

Part 1: SAR Evaluation Report (Tests in Static Transmission Condition)

Applicant Name : Getac Technology Corporation

Applicant Address : 5F., Building A, No. 209, Sec. 1 Nangang., Rd., Taipei City, 11568, Taiwan

Product Name : Wireless Module

Brand Name : Getac

Model Number : WLAN: AX211NGW
WWAN: EM9190U

FCC ID : QYLEM9190U

Report Number : USSC235211001

Compliant Standards : FCC 47 CFR §2.1093

Sample Received Date : May 22, 2023

Date of Testing : Jun. 28, 2023 ~ Jul. 20, 2023

Report Issue Date : Aug. 16, 2023

The above equipment have been tested by **Eurofins E&E Wireless Taiwan Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Device Under Test (DUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions specified in this report.

Note:

1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
2. This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Approved By :

William Chung / Senior Director



Table of Contents

Revision History	3
1. General Information	4
1.1 Reference Testing Standards	4
1.2 Information of Testing Laboratory	5
2. Description of Device Under Test (DUT)	6
3. Summary of Maximum Value	9
4. Introduction	11
4.1 SAR Definition	11
4.2 RF Exposure Limits	11
5. System Description	12
5.1 SAR Measurement System	12
5.2 Tissue Simulating Liquids (TSL)	16
6. System Verification	21
6.1 SAR System Verification.....	21
6.1.1 SAR Verification Summary	22
7. Test Equipment List	23
7.1 SAR Test Equipment List.....	23
8. Measurement Procedure	23
8.1 SAR Measurement Procedure	24
8.1.1 Area & Zoom Scan Procedures	25
8.1.2 Volume Scan Procedures	26
8.1.3 Power Drift Monitoring	26
8.1.4 Spatial Peak SAR Evaluation	26
9. Measurement Uncertainty	27
9.1 SAR Measurement Uncertainty	27
10. Measurement Evaluation	30
10.1 Positioning of the DUT in Relation to the Phantom	30
10.2 SAR Testing Consideration	31
10.2.1 SAR Testing with GSM & UMTS	31
10.2.2 SAR Testing with LTE	33
10.3 Conducted Power Measurements.....	33
10.4 Antenna location.....	33
10.5 Test Results.....	34
10.5.1 SAR Test Result.....	34
10.5.2 Power Density Test Result	51
10.6 Measurement Variability	52
10.7 Simultaneous Transmission Evaluation	53
10.7.1 Simultaneous Transmission Configurations	53
10.7.2 Simultaneous Transmission Result	53
10.7.3 SAR to peak location separation (SPLSR)	62
10.8 Requirements on the Uncertainty Evaluation.....	64
11. Conclusion	64

Appendix A - Conducted Power Measurements

Appendix B - System Performance Check Plots

Appendix C - Highest Measurement Plots

Appendix D - Calibration Certificates

Appendix E - Test Setup Photographs

Revision History

Rev.	Issue Date	Revisions	Revised by
00	Aug. 16, 2023	Initial release	Rowan Hsieh

1. General Information

1.1 Reference Testing Standards

Standard	Description	Version
47 CFR §2.1093	Radiofrequency radiation exposure evaluation: portable devices	-
IEC TR 63170		2018
IEEE 1528	Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques	2013
IEEE C95.1	IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz	1992
KDB 248227 D01	SAR guidance for IEEE 802.11 (Wi-Fi) transmitters	v02r02
KDB 447498 D01	RF exposure procedures and equipment authorization policies for mobile and portable devices	v06
KDB 865664 D01	SAR measurement requirement for 100 MHz to 6 GHz	v01r04
KDB 865664 D02	RF exposure compliance reporting and documentation considerations	v01r02
KDB 941225 D01	3G SAR measurement procedures	v03r01
KDB 941225 D05	SAR evaluation considerations for LTE devices	v02r05
KDB 941225 D05A	REL. 10 LTE SAR test guidance and KDB inquiries	v01r02

1.2 Information of Testing Laboratory

Test Facilities

Company Name: Eurofins E&E Wireless Taiwan Co., Ltd.
 Address: No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
 Website: <https://www.atl.com.tw>
 Telephone: +886-3-271-0188
 Fax: +886-3-271-0190
 E-mail: infoEETW@eurofins.com

Test Site Location

- No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
 No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan

Laboratory Accreditation

Location	TAF	FCC	ISED
No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan	Accreditation No.: 1330	Designation No.: TW0010	Company No.: 7381A CAB ID: TW1330
No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan	Accreditation No.: 1330	Designation No.: TW0034	Company No.: 28922 CAB ID: TW1330

2. Description of Device Under Test (DUT)

Applicant	Getac Technology Corporation 5F., Building A, No.209, Sec.1 Nangang., Rd., Taipei City, 11568, Taiwan
Product Name	Wireless Module
Trade Name	Getac
Model Number	WLAN: AX211NGW WWAN: EM9190U
FCC ID	WLAN: QYLAX211NG WWAN: QYLEM9190U
Host Information	Product Name: Tablet Trade Name: Getac Model Name: UX10, UX10G3, UX10-301, UX10-321, UX10-Ex, UX10Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_ " or blank for marketing purpose) All models are electrically identical, different model names are for marketing purpose.
Frequency Range	WCDMA Band II : 1852.4 ~ 1907.6 WCDMA Band IV : 1712.4 ~ 1752.6 WCDMA Band V : 826.4 ~ 846.6 LTE Band 2 : 1850.7 ~ 1909.3 LTE Band 4 : 1710.7 ~ 1754.3 LTE Band 5 : 824.7 ~ 848.3 LTE Band 7 : 2502.5 ~ 2567.5 LTE Band 12 : 699.7 ~ 715.3 LTE Band 13 : 779.5 ~ 784.5 LTE Band 14 : 790.5 ~ 795.5 LTE Band 17 : 706.5 ~ 713.5 LTE Band 25 : 1850.7 ~ 1914.3 LTE Band 26 : 814.7 ~ 848.3 LTE Band 38 : 2572.5 ~ 2617.5 LTE Band 41 : 2498.5 ~ 2687.5 LTE Band 42 : 3550 ~ 3600 LTE Band 48 : 3550 ~ 3700 LTE Band 66 : 1710.7 ~ 1779.3 LTE Band 71 : 665.5 ~ 695.5 5G NR n2 : 1852.5 ~ 1907.5 5G NR n5 : 826.5 ~ 846.5 5G NR n66 : 1712.5 ~ 1777.5 5G NR n71 : 665.5 ~ 695.5 5G NR n48 : 3550 ~ 3700 5G NR n77 : 3450 ~ 3980 WLAN : 2412 ~ 2472, 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720, 5745 ~ 5825 Bluetooth : 2402 ~ 2480
Supported Modulations	WCDMA: RMC 12.2Kbps / HSPA+
	LTE: QPSK / 16QAM / 64QAM +
	FR1: DFT-s-OFDM / CP-OFDM Pi/2 BPSK / QPSK / 16QAM / 64QAM
Device Category	Portable

Battery Information (1)	Standard
	Trade Name: Getac
	Model: BP3S2P2100S-01 Spec: 11.1 V, 4080 mAh, 45.2 Wh
Battery Information (2)	Standard
	Trade Name: Getac
	Model: BP2S1P2100S-1 Spec: 7.4 V / 2100 mAh, 15.5 Wh

Note:

1. The above information of DUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Antenna list:

Brand Name	Model Name	Type	Band	Max. Gain (dBi)
Auden	WWAN main Ant UX10G3	PIFA Antenna	WCDMA Band II	2.5
			WCDMA Band IV	3.0
			WCDMA Band V	0.8
			LTE Band 2	2.5
			LTE Band 4	3.0
			LTE Band 5	0.8
			LTE Band 7	2.8
			LTE Band 12	1.8
			LTE Band 13	1.1
			LTE Band 14	1.1
			LTE Band 17	1.7
			LTE Band 25	2.4
			LTE Band 26	1.0
			LTE Band 38	2.8
			LTE Band 41	2.8
			LTE Band 42	2.1
			LTE Band 48	0.5
			LTE Band 66	2.7
			LTE Band 71	-2.5
			5G NR n2	2.5
5G NR n5	0.8			
5G NR n48	0.5			
5G NR n66	2.7			
5G NR n71	-2.5			
5G NR n77	2.0			

ANT	Brand Name	Model Name	Type	Frequency	Max. Gain(dBi)
WLAN (Main)	Auden	UX10G3 WIFI MAIN ANT	PIFA Antenna	2402 - 2480	0.95
				5150 - 5350	2.42
				5250 - 5350	3.16
				5470 - 5725	3.06
				5725 - 5850	2.89
				5925 - 6425	1.86
				6425 - 6525	0.76
				6525 - 6875	1.11
				6875 - 7125	1.56
WLAN (AUX)	Auden	UX10G3 AUXWIFI ANT	PIFA Antenna	2402 - 2480	1.19
				5150 - 5350	0.95
				5250 - 5350	1.55
				5470 - 5725	-0.44
				5725 - 5850	0.45
				5925 - 6425	-0.13
				6425 - 6525	0.37
				6525 - 6875	0.51
				6875 - 7125	1.22

3. Summary of Maximum Value

Equipment Class	Mode	Highest Reported SAR	
		Body SAR _{1g} (W/kg)	Simultaneous Transmission SAR (W/kg)
Licensed	WCDMA Band 2	0.94	1.45
	WCDMA Band 4	0.96	
	WCDMA Band 5	0.96	
	LTE Band 2	0.935	
	LTE Band 4	0.553	
	LTE Band 5	0.965	
	LTE Band 7	0.875	
	LTE Band 12	0.744	
	LTE Band 13	0.811	
	LTE Band 14	0.952	
	LTE Band 17	0.794	
	LTE Band 25	0.929	
	LTE Band 26	0.952	
	LTE Band 38	0.95	
	LTE Band 41	0.96	
	LTE Band 42	0.824	
	LTE Band 48	0.880	
	LTE Band 66	0.96	
	LTE Band 71	0.541	
	NR Band n2	0.922	
NR Band n5	0.943		
NR Band n66	0.96		
NR Band n71	0.746		
NR Band n48	0.950		
NR Band n77	0.944		
DTS	WLAN 2.4G	1.01	
NII	WLAN 5.3G	1.00	
	WLAN 5.6G	1.18	
	WLAN 5.8G	1.17	
6XD	WLAN 6G	1.09	
DSS / DTS	Bluetooth	0.124	

Equipment Class	Mode	Highest Standalone Transmission	Highest Simultaneous Transmission
		Averaging Area [4 cm ²] Total PD (mW/cm ²)	Total Exposure Ratio
6XD	WLAN 6 GHz	2.73	0.609

Note:

1. The SAR limit for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
2. The test procedures, as described in American National Standards, Institute ANSI/IEEE C95.1 ANSI/IEEE C95.3 (For IC) were employed and they specify the maximum exposure limit of tissue for portable devices being used within 20 cm between user and DUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.
3. The evaluation requirements, as described in 47 CFR Part §1.310 were employed and they specify the maximum exposure limit for general population / uncontrolled exposure is 1.0 mW/cm² (equal to 10 W/m²) for 1.5 GHz to 100 GHz.

4. Introduction

4.1 SAR Definition

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

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

SAR measurement can be related to the electrical field in the tissue by

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

Where:

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m³)

E = RMS electric field strength (V/m)

SAR is expressed in units of Watts per kilogram (W/kg).

4.2 RF Exposure Limits

Table 1 Safety Limits for Controlled / Uncontrolled Environment Exposure

SAR Exposure Limit		
	General Population / Uncontrolled Exposure ¹ (W/kg)	Occupational / Controlled Exposure ² (W/kg)
Spatial Peak SAR ³ (head or Body)	1.60	8.00
Spatial Peak SAR ⁴ (Whole Body)	0.08	0.40
Spatial Peak SAR ⁵ (Hands / Feet / Ankle / Wrist)	4.00	20.00

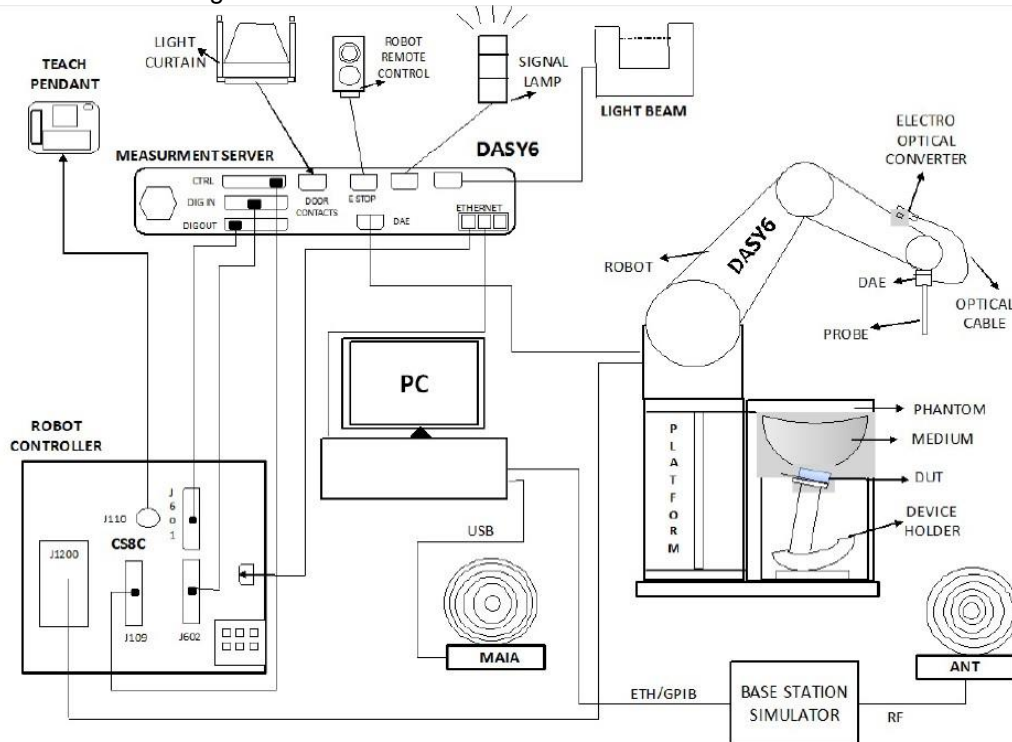
Notes:

- General Population / Uncontrolled Environments** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
- Occupational / 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).
- 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.

5. System Description

5.1 SAR Measurement System

The DASY system in SAR Configuration is shown below:



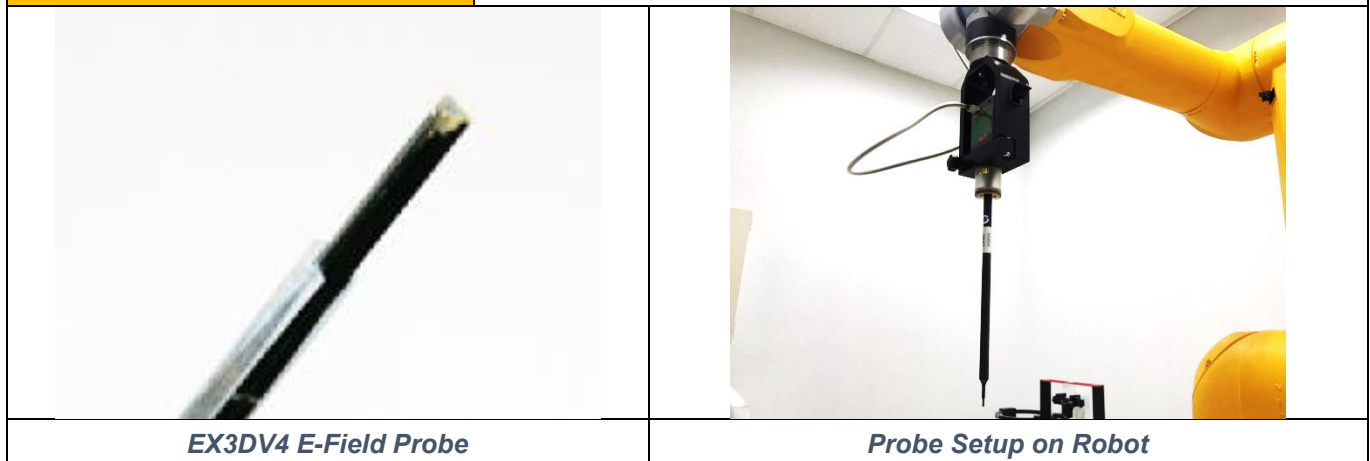
The system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli TX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. An isotropic field probe optimized and calibrated for the targeted measurements.
3. 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.
4. 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.
5. 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.
6. The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
7. A computer running Win7/Win8/Win10 professional operating system and DASY software.
8. Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
9. The phantom, the device holder and other accessories according to the targeted measurement.
10. Tissue simulating liquid mixed according to the given recipes.
11. The validation dipole has been calibrated within and the system performance check has been successful.


<DASY E-Field Probe System>

The SAR measurements were conducted with the dosimetric probe (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.


Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	4 MHz to 10 GHz Linearity: ± 0.2 dB (30 MHz to 10 GHz)
Directivity	± 0.1 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)
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
Calibration	ISO/IEC 17025 calibration service available



<Data Acquisition Electronic (DAE) System>



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

<Robot>

Positioner	Stäubli Unimation Corp.	
Robot Model	TX90XL	
Number of Axes	6	
Nominal Load	5 kg	
Reach	1450 mm	
Repeatability	\pm 0.035 mm	


<Device Holder>

The DASY device holder is constructed 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.

	
<i>Device Holder 1</i>	<i>Device Holder 2</i>


<Oval Flat Phantom – ELI>

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (Oval Flat) phantom defined in IEEE 1528, IEC 62209-2 and IEC/IEEE 62209-1528. It enables the dosimetric evaluation of wireless portable device 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 manually teaching three points with the robot.

Shell Thickness	2 ±0.2 mm	
Filling Volume	Approx. 30 liters	
Dimensions	190×600×400 mm (H × L × W)	

<SAM Phantom>

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528, IEC 62209-1 and IEC/IEEE 62209-1528. It enables the dosimetric evaluation of left and right hand phone usage as well as body-mounted usage at the flat phantom region. A cover prevents 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.

Shell Thickness	2 ±0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm Width: 500 mm Height: adjustable feet	

5.2 Tissue Simulating Liquids (TSL)

<Tissue Dielectric Parameters in IEEE 1528-2013 and IEC/IEEE 62209-1528>

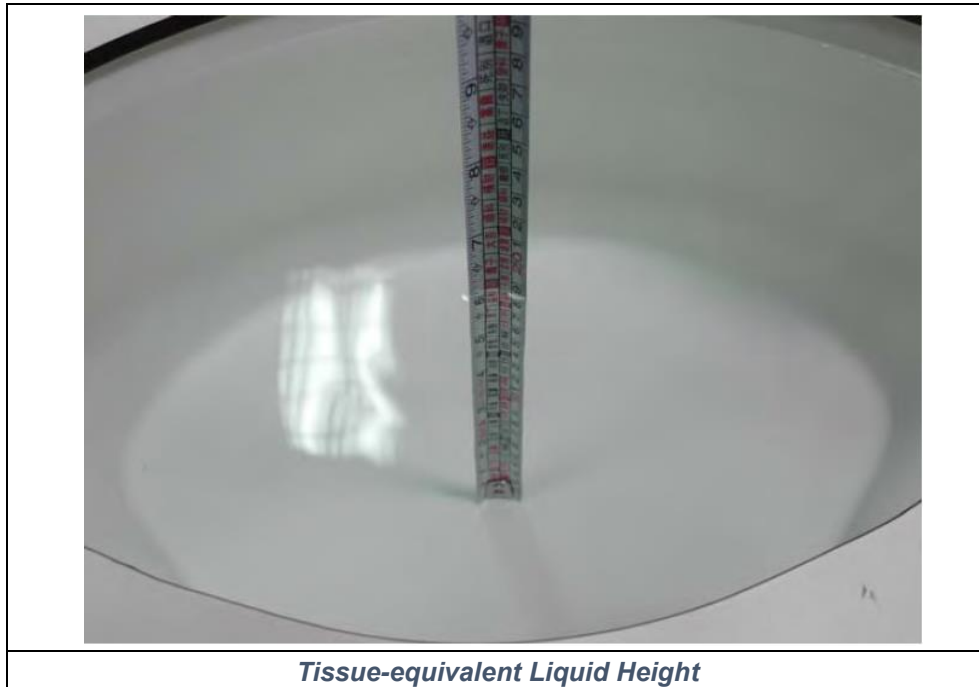
The following table incorporates the tissue dielectric parameters of head recommended by IEEE 1528-2013 and IEC/IEEE 62209-1528. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified are derived from the tissue dielectric parameters which computed by the 4-Cole-Cole equation according to the above-mentioned standards.

Table 2 Dielectric properties of the tissue-equivalent liquid material

Frequency (MHz)	Relative Permittivity (ϵ_r)	Conductivity (σ)
30	55.0	0.75
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800	40.0	1.40
1900	40.0	1.40
1950	40.0	1.40
2000	40.0	1.40
2100	39.8	1.49
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
3500	37.9	2.91
4000	37.4	3.43
4500	36.8	3.94
5000	36.2	4.45
5200	36.0	4.66
5400	35.8	4.86
5600	35.5	5.07
5800	35.3	5.27
6000	35.1	5.48
6500	34.5	6.07
7000	33.9	6.65
7500	33.3	7.24
8000	32.7	7.84
8500	32.1	8.46
9000	31.6	9.08
9500	31.0	9.71
10000	30.4	10.4

<Liquid Depth>

The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm to ensure that the probe is immersed sufficiently in the tissue medium.



<Test Site Environment>

Item	Requirement	Actual
Temperature (°C)	18 - 25	21 - 23

<Liquid Check>

1. The dielectric parameters of the liquids were verified prior to the SAR evaluation using a DAKS 3.5 Probe Kit.
2. The SAR testing with IEC tissue parameters as an alternative option to Head and body parameters. The head TSL were applied to body SAR tests with restrictions below:

Tissue Temp (°C)	Frequency (MHz)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Conductivity Deviation (%)	Permittivity Deviation (%)	Date
22.2	673	0.874	44.419	0.885	42.31	-1.29	4.98	Jun. 30, 2023
22.2	680.5	0.875	44.381	0.885	42.27	-1.17	4.99	Jun. 30, 2023
22.2	688	0.877	44.334	0.886	42.23	-1.03	4.98	Jun. 30, 2023
22.4	704	0.897	42.228	0.887	42.15	1.13	0.18	Jun. 29, 2023
22.4	707.5	0.899	42.202	0.887	42.12	1.37	0.19	Jun. 29, 2023
22.4	709	0.900	42.197	0.887	42.12	1.44	0.18	Jun. 29, 2023
22.4	710	0.900	42.196	0.887	42.11	1.50	0.20	Jun. 29, 2023
22.4	711	0.901	42.192	0.887	42.11	1.56	0.20	Jun. 29, 2023
22.4	782	0.925	41.952	0.894	41.75	3.49	0.48	Jun. 29, 2023
22.4	793	0.929	41.887	0.895	41.70	3.81	0.45	Jun. 29, 2023
22.2	821.5	0.923	43.863	0.898	41.56	2.75	5.54	Jun. 30, 2023
22.4	826.4	0.942	41.757	0.899	41.54	4.73	0.52	Jun. 29, 2023
22.4	829	0.943	41.751	0.899	41.53	4.87	0.53	Jun. 29, 2023
22.2	831.5	0.930	43.818	0.900	41.51	3.28	5.56	Jun. 30, 2023
22.2	834	0.931	43.818	0.900	41.50	3.39	5.58	Jun. 30, 2023
22.4	836.4	0.946	41.754	0.901	41.50	4.96	0.61	Jun. 29, 2023
22.4	836.5	0.946	41.751	0.902	41.50	4.87	0.61	Jun. 29, 2023
22.2	836.5	0.931	43.821	0.902	41.50	3.26	5.59	Jun. 30, 2023
22.2	839	0.932	43.823	0.904	41.50	3.11	5.60	Jun. 30, 2023
22.2	841.5	0.933	43.821	0.908	41.50	2.77	5.59	Jun. 30, 2023
22.4	844	0.949	41.730	0.910	41.50	4.23	0.56	Jun. 29, 2023
22.4	846.6	0.950	41.728	0.913	41.50	4.05	0.55	Jun. 29, 2023
22.4	1712.4	1.335	39.933	1.350	40.13	-1.09	-0.49	Jun. 29, 2023
22.4	1720	1.341	39.902	1.354	40.11	-0.96	-0.52	Jun. 29, 2023
22.2	1720	1.347	42.143	1.354	40.11	-0.55	5.07	Jun. 30, 2023
22.2	1730	1.355	42.131	1.360	40.10	-0.37	5.07	Jun. 30, 2023
22.4	1732.5	1.349	39.883	1.362	40.10	-0.97	-0.54	Jun. 29, 2023
22.4	1732.6	1.349	39.883	1.362	40.10	-0.97	-0.54	Jun. 29, 2023
22.4	1745	1.355	39.868	1.369	40.08	-1.00	-0.53	Jun. 29, 2023
22.2	1745	1.364	42.130	1.369	40.08	-0.38	5.11	Jun. 30, 2023
22.4	1752.6	1.359	39.849	1.373	40.07	-1.03	-0.55	Jun. 29, 2023
22.2	1760	1.372	42.135	1.377	40.06	-0.39	5.18	Jun. 30, 2023
22.2	1770	1.375	42.121	1.383	40.04	-0.56	5.20	Jun. 30, 2023

Tissue Temp (°C)	Frequency (MHz)	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Conductivity Deviation (%)	Permittivity Deviation (%)	Date
22.4	1852.4	1.407	39.654	1.400	40.00	0.54	-0.86	Jun. 29, 2023
22.4	1860	1.412	39.634	1.400	40.00	0.85	-0.92	Jun. 29, 2023
22.2	1860	1.428	42.007	1.400	40.00	2.00	5.02	Jun. 30, 2023
22.4	1880	1.420	39.623	1.400	40.00	1.41	-0.94	Jun. 29, 2023
22.2	1880	1.437	41.974	1.400	40.00	2.66	4.94	Jun. 30, 2023
22.2	1882.5	1.438	41.975	1.400	40.00	2.73	4.94	Jun. 30, 2023
22.4	1900	1.430	39.602	1.400	40.00	2.14	-1.00	Jun. 29, 2023
22.2	1900	1.446	41.921	1.400	40.00	3.30	4.80	Jun. 30, 2023
22.2	1905	1.449	41.910	1.400	40.00	3.51	4.77	Jun. 30, 2023
22.4	1907.6	1.437	39.584	1.400	40.00	2.67	-1.04	Jun. 29, 2023
22.7	2412	1.826	41.369	1.766	39.27	3.41	5.35	Jul. 04, 2023
22.7	2437	1.848	41.374	1.788	39.22	3.36	5.49	Jul. 04, 2023
22.4	2441	1.868	41.673	1.792	39.22	4.25	6.25	Jul. 07, 2023
22.7	2462	1.866	41.340	1.813	39.18	2.95	5.51	Jul. 04, 2023
22.7	2467	1.869	41.326	1.818	39.18	2.79	5.48	Jul. 04, 2023
22.7	2472	1.872	41.320	1.823	39.17	2.69	5.49	Jul. 04, 2023
22.4	2510	1.836	38.763	1.864	39.12	-1.48	-0.91	Jun. 29, 2023
22.2	2510	1.881	41.087	1.864	39.12	0.92	5.03	Jun. 30, 2023
22.4	2535	1.856	38.730	1.891	39.09	-1.84	-0.92	Jun. 29, 2023
22.2	2549.5	1.922	41.040	1.907	39.07	0.81	5.04	Jun. 30, 2023
22.4	2560	1.874	38.703	1.917	39.05	-2.27	-0.89	Jun. 29, 2023
22.2	2580	1.944	41.036	1.939	39.03	0.26	5.14	Jun. 30, 2023
22.2	2593	1.953	41.004	1.953	39.01	-0.02	5.11	Jun. 30, 2023
22.2	2595	1.954	40.997	1.955	39.01	-0.06	5.09	Jun. 30, 2023
22.2	2610	1.967	40.939	1.971	38.99	-0.23	5.00	Jun. 30, 2023
22.2	2636.5	1.994	40.871	2.001	38.95	-0.33	4.93	Jun. 30, 2023
22.2	2680	2.031	40.867	2.048	38.90	-0.82	5.06	Jun. 30, 2023
22.2	3500.01	2.687	36.968	2.910	37.90	-7.65	-2.46	Jun. 30, 2023
22.2	3525	2.712	36.920	2.936	37.88	-7.64	-2.53	Jun. 30, 2023
22.2	3549.99	2.734	36.900	2.962	37.85	-7.70	-2.51	Jun. 30, 2023
22.2	3560	2.740	36.880	2.972	37.84	-7.81	-2.54	Jun. 30, 2023
22.2	3575	2.753	36.839	2.988	37.83	-7.85	-2.62	Jun. 30, 2023
22.2	3575.01	2.753	36.839	2.988	37.83	-7.85	-2.62	Jun. 30, 2023
22.2	3590	2.763	36.828	3.004	37.81	-8.01	-2.60	Jun. 30, 2023
22.2	3600	2.772	36.807	3.014	37.80	-8.02	-2.63	Jun. 30, 2023

Tissue Temp (°C)	Frequency (MHz)	Conductivity (σ)	Permittivity (εr)	Conductivity Target (σ)	Permittivity Target (εr)	Conductivity Deviation (%)	Permittivity Deviation (%)	Date
22.2	3603	2.777	36.802	3.017	37.80	-7.97	-2.64	Jun. 30, 2023
22.2	3616.65	2.788	36.773	3.032	37.78	-8.06	-2.66	Jun. 30, 2023
22.2	3633.33	2.800	36.759	3.048	37.77	-8.13	-2.68	Jun. 30, 2023
22.2	3647	2.813	36.744	3.063	37.75	-8.15	-2.66	Jun. 30, 2023
22.2	3649.98	2.815	36.743	3.066	37.75	-8.19	-2.67	Jun. 30, 2023
22.2	3690	2.852	36.669	3.108	37.71	-8.23	-2.76	Jun. 30, 2023
22.2	3750	2.901	36.590	3.170	37.65	-8.50	-2.82	Jun. 30, 2023
22.2	3786	2.927	36.520	3.207	37.61	-8.73	-2.90	Jun. 30, 2023
22.2	3822	2.961	36.468	3.245	37.58	-8.75	-2.96	Jun. 30, 2023
22.2	3858	2.992	36.434	3.282	37.54	-8.85	-2.95	Jun. 30, 2023
22.2	3894	3.026	36.374	3.320	37.51	-8.86	-3.03	Jun. 30, 2023
22.2	3930	3.059	36.302	3.357	37.47	-8.88	-3.12	Jun. 30, 2023
22.1	5270	4.510	36.354	4.730	35.93	-4.66	1.18	Jun. 28, 2023
22.1	5310	4.553	36.265	4.770	35.89	-4.54	1.05	Jun. 28, 2023
22.1	5510	4.770	35.935	4.976	35.64	-4.14	0.83	Jun. 28, 2023
22.1	5530	4.789	35.893	4.997	35.61	-4.16	0.79	Jun. 28, 2023
22.1	5550	4.815	35.868	5.018	35.58	-4.04	0.81	Jun. 28, 2023
22.1	5610	4.878	35.788	5.080	35.49	-3.97	0.84	Jun. 28, 2023
22.1	5630	4.898	35.750	5.100	35.47	-3.96	0.79	Jun. 28, 2023
22.1	5670	4.949	35.676	5.140	35.43	-3.72	0.69	Jun. 28, 2023
22.1	5690	4.971	35.636	5.160	35.41	-3.66	0.64	Jun. 28, 2023
22.1	5710	4.994	35.604	5.180	35.39	-3.59	0.60	Jun. 28, 2023
22.8	5745	5.057	35.548	5.215	35.36	-3.02	0.53	Jul. 04, 2023
22.8	5755	5.067	35.544	5.225	35.35	-3.02	0.55	Jul. 04, 2023
22.8	5785	5.102	35.476	5.255	35.32	-2.91	0.44	Jul. 04, 2023
22.8	5795	5.116	35.484	5.265	35.31	-2.84	0.49	Jul. 04, 2023
22.8	5825	5.149	35.433	5.296	35.28	-2.78	0.43	Jul. 04, 2023
22.4	6025	5.507	35.275	5.510	35.07	-0.06	0.58	Jul. 07, 2023
22.4	6185	5.712	34.991	5.698	34.88	0.25	0.32	Jul. 07, 2023
22.4	6345	5.898	34.696	5.887	34.69	0.18	0.02	Jul. 07, 2023
22.4	6505	6.085	34.442	6.076	34.49	0.15	-0.14	Jul. 07, 2023
22.3	6665	6.270	33.926	6.261	34.30	0.14	-1.09	Jul. 10, 2023
22.3	6825	6.442	33.665	6.447	34.11	-0.08	-1.30	Jul. 10, 2023
22.3	6985	6.632	33.429	6.633	33.92	-0.01	-1.45	Jul. 10, 2023

6. System Verification

6.1 SAR System Verification

<Symmetric Dipoles for SAR System Verification>

Construction	Symmetrical dipole with $\lambda/4$ balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.		
Return Loss	> 20 dB at specified verification position.		
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request.		
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">System Verification Setup Diagram</td> <td style="width: 50%; text-align: center;">Validation Kit</td> </tr> </table>		System Verification Setup Diagram	Validation Kit
System Verification Setup Diagram	Validation Kit		

6.1.1 SAR Verification Summary

Prior to the assessment, the validation data compared to the original value provided by SPEAG should be within its specifications of $\pm 10\%$. The measured SAR will be normalized to 1 W input power. The result indicates the system check can meet the variation criterion and plots can be referred to Appendix B of this report.

Frequency (MHz)	Power (dBm)	Probe Model / Serial No.	Dipole Model / Serial No.	SAR _{1g} (W/kg)	1 W Normalize SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	Deviation SAR _{1g} (%)	Date
750	17 dBm	EX3DV4 / SN7737	D750V3 / SN1222	0.428	8.54	8.50	0.5%	Jun. 29, 2023
835	17 dBm	EX3DV4 / SN7737	D835V2 / SN4d291	0.495	9.88	9.65	2.4%	Jun. 29, 2023
835	17 dBm	EX3DV4 / SN7737	D835V2 / SN4d291	0.496	9.90	9.65	2.6%	Jun. 30, 2023
1800	17 dBm	EX3DV4 / SN7737	D1800V2 / SN2d167	1.87	37.31	38.50	-3.1%	Jun. 29, 2023
1800	17 dBm	EX3DV4 / SN7737	D1800V2 / SN2d167	1.87	37.31	38.50	-3.1%	Jun. 30, 2023
2000	17 dBm	EX3DV4 / SN7737	D2000V2 / SN1008	2.09	41.70	41.20	1.2%	Jun. 29, 2023
2000	17 dBm	EX3DV4 / SN7737	D2000V2 / SN1008	2.09	41.70	41.20	1.2%	Jun. 30, 2023
2450	17 dBm	EX3DV4 / SN7757	D2450V2 / SN1087	2.41	48.09	52.90	-9.1%	Jul. 04, 2023
2450	17 dBm	EX3DV4 / SN7757	D2450V2 / SN1087	2.4	47.89	52.90	-9.5%	Jul. 07, 2023
2600	17 dBm	EX3DV4 / SN7737	D2600V2 / SN1197	2.63	52.48	57.00	-7.9%	Jun. 29, 2023
2600	17 dBm	EX3DV4 / SN7737	D2600V2 / SN1197	2.68	53.47	57.00	-6.2%	Jun. 30, 2023
3300	17 dBm	EX3DV4 / SN7737	D3300V2 / SN1004	2.99	59.66	65.70	-9.2%	Jun. 30, 2023
3500	17 dBm	EX3DV4 / SN7737	D3500V2 / SN1013	2.92	58.26	64.20	-9.3%	Jun. 30, 2023
3700	17 dBm	EX3DV4 / SN7737	D3700V2 / SN1034	3.11	62.05	66.00	-6.0%	Jun. 30, 2023
3900	17 dBm	EX3DV4 / SN7737	D3900V2 / SN1014	3.28	65.44	66.20	-1.1%	Jun. 30, 2023
5250	17 dBm	EX3DV4 / SN7737	D5250V2 / SN1358	3.68	73.43	77.90	-5.7%	Jun. 28, 2023
5600	17 dBm	EX3DV4 / SN7737	D5600V2 / SN1358	3.74	74.62	80.00	-6.7%	Jun. 28, 2023
5750	17 dBm	EX3DV4 / SN7737	D5750V2 / SN1358	3.62	72.23	79.30	-8.9%	Jun. 28, 2023
5750	17 dBm	EX3DV4 / SN7757	D5750V2 / SN1358	3.76	75.02	79.30	-5.4%	Jul. 04, 2023
6500	20 dBm	EX3DV4 / SN7757	D6500V2 / SN1081	29.5	295.00	294.00	0.3%	Jul. 07, 2023
6500	20 dBm	EX3DV4 / SN7757	D6500V2 / SN1081	30.2	302.00	294.00	2.7%	Jul. 10, 2023

Frequency (GHz)	Power (dBm)	Probe Model / Serial No.	Dipole Model / Serial No.	Meas. 4 cm ² PD (W/m ²)	Target 4 cm ² PD (W/m ²)	PD Deviation (%)	Date
10	21	EUmmWV3 / SN9639	5G Verification Source 10 GHz / 2003	155.67	170.00	-8.4	Jul. 20, 2023

7. Test Equipment List

7.1 SAR Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Cal. Date	Cal.Period
SPEAG	750 MHz System Validation Kit	D750V3	1222	Aug. 05, 2022	1 year
SPEAG	835 MHz System Validation Kit	D835V2	4d291	Aug. 04, 2022	1 year
SPEAG	835 MHz System Validation Kit	D835V2	4d082	Sep. 21, 2022	1 year
SPEAG	900 MHz System Validation Kit	D900V2	1d031	Jun. 30, 2022	1 year
SPEAG	1450 MHz System Validation Kit	D1450V2	1094	Aug. 05, 2022	1 year
SPEAG	1800 MHz System Validation Kit	D1800V2	2d167	Jun. 30, 2022	1 year
SPEAG	1800 MHz System Validation Kit	D1800V2	2d052	Sep. 21, 2022	1 year
SPEAG	1900 MHz System Validation Kit	D1900V2	5d111	Sep. 23, 2022	1 year
SPEAG	1950 MHz System Validation Kit	D1950V3	1117	Jun. 29, 2022	1 year
SPEAG	2000 MHz System Validation Kit	D2000V2	1008	Jul. 01, 2022	1 year
SPEAG	2300 MHz System Validation Kit	D2300V2	1005	Jun. 29, 2022	1 year
SPEAG	2450 MHz System Validation Kit	D2450V2	1087	Aug. 05, 2022	1 year
SPEAG	2600 MHz System Validation Kit	D2600V2	1197	Aug. 05, 2022	1 year
SPEAG	3300 MHz System Validation Kit	D3300V2	1004	Aug. 17, 2022	1 year
SPEAG	3500 MHz System Validation Kit	D3500V2	1013	Aug. 18, 2022	1 year
SPEAG	3700 MHz System Validation Kit	D3700V2	1034	Aug. 19, 2022	1 year
SPEAG	3900 MHz System Validation Kit	D3900V2	1014	Aug. 18, 2022	1 year
SPEAG	5 GHz System Validation Kit	D5GHzV2	1021	Jun. 30, 2022	1 year
SPEAG	5 GHz System Validation Kit	D5GHzV2	1358	Aug. 09, 2022	1 year
SPEAG	6.5 GHz System Validation Kit	D6.5GHzV2	1081	Aug. 12, 2022	1 year
SPEAG	5G Verification Source	10 GHz	2003	Feb. 15, 2023	1 year
SPEAG	Dosimetric E-Field Probe	EUmmWV4	9639	Aug. 24, 2022	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	7737	Jun. 05, 2023	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	7757	Sep. 02, 2022	1 year
SPEAG	Data Acquisition Electronics	DAE4	1669	May. 23, 2023	1 year
SPEAG	Data Acquisition Electronics	DAE4	1742	Aug. 31, 2022	1 year
SPEAG	Data Acquisition Electronics	DAE4	1743	Aug. 25, 2022	1 year
Anritsu	Radio Communication Analyzer	MT8821C	6272374573	Jan. 05, 2023	1 year
Anritsu	Radio Communication Analyzer	MT8000	6272368745	Jan. 06, 2023	1 year
R&S	Bluetooth Tester	CBT	100350	Mar. 20, 2023	2 year
SPEAG	Network Analyzer	DAKS_VNA R140B	22420002	Dec. 08, 2022	1 year
SPEAG	Dielectric Probe Kit	DAKS-3.5	1158	Dec. 14, 2022	1 year
HILA	Digital Thermometer	TM-906A	1500033	Nov. 03, 2022	1 year
Agilent	Power Sensor	8481H	3318A20779	May. 25, 2023	1 year
Agilent	Power Meter	EDM Series E4418B	GB40206143	May. 25, 2023	1 year
R&S	Power Sensor	NRP8S	111512	Nov. 29, 2022	1 year
R&S	Power Sensor	NRP50S	101511	Nov. 29, 2022	1 year
Agilent	Signal Generator	E8257D	MY44320425	Feb. 24, 2023	1 year
Agilent	Spectrum Analyzer	E4446A	MY46180578	Sep. 28, 2022	1 year

8. Measurement Procedure

8.1 SAR Measurement Procedure

The measurement procedures are as follows:

1. The DUT is installed engineering testing software that provides continuous transmitting signal.
2. Measure output power through RF cable and power meter
3. Set scan area, grid size and other setting on the DASY software
4. Find out the largest SAR result on these testing positions of each band
5. Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

1. Power reference measurement
2. Area scan
3. Zoom scan
4. Power drift measurement

8.1.1 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures points and step size follow as below. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution.

The measure settings are referred to KDB 865664 D01v01r04 :

		≤ 3 GHz	> 3 GHz	
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5 mm ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm ± 0.5 mm	
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30° ± 1°	20° ± 1°	
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}		≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm	
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.		
Maximum zoom scan spatial resolution: Δx_{Area}, Δy_{Area}		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	Graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z	≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm	

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
 * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

8.1.2 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1 g aggregate SAR, the DUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

8.1.3 Power Drift Monitoring

All SAR testing is under the DUT install full charged battery and transmit maximum output power. In DASYS measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of DUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5 %, the SAR will be retested.

8.1.4 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1 g and 10 g, as well as for user-specific masses. The DASYS software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1 g and 10 g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. Extraction of the measured data (grid and values) from the Zoom Scan
2. Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. Generation of a high-resolution mesh within the measured volume
4. Interpolation of all measured values form the measurement grid to the high-resolution grid
5. Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. Calculation of the averaged SAR within masses of 1 g and 10 g

9. Measurement Uncertainty

9.1 SAR Measurement Uncertainty

SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Div.	ci (1 g)	ci (10 g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
Measurement System Errors								
CF	Probe Calibration	12.0	N	2	1	1	6.0	6.0
CF _{drift}	Probe Calibration Drift	1.7	R	√3	1	1	1.0	1.0
LIN	Probe Linearity	4.7	R	√3	1	1	2.7	2.7
BBS	Broadband Signal	2.8	R	√3	1	1	1.6	1.6
ISO	Probe Isotropy	7.6	R	√3	1	1	4.4	4.4
DAE	Other Probe+Electronic	0.8	N	1	1	1	0.8	0.8
AMB	RF Ambient	0.7	N	1	1	1	0.7	0.7
Δ _{sys}	Probe Positioning	0.006	N	1	0.14	0.14	0.0	0.0
DAT	Data Processing	1.2	N	1	1	1	1.2	1.2
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	2.5	N	1	0.78	0.71	2.0	1.8
LIQ(T _σ)	Conductivity (temp)BB	3.3	R	√3	0.78	0.71	1.5	1.4
EPS	Phantom Permittivity	14.0	R	√3	0	0	0.0	0.0
DIS	Distance DUT-TSL	2.0	N	1	2	2	4.0	4.0
D _{xyz}	Device Positioning	1.0	N	1	1	1	1.0	1.0
H	Device Holder	2.5	N	1	1	1	2.5	2.5
MOD	DUT Modulation	2.4	R	√3	1	1	1.4	1.4
TAS	Time-average SAR	1.7	R	√3	1	1	1.0	1.0
RF _{drift}	DUT drift	2.5	N	1	1	1	2.5	2.5
Correction to the SAR results								
C(ε, σ)	Deviation to Target	1.9	N	1	1	0.84	1.9	1.6
C(R)	SAR Scaling	0.0	R	√3	1	1	0.0	0.0
u(ΔSAR)	Combined Uncertainty					RSS	10.5	10.4
U	Expanded Uncertainty					k=2	21.0	20.8

SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Div.	ci (1 g)	ci (10 g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
Measurement System Errors								
CF	Probe Calibration	13.1	N	2	1	1	6.55	6.55
CF _{drift}	Probe Calibration Drift	1.7	R	√3	1	1	1.0	1.0
LIN	Probe Linearity	4.7	R	√3	1	1	2.7	2.7
BBS	Broadband Signal	2.6	R	√3	1	1	1.5	1.5
ISO	Probe Isotropy	7.6	R	√3	1	1	4.4	4.4
DAE	Other Probe+Electronic	1.2	N	1	1	1	1.2	1.2
AMB	RF Ambient	0.7	N	1	1	1	0.7	0.7
Δ _{sys}	Probe Positioning	0.005	N	1	0.29	0.29	0.0	0.0
DAT	Data Processing	2.3	N	1	1	1	2.3	2.3
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	2.5	N	1	0.78	0.71	2.0	1.8
LIQ(T _σ)	Conductivity (temp)BB	3.4	R	√3	0.78	0.71	1.5	1.4
EPS	Phantom Permittivity	14.0	R	√3	0.25	0.25	2.0	2.0
DIS	Distance DUT-TSL	2.0	N	1	2	2	4.0	4.0
D _{xyz}	Device Positioning	1.0	N	1	1	1	1.0	1.0
H	Device Holder	2.5	N	1	1	1	2.5	2.5
MOD	DUT Modulation	2.4	R	√3	1	1	1.4	1.4
TAS	Time-average SAR	1.7	R	√3	1	1	1.0	1.0
RF _{drift}	DUT drift	2.5	N	1	1	1	2.5	2.5
Correction to the SAR results								
C(ε, σ)	Deviation to Target	1.9	N	1	1	0.84	1.9	1.6
C(R)	SAR Scaling	0.0	R	√3	1	1	0.0	0.0
u(ΔSAR)	Combined Uncertainty					RSS	11.2	11.1
U	Expanded Uncertainty					k=2	22.4	22.2

SAR Uncertainty Budget for Frequency Range of 6 GHz to 10 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Div.	ci (1 g)	ci (10 g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
Measurement System Errors								
CF	Probe Calibration	18.6	N	2	1	1	9.3	9.3
CF _{drift}	Probe Calibration Drift	1.7	R	√3	1	1	1.0	1.0
LIN	Probe Linearity	4.7	R	√3	1	1	2.7	2.7
BBS	Broadband Signal	2.6	R	√3	1	1	1.5	1.5
ISO	Probe Isotropy	7.6	R	√3	1	1	4.4	4.4
DAE	Other Probe+Electronic	2.4	N	1	1	1	2.4	2.4
AMB	RF Ambient	0.7	N	1	1	1	0.7	0.7
Δ _{sys}	Probe Positioning	0.005	N	1	0.5	0.5	0.0	0.0
DAT	Data Processing	3.5	N	1	1	1	3.5	3.5
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	2.5	N	1	0.78	0.71	2.0	1.8
LIQ(T _σ)	Conductivity (temp)BB	2.4	R	√3	0.78	0.71	1.1	1.0
EPS	Phantom Permittivity	14.0	R	√3	0.5	0.5	4.0	4.0
DIS	Distance DUT-TSL	2.0	N	1	2	2	4.0	4.0
D _{xyz}	Device Positioning	1.0	N	1	1	1	1.0	1.0
H	Device Holder	2.5	N	1	1	1	2.5	2.5
MOD	DUT Modulation	2.4	R	√3	1	1	1.4	1.4
TAS	Time-average SAR	1.7	R	√3	1	1	1.0	1.0
RF _{drift}	DUT drift	2.5	N	1	1	1	2.5	2.5
Correction to the SAR results								
C(ε, σ)	Deviation to Target	1.9	N	1	1	0.84	1.9	1.6
C(R)	SAR Scaling	0.0	R	√3	1	1	0.0	0.0
u(ΔSAR)	Combined Uncertainty					RSS	13.9	13.8
U	Expanded Uncertainty					k=2	27.8	27.6

APD Uncertainty Budget for Frequency Range of 6 GHz to 10 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Div.	ci (1 g)	ci (10 g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
psSAR	SAR Measurement Uncertainty	13.9 / 13.8	N	1	1	1	13.9	13.8
PDC	APD Conversion	13.5	R	$\sqrt{3}$	1	1	7.8	7.8
u(Δ SAR)	Combined Uncertainty					RSS	15.9	15.9
U	Expanded Uncertainty					k=2	31.8	31.8

10. Measurement Evaluation

10.1 Positioning of the DUT in Relation to the Phantom

According to KDB 616217 D04:

1. SAR evaluation is required for back (bottom) surface and side edges of the devices.
2. Some 2-in-1 tablets may operate with the display folded on top of the keyboard. Most recent tablets are designed with an interactive display that may not require a physical keyboard. Both configurations are used in similar manners and require SAR evaluation for the back surface and edges of the tablet. For keyboards that can be unfolded like a laptop, SAR evaluation is required for the bottom surface of the keyboard.
3. SAR evaluation for the front surface of tablet display screens are generally not necessary, except for tablets that are designed to require continuous operations with the hand(s) next to the antenna.
4. When voice mode is supported on a tablet and it is limited to speaker mode or headset operations only, additional SAR testing for this type of voice use is not required.

10.2 SAR Testing Consideration

10.2.1 SAR Testing with GSM & UMTS

<KDB 941225 D01 General Requirement>

According to 3G SAR test reduction procedure in KDB 941225 D01, when the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

GSM SAR Measurement

The 3G SAR test reduction procedure is applied to EDGE (8-PSK) with GPRS/EDGE (GMSK) as the primary mode in conjunction with the test reduction procedure in KDB Publication 447498 D01.

WCDMA SAR Measurement

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

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

Rel. 5 HSDPA SAR Measurement

When voice transmission in next to the ear head exposure conditions is according to the "Head SAR" part in "WCDMA SAR Measurement" of this document. SAR for body exposure configurations is according to the "Body-Worn Accessory SAR" part in "WCDMA SAR Measurement" of this document. The 3G SAR test reduction procedure is applied to HSDPA body SAR with 12.2 kbps RMC as the primary mode. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA.

Rel. 6 HSPA (HSDPA/HSUPA) SAR Measurement

When voice transmission in next to the ear head exposure conditions is according to the "Head SAR" part in "WCDMA SAR Measurement" of this document. SAR for body exposure configurations is according to the the "Body-Worn Accessory SAR" part in "WCDMA SAR Measurement" of this document. The 3G SAR test reduction procedure is applied to HSPA body SAR with 12.2 kbps RMC as the primary mode. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

Rel. 8 DC-HSDPA SAR Measurement

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode.

CDMA2000 SAR Measurement

Head SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at full rate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode.

Body-worn accessory SAR is measured in RC3 with the handset configured in TDSO/SO32 to transmit at full rate on FCH only with all other code channels disabled. The body-worn accessory procedures in KDB Publication 447498 D01 are applied. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCHn), with FCH only as the primary mode.

For handsets with Ev-Do capabilities, the 3G SAR test reduction procedure is applied to Ev-Do Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. When VOIP is supported by Ev-Do devices for next to the ear use, head exposure SAR is required.

The 3G SAR test reduction procedure is applied to 1x-Advanced with 1x RTT RC3 as the primary mode.

10.2.2 SAR Testing with LTE

<KDB 941225 D05 General requirements>

1. 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.
2. 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.
3. When the highest reported SAR for 1 RB and 50% RB allocation are > 0.8 W/kg, SAR is measured for the highest output power channel in 100%RB.
4. 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.
5. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation.
6. 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 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.
7. 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.
8. According to 5.3 of KDB 941225 D05, that about the test reduction for other channel bandwidth, if the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > 0.5 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, then SAR need to test.
9. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M, and L channels may not fully apply.

10.3 Conducted Power Measurements

Please refer to Appendix A

10.4 Antenna location

Please refer to Appendix E.

10.5 Test Results

10.5.1 SAR Test Result

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR ₁₀ (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR ₁₀ (W/kg)	Smart card
WCDMA Band II	RMC12.2Kbps	9400	Bottom Face	0	0.303	0.11	19.44	19.5	0.307	
WCDMA Band II	RMC12.2Kbps	9400	Side 1	0	0.788	0.02	19.44	19.5	0.799	
WCDMA Band II	RMC12.2Kbps	9262	Side 1	0	0.677	0.03	19.42	19.5	0.690	
WCDMA Band II	RMC12.2Kbps	9538	Side 1	0	0.92	-0.11	19.4	19.5	0.94	
WCDMA Band II	RMC12.2Kbps	9538	Side 1	0	0.905	0.15	19.4	19.5	0.93	
WCDMA Band II	RMC12.2Kbps	9538	Side 1	0	0.901	0.02	19.4	19.5	0.922	V
WCDMA Band II	RMC12.2Kbps	9400	Side 2	0	0.069	0.03	19.44	19.5	0.070	
WCDMA Band II	RMC12.2Kbps	9400	Side 3	0	0.001	0.11	19.44	19.5	0.001	
WCDMA Band II	RMC12.2Kbps	9400	Side 4	0	0.001	0.02	19.44	19.5	0.001	
WCDMA Band IV	RMC12.2Kbps	1413	Bottom Face	0	0.687	0.05	22.78	22.9	0.706	
WCDMA Band IV	RMC12.2Kbps	1413	Side 1	0	0.93	0.07	22.78	22.9	0.96	
WCDMA Band IV	RMC12.2Kbps	1413	Side 1	0	0.883	-0.02	22.78	22.9	0.91	
WCDMA Band IV	RMC12.2Kbps	1413	Side 1	0	0.9	0.07	22.78	22.9	0.93	V
WCDMA Band IV	RMC12.2Kbps	1312	Side 1	0	0.768	-0.01	22.71	22.9	0.802	
WCDMA Band IV	RMC12.2Kbps	1513	Side 1	0	0.845	0.03	22.75	22.9	0.875	
WCDMA Band IV	RMC12.2Kbps	1413	Side 2	0	0.19	0.01	22.78	22.9	0.195	
WCDMA Band IV	RMC12.2Kbps	1413	Side 3	0	0.001	0.12	22.78	22.9	0.001	
WCDMA Band IV	RMC12.2Kbps	1413	Side 4	0	0.001	0.02	22.78	22.9	0.001	
WCDMA Band V	RMC12.2Kbps	4182	Bottom Face	0	0.553	0.02	21.45	21.5	0.559	
WCDMA Band V	RMC12.2Kbps	4182	Side 1	0	0.92	0.02	21.45	21.5	0.93	
WCDMA Band V	RMC12.2Kbps	4132	Side 1	0	0.95	-0.02	21.44	21.5	0.96	
WCDMA Band V	RMC12.2Kbps	4132	Side 1	0	0.9	-0.01	21.44	21.5	0.91	
WCDMA Band V	RMC12.2Kbps	4132	Side 1	0	0.93	-0.02	21.44	21.5	0.94	V
WCDMA Band V	RMC12.2Kbps	4233	Side 1	0	0.92	0.03	21.41	21.5	0.94	
WCDMA Band V	RMC12.2Kbps	4182	Side 2	0	0.295	0.11	21.45	21.5	0.298	
WCDMA Band V	RMC12.2Kbps	4182	Side 3	0	0.001	0.01	21.45	21.5	0.001	
WCDMA Band V	RMC12.2Kbps	4182	Side 4	0	0.001	0.02	21.45	21.5	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 2	QPSK	18900	20M	1	0	Bottom Face	0	0.277	0.11	19.78	19.8	0.278	
LTE Band 2	QPSK	18900	20M	50	0	Bottom Face	0	0.225	0.12	18.79	18.8	0.226	
LTE Band 2	QPSK	18900	20M	1	0	Side 1	0	0.727	0.11	19.78	19.8	0.730	
LTE Band 2	QPSK	18700	20M	1	0	Side 1	0	0.691	0.1	19.78	19.8	0.694	
LTE Band 2	QPSK	19100	20M	1	0	Side 1	0	0.91	0.03	19.68	19.8	0.935	
LTE Band 2	QPSK	19100	20M	1	0	Side 1	0	0.887	0.03	19.68	19.8	0.912	
LTE Band 2	QPSK	19100	20M	1	0	Side 1	0	0.885	0.03	19.68	19.8	0.910	V
LTE Band 2	QPSK	18900	20M	50	0	Side 1	0	0.66	0.11	18.79	18.8	0.662	
LTE Band 2	QPSK	18900	20M	100	0	Side 1	0	0.673	0.12	18.75	18.8	0.681	
LTE Band 2	QPSK	18900	20M	1	0	Side 2	0	0.069	0.06	18.79	19.8	0.087	
LTE Band 2	QPSK	18900	20M	50	0	Side 2	0	0.057	0.05	18.75	18.8	0.058	
LTE Band 2	QPSK	18900	20M	1	0	Side 3	0	0.001	0.02	18.79	19.8	0.001	
LTE Band 2	QPSK	18900	20M	50	0	Side 3	0	0.001	0.03	18.75	18.8	0.001	
LTE Band 2	QPSK	18900	20M	1	0	Side 4	0	0.001	0.01	18.79	19.8	0.001	
LTE Band 2	QPSK	18900	20M	50	0	Side 4	0	0.001	0.2	18.75	18.8	0.001	
LTE Band 4	QPSK	20175	20M	1	0	Bottom Face	0	0.343	-0.11	22.45	22.5	0.347	
LTE Band 4	QPSK	20175	20M	50	0	Bottom Face	0	0.261	0.02	21.45	21.5	0.264	
LTE Band 4	QPSK	20175	20M	1	0	Side 1	0	0.535	-0.03	22.45	22.5	0.541	
LTE Band 4	QPSK	20050	20M	1	0	Side 1	0	0.514	0.02	22.41	22.5	0.525	
LTE Band 4	QPSK	20300	20M	1	0	Side 1	0	0.54	-0.02	22.4	22.5	0.553	
LTE Band 4	QPSK	20300	20M	1	0	Side 1	0	0.51	0.05	22.4	22.5	0.522	V
LTE Band 4	QPSK	20175	20M	50	0	Side 1	0	0.438	0.11	21.45	21.5	0.443	
LTE Band 4	QPSK	20175	20M	1	0	Side 2	0	0.116	0.03	22.45	22.5	0.117	
LTE Band 4	QPSK	20175	20M	50	0	Side 2	0	0.096	0.12	21.45	21.5	0.097	
LTE Band 4	QPSK	20175	20M	1	0	Side 3	0	0.001	0.03	22.45	22.5	0.001	
LTE Band 4	QPSK	20175	20M	50	0	Side 3	0	0.001	-0.02	21.45	21.5	0.001	
LTE Band 4	QPSK	20175	20M	1	0	Side 4	0	0.001	-0.03	22.45	22.5	0.001	
LTE Band 4	QPSK	20175	20M	50	0	Side 4	0	0.001	0.01	21.45	21.5	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 5	QPSK	20525	10M	1	0	Bottom Face	0	0.534	0.02	21.15	21.2	0.540	
LTE Band 5	QPSK	20525	10M	25	0	Bottom Face	0	0.426	0.11	20.15	20.2	0.431	
LTE Band 5	QPSK	20525	10M	1	0	Side 1	0	0.887	0.11	21.15	21.2	0.897	
LTE Band 5	QPSK	20450	10M	1	0	Side 1	0	0.895	0.05	21.1	21.2	0.916	
LTE Band 5	QPSK	20600	10M	1	0	Side 1	0	0.932	0.06	21.05	21.2	0.965	
LTE Band 5	QPSK	20600	10M	1	0	Side 1	0	0.902	0.02	21.05	21.2	0.934	
LTE Band 5	QPSK	20600	10M	1	0	Side 1	0	0.931	0.06	21.05	21.2	0.964	V
LTE Band 5	QPSK	20525	10M	25	0	Side 1	0	0.739	0.11	20.15	20.2	0.748	
LTE Band 5	QPSK	20525	10M	50	0	Side 1	0	0.712	0.05	20.1	20.2	0.729	
LTE Band 5	QPSK	20525	10M	1	0	Side 2	0	0.216	0.09	21.15	21.2	0.219	
LTE Band 5	QPSK	20525	10M	25	0	Side 2	0	0.169	0.03	20.15	20.2	0.171	
LTE Band 5	QPSK	20525	10M	1	0	Side 3	0	0.001	-0.02	21.15	21.2	0.001	
LTE Band 5	QPSK	20525	10M	25	0	Side 3	0	0.001	0.02	20.15	20.2	0.001	
LTE Band 5	QPSK	20525	10M	1	0	Side 4	0	0.001	0.01	21.15	21.2	0.001	
LTE Band 5	QPSK	20525	10M	25	0	Side 4	0	0.001	0.02	20.15	20.2	0.001	
LTE Band 7	QPSK	21100	20M	1	0	Bottom Face	0	0.412	0.03	16.59	16.6	0.413	
LTE Band 7	QPSK	21100	20M	50	0	Bottom Face	0	0.394	0.02	15.55	15.6	0.399	
LTE Band 7	QPSK	21100	20M	1	0	Side 1	0	0.638	0.01	16.59	16.6	0.639	
LTE Band 7	QPSK	20850	20M	1	0	Side 1	0	0.453	0.02	16.52	16.6	0.461	
LTE Band 7	QPSK	21350	20M	1	0	Side 1	0	0.851	-0.05	16.48	16.6	0.875	
LTE Band 7	QPSK	21350	20M	1	0	Side 1	0	0.83	-0.03	16.48	16.6	0.853	
LTE Band 7	QPSK	21350	20M	1	0	Side 1	0	0.845	-0.05	16.48	16.6	0.869	V
LTE Band 7	QPSK	21100	20M	50	0	Side 1	0	0.561	0.02	15.55	15.6	0.567	
LTE Band 7	QPSK	21100	20M	100	0	Side 1	0	0.581	0.11	15.52	15.6	0.592	
LTE Band 7	QPSK	21100	20M	1	0	Side 2	0	0.096	0.02	16.59	16.6	0.096	
LTE Band 7	QPSK	21100	20M	50	0	Side 2	0	0.079	0.02	15.55	15.6	0.080	
LTE Band 7	QPSK	21100	20M	1	0	Side 3	0	0.001	0.15	16.59	16.6	0.001	
LTE Band 7	QPSK	21100	20M	50	0	Side 3	0	0.001	0.03	15.55	15.6	0.001	
LTE Band 7	QPSK	21100	20M	1	0	Side 4	0	0.001	-0.03	16.59	16.6	0.001	
LTE Band 7	QPSK	21100	20M	50	0	Side 4	0	0.001	0.02	15.55	15.6	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 12	QPSK	23095	10M	1	0	Bottom Face	0	0.244	0.02	23.36	23.4	0.246	
LTE Band 12	QPSK	23095	10M	25	0	Bottom Face	0	0.215	0.02	22.35	22.4	0.217	
LTE Band 12	QPSK	23095	10M	1	0	Side 1	0	0.676	0.01	23.36	23.4	0.682	
LTE Band 12	QPSK	23060	10M	1	0	Side 1	0	0.665	0.11	23.33	23.4	0.676	
LTE Band 12	QPSK	23130	10M	1	0	Side 1	0	0.729	0.02	23.31	23.4	0.744	
LTE Band 12	QPSK	23130	10M	1	0	Side 1	0	0.713	-0.02	23.31	23.4	0.728	V
LTE Band 12	QPSK	23095	10M	25	0	Side 1	0	0.581	-0.03	22.35	22.4	0.588	
LTE Band 12	QPSK	23095	10M	1	0	Side 2	0	0.094	0.02	23.36	23.4	0.095	
LTE Band 12	QPSK	23095	10M	25	0	Side 2	0	0.079	0.01	22.35	22.4	0.080	
LTE Band 12	QPSK	23095	10M	1	0	Side 3	0	0.001	0.02	23.36	23.4	0.001	
LTE Band 12	QPSK	23095	10M	25	0	Side 3	0	0.001	0.03	22.35	22.4	0.001	
LTE Band 12	QPSK	23095	10M	1	0	Side 4	0	0.001	0.03	23.36	23.4	0.001	
LTE Band 12	QPSK	23095	10M	25	0	Side 4	0	0.001	0.03	22.35	22.4	0.001	
LTE Band 13	QPSK	23230	10M	1	0	Bottom Face	0	0.415	-0.01	21.66	21.7	0.419	
LTE Band 13	QPSK	23230	10M	25	0	Bottom Face	0	0.337	0.02	20.58	20.7	0.346	
LTE Band 13	QPSK	23230	10M	1	0	Side 1	0	0.804	-0.04	21.66	21.7	0.811	
LTE Band 13	QPSK	23230	10M	1	0	Side 1	0	0.768	0.02	21.66	21.7	0.775	
LTE Band 13	QPSK	23230	10M	1	0	Side 1	0	0.802	-0.04	21.66	21.7	0.809	V
LTE Band 13	QPSK	23230	10M	25	0	Side 1	0	0.667	-0.03	20.58	20.7	0.686	
LTE Band 13	QPSK	23230	10M	50	0	Side 1	0	0.681	-0.03	20.55	20.7	0.705	
LTE Band 13	QPSK	23230	10M	1	0	Side 2	0	0.243	0.02	21.66	21.7	0.245	
LTE Band 13	QPSK	23230	10M	25	0	Side 2	0	0.194	0.01	20.58	20.7	0.199	
LTE Band 13	QPSK	23230	10M	1	0	Side 3	0	0.001	0.02	21.66	21.7	0.001	
LTE Band 13	QPSK	23230	10M	25	0	Side 3	0	0.001	0.02	20.58	20.7	0.001	
LTE Band 13	QPSK	23230	10M	1	0	Side 4	0	0.001	0.03	21.66	21.7	0.001	
LTE Band 13	QPSK	23230	10M	25	0	Side 4	0	0.001	0.02	20.58	20.7	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 14	QPSK	23330	10M	1	0	Bottom Face	0	0.49	0.02	21.79	21.8	0.491	
LTE Band 14	QPSK	23330	10M	25	0	Bottom Face	0	0.393	0.03	20.75	20.8	0.398	
LTE Band 14	QPSK	23330	10M	1	0	Side 1	0	0.95	-0.02	21.79	21.8	0.952	
LTE Band 14	QPSK	23330	10M	1	0	Side 1	0	0.911	0.02	21.79	21.8	0.913	
LTE Band 14	QPSK	23330	10M	1	0	Side 1	0	0.942	-0.02	21.79	21.8	0.944	V
LTE Band 14	QPSK	23330	10M	25	0	Side 1	0	0.743	0.03	20.75	20.8	0.752	
LTE Band 14	QPSK	23330	10M	50	0	Side 1	0	0.715	-0.03	20.69	20.8	0.733	
LTE Band 14	QPSK	23330	10M	1	0	Side 2	0	0.219	-0.02	21.79	21.8	0.220	
LTE Band 14	QPSK	23330	10M	25	0	Side 2	0	0.188	-0.04	20.75	20.8	0.190	
LTE Band 14	QPSK	23330	10M	1	0	Side 3	0	0.001	0.02	21.79	21.8	0.001	
LTE Band 14	QPSK	23330	10M	25	0	Side 3	0	0.001	-0.03	20.75	20.8	0.001	
LTE Band 14	QPSK	23330	10M	1	0	Side 4	0	0.001	-0.02	21.79	21.8	0.001	
LTE Band 14	QPSK	23330	10M	25	0	Side 4	0	0.001	-0.03	20.75	20.8	0.001	
LTE Band 17	QPSK	23790	10M	1	0	Bottom Face	0	0.249	-0.02	23.19	23.4	0.261	
LTE Band 17	QPSK	23790	10M	25	0	Bottom Face	0	0.22	-0.03	22.31	22.4	0.225	
LTE Band 17	QPSK	23790	10M	1	0	Side 1	0	0.743	0.02	23.19	23.4	0.780	
LTE Band 17	QPSK	23780	10M	1	0	Side 1	0	0.737	0.05	23.11	23.4	0.788	
LTE Band 17	QPSK	23800	10M	1	0	Side 1	0	0.748	-0.05	23.14	23.4	0.794	
LTE Band 17	QPSK	23800	10M	1	0	Side 1	0	0.735	0.03	23.14	23.4	0.780	V
LTE Band 17	QPSK	23790	10M	25	0	Side 1	0	0.605	0.04	22.31	22.4	0.618	
LTE Band 17	QPSK	23790	10M	1	0	Side 2	0	0.11	-0.02	23.19	23.4	0.115	
LTE Band 17	QPSK	23790	10M	25	0	Side 2	0	0.092	-0.03	22.31	22.4	0.094	
LTE Band 17	QPSK	23790	10M	1	0	Side 3	0	0.001	-0.01	23.19	23.54	0.001	
LTE Band 17	QPSK	23790	10M	25	0	Side 3	0	0.001	-0.01	22.31	22.4	0.001	
LTE Band 17	QPSK	23790	10M	1	0	Side 4	0	0.001	0.02	23.19	23.4	0.001	
LTE Band 17	QPSK	23790	10M	25	0	Side 4	0	0.001	0.03	22.31	22.4	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 25	QPSK	26365	20M	1	0	Bottom Face	0	0.291	0.02	19.58	19.6	0.292	
LTE Band 25	QPSK	26365	20M	50	0	Bottom Face	0	0.231	0.03	18.58	18.6	0.232	
LTE Band 25	QPSK	26365	20M	1	0	Side 1	0	0.779	0.12	19.58	19.6	0.783	
LTE Band 25	QPSK	26140	20M	1	0	Side 1	0	0.68	0.06	19.55	19.6	0.688	
LTE Band 25	QPSK	26590	20M	1	0	Side 1	0	0.891	0.04	19.42	19.6	0.929	
LTE Band 25	QPSK	26590	20M	1	0	Side 1	0	0.855	0.02	19.42	19.6	0.891	
LTE Band 25	QPSK	26590	20M	1	0	Side 1	0	0.889	0.04	19.42	19.6	0.927	V
LTE Band 25	QPSK	26365	20M	50	0	Side 1	0	0.644	-0.17	18.58	18.6	0.647	
LTE Band 25	QPSK	26365	20M	100	0	Side 1	0	0.653	-0.08	18.55	18.6	0.661	
LTE Band 25	QPSK	26365	20M	1	0	Side 2	0	0.07	-0.15	19.58	19.6	0.070	
LTE Band 25	QPSK	26365	20M	50	0	Side 2	0	0.057	0.09	18.58	18.6	0.057	
LTE Band 25	QPSK	26365	20M	1	0	Side 3	0	0.001	0.17	19.58	19.6	0.001	
LTE Band 25	QPSK	26365	20M	50	0	Side 3	0	0.001	-0.16	18.58	18.6	0.001	
LTE Band 25	QPSK	26365	20M	1	0	Side 4	0	0.001	0.02	19.58	19.6	0.001	
LTE Band 25	QPSK	26365	20M	50	0	Side 4	0	0.001	0	18.58	18.6	0.001	
LTE Band 26	QPSK	26865	15M	1	0	Bottom Face	0	0.446	-0.05	21.28	21.3	0.448	
LTE Band 26	QPSK	26865	15M	36	0	Bottom Face	0	0.395	0.02	20.25	20.3	0.400	
LTE Band 26	QPSK	26865	15M	1	0	Side 1	0	0.873	0.03	21.28	21.3	0.877	
LTE Band 26	QPSK	26765	15M	1	0	Side 1	0	0.893	0.01	21.22	21.3	0.910	
LTE Band 26	QPSK	26965	15M	1	0	Side 1	0	0.928	-0.09	21.19	21.3	0.952	
LTE Band 26	QPSK	26965	15M	1	0	Side 1	0	0.88	0.08	21.19	21.3	0.903	
LTE Band 26	QPSK	26965	15M	1	0	Side 1	0	0.925	-0.09	21.19	21.3	0.949	V
LTE Band 26	QPSK	26865	15M	36	0	Side 1	0	0.723	-0.08	20.25	20.3	0.731	
LTE Band 26	QPSK	26865	15M	75	0	Side 1	0	0.709	0.1	20.22	20.3	0.722	
LTE Band 26	QPSK	26865	15M	1	0	Side 2	0	0.244	0.02	21.28	21.3	0.245	
LTE Band 26	QPSK	26865	15M	36	0	Side 2	0	0.193	-0.14	20.25	20.3	0.195	
LTE Band 26	QPSK	26865	15M	1	0	Side 3	0	0.001	-0.1	21.28	21.3	0.001	
LTE Band 26	QPSK	26865	15M	36	0	Side 3	0	0.001	0.18	20.25	20.3	0.001	
LTE Band 26	QPSK	26865	15M	1	0	Side 4	0	0.001	-0.02	21.28	21.3	0.001	
LTE Band 26	QPSK	26865	15M	36	0	Side 4	0	0.001	0.07	20.25	20.3	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 38	QPSK	38000	20M	1	0	Bottom Face	0	0.515	0.19	15.88	15.9	0.517	
LTE Band 38	QPSK	38000	20M	50	0	Bottom Face	0	0.41	0.04	14.85	14.9	0.415	
LTE Band 38	QPSK	38000	20M	1	0	Side 1	0	0.896	-0.12	15.88	15.9	0.900	
LTE Band 38	QPSK	37850	20M	1	0	Side 1	0	0.818	-0.08	15.82	15.9	0.833	
LTE Band 38	QPSK	38150	20M	1	0	Side 1	0	0.93	0.04	15.79	15.9	0.950	
LTE Band 38	QPSK	38150	20M	1	0	Side 1	0	0.906	0.04	15.79	15.9	0.930	
LTE Band 38	QPSK	38150	20M	1	0	Side 1	0	0.915	0.04	15.79	15.9	0.940	V
LTE Band 38	QPSK	38000	20M	50	0	Side 1	0	0.774	0.16	14.85	14.9	0.783	
LTE Band 38	QPSK	38000	20M	100	0	Side 1	0	0.83	-0.03	14.82	14.9	0.845	
LTE Band 38	QPSK	38000	20M	1	0	Side 2	0	0.056	0.14	15.88	15.9	0.056	
LTE Band 38	QPSK	38000	20M	50	0	Side 2	0	0.051	-0.04	14.85	14.9	0.052	
LTE Band 38	QPSK	38000	20M	1	0	Side 3	0	0.001	-0.17	15.88	15.9	0.001	
LTE Band 38	QPSK	38000	20M	50	0	Side 3	0	0.001	0.15	14.85	14.9	0.001	
LTE Band 38	QPSK	38000	20M	1	0	Side 4	0	0.001	-0.02	15.88	15.9	0.001	
LTE Band 38	QPSK	38000	20M	50	0	Side 4	0	0.001	-0.03	14.85	14.9	0.001	
LTE Band 41	QPSK	41055	20M	1	0	Bottom Face	0	0.431	0.12	16.28	16.3	0.433	
LTE Band 41	QPSK	41055	20M	50	0	Bottom Face	0	0.363	-0.08	15.27	15.3	0.366	
LTE Band 41	QPSK	41055	20M	1	0	Side 1	0	0.92	-0.03	16.28	16.3	0.924	
LTE Band 41	QPSK	39750	20M	1	0	Side 1	0	0.363	-0.1	16.25	16.3	0.367	
LTE Band 41	QPSK	39790	20M	1	0	Side 1	0	0.381	0.02	16.23	16.3	0.387	
LTE Band 41	QPSK	40185	20M	1	0	Side 1	0	0.666	0.12	16.21	16.3	0.680	
LTE Band 41	QPSK	40620	20M	1	0	Side 1	0	0.932	0.01	16.18	16.3	0.960	
LTE Band 41	QPSK	40620	20M	1	0	Side 1	0	0.815	0.06	15.18	15.2	0.819	
LTE Band 41	QPSK	40620	20M	1	0	Side 1	0	0.905	0.07	16.18	16.3	0.930	
LTE Band 41	QPSK	40620	20M	1	0	Side 1	0	0.92	0.01	16.18	16.3	0.946	V
LTE Band 41	QPSK	41490	20M	1	0	Side 1	0	0.87	0.14	16.11	16.3	0.909	
LTE Band 41	QPSK	41055	20M	50	0	Side 1	0	0.782	0.12	15.27	15.3	0.787	
LTE Band 41	QPSK	41055	20M	100	0	Side 1	0	0.816	-0.13	15.25	15.3	0.825	
LTE Band 41	QPSK	41055	20M	1	0	Side 2	0	0.065	0.12	16.28	16.3	0.065	
LTE Band 41	QPSK	41055	20M	50	0	Side 2	0	0.06	-0.08	15.27	15.3	0.060	
LTE Band 41	QPSK	41055	20M	1	0	Side 3	0	0.001	-0.18	16.28	16.3	0.001	
LTE Band 41	QPSK	41055	20M	50	0	Side 3	0	0.001	-0.03	15.27	15.3	0.001	
LTE Band 41	QPSK	41055	20M	1	0	Side 4	0	0.001	0.17	16.28	16.3	0.001	
LTE Band 41	QPSK	41055	20M	50	0	Side 4	0	0.001	-0.06	15.27	15.3	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 42	QPSK	43340	20M	1	0	Bottom Face	0	0.744	0.05	20.25	20.3	0.753	
LTE Band 42	QPSK	43340	20M	50	0	Bottom Face	0	0.624	0.12	19.22	19.3	0.636	
LTE Band 42	QPSK	43340	20M	1	0	Side 1	0	0.815	-0.02	20.25	20.3	0.824	
LTE Band 42	QPSK	43340	20M	1	0	Side 1	0	0.805	0.03	20.25	20.3	0.814	
LTE Band 42	QPSK	43340	20M	1	0	Side 1	0	0.812	-0.02	20.25	20.3	0.821	V
LTE Band 42	QPSK	43190	20M	1	0	Side 1	0	0.811	0.19	20.22	20.3	0.826	
LTE Band 42	QPSK	43490	20M	1	0	Side 1	0	0.797	-0.13	20.15	20.3	0.825	
LTE Band 42	QPSK	43340	20M	50	0	Side 1	0	0.661	0.01	19.22	19.3	0.673	
LTE Band 42	QPSK	43340	20M	100	0	Side 1	0	0.66	0.04	19.2	19.3	0.675	
LTE Band 42	QPSK	43340	20M	1	0	Side 2	0	0.08	0.17	20.25	20.3	0.081	
LTE Band 42	QPSK	43340	20M	50	0	Side 2	0	0.062	-0.01	19.22	19.3	0.063	
LTE Band 42	QPSK	43340	20M	1	0	Side 3	0	0.001	-0.01	20.25	20.3	0.001	
LTE Band 42	QPSK	43340	20M	50	0	Side 3	0	0.001	-0.1	19.22	19.3	0.001	
LTE Band 42	QPSK	43340	20M	1	0	Side 4	0	0.001	0.02	20.25	20.3	0.001	
LTE Band 42	QPSK	43340	20M	50	0	Side 4	0	0.001	-0.15	19.22	19.3	0.001	
LTE Band 48	QPSK	55773	20M	1	0	Bottom Face	0	0.771	-0.15	20.15	20.2	0.780	
LTE Band 48	QPSK	55773	20M	50	0	Bottom Face	0	0.628	-0.01	19.15	19.2	0.635	
LTE Band 48	QPSK	55773	20M	1	0	Side 1	0	0.837	0.02	20.15	20.2	0.847	
LTE Band 48	QPSK	55340	20M	1	0	Side 1	0	0.815	-0.12	20.11	20.2	0.832	
LTE Band 48	QPSK	56207	20M	1	0	Side 1	0	0.852	0.05	20.06	20.2	0.880	
LTE Band 48	QPSK	56207	20M	1	0	Side 1	0	0.814	0.04	20.06	20.2	0.841	
LTE Band 48	QPSK	56207	20M	1	0	Side 1	0	0.851	0.05	20.06	20.2	0.879	V
LTE Band 48	QPSK	56640	20M	1	0	Side 1	0	0.822	0.18	20.01	20.2	0.859	
LTE Band 48	QPSK	55773	20M	50	0	Side 1	0	0.683	0.01	19.15	19.2	0.691	
LTE Band 48	QPSK	55773	20M	100	0	Side 1	0	0.685	0.05	19.12	19.2	0.698	
LTE Band 48	QPSK	55773	20M	1	0	Side 2	0	0.069	0.18	20.15	20.2	0.070	
LTE Band 48	QPSK	55773	20M	50	0	Side 2	0	0.048	-0.01	19.15	19.2	0.049	
LTE Band 48	QPSK	55773	20M	1	0	Side 3	0	0.001	0.01	20.15	20.2	0.001	
LTE Band 48	QPSK	55773	20M	50	0	Side 3	0	0.001	0.07	19.15	19.2	0.001	
LTE Band 48	QPSK	55773	20M	1	0	Side 4	0	0.001	-0.03	20.15	20.2	0.001	
LTE Band 48	QPSK	55773	20M	50	0	Side 4	0	0.001	-0.06	19.15	19.2	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
LTE Band 66	QPSK	132322	20M	1	0	Bottom Face	0	0.653	0.02	22.54	22.6	0.662	
LTE Band 66	QPSK	132322	20M	50	0	Bottom Face	0	0.544	0.04	21.52	21.6	0.554	
LTE Band 66	QPSK	132322	20M	1	0	Side 1	0	0.951	0.01	22.54	22.6	0.960	
LTE Band 66	QPSK	132322	20M	1	0	Side 1	0	0.89	0.06	22.54	22.6	0.900	
LTE Band 66	QPSK	132322	20M	1	0	Side 1	0	0.93	0.01	22.54	22.6	0.940	V
LTE Band 66	QPSK	132072	20M	1	0	Side 1	0	0.91	0.1	22.51	22.6	0.930	
LTE Band 66	QPSK	132572	20M	1	0	Side 1	0	0.93	-0.04	22.44	22.6	0.960	
LTE Band 66	QPSK	132322	20M	50	0	Side 1	0	0.775	-0.03	21.52	21.6	0.789	
LTE Band 66	QPSK	132322	20M	100	0	Side 1	0	0.854	-0.13	21.51	21.6	0.872	
LTE Band 66	QPSK	132322	20M	1	0	Side 2	0	0.218	-0.13	22.54	22.6	0.221	
LTE Band 66	QPSK	132322	20M	50	0	Side 2	0	0.175	-0.07	21.52	21.6	0.178	
LTE Band 66	QPSK	132322	20M	1	0	Side 3	0	0.001	0.1	22.54	22.6	0.001	
LTE Band 66	QPSK	132322	20M	50	0	Side 3	0	0.001	-0.03	21.52	21.6	0.001	
LTE Band 66	QPSK	132322	20M	1	0	Side 4	0	0.001	0.09	22.54	22.6	0.001	
LTE Band 66	QPSK	132322	20M	50	0	Side 4	0	0.001	0.05	21.52	21.6	0.001	
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LTE Band 71	QPSK	133322	20M	1	0	Bottom Face	0	0.17	0.06	24.15	24.2	0.172	
LTE Band 71	QPSK	133322	20M	50	0	Bottom Face	0	0.132	-0.04	23.11	23.2	0.135	
LTE Band 71	QPSK	133322	20M	1	0	Side 1	0	0.523	0.12	24.15	24.2	0.529	
LTE Band 71	QPSK	133222	20M	1	0	Side 1	0	0.497	0.18	24.15	24.2	0.503	
LTE Band 71	QPSK	133372	20M	1	0	Side 1	0	0.535	-0.01	24.15	24.2	0.541	
LTE Band 71	QPSK	133372	20M	1	0	Side 1	0	0.523	0.11	24.15	24.2	0.529	V
LTE Band 71	QPSK	133322	20M	50	0	Side 1	0	0.428	0.04	23.11	23.2	0.437	
LTE Band 71	QPSK	133322	20M	1	0	Side 2	0	0.063	-0.16	24.15	24.2	0.064	
LTE Band 71	QPSK	133322	20M	50	0	Side 2	0	0.054	-0.12	23.11	23.2	0.055	
LTE Band 71	QPSK	133322	20M	1	0	Side 3	0	0.001	-0.11	24.15	24.2	0.001	
LTE Band 71	QPSK	133322	20M	50	0	Side 3	0	0.001	-0.13	23.11	23.2	0.001	
LTE Band 71	QPSK	133322	20M	1	0	Side 4	0	0.001	0.04	24.15	24.2	0.001	
LTE Band 71	QPSK	133322	20M	50	0	Side 4	0	0.001	0.06	23.11	23.2	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
NR Band n2	DFT-S QPSK	376000	20M	1	1	Bottom Face	0	0.246	0.19	19.44	19.5	0.249	
NR Band n2	DFT-S QPSK	376000	20M	50	28	Bottom Face	0	0.23	0.17	18.48	19.5	0.291	
NR Band n2	DFT-S QPSK	376000	20M	1	1	Side 1	0	0.798	-0.13	19.44	19.5	0.809	
NR Band n2	DFT-S QPSK	372000	20M	1	1	Side 1	0	0.568	0.12	19.42	19.5	0.579	
NR Band n2	DFT-S QPSK	380000	20M	1	1	Side 1	0	0.903	-0.03	19.41	19.5	0.922	
NR Band n2	DFT-S QPSK	380000	20M	1	1	Side 1	0	0.888	-0.03	19.41	19.5	0.907	
NR Band n2	DFT-S QPSK	380000	20M	1	1	Side 1	0	0.902	-0.03	19.41	19.5	0.921	V
NR Band n2	DFT-S QPSK	376000	20M	50	28	Side 1	0	0.746	-0.09	18.48	19.5	0.943	
NR Band n2	DFT-S QPSK	372000	20M	50	28	Side 1	0	0.732	-0.06	18.48	19.5	0.926	
NR Band n2	DFT-S QPSK	380000	20M	50	28	Side 1	0	0.722	-0.14	18.48	19.5	0.913	
NR Band n2	DFT-S QPSK	376000	20M	100	0	Side 1	0	0.531	0.06	18.41	18.5	0.542	
NR Band n2	DFT-S QPSK	376000	20M	1	1	Side 2	0	0.074	0.05	19.44	19.5	0.075	
NR Band n2	DFT-S QPSK	376000	20M	50	28	Side 2	0	0.067	0.12	18.48	19.5	0.085	
NR Band n2	DFT-S QPSK	376000	20M	1	1	Side 3	0	0.001	-0.19	19.44	19.5	0.001	
NR Band n2	DFT-S QPSK	376000	20M	50	28	Side 3	0	0.001	-0.19	18.48	19.5	0.001	
NR Band n2	DFT-S QPSK	376000	20M	1	1	Side 4	0	0.001	-0.08	19.44	19.5	0.001	
NR Band n2	DFT-S QPSK	376000	20M	50	28	Side 4	0	0.001	-0.04	18.48	19.5	0.001	
NR Band n5	DFT-S QPSK	167300	20M	1	1	Bottom Face	0	0.521	-0.09	21.15	21.2	0.527	
NR Band n5	DFT-S QPSK	167300	20M	50	28	Bottom Face	0	0.503	-0.02	21.1	21.2	0.515	
NR Band n5	DFT-S QPSK	167300	20M	1	1	Side 1	0	0.904	-0.13	21.15	21.2	0.914	
NR Band n5	DFT-S QPSK	166800	20M	1	1	Side 1	0	0.924	-0.02	21.11	21.2	0.943	
NR Band n5	DFT-S QPSK	166800	20M	1	1	Side 1	0	0.898	-0.03	21.11	21.2	0.917	
NR Band n5	DFT-S QPSK	166800	20M	1	1	Side 1	0	0.922	-0.02	21.11	21.2	0.941	V
NR Band n5	DFT-S QPSK	167800	20M	1	1	Side 1	0	0.891	0.04	21.06	21.2	0.920	
NR Band n5	DFT-S QPSK	167300	20M	50	28	Side 1	0	0.885	0.14	21.1	21.2	0.906	
NR Band n5	DFT-S QPSK	166800	20M	50	28	Side 1	0	0.895	0.17	21.1	21.2	0.916	
NR Band n5	DFT-S QPSK	167800	20M	50	28	Side 1	0	0.874	0.05	21.1	21.2	0.894	
NR Band n5	DFT-S QPSK	167300	20M	100	0	Side 1	0	0.711	0.16	20.03	20.2	0.739	
NR Band n5	DFT-S QPSK	167300	20M	1	1	Side 2	0	0.228	-0.11	21.15	21.2	0.231	
NR Band n5	DFT-S QPSK	167300	20M	50	28	Side 2	0	0.226	0.18	21.1	21.2	0.231	
NR Band n5	DFT-S QPSK	167300	20M	1	1	Side 3	0	0.001	-0.16	21.15	21.2	0.001	
NR Band n5	DFT-S QPSK	167300	20M	50	28	Side 3	0	0.001	0.1	21.1	21.2	0.001	
NR Band n5	DFT-S QPSK	167300	20M	1	1	Side 4	0	0.001	-0.04	21.15	21.2	0.001	
NR Band n5	DFT-S QPSK	167300	20M	50	28	Side 4	0	0.001	0.05	21.1	21.2	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{0.5} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1.0} (W/kg)	Smart card
NR Band n66	DFT-S QPSK	349000	40M	1	1	Bottom Face	0	0.638	0.06	22.35	22.4	0.645	
NR Band n66	DFT-S QPSK	349000	40M	108	54	Bottom Face	0	0.593	0.07	22.31	22.4	0.605	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 1	0	0.949	0.07	22.35	22.4	0.960	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 1	0	0.917	0.05	22.35	22.4	0.930	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 1	0	0.939	0.07	22.35	22.4	0.950	V
NR Band n66	DFT-S QPSK	346000	40M	1	1	Side 1	0	0.867	0.07	22.31	22.4	0.885	
NR Band n66	DFT-S QPSK	352000	40M	1	1	Side 1	0	0.886	-0.05	22.25	22.4	0.917	
NR Band n66	DFT-S QPSK	349000	40M	108	54	Side 1	0	0.873	-0.09	22.31	22.4	0.891	
NR Band n66	DFT-S QPSK	346000	40M	108	54	Side 1	0	0.861	0.05	22.31	22.4	0.879	
NR Band n66	DFT-S QPSK	352000	40M	108	54	Side 1	0	0.839	0.1	22.31	22.4	0.857	
NR Band n66	DFT-S QPSK	349000	40M	216	0	Side 1	0	0.694	-0.16	21.33	21.4	0.705	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 2	0	0.232	-0.14	22.35	22.4	0.235	
NR Band n66	DFT-S QPSK	349000	40M	108	54	Side 2	0	0.176	-0.15	22.31	22.4	0.180	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 3	0	0.001	-0.17	22.35	22.4	0.001	
NR Band n66	DFT-S QPSK	349000	40M	108	54	Side 3	0	0.001	-0.04	22.31	22.4	0.001	
NR Band n66	DFT-S QPSK	349000	40M	1	1	Side 4	0	0.001	0.18	22.35	22.4	0.001	
NR Band n66	DFT-S QPSK	349000	40M	108	54	Side 4	0	0.001	-0.1	22.31	22.4	0.001	
										-	-	0.000	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Bottom Face	0	0.272	-0.03	23.85	23.9	0.275	
NR Band n71	DFT-S QPSK	136100	20M	50	28	Bottom Face	0	0.246	-0.07	23.81	23.9	0.251	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Side 1	0	0.737	0.01	23.85	23.9	0.746	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Side 1	0	0.725	-0.03	23.85	23.9	0.733	V
NR Band n71	DFT-S QPSK	134600	20M	1	1	Side 1	0	0.699	-0.07	23.82	23.9	0.712	
NR Band n71	DFT-S QPSK	137600	20M	1	1	Side 1	0	0.72	-0.01	23.77	23.9	0.742	
NR Band n71	DFT-S QPSK	136100	20M	50	28	Side 1	0	0.695	0.06	23.81	23.9	0.710	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Side 2	0	0.091	-0.04	23.85	23.9	0.092	
NR Band n71	DFT-S QPSK	136100	20M	50	28	Side 2	0	0.075	0.13	23.81	23.9	0.077	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Side 3	0	0.001	-0.16	23.85	23.9	0.001	
NR Band n71	DFT-S QPSK	136100	20M	50	28	Side 3	0	0.001	0.14	23.81	23.9	0.001	
NR Band n71	DFT-S QPSK	136100	20M	1	1	Side 4	0	0.001	-0.06	23.85	23.9	0.001	
NR Band n71	DFT-S QPSK	136100	20M	50	28	Side 4	0	0.001	0.1	23.81	23.9	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
NR Band n48	DFT-S QPSK	642888	40M	1	1	Bottom Face	0	0.898	0.09	19.89	19.9	0.900	
NR Band n48	DFT-S QPSK	642888	40M	50	28	Bottom Face	0	0.87	0.05	19.88	19.9	0.874	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 1	0	0.948	0.04	19.89	19.9	0.950	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 1	0	0.902	0.02	19.89	19.9	0.904	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 1	0	0.945	0.04	19.89	19.9	0.947	V
NR Band n48	DFT-S QPSK	638000	40M	1	1	Side 1	0	0.87	0.09	19.82	19.9	0.886	
NR Band n48	DFT-S QPSK	640444	40M	1	1	Side 1	0	0.902	0.05	19.78	19.9	0.927	
NR Band n48	DFT-S QPSK	645332	40M	1	1	Side 1	0	0.907	-0.12	19.72	19.9	0.945	
NR Band n48	DFT-S QPSK	642888	40M	50	28	Side 1	0	0.92	0.05	19.69	19.9	0.966	
NR Band n48	DFT-S QPSK	638000	40M	50	28	Side 1	0	0.912	-0.12	19.69	19.9	0.957	
NR Band n48	DFT-S QPSK	640444	40M	50	28	Side 1	0	0.895	0.06	19.69	19.9	0.939	
NR Band n48	DFT-S QPSK	645332	40M	50	28	Side 1	0	0.888	0.12	19.69	19.9	0.932	
NR Band n48	DFT-S QPSK	642888	40M	100	0	Side 1	0	0.743	0.08	18.69	18.9	0.780	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 2	0	0.053	-0.13	19.78	19.9	0.054	
NR Band n48	DFT-S QPSK	642888	40M	50	28	Side 2	0	0.046	-0.07	19.69	19.9	0.048	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 3	0	0.001	0.11	19.78	19.9	0.001	
NR Band n48	DFT-S QPSK	642888	40M	50	28	Side 3	0	0.001	-0.02	19.69	19.9	0.001	
NR Band n48	DFT-S QPSK	642888	40M	1	1	Side 4	0	0.001	0.04	19.78	19.9	0.001	
NR Band n48	DFT-S QPSK	642888	40M	50	28	Side 4	0	0.001	0.11	19.69	19.9	0.001	

Band	Modulation	Channel	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Reported SAR _{1g} (W/kg)	Smart card
NR Band n77	DFT-S QPSK	654800	100M	1	1	Bottom Face	0	0.864	0.05	19.78	19.8	0.868	
NR Band n77	DFT-S QPSK	654800	100M	135	69	Bottom Face	0	0.772	-0.13	19.72	19.8	0.786	
NR Band n77	DFT-S QPSK	654800	100M	1	1	Side 1	0	0.867	0.18	19.78	19.8	0.871	
NR Band n77	DFT-S QPSK	650000	100M	1	1	Side 1	0	0.925	-0.01	19.71	19.8	0.944	
NR Band n77	DFT-S QPSK	650000	100M	1	1	Side 1	0	0.898	0.02	19.71	19.8	0.917	
NR Band n77	DFT-S QPSK	650000	100M	1	1	Side 1	0	0.921	-0.01	19.71	19.8	0.940	V
NR Band n77	DFT-S QPSK	652400	100M	1	1	Side 1	0	0.86	0.05	19.75	19.8	0.870	
NR Band n77	DFT-S QPSK	657200	100M	1	1	Side 1	0	0.879	-0.13	19.66	19.8	0.908	
NR Band n77	DFT-S QPSK	659600	100M	1	1	Side 1	0	0.852	0.18	19.57	19.8	0.898	
NR Band n77	DFT-S QPSK	662000	100M	1	1	Side 1	0	0.856	-0.09	19.45	19.8	0.928	
NR Band n77	DFT-S QPSK	654800	100M	135	69	Side 1	0	0.848	0.04	19.72	19.8	0.864	
NR Band n77	DFT-S QPSK	650000	100M	135	69	Side 1	0	0.832	0.18	19.72	19.8	0.847	
NR Band n77	DFT-S QPSK	652400	100M	135	69	Side 1	0	0.814	-0.04	19.72	19.8	0.829	
NR Band n77	DFT-S QPSK	657200	100M	135	69	Side 1	0	0.795	0.04	19.72	19.8	0.810	
NR Band n77	DFT-S QPSK	659600	100M	135	69	Side 1	0	0.782	-0.1	19.72	19.8	0.797	
NR Band n77	DFT-S QPSK	662000	100M	135	69	Side 1	0	0.777	-0.09	19.72	19.8	0.791	
NR Band n77	DFT-S QPSK	654800	100M	270	0	Side 1	0	0.753	0.02	18.69	18.8	0.772	
NR Band n77	DFT-S QPSK	654800	100M	1	1	Side 2	0	0.03	0.01	19.78	19.8	0.030	
NR Band n77	DFT-S QPSK	654800	100M	135	69	Side 2	0	0.027	0.02	19.72	19.8	0.028	
NR Band n77	DFT-S QPSK	654800	100M	1	1	Side 3	0	0.001	0.01	19.78	19.8	0.001	
NR Band n77	DFT-S QPSK	654800	100M	135	69	Side 3	0	0.001	0.02	19.72	19.8	0.001	
NR Band n77	DFT-S QPSK	654800	100M	1	1	Side 4	0	0.001	0.02	19.78	19.8	0.001	
NR Band n77	DFT-S QPSK	654800	100M	135	69	Side 4	0	0.001	0.01	19.72	19.8	0.001	
												0.000	
NR Band n77	DFT-S QPSK	640000	100M	1	1	Bottom Face	0	0.638	0.1	19.78	19.8	0.641	
NR Band n77	DFT-S QPSK	640000	100M	135	69	Bottom Face	0	0.593	-0.06	19.71	19.8	0.605	
NR Band n77	DFT-S QPSK	640000	100M	1	1	Side 1	0	0.655	-0.06	19.78	19.8	0.658	
NR Band n77	DFT-S QPSK	633334	100M	1	1	Side 1	0	0.627	0.17	19.72	19.8	0.639	
NR Band n77	DFT-S QPSK	635000	100M	1	1	Side 1	0	0.633	0.06	19.68	19.8	0.651	
NR Band n77	DFT-S QPSK	636666	100M	1	1	Side 1	0	0.638	0.14	19.54	19.8	0.677	
NR Band n77	DFT-S QPSK	638334	100M	1	1	Side 1	0	0.664	0.06	19.42	19.8	0.725	
NR Band n77	DFT-S QPSK	638334	100M	1	1	Side 1	0	0.644	0.02	19.42	19.8	0.703	
NR Band n77	DFT-S QPSK	638334	100M	1	1	Side 1	0	0.663	0.06	19.42	19.8	0.724	V
NR Band n77	DFT-S QPSK	640000	100M	135	69	Side 1	0	0.616	0.15	19.71	19.8	0.629	
NR Band n77	DFT-S QPSK	640000	100M	1	1	Side 2	0	0.031	0.09	19.78	19.8	0.031	
NR Band n77	DFT-S QPSK	640000	100M	135	69	Side 2	0	0.03	-0.05	19.71	19.8	0.031	
NR Band n77	DFT-S QPSK	640000	100M	1	1	Side 3	0	0.001	0.01	19.78	19.8	0.001	
NR Band n77	DFT-S QPSK	640000	100M	135	69	Side 3	0	0.001	-0.06	19.71	19.8	0.001	
NR Band n77	DFT-S QPSK	640000	100M	1	1	Side 4	0	0.001	-0.08	19.78	19.8	0.001	
NR Band n77	DFT-S QPSK	640000	100M	135	69	Side 4	0	0.001	-0.06	19.71	19.8	0.001	

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Reported SAR _{1g} (W/kg)	Antenna	Smart card
WLAN 2.4 GHz	802.11b	6	Bottom Face	0	0.114	0.02	18.44	18.5	99.05	0.117	ANT Main	
WLAN 2.4 GHz	802.11b	6	Side 1	0	0.869	0.01	18.44	18.5	99.05	0.890	ANT Main	
WLAN 2.4 GHz	802.11b	6	Side 1	0	0.862	-0.10	18.44	18.5	99.05	0.883	ANT Main	V
WLAN 2.4 GHz	802.11b	1	Side 1	0	0.846	-0.10	18.4	18.5	99.05	0.874	ANT Main	
WLAN 2.4 GHz	802.11b	11	Side 1	0	0.837	0.08	18.36	18.5	99.05	0.873	ANT Main	
WLAN 2.4 GHz	802.11b	12	Side 1	0	0.825	-0.06	18.42	18.5	99.05	0.849	ANT Main	
WLAN 2.4 GHz	802.11b	13	Side 1	0	0.483	0.12	15.44	15.5	99.05	0.495	ANT Main	
WLAN 2.4 GHz	802.11b	6	Side 2	0	0.001	0.15	18.44	18.5	99.05	0.001	ANT Main	
WLAN 2.4 GHz	802.11b	6	Side 3	0	0.001	-0.05	18.44	18.5	99.05	0.001	ANT Main	
WLAN 2.4 GHz	802.11b	6	Side 4	0	0.001	0.02	18.44	18.5	99.05	0.001	ANT Main	
							-	-				
WLAN 2.4 GHz	802.11b	6	Bottom Face	0	0.186	0.11	17.44	17.5	99.05	0.190	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 1	0	0.000638	0.05	17.44	17.5	99.05	0.001	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 2	0	0.989	-0.01	17.44	17.5	99.05	1.01	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 2	0	0.988	-0.08	17.44	17.5	99.05	1.01	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 2	0	0.987	0.04	17.44	17.5	99.05	1.01	ANT Aux	V
WLAN 2.4 GHz	802.11b	1	Side 2	0	0.912	-0.04	17.35	17.5	99.05	0.953	ANT Aux	
WLAN 2.4 GHz	802.11b	11	Side 2	0	0.842	-0.02	17.25	17.5	99.05	0.901	ANT Aux	
WLAN 2.4 GHz	802.11b	12	Side 2	0	0.893	-0.05	15.44	15.5	99.05	0.914	ANT Aux	
WLAN 2.4 GHz	802.11b	13	Side 2	0	0.335	-0.07	15.34	15.5	99.05	0.351	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 3	0	0.39	0.10	17.44	17.5	99.05	0.399	ANT Aux	
WLAN 2.4 GHz	802.11b	6	Side 4	0	0.000638	0.11	17.44	17.5	99.05	0.001	ANT Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Bottom Face	0	0.062	0.03	14.42	14.5	99.05	0.064	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Side 1	0	0.342	0.00	14.42	14.5	99.05	0.352	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Side 1	0	0.341	0.00	14.42	14.5	99.05	0.351	ANT Main+Aux	V
WLAN 2.4 GHz	802.11ax HE20	1	Side 1	0	0.107	-0.07	10.35	10.5	99.05	0.112	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	11	Side 1	0	0.129	0.07	10.41	10.5	99.05	0.133	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	12	Side 1	0	0.061	0.11	6.92	7	99.05	0.063	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	13	Side 1	0	0.015	-0.09	2.95	3	99.05	0.015	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Side 2	0	0.336	-0.01	14.42	14.5	99.05	0.346	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Side 3	0	0.122	-0.06	14.42	14.5	99.05	0.126	ANT Main+Aux	
WLAN 2.4 GHz	802.11ax HE20	6	Side 4	0	0.037	0.03	14.42	14.5	99.05	0.038	ANT Main+Aux	

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Reported SAR _{1g} (W/kg)	Antenna	Smart card
WLAN 5 GHz	802.11n HT40	54	Bottom Face	0	0.07	0.02	15.46	15.5	98.35	0.072	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Side 1	0	0.471	0.01	15.46	15.5	98.35	0.483	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Side 1	0	0.47	0.01	15.46	15.5	98.35	0.482	ANT Main	V
WLAN 5 GHz	802.11n HT40	62	Side 1	0	0.263	0.03	15.46	15.5	98.35	0.270	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.001	-0.07	15.46	15.5	98.35	0.001	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Side 3	0	0.001	0.07	15.46	15.5	98.35	0.001	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Side 4	0	0.102	0.11	15.46	15.5	98.35	0.105	ANT Main	
WLAN 5 GHz	802.11n HT40	54	Bottom Face	0	0.023	0.03	10.43	10.5	98.31	0.024	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 1	0	0.001	0.04	10.43	10.5	98.31	0.001	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.972	0.05	10.43	10.5	98.31	1.00	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.96	0.05	10.43	10.5	98.31	0.99	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.962	0.05	10.43	10.5	98.31	0.99	ANT Aux	V
WLAN 5 GHz	802.11n HT40	62	Side 2	0	0.527	-0.08	8.95	9	98.31	0.542	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 3	0	0.089	0.04	10.43	10.5	98.31	0.092	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Side 4	0	0.001	-0.04	10.43	10.5	98.31	0.001	ANT Aux	
WLAN 5 GHz	802.11n HT40	54	Bottom Face	0	0.022	-0.07	13.3	13.5	97.25	0.024	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	54	Side 1	0	0.139	0.07	13.3	13.5	97.25	0.150	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.836	0.07	13.3	13.5	97.25	0.900	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	54	Side 2	0	0.831	0.07	13.3	13.5	97.25	0.895	ANT Main+Aux	V
WLAN 5 GHz	802.11n HT40	62	Side 2	0	0.429	0.14	11.41	11.5	97.25	0.450	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	54	Side 3	0	0.114	0.15	13.3	13.5	97.25	0.123	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	54	Side 4	0	0.034	-0.06	13.3	13.5	97.25	0.037	ANT Main+Aux	
WLAN 5 GHz	802.11ac VHT80	106	Bottom Face	0	0.174	0.00	16.44	16.5	97.22	0.18	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 1	0	1.13	0.00	16.44	16.5	97.22	1.18	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 1	0	1.11	0.00	16.44	16.5	97.22	1.16	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 1	0	1.1	0.00	16.44	16.5	97.22	1.15	ANT Main	V
WLAN 5 GHz	802.11ac VHT80	122	Side 1	0	1.07	-0.08	16.42	16.5	97.22	1.12	ANT Main	
WLAN 5 GHz	802.11ac VHT80	138	Side 1	0	1	0.04	16.4	16.5	97.22	1.05	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 2	0	0.001	-0.04	16.44	16.5	97.22	0.001	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 3	0	0.001	-0.02	16.44	16.5	97.22	0.001	ANT Main	
WLAN 5 GHz	802.11ac VHT80	106	Side 4	0	0.202	0.02	16.44	16.5	97.22	0.211	ANT Main	

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Reported SAR _{1g} (W/kg)	Antenna	Smart card
WLAN 5 GHz	802.11ac VHT80	106	Bottom Face	0	0.036	0.04	9.87	10	97.62	0.038	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	106	Side 1	0	0.001	0.03	9.87	10	97.62	0.001	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	106	Side 2	0	1.05	0.04	9.87	10	97.62	1.11	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	106	Side 2	0	1.01	0.04	9.87	10	97.62	1.07	ANT Aux	V
WLAN 5 GHz	802.11ac VHT80	122	Side 2	0	0.922	0.02	9.85	10	97.62	0.977	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	138	Side 2	0	0.918	-0.07	9.81	10	97.62	0.982	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	106	Side 3	0	0.131	0.07	9.87	10	97.62	0.138	ANT Aux	
WLAN 5 GHz	802.11ac VHT80	106	Side 4	0	0.001	0.11	9.87	10	97.62	0.001	ANT Aux	
WLAN 5 GHz	802.11n HT40	110	Bottom Face	0	0.013	-0.12	10.91	11	95.35	0.014	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	110	Side 1	0	0.09	0.04	10.91	11	95.35	0.096	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	110	Side 2	0	0.279	-0.15	10.91	11	95.35	0.299	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	102	Side 2	0	0.297	0.19	9.4	10	95.35	0.358	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	126	Side 2	0	0.389	-0.13	10.88	11	95.35	0.419	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	134	Side 2	0	0.316	0.08	9.88	10	95.35	0.341	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	142	Side 2	0	0.499	0.06	9.91	10	95.35	0.534	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	142	Side 2	0	0.495	0.06	9.91	10	95.35	0.530	ANT Main+Aux	V
WLAN 5 GHz	802.11n HT40	110	Side 3	0	0.036	0.07	10.91	11	95.35	0.039	ANT Main+Aux	
WLAN 5 GHz	802.11n HT40	110	Side 4	0	0.012	-0.07	10.91	11	95.35	0.013	ANT Main+Aux	
							-	-				
WLAN 5 GHz	802.11n HT40	151	Bottom Face	0	0.154	0.03	15.45	15.5	98.45	0.158	ANT Main	
WLAN 5 GHz	802.11n HT40	151	Side 1	0	0.781	-0.04	15.45	15.5	98.45	0.803	ANT Main	
WLAN 5 GHz	802.11n HT40	151	Side 1	0	0.774	0.02	15.45	15.5	98.45	0.795	ANT Main	V
WLAN 5 GHz	802.11n HT40	159	Side 1	0	0.763	0.02	15.32	15.5	98.45	0.808	ANT Main	
WLAN 5 GHz	802.11n HT40	151	Side 2	0	0.000816	0.05	15.45	15.5	98.45	0.001	ANT Main	
WLAN 5 GHz	802.11n HT40	151	Side 3	0	0.000816	-0.07	15.45	15.5	98.45	0.001	ANT Main	
WLAN 5 GHz	802.11n HT40	151	Side 4	0	0.218	-0.07	15.45	15.5	98.45	0.224	ANT Main	
							-	-				
WLAN 5 GHz	802.11n HT40	151	Bottom Face	0	0.033	0.04	8.95	9	98.32	0.034	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 1	0	0.001	0.01	8.95	9	98.32	0.001	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 2	0	1.14	-0.05	8.95	9	98.32	1.17	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 2	0	1.12	-0.05	8.95	9	98.32	1.15	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 2	0	1.11	-0.05	8.95	9	98.32	1.14	ANT Aux	V
WLAN 5 GHz	802.11n HT40	159	Side 2	0	0.88	-0.02	8.84	9	98.32	0.929	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 3	0	0.061	-0.01	8.95	9	98.32	0.063	ANT Aux	
WLAN 5 GHz	802.11n HT40	151	Side 4	0	0.001	0.19	8.95	9	98.32	0.001	ANT Aux	

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Reported SAR1 g (W/kg)	Antenna	Smart card
WLAN 5 GHz	802.11ax HE20	165	Bottom Face	0	0.018	0.09	8.91	9	97.44	0.019	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	165	Side 1	0	0.12	0.19	8.91	9	97.44	0.126	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	165	Side 2	0	0.458	0.18	8.91	9	97.44	0.480	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	165	Side 2	0	0.452	0.18	8.91	9	97.44	0.473	ANT Main+Aux	V
WLAN 5 GHz	802.11ax HE20	149	Side 2	0	0.431	-0.17	8.42	8.5	97.44	0.450	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	157	Side 2	0	0.383	-0.18	8.4	8.5	97.44	0.402	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	165	Side 3	0	0.046	0.15	8.91	9	97.44	0.048	ANT Main+Aux	
WLAN 5 GHz	802.11ax HE20	165	Side 4	0	0.021	0.02	8.91	9	97.44	0.022	ANT Main+Aux	
Bluetooth	GFSK	39	Bottom Face	0	0.00579	0.03	9.44	10.5	75.4	0.010	ANT Aux	
Bluetooth	GFSK	39	Side 1	0	0.00579	-0.02	9.44	10.5	75.4	0.010	ANT Aux	
Bluetooth	GFSK	39	Side 2	0	0.073	-0.02	9.44	10.5	75.4	0.124	ANT Aux	
Bluetooth	GFSK	39	Side 2	0	0.071	-0.02	9.44	10.5	75.4	0.120	ANT Aux	V
Bluetooth	GFSK	39	Side 3	0	0.00579	0.1	9.44	10.5	75.4	0.010	ANT Aux	
Bluetooth	GFSK	39	Side 4	0	0.00579	0.12	9.44	10.5	75.4	0.010	ANT Aux	

Band	Modulation	Channel	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Reported SAR1 g (W/kg)	Antenna	APD (W/m ²)	Reported APD (W/m ²)	Smart card
WLAN 6 GHz	802.11ax HE160	79	Bottom Face	0	0.036	0.03	12.98	13	94.25	0.038	ANT Main	0.16	0.171	
WLAN 6 GHz	802.11ax HE160	79	Side 1	0	0.304	0.05	12.98	13	94.25	0.324	ANT Main	1.36	1.45	
WLAN 6 GHz	802.11ax HE160	79	Side 2	0	0.000712	0.11	12.98	13	94.25	0.001	ANT Main	0.00318	0.00	
WLAN 6 GHz	802.11ax HE160	79	Side 3	0	0.000712	0.01	12.98	13	94.25	0.001	ANT Main	0.003122	0.00	
WLAN 6 GHz	802.11ax HE160	79	Side 4	0	0.056	0.02	12.98	13	94.25	0.060	ANT Main	0.25	0.266	
WLAN 6 GHz	802.11ax HE160	143	Bottom Face	0	0.000615	-0.02	9.35	9.5	94.25	0.001	ANT Aux	0.00274	0.00	
WLAN 6 GHz	802.11ax HE160	143	Side 1	0	0.025	-0.01	9.35	9.5	94.25	0.027	ANT Aux	0.111	0.122	
WLAN 6 GHz	802.11ax HE160	143	Side 2	0	0.88	0.04	9.35	9.5	94.25	0.966	ANT Aux	3.93	4.32	
WLAN 6 GHz	802.11ax HE160	143	Side 3	0	0.041	-0.04	9.35	9.5	94.25	0.045	ANT Aux	0.183	0.201	
WLAN 6 GHz	802.11ax HE160	143	Side 4	0	0.027	-0.19	9.35	9.5	94.25	0.030	ANT Aux	0.12	0.132	
WLAN 6 GHz	802.11ax HE160	15	Side 2	0	0.967	-0.11	8.72	9	94.25	1.09	ANT Aux	4.61	5.22	
WLAN 6 GHz	802.11ax HE160	15	Side 2	0	0.966	-0.11	8.72	9	94.25	1.09	ANT Aux	4.58	5.18	
WLAN 6 GHz	802.11ax HE160	15	Side 2	0	0.962	0.02	8.72	9	94.25	1.09	ANT Aux	4.52	5.12	V
WLAN 6 GHz	802.11ax HE160	47	Side 2	0	0.443	0.09	8.62	9	94.25	0.51	ANT Aux	1.98	2.29	
WLAN 6 GHz	802.11ax HE160	79	Side 2	0	0.789	-0.12	8.61	9	94.25	0.916	ANT Aux	3.52	4.09	
WLAN 6 GHz	802.11ax HE160	111	Side 2	0	0.992	0.13	8.92	9	94.25	1.072	ANT Aux	4.43	4.79	
WLAN 6 GHz	802.11ax HE160	175	Side 2	0	0.72	-0.11	9.33	9.5	94.25	0.794	ANT Aux	3.21	3.54	
WLAN 6 GHz	802.11ax HE160	207	Side 2	0	0.893	0.02	9.42	9.5	94.25	0.965	ANT Aux	3.99	4.31	
WLAN 6 GHz	802.11ax HE160	111	Bottom Face	0	0.042	0.07	9.78	10	94.25	0.047	ANT Main+Aux	0.206	0.230	
WLAN 6 GHz	802.11ax HE160	111	Side 1	0	0.051	0.08	9.78	10	94.25	0.057	ANT Main+Aux	0.253	0.282	
WLAN 6 GHz	802.11ax HE160	111	Side 2	0	0.721	0.07	9.78	10	94.25	0.805	ANT Main+Aux	3.56	3.97	
WLAN 6 GHz	802.11ax HE160	111	Side 3	0	0.042	0.06	9.78	10	94.25	0.047	ANT Main+Aux	0.206	0.230	
WLAN 6 GHz	802.11ax HE160	111	Side 4	0	0.032	0.04	9.78	10	94.25	0.036	ANT Main+Aux	0.159	0.177	

10.5.2 Power Density Test Result

Band	Modulation	Channel	Frequency (MHz)	Test Position	Spacing (mm)	sPDn 4 cm ² (W/m ²)	sPDtot 4 cm ² (W/m ²)	Power Drift	Power Setting	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle (%)	Duty Cycle Scaling Factor	Scaling Factor for Measurement Uncertainty	Scaling sPDtot 4 cm ² (W/m ²)	Antenna
WLAN 6 GHz	802.11ax HE160	79	6345	Bottom Face	0							94.25	1.061	1.119	0.00	ANT Main
WLAN 6 GHz	802.11ax HE160	79	6345	Side 1	0							94.25	1.061	1.119	0.00	ANT Main
WLAN 6 GHz	802.11ax HE160	79	6345	Side 2	0							94.25	1.061	1.119	0.00	ANT Main
WLAN 6 GHz	802.11ax HE160	79	6345	Side 3	0							94.25	1.061	1.119	0.00	ANT Main
WLAN 6 GHz	802.11ax HE160	79	6345	Side 4	0							94.25	1.061	1.119	0.00	ANT Main
WLAN 6 GHz	802.11ax HE160	143	6665	Bottom Face	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	143	6665	Side 1	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	143	6665	Side 2	0	1.89	2.05	-0.02	8	8.72	9	94.25	1.061	1.119	2.32	ANT Aux
WLAN 6 GHz	802.11ax HE160	143	6665	Side 3	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	143	6665	Side 4	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	15	6025	Side 2	0	2.22	2.41	-0.04	8	8.72	9	94.25	1.061	1.119	2.73	ANT Aux
WLAN 6 GHz	802.11ax HE160	15	6025	Side 2	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	15	6025	Side 2	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	47	6185	Side 2	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	79	6345	Side 2	0	1.69	1.84	-0.08	8	8.72	9	94.25	1.061	1.119	2.08	ANT Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Side 2	0	2.13	2.31	0.04	8	8.72	9	94.25	1.061	1.119	2.61	ANT Aux
WLAN 6 GHz	802.11ax HE160	175	6825	Side 2	0							94.25	1.061	1.119	0.00	ANT Aux
WLAN 6 GHz	802.11ax HE160	207	6985	Side 2	0	1.92	2.08	0.03	8	8.72	9	94.25	1.061	1.119	2.35	ANT Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Bottom Face	0							94.25	1.061	1.119	0.00	ANT Main+Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Side 1	0							94.25	1.061	1.119	0.00	ANT Main+Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Side 2	0							94.25	1.061	1.119	0.00	ANT Main+Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Side 3	0							94.25	1.061	1.119	0.00	ANT Main+Aux
WLAN 6 GHz	802.11ax HE160	111	6505	Side 4	0							94.25	1.061	1.119	0.00	ANT Main+Aux

10.6 Measurement Variability

According to KDB 865664 D01v01r04, 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. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required:

1. The original highest measured Reported SAR 1-g is ≥ 0.80 W/kg, repeated that measurement once.
2. Perform a second repeated measurement the ratio of the largest to the smallest SAR for the original and first repeated measurements is <1.2 W/kg, or when the original or repeated measurement is ≥ 1.45 W/kg (~10% from the 1-g SAR limit).

Index	Band	Modulation	Channel	Frequency (MHz)	Bandwidth	RB Size	RB Offset	Test Position	Spacing (mm)	Original SAR1 g (W/kg)	First SAR1 g (W/kg)	First Ratio SAR1 g	Second Ratio SAR1 g
1	WCDMA Band 2	RMC12.2Kbps	9538	1907.6	-	-	-	Side 1	0	0.92	0.975	-5.98%	100.00%
2	WCDMA Band 4	RMC12.2Kbps	1413	1732.6	-	-	-	Side 1	0	0.93	0.993	-6.77%	100.00%
3	WCDMA Band 5	RMC12.2Kbps	4132	826.4	-	-	-	Side 1	0	0.95	1.02	-7.37%	100.00%
4	LTE Band 2	QPSK	19100	1900	20M	1	0	Side 1	0	0.91	0.887	2.53%	100.00%
6	LTE Band 5	QPSK	20600	844	10M	1	0	Side 1	0	0.932	0.902	3.22%	100.00%
7	LTE Band 7	QPSK	21350	2560	20M	1	0	Side 1	0	0.851	0.83	2.47%	100.00%
9	LTE Band 13	QPSK	23230	782	10M	1	0	Side 1	0	0.804	0.768	4.48%	100.00%
10	LTE Band 14	QPSK	23330	793	10M	1	0	Side 1	0	0.95	0.911	4.11%	100.00%
12	LTE Band 25	QPSK	26590	1905	20M	1	0	Side 1	0	0.891	0.855	4.04%	100.00%
13	LTE Band 26	QPSK	26965	841.5	15M	1	0	Side 1	0	0.928	0.88	5.17%	100.00%
14	LTE Band 38	QPSK	38150	2610	20M	1	0	Side 1	0	0.93	0.986	-6.02%	100.00%
15	LTE Band 41	QPSK	40620	2593	20M	1	0	Side 1	0	0.932	0.905	2.90%	100.00%
16	LTE Band 42	QPSK	43340	3575	20M	1	0	Side 1	0	0.815	0.805	1.23%	100.00%
17	LTE Band 48	QPSK	56207	3646.7	20M	1	0	Side 1	0	0.852	0.814	4.46%	100.00%
18	LTE Band 66	QPSK	132322	1745	20M	1	0	Side 1	0	0.951	1.01	-6.20%	100.00%
20	NR Band n2	DFT-S QPSK	380000	1900	20M	1	1	Side 1	0	0.903	0.888	1.66%	100.00%
21	NR Band n5	DFT-S QPSK	166800	834	20M	1	1	Side 1	0	0.924	0.918	0.65%	100.00%
22	NR Band n66	DFT-S QPSK	349000	1745	40M	1	1	Side 1	0	0.949	0.988	-4.11%	100.00%
24	NR Band n48	DFT-S QPSK	642888	3643.32	40M	1	1	Side 1	0	0.948	0.902	4.85%	100.00%
25	NR Band n77	DFT-S QPSK	650000	3750	100M	1	1	Side 1	0	0.925	0.898	2.92%	100.00%
27	WLAN 2.4 GHz	802.11b	6	2437	-	-	-	Side 1	0	0.869	0.885	-1.84%	100.00%
28	WLAN 2.4 GHz	802.11b	6	2437	-	-	-	Side 2	0	0.989	0.988	0.10%	100.00%
31	WLAN 5 GHz	802.11n HT40	54	5270	-	-	-	Side 2	0	0.972	0.96	1.23%	100.00%
33	WLAN 5 GHz	802.11ac VHT80	106	5530	-	-	-	Side 1	0	1.13	1.11	1.77%	100.00%
37	WLAN 5 GHz	802.11n HT40	151	5755	-	-	-	Side 2	0	1.14	1.12	1.75%	100.00%
40	WLAN 6 GHz	802.11ax HE160	15	6025	-	-	-	Side 1	0	0.361	0.966	-167.59%	100.00%

10.7 Simultaneous Transmission Evaluation

10.7.1 Simultaneous Transmission Configurations

Condition	WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT Aux	WLAN 2.4 GHz ANT Main+Aux	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT Aux	WLAN 5GHz ANT Main+Aux	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT Aux	WLAN 6GHz ANT Main+Aux	Bluetooth
1	V	V									V
2	V			V							
3	V				V						V
4	V						V				
5	V						V				V
6	V							V			V
7	V									V	
8	V									V	V

10.7.2 Simultaneous Transmission Result

When the sum of SAR_{1g} of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration. The sum of SAR_{1g} results is shown as below.

WWAN Band	Exposure Position	1	2	3	4	5	6	7	8	1+2+8	1+3	1+4+8	1+5+8	1+6+8	1+7+8	
		WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT MIMO	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT MIMO	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	∑SAR _{1g} (W/kg)	∑SAR _{1g} (W/kg)	∑SAR _{1g} (W/kg)	∑SAR _{1g} (W/kg)	∑SAR _{1g} (W/kg)	∑SAR _{1g} (W/kg)	
		SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)	SAR _{1g} (W/kg)							
WCDMA	WCDMA Band 2	Bottom Face at 0 mm	0.307	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.434	0.370	0.499	0.340	0.353	0.361
		side 1 at 0 mm	0.94	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.84	1.29	2.13	1.10	1.26	1.00
		side 2 at 0 mm	0.070	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.195	0.412	0.195	1.07	0.195	0.952
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
	WCDMA Band 4	Bottom Face at 0 mm	0.71	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.833	0.769	0.898	0.739	0.752	0.760
		side 1 at 0 mm	0.96	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.86	1.31	2.15	1.12	1.28	1.02
		side 2 at 0 mm	0.195	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.320	0.537	0.320	1.19	0.320	1.08
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	WCDMA Band 5	Bottom Face at 0 mm	0.559	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.686	0.622	0.751	0.592	0.605	0.613
		side 1 at 0 mm	0.96	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.86	1.31	2.15	1.12	1.28	1.02
		side 2 at 0 mm	0.298	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.423	0.640	0.423	1.30	0.423	1.18
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045

WWAN Band	Exposure Position	1	2	3	4	5	6	7	8	1+2+8	1+3	1+4+8	1+5+8	1+6+8	1+7+8	
		WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT MIMO	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT MIMO	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	
		$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)
LTE	LTE Band 2	Bottom Face at 0 mm	0.278	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.405	0.341	0.470	0.311	0.324	0.332
		side 1 at 0 mm	0.935	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.84	1.28	2.13	1.10	1.250	0.999
		side 2 at 0 mm	0.087	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.212	0.429	0.212	1.09	0.212	0.969
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 4	Bottom Face at 0 mm	0.347	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.474	0.410	0.539	0.380	0.393	0.401
		side 1 at 0 mm	0.553	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.45	0.901	1.74	0.713	0.87	0.617
		side 2 at 0 mm	0.117	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.242	0.459	0.242	1.12	0.242	0.999
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 5	Bottom Face at 0 mm	0.540	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.667	0.603	0.732	0.573	0.586	0.594
		side 1 at 0 mm	0.965	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.87	1.31	2.16	1.13	1.28	1.03
		side 2 at 0 mm	0.219	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.344	0.561	0.344	1.22	0.344	1.10
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
	LTE Band 7	Bottom Face at 0 mm	0.413	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.540	0.476	0.605	0.446	0.459	0.467
		side 1 at 0 mm	0.875	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.78	1.22	2.07	1.04	1.19	0.939
		side 2 at 0 mm	0.096	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.221	0.438	0.221	1.10	0.221	0.978
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
LTE Band 12	Bottom Face at 0 mm	0.246	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.373	0.309	0.438	0.279	0.292	0.300	
	side 1 at 0 mm	0.744	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.64	1.09	1.93	0.904	1.06	0.808	
	side 2 at 0 mm	0.095	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.220	0.437	0.220	1.09	0.220	0.977	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	
LTE Band 13	Bottom Face at 0 mm	0.419	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.546	0.482	0.611	0.452	0.465	0.473	
	side 1 at 0 mm	0.811	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.71	1.16	2.00	0.971	1.13	0.875	
	side 2 at 0 mm	0.245	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.370	0.587	0.370	1.24	0.370	1.13	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045	

WWAN Band	Exposure Position	1	2	3	4	5	6	7	8	1+2+8	1+3	1+4+8	1+5+8	1+6+8	1+7+8	
		WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT MIMO	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT MIMO	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	
		$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	
LTE	LTE Band 14	Bottom Face at 0 mm	0.491	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.618	0.554	0.683	0.524	0.537	0.545
		side 1 at 0 mm	0.952	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.85	1.30	2.14	1.11	1.27	1.02
		side 2 at 0 mm	0.220	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.345	0.562	0.345	1.22	0.345	1.10
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
	LTE Band 17	Bottom Face at 0 mm	0.261	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.388	0.324	0.453	0.294	0.307	0.315
		side 1 at 0 mm	0.794	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.69	1.14	1.98	0.95	1.11	0.858
		side 2 at 0 mm	0.115	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.240	0.457	0.240	1.11	0.240	0.997
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 25	Bottom Face at 0 mm	0.292	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.419	0.355	0.484	0.325	0.338	0.346
		side 1 at 0 mm	0.929	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.83	1.28	2.12	1.09	1.24	0.993
		side 2 at 0 mm	0.070	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.195	0.412	0.195	1.07	0.195	0.952
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 26	Bottom Face at 0 mm	0.448	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.575	0.511	0.640	0.481	0.494	0.502
		side 1 at 0 mm	0.952	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.85	1.30	2.14	1.11	1.27	1.02
		side 2 at 0 mm	0.245	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.370	0.587	0.370	1.24	0.370	1.13
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
LTE Band 38	Bottom Face at 0 mm	0.517	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.644	0.580	0.709	0.550	0.563	0.571	
	side 1 at 0 mm	0.950	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.85	1.30	2.14	1.11	1.27	1.01	
	side 2 at 0 mm	0.056	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.181	0.398	0.181	1.06	0.181	0.938	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	
LTE Band 41	Bottom Face at 0 mm	0.433	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.560	0.496	0.625	0.466	0.479	0.487	
	side 1 at 0 mm	0.960	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.86	1.31	2.15	1.12	1.28	1.02	
	side 2 at 0 mm	0.065	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.190	0.407	0.190	1.06	0.190	0.947	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	

WWAN Band	Exposure Position	1	2	3	4	5	6	7	8	1+2+8	1+3	1+4+8	1+5+8	1+6+8	1+7+8	
		WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT MIMO	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT MIMO	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	$\sum SAR_{1.0}$ (W/kg)	
		$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	$SAR_{1.0}$ (W/kg)	
LTE	LTE Band 42	Bottom Face at 0 mm	0.753	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.880	0.816	0.945	0.786	0.799	0.807
		side 1 at 0 mm	0.824	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.72	1.17	2.01	0.984	1.14	0.888
		side 2 at 0 mm	0.081	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.206	0.423	0.206	1.08	0.206	0.963
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 48	Bottom Face at 0 mm	0.780	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.907	0.843	0.972	0.813	0.826	0.834
		side 1 at 0 mm	0.880	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.78	1.23	2.07	1.04	1.20	0.944
		side 2 at 0 mm	0.070	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.195	0.412	0.195	1.07	0.195	0.952
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.05	0.067	0.045
	LTE Band 66	Bottom Face at 0 mm	0.662	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.789	0.725	0.854	0.695	0.708	0.716
		side 1 at 0 mm	0.960	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.86	1.31	2.15	1.12	1.28	1.02
		side 2 at 0 mm	0.221	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.346	0.563	0.346	1.22	0.346	1.10
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	LTE Band 71	Bottom Face at 0 mm	0.172	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.299	0.235	0.364	0.205	0.218	0.226
		side 1 at 0 mm	0.541	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.44	0.889	1.73	0.701	0.86	0.605
		side 2 at 0 mm	0.064	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.189	0.406	0.189	1.06	0.189	0.946
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045

WWAN Band	Exposure Position	1	2	3	4	5	6	7	8	1+2+8	1+3	1+4+8	1+5+8	1+6+8	1+7+8	
		WWAN	WLAN 2.4 GHz ANT Main	WLAN 2.4 GHz ANT MIMO	WLAN 5 GHz ANT Main	WLAN 5 GHz ANT MIMO	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	ΣSAR_{1g} (W/kg)	ΣSAR_{1g} (W/kg)	ΣSAR_{1g} (W/kg)	ΣSAR_{1g} (W/kg)	ΣSAR_{1g} (W/kg)	ΣSAR_{1g} (W/kg)	
		SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	SAR_{1g} (W/kg)	
NR	NR Band n2	Bottom Face at 0 mm	0.291	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.418	0.354	0.483	0.324	0.337	0.345
		side 1 at 0 mm	0.922	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.82	1.27	2.11	1.08	1.24	0.986
		side 2 at 0 mm	0.085	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.210	0.427	0.210	1.08	0.210	0.967
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	NR Band n5	Bottom Face at 0 mm	0.527	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.654	0.590	0.719	0.560	0.573	0.581
		side 1 at 0 mm	0.943	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.84	1.29	2.13	1.10	1.26	1.01
		side 2 at 0 mm	0.231	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.356	0.573	0.356	1.23	0.356	1.11
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	NR Band n66	Bottom Face at 0 mm	0.645	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.772	0.708	0.837	0.678	0.691	0.699
		side 1 at 0 mm	0.96	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.86	1.31	2.15	1.12	1.28	1.02
		side 2 at 0 mm	0.235	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.360	0.577	0.360	1.23	0.360	1.12
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
	NR Band n71	Bottom Face at 0 mm	0.275	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.402	0.338	0.467	0.308	0.321	0.329
		side 1 at 0 mm	0.746	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.65	1.09	1.94	0.906	1.06	0.810
		side 2 at 0 mm	0.092	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.217	0.434	0.217	1.09	0.217	0.974
		side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055
		side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045
NR Band n48	Bottom Face at 0 mm	0.900	0.117	0.063	0.182	0.023	0.036	0.044	0.010	1.03	0.963	1.09	0.933	0.946	0.954	
	side 1 at 0 mm	0.950	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.85	1.30	2.14	1.11	1.27	1.01	
	side 2 at 0 mm	0.054	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.179	0.396	0.179	1.05	0.179	0.936	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	
NR Band n77	Bottom Face at 0 mm	0.868	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.995	0.931	1.06	0.901	0.914	0.922	
	side 1 at 0 mm	0.944	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.84	1.29	2.13	1.10	1.26	1.01	
	side 2 at 0 mm	0.030	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.155	0.372	0.155	1.03	0.155	0.912	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.130	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	
NR Band n77	Bottom Face at 0 mm	0.641	0.117	0.063	0.182	0.023	0.036	0.044	0.010	0.768	0.704	0.833	0.674	0.687	0.695	
	side 1 at 0 mm	0.725	0.890	0.348	1.18	0.150	0.305	0.054	0.010	1.63	1.07	1.92	0.885	1.04	0.789	
	side 2 at 0 mm	0.031	0.001	0.342	0.001	0.875	0.001	0.758	0.124	0.156	0.373	0.156	1.03	0.156	0.913	
	side 3 at 0 mm	0.001	0.001	0.124	0.001	0.119	0.001	0.044	0.010	0.012	0.125	0.012	0.13	0.012	0.055	
	side 4 at 0 mm	0.001	0.001	0.038	0.224	0.036	0.056	0.034	0.010	0.012	0.039	0.235	0.047	0.067	0.045	

WWAN Band		Exposure Position	1	6	7	8	1+6+8	1+7+8
			WWAN	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	Total Exposure Ratio	Total Exposure Ratio
			SAR _{1g} (W/kg)	APD (W/m ²)	APD (W/m ²)	SAR _{1g} (W/kg)		
WCDMA	WCDMA Band 2	Bottom Face at 0 mm	0.307	0.00	0.00	0.010	0.198	0.198
		side 1 at 0 mm	0.94	0.00	0.00	0.010	0.594	0.594
		side 2 at 0 mm	0.070	2.73	0.00	0.124	0.394	0.121
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	WCDMA Band 4	Bottom Face at 0 mm	0.71	0.00	0.00	0.010	0.448	0.448
		side 1 at 0 mm	0.96	0.00	0.00	0.010	0.606	0.606
		side 2 at 0 mm	0.195	2.73	0.00	0.124	0.472	0.199
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	WCDMA Band 5	Bottom Face at 0 mm	0.559	0.00	0.00	0.010	0.356	0.356
		side 1 at 0 mm	0.96	0.00	0.00	0.010	0.606	0.606
		side 2 at 0 mm	0.298	2.73	0.00	0.124	0.537	0.264
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007

WWAN Band		Exposure Position	1	6	7	8	1+6+8	1+7+8
			WWAN	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	Total Exposure Ratio	Total Exposure Ratio
			SAR _{1g} (W/kg)	APD (W/m ²)	APD (W/m ²)	SAR _{1g} (W/kg)		
LTE	LTE Band 2	Bottom Face at 0 mm	0.278	0.00	0.00	0.010	0.180	0.180
		side 1 at 0 mm	0.935	0.00	0.00	0.010	0.591	0.591
		side 2 at 0 mm	0.087	2.73	0.00	0.124	0.405	0.132
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 4	Bottom Face at 0 mm	0.347	0.00	0.00	0.010	0.223	0.223
		side 1 at 0 mm	0.553	0.00	0.00	0.010	0.352	0.352
		side 2 at 0 mm	0.117	2.73	0.00	0.124	0.424	0.151
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 5	Bottom Face at 0 mm	0.540	0.00	0.00	0.010	0.344	0.344
		side 1 at 0 mm	0.965	0.00	0.00	0.010	0.609	0.609
		side 2 at 0 mm	0.219	2.73	0.00	0.124	0.487	0.214
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 7	Bottom Face at 0 mm	0.413	0.00	0.00	0.010	0.264	0.264
		side 1 at 0 mm	0.875	0.00	0.00	0.010	0.553	0.553
		side 2 at 0 mm	0.096	2.73	0.00	0.124	0.411	0.138
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 12	Bottom Face at 0 mm	0.246	0.00	0.00	0.010	0.160	0.160
		side 1 at 0 mm	0.744	0.00	0.00	0.010	0.471	0.471
		side 2 at 0 mm	0.095	2.73	0.00	0.124	0.410	0.137
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 13	Bottom Face at 0 mm	0.419	0.00	0.00	0.010	0.268	0.268
		side 1 at 0 mm	0.811	0.00	0.00	0.010	0.513	0.513
		side 2 at 0 mm	0.245	2.73	0.00	0.124	0.504	0.231
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 14	Bottom Face at 0 mm	0.491	0.00	0.00	0.010	0.313	0.313
		side 1 at 0 mm	0.952	0.00	0.00	0.010	0.601	0.601
		side 2 at 0 mm	0.220	2.73	0.00	0.124	0.488	0.215
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007

WWAN Band	Exposure Position	1	6	7	8	1+6+8	1+7+8	
		WWAN	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	Total Exposure Ratio	Total Exposure Ratio	
		SAR ₁₀ (W/kg)	APD (W/m ²)	APD (W/m ²)	SAR ₁₀ (W/kg)			
LTE	LTE Band 17	Bottom Face at 0 mm	0.261	0.00	0.00	0.010	0.169	0.169
		side 1 at 0 mm	0.794	0.00	0.00	0.010	0.503	0.503
		side 2 at 0 mm	0.115	2.73	0.00	0.124	0.422	0.149
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 25	Bottom Face at 0 mm	0.292	0.00	0.00	0.010	0.189	0.189
		side 1 at 0 mm	0.929	0.00	0.00	0.010	0.587	0.587
		side 2 at 0 mm	0.070	2.73	0.00	0.124	0.394	0.121
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 26	Bottom Face at 0 mm	0.448	0.00	0.00	0.010	0.286	0.286
		side 1 at 0 mm	0.952	0.00	0.00	0.010	0.601	0.601
		side 2 at 0 mm	0.245	2.73	0.00	0.124	0.504	0.231
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 38	Bottom Face at 0 mm	0.517	0.00	0.00	0.010	0.329	0.329
		side 1 at 0 mm	0.950	0.00	0.00	0.010	0.600	0.600
		side 2 at 0 mm	0.056	2.73	0.00	0.124	0.386	0.113
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 41	Bottom Face at 0 mm	0.433	0.00	0.00	0.010	0.277	0.277
		side 1 at 0 mm	0.960	0.00	0.00	0.010	0.606	0.606
		side 2 at 0 mm	0.065	2.73	0.00	0.124	0.391	0.118
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 42	Bottom Face at 0 mm	0.753	0.00	0.00	0.010	0.477	0.477
		side 1 at 0 mm	0.824	0.00	0.00	0.010	0.521	0.521
		side 2 at 0 mm	0.081	2.73	0.00	0.124	0.401	0.128
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 48	Bottom Face at 0 mm	0.780	0.00	0.00	0.010	0.494	0.494
		side 1 at 0 mm	0.880	0.00	0.00	0.010	0.556	0.556
		side 2 at 0 mm	0.070	2.73	0.00	0.124	0.394	0.121
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	LTE Band 66	Bottom Face at 0 mm	0.662	0.00	0.00	0.010	0.420	0.420
		side 1 at 0 mm	0.960	0.00	0.00	0.010	0.606	0.606
		side 2 at 0 mm	0.221	2.73	0.00	0.124	0.489	0.216
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
LTE Band 71	Bottom Face at 0 mm	0.172	0.00	0.00	0.010	0.114	0.114	
	side 1 at 0 mm	0.541	0.00	0.00	0.010	0.344	0.344	
	side 2 at 0 mm	0.064	2.73	0.00	0.124	0.391	0.118	
	side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007	
	side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007	

WWAN Band		Exposure Position	1	6	7	8	1+6+8	1+7+8
			WWAN	WLAN 6 GHz ANT Main	WLAN 6 GHz ANT MIMO	Bluetooth ANT Aux	Total Exposure Ratio	Total Exposure Ratio
			SAR _{1g} (W/kg)	APD (W/m ²)	APD (W/m ²)	SAR _{1g} (W/kg)		
NR	NR Band n2	Bottom Face at 0 mm	0.291	0.00	0.00	0.010	0.188	0.188
		side 1 at 0 mm	0.922	0.00	0.00	0.010	0.583	0.583
		side 2 at 0 mm	0.085	2.73	0.00	0.124	0.404	0.131
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n5	Bottom Face at 0 mm	0.527	0.00	0.00	0.010	0.336	0.336
		side 1 at 0 mm	0.943	0.00	0.00	0.010	0.596	0.596
		side 2 at 0 mm	0.231	2.73	0.00	0.124	0.495	0.222
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n66	Bottom Face at 0 mm	0.645	0.00	0.00	0.010	0.409	0.409
		side 1 at 0 mm	0.96	0.00	0.00	0.010	0.606	0.606
		side 2 at 0 mm	0.235	2.73	0.00	0.124	0.497	0.224
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n71	Bottom Face at 0 mm	0.275	0.00	0.00	0.010	0.178	0.178
		side 1 at 0 mm	0.746	0.00	0.00	0.010	0.473	0.473
		side 2 at 0 mm	0.092	2.73	0.00	0.124	0.408	0.135
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n48	Bottom Face at 0 mm	0.900	0.00	0.00	0.010	0.569	0.569
		side 1 at 0 mm	0.950	0.00	0.00	0.010	0.600	0.600
		side 2 at 0 mm	0.054	2.73	0.00	0.124	0.384	0.111
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n77	Bottom Face at 0 mm	0.868	0.00	0.00	0.010	0.549	0.549
		side 1 at 0 mm	0.944	0.00	0.00	0.010	0.596	0.596
		side 2 at 0 mm	0.030	2.73	0.00	0.124	0.369	0.096
		side 3 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
		side 4 at 0 mm	0.001	0.00	0.00	0.010	0.007	0.007
	NR Band n77	Bottom Face at 0 mm	0.641	0.00	0.00	0.010	0.407	0.407
		side 1 at 0 mm	0.725	0.00	0.00	0.010	0.459	0.459
side 2 at 0 mm		0.031	2.73	0.00	0.124	0.370	0.097	
side 3 at 0 mm		0.001	0.00	0.00	0.010	0.007	0.007	
side 4 at 0 mm		0.001	0.00	0.00	0.010	0.007	0.007	

10.7.3 SAR to peak location separation (SPLSR)

According to KDB 447498, when the sum of SAR is greater than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio (SPLSR), and the simultaneously transmitting antennas must be considered one pair at a time. The ratio is determined by $(SAR1+SAR2)^{1.5} / (\text{separation distance between the peak SAR locations for the antenna pair, mm})$, round to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

The SPLSR hotspot combination procedure in TCB workshop Nov. 2019 was applied when simultaneous transmission SAR is > 1.6 W/kg and antenna pair is co-located.

Max WWAN +WLAN 2.4GHz ANT Main					
Index.			3	+	27
Band	Modulation	Frequency (MHz)	Test Position	Antenna	Peak location separation ratio
LTE Band 5	QPSK	844	Side 1	0	0.01
WLAN 2.4 GHz	802.11b	2437	Side 1	ANT Main	
Reported SAR _{1g} (W/kg)	Σ Reported SAR _{1g} (W/Kg)	X (mm)	Y (mm)	Z (mm)	Antenna pair (mm)
0.965	1.86	-9.40	75.10	-177.00	184.90
0.89		7.80	-109.00	-177.00	

WLAN 2.4 GHz ANT Main + Bluetooth ANT Aux					
Index.			27	+	39_1
Band	Modulation	Frequency (MHz)	Test Position	Antenna	Peak location separation ratio
WLAN 2.4 GHz	802.11b	2437.000	Side 1	ANT Main	0.003
Bluetooth	GFSK	2441	Side 1	ANT Aux	
Reported SAR _{1g} (W/kg)	Σ Reported SAR _{1g} (W/Kg)	X (mm)	Y (mm)	Z (mm)	Antenna pair (mm)
0.89	0.90	7.80	-109.00	-177.00	238.00
0.01		6.50	129.00	-177.00	

Max WWAN +WLAN 5GHz ANT Main					
Index.			3	+	33
Band	Modulation	Frequency (MHz)	Test Position	Antenna	Peak location separation ratio
LTE Band 5	QPSK	844.000	Side 1	0	0.02
WLAN 5 GHz	802.11ac VHT80	5530	Side 1	ANT Main	
Reported SAR _{1g} (W/kg)	∑ Reported SAR _{1g} (W/Kg)	X (mm)	Y (mm)	Z (mm)	Antenna pair (mm)
0.965	2.15	-9.40	75.10	-177.00	192.38
1.18		7.90	-116.50	-177.00	

Max WWAN + Bluetooth ANT Aux					
Index.			3	+	39_1
Band	Modulation	Frequency (MHz)	Test Position	Antenna	Peak location separation ratio
LTE Band 5	QPSK	844.000	Side 1	0	0.02
Bluetooth	GFSK	2441	Side 1	ANT Aux	
Reported SAR _{1g} (W/kg)	∑ Reported SAR _{1g} (W/Kg)	X (mm)	Y (mm)	Z (mm)	Antenna pair (mm)
0.965	0.98	-9.40	75.10	-177.00	56.20
0.01		6.50	129.00	-177.00	

WLAN 5 GHz ANT Main + Bluetooth ANT Aux					
Index.			33	+	39_1
Band	Modulation	Frequency (MHz)	Test Position	Antenna	Peak location separation ratio
WLAN 5 GHz	802.11ac VHT80	5530.000	Side 1	ANT Main	0.01
Bluetooth	GFSK	2441	Side 1	ANT Aux	
Reported SAR _{1g} (W/kg)	∑ Reported SAR _{1g} (W/Kg)	X (mm)	Y (mm)	Z (mm)	Antenna pair (mm)
1.18	1.19	7.90	-116.50	-177.00	245.50
0.01		6.50	129.00	-177.00	

10.8 Requirements on the Uncertainty Evaluation

Decision Rule

- Uncertainty is not included.
- Uncertainty is included.

The highest measured 1-g SAR is less than 1.5 W/kg and the highest measured 10-g SAR is less than 3.75 W/kg. Therefore, per KDB Publication 865664 D01, the extended measurement uncertainty analysis described in IEEE 1528-2013 and IEC/IEEE 62209-1528 is not required.

11. Conclusion

The SAR test values found for the device are below the maximum limit of 1.6 W/kg.

***** End of Report *****