

SAR TEST REPORT

Application No.: SUCR2511001119WM
Applicant: TCL Communication Ltd.
Address of Applicant: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Manufacturer: TCL Communication Ltd.
Address of Manufacturer: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
EUT Description: GSM/UMTS/LTE Mobile phone
Model No.: T522A
Trade Mark: TCL
FCC ID: 2ACCJH198
Standards: FCC 47CFR §2.1093
Date of Receipt: 2024-11-13
Date of Test: 2024-11-25 to 2024-12-04
Date of Issue: 2025-12-18

Test Result :	PASS *
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* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

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Revision Record			
Version	Description	Date	Remark
00	Original	2025-12-18	/

Authorized for issue by:		
Prepared By		Leon Liu
		Leon Liu/ Project Manager
Approved By		Nick Hu
		Nick Hu/ Technical Manager

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	1.17	0.24	0.41	/
GSM1900	<0.10	0.41	0.75	/
WCDMA Band II	0.17	0.44	0.86	/
WCDMA Band IV	0.23	0.61	1.12	/
WCDMA Band V	0.67	0.22	0.30	/
LTE Band 2	0.18	0.49	0.91	/
LTE Band 7	0.82	0.39	0.86	/
LTE Band 12(17)	0.80	0.29	0.31	/
LTE Band 13	0.82	0.30	0.41	/
LTE Band 26(5)	1.04	0.28	0.39	/
LTE Band 41(38)	1.01	0.43	1.11	/
LTE Band 66(4)	0.21	0.56	1.07	/
WI-FI (2.4GHz)	0.32	<0.10	0.20	/
WI-FI (5GHz)	0.96	0.90	1.15	1.40
BT	0.18	<0.10	0.12	/
NFC	/	/	/	<0.10
SAR Limited(W/kg)	1.6			4.0
Maximum Simultaneous Transmission SAR (W/kg)				
Scenario	Head	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.59	1.58	1.59	/
SPLSR	/	/	/	/
SPLSR Limited	0.04			0.1

Note:

1) The Simultaneous transmission SAR is the same test position of the WWAN Antenna + WiFi/BT Antenna.

2) According to TCB workshop October, 2014 RF Exposure Procedures Update (Overlapping Bands): SAR for LTE Band 4/5/17/38 is respectively covered by LTE Band 66/26/12/41 due to similar frequency range, same maximum tune up limit and same channel bandwidth.

Because the frequency range is similar, the maximum tuning limit is the same, and the channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band.

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1 General Information

1.1 General Description of EUT

Product Name:	GSM/UMTS/LTE Mobile phone		
Model No.:	T522A		
Trade Mark:	TCL		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	355476330006688/355476330006837		
Hardware Version:	05		
Software Version:	vBVS9		
Antenna Type:	PIFA Antenna		
Device Operating Configurations:			
Modulation Mode:	GSM:GMSK,8PSK; WCDMA:QPSK,16QAM LTE:QPSK,16QAM,64QAM WIFI:DSSS,OFDM; BT:GFSK, π/4DQPSK,8DPSK NFC:ASK		
Device Class:	B		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	24	HSUPA UE Category:	7
Power Class:	4, tested with power level 5(GSM850)		
	1, tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control “max power”(LTE Band)		
Frequency Bands:	Band	Tx(MHz)	
	GSM850	824~849	
	GSM1900	1850~1910	
	WCDMA Band II	1850~1910	
	WCDMA Band IV	1710~1755	
	WCDMA Band V	824~849	
	LTE Band 2	1850 ~1910	
	LTE Band 4	1710~1755	
	LTE Band 5	824~849	
	LTE Band 7	2500~2570	
	LTE Band 12	699~716	
	LTE Band 13	777~787	
	LTE Band 17	704-716	
	LTE Band 26	814~849	
	LTE Band 38	2570~2620	

	LTE Band 41	2496~2690
	LTE Band 66	1710~1780
	WIFI 2.4G	2412~2462
	WIFI 5G	5150~5250
		5250~5350
		5470~5725
		5725~5850
	BT	2402~2480
	NFC	13.56
RF Cable:	☒ Provided by applicant ☐ Provided by the laboratory	
# 1 Battery Information:	Model:	TLp050CB
	Normal Voltage:	3.91V
	Rated capacity:	5000mAh
	Manufacturer:	Shenzhen Aerospace Electronic Co., Ltd.
# 2 Battery Information:	Model:	TLp050C9
	Normal Voltage:	3.91V
	Rated capacity:	5000mAh
	Manufacturer:	Guangdong Fenghua New Energy Co.,Ltd.
Note: Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.		

1.2 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB 447498 D01	General RF Exposure Guidance v06
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03

1.3 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	1.60 mW/g	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:

* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time

** The Spatial Average value of the SAR averaged over the whole body.

*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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

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

1.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu)
Pilot Free Trade Zone

No tests were sub-contracted.

1.5 Test Engineer

Test Engineer: Koller Chen

1.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6336.01)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA).

- **FCC (Designation Number: CN1312)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory.

Test Firm Registration Number: 717327

- **ISED (CAB Identifier: CN0120)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 27594

2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

3 SAR Measurements System Configuraion

3.1 The SAR Measurement System

This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation $SAR = \sigma (|E_i|^2) / \rho$ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

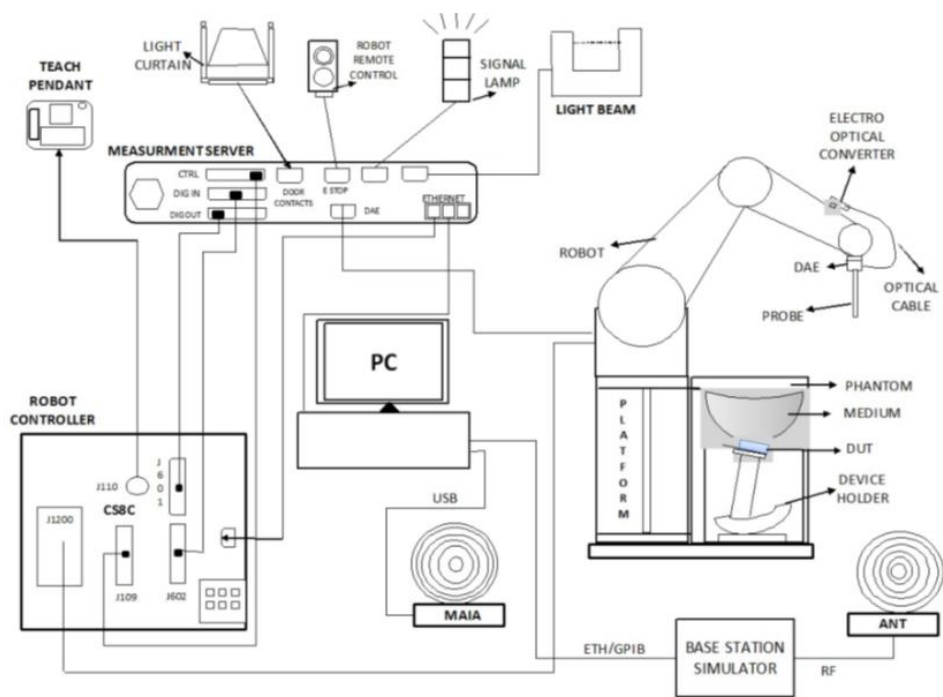
The DASY system for performing compliance tests consists of the following items:

A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.



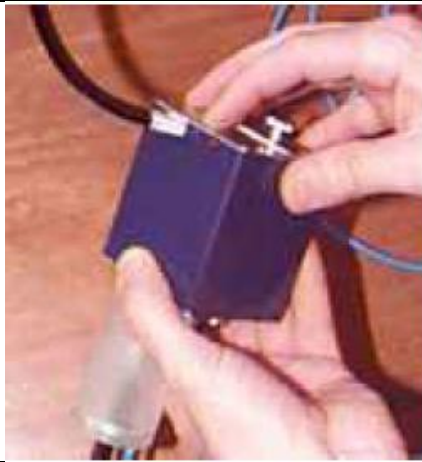
F-1. SAR Measurement System Configuration

- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows system.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

3.2 Isotropic E-field Probe EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY52 SAR and higher, EASY4/MRI

3.3 Data Acquisition Electronics (DAE)

Model	DAE	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 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 f A	
Dimensions	60 x 60 x 68 mm	

3.4 SAM Twin Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)	
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)	
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)	
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet	
Filling Volume	pprox.. 25 liters	
Wooden Support	SPEAG standard phantom table	

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528. 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.

Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

3.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)	
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)	
Shell Thickness	2.0 ± 0.2 mm(bottom plate)	
Dimensions	Major axis: 600 mm Minor axis: 400 mm	
Filling Volume	pprox.. 30 liters	
Wooden Support	SPEAG standard phantom table	

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. 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. ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4 but has reinforced top structure.

3.6 Device Holder for Transmitters



F-2. Device Holder for Transmitters

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.
- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\delta=0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

3.7 Measurement Procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: Area scan

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm. Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Zoom scan

Around this point, a volume of 32mm*32mm*30mm ($f \leq 2\text{GHz}$), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points ($f \leq 2\text{GHz}$), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification). The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

If the zoom scan measured as specified in the preceding paragraphs complies with both i) and ii), or if the psSAR is below 0,1 W/kg, no additional measurements are needed.

i) The smallest horizontal distance from the local SAR peaks to all points 3 dB below the SAR peak shall be larger than the horizontal grid steps in both x- and y-directions (Δx , Δy). This shall be checked for the measured zoom scan plane conformal to the phantom at the distance zM1. The minimum distance shall be recorded in the SAR test report.

ii) The ratio of the SAR at the second measured point (M2) to the SAR at the closest measured point (M1) at the x-y location of the measured maximum SAR value shall be at least 30 %. This ratio (in %) shall be recorded in the SAR test report.

			$\leq 3 \text{ GHz}$	$> 3 \text{ GHz}$
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			$5 \pm 1 \text{ mm}$	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$			$\leq 2 \text{ GHz}: \leq 15 \text{ mm}$ $2 - 3 \text{ GHz}: \leq 12 \text{ mm}$	$3 - 4 \text{ GHz}: \leq 12 \text{ mm}$ $4 - 6 \text{ GHz}: \leq 10 \text{ mm}$
			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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			$\leq 2 \text{ GHz}: \leq 8 \text{ mm}$ $2 - 3 \text{ GHz}: \leq 5 \text{ mm}^*$	$3 - 4 \text{ GHz}: \leq 5 \text{ mm}^*$ $4 - 6 \text{ GHz}: \leq 4 \text{ mm}^*$
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		$\leq 5 \text{ mm}$	$3 - 4 \text{ GHz}: \leq 4 \text{ mm}$ $4 - 5 \text{ GHz}: \leq 3 \text{ mm}$ $5 - 6 \text{ GHz}: \leq 2 \text{ mm}$
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	$\leq 4 \text{ mm}$	$3 - 4 \text{ GHz}: \leq 3 \text{ mm}$ $4 - 5 \text{ GHz}: \leq 2.5 \text{ mm}$ $5 - 6 \text{ GHz}: \leq 2 \text{ mm}$
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		$\geq 30 \text{ mm}$	$3 - 4 \text{ GHz}: \geq 28 \text{ mm}$ $4 - 5 \text{ GHz}: \geq 25 \text{ mm}$ $5 - 6 \text{ GHz}: \geq 22 \text{ mm}$

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max $\pm 5 \%$.

3.7.2 Data storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension "DAE". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
- Conversion factor	ConvFi	
- Diode compression point	Dcpi	
Device parameters:	- Frequency	f
- Crest factor	cf	
Media parameters:	- Conductivity	ε
- Density	ρ	

These parameters must be set correctly in the software. They can be found in the component documents, or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With V_i = compensated signal of channel I (I = x, y, z)

U_i = input signal of channel I (I = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp I = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1}f + a_{i2}f^2) / f$$

With V_i = compensated signal of channel i ($i = x, y, z$)

$Norm_i$ = sensor sensitivity of channel i ($i = x, y, z$)

[mV/(V/m)²] for E-field Probes

$ConvF$ = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (E_{tot}^2 \cdot \sigma) / (\epsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

ϵ = equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}^2 / 3770 \text{ or } P_{pwe} = H_{tot}^2 \cdot 37.7$$

with P_{pwe} = equivalent power density of a plane wave in mW/cm²

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

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

4.2 SAR 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. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

5 Description of Test Position

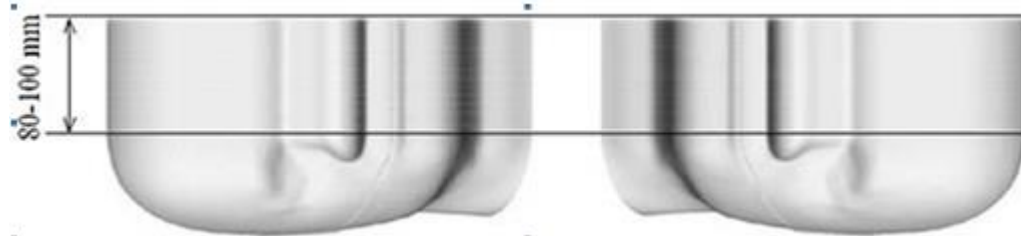
5.1 The Head Test Position

5.1.1 SAM Phantom Shape

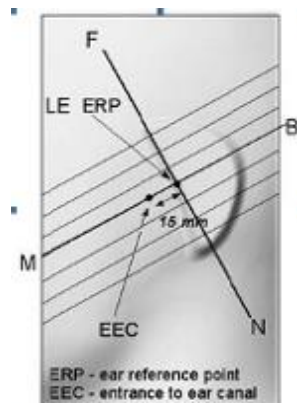


F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

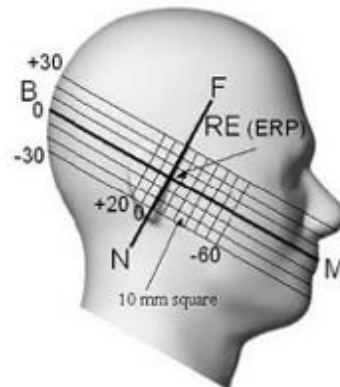
Note: The centre strip including the nose region has a different thickness tolerance.



F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

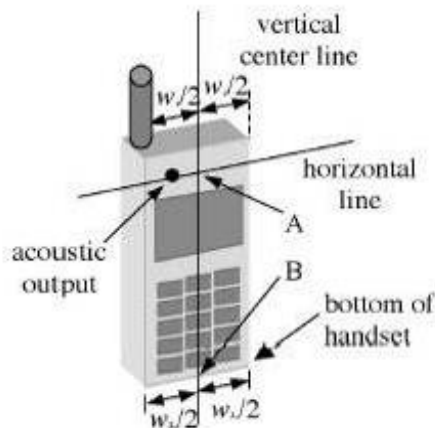


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

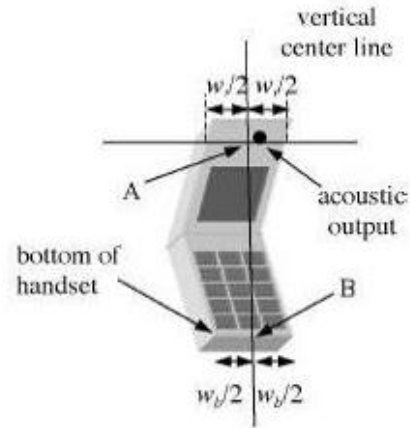


F-6.Side view of the phantom showing relevant markings and seven cross-sectional plane locations

5.1.2 EUT constructions



F-7. Handset vertical and horizontal reference lines-
“fixed case”



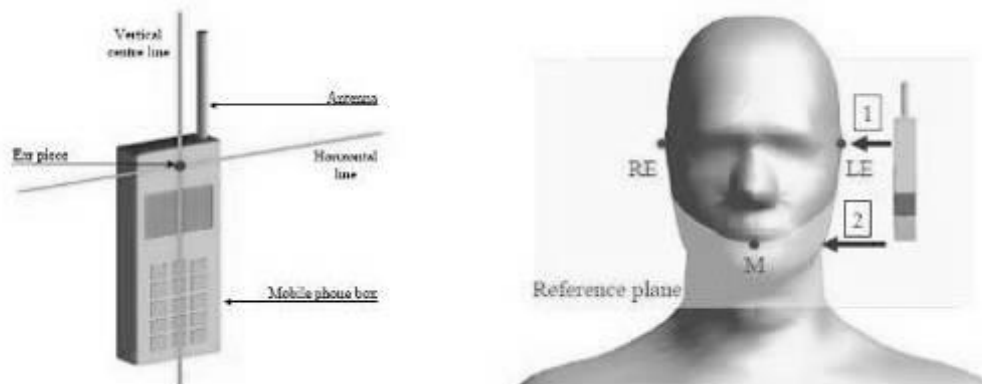
F-8.Handset vertical and horizontal reference lines-
“clam-shell case”

5.1.3 Definition of the “check” position

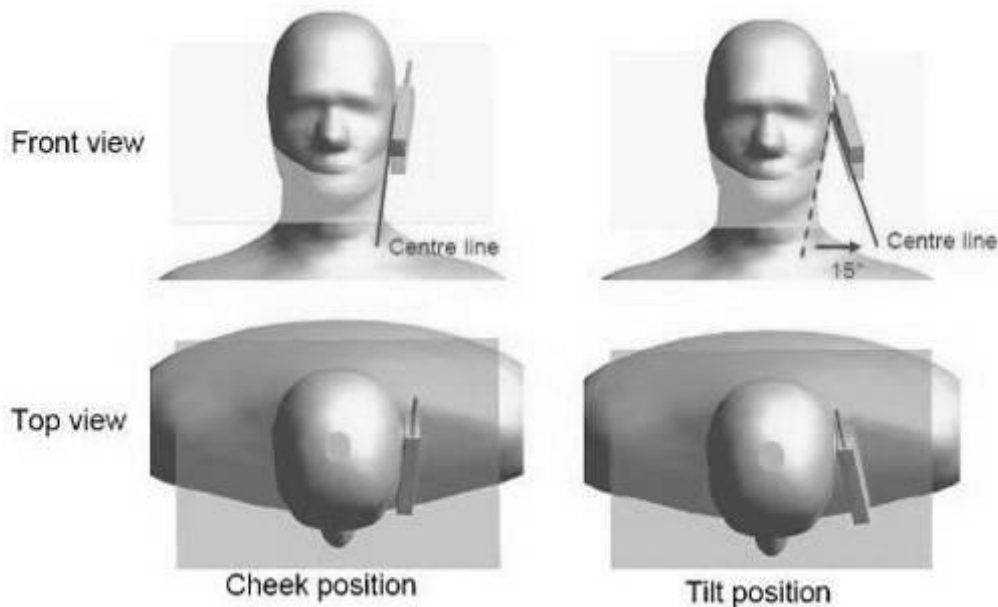
- Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom (“initial position”). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.
- Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

5.1.4 Definition of the “tilted” position

- Position the device in the “cheek” position described above.
- While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.



F-9. Definition of the reference lines and points, on the phone and on the phantom and initial position



F-10. “Cheek” and “tilt” positions of the mobile phone on the left side

5.2 The Body Test Position

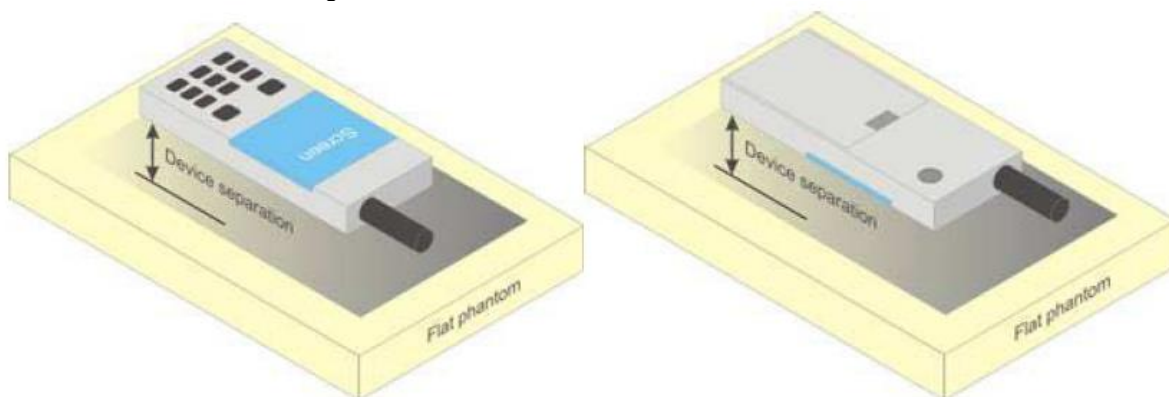
5.2.1 Body-worn exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is $> 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.



F-11. Test positions for body-worn devices

5.2.2 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed-use conditions for this type of devices. For devices with form factors smaller than $9 \text{ cm} \times 5 \text{ cm}$, a test separation distance of 5 mm is required.

5.3 Extremity exposure conditions

Per FCC KDB 648474 D04, for smart phones with a display diagonal dimension $> 15.0 \text{ cm}$ or an overall diagonal dimension $> 16.0 \text{ cm}$ that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as "Phablet".

The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at $\leq 25 \text{ mm}$ from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR $> 1.2 \text{ W/kg}$; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Due to the SAR result, only the WLAN 5G and NFC frequency bands need to test with 0mm for the Product Specific 10-g SAR, the others are not required.

6 SAR System Verificaion Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands:

Ingredients (% by weight)	Frequency (MHz)				
	450	700-1000	1700-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose					
Head Tissue Simulate Liquid (HBBL600-10000V6) is composed of the following ingredients: (Manufactured by SPEAG) Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 1 : Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

The Conductivity (σ) and Permittivity (ϵ_r) are listed in Table 2. For the SAR measurement given in this report.

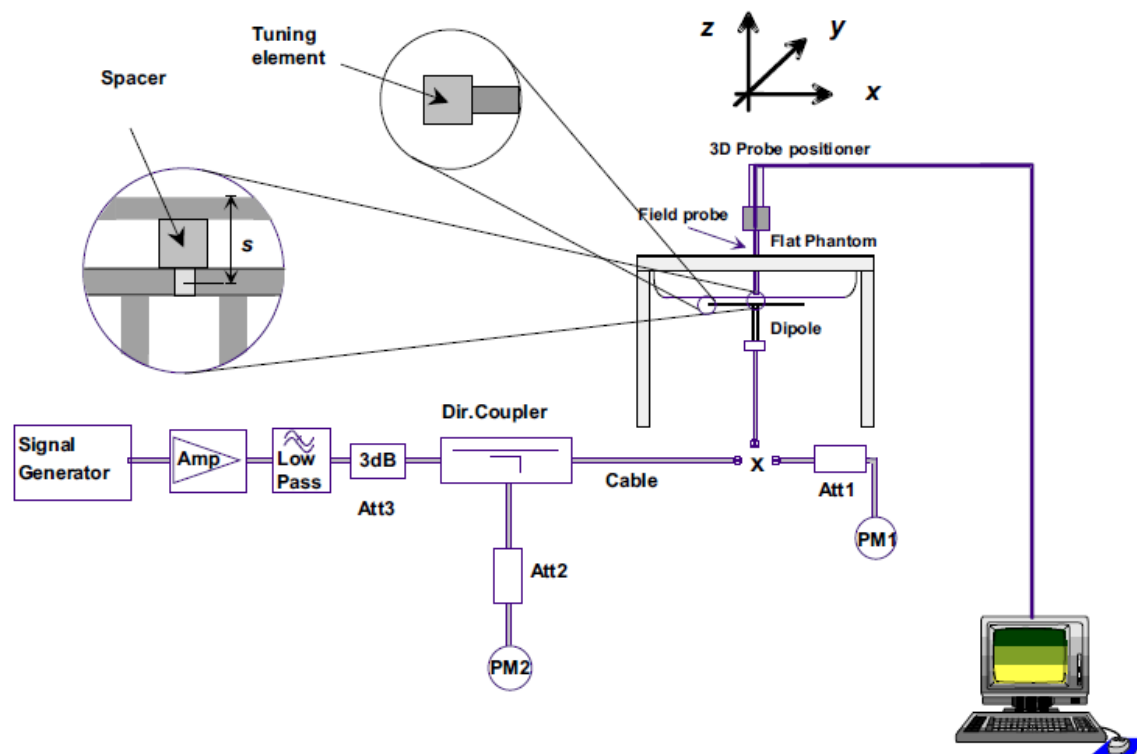
The temperature variation of the Tissue Simulate Liquids was $22 \pm 2^\circ\text{C}$.

Tissue Type	Measured Frequency (MHz)	Measured Tissue		Target Tissue ($\pm 5\%$)		Deviation (Within $\pm 5\%$)		Liquid Temp. ($^\circ\text{C}$)	Test Date
		ϵ_r	$\sigma(\text{S/m})$	ϵ_r	$\sigma(\text{S/m})$	ϵ_r	$\sigma(\text{S/m})$		
13 Head	13	55.500	0.767	55.00	0.75	0.91%	2.27%	22.7	2025/11/25
750 Head	750	42.688	0.884	41.90	0.89	1.88%	-0.67%	23.5	2025/11/28
835 Head	835	42.324	0.899	41.50	0.90	1.99%	-0.11%	23.2	2025/11/29
1750 Head	1750	39.254	1.315	40.10	1.37	-2.11%	-4.01%	23.6	2025/11/30
1950 Head	1950	39.656	1.394	40.00	1.40	-0.86%	-0.43%	23.3	2025/12/1
2450 Head	2450	39.150	1.800	39.20	1.80	-0.13%	0.00%	23.4	2025/12/2
2600 Head	2600	38.940	1.948	39.00	1.96	-0.15%	-0.61%	23.1	2025/12/3
5250 Head	5250	36.936	4.756	35.90	4.71	2.89%	0.98%	23.7	2025/12/4
5600 Head	5600	36.068	5.142	35.50	5.07	1.60%	1.42%	23.7	2025/12/4
5750 Head	5750	35.887	5.336	35.40	5.22	1.38%	2.22%	23.7	2025/12/4

Table 2 : Measurement result of Tissue electric parameters

6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within $\pm 10\%$ from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range $22\pm 2^{\circ}\text{C}$, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15 ± 0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-12.The microwave circuit arrangement used for SAR system Check

6.2.1 Justification for Extended SAR Dipole Calibrations

1) Instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

- a) There is no physical damage on the dipole;
- b) System check with specific dipole is within 10% of calibrated value;
- c) Return-loss is within 20% of calibrated measurement;
- d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

6.2.2 Summary System Check Result(s)

Validation Kit	Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (°C)	Test Date
	1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1- g(W/kg)	10- g(W/kg)		
CLA13_Head	0.101	0.063	0.40	0.25	0.421	0.266	-4.76%	-7.41%	22.7	2025/11/25
D750V3_Head	2.19	1.49	8.76	5.96	8.54	5.80	2.58%	2.76%	23.5	2025/11/28
D835V2_Head	2.50	1.63	10.00	6.52	9.60	6.16	4.17%	5.84%	23.2	2025/11/29
D1750V2_Head	9.39	4.98	37.56	19.92	36.30	19.30	3.47%	3.21%	23.6	2025/11/30
D1950V3_Head	9.74	5.04	38.96	20.16	40.40	20.80	-3.56%	-3.08%	23.3	2025/12/1
D2450V2_Head	13.00	6.08	52.00	24.32	52.70	24.60	-1.33%	-1.14%	23.4	2025/12/2
D2600V2_Head	13.40	6.16	53.60	24.64	55.20	24.70	-2.90%	-0.24%	23.1	2025/12/3
Validation Kit	Measured SAR 100mW	Measured SAR 100mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (°C)	Test Date
	1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1- g(W/kg)	10- g(W/kg)		
D5GHzV2_5.25G_Head	7.41	2.11	74.10	21.10	77.20	21.90	-4.02%	-3.65%	23.7	2025/12/4
D5GHzV2_5.6G_Head	8.08	2.31	80.80	23.10	81.10	22.80	-0.37%	1.32%	23.7	2025/12/4
D5GHzV2_5.75G_Head	7.47	2.08	74.70	20.80	77.80	21.70	-3.98%	-4.15%	23.7	2025/12/4

Table 3 : SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A

7 Test Configuration

7.1 Operation Configurations

7.1.1 GSM Test Configuration

SAR tests for GSM frequency band, a communication link is set up with a base station by air link. Using Radio Communication Analyzer, the power lever is set to “5” or “0” in SAR of GSM frequency band. The tests in the GSM frequency band are performed in the mode of GPRS/EGPRS function.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units. 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, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

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

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8).

7.1.2 WCDMA Test Configuration

1) Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2) 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. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

3) Body SAR

SAR for body 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 DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

4) HSDPA / HSUPA

RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power for production units in HSDPA / HSUPA is $\leq \frac{1}{4}$ dB higher than RMC 12.2Kbps or when the highest measured SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.5 W/kg, SAR measurement is not required for HSDPA / HSUPA.

a) 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 the following table. 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	Bd	β_d (SF)	β_c/β_d	β_{hs}	CM(dB)	MPR (dB)
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

Note1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8$ Ahs = $\beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 8$ (Ahs=30/15) with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 7$ (Ahs=24/15) with $\beta_{hs} = 24/15 * \beta_c$.

Note3: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 4 : settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum HS-DSCH Transport Block Bits/HS-DSCH TTI	Total Soft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 5 : HSDPA UE category

b) HSUPA

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSUPA should be configured according to the values indicated below as well as other applicable procedures described in the WCDMA Handset and Release 5 HSUPA Data Device sections of 3G device.

Sub-test ¹	β_c ²	β_d ³	β_d (SF) ³	β_c/β_d ³	β_{hs} ⁽¹⁾ ³	β_{acc} ³	β_{ed} ³	β_c ⁽⁴⁾ (SF) ³	β_{ed} ⁽⁴⁾ (code) ³	CM ⁽²⁾ (dB) ³	MP R ⁽⁴⁾ (dB) ³	AG ⁽⁴⁾ Index ³	E- TFC I ³
1 ³	11/15 ⁽³⁾ ³	15/15 ⁽³⁾ ³	64 ³	11/15 ⁽³⁾ ³	22/15 ³	209/225 ³	1039/225 ³	4 ³	1 ³	1.0 ³	0.0 ³	20 ³	75 ³
2 ³	6/15 ³	15/15 ³	64 ³	6/15 ³	12/15 ³	12/15 ³	94/75 ³	4 ³	1 ³	3.0 ³	2.0 ³	12 ³	67 ³
3 ³	15/15 ³	9/15 ³	64 ³	15/9 ³	30/15 ³	30/15 ³	β_{ed1} : 47/15 ³ β_{ed2} : 47/15 ³	4 ³	2 ³	2.0 ³	1.0 ³	15 ³	92 ³
4 ³	2/15 ³	15/15 ³	64 ³	2/15 ³	4/15 ³	2/15 ³	56/75 ³	4 ³	1 ³	3.0 ³	2.0 ³	17 ³	71 ³
5 ³	15/15 ⁽⁴⁾ ³	15/15 ⁽⁴⁾ ³	64 ³	15/15 ⁽⁴⁾ ³	30/15 ³	24/15 ³	134/15 ³	4 ³	1 ³	1.0 ³	0.0 ³	21 ³	81 ³
Note 1: ΔACK, $\Delta NACK$ and $\Delta CQI = 8$ $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$³ Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference³ 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 signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$³ 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 signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$³ Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g³ Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.³													

Table 6 : Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF	11484	5.76
	4	4	2	4	20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF	22996	?
	4	4	10	4	20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).

Table 7 : HSUPA UE category

d) HSPA+

SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_{cat} (Note3)	β_{d}	β_{HSPA} (Note1)	β_{cat}	$\beta_{\text{ed}}(2\text{xSF2})$ (Note 4)	$\beta_{\text{ed}}(2\text{xSF4})$ (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{\text{ed1}}: 30/15$ $\beta_{\text{ed2}}: 30/15$	$\beta_{\text{ed3}}: 24/15$ $\beta_{\text{ed4}}: 24/15$	3.5	2.5	14	105	105
Note 1: $\Delta_{\text{ACK}}, \Delta_{\text{NACK}}$ and $\Delta_{\text{CQI}} = 30/15$ with $\beta_{\text{HSPA}} = 30/15 * \beta_{\text{cat}}$ Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0). Note 3: DPDCH is not configured, therefore the β_{cat} is set to 1 and $\beta_{\text{d}} = 0$ by default. Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value. Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.											

5) 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, 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 $\leq \frac{1}{4}$ 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. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

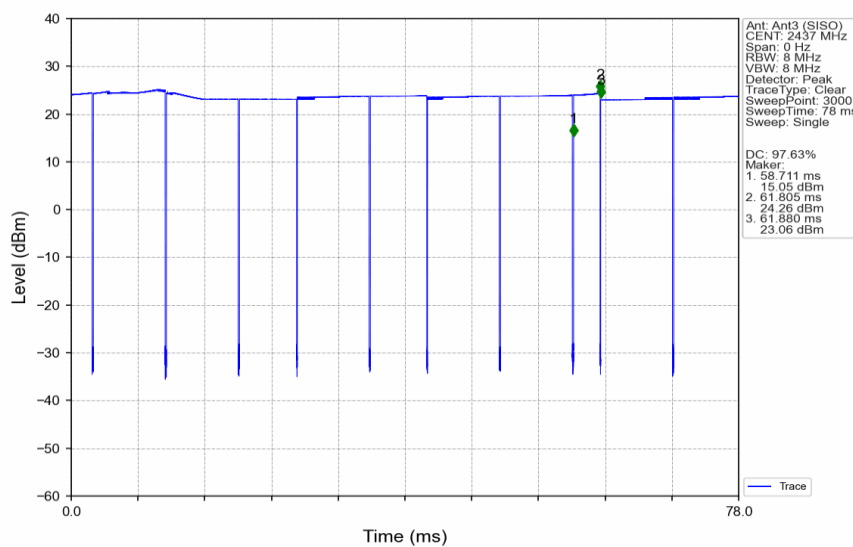
7.1.3 WIFI Test Configuration

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.

7.1.3.1 Duty cycle

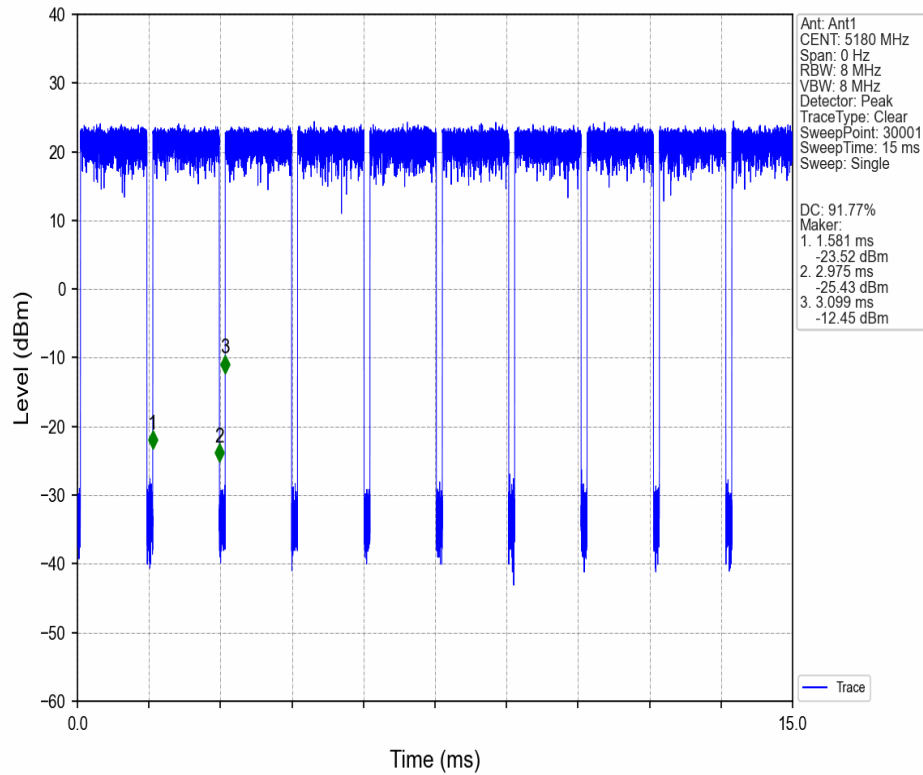
1) Wi-Fi 2.4GHz 802.11b:

Duty cycle=97.63%



2) Wi-Fi 5GHz 802.11a:

Duty cycle=91.77%



7.1.3.2 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

- 1) . When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
- 2) . When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
- 3) . For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

7.1.3.3 Subsequent Test Configuration Procedures

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. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

- 1) . When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.
- 2) . When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), 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.
- 3) . The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.
 - a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.
 - b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.
- 4) . SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:
 - a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)
 - b) replace “initial test configuration” with “all tested higher output power configurations”

7.1.3.4 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) . When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
- 2) . When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

- 1) . When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.
- 2) . When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

7.1.3.5 5 GHz WiFi SAR Procedures

- **U-NII-1 and U-NII-2A Bands**

For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. 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); otherwise, both bands are tested independently for SAR.
- 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; otherwise, both bands are tested independently for SAR.
- 3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

- **U-NII-2C and U-NII-3 Bands**

The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

- 1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
- 2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
- 3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
- 4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; 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. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
 - a) The channel closest to mid-band frequency is selected for SAR measurement.
 - b) 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.

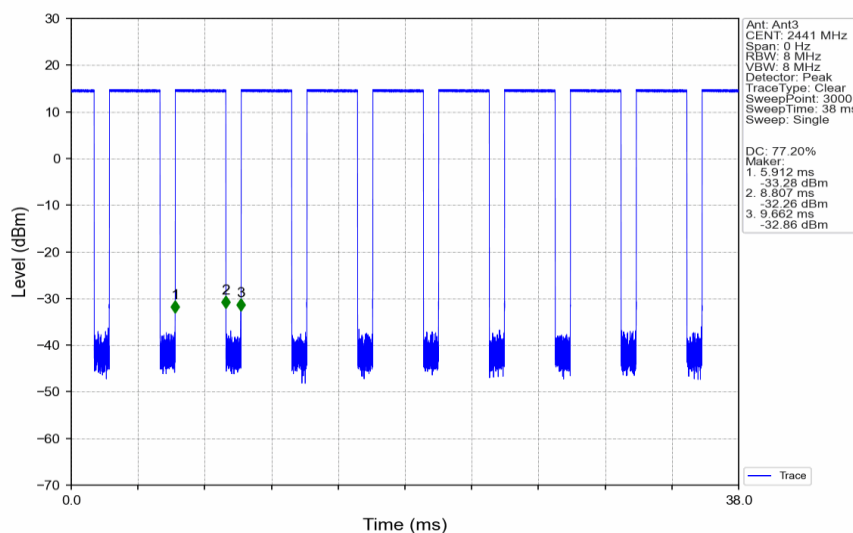
• SAR Test Requirements for OFDM configurations

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

7.1.4 BT Test Configuration

For the Bluetooth SAR tests, a communication link is set up with the test mode software for BT mode test. Bluetooth USES frequency hopping technology to divide the transmitted data into packets and transmit the packets respectively through 79 designated Bluetooth channels, frequency hops at 1600 hops/second per the Bluetooth standard, the EUT is operated at the RF continuous emission mode.

BT DH5 Duty Cycle=77.20%



7.1.5 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Radio Communication Analyzer was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration

For Time-Division Duplex (TDD) systems, SAR 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 LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.

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

Frame structure type 2:

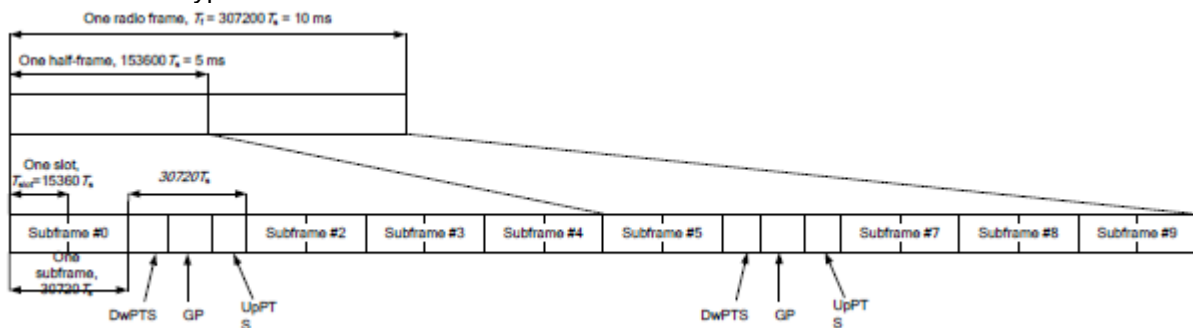


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.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	4384.Ts	5120.Ts	7680.Ts	4384.Ts	5120.Ts
5	6592.Ts			20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Table 4.2-2: Uplink-downlink configurations.

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

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

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

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

Modulation	Channel bandwidth/Transmission bandwidth						MPR (dB)
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3
256QAM	≥ 1						5

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for 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 for 1 RB allocation; 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.

2) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) 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.

4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ 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.

8 Test Result

8.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D

Note:

- 1) The test device is a smart phone, and the diagonal distance of this device is $\geq 160\text{mm}$ but $\leq 200\text{mm}$, so it is a Phablet per KDB 648474 D04.
- 2) The distance between the antennas and the sides of the EUT show as below table, when the antenna-to-edge distance is greater than 25mm, such position does not need to be SAR tested.

EUT Sides for SAR Testing							
Mode	Exposure Condition	Front	Back	Left	Right	Top	Bottom
Ant.0	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	No	No	Yes
Ant.1	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	No	Yes	No
Ant.2	Hotspot/ Product specific 10g SAR	Yes	Yes	Yes	Yes	Yes	No
Ant.3	Hotspot/ Product specific 10g SAR	Yes	Yes	No	Yes	Yes	No

8.2 Measurement of RF Conducted Power

8.2.1 RF Conducted Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation

- 1) A fixed level power reduction is applied for some frequency bands when simultaneously transmitting with the other antennas in certain simultaneous transmission conditions.
- 2) This device uses the receiver to indicate whether the user is making a voice call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. A fixed level power reduction is applied for some frequency bands when the audio receiver is on.

8.2.2 RF Conducted Power Data

The detailed power data can be referred to Appendix E Conducted RF Output Power.

8.3 Measurement of SAR Data

Note:

- 1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B.
- 2) Per KDB 447498 D01, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - $\leq 0.8\text{W/kg}$ for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is $\leq 100\text{MHz}$.
 - $\leq 0.6\text{ W/kg}$ or 1.5 W/kg , for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
 - $\leq 0.4\text{ W/kg}$ or 1.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\geq 200\text{ MHz}$.
- 3) The device does not support DTM function.
- 4) For WiFi 5G,U-NII-2A and U-NII-2C band does not support hotspot function.
- 5) For WiFi SAR test, as the highest reported SAR is smaller than 1.2 W/kg , and the tune-up of the other 802.11 modes are not higher than SAR measurement mode, therefore the adjusted SAR is $\leq 1.2\text{ W/kg}$ for other 802.11 modes, SAR test for the other 802.11 modes are not required. For Product specific 10gSAR the highest reported SAR is smaller than 3.0 W/kg , SAR test for the other 802.11 modes are also not required.
- 6) NFC is different from the working scenario of WWAN/WIFI(Head/Body-worn/Hotspot) and does not participate in the simultaneous transmission.
- 7) The simultaneous transmission is reduced by XdB (the detailed power reduced can be referred to Conducted Power Appendix E), therefore, those SAR of simultaneous transmission mode are scaled based on standalone SAR results.

8.3.1 SAR Result of GSM850

GSM850 SAR Test Record										
Ant.2 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON										
Left cheek	GPRS 4TS	190/836.6	1:2.075	0.725	-0.16	28.60	29.00	1.096	0.795	23.2
Left tilted	GPRS 4TS	190/836.6	1:2.075	0.561	0.15	28.60	29.00	1.096	0.615	23.2
Right cheek	GPRS 4TS	190/836.6	1:2.075	1.070	-0.15	28.60	29.00	1.096	1.173	23.2
Right cheek-Repeat SAR	GPRS 4TS	190/836.6	1:2.075	0.996	-0.05	28.60	29.00	1.096	1.092	23.2
Right tilted	GPRS 4TS	190/836.6	1:2.075	0.787	0.19	28.60	29.00	1.096	0.863	23.2
Right cheek	GPRS 4TS	128/824.2	1:2.075	0.984	-0.06	28.56	29.00	1.107	1.089	23.2
Right cheek	GPRS 4TS	251/848.8	1:2.075	0.991	-0.06	28.49	29.00	1.125	1.115	23.2
Right cheek-Sample2	GPRS 4TS	190/836.6	1:2.075	1.010	0.02	28.60	29.00	1.096	1.107	23.2
Body worn Test data(Separate 15mm) Receiver OFF										
Front side	GPRS 4TS	190/836.6	1:2.075	0.163	0.08	28.60	29.00	1.096	0.179	23.2
Back side	GPRS 4TS	190/836.6	1:2.075	0.219	-0.06	28.60	29.00	1.096	0.240	23.2
Back side-Sample2	GPRS 4TS	190/836.6	1:2.075	0.211	0.14	28.60	29.00	1.096	0.231	23.2
Hotspot Test data(Separate 10mm) Receiver OFF										
Front side	GPRS 4TS	190/836.6	1:2.075	0.222	0.12	28.60	29.00	1.096	0.243	23.2
Back side	GPRS 4TS	190/836.6	1:2.075	0.372	-0.11	28.60	29.00	1.096	0.408	23.2
Left side	GPRS 4TS	190/836.6	1:2.075	0.245	-0.11	28.60	29.00	1.096	0.269	23.2
Right side	GPRS 4TS	190/836.6	1:2.075	0.107	-0.07	28.60	29.00	1.096	0.117	23.2
Top side	GPRS 4TS	190/836.6	1:2.075	0.313	0.17	28.60	29.00	1.096	0.343	23.2
Back side-Sample2	GPRS 4TS	190/836.6	1:2.075	0.364	0.05	28.60	29.00	1.096	0.399	23.2

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Right cheek	190/836.6	1.070	0.996	1.074	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.3.2 SAR Result of GSM1900

GSM1900 SAR Test Record										
Ant.0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON										
Left cheek	GPRS 2TS	661/1880	1:4.15	0.032	0.06	28.72	30.00	1.343	0.043	23.3
Left tilted	GPRS 2TS	661/1880	1:4.15	0.023	-0.12	28.72	30.00	1.343	0.031	23.3
Right cheek	GPRS 2TS	661/1880	1:4.15	0.042	0.07	28.72	30.00	1.343	0.056	23.3
Right tilted	GPRS 2TS	661/1880	1:4.15	0.019	0.02	28.72	30.00	1.343	0.026	23.3
Right cheek-Sample2	GPRS 2TS	661/1880	1:4.15	0.038	0.01	28.72	30.00	1.343	0.051	23.3
Body worn Test data(Separate 15mm) Receiver OFF										
Front side	GPRS 2TS	661/1880	1:4.15	0.188	0.03	28.72	30.00	1.343	0.252	23.3
Back side	GPRS 2TS	661/1880	1:4.15	0.306	0.15	28.72	30.00	1.343	0.411	23.3
Back side-Sample2	GPRS 2TS	661/1880	1:4.15	0.289	0.04	28.72	30.00	1.343	0.388	23.3
Hotspot Test data(Separate 10mm) Receiver OFF										
Front side	GPRS 2TS	661/1880	1:4.15	0.272	-0.17	28.72	30.00	1.343	0.365	23.3
Back side	GPRS 2TS	661/1880	1:4.15	0.559	0.08	28.72	30.00	1.343	0.751	23.3
Left side	GPRS 2TS	661/1880	1:4.15	0.177	0.06	28.72	30.00	1.343	0.238	23.3
Bottom side	GPRS 2TS	661/1880	1:4.15	0.541	0.03	28.72	30.00	1.343	0.727	23.3
Back side-Sample2	GPRS 2TS	661/1880	1:4.15	0.547	-0.12	28.72	30.00	1.343	0.735	23.3

8.3.3 SAR Result of WCDMA Band II

WCDMA Band II SAR Test Record										
Ant.0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON										
Left cheek	RMC	9400/1880	1:1	0.129	-0.02	22.84	24.00	1.306	0.168	23.3
Left tilted	RMC	9400/1880	1:1	0.084	-0.10	22.84	24.00	1.306	0.110	23.3
Right cheek	RMC	9400/1880	1:1	0.104	-0.13	22.84	24.00	1.306	0.136	23.3
Right tilted	RMC	9400/1880	1:1	0.075	-0.05	22.84	24.00	1.306	0.098	23.3
Left cheek-Sample2	RMC	9400/1880	1:1	0.124	0.07	22.84	24.00	1.306	0.162	23.3
Body worn Test data(Separate 15mm) Receiver OFF										
Front side	RMC	9400/1880	1:1	0.236	-0.07	22.84	24.00	1.306	0.308	23.3
Back side	RMC	9400/1880	1:1	0.337	-0.12	22.84	24.00	1.306	0.440	23.3
Back side-Sample2	RMC	9400/1880	1:1	0.326	0.05	22.84	24.00	1.306	0.426	23.3
Hotspot Test data(Separate 10mm) Receiver OFF										
Front side	RMC	9400/1880	1:1	0.393	0.19	22.84	24.00	1.306	0.513	23.3
Back side	RMC	9400/1880	1:1	0.604	0.03	22.84	24.00	1.306	0.789	23.3
Left side	RMC	9400/1880	1:1	0.230	-0.17	22.84	24.00	1.306	0.300	23.3
Bottom side	RMC	9400/1880	1:1	0.657	0.02	22.84	24.00	1.306	0.858	23.3
Bottom side	RMC	9262/1852.4	1:1	0.633	-0.01	22.73	24.00	1.340	0.848	23.3
Bottom side	RMC	9538/1907.6	1:1	0.638	-0.08	22.79	24.00	1.321	0.843	23.3
Bottom side-Sample2	RMC	9400/1880	1:1	0.651	0.07	22.84	24.00	1.306	0.850	23.3

8.3.4 SAR Result of WCDMA Band IV

WCDMA Band IV SAR Test Record										
Ant.0 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON										
Left cheek	RMC	1412/1732.4	1:1	0.142	0.10	22.85	24.50	1.462	0.208	23.6
Left tilted	RMC	1412/1732.4	1:1	0.104	0.18	22.85	24.50	1.462	0.152	23.6
Right cheek	RMC	1412/1732.4	1:1	0.156	-0.02	22.85	24.50	1.462	0.228	23.6
Right tilted	RMC	1412/1732.4	1:1	0.103	-0.03	22.85	24.50	1.462	0.151	23.6
Right cheek-Sample2	RMC	1412/1732.4	1:1	0.153	0.07	22.85	24.50	1.462	0.224	23.6
Body worn Test data(Separate 15mm) Receiver OFF										
Front side	RMC	1412/1732.4	1:1	0.261	0.17	22.85	24.50	1.462	0.382	23.6
Back side	RMC	1412/1732.4	1:1	0.420	0.05	22.85	24.50	1.462	0.614	23.6
Back side-Sample2	RMC	1412/1732.4	1:1	0.416	-0.04	22.85	24.50	1.462	0.608	23.6
Hotspot Test data(Separate 10mm) Receiver OFF										
Front side	RMC	1412/1732.4	1:1	0.426	0.02	22.85	24.50	1.462	0.623	23.6
Back side	RMC	1412/1732.4	1:1	0.713	0.17	22.85	24.50	1.462	1.042	23.6
Back side	RMC	1312/1712.4	1:1	0.684	-0.16	22.77	24.50	1.489	1.018	23.6
Back side	RMC	1513/1752.6	1:1	0.669	-0.12	22.75	24.50	1.496	1.001	23.6
Left side	RMC	1412/1732.4	1:1	0.237	-0.13	22.85	24.50	1.462	0.346	23.6
Bottom side	RMC	1412/1732.4	1:1	0.764	0.04	22.85	24.50	1.462	1.117	23.6
Bottom side	RMC	1312/1712.4	1:1	0.735	0.12	22.77	24.50	1.489	1.094	23.6
Bottom side	RMC	1513/1752.6	1:1	0.741	-0.09	22.75	24.50	1.496	1.109	23.6
Bottom side-Sample2	RMC	1412/1732.4	1:1	0.759	0.02	22.85	24.50	1.462	1.110	23.6

8.3.5 SAR Result of WCDMA Band V

WCDMA Band V SAR Test Record										
Ant.2 Test Record										
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON										
Left cheek	RMC	4182/836.4	1:1	0.417	0.03	23.32	24.00	1.169	0.487	23.2
Left tilted	RMC	4182/836.4	1:1	0.377	0.17	23.32	24.00	1.169	0.441	23.2
Right cheek	RMC	4182/836.4	1:1	0.573	-0.14	23.32	24.00	1.169	0.670	23.2
Right tilted	RMC	4182/836.4	1:1	0.503	-0.09	23.32	24.00	1.169	0.588	23.2
Right cheek-Sample2	RMC	4182/836.4	1:1	0.568	0.02	23.32	24.00	1.169	0.664	23.2
Body worn Test data(Separate 15mm) Receiver OFF										
Front side	RMC	4182/836.4	1:1	0.143	0.16	23.32	24.00	1.169	0.167	23.2
Back side	RMC	4182/836.4	1:1	0.188	0.14	23.32	24.00	1.169	0.220	23.2
Back side-Sample2	RMC	4182/836.4	1:1	0.177	0.02	23.32	24.00	1.169	0.207	23.2
Hotspot Test data(Separate 10mm) Receiver OFF										
Front side	RMC	4182/836.4	1:1	0.172	0.10	23.32	24.00	1.169	0.201	23.2
Back side	RMC	4182/836.4	1:1	0.254	-0.16	23.32	24.00	1.169	0.297	23.2
Left side	RMC	4182/836.4	1:1	0.240	0.16	23.32	24.00	1.169	0.281	23.2
Right side	RMC	4182/836.4	1:1	0.115	-0.18	23.32	24.00	1.169	0.134	23.2
Top side	RMC	4182/836.4	1:1	0.236	0.14	23.32	24.00	1.169	0.276	23.2
Back side-Sample2	RMC	4182/836.4	1:1	0.249	0.04	23.32	24.00	1.169	0.291	23.2

8.3.6 SAR Result of LTE Band 2

LTE Band 2 SAR Test Record											
Ant.0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	20	QPSK 1_0	18900/1880	1:1	0.152	0.01	23.71	24.50	1.199	0.182	23.3
Left tilted	20	QPSK 1_0	18900/1880	1:1	0.081	0.13	23.71	24.50	1.199	0.097	23.3
Right cheek	20	QPSK 1_0	18900/1880	1:1	0.105	0.15	23.71	24.50	1.199	0.126	23.3
Right tilted	20	QPSK 1_0	18900/1880	1:1	0.093	-0.17	23.71	24.50	1.199	0.112	23.3
Left cheek-Sample2	20	QPSK 1_0	18900/1880	1:1	0.147	0.04	23.71	24.50	1.199	0.176	23.3
Head Test Data (50%RB) Receiver ON											
Left cheek	20	QPSK 50_0	18900/1880	1:1	0.121	0.03	22.69	23.50	1.205	0.146	23.3
Left tilted	20	QPSK 50_0	18900/1880	1:1	0.070	0.15	22.69	23.50	1.205	0.084	23.3
Right cheek	20	QPSK 50_0	18900/1880	1:1	0.091	0.13	22.69	23.50	1.205	0.110	23.3
Right tilted	20	QPSK 50_0	18900/1880	1:1	0.072	-0.12	22.69	23.50	1.205	0.087	23.3
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	18900/1880	1:1	0.282	0.01	23.71	24.50	1.199	0.338	23.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.407	0.18	23.71	24.50	1.199	0.488	23.3
Back side-Sample2	20	QPSK 1_0	18900/1880	1:1	0.393	-0.02	23.71	24.50	1.199	0.471	23.3
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	18900/1880	1:1	0.227	0.07	22.69	23.50	1.205	0.274	23.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.336	-0.19	22.69	23.50	1.205	0.405	23.3
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	18900/1880	1:1	0.422	0.11	23.71	24.50	1.199	0.506	23.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.702	-0.06	23.71	24.50	1.199	0.842	23.3
Left side	20	QPSK 1_0	18900/1880	1:1	0.205	-0.16	23.71	24.50	1.199	0.246	23.3
Bottom side	20	QPSK 1_0	18900/1880	1:1	0.762	-0.04	23.71	24.50	1.199	0.914	23.3
Bottom side	20	QPSK 1_0	18700/1860	1:1	0.745	0.17	23.63	24.50	1.222	0.910	23.3
Bottom side	20	QPSK 1_0	19100/1900	1:1	0.751	-0.14	23.66	24.50	1.213	0.911	23.3
Bottom side-Sample2	20	QPSK 1_0	18900/1880	1:1	0.749	0.07	23.71	24.50	1.199	0.898	23.3
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	18900/1880	1:1	0.343	-0.14	22.69	23.50	1.205	0.413	23.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.583	-0.13	22.69	23.50	1.205	0.703	23.3
Left side	20	QPSK 50_0	18900/1880	1:1	0.179	0.07	22.69	23.50	1.205	0.216	23.3
Bottom side	20	QPSK 50_0	18900/1880	1:1	0.613	-0.06	22.69	23.50	1.205	0.739	23.3
Hotspot Test data (Separate 10mm 100%RB) Receiver OFF											
Bottom side	20	QPSK 100_0	18900/1880	1:1	0.611	0.17	22.74	23.50	1.191	0.728	23.3

8.3.7 SAR Result of LTE Band 7

LTE Band 7 SAR Test Record											
Ant.1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	20	QPSK 1_0	21100/2535	1:1	0.286	0.06	21.74	22.50	1.191	0.341	23.1
Left tilted	20	QPSK 1_0	21100/2535	1:1	0.177	0.04	21.74	22.50	1.191	0.211	23.1
Right cheek	20	QPSK 1_0	21100/2535	1:1	0.689	0.02	21.74	22.50	1.191	0.821	23.1
Right tilted	20	QPSK 1_0	21100/2535	1:1	0.303	-0.17	21.74	22.50	1.191	0.361	23.1
Right cheek	20	QPSK 1_0	20850/2510	1:1	0.658	-0.16	21.71	22.50	1.199	0.789	23.1
Right cheek	20	QPSK 1_0	21350/2560	1:1	0.662	-0.14	21.68	22.50	1.208	0.800	23.1
Right cheek-Sample2	20	QPSK 1_0	21100/2535	1:1	0.683	0.01	21.74	22.50	1.191	0.813	23.1
Head Test Data (50%RB) Receiver ON											
Left cheek	20	QPSK 50_0	21100/2535	1:1	0.238	0.06	21.67	22.50	1.211	0.288	23.1
Left tilted	20	QPSK 50_0	21100/2535	1:1	0.149	0.12	21.67	22.50	1.211	0.180	23.1
Right cheek	20	QPSK 50_0	21100/2535	1:1	0.584	-0.12	21.67	22.50	1.211	0.707	23.1
Right tilted	20	QPSK 50_0	21100/2535	1:1	0.266	-0.08	21.67	22.50	1.211	0.322	23.1
Head Test Data (100%RB) Receiver ON											
Right cheek	20	QPSK 100_0	21100/2535	1:1	0.579	0.12	21.61	22.50	1.227	0.710	23.1
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	21100/2535	1:1	0.099	-0.19	19.64	20.50	1.219	0.121	23.1
Back side	20	QPSK 1_0	21100/2535	1:1	0.322	-0.06	19.64	20.50	1.219	0.393	23.1
Back side-Sample2	20	QPSK 1_0	21100/2535	1:1	0.316	0.02	19.64	20.50	1.219	0.385	23.1
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	21100/2535	1:1	0.087	-0.11	19.17	20.50	1.358	0.118	23.1
Back side	20	QPSK 50_0	21100/2535	1:1	0.281	-0.18	19.17	20.50	1.358	0.382	23.1
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	21100/2535	1:1	0.189	-0.02	19.64	20.50	1.219	0.230	23.1
Back side	20	QPSK 1_0	21100/2535	1:1	0.702	-0.06	19.64	20.50	1.219	0.856	23.1
Left side	20	QPSK 1_0	21100/2535	1:1	0.274	0.09	19.64	20.50	1.219	0.334	23.1
Top side	20	QPSK 1_0	21100/2535	1:1	0.062	-0.16	19.64	20.50	1.219	0.076	23.1
Back side	20	QPSK 1_0	20850/2510	1:1	0.691	-0.03	19.61	20.50	1.227	0.848	23.1
Back side	20	QPSK 1_0	21350/2560	1:1	0.686	-0.17	19.58	20.50	1.236	0.848	23.1
Back side-Sample2	20	QPSK 1_0	21100/2535	1:1	0.694	0.05	19.64	20.50	1.219	0.846	23.1
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	21100/2535	1:1	0.166	0.12	19.17	20.50	1.358	0.225	23.1
Back side	20	QPSK 50_0	21100/2535	1:1	0.604	-0.15	19.17	20.50	1.358	0.820	23.1
Left side	20	QPSK 50_0	21100/2535	1:1	0.234	-0.11	19.17	20.50	1.358	0.318	23.1
Top side	20	QPSK 50_0	21100/2535	1:1	0.055	0.04	19.17	20.50	1.358	0.075	23.1
Hotspot Test data (Separate 10mm 100%RB) Receiver OFF											
Back side	20	QPSK 100_0	21100/2535	1:1	0.594	0.09	19.11	20.50	1.377	0.818	23.1

8.3.8 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record											
Ant.2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	10	QPSK 1_0	23095/707.5	1:1	0.498	-0.06	23.96	25.00	1.271	0.633	23.5
Left tilted	10	QPSK 1_0	23095/707.5	1:1	0.354	-0.13	23.96	25.00	1.271	0.450	23.5
Right cheek	10	QPSK 1_0	23095/707.5	1:1	0.626	0.13	23.96	25.00	1.271	0.796	23.5
Right tilted	10	QPSK 1_0	23095/707.5	1:1	0.424	-0.11	23.96	25.00	1.271	0.539	23.5
Right cheek-Sample2	10	QPSK 1_0	23095/707.5	1:1	0.616	0.04	23.96	25.00	1.271	0.783	23.5
Head Test Data (50%RB) Receiver ON											
Left cheek	10	QPSK 25_0	23095/707.5	1:1	0.398	-0.16	22.98	24.00	1.265	0.503	23.5
Left tilted	10	QPSK 25_0	23095/707.5	1:1	0.282	0.06	22.98	24.00	1.265	0.357	23.5
Right cheek	10	QPSK 25_0	23095/707.5	1:1	0.501	-0.09	22.98	24.00	1.265	0.634	23.5
Right tilted	10	QPSK 25_0	23095/707.5	1:1	0.335	0.05	22.98	24.00	1.265	0.424	23.5
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.172	-0.16	23.96	25.00	1.271	0.219	23.5
Back side	10	QPSK 1_0	23095/707.5	1:1	0.228	0.11	23.96	25.00	1.271	0.290	23.5
Back side-Sample2	10	QPSK 1_0	23095/707.5	1:1	0.222	0.02	23.96	25.00	1.271	0.282	23.5
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.136	-0.02	22.98	24.00	1.265	0.172	23.5
Back side	10	QPSK 25_0	23095/707.5	1:1	0.179	0.14	22.98	24.00	1.265	0.226	23.5
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	10	QPSK 1_0	23095/707.5	1:1	0.144	-0.06	23.96	25.00	1.271	0.183	23.5
Back side	10	QPSK 1_0	23095/707.5	1:1	0.220	-0.01	23.96	25.00	1.271	0.280	23.5
Left side	10	QPSK 1_0	23095/707.5	1:1	0.241	-0.04	23.96	25.00	1.271	0.306	23.5
Right side	10	QPSK 1_0	23095/707.5	1:1	0.136	-0.11	23.96	25.00	1.271	0.173	23.5
Top side	10	QPSK 1_0	23095/707.5	1:1	0.089	0.18	23.96	25.00	1.271	0.113	23.5
Left side-Sample2	10	QPSK 1_0	23095/707.5	1:1	0.238	0.11	23.96	25.00	1.271	0.302	23.5
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	10	QPSK 25_0	23095/707.5	1:1	0.117	-0.06	22.98	24.00	1.265	0.148	23.5
Back side	10	QPSK 25_0	23095/707.5	1:1	0.175	0.14	22.98	24.00	1.265	0.221	23.5
Left side	10	QPSK 25_0	23095/707.5	1:1	0.179	-0.15	22.98	24.00	1.265	0.226	23.5
Right side	10	QPSK 25_0	23095/707.5	1:1	0.105	0.06	22.98	24.00	1.265	0.133	23.5
Top side	10	QPSK 25_0	23095/707.5	1:1	0.065	-0.15	22.98	24.00	1.265	0.082	23.5

8.3.9 SAR Result of LTE Band 13

LTE Band 13 SAR Test Record											
Ant.2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	10	QPSK 1_0	23230/782	1:1	0.515	0.08	24.06	25.00	1.242	0.640	23.5
Left tilted	10	QPSK 1_0	23230/782	1:1	0.397	-0.01	24.06	25.00	1.242	0.493	23.5
Right cheek	10	QPSK 1_0	23230/782	1:1	0.659	0.07	24.06	25.00	1.242	0.818	23.5
Right tilted	10	QPSK 1_0	23230/782	1:1	0.509	-0.02	24.06	25.00	1.242	0.632	23.5
Right cheek-Sample2	10	QPSK 1_0	23230/782	1:1	0.651	0.11	24.06	25.00	1.242	0.809	23.5
Head Test Data (50%RB) Receiver ON											
Left cheek	10	QPSK 25_0	23230/782	1:1	0.395	0.06	23.03	24.00	1.250	0.494	23.5
Left tilted	10	QPSK 25_0	23230/782	1:1	0.308	0.17	23.03	24.00	1.250	0.385	23.5
Right cheek	10	QPSK 25_0	23230/782	1:1	0.501	-0.05	23.03	24.00	1.250	0.626	23.5
Right tilted	10	QPSK 25_0	23230/782	1:1	0.390	0.16	23.03	24.00	1.250	0.488	23.5
Head Test Data (100%RB) Receiver ON											
Right cheek	10	QPSK 50_0	23230/782	1:1	0.489	0.08	22.95	24.00	1.274	0.623	23.5
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	10	QPSK 1_0	23230/782	1:1	0.173	0.16	24.06	25.00	1.242	0.215	23.5
Back side	10	QPSK 1_0	23230/782	1:1	0.241	0.13	24.06	25.00	1.242	0.299	23.5
Back side-Sample2	10	QPSK 1_0	23230/782	1:1	0.235	-0.02	24.06	25.00	1.242	0.292	23.5
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	10	QPSK 25_0	23230/782	1:1	0.137	-0.02	23.03	24.00	1.250	0.171	23.5
Back side	10	QPSK 25_0	23230/782	1:1	0.191	0.11	23.03	24.00	1.250	0.239	23.5
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	10	QPSK 1_0	23230/782	1:1	0.196	0.10	24.06	25.00	1.242	0.243	23.5
Back side	10	QPSK 1_0	23230/782	1:1	0.315	-0.18	24.06	25.00	1.242	0.391	23.5
Left side	10	QPSK 1_0	23230/782	1:1	0.332	0.02	24.06	25.00	1.242	0.412	23.5
Right side	10	QPSK 1_0	23230/782	1:1	0.183	0.05	24.06	25.00	1.242	0.227	23.5
Top side	10	QPSK 1_0	23230/782	1:1	0.157	-0.12	24.06	25.00	1.242	0.195	23.5
Left side-Sample2	10	QPSK 1_0	23230/782	1:1	0.324	0.09	24.06	25.00	1.242	0.402	23.5
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	10	QPSK 25_0	23230/782	1:1	0.152	-0.06	23.03	24.00	1.250	0.190	23.5
Back side	10	QPSK 25_0	23230/782	1:1	0.244	0.14	23.03	24.00	1.250	0.305	23.5
Left side	10	QPSK 25_0	23230/782	1:1	0.261	-0.11	23.03	24.00	1.250	0.326	23.5
Right side	10	QPSK 25_0	23230/782	1:1	0.149	-0.03	23.03	24.00	1.250	0.186	23.5
Top side	10	QPSK 25_0	23230/782	1:1	0.120	-0.12	23.03	24.00	1.250	0.150	23.5

8.3.10 SAR Result of LTE Band 26

LTE Band 26 SAR Test Record											
Ant.2 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	15	QPSK 1_0	26865/831.5	1:1	0.587	0.03	24.08	25.00	1.236	0.726	23.2
Left tilted	15	QPSK 1_0	26865/831.5	1:1	0.501	0.10	24.08	25.00	1.236	0.619	23.2
Right cheek	15	QPSK 1_0	26865/831.5	1:1	0.844	-0.09	24.08	25.00	1.236	1.043	23.2
Right cheek-Repeat SAR	15	QPSK 1_0	26865/831.5	1:1	0.836	-0.19	24.08	25.00	1.236	1.033	23.2
Right tilted	15	QPSK 1_0	26865/831.5	1:1	0.634	-0.14	24.08	25.00	1.236	0.784	23.2
Right cheek-Sample2	15	QPSK 1_0	26865/831.5	1:1	0.839	0.02	24.08	25.00	1.236	1.037	23.2
Head Test Data (50%RB) Receiver ON											
Left cheek	15	QPSK 36_0	26865/831.5	1:1	0.461	-0.07	22.99	24.00	1.262	0.582	23.2
Left tilted	15	QPSK 36_0	26865/831.5	1:1	0.398	0.14	22.99	24.00	1.262	0.502	23.2
Right cheek	15	QPSK 36_0	26865/831.5	1:1	0.664	-0.04	22.99	24.00	1.262	0.838	23.2
Right tilted	15	QPSK 36_0	26865/831.5	1:1	0.528	-0.18	22.99	24.00	1.262	0.666	23.2
Head Test Data (100%RB) Receiver ON											
Right cheek	15	QPSK 75_0	26865/831.5	1:1	0.639	0.12	22.95	24.00	1.274	0.814	23.2
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	15	QPSK 1_0	26865/831.5	1:1	0.168	-0.06	24.08	25.00	1.236	0.208	23.2
Back side	15	QPSK 1_0	26865/831.5	1:1	0.224	0.02	24.08	25.00	1.236	0.277	23.2
Back side-Sample2	15	QPSK 1_0	26865/831.5	1:1	0.216	0.09	24.08	25.00	1.236	0.267	23.2
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	15	QPSK 36_0	26865/831.5	1:1	0.136	0.19	22.99	24.00	1.262	0.172	23.2
Back side	15	QPSK 36_0	26865/831.5	1:1	0.179	-0.09	22.99	24.00	1.262	0.226	23.2
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	15	QPSK 1_0	26865/831.5	1:1	0.218	0.01	24.08	25.00	1.236	0.269	23.2
Back side	15	QPSK 1_0	26865/831.5	1:1	0.318	-0.04	24.08	25.00	1.236	0.393	23.2
Left side	15	QPSK 1_0	26865/831.5	1:1	0.305	-0.12	24.08	25.00	1.236	0.377	23.2
Right side	15	QPSK 1_0	26865/831.5	1:1	0.147	-0.01	24.08	25.00	1.236	0.182	23.2
Top side	15	QPSK 1_0	26865/831.5	1:1	0.286	0.13	24.08	25.00	1.236	0.353	23.2
Back side-Sample2	15	QPSK 1_0	26865/831.5	1:1	0.311	0.02	24.08	25.00	1.236	0.384	23.2
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	15	QPSK 36_0	26865/831.5	1:1	0.173	-0.13	22.99	24.00	1.262	0.218	23.2
Back side	15	QPSK 36_0	26865/831.5	1:1	0.257	-0.11	22.99	24.00	1.262	0.324	23.2
Left side	15	QPSK 36_0	26865/831.5	1:1	0.236	0.11	22.99	24.00	1.262	0.298	23.2
Right side	15	QPSK 36_0	26865/831.5	1:1	0.112	-0.16	22.99	24.00	1.262	0.141	23.2
Top side	15	QPSK 36_0	26865/831.5	1:1	0.225	-0.17	22.99	24.00	1.262	0.284	23.2

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Right cheek	26865/831.5	0.844	0.836	1.010	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.3.11 SAR Result of LTE Band 41

LTE Band 41 SAR Test Record											
Ant.1 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	20	QPSK 1_0	40620/2593	1:1.58	0.343	0.12	23.88	24.50	1.153	0.395	23.1
Left tilted	20	QPSK 1_0	40620/2593	1:1.58	0.217	-0.13	23.88	24.50	1.153	0.250	23.1
Right cheek	20	QPSK 1_0	40620/2593	1:1.58	0.836	0.02	23.88	24.50	1.153	0.964	23.1
Right cheek-Repeat SAR	20	QPSK 1_0	40620/2593	1:1.58	0.833	-0.19	23.88	24.50	1.153	0.960	23.1
Right tilted	20	QPSK 1_0	40620/2593	1:1.58	0.395	-0.13	23.88	24.50	1.153	0.455	23.1
Right cheek	20	QPSK 1_0	39750/2506	1:1.58	0.793	-0.18	23.84	24.50	1.164	0.923	23.1
Right cheek	20	QPSK 1_0	40185/2549.5	1:1.58	0.782	0.05	23.86	24.50	1.159	0.906	23.1
Right cheek	20	QPSK 1_0	41055/2636.5	1:1.58	0.801	0.03	23.87	24.50	1.156	0.926	23.1
Right cheek	20	QPSK 1_0	41490/2680	1:1.58	0.814	-0.07	23.83	24.50	1.167	0.950	23.1
Right cheek-Sample2	20	QPSK 1_0	40620/2593	1:1.58	0.833	0.04	23.88	24.50	1.153	0.960	23.1
Head Test Data (50%RB) Receiver ON											
Left cheek	20	QPSK 50_0	40620/2593	1:1.58	0.288	-0.03	22.91	23.50	1.146	0.330	23.1
Left tilted	20	QPSK 50_0	40620/2593	1:1.58	0.182	0.11	22.91	23.50	1.146	0.209	23.1
Right cheek	20	QPSK 50_0	40620/2593	1:1.58	0.663	0.01	22.91	23.50	1.146	0.760	23.1
Right tilted	20	QPSK 50_0	40620/2593	1:1.58	0.313	0.07	22.91	23.50	1.146	0.359	23.1
Right cheek	20	QPSK 50_0	39750/2506	1:1.58	0.632	0.02	22.80	23.50	1.175	0.743	23.1
Right cheek	20	QPSK 50_0	40185/2549.5	1:1.58	0.659	0.09	22.86	23.50	1.159	0.764	23.1
Right cheek	20	QPSK 50_0	41055/2636.5	1:1.58	0.646	-0.03	22.86	23.50	1.159	0.749	23.1
Right cheek	20	QPSK 50_0	41490/2680	1:1.58	0.655	0.14	22.82	23.50	1.169	0.766	23.1
Head Test Data (100%RB) Receiver ON											
Right cheek	20	QPSK 100_0	40620/2593	1:1.58	0.655	0.01	22.85	23.50	1.161	0.760	23.1
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.118	0.19	23.68	24.50	1.208	0.143	23.1
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.358	0.02	23.68	24.50	1.208	0.432	23.1
Back side-Sample2	20	QPSK 1_0	40620/2593	1:1.58	0.351	-0.07	23.68	24.50	1.208	0.424	23.1
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.094	-0.16	22.71	23.50	1.199	0.113	23.1
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.293	0.07	22.71	23.50	1.199	0.351	23.1
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.279	-0.08	23.88	24.50	1.153	0.322	23.1
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.958	-0.05	23.88	24.50	1.153	1.105	23.1
Back side-Repeat SAR	20	QPSK 1_0	40620/2593	1:1.58	0.949	0.15	23.88	24.50	1.153	1.094	23.1
Left side	20	QPSK 1_0	40620/2593	1:1.58	0.381	-0.07	23.88	24.50	1.153	0.439	23.1
Top side	20	QPSK 1_0	40620/2593	1:1.58	0.100	-0.06	23.88	24.50	1.153	0.115	23.1
Back side	20	QPSK 1_0	39750/2506	1:1.58	0.934	0.15	23.84	24.50	1.164	1.087	23.1
Back side	20	QPSK 1_0	40185/2549.5	1:1.58	0.942	0.16	23.86	24.50	1.159	1.092	23.1
Back side	20	QPSK 1_0	41055/2636.5	1:1.58	0.938	-0.08	23.87	24.50	1.156	1.084	23.1
Back side	20	QPSK 1_0	41490/2680	1:1.58	0.937	-0.14	23.83	24.50	1.167	1.093	23.1
Back side-Sample2	20	QPSK 1_0	40620/2593	1:1.58	0.952	0.09	23.88	24.50	1.153	1.098	23.1
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.226	0.02	22.91	23.50	1.146	0.259	23.1
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.797	0.05	22.91	23.50	1.146	0.913	23.1
Left side	20	QPSK 50_0	40620/2593	1:1.58	0.316	-0.04	22.91	23.50	1.146	0.362	23.1
Top side	20	QPSK 50_0	40620/2593	1:1.58	0.086	-0.09	22.91	23.50	1.146	0.099	23.1

Back side	20	QPSK 50_0	39750/2506	1:1.58	0.784	-0.08	22.80	23.50	1.175	0.921	23.1
Back side	20	QPSK 50_0	40185/2549.5	1:1.58	0.793	0.04	22.86	23.50	1.159	0.919	23.1
Back side	20	QPSK 50_0	41055/2636.5	1:1.58	0.779	-0.04	22.86	23.50	1.159	0.903	23.1
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.795	0.19	22.82	23.50	1.169	0.929	23.1
Hotspot Test data (Separate 10mm 100%RB) Receiver OFF											
Back side	20	QPSK 100_0	40620/2593	1:1.58	0.749	0.07	22.85	23.50	1.161	0.870	23.1

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Right cheek	40620/2593	0.836	0.833	1.004	N/A	N/A
Back side	40620/2593	0.958	0.949	1.009	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

8.3.12 SAR Result of LTE Band 66

LTE Band 66 SAR Test Record											
Ant.0 Test Record											
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data (1RB) Receiver ON											
Left cheek	20	QPSK 1_0	132322/1745	1:1	0.154	0.12	23.55	24.50	1.245	0.192	23.6
Left tilted	20	QPSK 1_0	132322/1745	1:1	0.117	-0.15	23.55	24.50	1.245	0.146	23.6
Right cheek	20	QPSK 1_0	132322/1745	1:1	0.172	0.09	23.55	24.50	1.245	0.214	23.6
Right tilted	20	QPSK 1_0	132322/1745	1:1	0.086	-0.02	23.55	24.50	1.245	0.107	23.6
Right cheek-Sample2	20	QPSK 1_0	132322/1745	1:1	0.169	0.04	23.55	24.50	1.245	0.210	23.6
Head Test Data (50%RB) Receiver ON											
Left cheek	20	QPSK 50_0	132322/1745	1:1	0.123	-0.07	22.59	23.50	1.233	0.152	23.6
Left tilted	20	QPSK 50_0	132322/1745	1:1	0.091	0.03	22.59	23.50	1.233	0.112	23.6
Right cheek	20	QPSK 50_0	132322/1745	1:1	0.150	-0.13	22.59	23.50	1.233	0.185	23.6
Right tilted	20	QPSK 50_0	132322/1745	1:1	0.082	-0.19	22.59	23.50	1.233	0.101	23.6
Body worn Test data (Separate 15mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	132322/1745	1:1	0.301	-0.02	23.55	24.50	1.245	0.375	23.6
Back side	20	QPSK 1_0	132322/1745	1:1	0.452	0.19	23.55	24.50	1.245	0.563	23.6
Back side-Sample2	20	QPSK 1_0	132322/1745	1:1	0.449	0.03	23.55	24.50	1.245	0.559	23.6
Body worn Test data (Separate 15mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	132322/1745	1:1	0.242	0.12	22.59	23.50	1.233	0.298	23.6
Back side	20	QPSK 50_0	132322/1745	1:1	0.378	0.04	22.59	23.50	1.233	0.466	23.6
Hotspot Test data (Separate 10mm 1RB) Receiver OFF											
Front side	20	QPSK 1_0	132322/1745	1:1	0.463	0.05	23.55	24.50	1.245	0.576	23.6
Back side	20	QPSK 1_0	132322/1745	1:1	0.621	-0.19	23.55	24.50	1.245	0.773	23.6
Left side	20	QPSK 1_0	132322/1745	1:1	0.270	-0.07	23.55	24.50	1.245	0.336	23.6
Bottom side	20	QPSK 1_0	132322/1745	1:1	0.858	0.02	23.55	24.50	1.245	1.068	23.6
Bottom side-Repeat SAR	20	QPSK 1_0	132322/1745	1:1	0.849	0.04	23.55	24.50	1.245	1.057	23.6
Bottom side	20	QPSK 1_0	132072/1720	1:1	0.851	0.16	23.53	24.50	1.250	1.064	23.6
Bottom side	20	QPSK 1_0	132572/1770	1:1	0.842	0.16	23.49	24.50	1.262	1.063	23.6
Bottom side-Sample2	20	QPSK 1_0	132322/1745	1:1	0.851	-0.11	23.55	24.50	1.245	1.059	23.6
Hotspot Test data (Separate 10mm 50%RB) Receiver OFF											
Front side	20	QPSK 50_0	132322/1745	1:1	0.381	-0.19	22.59	23.50	1.233	0.470	23.6
Back side	20	QPSK 50_0	132322/1745	1:1	0.519	-0.04	22.59	23.50	1.233	0.640	23.6
Left side	20	QPSK 50_0	132322/1745	1:1	0.228	0.06	22.59	23.50	1.233	0.281	23.6
Bottom side	20	QPSK 50_0	132322/1745	1:1	0.642	-0.19	22.59	23.50	1.233	0.792	23.6
Hotspot Test data (Separate 10mm 100%RB) Receiver OFF											
Bottom side	20	QPSK 100_0	132322/1745	1:1	0.633	0.16	22.57	23.50	1.239	0.784	23.6

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Bottom side	132322/1745	0.858	0.849	1.011	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.3.13 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record											
Ant.3 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON											
Left cheek	802.11b	6/2437	97.63%	1.024	0.216	-0.04	17.94	19.00	1.276	0.282	23.4
Left tilted	802.11b	6/2437	97.63%	1.024	0.246	0.11	17.94	19.00	1.276	0.321	23.4
Right cheek	802.11b	6/2437	97.63%	1.024	0.120	0.19	17.94	19.00	1.276	0.157	23.4
Right tilted	802.11b	6/2437	97.63%	1.024	0.137	0.01	17.94	19.00	1.276	0.179	23.4
Left tilted-Sample2	802.11b	6/2437	97.63%	1.024	0.241	0.02	17.94	19.00	1.276	0.315	23.4
Body worn Test data (Separate 15mm) Receiver OFF											
Front side	802.11b	6/2437	97.63%	1.024	0.001	0.07	17.94	19.00	1.276	0.001	23.4
Back side	802.11b	6/2437	97.63%	1.024	0.069	-0.04	17.94	19.00	1.276	0.090	23.4
Back side-Sample2	802.11b	6/2437	97.63%	1.024	0.064	0.05	17.94	19.00	1.276	0.084	23.4
Hotspot Test data (Separate 10mm) Receiver OFF											
Front side	802.11b	6/2437	97.63%	1.024	0.062	-0.11	17.94	19.00	1.276	0.081	23.4
Back side	802.11b	6/2437	97.63%	1.024	0.151	0.04	17.94	19.00	1.276	0.197	23.4
Right side	802.11b	6/2437	97.63%	1.024	0.048	0.02	17.94	19.00	1.276	0.063	23.4
Top side	802.11b	6/2437	97.63%	1.024	0.143	0.13	17.94	19.00	1.276	0.187	23.4
Back side-Sample2	802.11b	6/2437	97.63%	1.024	0.146	-0.09	17.94	19.00	1.276	0.191	23.4

8.3.14 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record											
Ant.3 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data of U-NII-1 Receiver ON											
Left cheek	802.11a	48/5240	91.77%	1.090	0.698	-0.08	14.48	15.50	1.265	0.962	23.7
Left tilted	802.11a	48/5240	91.77%	1.090	0.661	0.19	14.48	15.50	1.265	0.911	23.7
Right cheek	802.11a	48/5240	91.77%	1.090	0.319	0.14	14.48	15.50	1.265	0.440	23.7
Right tilted	802.11a	48/5240	91.77%	1.090	0.374	-0.03	14.48	15.50	1.265	0.516	23.7
Left cheek	802.11a	44/5220	91.77%	1.090	0.664	-0.08	14.29	15.50	1.321	0.956	23.7
Left cheek-Sample2	802.11a	48/5240	91.77%	1.090	0.695	0.05	14.48	15.50	1.265	0.958	23.7
Head Test Data of U-NII-2A Receiver ON											
Left cheek	802.11a	64/5320	91.77%	1.090	0.534	-0.14	14.36	15.50	1.300	0.757	23.7
Left tilted	802.11a	64/5320	91.77%	1.090	0.504	0.06	14.36	15.50	1.300	0.714	23.7
Right cheek	802.11a	64/5320	91.77%	1.090	0.220	-0.14	14.36	15.50	1.300	0.312	23.7
Right tilted	802.11a	64/5320	91.77%	1.090	0.271	0.13	14.36	15.50	1.300	0.384	23.7
Head Test Data of U-NII-2C Receiver ON											
Left cheek	802.11a	100/5500	91.77%	1.090	0.531	-0.02	14.79	15.50	1.178	0.682	23.7
Left tilted	802.11a	100/5500	91.77%	1.090	0.519	0.13	14.79	15.50	1.178	0.666	23.7
Right cheek	802.11a	100/5500	91.77%	1.090	0.240	0.15	14.79	15.50	1.178	0.308	23.7
Right tilted	802.11a	100/5500	91.77%	1.090	0.265	-0.03	14.79	15.50	1.178	0.340	23.7
Head Test Data of U-NII-3 Receiver ON											
Left cheek	802.11a	149/5745	91.77%	1.090	0.605	-0.14	13.87	15.50	1.455	0.959	23.7
Left tilted	802.11a	149/5745	91.77%	1.090	0.569	0.15	13.87	15.50	1.455	0.902	23.7
Right cheek	802.11a	149/5745	91.77%	1.090	0.342	-0.02	13.87	15.50	1.455	0.542	23.7
Right tilted	802.11a	149/5745	91.77%	1.090	0.432	-0.04	13.87	15.50	1.455	0.685	23.7
Left cheek	802.11a	157/5785	91.77%	1.090	0.585	0.08	13.79	15.50	1.483	0.946	23.7
Left cheek	802.11a	165/5825	91.77%	1.090	0.592	0.13	13.83	15.50	1.469	0.948	23.7
Left tilted	802.11a	157/5785	91.77%	1.090	0.544	0.01	13.79	15.50	1.483	0.879	23.7
Left tilted	802.11a	165/5825	91.77%	1.090	0.551	-0.14	13.83	15.50	1.469	0.882	23.7
Head Test Data of U-NII-1 Receiver ON with Simultaneous											
Left cheek	802.11a	48/5240	91.77%	1.090	0.698	-0.08	14.48	13.50	0.798	0.607	23.7
Left tilted	802.11a	48/5240	91.77%	1.090	0.661	0.19	14.48	13.50	0.798	0.575	23.7
Right cheek	802.11a	48/5240	91.77%	1.090	0.319	0.14	14.48	13.50	0.798	0.277	23.7
Right tilted	802.11a	48/5240	91.77%	1.090	0.374	-0.03	14.48	13.50	0.798	0.325	23.7
Left cheek	802.11a	44/5220	91.77%	1.090	0.664	-0.08	14.29	13.50	0.834	0.604	23.7
Head Test Data of U-NII-2A Receiver ON with Simultaneous											
Left cheek	802.11a	64/5320	91.77%	1.090	0.534	-0.14	14.36	13.50	0.820	0.477	23.7
Left tilted	802.11a	64/5320	91.77%	1.090	0.504	0.06	14.36	13.50	0.820	0.450	23.7
Right cheek	802.11a	64/5320	91.77%	1.090	0.220	-0.14	14.36	13.50	0.820	0.197	23.7
Right tilted	802.11a	64/5320	91.77%	1.090	0.271	0.13	14.36	13.50	0.820	0.242	23.7
Head Test Data of U-NII-2C Receiver ON with Simultaneous											
Left cheek	802.11a	100/5500	91.77%	1.090	0.531	-0.02	14.79	13.50	0.743	0.430	23.7
Left tilted	802.11a	100/5500	91.77%	1.090	0.519	0.13	14.79	13.50	0.743	0.420	23.7
Right cheek	802.11a	100/5500	91.77%	1.090	0.240	0.15	14.79	13.50	0.743	0.194	23.7
Right tilted	802.11a	100/5500	91.77%	1.090	0.265	-0.03	14.79	13.50	0.743	0.215	23.7
Head Test Data of U-NII-3 Receiver ON with Simultaneous											
Left cheek	802.11a	149/5745	91.77%	1.090	0.605	-0.14	13.87	13.50	0.918	0.605	23.7

Left tilted	802.11a	149/5745	91.77%	1.090	0.569	0.15	13.87	13.50	0.918	0.569	23.7
Right cheek	802.11a	149/5745	91.77%	1.090	0.342	-0.02	13.87	13.50	0.918	0.342	23.7
Right tilted	802.11a	149/5745	91.77%	1.090	0.432	-0.04	13.87	13.50	0.918	0.432	23.7
Left cheek	802.11a	157/5785	91.77%	1.090	0.585	0.08	13.79	13.50	0.935	0.596	23.7
Left cheek	802.11a	165/5825	91.77%	1.090	0.592	0.13	13.83	13.50	0.927	0.598	23.7
Left tilted	802.11a	157/5785	91.77%	1.090	0.544	0.01	13.79	13.50	0.935	0.554	23.7
Left tilted	802.11a	165/5825	91.77%	1.090	0.551	-0.14	13.83	13.50	0.927	0.557	23.7
Body worn Test data of U-NII-2A (Separate 15mm) Receiver OFF											
Front side	802.11a	64/5320	91.77%	1.090	0.162	0.07	17.90	19.00	1.288	0.227	23.7
Back side	802.11a	64/5320	91.77%	1.090	0.448	0.05	17.90	19.00	1.288	0.629	23.7
Body worn Test data of U-NII-2C (Separate 15mm) Receiver OFF											
Front side	802.11a	116/5580	91.77%	1.090	0.152	-0.13	18.29	19.00	1.178	0.195	23.7
Back side	802.11a	116/5580	91.77%	1.090	0.448	-0.07	18.29	19.00	1.178	0.575	23.7
Body worn Test data of U-NII-3 (Separate 15mm) Receiver OFF											
Front side	802.11a	149/5745	91.77%	1.090	0.260	0.05	17.35	19.00	1.462	0.414	23.7
Back side	802.11a	149/5745	91.77%	1.090	0.566	0.07	17.35	19.00	1.462	0.902	23.7
Back side	802.11a	157/5785	91.77%	1.090	0.551	0.18	17.28	19.00	1.486	0.892	23.7
Back side	802.11a	165/5825	91.77%	1.090	0.556	-0.11	17.33	19.00	1.469	0.890	23.7
Back side-Sample2	802.11a	149/5745	91.77%	1.090	0.562	-0.01	17.35	19.00	1.462	0.896	23.7
Hotspot Test data of U-NII-1 (Separate 10mm) Receiver OFF											
Front side	802.11a	48/5240	91.77%	1.090	0.246	0.05	17.97	19.00	1.268	0.340	23.7
Back side	802.11a	48/5240	91.77%	1.090	0.831	0.01	17.97	19.00	1.268	1.149	23.7
Back side-Repeat SAR	802.11a	48/5240	91.77%	1.090	0.824	-0.17	17.97	19.00	1.268	1.139	23.7
Right side	802.11a	48/5240	91.77%	1.090	0.487	0.07	17.97	19.00	1.268	0.673	23.7
Top side	802.11a	48/5240	91.77%	1.090	0.646	0.14	17.97	19.00	1.268	0.893	23.7
Back side	802.11a	44/5220	91.77%	1.090	0.805	0.09	17.85	19.00	1.303	1.143	23.7
Top side	802.11a	44/5220	91.77%	1.090	0.624	0.16	17.85	19.00	1.303	0.886	23.7
Back side-Sample2	802.11a	48/5240	91.77%	1.090	0.819	-0.02	17.97	19.00	1.268	1.132	23.7
Hotspot Test data of U-NII-3 (Separate 10mm) Receiver OFF											
Front side	802.11a	149/5745	91.77%	1.090	0.320	0.04	17.35	19.00	1.462	0.510	23.7
Back side	802.11a	149/5745	91.77%	1.090	0.653	0.02	17.35	19.00	1.462	1.041	23.7
Right side	802.11a	149/5745	91.77%	1.090	0.467	0.11	17.35	19.00	1.462	0.744	23.7
Top side	802.11a	149/5745	91.77%	1.090	0.533	0.15	17.35	19.00	1.462	0.849	23.7
Back side	802.11a	157/5785	91.77%	1.090	0.634	-0.05	17.28	19.00	1.486	1.027	23.7
Back side	802.11a	165/5825	91.77%	1.090	0.641	-0.14	17.33	19.00	1.469	1.026	23.7
Top side	802.11a	157/5785	91.77%	1.090	0.509	-0.07	17.28	19.00	1.486	0.824	23.7
Top side	802.11a	165/5825	91.77%	1.090	0.517	0.09	17.33	19.00	1.469	0.828	23.7
Hotspot Test data of U-NII-1 (Separate 10mm) Receiver OFF with Simultaneous											
Front side	802.11a	48/5240	91.77%	1.090	0.246	0.05	17.97	14.00	0.401	0.108	23.7
Back side	802.11a	48/5240	91.77%	1.090	0.831	0.01	17.97	14.00	0.401	0.363	23.7
Back side-Repeat SAR	802.11a	48/5240	91.77%	1.090	0.824	-0.17	17.97	14.00	0.401	0.360	23.7
Right side	802.11a	48/5240	91.77%	1.090	0.487	0.07	17.97	14.00	0.401	0.213	23.7
Top side	802.11a	48/5240	91.77%	1.090	0.646	0.14	17.97	14.00	0.401	0.282	23.7
Back side	802.11a	44/5220	91.77%	1.090	0.805	0.09	17.85	14.00	0.412	0.362	23.7
Top side	802.11a	44/5220	91.77%	1.090	0.624	0.16	17.85	14.00	0.412	0.280	23.7
Hotspot Test data of U-NII-3 (Separate 10mm) Receiver OFF with Simultaneous											
Front side	802.11a	149/5745	91.77%	1.090	0.320	0.04	17.35	14.00	0.462	0.161	23.7
Back side	802.11a	149/5745	91.77%	1.090	0.653	0.02	17.35	14.00	0.462	0.329	23.7
Right side	802.11a	149/5745	91.77%	1.090	0.467	0.11	17.35	14.00	0.462	0.235	23.7
Top side	802.11a	149/5745	91.77%	1.090	0.533	0.15	17.35	14.00	0.462	0.268	23.7

Back side	802.11a	157/5785	91.77%	1.090	0.634	-0.05	17.28	14.00	0.470	0.325	23.7
Back side	802.11a	165/5825	91.77%	1.090	0.641	-0.14	17.33	14.00	0.465	0.325	23.7
Top side	802.11a	157/5785	91.77%	1.090	0.509	-0.07	17.28	14.00	0.470	0.261	23.7
Top side	802.11a	165/5825	91.77%	1.090	0.517	0.09	17.33	14.00	0.465	0.262	23.7
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
Product specific 10gSAR Test data of U-NII-2A (Separate 0mm) Receiver OFF											
Front side	802.11a	64/5320	91.77%	1.090	0.497	-0.16	17.90	19.00	1.288	0.698	23.7
Back side	802.11a	64/5320	91.77%	1.090	0.943	-0.14	17.90	19.00	1.288	1.324	23.7
Right side	802.11a	64/5320	91.77%	1.090	0.511	-0.10	17.90	19.00	1.288	0.717	23.7
Top side	802.11a	64/5320	91.77%	1.090	0.975	0.05	17.90	19.00	1.288	1.369	23.7
Product specific 10gSAR Test data of U-NII-2C (Separate 0mm) Receiver OFF											
Front side	802.11a	116/5580	91.77%	1.090	0.536	0.19	18.29	19.00	1.178	0.688	23.7
Back side	802.11a	116/5580	91.77%	1.090	0.775	-0.12	18.29	19.00	1.178	0.995	23.7
Right side	802.11a	116/5580	91.77%	1.090	0.484	-0.08	18.29	19.00	1.178	0.621	23.7
Top side	802.11a	116/5580	91.77%	1.090	1.090	0.12	18.29	19.00	1.178	1.400	23.7
Top side-Sample2	802.11a	116/5580	91.77%	1.090	0.993	0.07	18.29	19.00	1.178	1.275	23.7

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Back side	48/5240	0.831	0.824	1.008	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

8.3.15 SAR Result of BT

Bluetooth SAR Test Record											
Ant.3 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(°C)
Head Test Data Receiver ON											
Left cheek	DH5	78/2480	77.20%	1.295	0.123	0.07	14.88	15.50	1.153	0.184	23.4
Left tilted	DH5	78/2480	77.20%	1.295	0.109	0.02	14.88	15.50	1.153	0.163	23.4
Right cheek	DH5	78/2480	77.20%	1.295	0.036	-0.10	14.88	15.50	1.153	0.054	23.4
Right tilted	DH5	78/2480	77.20%	1.295	0.071	0.02	14.88	15.50	1.153	0.106	23.4
Left cheek-Sample2	DH5	78/2480	77.20%	1.295	0.169	0.07	14.88	15.50	1.153	0.252	23.4
Body worn Test data (Separate 15mm) Receiver OFF											
Front side	DH5	78/2480	77.20%	1.295	0.011	-0.01	14.88	15.50	1.153	0.016	23.4
Back side	DH5	78/2480	77.20%	1.295	0.045	0.04	14.88	15.50	1.153	0.067	23.4
Back side-Sample2	DH5	78/2480	77.20%	1.295	0.038	0.02	14.88	15.50	1.153	0.057	23.4
Hotspot Test data (Separate 10mm) Receiver OFF											
Front side	DH5	78/2480	77.20%	1.295	0.034	0.14	14.88	15.50	1.153	0.051	23.4
Back side	DH5	78/2480	77.20%	1.295	0.079	0.03	14.88	15.50	1.153	0.118	23.4
Right side	DH5	78/2480	77.20%	1.295	0.001	-0.02	14.88	15.50	1.153	0.001	23.4
Top side	DH5	78/2480	77.20%	1.295	0.070	0.04	14.88	15.50	1.153	0.105	23.4
Back side-Sample2	DH5	78/2480	77.20%	1.295	0.065	-0.13	14.88	15.50	1.153	0.097	23.4

8.3.16 SAR Result of NFC

NFC SAR Test Record									
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 10-g	Power drift (dB)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(°C)
NFC Test data (Separate 0mm)									
Front side	NFC	13.56MHz	100.00%	1.000	0.000	-0.08	1.000	0.000	22.7
Back side	NFC	13.56MHz	100.00%	1.000	0.007	-0.04	1.000	0.007	22.7
Left side	NFC	13.56MHz	100.00%	1.000	0.000	0.14	1.000	0.000	22.7
Right side	NFC	13.56MHz	100.00%	1.000	0.000	-0.13	1.000	0.000	22.7
Top side	NFC	13.56MHz	100.00%	1.000	0.000	-0.11	1.000	0.000	22.7
Bottom side	NFC	13.56MHz	100.00%	1.000	0.000	-0.14	1.000	0.000	22.7
Back side-Sample2	NFC	13.56MHz	100.00%	1.000	0.006	0.03	1.000	0.006	22.7

8.4 Multiple Transmitter Evaluation

8.4.1 Simultaneous SAR test evaluation

No.	Simultaneous Tx Combination	Head	Body-worn	Hotspot	Product Specific 10-g (0mm)
1	WWAN + WLAN 2.4GHz	Yes	Yes	Yes	Yes
2	WWAN + WLAN 5GHz	Yes	Yes	Yes	Yes
3	WWAN + BT	Yes	Yes	Yes	Yes
4	WWAN + WLAN 5GHz + BT	Yes	Yes	Yes	Yes

8.4.2 Simultaneous Transmission SAR Summation Scenario

Head:

Test position		SARmax (W/kg)				Summed SAR			
		WWAN	WiFi 2.4	WiFi 5G	BT				
		1	2	3	4	1+2	1+3	1+4	1+3+4
GSM850	Left cheek	0.795	0.282	0.607	0.184	1.077	1.402	0.979	1.586
	Left tilted	0.615	0.321	0.575	0.163	0.936	1.190	0.778	1.353
	Right cheek	1.173	0.157	0.342	0.054	1.330	1.515	1.227	1.569
	Right tilted	0.863	0.179	0.432	0.106	1.042	1.295	0.969	1.401
GSM1900	Left cheek	0.043	0.282	0.607	0.184	0.325	0.650	0.227	0.834
	Left tilted	0.031	0.321	0.575	0.163	0.352	0.606	0.194	0.769
	Right cheek	0.056	0.157	0.342	0.054	0.213	0.398	0.110	0.452
	Right tilted	0.026	0.179	0.432	0.106	0.205	0.458	0.132	0.564
WCDMA B2	Left cheek	0.168	0.282	0.607	0.184	0.450	0.775	0.352	0.959
	Left tilted	0.110	0.321	0.575	0.163	0.431	0.685	0.273	0.848
	Right cheek	0.136	0.157	0.342	0.054	0.293	0.478	0.190	0.532
	Right tilted	0.098	0.179	0.432	0.106	0.277	0.530	0.204	0.636
WCDMA B4	Left cheek	0.208	0.282	0.607	0.184	0.490	0.815	0.392	0.999
	Left tilted	0.152	0.321	0.575	0.163	0.473	0.727	0.315	0.890
	Right cheek	0.228	0.157	0.342	0.054	0.385	0.570	0.282	0.624
	Right tilted	0.151	0.179	0.432	0.106	0.330	0.583	0.257	0.689
WCDMA B5	Left cheek	0.487	0.282	0.607	0.184	0.769	1.094	0.671	1.278
	Left tilted	0.441	0.321	0.575	0.163	0.762	1.016	0.604	1.179
	Right cheek	0.670	0.157	0.342	0.054	0.827	1.012	0.724	1.066
	Right tilted	0.588	0.179	0.432	0.106	0.767	1.020	0.694	1.126
LTE Band 2	Left cheek	0.182	0.282	0.607	0.184	0.464	0.789	0.366	0.973
	Left tilted	0.097	0.321	0.575	0.163	0.418	0.672	0.260	0.835
	Right cheek	0.126	0.157	0.342	0.054	0.283	0.468	0.180	0.522
	Right tilted	0.112	0.179	0.432	0.106	0.291	0.544	0.218	0.650
LTE Band 7	Left cheek	0.341	0.282	0.607	0.184	0.623	0.948	0.525	1.132
	Left tilted	0.211	0.321	0.575	0.163	0.532	0.786	0.374	0.949
	Right cheek	0.821	0.157	0.342	0.054	0.978	1.163	0.875	1.217
	Right tilted	0.361	0.179	0.432	0.106	0.540	0.793	0.467	0.899
LTE Band 12(17)	Left cheek	0.633	0.282	0.607	0.184	0.915	1.240	0.817	1.424
	Left tilted	0.450	0.321	0.575	0.163	0.771	1.025	0.613	1.188
	Right cheek	0.796	0.157	0.342	0.054	0.953	1.138	0.850	1.192
	Right tilted	0.539	0.179	0.432	0.106	0.718	0.971	0.645	1.077
LTE Band 13	Left cheek	0.640	0.282	0.607	0.184	0.922	1.247	0.824	1.431
	Left tilted	0.493	0.321	0.575	0.163	0.814	1.068	0.656	1.231
	Right cheek	0.818	0.157	0.342	0.054	0.975	1.160	0.872	1.214
	Right tilted	0.632	0.179	0.432	0.106	0.811	1.064	0.738	1.170
LTE Band 26(5)	Left cheek	0.726	0.282	0.607	0.184	1.008	1.333	0.910	1.517
	Left tilted	0.619	0.321	0.575	0.163	0.940	1.194	0.782	1.357
	Right cheek	1.043	0.157	0.342	0.054	1.200	1.385	1.097	1.439
	Right tilted	0.784	0.179	0.432	0.106	0.963	1.216	0.890	1.322
LTE Band 41(38)	Left cheek	0.414	0.282	0.607	0.184	0.696	1.021	0.598	1.205
	Left tilted	0.262	0.321	0.575	0.163	0.583	0.837	0.425	1.000
	Right cheek	1.010	0.157	0.342	0.054	1.167	1.352	1.064	1.406
	Right tilted	0.477	0.179	0.432	0.106	0.656	0.909	0.583	1.015
LTE Band 66(4)	Left cheek	0.192	0.282	0.607	0.184	0.474	0.799	0.376	0.983

	Left tilted	0.146	0.321	0.575	0.163	0.467	0.721	0.309	0.884
	Right cheek	0.214	0.157	0.342	0.054	0.371	0.556	0.268	0.610
	Right tilted	0.107	0.179	0.432	0.106	0.286	0.539	0.213	0.645

Body-worn:

Test position		SARmax (W/kg)				Summed SAR			
		WWAN	WiFi 2.4G	WiFi 5G	BT				
		1	2	3	4	1+2	1+3	1+4	1+3+4
GSM850	Front side	0.179	0.001	0.414	0.016	0.180	0.593	0.195	0.609
	Back side	0.240	0.090	0.902	0.067	0.330	1.142	0.307	1.209
GSM1900	Front side	0.252	0.001	0.414	0.016	0.253	0.666	0.268	0.682
	Back side	0.411	0.090	0.902	0.067	0.501	1.313	0.478	1.380
WCDMA B2	Front side	0.308	0.001	0.414	0.016	0.309	0.722	0.324	0.738
	Back side	0.440	0.090	0.902	0.067	0.530	1.342	0.507	1.409
WCDMA B4	Front side	0.382	0.001	0.414	0.016	0.383	0.796	0.398	0.812
	Back side	0.614	0.090	0.902	0.067	0.704	1.516	0.681	1.583
WCDMA B5	Front side	0.167	0.001	0.414	0.016	0.168	0.581	0.183	0.597
	Back side	0.220	0.090	0.902	0.067	0.310	1.122	0.287	1.189
LTE Band 2	Front side	0.338	0.001	0.414	0.016	0.339	0.752	0.354	0.768
	Back side	0.488	0.090	0.902	0.067	0.578	1.390	0.555	1.457
LTE Band 7	Front side	0.121	0.001	0.414	0.016	0.122	0.535	0.137	0.551
	Back side	0.393	0.090	0.902	0.067	0.483	1.295	0.460	1.362
LTE Band 12(17)	Front side	0.219	0.001	0.414	0.016	0.220	0.633	0.235	0.649
	Back side	0.290	0.090	0.902	0.067	0.380	1.192	0.357	1.259
LTE Band 13	Front side	0.215	0.001	0.414	0.016	0.216	0.629	0.231	0.645
	Back side	0.299	0.090	0.902	0.067	0.389	1.201	0.366	1.268
LTE Band 26(5)	Front side	0.208	0.001	0.414	0.016	0.209	0.622	0.224	0.638
	Back side	0.277	0.090	0.902	0.067	0.367	1.179	0.344	1.246
LTE Band 41(38)	Front side	0.143	0.001	0.414	0.016	0.144	0.557	0.159	0.573
	Back side	0.432	0.090	0.902	0.067	0.522	1.334	0.499	1.401
LTE Band 66(4)	Front side	0.375	0.001	0.414	0.016	0.376	0.789	0.391	0.805
	Back side	0.563	0.090	0.902	0.067	0.653	1.465	0.630	1.532

Hotspot:

Test position		SARmax (W/kg)				Summed SAR			
		WWAN	WiFi 2.4G	WiFi 5G	BT				
		1	2	3	4	1+2	1+3	1+4	1+3+4
GSM850	Front side	0.243	0.081	0.161	0.051	0.324	0.404	0.294	0.455
	Back side	0.408	0.197	0.363	0.118	0.605	0.771	0.526	0.889
	Left side	0.269	0.000	0.000	0.000	0.269	0.269	0.269	0.269
	Right side	0.117	0.063	0.235	0.001	0.180	0.352	0.118	0.353
	Top side	0.343	0.187	0.282	0.105	0.530	0.625	0.448	0.730
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GSM1900	Front side	0.365	0.081	0.161	0.051	0.446	0.526	0.416	0.577
	Back side	0.751	0.197	0.363	0.118	0.948	1.114	0.869	1.232
	Left side	0.238	0.000	0.000	0.000	0.238	0.238	0.238	0.238
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.000	0.187	0.282	0.105	0.187	0.282	0.105	0.387
	Bottom side	0.727	0.000	0.000	0.000	0.727	0.727	0.727	0.727
WCDMA B2	Front side	0.513	0.081	0.161	0.051	0.594	0.674	0.564	0.725
	Back side	0.789	0.197	0.363	0.118	0.986	1.152	0.907	1.270
	Left side	0.300	0.000	0.000	0.000	0.300	0.300	0.300	0.300
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.000	0.187	0.282	0.105	0.187	0.282	0.105	0.387
	Bottom side	0.858	0.000	0.000	0.000	0.858	0.858	0.858	0.858
WCDMA B4	Front side	0.623	0.081	0.161	0.051	0.704	0.784	0.674	0.835
	Back side	1.042	0.197	0.363	0.118	1.239	1.405	1.160	1.523
	Left side	0.346	0.000	0.000	0.000	0.346	0.346	0.346	0.346
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.000	0.187	0.282	0.105	0.187	0.282	0.105	0.387
	Bottom side	1.117	0.000	0.000	0.000	1.117	1.117	1.117	1.117
WCDMA B5	Front side	0.201	0.081	0.161	0.051	0.282	0.362	0.252	0.413
	Back side	0.297	0.197	0.363	0.118	0.494	0.660	0.415	0.778
	Left side	0.281	0.000	0.000	0.000	0.281	0.281	0.281	0.281
	Right side	0.134	0.063	0.235	0.001	0.197	0.369	0.135	0.370
	Top side	0.276	0.187	0.282	0.105	0.463	0.558	0.381	0.663
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 2	Front side	0.506	0.081	0.161	0.051	0.587	0.667	0.557	0.718
	Back side	0.842	0.197	0.363	0.118	1.039	1.205	0.960	1.323
	Left side	0.246	0.000	0.000	0.000	0.246	0.246	0.246	0.246
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.000	0.187	0.282	0.105	0.187	0.282	0.105	0.387
	Bottom side	0.914	0.000	0.000	0.000	0.914	0.914	0.914	0.914
LTE Band 7	Front side	0.230	0.081	0.161	0.051	0.311	0.391	0.281	0.442
	Back side	0.856	0.197	0.363	0.118	1.053	1.219	0.974	1.337
	Left side	0.334	0.000	0.000	0.000	0.334	0.334	0.334	0.334
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.076	0.187	0.282	0.105	0.263	0.358	0.181	0.463
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 12(17)	Front side	0.183	0.081	0.161	0.051	0.264	0.344	0.234	0.395
	Back side	0.280	0.197	0.363	0.118	0.477	0.643	0.398	0.761
	Left side	0.306	0.000	0.000	0.000	0.306	0.306	0.306	0.306
	Right side	0.173	0.063	0.235	0.001	0.236	0.408	0.174	0.409
	Top side	0.113	0.187	0.282	0.105	0.300	0.395	0.218	0.500

	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 13	Front side	0.243	0.081	0.161	0.051	0.324	0.404	0.294	0.455
	Back side	0.391	0.197	0.363	0.118	0.588	0.754	0.509	0.872
	Left side	0.412	0.000	0.000	0.000	0.412	0.412	0.412	0.412
	Right side	0.227	0.063	0.235	0.001	0.290	0.462	0.228	0.463
	Top side	0.195	0.187	0.282	0.105	0.382	0.477	0.300	0.582
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 26(5)	Front side	0.269	0.081	0.161	0.051	0.350	0.430	0.320	0.481
	Back side	0.393	0.197	0.363	0.118	0.590	0.756	0.511	0.874
	Left side	0.377	0.000	0.000	0.000	0.377	0.377	0.377	0.377
	Right side	0.182	0.063	0.235	0.001	0.245	0.417	0.183	0.418
	Top side	0.353	0.187	0.282	0.105	0.540	0.635	0.458	0.740
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 41(38)	Front side	0.322	0.081	0.161	0.051	0.403	0.483	0.373	0.534
	Back side	1.105	0.197	0.363	0.118	1.302	1.468	1.223	1.586
	Left side	0.439	0.000	0.000	0.000	0.439	0.439	0.439	0.439
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.115	0.187	0.282	0.105	0.302	0.397	0.220	0.502
	Bottom side	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LTE Band 66(4)	Front side	0.576	0.081	0.161	0.051	0.657	0.737	0.627	0.788
	Back side	0.773	0.197	0.363	0.118	0.970	1.136	0.891	1.254
	Left side	0.336	0.000	0.000	0.000	0.336	0.336	0.336	0.336
	Right side	0.000	0.063	0.235	0.001	0.063	0.235	0.001	0.236
	Top side	0.000	0.187	0.282	0.105	0.187	0.282	0.105	0.387
	Bottom side	1.068	0.000	0.000	0.000	1.068	1.068	1.068	1.068

9 Equipment list

Test Platform		SPEAG DASY Professional				
Software Reference		DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)				
		cDASY8 V16.4.0.5005				
Hardware Reference						
Equipment		Manufacturer	Model	Serial Number	Calibration Date	Due date of calibration
☒	Twin Phantom	SPEAG	SAM8	1824	NCR	NCR
☒	Twin Phantom	SPEAG	ELI V8.0	2217	NCR	NCR
☒	DAE	SPEAG	DAE4	1245	2025-09-08	2026-09-07
☒	DAE	SPEAG	DAE4ip	1826	2025-02-17	2026-02-16
☒	E-Field Probe	SPEAG	EX3DV4	7767	2024-12-31	2025-12-30
☒	E-Field Probe	SPEAG	EX3DV4	7735	2025-01-29	2026-01-28
☒	Validation Kits	SPEAG	CLA13	1032	2023-02-09	2026-02-08
☒	Validation Kits	SPEAG	D750V3	1214	2025-04-01	2028-03-31
☒	Validation Kits	SPEAG	D835V2	4d161	2023-08-25	2026-08-24
☒	Validation Kits	SPEAG	D1750V2	1105	2023-11-03	2026-11-02
☒	Validation Kits	SPEAG	D1950V3	1218	2023-05-04	2026-05-03
☒	Validation Kits	SPEAG	D2450V2	922	2023-08-28	2026-08-27
☒	Validation Kits	SPEAG	D2600V2	1158	2025-03-31	2028-03-30
☒	Validation Kits	SPEAG	D3700V2	1108	2025-04-02	2028-03-31
☒	Validation Kits	SPEAG	D5GHzV2	1174	2023-08-23	2026-08-22
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	1120	2025-08-25	2026-08-24
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	50920	2025-08-25	2026-08-24
☒	Dielectric parameter probes	SPEAG	DAKS-12	1043	2025-09-22	2026-09-21
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R60	21423005	2025-09-22	2026-09-21
☒	Universal Radio Communication Tester	R&S	CMW500	111637	2025-09-03	2026-09-02
☒	RF Bi-Directional Coupler	Agilent	86205-60001	MY31400031	NCR	NCR
☒	Signal Generator	R&S	SMB100A	182393	2025-02-05	2026-02-04
☒	Preamplifier	Qiji	YX28980933	202104001	NCR	NCR
☒	USB Average Power Sensor	Keysight	U2002H	MY5639004	2025-09-10	2026-09-09
☒	USB Average Power Sensor	Agilent	U2002H	MY48200110	2025-11-20	2026-11-19
☒	USB Power Sensor	KEYSIGHT	U8481A	MZ52460001	2025-06-16	2026-06-14
☒	USB Power Sensor	KEYSIGHT	U8481A	MZ52460007	2025-06-16	2026-06-14
☒	Attenuator	SHX	TS2-3dB	30704	NCR	NCR
☒	Coaxial low pass filter	Mini-Circuits	VLF-2500(+)	NA	NCR	NCR
☒	Coaxial low pass filter	Microlab Fxr	LA-F13	NA	NCR	NCR
☒	DC POWER SUPPLY	SAKO	SK1730SL5A	NA	NCR	NCR
☒	Speed reading thermometer	LKM	DTM3000	NA	2025-09-16	2026-09-15



☒	Humidity and Temperature Indicator	MingGao	MingGao	NA	2025-09-16	2026-09-15
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Note: All the equipment are within the valid period when the tests are performed.



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10 Calibration certificate

Please see the Appendix C

11 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power

--- End of report ---