

**KDB 865664 D01 SAR Measurement 100MHz to 6GHz
FCC 47 CFR part 2 (2.1093)**

SAR EVALUATION REPORT

For

**Host Equipment*: Permobil Power Platform
Contains FCC ID*: 2AKPO338877
Module Model Number*: 338877**

**REPORT NUMBER UL-SAR-RP16226358JD03A V2.0
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Prepared for

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REVISION HISTORY

Ver.	Issue Date	Revisions	Revised By
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1. Attestation of Test Results

Manufacturer Company Name*:	Penny and Giles Ltd				
Manufacturer Company Address*:	Aviation Park West, 15 Enterprise Way, East Parley, Christchurch, BH23 6HH United Kingdom				
Host Equipment*:	Permobil Power Platform				
Module Model Number*:	338877				
Applicable Standards:	FCC 47 CFR part 2 (2.1093) FCC KDB publications				
Test Device is*:	A representative test sample				
Device category*	Portable				
Date Tested:	21 April 2026 to 14 May 2026				
ICNIRP Guidelines Limits for SAR Exposure Characteristics	General Population/Localised SAR (Body-worn) – 1g-SAR limit 1.6 W/kg				
The highest reported SAR values for Localized SAR					
RF Exposure Conditions		Equipment Class			
		Licensed	DTS (Estimated)	U-NII	DSS (Estimated)
Standalone	Body-worn	0.091	0.011	N/A	0.006
Simultaneous Transmission	Body-worn	0.097	0.017	N/A	0.097
Test Results	Pass				
1. This test report shall not be reproduced except in full without the written approval of UL International (UK) Ltd. 2. The results documented in this report apply only to the sample(s) tested. 3. All Pass/Fail indications in this report are observations based on the measurements recorded herein from testing performed in accordance with the standards named above. 4. The measurements in this report are traceable to national or international standards. 5. This report must not be used by the client to claim product certification, approval, or endorsement by UKAS. 6. This report is written to support regulatory compliance of the standards named above. 7. Throughout this report, all information marked with (*) was provided by customer, Applicant or Authorised representative.					
Issued By:			Prepared By:		
					
Naseer Mirza Operations Leader			Masood Khan Senior Test Engineer		

2. Test Specification, Methods and Procedures

2.1. Test Specification

Reference:	KDB Publication Number: 865664 D01 SAR Measurement 100 MHz to 6 GHz
Title:	SAR Measurement Requirements for 100 MHz to 6 GHz
Introduction:	The SAR Measurement procedures for 100MHz to 6GHz are described in this document. Field probes, tissue dielectric properties, SAR scans, measurement accuracy and variability of the measured results are discussed. The field probe and SAR scan requirements are derived from criteria considered in standard IEEE 1528-2013. The wireless product and technology specific procedures in applicable KDB publications are required to be used unless further guidance has been approved by the FCC.
Purpose of Test:	To determine if the Equipment Under Test complies with the Specific Absorption Rate for general population/uncontrolled exposure limit of 1.6 W/kg as specified in FCC 47 CFR part 2 (2.1093).

2.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

IEEE 1528:2013

IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques

IEC/IEEE 62209-1528: 2020

Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices.

FCC KDB Publication:

KDB 248227 D01 802.11 Wi-Fi SAR v02r02

KDB 447498 D03 Supplement C Cross-Reference v01

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

2.3. Definition of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Section 4.3 contains a list of the test equipment used.

3. Facilities and Accreditation

The measurement facilities used to collect data are located at

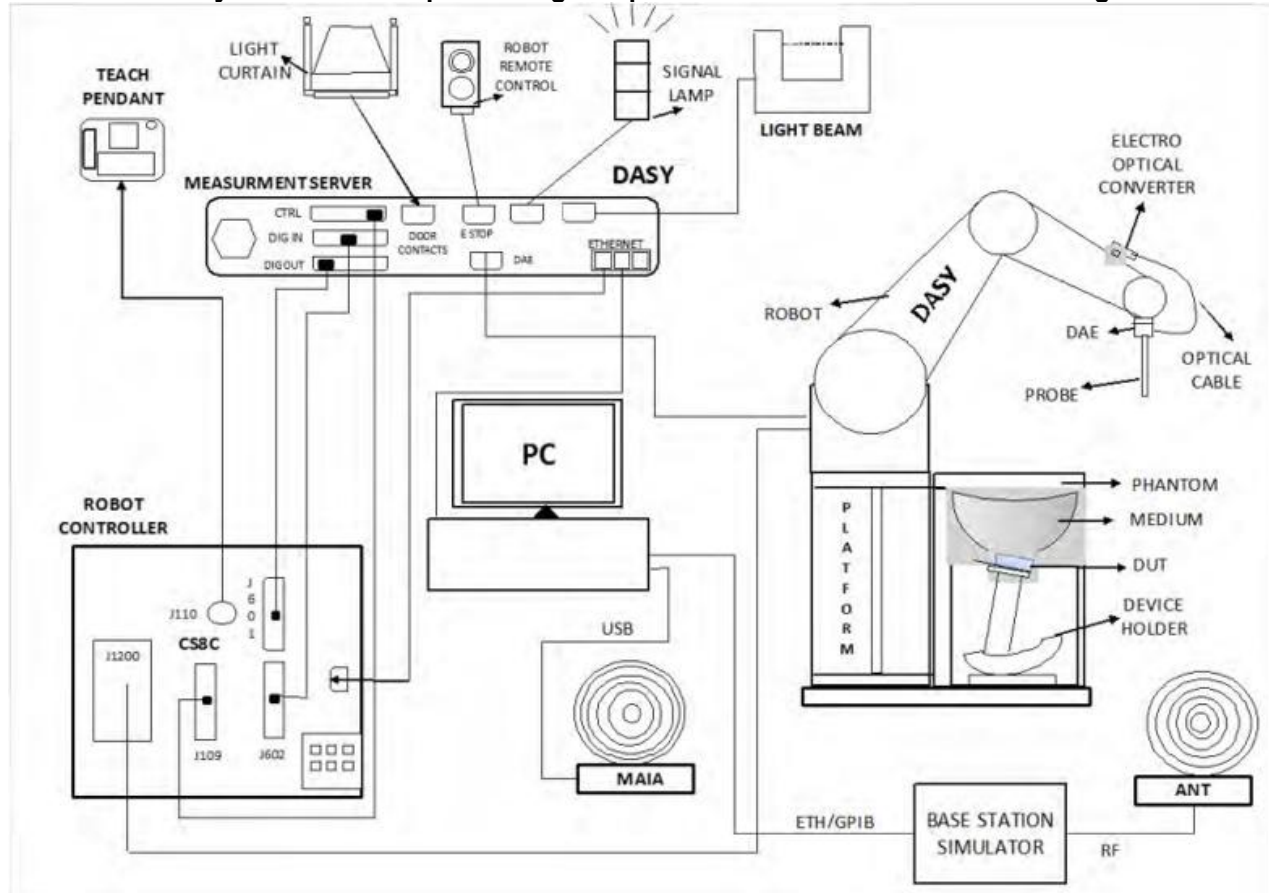
Horizon Unit 1-4, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, UK	Facility Type
SAR Lab 61	Controlled Environment Chamber
SAR Lab 62	Controlled Environment Chamber
SAR Lab 64	Controlled Environment Chamber
SAR Lab 65	Controlled Environment Chamber

UL International (UK) Limited is accredited by UKAS (United Kingdom Accreditation Service, Accredited to ISO/IEC 17025:2017), Laboratory UKAS Code 5772.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY test systems used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- 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 from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win10 with DASY software installed.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.2. SAR Measurement Procedure

4.2.1. Normal SAR Measurement Procedure

The following procedure shall be performed for each of the test conditions

- a) Measure the local SAR at a test point within 5 mm of the phantom inner surface that is closest to the DUT.
- b) Measure the two-dimensional SAR distribution within the phantom (area scan procedure). The boundary of the measurement area shall not be closer than 20 mm from the phantom side walls. The distance between the measurement points should enable the detection of the location of local maximum with an accuracy of better than half the linear dimension of the tissue cube after interpolation. A maximum grid spacing of 20 mm for frequencies below 3 GHz and $(60/f \text{ [GHz]})$ mm for frequencies of 3 GHz and greater is recommended. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be 5 mm for frequencies below 3 GHz and $\delta \ln(2)/2$ mm for frequencies of 3 GHz and greater, where δ is the plane wave skin depth and $\ln(x)$ is the natural logarithm. The maximum variation of the sensor-phantom surface distance shall be ± 1 mm for frequencies below 3 GHz and $\pm 0,5$ mm for frequencies of 3 GHz and greater. At all measurement points the angle of the probe with respect to the line normal to the surface should be less than 5° . If this cannot be achieved for a measurement distance to the phantom inner surface shorter than the probe diameter, additional uncertainty evaluation is needed.
- c) From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks; additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g., 1 W/kg for 1,6 W /kg 1 g limit, or 1,26 W/kg for 2 W /kg, 10 g limit).
- d) Measure the three-dimensional SAR distribution at the local maxima locations identified in step c) (zoom scan). For frequencies at or below 3 GHz, the following procedure shall be applied: The horizontal grid step shall be 8 mm or less. The grid step in the vertical direction shall be 5 mm or less if uniform spacing is used. If variable spacing is used in the vertical direction, the maximum spacing between the two closest measured points to the phantom shell (M1 and M2) shall be 4 mm or less and the spacing between farther points shall increase by a factor of 1,5 or less. The minimum size of the zoom scan volume shall be 30 mm by 30 mm by 30 mm.

For frequencies above 3 GHz, the minimum size of the zoom scan volume may be reduced to 22 mm by 22 mm by 22 mm. The horizontal grid step shall be $(24/f \text{ [GHz]})$ mm or less. If uniform spacing in the vertical direction is used, the grid step in the vertical direction shall be $(10/(f \text{ [GHz]} - 1))$ mm or less. If variable spacing is used in the vertical direction, the maximum spacing between the two measured points closest to the phantom shell shall be $(12/f \text{ [GHz]})$ mm or less and the spacing between further points shall increase by a factor of 1,5 or less. For other parameters, see Zoom Scan Parameters table.

When the highest 1 g or 10 g cube is touching the boundary of a zoom-scan volume, the entire zoom scan shall be repeated with the new centre located at the maximum SAR location indicated by the preceding zoom scan measurement. If the zoom scan measured as defined above complies with both of the following criteria, or if the peak spatial-average SAR is below 0,1 W/kg, no additional measurements are needed:

1) 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 z_{M1} . The minimum distance shall be recorded in the SAR test report;

2) 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.

If one or both of the above criteria are not met, the zoom scan measurement shall be repeated using a finer resolution while keeping the other zoom scan parameters compatible with Zoom Scan Parameters table. New horizontal and vertical grid steps shall be determined from the measured SAR distribution so that the above criteria are met. Compliance with the above two criteria shall be demonstrated for the new measured zoom scan. The size of the higher resolution zoom scan and other parameters of Zoom Scan Parameters table shall apply. The closest point to the phantom shell shall be 2 mm or less for graded grids and the grading factor shall be 1,5 or less.

Uncertainties due to field distortion between the media boundary and the dielectric enclosure of the probe should also be minimized, which is achieved if the distance between the phantom surface and physical

tip of the probe is larger than the probe tip diameter. Other methods may utilize correction procedures to compensate for boundary effects that enable high precision measurements closer than half the probe diameter. For all measurement points, the angle of the probe normal to the flat phantom surface shall be less than 5°.

Zoom Scan Parameters

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	$3 \text{ GHz} < f \leq 6$ GHz
Maximum distance between the closest measured points and the phantom surface (z_{M1} in Figure 14 and Table 2, in mm)	5	$\delta \ln(2)/2^a$
Maximum angle between the probe axis and the flat phantom surface normal (α in Figure 14)	5°	5°
Maximum spacing between measured points in the x- and y-directions (Δx and Δy , in mm)	8	$24/f^{b,c}$
For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell (Δz_1 in Figure 14, in mm)	5	$10/(f - 1)$
For graded grids: Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 14, in mm)	4	$12/f$
For graded grids: Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ($R_z = \Delta z_2/\Delta z_1$ in Figure 14)	1,5	1,5
Minimum edge length of the zoom scan volume in the x- and y-directions (L_z in 7.2.5.3, in mm)	30	22
Minimum edge length of the zoom scan volume in the direction normal to the phantom shell (L_h in 7.2.5.3, in mm)	30	22
Tolerance in the probe angle	1°	1°
^a δ is the penetration depth for a plane-wave incident normally on a planar half-space. ^b This is the maximum spacing allowed, which may not work for all circumstances. ^c f is the frequency in GHz.		

- e) Use post processing (e.g. interpolation and extrapolation) procedures to determine the local SAR values at the spatial resolution needed for mass averaging.
- f) The local SAR should be measured at the same location as in Step a). SAR drift is assessed and reported in the uncertainty budget.

In the event that the evaluation of measurement drift exceeds the 5 % tolerance, it is required that SAR be reassessed following guidelines contained within this standard.

If the drift is larger than 5 %, then the measurement drift shall be considered a bias, not an uncertainty. A correction shall be applied to the measured SAR value. It is not necessary to record the drift in the uncertainty budget (i.e. $u_i = 0$ %). The uncertainty budget reported in a measurement report should correspond to the highest SAR value reported (after correction, if applicable). Alternatively, the uncertainty budget reported should cover all measurements, i.e., it should report a conservative value

4.3. Test Equipment

Measuring equipment used to perform the tests is documented in this report and has been calibrated in accordance with UKAS' recommendations and is traceable to recognized national standards.

****Note:** The test equipment was within 1-year annual calibration during the time of testing.

UL Asset No.	Instrument Name	Manufacturer	Type	Serial No.	Date Last Calibrated	Cal. Interval (Months)
134030	E-Field Probe	SPEAG	EX3DV4	3995	21 Nov 2025	12
234652	E-Field Probe	SPEAG	EX3DV4	7788	12 Jan 2026	12
234649	E-Field Probe	SPEAG	EX3DV4	7790	09 Jan 2026	12
270554	E-Field Probe	SPEAG	EX3DV4	7950	08 Sep 2025	12
134031	Data Acquisition Equipment	SPEAG	DAE4	1435	12 Feb 2026	12
168974	Data Acquisition Equipment	SPEAG	DAE4	1543	09 Jan 2026	12
132812	Data Acquisition Equipment	SPEAG	DAE4	431	13 Nov 2025	12
132813	Data Acquisition Equipment	SPEAG	DAE4	432	14 Oct 2025	12
131901	Phantom	SPEAG	Twin Sam V5	1832	Cal. as part of system	-
170204	Phantom	SPEAG	Twin Sam V8	1945	Cal. as part of system	-
170206	Phantom	SPEAG	Twin Sam V8	1949	Cal. as part of system	-
234940	Phantom	SPEAG	Twin Sam V8	2128	Cal. as part of system	-
129785	Dipole Antenna	SPEAG	D750V3	1011	09 Feb 2026	12
133674	Dipole Antenna	SPEAG	D750V3	1147	08 Oct 2025	12
134145	Dipole Antenna	SPEAG	D900V2	1d168	08 Oct 2025	12
132959	Dipole Antenna	SPEAG	D900V2	035	09 Feb 2026	12
168975	Dipole Antenna	SPEAG	D1800V2	2d218	12 Mar 2026	12
130805	Dipole Antenna	SPEAG	D1800V2	2d009	18 Feb 2026	12
130607	Dipole Antenna	SPEAG	D1800V2	264	08 Oct 2025	12
168979	Dipole Antenna	SPEAG	D1900V2	5d227	12 Mar 2026	12
132925	Dipole Antenna	SPEAG	D1900V2	537	17 Feb 2026	12
130029	Dipole Antenna	SPEAG	D2450V2	725	10 Oct 2025	12
133676	Dipole Antenna	SPEAG	D2600V2	1109	12 Feb 2026	12
180463	POWERSOURCE1	SPEAG	SE UMS 160 BA	4012	13 Nov 2025	12
207451	POWERSOURCE1	SPEAG	SE UMS 160 CA	4248	09 Jan 2026	12
234638	POWERSOURCE1	SPEAG	SE UMS 160 CB	4317	09 Apr 2026	12
151859	RS Hygrometer	RS Components	408-6109	612Q19R(2)	29 Jan 2026	12
151858	RS Hygrometer	RS Components	408-6109	612Q19R(1)	29 Jan 2026	12
235576	RS Hygrometer	RS Components	196-8736	196-8736	29 Jan 2026	12
133922	RS Hygrometer	RS Components	408-6109	D10Q69	29 Jan 2026	12
191047	Body Handset Positioner	SPEAG	MD4HACV5	None	Cal. not required	-
133684	Body Handset Positioner	SPEAG	MD4HACV5	None	Cal. not required	-
170228	Body Handset Positioner	SPEAG	MD4HACV5	None	Cal. not required	-
170229	Body Handset Positioner	SPEAG	MD4HACV5	None	Cal. not required	-
133845	Measurement Server	SPEAG	SE UMS 011 EA	1437	Cal. not required	-
168794	Measurement Server	SPEAG	SE UMS 028 BB	1566	Cal. not required	-
168797	Measurement Server	SPEAG	SE UMS 028 BD	1593	Cal. not required	-
168796	Measurement Server	SPEAG	SE UMS 028 BB	1572	Cal. not required	-
138452	Phantom Support Structure	SPEAG	Phantom Table	-	Cal. not required	-
170217	Phantom Support Structure	SPEAG	Phantom Table	-	Cal. not required	-
170219	Phantom Support Structure	SPEAG	Phantom Table	-	Cal. not required	-
170220	Phantom Support Structure	SPEAG	Phantom Table	-	Cal. not required	-
131908	Robot Arm	Staubli	TX60 L	F14/5UA6A1/A/01	Cal. not required	-
168792	Robot Arm	Staubli	TX60 L	F17/5ETWA1/A/01	Cal. not required	-
168793	Robot Arm	Staubli	TX60 L	F17/5ETWB1/A/01	Cal. not required	-
168790	Robot Arm	Staubli	TX60 L	F17/5ENYG1/A/01	Cal. not required	-
131905	Robot Power Supply	SPEAG	CS8C	F14/5T5ZA1/C/01	Cal. not required	-
168800	Robot Power Supply	SPEAG	CS8C	F17/5ETWA1/C/01	Cal. not required	-
168801	Robot Power Supply	SPEAG	CS8C	F17/5ETWB1/C/01	Cal. not required	-
168799	Robot Power Supply	SPEAG	CS8C	F17/5ENYG1/C/01	Cal. not required	-
236432	Communication Test Set	Rohde & Schwarz	CMW500	102066	03 Dec 2025	12
137944	Communication Test Set	Rohde & Schwarz	CMW500	145921	17 Dec 2025	12
199579	Communication Test Set	Rohde & Schwarz	CMW500	149836	05 May 2026	12
278652	Communication Test Set	Rohde & Schwarz	CMW500	152971	08 Apr 2026	12
278871	Communication Test Set	Rohde & Schwarz	CMW500	164711	12 Mar 2026	12
132628	Communication Test Set	Anritsu	MT8821C	6200938937	24 Feb 2026	12
166282	Power Sensor	Rohde & Schwarz	NRP-Z51	103031-NV	12 Jan 2026	12
166281	Power Sensor	Rohde & Schwarz	NRP-Z51	104649-JG	25 Mar 2026	12
174120	Thermometer (Fluid)	Testo	Testo 720	3327513	04 Jun 2025	12
248441	Thermometer (Fluid)	Testo	Testo 925	84661745	02 Apr 2026	12
248440	Thermometer (Fluid)	Testo	Testo 925	84796589	02 Apr 2026	12
248442	Thermometer (Fluid)	Testo	Testo 925	84866571	02 Apr 2026	12
147741	Vector Network Analyser	Rohde Schwarz	ZND132.5170K92	100151	18 Feb 2026	12

UL Asset No.	Instrument Name	Manufacturer	Type	Serial No.	Date Last Calibrated	Cal. Interval (Months)
239824	Vector Network Analyser	Copper Mountain	R140B-02	23150058	27 Apr 2026	12
130641	Vector Network Analyser	Keysight	8753ES	US39172406	25 Mar 2026	12
133906	DAK 3.5 Fluid Probe	SPEAG	SM DAK 040 CA	1089	Cal. before use	-
235355	DAK 3.5 Fluid Probe	SPEAG	SM DAK 040 CA	1337	Cal. before use	-
264423	Digital Camera	Kodak	PixPro AZ425	M067074145	Cal. not required	-
184269	RF Coax Cable	Taoglas	CAB.721	-	Cal. not required	-
184271	RF Coax Cable	Taoglas	CAB.721	-	Cal. not required	-
134732	RF Coax Cable	-	70530/4PE	-	Cal. not required	-
137559	RF Coax Cable	Huber+Suhner	ST18/SMAm/Nm/36	-	Cal. not required	-

4.3.1. SAR System Specifications

Robot System	
Positioner:	Stäubli Unimation Corp. Robot Model: TX60L
Repeatability:	±0.030 mm
No. of Axes:	6
Serial Number:	F14/5UA6A1/A/01; F17/5ETWA1/A/01; F17/5ETWB1/A/01; F17/5ENYG1/A/01
Reach:	920 mm
Payload:	2.0 kg
Control Unit:	CS8C
Programming Language:	V+
Data Acquisition Electronic (DAE) System	
Serial Number:	DAE4: 1435; 1543; 431; 432
PC Controller	
PC:	HP EliteDesk800
Operating System:	Windows 11
Data Card:	DASY Measurement Server
Data Converter	
Features:	Signal Amplifier, multiplexer, A/D converted and control logic.
Software:	DASY6 PRO Software
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock.
PC Interface Card	
Function:	24 bit (64 MHz) DSP for real time processing Link to DAE4 16 bit A/D converter for surface detection system serial link to robot direct emergency stop output for robot.
Phantom	
Phantom:	SAM Phantom
Shell Material:	Fibreglass
Thickness:	2.0 ±0.1 mm

E-Field Probe	
Model:	EX3DV4
Serial No:	3995; 7788; 7790; 7950
Construction:	Triangular core
Frequency:	10 MHz to > 6 GHz
Linearity:	± 0.2 dB (30 MHz to 6 GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	9
Tip Diameter (mm):	2.5
Sensor X Offset (mm):	1
Sensor Y Offset (mm):	1
Sensor Z Offset (mm):	1

5. Measurement Uncertainty

5.1.Overview

No measurement or test can ever be perfect, and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Test Name	Confidence Level	Calculated Uncertainty
Uncertainty- Freq. 300 MHz - 3 GHz Head & Body Configuration 1g	95%	±23.8%

5.2.Method of Calculation

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed

5.3.Equipment Accuracy and Decision Rule

Measurement system instrumentation shall be used with an accuracy specification meeting the accuracy specification limits according to IEC/IEEE OD-5014.

As applicable, unless specified otherwise in this quotation, the compliance “Decision Rule” is based on Simple Acceptance. If the measured value is on the limit, the result is defined as a pass. In this case the risk of a false positive is 50%. For further information regarding risk assessment refer to ILAC G8:09/2019.

5.4.Uncertainty – Freq. 300MHz - 3GHz Head & Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	C _i (10g)	Standard Uncertainty		v _i or v _{eff}
							+ u (%)	- u (%)	
B	Probe calibration	12.000	12.000	normal (k=2)	2.0000	1.0000	6.000	6.000	∞
B	Probe calibration drift	1.700	1.700	Rectangular	1.7321	1.0000	0.981	0.981	∞
B	Probe Linearity and Detection Limits	4.700	4.700	Rectangular	1.7321	1.0000	2.714	2.714	∞
B	Broadband Signal	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Isotropy	7.600	7.600	Rectangular	1.7321	1.0000	4.388	4.388	∞
B	Data Acquisition	0.300	0.300	normal (k=1)	1.0000	1.0000	0.300	0.300	∞
B	RF Ambient conditions	0.260	0.260	normal (k=1)	1.0000	1.0000	0.260	0.260	∞
B	Probe Positioning	0.700	0.700	normal (k=1)	1.0000	0.1400	0.098	0.098	∞
B	Data Processing Errors	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Uncertainty in SAR correction for deviations in permittivity and conductivity	1.900	1.900	normal (k=1)	1.0000	0.8400	1.900	1.900	∞
B	Liquid Conductivity (measured value)	2.500	2.500	normal (k=1)	1.0000	0.0000	0.000	0.000	∞
B	Liquid Permittivity (measured value)	2.500	2.500	normal (k=1)	1.0000	0.0000	0.000	0.000	∞
B	Liquid Conductivity (temperature uncertainty)	3.300	3.300	Rectangular	1.7321	0.7100	1.486	1.486	∞
B	Liquid Permittivity (temperature uncertainty)	0.310	0.310	Rectangular	1.7321	0.7100	0.140	0.140	∞
B	Phantom Shell Permittivity	14.000	14.000	Rectangular	1.7321	0.2500	2.021	2.021	∞
B	Distance DUT - TSL	2.000	2.000	normal (k=1)	1.0000	2.0000	4.000	4.000	∞
A	Test Sample Positioning	4.240	4.240	normal (k=1)	1.0000	1.0000	4.240	4.240	25
A	Device Holder uncertainty	4.550	4.550	normal (k=1)	1.0000	1.0000	4.550	4.550	5
B	DUT Modulation	2.400	2.400	Rectangular	1.7321	1.0000	1.386	1.386	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
	Combined standard uncertainty			t-distribution			12.12	12.12	>200
	Expanded uncertainty			k = 1.96			23.8	23.8	>200

6. Equipment Under Test (EUT)

6.1. Description of Equipment Under Test (EUT)

DUT Description*:	The equipment under test (EUT) is Module fixed on a wheelchair, supports Cellular, WLAN 2.4 GHz and BT 2.4 GHz technologies.	
Serial Number*:	Radiated Sample(s)	Sample 1 – EA26020001 Sample 2 – EA26020002
	Conducted Sample(s)	Sample 3 - EA26020003 Sample 4 - EA26020004
Hardware Version Number*:	Version 2	
Software Version Number*:	2.7	
Baseband Firmware Version*:	30.201.30.201	
Country of Manufacture*:	UK	
Date of Receipt:	03 Mar 2026	
Operating Configurations*:	Body-Worn	
Device dimension*	1. Quectel Antenna - Overall (Length x Width x Depth): 86.8 mm x 78.3 mm x 35.0 mm 2. Laird Antenna - Overall (Length x Width x Depth): 3.2 mm x 1.6 mm x 1.2 mm	
Antenna Type*:	Internal Integral	
Number of Antenna Positions*:	2	Fixed
Battery Type*	☐ Standard – Lithium-ion battery ☐ Extended (large capacity) ☒ External Battery powered from Wheelchair (24VDC)	

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode	Duty Cycle
GSM	900 1800	GPRS (GMSK) EGPRS (GMSK/8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down ☐ DTM (Dual Transfer Mode)
W-CDMA ☒ (FDD) ☐ (TDD)	Band 1 Band 8	WCDMA Rel. 99 (Voice & Data) HSDPA (Rel. 5) HSUPA (Rel. 6)	100%
LTE ☒ (FDD) ☐ (TDD)	Band 1 Band 3 Band 8 Band 20 Band 28 Band 38 Band 40	QPSK 16QAM	100% (FDD)

Additional Information Related to Testing:

Antenna Type:	Internal integral
Antenna Lengths:	As specified in Appendix 11.1

Number of Antennas:	Antenna Name	Antenna Type	Type
	WWAN	Cellular	1 fixed
	WLAN	WLAN 2.4 GHz	1 fixed
	WPAN	BT 2.4 GHz	

Additional Information Related to Testing:

GSM			
Band	Description		
GSM850	Frequency Range: 824 - 849 MHz		
	Channel Number	Channel Description	Frequency (MHz)
	128	Low	824.2
	190	Middle	836.6
	251	High	848.8
PCS1900	Frequency Range: 1850 - 1910 MHz		
	Channel Number	Channel Description	Frequency (MHz)
	512	Low	1850.2
	661	Middle	1880.0
	810	High	1909.8

WCDMA			
Band	Description		
WCDMA FDD 2	Frequency Range: 1852 - 1908 MHz		
	Channel Number	Channel Description	Frequency (MHz)
	9262	Low	1852.4
	9400	Middle	1880.0
	9538	High	1907.6
WCDMA FDD 4	Frequency Range: 1712 - 1753 MHz		
	Channel Number	Channel Description	Frequency (MHz)
	1312	Low	1712.4
	1412	Middle	1732.4
	1513	High	1752.6

LTE							
Band	Description						
LTE FDD 2	Frequency Range: 1850 - 1910 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Channel No. / Freq. (MHz)						
	Low	18700 / 1860.0	18675 / 1857.5	18650 / 1855.0	18625 / 1852.5	18615 / 1851.5	18607 / 1850.7
	Mid	18900 / 1880.0	18900 / 1880.0	18900 / 1880.0	18900 / 1880.0	18900 / 1880.0	18900 / 1880.0
	High	19100 / 1900.0	19125 / 1902.5	19150 / 1905.0	19175 / 1907.5	19185 / 1908.5	19193 / 1909.3
LTE FDD 4	Frequency Range: 1710 - 1755 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Channel No. / Freq. (MHz)						
	Low	20050/ 1720.0	20025/ 1717.5	20000/ 1715.0	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745.0	20325/ 1747.5	20350/ 1750.0	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
LTE FDD 5	Frequency Range: 824 - 849 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Channel No. / Freq. (MHz)						
	Low			20450/ 829.0	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844.0	20625/ 846.5	20635/ 847.5	20643/ 848.3

LTE							
Band	Description						
LTE FDD 7	Frequency Range: 2500 - 2570 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low	20850 / 2510.0	20825 / 2507.5	20800 / 2505.0	20775 / 2502.5		
	Mid	21100 / 2535.0	21100 / 2535.0	21100 / 2535.0	21100 / 2535.0		
	High	21350 / 2560.0	21375 / 2562.5	21400 / 2565.0	21425 / 2567.5		
LTE FDD 12	Frequency Range: 700 - 716 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low			23060 / 704.0	23035 / 701.5	23025 / 700.5	23017 / 699.7
	Mid			23095 / 707.5	23095 / 707.5	23095 / 707.5	23095 / 707.5
	High			23130 / 711.0	23155 / 713.5	23165 / 714.5	23173 / 715.3
LTE FDD 13	Frequency Range: 777 - 787 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low				23205 / 779.5		
	Mid			23230 / 782.0	23230 / 782.0		
	High				23255 / 784.5		

LTE							
Band	Description						
LTE FDD 25	Frequency Range: 1850 - 1915 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low	26140 / 1860.0	26115 / 1857.5	26090 / 1855.0	26065 / 1852.5	26055 / 1851.5	26047 / 1850.7
	Mid	26365 / 1882.5	26365 / 1882.5	26365 / 1882.5	26365 / 1882.5	26365 / 1882.5	26365 / 1882.5
	High	26590 / 1905.0	26615 / 1907.5	26640 / 1910.0	26665 / 1912.5	26675 / 1913.5	26683 / 1914.3
LTE FDD 26	Frequency Range: 814 - 849 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low		26765 / 821.5	26740 / 819.0	26715 / 816.5	26705 / 815.5	26697 / 814.7
	Mid		26865 / 831.5	26865 / 831.5	26865 / 831.5	26865 / 831.5	26865 / 831.5
	High		26965 / 841.5	26990 / 844.0	27015 / 846.5	27025 / 847.5	27033 / 848.3
LTE TDD 41	Frequency Range: 2496 - 2690 MHz						
	Channel Description	Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
		Channel No. / Freq. (MHz)					
	Low	39750 / 2506.0	39725 / 2503.5	39700 / 2501.0	39675 / 2498.5		
	Mid	40620 / 2593.0	40620 / 2593.0	40620 / 2593.0	40620 / 2593.0		
	High	41490 / 2680.0	41515 / 2682.5	41540 / 2685.0	41565 / 2687.5		

Wireless Technologies (Continued)

Wi-Fi 2.4GHz								
Band	Description							
	Channel No. 20 MHz BW	Freq. (MHz)	Channel No. 40 MHz BW	Freq. (MHz)	Channel No. 80 MHz BW	Freq. (MHz)	Channel No. 160 MHz BW	Freq. (MHz)
Wi-Fi 2.4 GHz (802.11b/g/n)	1	2412.0	N/A					
	2	2417.0						
	3	2422.0						
	4	2427.0						
	5	2432.0						
	6	2437.0						
	7	2442.0						
	8	2447.0						
	9	2452.0						
	10	2457.0						
	11	2462.0						
	12	2467.0						
	13	2472.0						

Bluetooth				
Band	Description			
Bluetooth	Frequency Range: 2402 - 2480 MHz			
	Mode	Channel Number	Channel Description	Frequency (MHz)
	BDR Mode	0	Low	2402.0
		39	Middle	2441.0
		78	High	2480.0

6.3.Nominal and Maximum Output power*: GSM

RF Air interface	Mode	Target + Max. Tolerances (dBm)	
		Channels	Body
GSM850	GMSK 1 slots	Low	33.82
		Mid	33.93
		High	34.15
	GMSK 2 slots	Low	32.62
		Mid	32.76
		High	32.46
	GMSK 3 Slots	Low	31.35
		Mid	31.36
		High	31.42
	GMSK 4 Slots	Low	29.98
		Mid	30.00
		High	30.24
PCS1900	GMSK 1 slots	Low	31.53
		Mid	31.67
		High	31.74
	GMSK 2 slots	Low	30.57
		Mid	30.73
		High	30.70
	GMSK 3 Slots	Low	28.88
		Mid	29.39
		High	28.97
	GMSK 4 Slots	Low	26.72
		Mid	26.67
		High	27.61

6.4.Nominal and Maximum Output power*: WCDMA

RF Air interface	Mode	Target + Max. Tolerances (dBm)
		Body
WCDMA FDD 2	RMC 12.2kbps	25.00
WCDMA FDD 4	RMC 12.2kbps	25.00

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.

6.5.Nominal and Maximum Output power*: LTE

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 2	All	1.4	QPSK	Low	24.13	24.08	23.04
				Mid	23.86	23.95	23.02
				High	23.97	24.03	23.03
			16QAM	Low	23.02	22.9	22.13
				Mid	22.97	23.05	21.87
				High	22.91	22.97	21.79
		3	QPSK	Low	23.98	24.03	23.10
				Mid	23.81	24.02	23.17
				High	23.96	24.01	23.07
			16QAM	Low	23.03	23.09	22.12
				Mid	23.03	23.38	22.10
				High	23.01	23.26	22.02
		5	QPSK	Low	23.79	23.96	23.1
				Mid	23.92	23.9	23.17
				High	24.01	23.99	23.96
			16QAM	Low	22.99	23.03	22.12
				Mid	23.03	23.02	22.01
				High	23.23	23.01	21.99
		10	QPSK	Low	23.99	24.03	23.21
				Mid	23.93	24.10	23.17
				High	24.04	24.00	23.11
			16QAM	Low	23.11	23.12	22.09
				Mid	22.97	23.12	22.13
				High	23.12	23.23	22.15
		15	QPSK	Low	23.89	24.1	23.15
				Mid	23.76	23.94	23.07
				High	23.77	24.08	23.07
			16QAM	Low	22.95	23.13	22.16
				Mid	22.92	23.11	22.08
				High	22.79	23.06	22.18
		20	QPSK	Low	23.73	24.13	23.22
				Mid	23.91	24.04	23.08
				High	23.79	23.96	23.12
			16QAM	Low	22.95	23.22	22.19
				Mid	22.96	23.07	22.18
				High	22.93	23.07	22.18

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 4	All	1.4	QPSK	Low	24.45	24.61	23.80
				Mid	24.54	24.58	23.73
				High	24.48	24.54	23.81
			16QAM	Low	23.46	23.62	22.90
				Mid	23.73	23.77	22.76
				High	23.72	23.78	22.76
		3	QPSK	Low	24.61	24.61	23.80
				Mid	24.68	24.67	23.85
				High	24.57	24.63	23.83
			16QAM	Low	23.87	23.85	22.83
				Mid	23.85	24.02	22.86
				High	23.79	23.95	22.95
		5	QPSK	Low	24.39	24.60	23.81
				Mid	24.47	24.48	23.79
				High	24.69	24.75	23.88
			16QAM	Low	23.57	23.78	22.94
				Mid	23.61	23.63	22.62
				High	23.83	23.89	22.98
		10	QPSK	Low	24.55	24.72	23.86
				Mid	24.48	24.69	23.80
				High	24.55	24.92	23.83
			16QAM	Low	23.73	23.90	22.85
				Mid	23.42	23.61	22.73
				High	23.32	23.69	22.85
		15	QPSK	Low	24.54	24.76	23.82
				Mid	24.54	24.89	23.80
				High	24.65	24.91	23.88
			16QAM	Low	23.72	23.94	22.92
				Mid	23.56	23.91	22.83
				High	23.69	23.95	22.97
		20	QPSK	Low	24.41	24.69	23.88
				Mid	24.82	24.87	23.92
				High	24.62	24.90	24.01
			16QAM	Low	23.58	23.86	22.99
				Mid	23.93	23.98	22.94
				High	23.68	23.95	23.00

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 5	All	1.4	QPSK	Low	24.58	24.43	23.61
				Mid	24.33	24.40	23.45
				High	24.39	24.32	23.51
			16QAM	Low	23.61	23.43	22.64
				Mid	23.55	23.62	22.59
				High	23.61	23.54	22.53
		3	QPSK	Low	24.41	24.41	23.47
				Mid	24.38	24.46	23.48
				High	24.40	24.39	23.55
			16QAM	Low	23.72	23.73	22.42
				Mid	23.55	23.63	22.41
				High	23.54	23.52	22.51
		5	QPSK	Low	24.35	24.29	23.45
				Mid	24.24	24.41	23.47
				High	24.29	24.32	23.41
			16QAM	Low	23.53	23.47	22.43
				Mid	23.28	23.47	22.46
				High	23.15	23.21	22.15
		10	QPSK	Low	24.25	24.51	23.52
				Mid	24.30	24.50	23.59
				High	24.28	24.50	23.49
			16QAM	Low	23.16	23.42	22.51
				Mid	23.34	23.51	22.61
				High	23.07	23.29	22.62

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 7	All	5	QPSK	Low	24.40	24.45	23.46
				Mid	24.23	24.34	23.44
				High	24.21	24.29	23.45
			16QAM	Low	23.64	23.69	22.64
				Mid	23.08	23.17	22.17
				High	23.32	23.47	22.40
		10	QPSK	Low	24.41	24.45	23.60
				Mid	24.30	24.30	23.50
				High	24.41	24.35	23.50
			16QAM	Low	23.48	23.52	22.52
				Mid	23.32	23.34	22.44
				High	23.29	23.20	22.33
		15	QPSK	Low	24.48	24.47	23.58
				Mid	24.32	24.39	23.41
				High	24.14	24.27	23.29
			16QAM	Low	23.71	23.68	22.51
				Mid	23.36	23.43	22.47
				High	23.18	23.31	22.24
		20	QPSK	Low	24.39	24.50	23.47
				Mid	24.38	24.39	23.42
				High	24.19	24.25	23.21
			16QAM	Low	23.41	23.52	22.42
				Mid	23.39	23.40	22.38
				High	23.06	23.12	22.25

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 12	All	1.4	QPSK	Low	24.56	24.53	23.54
				Mid	24.43	24.59	23.63
				High	24.37	24.31	23.51
			16QAM	Low	23.31	23.33	22.52
				Mid	23.34	23.60	22.63
				High	23.50	23.43	22.39
		3	QPSK	Low	24.46	24.65	23.60
				Mid	24.47	24.45	23.56
				High	24.46	24.49	23.59
			16QAM	Low	23.61	23.72	22.57
				Mid	23.81	23.78	22.62
				High	23.70	23.74	22.73
		5	QPSK	Low	24.37	24.48	23.54
				Mid	24.37	24.56	23.64
				High	24.49	24.54	23.55
			16QAM	Low	23.28	23.39	22.62
				Mid	23.36	23.55	22.45
				High	23.46	23.52	22.50
		10	QPSK	Low	24.31	24.47	23.59
				Mid	24.24	24.45	23.67
				High	24.30	24.61	23.66
			16QAM	Low	23.29	23.46	22.55
				Mid	23.32	23.54	22.59
				High	23.39	23.68	22.58

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 13	All	5	QPSK	Low	24.28	24.53	23.58
				Mid	24.47	24.68	23.66
				High	24.38	24.57	23.68
			16QAM	Low	23.39	23.65	22.64
				Mid	23.60	23.78	22.66
				High	23.50	23.68	22.68
		10	QPSK	Mid	24.38	24.68	23.74
			16QAM	Mid	23.35	23.64	22.74

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 25	All	1.4	QPSK	Low	24.36	24.52	23.70
				Mid	24.33	24.48	23.55
				High	24.46	24.47	23.76
			16QAM	Low	23.35	23.51	22.70
				Mid	23.47	23.62	22.42
				High	23.63	23.65	22.75
		3	QPSK	Low	24.44	24.55	23.71
				Mid	24.43	24.46	23.57
				High	24.78	24.54	23.89
			16QAM	Low	23.64	23.75	22.64
				Mid	23.81	23.83	22.69
				High	24.36	24.11	22.97
		5	QPSK	Low	24.42	24.50	23.58
				Mid	24.51	24.54	23.67
				High	24.45	24.79	23.80
			16QAM	Low	23.60	23.67	22.61
				Mid	23.52	23.55	22.60
				High	23.37	23.71	22.82
		10	QPSK	Low	24.43	24.56	23.64
				Mid	24.31	24.54	23.67
				High	24.54	24.86	23.75
			16QAM	Low	23.56	23.66	22.72
				Mid	23.32	23.65	22.70
				High	23.51	23.82	22.75
		15	QPSK	Low	24.47	24.57	23.75
				Mid	24.32	24.60	23.73
				High	24.34	24.81	23.78
			16QAM	Low	23.74	23.83	22.79
				Mid	23.49	23.77	22.74
				High	23.26	23.73	22.74
		20	QPSK	Low	24.46	24.69	23.73
				Mid	24.39	24.65	23.88
				High	24.45	24.12	23.82
			16QAM	Low	23.55	23.78	22.77
				Mid	23.48	23.74	22.75
				High	23.19	23.84	22.84

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 26	All	1.4	QPSK	Low	24.42	24.35	23.50
				Mid	24.45	24.48	23.51
				High	24.48	24.48	23.48
			16QAM	Low	23.35	23.28	22.46
				Mid	23.26	23.30	22.46
				High	23.30	23.30	22.43
		3	QPSK	Low	24.16	24.22	23.39
				Mid	24.28	24.38	23.43
				High	24.46	24.49	23.56
			16QAM	Low	23.38	23.42	22.27
				Mid	23.40	23.48	22.48
				High	23.54	23.58	22.49
		5	QPSK	Low	24.06	24.24	23.31
				Mid	24.21	24.35	23.39
				High	24.09	24.55	23.57
			16QAM	Low	23.20	23.34	22.45
				Mid	23.32	23.46	22.46
				High	23.12	23.53	22.65
		10	QPSK	Low	24.10	24.21	23.47
				Mid	24.25	24.49	24.52
				High	24.27	24.49	23.53
			16QAM	Low	23.32	23.41	22.50
				Mid	23.13	23.39	23.52
				High	22.31	23.50	22.47
		15	QPSK	Low	24.00	24.17	23.37
				Mid	24.32	24.54	23.54
				High	24.47	24.47	23.58
			16QAM	Low	23.19	23.36	22.50
				Mid	23.27	23.50	22.54
				High	23.53	23.55	22.57

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

RF Air interface	Channel	BW (MHz)	Mode	Target + Max. Tolerances (dBm)			
				Channels	1RB	50%RB	100%RB
LTE B 41	All	5	QPSK	Low	24.11	24.35	23.55
				Mid	24.18	24.29	23.47
				High	24.28	24.37	23.50
			16QAM	Low	23.29	23.51	22.52
				Mid	23.21	23.30	22.39
				High	23.22	23.30	22.37
		10	QPSK	Low	24.18	24.35	23.58
				Mid	23.98	24.28	23.56
				High	24.18	24.61	23.67
			16QAM	Low	23.12	23.29	22.50
				Mid	23.04	23.34	22.58
				High	23.14	23.55	22.55
		15	QPSK	Low	24.04	24.25	23.56
				Mid	24.12	24.19	23.41
				High	24.36	24.72	23.67
			16QAM	Low	23.19	23.38	22.69
				Mid	23.23	23.29	22.44
				High	23.34	23.68	22.76
		20	QPSK	Low	23.89	24.34	23.57
				Mid	24.03	24.19	23.50
				High	24.33	24.75	23.76
			16QAM	Low	23.09	23.49	22.60
				Mid	23.01	23.18	22.45
				High	23.19	23.61	22.83

Note:

1. The nominal and maximum average source based rated powers declared and supplied by manufacturer are shown in the above tables and including of the Upper Tolerance.
2. These are specified maximum allowed average power for all the wireless modes and frequency bands supported.

6.6.Nominal and Maximum Output Power*: WLAN 2.4 GHz

Note: SAR measurements on WLAN 2.4 GHz were not performed as max. rated power including tolerance qualifies for exemption.

6.7.Nominal and Maximum Output *: Bluetooth 2.4 GHz

Note: SAR measurements on BT 2.4 GHz were not performed as max. rated power including tolerance qualifies for exemption.

7. RF Exposure Conditions (Test Configurations)

7.1. Configuration Consideration

Technology Port	Configuration	DUT-to-User Separation	Position	Antenna-to-Edge Separation (mm)	Evaluation Considered
Cellular (Ant 1)	Body-Worn	53mm	Front	> 50	Yes ²
			Back	> 50	No
			Edge 1 (Top Edge)	> 50	Yes ²
			Edge 2 (Right Edge)	> 50	No
			Edge 3 (Bottom Edge)	> 50	No
			Edge 4 (Left Edge)	> 50	No

Notes

1. The Antenna to edge separation distances is indicated in the 'Antenna Schematics' located in Section 11.1 of this report.
2. Prior to testing, FCC was contacted for test plan approval via KDB inquiry.

7.2. SAR Test Exemption Consideration

Frequency Band	Configuration(s)
	Body
Cellular (Ant 1)	No
WLAN (Ant 2)	Yes ³
BT (Ant 2)	Yes ³

Note:

1. As per KDB 447498 D04, the frequency bands with rated power including upper tolerance, which qualify for **Standalone SAR Test Exemption**, are as per the above table.
2. The details for the Maximum Rated Power and tolerance(s) can be found in section 6.
3. SAR measurements on WLAN/BT 2.4 GHz were not performed as max. rated power including tolerance qualifies for exemption @ 91mm separation distance. Hence estimated SAR approached used for Simultaneous summations.

8. Conducted output power measurements

8.1. RF Output Average Power Measurement: GSM

Body

GPRS (GMSK) – Coding Scheme: CS1 / EDGE (GMSK) – Coding Scheme: MCS4

Band	Channel	Frequency (MHz)	Avg Power (dBm)				Frame Power (dBm)			
			1 Uplink	2 Uplinks	3 Uplinks	4 Uplinks	1 Uplink	2 Uplinks	3 Uplinks	4 Uplinks
GSM 850	128	824.2	33.21	31.81	29.71	28.31	24.18	25.79	25.45	25.30
	190	836.6	33.41	31.81	29.71	28.41	24.38	25.79	25.45	25.40
	251	848.8	33.61	31.61	29.71	28.31	24.58	25.59	25.45	25.30
PCS 1900	512	1850.2	29.90	29.50	27.70	25.90	20.87	23.48	23.44	22.89
	661	1880.0	30.00	29.80	28.00	25.95	20.97	23.78	23.74	22.94
	810	1909.8	30.65	30.25	28.35	26.35	21.62	24.23	24.09	23.34

Note:

1. Conducted power measurements on EDGE (8PSK) modes were not performed as max. rated power including tolerance is equal or lower than other modes.

8.2. RF Output Average Power Measurement: WCDMA

As per KDB 941225 D01v03r01, SAR measurement is not required for the HSDPA, HSUPA and DC-HSDPA. When the primary mode and the adjust SAR is $\leq 75\%$ of the SAR limit and secondary mode is $\leq 1/4$ dB higher than the primary mode.

Body

Modes			HSDPA				HSUPA					DC-HSDPA (Cat 24)				WCDMA
Sets			1	2	3	4	1	2	3	4	5	1	2	3	4	Voice / RMC 12.2kbps
Band	Ch.	Freq (MHz)	Power [dBm]													
2	9262	1852.4	22.59	22.39	22.49	22.39	22.39	22.39	22.39	22.39	22.39	22.09	21.79	21.69	21.79	24.39
	9400	1880.0	22.48	22.58	22.58	22.68	22.58	22.58	22.58	22.68	22.58	22.38	21.88	21.98	21.98	24.68
	9538	1907.6	22.41	22.61	22.61	22.61	22.61	22.61	22.71	22.71	22.61	22.41	22.01	22.01	22.01	24.71
4	1312	1712.4	23.32	23.32	23.42	23.42	23.32	23.32	23.42	23.42	23.32	23.12	22.72	22.82	22.72	24.62
	1412	1732.4	23.25	23.35	23.35	23.35	23.25	23.35	23.35	23.35	23.25	23.05	22.55	22.65	22.65	24.55
	1513	1752.6	22.91	22.91	22.91	23.01	22.91	22.91	22.91	22.91	22.91	22.71	22.31	22.31	22.41	24.91
β_c			2	12	15	15	11	6	15	2	15	2	12	15	15	
β_d			15	15	8	4	15	15	9	15	15	15	15	8	4	
$\Delta ACK, \Delta NACK, \Delta CQI$			8	8	8	8	8	8	8	8	8	8	8	8	8	
AGV			-	-	-	-	20	12	15	17	21	-	-	-	-	

8.3.RF Output Average Power Measurement: LTE

As defined in the 3GPP specification, RF Output Power of 16QAM < QPSK.

8.3.1. LTE FDD Band 2

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	49 Offset	99 Offset	0 Offset	25 Offset	50 Offset	
20	Body-Worn	QPSK	18700	1860.0	23.04	23.04	23.04	22.90	23.00	23.20	22.05
			18900	1880.0	23.18	23.08	23.18	23.40	23.60	23.65	22.55
			19100	1900.0	23.20	23.10	23.10	23.65	23.10	22.95	22.35
		16QAM	18700	1860.0	21.64	21.64	21.79	21.90	22.00	22.15	20.95
			18900	1880.0	21.78	21.93	21.98	22.35	22.50	22.55	21.60
			19100	1900.0	22.00	21.70	21.80	22.25	22.05	22.05	21.25
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	18675	1857.5	22.84	22.84	22.99	22.75	22.75	22.85	21.90
			18900	1880.0	23.13	22.88	22.98	23.50	23.55	23.55	22.60
			19125	1902.5	23.05	22.85	23.10	23.15	22.95	22.95	22.20
		16QAM	18675	1857.5	21.74	21.39	21.14	21.80	21.90	22.00	20.95
			18900	1880.0	21.83	21.53	21.53	22.60	22.50	22.50	21.55
			19125	1902.5	21.55	21.90	21.50	22.15	22.10	22.05	21.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	18650	1855.0	22.89	22.74	22.74	22.70	22.75	22.85	21.75
			18900	1880.0	23.08	23.13	23.08	23.65	23.60	23.60	22.50
			19150	1905.0	23.20	23.15	23.05	23.05	23.05	23.00	22.15
		16QAM	18650	1855.0	21.84	21.54	21.34	21.90	21.80	21.90	20.80
			18900	1880.0	22.08	21.78	21.83	22.55	22.60	22.55	21.55
			19150	1905.0	22.30	21.70	21.80	22.05	22.25	22.10	21.10
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	18625	1852.5	23.39	23.44	23.44	22.70	22.70	22.70	21.80
			18900	1880.0	23.43	23.23	23.13	23.55	23.60	23.60	22.60
			19175	1907.5	23.76	23.76	23.61	23.05	23.00	22.90	22.10
		16QAM	18625	1852.5	22.09	21.94	22.14	21.85	21.90	21.75	20.85
			18900	1880.0	21.88	22.18	22.18	22.50	22.60	22.45	21.50
			19175	1907.5	22.21	22.31	22.06	22.10	22.00	21.90	20.95
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	18615	1851.5	23.50	23.55	23.60	23.65	23.65	23.60	22.50
			18900	1880.0	23.60	23.80	23.60	23.70	23.85	23.90	22.80
			19185	1908.5	23.65	23.80	23.75	23.95	23.95	23.70	22.80
		16QAM	18615	1851.5	22.00	22.05	22.15	22.45	22.25	22.55	21.55
			18900	1880.0	22.50	22.50	22.30	22.75	22.70	22.75	21.80
			19185	1908.5	22.70	22.60	22.70	22.95	22.75	22.85	21.80
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	18607	1850.7	23.70	23.75	23.80	23.70	23.70	23.65	22.70
			18900	1880.0	23.80	23.85	23.80	23.70	23.90	23.90	23.00
			19193	1909.3	23.85	23.95	23.95	24.00	24.00	23.75	23.00
		16QAM	18607	1850.7	22.20	22.25	22.35	22.65	22.45	22.75	21.75
			18900	1880.0	22.70	22.70	22.50	22.95	22.90	22.95	21.80
			19193	1909.3	22.90	22.80	22.90	22.95	22.95	22.95	21.75

8.3.2. LTE FDD Band 4

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	49 Offset	99 Offset	0 Offset	25 Offset	50 Offset	
20	Body-Worn	QPSK	20050	1720.0	23.34	23.49	23.74	23.70	23.80	23.95	22.85
			20175	1732.5	23.50	23.74	23.05	23.70	23.85	23.75	22.65
			20300	1745.0	23.39	23.09	23.09	23.85	23.70	23.60	22.55
		16QAM	20050	1720.0	22.29	22.69	22.74	22.80	22.85	23.10	22.10
			20175	1732.5	22.75	22.55	21.95	22.75	22.95	22.90	21.80
			20300	1745.0	22.44	21.84	22.34	22.85	22.70	22.65	21.70
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	20025	1717.5	23.89	23.69	23.84	24.00	23.95	24.00	23.00
			20175	1732.5	23.80	23.55	23.50	23.80	23.90	23.90	22.95
			20325	1747.5	23.48	23.38	23.38	23.70	23.65	23.65	22.65
		16QAM	20025	1717.5	22.69	22.79	22.69	22.95	22.70	22.75	22.05
			20175	1732.5	23.05	22.45	22.30	22.70	22.75	22.65	22.05
			20325	1747.5	22.13	22.13	21.98	22.60	22.50	22.50	21.75
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	20000	1715.0	23.73	23.53	23.73	23.90	23.95	23.80	22.90
			20175	1732.5	23.75	23.65	23.35	23.75	23.90	24.00	22.95
			20350	1750.0	23.52	23.22	23.42	23.70	23.70	23.65	22.75
		16QAM	20000	1715.0	22.73	22.28	22.58	22.80	22.85	22.60	21.95
			20175	1732.5	22.50	22.65	22.40	22.70	22.70	22.85	21.95
			20350	1750.0	22.12	22.07	22.42	22.55	22.65	22.65	21.80
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	19975	1712.5	23.47	23.52	23.57	24.00	24.05	23.95	23.00
			20175	1732.5	23.45	23.45	23.50	23.85	23.90	23.90	23.05
			20375	1752.5	23.16	23.16	23.26	23.65	23.55	23.65	22.65
		16QAM	19975	1712.5	22.52	22.12	22.52	22.85	23.00	23.00	22.00
			20175	1732.5	22.45	22.00	22.30	22.65	22.80	23.00	21.95
			20375	1752.5	22.11	22.06	22.41	22.50	22.40	22.55	21.80
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	19965	1711.5	24.35	24.45	24.40	24.60	24.55	24.55	23.60
			20175	1732.5	24.35	24.25	24.30	24.40	24.40	24.35	23.50
			20385	1753.5	23.60	23.85	23.95	23.85	24.15	24.05	22.90
		16QAM	19965	1711.5	23.15	23.10	23.10	23.60	23.50	23.45	22.55
			20175	1732.5	23.05	22.85	23.15	23.55	23.45	23.40	22.40
			20385	1753.5	22.50	22.30	21.95	22.40	23.30	22.85	21.80
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	19957	1710.7	24.35	24.45	24.40	24.60	24.55	24.55	23.60
			20175	1732.5	24.35	24.25	24.30	24.40	24.40	24.35	23.50
			20393	1754.3	23.60	23.85	23.95	23.85	24.15	24.05	22.90
		16QAM	19957	1710.7	23.15	23.10	23.10	23.60	23.50	23.45	22.55
			20175	1732.5	23.05	22.85	23.15	23.55	23.45	23.40	22.40
			20393	1754.3	22.50	22.30	21.95	22.40	23.30	22.85	21.80

8.3.3. LTE FDD Band 5

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	20450	829.0	23.26	23.16	23.36	22.85	22.80	22.95	22.95
			20525	836.5	23.36	23.36	23.21	23.20	23.15	23.10	23.15
			20600	844.0	23.11	23.21	23.31	23.10	23.05	23.10	23.05
		16QAM	20450	829.0	22.16	22.21	21.96	21.95	22.00	22.15	22.00
			20525	836.5	22.16	22.26	22.21	22.20	22.20	22.35	22.25
			20600	844.0	22.11	22.26	22.21	22.15	22.30	22.20	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	20425	826.5	23.21	23.26	23.06	23.00	22.95	22.90	23.00
			20525	836.5	23.21	23.21	23.06	23.20	23.25	23.15	23.15
			20625	846.5	23.21	23.31	23.31	23.10	23.15	23.10	23.10
		16QAM	20425	826.5	22.16	21.96	22.06	22.10	22.10	21.75	21.95
			20525	836.5	22.51	21.81	22.06	22.20	22.05	22.10	22.20
			20625	846.5	22.11	22.26	21.91	22.10	22.20	22.20	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	20415	825.5	24.20	23.90	24.25	23.10	22.90	23.10	23.00
			20525	836.5	24.25	24.10	24.20	23.20	23.15	23.10	23.25
			20635	847.5	24.15	24.15	24.25	23.15	23.25	23.25	23.15
		16QAM	20415	825.5	22.80	22.60	22.90	22.15	22.05	22.10	22.15
			20525	836.5	22.55	23.05	23.00	22.40	22.15	22.20	22.20
			20635	847.5	23.05	23.10	22.90	22.00	22.30	22.25	22.25
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	20407	824.7	24.05	24.10	24.05	24.25	24.25	24.15	23.10
			20525	836.5	23.80	23.95	23.95	24.10	24.05	24.05	23.00
			20643	848.3	24.20	24.05	24.15	24.10	24.20	24.05	23.20
		16QAM	20407	824.7	23.00	22.50	22.65	23.10	23.25	23.20	22.10
			20525	836.5	23.00	22.85	22.55	22.95	23.00	23.05	22.05
			20643	848.3	22.70	22.70	22.65	23.30	23.35	23.15	22.15

8.3.4. LTE FDD Band 7

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	49 Offset	99 Offset	0 Offset	25 Offset	50 Offset	
20	Body-Worn	QPSK	20850	2510.0	23.25	23.25	23.05	23.20	23.00	23.00	22.10
			21100	2535.0	23.37	23.64	23.64	23.30	23.30	23.45	22.47
			21350	2560.0	23.64	23.64	23.24	23.45	23.45	23.30	22.34
		16QAM	20850	2510.0	21.50	21.75	21.70	22.10	21.85	21.85	21.00
			21100	2535.0	22.02	22.02	22.17	22.15	22.10	22.25	21.32
			21350	2560.0	22.14	21.99	21.74	22.20	22.25	22.15	21.24
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	20825	2507.5	22.95	22.80	22.75	23.05	22.85	22.75	22.85
			21100	2535.0	23.12	23.17	23.17	23.20	23.15	23.30	23.10
			21375	2562.5	23.29	23.29	23.14	23.30	23.15	23.15	23.20
		16QAM	20825	2507.5	22.65	22.80	22.65	22.00	21.85	21.85	21.85
			21100	2535.0	22.90	23.30	23.35	22.15	22.15	22.25	22.15
			21375	2562.5	23.10	22.75	22.90	22.15	22.05	22.00	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	20800	2505.0	22.90	23.05	22.85	23.20	23.15	22.95	22.95
			21100	2535.0	23.07	23.37	23.42	23.20	23.25	23.15	23.15
			21400	2565.0	23.24	23.24	23.04	23.25	23.25	23.15	23.20
		16QAM	20800	2505.0	22.00	21.75	21.50	22.10	22.15	21.95	22.10
			21100	2535.0	21.57	22.12	21.77	22.25	22.15	22.15	22.25
			21400	2565.0	21.84	22.04	21.69	22.20	22.20	22.15	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	20775	2502.5	22.84	22.79	22.69	23.05	23.10	23.05	23.10
			21100	2535	23.07	23.07	22.97	23.20	23.15	23.15	23.20
			21425	2567.5	23.04	22.89	22.94	23.00	23.00	23.00	23.05
		16QAM	20775	2502.5	22.85	23.00	22.40	22.10	22.05	22.10	22.00
			21100	2535.0	22.80	22.90	23.05	22.10	22.20	21.95	22.15
			21425	2567.5	22.85	22.40	22.75	21.90	21.95	22.00	21.95

8.3.4. LTE FDD Band 12

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	23060	704.0	23.24	23.14	23.24	23.00	23.10	23.10	23.10
			23095	707.5	23.14	23.24	23.24	23.15	23.15	23.10	23.10
			23130	711.0	23.24	23.39	23.34	23.20	23.25	23.25	23.15
		16QAM	23060	704.0	22.14	22.34	22.29	22.15	22.20	22.20	22.20
			23095	707.5	21.84	22.09	22.04	22.25	22.20	22.30	22.20
			23130	711.0	22.19	22.09	22.09	22.40	22.25	22.15	22.25
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	23035	701.5	23.14	23.19	23.04	23.10	23.10	23.05	23.10
			23095	707.5	23.29	23.09	23.24	23.25	23.30	23.20	23.25
			23155	713.5	23.29	23.44	23.39	23.30	23.20	23.00	23.10
		16QAM	23035	701.5	22.29	22.14	22.14	22.10	22.05	22.15	22.15
			23095	707.5	22.09	22.09	21.99	22.35	22.30	22.20	22.25
			23155	713.5	22.14	22.29	21.84	22.20	22.20	21.90	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	23025	700.5	24.20	24.30	24.25	23.15	23.20	23.15	23.15
			23095	707.5	24.30	24.35	24.30	23.35	23.25	23.25	23.35
			23165	714.5	24.30	24.20	24.20	23.25	23.15	23.05	23.20
		16QAM	23025	700.5	23.15	22.95	22.75	22.20	22.00	22.15	22.30
			23095	707.5	23.25	23.10	23.25	22.30	22.20	22.25	22.30
			23165	714.5	22.90	23.05	22.95	22.15	22.15	22.05	22.25
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	23017	699.7	22.69	22.99	22.94	22.74	22.65	22.65	22.65
			23095	707.5	22.99	23.19	23.09	22.94	22.85	22.85	22.85
			23173	715.3	22.69	22.89	22.94	22.74	22.65	22.65	22.65
		16QAM	23017.0	699.7	21.49	21.39	21.94	21.89	21.80	21.80	21.80
			23095.0	707.5	21.74	21.69	21.84	22.14	22.05	22.05	22.05
			23173.0	715.3	21.64	21.74	21.74	21.84	21.75	21.75	21.75

8.3.5. LTE FDD Band 13

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	23230	782.0	23.40	23.45	23.45	24.10	24.10	24.00	22.25
		16QAM	23230	782.0	22.20	22.00	22.25	23.00	23.20	23.00	21.10
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	23205	779.5	23.21	23.11	22.96	24.50	24.30	24.25	21.96
			23230	782.0	23.10	23.15	23.05	24.25	24.40	24.30	21.95
			23255	784.5	23.06	23.11	23.01	24.30	24.25	24.25	22.01
		16QAM	23205	779.5	21.81	21.71	21.91	23.50	23.25	23.15	20.96
			23230	782.0	21.95	21.85	21.95	23.20	23.30	23.25	20.90
			23255	784.5	21.76	21.51	22.06	23.25	23.25	23.25	20.91

8.3.6. LTE FDD Band 25

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	49 Offset	99 Offset	0 Offset	25 Offset	50 Offset	
20	Body-Worn	QPSK	26140	1860.0	23.09	23.19	23.24	23.30	23.30	23.40	22.40
			26365	1882.5	23.18	23.43	23.13	23.90	23.90	23.80	22.85
			26590	1905.0	23.25	23.25	23.25	23.60	23.80	23.90	22.75
		16QAM	26140	1860.0	21.69	21.99	21.60	22.40	22.45	22.50	21.50
			26365	1882.5	21.93	22.18	22.03	23.00	22.95	23.00	21.95
			26590	1905.0	22.30	22.40	22.00	22.60	22.75	22.95	21.85
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	20825	2507.5	23.29	23.29	23.29	23.65	23.50	23.60	22.50
			21100	2535.0	23.63	23.58	23.53	24.05	24.15	24.05	23.00
			21375	2562.5	23.56	23.66	23.51	24.05	23.95	24.10	22.85
		16QAM	20825	2507.5	22.84	21.94	22.14	22.50	22.50	22.50	21.45
			21100	2535.0	22.73	22.48	22.58	23.00	23.10	23.05	22.05
			21375	2562.5	22.66	22.11	22.36	22.95	22.85	23.10	22.00
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	26090	1855.0	23.14	23.34	23.29	23.60	23.55	23.60	22.50
			26365	1882.5	23.38	23.63	23.53	24.15	24.10	24.20	23.05
			26640	1910.0	23.62	23.67	23.57	24.05	24.15	24.15	23.00
		16QAM	26090	1855.0	22.19	22.49	21.99	22.50	22.60	22.50	21.50
			26365	1882.5	22.43	22.53	22.68	23.10	23.10	23.05	22.05
			26640	1910.0	22.62	22.72	22.62	22.90	23.10	23.05	22.10
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	26065	1852.5	23.09	23.34	23.29	23.55	23.60	23.55	22.40
			26365	1882.5	23.33	23.58	23.48	24.10	24.15	24.15	23.00
			26665	1912.5	23.57	23.47	23.52	24.10	24.15	24.15	23.10
		16QAM	26065	1852.5	21.89	21.89	22.14	22.55	22.55	22.60	21.40
			26365	1882.5	21.98	22.23	22.28	23.05	23.10	23.00	22.00
			26665	1912.5	21.87	22.17	22.17	23.10	22.95	22.95	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	26055	1851.5	23.80	24.00	23.65	24.00	24.15	24.00	23.05
			26365	1882.5	24.05	24.25	24.35	24.20	24.45	24.45	23.25
			26675	1913.5	24.20	24.40	24.25	24.50	24.50	24.45	23.50
		16QAM	26055	1851.5	22.60	22.60	22.80	23.10	23.00	23.20	21.95
			26365	1882.5	23.15	22.55	22.70	22.95	23.30	23.65	22.30
			26675	1913.5	23.05	22.95	22.95	23.25	23.35	23.45	22.20
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	26047	1850.7	23.60	23.80	23.45	23.80	23.95	23.80	22.85
			26365	1882.5	23.85	24.05	24.15	24.00	24.25	24.25	23.05
			26683	1914.3	24.00	24.20	24.05	24.40	24.30	24.25	23.30
		16QAM	26047.0	1850.7	22.40	22.40	22.60	22.90	22.80	23.00	21.75
			26365.0	1882.5	22.95	22.35	22.50	22.75	23.10	23.45	22.10
			26683.0	1914.3	22.85	22.75	22.75	23.05	23.15	23.25	22.00

8.3.7. LTE FDD Band 26

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	26765	821.5	23.01	23.16	23.16	23.00	23.00	22.90	22.95
			26865	831.5	23.26	23.16	23.16	23.15	23.15	23.15	23.15
			26965	841.5	23.21	23.21	23.11	23.20	23.10	23.20	23.15
		16QAM	26765	821.5	22.16	22.01	21.81	22.15	22.25	22.10	22.10
			26865	831.5	22.06	21.96	22.21	22.20	22.20	22.25	22.15
			26965	841.5	22.31	22.11	22.06	22.15	22.25	22.00	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	26740	819.0	23.46	23.21	23.41	23.15	23.10	23.10	23.10
			26865	831.5	23.41	23.31	23.41	23.25	23.50	23.35	23.30
			26990	844.0	23.46	23.61	23.51	23.25	23.25	23.10	23.10
		16QAM	26740	819.0	22.16	22.01	22.31	22.20	22.30	22.10	22.10
			26865	831.5	22.16	22.21	21.91	22.20	22.35	22.35	22.30
			26990	844.0	22.26	22.31	21.81	22.25	22.20	22.15	22.15
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	26715	816.5	23.21	23.16	23.26	23.20	23.20	23.15	23.15
			26865	831.5	23.21	23.26	23.36	23.30	23.40	23.35	23.35
			27015	846.5	23.51	23.36	23.46	23.05	23.05	23.05	23.05
		16QAM	26715	816.5	22.11	21.71	21.91	22.25	22.30	22.10	22.20
			26865	831.5	21.76	21.96	21.86	22.30	22.30	22.30	22.40
			27015	846.5	21.71	22.01	21.61	22.00	22.00	22.15	22.05
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	8 Offset	14 Offset	0 Offset	4 Offset	7 Offset	
3	Body-Worn	QPSK	26705	815.5	24.10	24.10	24.10	23.30	23.20	23.15	23.20
			26865	831.5	24.25	24.20	24.20	23.35	23.45	23.40	23.40
			27025	847.5	24.15	24.20	24.15	23.10	23.15	23.05	23.05
		16QAM	26705	815.5	23.35	22.80	22.55	22.35	22.25	22.30	22.25
			26865	831.5	22.85	23.00	23.00	22.20	22.40	22.20	22.45
			27025	847.5	22.60	22.70	22.80	22.10	22.15	22.05	22.00
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	3 Offset	5 Offset	0 Offset	2 Offset	3 Offset	
1.4	Body-Worn	QPSK	26697	814.7	22.96	23.11	22.71	23.01	22.90	22.90	22.90
			26865	831.5	22.91	22.86	22.96	22.86	22.75	22.75	22.75
			27033	848.3	22.66	22.61	22.61	22.56	22.50	22.50	22.45
		16QAM	26697.0	814.7	21.51	21.56	21.61	21.91	21.80	21.80	21.80
			26865.0	831.5	21.81	21.91	21.41	21.61	21.50	21.50	21.50
			27033.0	848.3	21.41	21.36	21.46	21.46	21.35	21.35	21.35

8.3.8. LTE TDD Band 41

Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	49 Offset	99 Offset	0 Offset	25 Offset	50 Offset	
20	Body-Worn	QPSK	39750	2506.0	23.25	23.50	23.35	23.35	23.25	23.25	22.40
			40620	2593.0	23.61	23.51	23.11	22.60	22.60	22.40	22.36
			41490	2680.0	23.88	24.13	23.88	23.65	23.65	23.50	22.83
		16QAM	39750	2506.0	21.95	22.45	21.75	22.45	22.30	22.15	21.40
			40620	2593.0	22.46	22.51	22.11	21.55	21.65	21.35	21.21
			41490	2680.0	22.38	22.78	22.53	22.75	22.70	22.60	21.98
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	37 Offset	74 Offset	0 Offset	19 Offset	39 Offset	
15	Body-Worn	QPSK	39725	2503.5	23.49	23.54	23.54	22.54	22.54	22.49	22.44
			40620	2593.0	23.61	23.36	23.21	22.56	22.41	22.31	22.36
			41515	2682.5	23.88	23.78	23.93	22.88	22.73	22.78	23.03
		16QAM	39725	2503.5	22.44	22.34	22.14	22.45	22.50	22.20	22.25
			40620	2593.0	22.31	22.06	22.01	21.50	21.60	21.60	21.65
			41515	2682.5	23.13	22.53	22.53	22.75	22.80	22.40	22.70
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	25 Offset	49 Offset	0 Offset	13 Offset	25 Offset	
10	Body-Worn	QPSK	39700	2501.0	23.54	23.59	23.59	23.65	23.70	23.50	22.49
			40620	2593.0	23.66	23.46	23.36	22.70	22.65	22.55	22.46
			41540	2685.0	24.03	24.03	23.88	23.65	23.60	23.45	23.08
		16QAM	39700	2501.0	22.24	22.09	22.29	22.65	22.85	22.55	21.44
			40620	2593.0	22.11	22.41	22.41	21.65	21.70	21.60	21.31
			41540	2685.0	22.48	22.58	22.33	22.85	22.75	22.60	21.98
Ch.BW (MHz)	Config	Mode	Channel	Frequency (MHz)	Measured Avg Power (dBm)						
					1RB			50%RB			100%RB
					0 Offset	13 Offset	24 Offset	0 Offset	7 Offset	13 Offset	
5	Body-Worn	QPSK	39675	2498.5	23.44	23.54	23.39	23.55	23.70	23.60	22.49
			40620	2593.0	23.41	23.36	23.31	22.55	22.70	22.60	22.41
			41565	2687.5	23.93	23.93	23.88	23.60	23.50	23.45	22.78
		16QAM	39675	2498.5	22.49	22.39	22.14	22.40	22.45	22.55	21.44
			40620	2593.0	22.21	22.06	21.86	21.55	21.60	21.60	21.46
			41565	2687.5	22.73	22.68	22.98	22.75	22.65	22.65	21.93

8.4. RF Output Average Power Measurement: WLAN 2.4GHz

Note: Conducted power measurements on WLAN 2.4 GHz were not performed as max. rated power including tolerance qualifies for exemption.

8.5. RF Output Average Power Measurement: Bluetooth 2.4 GHz

Note: Conducted power measurements on BT 2.4 GHz were not performed as max. rated power including tolerance qualifies for exemption.

9.Measurements, Examinations and Derived Results

9.1.Specific Absorption Rate - Test Results - Cellular

Test Approach

GSM / WCDMA Band(s):

In order to determine the highest peak spatial-average SAR, all required positions were tested on the highest output channel (determined from the conducted power measurements), overall worst case per configuration were also tested on remaining channels.

LTE Band(s):

In order to determine the highest peak spatial-average SAR, all required positions were tested on the highest output channel and RB configuration (determined from the conducted power measurements), overall worst case per configuration were also tested on remaining channels

Note

1. SAR results are scaled down to Max Rated Tune-up declared by Manufacturer
2. Refer to section 7 for the configuration considered for SAR test

Results – GSM – Body 1g

Ant.	Band	Mod.	Dist. (mm)	EUT Position	CH no.	Freq. (MHz)	Config.	Power (dBm)		psSAR (W/kg) - 10g		Notes	Plot no.
								Tune Up Limit	Meas.	Meas.	Rep.		
1	GSM 850	GMSK	53	Front	190	836.6	GPRS 2Tx	32.76	31.81	0.020	0.025	-	001
			53	Top	190	836.6	GPRS 2Tx	32.76	31.81	0.010	0.012	-	-
			53	Front	128	824.2	GPRS 2Tx	32.62	31.81	0.011	0.013	-	-
			53	Front	251	848.8	GPRS 2Tx	32.46	31.61	0.013	0.016	-	-
1	PCS 1900	GMSK	53	Front	810	1909.8	GPRS 2Tx	30.70	30.25	0.013	0.014	-	002
			53	Top	810	1909.8	GPRS 2Tx	30.70	30.25	0.008	0.009	-	-
			53	Front	661	1880.0	GPRS 2Tx	30.73	29.80	0.006	0.007	-	-
			53	Front	512	1850.2	GPRS 2Tx	30.57	29.50	0.006	0.008	-	-

Results – WCDMA – Body 1g

Ant.	Band	Mod.	Dist. (mm)	EUT Position	CH no.	Freq. (MHz)	Config.	Power (dBm)		psSAR (W/kg) - 10g		Notes	Plot no.
								Tune Up Limit	Meas.	Meas.	Rep.		
1	WCDMA FDD 2	Rel. 99 RMC	53	Front	9538	1907.6	12.2 kbps	25.00	24.71	0.030	0.032	-	003
			53	Top	9538	1907.6	12.2 kbps	25.00	24.71	0.011	0.012	-	-
			53	Front	9262	1852.4	12.2 kbps	25.00	24.39	0.019	0.022	-	-
			53	Front	9400	1880.0	12.2 kbps	25.00	24.68	0.019	0.020	-	-
1	WCDMA FDD 4	Rel. 99 RMC	53	Front	1513	1752.6	12.2 kbps	25.00	24.91	0.019	0.019	-	004
			53	Top	1513	1752.6	12.2 kbps	25.00	24.91	0.013	0.013	-	-
			53	Front	1312	1712.4	12.2 kbps	25.00	24.62	0.015	0.016	-	-
			53	Front	1412	1732.4	12.2 kbps	25.00	24.55	0.014	0.016	-	-

Results – LTE – Body 1g

Ant.	Band	Mod.	Dist. (mm)	EUT Position	CH no.	Freq. (MHz)	Config.	Power (dBm)		psSAR (W/kg) - 10g		Notes	Plot no.
								Tune Up Limit	Meas.	Meas.	Rep.		
1	LTE FDD 2	QPSK	53	Front	19100	1900.0	1@0	23.79	23.20	0.040	0.046	-	005
			53	Front	19100	1900.0	50@0	23.96	23.65	0.037	0.040		
			53	Top	19100	1900.0	1@0	23.79	23.20	0.013	0.015		
			53	Top	19100	1900.0	50@0	23.96	23.65	0.010	0.011	-	-
			53	Front	18700	1860.0	1@99	23.73	23.04	0.020	0.023	-	-
			53	Front	18900	1880.0	1@99	23.91	23.18	0.029	0.034	-	-
1	LTE FDD 4	QPSK	53	Front	20175	1732.5	1@49	24.82	23.74	0.009	0.012	-	-
			53	Front	20050	1720.0	50@50	24.69	23.95	0.004	0.005	-	-
			53	Top	20175	1732.5	1@49	24.82	23.74	0.006	0.008		
			53	Top	20050	1720.0	50@50	24.69	23.95	0.004	0.005		
			53	Front	20050	1720.0	1@99	24.41	23.74	0.018	0.021	-	-
			53	Front	20300	1745.0	1@0	24.62	23.39	0.017	0.023	-	006
1	LTE FDD 5	QPSK	53	Front	20450	829.0	1@49	24.25	23.36	0.008	0.010	-	-
			53	Front	20525	836.5	25@0	24.50	23.20	0.006	0.008	-	-
			53	Top	20450	829.0	1@49	24.25	23.36	0.003	0.004		
			53	Top	20525	836.5	25@0	24.50	23.20	0.006	0.008	-	-
			53	Front	20525	836.5	1@0	24.30	23.36	0.005	0.006		
			53	Front	20600	844.0	1@49	24.28	23.31	0.008	0.010	-	007
1	LTE FDD 7	QPSK	53	Front	21100	2535.0	1@49	24.38	23.64	0.061	0.072	-	-
			53	Front	21350	2560.0	50@25	24.25	22.64	0.057	0.083	-	-
			53	Top	21100	2535.0	1@49	24.38	23.64	0.024	0.028		
			53	Top	21350	2560.0	50@25	24.25	22.64	0.006	0.009		
			53	Front	20850	2510.0	1@49	24.39	23.25	0.064	0.083	-	-
			53	Front	21350	2560.0	1@49	24.19	23.64	0.076	0.086	-	008
1	LTE FDD 12	QPSK	53	Front	23130	711.0	1@24	24.30	23.39	0.028	0.035	-	-
			53	Front	23130	711.0	25@25	24.61	23.25	0.026	0.036	-	009
			53	Top	23130	711.0	1@24	24.30	23.39	0.004	0.005		
			53	Top	23130	711.0	25@25	24.61	23.25	0.003	0.004		
			53	Front	23060	704.0	1@49	24.31	23.24	0.004	0.005	-	-
			53	Front	23095	707.5	1@49	24.24	23.24	0.004	0.005	-	-
1	LTE TDD 13	QPSK	53	Front	23230	782.0	1@24	24.38	23.45	0.019	0.024	-	010
			53	Front	23230	782.0	25@0	24.68	22.30	0.014	0.024	-	-
			53	Top	23230	782.0	1@24	24.38	23.45	0.005	0.006	-	-
			53	Top	23230	782.0	25@0	24.68	22.30	0.001	0.002	-	-
1	LTE TDD 25	QPSK	53	Front	26365	1882.5	1@49	24.39	23.43	0.049	0.061	-	011
			53	Front	26590	1905.0	50@50	24.12	23.90	0.042	0.044	-	-
			53	Top	26365	1882.5	1@49	24.39	23.43	0.028	0.035		
			53	Top	26590	1905.0	50@50	24.12	23.90	0.004	0.004		
			53	Front	26590	1905.0	1@49	24.45	23.25	0.046	0.061	-	-
			53	Front	26140	1860.0	1@99	24.46	23.24	0.033	0.044	-	-
1	LTE TDD 26	QPSK	53	Front	26865	831.5	1@0	24.32	23.26	0.030	0.038	-	012
			53	Front	26965	841.5	36@39	24.47	22.75	0.012	0.018	-	-
			53	Top	26865	831.5	1@0	24.32	23.26	0.000	0.000		
			53	Top	26965	841.5	36@39	24.47	22.75	0.000	0.000		
			53	Front	26765	821.5	1@37	24.00	23.16	0.003	0.004	-	-
			53	Front	26965	841.5	1@37	24.47	23.21	0.004	0.005	-	-
1	LTE TDD 41	QPSK	53	Front	41490	2680.0	1@49	24.33	24.13	0.061	0.064	-	-
			53	Front	41490	2680.0	50@25	24.75	22.88	0.046	0.071	-	-
			53	Top	41490	2680.0	1@49	24.33	24.13	0.011	0.012		
			53	Top	41490	2680.0	50@25	24.75	22.88	0.008	0.012		
			53	Front	39750	2506.0	1@49	23.89	23.50	0.083	0.091	-	013
			53	Front	40620	2593.0	1@0	24.03	23.61	0.080	0.088	-	-

9.2. Specific Absorption Rate - Test Results – WLAN 2.4 GHz

Test Approach

Standalone SAR Test Exclusion Considerations & Estimated SAR

D.1 Estimated SAR

When an antenna qualifies for test exemption in single transmitter/antenna mode, its actual SAR value may not be available, because it was not required to be measured.

In this case, the SAR contribution of that antenna to simultaneous transmission must be estimated relative to the SAR or MPE test exemption criteria for the applicable terms in the *TER* expression, eq. (2.1), by multiplying the corresponding ratio by the SAR limit of 0.4 W/kg for 1-g SAR. This is referred to as *estimated SAR*.

For instance, a given antenna may qualify for a SAR test exemption according to Sec. B.1, with $P_{ant} < P_{7X}$, where P_{ant} is maximum time-averaged power or effective radiated power (ERP), whichever is applicable, and P_{7X} is exemption power threshold defined in eq. (B.1.1). Then, the *estimated SAR* is computed as

$$SAR_{est} = 0.4 \cdot P_{ant} / P_{7X} \text{ [W/kg]}.$$

When SAR is estimated, the peak SAR location is assumed to be at the feed-point or geometric center of the antenna, whichever provides a smaller antenna separation distance, and this location must be clearly identified in test reports. The estimated SAR is used only to determine simultaneous transmission SAR test exemption, and it shall not be reported as the standalone SAR.

Power Exemption Threshold

$$P_{7X}(d_{mm}, f_{MHz}) = 3060 \cdot (d_{mm}/200)^{-\log_{10}\left(\frac{60}{3060 \cdot \sqrt{f_{MHz}/1000}}\right)}$$

Ant.	Band	Mode	Dist. (mm)	Max Power(dBm)** (P_{ant})	Exemption Power Threshold (P_{7X})	
					mW	dBm
Ant 1	WLAN 2.4 GHz	802.11b	91	19.5	684.0	28.35

Conclusion:

** : Since Max power (P_{ant}) < threshold(P_{7X}), therefore WLAN 2.4 GHz qualifies for standalone SAR test Exclusion.

$$SAR_{est} = 0.4 \cdot P_{ant} / P_{7X} \text{ [W/kg]}$$

Ant.	Band	Mode	Dist. (mm)	Max Power (P_{ant})	Exemption Power Threshold (P_{7X})	SAR Estimation** (W/Kg)
Ant 1	WLAN 2.4 GHz	802.11b	91	19.5	684.0	0.011

Conclusion:

** : Estimated SAR for WLAN 2.4 GHz = **0.011 W/kg**

9.3. Specific Absorption Rate - Test Results – Bluetooth 2.4 GHz

Test Approach

Standalone SAR Test Exclusion Considerations & Estimated SAR

D.1 Estimated SAR

When an antenna qualifies for test exemption in single transmitter/antenna mode, its actual SAR value may not be available, because it was not required to be measured.

In this case, the SAR contribution of that antenna to simultaneous transmission must be estimated relative to the SAR or MPE test exemption criteria for the applicable terms in the *TER* expression, eq. (2.1), by multiplying the corresponding ratio by the SAR limit of 0.4 W/kg for 1-g SAR.33 This is referred to as *estimated SAR*.

For instance, a given antenna may qualify for a SAR test exemption according to Sec. B.1, with $P_{ant} < P_{7X}$, where P_{ant} is maximum time-averaged power or effective radiated power (ERP), whichever is applicable, and P_{7X} is exemption power threshold defined in eq. (B.1.1). Then, the *estimated SAR* is computed as

$$SAR_{est} = 0.4 \cdot P_{ant} / P_{7X} \text{ [W/kg]}.$$

When SAR is estimated, the peak SAR location is assumed to be at the feed-point or geometric center of the antenna, whichever provides a smaller antenna separation distance, and this location must be clearly identified in test reports. The estimated SAR is used only to determine simultaneous transmission SAR test exemption, and it shall not be reported as the standalone SAR.

Power Exemption Threshold

$$P_{7X}(d_{mm}, f_{MHz}) = 3060 \cdot \left(\frac{d_{mm}}{200} \right)^{-\log_{10} \left(\frac{60}{3060 \cdot \sqrt{f_{MHz}/1000}} \right)}$$

Ant.	Band	Mode	Dist. (mm)	Max Power(dBm)** (P_{ant})	Exemption Power Threshold (P_{7X})	
					mW	dBm
Ant 1	Bluetooth 2.4 GHz	BLE/BDR	91	10.50	684.0	28.35

Conclusion:

** : Since Max power (P_{ant}) < threshold(P_{7X}), therefore Bluetooth 2.4 GHz qualifies for standalone SAR test Exclusion.

$$SAR_{est} = 0.4 \cdot P_{ant} / P_{7X} \text{ [W/kg]}$$

Ant.	Band	Mode	Dist. (mm)	Max Power (P_{ant})	Exemption Power Threshold (P_{7X})	SAR Estimation** (W/Kg)
Ant 1	Bluetooth 2.4 GHz	BLE/BDR	91	10.50	684.0	0.006

Conclusion:

** : Estimated SAR for Bluetooth 2.4 GHz = 0.006 W/kg

9.4.SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1g-SAR (Body-Worn)

- 1) Repeated measurement is not required when the original highest measured SAR is < 2.0 W/Kg; steps 2) through 4) do not apply.
- 2) When the original highest measured 10g-SAR is ≥ 2.00 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 ≥ 3.625 W/kg (~10% from the 10g-SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 3.75 W/Kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

Note: Since the 10g measured SAR for none of the runs was > 2.0 W/Kg, repeat measurements were not performed on Extremity.

10.Highest Standalone SAR and Simultaneous Transmission

10.1.Highest Standalone Reported SAR

Individual Transmitter Evaluation per Band: Cellular

Exposure Configuration	Technology Band	Reported 1g - SAR (W/Kg)	Equipment Class	Highest Reported 1g - SAR (W/Kg)
Body-Worn (Separation Distance 53mm)	GSM850	0.025	PCE	0.091
	PCS1900	0.014		
	WCDMA FDD 2	0.032		
	WCDMA FDD 4	0.019		
	LTE Band 2	0.046		
	LTE Band 4	0.023		
	LTE Band 5	0.010		
	LTE Band 7	0.086		
	LTE Band 12	0.036		
	LTE Band 13	0.024		
	LTE Band 25	0.061		
	LTE Band 26	0.038		
	LTE Band 41	0.091		

Individual Transmitter Evaluation per Band: WLAN/BT

Exposure Configuration	Technology Band	Estimated 1g - SAR (W/Kg)	Equipment Class	Highest Estimated 1g - SAR (W/Kg)
Body-Worn (Separation Distance 91mm)	WLAN 2.4GHz	0.011	DTS	0.011
	BT 2.4GHz	0.006	DSS	0.006

10.2.Simultaneous Transmission analysis

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the *reported* standalone SAR of each applicable simultaneous transmitting antenna. The worst case simultaneous transmission analysis is considered for the following cases:

1. Cellular + Bluetooth 2.4 GHz
2. WLAN 2.4 GHz + Bluetooth 2.4 GHz

1. Cellular + Bluetooth 2.4 GHz

Exposure Configuration	Case (s)	Technology Band	Reported 1g - SAR (W/Kg)	Equipment Class	Highest Reported 1g -SAR (W/Kg)
Body-Worn (Separation Distance 53mm)	1	Cellular	0.091	DSS	0.097
Body-Worn (Separation Distance 91mm)		Bluetooth 2.4 GHz (LE)	0.006	DSS	

2. WLAN 2.4 GHz + Bluetooth 2.4 GHz

Exposure Configuration	Case (s)	Technology Band	Reported 1g - SAR (W/Kg)	Equipment Class	Highest Reported 1g -SAR (W/Kg)
Body-Worn (Separation Distance 91mm)	2	WLAN 2.4 GHz	0.011	DTS	0.017
Body-Worn (Separation Distance 91mm)		Bluetooth 2.4 GHz (LE)	0.006	DSS	