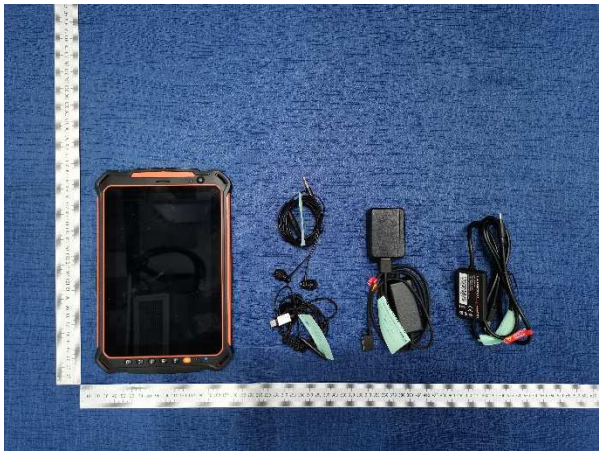
Prüfbericht-Nr.: *Test report no.:*	**60374756 007**	**Auftrags-Nr.:** *Order no.*:	**168264720**	Seite 1 von 53 *Page 1 of 53*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2020-05-13	
Auftraggeber: *Client:*	i.safe MOBILE GmbH i_Park Tauberfranken 10, 97922 Lauda-Koenigshofen, Germany			
Prüfgegenstand: *Test item:*	Rugged tablet computer			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	M93A01			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 2: Section 2.1093 RSS-102 Issue 5 IEEE Std 1528-2013 KDB 941225 D01 v03r01 KDB 941225 D05 v02r05 KDB 941225 D06 v02r01 KDB 447498 D01 v06		KDB 648474 D04 v01r03 KDB 248227 D01 v02r02 KDB 865664 D01 v01r04 KDB 865664 D02 v01r02 KDB 690783 D01 v01r03 KDB 616217 D04 v01r02	

Wareneingangsdatum: *Date of sample receipt:*	2020-05-13
Prüfmuster-Nr.: *Test sample no:*	A002024323-006
Prüfzeitraum: *Testing period:*	2020-08-25 – 2020-09-11
Ort der Prüfung: *Place of testing:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass



geprüft von:
tested by: Lin Lin

Datum:
Date: 2020-10-09

Stellung / *Position:* Senior Project Manager

genehmigt von:
authorized by: Winnie Hou

Ausstellungsdatum:
Issue date: 2020-10-09

Stellung / *Position:* Technical Certifier

Sonstiges / *Other:*

FCC ID: 2AACZ-M93A01 IC: 11122A-M93A01 HVIN: M93A01

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* *Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Contents

1 General Information

1.1 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Equipment Class	Mode	Highest Reported Head SAR_{1g} (W/kg)	Highest Reported Body-worn SAR_{1g} (0 cm Gap) (W/kg)	Highest Reported Hotspot SAR_{1g} (0 cm Gap) (W/kg)	Highest Reported Extremity SAR_{10g} (0 cm Gap) (W/kg)
PCE	GSM850	0.17	0.73	N/A	N/A
	GSM1900	0.02	0.73	N/A	N/A
	WCDMA II	0.03	0.76	N/A	N/A
	WCDMA IV	0.03	0.75	N/A	N/A
	WCDMA V	0.14	0.74	N/A	N/A
	LTE 2	0.02	0.68	N/A	N/A
	LTE 4	0.04	0.76	N/A	N/A
	LTE 5	0.11	0.67	N/A	N/A
	LTE 7	0.02	0.73	N/A	N/A
	LTE 12	0.01	0.29	N/A	N/A
	LTE 13	0.06	0.69	N/A	N/A
	LTE 14	0.06	0.65	N/A	N/A
	LTE 17	0.01	0.34	N/A	N/A
	LTE 25	0.02	0.72	N/A	N/A
	LTE 26	0.12	0.71	N/A	N/A
	LTE 30	0.02	0.76	N/A	N/A
	LTE 38	0.01	0.79	N/A	N/A
	LTE 41	0.01	0.76	N/A	N/A
	LTE 66	0.04	0.65	N/A	N/A
DTS	2.4G WLAN	0.09	0.56	N/A	N/A
NII	5.G WLAN	0.04	0.79	N/A	N/A
DSS	Bluetooth	N/A	N/A	N/A	N/A
DXX	NFC	N/A	N/A	N/A	N/A
Highest Simultaneous Transmission SAR		Head (W/kg)	Body-worn (W/kg)	Hotspot (W/kg)	Extremity (W/kg)
PCE + DTS		0.23	1.35	N/A	N/A
PCE + NII		0.24	1.58	N/A	N/A
PCE + DSS		0.54	1.16	N/A	N/A

1.2 EUT Description

1.2.1 General Description

Product Name	Rugged tablet computer
Model No.(EUT)	M93A01
FCC ID	2AACZ-M93A01
IC	11122A-M93A01
HVIN	M93A01
Device Dimension	Overall (Length × Width): 237.5mm × 157mm Overall Diagonal: 284mm Display Diagonal: >200mm
HW Version	V1.0
SW Version	IS930_ROW_V1.0.0.0.0_1_20200414
Tx Frequency Bands	GSM850/ WCDMA850: 824 to 849 MHz PCS1900/ WCDMA1900: 1850 to 1910 MHz WCDMA1700: Transmission (TX): 1710 to 1755 MHz LTE BAND2: 1850 to 1910 MHz LTE BAND4: 1710 to 1755 MHz LTE BAND5: 824 to 849 MHz LTE BAND7: 2500 to 2570 MHz LTE BAND12: 699 to 716 MHz LTE BAND13: 777 to 787 MHz LTE BAND14: 788 to 798 MHz LTE BAND17: 704 to 716 MHz LTE BAND25: 1850 to 1915 MHz LTE band 26: 814 to 824MHz, 824 to 849 MHz LTE Band 30: 2305 to 2315 MHz LTE BAND38: 2570 to 2620 MHz LTE Band 40: 2305 to 2315 MHz LTE Band 41: 2496 to 2690 MHz LTE Band 66: 1710 to 1780 MHz LTE CA_5B: 824 to 849 MHz LTE CA_41C: 2496 to 2690 MHz WLAN: 2412 ~ 2462, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720,5745 ~ 5825MHz Bluetooth: 2402 ~ 2480MHz NFC: 13.56MHz
	Note: According to 201504 FCC TCB workshop RF exposure slides, for overlapping bands, only larger band was tested. 1. The maximum output power, including tolerance, for the smaller band is = the larger band to qualify for the SAR test exclusion. 2. The channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band. 3. Band 26 (814 – 849 MHz) SAR can support band 5 (824 – 849 MHz). 4. Band 12 (699 – 716 MHz) SAR can support band 17 (704 – 716 MHz). 5. Band 25 (1850 – 1915 MHz) SAR can support band 2 (1850 – 1910 MHz).
Device Class	B
Antenna Type	Integral internal antenna
EUT Stage	Identical Prototype

1.2.2 Wireless Technologies

GSM	Voice GPRS (Multi-Slot Class: 33-4UP) EDGE (Multi-Slot Class: 33-4UP)
WCDMA	RMC, HSDPA, HSUPA, HSPA+
LTE	QPSK, 16QAM UL/DL CA
2.4G WLAN	802.11b 802.11g 802.11n (HT20)
5G WLAN	802.11a 802.11n (HT20/HT40) 802.11ac (VHT20/VHT40/VHT80)
Bluetooth	Bluetooth 5.0 Dual mode
Others	NFC
Power Reduction	P-Sensor Note : 1. Only LTE B12, LTE B17 without power reduction. 2. Since the technical document related to the design of proximity sensor and power reduction is confidential, the detail about proximity sensor does not be described in this SAR report. Please refer to the technical documents as “Proximity Sensor Technical Description” for the details.
Wireless Router (Hotspot)	2.4G WLAN: Support 5.2G WLAN: Support 5.3G WLAN: Not Support 5.6G WLAN: Not Support 5.8G WLAN: Support
VOIP	Support Note: Since this device supports VOIP capability through 3rd party apps software, we have evaluated data mode for head SAR.

1.2.3 List of Accessory

Battery	**Model Name**	MBP93A01
	Power Rating	3.7Vdc, 8160mAh
	Type	Li-ion
Earphone	**N/A**	3.5mm Earphone

1.3 Other Information

Sample Received Date:	2020-05-13
Sample tested Date:	Aug. 25, 2020 ~ Sep. 11, 2020

1.4 Testing Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
1F East & 2-4F, Cybio Technology Building No.1, No.16 Langshan 2nd Road, High-Tech Industrial Park North Nanshan District, 518057, Shenzhen, China

A2LA Cert. No.: 5162.01

FCC Registration No.: 694916

IC Registration No.: 25069

1.5 Guidance Standard

The tests documented in this report were performed in accordance with FCC 47 CFR Part 2 §2.1093, IEEE Std 1528-2013, ANSI/IEEE C95.1-1992, the following FCC Published RF exposure KDB procedures:

CFR47 FCC Part 2: Section 2.1093
RSS-102 Issue 5
IEEE Std 1528-2013
KDB 941225 D01 v03r01
KDB 941225 D05 v02r05
KDB 941225 D06 v02r01
KDB 447498 D01 v06
KDB 648474 D04 v01r03
KDB 248227 D01 v02r02
KDB 865664 D01 v01r04
KDB 865664 D02 v01r02
KDB 690783 D01 v01r03
KDB 616217 D04 v01r02

The equipment have been tested by **TÜV Rheinland (Shenzhen) Co., Ltd.** , and found compliance with the requirement of the above standards.

2 Specific Absorption Rate (SAR)

2.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling, by appropriate techniques, to produce specific absorption rates (SARs) as averaged over the whole-body, any 1 g or any 10 g of tissue (defined as a tissue volume in the shape of a cube). All SAR values are to be averaged over any six-minute period. When portable device was used within 20 cm of the user's body, SAR evaluation of the device will be required. The SAR limit in chapter 2.3.

2.2 SAR Definition

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

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

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

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

2.3 SAR Limits

(A) Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B) Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

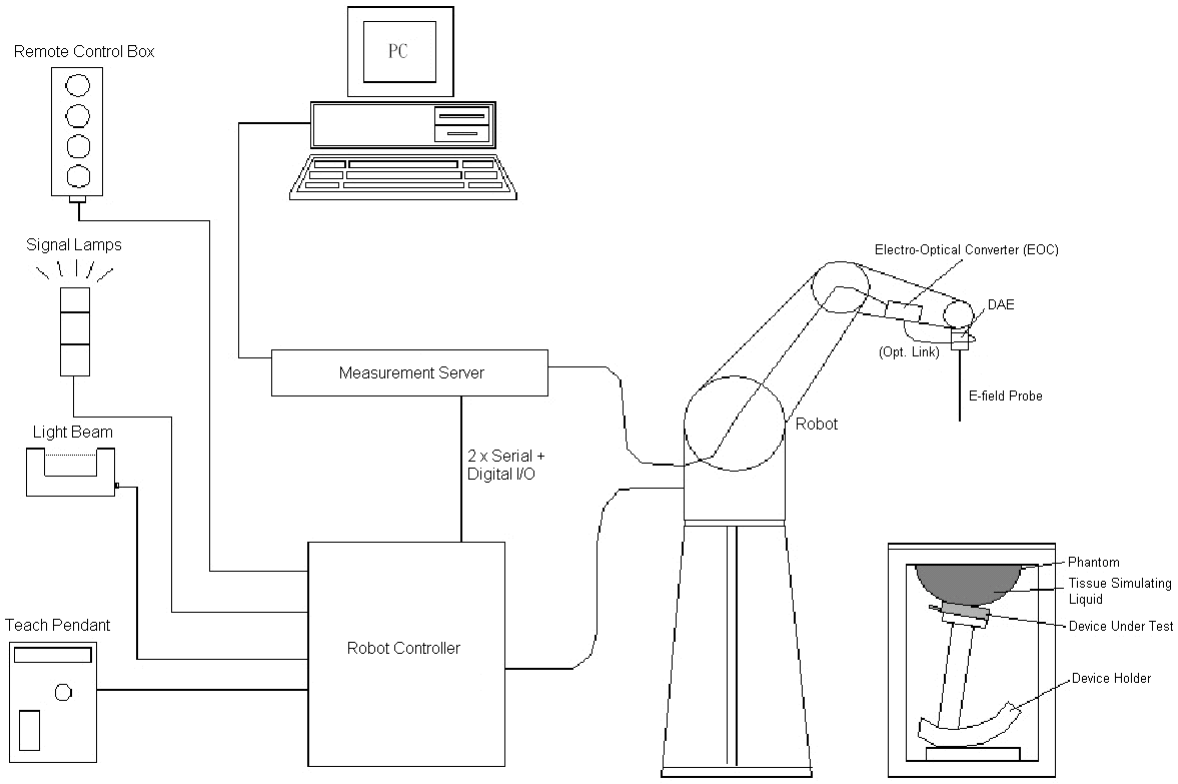
Note:

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.
2. At frequencies above 6.0 GHz, SAR limits are not applicable and MPE limits for power density should be applied at 5 cm or more from the transmitting device.
3. The SAR limit is specified in FCC 47 CFR Part 2 § 2.1093, ANSI/IEEE C95.1-1992.

3 SAR Measurement System

3.1 SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

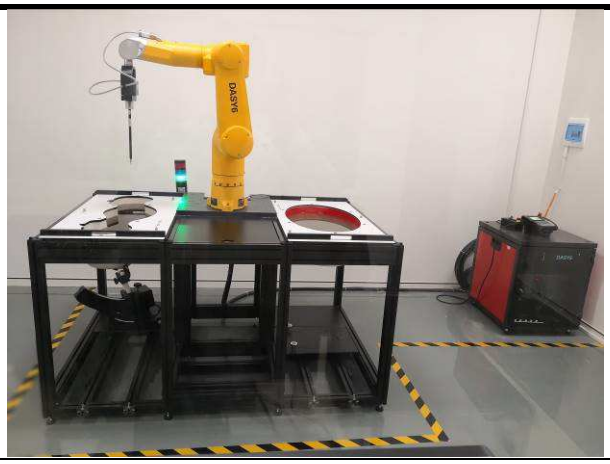


DASY Measurement System

3.1.1 Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)



DASY6

3.1.2 Probe

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

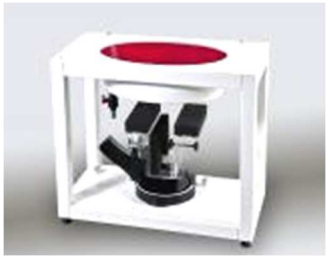
Model	EX3DV4
Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (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

3.1.3 Data Acquisition Electronics (DAE)

Model	DAE3, DAE4
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Offset Voltage	< 5µV (with auto zero)
Input Bias Current	< 50 fA
Dimensions	60 x 60 x 68 mm

3.1.4 Phantom

Model	Twin SAM	
Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	approx. 25 liters	

Model	ELI	
Construction	Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.	
Material	Vinylester, glass fiber reinforced (VE-GF)	
Shell Thickness	2.0 ± 0.2 mm (bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	approx. 30 liters	

3.1.5 Device Holder

Model	Mounting Device	
Construction	In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).	
Material	POM	

Model	Laptop Extensions Kit	
Construction	Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner.	
Material	POM, Acrylic glass, Foam	

3.1.6 System Validation Dipoles

Model	D-Serial	
Construction	Symmetrical dipole with l/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.	
Frequency	750 MHz to 5800 MHz	
Return Loss	> 20 dB	
Power Capability	> 100 W (f < 1GHz), > 40 W (f > 1GHz)	

3.2 SAR Scan Procedure

3.2.1 SAR Reference Measurement (drift)

Prior to the SAR test, local SAR shall be measured at a stationary reference point where the SAR exceeds the lower detection limit of the measurement system.

3.2.2 Area Scan

Measurement procedures for evaluating the SAR of wireless device start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. All antennas and radiating structures that may contribute to the measured SAR or influence the SAR distribution must be included in the area scan. The area scan measurement resolution must enable the extrapolation algorithms of the SAR system to correctly identify the peak SAR location(s) for subsequent zoom scan measurements to correctly determine the 1-g SAR. Area scans are performed at a constant distance from the phantom surface, determined by the measurement frequencies. When a measured peak is closer than ½ the zoom scan volume dimension (x, y) from the edge of the area scan region, unless the entire peak and gram-averaging volume are both captured within the zoom scan volume, the area scan must be repeated by shifting and expanding the area scan region to ensure all peaks are away from the area scan boundary. The area scan resolutions specified in the table below must be applied to the SAR measurements.

	≤ 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.	

3.2.3 Zoom Scan

To evaluate the peak spatial-average SAR values with respect to 1 g or 10 g cubes, fine resolution volume scans, called zoom scans, are performed at the peak SAR locations identified during the area scan. If the cube volume within the zoom scan chosen to calculate the peak spatial-average SAR touches any boundary of the zoom-scan volume, the zoom scan shall be repeated with the center of the zoom-scan volume shifted to the new maximum SAR location. For any secondary peaks found in the area scan that are within 2 dB of the maximum peak and are not within this zoom scan, the zoom scan shall be performed for such peaks, unless the peak spatial-average SAR at the location of the maximum peak is more than 2 dB below the applicable SAR limit (i.e., 1 W/kg for a 1.6 W/kg 1 g limit, or 1.26 W/kg for a 2 W/kg 10 g limit). The zoom scan resolutions specified in the table below must be applied to the SAR measurements.

			≤ 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: ΔZ_{Zoom}(n)		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	ΔZ_{Zoom}(1): between 1^{ST} two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		ΔZ_{Zoom}(n>1): between subsequent points	≤ 1.5·ΔZ_{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.				

3.2.4 SAR Drift Measurement

The local SAR (or conducted power) shall be measured at exactly the same location as in 3.2.1 section. The absolute value of the measurement drift (the difference between the SAR measured in 3.2.1 and 3.2.4 section) shall be recorded. The SAR drift shall be kept within ± 5%.

3.3 Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D750V3	1109	Jun. 25, 2018	3 years
System Validation Dipole	SPEAG	D835V2	4d242	Jun. 06, 2018	3 years
System Validation Dipole	SPEAG	D900V2	1d200	Jun. 06, 2018	3 years
System Validation Dipole	SPEAG	D1750V2	1166	Jun. 11, 2018	3 years
System Validation Dipole	SPEAG	D1800V2	2d219	Jun. 11, 2018	3 years
System Validation Dipole	SPEAG	D1900V2	5d229	Jun. 12, 2018	3 years
System Validation Dipole	SPEAG	D2000V2	1089	Jun. 07, 2018	3 years
System Validation Dipole	SPEAG	D2300V2	1087	Jun. 07, 2018	3 years
System Validation Dipole	SPEAG	D2450V2	1014	Jun. 07, 2018	3 years
System Validation Dipole	SPEAG	D2600V2	1153	Jun. 07, 2018	3 years
System Validation Dipole	SPEAG	D5GHzV2	1280	May. 26, 2020	1 year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7506	May. 29, 2020	1 year
Data Acquisition Electronics	SPEAG	DAE4	1557	May. 27, 2020	1 year
Wideband Radio Communication Tester	R&S	CMW500	166305	Aug. 22, 2020	1 year
Vector Network Analyzer	R&S	ZNB 8	107040	Aug. 22, 2020	1 year
Signal Analyzer	R&S	FSV 7	103665	Aug. 22, 2020	1 year
Coaxial Directional Couper	Keysight	773D	MY52180552	Dec. 20, 2019	1 year
Coaxial Directional Couper	shhuaxiang	DTO-0.4/3.9-10	18052101	Dec. 20, 2019	1 year
Dielectric assessment Kit	SPEAG	DAK-3.5	1269	Jun. 19, 2020	1 year
EPM Series Power Meter	Keysight	N1914A	MY58240005	Dec. 20, 2019	2 years
Power Sensor	Keysight	N8481H	MY58250002	Dec. 20, 2019	1 year
Power Sensor	Keysight	N8481H	MY58250006	Dec. 20, 2019	1 year
DC Power Supply	Topward	3303D	809332	Dec. 20, 2019	1 year
Power Amplifier Mini circuit	mini-circuits	ZHL-42W	SN002101809	N/A	N/A
Power Amplifier Mini circuit	mini-circuits	ZVE-8G	SN070501814	N/A	N/A
Coaxial attenuator	Keysight	8491A	MY52463219	Dec. 20, 2019	1 year
Coaxial attenuator	Keysight	8491A	MY52463210	Dec. 20, 2019	1 year
Coaxial attenuator	Keysight	8491A	MY52463222	Dec. 20, 2019	1 year
Digital Thermometer	LKM	DTM3000	3116	Dec. 20, 2019	1 year
Phantom	SPEAG	ELI V8.0	2094	N/A	N/A
Phantom	SPEAG	SAM-Twin V8.0	1961	N/A	N/A

3.4 Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

3.5 Tissue Dielectric Parameter Measurement & System Verification

3.5.1 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed.

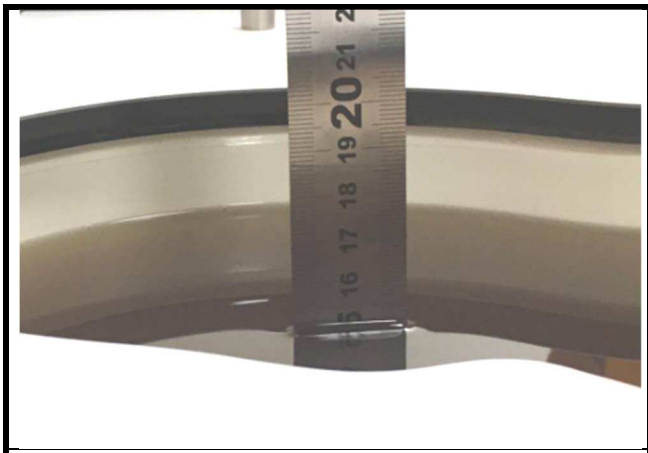


Photo of Liquid Height for Head Position

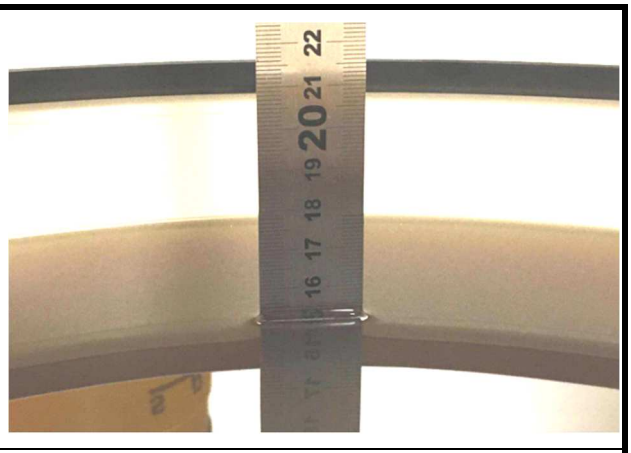


Photo of Liquid Height for Body Position

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

Table-3.1 Tissue Dielectric Parameters for Head and Body

Frequency (MHz)	Target Permittivity	Range of ±5%	Target Conductivity	Range of ±5%
For Head				
750	41.9	39.8 ~ 44.0	0.89	0.85 ~ 0.93
835	41.5	39.4 ~ 43.6	0.90	0.86 ~ 0.95
900	41.5	39.4 ~ 43.6	0.97	0.92 ~ 1.02
1450	40.5	38.5 ~ 42.5	1.20	1.14 ~ 1.26
1640	40.3	38.3 ~ 42.3	1.29	1.23 ~ 1.35
1750	40.1	38.1 ~ 42.1	1.37	1.30 ~ 1.44
1800	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
1900	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2000	40.0	38.0 ~ 42.0	1.40	1.33 ~ 1.47
2300	39.5	37.5 ~ 41.5	1.67	1.59 ~ 1.75
2450	39.2	37.2 ~ 41.2	1.80	1.71 ~ 1.89
2600	39.0	37.1 ~ 41.0	1.96	1.86 ~ 2.06
3500	37.9	36.0 ~ 39.8	2.91	2.76 ~ 3.06
5200	36.0	34.2 ~ 37.8	4.66	4.43 ~ 4.89
5300	35.9	34.1 ~ 37.7	4.76	4.52 ~ 5.00
5500	35.6	33.8 ~ 37.4	4.96	4.71 ~ 5.21
5600	35.5	33.7 ~ 37.3	5.07	4.82 ~ 5.32
5800	35.3	33.5 ~ 37.1	5.27	5.01 ~ 5.53

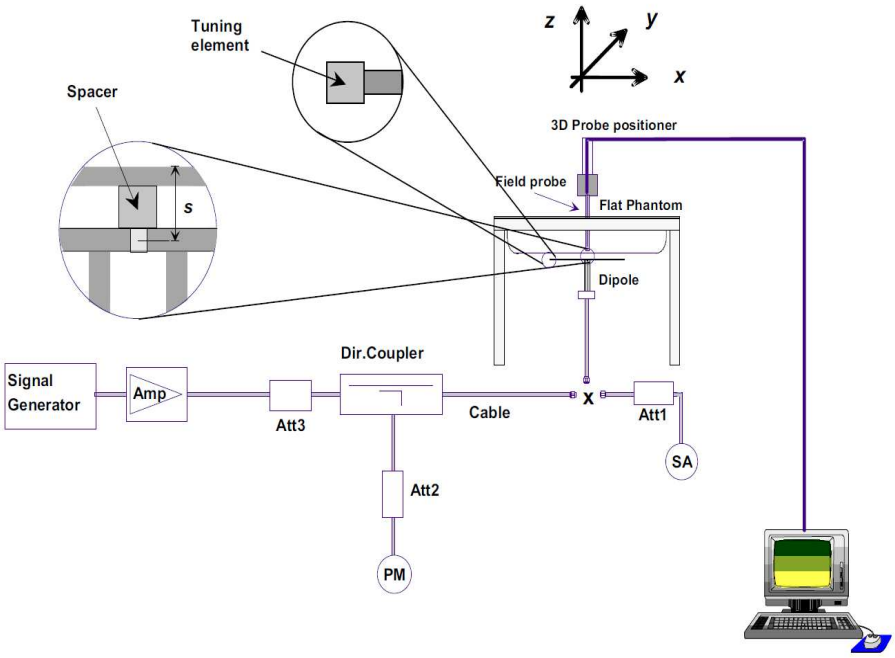
For Body				
750	55.5	52.7 ~ 58.3	0.96	0.91 ~ 1.01
835	55.2	52.4 ~ 58.0	0.97	0.92 ~ 1.02
900	55.0	52.3 ~ 57.8	1.05	1.00 ~ 1.10
1450	54.0	51.3 ~ 56.7	1.30	1.24 ~ 1.37
1640	53.8	51.1 ~ 56.5	1.40	1.33 ~ 1.47
1750	53.4	50.7 ~ 56.1	1.49	1.42 ~ 1.56
1800	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
1900	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2000	53.3	50.6 ~ 56.0	1.52	1.44 ~ 1.60
2300	52.9	50.3 ~ 55.5	1.81	1.72 ~ 1.90
2450	52.7	50.1 ~ 55.3	1.95	1.85 ~ 2.05
2600	52.5	49.9 ~ 55.1	2.16	2.05 ~ 2.27
3500	51.3	48.7 ~ 53.9	3.31	3.14 ~ 3.48
5200	49.0	46.6 ~ 51.5	5.30	5.04 ~ 5.57
5300	48.9	46.5 ~ 51.3	5.42	5.15 ~ 5.69
5500	48.6	46.2 ~ 51.0	5.65	5.37 ~ 5.93
5600	48.5	46.1 ~ 50.9	5.77	5.48 ~ 6.06
5800	48.2	45.8 ~ 50.6	6.00	5.70 ~ 6.30

Table-3.2 Recipes of Tissue Simulating Liquid

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono-hexylether
H750	0.2	-	0.2	1.5	56.0	-	42.1	-
H835	0.2	-	0.2	1.5	57.0	-	41.1	-
H900	0.2	-	0.2	1.4	58.0	-	40.2	-
H1450	-	43.3	-	0.6	-	-	56.1	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	47.0	-	0.4	-	-	52.6	-
H1800	-	44.5	-	0.3	-	-	55.2	-
H1900	-	44.5	-	0.2	-	-	55.3	-
H2000	-	44.5	-	0.1	-	-	55.4	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.5	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	31.0	-	0.2	-	-	68.8	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

3.5.2 System Check Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.



System Verification Setup

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power (250 mW is used for 700 MHz to 3 GHz, 100 mW is used for 3.5 GHz to 6 GHz) at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

3.5.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

Tissue Type	Frequency (MHz)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ)	Deviation Permittivity (εr)	Date
Head								
H750	750	0.890	41.112	0.89	41.90	0.00	-1.88	Sep. 03, 2020
H835	835	0.922	40.869	0.90	41.50	2.44	-1.52	Sep. 04, 2020
H1750	1750	1.375	39.472	1.37	40.10	0.36	-1.57	Sep. 06, 2020
H1900	1900	1.455	39.264	1.40	40.00	3.93	-1.84	Sep. 05, 2020
H2300	2300	1.721	38.075	1.67	39.50	3.05	-3.61	Sep. 08, 2020
H2450	2450	1.827	37.969	1.80	39.20	1.50	-3.14	Sep. 10, 2020
H2600	2600	1.947	37.691	1.96	39.00	-0.66	-3.36	Sep. 07, 2020
H5G	5250	4.742	36.250	4.71	35.90	0.68	0.97	Sep. 11, 2020
H5G	5600	5.101	35.737	5.07	35.50	0.61	0.67	Sep. 11, 2020
H5G	5800	5.315	35.447	5.27	35.30	0.85	0.42	Sep. 11, 2020
Body								
B750	750	0.963	53.779	0.96	55.50	0.31	-3.10	Aug. 28, 2020
B835	835	0.957	56.335	0.97	55.20	-1.34	2.06	Aug. 31, 2020
B1750	1750	1.439	53.695	1.49	53.40	-3.42	0.55	Aug. 30, 2020
B1900	1900	1.584	53.066	1.52	53.30	4.21	-0.44	Aug. 29, 2020
B2300	2300	1.801	52.651	1.81	52.90	-0.50	-0.47	Aug. 27, 2020
B2450	2450	1.902	51.445	1.95	52.70	-2.46	-2.38	Sep. 10, 2020
B2600	2600	2.117	51.117	2.16	52.50	-1.99	-2.63	Aug. 26, 2020
B5G	5250	5.494	48.293	5.36	48.90	2.50	-1.24	Sep. 11, 2020
B5G	5600	5.957	47.703	5.77	48.50	3.24	-1.64	Sep. 11, 2020
B5G	5750	6.221	47.400	6.00	48.20	3.68	-1.66	Sep. 11, 2020

Note:

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ± 5% of the target values. The variation of the liquid temperature must be within ± 2 °C during the test.

3.5.4 System Verification

The measuring result for system verification is tabulated as below.

	System Validation									Note		
Date	Frequency (MHz)	Targeted SAR 1g (W/kg)	Targeted SAR 10g (W/kg)	Measured SAR 1g (W/kg)	Measured SAR 10g (W/kg)	normalized SAR 1g (W/kg)	normalized SAR 10g (W/kg)	SAR 1g Deviation (%)	SAR 10g Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
Head												
Sep. 03, 2020	750	8.13	5.30	2.01	1.32	8.04	5.28	-1.11	-0.38	1109	7506	1557
Sep. 04, 2020	835	9.21	5.99	2.34	1.53	9.36	6.12	1.63	2.17	4d242	7506	1557
Sep. 06, 2020	1750	35.50	18.90	8.87	4.71	35.48	18.84	-0.06	-0.32	1166	7506	1557
Sep. 05, 2020	1900	39.90	20.80	10.40	5.34	41.60	21.36	4.26	2.69	5d229	7506	1557
Sep. 08, 2020	2300	48.00	23.10	12.50	5.94	50.00	23.76	4.17	2.86	1087	7506	1557
Sep. 10, 2020	2450	51.40	24.10	13.10	6.07	52.40	24.28	1.95	0.75	1014	7506	1557
Sep. 07, 2020	2600	56.00	25.10	14.20	6.37	56.80	25.48	1.43	1.51	1153	7506	1557
Sep. 11, 2020	5250	80.10	23.10	8.39	2.38	83.90	23.80	4.74	3.03	1280	7506	1557
Sep. 11, 2020	5600	83.60	23.80	8.31	2.34	83.10	23.40	-0.60	-1.68	1280	7506	1557
Sep. 11, 2020	5800	79.90	22.60	8.51	2.41	85.10	24.10	6.51	6.64	1280	7506	1557
Body												
Aug. 28, 2020	750	8.51	5.64	2.17	1.41	8.68	5.64	2.00	0.00	1109	7506	1557
Aug. 31, 2020	835	9.59	6.31	2.42	1.57	9.68	6.28	0.94	-0.48	4d242	7506	1557
Aug. 30, 2020	1750	35.90	19.20	8.84	4.66	35.36	18.64	-1.50	-2.92	1166	7506	1557
Aug. 29, 2020	1900	40.20	21.30	9.68	4.99	38.72	19.96	-3.68	-6.29	5d229	7506	1557
Aug. 27, 2020	2300	45.70	22.10	11.50	5.42	46.00	21.68	0.66	-1.90	1087	7506	1557
Sep. 10, 2020	2450	50.50	23.80	12.50	5.78	50.00	23.12	-0.99	-2.86	1014	7506	1557
Aug. 26, 2020	2600	54.80	24.50	14.10	6.19	56.40	24.76	2.92	1.06	1153	7506	1557
Sep. 11, 2020	5250	74.80	20.90	7.54	2.13	75.40	21.30	0.80	1.91	1280	7506	1557
Sep. 11, 2020	5600	79.20	22.20	8.02	2.25	80.20	22.50	1.26	1.35	1280	7506	1557
Sep. 11, 2020	5750	74.80	20.90	7.64	2.13	76.40	21.30	2.14	1.91	1280	7506	1557

Note:

Comparing to the reference SAR value, the validation data should be within its specification of 10%. The result indicates the system check can meet the variation criterion and the plots can be referred to 0 of this report.

4 SAR Measurement Evaluation and Test Results

4.1 EUT Configuration and Setting

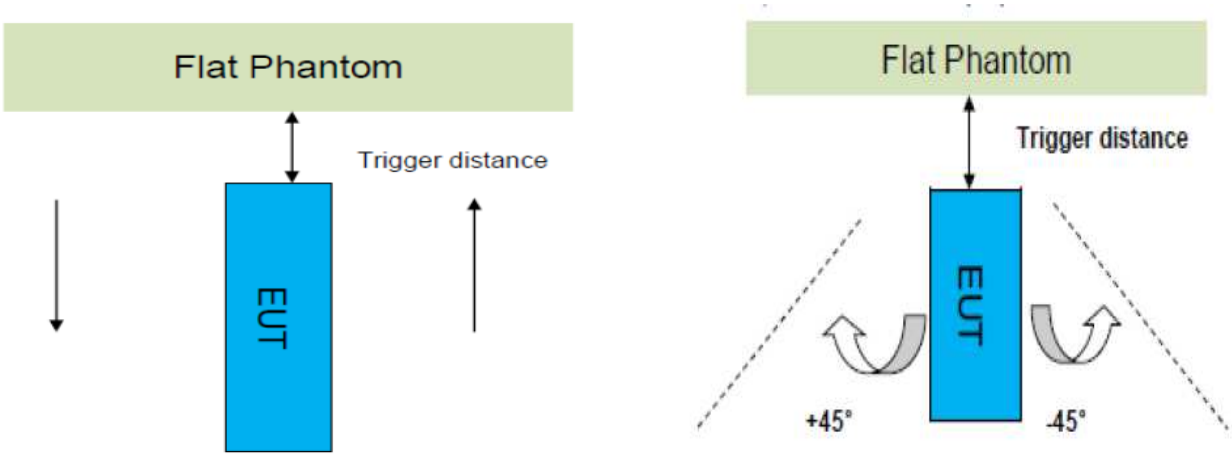
Connections between EUT and System Simulator

For WWAN SAR testing, the EUT was linked and controlled by base station emulator. Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing.

The device supports WWAN, WLAN, and Bluetooth capabilities. It is designed with a proximity sensor which can trigger/not trigger power reduction for WLAN, GSM, WCDMA and LTE on Rear, Right and Top Side of EUT for SAR compliance. Others RF capability (Bluetooth) have no power reduction. The power levels for all wireless technologies and the power reduction please refer to section 4.6 of this report.

According to the procedures noticed in KDB 616217 D04, the proximity sensor triggering distance is 16 mm for EUT Rear Face and Right side, and 6 mm for Top Side. The separation distance of 5 mm determined by the smallest triggering distance on Top Side and 15 mm on Rear face & Right side were used to access the tilt angle influence and the sensor does not release during ±45 degree. Therefore, the smallest separation distance for tilt angle influence is 5 mm for the Top Side. The details can be found in technical document. The conservation triggering distances based on the separation distance for the sensor trigger / not triggered as EUT with power reduction at 0 mm, and EUT without power reduction at 15 mm for EUT Rear Face and Right side, and 5 mm for Top Side is used to test SAR.

The power reduction is depends on the proximity sensor input. For a steady SAR test, the power reduction was enabled or disabled manually by engineering software during SAR testing.



Tablet tilt angle influence to proximity sensor triggering for Rear Face, Top Side and Right Side.

4.1.1 GSM Configuration and Testing

GSM (GMSK: CS1) voice mode transmits with 1 time slot. GPRS (GMSK: CS1) and EDGE (GMSK: MCS1, 8PSK: MCS9) may transmit up to 4 time slots in the 8 time-slot frame according to the multislot class implemented in a device.

4.1.2 WCDMA Configuration and Testing

WCDMA Handsets Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode.

WCDMA Handsets Body-worn SAR

SAR for body-worn configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple $DPDCH_n$ configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices”, for the highest reported SAR body-worn exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

Handsets with Release 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices”, for the highest reported body-worn exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn measurements is tested for next to the ear head exposure.

Release 5 HSDPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH / HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c, β_d), and HS-DPCCH power offset parameters (Δ_{ACK}, Δ_{NACK}, Δ_{CQI}) are set according to values indicated in below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	β_{hs} (1)	CM (dB)(2)	MPR
1	2 / 15	15 / 15	64	2 / 15	4 / 15	0.0	0
2	12 / 15 (3)	15 / 15 (3)	64	12 / 15 (3)	24 / 15	1.0	0
3	15 / 15	8 / 15	64	15 / 8	30 / 15	1.5	0.5
4	15 / 15	4 / 15	64	15 / 4	30 / 15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 $\Leftrightarrow$ A_{hs} = β_{hs} / β_c = 30 / 15 $\Leftrightarrow$ β_{hs} = 30 / 15 * β_c.
Note 2: CM = 1 for β_c / β_d = 12 / 15, β_{hs} / β_c = 24 / 15.
Note 3: For subtest 2 the β_c / β_d ratio of 12 / 15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 11 / 15 and β_d = 15 / 15.

Release 6 HSUPA Data Devices

The 3G SAR test reduction procedure is applied to body SAR with 12.2 kbps RMC as the primary mode. Otherwise, body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode. Otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing. Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in below.

Sub-test	β_c	β_d	β_d (SF)	β_c / β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11 / 15 (3)	15 / 15 (3)	64	11 / 15 (3)	22 / 15	209 / 225	1039 / 225	4	1	1.0	0.0	20	75
2	6 / 15	15 / 15	64	6 / 15	12 / 15	12 / 15	94 / 75	4	1	3.0	2.0	12	67
3	15 / 15	9 / 15	64	15 / 9	30 / 15	30 / 15	β_{ed1}: 47/15 β_{ed2}: 47/15	4	2	2.0	1.0	15	92
4	2 / 15	15 / 15	64	2 / 15	4 / 15	2 / 15	56 / 75	4	1	3.0	2.0	17	71
5	15 / 15 (4)	15 / 15 (4)	64	15 / 15 (4)	30 / 15	24 / 15	134 / 15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 $\Leftrightarrow$ A_{hs} = β_{hs} / β_c = 30 / 15 $\Leftrightarrow$ β_{hs} = 30 / 15 * β_c.
Note 2: CM = 1 for β_c / β_d = 12 / 15, β_{hs} / β_c = 24 / 15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c / β_d ratio of 11 / 15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10 / 15 and β_d = 15 / 15.
Note 4: For subtest 5 the β_c / β_d ratio of 15 / 15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14 / 15 and β_d = 15 / 15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

DC-HSDPA SAR Guidance

The 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Otherwise, when SAR is required for Rel. 5 HSDPA, SAR is required for Rel. 8 DC-HSDPA. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

4.1.3 LTE Configuration and Testing

UE power class is category 3. The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

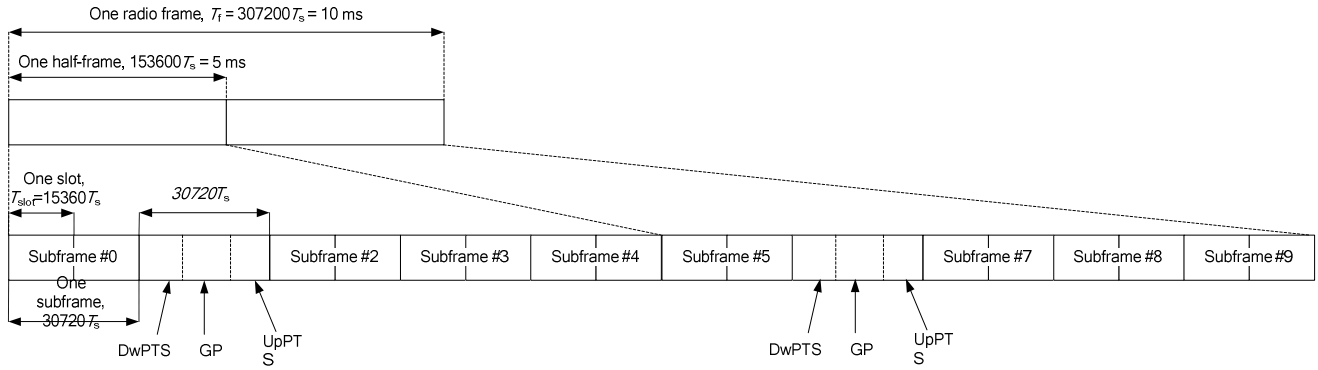
Modulation	Channel Bandwidth / RB Configurations						LTE MPR Setting (dB)
	BW 1.4 MHz	BW 3 MHz	BW 5 MHz	BW 10 MHz	BW 15 MHz	BW 20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64 QAM	<= 5	<= 4	<= 8	<= 12	<= 16	<= 18	2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	3

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

A properly configured base station simulator is used for the SAR and power measurements, so spectrum plots for each RB allocation and offset configuration are not included in the SAR report to demonstrate that the tested RB allocations have been correctly established at the maximum output power conditions.

TDD-LTE Setup Configurations

According to KDB 941225 D05, SAR testing for TDD-LTE device must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.



3GPP TS 36.211 Figure 4.2-1: Frame Structure Type 2

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 • Ts	2192 • Ts	2560 • Ts	7680 • Ts	2192 • Ts	2560 • Ts
1	19760 • Ts			20480 • Ts		
2	21952 • Ts			23040 • Ts		
3	24144 • Ts			25600 • Ts		
4	26336 • Ts			7680 • Ts	4384 • Ts	5120 • Ts
5	6592 • Ts	4384 • Ts	5120 • Ts	20480 • Ts		
6	19760 • Ts			23040 • Ts		
7	21952 • Ts			12800 • Ts		
8	24144 • Ts			-	-	-
9	13168 • Ts			-	-	-

3GPP TS 36.211 Table 4.2-1: Configuration of Special Subframe

Uplink-Downlink	Downlink-to-Uplink	Subframe Number	Duty-

Configuration	Switch-Point Periodicity	0	1	2	3	4	5	6	7	8	9	Cycle
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%

Uplink-Downlink Configurations and duty cycle

Considering the highest transmission duty cycle, TDD-LTE was tested using Uplink-Downlink Configuration 0 with 6 uplink subframe and 2 special subframe. The special subframe was set to special subframe configuration 7 using extended cyclic prefix uplink. Therefore, SAR testing for TDD-LTE was performed at the maximum output power with highest transmission duty cycle of 63.33%.

LTE UL CA

This device supports UL CA, E-UTRA CA configurations and bandwidth combination sets defined for intra-band contiguous CA as bellow table.

Table 5.6A.1-1: E-UTRA CA configurations and bandwidth combination sets defined for **intra-band contiguous CA**

E-UTRA CA configuration	CA configurations	Component carriers in order of increasing carrier frequency				Maximum aggregated bandwidth [MHz]	Bandwidth combination set
		Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]	Channel bandwidths for carrier [MHz]		
CA_5B	CA_5B	5, 10	10			20	0
		10	5				
CA_41C	CA_41C	10	20			40	0
		15	15, 20				
		20	10, 15, 20				
		5, 10	20			40	1
		15	15, 20				
		20	5, 10, 15, 20				
		10	15, 20			40	2
		15	10, 15, 20				
		20	10, 15, 20				
		10	20			40	3
		20	20				

LTE DL CA

This device supports DL CA, E-UTRA CA defined for intra-band contiguous and inter-band CA as bellow table. The configurations and bandwidth combination sets refer to 3GPP TS 35.521-1

2 X Downlink CA	CA_2A-2A, CA_2A-4A, CA_2A-5A, CA_2A-12A, CA_2A-29A, CA_2A-30A, CA_3A_3A, CA_3A_7A, CA_3A_20A, CA_3C, CA_4A-5A, CA_4A-12A, CA_4A-29A, CA 4A-30A, CA_5B, CA_5A-5A, CA_5A-30A, CA_5A-66A, CA_7A_20A, CA_7A_7A, CA_12A-30A, CA_12A_66A, CA_29A-30A, CA_66A-66A, CA_41C, CA_25A-25A, CA_25A-26A
3 X Downlink CA	CA_2A-2A-4A, CA_2A-2A-5A, CA_2A-4A-4A, CA_2A-4A-5A, CA_2A-5A-66A, CA_2A-5B, CA_2A-5A-30A, CA_2A-5A-66A, CA_2A-12A-30A, CA_2A-12A-66A, CA_2A-29A-30A, CA_3A-

	7A-20A, CA_4A-4A-5A, CA_4A-5A-30A, CA_4A-12A-30A, CA_4A-29A-30A, CA_5B-66A, CA_5A-66B, CA_5A-66C, CA-41D

Note.: The output power with Intra-band and Inter-band DL CA operation (two bands and three bands) were not exceed the output power of single carrier after pretest and the max. power refer to Appendix D.

4.1.4 WLAN Configuration and Testing

In general, various vendor specific external test software and chipset based internal test modes are typically used for SAR measurement. These chipset based test mode utilities are generally hardware and manufacturer dependent, and often include substantial flexibility to reconfigure or reprogram a device. A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement. The test frequencies established using test mode must correspond to the actual channel frequencies. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. In addition, a periodic transmission duty factor is required for current generation SAR systems to measure SAR correctly. The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

According to KDB 248227 D01, this device has installed WLAN engineering testing software which can provide continuous transmitting RF signal. During WLAN SAR testing, this device was operated to transmit continuously at the maximum transmission duty with specified transmission mode, operating frequency, lowest data rate, and maximum output power.

Initial Test Configuration

An initial test configuration is determined for OFDM transmission modes in 2.4 GHz and 5 GHz bands according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.

Subsequent Test Configuration

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. Additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. When the highest reported SAR for the initial test configuration according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

SAR Test Configuration and Channel Selection

When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, the initial test configuration is using largest channel bandwidth, lowest order modulation, lowest data rate, and lowest order 802.11 mode (i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n). After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following.
1) The channel closest to mid-band frequency is selected for SAR measurement.
2) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

Test Reduction for U-NII-1 (5.2 GHz) and U-NII-2A (5.3 GHz) Bands
For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following.
1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition).
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration.

4.2 EUT Testing Position

4.2.1 Head Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Head	Right Cheek	0 cm	N
	Right Tilted		
	Left Cheek		
	Left Tilted		

Note:

1. Since this tablet has receiver and it can be used in close proximity to the ear as handset. According to technical standards, this tablet was tested for SAR compliance in head described in the following subsections.
2. Head exposure for voice mode of handset is limited to next to the ear exposure conditions.
3. Devices that are designed to transmit next to the ear must be tested using the SAM phantom.
4. Other head exposure conditions, for example, in-front-of the face, should be tested using a flat phantom according to the required published RF exposure KDB procedures.
5. When data mode operates in next to the ear configurations, either data alone or in conjunction with voice transmissions, SAR evaluation is required for such use conditions.
6. When device supports VoIP, SAR evaluation for head Exposure Conditions using the most appropriate wireless data mode configurations is required.

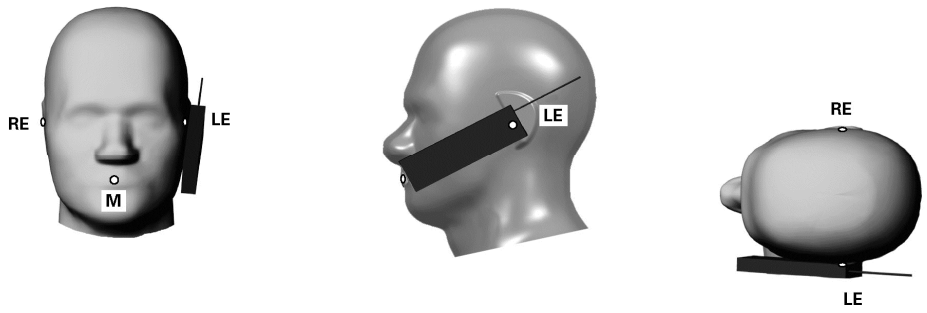


Fig-4.1 Cheek Position

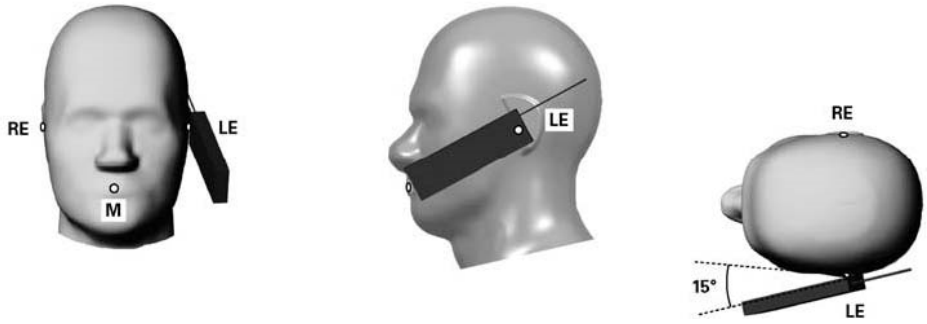


Fig-4.2 Tilted Position

Define two imaginary lines on the handset

a) The vertical centerline passes through two points on the front side of the handset - the midpoint of the width w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b of the bottom of the

handset.

b) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

c) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

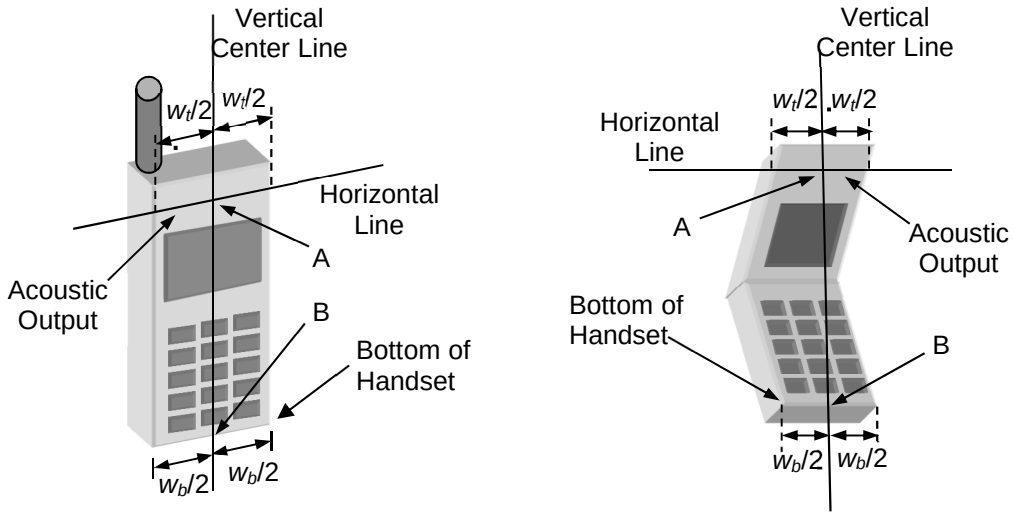


Fig-4.3 Handset Vertical and Horizontal Reference Lines

4.2.2 Body-worn Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Body-worn	Front Face	0mm (Touching the phantom)	Y
	Rear Face		N
	Top Side		N
	Right Side		N
	Left Side		N
	Bottom Side		N

1. The normal tablet procedures in KDB 616217 are required when the over diagonal dimension of the device is > 20 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of large form factor full size tablets. The more conservative tablet SAR results can be used to support the 10-g extremity SAR for phablet mode.
3. The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions.
4. For full-size tablet, according to KDB 616217 D04, SAR evaluation is required for back surface and edges of the devices. The back surface and edges of the tablet are tested with the tablet touching the phantom. Exposures from antennas through the front surface of the display section of a tablet are generally limited to the user's hands. Exposures to hands for typical consumer transmitters used in tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary. When voice mode is supported on a tablet and it is limited to speaker mode or headset operations only, additional SAR testing for this type of voice use is not required.

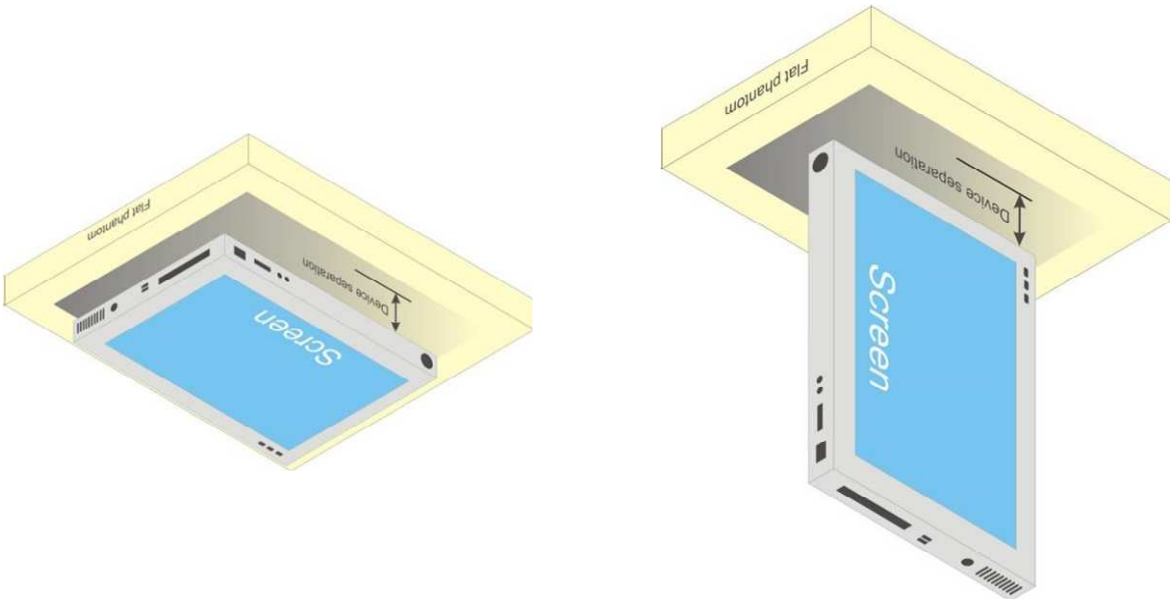


Fig-4.4 Body Worn Position

4.2.3 Hotspot Mode Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Hotspot	Front Face	--	Y Note 2
	Rear Face		
	Left Side		
	Right Side		
	Top Side		
	Bottom Side		

Note:

1. Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.
2. The normal tablet procedures in KDB 616217 are required when the over diagonal dimension of the device is > 20 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of large form factor full size tablets. The more conservative tablet SAR results can be used to support the 10-g extremity SAR for phablet mode.

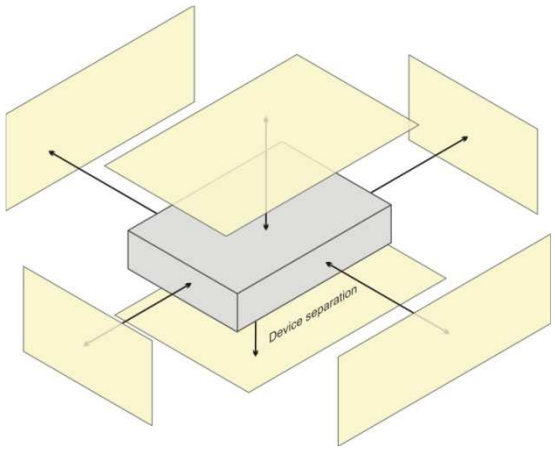


Fig-4.5 Test Positions for Hotspot Mode

4.2.4 Extremity Exposure Conditions

RF Exposure Conditions	Test Position	Separation Distance	SAR test exclusion
Extremity	Front Face	--	Y Note 2
	Rear Face		
	Left Side		
	Right Side		
	Top Side		
	Bottom Side		

Note:

1. Extremity SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.
2. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode 10-g extremity SAR.
3. The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions.

4.3 Measured Conducted Power Result

4.3.1 Conducted Power of GSM Band

Refer to Appendix D

4.3.2 Conducted Power of WCDMA Band

Refer to Appendix D

4.3.3 Conducted Power of LTE Band

Refer to Appendix D

4.3.4 Conducted Power of WLAN

Refer to Appendix D

4.3.5 Conducted Power of BT

Refer to Appendix D

4.4 SAR Test Exclusion Evaluations

4.4.1 Standalone SAR Test Exclusion Considerations

According to KDB 447498 D01, the SAR test exclusion condition is based on source-based time-averaged maximum conducted output power, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions. The 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

a) For 100 MHz to 6 GHz and *test separation distances* ≤ 50 mm:

$$\frac{Max.Tune\ up\ Power_{(mW)}}{Min.Test\ Separation\ Distance_{(mm)}} \times \sqrt{f_{(GHz)}} \leq 3.0 \text{ for SAR-1g, } \leq 7.5 \text{ for SAR-10g}$$

When the minimum *test separation distance* is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

b) For 100 MHz to 1500 MHz and *test separation distances* > 50 mm:

{[Threshold for 50 mm in step a)] + [(test separation distance – 50 mm) · ($f_{(MHz)}$/150)]} mW

c) For > 1500 MHz and ≤ 6 GHz and *test separation distances* > 50 mm:

{[Threshold for 50 mm in step a)] + [(test separation distance – 50 mm) ·10]} mW

When the calculated result in step a) is <= 3.0 for SAR-1g exposure condition, or <= 7.5 for SAR-10g exposure condition, the SAR testing exclusion is applied.
When the device output power is less than the calculated result (power threshold, mW) shown in in step b) and c), the SAR testing exclusion is applied.

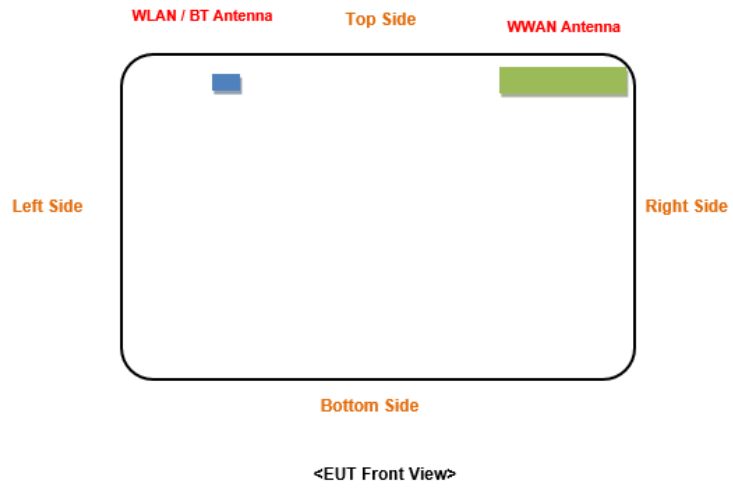
Test Exclusion Evaluations

Tx Ant. Separation (mm) WWAN-1_Full Power	Air-Interface	Frequency (GHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
					Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?
to Front Face n/a to Rear Face 5 to Left Side 148 to Right Side 10 to Top Side 5 to Bottom Side 130	GSM850	0.849	27.2	524.81	5	96.7	Yes	148	717 mW	No	10	48.4	Yes	5	96.7	Yes	130	616 mW	No
	GSM1900	1.91	24.2	263.03	5	72.7	Yes	148	1089 mW	No	10	36.4	Yes	5	72.7	Yes	130	909 mW	No
	WCDMA II	1.908	25.0	316.23	5	87.4	Yes	148	1089 mW	No	10	43.7	Yes	5	87.4	Yes	130	909 mW	No
	WCDMA IV	1.753	25.0	316.23	5	83.7	Yes	148	1093 mW	No	10	41.9	Yes	5	83.7	Yes	130	913 mW	No
	WCDMA V	0.847	25.0	316.23	5	58.2	Yes	148	716 mW	No	10	29.1	Yes	5	58.2	Yes	130	615 mW	No
	LTE 2	1.908	24.0	251.19	5	69.4	Yes	148	1089 mW	No	10	34.7	Yes	5	69.4	Yes	130	909 mW	No
	LTE 4	1.753	24.0	251.19	5	66.5	Yes	148	1093 mW	No	10	33.3	Yes	5	66.5	Yes	130	913 mW	No
	LTE 5	0.847	24.0	251.19	5	46.2	Yes	148	716 mW	No	10	23.1	Yes	5	46.2	Yes	130	615 mW	No
	LTE 7	2.56	23.5	223.87	5	71.6	Yes	148	1074 mW	No	10	35.8	Yes	5	71.6	Yes	130	894 mW	No
	LTE 12	0.714	24.0	251.19	5	42.5	Yes	148	644 mW	No	10	21.2	Yes	5	42.5	Yes	130	558 mW	No
	LTE 13	0.785	24.0	251.19	5	44.5	Yes	148	682 mW	No	10	22.3	Yes	5	44.5	Yes	130	588 mW	No
	LTE 14	0.796	24.0	251.19	5	44.8	Yes	148	688 mW	No	10	22.4	Yes	5	44.8	Yes	130	593 mW	No
	LTE 17	0.714	24.0	251.19	5	42.5	Yes	148	644 mW	No	10	21.2	Yes	5	42.5	Yes	130	558 mW	No
	LTE 25	1.913	24.0	251.19	5	69.5	Yes	148	1088 mW	No	10	34.7	Yes	5	69.5	Yes	130	908 mW	No
	LTE 26	0.849	24.0	251.19	5	46.3	Yes	148	717 mW	No	10	23.1	Yes	5	46.3	Yes	130	616 mW	No
	LTE 30	2.312	24.0	251.19	5	76.4	Yes	148	1079 mW	No	10	38.2	Yes	5	76.4	Yes	130	899 mW	No

	LTE 38	2.617	25.0	316.23	5	102.3	Yes	148	1073 mW	No	10	51.2	Yes	5	102.3	Yes	130	893 mW	No
	LTE 40	2.397	25.0	316.23	5	97.9	Yes	148	1077 mW	No	10	49.0	Yes	5	97.9	Yes	130	897 mW	No
	LTE 41	2.687	25.0	316.23	5	103.7	Yes	148	1072 mW	No	10	51.8	Yes	5	103.7	Yes	130	892 mW	No
	LTE 66	1.779	24.0	251.19	5	67.0	Yes	148	1092 mW	No	10	33.5	Yes	5	67.0	Yes	130	912 mW	No
Tx Ant. Separation (mm) WWAN-1_Sensor	Air-Interface	Frequency (GHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
					Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?
to Front Face n/a to Rear Face 5 to Left Side 148 to Right Side 10 to Top Side 5 to Bottom Side 130	GSM850	0.849	25.7	371.54	5	68.5	Yes	148	717 mW	No	10	34.2	Yes	5	68.5	Yes	130	616 mW	No
	GSM1900	1.91	19.2	83.18	5	23.0	Yes	148	1089 mW	No	10	11.5	Yes	5	23.0	Yes	130	909 mW	No
	WCDMA II	1.908	16.0	39.81	5	11.0	Yes	148	1089 mW	No	10	5.5	Yes	5	11.0	Yes	130	909 mW	No
	WCDMA IV	1.753	16.0	39.81	5	10.5	Yes	148	1093 mW	No	10	5.3	Yes	5	10.5	Yes	130	913 mW	No
	WCDMA V	0.847	22.0	158.49	5	29.2	Yes	148	716 mW	No	10	14.6	Yes	5	29.2	Yes	130	615 mW	No
	LTE 2	1.908	16.0	39.81	5	11.0	Yes	148	1089 mW	No	10	5.5	Yes	5	11.0	Yes	130	909 mW	No
	LTE 4	1.753	18.0	63.10	5	16.7	Yes	148	1093 mW	No	10	8.4	Yes	5	16.7	Yes	130	913 mW	No
	LTE 5	0.847	22.0	158.49	5	29.2	Yes	148	716 mW	No	10	14.6	Yes	5	29.2	Yes	130	615 mW	No
	LTE 7	2.56	14.0	25.12	5	8.0	Yes	148	1074 mW	No	10	4.0	Yes	5	8.0	Yes	130	894 mW	No
	LTE 12	0.714	24.0	251.19	5	42.5	Yes	148	644 mW	No	10	21.2	Yes	5	42.5	Yes	130	558 mW	No
	LTE 13	0.785	22.0	158.49	5	28.1	Yes	148	682 mW	No	10	14.0	Yes	5	28.1	Yes	130	588 mW	No
	LTE 14	0.796	22.0	158.49	5	28.3	Yes	148	688 mW	No	10	14.1	Yes	5	28.3	Yes	130	593 mW	No
	LTE 17	0.714	24.0	251.19	5	42.5	Yes	148	644 mW	No	10	21.2	Yes	5	42.5	Yes	130	558 mW	No
	LTE 25	1.913	16.0	39.81	5	11.0	Yes	148	1088 mW	No	10	5.5	Yes	5	11.0	Yes	130	908 mW	No
	LTE 26	0.849	22.0	158.49	5	29.2	Yes	148	717 mW	No	10	14.6	Yes	5	29.2	Yes	130	616 mW	No
	LTE 30	2.312	15.0	31.62	5	9.6	Yes	148	1079 mW	No	10	4.8	Yes	5	9.6	Yes	130	899 mW	No
	LTE 38	2.617	16.0	39.81	5	12.9	Yes	148	1073 mW	No	10	6.4	Yes	5	12.9	Yes	130	893 mW	No
	LTE 40	2.397	17.0	50.12	5	15.5	Yes	148	1077 mW	No	10	7.8	Yes	5	15.5	Yes	130	897 mW	No
	LTE 41	2.687	16.0	39.81	5	13.1	Yes	148	1072 mW	No	10	6.5	Yes	5	13.1	Yes	130	892 mW	No
	LTE 66	1.779	17.0	50.12	5	13.4	Yes	148	1092 mW	No	10	6.7	Yes	5	13.4	Yes	130	912 mW	No
Tx Ant. Separation (mm) WiFi-0 &BT	Air-Interface	Frequency (GHz)	Max Tune up Power (dBm)	Max Tune up Power (mW)	Rear Face			Left Side			Right Side			Top Side			Bottom Side		
					Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?	Separation (mm)	Calculated Result	SAR Require?
to Front Face n/a to Rear Face 5 to Left Side 80 to Right Side 140 to Top Side 5 to Bottom Side 130	WLAN 2.4G	2.462	17.5	56.23	5	17.6	Yes	80	396 mW	No	140	996 mW	No	5	17.6	Yes	130	896 mW	No
	WLAN 5.2G	5.24	13.0	19.95	5	9.1	Yes	80	366 mW	No	140	966 mW	No	5	9.1	Yes	130	866 mW	No
	WLAN 5.3G	5.32	13.0	19.95	5	9.2	Yes	80	365 mW	No	140	965 mW	No	5	9.2	Yes	130	865 mW	No
	WLAN 5.6G	5.7	11.0	12.59	5	6.0	Yes	80	363 mW	No	140	963 mW	No	5	6.0	Yes	130	863 mW	No
	WLAN 5.8G	5.825	11.0	12.59	5	6.1	Yes	80	362 mW	No	140	962 mW	No	5	6.1	Yes	130	862 mW	No
	BT	2.48	9.5	8.91	5	2.8	No	80	395 mW	No	140	995 mW	No	5	2.8	No	130	895 mW	No

.

Antenna Location



<EUT Front View>

Antenna to edge (mm)	overall diagonal	display diagonal	Left Side	Right Side	Top Side	Bottom Side
WWAN-0	285	>200	148	10	5	130
WLAN / BT			80	140	5	130

4.4.2 Estimated SAR Calculation

According to KDB 447498 D01, when an antenna qualifies for the standalone SAR test exclusion and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria:

a) For *test separation distances* ≤ 50 mm:

$$Estimated\ SAR = \frac{Max.Tune\ up\ Power_{(mW)}}{Min.Test\ Separation\ Distance_{(mm)}} \times \frac{\sqrt{f_{(GHz)}}}{x}$$

Where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.

Mode / Band	Frequency (GHz)	Max. Tune-up Power (dBm)	Test Position	Separation Distance (mm)	Estimated SAR (W/kg)
BT	2.48	9.5	Body-worn	5	0.37

b) For *test separation distances* > 50 mm, 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR.

Mode / Band	Frequency (GHz)	Max. Tune-up Power (dBm)	Test Position	Separation Distance (mm)	Estimated SAR (W/kg)
BT	2.48	9.5	Body-worn	>50	<0.4

4.5 SAR Testing Results

4.5.1 SAR Test Reduction Considerations

KDB 447498 D01 General RF Exposure Guidance

Testing of other required channels within the operating mode of a frequency band is not required when the *reported* SAR for the mid-band or highest output power channel is:

a) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
b) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
c) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 941225 D01 3G SAR Procedures

a) GSM SAR Test Reduction

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

b) 3G SAR Test Reduction Procedure

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted .SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices

a) QPSK with 1 RB and 50% RB allocation

Start with the largest channel bandwidth and measure SAR, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

b) 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. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

c) Higher order modulations
SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

d) Other channel bandwidth
SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 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.

KDB 941225 D06 Hot Spot SAR

Hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge. Refer to Appendix E for antenna location.

Antenna	Front Face	Rear Face	Left Side	Right Side	Top Side	Bottom Side
WWAN Ant	N/A	Yes	N/A	Yes	Yes	N/A
WLAN / BT	N/A	Yes	N/A	Yes	Yes	N/A

KDB 248227 D01 Wi-Fi SAR

a) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

b) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

c) For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with the highest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

d) For WLAN MIMO mode, the power-based standalone SAR test exclusion or the sum of SAR provision in KDB 447498 to determine simultaneous transmission SAR test exclusion should be applied. Otherwise, SAR for MIMO mode will be measured with all applicable antennas transmitting simultaneously at the specified maximum output power of MIMO operation.

e) Duty Cycle
For SAR test, the correct crest factor parameter in the SAR measurement system software was set. The duty cycle as below table.

Band	Duty Cycle
2.4G WLAN	98.2%
5G WLAN	94.6%

Note: Crest Factor = 1 / Duty Cycle

4.5.2 SAR Results for Head Exposure Condition

Plot No.	Band	Mode	Test Position	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift	SAR 1g	SAR 10g	Scaling Factor	Scaled 1g SAR
1	GSM850	GPRS11	Right Cheek	190	-	-	31.5	30.44	0.05	**0.132**	0.103	1.28	**0.17**
	GSM850	GPRS11	Right Tilted	190	-	-	31.5	30.44	-0.01	0.078	0.055	1.28	0.10
	GSM850	GPRS11	Left Cheek	190	-	-	31.5	30.44	0.08	0.078	0.061	1.28	0.10
	GSM850	GPRS11	Left Tilted	190	-	-	31.5	30.44	0.00	0.106	0.08	1.28	0.14
	GSM1900	GPRS11	Right Cheek	810	-	-	28.5	27.32	-0.03	0.0086	0.00257	1.31	0.01
	GSM1900	GPRS11	Right Tilted	810	-	-	28.5	27.32	0.18	0.0037	0.000746	1.31	0.00
2	GSM1900	GPRS11	Left Cheek	810	-	-	28.5	27.32	0.07	**0.014**	0.00843	1.31	**0.02**
	GSM1900	GPRS11	Left Tilted	810	-	-	28.5	27.32	0.02	0.00423	0.000863	1.31	0.01
	WCDMA II	RMC12.2K	Right Cheek	9400	-	-	25.0	23.18	0.04	0.00898	0	1.52	0.01
	WCDMA II	RMC12.2K	Right Tilted	9400	-	-	25.0	23.18	0.03	0.016	0.00946	1.52	0.02
	WCDMA II	RMC12.2K	Left Cheek	9400	-	-	25.0	23.18	0.06	0.00961	0.00482	1.52	0.01
3	WCDMA II	RMC12.2K	Left Tilted	9400	-	-	25.0	23.18	0.06	**0.017**	0.00886	1.52	**0.03**
4	WCDMA IV	RMC12.2K	Right Cheek	1413	-	-	25.0	23.02	-0.07	**0.02**	0.013	1.58	**0.03**
	WCDMA IV	RMC12.2K	Right Tilted	1413	-	-	25.0	23.02	0.05	0.00844	0.0045	1.58	0.01
	WCDMA IV	RMC12.2K	Left Cheek	1413	-	-	25.0	23.02	-0.07	0.019	0.011	1.58	0.03
	WCDMA IV	RMC12.2K	Left Tilted	1413	-	-	25.0	23.02	0.07	0.011	0.00664	1.58	0.02
5	WCDMA V	RMC12.2K	Right Cheek	4233	-	-	25.0	23.07	-0.15	**0.088**	0.068	1.56	**0.14**
	WCDMA V	RMC12.2K	Right Tilted	4233	-	-	25.0	23.07	-0.14	0.075	0.058	1.56	0.12
	WCDMA V	RMC12.2K	Left Cheek	4233	-	-	25.0	23.07	-0.01	0.063	0.051	1.56	0.10
	WCDMA V	RMC12.2K	Left Tilted	4233	-	-	25.0	23.07	0.10	0.073	0.055	1.56	0.11
	LTE 2	QPSK20M	Right Cheek	18900	1	50	24.0	22.61	0.02	0.00583	0.00142	1.38	0.01
	LTE 2	QPSK20M	Right Tilted	18900	1	50	24.0	22.61	-0.15	＜0.01	＜0.01	1.38	＜0.01
	LTE 2	QPSK20M	Left Cheek	18900	1	50	24.0	22.61	0.02	0.014	0.00556	1.38	0.02
6	LTE 2	QPSK20M	Left Tilted	18900	1	50	24.0	22.61	-0.08	**0.015**	0.00866	1.38	**0.02**
	LTE 2	QPSK20M	Right Cheek	18900	50	25	23.0	21.77	0.09	0.00466	0.00113	1.33	0.01
	LTE 2	QPSK20M	Right Tilted	18900	50	25	23.0	21.77	0.05	＜0.01	＜0.01	1.33	＜0.01
	LTE 2	QPSK20M	Left Cheek	18900	50	25	23.0	21.77	0.01	0.01	0.00442	1.33	0.01
	LTE 2	QPSK20M	Left Tilted	18900	50	25	23.0	21.77	-0.03	0.012	0.00692	1.33	0.02
7	LTE 4	QPSK20M	Right Cheek	20300	1	50	24.0	22.63	-0.05	**0.03**	0.019	1.37	**0.04**
	LTE 4	QPSK20M	Right Tilted	20300	1	50	24.0	22.63	-0.15	0.00922	0.00331	1.37	0.01
	LTE 4	QPSK20M	Left Cheek	20300	1	50	24.0	22.63	0.09	0.018	0.011	1.37	0.02
	LTE 4	QPSK20M	Left Tilted	20300	1	50	24.0	22.63	0.09	0.013	0.00797	1.37	0.02
	LTE 4	QPSK20M	Right Cheek	20300	50	25	23.0	21.70	0.03	0.025	0.016	1.35	0.03
	LTE 4	QPSK20M	Right Tilted	20300	50	25	23.0	21.70	0.08	0.00738	0.00265	1.35	0.01
	LTE 4	QPSK20M	Left Cheek	20300	50	25	23.0	21.70	0.01	0.015	0.00881	1.35	0.02
	LTE 4	QPSK20M	Left Tilted	20300	50	25	23.0	21.70	0.05	0.01	0.00638	1.35	0.01
8	LTE 5	QPSK10M	Right Cheek	20600	1	49	24.0	22.65	-0.02	**0.08**	0.062	1.36	**0.11**
	LTE 5	QPSK10M	Right Tilted	20600	1	49	24.0	22.65	0.15	0.066	0.051	1.36	0.09
	LTE 5	QPSK10M	Left Cheek	20600	1	49	24.0	22.65	0.06	0.057	0.046	1.36	0.08
	LTE 5	QPSK10M	Left Tilted	20600	1	49	24.0	22.65	-0.07	0.066	0.051	1.36	0.09
	LTE 5	QPSK10M	Right Cheek	20600	25	25	23.0	21.57	-0.05	0.063	0.049	1.39	0.09
	LTE 5	QPSK10M	Right Tilted	20600	25	25	23.0	21.57	0.06	0.052	0.04	1.39	0.07
	LTE 5	QPSK10M	Left Cheek	20600	25	25	23.0	21.57	0.01	0.045	0.036	1.39	0.06
	LTE 5	QPSK10M	Left Tilted	20600	25	25	23.0	21.57	0.08	0.053	0.041	1.39	0.07
	LTE 5	QPSK10M	Right Cheek	20450 (PCC)	1	49	24.0	22.84	0.05	0.068	0.053	1.31	0.09

				20549 (SCC)	0	0							
	LTE 7	QPSK20M	Right Cheek	21350	1	99	23.5	21.41	-0.09	<0.01	<0.01	1.62	<0.01
	LTE 7	QPSK20M	Right Tilted	21350	1	99	23.5	21.41	0.06	<0.01	<0.01	1.62	<0.01
9	LTE 7	QPSK20M	Left Cheek	21350	1	99	23.5	21.41	0.01	**0.011**	0.00352	1.62	**0.02**
	LTE 7	QPSK20M	Left Tilted	21350	1	99	23.5	21.41	0.18	<0.01	<0.01	1.62	<0.01
	LTE 7	QPSK20M	Right Cheek	21350	50	25	22.5	20.32	0.02	<0.01	<0.01	1.65	<0.01
	LTE 7	QPSK20M	Right Tilted	21350	50	25	22.5	20.32	0.02	<0.01	<0.01	1.65	<0.01
	LTE 7	QPSK20M	Left Cheek	21350	50	25	22.5	20.32	-0.06	0.00814	0.00282	1.65	0.01
	LTE 7	QPSK20M	Left Tilted	21350	50	25	22.5	20.32	0.05	<0.01	<0.01	1.65	<0.01
	LTE 12	QPSK10M	Right Cheek	23130	1	0	24.0	22.81	0.03	<0.01	<0.01	1.32	<0.01
	LTE 12	QPSK10M	Right Tilted	23130	1	0	24.0	22.81	-0.09	<0.01	<0.01	1.32	<0.01
10	LTE 12	QPSK10M	Left Cheek	23130	1	0	24.0	22.81	-0.01	**0.000625**	<0.01	1.32	**<0.01**
	LTE 12	QPSK10M	Left Tilted	23130	1	0	24.0	22.81	-0.09	<0.01	<0.01	1.32	<0.01
	LTE 12	QPSK10M	Right Cheek	23130	25	0	23.0	21.75	0.03	<0.01	<0.01	1.33	<0.01
	LTE 12	QPSK10M	Right Tilted	23130	25	0	23.0	21.75	0.05	<0.01	<0.01	1.33	<0.01
	LTE 12	QPSK10M	Left Cheek	23130	25	0	23.0	21.75	0.08	<0.01	<0.01	1.33	<0.01
	LTE 12	QPSK10M	Left Tilted	23130	25	0	23.0	21.75	0.02	<0.01	<0.01	1.33	<0.01
	LTE 13	QPSK10M	Right Cheek	23230	1	24	24.0	22.48	-0.11	0.043	0.034	1.42	0.06
	LTE 13	QPSK10M	Right Tilted	23230	1	24	24.0	22.48	-0.04	0.031	0.022	1.42	0.04
11	LTE 13	QPSK10M	Left Cheek	23230	1	24	24.0	22.48	-0.02	**0.044**	0.034	1.42	**0.06**
	LTE 13	QPSK10M	Left Tilted	23230	1	24	24.0	22.48	-0.09	0.022	0.018	1.42	0.03
	LTE 13	QPSK10M	Right Cheek	23230	25	12	23.0	21.31	0.02	0.035	0.027	1.48	0.05
	LTE 13	QPSK10M	Right Tilted	23230	25	12	23.0	21.31	0.05	0.025	0.018	1.48	0.04
	LTE 13	QPSK10M	Left Cheek	23230	25	12	23.0	21.31	0.12	0.034	0.027	1.48	0.05
	LTE 13	QPSK10M	Left Tilted	23230	25	12	23.0	21.31	0.02	0.018	0.012	1.48	0.03
	LTE 14	QPSK10M	Right Cheek	23330	1	24	24.0	22.54	-0.07	0.035	0.023	1.40	0.05
	LTE 14	QPSK10M	Right Tilted	23330	1	24	24.0	22.54	-0.02	0.04	0.032	1.40	0.06
12	LTE 14	QPSK10M	Left Cheek	23330	1	24	24.0	22.54	-0.05	**0.044**	0.032	1.40	**0.06**
	LTE 14	QPSK10M	Left Tilted	23330	1	24	24.0	22.54	-0.07	0.023	0.015	1.40	0.03
	LTE 14	QPSK10M	Right Cheek	23330	25	0	23.0	21.67	-0.04	0.027	0.018	1.36	0.04
	LTE 14	QPSK10M	Right Tilted	23330	25	0	23.0	21.67	0.05	0.031	0.023	1.36	0.04
	LTE 14	QPSK10M	Left Cheek	23330	25	0	23.0	21.67	0.02	0.034	0.024	1.36	0.05
	LTE 14	QPSK10M	Left Tilted	23330	25	0	23.0	21.67	-0.05	0.018	0.011	1.36	0.02
	LTE 17	QPSK10M	Right Cheek	23800	1	0	24.0	22.28	-0.09	<0.01	<0.01	1.49	<0.01
	LTE 17	QPSK10M	Right Tilted	23800	1	0	24.0	22.28	0.05	<0.01	<0.01	1.49	<0.01
13	LTE 17	QPSK10M	Left Cheek	23800	1	0	24.0	22.28	-0.05	**0.0000157**	<0.01	1.49	**<0.01**
	LTE 17	QPSK10M	Left Tilted	23800	1	0	24.0	22.28	0.04	<0.01	<0.01	1.49	<0.01
	LTE 17	QPSK10M	Right Cheek	23800	25	0	23.0	21.37	0.05	<0.01	<0.01	1.46	<0.01
	LTE 17	QPSK10M	Right Tilted	23800	25	0	23.0	21.37	0.08	<0.01	<0.01	1.46	<0.01
	LTE 17	QPSK10M	Left Cheek	23800	25	0	23.0	21.37	0.12	<0.01	<0.01	1.46	<0.01
	LTE 17	QPSK10M	Left Tilted	23800	25	0	23.0	21.37	0.06	<0.01	<0.01	1.46	<0.01
	LTE 25	QPSK20M	Right Cheek	26365	1	99	24.0	22.64	0.09	0.00633	0.0014	1.37	0.01
	LTE 25	QPSK20M	Right Tilted	26365	1	99	24.0	22.64	0.08	<0.01	<0.01	1.37	<0.01
	LTE 25	QPSK20M	Left Cheek	26365	1	99	24.0	22.64	0.03	0.015	0.00537	1.37	0.02
14	LTE 25	QPSK20M	Left Tilted	26365	1	99	24.0	22.64	0.06	**0.016**	0.00836	1.37	**0.02**
	LTE 25	QPSK20M	Right Cheek	26365	50	25	23.0	21.58	0.02	0.00508	0.00112	1.39	0.01
	LTE 25	QPSK20M	Right Tilted	26365	50	25	23.0	21.58	0.01	<0.01	<0.01	1.39	<0.01
	LTE 25	QPSK20M	Left Cheek	26365	50	25	23.0	21.58	0.08	0.011	0.00356	1.39	0.02
	LTE 25	QPSK20M	Left Tilted	26365	50	25	23.0	21.58	0.08	0.013	0.00667	1.39	0.02
15	LTE 26	QPSK15M	Right Cheek	26965	1	74	24.0	22.52	-0.04	**0.082**	0.063	1.41	**0.12**
	LTE 26	QPSK15M	Right Tilted	26965	1	74	24.0	22.52	-0.07	0.059	0.045	1.41	0.08
	LTE 26	QPSK15M	Left Cheek	26965	1	74	24.0	22.52	0.02	0.046	0.035	1.41	0.06
	LTE 26	QPSK15M	Left Tilted	26965	1	74	24.0	22.52	0.06	0.053	0.039	1.41	0.07

	LTE 26	QPSK15M	Right Cheek	26965	36	39	23.0	21.45	-0.05	0.064	0.049	1.43	0.09
	LTE 26	QPSK15M	Right Tilted	26965	36	39	23.0	21.45	0.03	0.046	0.034	1.43	0.07
	LTE 26	QPSK15M	Left Cheek	26965	36	39	23.0	21.45	0.05	0.036	0.026	1.43	0.05
	LTE 26	QPSK15M	Left Tilted	26965	36	39	23.0	21.45	-0.06	0.04	0.029	1.43	0.06
16	LTE 30	QPSK10M	Right Cheek	27710	1	49	24.0	23.07	0.01	**0.016**	0.012	1.24	**0.02**
	LTE 30	QPSK10M	Right Tilted	27710	1	49	24.0	23.07	0.03	0.00406	0.00173	1.24	0.01
	LTE 30	QPSK10M	Left Cheek	27710	1	49	24.0	23.07	0.07	0.00555	<0.01	1.24	0.01
	LTE 30	QPSK10M	Left Tilted	27710	1	49	24.0	23.07	0.01	<0.01	<0.01	1.24	<0.01
	LTE 30	QPSK10M	Right Cheek	27710	25	25	23.0	22.02	0.05	0.013	0.00961	1.25	0.02
	LTE 30	QPSK10M	Right Tilted	27710	25	25	23.0	22.02	0.02	<0.01	<0.01	1.25	<0.01
	LTE 30	QPSK10M	Left Cheek	27710	25	25	23.0	22.02	-0.06	<0.01	<0.01	1.25	<0.01
	LTE 30	QPSK10M	Left Tilted	27710	25	25	23.0	22.02	0.05	<0.01	<0.01	1.25	<0.01
	LTE 38	QPSK20M	Right Cheek	38150	1	50	25.0	23.25	-0.08	<0.01	<0.01	1.50	<0.01
17	LTE 38	QPSK20M	Right Tilted	38150	1	50	25.0	23.25	0.02	**0.00323**	0.00109	1.50	**<0.01**
	LTE 38	QPSK20M	Left Cheek	38150	1	50	25.0	23.25	0.03	<0.01	<0.01	1.50	<0.01
	LTE 38	QPSK20M	Left Tilted	38150	1	50	25.0	23.25	0.08	<0.01	<0.01	1.50	<0.01
	LTE 38	QPSK20M	Right Cheek	38150	50	0	24.0	22.17	0.02	<0.01	<0.01	1.52	<0.01
	LTE 38	QPSK20M	Right Tilted	38150	50	0	24.0	22.17	0.04	<0.01	<0.01	1.52	<0.01
	LTE 38	QPSK20M	Left Cheek	38150	50	0	24.0	22.17	-0.05	<0.01	<0.01	1.52	<0.01
	LTE 38	QPSK20M	Left Tilted	38150	50	0	24.0	22.17	-0.05	<0.01	<0.01	1.52	<0.01
18	LTE 40	QPSK20M	Right Cheek	38750	1	99	25.0	23.28	0.05	**0.0081**	0.00332	1.49	**0.01**
	LTE 40	QPSK20M	Right Tilted	38750	1	99	25.0	23.28	0.05	<0.01	<0.01	1.49	<0.01
	LTE 40	QPSK20M	Left Cheek	38750	1	99	25.0	23.28	0.09	<0.01	<0.01	1.49	<0.01
	LTE 40	QPSK20M	Left Tilted	38750	1	99	25.0	23.28	0.05	<0.01	<0.01	1.49	<0.01
	LTE 40	QPSK20M	Right Cheek	38750	50	50	24.0	22.28	0.09	0.00648	0.00265	1.49	<0.01
	LTE 40	QPSK20M	Right Tilted	38750	50	50	24.0	22.28	-0.05	<0.01	<0.01	1.49	<0.01
	LTE 40	QPSK20M	Left Cheek	38750	50	50	24.0	22.28	-0.06	<0.01	<0.01	1.49	<0.01
	LTE 40	QPSK20M	Left Tilted	38750	50	50	24.0	22.28	-0.04	<0.01	<0.01	1.49	<0.01
	LTE 41	QPSK20M	Right Cheek	41490	1	0	25.0	24.90	-0.03	<0.01	<0.01	1.02	<0.01
	LTE 41	QPSK20M	Right Tilted	41490	1	0	25.0	24.90	0.09	<0.01	<0.01	1.02	<0.01
19	LTE 41	QPSK20M	Left Cheek	41490	1	0	25.0	24.90	-0.01	**0.00824**	0.00222	1.02	**0.01**
	LTE 41	QPSK20M	Left Tilted	41490	1	0	25.0	24.90	0.05	<0.01	<0.01	1.02	<0.01
	LTE 41	QPSK20M	Right Cheek	41490	50	0	24.0	23.92	0.05	<0.01	<0.01	1.02	<0.01
	LTE 41	QPSK20M	Right Tilted	41490	50	0	24.0	23.92	0.02	<0.01	<0.01	1.02	<0.01
	LTE 41	QPSK20M	Left Cheek	41490	50	0	24.0	23.92	0.08	0.00659	0.00178	1.02	0.01
	LTE 41	QPSK20M	Left Tilted	41490	50	0	24.0	23.92	-0.06	<0.01	<0.01	1.02	<0.01
	LTE 41	QPSK20M	Left Cheek	41292 (PCC)	1	99	25.0	23.38	0.06	<0.01	<0.01	1.45	<0.01
				41490 (SCC)	0	0							
20	LTE 66	QPSK20M	Right Cheek	132322	1	50	24.0	22.75	0.01	**0.028**	0.019	1.33	**0.04**
	LTE 66	QPSK20M	Right Tilted	132322	1	50	24.0	22.75	0.08	0.01	0.00522	1.33	0.01
	LTE 66	QPSK20M	Left Cheek	132322	1	50	24.0	22.75	-0.07	0.025	0.016	1.33	0.03
	LTE 66	QPSK20M	Left Tilted	132322	1	50	24.0	22.75	0.08	0.014	0.00836	1.33	0.02
	LTE 66	QPSK20M	Right Cheek	132322	50	50	23.0	21.58	0.02	0.022	0.015	1.39	0.03
	LTE 66	QPSK20M	Right Tilted	132322	50	50	23.0	21.58	0.04	0.00813	0.00418	1.39	0.01
	LTE 66	QPSK20M	Left Cheek	132322	50	50	23.0	21.58	0.16	0.021	0.013	1.39	0.03
	LTE 66	QPSK20M	Left Tilted	132322	50	50	23.0	21.58	0.02	0.011	0.00668	1.39	0.02
	802.11b	-	Right Cheek	11	-	-	17.5	16.00	-0.07	0.041	0.02	1.41	0.06
	802.11b	-	Right Tilted	11	-	-	17.5	16.00	0.01	0.027	0.012	1.41	0.04
21	802.11b	-	Left Cheek	11	-	-	17.5	16.00	0.07	**0.062**	0.032	1.41	**0.09**
	802.11b	-	Left Tilted	11	-	-	17.5	16.00	0.02	0.06	0.031	1.41	0.08
22	802.11ac	VHT80	Right Cheek	58	-	-	13.0	12.827	0.09	**0.072**	0.03	1.04	**0.07**
	802.11ac	VHT80	Right Tilted	58	-	-	13.0	12.827	-0.09	0.058	0.023	1.04	0.06
	802.11ac	VHT80	Left Cheek	58	-	-	13.0	12.827	0.04	0.017	0.00497	1.04	0.02
	802.11ac	VHT80	Left Tilted	58	-	-	13.0	12.827	0.09	0.00618	0.00114	1.04	0.01

23	802.11n	HT40	Right Cheek	134	-	-	11.0	10.562	-0.09	**0.039**	0.015	1.11	**0.04**
	802.11n	HT40	Right Tilted	134	-	-	11.0	10.562	-0.03	0.029	0.011	1.11	0.03
	802.11n	HT40	Left Cheek	134	-	-	11.0	10.562	0.05	0.009	0.00275	1.11	0.01
	802.11n	HT40	Left Tilted	134	-	-	11.0	10.562	0.08	0.00327	0.000631	1.11	0.00
24	802.11n	HT40	Right Cheek	151	-	-	11.0	10.466	0.05	**0.033**	0.012	1.13	**0.04**
	802.11n	HT40	Right Tilted	151	-	-	11.0	10.466	0.01	0.027	0.00943	1.13	0.03
	802.11n	HT40	Left Cheek	151	-	-	11.0	10.466	0.01	0.00838	0.00238	1.13	0.01
	802.11n	HT40	Left Tilted	151	-	-	11.0	10.466	0.00	0.00304	0.000546	1.13	0.00

4.5.3 SAR Results for Body-worn Exposure Condition

Plot No.	Band	Mode	Test Position	Separation Distance (cm)	Channel	Power Sensor	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Power Drift	SAR 1g	SAR 10g	Scaling Factor	Scaled 1g SAR
	GSM850	GPRS11	Rear Face	1.5	190	w	-	-	31.5	30.44	-0.04	0.381	0.26	1.28	0.49
	GSM850	GPRS11	Right Side	1.5	190	w	-	-	31.5	30.44	0.02	0.338	0.238	1.28	0.43
	GSM850	GPRS11	Top Side	0.5	190	w	-	-	31.5	30.44	0.05	0.199	0.134	1.28	0.25
25	GSM850	GPRS11	Rear Face	0	190	w/o	-	-	30.0	29.42	0.00	**0.637**	0.368	1.14	0.73
	GSM850	GPRS11	Right Side	0	190	w/o	-	-	30.0	29.42	-0.04	0.565	0.337	1.14	0.65
	GSM850	GPRS11	Top Side	0	190	w/o	-	-	30.0	29.42	-0.07	0.367	0.233	1.14	0.42
	GSM1900	GPRS11	Rear Face	1.5	810	w	-	-	28.5	27.32	-0.07	0.325	0.195	1.31	0.43
	GSM1900	GPRS11	Right Side	1.5	810	w	-	-	28.5	27.32	0.06	0.271	0.189	1.31	0.36
	GSM1900	GPRS11	Top Side	0.5	810	w	-	-	28.5	27.32	0.08	0.237	0.142	1.31	0.31
26	GSM1900	GPRS11	Rear Face	0	810	w/o	-	-	23.5	22.32	0.00	**0.559**	0.261	1.31	**0.73**
	GSM1900	GPRS11	Right Side	0	810	w/o	-	-	23.5	22.32	-0.09	0.354	0.188	1.31	0.46
	GSM1900	GPRS11	Top Side	0	810	w/o	-	-	23.5	22.32	0.00	0.078	0.033	1.31	0.10
	WCDMA II	RMC12.2K	Rear Face	1.5	9400	w	-	-	25.0	23.18	0.04	0.495	0.296	1.52	0.75
	WCDMA II	RMC12.2K	Right Side	1.5	9400	w	-	-	25.0	23.18	-0.05	0.412	0.285	1.52	0.63
	WCDMA II	RMC12.2K	Top Side	0.5	9400	w	-	-	25.0	23.18	-0.02	0.19	0.115	1.52	0.29
27	WCDMA II	RMC12.2K	Rear Face	0	9400	w/o	-	-	16.0	15.63	0.00	**0.702**	0.324	1.09	**0.76**
	WCDMA II	RMC12.2K	Right Side	0	9400	w/o	-	-	16.0	15.63	0.07	0.584	0.312	1.09	0.64
	WCDMA II	RMC12.2K	Top Side	0	9400	w/o	-	-	16.0	15.63	0.08	0.125	0.069	1.09	0.14
	WCDMA IV	RMC12.2K	Rear Face	1.5	1413	w	-	-	25.0	23.02	-0.08	0.413	0.237	1.58	0.65
	WCDMA IV	RMC12.2K	Right Side	1.5	1413	w	-	-	25.0	23.02	0.04	0.286	0.176	1.58	0.45
	WCDMA IV	RMC12.2K	Top Side	0.5	1413	w	-	-	25.0	23.02	0.02	0.307	0.18	1.58	0.48
28	WCDMA IV	RMC12.2K	Rear Face	0	1413	w/o	-	-	16.0	15.78	-0.03	**0.709**	0.318	1.05	**0.75**
	WCDMA IV	RMC12.2K	Right Side	0	1413	w/o	-	-	16.0	15.78	-0.05	0.416	0.201	1.05	0.44
	WCDMA IV	RMC12.2K	Top Side	0	1413	w/o	-	-	16.0	15.78	0.02	0.575	0.261	1.05	0.60
	WCDMA V	RMC12.2K	Rear Face	1.5	4233	w	-	-	25.0	23.07	0.06	0.392	0.269	1.56	0.61
	WCDMA V	RMC12.2K	Right Side	1.5	4233	w	-	-	25.0	23.07	0.01	0.348	0.239	1.56	0.54
	WCDMA V	RMC12.2K	Top Side	0.5	4233	w	-	-	25.0	23.07	0.01	0.149	0.102	1.56	0.23
29	WCDMA V	RMC12.2K	Rear Face	0	4233	w/o	-	-	22.0	21.57	0.02	**0.672**	0.424	1.10	**0.74**
	WCDMA V	RMC12.2K	Right Side	0	4233	w/o	-	-	22.0	21.57	0.06	0.596	0.378	1.10	0.66
	WCDMA V	RMC12.2K	Top Side	0	4233	w/o	-	-	22.0	21.57	0.01	0.387	0.261	1.10	0.43
	LTE 2	QPSK20M	Rear Face	1.5	18900	w	1	50	24.0	22.61	-0.12	0.425	0.256	1.38	0.59
	LTE 2	QPSK20M	Right Side	1.5	18900	w	1	50	24.0	22.61	0.05	0.354	0.246	1.38	0.49
	LTE 2	QPSK20M	Top Side	0.5	18900	w	1	50	24.0	22.61	0.08	0.296	0.177	1.38	0.41
	LTE 2	QPSK20M	Rear Face	1.5	18900	w	50	25	23.0	21.77	-0.18	0.343	0.207	1.33	0.46
	LTE 2	QPSK20M	Right Side	1.5	18900	w	50	25	23.0	21.77	0.03	0.283	0.197	1.33	0.38
	LTE 2	QPSK20M	Top Side	0.5	18900	w	50	25	23.0	21.77	0.05	0.239	0.143	1.33	0.32
	LTE 2	QPSK20M	Rear Face	0	19100	w/o	1	0	16.0	15.63	0.00	0.618	0.289	1.09	0.67
	LTE 2	QPSK20M	Right Side	0	19100	w/o	1	0	16.0	15.63	0.06	0.514	0.278	1.09	0.56
	LTE 2	QPSK20M	Top Side	0	19100	w/o	1	0	16.0	15.63	0.02	0.11	0.061	1.09	0.12
30	LTE 2	QPSK20M	Rear Face	0	18900	w/o	50	0	16.0	15.59	0.00	**0.623**	0.292	1.10	**0.68**
	LTE 2	QPSK20M	Right Side	0	18900	w/o	50	0	16.0	15.59	0.08	0.519	0.281	1.10	0.57

	LTE 2	QPSK20 M	Top Side	0	18900	w/o	50	0	16.0	15.59	0.05	0.111	0.062	1.10	0.12
	LTE 4	QPSK20 M	Rear Face	1.5	20300	w	1	50	24.0	22.63	0.05	0.322	0.186	1.37	0.44
	LTE 4	QPSK20 M	Right Side	1.5	20300	w	1	50	24.0	22.63	0.02	0.201	0.118	1.37	0.28
	LTE 4	QPSK20 M	Top Side	0.5	20300	w	1	50	24.0	22.63	0.07	0.263	0.155	1.37	0.36
	LTE 4	QPSK20 M	Rear Face	1.5	20300	w	50	25	23.0	21.70	0.01	0.259	0.15	1.35	0.35
	LTE 4	QPSK20 M	Right Side	1.5	20300	w	50	25	23.0	21.70	0.08	0.152	0.095	1.35	0.21
	LTE 4	QPSK20 M	Top Side	0.5	20300	w	50	25	23.0	21.70	0.05	0.21	0.123	1.35	0.28
	LTE 4	QPSK20 M	Rear Face	0	20050	w/o	1	50	18.0	17.68	0.03	0.695	0.311	1.08	0.75
	LTE 4	QPSK20 M	Right Side	0	20050	w/o	1	50	18.0	17.68	0.05	0.433	0.197	1.08	0.47
	LTE 4	QPSK20 M	Top Side	0	20050	w/o	1	50	18.0	17.68	0.08	0.148	0.079	1.08	0.16
31	LTE 4	QPSK20 M	Rear Face	0	20300	w/o	50	0	18.0	17.65	0.00	**0.703**	0.318	1.08	**0.76**
	LTE 4	QPSK20 M	Right Side	0	20300	w/o	50	0	18.0	17.65	0.03	0.438	0.201	1.08	0.47
	LTE 4	QPSK20 M	Top Side	0	20300	w/o	50	0	18.0	17.65	0.08	0.142	0.075	1.08	0.15
	LTE 5	QPSK10 M	Rear Face	1.5	20600	w	1	49	24.0	22.65	0.15	0.297	0.205	1.36	0.41
	LTE 5	QPSK10 M	Right Side	1.5	20600	w	1	49	24.0	22.65	0.02	0.264	0.182	1.36	0.36
	LTE 5	QPSK10 M	Top Side	0.5	20600	w	1	49	24.0	22.65	0.04	0.13	0.089	1.36	0.18
	LTE 5	QPSK10 M	Rear Face	1.5	20600	w	25	25	23.0	21.57	0.14	0.229	0.158	1.39	0.32
	LTE 5	QPSK10 M	Right Side	1.5	20600	w	25	25	23.0	21.57	0.05	0.211	0.146	1.39	0.29
	LTE 5	QPSK10 M	Top Side	0.5	20600	w	25	25	23.0	21.57	-0.02	0.104	0.071	1.39	0.14
32	LTE 5	QPSK10 M	Rear Face	0	20600	w/o	1	0	22.0	21.70	-0.18	**0.622**	0.384	1.07	**0.67**
	LTE 5	QPSK10 M	Right Side	0	20600	w/o	1	0	22.0	21.70	-0.16	0.553	0.341	1.07	0.59
	LTE 5	QPSK10 M	Top Side	0	20600	w/o	1	0	22.0	21.70	0.05	0.219	0.129	1.07	0.23
	LTE 5	QPSK10 M	Rear Face	0	20525	w/o	25	0	21.0	20.67	-0.05	0.503	0.311	1.08	0.54
	LTE 5	QPSK10 M	Right Side	0	20525	w/o	25	0	21.0	20.67	0.01	0.447	0.276	1.08	0.48
	LTE 5	QPSK10 M	Top Side	0	20525	w/o	25	0	21.0	20.67	-0.06	0.177	0.106	1.08	0.19
	LTE 5	QPSK10 M	Rear Face	0	20450 (PCC) 20549 (SCC)	w/o	1 0	49 0	22.0	21.68	0.05	0.614	0.379	1.08	0.66
	LTE 7	QPSK20 M	Rear Face	1.5	21350	w	1	99	23.5	21.41	0.12	0.269	0.127	1.62	0.44
	LTE 7	QPSK20 M	Right Side	1.5	21350	w	1	99	23.5	21.41	0.07	0.029	0.015	1.62	0.05
	LTE 7	QPSK20 M	Top Side	0.5	21350	w	1	99	23.5	21.41	0.03	0.134	0.068	1.62	0.22
	LTE 7	QPSK20 M	Rear Face	1.5	21350	w	50	25	22.5	20.32	-0.02	0.218	0.102	1.65	0.36
	LTE 7	QPSK20 M	Right Side	1.5	21350	w	50	25	22.5	20.32	0.02	0.024	0.012	1.65	0.04
	LTE 7	QPSK20 M	Top Side	0.5	21350	w	50	25	22.5	20.32	0.05	0.117	0.058	1.65	0.19
33	LTE 7	QPSK20 M	Rear Face	0	21350	w/o	1	0	14.0	13.49	-0.13	**0.648**	0.263	1.12	**0.73**
	LTE 7	QPSK20 M	Right Side	0	21350	w/o	1	0	14.0	13.49	0.02	0.025	0.011	1.12	0.03
	LTE 7	QPSK20 M	Top Side	0	21350	w/o	1	0	14.0	13.49	0.10	0.057	0.024	1.12	0.06
	LTE 7	QPSK20 M	Rear Face	0	21350	w/o	50	0	14.0	13.46	0.02	0.636	0.258	1.13	0.72
	LTE 7	QPSK20 M	Right Side	0	21350	w/o	50	0	14.0	13.46	0.05	0.025	0.011	1.13	0.03
	LTE 7	QPSK20 M	Top Side	0	21350	w/o	50	0	14.0	13.46	-0.02	0.056	0.024	1.13	0.06
	LTE 12	QPSK10 M	Rear Face	1.5	23130	w	1	0	24.0	22.81	0.00	0.017	0.0085	1.32	0.02
	LTE 12	QPSK10 M	Right Side	1.5	23130	w	1	0	24.0	22.81	-0.09	0.00487	0.00238	1.32	0.01
	LTE 12	QPSK10 M	Top Side	0.5	23130	w	1	0	24.0	22.81	0.02	0.00522	0.00248	1.32	0.01
	LTE 12	QPSK10 M	Rear Face	1.5	23130	w	25	0	23.0	21.75	0.00	0.013	0.00638	1.33	0.02
	LTE 12	QPSK10 M	Right Side	1.5	23130	w	25	0	23.0	21.75	0.06	0.00389	0.00191	1.33	0.01
	LTE 12	QPSK10 M	Top Side	0.5	23130	w	25	0	23.0	21.75	0.08	0.00418	0.00198	1.33	0.01
34	LTE 12	QPSK10 M	Rear Face	0	23130	w/o	1	0	24.0	22.81	0.00	**0.219**	0.099	1.32	**0.29**
	LTE 12	QPSK10 M	Right Side	0	23130	w/o	1	0	24.0	22.81	-0.07	0.026	0.011	1.32	0.03

	LTE 12	QPSK10M	Top Side	0	23130	w/o	1	0	24.0	22.81	0.00	0.015	0.00634	1.32	0.02
	LTE 12	QPSK10M	Rear Face	0	23130	w/o	25	0	23.0	21.75	0.00	0.188	0.078	1.33	0.25
	LTE 12	QPSK10M	Right Side	0	23130	w/o	25	0	23.0	21.75	-0.05	0.022	0.00867	1.33	0.03
	LTE 12	QPSK10M	Top Side	0	23130	w/o	25	0	23.0	21.75	-0.02	0.013	0.00498	1.33	0.02
	LTE 13	QPSK10M	Rear Face	1.5	23230	w	1	24	24.0	22.48	0.05	0.482	0.327	1.42	0.68
	LTE 13	QPSK10M	Right Side	1.5	23230	w	1	24	24.0	22.48	0.00	0.174	0.122	1.42	0.25
	LTE 13	QPSK10M	Top Side	0.5	23230	w	1	24	24.0	22.48	0.11	0.129	0.085	1.42	0.18
	LTE 13	QPSK10M	Rear Face	1.5	23230	w	25	12	23.0	21.31	0.04	0.374	0.254	1.48	0.55
	LTE 13	QPSK10M	Right Side	1.5	23230	w	25	12	23.0	21.31	0.01	0.135	0.095	1.48	0.20
	LTE 13	QPSK10M	Top Side	0.5	23230	w	25	12	23.0	21.31	-0.01	0.1	0.066	1.48	0.15
35	LTE 13	QPSK10M	Rear Face	0	23230	w/o	1	0	22.0	21.60	0.05	**0.63**	0.396	1.10	**0.69**
	LTE 13	QPSK10M	Right Side	0	23230	w/o	1	0	22.0	21.60	0.01	0.466	0.302	1.10	0.51
	LTE 13	QPSK10M	Top Side	0	23230	w/o	1	0	22.0	21.60	-0.01	0.228	0.144	1.10	0.25
	LTE 13	QPSK10M	Rear Face	0	23230	w/o	25	0	21.0	20.57	0.04	0.512	0.302	1.10	0.57
	LTE 13	QPSK10M	Right Side	0	23230	w/o	25	0	21.0	20.57	0.02	0.383	0.242	1.10	0.42
	LTE 13	QPSK10M	Top Side	0	23230	w/o	25	0	21.0	20.57	-0.05	0.182	0.115	1.10	0.20
	LTE 14	QPSK10M	Rear Face	1.5	23330	w	1	24	24.0	22.54	0.02	0.396	0.271	1.40	0.55
	LTE 14	QPSK10M	Right Side	1.5	23330	w	1	24	24.0	22.54	0.00	0.152	0.11	1.40	0.21
	LTE 14	QPSK10M	Top Side	0.5	23330	w	1	24	24.0	22.54	0.07	0.132	0.087	1.40	0.18
	LTE 14	QPSK10M	Rear Face	1.5	23330	w	25	0	23.0	21.67	0.02	0.321	0.219	1.36	0.44
	LTE 14	QPSK10M	Right Side	1.5	23330	w	25	0	23.0	21.67	0.08	0.123	0.089	1.36	0.17
	LTE 14	QPSK10M	Top Side	0.5	23330	w	25	0	23.0	21.67	0.05	0.109	0.07	1.36	0.15
36	LTE 14	QPSK10M	Rear Face	0	23330	w/o	1	0	22.0	21.68	-0.06	**0.607**	0.382	1.08	**0.65**
	LTE 14	QPSK10M	Right Side	0	23330	w/o	1	0	22.0	21.68	0.02	0.421	0.272	1.08	0.45
	LTE 14	QPSK10M	Top Side	0	23330	w/o	1	0	22.0	21.68	-0.03	0.211	0.131	1.08	0.23
	LTE 14	QPSK10M	Rear Face	0	23330	w/o	25	0	21.0	20.63	0.12	0.498	0.315	1.09	0.54
	LTE 14	QPSK10M	Right Side	0	23330	w/o	25	0	21.0	20.63	0.05	0.345	0.224	1.09	0.38
	LTE 14	QPSK10M	Top Side	0	23330	w/o	25	0	21.0	20.63	0.03	0.173	0.108	1.09	0.19
	LTE 17	QPSK10M	Rear Face	1.5	23800	w	1	0	24.0	22.28	0.00	0.016	0.00818	1.49	0.02
	LTE 17	QPSK10M	Right Side	1.5	23800	w	1	0	24.0	22.28	-0.18	0.0055	0.00232	1.49	0.01
	LTE 17	QPSK10M	Top Side	0.5	23800	w	1	0	24.0	22.28	-0.03	0.00536	0.0025	1.49	0.01
	LTE 17	QPSK10M	Rear Face	1.5	23800	w	25	0	23.0	21.37	0.09	0.012	0.00602	1.46	0.02
	LTE 17	QPSK10M	Right Side	1.5	23800	w	25	0	23.0	21.37	0.03	0.00412	0.00171	1.46	0.01
	LTE 17	QPSK10M	Top Side	0.5	23800	w	25	0	23.0	21.37	0.08	0.00401	0.00184	1.46	0.01
37	LTE 17	QPSK10M	Rear Face	0	23800	w/o	1	0	24.0	22.28	0.00	**0.226**	0.099	1.49	**0.34**
	LTE 17	QPSK10M	Right Side	0	23800	w/o	1	0	24.0	22.28	-0.04	0.026	0.01	1.49	0.04
	LTE 17	QPSK10M	Top Side	0	23800	w/o	1	0	24.0	22.28	0.00	0.015	0.00662	1.49	0.02
	LTE 17	QPSK10M	Rear Face	0	23800	w/o	25	0	23.0	21.37	0.00	0.172	0.076	1.46	0.25
	LTE 17	QPSK10M	Right Side	0	23800	w/o	25	0	23.0	21.37	-0.05	0.021	0.00768	1.46	0.03
	LTE 17	QPSK10M	Top Side	0	23800	w/o	25	0	23.0	21.37	0.06	0.012	0.00508	1.46	0.02
	LTE 25	QPSK20M	Rear Face	1.5	26365	w	1	99	24.0	22.64	-0.07	0.496	0.295	1.37	0.68
	LTE 25	QPSK20M	Right Side	1.5	26365	w	1	99	24.0	22.64	0.10	0.382	0.231	1.37	0.52
	LTE 25	QPSK20M	Top Side	0.5	26365	w	1	99	24.0	22.64	0.02	0.256	0.153	1.37	0.35
	LTE 25	QPSK20M	Rear Face	1.5	26365	w	50	25	23.0	21.58	-0.01	0.388	0.231	1.39	0.54
	LTE 25	QPSK20M	Right Side	1.5	26365	w	50	25	23.0	21.58	0.03	0.285	0.156	1.39	0.40
	LTE 25	QPSK20M	Top Side	0.5	26365	w	50	25	23.0	21.58	0.05	0.234	0.139	1.39	0.32
	LTE 25	QPSK20M	Rear Face	0	26365	w/o	1	0	16.0	15.73	0.00	0.614	0.29	1.06	0.65

	LTE 25	QPSK20 M	Right Side	0	26365	w/o	1	0	16.0	15.73	0.00	0.392	0.211	1.06	0.42
	LTE 25	QPSK20 M	Top Side	0	26365	w/o	1	0	16.0	15.73	0.05	0.14	0.076	1.06	0.15
38	LTE 25	QPSK20 M	Rear Face	0	26365	w/o	50	0	16.0	15.70	0.00	**0.672**	0.315	1.07	**0.72**
	LTE 25	QPSK20 M	Right Side	0	26365	w/o	50	0	16.0	15.70	-0.02	0.429	0.229	1.07	0.46
	LTE 25	QPSK20 M	Top Side	0	26365	w/o	50	0	16.0	15.70	0.08	0.153	0.082	1.07	0.16
	LTE 26	QPSK15 M	Rear Face	1.5	26965	w	1	74	24.0	22.52	0.02	0.323	0.221	1.41	0.45
	LTE 26	QPSK15 M	Right Side	1.5	26965	w	1	74	24.0	22.52	0.05	0.287	0.196	1.41	0.40
	LTE 26	QPSK15 M	Top Side	0.5	26965	w	1	74	24.0	22.52	0.02	0.131	0.09	1.41	0.18
	LTE 26	QPSK15 M	Rear Face	1.5	26965	w	36	39	23.0	21.45	0.07	0.26	0.177	1.43	0.37
	LTE 26	QPSK15 M	Right Side	1.5	26965	w	36	39	23.0	21.45	0.05	0.231	0.158	1.43	0.33
	LTE 26	QPSK15 M	Top Side	0.5	26965	w	36	39	23.0	21.45	0.08	0.105	0.072	1.43	0.15
39	LTE 26	QPSK15 M	Rear Face	0	26965	w/o	1	0	22.0	21.67	0.02	**0.656**	0.409	1.08	**0.71**
	LTE 26	QPSK15 M	Right Side	0	26965	w/o	1	0	22.0	21.67	-0.02	0.583	0.363	1.08	0.63
	LTE 26	QPSK15 M	Top Side	0	26965	w/o	1	0	22.0	21.67	-0.10	0.271	0.157	1.08	0.29
	LTE 26	QPSK15 M	Rear Face	0	26865	w/o	37	0	21.0	20.70	0.02	0.525	0.327	1.07	0.56
	LTE 26	QPSK15 M	Right Side	0	26865	w/o	37	0	21.0	20.70	0.01	0.466	0.29	1.07	0.50
	LTE 26	QPSK15 M	Top Side	0	26865	w/o	37	0	21.0	20.70	0.14	0.217	0.126	1.07	0.23
	LTE 30	QPSK10 M	Rear Face	1.5	27710	w	1	49	24.0	23.07	-0.02	0.264	0.14	1.24	0.33
	LTE 30	QPSK10 M	Right Side	1.5	27710	w	1	49	24.0	23.07	0.10	0.071	0.042	1.24	0.09
	LTE 30	QPSK10 M	Top Side	0.5	27710	w	1	49	24.0	23.07	0.17	0.302	0.161	1.24	0.37
	LTE 30	QPSK10 M	Rear Face	1.5	27710	w	25	25	23.0	22.02	-0.06	0.193	0.102	1.25	0.24
	LTE 30	QPSK10 M	Right Side	1.5	27710	w	25	25	23.0	22.02	0.06	0.052	0.031	1.25	0.07
	LTE 30	QPSK10 M	Top Side	0.5	27710	w	25	25	23.0	22.02	0.02	0.221	0.119	1.25	0.28
40	LTE 30	QPSK10 M	Rear Face	0	27710	w/o	1	0	15.0	14.86	0.00	**0.736**	0.332	1.03	**0.76**
	LTE 30	QPSK10 M	Right Side	0	27710	w/o	1	0	15.0	14.86	0.10	0.079	0.038	1.03	0.08
	LTE 30	QPSK10 M	Top Side	0	27710	w/o	1	0	15.0	14.86	0.17	0.144	0.071	1.03	0.15
	LTE 30	QPSK10 M	Rear Face	0	27710	w/o	25	12	15.0	14.87	0.05	0.723	0.326	1.03	0.74
	LTE 30	QPSK10 M	Right Side	0	27710	w/o	25	12	15.0	14.87	0.02	0.077	0.037	1.03	0.08
	LTE 30	QPSK10 M	Top Side	0	27710	w/o	25	12	15.0	14.87	0.08	0.141	0.071	1.03	0.15
	LTE 38	QPSK20 M	Rear Face	1.5	38150	w	1	50	25.0	23.25	0.01	0.241	0.113	1.50	0.36
	LTE 38	QPSK20 M	Right Side	1.5	38150	w	1	50	25.0	23.25	0.04	0.014	0.006	1.50	0.02
	LTE 38	QPSK20 M	Top Side	0.5	38150	w	1	50	25.0	23.25	0.18	0.08	0.035	1.50	0.12
	LTE 38	QPSK20 M	Rear Face	1.5	38150	w	50	0	24.0	22.17	-0.03	0.186	0.087	1.52	0.28
	LTE 38	QPSK20 M	Right Side	1.5	38150	w	50	0	24.0	22.17	0.03	0.011	0.00462	1.52	0.02
	LTE 38	QPSK20 M	Top Side	0.5	38150	w	50	0	24.0	22.17	0.08	0.063	0.027	1.52	0.10
41	LTE 38	QPSK20 M	Rear Face	0	38150	w/o	1	0	16.0	15.89	-0.08	**0.773**	0.303	1.03	**0.79**
	LTE 38	QPSK20 M	Right Side	0	38150	w/o	1	0	16.0	15.89	-0.16	0.022	0.00888	1.03	0.02
	LTE 38	QPSK20 M	Top Side	0	38150	w/o	1	0	16.0	15.89	0.07	0.053	0.023	1.03	0.05
	LTE 38	QPSK20 M	Rear Face	0	38150	w/o	50	50	16.0	15.84	0.08	0.766	0.3	1.04	0.79
	LTE 38	QPSK20 M	Right Side	0	38150	w/o	50	50	16.0	15.84	0.01	0.022	0.00881	1.04	0.02
	LTE 38	QPSK20 M	Top Side	0	38150	w/o	50	50	16.0	15.84	0.05	0.053	0.023	1.04	0.05
	LTE 40	QPSK20 M	Rear Face	1.5	38750	w	1	99	25.0	23.28	0.01	0.132	0.07	1.49	0.20
	LTE 40	QPSK20 M	Right Side	1.5	38750	w	1	99	25.0	23.28	-0.08	0.044	0.025	1.49	0.07
	LTE 40	QPSK20 M	Top Side	0.5	38750	w	1	99	25.0	23.28	0.01	0.186	0.1	1.49	0.28
	LTE 40	QPSK20 M	Rear Face	1.5	38750	w	50	50	24.0	22.28	0.09	0.111	0.059	1.49	0.16
	LTE 40	QPSK20 M	Right Side	1.5	38750	w	50	50	24.0	22.28	0.06	0.038	0.022	1.49	0.06
	LTE 40	QPSK20 M	Top Side	0.5	38750	w	50	50	24.0	22.28	0.01	0.161	0.087	1.49	0.24

42	LTE 40	QPSK20 M	Rear Face	0	38750	w/o	1	0	17.0	16.72	0.00	**0.742**	0.327	1.07	**0.79**
	LTE 40	QPSK20 M	Right Side	0	38750	w/o	1	0	17.0	16.72	0.08	0.053	0.026	1.07	0.06
	LTE 40	QPSK20 M	Top Side	0	38750	w/o	1	0	17.0	16.72	0.07	0.104	0.052	1.07	0.11
	LTE 40	QPSK20 M	Rear Face	0	39550	w/o	50	25	17.0	16.69	0.02	0.723	0.319	1.07	0.78
	LTE 40	QPSK20 M	Right Side	0	39550	w/o	50	25	17.0	16.69	0.07	0.052	0.025	1.07	0.06
	LTE 40	QPSK20 M	Top Side	0	39550	w/o	50	25	17.0	16.69	0.09	0.101	0.051	1.07	0.11
	LTE 41	QPSK20 M	Rear Face	1.5	41490	w	1	0	25.0	24.90	0.08	0.568	0.271	1.02	0.58
	LTE 41	QPSK20 M	Right Side	1.5	41490	w	1	0	25.0	24.90	0.07	0.024	0.011	1.02	0.02
	LTE 41	QPSK20 M	Top Side	0.5	41490	w	1	0	25.0	24.90	0.09	0.147	0.068	1.02	0.15
	LTE 41	QPSK20 M	Rear Face	1.5	41490	w	50	0	24.0	23.92	0.09	0.454	0.217	1.02	0.46
	LTE 41	QPSK20 M	Right Side	1.5	41490	w	50	0	24.0	23.92	0.02	0.019	0.00881	1.02	0.02
	LTE 41	QPSK20 M	Top Side	0.5	41490	w	50	0	24.0	23.92	0.09	0.012	0.054	1.02	0.01
43	LTE 41	QPSK20 M	Rear Face	0	41490	w/o	1	0	16.0	15.88	0.00	**0.743**	0.295	1.03	**0.76**
	LTE 41	QPSK20 M	Right Side	0	41490	w/o	1	0	16.0	15.88	0.02	0.017	0.00667	1.03	0.02
	LTE 41	QPSK20 M	Top Side	0	41490	w/o	1	0	16.0	15.88	0.10	0.082	0.034	1.03	0.08
	LTE 41	QPSK20 M	Rear Face	0	41490	w/o	50	25	16.0	15.87	0.06	0.732	0.291	1.03	0.75
	LTE 41	QPSK20 M	Right Side	0	41490	w/o	50	25	16.0	15.87	0.08	0.017	0.00657	1.03	0.02
	LTE 41	QPSK20 M	Top Side	0	41490	w/o	50	25	16.0	15.87	0.02	0.081	0.033	1.03	0.08
	LTE 41	QPSK20 M	Rear Face	0	41292 (PCC)	w/o	1	99	16.0	15.91	0.05	0.716	0.284	1.02	0.73
					41490 (SCC)		0	0							
	LTE 66	QPSK20 M	Rear Face	1.5	132322	w	1	50	24.0	22.75	0.08	0.356	0.205	1.33	0.47
	LTE 66	QPSK20 M	Right Side	1.5	132322	w	1	50	24.0	22.75	0.04	0.203	0.121	1.33	0.27
	LTE 66	QPSK20 M	Top Side	0.5	132322	w	1	50	24.0	22.75	0.02	0.263	0.151	1.33	0.35
	LTE 66	QPSK20 M	Rear Face	1.5	132322	w	50	50	23.0	21.58	-0.07	0.276	0.158	1.39	0.38
	LTE 66	QPSK20 M	Right Side	1.5	132322	w	50	50	23.0	21.58	0.06	0.162	0.095	1.39	0.22
	LTE 66	QPSK20 M	Top Side	0.5	132322	w	50	50	23.0	21.58	0.08	0.204	0.116	1.39	0.28
44	LTE 66	QPSK20 M	Rear Face	0	132322	w/o	1	0	17.0	16.90	0.00	**0.633**	0.283	1.02	**0.65**
	LTE 66	QPSK20 M	Right Side	0	132322	w/o	1	0	17.0	16.90	0.01	0.438	0.211	1.02	0.45
	LTE 66	QPSK20 M	Top Side	0	132322	w/o	1	0	17.0	16.90	0.04	0.113	0.06	1.02	0.12
	LTE 66	QPSK20 M	Rear Face	0	132322	w/o	50	0	17.0	16.87	-0.09	0.573	0.259	1.03	0.59
	LTE 66	QPSK20 M	Right Side	0	132322	w/o	50	0	17.0	16.87	0.02	0.396	0.193	1.03	0.41
	LTE 66	QPSK20 M	Top Side	0	132322	w/o	50	0	17.0	16.87	-0.01	0.102	0.056	1.03	0.11
45	802.11b	-	Rear Face	0	11	-	-	-	17.5	16.00	-0.11	**0.395**	0.203	1.41	**0.56**
	802.11b	-	Top Side	0	11	-	-	-	17.5	16.00	0.04	0.211	0.097	1.41	0.30
46	802.11ac	VHT80	Rear Face	0	58	-	-	-	13.0	12.827	0.00	**0.757**	0.221	1.04	**0.79**
	802.11ac	VHT80	Top Side	0	58	-	-	-	13.0	12.827	0.10	0.486	0.164	1.04	0.51
47	802.11n	HT40	Rear Face	0	134	-	-	-	11.0	10.562	0.00	**0.714**	0.209	1.11	**0.79**
	802.11n	HT40	Top Side	0	134	-	-	-	11.0	10.562	0.15	0.567	0.189	1.11	0.63
48	802.11n	HT40	Rear Face	0	151	-	-	-	11.0	10.466	0.00	**0.699**	0.202	1.13	**0.79**
	802.11n	HT40	Top Side	0	151	-	-	-	11.0	10.466	-0.15	0.528	0.178	1.13	0.60

4.6 SAR Measurement Variability

4.6.1 Repeated Measurement

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

SAR repeated measurement procedure:

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

Note: All the measured SAR < 0.8w/kg, no repeated measurement is required.

4.6.2 DUT Holder Perturbations

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.

When the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required, using the highest SAR configuration among all applicable frequency bands with and without the device holder.

All the measured SAR are less than 1.2 W/kg, so the holder perturbation verification is not required.

4.7 Simultaneous Multi-band Transmission Evaluation

4.7.1 Simultaneous Transmission SAR Test Exclusion Considerations

a) Sum of SAR

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

b) SAR to Peak Location Separation Ratio

The simultaneous transmitting antennas in each operating mode and exposure condition combination are considered one pair at a time to determine the SPLSR.

$$SPLSR = (SAR_1 + SAR_2)^{1.5}/R_i$$

The ratio is rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. When 10-g SAR applies, the ratio must be ≤ 0.10.

SAR_1 and SAR_2 are the highest reported or estimated SAR values for each antenna in the pair, and R_i is the separation distance in mm between the peak SAR locations for the antenna pair

$$peak\ location\ separation\ distance = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

Where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the area or zoom scans.

When standalone test exclusion applies, SAR is estimated; the peak location is assumed to be at the feed-point or geometric center of the antenna. Due to curvatures on the SAM phantom, when SAR is estimated for one of the antennas in an antenna pair, the measured peak SAR location will be translated onto the test device to determine the peak location separation for the antenna pair.

When SAR is estimated for both antennas, the peak location separation should be determined by the closest physical separation of the antennas, according to the feed-point or geometric center of the antennas.

c) Volume Scan

When the SPLSR is <= 0.04 for 1-g SAR and <= 0.10 for 10-g SAR, the simultaneous transmission SAR is not required. Otherwise, the enlarged zoom scan and volume scan post-processing procedures will be performed.

4.7.2 Simultaneous Transmission Possibilities

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous Transmission Configurations	Head (Voice / VoIP)	Body-worn (Voice / VoIP)	Hotspot (Data)	Extremity (Data)
GSM (Voice / Data) + WLAN (Data)	Yes	Yes	n/a	n/a
WCDMA (Voice / Data) + WLAN (Data)	Yes	Yes	n/a	n/a
LTE (Data) + WLAN (Data)	Yes	Yes	n/a	n/a
GSM (Voice / Data) + BT (Data)	No	Yes	n/a	n/a
WCDMA (Voice / Data) + BT (Data)	No	Yes	n/a	n/a
LTE (Data) + BT (Data)	No	Yes	n/a	n/a

Note:

1. The 2.4G WLAN and 5G WLAN cannot transmit simultaneously.
2. The WLAN and Bluetooth cannot transmit simultaneously, so there is no co-location test requirement for WLAN and Bluetooth.

4.7.3 Max. Standalone SAR

Position	GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 12	LTE 13	LTE 14	LTE 17	LTE 25	LTE 26
Right Cheek	0.17	0.01	0.01	0.03	0.14	0.01	0.04	0.11	0.00	0.00	0.06	0.05	0.00	0.01	0.12
Right Tilted	0.10	0.00	0.02	0.01	0.12	0.00	0.01	0.09	0.00	0.00	0.04	0.06	0.00	0.00	0.08
Left Cheek	0.10	0.02	0.01	0.03	0.10	0.02	0.02	0.08	0.02	0.00	0.06	0.06	0.00	0.02	0.06
Left Tilted	0.14	0.01	0.03	0.02	0.11	0.02	0.02	0.09	0.00	0.00	0.03	0.03	0.00	0.02	0.07
Front Face	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rear Face	0.73	0.73	0.76	0.75	0.74	0.68	0.76	0.67	0.73	0.29	0.69	0.65	0.34	0.72	0.71
Left Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Right Side	0.65	0.46	0.64	0.45	0.66	0.57	0.47	0.59	0.05	0.03	0.51	0.45	0.04	0.52	0.63
Top Side	0.42	0.31	0.29	0.60	0.43	0.41	0.36	0.23	0.22	0.02	0.25	0.23	0.02	0.35	0.29
Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40

Position	LTE 30	LTE 38	LTE 40	LTE 41	LTE 66	802.11b/g	5.3G	5.6G	5.8G	Bluetooth	5G Max. SAR	Max. SAR Summation	WWAN Max. SAR	WLAN Max. SAR
Right Cheek	0.02	0.00	0.01	0.00	0.04	0.06	0.07	0.04	0.04	0.37	0.07	**0.54**	0.17	0.37
Right Tilted	0.01	0.00	0.00	0.00	0.01	0.04	0.06	0.03	0.03	0.37	0.06	**0.49**	0.12	0.37
Left Cheek	0.01	0.00	0.00	0.01	0.03	0.09	0.02	0.01	0.01	0.37	0.02	**0.47**	0.10	0.37
Left Tilted	0.00	0.00	0.00	0.00	0.02	0.08	0.01	0.00	0.00	0.37	0.01	**0.51**	0.14	0.37
Front Face	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rear Face	0.76	0.79	0.79	0.76	0.65	0.56	0.79	0.79	0.79	0.37	0.79	**1.58**	0.79	0.79
Left Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.37	0.40	**0.80**	0.40	0.40
Right Side	0.09	0.02	0.07	0.02	0.45	0.40	0.40	0.40	0.40	0.37	0.40	**1.06**	0.66	0.40
Top Side	0.37	0.12	0.28	0.15	0.35	0.30	0.51	0.63	0.60	0.37	0.63	**1.23**	0.60	0.63
Bottom Side	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.37	0.40	**0.80**	0.40	0.40

Note: The maximum SAR summation is calculated based on the same configuration and test position.

4.7.4 Sum of SAR

Position	Highest Simultaneous Transmission SAR	Co-location_FCC																			
		GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 12	LTE 13	LTE 14	LTE 17	LTE 25	LTE 26	LTE 30	LTE 38	LTE 40	LTE 41	LTE 66
		WWAN+WLAN(DTS)																			
Head	0.23	0.23	0.07	0.07	0.09	0.20	0.07	0.10	0.17	0.06	0.06	0.12	0.11	0.06	0.07	0.18	0.08	0.06	0.07	0.06	0.10
		0.14	0.04	0.06	0.05	0.16	0.04	0.05	0.13	0.04	0.04	0.08	0.10	0.04	0.04	0.12	0.05	0.04	0.04	0.04	0.05
		0.19	0.11	0.10	0.12	0.19	0.11	0.11	0.17	0.11	0.09	0.15	0.15	0.09	0.11	0.15	0.10	0.09	0.09	0.10	0.12
		0.22	0.09	0.11	0.10	0.19	0.10	0.10	0.17	0.08	0.08	0.11	0.11	0.08	0.10	0.15	0.08	0.08	0.08	0.08	0.10
Body	1.35	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
		1.29	1.29	1.32	1.31	1.30	1.24	1.32	1.23	1.29	0.85	1.25	1.21	0.90	1.28	1.27	1.32	1.35	1.35	1.32	1.21
		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
		1.05	0.86	1.04	0.85	1.06	0.97	0.87	0.99	0.45	0.43	0.91	0.85	0.44	0.92	1.03	0.49	0.42	0.47	0.42	0.85

		0.72	0.61	0.59	0.90	0.73	0.71	0.66	0.53	0.52	0.32	0.55	0.53	0.32	0.65	0.59	0.67	0.42	0.58	0.45	0.65
		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80

Position	Highest Simultaneous Transmission SAR	Co-location_FCC																			
		GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 12	LTE 13	LTE 14	LTE 17	LTE 25	LTE 26	LTE 30	LTE 38	LTE 40	LTE 41	LTE 66
		WWAN+WLAN(NII)																			
Head	0.24	0.24	0.08	0.08	0.10	0.21	0.08	0.11	0.18	0.07	0.07	0.13	0.12	0.07	0.08	0.19	0.09	0.07	0.08	0.07	0.11
		0.16	0.06	0.08	0.07	0.18	0.06	0.07	0.15	0.06	0.06	0.10	0.12	0.06	0.06	0.14	0.07	0.06	0.06	0.06	0.07
		0.12	0.04	0.03	0.05	0.12	0.04	0.04	0.10	0.04	0.02	0.08	0.08	0.02	0.04	0.08	0.03	0.02	0.02	0.03	0.05
		0.15	0.02	0.04	0.03	0.12	0.03	0.03	0.10	0.01	0.01	0.04	0.04	0.01	0.03	0.08	0.01	0.01	0.01	0.01	0.03
Body	1.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.52	1.52	1.55	1.54	1.53	1.47	1.55	1.46	1.52	1.08	1.48	1.44	1.13	1.51	1.50	1.55	1.58	1.58	1.55	1.44
		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
		1.05	0.86	1.04	0.85	1.06	0.97	0.87	0.99	0.45	0.43	0.91	0.85	0.44	0.92	1.03	0.49	0.42	0.47	0.42	0.85
		1.05	0.94	0.92	1.23	1.06	1.04	0.99	0.86	0.85	0.65	0.88	0.86	0.65	0.98	0.92	1.00	0.75	0.91	0.78	0.98
		0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80

Position	Highest Simultaneous Transmission SAR	Co-location_FCC																			
		GSM 850	GSM 1900	WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE 2	LTE 4	LTE 5	LTE 7	LTE 12	LTE 13	LTE 14	LTE 17	LTE 25	LTE 26	LTE 30	LTE 38	LTE 40	LTE 41	LTE 66
		WWAN+BT(DSS)																			
Head	0.54	0.54	0.38	0.38	0.40	0.51	0.38	0.41	0.48	0.37	0.37	0.43	0.42	0.37	0.38	0.49	0.39	0.37	0.38	0.37	0.41
		0.47	0.37	0.39	0.38	0.49	0.37	0.38	0.46	0.37	0.37	0.41	0.43	0.37	0.37	0.45	0.38	0.37	0.37	0.37	0.38
		0.47	0.39	0.38	0.40	0.47	0.39	0.39	0.45	0.39	0.37	0.43	0.43	0.37	0.39	0.43	0.38	0.37	0.37	0.38	0.40
		0.51	0.38	0.40	0.39	0.48	0.39	0.39	0.46	0.37	0.37	0.40	0.40	0.37	0.39	0.44	0.37	0.37	0.37	0.37	0.39
Body	1.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		1.10	1.10	1.13	1.12	1.11	1.05	1.13	1.04	1.10	0.66	1.06	1.02	0.71	1.09	1.08	1.13	1.16	1.16	1.13	1.02
		0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
		1.02	0.83	1.01	0.82	1.03	0.94	0.84	0.96	0.42	0.40	0.88	0.82	0.41	0.89	1.00	0.46	0.39	0.44	0.39	0.82
		0.79	0.68	0.66	0.97	0.80	0.78	0.73	0.60	0.59	0.39	0.62	0.60	0.39	0.72	0.66	0.74	0.49	0.65	0.52	0.72
		0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77

*** End of Report ***

Appendix A. SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown in Appensix A.

Appendix B. SAR Plots of SAR Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination, and measured SAR > 1.5 W/kg are shown in Appendix B..

Appendix C. Calibration Certificate for Probe and Dipole

The calibration certificates are shown in Appendix C.

Appendix D. Measured Conducted Power Result

The measurement conducted output power are shown in Appendix D.

Appendix E. Photographs of EUT and Setup

The photographs of EUT and Setup are shown in Appendix E.