

SAR TEST REPORT

Application No.: SZCR2602000721AT
Applicant: Guangdong Transtek Medical Electronics Co., Ltd.
Address of Applicant: Zone A, No.105 Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
Manufacturer: Guangdong Transtek Medical Electronics Co., Ltd.
Address of Manufacturer: Zone A, No.105 Dongli Road, Torch Development District, 528437 Zhongshan, Guangdong, China
EUT Description: Cellular Body scale
Model No.: GBS-2104-G
FCC ID: OU9GBS-2104-G
Standards: FCC 47CFR §2.1093
Date of Receipt: 2026-02-28
Date of Test: 2026-03-19
Date of Issue: 2026-04-02

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

Keny Xu

Keny Xu
EMC Laboratory Manager



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SZSAR-TRF-01 Rev. A/2

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Revision Record

Version	Description	Date	Remark
01		2026-04-02	Original

Authorized for issue
by:

Edison Li

Edison Li/Project Engineer

Roman Pan

Roman Pan / Reviewer



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TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Extremity
GSM850	2.55
GSM1900	2.64
CAT M1 Band 2	0.55
CAT M1 Band 4	0.19
CAT M1 Band 12	0.11
CAT M1 Band 13	0.17
CAT M1 Band 25	0.45
SAR Limited(W/kg)	4.0



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1 General Information

1.1 General Description of EUT

Product Name:	Cellular Body scale	
Model No.:	GBS-2104-G	
Product Phase:	production unit	
Device Type:	portable device	
Exposure Category:	uncontrolled environment / general population	
IMEI:	016338002901128	
Hardware Version:	TSH2104 20211210	
Software Version:	A6	
Antenna Type:	PIFA	
Antenna Gain:	GSM850:0.5dBi, GSM1900:3.5dBi CatM1 Band 2: 3.5dBi CatM1 Band 4: 3.1dBi CatM1 Band 12: 1.3dBi CatM1 Band 13: 1.1dBi CatM1 Band 25: 3.5dBi	
Device Operating Configurations:		
Test Mode Configuration:	GSM: GMSK,8PSK; LTE Cat-M1: QPSK, 16QAM	
Power Class:	4, tested with power level 5(GSM850) 1, tested with power level 0(GSM1900)	
Frequency Bands:	Band	Tx(MHz)
	GSM850	824~849
	GSM1900	1850~1910
	Cat-M1 Band 2	1850 ~1910
	Cat-M1 Band 4	1710~1755
	Cat-M1 Band 12	699~716
	Cat-M1 Band 13	777~787
	Cat-M1 Band 25	1850~1915
RF Cable:	☒ Provided by applicant ☐ Provided by the laboratory	
Battery Information:	Normal Voltage:	DC 6V (4*AA batteries)
Note: Since the above data and/or information is provided by the client relevant results or conclusions of this report		





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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 447498 D04	Interim General RF Exposure Guidance v01
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



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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).



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1.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

1.5 Test Engineer

Test Engineer: Claire Shen

1.6 Test Facility

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

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI (Member No. 1937)**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1336**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



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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.	



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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.

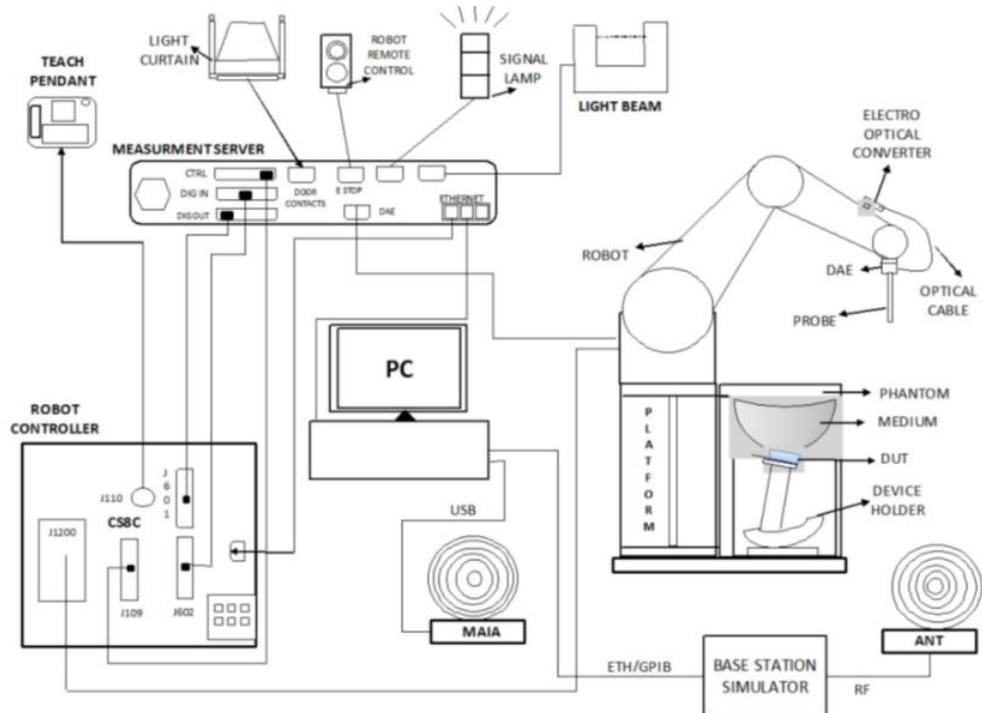
The DASY system for performing compliance tests consists of the following items:

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,

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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.



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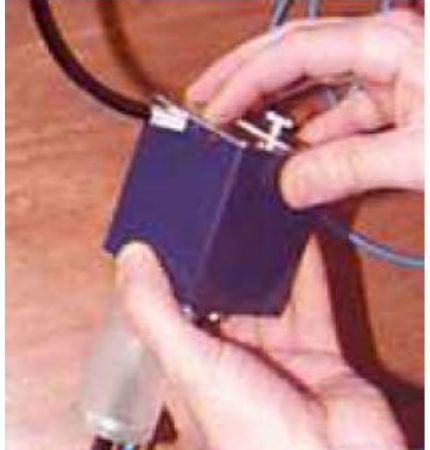
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3.2 Isotropic E-field Probe EX3DV4

	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 DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)	
Input Offset Voltage	< 5µV (with auto zero)	
Input Bias Current	< 50 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. 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:



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

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



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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.

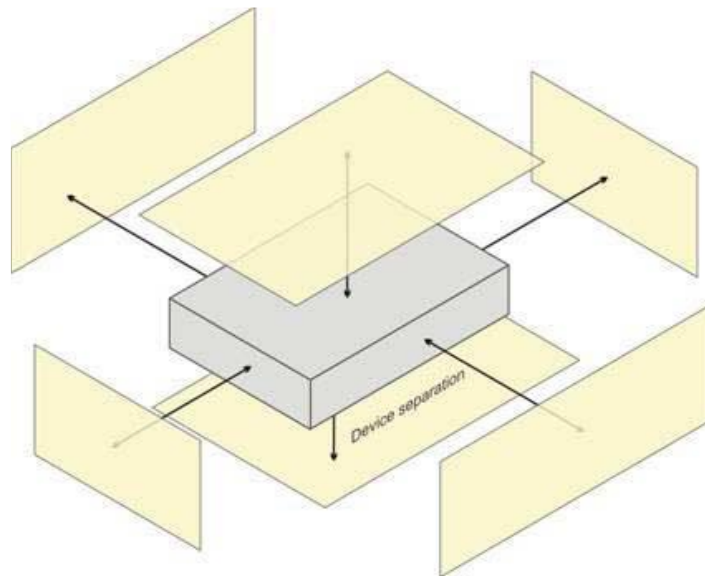
4.2 SAR measurement uncertainty

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 Generic device

The SAR evaluation shall be performed for all surfaces of the DUT that are accessible during intended use, as indicated in the below Figure. The separation distance in testing shall correspond to the intended use distance as specified in the user instructions provided by the manufacturer. If the intended use is not specified, all surfaces of the DUT shall be tested directly against the flat phantom. The surface of the generic device (or the surface of the carry accessory holding the DUT) pointing towards the flat phantom shall be parallel to the surface of the phantom. In this report, there is a Body Scale where the feet of the human body come into direct contact with the front side of the Body Scale during use.



a) Test positions for a generic device

6 SAR System Verification Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

The following 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.

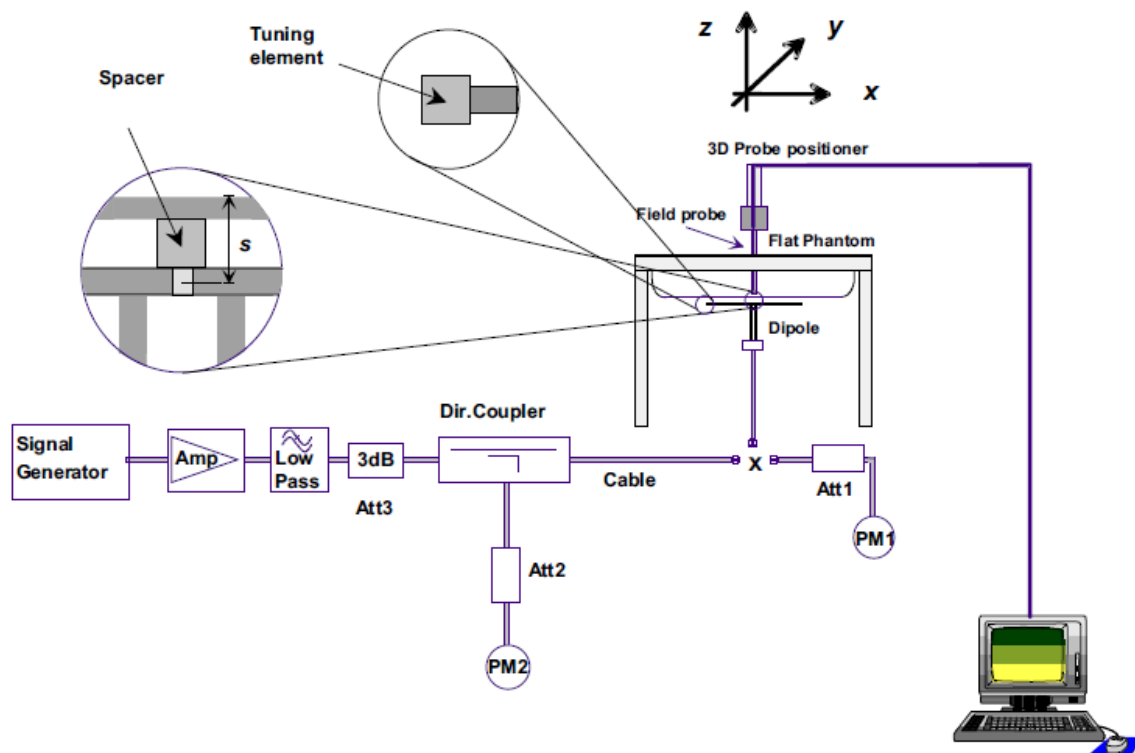
The temperature variation of the Tissue Simulate Liquids was $22 \pm 2^\circ\text{C}$.

Measurement for Tissue Simulate Liquid for System check									
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	$\sigma(\text{S/m})$		
750 Head	750	40.100	0.897	41.90	0.89	-4.30%	0.79%	20.7	2026/3/19
835 Head	835	39.700	0.937	41.50	0.90	-4.34%	4.11%	20.7	2026/3/19
1750 Head	1750	40.700	1.370	40.10	1.37	1.50%	0.00%	20.7	2026/3/19
1950 Head	1950	40.300	1.410	40.00	1.40	0.75%	0.71%	20.7	2026/3/19

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 (3GHz or higher) 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 $15\pm 0.5\text{ cm}$ 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.



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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 $\pm 10\%$)		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)		
D750V3_Head	2.22	1.39	8.88	5.56	8.42	5.49	5.46%	1.28%	20.7	2026/3/19
D835V2_Head	2.63	1.71	10.52	6.84	9.67	6.43	8.79%	6.38%	20.7	2026/3/19
D1750V2_Head	9.88	5.12	39.52	20.48	36.20	19.10	9.17%	7.23%	20.7	2026/3/19
D1950V3_Head	11.10	5.75	44.40	23.00	40.70	21.20	9.09%	8.49%	20.7	2026/3/19

Table 3 : SAR System Check Result

6.2.3 Detailed System Check Results

Please see the Appendix A



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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 LTE Cat-M1 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:

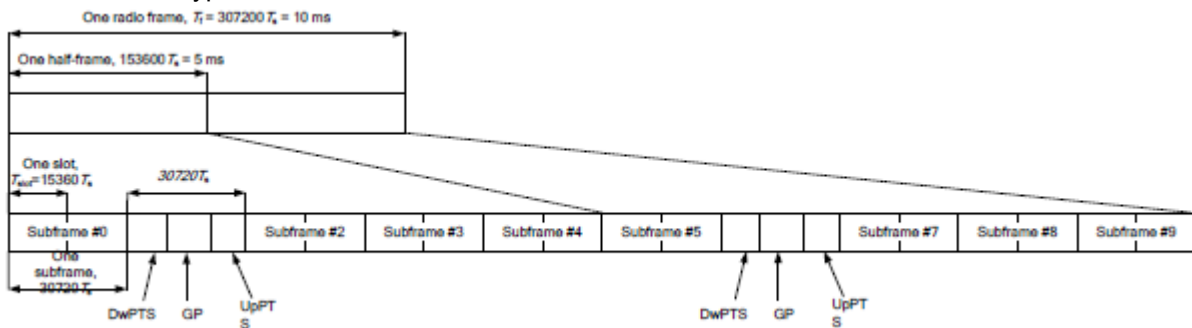


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

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



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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.



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8 Test Result

8.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D



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8.2 Measurement of RF Conducted Power

8.2.1 Conducted Power Data of GSM 850

GSM 850										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		128	190	251	Tune up		128	190	251	Tune up
GSM(GMSK)	GSM	33.13	33.47	33.50	34.00	-9.19	23.94	24.28	24.31	24.81
GPRS (GMSK)	1 TX Slot	33.22	33.51	33.49	34.00	-9.19	24.03	24.32	24.30	24.81
	2 TX Slots	32.77	32.69	32.88	33.00	-6.18	26.59	26.51	26.70	26.82
	3 TX Slots	30.27	30.44	30.51	31.00	-4.42	25.85	26.02	26.09	26.58
	4 TX Slots	29.89	30.01	30.15	31.00	-3.17	26.72	26.84	26.98	27.83
EGPRS (GMSK)	1 TX Slot	33.27	33.54	33.49	34.00	-9.19	24.08	24.35	24.30	24.81
	2 TX Slots	32.71	32.73	32.84	33.00	-6.18	26.53	26.55	26.66	26.82
	3 TX Slots	30.32	30.45	30.61	31.00	-4.42	25.90	26.03	26.19	26.58
	4 TX Slots	29.91	30.01	30.20	31.00	-3.17	26.74	26.84	27.03	27.83
EGPRS (8PSK)	1 TX Slot	28.13	27.84	27.97	29.00	-9.19	18.94	18.65	18.78	19.81
	2 TX Slots	26.33	26.17	26.42	27.00	-6.18	20.15	19.99	20.24	20.82
	3 TX Slots	25.64	25.77	25.49	26.00	-4.42	21.22	21.35	21.07	21.58
	4 TX Slots	24.77	24.69	24.66	25.00	-3.17	21.60	21.52	21.49	21.83

8.2.2 Conducted Power Data of GSM 1900

GSM 1900										
Burst Output Power(dBm)						Division Factors	Frame-Average Output Power(dBm)			
Channel		512	661	810	Tune up		512	661	810	Tune up
GSM(GMSK)	GSM	28.50	28.68	28.38	29.00	-9.19	19.31	19.49	19.19	19.81
GPRS (GMSK)	1 TX Slot	28.49	28.77	28.37	29.00	-9.19	19.30	19.58	19.18	19.81
	2 TX Slots	28.22	28.51	28.13	29.00	-6.18	22.04	22.33	21.95	22.82
	3 TX Slots	27.94	27.88	28.04	29.00	-4.42	23.52	23.46	23.62	24.58
	4 TX Slots	27.66	27.81	27.66	28.00	-3.17	24.49	24.64	24.49	24.83
EGPRS (GMSK)	1 TX Slot	28.40	28.74	28.39	29.00	-9.19	19.21	19.55	19.20	19.81
	2 TX Slots	28.19	28.58	28.10	29.00	-6.18	22.01	22.40	21.92	22.82
	3 TX Slots	27.90	27.79	27.98	29.00	-4.42	23.48	23.37	23.56	24.58
	4 TX Slots	27.71	27.75	27.61	28.00	-3.17	24.54	24.58	24.44	24.83
EGPRS (8PSK)	1 TX Slot	25.64	25.77	25.79	26.00	-9.19	16.45	16.58	16.60	16.81
	2 TX Slots	25.36	25.28	25.44	26.00	-6.18	19.18	19.10	19.26	19.82
	3 TX Slots	25.21	25.15	25.33	26.00	-4.42	20.79	20.73	20.91	21.58
	4 TX Slots	25.03	25.07	25.14	26.00	-3.17	21.86	21.90	21.97	22.83

8.2.3 Conducted Power Data of CAT M1 Band 2

CAT M1 Band 2				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18607	18900	19193	
1.4MHz	QPSK	1	0	21.09	20.83	21.09	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18615	18900	19185	
3MHz	QPSK	1	0	21.00	20.93	21.15	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18625	18900	19175	
5MHz	QPSK	1	0	20.92	20.92	21.22	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18650	18900	19150	
10MHz	QPSK	1	0	21.01	20.91	21.30	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18675	18900	19125	
15MHz	QPSK	1	0	20.91	20.97	21.30	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				18700	18900	19100	
20MHz	QPSK	1	0	20.89	20.97	21.36	21.50
		1	2	20.77	20.85	20.95	21.50
		1	5	20.79	20.81	20.89	21.50
		3	0	20.34	20.80	20.32	21.50
		3	1	20.40	20.27	20.28	21.50
		3	3	20.37	20.25	20.27	21.50
		6	0	20.35	20.31	20.35	20.50
	16QAM	1	0	20.18	20.16	20.11	20.50
		1	2	20.11	20.02	20.08	20.50
		1	5	20.46	20.27	20.19	20.50
		3	0	19.99	20.08	20.20	20.50
		3	1	19.81	20.04	20.02	20.50
		3	3	19.88	19.93	20.06	20.50
		5	0	19.20	19.29	19.41	19.50

8.2.4 Conducted Power Data of CAT M1 Band 4

CAT M1 Band 4				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19957	20175	20393	
1.4MHz	QPSK	1	0	21.04	21.08	21.04	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19965	20175	20385	
3MHz	QPSK	1	0	21.14	21.11	21.04	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				19975	20175	20375	
5MHz	QPSK	1	0	21.28	21.21	21.24	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20000	20175	20350	
10MHz	QPSK	1	0	21.24	21.28	21.26	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				20025	20175	20325	
15MHz	QPSK	1	0	21.33	21.35	21.35	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	20175	/	
20MHz	QPSK	1	0	/	21.32	/	21.50
		1	2	/	21.31	/	21.50
		1	5	/	21.28	/	21.50
		3	0	/	20.22	/	21.50
		3	1	/	20.21	/	21.50
		3	3	/	20.26	/	21.50
		6	0	/	20.16	/	20.50
	16QAM	1	0	/	19.94	/	20.50
		1	2	/	20.48	/	20.50
		1	5	/	20.42	/	20.50
		3	0	/	19.49	/	20.50
		3	1	/	18.86	/	20.50
		3	3	/	18.91	/	20.50
		5	0	/	18.84	/	19.50

8.2.5 Conducted Power Data of CAT M1 Band 12

CAT M1 FDD Band 12				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23017	23095	23173	
1.4MHz	QPSK	1	0	21.41	21.38	21.31	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23025	23095	23165	
3MHz	QPSK	1	0	21.44	21.37	21.36	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				23035	23095	23155	
5MHz	QPSK	1	0	21.36	21.44	21.41	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	23095	/	
10MHz	QPSK	1	0	/	21.34	/	21.50
		1	2	/	21.33	/	21.50
		1	5	/	21.21	/	21.50
		3	0	/	19.89	/	21.50
		3	1	/	19.76	/	21.50
		3	3	/	19.70	/	21.50
		6	0	/	19.81	/	20.50
	16QAM	1	0	/	19.95	/	20.50
		1	2	/	19.81	/	20.50
		1	5	/	19.67	/	20.50
		3	0	/	19.39	/	20.50
		3	1	/	19.48	/	20.50
		3	3	/	19.44	/	20.50
		5	0	/	19.22	/	19.50

8.2.6 Conducted Power Data of CAT M1 Band 13

CAT M1 FDD Band 13				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	23230	/	
5MHz	QPSK	1	0	/	20.77	/	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				/	23230	/	
10MHz	QPSK	1	0	/	20.78	/	21.50
		1	2	/	20.91	/	21.50
		1	5	/	20.83	/	21.50
		3	0	/	20.44	/	21.50
		3	1	/	20.39	/	21.50
		3	3	/	20.35	/	21.50
		6	0	/	20.37	/	20.50
	16QAM	1	0	/	20.41	/	20.50
		1	2	/	20.29	/	20.50
		1	5	/	20.32	/	20.50
		3	0	/	19.49	/	20.50
		3	1	/	19.45	/	20.50
		3	3	/	19.35	/	20.50
		5	0	/	19.38	/	19.50

8.2.7 Conducted Power Data of CAT M1 Band 25

CAT M1 Band 25				Conducted Power(dBm)			
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26047	26365	26683	
1.4MHz	QPSK	1	0	20.94	21.27	21.27	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26055	26365	26675	
3MHz	QPSK	1	0	20.95	21.36	21.31	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26065	26365	26665	
5MHz	QPSK	1	0	20.97	21.44	21.26	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26090	26365	26640	
10MHz	QPSK	1	0	21.06	21.37	21.25	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26115	26365	26615	
15MHz	QPSK	1	0	21.15	21.43	21.31	21.50
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel	Tune up
				26140	26365	26590	
20MHz	QPSK	1	0	21.11	21.40	21.24	21.50
		1	2	21.34	21.36	21.25	21.50
		1	5	21.03	21.17	21.34	21.50
		3	0	20.48	20.44	20.39	21.50
		3	1	20.16	20.33	20.41	21.50
		3	3	20.06	20.14	20.27	21.50
		6	0	19.98	20.07	20.12	20.50
	16QAM	1	0	19.89	19.77	20.06	20.50
		1	2	19.87	19.85	20.11	20.50
		1	5	19.49	19.49	19.87	20.50
		3	0	19.44	19.39	19.45	20.50
		3	1	19.32	19.27	19.29	20.50
		3	3	19.11	19.32	19.24	20.50
		5	0	19.16	19.25	19.17	19.50

8.3 Measurement of SAR Data

Note:

- 1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B.
- 2) 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.



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8.3.1 SAR Result of GSM850

Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	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)
Extremity Test data(Separate 0mm)											
Front side	GPRS 4TS	251/848.8	1:2.075	3.160	2.100	-0.05	30.15	31.00	1.216	2.554	20.7
Front side	GPRS 4TS	128/824.2	1:2.075	2.860	1.900	-0.10	29.89	31.00	1.291	2.453	20.7
Front side	GPRS 4TS	190/836.6	1:2.075	2.950	1.950	-0.15	30.01	31.00	1.256	2.449	20.7
Front side Repeated	GPRS 4TS	251/848.8	1:2.075	3.020	2.020	0.06	30.15	31.00	1.216	2.456	20.7

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Front side 0mm	251/848.8	2.100	2.020	1.040	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.



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8.3.2 SAR Result of GSM1900

Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	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)
Extremity Test data(Separate 0mm)											
Front side	GPRS 4TS	661/1880	1:2.075	4.630	2.530	0.16	27.81	28.00	1.045	2.644	20.7
Front side	GPRS 4TS	512/1850.2	1:2.075	4.230	2.330	-0.03	27.66	28.00	1.081	2.519	20.7
Front side	GPRS 4TS	810/1909.8	1:2.075	4.420	2.360	-0.14	27.66	28.00	1.081	2.551	20.7
Front side Repeated	GPRS 4TS	661/1880	1:2.075	4.420	2.450	0.04	27.81	28.00	1.045	2.560	20.7

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1 st Repeated	Ratio	2 nd Repeated	3 rd Repeated
Front side 0mm	661/1880	2.530	2.450	1.033	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.



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8.3.3 SAR Result of CAT M1 Band 2

Test Record												
Test position	BW	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scale factor	Scale d SAR 10-g (W/kg)	Liquid Temp.(℃)
Extremity Test data (Separate 0mm 1RB)												
Front side	20	QPSK 1_0	19100/1900	1:1	0.923	0.536	0.14	21.36	21.50	1.033	0.554	20.7
Extremity Test data (Separate 0mm 50%RB)												
Front side	20	QPSK 3_0	18900/1880	1:1	0.721	0.462	0.08	20.80	21.50	1.175	0.543	20.7



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8.3.4 SAR Result of CAT M1 Band 4

Test Record												
Test position	BW	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power (dBm)	Tune up Limit (dBm)	Scale factor	Scaled SAR 10-g (W/kg)	Liquid Temp. (°C)
Extremity Test data (Separate 0mm 1RB)												
Front side	20	QPSK 1_0	20175/1732.5	1:1	0.300	0.179	0.06	21.32	21.50	1.042	0.187	20.7
Extremity Test data (Separate 0mm 50%RB)												
Front side	20	QPSK 3_3	20175/1732.5	1:1	0.221	0.110	-0.02	20.26	21.50	1.330	0.146	20.7



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8.3.5 SAR Result of CAT M1 Band 12

Test Record												
Test position	BW	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scale factor	Scale d SAR 10-g (W/kg)	Liquid Temp.(°C)
Extremity Test data (Separate 0mm 1RB)												
Front side	10	QPSK 1_0	23095/707.5	1:1	0.150	0.105	0.06	21.34	21.50	1.038	0.109	20.7
Extremity Test data (Separate 0mm 50%RB)												
Front side	10	QPSK 3_0	23095/707.5	1:1	0.101	0.052	-0.08	19.89	21.50	1.449	0.075	20.7



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8.3.6 SAR Result of CAT M1 Band 13

Test Record												
Test position	BW	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scale d factor	Scale d SAR 10-g (W/kg)	Liquid Temp.(℃)
Extremity Test data (Separate 0mm 1RB)												
Front side	10	QPSK 1_2	23230/782	1:1	0.209	0.145	0.06	20.91	21.50	1.146	0.166	20.7
Extremity Test data (Separate 0mm 50%RB)												
Front side	10	QPSK 3_0	23230/782	1:1	0.185	0.128	0.04	20.44	21.50	1.276	0.163	20.7



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8.3.7 SAR Result of CAT M1 Band 25

Test Record												
Test position	BW	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scale factor	Scale d SAR 10-g (W/kg)	Liquid Temp.(°C)
Extremity Test data (Separate 0mm 1RB)												
Front side	20	QPSK 1_0	26365/1882.5	1:1	0.737	0.437	0.07	21.40	21.50	1.023	0.447	20.7
Extremity Test data (Separate 0mm 50%RB)												
Front side	20	QPSK 3_0	26140/1860	1:1	0.679	0.345	0.03	20.48	21.50	1.265	0.436	20.7



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9 Equipment list

Test Platform		SPEAG DASY Professional				
Software Reference		cDASY8 V16.4.0.5005				
Hardware Reference						
Equipment		Manufacturer	Model	Inventory No.	Calibration Date	Due date of calibration
☒	Test Phantom	SPEAG	ELI	SZ-WSR-A-028	NCR	NCR
☒	DAE	SPEAG	DAE4ip	SZ-WSR-M-074	2025/8/15	2026/8/14
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-079	2026/2/2	2027/2/1
☒	Validation Kits	SPEAG	D750V3	SZ-WSR-M-032	2025/6/18	2028/6/17
☒	Validation Kits	SPEAG	D835V2	SZ-WSR-M-033	2025/10/14	2028/10/13
☒	Validation Kits	SPEAG	D1750V2	SZ-WSR-M-035	2025/6/18	2028/6/17
☒	Validation Kits	SPEAG	D1950V3	SZ-WSR-M-037	2025/10/15	2028/10/14
☒	Dielectric parameter probes	SPEAG	DAKS-3.5	SZ-WSR-M-053	2025/6/15	2026/6/14
☒	Vector Network Analyzer and Vector Reflectometer	SPEAG	DAKS_VNA R140	SZ-WSR-M-054	2025/6/15	2026/6/14
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-005	2025/12/16	2026/12/15
☒	Universal Radio Communication Tester	R&S	CMW500	SZ-WSR-M-099	2025/12/16	2026/12/15
☒	RF Bi-Directional Coupler	Agilent	86205-60001	SZ-WSR-A-004	NCR	NCR
☒	Signal Generator	Agilent	N5171B	SZ-WSR-M-006	2025/12/16	2026/12/15
☒	Preamplifier	Mini-Circuits	ZHL-42W	SZ-WSR-A-001	NCR	NCR
☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	SZ-WSR-A-002	NCR	NCR
☒	Power Meter	Agilent	E4416A	SZ-WSR-M-007	2025/12/16	2026/12/15
☒	Power Sensor	Agilent	8481H	SZ-WSR-M-008	2025/12/16	2026/12/15
☒	Power Sensor	R&S	NRP-Z92	SZ-WSR-M-009	2025/12/16	2026/12/15
☒	Attenuator	SHX	TS2-3dB	SZ-WSR-A-012	NCR	NCR
☒	Speed reading thermometer	Zhengzhou Boyang Instrument	TP3001	SZ-WSR-M-014	2025/5/19	2026/5/18
☒	Temperature	MingGao	T809	SZ-WSR-M-015	2025/5/19	2026/5/18
☒	Temperature	MingGao	T809	SZ-WSR-M-016	2025/5/19	2026/5/18
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-013	2025/5/19	2026/5/18

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

--- End of report ---



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