

FCC SAR Compliance Test Report

For

Shanghai Kieslect Technology Company Limited

Building 4,1588 Xinyang Road, China(Shanghai) Pilot Free Trade Zone, Shanghai, China

Model: Qualy Plus

Test Engineer: Liu Yuhao

Report Number: WSCT-ANAB-R&E260700062A-SAR

Report Date: 30 July 2026

FCC ID: 2BC3S-QUALYPLUS

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Modified History

REV.	Modification Description	Issued Date	Remark
REV.1.0	Initial Test Report Release	30 July 2026	Li Huaibi

1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. Shenzhen Timeway Testing Laboratories does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report is not to be reproduced or published in full without the prior written permission.

1.2 Application details

Date of receipt of test item: 2026-07-23
Start of test: 2026-07-24
End of test: 2026-07-29

1.3 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for OKW-800 is as below:

Band	MAX Reported SAR(W/kg)	
	10g Extremity SAR(Separation 0mm)	1g Head SAR (Separation 10mm)
LTE Band 2	0.524	1.167
LTE Band 4	0.383	0.817
LTE Band 5	0.198	0.056
LTE Band 7	1.110	0.364
LTE Band 38	0.392	0.228
LTE Band 41	0.445	0.247
LTE Band 66	0.354	0.695
Max Head SAR Level(s) Measured: (Limit: 1.6W/Kg):	1.167 W/kg 1g Head SAR	
Max 10g Extremity SAR Level(s) Measured: (Limit: 4W/Kg):	1.110 W/kg 10g Extremity SAR	

NOTE:

- The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits of 1.6 W/Kg as averaged over any 1g tissue(10g Extremity SAR limits of 4 W/Kg) according to the FCC rule the ANSI/IEEE C95.1:2005, the INCRP Report Number 86 for uncontrolled environment, according to the Industry Canada Radio Standards Specification RSS-102 for General Population /Uncontrolled exposure, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.
- EUT does not support multiple transmitters operating simultaneously, so there is no need to consider the increase in TER due to synchronous transmission.

1.4 EUT Information

Device Information:	
Product Type:	Smart Watch
Model:	Qualy Plus
Trade Name:	Kleslect
FCC ID:	2BC3S-QUALYPLUS
Software version:	V1.0
Hardware version:	V1.0
IMEL Number:	861560080034144
SN Number:	K3011086J01714
Device Type:	Portable device
Exposure Category:	uncontrolled environment / general population
Production Unit or Identical Prototype:	Production Unit
Antenna Type :	Internal antenna
Device Operating Configurations:	
Supporting Mode(s) :	LTE Band 2/ LTE Band 4 LTE Band 5/LTE Band 7 LTE Band 38/LTE Band 41 LTE Band 66
Modulation:	LTE: QPSK/16QAM
Operating Frequency Range(s) :	LTE Band2: 1850-1910MHz (TX), 1930-1990MHz (RX); LTE Band4: 1710-1755MHz (TX), 2110-2155MHz (RX); LTE Band5: 824-849MHz (TX), 869-894MHz (RX); LTE Band7: 2500-2570MHz (TX), 2620-2690MHz (RX); LTE Band38: 2570-2620MHz(TX), 2570-2620MHz(RX); LTE Band41: 2496-2690 MHz(TX), 2496-2690 MHz(RX); LTE Band66:1710-1780 MHz(TX), 2110-2200 MHz(RX);

Antenna gain:	LTE B2: -3.84dbi LTE B4: -3.60dbi LTE B5: -5.54dbi LTE B7: -3.10dbi LTE B38: -3.10dbi LTE B41: -3.10dbi LTE B66: -3.60dbi
Radiated Power (EIRP/ERP) Limit	LTE B5: 7.00W(38.45dBm) LTE B2: 2.00W(33.01dBm) LTE B4/ LTE B66: 1.00W(30.00dBm) LTE B7/LTE B38/LTE B41: 2.00W(33.01dBm)
Power Source:	DC 5V Power by adapter or 3.85V---800mAh(By Li-ion rechargeable battery)

- Note:
1. The EUT is a smartwatch featuring a single SIM card slot, which supports LTE and shares the same transceiver; therefore, this report focuses on testing the SIM.
 2. The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.
 3. N/A stands for no applicable.

2 Testing laboratory

Test Site	World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.
Laboratory	Building A-B, Baoli'an Industrial Park, No.58 and 60, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China
Tel:	+86-755-26996192
Fax:	+86-755-86376605

3 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:2017

USA	ANAB (Certificate Number: AT-3951)
China	CNAS (Registration Number: L3732)
Canada	ISED (CAB identifier: CN0178)

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.wsct-cert.com>

4 Test Environment

	Required	Actual
Ambient temperature:	18 – 25 °C	22 ± 2 °C
Tissue Simulating liquid:	22 ± 2 °C	22 ± 2 °C
Relative humidity content:	30 – 70 %	30 – 70 %

5 Applicant and Manufacturer

Applicant/Client Name:	Kieslect Technology Company Limited
Applicant Address:	Building 4, 1588 Xinyang Road, China (Shanghai) Pilot Free Trade Zone, Shanghai, China
Manufacturer Name:	Kieslect Technology Company Limited
Manufacturer Address:	Building 4, 1588 Xinyang Road, China (Shanghai) Pilot Free Trade Zone, Shanghai, China

6 Test standards:

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	IEC/IEEE 62209-1528:2020	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate in the Human Head from Wireless Communications Devices: Measurement Techniques
3	KDB447498 D04	Interim General RF Exposure Guidance v01
4	KDB865664 D01	SAR measurement 100MHz to 6GHz v01r04
5	KDB865664 D02	RF Exposure Reporting v01r02
6	KDB941225 D05	SAR for LTE Devices v02r05
7	KDB941225 D06	Hotspot Mode v02r01
8	KDB648474 D04	Handset SAR v01r03
9	KDB690783 D01	SAR Listings on Grant v01r03

6.1 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Head)	1.60W/Kg	8.00 W/Kg
Whole Body SAR	0.08W/Kg	0.4W/Kg
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 W/Kg	20.00 W/Kg

The limit applied in this test report is shown in bold letters

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.

6.2 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dW) absorbed by(dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ).

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

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

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

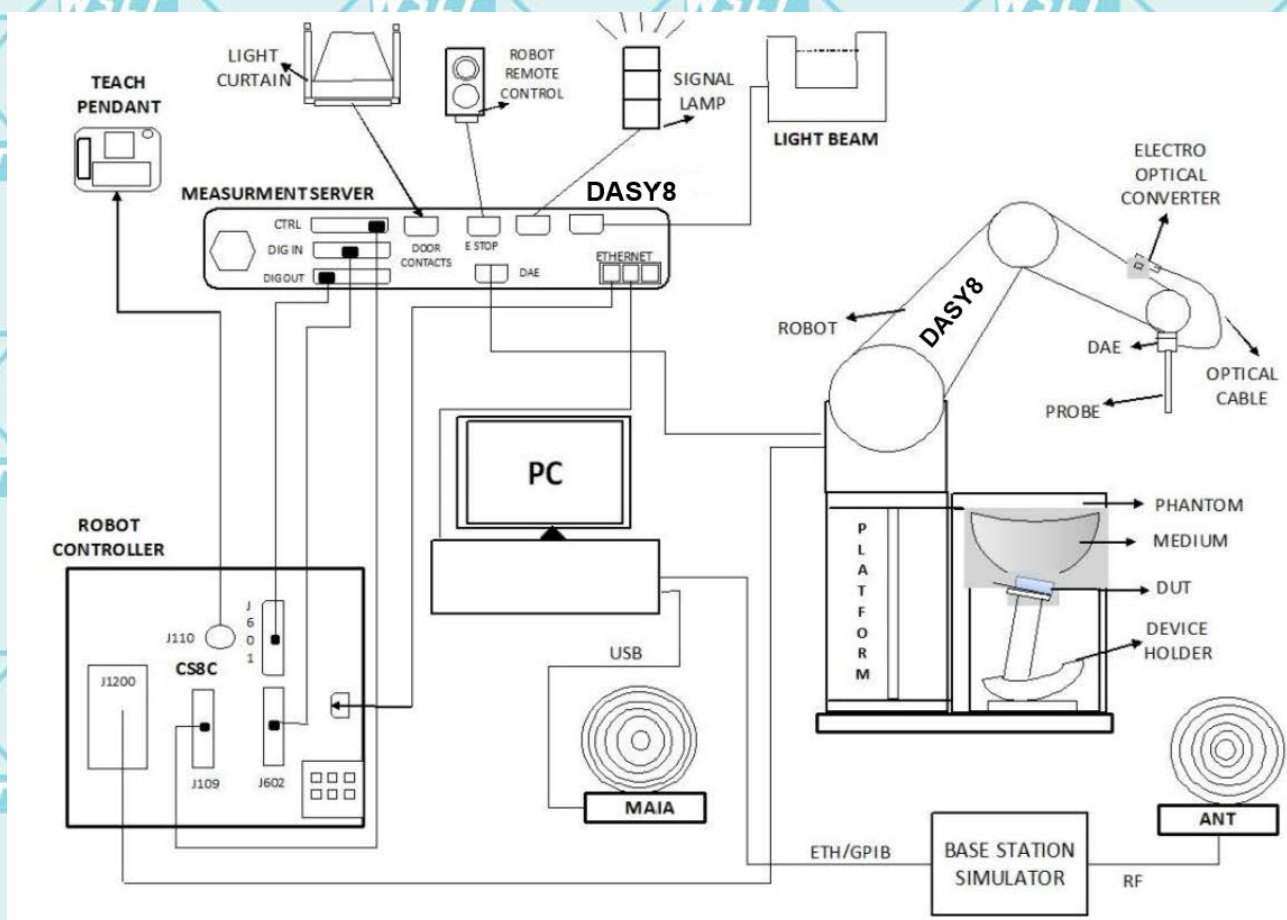
where:

- σ = conductivity of the tissue (S/m)
- ρ = mass density of the tissue (kg/m³)
- E = rms electric field strength (V/m)

7 SAR Measurement System

7.1 The Measurement System

DASY8 is a flexible, high-precision near-field scanner optimized for automated measurements in free-space and tissue simulating liquids (TSL), using the most advanced probes covering the frequency range from 3 kHz to 110 GHz. The software enables point, area, and volume measurements and conformal scanning of complex geometries.



The DASY8 SAR module consists of an isotropic dosimetric probe (SAR) mounted on the TX2 precision robot, which allows field scanning inside anthropomorphic phantoms filled with tissue-simulating liquids. The probes are miniaturized, sensitive, isotropic, linear, stable and calibrated with precise boundary compensation. The spatial accuracy of probe positioning within the phantom is better than 0.2 mm. Scanning is optimized and adaptive to the induced field. The spatial SAR peak is determined without reconstruction.

7.2 Robot

The DASY8 system uses the high-precision industrial robots TX2-60L and TX2-90XL from Stäubli SA (France). The TX2 family of robots provides the ideal combination of speed, rigidity, size, and precision:

- High precision (repeatability 0.03 mm)
- High reliability and low maintenance costs (industrial design)
- ELF interference (motor control fields are shielded by the closed metallic construction)
- Hygienic encapsulated 6-axis arm enabled by a hollow shaft gearbox, no external cables.



7.3 Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

For the measurements the Specific Dosimetric E-Field Probe EX3DV4 with following specifications is used



Frequency: 4MHz – 10GHz ;

Linearity: ± 0.2 dB (30MHz – 10GHz)

Dynamic Range: $10\mu\text{W/g}$ – 100 mW/g

Linearity: ± 0.2 dB (noise: typically $< 1\mu\text{W/g}$)

Directivity (typical): ± 0.1 dB in TSL (rotation around probe axis)
 ± 0.3 dB in TSL (rotation normal to probe axis)

Sensor Arrangement	Triangular
Connector Angle	46.9°
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm

7.4 DAE

DAE4ip– Data Acquisition Electronics 4 with Integrated Power

Data Acquisition Electronics 4 with an integrated power supply for time unlimited measurements.

Performance:

- Measurement range: -100—+300 mV (16-bit resolution and two range settings: 4 mV, 400 mV)
 - Input offset voltage: <5 μ V (with auto zero)
 - Input resistance: 200 M Ω
 - Input bias current: <50 fA
 - Power supply: integrated (from the DASY8 measurement server)
 - Dimensions (L $\times$ W $\times$ H): 60 $\times$ 60 $\times$ 68 mm
 - Calibration: ISO/IEC 17025 calibration service available.
- 



7.5 Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEC/IEEE 62209-1528. 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 the liquid from evaporating. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.



Material	Vinyl ester, fiberglass reinforced (VE-GF)
Liquid Compatibility	The phantom shell is compatible with SPEAG's tissue-simulating liquids (sugar and oil-based). However, using other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	$2 \pm 0.2\text{mm}$ ($6 \pm 0.2\text{mm}$ at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx. 25 liters
Support	DASY6/8: standard-size platform slot
Accessories	DASY52 stand-alone: SPEAG standard phantom table Mounting Device and Adaptors

7.6 Device Holder

The DASY instrument holder is designed to accommodate the various positions specified in the standard. It has two scales for instrument rotation (with respect to the body axis) and instrument tilt (with respect to the line between the ear reference points). The center of rotation for both scales is the Ear Reference Point (ERP). This eliminates the need to reposition the instrument when changing angles.

The DASY instrument holder is made of low-loss POM material with the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\delta=0.02$. The amount of dielectric material in the immediate vicinity of the device was reduced because measurements indicated that the influence of the clamp on the test results could be reduced.



Device holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.

7.7 SAR Scan General Requirement

According to kdb865664 D01 v01r04:

Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013. The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports, unless further guidance has been provided by the FCC.

		≤ 3 GHz	>3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5 mm ± 1 mm	$\frac{1}{2}\delta\ln(2)$ mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx Area, Δy Area		≤ 2 GHz: ≤ 15 mm 2-3 GHz: ≤ 12 mm	3- 4 GHz: ≤ 12 mm 4- 6 GHz: ≤ 10 mm
Maximum zoom scan spatial resolution: ΔxZoom, ΔyZoom		≤ 2 GHz: ≤ 8 mm 2-3 GHz: ≤ 5 mm*	3- 4 GHz: ≤ 5 mm* 4- 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: Δz Zoom (n)	≤ 5 mm	3- 4 GHz: ≤ 4 mm 4- 5 GHz: ≤ 3 mm 5- 6 GHz: ≤ 2 mm
	graded grid ΔzZoom (1): between 1 st two points closest to phantom surface	≤ 4 mm	3-4 GHz: ≤ 3 mm 4-5 GHz: ≤ 2.5 mm 5-6 GHz: ≤ 2 mm
	ΔzZoom (n>1): between subsequent points	≤ 1.5 · ΔzZoom (n-1) mm	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 -4 GHz: ≥ 28 mm 4- 5 GHz: ≥ 25 mm 5- 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

7.8 Measurement procedure

Power Drift :

All SAR tests were performed with a fully charged battery under the DUT and transmitting at maximum output power. The DASY measurement software uses the power reference measurement and power drift measurement procedures to monitor the power drift of the DUT during SAR testing. Both methods measure the field value at a specified reference position before and after the SAR test. The software calculates the field difference in dB. If the power drift exceeds 5%, the SAR is retested.

Area scan:

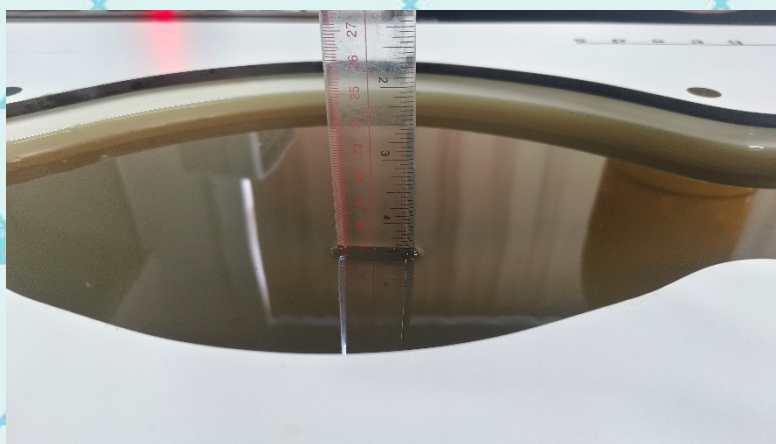
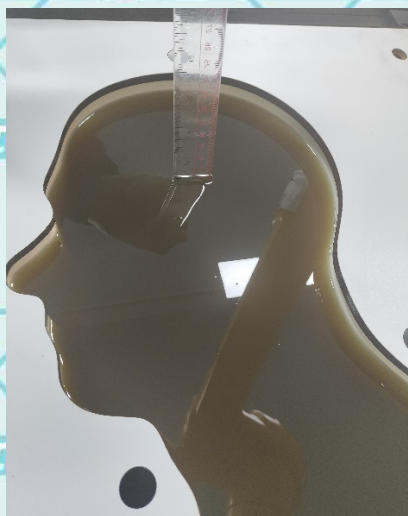
All antennas and radiating structures that may contribute to the measured SAR or influence the SAR distribution must be included in the area scan. The areas of the transmitter(s), antenna(s) and host device, when projected onto the phantom, must be within the area scan measurement region. The area scan measurement resolution must enable the extrapolation algorithms of the SAR system to correctly identify the peak SAR location(s) for subsequent zoom scan measurements to correctly determine the 1-g SAR. Area scans are performed at a constant distance from the phantom surface, determined by the measurement frequencies.

Zoom Scan:

Except when area scan based 1-g SAR estimation applies, a zoom scan measurement is required at the highest peak SAR location determined in the area scan to determine the 1-g SAR. When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR. The zoom scan volume must be larger than the required minimum dimensions described 7.7. There must be at least one measurement point within the first 5 mm from the phantom surface for measurements ≤ 3 GHz, two measurement points for measurements ≤ 5 GHz and three measurement points for measurements above 5 GHz. When graded grids are used, which only applies in the direction normal to the phantom surface, the initial grid separation closest to the phantom surface and subsequent graded grid increment ratios must satisfy the required protocols in 7.7. The 1-g SAR averaging volume must be fully contained within the zoom scan measurement volume boundaries; otherwise, the measurement must be repeated by shifting or expanding the zoom scan volume. The similar requirements also apply to 10-g SAR measurements.

7.9 Tissue simulating liquids: dielectric properties

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 10\%$ of the target values.



Simulating Head Liquid for 5G(HBBL600-10000MHz V6), Manufactured by SPEAG:

Ingredients	(% by weight)
Water	50-65%
Mineral oil	10-30%
Emulsifiers	8-25%
Sodium salt	0-1.5%

7.10 Tissue simulating liquids: parameters

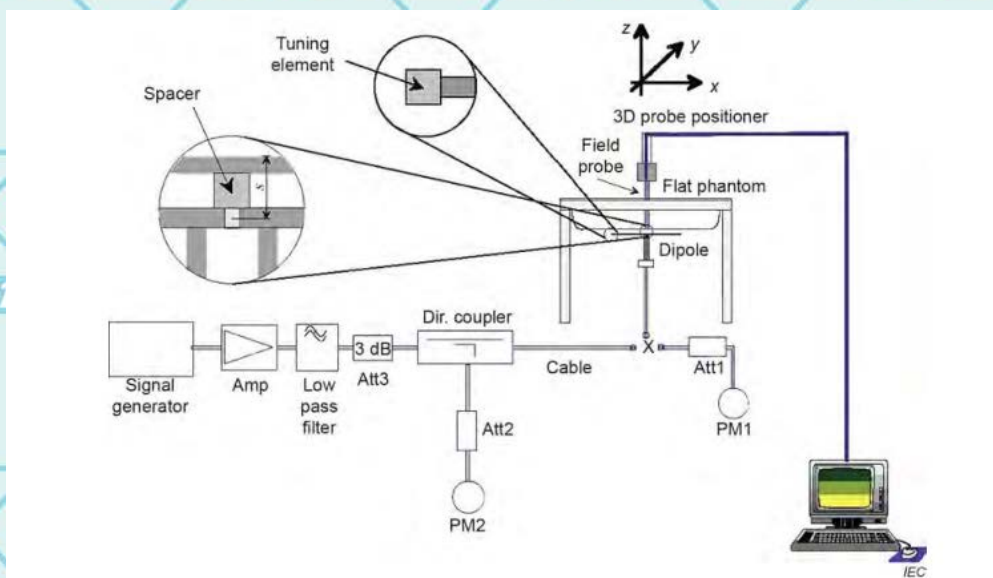
Used Target Frequency	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
	ϵ_r (+/-10%)	σ (S/m) (+/-10%)	ϵ_r	σ (S/m)		
835MHz Head	41.50 (37.35~45.65)	0.91 (0.82~1.00)	43.60	0.914	21.6°C	2026-07-24
1750MHz Head	40.10 (36.09~44.11)	1.37 (1.24~1.50)	41.90	1.34	21.6°C	2026-07-26
1900MHz Head	40.00 (36.00~44.00)	1.40 (1.26~1.54)	41.70	1.44	21.6°C	2026-07-27
2450MHz Head	39.20 (35.28~43.12)	1.80 (1.62~1.98)	41.00	1.82	21.6°C	2026-07-29
2550MHz Head	39.10 (35.19~43.01)	1.91 (1.72~2.1)	40.80	1.90	21.6°C	2026-07-29
2600MHz Head	39.00 (35.10~42.90)	1.96 (1.77~2.15)	40.70	1.94	21.6°C	2026-07-29
ϵ_r = Relative permittivity, σ = Conductivity						

8 System Check

8.1 System check procedure

The System check is performed by using a System check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100 mW. To adjust this power a power meter is used. The power sensor is connected to the cable before the System check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the validation to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



8.2 System check results

The system Check is performed for verifying the accuracy of the complete measurement system and performance of the software. The following table shows System check results for all frequency bands and tissue liquids used during the tests (plot(s) see annex A).

System Check	Target SAR (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/kg)	10-g (W/kg)	1-g (W/kg)	10-g (W/kg)		
D835V2 Body	9.68 (8.72~10.64)	6.44 (5.80~7.08)	9.89	6.49	21.6°C	2026-07-24
D1750V2 Body	36.40 (32.76~40.04)	19.60 (17.64~21.56)	35.60	19.50	21.6°C	2026-07-26
D1900V2 Body	39.70 (35.73~43.67)	21.00 (18.90~23.10)	40.00	21.20	21.6°C	2026-07-27
D2450V2 Body	52.70 (47.16~57.64)	24.00 (21.60~26.40)	53.60	25.20	21.6°C	2026-07-29
D2550V2 Body	54.10 (48.69~59.51)	24.70 (22.23~27.17)	54.70	25.50	21.6°C	2026-07-29
D2600V2 Body	55.90 (49.77~60.83)	24.60 (22.14~27.06)	55.90	25.60	21.6°C	2026-07-29

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

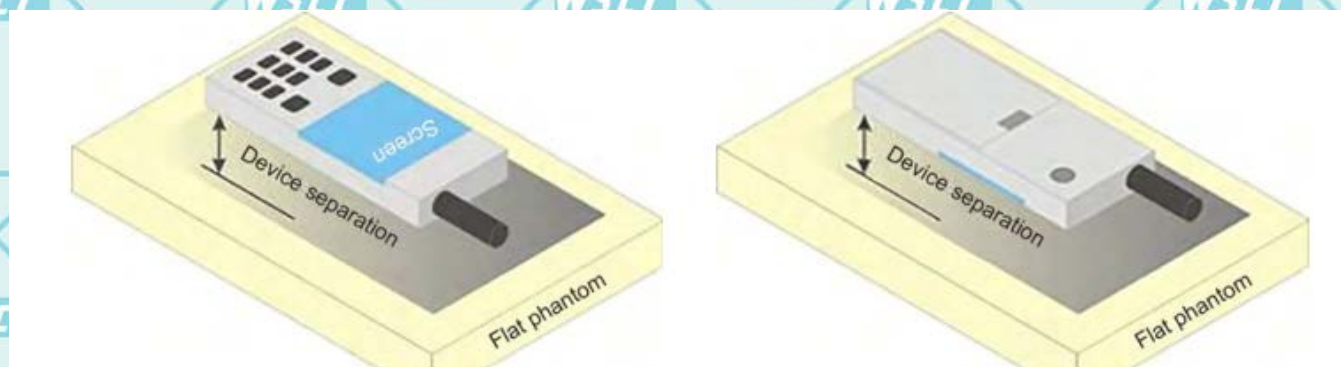
2. The actual forward power output to the dipole antenna is 20dbm(100mw), so the measured value differs ten times from the table

9 Test Position Configurations

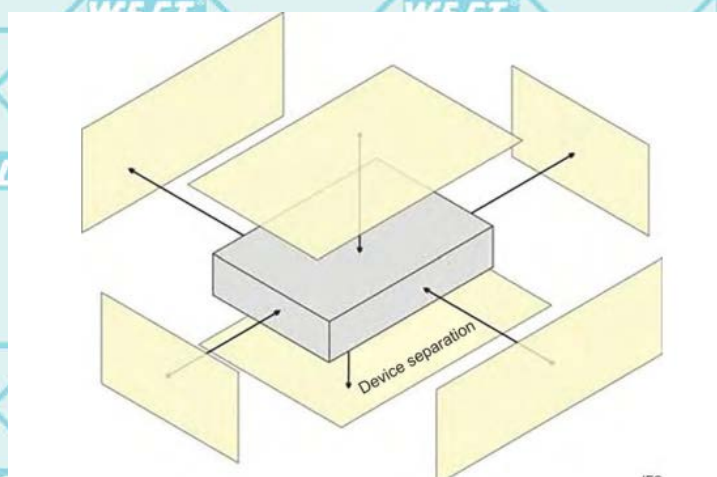
9.1 Body Exposure Condition

According to 447498 D04: Devices that support transmission while used with body-worn accessories must be tested for SAR compliance related to each body-worn condition of use. SAR evaluation is required for body-worn accessories supplied with the device they are attached to.

The general informing principle is that the selected test configurations must conservatively capture the various body-worn accessory use conditions expected by users. For instance, devices that are designed to operate on the body of users using lanyards and straps, or without requiring additional body-worn accessories, must be tested for SAR compliance using a conservative minimum test separation distance for all use conditions required by the device.



Test positions for body-worn devices



Possible test positions for a generic device

Testing of all six faces of the DUT (see Figure) might not be required; justification shall be provided when omitting testing of some faces.

10 SAR Test Configuration

10.1 LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices. The CMW500 WideBand Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames(Maximum TTI)

1) Spectrum Plots for RB configurations

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

2) MPR

When MPR is implemented permanently within the UE, regardless of network requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR.

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

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

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

3) A-MPR

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of “NS_01” on the base station simulator.

4) LTE procedures for SAR testing

A) Largest channel bandwidth standalone SAR test requirements

i) 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.

ii) QPSK with 50% RB allocation

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

iii) 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 i) and ii) 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.

iv) 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.

B) 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.

5) TDD LTE test configuration

According to KDB 941225 D05 SAR for LTE Devices v02r04, 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.

11 Detailed Test Results

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

11.1 Conducted Power of LTE Band 2

LTE-FDD Band 2				Maximum Tune-up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18607 1850.7MHz	18900 1880.0MHz	19193 1909.3MHz
1.4MHz	QPSK	1	0	23.00	21.66	22.94	21.73
			2	23.00	21.53	22.88	21.56
			5	23.00	21.62	22.84	21.56
		3	0	23.00	21.58	22.85	21.48
			1	23.00	21.55	22.89	21.54
			3	23.00	21.57	22.79	21.54
	16QAM	6	0	22.00	20.50	21.82	20.28
			0	22.00	20.42	21.69	20.19
			2	22.00	20.45	21.75	20.42
		1	5	22.00	20.29	21.69	20.18
			0	22.00	20.28	21.59	20.12
			1	22.00	20.43	21.75	20.19
3MHz	QPSK	3	3	22.00	20.24	21.56	20.07
			0	21.00	19.54	20.81	19.11
		6	0	21.00	19.54	20.81	19.11
	16QAM	1	0	22.00	20.42	21.69	20.19
			2	22.00	20.45	21.75	20.42
			5	22.00	20.29	21.69	20.18
5MHz	QPSK	1	0	23.00	21.96	22.97	21.75
			8	23.00	21.98	22.96	21.61
			14	23.00	21.93	22.98	21.58
		8	0	22.00	20.77	21.91	20.46
			4	22.00	20.85	21.84	20.44
			7	22.00	20.85	21.66	20.42
	16QAM	15	0	22.00	20.83	21.70	20.40
			0	22.00	20.81	21.71	20.42
			8	22.50	20.81	22.01	20.48
		8	14	22.00	20.80	21.65	20.06
			0	21.00	19.83	20.89	19.38
			4	21.00	19.84	20.67	19.27
7MHz	QPSK	8	8	21.00	19.84	20.85	19.26
			0	21.00	19.84	20.60	19.27
			15	21.00	19.84	20.60	19.27
	16QAM	1	0	21.00	19.84	20.60	19.27
			8	21.00	19.84	20.60	19.27
			15	21.00	19.84	20.60	19.27
10MHz	QPSK	1	0	23.50	21.67	23.08	22.53
			12	23.00	21.43	22.85	21.65
			24	23.00	21.70	22.88	21.69
		12	0	22.00	20.31	21.69	20.64
			6	22.00	20.43	21.79	20.58
			13	22.00	20.39	21.72	20.27
15MHz	QPSK	25	0	22.00	20.37	21.72	20.53
			0	22.00	20.46	21.90	20.98
			12	22.00	20.24	21.83	20.42
	16QAM	1	24	22.00	20.47	21.85	20.18
			0	21.00	19.34	20.79	19.68
			6	21.00	19.43	20.85	19.51
20MHz	QPSK	12	13	21.00	19.40	20.77	19.23
			0	21.00	19.36	20.68	19.52
			25	21.00	19.36	20.68	19.52
	16QAM	1	0	21.00	19.36	20.68	19.52
			12	21.00	19.36	20.68	19.52
			25	21.00	19.36	20.68	19.52

LTE-FDD Band 2				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		18650 1855.0MHz	18900 1880.0MHz	19150 1905.0MHz
10MHz	QPSK	1	0	23.50	21.86	23.22	23.32
			24	23.00	21.61	22.94	22.37
			49	23.50	22.39	23.12	22.13
		25	0	22.00	20.34	21.66	21.47
			12	22.00	20.54	21.81	21.29
			25	22.00	20.64	21.68	20.71
	16QAM	50	0	22.00	20.52	21.71	21.25
			0	22.00	20.56	21.84	21.71
			24	22.00	20.51	21.97	21.10
		1	49	22.00	21.17	21.74	20.33
			0	21.00	19.28	20.71	20.45
			12	21.00	19.48	20.82	20.18
15MHz	QPSK	25	25	21.00	19.49	20.69	19.57
			0	23.50	18675	18900	19125
			38	23.50	1857.5MHz	1880.0MHz	1902.5MHz
			74	23.50	21.71	23.02	23.32
		38	0	23.50	21.88	23.01	23.02
			18	23.50	22.68	23.16	22.08
			39	22.00	20.96	21.78	21.54
			0	22.00	20.88	21.95	21.84
		75	0	22.00	20.89	21.84	21.60
			0	22.00	21.08	21.95	21.71
			0	22.50	20.52	21.97	22.17
			38	22.00	21.00	21.96	21.90
	16QAM	1	74	22.50	21.53	22.08	20.94
			0	22.00	20.98	21.82	21.57
			37	22.00	21.03	21.82	21.60
		38	0	22.00	18700	18900	19100
			0	24.00	1860.0MHz	1880.0MHz	1900.0MHz
			50	23.50	21.73	23.27	23.50
			99	23.50	22.36	23.20	23.30
		50	0	23.50	23.10	23.28	22.26
			0	22.50	20.66	22.04	22.14
			50	22.00	21.44	22.00	21.60
			0	22.00	21.15	21.84	21.70
20MHz	QPSK	100	0	22.50	20.49	22.03	22.33
			50	22.50	21.18	22.18	22.39
			99	22.00	21.90	22.00	21.04
		1	0	22.00	21.90	22.00	21.04
			50	22.50	21.18	22.18	22.39
			99	22.00	21.90	22.00	21.04
	16QAM	1	0	22.00	21.90	22.00	21.04
			50	22.50	21.18	22.18	22.39
			99	22.00	21.90	22.00	21.04

11.2 Conducted Power of LTE Band 4

LTE-FDD Band 4					Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	19957	20175	20393
					1710.7MHz	1732.5MHz	1754.3MHz
1.4MHz	QPSK	1	0	23.00	22.70	22.50	22.30
			2	23.00	22.79	22.32	22.22
			5	23.00	22.81	22.34	22.22
		3	0	23.00	22.81	22.39	22.18
			2	23.00	22.88	22.35	22.19
			3	23.00	22.83	22.33	22.20
	16QAM	6	0	22.00	21.67	21.30	21.03
			0	22.00	21.61	21.09	20.82
			2	22.00	21.67	21.34	20.90
		3	5	22.00	21.55	21.05	20.82
			0	21.50	21.44	21.04	20.81
			2	22.00	21.61	21.16	20.91
3MHz	QPSK	1	3	21.50	21.45	21.05	20.76
			0	21.00	20.65	20.12	20.00
			0	23.00	22.89	22.31	22.30
		8	7	23.00	23.00	22.20	22.22
			14	23.00	22.94	22.14	22.13
			0	22.00	21.82	21.30	21.18
		15	4	22.00	21.88	21.30	21.13
			7	22.00	21.90	21.26	21.13
			0	22.00	21.88	21.30	21.13
	16QAM	1	0	22.00	21.70	21.04	20.82
			7	22.00	21.77	21.21	21.09
			14	22.00	21.78	20.82	20.80
		8	0	21.00	20.76	20.34	20.07
			4	21.00	20.81	20.19	20.01
			7	21.00	20.85	20.21	20.12
		15	0	21.00	20.82	20.20	20.01
			0	23.50	23.32	22.69	22.72
	QPSK	1	13	23.50	23.17	22.41	22.36
			24	23.50	23.50	22.39	22.47
			0	22.00	21.91	21.50	21.25
		12	6	22.50	22.01	21.55	21.33
			13	22.50	22.04	21.33	21.25
			0	22.00	21.96	21.43	21.29
		25	0	22.00	21.97	21.63	21.27
			13	22.00	21.85	21.44	21.22
			24	22.50	22.11	21.34	21.23
5MHz	16QAM	1	0	21.00	20.77	20.54	20.16
			6	21.00	20.91	20.57	20.23
			13	21.00	20.88	20.36	20.20
		12	0	21.00	20.84	20.36	20.16
			0	21.00	20.84	20.36	20.16
			0	21.00	20.84	20.36	20.16
		25	0	21.00	20.84	20.36	20.16
			0	21.00	20.84	20.36	20.16
			0	21.00	20.84	20.36	20.16

LTE-FDD Band 4				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20000 1715.0MHz	20175 1732.5MHz	20350 1750.0MHz
10MHz	QPSK	1	0	23.50	23.29	23.15	22.41
			25	23.50	23.13	22.67	22.31
			49	23.50	23.42	22.50	22.49
		25	0	22.00	21.70	21.52	20.86
			13	22.00	21.86	21.56	21.12
			25	22.00	21.82	21.27	21.02
	16QAM	50	0	22.00	21.79	21.48	21.11
			0	22.00	21.90	21.73	20.70
			25	22.00	21.84	21.57	21.05
		1	49	22.50	22.12	21.08	21.04
			0	21.00	20.58	20.51	19.77
			13	21.00	20.79	20.51	20.05
15MHz	QPSK	25	25	21.00	20.70	20.21	19.96
			0	20.25	20025	20175	20325
			1717.5MHz	1732.5MHz	1747.5MHz		
		1	0	23.50	22.88	23.14	22.25
			38	23.00	22.97	22.59	22.12
			74	23.00	22.98	22.15	22.35
	16QAM	36	0	22.00	21.75	21.37	20.89
			18	22.00	21.86	21.49	20.92
			39	22.00	21.78	21.44	20.93
		75	0	22.00	21.89	21.58	21.35
			0	22.50	21.78	22.14	20.89
			38	22.00	21.91	21.52	21.02
20MHz	QPSK	1	74	22.00	22.00	21.19	21.05
			0	22.00	21.82	21.40	21.02
			39	22.00	21.79	21.46	20.97
	16QAM	36	0	20050	20175	20300	
			1720.0MHz	1732.5MHz	1745.0MHz		
			0	24.00	23.31	23.65	22.58
	QPSK	1	50	23.50	23.34	22.79	22.30
			99	23.50	23.11	22.43	22.60
			0	22.00	21.73	21.81	20.89
	50	50	50	22.00	21.81	21.04	20.85
			0	22.00	21.68	21.34	20.73
			0	22.50	21.96	22.49	21.25
16QAM	1	1	50	22.50	22.22	21.74	20.99
			99	22.00	21.90	21.33	21.24

11.3 Conducted Power of LTE Band 5

LTE-FDD Band 5				Maximum Tune- up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		20407	20525	20643	
					824.7MHz	836.5MHz	848.3MHz	
1.4MHz	QPSK	1	0	24.00	23.70	23.68	23.67	
			2	24.00	23.57	23.49	23.56	
			5	24.00	23.68	23.48	23.50	
		3	0	24.00	23.47	23.41	23.54	
			2	24.00	23.45	23.41	23.53	
			3	23.50	23.46	23.41	23.46	
	16QAM	6	0	22.50	22.50	22.37	22.41	
			1	0	22.50	22.41	22.24	22.40
				2	23.00	22.63	22.34	22.43
		3	5	22.50	22.42	22.22	22.27	
			0	0	22.50	22.29	22.15	22.22
				2	22.50	22.41	22.24	22.33
3MHz	QPSK	8	0	23.00	22.48	22.42	22.56	
			4	23.00	22.58	22.44	22.56	
			7	23.00	22.59	22.55	22.53	
		15	0	23.00	22.52	22.49	22.55	
			16QAM	0	22.50	22.37	22.24	22.32
				1	7	23.00	22.51	22.58
	16QAM	8			14	22.50	22.40	22.36
			0	22.00	21.52	21.37	21.56	
			4	22.00	21.57	21.33	21.45	
		15	7	22.00	21.57	21.56	21.50	
			0	0	21.50	21.50	21.35	21.44

LTE-FDD Band 5				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20425	20525	20625
					826.5MHz	836.5MHz	846.5MHz
5MHz	QPSK	1	0	24.50	23.54	23.58	23.91
			13	23.50	23.49	23.46	23.50
			24	24.00	23.62	23.66	23.59
		12	0	22.50	22.33	22.29	22.50
			6	23.00	22.50	22.45	22.56
			13	22.50	22.43	22.48	22.39
	16QAM	25	0	22.50	22.37	22.44	22.50
		1	0	23.00	22.37	22.37	22.60
			13	22.50	22.37	22.47	22.43
			24	23.00	22.37	22.65	22.33
		12	0	22.00	21.34	21.28	21.53
			6	21.50	21.47	21.47	21.49
13	21.50		21.34	21.50	21.36		
25	0	21.50	21.38	21.33	21.48		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	20450	20525	20600
					829.0MHz	836.5MHz	844.0MHz
10MHz	QPSK	1	0	24.00	23.48	23.53	23.75
			25	24.00	23.37	23.39	23.60
			49	24.00	23.49	23.75	23.66
		25	0	22.50	22.15	22.03	22.38
			13	23.00	22.25	22.35	22.57
			25	22.50	22.12	22.35	22.37
	16QAM	50	0	22.50	22.03	22.30	22.41
		1	0	22.50	22.37	22.02	22.34
			25	22.50	22.20	22.40	22.50
			49	22.50	22.22	22.44	22.17
		25	0	21.50	21.14	20.95	21.40
			13	22.00	21.19	21.32	21.53
25	21.50		20.99	21.34	21.33		

11.4 Conducted Power of LTE Band 7

LTE-FDD Band 7				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		20775	21100	21425
					2502.5MHz	2535.0MHz	2567.5MHz
5MHz	QPSK	1	0	22.50	20.98	22.15	21.39
			13	22.00	21.32	21.89	21.32
			24	22.50	21.67	21.97	22.12
		12	0	21.00	20.11	20.78	19.78
			6	21.00	20.47	20.95	20.15
			13	21.00	20.70	20.85	21.00
	25	0	21.00	20.46	20.89	20.24	
	16QAM	1	0	21.00	20.10	20.88	19.80
			13	21.00	20.49	20.93	20.10
			24	21.00	20.87	20.95	20.84
		12	0	20.00	19.20	19.86	18.84
			6	20.00	19.59	19.98	19.85
			13	20.00	19.71	19.97	19.61
		25	0	20.00	19.35	19.97	19.37
Bandwidth		Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	20800	21100
	2505.0MHz					2535.0MHz	2565.0MHz
10MHz	QPSK	1	0	23.00	21.64	22.80	21.66
			25	23.00	21.92	22.69	21.66
			49	23.00	21.51	22.93	22.51
		25	0	22.00	20.79	21.53	20.04
			13	22.00	21.00	21.77	20.38
			25	22.00	20.84	21.73	20.64
	50	0	22.00	20.83	21.56	20.49	
	16QAM	1	0	22.00	20.68	21.55	20.97
			25	22.00	20.94	21.85	20.59
			49	22.00	20.71	21.82	21.51
		25	0	21.00	19.76	20.62	18.93
			13	21.00	20.06	20.82	19.42
			25	21.00	19.89	20.72	19.60

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	20825	21100	21375
					2057.5MHz	2535.0MHz	2562.5MHz
15MHz	QPSK	1	0	23.00	21.68	22.60	21.88
			38	23.00	21.97	22.79	21.24
			74	23.00	21.79	22.82	22.33
		36	0	22.00	20.84	21.77	20.33
			18	22.00	21.10	21.76	20.13
			39	22.50	21.58	22.27	21.33
	16QAM	75	0	22.00	21.16	21.83	20.64
			0	22.00	20.63	21.59	20.65
			38	22.00	21.02	21.72	20.24
		36	74	22.00	20.88	21.92	21.06
			0	22.00	20.83	21.74	20.32
			39	22.00	21.23	21.79	20.77
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	21350	21100	21350
					2560.0MHz	2535.0MHz	2560.0MHz
20MH	QPSK	1	0	23.00	21.95	22.55	21.90
			50	23.00	21.95	22.81	21.01
			99	23.50	22.20	23.03	22.92
		50	0	22.00	21.20	21.83	21.11
			50	22.50	22.00	22.27	21.36
			100	22.00	21.28	21.94	20.95
	16QAM	1	0	22.00	20.82	21.63	20.82
			50	22.00	21.03	21.98	19.96
			99	22.50	21.09	22.31	21.55

11.5 Conducted Power of LTE Band 38

LTE-TDD Band 38				Maximum Tune- up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		37775	38000	38225	
					2572.5MHz	2595.0MHz	2617.5MHz	
5MHz	QPSK	1	0	24.50	22.83	24.12	23.82	
			13	24.00	22.92	23.98	23.77	
			24	24.00	23.10	24.00	23.83	
		12	0	23.00	21.74	23.00	22.64	
			6	23.50	21.94	23.10	22.75	
			13	23.00	21.94	23.00	22.89	
	16QAM	25	0	23.50	21.83	23.02	22.78	
			1	0	23.50	22.22	23.23	22.76
				13	23.50	22.39	23.21	22.82
		24		23.50	22.47	23.22	22.95	
			12	0	22.50	20.86	22.14	21.67
				6	22.50	20.98	22.15	21.93
13	22.50	20.99		22.13	21.90			
	25	0	22.50	20.92	22.04	21.75		
	Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	37800	38000	38200
2575.0MHz						2595.0MHz	2615.0MHz	
10MHz	QPSK	1	0	24.50	22.74	24.19	23.71	
			25	24.00	23.04	23.99	23.59	
			49	24.50	23.54	24.03	23.95	
		25	0	23.00	21.70	22.90	22.50	
			13	23.50	22.04	23.11	22.65	
			25	23.00	22.20	22.98	22.69	
	16QAM	50	0	23.50	21.91	23.05	22.68	
			1	0	23.00	21.98	22.81	22.69
				25	23.00	22.17	22.74	22.52
		49		23.00	22.75	22.82	22.92	
			25	0	22.00	20.83	21.94	21.54
				13	22.50	21.16	22.09	21.71
25	22.00	21.34		22.00	21.70			

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	37825	38000	38175
					2577.5MHz	2595.0MHz	2612.5MHz
15MHz	QPSK	1	0	23.50	22.15	23.36	23.08
			38	23.50	22.66	23.29	22.89
			74	23.50	23.05	23.08	23.10
		36	0	22.50	21.57	22.16	21.87
			18	22.50	21.59	22.23	21.87
			39	22.50	21.51	22.11	21.83
	16QAM	75	0	22.50	21.47	22.31	22.05
			0	22.50	21.31	22.19	22.09
			38	22.50	21.75	22.16	21.89
		36	74	22.50	22.21	22.04	22.19
			0	22.00	21.49	21.88	21.71
			39	23.50	21.36	23.36	
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	38750	38000	38150
					2580.0MHz	2595.0MHz	2610.0MHz
20MHz	QPSK	1	0	23.50	22.10	23.37	23.31
			50	23.50	22.86	23.45	22.99
			99	23.50	23.20	23.10	23.18
		50	0	23.00	21.76	22.52	22.26
			50	22.50	22.24	22.42	22.17
			100	0	22.50	21.90	22.39
	16QAM	1	0	22.50	21.16	22.26	22.12
			0	22.50	21.16	22.26	22.12
			50	22.50	21.93	22.49	22.06
			99	22.50	22.32	22.21	22.29

11.6 Conducted Power of LTE Band 41

LTE-TDD Band 41					Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	39675	40620	41565
					2498.5MHz	2593 MHz	2687.5 MHz
5MHz	QPSK	1	0	24.00	21.12	23.68	23.63
			13	24.00	21.04	23.51	23.47
			24	24.00	21.04	23.49	23.65
		12	0	23.00	20.03	22.52	22.56
			6	23.00	20.09	22.54	22.58
			13	23.00	19.97	22.47	22.59
	16QAM	25	0	23.00	20.03	22.46	22.63
			0	23.00	20.28	22.62	22.90
			13	23.00	20.22	22.62	22.94
		1	24	23.50	20.22	22.62	23.12
			0	22.00	19.05	21.55	21.62
			6	22.00	19.05	21.53	21.67
		12	13	22.00	19.05	21.46	21.69
			0	22.00	19.04	21.46	21.69
			0	22.00	19.04	21.46	21.69
		25	0	22.00	19.04	21.46	21.69
10MHz	QPSK	1	0	24.00	21.10	23.64	23.72
			25	24.00	21.12	23.53	23.63
			49	24.00	21.45	23.64	23.94
		25	0	23.00	19.94	22.51	22.36
			13	23.00	20.11	22.66	22.74
			25	23.00	20.09	22.48	22.69
		50	0	23.00	19.90	22.53	22.57
			0	23.00	20.30	22.33	22.61
			25	23.00	20.30	22.27	22.58
	16QAM	1	49	23.00	20.71	22.48	22.82
			0	22.00	18.95	21.56	21.48
			13	22.00	19.15	21.62	21.78
		25	25	22.00	19.24	21.53	21.82
			0	22.00	19.24	21.53	21.82
			0	22.00	19.24	21.53	21.82
			0	22.00	19.24	21.53	21.82

Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	39725	40620	41515
					2503.5MHz	2593.0MHz	2682.5MHz
15MHz	QPSK	1	0	24.50	21.17	24.08	23.91
			38	24.50	21.37	24.20	24.17
			74	25.00	21.86	23.97	24.36
		36	0	23.50	20.35	23.03	23.08
			18	23.50	20.43	23.15	23.11
			39	23.50	21.16	23.44	23.28
	16QAM	75	0	23.50	20.89	23.20	23.13
			0	23.50	20.37	23.22	23.04
			38	23.50	20.55	23.34	23.30
		36	74	24.00	21.09	23.24	23.60
			0	23.50	20.36	23.02	23.03
			39	23.50	20.88	23.19	23.07
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune-up(dBm)	39750	40620	41490
					2506 MHz	2593 MHz	2680 MHz
20MHz	QPSK	1	0	24.00	21.06	23.56	23.34
			50	24.00	21.53	23.64	23.57
			99	24.00	22.02	23.41	23.89
		50	0	23.00	20.28	22.76	22.64
			50	23.50	21.26	23.13	23.28
			0	23.00	20.74	22.79	22.84
	16QAM	1	0	23.00	20.13	22.54	22.38
			50	23.00	20.64	22.69	22.64
			99	23.00	21.21	22.42	22.93

11.7 Conducted Power of LTE Band 66

LTE-FDD Band 66				Maximum Tune- up(dBm)	Conducted Power(dBm)			
Bandwidth	Modulation	RB allocation	RB offset		131979	132322	132665	
					1710.7MHz	1755.0MHz	1779.3MHz	
1.4MHz	QPSK	1	0	22.00	21.73	19.56	20.31	
			2	21.50	21.19	19.30	20.03	
			5	21.00	20.90	19.27	20.05	
		3	0	21.00	20.72	19.17	19.98	
			2	21.00	20.61	19.11	19.98	
			3	20.50	20.46	19.09	20.00	
	16QAM	6	0	20.50	20.41	19.01	19.99	
			0	21.50	21.32	19.18	19.90	
			2	21.50	21.03	19.40	19.96	
		3	5	21.00	20.72	19.11	19.82	
			0	20.50	20.46	18.98	19.78	
			2	20.50	20.48	19.02	19.90	
6	3	20.50	20.24	18.90	19.77			
	0	19.50	19.45	17.92	18.96			
	Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	131987	132322	132657
1711.5MHz						1755.0MHz	1778.5MHz	
3MHz	QPSK	1	0	20.50	19.83	19.07	20.07	
			7	20.00	19.83	18.97	19.93	
			14	20.00	19.80	18.96	19.95	
		8	0	20.00	19.86	18.90	19.81	
			4	20.00	19.86	18.98	19.88	
			7	20.00	19.89	18.97	19.97	
	16QAM	15	0	20.00	19.87	18.97	19.87	
			0	20.00	19.80	18.80	19.63	
			7	20.00	19.83	19.10	19.88	
		8	14	20.00	19.79	18.74	19.73	
			0	19.00	18.96	17.98	18.82	
			4	19.00	18.91	17.95	18.80	
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	131997	132322	132647	
					1712.5MHz	1755.0MHz	1775.0MHz	
5MHz	QPSK	1	0	20.50	20.48	19.33	20.25	
			13	20.50	20.16	19.15	20.05	
			24	20.50	20.26	19.23	20.23	
		12	0	20.50	20.07	19.05	19.80	
			6	20.50	20.11	19.16	20.06	
			13	20.50	20.08	19.12	20.02	
	16QAM	25	0	20.50	20.07	19.12	19.99	
			0	20.50	20.22	19.27	19.93	
			13	20.50	20.04	19.24	20.03	
		1	24	20.50	20.16	19.27	20.11	
			12	0	19.00	18.99	18.15	18.84
				6	19.50	19.15	18.25	19.00
13	19.50	19.08		18.20	19.00			
Bandwidth	Modulation	RB allocation	RB offset	Maximum Tune- up(dBm)	19.08	18.11	18.98	
					1712.5MHz	1755.0MHz	1775.0MHz	

LTE-FDD Band 66				Maximum Tune- up(dBm)	Conducted Power(dBm)		
Bandwidth	Modulation	RB allocation	RB offset		132022 1715.0MHz	132322 1755.0MHz	132622 1775.0MHz
10MHz	QPSK	1	0	21.00	20.56	19.65	19.90
			25	20.50	20.28	19.41	20.03
			49	20.50	20.43	19.65	20.50
		25	0	20.50	20.18	19.21	19.55
			13	20.50	20.32	19.36	19.95
			25	20.50	20.24	19.32	20.08
	16QAM	50	0	20.50	20.06	19.27	19.95
			0	20.50	20.44	19.38	19.51
			25	20.50	20.25	19.51	19.96
		1	49	20.50	20.45	19.45	20.20
			0	19.50	19.19	18.26	18.63
			13	19.50	19.36	18.40	18.95
15MHz	QPSK	25	25	19.50	19.23	18.34	18.99
			0	22.50	22.047	20.81	21.43
			38	21.50	21.50	20.49	21.29
		36	74	21.50	21.32	20.36	21.25
			0	21.00	21.00	20.07	20.56
			18	21.50	21.02	20.09	20.54
	16QAM	75	39	23.00	22.21	21.70	22.69
			0	21.50	21.41	20.58	21.21
			0	22.00	21.66	20.72	21.25
		1	38	21.50	21.31	20.32	21.05
			74	21.50	21.24	20.43	21.23
			0	21.00	20.92	20.02	20.50
20MHz	QPSK	36	39	22.00	21.56	20.94	21.74
			0	22.072	132322	132572	
			0	20.00	1720.0MHz	1755.0MHz	1770.0MHz
		50	0	20.00	19.65	19.15	19.12
			50	20.00	19.81	18.88	19.08
			99	20.00	19.51	19.08	19.82
	16 QAM	50	0	22.00	21.62	20.74	21.34
			25	23.00	22.37	21.58	22.82
			50	22.00	21.63	20.91	21.76
		100	0	20.00	19.52	19.14	18.89
			0	20.00	19.85	18.96	18.96
			99	20.00	19.42	19.21	19.56

11.8 Tune-up power tolerance

Band	Tune-up power tolerance(dBm)
LTE B2	Max output power =24.00
LTE B4	Max output power =24.00
LTE B5	Max output power =24.50
LTE B7	Max output power =23.50
LTE B38	Max output power =24.50
LTE B41	Max output power =25.00
LTE B66	Max output power =23.50

11.9 SAR test results

Notes:

- 1) Per KDB447498, the SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the scaled SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit ($< 0.8 \text{ W/kg}$), testing at the high and low channels is optional.
- 2) Per KDB447498, 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: $\leq 0.8 \text{ W/kg}$ or 2.0 W/kg , for 1-g or 10-g respectively, when the transmission band is $\leq 100 \text{ MHz}$. When the maximum output power variation across the required test channels is $> \frac{1}{2} \text{ dB}$, instead of the middle channel, the highest output power channel must be used.
- 3) Per KDB447498, All measurement SAR result is scaled-up to account for tune-up tolerance is compliant.
- 4) Per KDB648474 D04v01r02, body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn with headset SAR.
- 5) Per KDB248227 D01v01r02, the procedures required to establish specific device operating configurations for testing the SAR of 802.11 a/b/g transmitters.
 - (1) For Headsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is $\leq 0.4 \text{ W/kg}$, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is $\leq 0.8 \text{ W/kg}$ or all test positions are measured.
 - (2) For WLAN 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is $\leq 0.8 \text{ W/kg}$, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is $> 1.2 \text{ W/kg}$, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is $\leq 1.2 \text{ W/kg}$.

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

6) Per KDB865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/Kg; if the deviation among the repeated measurement is $\leq 20\%$, and the measured SAR < 1.45 W/Kg, only one repeated measurement is required.

7) Per KDB865664 D02v01r01, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing (Refer to appendix B for details).

8) Per KDB941225 D06v01r01, the DUT Dimension is bigger than 9 cm x 5 cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

9) Per KDB 941225 D01, 3G SAR Measurement 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 $\leq 1/4$ 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.

10) Per KDB 941225 D05, SAR Evaluation Considerations for LTE Devices

(1) QPSK with 1 RB and 50% RB allocation

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

(2) QPSK with 100% RB allocation

SAR is not required when the highest maximum output power for 100% RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be

tested.

(3) Higher order modulations

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

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is $> 1/2$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

11.10 Results overview of LTE

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 2 (BW: 20MHz)	1RB	Back	19100	1900.0	0.010	0.467	100	1.00	23.50	24.00	1.122	0.524
	50%RB	Back	19100	1900.0	0.070	0.462	100	1.00	23.50	24.00	1.122	0.518
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 2 (BW: 20MHz)	1RB	Front 10mm	19100	1900.0	-0.080	1.040	100	1.00	23.50	24.00	1.122	1.167
	50%RB	Front 10mm	19100	1900.0	0.010	0.997	100	1.00	23.50	24.00	1.122	1.119

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 4 (BW: 20MHz)	1RB	Back	20175	1732.5	-0.010	0.353	100	1.00	23.65	24.00	1.084	0.383
	50%RB	Back	20175	1732.5	0.030	0.349	100	1.00	23.65	24.00	1.084	0.378
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 4 (BW: 20MHz)	1RB	Front 10mm	20175	1732.5	-0.130	0.754	100	1.00	23.65	24.00	1.084	0.817

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 5 (BW: 10MHz)	1RB	Back	20525	836.5	-0.040	0.173	100	1.00	23.91	24.50	1.146	0.198
	50%RB	Back	20525	836.5	0.020	0.171	100	1.00	23.91	24.50	1.146	0.196
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 5 (BW: 10MHz)	1RB	Front 10mm	20525	836.5	-0.110	0.049	100	1.00	23.91	24.50	1.146	0.056

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 7 (BW: 20MHz)	1RB	Back	21100	2535.0	0.000	0.996	100	1.00	23.03	23.50	1.114	1.110
	50%RB	Back	21100	2535.0	0.110	0.987	100	1.00	23.03	23.50	1.114	1.100
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 7 (BW: 20MHz)	1RB	Front 10mm	21100	2535.0	-0.130	0.327	100	1.00	23.03	23.50	1.114	0.364

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 38 (BW: 20MHz)	1RB	Back	38000	2595.0	-0.090	0.365	100	1.00	24.19	24.50	1.074	0.392
	50%RB	Back	38000	2595.0	0.010	0.361	100	1.00	24.19	24.50	1.074	0.388
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 38 (BW: 20MHz)	1RB	Front 10mm	38000	2595.0	-0.060	0.212	100	1.00	24.19	24.50	1.074	0.228

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	10g Meas. Extremity SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Scaled SAR (W/kg)
Band 41 (BW: 20MHz)	1RB	Back	40620	2593.0	-0.170	0.356	100	1.00	24.36	25.00	1.159	0.413
		Back	39750	2506.0	0.020	0.384	100	1.00	24.36	25.00	1.159	0.445
		Back	41490	2680.0	0.020	0.110	100	1.00	24.36	25.00	1.159	0.127
		Back	41540	2685.0	-0.140	0.110	100	1.00	24.36	25.00	1.159	0.127
		Back	39700	2501.0	-0.010	0.374	100	1.00	24.36	25.00	1.159	0.433
	50%RB	Back	39700	2506.0	0.090	0.382	100	1.00	24.36	25.00	1.159	0.443
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 41 (BW: 20MHz)	1RB	Front 10mm	40620	2593.0	-0.020	0.213	100	1.00	24.36	25.00	1.159	0.247
		Front 10mm	39750	2506.0	-0.060	0.164	100	1.00	24.36	25.00	1.159	0.190
		Front 10mm	41490	2680.0	0.080	0.071	100	1.00	24.36	25.00	1.159	0.082
		Front 10mm	41540	2685.0	0.050	0.072	100	1.00	24.36	25.00	1.159	0.083
		Front 10mm	39700	2501.0	-0.030	0.144	100	1.00	24.36	25.00	1.159	0.167

Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 66 (BW: 20MHz)	1RB	Back	132572	1770.0	-0.100	0.303	100	1.00	22.82	23.50	1.169	0.354
	50%RB	Back	132572	1770.0	0.030	0.300	100	1.00	22.82	23.50	1.169	0.351
Mode	Channel Type	Position	Ch.	Freq. (MHz)	Power Drift (db)	1g Meas. Head SAR (W/kg)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Scaled SAR (W/kg)
Band 66 (BW: 20MHz)	1RB	Front 10mm	132657	1778.5	0.040	0.194	100	1.00	22.60	23.00	1.096	0.213

Note:

- 1.The maximum SAR Value of each test band is marked bold.
- 2.SAR plot is provided only for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination.
- 3.Per KDB 447498 D01 v06, for each exposure position, if the highest output power channel Reported SAR ≤ 0.8 W/kg, other channels SAR testing is not necessary.
- 4.Per KDB 447498 D01 v06, head/body-worn use is evaluated with the device positioned at 0mm/10 mm from a head/flat phantom respectively filled with head tissue-equivalent medium.
- 5.Per 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 with antennas 2.5 cm or closer to the edge of the device, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.
- 6.Per KDB 447498 D01 v06, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor= $10^{[(\text{tune-up limit power(dBm)} - \text{Ave.power power (dBm)})/10]}$, where tune-up limit is the maximum rated power among all production units.
- 7.Reported SAR(W/kg)=Measured SAR (W/kg)*Scaling Factor.

11.11 Simultaneous Transmission Possibilities

EUT does not support multiple transmitters operating simultaneously, so there is no need to consider the increase in TER due to synchronous transmission.

Note: The relevant synchronous transmission technical specification materials are provided by the applicant.

12 Measurement uncertainty evaluation

12.1 Measurement uncertainty evaluation for SAR test

The following table includes the uncertainty table of the IEEE 1528. The values are determined by SPEAG. The breakdown of the individual uncertainties is as follows:

DASY8 Uncertainty Budget								
According to IEC/IEEE 62209-1528 (Frequency band: 300MHz-3GHz range)								
Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(ci) (1g)	(ci) (10g)	Std.Unc (1g)	Std.Unc (10g)
Measurement System Errors								
CF	Probe Calibration	±13.3%	N	2	1	1	±6.7%	±6.7%
CF _{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.8%	R	$\sqrt{3}$	1	1	±1.6%	±1.6%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±0.8%	N	1	1	1	±0.8%	±0.8%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.006 mm	N	1	0.14	0.14	±0.10%	±0.10%
DAT	Data Processing	±1.2%	N	1	1	1	±1.2%	±1.2%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T σ)	Conductivity (temp.)BB	±3.3%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0	0	±0%	±0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D _{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation ^m	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF _{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc. ^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
RF _{in}	Unc.Input Power ^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR results								
C(ϵ , σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling ^p	±0.0%	R	$\sqrt{3}$	1	1	±0.0%	±0.0%
u(Δ SAR)	Combined Uncertainty						±11.3%	±11.2%
U	Expanded Uncertainty						±22.6%	±22.5%

DASY8 Uncertainty Budget

According to IEC/IEEE 62209-1528
(Frequency band: 3GHz–6GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(ci) (1g)	(ci) (10g)	Std.Unc (1g)	Std.Unc (10g)
Measurement System Errors								
CF	Probe Calibration	±13.1%	N	2	1	1	±6.55%	±6.55%
CF _{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ _{sys}	Probe Positioning	±0.005 mm	N	1	0.29	0.29	±0.2%	±0.20%
DAT	Data Processing	±2.3%	N	1	1	1	±2.3%	±2.3%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T _σ)	Conductivity (temp.)BB	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.25	0.25	±2.0%	±2.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D _{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation ^m	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF _{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc. ^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
RF _{in}	Unc.Input Power ^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling ^p	±0.0%	R	$\sqrt{3}$	1	1	±0.0%	±0.0%
u(ΔSAR)	Combined Uncertainty						±11.6%	±11.6%
U	Expanded Uncertainty						±23.3%	±23.1%

12.2 Measurement uncertainty evaluation for system check

The following table includes the uncertainty table of the IEEE 1528. The values are determined by SPEAG. The breakdown of the individual uncertainties is as follows:

Uncertainty For System Performance Check								
Uncertainty Component	Tol. (±%)	Prob. Dist.	Div.	C _i 1g	C _i 10g	1g U _i (±%)	10g U _i (±%)	V _i
measurement system								
Probe Calibration	6.7	N	1	1	1	6.70	6.70	∞
Axial Isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.90	1.90	∞
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0.7	0.7	3.88	3.88	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
system detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	N	1	1	1	0.00	0.00	∞
Readout Electronics	0.3	N	1	1	1	0.30	0.30	∞
Response Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
RF ambient Conditions - Noise	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
RF ambient Conditions – Reflections	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Probe positioned Mechanical Tolerance	0.8	R	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe positioning with respect to Phantom Shell	6.7	R	$\sqrt{3}$	1	1	3.87	3.87	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Dipole								
Deviation of experimental source from numerical source	5.5	N	1	1	1	3.18	3.18	∞
Input power and SAR drift measurement	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Dipole axis to liquid Distance	3.4	R	$\sqrt{3}$	1	1	1.96	1.96	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2.0	1.68	∞
Liquid conductivity (meas.)	2.5	N	1	0.78	0.71	1.13	1.03	5
Liquid conductivity (target.)	5	R	$\sqrt{3}$	0.78	0.71	3.90	3.55	5
Liquid Permittivity (meas.)	2.5	N	1	0.23	0.26	0.33	0.38	∞
Liquid Permittivity (target.)	5	R	$\sqrt{3}$	0.23	0.26	1.15	1.30	∞
Combined Standard Uncertainty		Rss				11.29	11.18	
Expanded Uncertainty (95% Confidence interval)		k				20.57	19.95	

13 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

	Manufacturer	Device Type	Type(Model)	Serial number	calibration	
					Last Cal.	Due Date
☒	SPEAG	E-Field PROBE	EX3DV4	7955	2025-09-30	2026-09-29
☐	SPEAG	Validation Kits	D750V3	1151	2024-08-19	2027-08-18
☒	SPEAG	Validation Kits	D835V2	4d203	2024-08-20	2027-08-19
☒	SPEAG	Validation Kits	D1750V2	1143	2024-08-20	2027-08-19
☒	SPEAG	Validation Kits	D1900V2	5d211	2024-08-19	2027-08-18
☒	SPEAG	Validation Kits	D2450V2	1099	2026-02-05	2029-02-04
☒	SPEAG	Validation Sources	D2550V2	1015	2024-08-16	2027-08-15
☒	SPEAG	Validation Kits	D2600V2	1094	2026-02-04	2029-02-03
☐	SPEAG	Validation Sources	D3500V2	1164	2024-10-17	2027-10-16
☐	SPEAG	Validation Sources	D3700V2	1139	2024-10-17	2027-10-16
☐	SPEAG	Validation Sources	D3900V2	1106	2024-10-17	2027-10-16
☐	SPEAG	Validation Sources	D4600V2	1097	2024-10-17	2027-10-16
☐	SPEAG	Validation Sources	D4900V2	1093	2024-10-08	2027-10-07
☐	SPEAG	Validation Sources	D5GHzV2	1412	2024-10-17	2027-10-16
☐	SPEAG	Validation Sources	D6.5GHzV2	1116	2024-10-14	2027-10-13
☒	SPEAG	DAE	DAE4ip	1924	2025-09-24	2026-09-23
☐	R & S	Universal Radio Communication Tester	CMU 200	119733	2025-11-27	2026-11-26
☒	R & S	Universal Radio Communication Tester	CMW500	144459	2025-11-27	2026-11-26
☐	R & S	UXM5G Wireless Test Platform	E7515B	MY60192341	2025-11-27	2026-11-26
☒	HP	Network Analyser	8753D	3410A08889	2025-11-27	2026-11-26
☒	HP	Signal Generator	E4421B	GB39340770	2025-11-27	2026-11-26
☒	Keithley	Multimeter	Keithley 2000	4014539	2025-11-27	2026-11-26
☒	SATIMO	Amplifier	Power Amplifier	MODU-023-A-0004	2025-11-27	2026-11-26
☒	Agilent	Power Meter	E4418B	GB43312909	2025-11-27	2026-11-26
☒	Agilent	Power Meter Sensor	E4412A	MY41500046	2025-11-27	2026-11-26

Annex A: System Check

(Please See the SAR Measurement Plots of annex A.)

Annex B: Measurement Results

(Please See the SAR Measurement Plots of annex B.)

Annex C: Calibration Reports

(Please See the Calibration reports of annex C.)

Annex D: Test Photographs

(Please see SAR test setup photos.)