2.1093

Sample Description

Product Type:	Tractive CAT Mini
Model No.:	TG5
Multiple Models:	N/A
Trade Mark:	N/A
Date Received:	2024/02/02
Date of Test:	2024/04/08-2024/04/11
Issue Date:	2024/05/06

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

Attestation of Test Results

MODE		Max. SAR Level(s) Reported(W/kg)	Limit (W/kg)
GSM 850	1g Body SAR	0.74	**1.6**
PCS 1900	1g Body SAR	1.14	
LTE CAT M1Band 2	1g Body SAR	0.79	
LTE CAT M1Band 4	1g Body SAR	0.68	
LTE CAT M1Band 5	1g Body SAR	0.58	
LTE CAT M1Band 12	1g Body SAR	0.17	
LTE CAT M1Band 13	1g Body SAR	0.27	
2.4G Wi-Fi	1g Body SAR	0.21	
Simultaneous	1g Body SAR	**1.35**	

Applicable Standards	**FCC 47 CFR part 2.1093** Radiofrequency radiation exposure evaluation: portable devices
	RF Exposure Procedures: TCB Workshop October 2016(Bluetooth Duty Factor)
	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
	KDB procedures KDB 447498 D01 General RF Exposure Guidance v06 KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04 KDB865664 D02 RF Exposure Reporting v01r02 KDB 941225 D05 SAR for LTE Devices v02r05 KDB 248227 D01 802 11 Wi-Fi SAR v02r02

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.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ2240105-01314E-20A	Original Report	2024/05/06

EUT DESCRIPTION

This report has been prepared on behalf of***Tractive GmbH***and their product***Tractive CAT Mini***, Model: **TG5**, SN: ***2I3C-2***, FCC: **2AVE6TG5B**or the EUT (Equipment under Test) as referred to in the rest of this report.

Technical Specification

Device Type:	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Operation Mode :	GPRS/EDGE Data FDD-LTE CAT M1, Wi-Fi andBluetooth
Frequency Band:	GSM 850: 824-849 MHz(TX); 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX) LTE CAT M1 Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) LTE CAT M1 Band 4: 1710-1755MHz(TX) ; 2110-2155 MHz(RX) LTE CAT M1 Band 5: 824-849 MHz(TX) ; 869-894 MHz(RX) LTE CAT M1 Band 12: 699-716 MHz(TX) ; 729-746 MHz(RX) LTE CAT M1 Band 13: 777-716 MHz(TX) ; 746-756 MHz(RX) Wi-Fi 2.4G: 2412 -2462 MHz(TX&RX) BLE: 2402-2480MHz(TX&RX)
Power Source:	Rechargeable Battery
Normal Operation:	Body-worn

REFERENCE, STANDARDS, AND GUIDELINES

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.

IC:

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 ISS-102 for an uncontrolled environment. According to the Safety Code 6 Health Canada’s Radiofrequency Exposure Guidelines, 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)	**1.60**	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

IC 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)	**1.60**	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 ofindividual 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 employmentor occupation).

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

FACILITIES

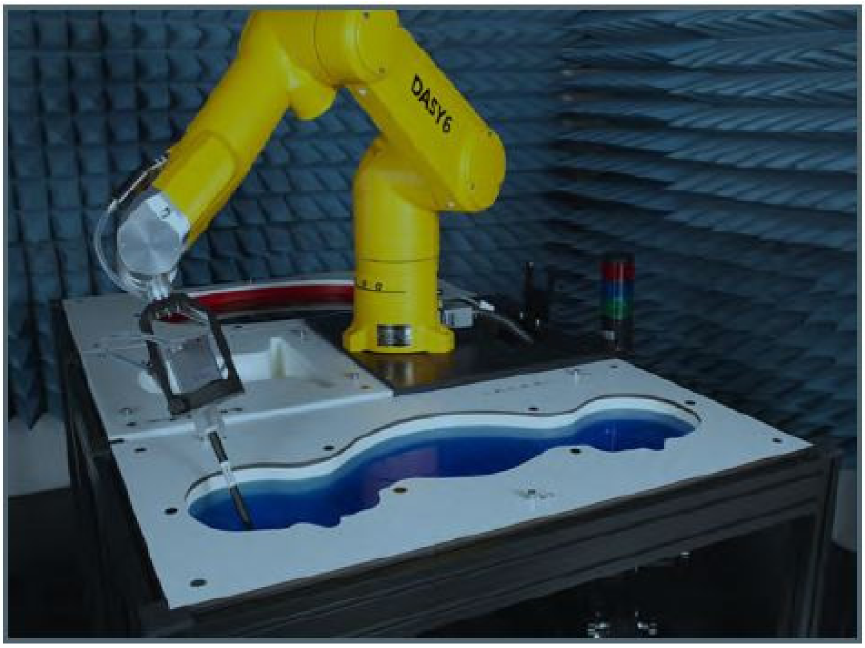
The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect data is located at 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China

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.

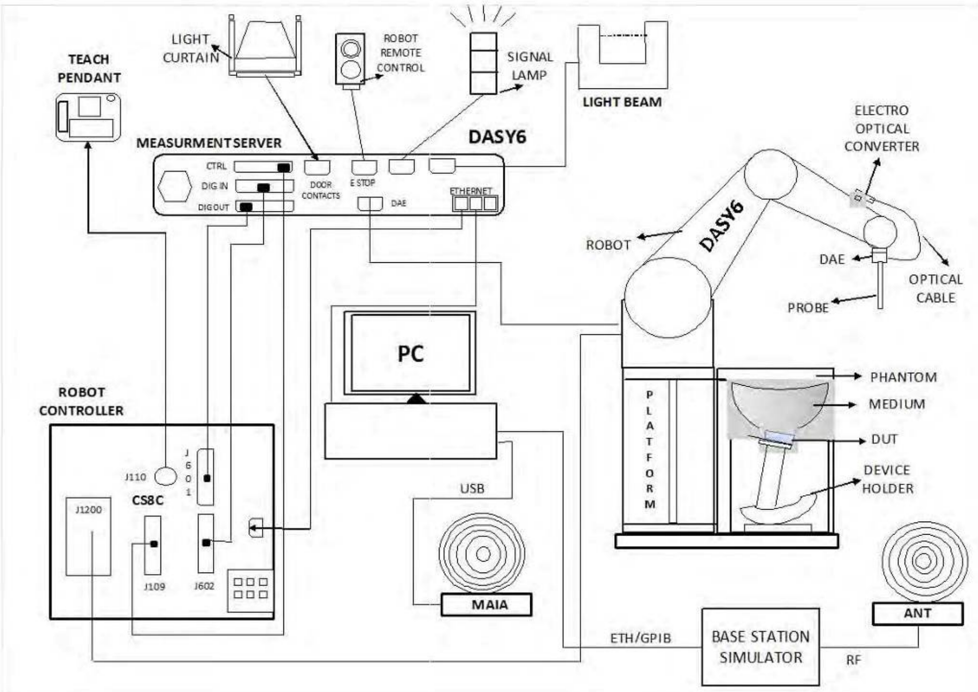
DESCRIPTION OF TEST SYSTEM

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.

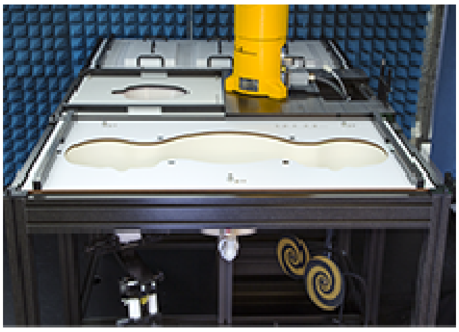
The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

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:

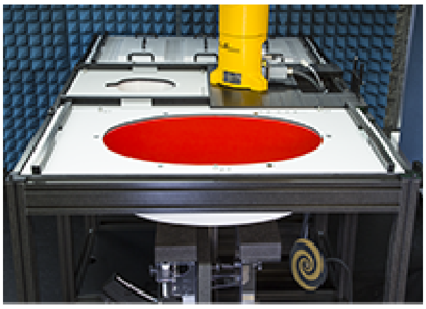
Sugar-water-based liquids can be left permanently in the phantom. Always cover the liquid when the system is not in use to prevent changes in liquid parameters due to water evaporation.

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 IEC 62209-2 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: 7382 Calibrated: 2023/09/27

Calibration Frequency Point(MHz)	Frequency Range(MHz)		Conversion Factor		
	From	To	X	Y	Z
750 Head	650	850	10.65	10.65	10.65
900 Head	850	1000	10.19	10.19	10.19
1750 Head	1650	1850	8.60	8.60	8.60
1900 Head	1850	2000	8.30	8.30	8.30
2300 Head	2200	2400	8.16	8.16	8.16
2450 Head	2400	2550	7.89	7.89	7.89
2600 Head	2550	2700	7.65	7.65	7.65
3300 Head	3200	3400	7.39	7.39	7.39
3500 Head	3400	3600	7.24	7.24	7.24
3700 Head	3600	3800	7.10	7.10	7.10
3900 Head	3800	4000	6.98	6.98	6.98
5250 Head	5140	5360	5.62	5.62	5.62
5500 Head	5390	5610	5.10	5.10	5.10
5750 Head	5640	5860	5.08	5.08	5.08

Area scan parameters

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	½·δ·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.	

Zoom scan parameters

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	≤ 1.5·$\Delta z_{Zoom}(n-1)$ 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.

Tissue Dielectric Parameters for Head

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	≤ 1.5·$\Delta z_{Zoom}(n-1)$ 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.

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the KDB 865664 D01

Recommended Tissue Dielectric Parameters for Head 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.		

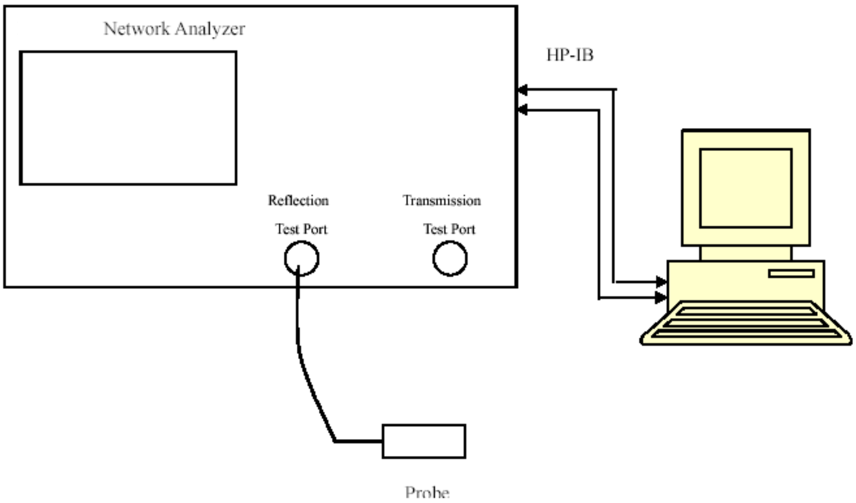
EQUIPMENT LIST AND CALIBRATION

Equipments List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52 52.10.2	N/A	NCR	NCR
DASY6 Measurement Server	DASY6 6.0.31	N/A	NCR	NCR
Data Acquisition Electronics	DAE4	1325	2023/9/27	2024/9/26
E-Field Probe	EX3DV4	7382	2023/9/27	2024/9/26
Mounting Device	MD4HHTV5	SD 000 H01 KA	NCR	NCR
SAM Twin Phantom	SAM-Twin V8.0	1962	NCR	NCR
Dipole, 750 MHz	D750V3	1229	2023/3/24	2026/3/23
Dipole, 1750 MHz	D1750V2	1199	2023/3/27	2026/3/26
Dipole, 1900 MHz	D1900V2	5d231	2023/2/17	2026/2/16
Dipole, 2450 MHz	D2450V2	1103	2023/3/27	2026/3/26
Simulated Tissue Liquid Head	HBBL600-10000V6	180622-2	Each Time	/
Network Analyzer	E5071C	SER MY46519680	2023/06/08	2024/06/07
Dielectric Assessment Kit	DAK-3.5	1248	NCR	NCR
MXG Analog Signal Generator	N5181A	MY48180408	2023/06/08	2024/06/07
USB wideband power sensor	U2021XA	MY52350001	2023/06/08	2024/06/07
Directional Coupler	855673	3307	NCR	NCR
RF Power Amplifier	5205FE	1014	NCR	NCR
Temperature & Humidity Meter	DTM3000	N/A	2024/01/16	2025/01/15
Universal Radio Communication Tester	CMU200	110 825	2023/06/26	2024/06/25
Functional radio communication Tester	CMW290	101742	2023/06/26	2024/06/25
Spectrum Analyzer	FSV40	101605	2023/04/18	2024/04/17

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency (MHz)	LiquidType	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	43.495	0.869	42.18	0.89	3.12	-2.36	±5
707.5	Simulated Tissue Liquid Head	43.53	0.865	42.13	0.89	3.32	-2.81	±5
711	Simulated Tissue Liquid Head	43.565	0.869	42.11	0.89	3.46	-2.36	±5
750	Simulated Tissue Liquid Head	43.402	0.867	41.90	0.89	3.58	-2.58	±5
782	Simulated Tissue Liquid Head	43.323	0.866	41.78	0.90	3.69	-3.78	±5
824.2	Simulated Tissue Liquid Head	42.677	0.925	41.55	0.90	2.71	2.78	±5
829	Simulated Tissue Liquid Head	42.831	0.918	41.53	0.90	3.13	2	±5
836.5	Simulated Tissue Liquid Head	42.716	0.92	41.50	0.90	2.93	2.22	±5
836.6	Simulated Tissue Liquid Head	42.79	0.925	41.50	0.90	3.11	2.78	±5
844	Simulated Tissue Liquid Head	42.734	0.924	41.50	0.91	2.97	1.54	±5
848.8	Simulated Tissue Liquid Head	42.645	0.92	41.50	0.91	2.76	1.1	±5

**Liquid Verification above was performed on2024/04/08.*

Frequency (MHz)	LiquidType	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ (S/m)	
1720	Simulated Tissue Liquid Head	40.993	1.352	40.13	1.35	2.15	0.15	±5
1732.5	Simulated Tissue Liquid Head	39.271	1.394	40.12	1.36	-2.12	2.5	±5
1745	Simulated Tissue Liquid Head	39.881	1.385	40.10	1.37	-0.55	1.09	±5
1750	Simulated Tissue Liquid Head	40.829	1.335	40.10	1.37	1.82	-2.55	±5

**Liquid Verification above was performed on 2024/04/09.*

Frequency (MHz)	LiquidType	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	41.231	1.449	40.00	1.40	3.08	3.5	±5
1860	Simulated Tissue Liquid Head	41.476	1.451	40.00	1.40	3.69	3.64	±5
1880	Simulated Tissue Liquid Head	41.379	1.459	40.00	1.40	3.45	4.21	±5
1900	Simulated Tissue Liquid Head	41.498	1.465	40.00	1.40	3.74	4.64	±5
1909.8	Simulated Tissue Liquid Head	41.137	1.446	40.00	1.40	2.84	3.29	±5

**Liquid Verification above was performed on2024/04/11.*

Frequency (MHz)	LiquidType	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	Ơ (S/m)	ε_r	Ơ (S/m)	$\Delta\varepsilon_r$	ΔƠ	
2412	Simulated Tissue Liquid Head	40.708	1.801	39.27	1.77	3.66	1.75	±5
2437	Simulated Tissue Liquid Head	40.484	1.831	39.21	1.79	3.25	2.29	±5
2450	Simulated Tissue Liquid Head	40.159	1.839	39.20	1.80	2.45	2.17	±5
2462	Simulated Tissue Liquid Head	39.692	1.841	39.17	1.82	1.33	1.15	±5

**Liquid Verification above was performed on2024/04/09.*

System Accuracy Verification

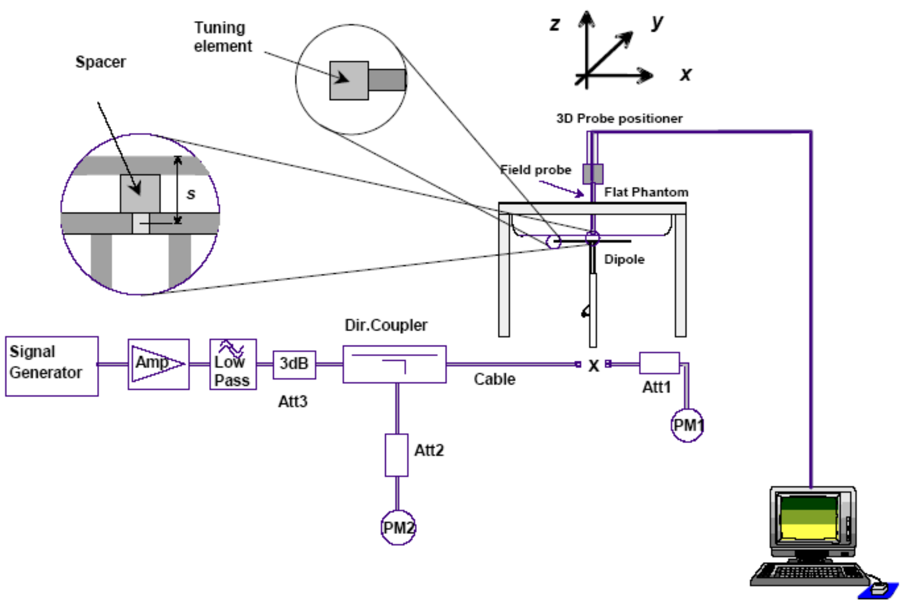
Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

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 ≤ 6 000 MHz;

System Verification Setup Block Diagram



System Accuracy Check Results

Date	Frequency Band	Liquid Type	Input Power (mW)	Measured SAR (W/kg)		Normalized to 1W (W/kg)	Target Value (W/kg)	Delta (%)	Tolerance (%)
2024/04/08	750 MHz	Head	100	1g	0.871	8.71	8.41	3.567	±10
2024/04/09	1750MHz	Head	100	1g	3.78	37.8	36.0	5.000	±10
2024/04/11	1900 MHz	Head	100	1g	4.12	41.2	39.9	3.258	±10
2024/04/09	2450 MHz	Head	100	1g	5.45	54.5	51.7	5.416	±10

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

SAR SYSTEM VALIDATION DATA

System Performance 750 MHz

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

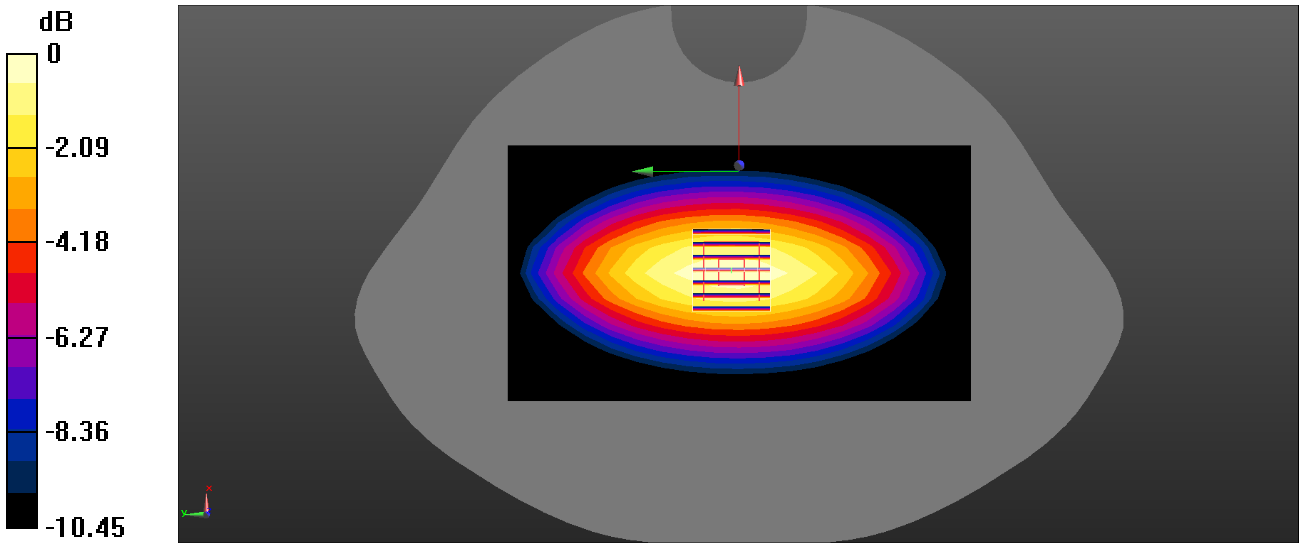
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.867 S/m; ε_r = 43.402; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7382; ConvF(10.65, 10.65, 10.65) @ 750 MHz;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 9/27/2023
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ; Serial: 1962
- Measurement SW: DASY52, Version 52.10 (2);

Configuration/Head 750MHz Pin=100mW/Area Scan (11x19x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.877 W/kg

Configuration/Head 750MHz Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.73 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.871 W/kg; SAR(10 g) = 0.539 W/kg
Maximum value of SAR (measured) = 0.887 W/kg



0 dB = 0.887 W/kg = -0.52 dBW/kg

System Performance 1750MHz

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1199

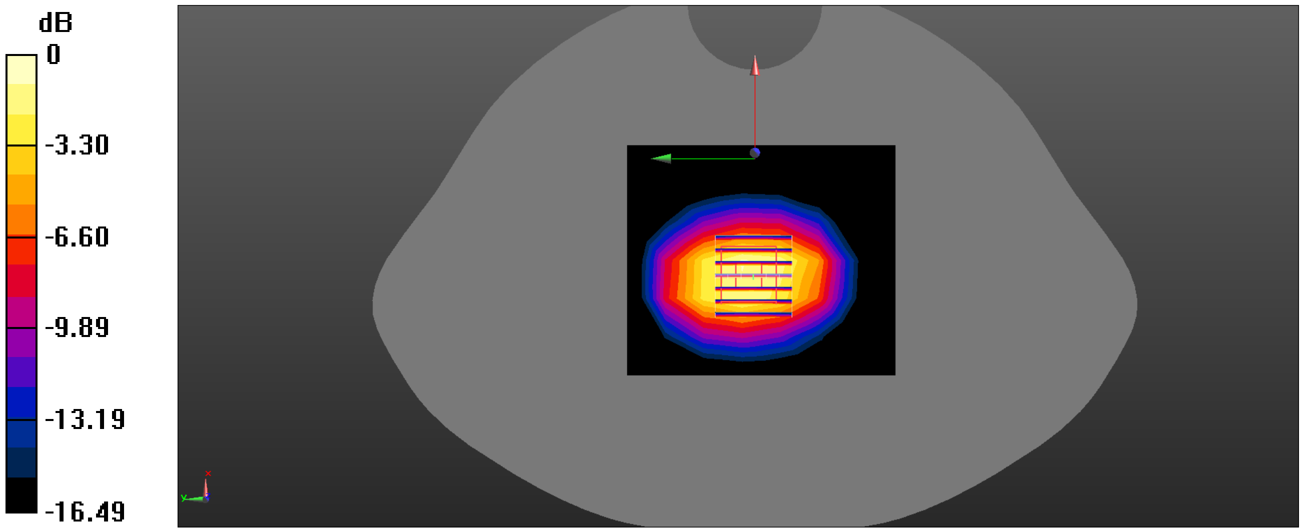
Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.335 S/m; ε_r = 40.829; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7382; ConvF(8.6, 8.6, 8.6) @ 1750 MHz;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 9/27/2023
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ; Serial: 1962
- Measurement SW: DASY52, Version 52.10 (2);

Configuration/Head 1750MHz Pin=100mW/Area Scan (7x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.28 W/kg

Configuration/Head 1750MHz Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.66 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 6.82 W/kg
SAR(1 g) = 3.78 W/kg; SAR(10 g) = 2 W/kg
Maximum value of SAR (measured) = 4.11 W/kg



0 dB = 4.11 W/kg = 6.14 dBW/kg

System Performance 1900MHz

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

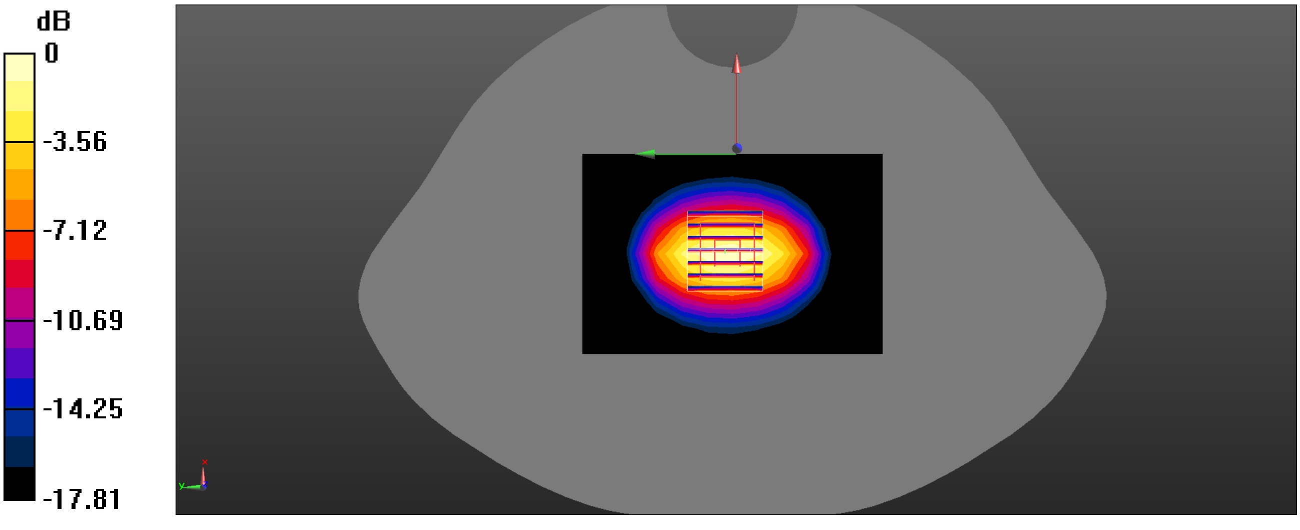
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.465 S/m; ε_r = 41.498; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7382; ConvF(8.3, 8.3, 8.3) @ 1900 MHz;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 9/27/2023
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ; Serial: 1962
- Measurement SW: DASY52, Version 52.10 (2);

Configuration/Head 1900MHz Pin=100mW/Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.99 W/kg

Configuration/Head 1900MHz Pin=100mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.45 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 8.23 W/kg
SAR(1 g) = 4.12 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 6.84 W/kg



0 dB = 6.84 W/kg = 8.35 dBW/kg

System Performance 2450MHz

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

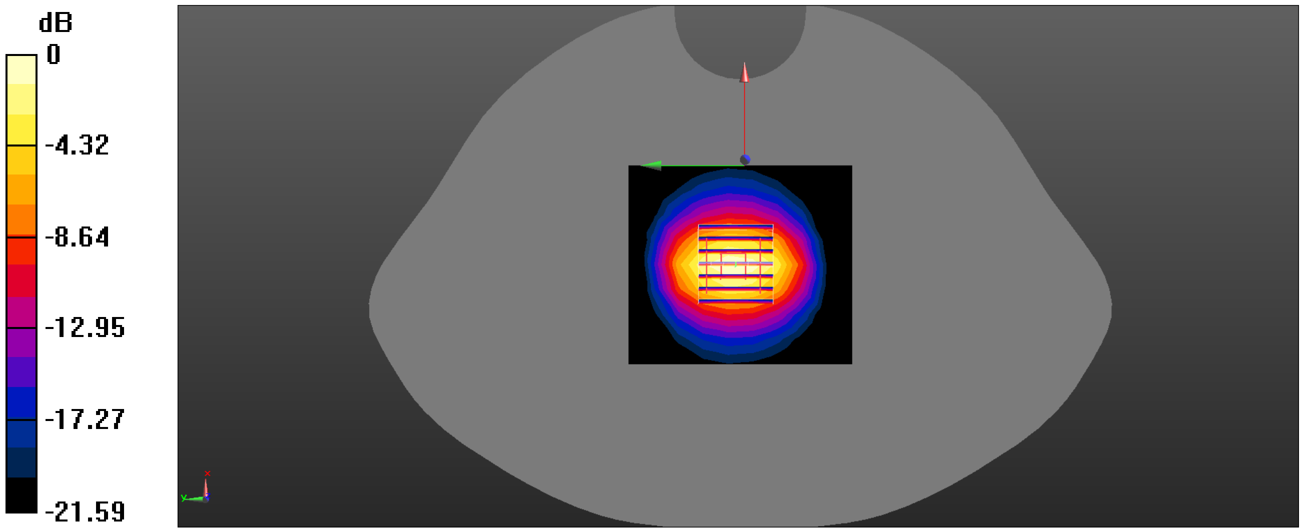
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.839 S/m; ε_r = 40.159; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7382; ConvF(7.89, 7.89, 7.89) @ 2450 MHz;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1325; Calibrated: 9/27/2023
- Phantom: SAM-Twin V8.0 P1aP2a; Type: QD 000 P41 AA ; Serial: 1962
- Measurement SW: DASY52, Version 52.10 (2);

Configuration/Head 2450MHz Pin=100mW/Area Scan (9x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 9.03 W/kg

Configuration/Head 2450MHz Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.86 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 11.0 W/kg
SAR(1 g) = 5.45 W/kg; SAR(10 g) = 2.53 W/kg
Maximum value of SAR (measured) = 8.98 W/kg



0 dB = 8.98 W/kg = 9.53 dBW/kg

EUT TEST STRATEGY AND METHODOLOGY

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.

Test Distance for SAR Evaluation

For this case the EUT(Equipment Under Test) is set 0mm away from the phantom, the test distance is 0mm.

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.

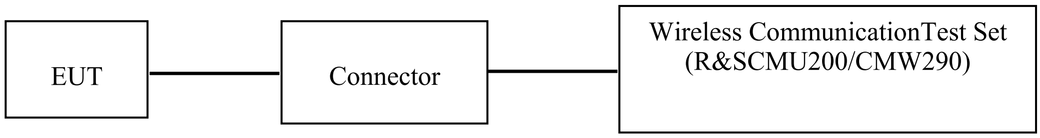
2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (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.

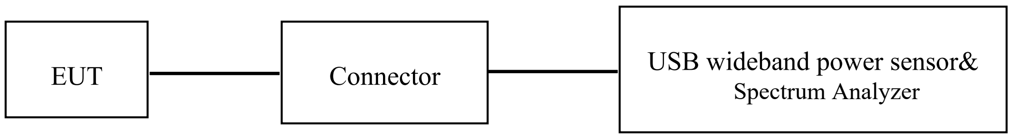
Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

CONDUCTED OUTPUT POWER MEASUREMENT

Test Procedure



GSM/LTE CAT M1



WLAN/ Bluetooth

Radio Configuration

The power measurement was configured by theWireless Communication Test Set.

GPRS/EDGE

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)
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

FDD-LTE

For UE Power Class 1 and 3, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table6.2.2-1due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table6.2.3-1.

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 alongwith the allowed A-MPR values that may be used to meet these requirements. The allowed A-MPR values specifiedbelow 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	-	-	-	-	-

Maximum Target Output Power

Max Target Power(dBm)			
Mode/Band	Channel		
	Low	Middle	High
GSM 850 GPRS 1 TX Slot	31.0	31.0	31.0
GSM 850 GPRS 2 TX Slot	28.5	28.5	28.5
GSM 850 GPRS 3 TX Slot	27.0	27.0	27.0
GSM 850 GPRS 4 TX Slot	26.0	26.0	26.0
GSM 850 EDGE 1 TX Slot	25.5	25.5	25.5
GSM 850 EDGE 2 TX Slot	25.0	25.0	25.0
GSM 850 EDGE 3 TX Slot	25.0	25.0	25.0
GSM 850 EDGE 4 TX Slot	24.0	24.0	24.0
PCS 1900GPRS 1 TX Slot	26.0	26.0	26.0
PCS 1900GPRS 2 TX Slot	24.0	24.0	24.0
PCS 1900GPRS 3 TX Slot	22.0	22.0	22.0
PCS 1900GPRS 4 TX Slot	21.0	21.0	21.0
PCS 1900EDGE 1 TX Slot	22.0	22.0	22.0
PCS 1900EDGE 2 TX Slot	22.0	22.0	22.0
PCS 1900EDGE 3 TX Slot	21.5	21.5	21.5
PCS 1900EDGE 4 TX Slot	21.0	21.0	21.0
LTE CAT M1 Band 2	21.0	21.0	21.0
LTE CAT M1 Band 4	23.5	23.5	23.5
LTE CAT M1 Band 5	23.5	23.5	23.5
LTE CAT M1 Band 12	23.5	23.5	23.5
LTE CAT M1 Band 13	25.0	25.0	25.0
WLAN 2.4G	7.5	7.5	7.5
BLE	-6.0	-6.0	-6.0

Test Results:

GPRS:

Band	Channel No.	Frequency (MHz)	RFOutput Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	30.40	28.11	26.66	25.63
	190	836.6	30.19	27.95	26.12	25.56
	251	848.8	30.05	27.63	25.88	25.35
PCS 1900	512	1850.2	25.85	23.72	21.71	20.36
	661	1880	25.86	23.68	21.48	20.38
	810	1909.8	25.89	23.79	21.70	20.41

EDGE:

Band	Channel No.	Frequency (MHz)	RFOutput Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	25.08	24.75	24.34	23.39
	190	836.6	24.90	24.61	23.91	23.33
	251	848.8	24.78	24.56	23.80	23.26
PCS 1900	512	1850.2	21.95	21.74	21.40	20.81
	661	1880	21.88	21.60	21.11	20.65
	810	1909.8	21.82	21.49	21.27	20.69

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

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

The time based average power for GPRS

Band	Channel No.	Frequency (MHz)	RFOutput Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	21.40	22.11	22.41	**22.63**
	190	836.6	21.19	21.95	21.87	22.56
	251	848.8	21.05	21.63	21.63	22.35
PCS 1900	512	1850.2	16.85	17.72	17.46	17.36
	661	1880	16.86	17.68	17.23	17.38
	810	1909.8	16.89	**17.79**	17.45	17.41

The time based average power for EDGE

Band	Channel No.	Frequency (MHz)	RFOutput Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	16.08	18.75	20.09	20.39
	190	836.6	15.90	18.61	19.66	20.33
	251	848.8	15.78	18.56	19.55	20.26
PCS 1900	512	1850.2	12.95	15.74	17.15	17.81
	661	1880	12.88	15.60	16.86	17.65
	810	1909.8	12.82	15.49	17.02	17.69

Note:

1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.
2 .For GPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 3 (850 MHz band) and 3(1900 MHz band).
3 .For EGPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 6 (850 MHz band) and 5(1900 MHz band).

LTE CAT M1 Band 2

Test Bandwidth & Modulation	Index	Channel	Resource Block & RB offset	Conducted Average Output Power(dBm)
1.4MHz QPSK	0	Lowest	RB1#0	20.24
	0		RB6#0	18.33
	0	Middle	RB1#0	20.55
	0		RB6#0	18.68
	0	Highest	RB1#5	20.35
	0		RB6#0	18.59
1.4MHz 16QAM	0	Lowest	RB1#0	19.66
	0		RB5#0	18.27
	0	Middle	RB1#0	19.55
	0		RB5#0	18.68
	0	Highest	RB1#5	19.28
	0		RB5#0	18.52
3MHz QPSK	0	Lowest	RB1#0	20.59
	0		RB6#0	18.76
	0	Middle	RB1#0	20.62
	0		RB6#0	18.70
	1	Highest	RB1#5	20.26
	0		RB6#0	18.61
3MHz 16QAM	0	Lowest	RB1#0	19.81
	0		RB5#0	18.61
	0	Middle	RB1#0	19.77
	0		RB5#0	18.45
	1	Highest	RB1#5	19.12
	0		RB5#0	18.70
5MHz QPSK	3	Lowest	RB1#0	20.54
	0		RB6#0	19.78
	0	Middle	RB1#0	20.63
	0		RB6#0	19.51
	0	Highest	RB1#5	20.49
	0		RB6#0	19.58
5MHz 16QAM	3	Lowest	RB1#0	20.63
	0		RB5#0	18.61
	0	Middle	RB1#0	20.48
	0		RB5#0	18.70
	0	Highest	RB1#5	20.53
	0		RB5#0	18.62
10MHz QPSK	3	Lowest	RB1#0	20.59

	0		RB4#0	20.75
	0	Middle	RB1#0	20.60
	0		RB4#0	20.53
	4	Highest	RB1#5	20.28
	7		RB4#2	20.32
10MHz 16QAM	3	Lowest	RB1#0	20.25
	0		RB4#0	19.76
	0	Middle	RB1#0	20.77
	0		RB4#0	19.61
	4	Highest	RB1#5	20.19
	7		RB4#2	19.14
15MHz QPSK	3	Lowest	RB1#0	20.47
	0		RB6#0	20.53
	0	Middle	RB1#0	20.56
	0		RB6#0	20.47
	8	Highest	RB1#5	20.29
	11		RB6#0	20.40
15MHz 16QAM	3	Lowest	RB1#0	20.81
	0		RB5#0	20.60
	0	Middle	RB1#0	20.39
	0		RB5#0	20.52
	8	Highest	RB1#5	20.52
	11		RB5#0	20.16
20MHz QPSK	3	Lowest	RB1#0	20.56
	0		RB6#0	20.59
	0	Middle	RB1#0	20.51
	0		RB6#0	20.39
	12	Highest	RB1#5	20.27
	15		RB6#0	20.29
20MHz 16QAM	3	Lowest	RB1#0	20.41
	0		RB5#0	20.57
	0	Middle	RB1#0	20.50
	0		RB5#0	20.41
	12	Highest	RB1#5	20.11
	15		RB5#0	20.16

LTE CAT M1 Band 4

Test Bandwidth & Modulation	Index	Channel	Resource Block & RB offset	Conducted Average Output Power(dBm)
1.4MHz QPSK	0	Lowest	RB1#0	23.12
	0		RB6#0	21.11
	0	Middle	RB1#0	22.41
	0		RB6#0	20.28
	0	Highest	RB1#5	22.07
	0		RB6#0	20.32
1.4MHz 16QAM	0	Lowest	RB1#0	22.23
	0		RB5#0	21.07
	0	Middle	RB1#0	21.81
	0		RB5#0	20.44
	0	Highest	RB1#5	21.08
	0		RB5#0	20.34
3MHz QPSK	0	Lowest	RB1#0	23.17
	0		RB6#0	21.09
	0	Middle	RB1#0	22.90
	0		RB6#0	20.41
	1	Highest	RB1#5	21.97
	0		RB6#0	20.21
3MHz 16QAM	0	Lowest	RB1#0	22.26
	0		RB5#0	20.90
	0	Middle	RB1#0	21.55
	0		RB5#0	20.64
	1	Highest	RB1#5	21.06
	0		RB5#0	20.32
5MHz QPSK	3	Lowest	RB1#0	22.93
	0		RB6#0	21.99
	0	Middle	RB1#0	22.67
	0		RB6#0	21.74
	0	Highest	RB1#5	22.09
	0		RB6#0	21.32
5MHz 16QAM	3	Lowest	RB1#0	22.92
	0		RB5#0	20.93
	0	Middle	RB1#0	22.51
	0		RB5#0	20.70
	0	Highest	RB1#5	22.00
	0		RB5#0	20.50
10MHz QPSK	3	Lowest	RB1#0	22.88
	0		RB4#0	22.90

	0	Middle	RB1#0	22.58
	0		RB4#0	22.47
	4	Highest	RB1#5	21.87
	7		RB4#2	22.03
10MHz 16QAM	3	Lowest	RB1#0	23.00
	0		RB4#0	22.02
	0	Middle	RB1#0	22.33
	0		RB4#0	21.39
	4	Highest	RB1#5	21.69
	7		RB4#2	21.12
15MHz QPSK	3	Lowest	RB1#0	22.81
	0		RB6#0	22.97
	0	Middle	RB1#0	22.64
	0		RB6#0	22.73
	8	Highest	RB1#5	21.94
	11		RB6#0	21.98
15MHz 16QAM	3	Lowest	RB1#0	23.07
	0		RB5#0	22.80
	0	Middle	RB1#0	22.63
	0		RB5#0	22.80
	8	Highest	RB1#5	21.93
	11		RB5#0	22.29
20MHz QPSK	3	Lowest	RB1#0	22.69
	0		RB6#0	22.93
	0	Middle	RB1#0	22.91
	0		RB6#0	22.98
	12	Highest	RB1#5	22.89
	15		RB6#0	22.68
20MHz 16QAM	3	Lowest	RB1#0	22.77
	0		RB5#0	22.88
	0	Middle	RB1#0	22.68
	0		RB5#0	22.53
	12	Highest	RB1#5	21.76
	15		RB5#0	21.99

LTE CAT M1 Band 5

Test Bandwidth & Modulation	Index	Channel	Resource Block & RB offset	Conducted Average Output Power(dBm)
1.4MHz QPSK	0	Lowest	RB1#0	23.14
	0		RB6#0	20.92
	0	Middle	RB1#0	23.05
	0		RB6#0	20.79
	0	Highest	RB1#5	22.69
	0		RB6#0	20.77
1.4MHz 16QAM	0	Lowest	RB1#0	22.06
	0		RB5#0	21.04
	0	Middle	RB1#0	22.07
	0		RB5#0	20.78
	0	Highest	RB1#5	21.33
	0		RB5#0	20.73
3MHz QPSK	0	Lowest	RB1#0	23.20
	0		RB6#0	21.03
	0	Middle	RB1#0	23.02
	0		RB6#0	20.87
	1	Highest	RB1#5	22.42
	0		RB6#0	20.65
3MHz 16QAM	0	Lowest	RB1#0	22.63
	0		RB5#0	20.77
	0	Middle	RB1#0	21.65
	0		RB5#0	20.90
	1	Highest	RB1#5	21.40
	0		RB5#0	20.89
5MHz QPSK	3	Lowest	RB1#0	23.02
	0		RB6#0	21.96
	0	Middle	RB1#0	22.96
	0		RB6#0	21.78
	0	Highest	RB1#5	22.56
	0		RB6#0	21.74
5MHz 16QAM	3	Lowest	RB1#0	22.82
	0		RB5#0	21.05
	0	Middle	RB1#0	22.85
	0		RB5#0	20.73
	0	Highest	RB1#5	22.27
	0		RB5#0	20.69
10MHz QPSK	3	Lowest	RB1#0	22.98
	0		RB4#0	22.95

	0	Middle	RB1#0	23.04
	0		RB4#0	22.89
	4	Highest	RB1#5	22.89
	7		RB4#2	22.95
10MHz 16QAM	3	Lowest	RB1#0	23.03
	0		RB4#0	22.14
	0	Middle	RB1#0	22.80
	0		RB4#0	21.86
	4	Highest	RB1#5	22.49
	7		RB4#2	21.52

LTE CAT M1 Band 12

Test Bandwidth & Modulation	Index	Channel	Resource Block & RB offset	Conducted Average Output Power(dBm)
1.4MHz QPSK	0	Lowest	RB1#0	22.63
	0		RB6#0	20.61
	0	Middle	RB1#0	23.12
	0		RB6#0	21.08
	0	Highest	RB1#5	23.19
	0		RB6#0	21.64
1.4MHz 16QAM	0	Lowest	RB1#0	21.65
	0		RB5#0	20.71
	0	Middle	RB1#0	22.29
	0		RB5#0	21.14
	0	Highest	RB1#5	22.27
	0		RB5#0	21.36
3MHz QPSK	0	Lowest	RB1#0	22.79
	0		RB6#0	20.77
	0	Middle	RB1#0	23.18
	0		RB6#0	21.20
	1	Highest	RB1#5	23.28
	0		RB6#0	21.52
3MHz 16QAM	0	Lowest	RB1#0	22.00
	0		RB5#0	20.86
	0	Middle	RB1#0	22.33
	0		RB5#0	20.94
	1	Highest	RB1#5	22.17
	0		RB5#0	21.56
5MHz QPSK	3	Lowest	RB1#0	22.94
	0		RB6#0	21.78
	0	Middle	RB1#0	23.18
	0		RB6#0	22.15
	0	Highest	RB1#5	23.28
	0		RB6#0	22.45
5MHz 16QAM	3	Lowest	RB1#0	22.96
	0		RB5#0	20.85
	0	Middle	RB1#0	23.20
	0		RB5#0	21.15
	0	Highest	RB1#5	23.33
	0		RB5#0	21.52
10MHz QPSK	3	Lowest	RB1#0	23.04
	0		RB4#0	22.91

	0	Middle	RB1#0	22.98
	0		RB4#0	23.01
	4	Highest	RB1#5	23.01
	7		RB4#2	23.19
10MHz 16QAM	3	Lowest	RB1#0	22.88
	0		RB4#0	21.86
	0	Middle	RB1#0	22.57
	0		RB4#0	21.78
	4	Highest	RB1#5	23.24
	7		RB4#2	22.18

LTE CAT M1 Band 13

Test Bandwidth & Modulation	Index	Channel	Resource Block & RB offset	Conducted Average Output Power(dBm)
5MHz QPSK	3	Lowest	RB1#0	24.27
	0		RB6#0	23.25
	0	Middle	RB1#0	24.44
	0		RB6#0	23.26
	0	Highest	RB1#5	24.08
	0		RB6#0	23.22
5MHz 16QAM	3	Lowest	RB1#0	24.17
	0		RB5#0	22.25
	0	Middle	RB1#0	24.49
	0		RB5#0	22.15
	0	Highest	RB1#5	24.05
	0		RB5#0	22.29
10MHz QPSK	0			
	0			
	0	Middle	RB1#0	24.37
	0		RB4#0	24.28
	0			
	0			
10MHz 16QAM	0			
	0			
	0	Middle	RB1#0	24.63
	0		RB4#0	23.40
	0			
	0			

Bluetooth:

Mode	Channel frequency (MHz)	RF Output Power (dBm)
BLE(1M)	2402	-6.27
	2440	-6.82
	2480	-7.01

Wi-Fi 2.4G:

Mode	Channel frequency (MHz)	Data Rate	Conducted Average Output Power(dBm)
802.11b	2412	1Mbps	7.15
	2437		7.12
	2462		7.35
802.11g	2412	6Mbps	6.20
	2437		6.19
	2462		6.52
802.11n HT20	2412	MCS0	5.14
	2437		5.15
	2462		5.35
802.11n HT40	2422	MCS0	4.89
	2437		4.69
	2452		4.83

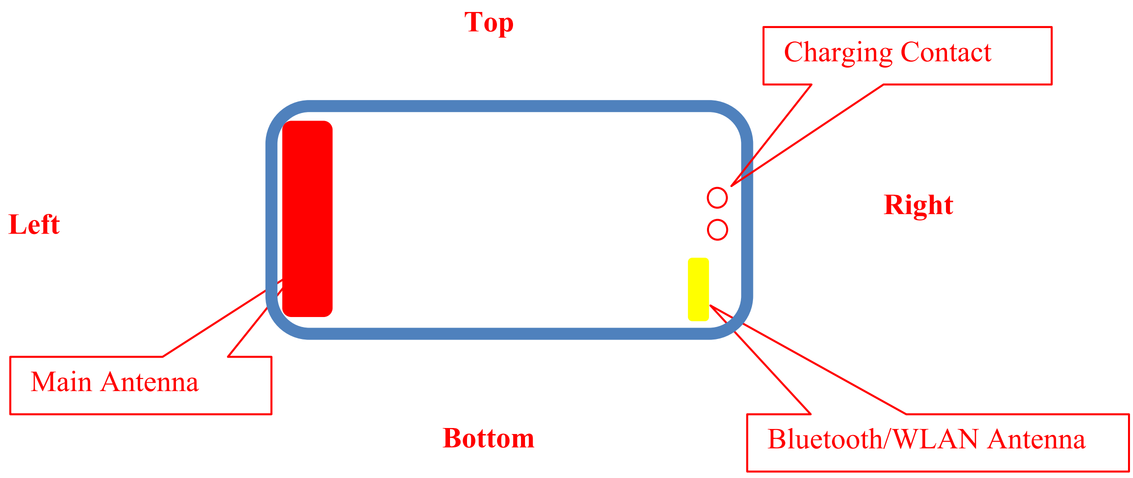
Duty Cycle:

TestMode	Duty Cycle [%]
802.11b	100.00
802.11g	100.00
802.11n-HT20	100.00
802.11n-HT40	100.00
BLE 1M	27.40

Note: Duty cycle data is derived from radio reports.

Standalone SAR test exclusion considerations

Antennas Location:



EUT Front View

Antenna Distance To Edge:

Antenna Distance To Edge(mm)						
Antenna	**Front**	**Back**	**Left**	**Right**	**Top**	**Bottom**
Main Antenna	< 5	< 5	< 5	46.93	< 5	< 5
BLE/WLAN Antenna	< 5	9.4	44.24	< 5	16.42	< 5

Note:In normal use, only Back side close to the user body.

Standalone SAR test exclusion considerations:

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
2.4G WLAN	2462	7.5	5.62	0	1.8	3	Yes
Bluetooth	2480	-6.0	0.25	0	0.1	3	Yes

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.

Standalone SAR estimation:

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Estimated 1-g (W/kg)
BLE	2480	-6.0	0.25	0	0.01

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with otherantennas, the standalone SAR must be estimated according to following to determine simultaneoustransmission 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

SAR MEASUREMENT RESULTS

This page summarizes the results ofthe performed dosimetric evaluation.

SAR Test Data

Environmental Conditions

Temperature:	22.6-23.8℃	22.3-23.6℃	22.5-23.4℃
Relative Humidity:	52-63%	46-58%	42-56%
ATM Pressure:	101kPa	105kPa	102kPa
Test Date:	2024/04/08	2024/04/09	2024/04/11

Testing was performed bySid Luo,Calvin Li and Bob Lu.

There are three sets of accessories (T1, T2, T3) for testing at Wi-Fi and WWAN worst Band.After pre-testing, T1 was configured as the worst mode for SAR testing.

Pre-testing Data for WWAN:

EUT Position	Frequency (MHz)	Test Mode	1g SAR (W/kg)		
			Meas. SAR	EUT	Plot
Body Back (0mm)	836.6	GPRS	0.621	T1	2#
	836.6	GPRS	0.505	T2	28#
	836.6	GPRS	0.574	T3	29#

Pre-testing Data for WLAN:

EUT Position	Frequency (MHz)	Test Mode	1g SAR (W/kg)		
			Meas. SAR	EUT	Plot
Body Back (0mm)	2437	802.11b	0.158	T1	26#
	2437	802.11b	0.103	T2	30#
	2437	802.11b	0.136	T3	31#

T1:

T2:

T3:

GSM 850：

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	824.2	GPRS	25.63	26.0	1.089	0.648	0.71	1#
	836.6	GPRS	25.56	26.0	1.107	0.621	0.69	2#
	848.8	GPRS	25.35	26.0	1.161	0.638	0.74	3#

Note:

1. The EUT transmit and receive through the same GSM antenna while testing SAR.
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. 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.
4. The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 1DL+4UL is the worst case.

PCS 1900：

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
BodyBack (0mm)	1850.2	GPRS	23.72	24.0	1.067	1.07	1.14	4#
	1880	GPRS	23.68	24.0	1.076	1.04	1.12	5#
	1909.8	GPRS	23.79	24.0	1.050	1.01	1.06	6#

Note:

1. The EUT transmit and receive through the same GSM antenna while testing SAR.
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. 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.
4. 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.

LTE CAT M1 Band 2：

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	1860	20	1RB	20.56	21.0	1.107	0.692	0.77	7#
	1880	20	1RB	20.51	21.0	1.119	0.705	0.79	8#
	1900	20	1RB	20.27	21.0	1.183	0.67	0.79	9#
	1880	20	50%RB	20.39	21.0	1.151	0.645	0.74	10#

LTE CAT M1 Band 4：

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	1720	20	1RB	22.69	23.5	1.205	0.507	0.61	11#
	1732.5	20	1RB	22.91	23.5	1.146	0.517	0.59	12#
	1745	20	1RB	22.89	23.5	1.151	0.587	0.68	13#
	1732.5	20	50%RB	22.98	23.5	1.127	0.544	0.61	14#

LTE CAT M1 Band 5：

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	829	10	1RB	22.98	23.5	1.127	0.397	0.45	15#
	836.5	10	1RB	23.04	23.5	1.112	0.514	0.57	16#
	844	10	1RB	22.89	23.5	1.151	0.413	0.48	17#
	836.5	10	50%RB	22.89	23.5	1.151	0.506	0.58	18#

LTE CAT M1 Band 12：

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 Back (0mm)	704	10	1RB	23.04	23.5	1.112	0.138	0.15	19#
	707.5	10	1RB	22.98	23.5	1.127	0.148	0.17	20#
	711	10	1RB	23.01	23.5	1.119	0.12	0.13	21#
	707.5	10	50%RB	23.01	23.5	1.119	0.142	0.16	22#

LTE CAT M1 Band 13：

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 Back (0mm)	/	/	/	/	/	/	/	/	/
	782	10	1RB	24.37	25.0	1.156	0.231	0.27	23#
	/	/	/	/	/	/	/	/	/
	782	10	50%RB	24.28	25.0	1.180	0.224	0.26	24#

Note:

1. SAR for LTE CAT M1 band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02.
2. KDB941225D05-SAR for higher order modulation is required only when the highest maximum output power for the configuration in the higher order modulation is > 0.5 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg
3. KDB941225D05-For QPSK with 100% RB allocation, when the reported SAR measured for the Highest output power channel is <1.45 W/kg, tests for the remaining required test channels are optional.
4. KDB941225D05- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
5. KDB941225D05- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offset the upper edge, middle and lower edge of each required test channel.
6. KDB941225D05- other channel bandwidths SAR test is required when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > 0.5 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.
7. Worst case SAR for 50% RB allocation is selected to be tested.

WLAN 2.4G:

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	Scaled Factor	1g SAR (W/kg)			
						Duty Cycle (%)	Meas. SAR	Scaled SAR	Plot
Body Back (0mm)	2412	802.11b	7.15	7.5	1.084	100	0.160	0.17	25#
	2437	802.11b	7.12	7.5	1.091	100	0.158	0.17	26#
	2462	802.11b	7.35	7.5	1.035	100	0.201	0.21	27#

Note:

1. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure.When OFDM tune up power is greater than DSSS, the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specifiedmaximum output power and the adjusted SAR is ≤ 1.2 W/kg, OFDM SAR is not required.
2. When SAR or MPE is not measured at the maximum power level allowed for production units, theresults must be scaled to the maximum tune-up tolerance limit according to the power applied to theindividual channels tested to determine compliance.
3. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 80211b/g/n mode is use for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
4. According 2016 Oct. TCB, for SAR testing of 2.4G WIFI 802.11b 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

Body

SAR probe calibration point	Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio
				Original	Repeated	
1900 MHz (1850-1950MHz)	PCS 1900	1850.2	Body Back	1.07	0.982	1.09

Note:

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

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities		
Transmitter Combination	**Simultaneous?**	**Hotspot?**
WWAN+ Bluetooth	√	×
WWAN+ WLAN	√	×
WLAN + Bluetooth	×	×

Simultaneous and Hotspot SAR test exclusion considerations:

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		ΣSAR < 1.6W/kg
		SAR1	SAR2	
WWAN+WLAN	Body	1.14	0.21	**1.35**
WWAN+BT	Body	1.14	0.01	1.15

Conclusion:

Sum of SAR: **ΣSAR ≤ 1.6 W/kg** therefore simultaneous transmission SAR with SPLSR 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	6.55	N	1	1	1	6.6	6.6
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
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
Post-processing	2.0	R	√3	1	1	1.2	1.2
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
Phantom and set-up							
Phantom uncertainty (shape and thickness tolerances)	4.0	R	√3	1	1	2.3	2.3
Liquid conductivity target)	5.0	R	√3	0.64	0.43	1.8	1.2
Liquid conductivity meas.)	2.5	N	1	0.64	0.43	1.6	1.1
Liquid permittivity target)	5.0	R	√3	0.6	0.49	1.7	1.4
Liquid permittivity meas.)	2.5	N	1	0.6	0.49	1.5	1.2
Combined standard uncertainty		RSS				12.2	12.0
Expanded uncertainty 95 % confidence interval)						24.3	23.9

APPENDIX BEUT TEST POSITION PHOTOS

Please Refer to the Attachment.

APPENDIX CPROBE CALIBRATION CERTIFICATES

Please Refer to the Attachment.

APPENDIX D DIPOLE CALIBRATION CERTIFICATES

Please Refer to the Attachment.

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