中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)

ACCREDITED
TESTING LABORATORY
CERTIFICATE # 6356.01

SAR TEST REPORT

Applicant: Shenzhen ITS Technology Co.,Ltd.

Address: 1103,11/F.,Beiyou Science and Technology Building,Gaoxin South Ring Road,NanshanDistrict,Shenzhen,China

FCC ID: 2BNYL-S8600

Product Name: Rugged Biometric Tablet

Standard(s): 47 CFR Part 2(2.1093)

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: 2503P42192E-20

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SAR TEST RESULTS SUMMARY

Operation Frequency Bands	Highest Reported 1g SAR (W/kg)		Limits (W/kg)
	Body-Supported		
GSM 850	1.11		**1.6**
PCS 1900	1.30		
WCDMA Band 2	0.92		
WCDMA Band 4	0.90		
WCDMA Band 5	0.29		
LTE Band 2	0.89		
LTE Band 4	1.17		
LTE Band 5	0.25		
LTE Band 7	**1.32**		
LTE Band 41&38	0.33		
Wi-Fi 2.4	0.16		
Wi-Fi 5.2	0.22		
Wi-Fi 5.8	0.11		
Maximum Simultaneous Transmission SAR			
Items	**Body-Supported**	**Hotspot**	**Limits**
Sum SAR(W/kg)	**1.54**	**1.54**	**1.6**
SPLSR	N/A	N/A	**0.04**
EUT Received Date:	2025/01/16		
Tested Date:	2025/01/25 ~ 2025/01/27, 2025/02/05		
Tested Result:	Pass		

Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, 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. : 442868, the FCC Designation No. : CN1314.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Each test item follows the test standard(s) without deviation.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2503P42192E-20	Original Report	2025/03/03

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Rugged Biometric Tablet
EUT Model:	ITS-S8600
Multiple Model:	ITS-S8800
Trade Mark:	ITS
Device Type:	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Body-Worn Accessories:	None
Operation modes:	GSM Voice, GPRS/EDGE Data, WCDMA(R99 (Voice+Data), HSDPA/HSUPA), FDD-LTE, TDD-LTE, WLAN, Bluetooth, NFC
Frequency Band:	GSM 850: 824-849 MHz(TX); 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 4: 1710-1755MHz(TX) ; 2110-2155 MHz(RX) WCDMA Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) LTE Band 4: 1710-1755MHz(TX) ; 2110-2155 MHz(RX) LTE Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 7: 2500-2570 MHz(TX); 2620-2690 MHz(RX) LTE Band 38: 2570-2620 MHz(TX/RX) LTE Band 41: 2496-2690 MHz(TX/RX) WLAN 2.4G : 2412 MHz-2462 MHz/2422-2452 MHz WLAN 5.2G : 5150 MHz-5250 MHz WLAN 5.8G : 5725 MHz-5850 MHz Bluetooth/BLE : 2402 MHz-2480 MHz NFC:13.56MHz
Dimensions (L*W*H):	210 mm (L) * 220 mm (W) * 28 mm (H)
Rated Input Voltage:	DC 3.8 V from Rechargeable Battery
Serial Number:	2XLX-1
Normal Operation:	Body Supported

Note: Model: ITS-S8800 is electrically identical with the model:ITS-S8600. The difference between them is that the ITS-S8600 has entering and recognizing fingerprints functions, the model ITS-S8600 was fully tested. The differences between them please refer to the declaration letter for details.

1.2 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528-2013, the following FCC Published RF exposure KDB procedures:

KDB 447498 D01 General RF Exposure Guidance v06
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 616217 D04 SAR for laptop and tablets v01r02
KDB 248227 D01 802 11 Wi-Fi SAR v02r02

TCB Workshop April 2019: RF Exposure Procedures

1.3 SAR Limits

FCC Limit

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 of individual who have no knowledge or control of their exposure.

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

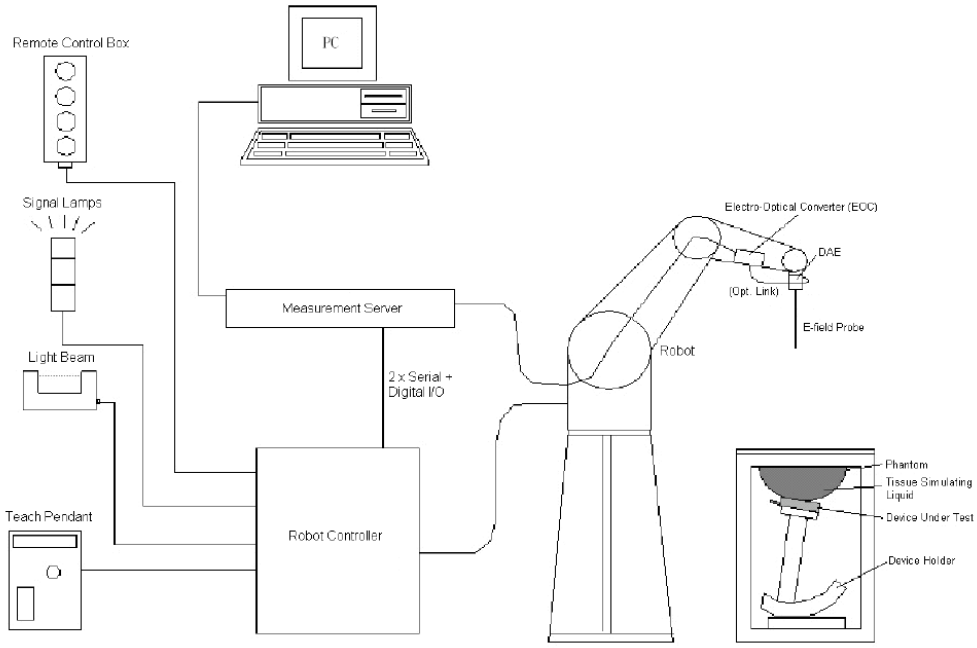
General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg for 1g SAR applied to the EUT.

2. SAR MEASUREMENT SYSTEM

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

DASY5 System Description

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



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

DASY5 Measurement Server

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip-disk and 128MB 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 DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. 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 point out, and therefore only devices provided by SPEAG can be connected. 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	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 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, EASY4/MRI

Calibration Frequency Points for EX3DV4 E-Field Probes SN: 7329 Calibrated: 2024/3/27

Calibration Frequency Point(MHz)	Frequency Range(MHz)		Conversion Factor		
	From	To	X	Y	Z
750 Head	650	810	8.79	10.07	9.05
900 Head	810	1000	8.42	9.50	8.93
1750 Head	1650	1810	7.56	8.56	7.71
1900 Head	1810	2000	7.37	8.32	7.54
2300 Head	2200	2399	7.21	8.13	7.41
2450 Head	2399	2500	7.05	7.92	7.22
2600 Head	2500	2700	6.91	7.77	7.08
5250 Head	5140	5360	4.96	5.61	5.16
5600 Head	5490	5675	4.38	4.98	4.56
5750 Head	5675	5860	4.54	5.16	4.70

SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6 mm). The phantom has three measurement areas:
_ Left Head
_ Right Head
_ Flat phantom

The phantom table for the DASY systems based on the robots have the size of 100 x 50 x 85 cm (L x W x H).
For easy dislocation these tables have fork lift cut outs at the bottom.
The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)

A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

Robots

The DASY5 system uses the high precision industrial robot. The robot offers the same features important for our application:

- 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 above mentioned 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 contained on the CDs delivered along with the robot. Paper manuals are available upon request direct from Staubli.

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 15mm 2 step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

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

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	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.	

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 10mm,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

			≤ 3 GHz	> 3 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.

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 IEEE 1528-2013

Recommended Tissue Dielectric Parameters for Head liquid

Table 3—Target dielectric properties of head tissue-equivalent material in the 300 MHz to 6000 MHz frequency range

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
1450	40.5	1.20
1500	*40.4*	*1.23*
1640	*40.2*	*1.31*
1750	*40.1*	*1.37*
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2100	*39.8*	*1.49*
2300	*39.5*	*1.67*
2450	39.2	1.80
2600	*39.0*	*1.96*
3000	38.5	2.40
3500	*37.9*	*2.91*
4000	*37.4*	*3.43*
4500	*36.8*	*3.94*
5000	*36.2*	*4.45*
5200	*36.0*	*4.66*
5400	*35.8*	*4.86*
5600	*35.5*	*5.07*
5800	35.3	5.27
6000	*35.1*	*5.48*

NOTE—For convenience, permittivity and conductivity values at some frequencies that are not part of the original data from Drossos et al. [B60] or the extension to 5800 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 6000 MHz that were linearly extrapolated from the values at 3000 MHz and 5800 MHz.

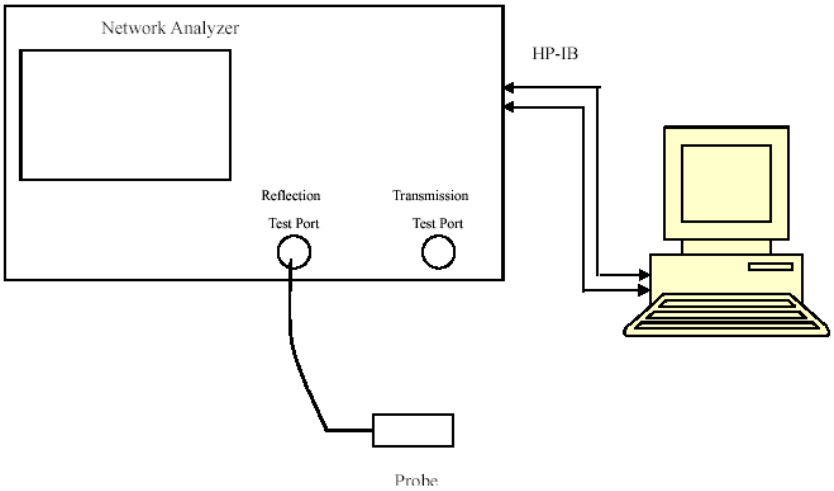
3. EQUIPMENT LIST AND CALIBRATION

3.1 Equipments List & Calibration Information

Equipment	Model	S/N	Calibration Date	Calibration Due Date
DASY5 Test Software	DASY52.10	N/A	NCR	NCR
DASY5 Measurement Server	DASY5 4.5.12	1567	NCR	NCR
Data Acquisition Electronics	DAE4	1354	2024/12/3	2025/12/2
E-Field Probe	EX3DV4	7329	2024/3/27	2025/3/26
Mounting Device	MD4HHTV5	BJPCTC0152	NCR	NCR
Twin SAM	Twin SAM V5.0	1412	NCR	NCR
Dipole, 900 MHz	D900V2	1d217	2023/3/24	2026/3/23
Dipole, 1750 MHz	D1750V2	1200	2023/3/27	2026/3/26
Dipole, 1900 MHz	D1900V2	5d251	2023/3/27	2026/3/26
Dipole, 2450 MHz	D2450V2	1102	2023/3/27	2026/3/26
Dipole,2600 MHz	D2600V2	1206	2023/3/27	2026/3/26
Dipole,5GHz	D5GHzV2	1245	2023/8/23	2026/8/22
Simulated Tissue Liquid Head(500-9500 MHz)	HBBL600-10000V6	220420-2	Each Time	/
Network Analyzer	8753B	2828A00170	2024/10/17	2025/10/16
Dielectric assessment kit	1319	SM DAK 040 CA	NCR	NCR
MXG Vector Signal Generator	N5182B	MY51350144	2024/4/1	2025/3/31
Power Meter	ML2495A	1106009	2024/8/29	2025/8/28
USB Power Sensor	U2001H	MY50000432	2024/4/1	2025/3/31
Power Amplifier	ZHL-5W-202-S+	416402204	NCR	NCR
Power Amplifier	ZVE-6W-83+	637202210	NCR	NCR
Directional Coupler	441493	520Z	NCR	NCR
Attenuator	20dB, 100W	LN749	NCR	NCR
Attenuator	6dB, 150W	2754	NCR	NCR
Thermometer	DTM3000	3892	2024/4/1	2025/3/31
Thermo-hygrometer	HTC-1	N/A	2024/4/1	2025/3/31
Radio Communication Analyzer	MT8820C	6201181458	2024/4/1	2025/3/31
Spectrum Analyzer	FSU26	100147	2024/4/1	2025/3/31

4. SAR MEASUREMENT SYSTEM VERIFICATION

4.1 Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ	
824.2	Simulated Tissue Liquid Head	42.169	0.912	41.55	0.9	1.49	1.33	±5
826.4	Simulated Tissue Liquid Head	42.166	0.915	41.54	0.9	1.51	1.67	±5
829	Simulated Tissue Liquid Head	42.139	0.921	41.53	0.9	1.47	2.33	±5
836.5	Simulated Tissue Liquid Head	42.121	0.927	41.5	0.9	1.5	3	±5
836.6	Simulated Tissue Liquid Head	42.119	0.929	41.5	0.9	1.49	3.22	±5
844	Simulated Tissue Liquid Head	42.103	0.932	41.5	0.91	1.45	2.42	±5
846.6	Simulated Tissue Liquid Head	42.089	0.936	41.5	0.91	1.42	2.86	±5
848.8	Simulated Tissue Liquid Head	42.059	0.938	41.5	0.91	1.35	3.08	±5
900	Simulated Tissue Liquid Head	42.026	0.968	41.5	0.97	1.27	-0.21	±5

**Liquid Verification above was performed on 2025/1/25.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
1712.4	Simulated Tissue Liquid Head	39.492	1.321	40.13	1.35	-1.59	-2.15	±5
1720	Simulated Tissue Liquid Head	39.433	1.336	40.13	1.35	-1.74	-1.04	±5
1732.5	Simulated Tissue Liquid Head	39.385	1.344	40.12	1.36	-1.83	-1.18	±5
1732.6	Simulated Tissue Liquid Head	39.371	1.348	40.12	1.36	-1.87	-0.88	±5
1745	Simulated Tissue Liquid Head	39.254	1.357	40.1	1.37	-2.11	-0.95	±5
1750	Simulated Tissue Liquid Head	39.239	1.366	40.1	1.37	-2.15	-0.29	±5
1752.6	Simulated Tissue Liquid Head	39.211	1.371	40.09	1.37	-2.19	0.07	±5

**Liquid Verification above was performed on 2025/01/25.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
1850.2	Simulated Tissue Liquid Head	39.478	1.408	40	1.4	-1.31	0.57	±5
1852.4	Simulated Tissue Liquid Head	39.304	1.413	40	1.4	-1.74	0.93	±5
1860	Simulated Tissue Liquid Head	39.235	1.416	40	1.4	-1.91	1.14	±5
1880	Simulated Tissue Liquid Head	39.209	1.419	40	1.4	-1.98	1.36	±5
1900	Simulated Tissue Liquid Head	39.199	1.421	40	1.4	-2	1.5	±5
1907.6	Simulated Tissue Liquid Head	39.17	1.423	40	1.4	-2.08	1.64	±5
1909.8	Simulated Tissue Liquid Head	39.034	1.425	40	1.4	-2.42	1.79	±5

**Liquid Verification above was performed on 2025/01/26.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
2412	Simulated Tissue Liquid Head	40.461	1.784	39.28	1.77	3.01	0.79	±5
2437	Simulated Tissue Liquid Head	40.323	1.834	39.23	1.79	2.79	2.46	±5
2450	Simulated Tissue Liquid Head	40.319	1.842	39.2	1.8	2.85	2.33	±5
2462	Simulated Tissue Liquid Head	40.259	1.851	39.18	1.81	2.75	2.27	±5

**Liquid Verification above was performed on 2025/02/05.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
2506	Simulated Tissue Liquid Head	40.155	1.922	39.13	1.86	2.62	3.33	±5
2510	Simulated Tissue Liquid Head	40.144	1.931	39.12	1.86	2.62	3.82	±5
2535	Simulated Tissue Liquid Head	40.116	1.958	39.09	1.89	2.62	3.6	±5
2549.5	Simulated Tissue Liquid Head	40.095	1.983	39.07	1.91	2.62	3.82	±5
2560	Simulated Tissue Liquid Head	40.041	1.987	39.05	1.92	2.54	3.49	±5
2593	Simulated Tissue Liquid Head	39.995	2.014	39.01	1.95	2.52	3.28	±5
2600	Simulated Tissue Liquid Head	39.988	2.024	39	1.96	2.53	3.27	±5
2636.5	Simulated Tissue Liquid Head	39.871	2.072	38.95	2	2.36	3.6	±5
2680	Simulated Tissue Liquid Head	39.701	2.111	38.9	2.05	2.06	2.98	±5

**Liquid Verification above was performed on 2025/01/27.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
5180	Simulated Tissue Liquid Head	36.879	4.719	36.02	4.64	2.38	1.7	±5
5200	Simulated Tissue Liquid Head	36.769	4.752	36	4.66	2.14	1.97	±5
5240	Simulated Tissue Liquid Head	36.562	4.784	35.96	4.7	1.67	1.79	±5
5250	Simulated Tissue Liquid Head	36.416	4.791	35.95	4.71	1.3	1.72	±5

**Liquid Verification above was performed on 2025/02/05.*

Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	Δσ (S/m)	
5745	Simulated Tissue Liquid Head	35.205	5.273	35.36	5.22	-0.44	1.02	±5
5750	Simulated Tissue Liquid Head	35.132	5.312	35.35	5.22	-0.62	1.76	±5
5785	Simulated Tissue Liquid Head	34.926	5.354	35.32	5.26	-1.12	1.79	±5
5825	Simulated Tissue Liquid Head	34.746	5.368	35.28	5.3	-1.51	1.28	±5

**Liquid Verification above was performed on 2025/02/05.*

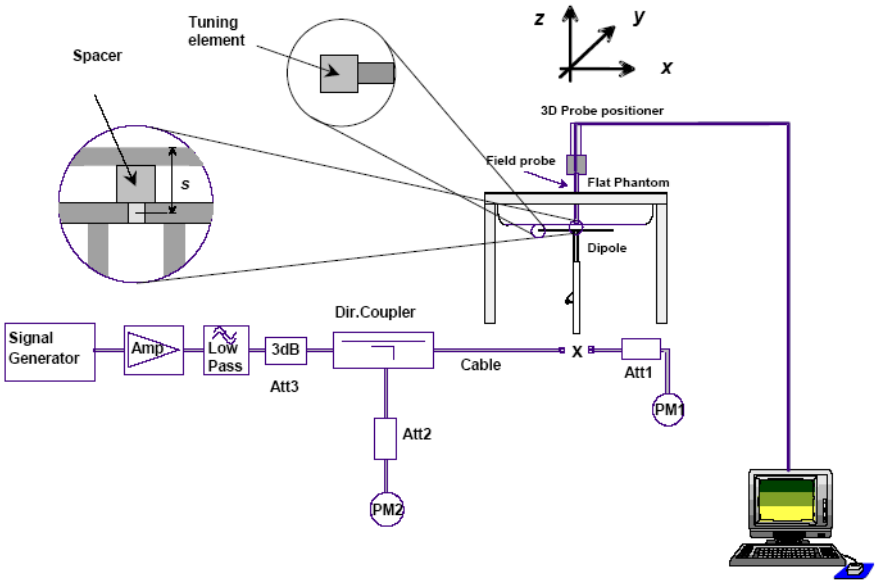
4.2 System Accuracy Verification

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 distances 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	Liquid Type	Input Power (mW)	Measured SAR (W/kg)		Normalized to 1W (W/kg)	Target Value (W/kg)	Delta (%)	Tolerance (%)
2025/01/25	900 MHz	Simulated Tissue Liquid Head	100	1g	1.05	10.5	10.9	-3.67	±10
2025/01/25	1750 MHz	Simulated Tissue Liquid Head	100	1g	3.75	37.5	35.8	4.75	±10
2025/01/26	1900 MHz	Simulated Tissue Liquid Head	100	1g	4.11	41.1	38.9	5.66	±10
2025/02/05	2450 MHz	Simulated Tissue Liquid Head	100	1g	5.21	52.1	50.9	2.36	±10
2025/01/27	2600 MHz	Simulated Tissue Liquid Head	100	1g	5.66	56.6	56.0	1.07	±10
2025/02/05	5250 MHz	Simulated Tissue Liquid Head	100	1g	7.68	76.8	78.0	-1.54	±10
2025/02/05	5750 MHz	Simulated Tissue Liquid Head	100	1g	7.61	76.1	77.8	-2.19	±10

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

4.3 SAR SYSTEM VALIDATION DATA

System Performance 900 MHz Head

DUT: D900V2; Type: 900 MHz; Serial: 1d217

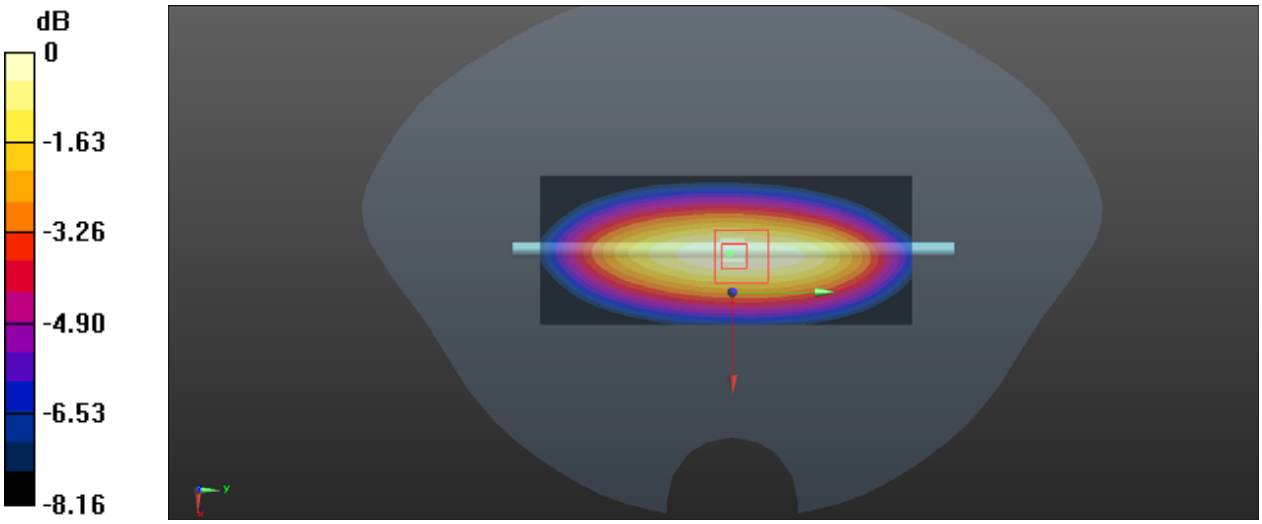
Communication System: CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 900 MHz; σ = 0.968 S/m; ε_r = 42.026; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(8.42, 9.5, 8.93)@ 900 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.29 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.65 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.741 W/kg
Maximum value of SAR (measured) = 1.32 W/kg



0 dB = 1.32 W/kg = 1.21 dBW/kg

System Performance 1750 MHz Head

DUT: D1750V2; Type: 1750 MHz; Serial: 1200

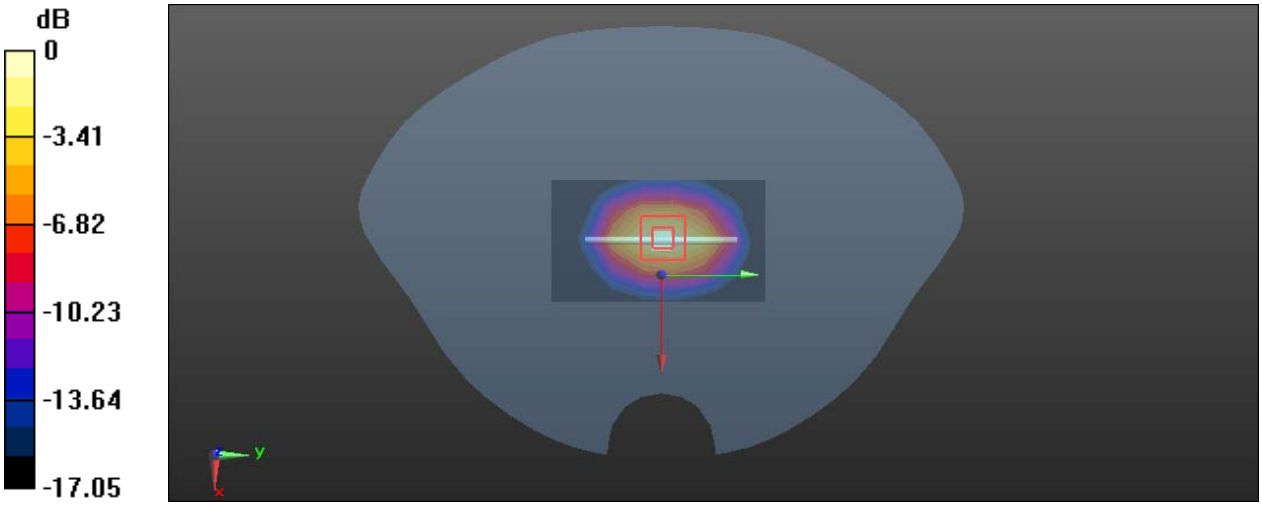
Communication System: CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.366 S/m; ε_r = 39.239; ρ = 1000 kg/m^3;
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.56, 8.56, 7.71) @1750 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (8x5x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 4.55 W/kg

Zoom Scan (5x5x7) /Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 51.58 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 6.36 W/kg
SAR(1 g) = 3.75 W/kg; SAR(10 g) = 2.01 W/kg
Maximum value of SAR (measured) = 4.04 W/kg



0 dB = 4.04 W/kg = 6.06 dBW/kg

System Performance 1900MHz Head

DUT: D1900V2; Type: 1900 MHz; Serial: 5d251

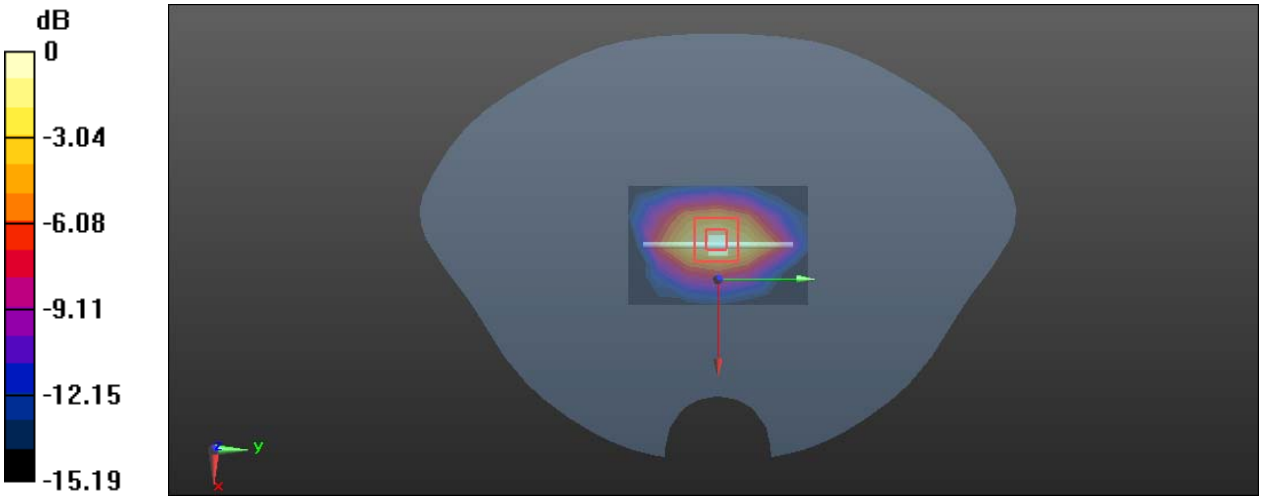
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.421 S/m; ε_r = 39.199; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.37, 8.32, 7.54)@ 1900 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.18 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.68 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 6.33 W/kg
SAR(1 g) =4.11 W/kg; SAR(10 g) = 2.17 W/kg
Maximum value of SAR (measured) = 4.53 W/kg



0 dB = 4.53 W/kg = 6.56 dBW/kg

System Performance 2450MHz Head

DUT: D2450V2; Type: 2450 MHz; Serial: 1102

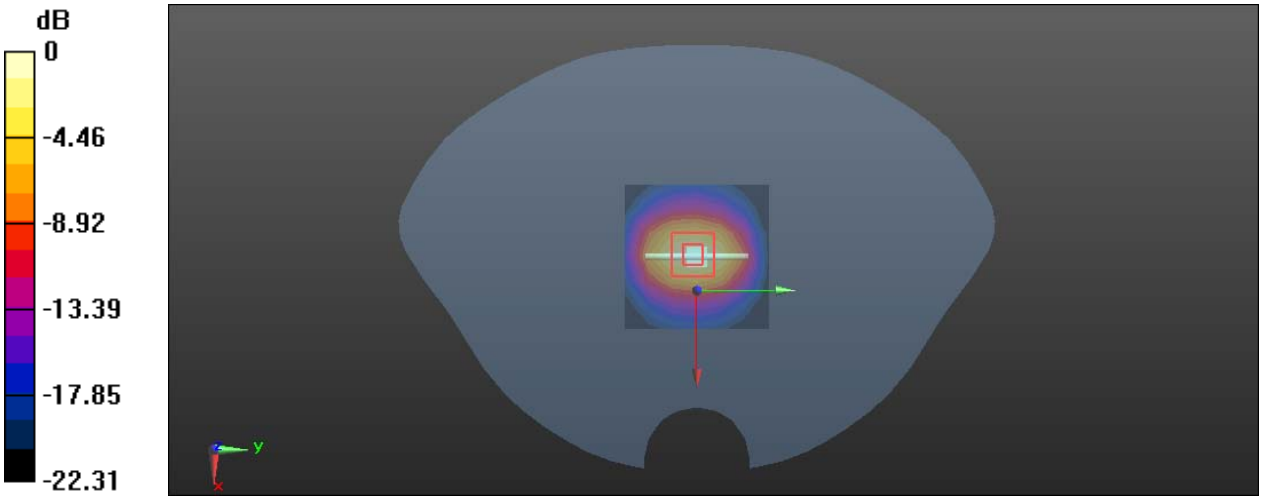
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.842 S/m; ε_r = 40.319; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(7.05, 7.92, 7.22) @ 2450 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (7x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 8.42 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.35 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 10.2 W/kg
SAR(1 g) = 5.21 W/kg; SAR(10 g) = 2.53 W/kg
Maximum value of SAR (measured) = 8.32 W/kg



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

System Performance 2600MHz Head

DUT: D2600V2; Type: 2600 MHz; Serial: 1206

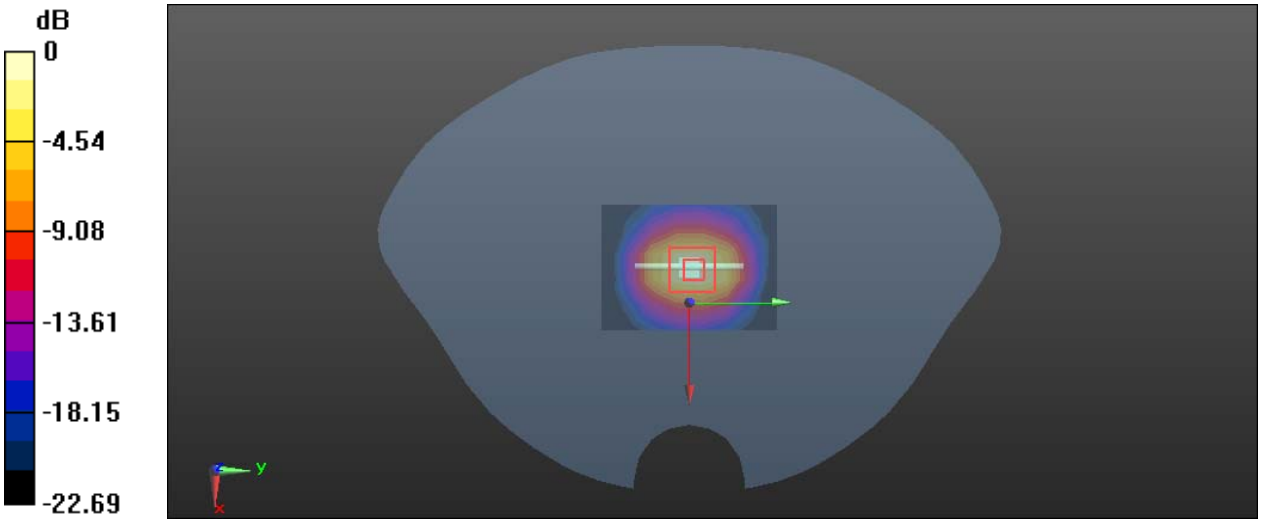
Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.024 S/m; ε_r = 39.988; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(6.91, 7.77, 7.08) @ 2600 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (6x7x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 8.41 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 68.96 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 10.8 W/kg
SAR(1 g) = 5.66 W/kg; SAR(10 g) = 2.58 W/kg
Maximum value of SAR (measured) = 9.34 W/kg



0 dB = 9.34 W/kg = 9.70 dBW/kg

System Performance 5250MHz Head

DUT: D5GHzV2; Type: 5250MHz; Serial: SN:1245

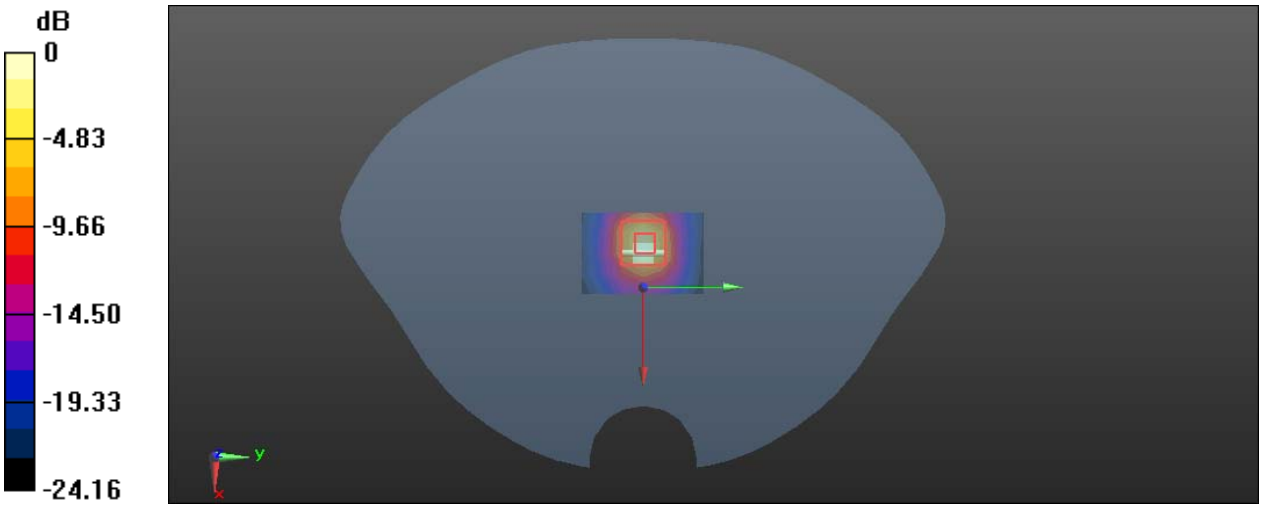
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.791 S/m; ε_r = 36.416; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(4.96, 5.61, 5.16) @ 5250 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (5x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 19.2 W/kg

Zoom Scan (8x8x12) /Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 39.56 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 30.7 W/kg
SAR(1 g) = 7.68 W/kg; SAR(10 g) = 2.29 W/kg
Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 18.3 W/kg = 12.62 dBW/kg

System Performance 5750MHz Head

DUT: D5GHzV2; Type: 5750MHz; Serial: SN:1245

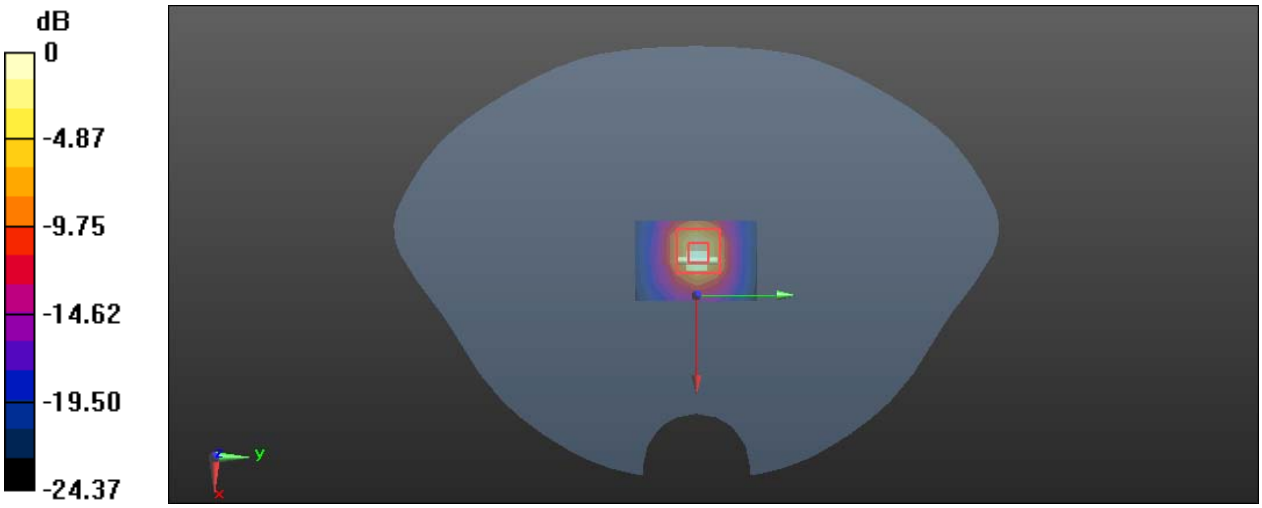
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.312 S/m; ε_r = 35.132; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7329; ConvF(4.54, 5.16, 4.7) @ 5750 MHz; Calibrated: 2024/3/27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

Area Scan (5x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 19.5 W/kg

Zoom Scan (8x8x12) /Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 39.75 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.2 W/kg
SAR(1 g) = 7.61 W/kg; SAR(10 g) = 2.11 W/kg
Maximum value of SAR (measured) = 18.2 W/kg



0 dB = 18.2 W/kg = 12.60 dBW/kg

5. EUT TEST STRATEGY AND METHODOLOGY

5.1 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.

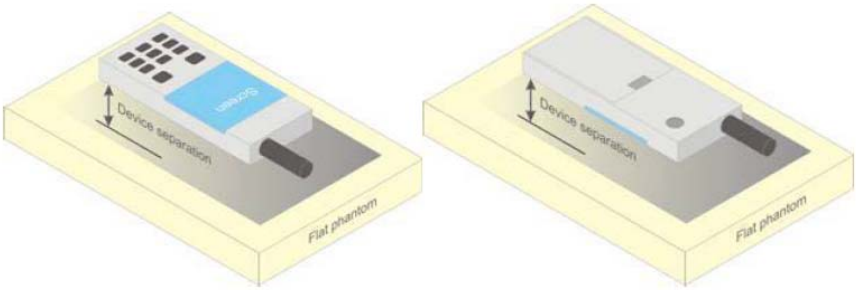


Figure 5 – Test positions for body-worn devices

5.2 Test Distance for SAR Evaluation

In this case the EUT(Equipment Under Test) is set directly against the phantom, the test distance is 0mm.

5.3 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.

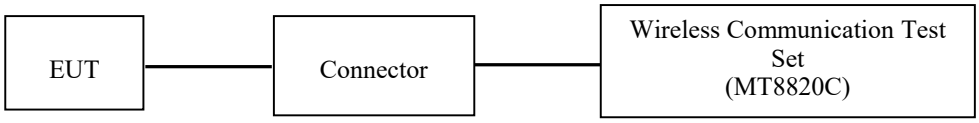
All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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.

6. CONDUCTED OUTPUT POWER MEASUREMENT

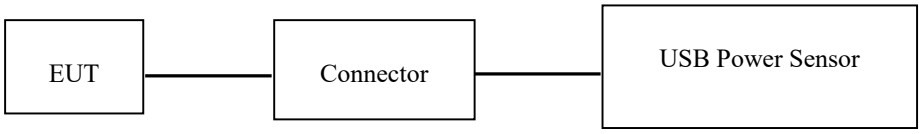
6.1 Test Procedure

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 port of the USB Power Sensor through Connector.



BT/WLAN

6.2 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

The maximum power was configured per 3GPP Standard for each operation modes as below setting:

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
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
BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset > + 0 Hz
Mode > BCCH and TCH

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

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
	βc / βd	8/15

WCDMA 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			
	βc	2/15	12/15	15/15	15/15
	βd	1 /15	15/15	8/15	4/15
	βd (SF)	64			
	βc/ βd	2/15	12/15	15/8	15/4
	βhs	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			

WCDMA 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**		**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				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30 15	2/15	5/15
	βc/ βd	11/15	6/15	15/9	2/15	-
	βhs	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=βhs/ βc	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 k ps	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	

LTE (FDD):

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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

Modulation	Channel bandwidth / Transmission bandwidth (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

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

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

Network Signalling value	Requirements (sub-clause)	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	NA
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	See 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	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	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

TDD-LTE

P 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&38 SAR test, that is 63.33%(1:1.58)for duty cycle.

6.3 Maximum Target Output Power

Max Target Power(dBm)			
Mode/Band	Channel		
	Low	Middle	High
GSM 850	32.3	32.3	32.3
GPRS 1 TX Slot	32.3	32.3	32.3
GPRS 2 TX Slot	31.4	31.4	31.4
GPRS 3 TX Slot	30	30	30
GPRS 4 TX Slot	28.6	28.6	28.6
EDGE 1 TX Slot	26.7	26.7	26.7
EDGE 2 TX Slot	25.4	25.4	25.4
EDGE 3 TX Slot	23.4	23.4	23.4
EDGE 4 TX Slot	22.3	22.3	22.3
GSM 1900	26.2	26.2	26.2
GPRS 1 TX Slot	26	26	26
GPRS 2 TX Slot	25.9	25.9	25.9
GPRS 3 TX Slot	25.7	25.7	25.7
GPRS 4 TX Slot	24.9	24.9	24.9
EDGE 1 TX Slot	26	26	26
EDGE 2 TX Slot	24.8	24.8	24.8
EDGE 3 TX Slot	23	23	23
EDGE 4 TX Slot	22	22	22
WCDMA Band 2	21.3	21.3	21.3
HSDPA	21.3	21.3	21.3
HSUPA	21.3	21.3	21.3
WCDMA Band 4	21.3	21.3	21.3
HSDPA	21.2	21.2	21.2
HSUPA	21.2	21.2	21.2
WCDMA Band 5	22.4	22.4	22.4
HSDPA	22.3	22.3	22.3
HSUPA	22.4	22.4	22.4
LTE Band 2	22.2	22.2	22.2
LTE Band 4	22	22	22
LTE Band 5	23.2	23.2	23.2
LTE Band 7	21.2	21.2	21.2
LTE Band 38	22.2	22.2	22.2
LTE Band 41	22.2	22.2	22.2
WLAN 2.4G(802.11b)	14.6	15.2	16.6
WLAN 2.4G(802.11g)	12.5	12.5	12.8
WLAN 2.4G(802.11n ht20)	12.5	12.5	12.7
WLAN 2.4G(802.11n ht40)	12.7	11.8	11.8

Max Target Power(dBm)				
Mode/Band	**Channel**			
	Low	**Middle**	**High**	**Additional**
WLAN5.2G(802.11a)	11.3	11.3	11.3	/
WLAN5.2G(802.11n ht20)	11.2	11.2	10.5	/
WLAN5.2G(802.11n ht40)	11.2	/	10.6	/
WLAN5.2G(802.11ac80)	/	9.8	/	/
WLAN5.8G(802.11a)	10.3	10.9	11.6	/
WLAN5.8G(802.11n ht20)	10.1	10.8	11.5	/
WLAN5.8G(802.11n ht40)	10.1	/	10.8	/
WLAN5.8G(802.11ac80)	/	9.5	/	/
Bluetooth BDR(GFSK)	0.5	0.5	-0.5	2.5
Bluetooth EDR(π/4-DQPSK)	1.5	1.5	0.5	5.0
Bluetooth EDR(8DPSK)	2.5	2.5	1.0	3.5
BLE	-2.0	-1.5	-3.0	/

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

6.4 Test Results:

GSM:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)
GSM 850	128	824.2	32.06
	190	836.6	32.05
	251	848.8	**32.14**
PCS 1900	512	1850.2	**26.06**
	661	1880	25.97
	810	1909.8	26.06

GPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	31.97	31.22	29.75	28.46
	190	836.6	32.02	31.25	29.88	28.38
	251	848.8	32.12	31.21	29.93	28.54
PCS 1900	512	1850.2	25.82	25.78	25.55	24.83
	661	1880	25.90	25.82	25.64	24.65
	810	1909.8	25.44	25.35	25.02	23.86

EGPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slots	3 slots	4 slots
GSM 850	128	824.2	26.48	25.32	23.19	22.05
	190	836.6	26.62	25.34	23.30	21.98
	251	848.8	26.58	25.31	23.22	22.17
PCS 1900	512	1850.2	25.88	24.72	22.91	21.91
	661	1880	25.11	24.06	22.29	21.17
	810	1909.8	25.13	24.10	22.37	21.14

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	23.05
	251	848.8	23.14
PCS 1900	512	1850.2	17.06
	661	1880	16.97
	810	1909.8	17.06

The time based average power for GPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	22.97	25.22	25.5	25.46
	190	836.6	23.02	25.25	25.63	25.38
	251	848.8	23.12	25.21	**25.68**	25.54
PCS 1900	512	1850.2	16.82	19.78	21.3	**21.83**
	661	1880	16.9	19.82	21.39	21.65
	810	1909.8	16.44	19.35	20.77	20.86

The time based average power for EGPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	17.48	19.32	18.94	19.05
	190	836.6	17.62	19.34	19.05	18.98
	251	848.8	17.58	19.31	18.97	19.17
PCS 1900	512	1850.2	16.88	18.72	18.66	18.91
	661	1880	16.11	18.06	18.04	18.17
	810	1909.8	16.13	18.1	18.12	18.14

Note:

1. Radio Communication Analyzer (MT8820C) 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 4timeslots has been activated separately with power level 3(850 MHz band) and 3(1900 MHz band).
4. For EGPRS, 1, 2, 3 and 4timeslots 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 R99	21.09	21.16	**21.21**
HSDPA Subtest 1	21.00	21.12	21.12
HSDPA Subtest 2	21.00	20.99	21.11
HSDPA Subtest 3	20.92	21.18	21.10
HSDPA Subtest 4	20.85	21.15	21.04
HSUPA Subtest 1	20.90	21.14	21.19
HSUPA Subtest 2	20.88	21.11	21.14
HSUPA Subtest 3	20.94	21.09	21.16
HSUPA Subtest 4	20.91	21.12	20.98
HSUPA Subtest 5	20.93	21.17	21.12

WCDMA Band 4:

Test Mode	Conducted Average Output Power(dBm)		
	Lowest Channel	Middle Channel	Highest Channel
WCDMA R99	21.02	**21.16**	20.99
HSDPA Subtest 1	20.98	21.02	20.73
HSDPA Subtest 2	21.07	20.92	20.91
HSDPA Subtest 3	21.01	21.06	20.82
HSDPA Subtest 4	20.95	21.09	20.84
HSUPA Subtest 1	20.79	20.94	20.67
HSUPA Subtest 2	20.97	20.88	20.86
HSUPA Subtest 3	21.08	20.90	20.67
HSUPA Subtest 4	20.89	21.12	20.83
HSUPA Subtest 5	21.08	21.04	20.80

WCDMA Band 5:

Test Mode	Conducted Average Output Power(dBm)		
	Lowest Channel	Middle Channel	Highest Channel
WCDMA R99	22.02	22.14	**22.27**
HSDPA Subtest 1	21.97	22.18	22.24
HSDPA Subtest 2	21.89	22.18	22.12
HSDPA Subtest 3	21.86	22.14	22.12
HSDPA Subtest 4	21.85	22.06	22.04
HSUPA Subtest 1	21.96	21.96	22.13
HSUPA Subtest 2	21.99	22.07	22.08
HSUPA Subtest 3	21.89	22.04	22.25
HSUPA Subtest 4	21.86	22.24	22.19
HSUPA Subtest 5	21.95	22.15	22.18

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 when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

LTE Band 2:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	21.48	21.76	21.4
		RB1#3	0	0	21.66	21.64	21.59
		RB1#5	0	0	21.65	21.83	21.48
		RB3#0	1	1	21.46	21.54	21.57
		RB3#3	1	1	21.43	21.62	21.67
		RB6#0	1	1	20.54	20.83	20.6
	16-QAM	RB1#0	1	1	20.38	21.03	20.66
		RB1#3	1	1	20.04	20.87	20.81
		RB1#5	2	2	19.99	20.81	20.76
		RB3#0	2	2	20.38	20.59	20.79
		RB3#3	2	2	20.24	20.69	20.7
		RB6#0	2	2	19.55	19.36	19.52
3M	QPSK	RB1#0	0	0	21.27	21.68	21.39
		RB1#8	0	0	21.54	21.74	21.4
		RB1#14	0	0	21.61	21.66	21.63
		RB6#0	1	1	20.48	20.75	20.62
		RB6#9	1	1	20.5	20.77	20.48
		RB15#0	1	1	20.43	20.67	20.63
	16-QAM	RB1#0	1	1	20.46	20.75	20.55
		RB1#8	1	1	20.09	20.88	20.61
		RB1#14	1	1	20.08	20.73	20.16
		RB6#0	2	2	19.04	19.69	19.7
		RB6#9	2	2	19.04	19.81	19.66
		RB15#0	2	2	19.41	19.7	19.51
5M	QPSK	RB1#0	0	0	21.14	21.58	21.23
		RB1#13	0	0	21.41	22.13	21.51
		RB1#24	0	0	21.19	21.37	21.32
		RB15#0	1	1	20.43	20.81	20.58
		RB15#10	1	1	20.29	20.78	20.55
		RB25#0	1	1	20.52	20.85	20.57
	16-QAM	RB1#0	1	1	19.74	20.48	20.63
		RB1#13	1	1	20.57	20.52	20.7
		RB1#24	1	1	20.27	19.74	20.08
		RB15#0	2	2	19.51	19.7	19.6
		RB15#10	2	2	19.49	19.68	19.55
		RB25#0	2	2	19.54	19.75	19.61

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	21.2	22.05	21.83
		RB1#25	0	0	21.36	**22.14**	21.8
		RB1#49	1	1	21.37	21.45	21.49
		RB25#0	1	1	20.39	20.82	20.69
		RB25#25	1	1	20.48	20.67	20.57
		RB50#0	1	1	20.46	20.69	20.67
	16-QAM	RB1#0	1	1	20.39	20.62	20.8
		RB1#25	1	1	20.79	21.1	20.88
		RB1#49	1	1	20.47	20.62	20.56
		RB25#0	2	2	19.62	19.7	19.77
		RB25#25	2	2	19.6	19.73	19.55
		RB50#0	2	2	19.51	19.72	19.75
15M	QPSK	RB1#0	0	0	21.35	21.69	21.46
		RB1#38	0	0	21.96	22.12	21.97
		RB1#74	1	1	21.55	21.56	21.57
		RB36#0	1	1	20.46	20.7	20.7
		RB36#39	1	1	20.47	20.56	20.65
		RB75#0	1	1	20.53	20.55	20.69
	16-QAM	RB1#0	1	1	20.94	20.67	20.84
		RB1#38	1	1	20.85	21.16	21.11
		RB1#74	2	2	20.43	20.43	19.96
		RB36#0	2	2	19.36	19.72	19.66
		RB36#39	2	2	19.62	19.67	19.68
		RB75#0	2	2	19.46	19.62	19.6
20M	QPSK	RB1#0	0	0	21.93	21.99	22.01
		RB1#50	0	0	21.84	21.64	22
		RB1#99	0	0	21.75	21.77	21.88
		RB50#0	1	1	20.94	21.12	20.95
		RB50#50	1	1	21.45	21.78	21.67
		RB100#0	1	1	20.87	21.25	20.73
	16-QAM	RB1#0	1	1	20.03	20.34	20.01
		RB1#50	1	1	20.29	20.99	20.63
		RB1#99	2	2	20.3	20.11	20.1
		RB50#0	2	2	19.59	19.86	19.45
		RB50#50	2	2	19.57	19.79	19.55
		RB100#0	2	2	19.48	19.56	19.53

LTE Band 4:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	21.28	21.49	21.25
		RB1#3	0	0	21.22	21.58	21.08
		RB1#5	0	0	21.28	21.57	21.20
		RB3#0	1	1	21.14	21.67	21.36
		RB3#3	1	1	21.40	21.54	21.32
		RB6#0	1	1	20.39	20.46	20.25
	16-QAM	RB1#0	1	1	20.16	20.55	20.11
		RB1#3	1	1	20.00	20.82	20.29
		RB1#5	2	2	20.27	20.40	20.34
		RB3#0	2	2	20.15	20.43	20.41
		RB3#3	2	2	20.28	20.51	20.24
		RB6#0	2	2	19.15	19.26	19.40
3M	QPSK	RB1#0	0	0	21.09	21.54	21.00
		RB1#8	0	0	21.68	21.66	21.21
		RB1#14	0	0	21.28	21.49	21.20
		RB6#0	1	1	20.42	20.60	20.20
		RB6#9	1	1	20.51	20.56	20.30
		RB15#0	1	1	20.47	20.63	20.23
	16-QAM	RB1#0	1	1	20.22	20.51	19.95
		RB1#8	1	1	20.36	20.74	20.15
		RB1#14	1	1	19.46	19.31	19.22
		RB6#0	2	2	19.58	19.47	19.19
		RB6#9	2	2	19.67	19.50	19.34
		RB15#0	2	2	19.62	19.56	19.05
5M	QPSK	RB1#0	0	0	21.00	21.12	20.79
		RB1#13	0	0	21.55	21.56	21.20
		RB1#24	0	0	21.15	21.30	21.00
		RB15#0	1	1	20.62	20.54	20.34
		RB15#10	1	1	20.48	20.66	20.25
		RB25#0	1	1	20.57	20.54	20.27
	16-QAM	RB1#0	1	1	20.17	20.40	19.68
		RB1#13	1	1	20.25	21.03	20.34
		RB1#24	1	1	19.28	19.38	19.17
		RB15#0	2	2	19.39	19.33	19.07
		RB15#10	2	2	19.37	19.33	19.00
		RB25#0	2	2	19.57	19.53	19.20

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	21.39	21.59	21.21
		RB1#25	0	0	21.83	21.87	21.32
		RB1#49	1	1	21.45	21.47	21.28
		RB25#0	1	1	20.63	20.59	20.23
		RB25#25	1	1	20.59	20.43	20.32
		RB50#0	1	1	20.60	20.48	20.28
	16-QAM	RB1#0	1	1	20.37	20.42	20.24
		RB1#25	1	1	20.91	21.41	20.29
		RB1#49	1	1	19.76	19.66	19.18
		RB25#0	2	2	19.71	19.64	19.24
		RB25#25	2	2	19.57	19.56	19.20
		RB50#0	2	2	19.63	19.32	19.16
15M	QPSK	RB1#0	0	0	21.25	21.68	21.52
		RB1#38	0	0	21.63	21.86	21.61
		RB1#74	1	1	21.74	21.10	21.36
		RB36#0	1	1	20.45	20.63	20.25
		RB36#39	1	1	20.69	20.33	20.20
		RB75#0	1	1	20.59	20.41	20.30
	16-QAM	RB1#0	1	1	20.67	20.56	20.39
		RB1#38	1	1	21.18	21.47	20.66
		RB1#74	2	2	19.52	19.66	19.32
		RB36#0	2	2	19.51	19.57	19.32
		RB36#39	2	2	19.57	19.43	19.10
		RB75#0	2	2	19.55	19.38	19.42
20M	QPSK	RB1#0	0	0	21.63	21.79	**21.93**
		RB1#50	0	0	21.42	21.47	21.80
		RB1#99	0	0	21.65	21.51	21.62
		RB50#0	1	1	20.88	20.84	20.75
		RB50#50	1	1	21.14	21.03	20.98
		RB100#0	1	1	20.67	20.75	20.51
	16-QAM	RB1#0	1	1	20.01	20.28	20.07
		RB1#50	1	1	20.40	20.94	19.88
		RB1#99	2	2	19.45	19.37	19.29
		RB50#0	2	2	19.68	19.68	19.29
		RB50#50	2	2	19.69	19.48	19.25
		RB100#0	2	2	19.64	19.31	19.13

LTE Band 5:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	RB1#0	0	0	22.38	22.76	22.77
		RB1#3	0	0	22.59	22.91	22.79
		RB1#5	0	0	22.61	22.83	22.71
		RB3#0	1	1	22.76	22.89	22.78
		RB3#3	1	1	22.59	22.91	23.00
		RB6#0	1	1	21.53	21.59	21.84
	16-QAM	RB1#0	1	1	21.50	21.87	21.81
		RB1#3	1	1	21.67	21.93	22.02
		RB1#5	2	2	21.49	21.88	21.70
		RB3#0	2	2	22.03	21.77	21.77
		RB3#3	2	2	22.04	21.89	21.59
		RB6#0	2	2	20.60	20.92	20.37
3M	QPSK	RB1#0	0	0	22.47	**23.07**	22.74
		RB1#8	0	0	22.66	23.02	22.74
		RB1#14	0	0	22.44	23.05	22.73
		RB6#0	1	1	21.74	21.78	21.67
		RB6#9	1	1	21.78	21.74	21.78
		RB15#0	1	1	21.70	21.77	21.77
	16-QAM	RB1#0	1	1	21.52	21.76	21.65
		RB1#8	1	1	21.41	21.87	21.71
		RB1#14	1	1	21.37	21.85	21.74
		RB6#0	2	2	20.79	20.94	20.75
		RB6#9	2	2	20.67	20.93	20.76
		RB15#0	2	2	20.67	20.68	20.73
5M	QPSK	RB1#0	0	0	22.54	22.64	22.21
		RB1#13	0	0	22.68	23.04	22.85
		RB1#24	0	0	22.36	22.43	22.20
		RB15#0	1	1	21.63	21.71	21.85
		RB15#10	1	1	21.91	21.73	21.70
		RB25#0	1	1	21.73	21.76	21.63
	16-QAM	RB1#0	1	1	21.12	21.52	21.87
		RB1#13	1	1	21.75	21.76	21.72
		RB1#24	1	1	21.43	21.11	21.71
		RB15#0	2	2	20.79	20.72	20.69
		RB15#10	2	2	20.62	20.62	20.46
		RB25#0	2	2	20.44	20.67	20.72

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	RB1#0	0	0	22.41	22.60	22.35
		RB1#25	0	0	22.84	22.75	22.93
		RB1#49	1	1	22.57	22.45	22.59
		RB25#0	1	1	21.72	21.60	21.58
		RB25#25	1	1	21.85	21.76	21.67
		RB50#0	1	1	21.83	21.46	21.58
	16-QAM	RB1#0	1	1	21.58	21.45	21.61
		RB1#25	1	1	21.68	22.49	21.91
		RB1#49	1	1	20.89	21.63	21.39
		RB25#0	2	2	20.43	20.65	20.66
		RB25#25	2	2	20.54	20.63	20.56
		RB50#0	2	2	20.39	20.45	20.69

LTE Band 7:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	RB1#0	0	0	20.34	19.97	20.52
		RB1#13	0	0	20.34	20.92	**21.13**
		RB1#24	0	0	19.91	19.99	20.45
		RB15#0	1	1	19.37	19.36	19.55
		RB15#10	1	1	19.29	19.41	19.5
		RB25#0	1	1	19.45	19.26	19.62
	16-QAM	RB1#0	1	1	19.37	18.65	19.23
		RB1#13	1	1	19.85	19.38	19.4
		RB1#24	1	1	19.21	18.56	18.59
		RB15#0	2	2	18.25	18.44	18.38
		RB15#10	2	2	18.3	18.58	18.39
		RB25#0	2	2	18.41	18.31	18.63
10M	QPSK	RB1#0	0	0	20.8	20.48	20.76
		RB1#25	0	0	20.43	20.66	20.96
		RB1#49	0	0	20.35	20.23	20.66
		RB25#0	1	1	19.38	19.36	19.59
		RB25#25	1	1	19.27	19.35	19.7
		RB50#0	1	1	19.35	19.4	19.65
	16-QAM	RB1#0	1	1	19.07	19.46	19.75
		RB1#25	1	1	19.22	19.75	19.7
		RB1#49	1	1	18.96	19.34	18.98
		RB25#0	2	2	18.81	18.2	18.74
		RB25#25	2	2	18.33	18.32	18.7
		RB50#0	2	2	18.35	18.52	18.88
15M	QPSK	RB1#0	0	0	20.61	20.41	20.69
		RB1#38	0	0	21.06	20.75	21.11
		RB1#74	0	0	20.32	20.42	20.65
		RB36#0	1	1	19.46	19.39	19.51
		RB36#39	1	1	19.45	19.28	19.59
		RB75#0	1	1	19.44	19.3	19.72
	16-QAM	RB1#0	1	1	19.72	19.71	19.85
		RB1#38	1	1	19.79	19.7	19.86
		RB1#74	1	1	19.36	19.18	19.07
		RB36#0	2	2	18.43	18.27	18.66
		RB36#39	2	2	18.34	18.24	18.62
		RB75#0	2	2	18.32	18.28	18.64

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
20M	QPSK	RB1#0	0	0	20.62	20.53	20.67
		RB1#50	0	0	20.54	20.44	20.95
		RB1#99	0	0	20.91	20.89	21.04
		RB50#0	1	1	20.57	20.42	20.54
		RB50#50	1	1	20.51	20.32	20.46
		RB100#0	1	1	19.95	20.23	20.25
	16-QAM	RB1#0	1	1	18.94	18.83	19.03
		RB1#50	1	1	18.92	19.24	19.62
		RB1#99	1	1	18.79	19.66	19.09
		RB50#0	2	2	18.42	18.24	18.6
		RB50#50	2	2	18.29	18.46	18.64
		RB100#0	2	2	18.37	18.29	18.72

LTE Band 38:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	RB1#0	0	0	20.9	21.41	21.2
		RB1#13	0	0	21.23	**22.14**	22
		RB1#24	0	0	21.01	21.36	21.36
		RB15#0	1	1	20.61	20.68	20.52
		RB15#10	1	1	20.43	20.69	20.52
		RB25#0	1	1	20.26	20.58	20.54
	16-QAM	RB1#0	1	1	20.18	20.08	20.24
		RB1#13	1	1	20.11	20.13	20.41
		RB1#24	1	1	20.24	19.82	19.86
		RB15#0	2	2	19.51	19.3	19.36
		RB15#10	2	2	19.37	19.42	19.52
		RB25#0	2	2	19.15	19.71	19.48
10M	QPSK	RB1#0	0	0	21.09	21.64	21.54
		RB1#25	0	0	21.48	21.65	21.68
		RB1#49	0	0	21.18	21.87	21.59
		RB25#0	1	1	20.42	20.6	20.48
		RB25#25	1	1	20.38	20.79	20.45
		RB50#0	1	1	20.4	20.65	20.54
	16-QAM	RB1#0	1	1	20.78	20.89	20.04
		RB1#25	1	1	21.24	21.12	20.09
		RB1#49	1	1	21.09	20.95	20.19
		RB25#0	2	2	19.39	19.57	19.38
		RB25#25	2	2	19.33	19.6	19.62
		RB50#0	2	2	19.44	19.59	19.68
15M	QPSK	RB1#0	0	0	21.22	21.26	21.82
		RB1#38	0	0	21.55	22.09	21.83
		RB1#74	0	0	21.19	21.45	21.66
		RB36#0	1	1	20.36	20.64	20.63
		RB36#39	1	1	20.39	20.67	20.54
		RB75#0	1	1	20.31	20.57	20.73
	16-QAM	RB1#0	1	1	20.25	20.58	20.37
		RB1#38	1	1	20.41	20.9	20.32
		RB1#74	1	1	20.25	20.85	20.08
		RB36#0	2	2	19.38	19.73	19.53
		RB36#39	2	2	19.29	19.49	19.48
		RB75#0	2	2	19.41	19.7	19.65

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
20M	QPSK	RB1#0	0	0	21.05	21.08	21.81
		RB1#50	0	0	21.18	21.45	22.04
		RB1#99	0	0	21.4	21.27	21.6
		RB50#0	1	1	20.32	20.77	20.54
		RB50#50	1	1	20.27	20.72	20.65
		RB100#0	1	1	20.41	20.65	20.78
	16-QAM	RB1#0	1	1	20.38	20.06	19.5
		RB1#50	1	1	20.51	20.58	19.77
		RB1#99	1	1	20.55	19.89	19.82
		RB50#0	2	2	19.33	19.66	19.68
		RB50#50	2	2	19.31	19.59	19.56
		RB100#0	2	2	19.4	19.54	19.43

LTE Band 41:

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	2549.5 MHz (dBm)	Middle Channel (dBm)	2636.5 MHz (dBm)	High Channel (dBm)
5M	QPSK	RB1#0	0	0	21.16	21.18	21.23	21.29	21.18
		RB1#13	0	0	21.23	21.27	21.87	21.94	21.82
		RB1#24	0	0	21.18	21.27	21.42	21.29	21.33
		RB15#0	1	1	20.29	20.37	20.77	20.63	20.5
		RB15#10	1	1	20.41	20.54	20.76	20.68	20.54
		RB25#0	1	1	20.23	20.28	20.6	20.61	20.55
	16-QAM	RB1#0	1	1	19.87	19.86	19.87	20.16	20.2
		RB1#13	1	1	20.1	20.23	20.45	20.97	20.85
		RB1#24	1	1	19.98	20.09	19.92	20.17	20.15
		RB15#0	2	2	19.12	19.15	19.69	19.73	19.62
		RB15#10	2	2	19.19	19.3	19.7	19.43	19.41
		RB25#0	2	2	19.15	19.13	19.53	19.46	19.48
10M	QPSK	RB1#0	0	0	21.09	21.2	21.55	21.82	21.77
		RB1#25	0	0	21.25	21.35	21.63	21.64	21.53
		RB1#49	0	0	21.44	21.45	21.67	22.01	21.91
		RB25#0	1	1	20.31	20.4	20.62	20.58	20.48
		RB25#25	1	1	20.41	20.38	20.74	20.63	20.55
		RB50#0	1	1	20.35	20.44	20.7	20.46	20.45
	16-QAM	RB1#0	1	1	20.41	20.45	20.24	20.87	20.77
		RB1#25	1	1	20.57	20.7	20.05	21.45	21.39
		RB1#49	1	1	20.55	20.57	20.07	21.23	21.21
		RB25#0	2	2	19.09	19.07	19.47	19.64	19.54
		RB25#25	2	2	19.11	19.24	19.49	19.61	19.5
		RB50#0	2	2	19.12	19.19	19.56	19.56	19.54
15M	QPSK	RB1#0	0	0	21.12	21.11	21.39	21.47	21.46
		RB1#38	0	0	21.36	21.5	**22.07**	21.79	21.81
		RB1#74	0	0	21.29	21.26	21.81	21.35	21.3
		RB36#0	1	1	20.29	20.39	20.65	20.61	20.58
		RB36#39	1	1	20.41	20.42	20.54	20.4	20.4
		RB75#0	1	1	20.33	20.3	20.6	20.32	20.33
	16-QAM	RB1#0	1	1	19.96	19.94	20.83	19.81	19.81
		RB1#38	1	1	20.61	20.75	21.19	20.22	20.15
		RB1#74	1	1	20.01	20.15	21.1	19.84	19.88
		RB36#0	2	2	19.05	19.12	19.73	19.43	19.36
		RB36#39	2	2	19.21	19.31	19.54	19.5	19.36
		RB75#0	2	2	19.18	19.13	19.59	19.55	19.46

Test Bandwidth	Test Modulation	Resource Block & RB offset	Target MPR	Meas MPR	Low Channel (dBm)	2549.5 MHz (dBm)	Middle Channel (dBm)	2636.5 MHz (dBm)	High Channel (dBm)
20M	QPSK	RB1#0	0	0	21.27	21.22	21.27	21.95	21.83
		RB1#50	0	0	21.55	21.57	21.69	21.86	21.87
		RB1#99	0	0	21.31	21.42	21.53	21.53	21.46
		RB50#0	1	1	20.57	20.55	20.76	20.57	20.62
		RB50#50	1	1	20.56	20.57	20.74	20.62	20.53
		RB100#0	1	1	20.44	20.42	20.7	20.59	20.56
	16-QAM	RB1#0	1	1	19.84	19.86	20.43	19.61	19.5
		RB1#50	1	1	20.15	20.2	20.41	19.59	19.57
		RB1#99	1	1	20.25	20.4	20.37	19.86	19.88
		RB50#0	2	2	19.2	19.31	19.68	19.57	19.5
		RB50#50	2	2	19.16	19.2	19.49	19.75	19.64
		RB100#0	2	2	19.1	19.11	19.5	19.43	19.45

WLAN 2.4G:

Mode	Channel frequency (MHz)	Data Rate	Duty cycle (%)	RF Output Power (dBm)
802.11b	2412	1Mbps	97.03	14.46
	2437			15.09
	2462			**16.53**
802.11g	2412	6Mbps	97.26	12.16
	2437			12.39
	2462			12.71
802.11n ht20	2412	MCS0	96.99	12.11
	2437			12.26
	2462			12.55
802.11n ht40	2422	MCS0	92.34	12.49
	2437			11.63
	2452			11.57

Note: WLAN 2.4G Duty Cycle please refer to RF Report Number: 2503P42192E-RF-00C

Wi-Fi 5.2G:

Mode	Channel frequency (MHz)	Data Rate	Duty cycle (%)	RF Output Power (dBm)
802.11a	5180	6Mbps	97.18	**11.21**
	5200			10.94
	5240			10.47
802.11n20	5180	MCS0	96.99	11.02
	5200			10.76
	5240			10.22
802.11n40	5190	MCS0	94.43	10.99
	5230			10.52
802.11ac80	5210	MCS0	91.17	9.67

Wi-Fi 5.8G:

Mode	Channel frequency (MHz)	Data Rate	Duty cycle (%)	RF Output Power (dBm)
802.11a	5745	6Mbps	97.18	10.16
	5785			10.79
	5825			**11.48**
802.11n20	5745	MCS0	96.99	9.96
	5785			10.65
	5825			11.37
802.11n40	5755	MCS0	94.43	9.96
	5795			10.72
802.11ac80	5775	MCS0	91.17	9.35

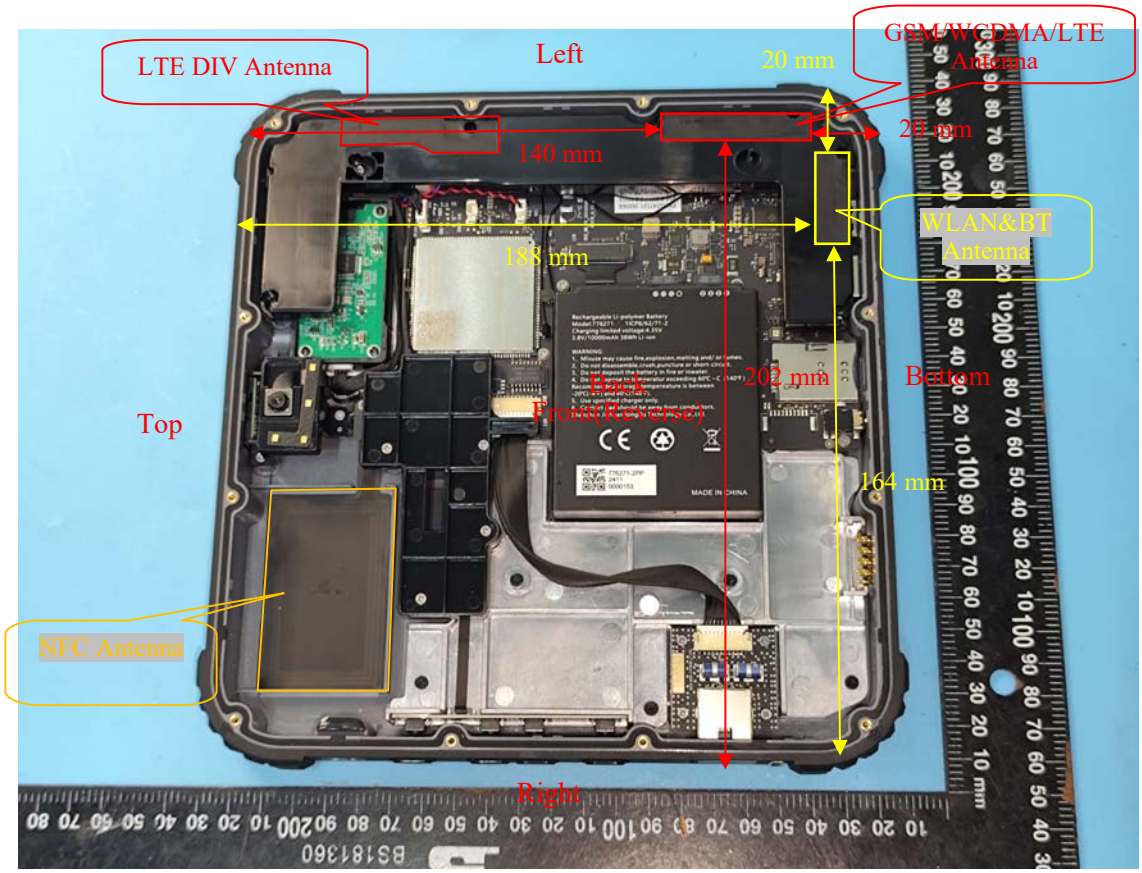
Note:1.WLAN 5G Duty Cycle please refer to RF Report Number: 2503P42192E-RF-00D
2.The system support 802.11a/n ht20/n ht40/ac vht20/vht40/vht80, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

Bluetooth:

Mode	Channel frequency (MHz)	RF Output Power (dBm)
BDR(GFSK)	2402	0.24
	2409	2.41
	2441	0.15
	2480	-0.96
EDR(π/4-DQPSK)	2402	1.36
	2408	**4.79**
	2441	1.47
	2480	0.31
EDR(8DPSK)	2402	2.07
	2410	3.38
	2441	1.94
	2480	0.86
BLE_1M	2402	-2.13
	2440	-1.97
	2480	-3.51

7. Standalone SAR test exclusion considerations

Antennas Location:



Note: The LTE DIV antenna cannot transmit, and is receiving only.

7.1 Antenna Distance To Edge

Antenna Distance To Edge(mm)						
Antenna	**Front**	**Back**	**Left**	**Right**	**Top**	**Bottom**
WWAN(GSM/WCDMA/LTE) Main Antenna	< 5	< 5	< 5	202	140	20
WLAN &BT Antenna	< 5	< 5	20	164	188	< 5

7.2 Standalone SAR test exclusion considerations

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Calculated value	Threshold (1-g)	SAR Test Exclusion
Wi-Fi 2.4G	2462	16.6	45.71	0	14.3	3	No
WLAN 5.2G	5240	11.3	13.49	0	6.2	3	No
WLAN 5.8G	5825	11.6	14.45	0	7.0	3	No
Bluetooth	2480	5.0	3.16	0	1.0	3	YES

Note: *The bluetooth based peak power for calculation, and Wi-Fi based average 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.

Measurement Result:

For NFC, the power of EUT: E Field@3m is 53.02dBuV/m =-42.18dBm(0.00006mW)
Note: E[dBμV/m] = EIRP[dBm] + 95.2 for d = 3 m.

SAR test exclusion threshold for NFC(13.56MHz) separation distance < 50mm

$=[474*(1 + \log(100/f_{(MHz)}))]/2$

= 443mW

>0.00006mW

Conclusion:

The NFC SAR evaluation can be exempted.

Note: E Field please refer to RF Report Number: 2503P42192E-RF-00F

7.3 Standalone SAR estimation:

Mode	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Distance (mm)	Estimated 1-g (W/kg)
BT Body	2480	5	3.16	0	0.13

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.

7.4 Standalone SAR test exclusion considerations:

Mode	Frequency (MHz)	Target Power (dBm)	Target Power (mW)	Test exclusion Threshold (mm)
GSM 850	848.8	25.75	375.84	87.7
PCS 1900	1909.8	21.9	154.88	54.7
WCDMA Band 2	1907.6	21.3	134.90	52.7
WCDMA Band 4	1752.6	21.3	134.90	52.2
WCDMA Band 5	846.6	22.4	173.78	52.0
LTE Band 2	1900	22.2	165.96	55.8
LTE Band 4	1745	22	158.49	54.5
LTE Band 5	844	23.2	208.93	58.2
LTE Band 7	2560	21.2	131.83	53.9
LTE Band 38	2610	22.2	165.96	57.4
LTE Band 41	2680	22.2	165.96	57.5
WLAN 2.4G	2462	16.6	45.71	24.0
WLAN 5.2G	5240	11.3	13.49	10.4
WLAN 5.8G	5825	11.6	14.45	11.7

Note: The maximum time based average power is used for calculation.

7.5 SAR test exclusion for the EUT edge considerations Result

Mode	Front Edge	Back Edge	Left Edge	Right Edge	Top Edge	Bottom Edge
GSM 850	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
PCS1900	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
WCDMA Band 2	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
WCDMA Band 4	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
WCDMA Band 5	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 2	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 4	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 5	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 7	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 38	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
LTE Band 41	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
WLAN 2.4G	**Required**	**Required**	**Required**	Exclusion	Exclusion	**Required**
WLAN 5.2G	**Required**	**Required**	Exclusion	Exclusion	Exclusion	**Required**
WLAN 5.8G	**Required**	**Required**	Exclusion	Exclusion	Exclusion	**Required**
Bluetooth	Exclusion*	Exclusion*	Exclusion*	Exclusion*	Exclusion*	Exclusion*

Note:
Required: The distance is less than **Test Exclusion Distance**, the SAR test is required.
Exclusion: The distance is large than **Test Exclusion Distance**, SAR test is not required.
Exclusion*： SAR test exclusion evaluation has been done above.

SAR test exclusion for the EUT edge considerations detail:

Distance< 50mm(To Edges)
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.
5. The Time based average Power is used for calculation

Distance> 50mm(To Edges)
At 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following:
a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

8. SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

8.1 SAR Test Data

Environmental Conditions

Temperature:	21.2-22.1 ℃	21.6-22.4 ℃	21.2-21.8 ℃	21.9~22.7℃
Relative Humidity:	44 %	39 %	41 %	44 %
ATM Pressure:	101.7 kPa	101.4 kPa	101.2 kPa	101.4 kPa
Test Date:	2025/01/25	2025/01/26	2025/01/27	2025/02/05

Testing was performed by Wen Chen, Leo Lu, Aixlee Li, Ken Zong.

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 Front (0mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	29.88	30	1.028	0.371	0.38	/
	848.8	GPRS	/	/	/	/	/	/
Body Back (0mm)	824.2	GPRS	29.75	30	1.059	0.903	0.96	/
	836.6	GPRS	29.88	30	1.028	1	1.03	/
	848.8	GPRS	29.93	30	1.016	1.09	1.11	1#
Body Left (0mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	29.88	30	1.028	0.584	0.60	/
	848.8	GPRS	/	/	/	/	/	/
Body Bottom (0mm)	824.2	GPRS	/	/	/	/	/	/
	836.6	GPRS	29.88	30	1.028	0.333	0.34	/
	848.8	GPRS	/	/	/	/	/	/

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 Body SAR testing.

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
Body Front (0mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	24.9	1.059	0.116	0.12	/
	1909.8	GPRS	/	/	/	/	/	/
Body Back (0mm)	1850.2	GPRS	24.83	24.9	1.016	1.21	1.23	/
	1880	GPRS	24.65	24.9	1.059	1.23	1.30	2#
	1909.8	GPRS	23.86	24.9	1.271	0.953	1.21	/
Body Left (0mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	24.9	1.059	0.093	0.10	/
	1909.8	GPRS	/	/	/	/	/	/
Body Bottom (0mm)	1850.2	GPRS	/	/	/	/	/	/
	1880	GPRS	24.65	24.9	1.059	0.223	0.24	/
	1909.8	GPRS	/	/	/	/	/	/

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, 1DL+4UL is the worst case.
6. The max. time based average power of GSM/GPRS/EGPRS mode was selected to Body SAR testing.

WCDMA Band 2:

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	21.16	21.3	1.033	0.218	0.23	/
	1907.6	RMC	/	/	/	/	/	/
Body Back (0mm)	1852.4	RMC	21.09	21.3	1.05	0.841	0.88	/
	1880	RMC	21.16	21.3	1.033	0.886	0.92	3#
	1907.6	RMC	21.21	21.3	1.021	0.822	0.84	/
Body Left (0mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	21.16	21.3	1.033	0.113	0.12	/
	1907.6	RMC	/	/	/	/	/	/
Body Bottom (0mm)	1852.4	RMC	/	/	/	/	/	/
	1880	RMC	21.16	21.3	1.033	0.239	0.25	/
	1907.6	RMC	/	/	/	/	/	/

WCDMA Band 4:

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 Front (0mm)	1712.4	RMC	/	/	/	/	/	/
	1732.6	RMC	21.16	21.3	1.033	0.111	0.11	/
	1752.6	RMC	/	/	/	/	/	/
Body Back (0mm)	1712.4	RMC	21.02	21.3	1.067	0.792	0.85	/
	1732.6	RMC	21.16	21.3	1.033	0.831	0.86	/
	1752.6	RMC	20.99	21.3	1.074	0.842	0.9	4#
Body Left (0mm)	1712.4	RMC	/	/	/	/	/	/
	1732.6	RMC	21.16	21.3	1.033	0.07	0.07	/
	1752.6	RMC	/	/	/	/	/	/
Body Bottom (0mm)	1712.4	RMC	/	/	/	/	/	/
	1732.6	RMC	21.16	21.3	1.033	0.123	0.13	/
	1752.6	RMC	/	/	/	/	/	/

WCDMA Band 5:

EUT Position	Frequency (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
					Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	22.14	22.4	1.062	0.078	0.08	/
	846.6	RMC	/	/	/	/	/	/
Body Back (0mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	22.14	22.4	1.062	0.274	**0.29**	5#
	846.6	RMC	/	/	/	/	/	/
Body Left (0mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	22.14	22.4	1.062	0.126	0.13	/
	846.6	RMC	/	/	/	/	/	/
Body Bottom (0mm)	826.4	RMC	/	/	/	/	/	/
	836.6	RMC	22.14	22.4	1.062	0.041	0.04	/
	846.6	RMC	/	/	/	/	/	/

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 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:

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 Front (0mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	21.99	22.2	1.05	0.164	0.17	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	21.78	22.2	1.102	0.146	0.16	/
Body Back (0mm)	1860	20	1RB	21.93	22.2	1.064	0.835	0.89	6#
	1880	20	1RB	21.99	22.2	1.05	0.829	0.87	/
	1900	20	1RB	22.01	22.2	1.045	0.826	0.86	/
	1880	20	50%RB	21.78	22.2	1.102	0.719	0.79	/
	1880	20	100%RB	21.25	22.2	1.245	0.672	0.84	/
Body Left (0mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	21.99	22.2	1.05	0.137	0.14	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	21.78	22.2	1.102	0.119	0.13	/
Body Bottom (0mm)	1860	20	1RB	/	/	/	/	/	/
	1880	20	1RB	21.99	22.2	1.05	0.245	0.26	/
	1900	20	1RB	/	/	/	/	/	/
	1880	20	50%RB	21.78	22.2	1.102	0.208	0.23	/

LTE Band 4:

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	21.79	22	1.05	0.116	0.12	/
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	21.03	22	1.25	0.1	0.13	/
Body Back (0mm)	1720	20	1RB	21.63	22	1.089	0.968	1.05	/
	1732.5	20	1RB	21.79	22	1.05	1.11	1.17	7#
	1745	20	1RB	21.93	22	1.016	1.07	1.09	/
	1720	20	50%RB	21.14	22	1.219	0.842	1.03	/
	1732.5	20	50%RB	21.03	22	1.25	0.855	1.07	/
	1745	20	50%RB	20.98	22	1.265	0.844	1.07	/
	1732.5	20	100%RB	20.75	22	1.334	0.848	1.13	/
Body Left (0mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	21.79	22	1.05	0.095	0.10	/
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	21.03	22	1.25	0.086	0.11	/
Body Bottom (0mm)	1720	20	1RB	/	/	/	/	/	/
	1732.5	20	1RB	21.79	22	1.05	0.124	0.13	/
	1745	20	1RB	/	/	/	/	/	/
	1732.5	20	50%RB	21.03	22	1.25	0.102	0.13	/

LTE Band 5:

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	22.75	23.2	1.109	0.097	0.11	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	21.76	23.2	1.393	0.078	0.11	/
Body Back (0mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	22.75	23.2	1.109	0.229	0.25	8#
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	21.76	23.2	1.393	0.18	0.25	/
Body Left (0mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	22.75	23.2	1.109	0.188	0.21	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	21.76	23.2	1.393	0.159	0.22	/
Body Bottom (0mm)	829	10	1RB	/	/	/	/	/	/
	836.5	10	1RB	22.75	23.2	1.109	0.053	0.06	/
	844	10	1RB	/	/	/	/	/	/
	836.5	10	50%RB	21.76	23.2	1.393	0.04	0.06	/

LTE Band 7:

EUT Position	Frequency (MHz)	Bandwidth (MHz)	Test Mode	Max. Meas. Power (dBm)	Max. Rated Power (dBm)	1g SAR (W/kg)			
						Scaled Factor	Meas. SAR	Scaled SAR	Plot
Body Front (0mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	20.89	21.2	1.074	0.465	0.5	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	20.42	21.2	1.197	0.396	0.47	/
Body Back (0mm)	2510	20	1RB	20.91	21.2	1.069	1.11	1.19	/
	2535	20	1RB	20.89	21.2	1.074	1.23	1.32	9#
	2560	20	1RB	21.04	21.2	1.038	1.1	1.14	/
	2510	20	50%RB	20.57	21.2	1.156	1.09	1.26	/
	2535	20	50%RB	20.42	21.2	1.197	1.03	1.23	/
	2560	20	50%RB	20.54	21.2	1.164	1.09	1.27	/
	2535	20	100%RB	20.23	21.2	1.25	1.04	1.3	/
Body Left (0mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	20.89	21.2	1.074	0.5	0.54	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	20.42	21.2	1.197	0.419	0.50	/
Body Bottom (0mm)	2510	20	1RB	/	/	/	/	/	/
	2535	20	1RB	20.89	21.2	1.074	0.182	0.20	/
	2560	20	1RB	/	/	/	/	/	/
	2535	20	50%RB	20.42	21.2	1.197	0.161	0.19	/

LTE Band 41&38:

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 Front (0mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	21.69	22.2	1.125	0.203	0.23	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	20.76	22.2	1.393	0.168	0.23	/
Body Back (0mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	21.69	22.2	1.125	0.293	0.33	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	20.76	22.2	1.393	0.239	0.33	/
Body Left (0mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	21.69	22.2	1.125	0.295	0.33	10#
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	20.76	22.2	1.393	0.235	0.33	/
Body Bottom (0mm)	2506	20	1RB	/	/	/	/	/	/
	2549.5	20	1RB	/	/	/	/	/	/
	2593	20	1RB	21.69	22.2	1.125	0.19	0.21	/
	2636.5	20	1RB	/	/	/	/	/	/
	2680	20	1RB	/	/	/	/	/	/
	2593	20	50%RB	20.76	22.2	1.393	0.154	0.21	/

Note: 1. The LTE Band 38 is a subset of LTE Band 41, and they are same in modulation type and rated output power, therefore, they were considered as one frequency band during SAR measurement.

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

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.[14]

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

where

- N_c is the number of test channels, rounded to the 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.LTE Band 41 SAR tested were performed using Power Class 3

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

WLAN 2.4G:

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
Body Front (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	16.53	16.6	1.016	1.031	0.098	0.10	/
Body Back (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	16.53	16.6	1.016	1.031	0.118	0.12	/
Body Left (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	16.53	16.6	1.016	1.031	0.032	0.03	/
Body Bottom (0mm)	2412	802.11b	/	/	/	/	/	/	/
	2437	802.11b	/	/	/	/	/	/	/
	2462	802.11b	16.53	16.6	1.016	1.031	0.153	0.16	11#

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.For 802.11b mode power is the largest among 802.11b/g/n, 802.11 b mode as initial test configuration is selected to test.
4. According to KDB 248227 D01, for SAR testing of 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)”.

WLAN 5.2G:

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
Body Front (0mm)	5180	802.11a	/	/	/	/	/	/	/
	5200	802.11a	10.94	11.3	1.086	1.029	0.074	0.08	/
	5240	802.11a	/	/	/	/	/	/	/
Body Back (0mm)	5180	802.11a	/	/	/	/	/	/	/
	5200	802.11a	10.94	11.3	1.086	1.029	0.157	0.18	/
	5240	802.11a	/	/	/	/	/	/	/
Body Bottom (0mm)	5180	802.11a	/	/	/	/	/	/	/
	5200	802.11a	10.94	11.3	1.086	1.029	0.2	0.22	12#
	5240	802.11a	/	/	/	/	/	/	/

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.For 802.11a mode power is the largest among 802.11a/n/ac, 802.11 a mode as initial test configuration is selected to test.
4.According to KDB 248227 D01, for SAR testing of WLAN with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”.

WLAN 5.8G:

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
Body Front (0mm)	5745	802.11a	/	/	/	/	/	/	/
	5785	802.11a	/	/	/	/	/	/	/
	5825	802.11a	11.48	11.6	1.028	1.029	0.04	0.04	/
Body Back (0mm)	5745	802.11a	/	/	/	/	/	/	/
	5785	802.11a	/	/	/	/	/	/	/
	5825	802.11a	11.48	11.6	1.028	1.029	0.104	0.11	13#
Body Bottom (0mm)	5745	802.11a	/	/	/	/	/	/	/
	5785	802.11a	/	/	/	/	/	/	/
	5825	802.11a	11.48	11.6	1.028	1.029	0.072	0.08	/

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.For 802.11a mode power is the largest among 802.11a/n/ac, 802.11 a mode as initial test configuration is selected to test.
4.According to KDB 248227 D01, for SAR testing of WLAN with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”.

9. 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.

Note: The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

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	
900MHz	GSM 850	848.8	Body Back	1.09	1.05	1.04
1750MHz	LTE Band 4	1732.5	Body Back	1.11	1.07	1.04
1900MHz	PCS 1900	1880	Body Back	1.23	1.16	1.06
2600MHz	LTE Band 7	2535	Body Back	1.23	1.19	1.03

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.

10. 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:

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

The Highest Measured SAR Configuration among all applicable Frequency Band

Frequency Band	Freq.(MHz)	EUT Position	Meas. SAR (W/kg)		The Device holder perturbation uncertainty
			With holder	Without holder	
LTE Band 7	2535	Body Back	1.23	1.18	4.2%

11. SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

Simultaneous Transmission:

Description of Simultaneous Transmit Capabilities		
Transmitter Combination	**Simultaneous?**	**Hotspot?**
WWAN(GSM/WCDMA/LTE) + Bluetooth + NFC	√	×
WWAN(GSM/WCDMA/LTE) + WLAN 2.4G/5G + NFC	√	√
WLAN + Bluetooth	×	×

Note:

KDB 616217 D04 The standalone and simultaneous transmission SAR tests required for tablets are more conservative than the hotspot mode use configurations; therefore, additional testing for hotspot SAR is not required.

Simultaneous SAR test exclusion considerations:

Mode(SAR1+SAR2)	Position	Reported SAR(W/kg)		ΣSAR < 1.6W/kg
		SAR1	SAR2	
WWAN(GSM/WCDMA/LTE) + Bluetooth	Body	1.32	0.13	1.45
WWAN(GSM/WCDMA/LTE) + WLAN 2.4G Hotspot	Body	1.32	0.16	1.48
WWAN(GSM/WCDMA/LTE) + WLAN 5G Hotspot	Body	1.32	0.22	1.54

Note: For the EIRP of NFC is 0.00006mW, per KDB447498 D01 clause 4.3, the estimated SAR is so lower, so the NFC almost have no influence on the results of simultaneous transmission.

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

12. 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	6.3	6.3
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 ambient conditions – 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	4.2	N	1	1	1	4.2	4.2
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)						24.1	23.7

APPENDIX B EUT TEST POSITION PHOTOS

Please Refer to the Attachment.

APPENDIX C CALIBRATION CERTIFICATES

Please Refer to the Attachment.

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