

# SAR TEST REPORT

For

**Mobile Phone**

**Model Number: RMX3867**

**FCC ID: 2AUYFRMX3867**

**Report Number: WT238001931**

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## Test report declaration

Applicant : Realme Chongqing Mobile Telecommunications Corp., Ltd.  
Address : No.178 Yulong Avenue, Yufengshan, Yubei District,  
Chongqing, China  
Manufacturer : Realme Chongqing Mobile Telecommunications Corp., Ltd.  
Address : No.178 Yulong Avenue, Yufengshan, Yubei District,  
Chongqing, China  
EUT Description : Mobile Phone  
Model No. : RMX3867  
Brand : realme  
FCC ID : 2AUYFRMX3867

### Test Standards:

FCC 47CFR Part 2(2.1093) IEC/IEEE 62209-1528 KDB 447498 D04v01 KDB 248227 D01v02r02 KDB  
865664 D01v01r04 KDB 865664 D02v01r02 KDB 648474 D04v01r03 KDB 941225 D01v03r01 KDB  
941225 D05v02r05 KDB 941225 D06v02r01

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the compliance of the applicable standards stated above. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The results documented in this report only apply to the tested sample, under the conditions and modes of operation as described herein.

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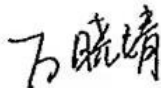
Project Engineer:



Date: Dec. 21, 2023

(Zhang Qiang)

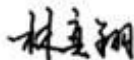
Checked by:



Date: Dec. 21, 2023

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Approved by:



Date: Dec. 21, 2023

(Lin Yi Xiang)

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# 1. REPORTED SAR SUMMARY

## 1.1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing are as follows.

Band		Highest SAR Summary			
		Head (Gap 0mm)	Hotspot (Gap10m)	Body-worn (Gap15m)	Extremity (Gap 0mm)
		1g SAR (W/kg)			10g SAR (W/kg)
GSM	GSM850	0.80	0.29	0.29	N/A
	PCS1900	0.59	0.40	0.20	N/A
WCDMA	WCDMA Band II	0.77	0.46	0.31	N/A
	WCDMA Band IV	0.85	0.39	0.29	N/A
	WCDMA Band V	0.93	0.26	0.20	N/A
LTE	LTE Band 2	0.72	0.52	0.35	N/A
	LTE Band 4	0.89	0.59	0.37	N/A
	LTE Band 5	0.55	0.30	0.21	N/A
	LTE Band 7	0.66	0.62	0.36	N/A
	LTE Band 12	0.58	0.25	0.24	N/A
	LTE Band 13	0.87	0.30	0.28	N/A
	LTE Band 17	0.61	0.25	0.24	N/A
	LTE Band 26	0.61	0.28	0.19	N/A

	LTE Band 38	0.55	0.58	0.30	N/A
	LTE Band 41	0.58	0.39	0.23	N/A
	LTE Band 66	0.82	0.58	0.44	N/A
5G NR	5G NR n5	0.90	0.30	0.19	N/A
	5G NR n7	0.57	0.54	0.38	N/A
	5G NR n38	0.75	0.54	0.37	N/A
	5G NR n41	0.76	0.73	0.36	N/A
	5G NR n66	0.45	0.49	0.33	N/A
WLAN	2.4GHzWLAN	0.67	0.47	0.19	N/A
	5GHzWLAN	0.89	0.62	0.40	0.72
2.4GHz Band	Bluetooth	0.20	0.08	0.03	0.11

Maximum Report SAR 1g(W/kg)	Head	0.93	Limit(W/kg): 1.6 W/kg
	Hotspot(10mm)	0.73	
	Body-worn(15mm)	0.44	
	Extremity(Gap 0mm)	0.72	Limit(W/kg): 4.0 W/kg

Highest Simultaneous SAR 1g(W/kg)	ENDC(LTE Band4+N7)+5GWIFI+BT	1.42	Limit(W/kg): 1.6 W/kg
Highest Simultaneous SAR 10g(W/kg)	5G WIFI+BT	0.83	Limit(W/kg): 4.0 W/kg

Note:

1. This device is in compliance with Specific Absorption Rate (SAR) for general population or uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992), and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.
2. When the test result is a critical value, we will use the measurement uncertainty give the

judgment result based on the 95% risk level.

### 1.2. RF exposure limits (ICNIRP Guidelines)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR*(Brain/Body)	<b>1.60mW/g</b>	8.00mW/g
Spatial Average SAR** (Whole Body)	0.08mW/g	0.40mW/g
Spatial Peak SAR***(Limbs)	4.00mW/g	20.00mW/g

**Table 2: RF exposure limits**

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

Notes:

- \* The Spatial Peak value of the SAR averaged over any 1 grams 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 1 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time. Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result if employment or occupation.)

### 1.3. Ratings and System Details

EUT Description	Mobile Phone
Model No.	RMX3867
Brand	realme
EUT Supports Radios application:	GSM850:TX 824MHz~849MHz GSM900:TX 880MHz~915MHz PCS1900: TX 1850MHZ~1910MHz WCDMA Band V: TX 824MHz~849MHz WCDMA Band IV: TX 1710MHz~1755MHz WCDMA Band II: TX 1850MHZ~1910MHz WCDMA Band VIII: TX 880MHz~915MHz LTE Band 2: TX 1850MHZ~1910MHz LTE Band 4: TX 1710MHz~1755MHz LTE Band 5: TX 824MHz~849MHz

	<p>LTE Band 7: TX 2500MHz~2570MHz  LTE Band 12: TX 699MHz~716MHz  LTE Band 13: TX 777MHz~787MHz  LTE Band 17: TX 704MHz~716MHz  LTE Band 26: TX 814MHz~849MHz  LTE Band 28: TX 703MHz~748MHz  LTE Band 38: TX 2570MHz~2620MHz  LTE Band 41: TX 2535MHz~2655MHz  LTE Band 66: TX 1710MHz~1780MHz  5G NRn5: 824 MHz ~ 849 MHz  5G NR n7: 2500 MHz ~ 2570 MHz  5G NR n38: 2570 MHz ~ 2620 MHz  5G NR n41 : 2496 MHz ~ 2690 MHz  5G NR n66: 1710 MHz ~ 1780 MHz  WL AN 2.4GHz Band: 2412 MHz ~ 2462 MHz  WL AN 5.2GHz Band: 5180 MHz ~ 5240 MHz  WL AN 5.3GHz Band: 5260 MHz ~ 5320 MHz  WL AN 5.5GHz Band: 5500 MHz ~ 5720 MHz  WL AN 5.8GHz Band: 5745 MHz ~ 5825 MHz  Bluetooth: 2402 MHz ~ 2480 MHz  NFC: 13.56 MHz</p>
Modulation Mode	<p>GSM/GPRS/EGPRS  AMR I RMC 12.2Kbps  HSDPA  HSUPA  DC-HSDPA  HSPA+ (16QAM uplink)  CDMA2000 : 1xRTT/1xEv-Do(Rel.0)/1xEv-Do(Rev.A)  LTE: QPSK, 16QAM, 64QAM, 256QAM  5G NR : CP-OFDM/ DFT-s-OFDM, QPSK, 16QAM, 64QAM, 256QAM  WL AN 24GHz : 802.11b/g/n/ac HT20/HT40/VHT20/VHT40  WL AN 2.4GHz : 802.11ax HE20/HE40  WL AN 5GHz : 802.11a/n/ac/ax  HT20/HT40/VHT20/VHT40/VHT80/VHT160/HE20/HE40/HE80/HE160  Bluetooth BR/EDR/L E  NFC: ASK</p>
Battery Specification	BLPA43
Battery Applicant	Rated:4880mAh Typical: 5000mAh Li-ion Polymer Battery
Hardware version:	11
Software version:	realme UI 5.0



#### 1.4. Test specification(s)

FCC 47CFR Part 2(2.1093)	Radiofrequency Radiation Exposure Evaluation: Portable Devices
IEC/IEEE 62209-1528	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
KDB 447498 D04v01	General RF Exposure Guidance No deviation
KDB 248227 D01v02r02	SAR Measurement Procedures for 802.11 Transmitters
KDB 865664 D01v01r04	SAR Measurement 100 MHz to 6 GHz
KDB 865664 D02v01r02	RF Exposure Reporting
KDB 648474 D04v01r03	Handset SAR
KDB 941225 D01v03r01	3G SAR MEAUREMENT PROCEDURES
KDB 941225 D05v02r05	SAR Evaluation Consideration for LTE Devices
KDB 941225 D06v02r01	SAR Evaluation Procedures For Portable Devices With Wireless Router Capabilities
<p><b>Note 1:</b> The test item is not applicable.</p> <p><b>Note 2:</b> Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.</p>	

## 1.5.List of Test and Measurement Instruments

	Equipment	Model No.	Serial No.	Manufacturer	Last Calibration Date	Period
<input checked="" type="checkbox"/>	SAR test system	TX60L	F08/5AY8A1/A/01+F08/	SPEAG	NCR	NCR
<input checked="" type="checkbox"/>	Electronic Data Transmitter	DAE4	1636	SPEAG	2023.01.11	1year
<input checked="" type="checkbox"/>	SAR Probe	EX3DV4	7623	SPEAG	2023.02.28	1year
<input checked="" type="checkbox"/>	Software	85070	--	Agilent	--	--
<input checked="" type="checkbox"/>	Software	DASY5	--	SPEAG	--	--
<input checked="" type="checkbox"/>	System Validation Dipole,750MHz	D750V3	1103	SPEAG	2023.01.05	3year
<input checked="" type="checkbox"/>	System Validation Dipole,835MHz	D835V2	4d141	SPEAG	2021.08.31	3year
<input checked="" type="checkbox"/>	System Validation Dipole,900MHz	D900V2	1d077	SPEAG	2021.08.27	3year
<input checked="" type="checkbox"/>	System Validation Dipole,1750MHz	D1750V2	1108	SPEAG	2023.01.05	3year
<input checked="" type="checkbox"/>	System Validation Dipole,1900MHz	D1900V2	5d162	SPEAG	2021.09.01	3year
<input checked="" type="checkbox"/>	System Validation Dipole,2450MHz	D2450V2	818	SPEAG	2021.08.26	3year
<input checked="" type="checkbox"/>	System Validation Dipole,2600MHz	D2600V2	1074	SPEAG	2023.01.05	3year
<input checked="" type="checkbox"/>	System Validation Dipole,5GHz	D5GzV2	1185	SPEAG	2022.12.09	3year
<input checked="" type="checkbox"/>	Dielectric Probe Kit	85070E	MY44300455	Agilent	NCR	NCR
<input checked="" type="checkbox"/>	Dual-directional coupler,0.10-2.0GHz	778D	MY48220198	Agilent	NCR	NCR
<input checked="" type="checkbox"/>	Dual-directional coupler,2.00-18GHz	772D	MY46151160	Agilent	NCR	NCR
<input checked="" type="checkbox"/>	Power Amplifier	ZVE-8G	SC280800926	MINI-CIRCUITS	NCR	NCR
<input checked="" type="checkbox"/>	Power Amplifier	ZHL42W	81709	MINI-CIRCUITS	NCR	NCR
<input checked="" type="checkbox"/>	Signal Generator	SMR20	100047	R&S	2023.04.19	1year
<input checked="" type="checkbox"/>	Power Sensor	NRP-Z21	102626	R&S	2023.04.24	1year
<input checked="" type="checkbox"/>	Power Sensor	NRP-Z21	102627	R&S	2023.04.24	1year
<input checked="" type="checkbox"/>	Call Tester	CMU 200	100110	R&S	2023.04.24	1year
<input checked="" type="checkbox"/>	Network Analyzer	E5071C	MY46109550	Agilent	2023.05.05	1Year
<input checked="" type="checkbox"/>	Flat Phantom	ELI4.0	TP-1904	SPEAG	NCR	NCR
<input checked="" type="checkbox"/>	Twin Phantom	SAM	TP-1504	SPEAG	NCR	NCR
<input checked="" type="checkbox"/>	Wideband Radio Communication Tester	CMW500	125469	R&S	2023.04.24	1Year
<input checked="" type="checkbox"/>	Precision Thermometer	--	--	--	2023.06.26	1Year

### **Table 3: List of Test and Measurement Equipment**

Note: All the test equipments are calibrated once a year, except the dipoles, which are calibrated every three years. Moreover, we have self-calibration every year to the dipoles.

## 2. GENERAL INFORMATION

### 2.1. Report information

This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

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### 2.2. Laboratory Accreditation and Relationship to Customer

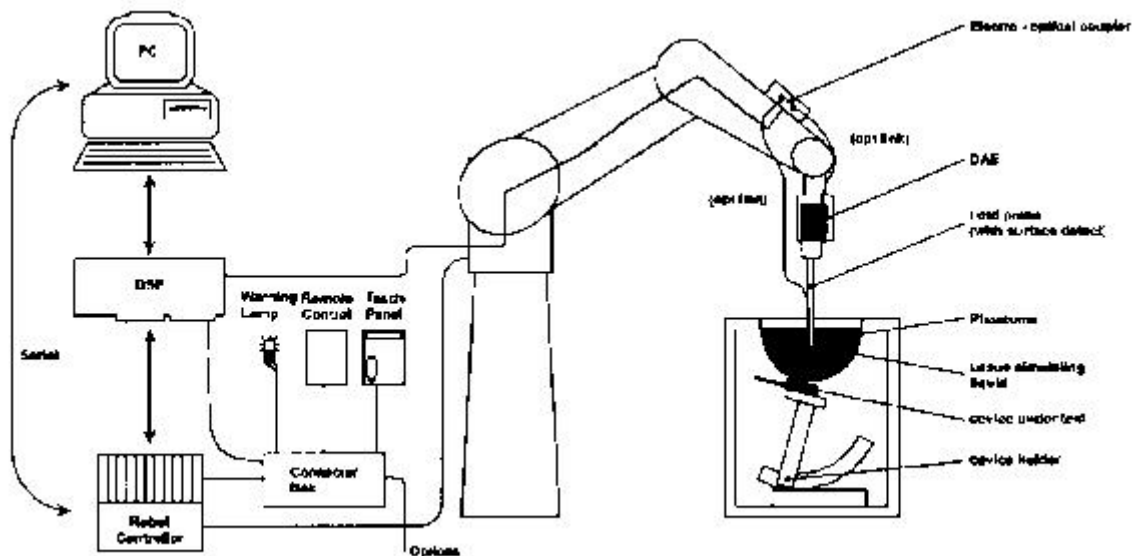
The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at NETC Building, No.4 Tongfa Rd., Xili, Nanshan, Shenzhen, China. At the time of testing, Laboratory is accredited by the following organizations: China National Accreditation Service for Conformity Assessment (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is CNAS L0579. The Laboratory is Accredited Testing Laboratory of FCC with Designation number CN1165 and Site registration number 582918. The Laboratory is registered to perform emission tests with Innovation, Science and

Economic Development (ISED), and the registration number is 11177A. The Laboratory is registered to perform emission tests with VCCI, and the registration numbers are C-20048, G20076, R-20077, R-20078, and T-20047.

The Laboratory is Accredited Testing Laboratory of American Association for Laboratory Accreditation (A2LA) and certificate number is 3292.01.

### 3. SAR MEASUREMENT SYSTEM CONFIGURATION

#### 3.1. SAR Measurement Set-up




The DASY5 system for performing compliance tests consists of the following items:


- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (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.
- A unit to operate the optical surface detector which is connected to the EOC.

- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
  - The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. • A computer operating Windows XP.
  - DASY5 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
  - The device holder for handheld mobile phones.
  - Tissue simulating liquid mixed according to the given recipes.
  - System checks dipoles allowing validating the proper functioning of the system.
  - Test environment
  - The DASY5 measurement system is placed at the head end of a room with dimensions: 4.5 x 4 x 3 m<sup>3</sup>, the SAM phantom is placed in a distance of 1.3 m from the side walls and 1.1m from the rear wall.
- Picture 1 of the photo documentation shows a complete view of the test environment.

### 3.2. Probe description

Isotropic E-Field Probe EX3DV4 for Dosimetric Measurements

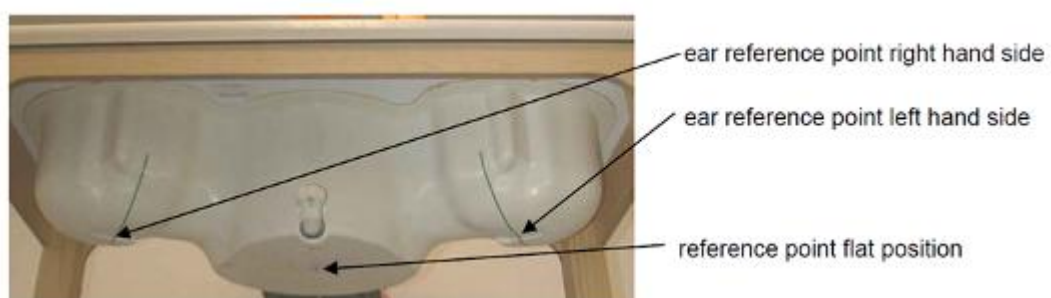
Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Calibration	ISO/IEC 17025 calibration service available.	
Frequency	10 MHz to >6 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	

Dynamic range	10 $\mu\text{W/g}$ to $> 100 \text{ mW/g}$ ; Linearity: $\pm 0.2 \text{ dB}$ (noise: typically $< 1 \mu\text{W/g}$ )	
Dimensions	Overall length: 337 mm (Tip: 20mm) Tip length: 2.5 mm (Body: 12mm) Typical distance from probe tip to dipole centers: 1mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

### 3.3. Phantom description

The used SAM Phantom meets the requirements specified in Edition 01-01 of Supplement C to OET Bulletin 65 for Specific Absorption Rate (SAR) measurements.

The phantom consists of a fibreglass shell integrated in a wooden table. It allows left-hand and right-hand head as well as body-worn measurements with a maximum liquid depth of 18 cm in head position and 22 cm in planar position (body measurements). The thickness of the Phantom shell is 2 mm +/- 0.1 mm.





ELI4 Phantom

Shell Thickness	2mm+/- 0.2mm
Filling Volume	Approximately 30 liters
Measurement Areas	Flat phantom
The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30MHz to 6GHz. ELI4 is fully compatible with the latest draft of the standard IEC 62209-2 and all known tissue simulating liquids.	

The phantom shell material is resistant to all ingredients used in the tissue-equivalent liquid recipes. The shell of the phantom including ear spacers is constructed from low permittivity and low loss material, with a relative permittivity  $\leq 5$  and a loss tangent  $\leq 0.05$ .

### 3.4. Device holder description

The DASY5 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of  $65^\circ$ . The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. This device holder is used for standard



mobile phones or PDA's only. If necessary an additional support of polystyrene material is used.

Larger DUT's (e.g. notebooks) cannot be tested using this device holder. Instead a support of bigger polystyrene cubes and thin polystyrene plates is used to position the DUT in all relevant positions to find and measure spots



with maximum SAR values.

Therefore those devices are normally only tested at the flat part of the SAM.

## 4. SAR MEASUREMENT PROCEDURE

### 4.1. Scanning procedure

- The DASY5 installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.
- The reference and drift measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT's output power and should vary max. +/- 5 %.
- The surface check measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above  $\pm 0.1\text{mm}$ ). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within  $\pm 30^\circ$ .)
- The area scan measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The standard scan uses large grid spacing for faster measurement. Standard grid spacing for head measurements is 15 mm in x- and y- dimension ( $\leq$

2GHz) , 12 mm in x- and y- dimension(2-4 GHz) and 10mm in x- and y- dimension(4-6GHz). If a finer resolution is needed, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation.

Results of this coarse scan are shown in Appendix B.

- A “zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous “coarse” scan. This is a fine grid with maximum scan spatial resolution:  $\Delta x_{zoom}$ ,  $\Delta y_{zoom} \leq 2GHz \leq 8 \text{ mm}$ ,  $2-4GHz - \leq 5 \text{ mm}$  and  $4-6 \text{ GHz} - \leq 4 \text{ mm}$ ;  $\Delta z_{zoom} \leq 3GHz - \leq 5 \text{ mm}$ ,  $3-4 \text{ GHz} - \leq 4 \text{ mm}$  and  $4-6GHz - \leq 2\text{mm}$  where the robot additionally moves the probe along the z-axis away from the bottom of the Phantom. DASY5 is also able to perform repeated zoom scans if more than 1 peak is found during area scan. Test results relevant for the specified standard (see chapter 1.5.) are shown in table form in chapter 3.2.

- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 2mm steps. This measurement shows the continuity of the liquid and can – depending in the field strength- also show the liquid depth. A z-axis scan of the measurement with maximum SAR value is shown in Appendix B.

The following table summarizes the area scan and zoom scan resolutions per FCC KDB 865664D01:

Frequency	Maximum Area Scan resolution ( $\Delta x_{area}, \Delta y_{area}$ )	Maximum Zoom Scan spatial resolution( $\Delta x_{zoom}, \Delta y_{zoom}$ )	Maximum Zoom Scan spatial resolution			Minimum zoom scan volume (x,y,z)
			Uniform Grid	Graded Grad		
				$\Delta z_{zoom}(n)$	$\Delta z_{zoom}(1)$	
$\leq 2GHz$	$\leq 15\text{mm}$	$\leq 8\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5 * \Delta z_{zoom}(n-1)$	$\geq 30\text{mm}$
2-3GHz	$\leq 12\text{mm}$	$\leq 5\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 1.5 * \Delta z_{zoom}(n-1)$	$\geq 30\text{mm}$
3-4GHz	$\leq 10\text{mm}$	$\leq 5\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq$	$\geq 28\text{mm}$

					$1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	
4-5GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 3\text{mm}$	$\leq 2.5\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 25\text{mm}$
5-6GHz	$\leq 10\text{mm}$	$\leq 4\text{mm}$	$\leq 2\text{mm}$	$\leq 2\text{mm}$	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	$\geq 22\text{mm}$

### Spatial Peak SAR Evaluation

- The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The bases of the evaluation are the SAR values measured at the points of the fine cube grid consisting of 5 x 5 x 7 points (with 8mm horizontal resolution) or 7 x 7 x 7 points (with 5mm horizontal resolution).
- The algorithm that finds the maximal averaged volume is separated into three different stages.
- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting 'Graph Evaluated'.
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighboring volumes are evaluated until no neighboring volume with a higher average value is found.
- Extrapolation
- The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

### Interpolation

- The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik,

p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff ].

- Volume Averaging
- At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.
- Advanced Extrapolation
- DASY5 uses the advanced extrapolation option which is able to compensate boundary effects on E-field probes.

#### 6.1.1. Data Storage and Evaluation

##### Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension DAE4. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm<sup>2</sup>], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

##### Data Evaluation by SEMCAD

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

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
- Conversion factor	ConvFi	
- Diode compression point	Dcpi	

Device parameters:	- Frequency	f
- Crest factor	cf	
Media parameters:	- Conductivity	$\sigma$
- Density	$\rho$	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

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

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcpi = diode compression point (DASY parameter)

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

E-field probes:  $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$

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

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

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

[mV/(V/m)<sup>2</sup>] for E-field Probes

ConvF = sensitivity enhancement in solution

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

$f$  = carrier frequency [GHz]

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g

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

$\sigma$  = conductivity in [mho/m] or [Siemens/m]

$\rho$  = equivalent tissue density in g/cm<sup>3</sup>

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

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

with  $P_{pwe}$  = equivalent power density of a plane wave in mW/cm<sup>2</sup>

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

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

## 7. SYSTEM VERIFICATION PROCEDURE

### 7.1. Tissue Verification

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within  $\pm 5\%$  of the target values.

The following materials are used for producing the tissue-equivalent materials

Ingredient (% by weight )	Head Tissue				
	750	835	1750	1900	2450
Water	34.4	41.45	52.64	55.24	62.7
Salt(NaCl)	0.79	1.45	0.36	0.306	0.5
Sugar	64.81	56.0	0.0	0.0	0.0
HEC	0.0	1.0	0.0	0.0	0.0
Bactericide	0.0	0.1	0.0	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	47.0	44.54	36.8

**Table 4 : Tissue Dielectric Properties**

Salt: 99+% Pure Sodium Chloride; Sugar: 98+% Pure Sucrose; Water: De-ionized, 16M $\Omega$ + resistivity

HEC: Hydroxyethyl Cellulose; DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100(ultra pure): Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl]ether

Tissue-equivalent liquid measurements:

f/MHz	Date Tested	Dielectric Parameters	Target	Tolerance (%)	Temp (°C)
750	2023.11.21	$\epsilon_r=41.39$	41.9 (39.81~44.00)	±5	20
		$\sigma=0.9$	0.89 (0.85~0.93)		
835	2023.11.23	$\epsilon_r =42.07$	41.5 (39.43~43.58)	±5	20
		$\sigma=0.87$	0.90 (0.86~0.95)		
1750	2023.11.27	$\epsilon_r =39.49$	40.1 (38.10~42.11)	±5	20
		$\sigma=1.42$	1.37 (1.30~1.44)		
1900	2023.11.29	$\epsilon_r =39.98$	40.0 (38.00~42.00)	±5	20
		$\sigma=1.37$	1.40 (1.33~1.47)		
2450	2023.12.02	$\epsilon_r =39.26$	39.2 (37.24~41.16)	±5	20
		$\sigma=1.78$	1.80 (1.71~1.89)		
2600	2023.12.04	$\epsilon_r =39.52$	39.0 (37.05~40.95)	±5	20
		$\sigma=1.96$	1.96 (1.86~2.06)		
5250	2023.12.07	$\epsilon_r =36.14$	36.0 (34.20~37.80)	±5	20
		$\sigma=4.5$	4.66 (4.43~4.89)		
5600	2023.12.09	$\epsilon_r =35.55$	35.5 (33.82~37.38)	±5	20
		$\sigma=5.08$	5.07 (4.71~5.21)		
5750	2023.12.11	$\epsilon_r =35.17$	35.3 (33.54~37.07)	±5	20
		$\sigma=5.44$	5.27 (5.01~5.53)		
750	2023.11.22	$\epsilon_r=42.18$	41.9 (39.81~44.00)	±5	20
		$\sigma=0.88$	0.89 (0.85~0.93)		
835	2023.11.24	$\epsilon_r =41.88$	41.5 (39.43~43.58)	±5	20
		$\sigma=0.89$	0.90 (0.86~0.95)		
900	2023.11.26	$\epsilon_r =41.55$	41.5	±5	20



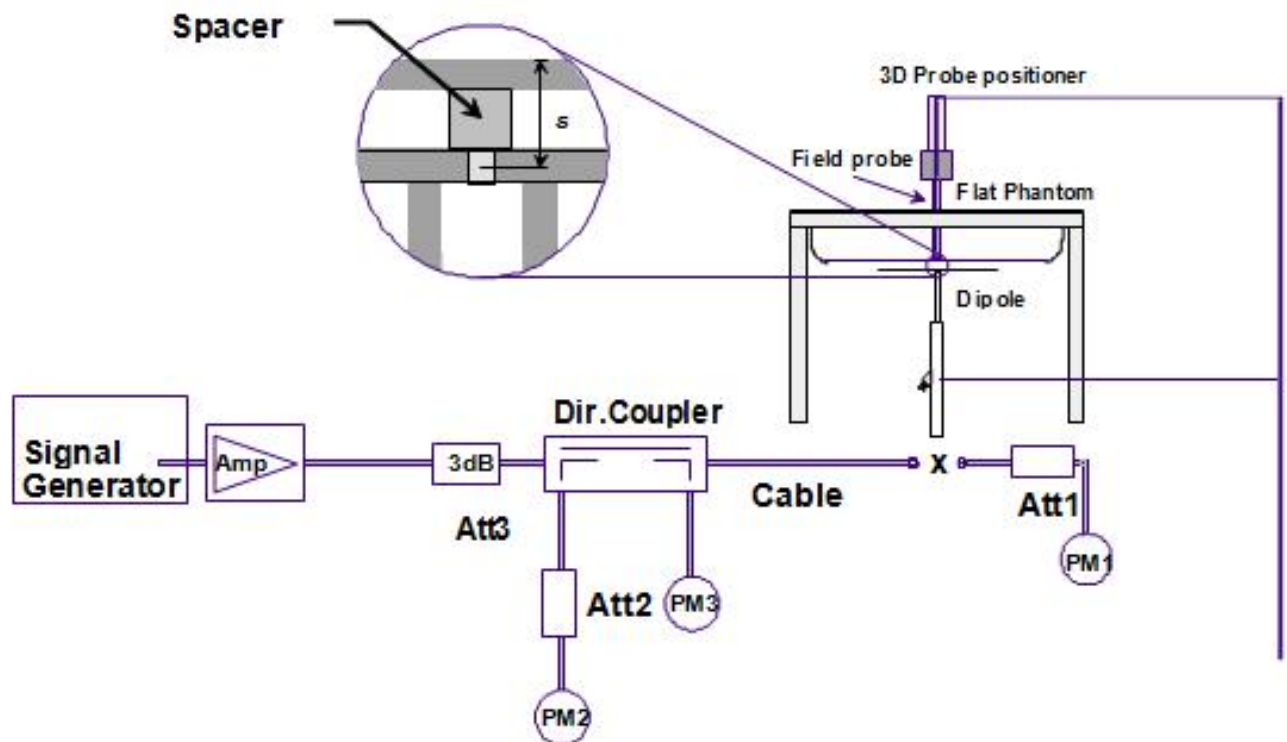
			(39.43~43.58)		
		$\sigma=0.93$	0.97 (0.92~1.02)		
1750	2023.11.28	$\epsilon_r=39.34$	40.1 (38.10~42.11)	$\pm 5$	20
		$\sigma=1.36$	1.37 (1.30~1.44)		
1900	2023.11.30	$\epsilon_r=39.91$	40.0 (38.00~42.00)	$\pm 5$	20
		$\sigma=1.35$	1.40 (1.33~1.47)		
2450	2023.12.14	$\epsilon_r=39.31$	39.2 (37.24~41.16)	$\pm 5$	20
		$\sigma=1.79$	1.80 (1.71~1.89)		
2600	2023.12.15	$\epsilon_r=38.65$	39.0 (37.05~40.95)	$\pm 5$	20
		$\sigma=2.01$	1.96 (1.86~2.06)		
5250	2023.12.16	$\epsilon_r=35.8$	36.0 (34.20~37.80)	$\pm 5$	20
		$\sigma=4.56$	4.66 (4.43~4.89)		
5600	2023.12.18	$\epsilon_r=35.39$	35.5 (33.82~37.38)	$\pm 5$	20
		$\sigma=5.26$	5.07 (4.71~5.21)		
5750	2023.12.19	$\epsilon_r=34.96$	35.3 (33.54~37.07)	$\pm 5$	20
		$\sigma=5.33$	5.27 (5.01~5.53)		

System check, Tissue-equivalent liquid:

f/MHz	Date Tested	Power (mW)	SAR(W/kg), 1g	SAR(W/kg), 10g	Target 1g	Target 10g	Tolerance (%)	Temp (°C)
750	2023.11.21	250	8.00	5.32	8.42 (7.58 ~9.26 )	5.53 (4.98 ~6.08 )	±10	20
835	2023.11.23	250	9.36	6.12	9.58 (8.63 ~10.53 )	6.19 (5.58 ~6.80 )	±10	20
1750	2023.11.27	250	36.84	19.84	35.90 (32.31 ~39.49 )	19.30 (17.37 ~21.23 )	±10	20
1900	2023.11.29	250	40.40	20.56	39.70 (35.73 ~43.67 )	20.20 (18.18 ~22.22 )	±10	20
2100	2023.11.27	250	43.60	21.44	43.20 (38.88 ~47.52 )	21.20 (19.08 ~23.32 )	±10	20
2450	2023.12.02	250	50.80	23.36	52.20 (46.98 ~57.42 )	23.80 (21.42 ~26.18 )	±10	20
2600	2023.12.04	250	54.40	24.56	56.20 (50.58 ~61.82 )	25.30 (22.77 ~27.83 )	±10	20
5250	2023.12.07	100	74.00	20.90	78.90 (71.01 ~86.79 )	22.50 (20.25 ~24.75 )	±10	20
5600	2023.12.09	100	77.70	22.00	81.70 (73.53 ~89.87 )	23.10 (20.79 ~25.41 )	±10	20
5750	2023.12.11	100	77.20	22.00	78.60 (70.74 ~86.46 )	22.00 (19.80 ~24.20 )	±10	20
750	2023.11.22	250	8.36	5.56	8.42 (7.58 ~9.26 )	5.53 (4.98 ~6.08 )	±10	20
835	2023.11.24	250	9.24	5.88	9.58 (8.63 ~10.53 )	6.19 (5.58 ~6.80 )	±10	20
900	2023.11.26	250	10.84	6.96	10.90 (9.81 ~11.99 )	7.00 (6.30 ~7.70 )	±10	20
1750	2023.11.28	250	35.68	19.20	35.90 (32.31 ~39.49 )	19.30 (17.37 ~21.23 )	±10	20
1900	2023.11.30	250	38.64	19.76	39.70 (35.73 ~43.67 )	20.20 (18.18 ~22.22 )	±10	20
2450	2023.12.14	250	51.60	23.52	52.20 (46.98 ~57.42 )	23.80 (21.42 ~26.18 )	±10	20
2600	2023.12.15	250	55.60	25.08	56.20 (50.58 ~61.82 )	25.30 (22.77 ~27.83 )	±10	20
5250	2023.12.16	100	74.00	20.70	78.90 (71.01 ~86.79 )	22.50 (20.25 ~24.75 )	±10	20
5600	2023.12.18	100	77.50	21.80	81.70 (73.53 ~89.87 )	23.10 (20.79 ~25.41 )	±10	20
5750	2023.12.19	100	80.00	22.70	78.60 (70.74 ~86.46 )	22.00 (19.80 ~24.20 )	±10	20

## System Checking

The manufacturer calibrates the probes annually. A system check measurement was made following the determination of the dielectric parameters of the tissue-equivalent liquid, using the dipole validation kit. A power level of 250mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom.



The system checking results (dielectric parameters and SAR values) are given in the table below.

The system check is performed for verifying the accuracy of the complete measurement system and performance of the software. The system check is performed with tissue equivalent material according to IEEE P1528 (described above). The following table shows system check results for all frequency bands and tissue liquids used during the tests (Graphic Plot(s) see Appendix A).

## 8. SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

### 8.1. SAR measurement variability

Per KDB865664 D01 SAR measurement 100MHz to 6GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurement requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is  $<0.80$  W/kg; step2) through 4) do not apply.
- 2) When the original highest measured SAR is  $\geq 0.8$  W/kg , repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is  $>1.20$  or when the original or repeated measurement is  $\geq 1.45$  W/kg (~10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is  $\geq 1.5$ W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is  $>1.20$ .

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

### 8.2. SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100MHz to 6GHz v01r03, when the highest measured 1-g SAR within a frequency band is  $<1.5$ W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2003 is not required in SAR reports submitted for equipment approval. The equivalent ratio(1.5/1.6) is applied to

extremity and occupational exposure conditions.

## 9. Test Configuration

The DUT is tested using a CMU 200 or E5515C communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted peak power.

Test positions as described in the tables above are in accordance with the specified test standard.

### GSM Test Configuration

SAR tests for GSM 850 and PCS 1900, a communication link is set up with a System Simulator (SS) by air link. Using CMU 200 or E5515C the power level is set to “5” for GSM 850, set to “0” for PCS 1900. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5.

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Output power of reductions:

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power,(dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

### WCDMA Test Configuration

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

	Mode	Rel99
	Subtest	---

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	$\beta_c / \beta_d$	8/15

### Handsets with Release 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices” section of this document, for the highest reported SAR body-worn accessory exposure configuration in 12.2 kbps RMC. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors ( $\beta_c$ ,  $\beta_d$ ), and HS-DPCCH power offset parameters ( $\Delta_{ACK}$ ,  $\Delta_{NACK}$ ,  $\Delta_{CQI}$ ) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-set	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}$ (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8$      $\beta_{hs} = \beta_{hs}/\beta_c = 30/15$      $\beta_{hs} = 30/15 * \beta_c$   
Note2: CM=1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ .  
Note3: For subtest 2 the  $\beta_c/\beta_d$  ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to  $\beta_c = 11/15$  and  $\beta_d = 15/15$ .

### HSUPA Test Configuration

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the  $\beta$  values indicated in Table 2 and other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Devices’ sections of this document

Sub-set	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}^{(1)}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$ (SF)	$\beta_{ed}$ (codes)	CM <sup>(2)</sup> (dB)	MPR (dB)	AG <sup>(4)</sup> Index	E-TFCI
1	11/15 <sup>(3)</sup>	15/15 <sup>(3)</sup>	64	11/15 <sup>(3)</sup>	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 <sup>(4)</sup>	15/15 <sup>(4)</sup>	64	15/15 <sup>(4)</sup>	30/15	24/15	134/15	4	1	1.0	0.0	21	81
<p>Note 1: <math>\Delta_{ACK}, \Delta_{NACK}</math> and <math>\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c</math>.</p> <p>Note 2: CM = 1 for <math>\beta_c/\beta_d = 12/15, \beta_{hs}/\beta_c = 24/15</math>. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.</p> <p>Note 3: For subtest 1 the <math>\beta_c/\beta_d</math> ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to <math>\beta_c = 10/15</math> and <math>\beta_d = 15/15</math>.</p> <p>Note 4: For subtest 5 the <math>\beta_c/\beta_d</math> ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to <math>\beta_c = 14/15</math> and <math>\beta_d = 15/15</math>.</p> <p>Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.</p> <p>Note 6: <math>\beta_{ed}</math> can not be set directly; it is set by Absolute Grant Value.</p>													



UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?

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

### HSPA, HSPA+ and DC-HSDPA Test Configuration

measurement is required for HSPA, HSPA+ or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements.<sup>35</sup> Without prior KDB confirmation to determine the SAR results are acceptable, a PBA is required for TCB approval. SAR test exclusion for HSPA, HSPA+ and DC-HSDPA is determined according to the following:

- 1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required Sub-test mode(s) to determine SAR test exclusion.
- 2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (Up antenna) HSPA+ with 12.2 kbps RMC as the primary mode.<sup>36</sup> Power is measured for HSPA+ that supports Up antenna 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.
- 3) 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. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be



acceptable.

4) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA: a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121.

i) Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.

c) The UE category, operating parameters, such as the  $\beta$  and  $\Delta$  values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.

5) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation		
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)		
Category 2	5	3	7298	28800					
Category 3	5	2	7298	28800					
Category 4	5	2	7298	38400					
Category 5	5	1	7298	57600					
Category 6	5	1	7298	67200					
Category 7	10	1	14411	115200					
Category 8	10	1	14411	134400					
Category 9	15	1	20251	172800					
Category 10	15	1	27952	172800					
Category 11	5	2	3630	14400				QPSK	
Category 12	5	1	3630	28800				QPSK, 16QAM, 64QAM	
Category 13	15	1	35280	259200				QPSK, 16QAM	
Category 14	15	1	42192	259200				64QAM	
Category 15	15	1	23370	345600				QPSK, 16QAM	
Category 16	15	1	27952	345600				QPSK, 16QAM	
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	-			
			23370	345600	-	QPSK, 16QAM			
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM	-			
			27952	345600	-	QPSK, 16QAM			
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM				
Category 20	15	1	42192	518400	QPSK, 16QAM, 64QAM				
Category 21	15	1	23370	345600	QPSK, 16QAM, 64QAM				
Category 22	15	1	27952	345600	QPSK, 16QAM, 64QAM				
Category 23	15	1	35280	518400	QPSK, 16QAM, 64QAM				
Category 24	15	1	42192	518400	QPSK, 16QAM, 64QAM				

## LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r05. The CMW500 WideBand Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames (Maximum TTI)

### 1) Spectrum Plots for RB configurations

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

### 2) MPR

When MPR is implemented permanently within the UE, regardless of network

requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR. The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

### Maximun Power Reduction(MRP) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth( $N_{RB}$ )						MPR(dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	>5	>4	>8	>12	>16	>18	$\leq 1$
16 QAM	$\leq 5$	$\leq 4$	$\leq 8$	$\leq 12$	$\leq 16$	$\leq 18$	$\leq 1$
16 QAM	>5	>4	>8	>12	>16	>18	$\leq 2$

### Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 T_S$	$2192 T_S$	$2560 T_S$	$7680 T_S$	$2192 T_S$	$2560 T_S$
1	$19760 T_S$			$20480 T_S$		
2	$21952 T_S$			$23040 T_S$		
3	$24144 T_S$			$25600 T_S$		
4	$26336 T_S$			$7680 T_S$		
5	$6592 T_S$	$4384 T_S$	$5120 T_S$	$20480 T_S$	$4384 T_S$	$5120 T_S$
6	$19760 T_S$			$23040 T_S$		
7	$21952 T_S$			$12800 T_S$		

8	$24144 T_S$			-	-	-
9	$13168 T_S$			-	-	-

### Uplink-downlink configurations

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

Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle =  $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

Where  $T_s = 1/(15000 \times 2048)$  seconds

### LTE Test Configuration

SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r05. The CMW500 WideBand Radio Communication Tester was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR test were performed with the same number of RB and RB offsets transmitting on all TTI frames (Maximum TTI)

#### 1) Spectrum Plots for RB configurations

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

#### 2) MPR

When MPR is implemented permanently within the UE, regardless of network

requirements, only those RB configurations allowed by 3GPP for the channel bandwidth and modulation combinations may be tested with MPR active. Configurations with RB allocations less than the RB thresholds required by 3GPP must be tested without MPR. The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101:

**Maximun Power Reduction(MRP) for Power Class 3**

Modulation	Channel bandwidth / Transmission bandwidth( $N_{RB}$ )						MPR(dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	>5	>4	>8	>12	>16	>18	$\leq 1$
16 QAM	$\leq 5$	$\leq 4$	$\leq 8$	$\leq 12$	$\leq 16$	$\leq 18$	$\leq 1$
16 QAM	>5	>4	>8	>12	>16	>18	$\leq 2$

**Configuration of special subframe (lengths of DwPTS/GP/UpPTS)**

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 T_S$	$2192 T_S$	$2560 T_S$	$7680 T_S$	$2192 T_S$	$2560 T_S$
1	$19760 T_S$			$20480 T_S$		
2	$21952 T_S$			$23040 T_S$		
3	$24144 T_S$			$25600 T_S$		
4	$26336 T_S$	$4384 T_S$	$5120 T_S$	$7680 T_S$	$4384 T_S$	$5120 T_S$
5	$6592 T_S$			$20480 T_S$		
6	$19760 T_S$			$23040 T_S$		

7	$21952 T_S$			12800 $T_S$		
8	$24144 T_S$			-	-	-
9	$13168 T_S$			-	-	-

### Uplink-downlink configurations

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

Calculated Duty Cycle = Extended cyclic prefix in uplink x (Ts) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle =  $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

Where Ts =  $1/(15000 \times 2048)$  seconds

#### 3) A-MPR

A-MPR(Additional MPR) has been disabled for all SAR tests by using Network Signalling Value of "NS\_01" on the base station simulator.

#### 4) LTE procedures for SAR testing

##### A) Largest channel bandwidth standalone SAR test requirements

##### i) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is  $\leq 0.8\text{W/kg}$ , testing of the remaining RB offset configurations and required test channels is not required for 1RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is  $> 1.45 \text{ W/kg}$ , SAR is required for all three RB offset configurations

for that required test channel.

ii) QPSK with 50% RB allocation

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

iii) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in i) and ii) are  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.

iv) Higher order modulations

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

B) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> \frac{1}{2}$  dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is  $> 1.45$  W/kg.

### 5G NR Test Configuration

This device support DPS ( Dynamic Power Share ) function to achieve higher uplink data rate keeping the total power unchanged in 5G NSa EN-DC mode according to 3GPP 38. 213 , when the equipment has a dynamic power sharing capability, it adjusts the LTE or NR transmission power so that the instantaneous total power does not exceed the specified value, when the maximum transmission power of NR (  $P_{LTE}$ ,  $P_{NR}$  and the specified total power (  $P$



total )have been set and the instantaneous calculated total transmission power exceeds P total, the NR transmission power is reduced so that the actual transmission power of the user equipment will not exceed P total power

For EN-DC DPS function, considering two conditions, one is the maximum total power tend to 5G NR bands ( 5G NR maximum SAR ) , the other is the maximum total tend to LtE bands ( 5G NR minimum SAR ) summed 5G NR( maximum power ) SAR or LTE( maximum power ) SAR as EN-DC SAR to consider simultaneous transmission evaluation For 5G NR SAR testing, due to test setup limitations, SAR testing for NR was performed using factory test mode software to establish the connection and perform SAR with 100% transmission The DFT-S-OFDM and CP-OFDM waveforms were investigated, and DFT-S-OFDM was found to be the worst case The worst-case scenario for all measurements is based on an engineering evaluation and QPSK was observed as the worst one and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM, and BPSK, modulations

#### **LTE CA additional specification**

The device supports uplink LTE Carrier Aggregation(CA).When carrier aggregation applies, implementation and measurement details for the following are necessary.

- a) Intra-band carrier aggregation requirements for uplink.
- b) Support of contiguous component carriers for intra-band aggregation requirements for uplink.

1. This device supports uplink carrier aggregation for LTE CA\_7C/CA\_38C/CA\_41C with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregationscenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. For the non-contiguously allocated resource blocks which the MPR level is determined by various RB separation and RB sizes requirement, and the allowed MPR levels, settings and the conducted powers are permanently implemented in this device per the 3GPP 36.101 section 6.2.3A.1.3 requirements.

2) The device supports Inter-band uplink LTE CA for CA\_7A with two component carriers in the uplink.

2. The output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.

3. In applying the power measurement procedures to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs

4. Maximum output power measurement is required for each UL CA configuration for the required test channels. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC. The following applied to intra-band contiguous UL CA only:

a. Maximum output power measurement is required for each UL CA configuration for the required test channels. The required test channel should be associated with the UL PCC. For channels at the ends of a frequency band, the SCC and subsequent CCs are added to the side within the transmission band. Otherwise, the CCs should be added alternatively to either side of the PCC

b. UL CA SAR is measured for each exposure condition in each frequency band using the highest SAR configuration tested in standalone LTE mode to establish the UL CA PCC. The SCC and subsequent CC must use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions.

c. When the SAR configuration tested in step b) has a maximum output power specification more than /dB lower than the highest maximum output power conditions measured in the power measurements in step a) above and the reported SAR in step b) is larger than 1.5 W/kg. SAR measurement is also required for the configuration in step a) d. All standalone SAR configurations with SAR > 1.5 W/kg must also be tested by applying the procedures in step b.

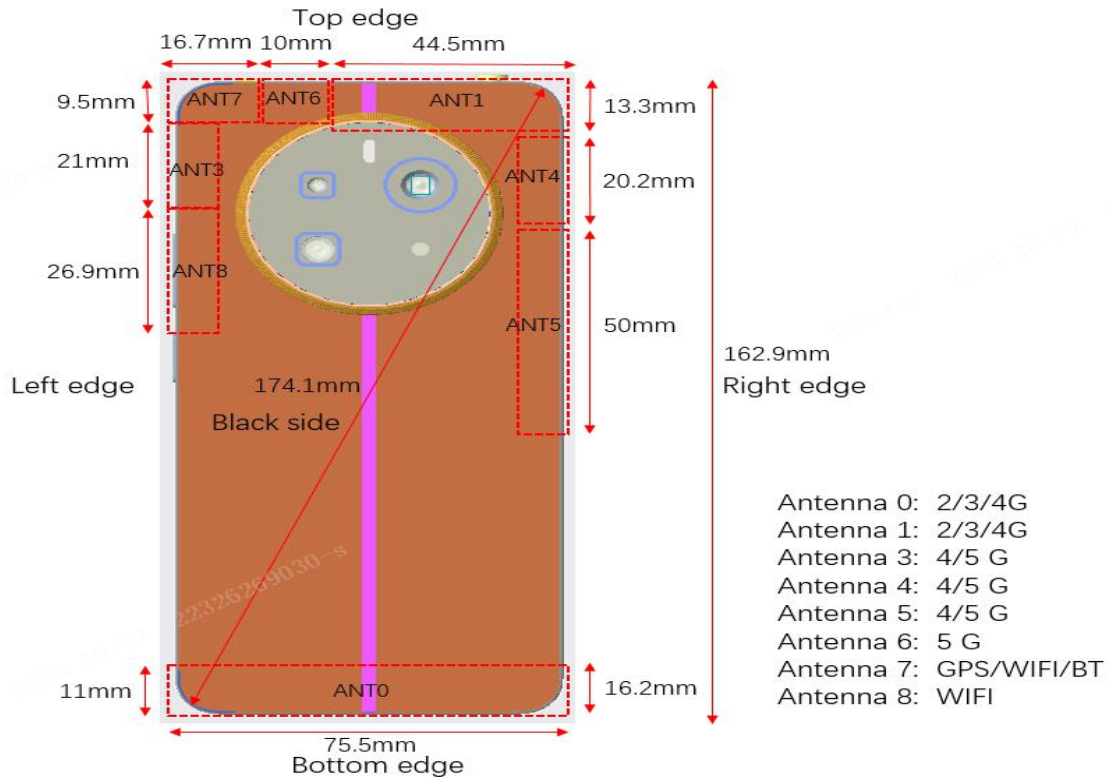
### **WIFI Test Configurations**

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal. The Tx power is set according to tune up procedure for 802.11 b mode by software. This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

For the 802.11b/g/n SAR tests, a communication link is set up with the test mode software for WiFi mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode.

## 10. AR TEST RESULTS

### 10.1. EUT Antenna Locations



ANT0	TX/RX GSM:850/1900 WCDMA : B2/4/5 LTE:B2/4/5/7/12/13/17/26/38/41/66 N5/7/38/41/66
ANT1	TX/RX GSM:850/1900 WCDMA : B2/4/5 LTE:B2/4/5/7/12/13/17/26/38/41/66 N5/7/38/41/66
ANT4	TX/RX : B7/38/41、 SA:N7/38/41
ANT7	GPS/WIFI 2.4G chain0 WIFI 5G chain1 /BT
ANT8	WIFI 2.4G chain1WIFI 5G chain0

## 10.2. Power Reduction Configuration

Overview of power reduction scenarios

The mobile phone device meets SAR requirements by accurately reducing the power of various scenes. Mainly the following scenarios:

- a. Head SAR is mainly determined by whether the receiver is working.
- b. Body SAR is judged by WIFI state working + the receiver not working

Description of power reduction scenarios

1) The mobile phone device supports the receiver detection mechanism. This device uses the receiver to indicate whether the user is making a call in head or body.

When there is a voice call (including VOIP) and the audio is actively routed through the earpiece receiver, which indicating the head exposure condition it will trigger the head exposure reduced the power.

When there is a voice call (including VOIP), and the audio is actively routed through the headset or speaker, which indicating the body exposure conditions will trigger the body exposure reduced the power.

When this device used data mode only, and the receiver will not work too, the reduced the power are same as body exposure.

WWAN Reduced power level table

Reduced level	Receiver state	Antenna	Power reduced bands	Transmitting conditions
Level 1	On (Head Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN Use Only
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
		N5/7/38/41/66		
		Ant4	N7/38/41	
Ant7	LTE Band 7/66			
Ant8	BT/Wifi2.4G/5G			
Level 2	On (Head Scenarion)	Ant1 Ant 0	Wifi2.4G/5G	WWAN+WLAN 2.4G
			GSM850/1900	
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	

		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 3	On (Head Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN+WLAN 5G
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	
		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 4	On (Head Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN+WLAN 5G+BT
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	
		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 5	On (Head Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN+WLAN 2.4G+WLAN 5G
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	
		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 6	Off (Body Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN Use Only
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	
		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 7	Off (Body Scenarion)	Ant1 Ant 0	GSM850/1900	WWAN+WLAN 2.4G
			WCDMA Band II/IV/V	
			LTE Band 2/4/5/7/12/13/17/26/66/38 /41	
			N5/7/38/41/66	

		Ant4	N7/38/41 LTE Band 7/66	
		Ant7	BT/Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 8	Off (Body Scenarion)	Ant1 Ant 0	GSM850/1900 WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/17/26/66/38 /41	WWAN+WLAN 5G
			N5/7/38/41/66	
			N7/38/41 LTE Band 7/66	
			BT/Wifi2.4G/5G	
		Ant4	Wifi2.4G/5G	
		Ant7	Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 9	Off (Body Scenarion)	Ant1 Ant 0	GSM850/1900 WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/17/26/66/38 /41	WWAN+WLAN 5G+BT
			N5/7/38/41/66	
			N7/38/41 LTE Band 7/66	
			BT/Wifi2.4G/5G	
		Ant4	Wifi2.4G/5G	
		Ant7	Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	
Level 10	Off (Body Scenarion)	Ant1 Ant 0	GSM850/1900 WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/17/26/66/38 /41	WWAN+WLAN 2.4G+WLAN 5G
			N5/7/38/41/66	
			N7/38/41 LTE Band 7/66	
			BT/Wifi2.4G/5G	
		Ant4	Wifi2.4G/5G	
		Ant7	Wifi2.4G/5G	
		Ant8	Wifi2.4G/5G	

## 11. MEASUREMENT RESULTS

Result: Passed

Date of testing : 2023.11.21~2023.12.19;  
Ambient temperature : 20°C~22°C  
Relative humidity : 50~68%

### 11.1. Conducted Power

For the measurements a Rohde & Schwarz Radio Communication Tester CMU 200 was used. SAR drift measured at the same position in liquid before and after each SAR test.

Note: CMU200 measures GSM peak and average output power for active timeslots. For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of Timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.1	1:2.77	1:2.08
Time based avg. power compared to slotted avg. power	-9.00dB	-6.00 dB	-4.26dB	-3.00dB

The signalling modes differ as follows:

Mode	Coding scheme	Modulation
GPRS	CS1 to CS4	GMSK
EDGE	MCS1 to MCS4	GMSK
EDGE	MCS5 to MCS9	8PSK

Apart from modulation change (GMSK/8PSK) coding schemes differ in code rate without influence on the RF signal. Therefore one coding scheme per mode was selected for conducted power measurements.



## 11.2. SAR measurement Results

### General Notes:

- 1) Per KDB447498 D01v06, all measurement SAR results are scaled to the maximum tune-up tolerance limit to demonstrate compliant.
- 2) Per KDB447498 D01v06, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is  $\leq 0.8$  W/kg or 2.0W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$ MHz. When the maximum output power variation across the required test channels is  $>1/2$  dB, instead of the middle channel, the highest output power channel must be used.
- 3) Per KDB865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measure SAR is  $\geq 0.8$ W/kg; if the deviation among the repeated measurement is  $\leq 20\%$ , and the measured SAR $<1.45$ W/kg, only one repeated measurement is required.
- 4) Per KDB 941225 D06 Hotspot Mode SAR v02:r01, the DUT dimension is bigger than 9cm\*5cm, so 10mm is chosen as the test separation distance for Hotspot mode. When the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
- 5) Per KDB648474 D04v01r03, SAR is evaluated without a headset connected to the device. When the standalone reported body-worn SAR is  $\leq 1.2$ W/kg, no additional SAR evaluations using a headset are required.
- 6) Per KDB865664 D02v01r02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; plots are also required when the measured SAR is  $>1.5$ W/kg, or  $>7.0$ W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan plots-processing (refer to appendix B for details).

### GSM Notes:

Per KDB941225 D01v03r01, SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including

tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

#### **UMTS Notes:**

Per KDB 941225 D01v03r01, when maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is  $\leq 1.2$  W/kg, SAR measurement is not required for the secondary mode..

Per KDB941225 D01v03, 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. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

#### **LTE Notes:**

- 7) 1. Per KDB 941225 D05v02r05, 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.
- 8) 2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
- 9) 3. Per KDB 941225 D05v02r05, 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  $\leq 0.8$  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.
- 11) 4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is  $>$  not Vs dB higher than the same configuration in QPSK and the reported SAR for the

QPSK configuration is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.

- 12)5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is  $>$  not % dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
- 13)6. For LTE B41/B5/B12/B17 1 B26 1 B381 B71 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, 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.
- 14)7. LTE band 2/4/17/38 SAR test was covered by Band 25/66/12/41; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
- 15)a. The maximum output power, including tolerance, for the smaller band is  $\leq$  the larger band to qualify for the SAR test exclusion. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

#### **LTE Intra-Band CA**

- 16) UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.
- 17) UL CA power measurements were performed for each antennas at with QPSK modulation based on the worst-case standalone SAR.
- 18) The UL CA mode power measurements represent the total power across both carriers. Measurements were made for all supported PCC bandwidths using the channel/RB combination resulting in the highest standalone output power at the least MPR (0 dB). SCCs were set to use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions (highest maximum power with MPR of 0 dB).
- 19) The standalone power measurement is the power for the PCC in the non-CA mode (i.e. single carrier power). In all cases the UL CA power is less than or equal to the standalone power, which is in accordance with the tune-up limits in table below.

20) According to November 2017 TCB workshop, Uplink CA SAR Test Guidance as follows:

- a) When the maximum output for UL CA is  $\leq$  standalone LTE mode (without CA)  
PCC is configured according to the highest standalone SAR configuration tested  
SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC
- b) When the Reported SAR for UL CA configuration, described above, is  $> 1.2$  W/kg, UL CA SAR is also required for all required test channels (PCC based) UL CA SAR is also required for standalone SAR configurations  $> 1.2$  W/kg when they are scaled to the UL CA power level
- c) UL CA SAR is also required for standalone SAR configurations  $> 1.2$  W/kg when they are scaled to the UL

#### 5G NR Notes:

- 21) 1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
- 22) 2. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK 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
- 23) 3. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
- 24) 4. PI/2 BPSK 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  $\leq 0.8$  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
- 25) 5. QPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not be % dB higher than the same configuration in BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
- 26) 6. Smaller bandwidth output power for each RB allocation configuration for this device will not be % dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is  $\leq 1.45$  W/kg, smaller bandwidth SAR

testing is not required for this device.

### ➤General Guidance

1. It is only limited to operate at EN-DC (NSA) for 5G NR implementation According to the character of the device. SAR measurement should be performed separately for the limitations of the probe calculation factors .
2. When the EN-DC is active the output power of the LTE anchors is equal or less than the standalone carrier, therefore the LTE output power and SAR were estimated based on the standalone carrier to performed sim-TX analysis with 5G NR, WL AN and Bluetooth.
3. According to October 2020 TCB Workshop publication, EN-DC SAR assessment should follow:
  - a. If the signal uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.
  - b. If one or the signal uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures found in FCC KDB Publication 865664 D01. And PAG is required for this case .
  - c. If the algebraic sum of the 1-g SAR values is  $> 1.45$  W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance and PAG is required for this case.
  - d. When the algebraic sum of the 1-g SAR values is  $> 1.6$  W/kg, SPL SR analysis procedure should be applied.

### WLAN Notes

Per KDB 248227 D01v02r02, for all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is  $> 0.8$  W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required channels are tested.

Per KDB 248227 D01v02r02, for 802.11g/n SAR testing is required. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is  $> 1.2$  W/kg.

Per KDB 248227 D01v02r02, for OFDM transmission configurations in the 2.4 GHz bands, When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11g/n mode is used for SAR measurement, on the highest measured output power channel for each frequency band.

### 11.3. GSM850 SAR results

Configuration	Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Ant1	original Power	GSM (CS)	Left Cheek	0	190	836.6	32.56	34.00	1.393	0.50	0.69
	original Power	GSM (CS)	Left Tilt	0	190	836.6	32.56	34.00	1.393	0.46	0.64
	original Power	GSM (CS)	Right Cheek	0	190	836.6	32.56	34.00	1.393	0.57	0.80
	original Power	GSM (CS)	Right Tilt	0	190	836.6	32.56	34.00	1.393	0.45	0.62
Ant0	original Power	GSM (CS)	Left Cheek	0	190	836.6	33.12	34.00	1.225	0.14	0.17
	original Power	GSM (CS)	Left Tilt	0	190	836.6	33.12	34.00	1.225	0.08	0.10
	original Power	GSM (CS)	Right Cheek	0	190	836.6	33.12	34.00	1.225	0.10	0.12
	original Power	GSM (CS)	Right Tilt	0	190	836.6	33.12	34.00	1.225	0.06	0.07
Body											
Ant1	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Front	10	190	836.6	28.18	30.00	1.521	0.11	0.17
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Back	10	190	836.6	28.18	30.00	1.521	0.19	0.29
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Left	10	190	836.6	28.18	30.00	1.521	0.10	0.16
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Right	10	190	836.6	28.18	30.00	1.521	0.09	0.14
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Top	10	190	836.6	28.18	30.00	1.521	0.13	0.20
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Bottom	10	190	836.6	28.18	30.00	1.521	0.01	0.01
Ant0	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Front	10	190	836.6	28.54	29.75	1.321	0.14	0.18
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Back	10	190	836.6	28.54	29.75	1.321	0.19	0.25
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Left	10	190	836.6	28.54	29.75	1.321	0.19	0.24
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Right	10	190	836.6	28.54	29.75	1.321	0.11	0.14
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Top	10	190	836.6	28.54	29.75	1.321	0.00	0.00
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Bottom	10	190	836.6	28.54	29.75	1.321	0.17	0.23
Ant1	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Front	15	190	836.6	29.38	29.75	1.089	0.07	0.08
	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Back	15	190	836.6	29.38	29.75	1.089	0.10	0.11
Ant0	original	GPRS/EDGE	Front	15	190	836.6	33.12	34.00	1.225	0.19	0.23

	Power	(GMSK, 2 Tx slots)									
	original Power	GPRS/EDGE (GMSK, 2 Tx slots)	Back	15	190	836.6	33.12	34.00	1.225	0.24	0.29



## 11.4. PCS1900 SAR results

Configuration	Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Ant1	State2	GSM (CS)	Left Cheek	0	661	1880	25.81	27.75	1.563	0.24	0.38
	State2	GSM (CS)	Left Tilt	0	661	1880	25.81	27.75	1.563	0.30	0.46
	State2	GSM (CS)	Right Cheek	0	661	1880	25.81	27.75	1.563	0.31	0.48
	State2	GSM (CS)	Right Tilt	0	661	1880	25.81	27.75	1.563	0.38	0.59
Ant0	original Power	GSM (CS)	Left Cheek	0	661	1880	30.25	31.00	1.189	0.07	0.08
	original Power	GSM (CS)	Left Tilt	0	661	1880	30.25	31.00	1.189	0.05	0.06
	original Power	GSM (CS)	Right Cheek	0	661	1880	30.25	31.00	1.189	0.06	0.07
	original Power	GSM (CS)	Right Tilt	0	661	1880	30.25	31.00	1.189	0.06	0.07
Body											
Ant1	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Front	10	661	1880	23.34	24.75	1.384	0.06	0.09
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Back	10	661	1880	23.34	24.75	1.384	0.14	0.19
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Left	10	661	1880	23.34	24.75	1.384	0.02	0.02
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Right	10	661	1880	23.34	24.75	1.384	0.02	0.02
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Top	10	661	1880	23.34	24.75	1.384	0.22	0.30
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Bottom	10	661	1880	23.34	24.75	1.384	0.01	0.01
Ant0	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Front	10	661	1880	23.98	25.25	1.340	0.25	0.34
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Back	10	661	1880	23.98	25.25	1.340	0.26	0.34
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Left	10	661	1880	23.98	25.25	1.340	0.04	0.06
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Right	10	661	1880	23.98	25.25	1.340	0.09	0.12
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Top	10	661	1880	23.98	25.25	1.340	0.01	0.01
	State3	GPRS/EDGE (GMSK, 2 Tx slots)	Bottom	10	661	1880	23.98	25.25	1.340	0.30	0.40
Ant1	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Front	15	661	1880	25.27	26.00	1.183	0.05	0.06
	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Back	15	661	1880	25.27	26.00	1.183	0.12	0.14
Ant0	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Front	15	661	1880	26.48	26.75	1.064	0.13	0.14
	State1	GPRS/EDGE (GMSK, 2 Tx slots)	Back	15	661	1880	26.48	26.75	1.064	0.19	0.20

		slots)										
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## 11.5. WCDMA II SAR results

Configuration	Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
Ant1	State2	RMC	Left Cheek	0	9400	1880	16.92	18.5	1.439	0.33	0.48
	State2	RMC	Left Tilt	0	9400	1880	16.92	18.5	1.439	0.41	0.59
	State2	RMC	Right Cheek	0	9400	1880	16.92	18.5	1.439	0.42	0.60
	State2	RMC	Right Tilt	0	9400	1880	16.92	18.5	1.439	0.53	0.77
Ant0	original Power	RMC	Left Cheek	0	9400	1880	24.33	25.0	1.167	0.09	0.11
	original Power	RMC	Left Tilt	0	9400	1880	24.33	25.0	1.167	0.07	0.08
	original Power	RMC	Right Cheek	0	9400	1880	24.33	25.0	1.167	0.08	0.09
	original Power	RMC	Right Tilt	0	9400	1880	24.33	25.0	1.167	0.07	0.08
Body											
Ant1	State3	RMC	Front	10	9400	1880	18.02	18.5	1.117	0.08	0.09
	State3	RMC	Back	10	9400	1880	18.02	18.5	1.117	0.16	0.18
	State3	RMC	Left	10	9400	1880	18.02	18.5	1.117	0.02	0.02
	State3	RMC	Right	10	9400	1880	18.02	18.5	1.117	0.01	0.01
	State3	RMC	Top	10	9400	1880	18.02	18.5	1.117	0.21	0.24
	State3	RMC	Bottom	10	9400	1880	18.02	18.5	1.117	0.01	0.01
Ant0	State3	RMC	Front	10	9400	1880	20.85	21.5	1.161	0.21	0.24
	State3	RMC	Back	10	9400	1880	20.85	21.5	1.161	0.31	0.36
	State3	RMC	Left	10	9400	1880	20.85	21.5	1.161	0.05	0.05
	State3	RMC	Right	10	9400	1880	20.85	21.5	1.161	0.10	0.12
	State3	RMC	Top	10	9400	1880	20.85	21.5	1.161	0.04	0.04
	State3	RMC	Bottom	10	9400	1880	20.85	21.5	1.161	0.40	0.46
Ant1	State1	RMC	Front	15	9400	1880	18.05	20.0	1.567	0.06	0.09
	State1	RMC	Back	15	9400	1880	18.05	20.0	1.567	0.11	0.16
Ant0	State1	RMC	Front	15	9400	1880	21.29	23.0	1.483	0.16	0.24
	State1	RMC	Back	15	9400	1880	21.29	23.0	1.483	0.21	0.31

## 11.6. WCDMA IV SAR results

Configuration	Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
Ant1	State2	RMC	Left Cheek	0	1412	1732.4	15.39	16.8	1.368	0.33	0.45
	State2	RMC	Left Tilt	0	1412	1732.4	15.39	16.8	1.368	0.44	0.60
	State2	RMC	Right Cheek	0	1412	1732.4	15.39	16.8	1.368	0.44	0.60
	State2	RMC	Right Tilt	0	1412	1732.4	15.39	16.8	1.368	0.62	0.85
	State2	RMC	Right Tilt	0	1312	1712.4	15.40	16.8	1.365	0.58	0.79
	State2	RMC	Right Tilt	0	1513	1752.6	15.31	16.8	1.393	0.55	0.77
Ant0	original Power	RMC	Left Cheek	0	1412	1732.4	24.37	25.0	1.156	0.08	0.09
	original Power	RMC	Left Tilt	0	1412	1732.4	24.37	25.0	1.156	0.01	0.02
	original Power	RMC	Right Cheek	0	1412	1732.4	24.37	25.0	1.156	0.04	0.04
	original Power	RMC	Right Tilt	0	1412	1732.4	24.37	25.0	1.156	0.05	0.06
Body											
Ant1	State3	RMC	Front	10	1412	1732.4	16.49	17.0	1.125	0.10	0.11
	State3	RMC	Back	10	1412	1732.4	16.49	17.0	1.125	0.28	0.31
	State3	RMC	Left	10	1412	1732.4	16.49	17.0	1.125	0.03	0.03
	State3	RMC	Right	10	1412	1732.4	16.49	17.0	1.125	0.03	0.03
	State3	RMC	Top	10	1412	1732.4	16.49	17.0	1.125	0.29	0.33
	State3	RMC	Bottom	10	1412	1732.4	16.49	17.0	1.125	0.01	0.02
Ant0	State3	RMC	Front	10	1412	1732.4	19.89	20.5	1.151	0.14	0.16
	State3	RMC	Back	10	1412	1732.4	19.89	20.5	1.151	0.26	0.30
	State3	RMC	Left	10	1412	1732.4	19.89	20.5	1.151	0.02	0.02
	State3	RMC	Right	10	1412	1732.4	19.89	20.5	1.151	0.07	0.08
	State3	RMC	Top	10	1412	1732.4	19.89	20.5	1.151	0.01	0.01
	State3	RMC	Bottom	10	1412	1732.4	19.89	20.5	1.151	0.34	0.39
Ant1	State1	RMC	Front	15	1412	1732.4	16.86	18.5	1.459	0.09	0.12
	State1	RMC	Back	15	1412	1732.4	16.86	18.5	1.459	0.18	0.27
Ant0	State1	RMC	Front	15	1412	1732.4	20.79	22.5	1.483	0.11	0.16
	State1	RMC	Back	15	1412	1732.4	20.79	22.5	1.483	0.20	0.29

## 11.7. WCDMA V SAR results

Configuration	Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
Ant1	original Power	RMC	Left Cheek	0	4183	836.6	23.98	25.0	1.265	0.68	0.86
	original Power	RMC	Left Tilt	0	4183	836.6	23.98	25.0	1.265	0.64	0.81
	original Power	RMC	Right Cheek	0	4183	836.6	23.98	25.0	1.265	0.73	0.93
	original Power	RMC	Right Tilt	0	4183	836.6	23.98	25.0	1.265	0.57	0.72
	original Power	RMC	Right Cheek	0	4132	826.4	23.98	25.0	1.265	0.70	0.88
	original Power	RMC	Right Cheek	0	4233	846.6	23.99	25.0	1.262	0.71	0.89
Ant0	original Power	RMC	Left Cheek	0	4183	836.6	24.38	25.0	1.153	0.16	0.19
	original Power	RMC	Left Tilt	0	4183	836.6	24.38	25.0	1.153	0.09	0.10
	original Power	RMC	Right Cheek	0	4183	836.6	24.38	25.0	1.153	0.12	0.14
	original Power	RMC	Right Tilt	0	4183	836.6	24.38	25.0	1.153	0.07	0.08
Body											
Ant1	original Power	RMC	Front	10	4183	836.6	23.98	25.0	1.265	0.13	0.16
	original Power	RMC	Back	10	4183	836.6	23.98	25.0	1.265	0.21	0.26
	original Power	RMC	Left	10	4183	836.6	23.98	25.0	1.265	0.12	0.15
	original Power	RMC	Right	10	4183	836.6	23.98	25.0	1.265	0.11	0.14
	original Power	RMC	Top	10	4183	836.6	23.98	25.0	1.265	0.17	0.22
	original Power	RMC	Bottom	10	4183	836.6	23.98	25.0	1.265	0.01	0.01
Ant0	original Power	RMC	Front	10	4183	836.6	24.38	25.0	1.153	0.11	0.13
	original Power	RMC	Back	10	4183	836.6	24.38	25.0	1.153	0.18	0.21
	original Power	RMC	Left	10	4183	836.6	24.38	25.0	1.153	0.14	0.16
	original Power	RMC	Right	10	4183	836.6	24.38	25.0	1.153	0.08	0.09
	original Power	RMC	Top	10	4183	836.6	24.38	25.0	1.153	0.01	0.01
	original Power	RMC	Bottom	10	4183	836.6	24.38	25.0	1.153	0.17	0.19
Ant1	original Power	RMC	Front	15	4183	836.6	23.98	25.0	1.265	0.12	0.16
	original Power	RMC	Back	15	4183	836.6	23.98	25.0	1.265	0.16	0.20
Ant0	original Power	RMC	Front	15	4183	836.6	24.38	25.0	1.153	0.12	0.14
	original Power	RMC	Back	15	4183	836.6	24.38	25.0	1.153	0.14	0.16

### 11.8. LTE Band 2 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	18900	1880	17.75	19.00	1.334	0.34	0.45
	State2	20MHz	QPSK	1	50	Left Tilt	0	18900	1880	17.75	19.00	1.334	0.42	0.56
	State2	20MHz	QPSK	1	50	Right Cheek	0	18900	1880	17.75	19.00	1.334	0.44	0.58
	State2	20MHz	QPSK	1	50	Right Tilt	0	18900	1880	17.75	19.00	1.334	0.54	0.72
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	18900	1880	23.10	24.50	1.380	0.12	0.17
	original Power	20MHz	QPSK	1	50	Left Tilt	0	18900	1880	23.10	24.50	1.380	0.09	0.13
	original Power	20MHz	QPSK	1	50	Right Cheek	0	18900	1880	23.10	24.50	1.380	0.12	0.16
	original Power	20MHz	QPSK	1	50	Right Tilt	0	18900	1880	23.10	24.50	1.380	0.11	0.15
Body														
Ant1	State3	20MHz	QPSK	1	50	Front	10	18900	1880	17.88	18.75	1.222	0.07	0.09
	State3	20MHz	QPSK	1	50	Back	10	18900	1880	17.88	18.75	1.222	0.17	0.21
	State3	20MHz	QPSK	1	50	Left	10	18900	1880	17.88	18.75	1.222	0.02	0.02
	State3	20MHz	QPSK	1	50	Right	10	18900	1880	17.88	18.75	1.222	0.02	0.02
	State3	20MHz	QPSK	1	50	Top	10	18900	1880	17.88	18.75	1.222	0.23	0.28
Ant0	State3	20MHz	QPSK	1	50	Front	10	18900	1880	19.67	21.00	1.358	0.19	0.26
	State3	20MHz	QPSK	1	50	Back	10	18900	1880	19.67	21.00	1.358	0.29	0.39
	State3	20MHz	QPSK	1	50	Left	10	18900	1880	19.67	21.00	1.358	0.04	0.06
	State3	20MHz	QPSK	1	50	Right	10	18900	1880	19.67	21.00	1.358	0.10	0.13
	State3	20MHz	QPSK	1	50	Top	10	18900	1880	19.67	21.00	1.358	0.04	0.05
	State3	20MHz	QPSK	1	50	Bottom	10	18900	1880	19.67	21.00	1.358	0.38	0.52
Ant1	State1	20MHz	QPSK	1	50	Front	15	18900	1880	18.45	19.75	1.349	0.02	0.02
	State1	20MHz	QPSK	1	50	Back	15	18900	1880	18.45	19.75	1.349	0.09	0.12
Ant0	State1	20MHz	QPSK	1	50	Front	15	18900	1880	21.61	23.00	1.377	0.17	0.23
	State1	20MHz	QPSK	1	50	Back	15	18900	1880	21.61	23.00	1.377	0.25	0.35

## 11.9. LTE Band 4 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	20175	1732.5	16.25	17.50	1.334	0.35	0.47
	State2	20MHz	QPSK	1	50	Left Tilt	0	20175	1732.5	16.25	17.50	1.334	0.46	0.61
	State2	20MHz	QPSK	1	50	Right Cheek	0	20175	1732.5	16.25	17.50	1.334	0.48	0.65
	State2	20MHz	QPSK	1	50	Right Tilt	0	20175	1732.5	16.25	17.50	1.334	0.67	0.89
	State2	20MHz	QPSK	1	50	Right Tilt	0	20050	1754.9	16.18	17.50	1.355	0.65	0.88
	State2	20MHz	QPSK	1	50	Right Tilt	0	20300	1745	16.16	17.50	1.361	0.62	0.85
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	20175	1732.5	23.07	24.50	1.390	0.10	0.14
	original Power	20MHz	QPSK	1	50	Left Tilt	0	20175	1732.5	23.07	24.50	1.390	0.01	0.01
	original Power	20MHz	QPSK	1	50	Right Cheek	0	20175	1732.5	23.07	24.50	1.390	0.06	0.09
	original Power	20MHz	QPSK	1	50	Right Tilt	0	20175	1732.5	23.07	24.50	1.390	0.07	0.10
Body														
Ant1	State3	20MHz	QPSK	1	50	Front	10	20175	1732.5	16.42	17.50	1.282	0.11	0.14
	State3	20MHz	QPSK	1	50	Back	10	20175	1732.5	16.42	17.50	1.282	0.30	0.38
	State3	20MHz	QPSK	1	50	Left	10	20175	1732.5	16.42	17.50	1.282	0.01	0.01
	State3	20MHz	QPSK	1	50	Right	10	20175	1732.5	16.42	17.50	1.282	0.02	0.02
	State3	20MHz	QPSK	1	50	Top	10	20175	1732.5	16.42	17.50	1.282	0.32	0.41
	State3	20MHz	QPSK	1	50	Bottom	10	20175	1732.5	16.42	17.50	1.282	0.01	0.01
Ant0	State3	20MHz	QPSK	1	50	Front	10	20175	1732.5	19.98	21.50	1.419	0.17	0.24
	State3	20MHz	QPSK	1	50	Back	10	20175	1732.5	19.98	21.50	1.419	0.32	0.45
	State3	20MHz	QPSK	1	50	Left	10	20175	1732.5	19.98	21.50	1.419	0.05	0.07
	State3	20MHz	QPSK	1	50	Right	10	20175	1732.5	19.98	21.50	1.419	0.08	0.11
	State3	20MHz	QPSK	1	50	Top	10	20175	1732.5	19.98	21.50	1.419	0.01	0.02
	State3	20MHz	QPSK	1	50	Bottom	10	20175	1732.5	19.98	21.50	1.419	0.42	0.59
Ant1	State1	20MHz	QPSK	1	50	Front	15	20175	1732.5	17.97	19.25	1.343	0.11	0.14
	State1	20MHz	QPSK	1	50	Back	15	20175	1732.5	17.97	19.25	1.343	0.20	0.27
Ant0	State1	20MHz	QPSK	1	50	Front	15	20175	1732.5	21.74	23.25	1.416	0.13	0.18
	State1	20MHz	QPSK	1	50	Back	15	20175	1732.5	21.74	23.25	1.416	0.26	0.37

### 11.10. LTE Band 5 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	10MHz	QPSK	1	25	Left Cheek	0	20525	836.5	20.30	22.00	1.479	0.35	0.52
	State2	10MHz	QPSK	1	25	Left Tilt	0	20525	836.5	20.30	22.00	1.479	0.33	0.49
	State2	10MHz	QPSK	1	25	Right Cheek	0	20525	836.5	20.30	22.00	1.479	0.38	0.55
	State2	10MHz	QPSK	1	25	Right Tilt	0	20525	836.5	20.30	22.00	1.479	0.30	0.44
Ant0	original Power	10MHz	QPSK	1	25	Left Cheek	0	20525	836.5	23.49	25.00	1.416	0.15	0.21
	original Power	10MHz	QPSK	1	25	Left Tilt	0	20525	836.5	23.49	25.00	1.416	0.09	0.13
	original Power	10MHz	QPSK	1	25	Right Cheek	0	20525	836.5	23.49	25.00	1.416	0.12	0.16
	original Power	10MHz	QPSK	1	25	Right Tilt	0	20525	836.5	23.49	25.00	1.416	0.07	0.10
Body														
Ant1	original Power	10MHz	QPSK	1	25	Front	10	20525	836.5	23.38	25.00	1.452	0.12	0.18
	original Power	10MHz	QPSK	1	25	Back	10	20525	836.5	23.38	25.00	1.452	0.21	0.30
	original Power	10MHz	QPSK	1	25	Left	10	20525	836.5	23.38	25.00	1.452	0.11	0.16
	original Power	10MHz	QPSK	1	25	Right	10	20525	836.5	23.38	25.00	1.452	0.11	0.15
	original Power	10MHz	QPSK	1	25	Top	10	20525	836.5	23.38	25.00	1.452	0.17	0.24
	original Power	10MHz	QPSK	1	25	Bottom	10	20525	836.5	23.38	25.00	1.452	0.01	0.01
Ant0	original Power	10MHz	QPSK	1	25	Front	10	20525	836.5	23.49	25.00	1.416	0.10	0.13
	original Power	10MHz	QPSK	1	25	Back	10	20525	836.5	23.49	25.00	1.416	0.16	0.22
	original Power	10MHz	QPSK	1	25	Left	10	20525	836.5	23.49	25.00	1.416	0.12	0.17
	original Power	10MHz	QPSK	1	25	Right	10	20525	836.5	23.49	25.00	1.416	0.07	0.10
	original Power	10MHz	QPSK	1	25	Top	10	20525	836.5	23.49	25.00	1.416	0.01	0.02
	original Power	10MHz	QPSK	1	25	Bottom	10	20525	836.5	23.49	25.00	1.416	0.13	0.18
Ant1	original Power	10MHz	QPSK	1	25	Front	15	20525	836.5	23.38	25.00	1.452	0.11	0.16
	original Power	10MHz	QPSK	1	25	Back	15	20525	836.5	23.38	25.00	1.452	0.15	0.21
Ant0	original Power	10MHz	QPSK	1	25	Front	15	20525	836.5	23.49	25.00	1.416	0.10	0.15
	original Power	10MHz	QPSK	1	25	Back	15	20525	836.5	23.49	25.00	1.416	0.13	0.19



### 11.11. LTE Band7 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	21100	2535	19.93	21.45	1.419	0.32	0.45
	State2	20MHz	QPSK	1	50	Left Tilt	0	21100	2535	19.93	21.45	1.419	0.39	0.55
	State2	20MHz	QPSK	1	50	Right Cheek	0	21100	2535	19.93	21.45	1.419	0.41	0.57
	State2	20MHz	QPSK	1	50	Right Tilt	0	21100	2535	19.93	21.45	1.419	0.47	0.66
	State2	20MHz	QPSK	1	0	Right Tilt	0	21001(P CC)	2525.1(P CC)	19.65	21.45	1.514	0.43	0.65
			0	0	21199(S CC)			2544.9(S CC)						
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	21100	2535	22.89	24.20	1.352	0.05	0.06
	original Power	20MHz	QPSK	1	50	Left Tilt	0	21100	2535	22.89	24.20	1.352	0.04	0.05
	original Power	20MHz	QPSK	1	50	Right Cheek	0	21100	2535	22.89	24.20	1.352	0.08	0.11
	original Power	20MHz	QPSK	1	0	Right Cheek	0	21001(P CC)	2525.1(P CC)	22.61	24.20	1.442	0.07	0.10
				0	0			21199(S CC)	2544.9(S CC)					
original Power	20MHz	QPSK	1	50	Right Tilt	0	21100	2535	22.89	24.20	1.352	0.07	0.10	
Ant4	State2	20MHz	QPSK	1	50	Left Cheek	0	21100	2535	13.46	14.20	1.186	0.13	0.15
	State2	20MHz	QPSK	1	50	Left Tilt	0	21100	2535	13.46	14.20	1.186	0.07	0.08
	State2	20MHz	QPSK	1	50	Right Cheek	0	21100	2535	13.46	14.20	1.186	0.36	0.42
	State2	20MHz	QPSK	1	0	Right Cheek	0	21001(P CC)	2525.1(P CC)	12.99	14.20	1.321	0.31	0.41
				0	0			21199(S CC)	2544.9(S CC)					
State2	20MHz	QPSK	1	50	Right Tilt	0	21100	2535	13.46	14.20	1.186	0.15	0.18	
Body														
Ant1	State3	20MHz	QPSK	1	50	Front	10	21100	2535	20.68	21.70	1.265	0.06	0.07
	State3	20MHz	QPSK	1	50	Back	10	21100	2535	20.68	21.70	1.265	0.09	0.11
	State3	20MHz	QPSK	1	50	Left	10	21100	2535	20.68	21.70	1.265	0.09	0.11
	State3	20MHz	QPSK	1	50	Right	10	21100	2535	20.68	21.70	1.265	0.05	0.06
	State3	20MHz	QPSK	1	50	Top	10	21100	2535	20.68	21.70	1.265	0.17	0.21
	State3	20MHz	QPSK	1	0	Top	10	21001(P CC)	2525.1(P CC)	20.21	21.70	1.409	0.14	0.20
				0	0			21199(S CC)	2544.9(S CC)					
State3	20MHz	QPSK	1	50	Bottom	10	21100	2535	20.68	21.70	1.265	0.04	0.05	
Ant0	State3	20MHz	QPSK	1	50	Front	10	21100	2535	20.41	21.70	1.346	0.11	0.14
	State3	20MHz	QPSK	1	50	Back	10	21100	2535	20.41	21.70	1.346	0.45	0.60
	State3	20MHz	QPSK	1	0	Back	10	21001(P CC)	2525.1(P CC)	20.15	21.70	1.429	0.41	0.59
				0	0			21199(S CC)	2544.9(S CC)					
	State3	20MHz	QPSK	1	50	Left	10	21100	2535	20.41	21.70	1.346	0.04	0.05
	State3	20MHz	QPSK	1	50	Right	10	21100	2535	20.41	21.70	1.346	0.10	0.13
	State3	20MHz	QPSK	1	50	Top	10	21100	2535	20.41	21.70	1.346	0.05	0.07
State3	20MHz	QPSK	1	50	Bottom	10	21100	2535	20.41	21.70	1.346	0.20	0.27	
Ant4	State3	20MHz	QPSK	1	50	Front	10	21100	2535	20.57	21.20	1.156	0.46	0.53

Ant1	State3	20MHz	QPSK	1	50	Back	10	21100	2535	20.57	21.20	1.156	0.53	0.62
	State3	20MHz	QPSK	1	0	Back	10	21001(P CC)	2525.1(P CC)	20.28	21.20	1.236	0.49	0.61
				0	0			21199(S CC)	2544.9(S CC)					
	State3	20MHz	QPSK	1	50	Left	10	21100	2535	20.57	21.20	1.156	0.51	0.59
	State3	20MHz	QPSK	1	50	Right	10	21100	2535	20.57	21.20	1.156	0.01	0.01
	State3	20MHz	QPSK	1	50	Top	10	21100	2535	20.57	21.20	1.156	0.16	0.18
	State3	20MHz	QPSK	1	50	Bottom	10	21100	2535	20.57	21.20	1.156	0.06	0.07
	original Power	20MHz	QPSK	1	50	Front	15	21100	2535	23.20	24.20	1.259	0.05	0.07
	original Power	20MHz	QPSK	1	50	Back	15	21100	2535	23.20	24.20	1.259	0.07	0.09
	original Power	20MHz	QPSK	1	0	Back	15	21001(P CC)	2525.1(P CC)	22.85	24.20	1.365	0.04	0.05
0	0	21199(S CC)	2544.9(S CC)											
Ant0	State1	20MHz	QPSK	1	50	Front	15	21100	2535	22.02	23.45	1.390	0.07	0.10
	State1	20MHz	QPSK	1	50	Back	15	21100	2535	22.02	23.45	1.390	0.26	0.36
Ant4	State1	20MHz	QPSK	1	0	Back	15	21001(P CC)	2525.1(P CC)	21.67	23.45	1.365	0.04	0.05
				0	0			21199(S CC)	2544.9(S CC)					
	original Power	20MHz	QPSK	1	50	Front	15	21100	2535	21.96	22.70	1.186	0.22	0.26
	original Power	20MHz	QPSK	1	0	Front	15	21001(P CC)	2525.1(P CC)	21.57	22.70	1.297	0.19	0.25
				0	0			21199(S CC)	2544.9(S CC)					
original Power	20MHz	QPSK	1	50	Back	15	21100	2535	21.96	22.70	1.186	0.21	0.25	

### 11.12. LTE Band12 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	original Power	10MHz	QPSK	1	25	Left Cheek	0	23090	707	23.69	25.00	1.352	0.37	0.50
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23090	707	23.69	25.00	1.352	0.39	0.52
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23090	707	23.69	25.00	1.352	0.43	0.58
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23090	707	23.69	25.00	1.352	0.41	0.55
Ant0	original Power	10MHz	QPSK	1	25	Left Cheek	0	23090	707	23.51	25.00	1.409	0.14	0.19
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23090	707	23.51	25.00	1.409	0.06	0.08
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23090	707	23.51	25.00	1.409	0.10	0.14
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23090	707	23.51	25.00	1.409	0.05	0.07
Body														
Ant1	original Power	10MHz	QPSK	1	13	Front	10	23090	707	23.69	25.00	1.352	0.12	0.16
	original Power	10MHz	QPSK	1	13	Back	10	23090	707	23.69	25.00	1.352	0.19	0.25
	original Power	10MHz	QPSK	1	13	Left	10	23090	707	23.69	25.00	1.352	0.16	0.21
	original Power	10MHz	QPSK	1	13	Right	10	23090	707	23.69	25.00	1.352	0.11	0.15
	original Power	10MHz	QPSK	1	13	Top	10	23090	707	23.69	25.00	1.352	0.09	0.12
	original Power	10MHz	QPSK	1	13	Bottom	10	23090	707	23.69	25.00	1.352	0.01	0.01
Ant0	State3	10MHz	QPSK	1	13	Front	10	23090	707	22.56	24.00	1.393	0.09	0.12
	State3	10MHz	QPSK	1	13	Back	10	23090	707	22.56	24.00	1.393	0.14	0.19
	State3	10MHz	QPSK	1	13	Left	10	23090	707	22.56	24.00	1.393	0.12	0.17
	State3	10MHz	QPSK	1	13	Right	10	23090	707	22.56	24.00	1.393	0.09	0.13
	State3	10MHz	QPSK	1	13	Top	10	23090	707	22.56	24.00	1.393	0.01	0.01
	State3	10MHz	QPSK	1	13	Bottom	10	23090	707	22.56	24.00	1.393	0.07	0.09
Ant1	original Power	10MHz	QPSK	1	13	Front	15	23090	707	23.69	25.00	1.352	0.13	0.17
	original Power	10MHz	QPSK	1	13	Back	15	23090	707	23.69	25.00	1.352	0.18	0.24
Ant0	original Power	10MHz	QPSK	1	13	Front	15	23090	707	23.51	25.00	1.409	0.10	0.15
	original Power	10MHz	QPSK	1	13	Back	15	23090	707	23.51	25.00	1.409	0.16	0.22

### 11.13. LTE Band13 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	original Power	10MHz	QPSK	1	25	Left Cheek	0	23230	782	23.05	25.00	1.567	0.49	0.76
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23230	782	23.05	25.00	1.567	0.48	0.75
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23230	782	23.05	25.00	1.567	0.56	0.87
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23230	782	23.05	25.00	1.567	0.45	0.71
Ant0	original Power	10MHz	QPSK	1	25	Left Cheek	0	23230	782	23.23	25.00	1.503	0.14	0.21
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23230	782	23.23	25.00	1.503	0.08	0.13
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23230	782	23.23	25.00	1.503	0.12	0.18
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23230	782	23.23	25.00	1.503	0.09	0.13
Body														
Ant1	original Power	10MHz	QPSK	1	25	Front	10	23230	782	23.05	25.00	1.567	0.10	0.15
	original Power	10MHz	QPSK	1	25	Back	10	23230	782	23.05	25.00	1.567	0.17	0.27
	original Power	10MHz	QPSK	1	25	Left	10	23230	782	23.05	25.00	1.567	0.11	0.17
	original Power	10MHz	QPSK	1	25	Right	10	23230	782	23.05	25.00	1.567	0.09	0.14
	original Power	10MHz	QPSK	1	25	Top	10	23230	782	23.05	25.00	1.567	0.13	0.21
	original Power	10MHz	QPSK	1	25	Bottom	10	23230	782	23.05	25.00	1.567	0.01	0.02
Ant0	original Power	10MHz	QPSK	1	25	Front	10	23230	782	23.23	25.00	1.503	0.14	0.21
	original Power	10MHz	QPSK	1	25	Back	10	23230	782	23.23	25.00	1.503	0.20	0.30
	original Power	10MHz	QPSK	1	25	Left	10	23230	782	23.23	25.00	1.503	0.13	0.19
	original Power	10MHz	QPSK	1	25	Right	10	23230	782	23.23	25.00	1.503	0.13	0.19
	original Power	10MHz	QPSK	1	25	Top	10	23230	782	23.23	25.00	1.503	0.01	0.01
	original Power	10MHz	QPSK	1	25	Bottom	10	23230	782	23.23	25.00	1.503	0.16	0.24
Ant1	original Power	10MHz	QPSK	1	25	Front	15	23230	782	23.05	25.00	1.567	0.10	0.16
	original Power	10MHz	QPSK	1	25	Back	15	23230	782	23.05	25.00	1.567	0.13	0.20
Ant0	original Power	10MHz	QPSK	1	25	Front	15	23230	782	23.23	25.00	1.503	0.15	0.22
	original Power	10MHz	QPSK	1	25	Back	15	23230	782	23.23	25.00	1.503	0.19	0.28

### 1.1.LTE Band17 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	original Power	10MHz	QPSK	1	25	Left Cheek	0	23790	710	23.64	25.00	1.368	0.38	0.53
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23790	710	23.64	25.00	1.368	0.39	0.53
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23790	710	23.64	25.00	1.368	0.44	0.61
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23790	710	23.64	25.00	1.368	0.42	0.57
Ant0	original Power	10MHz	QPSK	1	25	Left Cheek	0	23790	710	23.98	25.00	1.265	0.15	0.19
	original Power	10MHz	QPSK	1	25	Left Tilt	0	23790	710	23.98	25.00	1.265	0.08	0.10
	original Power	10MHz	QPSK	1	25	Right Cheek	0	23790	710	23.98	25.00	1.265	0.12	0.16
	original Power	10MHz	QPSK	1	25	Right Tilt	0	23790	710	23.98	25.00	1.265	0.07	0.08
Body														
Ant1	original Power	10MHz	QPSK	1	25	Front	10	23790	710	23.64	25.00	1.368	0.11	0.16
	original Power	10MHz	QPSK	1	25	Back	10	23790	710	23.64	25.00	1.368	0.18	0.25
	original Power	10MHz	QPSK	1	25	Left	10	23790	710	23.64	25.00	1.368	0.17	0.23
	original Power	10MHz	QPSK	1	25	Right	10	23790	710	23.64	25.00	1.368	0.13	0.17
	original Power	10MHz	QPSK	1	25	Top	10	23790	710	23.64	25.00	1.368	0.10	0.13
	original Power	10MHz	QPSK	1	25	Bottom	10	23790	710	23.64	25.00	1.368	0.02	0.02
Ant0	State3	10MHz	QPSK	1	25	Front	10	23790	710	23.24	24.25	1.262	0.10	0.13
	State3	10MHz	QPSK	1	25	Back	10	23790	710	23.24	24.25	1.262	0.16	0.20
	State3	10MHz	QPSK	1	25	Left	10	23790	710	23.24	24.25	1.262	0.15	0.19
	State3	10MHz	QPSK	1	25	Right	10	23790	710	23.24	24.25	1.262	0.10	0.12
	State3	10MHz	QPSK	1	25	Top	10	23790	710	23.24	24.25	1.262	0.01	0.01
	State3	10MHz	QPSK	1	25	Bottom	10	23790	710	23.24	24.25	1.262	0.08	0.10
Ant1	original Power	10MHz	QPSK	1	25	Front	15	23790	710	23.64	25.00	1.368	0.13	0.18
	original Power	10MHz	QPSK	1	25	Back	15	23790	710	23.64	25.00	1.368	0.17	0.24
Ant0	original Power	10MHz	QPSK	1	25	Front	15	23790	710	23.98	25.00	1.265	0.14	0.18
	original Power	10MHz	QPSK	1	25	Back	15	23790	710	23.98	25.00	1.265	0.18	0.22

### 11.14. LTE Band26 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	15MHz	QPSK	1	37	Left Cheek	0	26865	831.5	20.59	22.50	1.552	0.35	0.54
	State2	15MHz	QPSK	1	37	Left Tilt	0	26865	831.5	20.59	22.50	1.552	0.33	0.51
	State2	15MHz	QPSK	1	37	Right Cheek	0	26865	831.5	20.59	22.50	1.552	0.39	0.61
	State2	15MHz	QPSK	1	37	Right Tilt	0	26865	831.5	20.59	22.50	1.552	0.30	0.47
Ant0	original Power	15MHz	QPSK	1	37	Left Cheek	0	26865	831.5	23.36	25.00	1.459	0.12	0.18
	original Power	15MHz	QPSK	1	37	Left Tilt	0	26865	831.5	23.36	25.00	1.459	0.08	0.12
	original Power	15MHz	QPSK	1	37	Right Cheek	0	26865	831.5	23.36	25.00	1.459	0.10	0.15
	original Power	15MHz	QPSK	1	37	Right Tilt	0	26865	831.5	23.36	25.00	1.459	0.07	0.10
Body														
Ant1	original Power	15MHz	QPSK	1	37	Front	10	26865	831.5	23.04	25.00	1.570	0.11	0.18
	original Power	15MHz	QPSK	1	37	Back	10	26865	831.5	23.04	25.00	1.570	0.18	0.28
	original Power	15MHz	QPSK	1	37	Left	10	26865	831.5	23.04	25.00	1.570	0.10	0.15
	original Power	15MHz	QPSK	1	37	Right	10	26865	831.5	23.04	25.00	1.570	0.10	0.16
	original Power	15MHz	QPSK	1	37	Top	10	26865	831.5	23.04	25.00	1.570	0.16	0.24
	original Power	15MHz	QPSK	1	37	Bottom	10	26865	831.5	23.04	25.00	1.570	0.02	0.02
Ant0	original Power	15MHz	QPSK	1	37	Front	10	26865	831.5	23.36	25.00	1.459	0.09	0.13
	original Power	15MHz	QPSK	1	37	Back	10	26865	831.5	23.36	25.00	1.459	0.15	0.22
	original Power	15MHz	QPSK	1	37	Left	10	26865	831.5	23.36	25.00	1.459	0.11	0.16
	original Power	15MHz	QPSK	1	37	Right	10	26865	831.5	23.36	25.00	1.459	0.07	0.10
	original Power	15MHz	QPSK	1	37	Top	10	26865	831.5	23.36	25.00	1.459	0.02	0.02
	original Power	15MHz	QPSK	1	37	Bottom	10	26865	831.5	23.36	25.00	1.459	0.12	0.17
Ant1	original Power	15MHz	QPSK	1	37	Front	15	26865	831.5	23.04	25.00	1.570	0.09	0.14
	original Power	15MHz	QPSK	1	37	Back	15	26865	831.5	23.04	25.00	1.570	0.12	0.19
Ant0	original Power	15MHz	QPSK	1	37	Front	15	26865	831.5	23.36	25.00	1.459	0.09	0.14
	original Power	15MHz	QPSK	1	37	Back	15	26865	831.5	23.36	25.00	1.459	0.13	0.19

### 11.15. LTE Band38 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	38000	2595	22.31	23.50	1.315	0.29	0.38
	State2	20MHz	QPSK	1	50	Left Tilt	0	38000	2595	22.31	23.50	1.315	0.36	0.47
	State2	20MHz	QPSK	1	50	Right Cheek	0	38000	2595	22.31	23.50	1.315	0.36	0.47
	State2	20MHz	QPSK	1	50	Right Tilt	0	38000	2595	22.31	23.50	1.315	0.42	0.55
	State2	20MHz	QPSK	1	0	Right Tilt	0	37901(P CC)	2585.1	21.95	23.50	1.429	0.37	0.53
			0	0	38099(S CC)			2604.9						
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	38000	2595	23.63	24.50	1.222	0.03	0.03
	original Power	20MHz	QPSK	1	50	Left Tilt	0	38000	2595	23.63	24.50	1.222	0.01	0.01
	original Power	20MHz	QPSK	1	50	Right Cheek	0	38000	2595	23.63	24.50	1.222	0.05	0.06
	original Power	20MHz	QPSK	1	0	Right Cheek	0	37901(P CC)	2585.1	23.34	24.50	1.306	0.03	0.04
				0	0			38099(S CC)	2604.9					
Ant4	original Power	20MHz	QPSK	1	50	Right Tilt	0	38000	2595	23.63	24.50	1.222	0.03	0.04
	State2	20MHz	QPSK	1	50	Left Cheek	0	38000	2595	16.38	17.00	1.153	0.15	0.18
	State2	20MHz	QPSK	1	50	Left Tilt	0	38000	2595	16.38	17.00	1.153	0.09	0.11
	State2	20MHz	QPSK	1	50	Right Cheek	0	38000	2595	16.38	17.00	1.153	0.41	0.48
	State2	20MHz	QPSK	1	0	Right Cheek	0	37901(P CC)	2585.1	16.02	17.00	1.253	0.37	0.46
			0	0	38099(S CC)			2604.9						
	State2	20MHz	QPSK	1	50	Right Tilt	0	38000	2595	16.38	17.00	1.153	0.20	0.23
Body														
Ant1	original Power	20MHz	QPSK	1	50	Front	10	38000	2595	23.83	24.50	1.167	0.08	0.09
	original Power	20MHz	QPSK	1	50	Back	10	38000	2595	23.83	24.50	1.167	0.10	0.12
	original Power	20MHz	QPSK	1	50	Left	10	38000	2595	23.83	24.50	1.167	0.11	0.13
	original Power	20MHz	QPSK	1	50	Right	10	38000	2595	23.83	24.50	1.167	0.02	0.02
	original Power	20MHz	QPSK	1	50	Top	10	38000	2595	23.83	24.50	1.167	0.21	0.24
	original Power	20MHz	QPSK	1	0	Top	10	37901(P CC)	2585.1	23.59	24.50	1.233	0.19	0.23
				0	0			38099(S CC)	2604.9					
original Power	20MHz	QPSK	1	50	Bottom	10	38000	2595	23.83	24.50	1.167	0.01	0.01	
Ant0	State3	20MHz	QPSK	1	50	Front	10	38000	2595	22.05	23.00	1.245	0.11	0.13
	State3	20MHz	QPSK	1	50	Back	10	38000	2595	22.05	23.00	1.245	0.47	0.58
	State3	20MHz	QPSK	1	0	Back	10	37901(P CC)	2585.1	21.72	23.00	1.343	0.42	0.56
				0	0			38099(S CC)	2604.9					
	State3	20MHz	QPSK	1	50	Left	10	38000	2595	22.05	23.00	1.245	0.02	0.02
	State3	20MHz	QPSK	1	50	Right	10	38000	2595	22.05	23.00	1.245	0.08	0.10
	State3	20MHz	QPSK	1	50	Top	10	38000	2595	22.05	23.00	1.245	0.01	0.01
State3	20MHz	QPSK	1	50	Bottom	10	38000	2595	22.05	23.00	1.245	0.19	0.24	
Ant4	State3	20MHz	QPSK	1	50	Front	10	38000	2595	18.35	19.00	1.161	0.13	0.15
	State3	20MHz	QPSK	1	50	Back	10	38000	2595	18.35	19.00	1.161	0.19	0.22
	State3	20MHz	QPSK	1	0	Back	10	37901(P CC)	2585.1	18.11	19.00	1.227	0.17	0.21

			0	0			38099(S CC)	2604.9						
Ant1	State3	20MHz	QPSK	1	50	Left	10	38000	2595	18.35	19.00	1.161	0.15	0.17
	State3	20MHz	QPSK	1	50	Right	10	38000	2595	18.35	19.00	1.161	0.01	0.01
	State3	20MHz	QPSK	1	50	Top	10	38000	2595	18.35	19.00	1.161	0.05	0.06
	State3	20MHz	QPSK	1	50	Bottom	10	38000	2595	18.35	19.00	1.161	0.01	0.01
	original Power	20MHz	QPSK	1	50	Front	15	38000	2595	23.83	24.50	1.167	0.01	0.01
	original Power	20MHz	QPSK	1	50	Back	15	38000	2595	23.83	24.50	1.167	0.05	0.06
	original Power	20MHz	QPSK	1	0	Back	15	37901(P CC)	2585.1	23.59	24.50	1.233	0.03	0.04
			0	0	38099(S CC)			2604.9						
Ant0	State1	20MHz	QPSK	1	50	Front	15	38000	2595	23.31	24.25	1.242	0.08	0.10
	State1	20MHz	QPSK	1	50	Back	15	38000	2595	23.31	24.25	1.242	0.25	0.30
Ant4	State1	20MHz	QPSK	1	0	Back	15	37901(P CC)	2585.1	23.07	24.25	1.312	0.22	0.29
				0	0			38099(S CC)	2604.9					
	State1	20MHz	QPSK	1	50	Front	15	38000	2595	19.39	20.00	1.151	0.07	0.09
	State1	20MHz	QPSK	1	0	Front	15	37901(P CC)	2585.1	19.05	20.00	1.245	0.05	0.06
					0			0	38099(S CC)					
State1	20MHz	QPSK	1	50	Back	15	38000	2595	19.39	20.00	1.151	0.04	0.05	



### 11.16. LTE Band41 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	40620	2593	22.13	23.50	1.371	0.29	0.39
	State2	20MHz	QPSK	1	50	Left Tilt	0	40620	2593	22.13	23.50	1.371	0.37	0.51
	State2	20MHz	QPSK	1	50	Right Cheek	0	40620	2593	22.13	23.50	1.371	0.36	0.49
	State2	20MHz	QPSK	1	50	Right Tilt	0	40620	2593	22.13	23.50	1.371	0.42	0.58
	State2	20MHz	QPSK	18	0	Right Tilt	0	40521(P CC)	2583.1	21.70	23.50	1.514	0.35	0.53
			0	0	40719(S CC)			2602.9						
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	40620	2593	24.17	25.00	1.211	0.03	0.04
	original Power	20MHz	QPSK	1	50	Left Tilt	0	40620	2593	24.17	25.00	1.211	0.01	0.01
	original Power	20MHz	QPSK	1	50	Right Cheek	0	40620	2593	24.17	25.00	1.211	0.06	0.07
	original Power	20MHz	QPSK	18	0	Right Cheek	0	40521(P CC)	2583.1	23.74	25.00	1.337	0.04	0.05
				0	0			40719(S CC)	2602.9					
	original Power	20MHz	QPSK	1	50	Right Tilt	0	40620	2593	24.17	25.00	1.211	0.04	0.04
	State2	20MHz	QPSK	1	50	Left Cheek	0	40620	2593	16.47	17.00	1.130	0.15	0.17
State2	20MHz	QPSK	1	50	Left Tilt	0	40620	2593	16.47	17.00	1.130	0.09	0.10	
State2	20MHz	QPSK	1	50	Right Cheek	0	40620	2593	16.47	17.00	1.130	0.39	0.44	
Ant4	State2	20MHz	QPSK	18	0	Right Cheek	0	40521(P CC)	2583.1	16.23	17.00	1.194	0.31	0.37
				0	0			40719(S CC)	2602.9					
	State2	20MHz	QPSK	1	50	Right Tilt	0	40620	2593	16.47	17.00	1.130	0.18	0.20
Body														
Ant1	original Power	20MHz	QPSK	1	50	Front	10	40620	2593	24.25	25.00	1.189	0.09	0.10
	original Power	20MHz	QPSK	1	50	Back	10	40620	2593	24.25	25.00	1.189	0.11	0.13
	original Power	20MHz	QPSK	1	50	Left	10	40620	2593	24.25	25.00	1.189	0.12	0.14
	original Power	20MHz	QPSK	1	50	Right	10	40620	2593	24.25	25.00	1.189	0.01	0.01
	original Power	20MHz	QPSK	1	50	Top	10	40620	2593	24.25	25.00	1.189	0.24	0.28
	original Power	20MHz	QPSK	18	0	Top	10	40521(P CC)	2583.1	23.82	25.00	1.312	0.2	0.26
				0	0			40719(S CC)	2602.9					
original Power	20MHz	QPSK	1	50	Bottom	10	40620	2593	24.25	25.00	1.189	0.05	0.05	
Ant0	State3	20MHz	QPSK	1	50	Front	10	40620	2593	20.70	21.50	1.202	0.07	0.09
	State3	20MHz	QPSK	1	50	Back	10	40620	2593	20.70	21.50	1.202	0.32	0.39
	State3	20MHz	QPSK	18	0	Back	10	40521(P CC)	2583.1	20.51	21.50	1.256	0.28	0.35
				0	0			40719(S CC)	2602.9					
	State3	20MHz	QPSK	1	50	Left	10	40620	2593	20.70	21.50	1.202	0.02	0.02
	State3	20MHz	QPSK	1	50	Right	10	40620	2593	20.70	21.50	1.202	0.06	0.07
	State3	20MHz	QPSK	1	50	Top	10	40620	2593	20.70	21.50	1.202	0.01	0.01
State3	20MHz	QPSK	1	50	Bottom	10	40620	2593	20.70	21.50	1.202	0.16	0.19	
Ant4	State3	20MHz	QPSK	1	50	Front	10	40620	2593	19.03	19.50	1.114	0.18	0.20
	State3	20MHz	QPSK	1	50	Back	10	40620	2593	19.03	19.50	1.114	0.21	0.24
	State3	20MHz	QPSK	18	0	Back	10	40521(P CC)	2583.1	18.81	19.50	1.172	0.18	0.21

			0	0			40719(S CC)	2602.9							
	State3	20MHz	QPSK	1	50	Left	10	40620	2593	19.03	19.50	1.114	0.20	0.23	
	State3	20MHz	QPSK	1	50	Right	10	40620	2593	19.03	19.50	1.114	0.19	0.21	
	State3	20MHz	QPSK	1	50	Top	10	40620	2593	19.03	19.50	1.114	0.11	0.12	
	State3	20MHz	QPSK	1	50	Bottom	10	40620	2593	19.03	19.50	1.114	0.01	0.01	
Ant1	original Power	20MHz	QPSK	1	50	Front	15	40620	2593	24.25	25.00	1.189	0.04	0.05	
	original Power	20MHz	QPSK	18	0	Front	15	40521(P CC)	2583.1	23.82	25.00	1.312	0.02	0.03	
				0	0			40719(S CC)	2602.9						
	original Power	20MHz	QPSK	1	50	Back	15	40620	2593	24.25	25.00	1.189	0.03	0.04	
	Ant0	State1	20MHz	QPSK	1	50	Front	15	40620	2593	21.91	23.00	1.285	0.05	0.06
		State1	20MHz	QPSK	1	50	Back	15	40620	2593	21.91	23.00	1.285	0.18	0.23
Ant4	State1	20MHz	QPSK	18	0	Back	15	40521(P CC)	2583.1	21.46	23.00	1.426	0.15	0.21	
	State1	0		0	40719(S CC)			2602.9							
	State1	20MHz	QPSK	1	50	Front	15	40620	2593	20.02	20.50	1.117	0.08	0.09	
	State1	20MHz	QPSK	18	0	Front	15	40521(P CC)	2583.1	19.72	20.50	1.197	0.05	0.06	
				0	0			40719(S CC)	2602.9						
State1	20MHz	QPSK	1	50	Back	15	40620	2593	20.02	20.50	1.117	0.07	0.08		

### 11.17. LTE Band66 SAR results

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20MHz	QPSK	1	50	Left Cheek	0	132322	1745	16.00	17.25	1.334	0.35	0.47
	State2	20MHz	QPSK	1	50	Left Tilt	0	132322	1745	16.00	17.25	1.334	0.46	0.61
	State2	20MHz	QPSK	1	50	Right Cheek	0	132322	1745	16.00	17.25	1.334	0.47	0.63
	State2	20MHz	QPSK	1	50	Right Tilt	0	132322	1745	16.00	17.25	1.334	0.61	0.82
Ant0	original Power	20MHz	QPSK	1	50	Left Cheek	0	132322	1745	23.73	25.00	1.340	0.09	0.12
	original Power	20MHz	QPSK	1	50	Left Tilt	0	132322	1745	23.73	25.00	1.340	0.03	0.04
	original Power	20MHz	QPSK	1	50	Right Cheek	0	132322	1745	23.73	25.00	1.340	0.06	0.07
	original Power	20MHz	QPSK	1	50	Right Tilt	0	132322	1745	23.73	25.00	1.340	0.06	0.08
Body														
Ant1	State3	20MHz	QPSK	1	50	Front	10	132322	1745	16.24	17.50	1.337	0.10	0.14
	State3	20MHz	QPSK	1	50	Back	10	132322	1745	16.24	17.50	1.337	0.27	0.35
	State3	20MHz	QPSK	1	50	Left	10	132322	1745	16.24	17.50	1.337	0.03	0.04
	State3	20MHz	QPSK	1	50	Right	10	132322	1745	16.24	17.50	1.337	0.02	0.03
	State3	20MHz	QPSK	1	50	Top	10	132322	1745	16.24	17.50	1.337	0.30	0.39
	State3	20MHz	QPSK	1	50	Bottom	10	132322	1745	16.24	17.50	1.337	0.01	0.02
Ant0	State3	20MHz	QPSK	1	50	Front	10	132322	1745	19.82	21.00	1.312	0.21	0.28
	State3	20MHz	QPSK	1	50	Back	10	132322	1745	19.82	21.00	1.312	0.36	0.48
	State3	20MHz	QPSK	1	50	Left	10	132322	1745	19.82	21.00	1.312	0.05	0.07
	State3	20MHz	QPSK	1	50	Right	10	132322	1745	19.82	21.00	1.312	0.10	0.13
	State3	20MHz	QPSK	1	50	Top	10	132322	1745	19.82	21.00	1.312	0.01	0.01
	State3	20MHz	QPSK	1	50	Bottom	10	132322	1745	19.82	21.00	1.312	0.44	0.58
Ant1	State1	20MHz	QPSK	1	50	Front	15	132322	1745	18.00	19.25	1.334	0.10	0.13
	State1	20MHz	QPSK	1	50	Back	15	132322	1745	18.00	19.25	1.334	0.21	0.27
Ant0	State1	20MHz	QPSK	1	50	Front	15	132322	1745	21.47	23.00	1.422	0.20	0.29
	State1	20MHz	QPSK	1	50	Back	15	132322	1745	21.47	23.00	1.422	0.31	0.44

## 11.18. 5G SAR results

### NR N5

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	original Power	20Mhz	QPSK	50	25	Left Cheek	0	167300	836.5	23.05	24.70	1.462	0.57	0.84
	original Power	20Mhz	QPSK	50	25	Left Tilt	0	167300	836.5	23.05	24.70	1.462	0.54	0.79
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	167300	836.5	23.05	24.70	1.462	0.61	0.90
	original Power	20Mhz	QPSK	50	25	Right Tilt	0	167300	836.5	23.05	24.70	1.462	0.47	0.69
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	166800	834	23.09	24.70	1.449	0.52	0.75
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	167800	839	23.14	24.70	1.432	0.56	0.80
Ant0	original Power	20Mhz	QPSK	50	25	Left Cheek	0	167300	836.5	23.16	24.70	1.426	0.11	0.15
	original Power	20Mhz	QPSK	50	25	Left Tilt	0	167300	836.5	23.16	24.70	1.426	0.07	0.10
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	167300	836.5	23.16	24.70	1.426	0.10	0.14
	original Power	20Mhz	QPSK	50	25	Right Tilt	0	167300	836.5	23.16	24.70	1.426	0.07	0.10
Body														
Ant1	original Power	20Mhz	QPSK	50	25	Front	10	167300	836.5	23.05	24.70	1.462	0.10	0.15
	original Power	20Mhz	QPSK	50	25	Back	10	167300	836.5	23.05	24.70	1.462	0.20	0.30
	original Power	20Mhz	QPSK	50	25	Left	10	167300	836.5	23.05	24.70	1.462	0.11	0.15
	original Power	20Mhz	QPSK	50	25	Right	10	167300	836.5	23.05	24.70	1.462	0.09	0.13
	original Power	20Mhz	QPSK	50	25	Top	10	167300	836.5	23.05	24.70	1.462	0.13	0.19
	original Power	20Mhz	QPSK	50	25	Bottom	10	167300	836.5	23.05	24.70	1.462	0.00	0.00
Ant0	original Power	20Mhz	QPSK	50	25	Front	10	167300	836.5	23.16	24.70	1.426	0.10	0.15
	original Power	20Mhz	QPSK	50	25	Back	10	167300	836.5	23.16	24.70	1.426	0.17	0.24
	original Power	20Mhz	QPSK	50	25	Left	10	167300	836.5	23.16	24.70	1.426	0.13	0.19
	original Power	20Mhz	QPSK	50	25	Right	10	167300	836.5	23.16	24.70	1.426	0.09	0.12
	original Power	20Mhz	QPSK	50	25	Top	10	167300	836.5	23.16	24.70	1.426	0.00	0.00
	original Power	20Mhz	QPSK	50	25	Bottom	10	167300	836.5	23.16	24.70	1.426	0.11	0.16
Ant1	original Power	20Mhz	QPSK	50	25	Front	15	167300	836.5	23.05	24.70	1.462	0.06	0.08
	original Power	20Mhz	QPSK	50	25	Back	15	167300	836.5	23.05	24.70	1.462	0.09	0.13
Ant0	original Power	20Mhz	QPSK	50	25	Front	15	167300	836.5	23.16	24.70	1.426	0.10	0.14
	original Power	20Mhz	QPSK	50	25	Back	15	167300	836.5	23.16	24.70	1.426	0.14	0.19

**NR N7**

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20Mhz	QPSK	50	25	Left Cheek	0	507000	2535	21.11	22.2	1.285	0.38	0.48
	State2	20Mhz	QPSK	50	25	Left Tilt	0	507000	2535	21.11	22.2	1.285	0.45	0.57
	State2	20Mhz	QPSK	50	25	Right Cheek	0	507000	2535	21.11	22.2	1.285	0.40	0.51
	State2	20Mhz	QPSK	50	25	Right Tilt	0	507000	2535	21.11	22.2	1.285	0.56	0.72
Ant0	original Power	20Mhz	QPSK	50	25	Left Cheek	0	507000	2535	22.91	24.2	1.346	0.07	0.10
	original Power	20Mhz	QPSK	50	25	Left Tilt	0	507000	2535	22.91	24.2	1.346	0.07	0.09
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	507000	2535	22.91	24.2	1.346	0.08	0.11
	original Power	20Mhz	QPSK	50	25	Right Tilt	0	507000	2535	22.91	24.2	1.346	0.09	0.12
Ant4	State2	20Mhz	QPSK	50	25	Left Cheek	0	507000	2535	15.24	15.7	1.112	0.19	0.21
	State2	20Mhz	QPSK	50	25	Left Tilt	0	507000	2535	15.24	15.7	1.112	0.11	0.12
	State2	20Mhz	QPSK	50	25	Right Cheek	0	507000	2535	15.24	15.7	1.112	0.52	0.57
	State2	20Mhz	QPSK	50	25	Right Tilt	0	507000	2535	15.24	15.7	1.112	0.24	0.26
Body														
Ant1	State3	20Mhz	QPSK	50	25	Front	10	507000	2535	21.20	22.2	1.259	0.07	0.09
	State3	20Mhz	QPSK	50	25	Back	10	507000	2535	21.20	22.2	1.259	0.12	0.15
	State3	20Mhz	QPSK	50	25	Left	10	507000	2535	21.20	22.2	1.259	0.06	0.07
	State3	20Mhz	QPSK	50	25	Right	10	507000	2535	21.20	22.2	1.259	0.02	0.03
	State3	20Mhz	QPSK	50	25	Top	10	507000	2535	21.20	22.2	1.259	0.19	0.24
	State3	20Mhz	QPSK	50	25	Bottom	10	507000	2535	21.20	22.2	1.259	0.01	0.01
Ant0	State3	20Mhz	QPSK	50	25	Front	10	507000	2535	17.91	19.2	1.346	0.06	0.08
	State3	20Mhz	QPSK	50	25	Back	10	507000	2535	17.91	19.2	1.346	0.25	0.34
	State3	20Mhz	QPSK	50	25	Left	10	507000	2535	17.91	19.2	1.346	0.02	0.03
	State3	20Mhz	QPSK	50	25	Right	10	507000	2535	17.91	19.2	1.346	0.06	0.08
	State3	20Mhz	QPSK	50	25	Top	10	507000	2535	17.91	19.2	1.346	0.02	0.02
	State3	20Mhz	QPSK	50	25	Bottom	10	507000	2535	17.91	19.2	1.346	0.13	0.17
Ant4	State3	20Mhz	QPSK	50	25	Front	10	507000	2535	21.21	21.7	1.119	0.39	0.44
	State3	20Mhz	QPSK	50	25	Back	10	507000	2535	21.21	21.7	1.119	0.48	0.54
	State3	20Mhz	QPSK	50	25	Left	10	507000	2535	21.21	21.7	1.119	0.44	0.49
	State3	20Mhz	QPSK	50	25	Right	10	507000	2535	21.21	21.7	1.119	0.04	0.04
	State3	20Mhz	QPSK	50	25	Top	10	507000	2535	21.21	21.7	1.119	0.10	0.11
	State3	20Mhz	QPSK	50	25	Bottom	10	507000	2535	21.21	21.7	1.119	0.05	0.06
Ant1	original Power	20Mhz	QPSK	50	25	Front	15	507000	2535	23.14	24.2	1.276	0.05	0.07
	original Power	20Mhz	QPSK	50	25	Back	15	507000	2535	23.14	24.2	1.276	0.08	0.10
Ant0	Statae1	20Mhz	QPSK	50	25	Front	15	507000	2535	19.35	20.7	1.365	0.05	0.07
	Statae1	20Mhz	QPSK	50	25	Back	15	507000	2535	19.35	20.7	1.365	0.14	0.19
Ant4	original Power	20Mhz	QPSK	50	25	Front	15	507000	2535	22.23	22.7	1.114	0.30	0.34
	original Power	20Mhz	QPSK	50	25	Back	15	507000	2535	22.23	22.7	1.114	0.31	0.38
Head Simultaneous transmission(ENDC)														
Ant4	State2	20Mhz	QPSK	50	25	Left Cheek	0	507000	2535	14.14	14.70	1.138	0.15	0.17
	State2	20Mhz	QPSK	50	25	Left Tilt	0	507000	2535	14.14	14.70	1.138	0.08	0.10

Ant1	State2	20Mhz	QPSK	50	25	Right Cheek	0	507000	2535	14.14	14.70	1.138	0.41	0.47	
	State2	20Mhz	QPSK	50	25	Right Tilt	0	507000	2535	14.14	14.70	1.138	0.19	0.22	
	Head Simultaneous transmission														
	State2	20Mhz	QPSK	50	25	Left Cheek	0	507000	2535	19.01	19.95	1.242	0.23	0.29	
	State2	20Mhz	QPSK	50	25	Left Tilt	0	507000	2535	19.01	19.95	1.242	0.27	0.34	
	State2	20Mhz	QPSK	50	25	Right Cheek	0	507000	2535	19.01	19.95	1.242	0.24	0.30	
	State2	20Mhz	QPSK	50	25	Right Tilt	0	507000	2535	19.01	19.95	1.242	0.22	0.27	

**NR N38**

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20Mhz	QPSK	50	25	Left Cheek	0	519000	2595	21.13	22.20	1.279	0.42	0.54
	State2	20Mhz	QPSK	50	25	Left Tilt	0	519000	2595	21.13	22.20	1.279	0.52	0.67
	State2	20Mhz	QPSK	50	25	Right Cheek	0	519000	2595	21.13	22.20	1.279	0.55	0.70
	State2	20Mhz	QPSK	50	25	Right Tilt	0	519000	2595	21.13	22.20	1.279	0.59	0.75
Ant0	original Power	20Mhz	QPSK	50	25	Left Cheek	0	519000	2595	24.27	25.20	1.239	0.09	0.11
	original Power	20Mhz	QPSK	50	25	Left Tilt	0	519000	2595	24.27	25.20	1.239	0.05	0.06
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	519000	2595	24.27	25.20	1.239	0.11	0.14
	original Power	20Mhz	QPSK	50	25	Right Tilt	0	519000	2595	24.27	25.20	1.239	0.09	0.11
Ant4	State2	20Mhz	QPSK	50	25	Left Cheek	0	519000	2595	14.07	14.70	1.156	0.19	0.22
	State2	20Mhz	QPSK	50	25	Left Tilt	0	519000	2595	14.07	14.70	1.156	0.12	0.14
	State2	20Mhz	QPSK	50	25	Right Cheek	0	519000	2595	14.07	14.70	1.156	0.53	0.61
	State2	20Mhz	QPSK	50	25	Right Tilt	0	519000	2595	14.07	14.70	1.156	0.26	0.30
Body														
Ant1	State3	20Mhz	QPSK	50	25	Front	10	519000	2595	21.26	22.20	1.242	0.07	0.08
	State3	20Mhz	QPSK	50	25	Back	10	519000	2595	21.26	22.20	1.242	0.11	0.14
	State3	20Mhz	QPSK	50	25	Left	10	519000	2595	21.26	22.20	1.242	0.05	0.07
	State3	20Mhz	QPSK	50	25	Right	10	519000	2595	21.26	22.20	1.242	0.02	0.02
	State3	20Mhz	QPSK	50	25	Top	10	519000	2595	21.26	22.20	1.242	0.22	0.27
	State3	20Mhz	QPSK	50	25	Bottom	10	519000	2595	21.26	22.20	1.242	0.01	0.01
Ant0	State3	20Mhz	QPSK	50	25	Front	10	519000	2595	16.81	17.70	1.227	0.05	0.06
	State3	20Mhz	QPSK	50	25	Back	10	519000	2595	16.81	17.70	1.227	0.29	0.36
	State3	20Mhz	QPSK	50	25	Left	10	519000	2595	16.81	17.70	1.227	0.01	0.01
	State3	20Mhz	QPSK	50	25	Right	10	519000	2595	16.81	17.70	1.227	0.05	0.06
	State3	20Mhz	QPSK	50	25	Top	10	519000	2595	16.81	17.70	1.227	0.01	0.01
	State3	20Mhz	QPSK	50	25	Bottom	10	519000	2595	16.81	17.70	1.227	0.11	0.14
Ant4	State3	20Mhz	QPSK	50	25	Front	10	519000	2595	21.32	21.95	1.156	0.39	0.45
	State3	20Mhz	QPSK	50	25	Back	10	519000	2595	21.32	21.95	1.156	0.46	0.54
	State3	20Mhz	QPSK	50	25	Left	10	519000	2595	21.32	21.95	1.156	0.47	0.54
	State3	20Mhz	QPSK	50	25	Right	10	519000	2595	21.32	21.95	1.156	0.03	0.04
	State3	20Mhz	QPSK	50	25	Top	10	519000	2595	21.32	21.95	1.156	0.11	0.13
	State3	20Mhz	QPSK	50	25	Bottom	10	519000	2595	21.32	21.95	1.156	0.02	0.03
Ant1	Statae1	20Mhz	QPSK	50	25	Front	15	519000	2595	23.82	24.70	1.225	0.07	0.08
	Statae1	20Mhz	QPSK	50	25	Back	15	519000	2595	23.82	24.70	1.225	0.08	0.10
Ant0	Statae1	20Mhz	QPSK	50	25	Front	15	519000	2595	18.24	19.20	1.247	0.05	0.06
	Statae1	20Mhz	QPSK	50	25	Back	15	519000	2595	18.24	19.20	1.247	0.15	0.18
Ant4	original Power	20Mhz	QPSK	50	25	Front	15	519000	2595	23.17	23.70	1.130	0.33	0.37
	original Power	20Mhz	QPSK	50	25	Back	15	519000	2595	23.17	23.70	1.130	0.30	0.34
Body Simultaneous transmission(ENDC)														
Ant4	Statae1	20Mhz	QPSK	50	25	Front	10	519000	2595	20.32	21.0	1.156	0.24	0.28
	Statae1	20Mhz	QPSK	50	25	Back	10	519000	2595	20.32	21.0	1.156	0.29	0.34

Statae1	20Mhz	QPSK	50	25	Left	10	519000	2595	20.32	21.0	1.156	0.30	0.34
1	20Mhz	QPSK	50	25	Right	10	519000	2595	20.32	21.0	1.156	0.02	0.03
1	20Mhz	QPSK	50	25	Top	10	519000	2595	20.32	21.0	1.156	0.07	0.08
1	20Mhz	QPSK	50	25	Bottom	10	519000	2595	20.32	21.0	1.156	0.02	0.02



NR N41

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	100Mhz	QPSK	135	67	Left Cheek	0	518598	2592.99	21.33	22.20	1.222	0.46	0.56
	State2	100Mhz	QPSK	135	67	Left Tilt	0	518598	2592.99	21.33	22.20	1.222	0.55	0.67
	State2	100Mhz	QPSK	135	67	Right Cheek	0	518598	2592.99	21.33	22.20	1.222	0.56	0.68
	State2	100Mhz	QPSK	135	67	Right Tilt	0	518598	2592.99	21.33	22.20	1.222	0.62	0.76
Ant0	original Power	100Mhz	QPSK	135	67	Left Cheek	0	518598	2592.99	24.60	25.20	1.148	0.10	0.11
	original Power	100Mhz	QPSK	135	67	Left Tilt	0	518598	2592.99	24.60	25.20	1.148	0.05	0.05
	original Power	100Mhz	QPSK	135	67	Right Cheek	0	518598	2592.99	24.60	25.20	1.148	0.13	0.15
	original Power	100Mhz	QPSK	135	67	Right Tilt	0	518598	2592.99	24.60	25.20	1.148	0.09	0.10
Ant4	State2	100Mhz	QPSK	135	67	Left Cheek	0	518598	2592.99	13.17	13.45	1.067	0.14	0.15
	State2	100Mhz	QPSK	135	67	Left Tilt	0	518598	2592.99	13.17	13.45	1.067	0.09	0.09
	State2	100Mhz	QPSK	135	67	Right Cheek	0	518598	2592.99	13.17	13.45	1.067	0.41	0.44
	State2	100Mhz	QPSK	135	67	Right Tilt	0	518598	2592.99	13.17	13.45	1.067	0.19	0.20
Body														
Ant1	State3	100Mhz	QPSK	135	67	Front	10	518598	2592.99	21.72	22.45	1.183	0.10	0.11
	State3	100Mhz	QPSK	135	67	Back	10	518598	2592.99	21.72	22.45	1.183	0.14	0.16
	State3	100Mhz	QPSK	135	67	Left	10	518598	2592.99	21.72	22.45	1.183	0.08	0.09
	State3	100Mhz	QPSK	135	67	Right	10	518598	2592.99	21.72	22.45	1.183	0.01	0.01
	State3	100Mhz	QPSK	135	67	Top	10	518598	2592.99	21.72	22.45	1.183	0.25	0.29
	State3	100Mhz	QPSK	135	67	Bottom	10	518598	2592.99	21.72	22.45	1.183	0.01	0.01
Ant0	State3	100Mhz	QPSK	135	67	Front	10	518598	2592.99	17.06	17.70	1.159	0.05	0.06
	State3	100Mhz	QPSK	135	67	Back	10	518598	2592.99	17.06	17.70	1.159	0.30	0.35
	State3	100Mhz	QPSK	135	67	Left	10	518598	2592.99	17.06	17.70	1.159	0.01	0.01
	State3	100Mhz	QPSK	135	67	Right	10	518598	2592.99	17.06	17.70	1.159	0.05	0.06
	State3	100Mhz	QPSK	135	67	Top	10	518598	2592.99	17.06	17.70	1.159	0.01	0.01
	State3	100Mhz	QPSK	135	67	Bottom	10	518598	2592.99	17.06	17.70	1.159	0.12	0.14
Ant4	State3	100Mhz	QPSK	135	67	Front	10	518598	2592.99	21.44	21.70	1.062	0.34	0.36
	State3	100Mhz	QPSK	135	67	Back	10	518598	2592.99	21.44	21.70	1.062	0.38	0.41
	State3	100Mhz	QPSK	135	67	Left	10	518598	2592.99	21.44	21.70	1.062	0.39	0.42
	State3	100Mhz	QPSK	135	67	Right	10	518598	2592.99	21.44	21.70	1.062	0.03	0.03
	State3	100Mhz	QPSK	135	67	Top	10	518598	2592.99	21.44	21.70	1.062	0.10	0.10
	State3	100Mhz	QPSK	135	67	Bottom	10	518598	2592.99	21.44	21.70	1.062	0.02	0.03
Ant1	Statae1	100Mhz	QPSK	135	67	Front	15	518598	2592.99	24.17	24.95	1.197	0.08	0.09
	Statae1	100Mhz	QPSK	135	67	Back	15	518598	2592.99	24.17	24.95	1.197	0.09	0.11
Ant0	Statae1	100Mhz	QPSK	135	67	Front	15	518598	2592.99	18.55	19.20	1.161	0.05	0.06
	Statae1	100Mhz	QPSK	135	67	Back	15	518598	2592.99	18.55	19.20	1.161	0.14	0.17
Ant4	Statae1	100Mhz	QPSK	135	67	Front	15	518598	2592.99	22.87	23.20	1.079	0.33	0.36
	Statae1	100Mhz	QPSK	135	67	Back	15	518598	2592.99	22.87	23.20	1.079	0.31	0.33

NR N66

Configuration	Power Level	BW	Modulation	RB Num	RB Start	Position	Dist. mm	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head														
Ant1	State2	20Mhz	QPSK	50	25	Left Cheek	0	349000	1745	13.41	14.2	1.199	0.18	0.22
	State2	20Mhz	QPSK	50	25	Left Tilt	0	349000	1745	13.41	14.2	1.199	0.25	0.29
	State2	20Mhz	QPSK	50	25	Right Cheek	0	349000	1745	13.41	14.2	1.199	0.26	0.31
	State2	20Mhz	QPSK	50	25	Right Tilt	0	349000	1745	13.41	14.2	1.199	0.37	0.45
Ant0	original Power	20Mhz	QPSK	50	25	Left Cheek	0	349000	1745	23.98	25.2	1.324	0.05	0.07
	original Power	20Mhz	QPSK	50	25	Left Tilt	0	349000	1745	23.98	25.2	1.324	0.01	0.01
	original Power	20Mhz	QPSK	50	25	Right Cheek	0	349000	1745	23.98	25.2	1.324	0.07	0.09
	original Power	20Mhz	QPSK	50	25	Right Tilt	0	349000	1745	23.98	25.2	1.324	0.03	0.04
Body														
Ant1	State3	20Mhz	QPSK	50	25	Front	10	349000	1745	18.64	19.5	1.205	0.16	0.19
	State3	20Mhz	QPSK	50	25	Back	10	349000	1745	18.64	19.5	1.205	0.40	0.48
	State3	20Mhz	QPSK	50	25	Left	10	349000	1745	18.64	19.5	1.205	0.02	0.02
	State3	20Mhz	QPSK	50	25	Right	10	349000	1745	18.64	19.5	1.205	0.01	0.02
	State3	20Mhz	QPSK	50	25	Top	10	349000	1745	18.64	19.5	1.205	0.41	0.49
	State3	20Mhz	QPSK	50	25	Bottom	10	349000	1745	18.64	19.5	1.205	0.01	0.01
Ant0	State3	20Mhz	QPSK	50	25	Front	10	349000	1745	16.96	18.2	1.330	0.10	0.13
	State3	20Mhz	QPSK	50	25	Back	10	349000	1745	16.96	18.2	1.330	0.18	0.24
	State3	20Mhz	QPSK	50	25	Left	10	349000	1745	16.96	18.2	1.330	0.02	0.03
	State3	20Mhz	QPSK	50	25	Right	10	349000	1745	16.96	18.2	1.330	0.05	0.07
	State3	20Mhz	QPSK	50	25	Top	10	349000	1745	16.96	18.2	1.330	0.01	0.01
	State3	20Mhz	QPSK	50	25	Bottom	10	349000	1745	16.96	18.2	1.330	0.26	0.35
Ant1	Statae1	20Mhz	QPSK	50	25	Front	15	349000	1745	18.14	19.0	1.205	0.11	0.13
	Statae1	20Mhz	QPSK	50	25	Back	15	349000	1745	18.14	19.0	1.205	0.27	0.33
Ant0	Statae1	20Mhz	QPSK	50	25	Front	15	349000	1745	18.92	20.2	1.343	0.10	0.14
	Statae1	20Mhz	QPSK	50	25	Back	15	349000	1745	18.92	20.2	1.343	0.18	0.24

### 11.19. BT SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
Ant7	BT	original Power	Left Cheek	0	39	2441	13.07	14.0	1.239	0.16	0.20
	BT	original Power	Left Tilt	0	39	2441	13.07	14.0	1.239	0.13	0.16
	BT	original Power	Right Cheek	0	39	2441	13.07	14.0	1.239	0.07	0.09
	BT	original Power	Right Tilt	0	39	2441	13.07	14.0	1.239	0.07	0.09
Body											
Ant7	BT	original Power	Front	10	39	2441	13.07	14.0	1.239	0.01	0.01
	BT	original Power	Back	10	39	2441	13.07	14.0	1.239	0.07	0.08
	BT	original Power	Left	10	39	2441	13.07	14.0	1.239	0.01	0.02
	BT	original Power	Right	10	39	2441	13.07	14.0	1.239	0.04	0.05
	BT	original Power	Top	10	39	2441	13.07	14.0	1.239	0.04	0.05
	BT	original Power	Bottom	10	39	2441	13.07	14.0	1.239	0.01	0.01
Ant7	BT	original Power	Front	15	39	2441	13.07	14.0	1.239	0.01	0.01
	BT	original Power	Back	15	39	2441	13.07	14.0	1.239	0.02	0.03

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Body (0mm)											
Ant7	BT	original Power	Front	0	39	2441	13.07	14.0	1.239	0.01	0.01
	BT	original Power	Back	0	39	2441	13.07	14.0	1.239	0.09	0.11
	BT	original Power	Left	0	39	2441	13.07	14.0	1.239	0.02	0.02
	BT	original Power	Right	0	39	2441	13.07	14.0	1.239	0.06	0.07
	BT	original Power	Top	0	39	2441	13.07	14.0	1.239	0.06	0.07
	BT	original Power	Bottom	0	39	2441	13.07	14.0	1.239	0.01	0.02

## 11.20. 2.4GWi-Fi SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Head											
ANT8	802.11b	State2	Left Cheek	0	6	2437	16.27	17.00	1.183	0.45	0.53
	802.11b	State2	Left Tilt	0	6	2437	16.27	17.00	1.183	0.33	0.38
	802.11b	State2	Right Cheek	0	6	2437	16.27	17.00	1.183	0.18	0.22
	802.11b	State2	Right Tilt	0	6	2437	16.27	17.00	1.183	0.20	0.24
Body											
ANT8	802.11b	original Power	Front	10	6	2437	17.22	18.50	1.343	0.12	0.16
	802.11b	original Power	Back	10	6	2437	17.22	18.50	1.343	0.26	0.35
	802.11b	original Power	Left	10	6	2437	17.22	18.50	1.343	0.04	0.06
	802.11b	original Power	Right	10	6	2437	17.22	18.50	1.343	0.13	0.17
	802.11b	original Power	Top	10	6	2437	17.22	18.50	1.343	0.16	0.22
ANT8	802.11b	original Power	Front	15	6	2437	17.22	18.50	1.343	0.05	0.07
	802.11b	original Power	Back	15	6	2437	17.22	18.50	1.343	0.10	0.14
Head Simultaneous transmission											
ANT8	802.11b	State4	Left Cheek	0	7	2442	12.19	13.00	1.205	0.18	0.21
	802.11b	State4	Left Tilt	0	7	2442	12.19	13.00	1.205	0.12	0.15
	802.11b	State4	Right Cheek	0	7	2442	12.19	13.00	1.205	0.07	0.09
	802.11b	State4	Right Tilt	0	7	2442	12.19	13.00	1.205	0.08	0.10
Body Simultaneous transmission											
ANT8	802.11b	State3	Front	10	6	2437	13.19	14.00	1.205	0.04	0.05
	802.11b	State3	Back	10	6	2437	13.19	14.00	1.205	0.09	0.11
	802.11b	State3	Left	10	6	2437	13.19	14.00	1.205	0.02	0.02
	802.11b	State3	Right	10	6	2437	13.19	14.00	1.205	0.05	0.06
	802.11b	State3	Top	10	6	2437	13.19	14.00	1.205	0.06	0.07
	802.11b	State3	Bottom	10	6	2437	13.19	14.00	1.205	0.03	0.04

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Head											
ANT7	802.11b	State2	Left Cheek	0	6	2437	16.13	17.00	1.222	0.08	0.10
	802.11b	State2	Left Tilt	0	6	2437	16.13	17.00	1.222	0.05	0.06
	802.11b	State2	Right Cheek	0	6	2437	16.13	17.00	1.222	0.07	0.08
	802.11b	State2	Right Tilt	0	6	2437	16.13	17.00	1.222	0.01	0.01
Body											
ANT7	802.11b	original Power	Front	10	6	2437	17.66	18.50	1.213	0.06	0.08
	802.11b	original Power	Back	10	6	2437	17.66	18.50	1.213	0.26	0.32
	802.11b	original Power	Left	10	6	2437	17.66	18.50	1.213	0.04	0.05
	802.11b	original Power	Right	10	6	2437	17.66	18.50	1.213	0.17	0.21
	802.11b	original Power	Top	10	6	2437	17.66	18.50	1.213	0.04	0.05
	802.11b	original Power	Bottom	10	6	2437	17.66	18.50	1.213	0.01	0.01
ANT7	802.11b	original Power	Front	15	6	2437	17.66	18.50	1.213	0.02	0.03
	802.11b	original Power	Back	15	6	2437	17.66	18.50	1.213	0.11	0.14

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Head											
ANT7+8	802.11b	State2	Left Cheek	0	6	2437	19.21	20.00	1.199	0.56	0.67
	802.11b	State2	Left Tilt	0	6	2437	19.21	20.00	1.199	0.46	0.55
	802.11b	State2	Right Cheek	0	6	2437	19.21	20.00	1.199	0.34	0.41
	802.11b	State2	Right Tilt	0	6	2437	19.21	20.00	1.199	0.36	0.43
Body											
ANT7+8	802.11b	original Power	Front	10	6	2437	20.46	21.50	1.271	0.12	0.16
	802.11b	original Power	Back	10	6	2437	20.46	21.50	1.271	0.37	0.47
	802.11b	original Power	Left	10	6	2437	20.46	21.50	1.271	0.05	0.06
	802.11b	original Power	Right	10	6	2437	20.46	21.50	1.271	0.32	0.40
	802.11b	original Power	Top	10	6	2437	20.46	21.50	1.271	0.16	0.20
	802.11b	original Power	Bottom	10	6	2437	20.46	21.50	1.271	0.01	0.01
ANT7+8	802.11b	original Power	Front	15	6	2437	20.46	21.50	1.271	0.07	0.09
	802.11b	original Power	Back	15	6	2437	20.46	21.50	1.271	0.15	0.19
Head Simultaneous transmission											
ANT7+8	802.11b	State4	Left Cheek	0	7	2442	15.20	16.00	1.202	0.21	0.25
	802.11b	State4	Left Tilt	0	7	2442	15.20	16.00	1.202	0.18	0.22
	802.11b	State4	Right Cheek	0	7	2442	15.20	16.00	1.202	0.13	0.16
	802.11b	State4	Right Tilt	0	7	2442	15.20	16.00	1.202	0.14	0.17

## 11.21. 5.2GWi-Fi SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT8	802.11a	State2	Left Cheek	0	40	5200	13.48	14.50	1.265	0.04	0.05
	802.11a	State2	Left Tilt	0	40	5200	13.48	14.50	1.265	0.04	0.05
	802.11a	State2	Right Cheek	0	40	5200	13.48	14.50	1.265	0.06	0.08
	802.11a	State2	Right Tilt	0	40	5200	13.48	14.50	1.265	0.01	0.01
Body											
ANT8	802.11a	State1	Front	10	40	5200	15.44	16.50	1.276	0.07	0.08
	802.11a	State1	Back	10	40	5200	15.44	16.50	1.276	0.15	0.19
	802.11a	State1	Left	10	40	5200	15.44	16.50	1.276	0.05	0.06
	802.11a	State1	Right	10	40	5200	15.44	16.50	1.276	0.16	0.20
	802.11a	State1	Top	10	40	5200	15.44	16.50	1.276	0.05	0.06
	802.11a	State1	Bottom	10	40	5200	15.44	16.50	1.276	0.04	0.05
ANT8	802.11a	State1	Front	15	40	5200	15.44	16.50	1.276	0.06	0.07
	802.11a	State1	Back	15	40	5200	15.44	16.50	1.276	0.12	0.16

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT7	802.11a	State2	Left Cheek	0	40	5200	13.89	15.50	1.449	0.61	0.89
	802.11a	State2	Left Tilt	0	40	5200	13.89	15.50	1.449	0.43	0.63
	802.11a	State2	Right Cheek	0	40	5200	13.89	15.50	1.449	0.19	0.28
	802.11a	State2	Right Tilt	0	40	5200	13.89	15.50	1.449	0.19	0.28
Body											
ANT7	802.11a	State1	Front	10	40	5200	15.89	16.50	1.151	0.19	0.21
	802.11a	State1	Back	10	40	5200	15.89	16.50	1.151	0.21	0.25
	802.11a	State1	Left	10	40	5200	15.89	16.50	1.151	0.09	0.10
	802.11a	State1	Right	10	40	5200	15.89	16.50	1.151	0.35	0.40
	802.11a	State1	Top	10	40	5200	15.89	16.50	1.151	0.17	0.19
	802.11a	State1	Bottom	10	40	5200	15.89	16.50	1.151	0.12	0.13
ANT7	802.11a	State1	Front	15	40	5200	15.89	16.50	1.151	0.14	0.16
	802.11a	State1	Back	15	40	5200	15.89	16.50	1.151	0.13	0.15
Head Simultaneous transmission											
ANT7	802.11a	State4	Left Cheek	0	40	5200	9.89	10.50	1.151	0.24	0.27
	802.11a	State4	Left Tilt	0	40	5200	9.89	10.50	1.151	0.16	0.18
	802.11a	State4	Right Cheek	0	40	5200	9.89	10.50	1.151	0.07	0.08
	802.11a	State4	Right Tilt	0	40	5200	9.89	10.50	1.151	0.07	0.08

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											

ANT7+8	802.11a	State2	Left Cheek	0	40	5200	16.70	17.50	1.202	0.63	0.75
	802.11a	State2	Left Tilt	0	40	5200	16.70	17.50	1.202	0.47	0.56
	802.11a	State2	Right Cheek	0	40	5200	16.70	17.50	1.202	0.25	0.30
	802.11a	State2	Right Tilt	0	40	5200	16.70	17.50	1.202	0.24	0.29
Body											
ANT7+8	802.11a	State1	Front	10	40	5200	18.86	19.50	1.159	0.21	0.24
	802.11a	State1	Back	10	40	5200	18.86	19.50	1.159	0.23	0.27
	802.11a	State1	Left	10	40	5200	18.86	19.50	1.159	0.08	0.09
	802.11a	State1	Right	10	40	5200	18.86	19.50	1.159	0.41	0.47
	802.11a	State1	Top	10	40	5200	18.86	19.50	1.159	0.20	0.23
	802.11a	State1	Bottom	10	40	5200	18.86	19.50	1.159	0.08	0.09
ANT7+8	802.11a	State1	Front	15	40	5200	18.86	19.50	1.159	0.17	0.20
	802.11a	State1	Back	15	40	5200	18.86	19.50	1.159	0.19	0.22
Head Simultaneous transmission											
ANT7+8	802.11a	State4	Left Cheek	0	40	5200	12.70	13.50	1.202	0.25	0.30
	802.11a	State4	Left Tilt	0	40	5200	12.70	13.50	1.202	0.18	0.22
	802.11a	State4	Right Cheek	0	40	5200	12.70	13.50	1.202	0.10	0.12
	802.11a	State4	Right Tilt	0	40	5200	12.70	13.50	1.202	0.09	0.11

## 11.22. 5.3GWi-Fi SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT8	802.11a	State2	Left Cheek	0	56	5280	13.05	14.00	1.245	0.07	0.08
	802.11a	State2	Left Tilt	0	56	5280	13.05	14.00	1.245	0.05	0.07
	802.11a	State2	Right Cheek	0	56	5280	13.05	14.00	1.245	0.06	0.08
	802.11a	State2	Right Tilt	0	56	5280	13.05	14.00	1.245	0.01	0.01
Body											
ANT8	802.11a	State1	Front	10	56	5280	12.58	13.50	1.236	0.07	0.09
	802.11a	State1	Back	10	56	5280	12.58	13.50	1.236	0.21	0.26
	802.11a	State1	Left	10	56	5280	12.58	13.50	1.236	0.04	0.05
	802.11a	State1	Right	10	56	5280	12.58	13.50	1.236	0.24	0.29
	802.11a	State1	Top	10	56	5280	12.58	13.50	1.236	0.06	0.07
	802.11a	State1	Bottom	10	56	5280	12.58	13.50	1.236	0.07	0.08
ANT8	802.11a	State1	Front	15	56	5280	12.58	13.50	1.236	0.13	0.16
	802.11a	State1	Back	15	56	5280	12.58	13.50	1.236	0.09	0.11

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT7	802.11a	State2	Left Cheek	0	56	5280	13.36	14.00	1.159	0.57	0.66
	802.11a	State2	Left Tilt	0	56	5280	13.36	14.00	1.159	0.40	0.47
	802.11a	State2	Right Cheek	0	56	5280	13.36	14.00	1.159	0.19	0.22
	802.11a	State2	Right Tilt	0	56	5280	13.36	14.00	1.159	0.19	0.22
Body											
ANT7	802.11a	State1	Front	10	56	5280	12.87	13.50	1.156	0.13	0.15
	802.11a	State1	Back	10	56	5280	12.87	13.50	1.156	0.14	0.16
	802.11a	State1	Left	10	56	5280	12.87	13.50	1.156	0.07	0.08
	802.11a	State1	Right	10	56	5280	12.87	13.50	1.156	0.23	0.26
	802.11a	State1	Top	10	56	5280	12.87	13.50	1.156	0.11	0.13
	802.11a	State1	Bottom	10	56	5280	12.87	13.50	1.156	0.06	0.07
ANT7	802.11a	State1	Front	15	56	5280	12.87	13.50	1.156	0.07	0.08
	802.11a	State1	Back	15	56	5280	12.87	13.50	1.156	0.12	0.14
Head Simultaneous transmission											
ANT7	802.11a	State4	Left Cheek	0	56	5280	9.88	10.50	1.153	0.24	0.27
	802.11a	State4	Left Tilt	0	56	5280	9.88	10.50	1.153	0.17	0.20
	802.11a	State4	Right Cheek	0	56	5280	9.88	10.50	1.153	0.08	0.09
	802.11a	State4	Right Tilt	0	56	5280	9.88	10.50	1.153	0.08	0.09

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
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Head											
ANT7+8	802.11a	State2	Left Cheek	0	56	5280	16.22	17.00	1.197	0.66	0.79
	802.11a	State2	Left Tilt	0	56	5280	16.22	17.00	1.197	0.46	0.55
	802.11a	State2	Right Cheek	0	56	5280	16.22	17.00	1.197	0.26	0.31
	802.11a	State2	Right Tilt	0	56	5280	16.22	17.00	1.197	0.26	0.31
Body											
ANT7+8	802.11a	State1	Front	10	56	5280	15.74	16.50	1.191	0.12	0.14
	802.11a	State1	Back	10	56	5280	15.74	16.50	1.191	0.16	0.19
	802.11a	State1	Left	10	56	5280	15.74	16.50	1.191	0.06	0.07
	802.11a	State1	Right	10	56	5280	15.74	16.50	1.191	0.28	0.33
	802.11a	State1	Top	10	56	5280	15.74	16.50	1.191	0.11	0.13
	802.11a	State1	Bottom	10	56	5280	15.74	16.50	1.191	0.05	0.06
ANT7+8	802.11a	State1	Front	15	56	5280	15.74	16.50	1.191	0.09	0.11
	802.11a	State1	Back	15	56	5280	15.74	16.50	1.191	0.10	0.12
Head Simultaneous transmission											
ANT7+8	802.11a	State4	Left Cheek	0	56	5280	12.72	13.50	1.197	0.28	0.33
	802.11a	State4	Left Tilt	0	56	5280	12.72	13.50	1.197	0.19	0.23
	802.11a	State4	Right Cheek	0	56	5280	12.72	13.50	1.197	0.12	0.14
	802.11a	State4	Right Tilt	0	56	5280	12.72	13.50	1.197	0.11	0.13

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Body (0mm)											
ANT8	802.11a	State1	Front	0	56	5280	12.58	13.50	1.236	0.09	0.11
	802.11a	State1	Back	0	56	5280	12.58	13.50	1.236	0.29	0.36
	802.11a	State1	Left	0	56	5280	12.58	13.50	1.236	0.06	0.07
	802.11a	State1	Right	0	56	5280	12.58	13.50	1.236	0.32	0.39
	802.11a	State1	Top	0	56	5280	12.58	13.50	1.236	0.08	0.09
	802.11a	State1	Bottom	0	56	5280	12.58	13.50	1.236	0.09	0.11
ANT7	802.11a	State1	Front	0	56	5280	12.87	13.50	1.156	0.21	0.25
	802.11a	State1	Back	0	56	5280	12.87	13.50	1.156	0.24	0.28
	802.11a	State1	Left	0	56	5280	12.87	13.50	1.156	0.12	0.14
	802.11a	State1	Right	0	56	5280	12.87	13.50	1.156	0.39	0.45
	802.11a	State1	Top	0	56	5280	12.87	13.50	1.156	0.19	0.22
	802.11a	State1	Bottom	0	56	5280	12.87	13.50	1.156	0.10	0.12
ANT7+8	802.11a	State1	Front	0	56	5280	15.74	16.50	1.191	0.21	0.25
	802.11a	State1	Back	0	56	5280	15.74	16.50	1.191	0.29	0.35
	802.11a	State1	Left	0	56	5280	15.74	16.50	1.191	0.10	0.12
	802.11a	State1	Right	0	56	5280	15.74	16.50	1.191	0.50	0.59
	802.11a	State1	Top	0	56	5280	15.74	16.50	1.191	0.20	0.23
	802.11a	State1	Bottom	0	56	5280	15.74	16.50	1.191	0.10	0.11

### 11.23. 5.6GWi-Fi SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT8	802.11a	State2	Left Cheek	0	120	5600	12.93	14.00	1.279	0.28	0.35
	802.11a	State2	Left Tilt	0	120	5600	12.93	14.00	1.279	0.12	0.15
	802.11a	State2	Right Cheek	0	120	5600	12.93	14.00	1.279	0.16	0.21
	802.11a	State2	Right Tilt	0	120	5600	12.93	14.00	1.279	0.08	0.10
Body											
ANT8	802.11a	State1	Front	10	120	5600	12.06	13.50	1.393	0.10	0.14
	802.11a	State1	Back	10	120	5600	12.06	13.50	1.393	0.21	0.29
	802.11a	State1	Left	10	120	5600	12.06	13.50	1.393	0.12	0.17
	802.11a	State1	Right	10	120	5600	12.06	13.50	1.393	0.23	0.32
	802.11a	State1	Top	10	120	5600	12.06	13.50	1.393	0.11	0.15
	802.11a	State1	Bottom	10	120	5600	12.06	13.50	1.393	0.13	0.18
ANT8	802.11a	State1	Front	15	120	5600	12.06	13.50	1.393	0.15	0.21
	802.11a	State1	Back	15	120	5600	12.06	13.50	1.393	0.28	0.40

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT7	802.11a	State2	Left Cheek	0	120	5600	13.27	14.00	1.183	0.63	0.75
	802.11a	State2	Left Tilt	0	120	5600	13.27	14.00	1.183	0.35	0.41
	802.11a	State2	Right Cheek	0	120	5600	13.27	14.00	1.183	0.24	0.28
	802.11a	State2	Right Tilt	0	120	5600	13.27	14.00	1.183	0.24	0.28
Body											
ANT7	802.11a	State1	Front	10	120	5600	12.79	13.50	1.178	0.13	0.15
	802.11a	State1	Back	10	120	5600	12.79	13.50	1.178	0.18	0.21
	802.11a	State1	Left	10	120	5600	12.79	13.50	1.178	0.08	0.09
	802.11a	State1	Right	10	120	5600	12.79	13.50	1.178	0.39	0.46
	802.11a	State1	Top	10	120	5600	12.79	13.50	1.178	0.11	0.13
	802.11a	State1	Bottom	10	120	5600	12.79	13.50	1.178	0.13	0.15
ANT7	802.11a	State1	Front	15	120	5600	12.79	13.50	1.178	0.09	0.11
	802.11a	State1	Back	15	120	5600	12.79	13.50	1.178	0.14	0.17

Head Simultaneous transmission											
Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
ANT7	802.11a	State4	Left Cheek	0	120	5600	9.20	10.00	1.202	0.24	0.29
	802.11a	State4	Left Tilt	0	120	5600	9.20	10.00	1.202	0.13	0.16
	802.11a	State4	Right Cheek	0	120	5600	9.20	10.00	1.202	0.09	0.11
	802.11a	State4	Right Tilt	0	120	5600	9.20	10.00	1.202	0.09	0.11

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											

ANT7+8	802.11a	State2	Left Cheek	0	120	5600	16.11	17.00	1.227	0.69	0.85
	802.11a	State2	Left Tilt	0	120	5600	16.11	17.00	1.227	0.34	0.41
	802.11a	State2	Right Cheek	0	120	5600	16.11	17.00	1.227	0.19	0.24
	802.11a	State2	Right Tilt	0	120	5600	16.11	17.00	1.227	0.19	0.23

Body

ANT7+8	802.11a	State1	Front	10	120	5600	15.60	16.50	1.230	0.14	0.17
	802.11a	State1	Back	10	120	5600	15.60	16.50	1.230	0.29	0.36
	802.11a	State1	Left	10	120	5600	15.60	16.50	1.230	0.07	0.09
	802.11a	State1	Right	10	120	5600	15.60	16.50	1.230	0.47	0.58
	802.11a	State1	Top	10	120	5600	15.60	16.50	1.230	0.09	0.11
	802.11a	State1	Bottom	10	120	5600	15.60	16.50	1.230	0.06	0.07
ANT7+8	802.11a	State1	Front	15	120	5600	15.60	16.50	1.230	0.10	0.12
	802.11a	State1	Back	15	120	5600	15.60	16.50	1.230	0.19	0.23

Head Simultaneous transmission

ANT7+8	802.11a	State4	Left Cheek	0	120	5600	12.06	13.00	1.242	0.25	0.32
	802.11a	State4	Left Tilt	0	120	5600	12.06	13.00	1.242	0.13	0.16
	802.11a	State4	Right Cheek	0	120	5600	12.06	13.00	1.242	0.07	0.09
	802.11a	State4	Right Tilt	0	120	5600	12.06	13.00	1.242	0.07	0.09

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	10g Scaled SAR (W/kg)
Body (0mm)											
ANT8	802.11a	State1	Front	0	120	5600	12.06	13.50	1.393	0.17	0.23
	802.11a	State1	Back	0	120	5600	12.06	13.50	1.393	0.34	0.48
	802.11a	State1	Left	0	120	5600	12.06	13.50	1.393	0.19	0.27
	802.11a	State1	Right	0	120	5600	12.06	13.50	1.393	0.37	0.51
	802.11a	State1	Top	0	120	5600	12.06	13.50	1.393	0.17	0.24
	802.11a	State1	Bottom	0	120	5600	12.06	13.50	1.393	0.21	0.29
ANT7	802.11a	State1	Front	0	120	5600	12.79	13.50	1.178	0.17	0.20
	802.11a	State1	Back	0	120	5600	12.79	13.50	1.178	0.24	0.28
	802.11a	State1	Left	0	120	5600	12.79	13.50	1.178	0.10	0.11
	802.11a	State1	Right	0	120	5600	12.79	13.50	1.178	0.50	0.59
	802.11a	State1	Top	0	120	5600	12.79	13.50	1.178	0.14	0.16
	802.11a	State1	Bottom	0	120	5600	12.79	13.50	1.178	0.16	0.19
ANT7+8	802.11a	State1	Front	0	120	5600	15.60	16.50	1.230	0.18	0.22
	802.11a	State1	Back	0	120	5600	15.60	16.50	1.230	0.36	0.44
	802.11a	State1	Left	0	120	5600	15.60	16.50	1.230	0.10	0.12
	802.11a	State1	Right	0	120	5600	15.60	16.50	1.230	0.58	0.72
	802.11a	State1	Top	0	120	5600	15.60	16.50	1.230	0.11	0.13
	802.11a	State1	Bottom	0	120	5600	15.60	16.50	1.230	0.07	0.09

## 11.24. 5.8GWi-Fi SAR results

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT8	802.11a	State2	Left Cheek	0	157	5785	12.74	14.00	1.337	0.09	0.12
	802.11a	State2	Left Tilt	0	157	5785	12.74	14.00	1.337	0.07	0.09
	802.11a	State2	Right Cheek	0	157	5785	12.74	14.00	1.337	0.06	0.09
	802.11a	State2	Right Tilt	0	157	5785	12.74	14.00	1.337	0.07	0.10
Body											
ANT8	802.11a	State1	Front	10	157	5785	13.32	14.50	1.312	0.16	0.20
	802.11a	State1	Back	10	157	5785	13.32	14.50	1.312	0.18	0.23
	802.11a	State1	Left	10	157	5785	13.32	14.50	1.312	0.06	0.08
	802.11a	State1	Right	10	157	5785	13.32	14.50	1.312	0.19	0.25
	802.11a	State1	Top	10	157	5785	13.32	14.50	1.312	0.08	0.11
	802.11a	State1	Bottom	10	157	5785	13.32	14.50	1.312	0.07	0.09
ANT8	802.11a	State1	Front	15	157	5785	13.32	14.50	1.312	0.06	0.08
	802.11a	State1	Back	15	157	5785	13.32	14.50	1.312	0.10	0.14

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT7	802.11a	State2	Left Cheek	0	157	5785	13.11	14.00	1.227	0.40	0.50
	802.11a	State2	Left Tilt	0	157	5785	13.11	14.00	1.227	0.14	0.17
	802.11a	State2	Right Cheek	0	157	5785	13.11	14.00	1.227	0.10	0.12
	802.11a	State2	Right Tilt	0	157	5785	13.11	14.00	1.227	0.11	0.14
Body											
ANT7	802.11a	State1	Front	10	157	5785	13.57	14.50	1.239	0.11	0.14
	802.11a	State1	Back	10	157	5785	13.57	14.50	1.239	0.16	0.20
	802.11a	State1	Left	10	157	5785	13.57	14.50	1.239	0.11	0.14
	802.11a	State1	Right	10	157	5785	13.57	14.50	1.239	0.40	0.49
	802.11a	State1	Top	10	157	5785	13.57	14.50	1.239	0.10	0.12
	802.11a	State1	Bottom	10	157	5785	13.57	14.50	1.239	0.17	0.21
ANT7	802.11a	State1	Front	15	157	5785	13.57	14.50	1.239	0.08	0.09
	802.11a	State1	Back	15	157	5785	13.57	14.50	1.239	0.10	0.13

Config	Mode	Power Level	Position	Dist. (mm)	Ch.	Freq. (MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	10g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
Head											
ANT7+8	802.11a	State2	Left Cheek	0	157	5785	15.94	17.00	1.276	0.40	0.50
	802.11a	State2	Left Tilt	0	157	5785	15.94	17.00	1.276	0.16	0.20
	802.11a	State2	Right Cheek	0	157	5785	15.94	17.00	1.276	0.10	0.13
	802.11a	State2	Right Tilt	0	157	5785	15.94	17.00	1.276	0.12	0.15
Body											

ANT7+8	802.11a	State1	Front	10	157	5785	16.46	17.50	1.271	0.17	0.22
	802.11a	State1	Back	10	157	5785	16.46	17.50	1.271	0.27	0.34
	802.11a	State1	Left	10	157	5785	16.46	17.50	1.271	0.06	0.08
	802.11a	State1	Right	10	157	5785	16.46	17.50	1.271	0.49	0.62
	802.11a	State1	Top	10	157	5785	16.46	17.50	1.271	0.14	0.18
	802.11a	State1	Bottom	10	157	5785	16.46	17.50	1.271	0.05	0.07
ANT7+8	802.11a	State1	Front	15	157	5785	16.46	17.50	1.271	0.12	0.15
	802.11a	State1	Back	15	157	5785	16.46	17.50	1.271	0.14	0.18
Head Simultaneous transmission											
ANT7	802.11a	State4	Left Cheek	0	157	5785	9.06	10.0	1.242	0.16	0.20
	802.11a	State4	Left Tilt	0	157	5785	9.06	10.0	1.242	0.06	0.07
	802.11a	State4	Right Cheek	0	157	5785	9.06	10.0	1.242	0.04	0.05
	802.11a	State4	Right Tilt	0	157	5785	9.06	10.0	1.242	0.04	0.06
Head Simultaneous transmission											
ANT7+8	802.11a	State4	Left Cheek	0	157	5785	11.90	13.0	1.288	0.16	0.20
	802.11a	Reduce Power	Left Tilt	0	157	5785	11.90	13.0	1.288	0.06	0.08
	802.11a	Reduce Power	Right Cheek	0	157	5785	11.90	13.0	1.288	0.04	0.05
	802.11a	Reduce Power	Right Tilt	0	157	5785	11.90	13.0	1.288	0.05	0.06

## 11.25. Repeated SAR results

Remark:

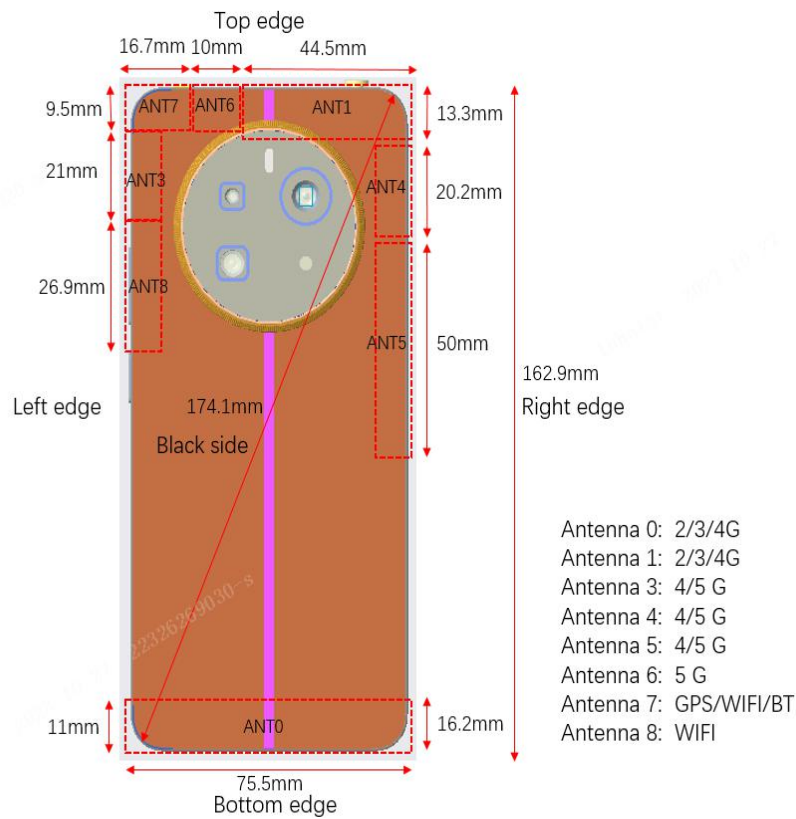
1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is  $\geq 0.8\text{W/kg}$ .
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is  $\leq 1.2$  and the measured SAR  $< 1.45\text{W/kg}$ , only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated measured SAR.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

Power Level	Mode	Position	Dist.(mm)	Ch.	Freq.(MHz)	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	1g Meas SAR (W/kg)	1g Scaled SAR (W/kg)
original Power	RMC	Right Cheek	0	4183	836.6	23.98	25.0	1.265	0.73	0.93
original Power	RMC	Right Cheek	0	4183	836.6	23.98	25.0	1.265	0.71	0.89

original Power	20Mhz	QPSK	50	25	Right Cheek	0	167300	836.5	23.05	24.70	1.462	0.61	0.90
original Power	20Mhz	QPSK	50	25	Right Cheek	0	167300	836.5	23.05	24.70	1.462	0.58	0.85

## 12. EXPOSURE POSITIONS CONSIDERATION

### 12.1. Multiple Transmitter Evaluation



Antennas	Distance of the Antenna to the EUT surface edge					
	Front	Back	Left	Right	Top	Bottom
ANT0	≤25mm	≤25mm	≤25mm	≤25mm	>25mm	≤25mm
ANT1	≤25mm	≤25mm	≤25mm	>25mm	≤25mm	>25mm
ANT4	≤25mm	≤25mm	≤25mm	>25mm	>25mm	>25mm
ANT7	≤25mm	≤25mm	>25mm	≤25mm	≤25mm	>25mm
ANT8	≤25mm	≤25mm	>25mm	≤25mm	>25mm	>25mm

	Positions for SAR tests; Hotspot mode					
Antennas	Front	Back	Left	Right	Top	Bottom
ANT0	Yes	Yes	Yes	Yes	No	Yes
ANT1	Yes	Yes	Yes	No	Yes	No
ANT4	Yes	Yes	Yes	No	No	No
ANT7	Yes	Yes	No	Yes	Yes	No
ANT8	Yes	Yes	No	Yes	No	No



## 12.2. Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

Support	WLAN 5GHz(chain 0) + BT(chain 0)
Support	WLAN 5GHz(chain 1) + BT(chain 0)
Support	WLAN 5GHz MIMO + BT(chain 0)
Support	WLAN 2.4GHz (chain 0) + WLAN 5GHz (chain 1)
Support	WWAN + WLAN 2.4GHz(chain 0)
Support	WWAN + WLAN 2.4GHz(chain 1)
Support	WWAN + WLAN 2.4GHz MIMO
Support	WWAN + WLAN 5GHz(chain 0)
Support	WWAN + WLAN 5GHz(chain 1)
Support	WWAN + WLAN 5GHz MIMO
Support	WWAN + BT
Support	WWAN + WLAN 5GHz(chain 0) + BT(chain 0)
Support	WWAN + WLAN 5GHz(chain 1) + BT(chain 0)
Support	WWAN + WLAN 5GHz MIMO + BT(chain 0)
Support	WWAN + WLAN 2.4GHz (chain 0) + WLAN 5GHz (chain 1)

**Table 7: Simultaneous Transmission Possibilities**

Note:

- 1) Bluetooth share the same Tx antenna and can't transmit simultaneously.
- 2) 2G&3G&4G&5G can't transmit simultaneously.
- 3) Held to ear configurations are not applicable to Bluetooth and therefore were not considered for simultaneous transmission.

### 12.3. SAR Summation Scenario

Test Position		Left head touched	Left head tilted 15°	Righthhead touched	Right head tilted 15°
	GSM850	0.69	0.64	0.80	0.62
	PCS1900	0.38	0.46	0.48	0.59
	WCDMA Band II	0.48	0.59	0.60	0.77
	WCDMA Band IV	0.45	0.60	0.60	0.85
	WCDMA Band V	0.86	0.81	0.93	0.72
	LTE Band 2	0.45	0.56	0.58	0.72
	LTE Band 4	0.47	0.61	0.65	0.89
	LTE Band 5	0.52	0.49	0.55	0.44
	LTE Band 7	0.45	0.55	0.57	0.66
	LTE Band 12	0.50	0.52	0.58	0.55
	LTE Band 13	0.76	0.75	0.87	0.71
	LTE Band 17	0.53	0.53	0.61	0.57
	LTE Band 26	0.54	0.51	0.61	0.47
	LTE Band 38	0.38	0.47	0.48	0.55
	LTE Band 41	0.39	0.51	0.49	0.58
LTE Band 66	0.47	0.61	0.63	0.82	
NR	n5	0.84	0.79	0.90	0.69
	n7	0.21	0.12	0.57	0.26
	n38	0.54	0.67	0.70	0.75
	n41	0.56	0.67	0.68	0.76
	n66	0.22	0.29	0.31	0.45

## ENDC

Test Position		Left head touched	Left head tilted 15°	Righthhead touched	Right head tilted 15°
ENDC	LTE Band 7 (ANT1)	0.45	0.55	0.57	0.66
	LTE Band 7 (ANT4)	0.15	0.08	0.42	0.18
	LTE Band 66 (ANT1)	0.47	0.61	0.63	0.82
	N5 (ANT0)	0.15	0.10	0.14	0.10
$\Sigma 1g$ SAR(W/kg)		0.62	0.71	0.77	0.92

Test Position		Left head touched	Left head tilted 15°	Righthhead touched	Right head tilted 15°
ENDC	LTE Band 2 (ANT0)	0.17	0.13	0.16	0.15
	LTE Band 4 (ANT1)	0.47	0.61	0.65	0.89
	LTE Band 5 (ANT0)	0.21	0.13	0.16	0.10
	LTE Band 66 (ANT1)	0.47	0.61	0.63	0.82
	N7(ANT0/4)	0.17	0.10	0.47	0.22
	N7(ANT1/4)	0.29	0.34	0.47	0.27
$\Sigma 1g$ SAR(W/kg)		0.76	0.95	1.12	1.16

Test Position		Left head touched	Left head tilted 15°	Righthead touched	Right head tilted 15°
ENDC	LTE Band 2 (ANT0)	0.17	0.13	0.16	0.15
	LTE Band 4 (ANT0)	0.14	0.01	0.09	0.10
	LTE Band 5 (ANT0)	0.21	0.13	0.16	0.10
	LTE Band 66 (ANT0)	0.12	0.04	0.07	0.08
	N38 (ANT1/4)	0.54	0.67	0.70	0.75
$\Sigma$ 1g SAR(W/kg)		0.75	0.80	0.23	0.90

Test Position		Left head touched	Left head tilted 15°	Righthead touched	Right head tilted 15°
ENDC	LTE Band 2 (ANT0)	0.17	0.13	0.16	0.15
	LTE Band 4 (ANT0)	0.14	0.01	0.09	0.10
	LTE Band 26 (ANT0)	0.18	0.12	0.15	0.10
	LTE Band 66 (ANT0)	0.12	0.04	0.07	0.08
	N41 (ANT1/4)	0.56	0.67	0.68	0.76
$\Sigma$ 1g SAR(W/kg)		0.74	0.80	0.84	0.91

Test Position		Left head touched	Left head tilted 15°	Righthead touched	Right head tilted 15°
ENDC	LTE Band 2 (ANT0)	0.17	0.13	0.16	0.15
	LTE Band 5 (ANT0)	0.21	0.13	0.16	0.10
	LTE Band 7 (ANT1)	0.45	0.55	0.57	0.66
	LTE Band 12 (ANT0)	0.19	0.08	0.14	0.07
	N66 (ANT0)	0.07	0.01	0.09	0.04
	N66 (ANT1)	0.22	0.29	0.31	0.45
$\Sigma$ 10g SAR(W/kg)		0.52	0.56	0.66	0.70

Test Position	Left head touched	Left head tilted 15°	Righthhead touched	Right head tilted 15°
WWAN	0.86	0.81	0.93	0.89
ENDC	0.76	0.95	1.12	1.16
802.11b 2.4G(Chain 8	0.21	0.15	0.09	0.10
802.11b 2.4G(Chain 7)	0.10	0.06	0.08	0.01
802.11b 2.4G(Chain 7+8)	0.25	0.22	0.16	0.17
802.11a 5.2G(Chain 8)	0.05	0.05	0.08	0.01
802.11a 5.2G(Chain 7)	0.27	0.18	0.08	0.08
802.11a 5.2G(Chain 7+8)	0.30	0.22	0.12	0.11
802.11a 5.3G(Chain 8)	0.08	0.07	0.08	0.01
802.11a 5.3G(Chain 7)	0.27	0.20	0.09	0.09
802.11a 5.3G(Chain 7+8)	0.33	0.23	0.14	0.13
802.11a 5.6G(Chain 8)	0.35	0.15	0.21	0.10
802.11a 5.6G(Chain 7)	0.29	0.16	0.11	0.11
802.11a 5.6G(Chain 7+8)	0.32	0.16	0.09	0.09
802.11a 5.8G(Chain 8)	0.12	0.09	0.09	0.10
802.11a 5.8G(Chain 7)	0.20	0.07	0.05	0.06
802.11a 5.8G(Chain 7+8)	0.20	0.08	0.05	0.06
BT	0.20	0.16	0.09	0.09
Σ1g SAR(W/kg)	1.41	1.34	1.42	1.38

Conclusion:

- 1) Simultaneous Transmission SAR evaluation is not required for WiFi and UMTS&GSM&LTE&NSA, because the sum of the 1g SAR is  $1.42\text{W/kg} < 1.6\text{ W/kg}$ .
- 2) One way of determining the threshold power level available to the secondary transmitter( $P_{\text{available}}$ ) is to calculate it from the measured peak spatial-average SAR of the primary transmitter (SAR1) according to the equation:

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
	GSM850	0.18	0.29	0.24	0.14	0.20	0.23	0.23	0.29
	PCS1900	0.34	0.34	0.06	0.12	0.30	0.40	0.14	0.20
	WCDMA Band I	0.24	0.36	0.05	0.12	0.24	0.46	0.24	0.31
	WCDMA Band IV	0.16	0.31	0.03	0.08	0.33	0.39	0.16	0.29
	WCDMA Band VIII	0.16	0.26	0.16	0.14	0.22	0.19	0.16	0.20
	LTE Band 2	0.26	0.39	0.06	0.13	0.28	0.52	0.23	0.35
	LTE Band 4	0.24	0.45	0.07	0.11	0.41	0.59	0.18	0.37
	LTE Band 5	0.18	0.30	0.17	0.15	0.24	0.18	0.16	0.21
	LTE Band 7	0.53	0.62	0.59	0.13	0.21	0.27	0.26	0.36
	LTE Band 12	0.16	0.25	0.21	0.15	0.12	0.09	0.17	0.24
	LTE Band 13	0.21	0.30	0.19	0.19	0.21	0.24	0.22	0.28
	LTE Band 17	0.16	0.25	0.23	0.17	0.13	0.10	0.18	0.24
	LTE Band 26	0.18	0.28	0.16	0.16	0.24	0.17	0.14	0.19
	LTE Band 38	0.15	0.58	0.17	0.01	0.24	0.24	0.10	0.30

	LTE Band 41	0.20	0.39	0.23	0.21	0.28	0.19	0.09	0.23
	LTE Band 66	0.28	0.48	0.07	0.13	0.39	0.58	0.29	0.44
NR	n5	0.15	0.30	0.19	0.13	0.19	0.16	0.14	0.19
	n7	0.44	0.54	0.49	0.08	0.24	0.17	0.34	0.38
	n38	0.45	0.54	0.54	0.06	0.27	0.14	0.37	0.34
	n41	0.36	0.73	0.42	0.06	0.29	0.14	0.36	0.33
	n66	0.19	0.48	0.03	0.07	0.49	0.35	0.14	0.33



## ENDC

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
ENDC	LTE Band 7 (ANT1)	0.07	0.11	0.11	0.06	0.21	0.05	0.07	0.09
	LTE Band 7 (ANT4)	0.53	0.62	0.59	0.01	0.18	0.07	0.26	0.25
	LTE Band 66 (ANT1)	0.14	0.35	0.04	0.03	0.39	0.02	0.13	0.27
	N5 (ANT0)	0.15	0.24	0.19	0.12	0.01	0.16	0.14	0.19
$\Sigma$ 1g SAR(W/kg)		0.68	0.86	0.78	0.18	0.40	0.23	0.40	0.46

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
ENDC	LTE Band 2 (ANT0)	0.26	0.39	0.06	0.13	0.05	0.52	0.23	0.35
	LTE Band 4 (ANT1)	0.14	0.38	0.01	0.02	0.41	0.01	0.14	0.27
	LTE Band 5 (ANT0)	0.13	0.22	0.17	0.10	0.02	0.18	0.15	0.19
	LTE Band 66 (ANT1)	0.14	0.35	0.04	0.03	0.39	0.02	0.13	0.27
	N7(ANT0/4)	0.44	0.54	0.49	0.08	0.11	0.17	0.34	0.33
	N7(ANT1/4)	0.44	0.54	0.49	0.04	0.24	0.06	0.34	0.33
$\Sigma$ 1g SAR(W/kg)		0.70	0.93	0.66	0.21	0.52	0.69	0.57	0.68

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
ENDC	LTE Band 2 (ANT0)	0.26	0.39	0.06	0.13	0.05	0.52	0.23	0.35
	LTE Band 4 (ANT0)	0.24	0.45	0.07	0.11	0.02	0.59	0.18	0.37
	LTE Band 5 (ANT0)	0.13	0.22	0.17	0.10	0.02	0.18	0.15	0.19
	LTE Band 66 (ANT0)	0.28	0.48	0.07	0.13	0.01	0.58	0.29	0.44
	N38 (ANT1/4)	0.28	0.34	0.34	0.03	0.27	0.02	0.37	0.34
$\Sigma$ 1g SAR(W/kg)		0.56	0.82	0.51	0.16	0.31	0.61	0.66	0.78

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
ENDC	LTE Band 2 (ANT0)	0.26	0.39	0.06	0.13	0.05	0.52	0.23	0.35
	LTE Band 4 (ANT0)	0.24	0.45	0.07	0.11	0.02	0.59	0.18	0.37
	LTE Band 26 (ANT0)	0.13	0.22	0.16	0.10	0.02	0.17	0.14	0.19
	LTE Band 66 (ANT0)	0.28	0.48	0.07	0.13	0.01	0.58	0.29	0.44
	N41 (ANT1/4)	0.36	0.41	0.42	0.03	0.29	0.03	0.36	0.33
$\Sigma$ 1g SAR(W/kg)		0.64	0.89	0.58	0.16	0.34	0.62	0.65	0.77

Test Position		Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
ENDC	LTE Band 2 (ANT0)	0.26	0.39	0.06	0.13	0.05	0.52	0.23	0.35
	LTE Band 5 (ANT0)	0.13	0.22	0.17	0.10	0.02	0.18	0.15	0.19
	LTE Band 7 (ANT1)	0.07	0.11	0.11	0.06	0.21	0.05	0.07	0.09
	LTE Band 12 (ANT0)	0.12	0.19	0.17	0.13	0.01	0.09	0.15	0.22
	N66 (ANT0)	0.13	0.24	0.03	0.07	0.01	0.35	0.14	0.24
	N66 (ANT1)	0.19	0.48	0.02	0.02	0.49	0.01	0.13	0.33
Σ1g SAR(W/kg)		0.39	0.70	0.19	0.20	0.51	0.87	0.37	0.59

Test Position	Front Side 10mm	Back Side 10mm	Left Side 10mm	Right Side 10mm	Top Side 10mm	Bottom Side 10mm	Front Side 15mm	Back Side 15mm
WWAN	0.53	0.73	0.59	0.21	0.49	0.59	0.37	0.44
ENDC	0.70	0.93	0.78	0.21	0.52	0.87	0.66	0.78
802.11b 2.4G(Chain 8)	0.05	0.11	0.02	0.06	0.07	0.04	0.07	0.14
802.11b 2.4G(Chain 7)	0.08	0.32	0.05	0.21	0.05	0.01	0.03	0.14
802.11b 2.4G(Chain 7+8)	0.16	0.47	0.06	0.40	0.20	0.01	0.09	0.19
802.11a 5.2G(Chain 8)	0.08	0.19	0.06	0.20	0.06	0.05	0.07	0.16
802.11a 5.2G(Chain 7)	0.21	0.25	0.10	0.40	0.19	0.13	0.16	0.15
802.11a 5.2G(Chain 7+8)	0.24	0.27	0.09	0.47	0.23	0.09	0.20	0.22
802.11a 5.3G(Chain 8)	0.09	0.26	0.05	0.29	0.07	0.08	0.16	0.11
802.11a 5.3G(Chain 7)	0.15	0.16	0.08	0.26	0.13	0.07	0.08	0.14
802.11a 5.3G(Chain 7+8)	0.14	0.19	0.07	0.33	0.13	0.06	0.11	0.12
802.11a 5.6G(Chain 8)	0.14	0.29	0.17	0.32	0.15	0.18	0.21	0.40
802.11a 5.6G(Chain 7)	0.15	0.21	0.09	0.46	0.13	0.15	0.11	0.17
802.11a 5.6G(Chain 7+8)	0.17	0.36	0.09	0.58	0.11	0.07	0.12	0.23
802.11a 5.8G(Chain 8)	0.20	0.23	0.08	0.25	0.11	0.09	0.08	0.14
802.11a 5.8G(Chain 7)	0.14	0.20	0.14	0.49	0.12	0.21	0.09	0.13
802.11a 5.8G(Chain 7+8)	0.22	0.34	0.08	0.62	0.18	0.07	0.15	0.18
BT	0.01	0.08	0.02	0.05	0.05	0.01	0.01	0.03
Σ1g SAR(W/kg)	0.95	1.40	0.97	0.88	0.90	1.15	0.88	1.21

Conclusion:

- 1) Simultaneous Transmission SAR evaluation is not required for WiFi and UMTS&GSM&LTE&NSA, because the sum of the 1g SAR is  $1.40\text{W/kg} < 1.6\text{ W/kg}$ .
- 2) One way of determining the threshold power level available to the secondary transmitter( $P_{\text{available}}$ ) is to calculate it from the measured peak spatial-average SAR of the primary transmitter (SAR1) according to the equation:

#### **12.4. Simultaneous Transmission Conclusion**

The above numeral summed SAR results and SPLSR analysis is sufficient to determine that simultaneous cases will not exceed the SAR limit and therefore simultaneous transmission SAR with Volume Scan is not required per KDB 447498 D01v06

**Appendix A. System Check Plots**

**(Pls see Appendix A)**

**Appendix B. MEASUREMENT SCANS**

**(Pls see Appendix B)**

**Appendix C RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)**

**(Pls see Appendix C)**

**Appendix D. RELEVANT PAGES FROM DAE&DIPOLE VALIDATION KIT REPORT(S)**

**(Pls see Appendix D)**

**Appendix E. Photographs of the Test Set-Up**

**(Pls see Appendix E)**

**Appendix F. Conducted RF Output Power Table and Tune-up**

**(Pls see Appendix F)**