FCC SAR Test Report

APPLICANT	:	TCL Communication Ltd
EQUIPMENT	:	GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone
BRAND NAME	:	ALCATEL ONETOUCH
MODEL NAME	:	6045B
MARKETING NAME	:	ALCATEL ONETOUCH IDOL 3 (5.5)
FCC ID	:	2ACCJN001
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2003

We, SPORTON INTERNATIONAL (KUNSHAN) INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (KUNSHAN) INC., the test report shall not be reproduced except in full.

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Approved by: Jones Tsai / Manager

Testing Laboratory
2627

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA511301	Rev. 01	Initial issue of report	Apr. 06, 2015
FA511301	Rev. 02	1) Updated description of note 2 on page 4. 2) Added antenna location for reversed portrait on page 48. 3) Added SAR test items for battery 2 and headset 2.	Apr. 10, 2015
FA511301	Rev. 03	Added illustration of power reduction mechanism on page 8.	Apr. 14, 2015
FA511301	Rev. 04	Revised the equipment to "GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone".	Apr. 14, 2015
FA511301	Rev. 05	Update report for revising Brand Name to ALCATEL ONETOUCH	Apr. 20, 2015

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **TCL Communication Ltd, GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone, 6045B,** are as follows.

Equipment Class	Frequency Band	Highest SAR Summary				
		Head 1g SAR (W/kg)	Wireless Router (Separation 1cm) 1g SAR (W/kg)	Body-worn (Separation 1cm) 1g SAR (W/kg)	Extremity (Separation 0cm) 10g SAR (W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)
PCE	GSM850	1.13	0.59	0.59		1.59
	GSM1900	1.23	0.79	0.79		
	WCDMA Band V	1.20	0.47	0.47		
	WCDMA Band II	1.38	1.18	1.18		
	LTE Band 4	**1.40**	0.79	0.79		
	LTE Band 2	1.17	**1.29**	**1.32**	**3.01**	
	LTE Band 7	1.31	1.19	1.08		
DTS	2.4GHz WLAN	1.30	0.30	0.30		1.59
NII	5.2GHz WLAN	0.50		0.11		1.57
	5.8GHz WLAN	1.38	0.59	0.59		
Date of Testing:		Feb. 16, 2015 ~ Apr. 10, 2015				

Note:

1. The SAR value list above are all rounded to two decimal digits.
2. a. According to section 16.2, the maximum simultaneous SAR for WWAN+NII is 1.88W/kg.
   b. Per KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by (SAR1 + SAR2)1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. For all configurations SPLSR is ≤ 0.04 and qualify for 1-g SAR test exclusion.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/kg as averaged over any 1 gram of tissue; 4.0W/kg as averaged over any 10 gram of tissue for extremity SAR) 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 1528-2003.

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.
Test Site Location	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P. R. China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958

Applicant	
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Manufacturer	
Company Name	TCL Communication Ltd
Address	FLAT/RM 1910-12A BLOCK 3 19/F CHINA HONG KONG CITY 33 CANTON ROAD TSIMSHATSUI KL

3. Guidance Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- ANSI/IEEE C95.3-2002
- IEEE 1528-2003
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03
- FCC KDB 865664 D02 SAR Reporting v01r01
- FCC KDB 447498 D01 General RF Exposure Guidance v05r02
- FCC KDB 648474 D04 SAR Evaluation Considerations for Wireless Handsets v01r02
- FCC KDB 248227 D01 SAR meas for 802 11abg v01r02
- FCC KDB 941225 D01 3G SAR Procedures v03
- FCC KDB 941225 D05 SAR for LTE Devices v02r03
- FCC KDB 941225 D06 Hotspot Mode SAR v02

4. Equipment Under Test (EUT)

4.1 General Information

Product Feature & Specification	
Equipment Name	GSM Quad-band / UMTS Quad-band / LTE 6 band mobile phone
Brand Name	ALCATEL ONETOUCH
Model Name	6045B
Marketing Name	ALCATEL ONETOUCH IDOL 3 (5.5)
FCC ID	2ACCJN001
IMEI Code	014324000002392
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz WLAN 2.4GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2GHz Band: 5180 MHz ~ 5240 MHz WLAN 5.8GHz Band: 5745 MHz ~ 5825 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC: 13.56 MHz
Mode	• GSM/GPRS/EGPRS • RMC/AMR 12.2Kbps • HSDPA • HSUPA • DC-HSDPA • HSPA+ (uplink 16QAM is not supported) • LTE • WLAN 2.4GHz 802.11b/g/n HT20 • WLAN 5GHz 802.11a/n HT20/HT40 • Bluetooth v3.0+EDR, Bluetooth v4.1 LE • NFC
HW Version	PIO
SW Version	7S25
GSM / (E)GPRS Dual Transfer mode	Class A – EUT can support Packet Switched and Circuit Switched Network simultaneously.
EUT Stage	Identical Prototype

Remark:

1. This device supports VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP), LTE supports VoLTE operation and 802.11n-HT40 is not supported in 2.4GHz WLAN.
2. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).
3. This device supports GRPS/EGPRS mode up to multi-slot class12 and supports DTM up to multi-slot class11.
4. This device has two sets of receivers and microphone, 1 receiver is located at the top and another one is located at the bottom of the phone. For the next-to-ear voice call the product allows the end user to use the device in the typical calling positions and in the reversed calling position. When the User Interface is in reversed portrait orientation, power reduction is implemented for the scenario that the bottom receiver is placed next-to-ear during the voice call, and SAR compliance was accessed for both orientations. The details of the power reduction mechanism for the reverse call are illustrated in the operational description.

4.2 Maximum Tune-up Limit

Mode		Burst Average Power(dBm)			
		GSM850		GSM1900	
		Full power mode	Reduced power mode	Full power mode	Reduced power mode
GSM (GMSK, 1 Tx slot)		33.5	31.0	30.5	26.5
GPRS (GMSK, 1 Tx slot)		33.5	31.0	30.5	26.5
GPRS (GMSK, 2 Tx slots)		31.5	28.0	28.5	24.0
GPRS (GMSK, 3 Tx slots)		30.0	26.0	27.0	22.0
GPRS (GMSK, 4 Tx slots)		29.2	25.0	26.1	21.0
EDGE (8PSK, 1 Tx slot)		27.0	27.0	26.0	26.0
EDGE (8PSK, 2 Tx slots)		26.0	26.0	25.0	23.5
EDGE (8PSK, 3 Tx slots)		25.5	24.0	23.5	21.5
EDGE (8PSK, 4 Tx slots)		23.0	23.0	22.0	20.5
DTM 5	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.5	24.0
	GPRS (GMSK, 1 Tx slot)	31.5	28.0	28.5	24.0
DTM 9	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.5	24.0
	GPRS (GMSK, 1 Tx slot)	31.5	28.0	28.5	24.0
DTM11	GSM (GMSK, 1 Tx slot)	30.0	26.0	27.0	22.0
	GPRS (GMSK, 2 Tx slots)	30.0	26.0	27.0	22.0
DTM 5	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.5	23.5
	EDGE (8PSK, 1 Tx slot)	26.0	26.0	25.0	23.5
DTM 9	GSM (GMSK, 1 Tx slot)	31.5	28.0	28.5	23.5
	EDGE (8PSK, 1 Tx slot)	26.0	26.0	25.0	23.5
DTM 11	GSM (GMSK, 1 Tx slot)	30.0	26.0	27.0	22.0
	EDGE (8PSK, 2 Tx slots)	24.5	24.0	23.5	21.5

Band / Mode				Average Power (dBm)
WCDMA	Band V	Full Power Mode	RMC / AMR12.2Kbps	24.8
			HSDPA	22.5
			DC-HSDPA	22.5
			HSUPA	22.5
		Reduced Power Mode	RMC / AMR12.2Kbps	22.5
			HSDPA	20.5
			DC-HSDPA	20.5
			HSUPA	20.5
	Band II	Full Power Mode	RMC / AMR12.2Kbps	23.2
			HSDPA	22.5
			DC-HSDPA	22.5
			HSUPA	22.5
		Reduced Power Mode	RMC / AMR12.2Kbps	18.0
			HSDPA	17.0
			DC-HSDPA	17.0
			HSUPA	17.0

Band / Mode			Average Power (dBm)
LTE	Band 4	Full Power Mode	24.3
		Reduced Power Mode	18.9
	Band 2	Full Power Mode	24.0
		Reduced Power Mode	17.0
	Band 7	Full Power Mode	22.0
		Reduced Power Mode	18.5
2.4GHz WLAN	802.11b		19.3
	802.11g		14.0
	802.11n HT20		12.5
5.2GHz WLAN	802.11a		15.0
	802.11n HT20		12.0
	802.11n HT40		12.0
5.8GHz WLAN	802.11a	CH 149	13.3
		CH 153	13.3
		CH 157	14.3
		CH 161	14.3
		CH 165	14.3
	802.11n HT20		12.0
	802.11n HT40		12.0
Bluetooth v3.0 + EDR			6.0
Bluetooth v4.1 LE			1.0

Remark:

This device employs a “reverse calling” feature based on the orientation of the device such that a call can be made or taken in either portrait orientation (“Normal” and “Upside Down”). When a user answer a voice call or initiate a voice call, the dialer UI orientation is locked and the power reduction mechanison will be activated if it’s locked in the reverse portrait mode. The maximum output power is reduced for a number of wireless technologies, as specified above, for the reverse calling mode. The details of the implementation is illustrated in the operational description for reverse call.

The device has been tested in voice mode for head SAR exposure compliance in both normal and reduced power mode according to the maximum output power specified in this document. Body-worn accessory and hotspot mode SAR compliance are tested at normal mode maximum output power without power reduction

4.3 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r03	
FCC ID	2ACCJN001
Equipment Name	GSM Quad-band / UMTS Quad-band / LTE 6 band MOBILE PHONE
Operating Frequency Range of each LTE transmission band	LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 7: 2502.5 MHz ~ 2567.5 MHz
Channel Bandwidth	1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 2/4) 5MHz, 10MHz, 15MHz, 20MHz (LTE Band 7)
uplink modulations used	QPSK, and 16QAM
LTE Voice / Data requirements	VoLTE is supported
LTE MPR permanently built-in by design	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3
LTE -MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI).
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
LTE Release Version	R9
Power reduction applied to satisfy SAR compliance	Yes, Power reduction is enabled when the User Interface is in the reversed portrait orientation.

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

LTE Band 4

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 2

	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 7

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20775	2502.5	20800	2505	20825	2507.5	20850	2510
M	21100	2535	21100	2535	21100	2535	21100	2535
H	21425	2567.5	21400	2565	21375	2562.5	21350	2560

5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

5.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

6. Specific Absorption Rate (SAR)

6.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

6.2 SAR Definition

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

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

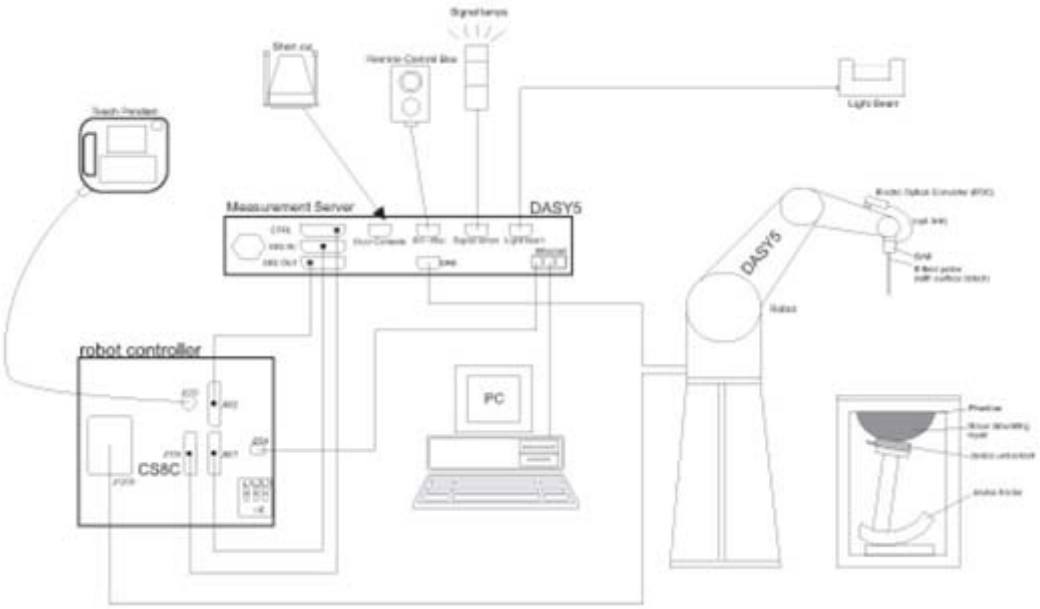
SAR is expressed in units of Watts per kilogram (W/kg)

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

7. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

8. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

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

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

8.1 Spatial Peak SAR Evaluation

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

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

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

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

8.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

8.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

8.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r03 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

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

8.5 Volume Scan Procedures

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

8.6 Power Drift Monitoring

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

9. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d091	Nov. 21, 2014	Nov. 20, 2015
SPEAG	1750MHz System Validation Kit	D1750V2	1069	Nov. 21, 2014	Nov. 20, 2015
SPEAG	1900MHz System Validation Kit	D1900V2	5d118	Nov. 21, 2014	Nov. 20, 2015
SPEAG	2450MHz System Validation Kit	D2450V2	840	Nov. 19, 2014	Nov. 18, 2015
SPEAG	2600MHz System Validation Kit	D2600V2	1061	Nov. 19, 2014	Nov. 18, 2015
SPEAG	5000MHz System Validation Kit	D5GHzV2	1113	Nov. 24, 2014	Nov. 23, 2015
SPEAG	Data Acquisition Electronics	DAE4	1210	May 19, 2014	May 18, 2015
SPEAG	Dosimetric E-Field Probe	EX3DV4	3857	May 23, 2014	May 22, 2015
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1477	NCR	NCR
SPEAG	SAM Twin Phantom	QD 000 P40 CB	TP-1479	NCR	NCR
SPEAG	Phone Positioner	N/A	N/A	NCR	NCR
Anritsu	Radio communication analyzer	MT8820C	6201091028	Jul. 10, 2014	Jul. 09, 2015
Agilent	Wireless Communication Test Set	E5515C	MY52102706	May 03, 2014	May 02, 2015
Agilent	Wireless Communication Test Set	E5515E	MY53211040	Jun. 12, 2014	Jun. 11, 2015
R&S	Signal Generator	SMBV100A	258305	Jan. 23, 2015	Jan. 22, 2016
R&S	Bluetooth Tester	CBT	100783	Aug. 11, 2014	Aug. 10, 2015
Agilent	ENA Series Network Analyzer	E5071C	MY46111157	May 04, 2014	May 03, 2015
Agilent	Dielectric Probe Kit	85070E	MY44300475	NCR	NCR
Anritsu	Power Senor	MA2411B	0917070	Jan. 23, 2015	Jan. 22, 2016
Anritsu	Power Meter	ML2495A	1005002	Jan. 23, 2015	Jan. 22, 2016
ARRA	Power Divider	A3200-2	N/A	NA	NA
R&S	Spectrum Analyzer	FSP40	100319	Oct. 28, 2014	Oct. 27, 2015
Agilent	Dual Directional Coupler	778D	50422	Note1	
Woken	Attenuator 1	WK0602-XX	N/A	Note1	
PE	Attenuator 2	PE7005-10	N/A	Note1	
PE	Attenuator 3	PE7005-3	N/A	Note1	
AR	Power Amplifier	5S1G4M2	0328767	Note1	
Mini-Circuits	Power Amplifier	ZVE-3W	162601250	Note1	
Mini-Circuits	Power Amplifier	ZHL-42W+	13440021344	Note1	

General Note:
Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

10. System Verification

10.1 Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
1750	55.2	0	0	0.3	0	44.5	1.37	40.1
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
1750	70.2	0	0	0.4	0	29.4	1.49	53.4
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
835	Head	22.6	0.885	41.087	0.90	41.50	-1.67	-1.00	±5	Feb. 17, 2015
835	Head	22.5	0.893	41.380	0.90	41.50	-0.78	-0.29	±5	Apr. 09, 2015
1750	Head	22.6	1.398	41.384	1.37	40.10	2.04	3.20	±5	Feb. 17, 2015
1750	Head	22.5	1.373	41.392	1.37	40.10	0.22	3.22	±5	Apr. 09, 2015
1900	Head	22.9	1.424	39.036	1.40	40.00	1.71	-2.41	±5	Feb. 16, 2015
1900	Head	22.5	1.423	39.080	1.40	40.00	1.64	-2.30	±5	Apr. 09, 2015
2450	Head	22.5	1.819	39.212	1.80	39.20	1.06	0.03	±5	Feb. 27, 2015
2450	Head	22.5	1.842	39.923	1.80	39.20	2.33	1.84	±5	Apr. 08, 2015
2600	Head	22.5	1.974	38.204	1.96	39.00	0.71	-2.04	±5	Feb. 24, 2015
2600	Head	22.6	1.981	38.254	1.96	39.00	1.07	-1.91	±5	Apr. 08, 2015
5200	Head	22.6	4.791	35.424	4.66	36.00	2.81	-1.60	±5	Mar. 03, 2015
5200	Head	22.6	4.811	35.440	4.66	36.00	3.24	-1.56	±5	Apr. 09, 2015
5800	Head	22.6	5.390	34.359	5.27	35.30	2.28	-2.67	±5	Mar. 03, 2015
5800	Head	22.6	5.420	34.328	5.27	35.30	2.85	-2.75	±5	Apr. 09, 2015
835	Body	22.5	0.979	54.083	0.97	55.20	0.93	-2.02	±5	Mar. 02, 2015
835	Body	22.5	0.975	54.080	0.97	55.20	0.52	-2.03	±5	Apr. 09, 2015
1750	Body	22.6	1.519	54.941	1.49	53.40	1.95	2.89	±5	Feb. 22, 2015
1750	Body	22.5	1.517	55.044	1.49	53.40	1.81	3.08	±5	Apr. 09, 2015
1900	Body	22.6	1.552	53.303	1.52	53.30	2.11	0.01	±5	Feb. 22, 2015
1900	Body	22.6	1.550	53.153	1.52	53.30	1.97	-0.28	±5	Apr. 09, 2015
2450	Body	22.9	1.933	51.282	1.95	52.70	-0.87	-2.69	±5	Mar. 01, 2015
2450	Body	22.6	2.018	50.474	1.95	52.70	3.49	-4.22	±5	Apr. 09, 2015
2600	Body	22.8	2.201	52.823	2.16	52.50	1.90	0.62	±5	Mar. 01, 2015
2600	Body	22.5	2.165	53.823	2.16	52.50	0.23	2.52	±5	Apr. 08, 2015
5200	Body	22.7	5.279	48.534	5.30	49.00	-0.40	-0.95	±5	Mar. 02, 2015
5200	Body	22.5	5.264	48.303	5.30	49.00	-0.68	-1.42	±5	Apr. 10, 2015
5800	Body	22.7	6.113	47.156	6.00	48.20	1.88	-2.17	±5	Mar. 02, 2015
5800	Body	22.5	6.096	46.929	6.00	48.20	1.60	-2.64	±5	Apr. 10, 2015

10.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

<System Verification 1g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Feb. 17, 2015	835	Head	250	4d091	3857	1210	2.39	9.11	9.56	4.94
Apr. 09, 2015	835	Head	250	4d091	3857	1210	2.38	9.11	9.52	4.50
Feb. 17, 2015	1750	Head	250	1069	3857	1210	9.48	37.10	37.92	2.21
Apr. 09, 2015	1750	Head	250	1069	3857	1210	9.31	37.10	37.24	0.38
Feb. 16, 2015	1900	Head	250	5d118	3857	1210	10.00	40.10	40.00	-0.25
Apr. 09, 2015	1900	Head	250	5d118	3857	1210	9.75	40.10	39.00	-2.74
Feb. 27, 2015	2450	Head	250	840	3857	1210	12.90	52.30	51.60	-1.34
Apr. 08, 2015	2450	Head	250	840	3857	1210	13.20	52.30	52.80	0.96
Feb. 24, 2015	2600	Head	250	1061	3857	1210	14.00	56.90	56.00	-1.58
Apr. 08, 2015	2600	Head	250	1061	3857	1210	14.10	56.90	56.40	-0.88
Mar. 03, 2015	5200	Head	100	1113	3857	1210	7.93	80.00	79.30	-0.88
Apr. 09, 2015	5200	Head	100	1113	3857	1210	7.96	80.00	79.60	-0.50
Mar. 03, 2015	5800	Head	100	1113	3857	1210	7.68	78.50	76.80	-2.17
Apr. 09, 2015	5800	Head	100	1113	3857	1210	7.42	78.50	74.20	-5.48
Mar. 02, 2015	835	Body	250	4d091	3857	1210	2.24	9.60	8.96	-6.67
Apr. 09, 2015	835	Body	250	4d091	3857	1210	2.27	9.60	9.08	-5.42
Feb. 22, 2015	1750	Body	250	1069	3857	1210	8.95	38.10	35.80	-6.04
Apr. 09, 2015	1750	Body	250	1069	3857	1210	8.94	38.10	35.76	-6.14
Feb. 22, 2015	1900	Body	250	5d118	3857	1210	10.40	40.00	41.60	4.00
Apr. 09, 2015	1900	Body	250	5d118	3857	1210	10.40	40.00	41.60	4.00
Mar. 01, 2015	2450	Body	250	840	3857	1210	12.40	51.00	49.60	-2.75
Apr. 09, 2015	2450	Body	250	840	3857	1210	12.50	51.00	50.00	-1.96
Mar. 01, 2015	2600	Body	250	1061	3857	1210	13.90	54.90	55.60	1.28
Apr. 08, 2015	2600	Body	250	1061	3857	1210	13.40	54.90	53.60	-2.37
Mar. 02, 2015	5200	Body	100	1113	3857	1210	7.20	74.90	72.00	-3.87
Apr. 10, 2015	5200	Body	100	1113	3857	1210	7.21	74.90	72.10	-3.74
Mar. 02, 2015	5800	Body	100	1113	3857	1210	7.07	75.40	70.70	-6.23
Apr. 10, 2015	5800	Body	100	1113	3857	1210	7.05	75.40	70.50	-6.50

<System Verification 10g SAR Results>

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured SAR (W/kg)	Targeted SAR (W/kg)	Normalized SAR (W/kg)	Deviation (%)
Feb. 22, 2015	1900	Body	250	5d118	3857	1210	5.32	21.40	21.28	-0.56

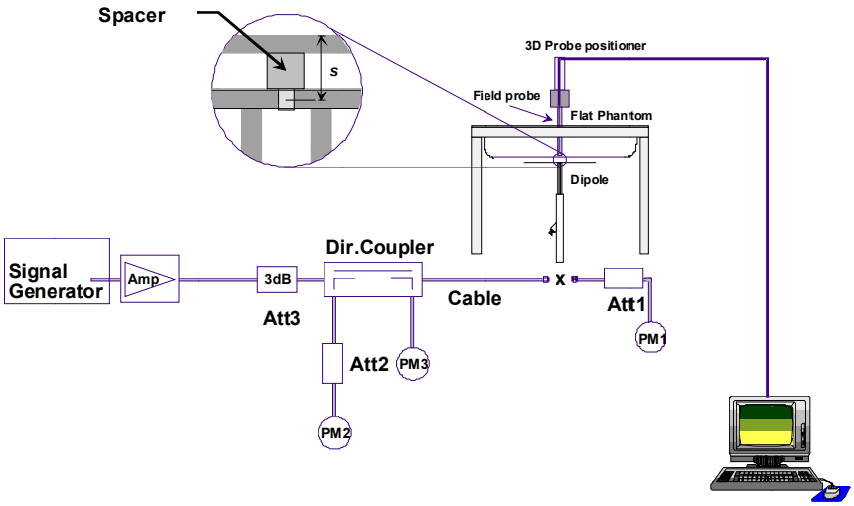


Fig 8.3.1 System Performance Check Setup

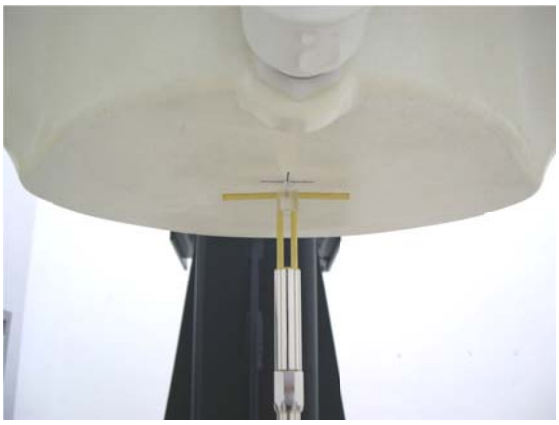


Fig 8.3.2 Setup Photo

11. RF Exposure Positions

11.1 Ear and handset reference point

Figure 9.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Figure 9.1.2 The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Figure 9.1.3). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Figure 9.1.2. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.

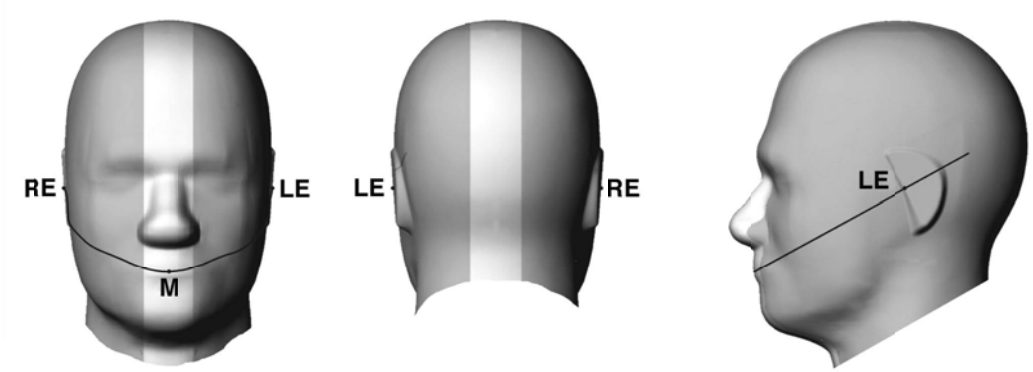


Fig 9.1.1 Front, back, and side views of SAM twin phantom

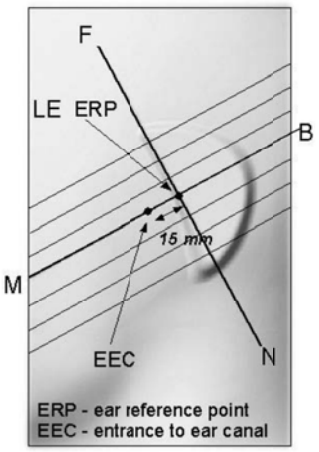


Fig 9.1.2 Close-up side view of phantom showing the ear region.

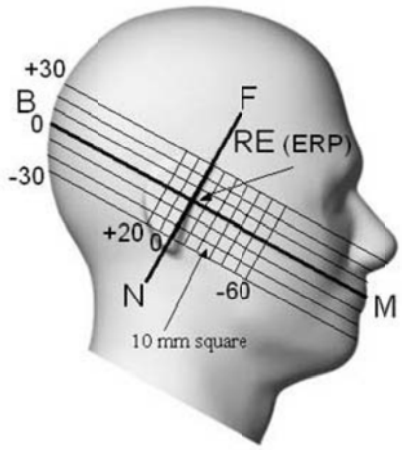


Fig 9.1.3 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

11.2 Definition of the cheek position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Figure 9.2.1 and Figure 9.2.2), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 9.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 9.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 9.2.3. The actual rotation angles should be documented in the test report.

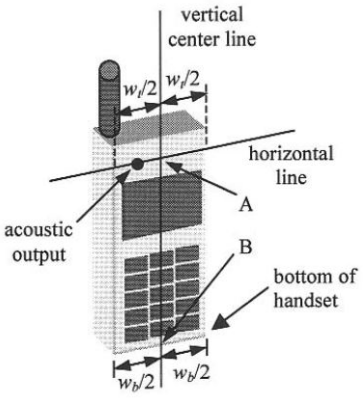


Fig 9.2.1 Handset vertical and horizontal reference lines—"fixed case

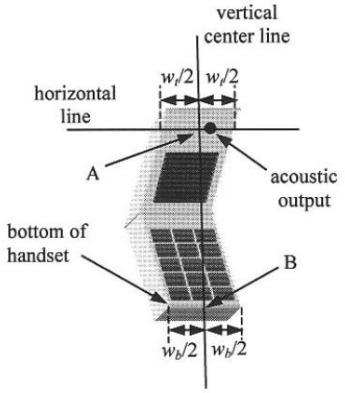


Fig 9.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

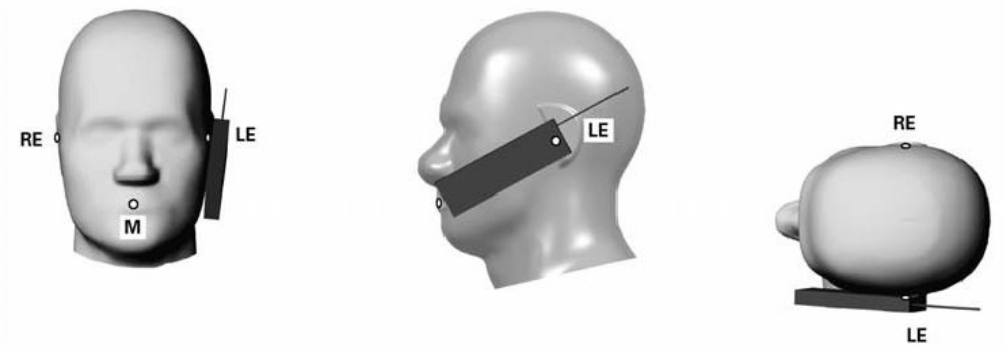


Fig 9.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

11.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Figure 9.3.1. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

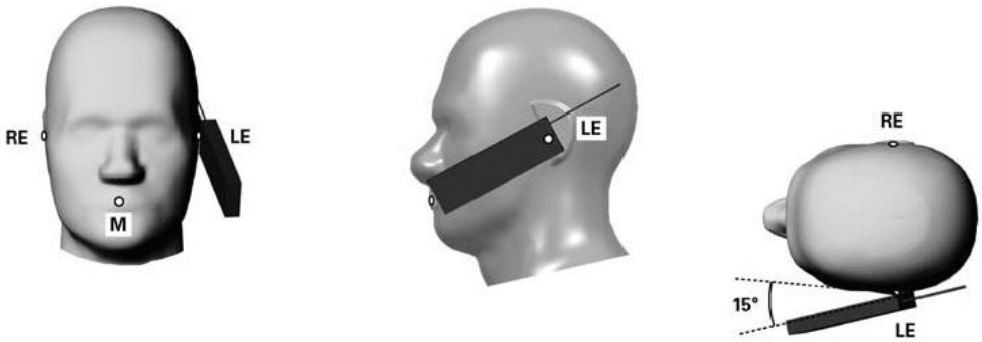


Fig 9.3.1 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

11.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9.4). Per KDB 648474 D04v01r02, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v05r02 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is < 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

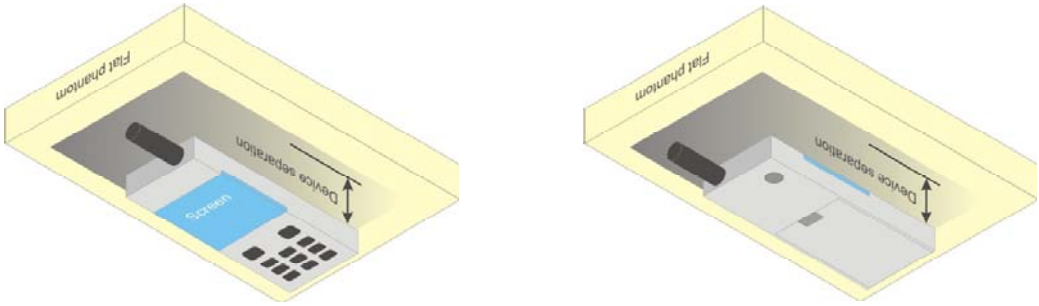


Fig 9.4 Body Worn Position

11.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC HDB Publication 941225 D06 v02 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v05r02 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

11.6 Extremity Exposure

For smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, According to KDB648474D04v01r02, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless mode and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.

2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions.6 The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.

12. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

1. For DTM multi-slot class mode, the device was linked with base station simulator (Agilent E5515C) and transmit maximum power on maximum number of TX slots, i.e. one CS timeslot, and additional PS timeslots (1 for DTM class 5 and 9, 2 for DTM class 11) in one TDMA frame.
2. Agilent E5515C was used to setup the device operated under DTM mode for power measurement and SAR testing. For conducted power, the power of the burst for voice and the power of the bursts for data was reported separately in the table above, and the frame-average power is derived below to determine SAR testing.
   *DTM frame average power (dBm) = 10*log [∑(power of each slot, in mW)/8]*
3. Per KDB 447498 D01v05r02, the maximum output power channel is used for SAR testing and for further SAR test reduction.
4. Per KDB 941225 D01v03, considering the possibility of e.g. 3rd party VoIP operation for Head and body-worn SAR test reduction for GSM, GPRS, EDGE and DTM modes is determined by the source-based time-averaged output power including tune-up tolerance. The 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. Therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.
5. Per KDB 941225 D01v03, for hotspot SAR test reduction for GPRS,EDGE and DTM modes are determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.

<Full Power Mode>:

Band GSM850		Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel		128	189	251		128	189	251	
Frequency (MHz)		824.2	836.4	848.8		824.2	836.4	848.8	
GSM (GMSK, 1 Tx slot)		33.24	33.37	33.34	33.50	24.24	24.37	24.34	24.50
GPRS (GMSK, 1 Tx slot)		33.23	33.26	33.33	33.50	24.23	24.26	24.33	24.50
GPRS (GMSK, 2 Tx slots)		31.29	31.36	31.34	31.50	25.29	25.36	25.34	25.50
GPRS (GMSK, 3 Tx slots)		29.35	29.40	29.53	30.00	25.09	25.14	25.27	25.74
GPRS (GMSK, 4 Tx slots)		28.32	28.34	28.46	29.20	25.32	25.34	25.46	26.20
EDGE (8PSK, 1 Tx slot)		26.68	26.74	26.77	27.00	17.68	17.74	17.77	18.00
EDGE (8PSK, 2 Tx slots)		25.63	25.61	25.62	26.00	19.63	19.61	19.62	20.00
EDGE (8PSK, 3 Tx slots)		24.07	24.06	24.07	25.50	19.81	19.80	19.81	21.24
EDGE (8PSK, 4 Tx slots)		22.48	22.55	22.57	23.00	19.48	19.55	19.57	20.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	31.14	31.29	31.29	31.50	25.09	25.24	25.27	25.50
	GPRS (GMSK, 1 Tx slot)	31.09	31.24	31.29	31.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	31.12	31.28	31.26	31.50	25.07	25.23	25.23	25.50
	GPRS (GMSK, 1 Tx slot)	31.07	31.22	31.24	31.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	29.34	29.49	29.56	30.00	25.03	25.18	25.31	25.74
	GPRS (GMSK, 2 Tx slots)	29.26	29.41	29.57	30.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	31.14	31.24	31.31	31.50	23.16	23.27	23.32	23.55
	EDGE (8PSK, 1 Tx slot)	25.52	25.68	25.62	26.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	31.15	31.33	31.28	31.50	23.16	23.34	23.30	23.55
	EDGE (8PSK, 1 Tx slot)	25.48	25.65	25.66	26.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	29.38	29.55	29.60	30.00	22.31	22.48	22.52	22.91
	EDGE (8PSK, 2 Tx slots)	23.93	24.10	24.12	24.50				

Band GSM1900		Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel		512	661	810		512	661	810	
Frequency (MHz)		1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM (GMSK, 1 Tx slot)		30.03	29.99	29.98	30.50	21.03	20.99	20.98	21.50
GPRS (GMSK, 1 Tx slot)		30.01	29.98	29.96	30.50	21.01	20.98	20.96	21.50
GPRS (GMSK, 2 Tx slots)		28.13	28.21	28.19	28.50	22.13	22.21	22.19	22.50
GPRS (GMSK, 3 Tx slots)		26.45	26.46	26.35	27.00	22.19	22.20	22.09	22.74
GPRS (GMSK, 4 Tx slots)		25.43	25.37	25.32	26.10	22.43	22.37	22.32	23.10
EDGE (8PSK, 1 Tx slot)		25.72	25.69	25.76	26.00	16.72	16.69	16.76	17.00
EDGE (8PSK, 2 Tx slots)		24.61	24.63	24.67	25.00	18.61	18.63	18.67	19.00
EDGE (8PSK, 3 Tx slots)		23.07	23.10	23.13	23.50	18.81	18.84	18.87	19.24
EDGE (8PSK, 4 Tx slots)		21.58	21.56	21.61	22.00	18.58	18.56	18.61	19.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	28.02	27.97	28.00	28.50	21.96	21.92	21.96	22.50
	GPRS (GMSK, 1 Tx slot)	27.95	27.92	27.97	28.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.99	27.94	27.98	28.50	21.95	21.90	21.95	22.50
	GPRS (GMSK, 1 Tx slot)	27.95	27.91	27.96	28.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	26.26	26.30	26.19	27.00	21.99	22.01	21.92	22.74
	GPRS (GMSK, 2 Tx slots)	26.24	26.26	26.17	27.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.97	27.96	27.98	28.50	20.53	20.53	20.54	21.07
	EDGE (8PSK, 1 Tx slot)	24.44	24.46	24.45	25.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.99	27.96	27.99	28.50	20.57	20.55	20.57	21.07
	EDGE (8PSK, 1 Tx slot)	24.51	24.52	24.50	25.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	26.30	26.34	26.22	27.00	20.08	20.10	20.03	20.74
	EDGE (8PSK, 2 Tx slots)	22.88	22.88	22.86	23.50				

<Reduced Power Mode>:

Band GSM850		Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel		128	189	251		128	189	251	
Frequency (MHz)		824.2	836.4	848.8		824.2	836.4	848.8	
GSM (GMSK, 1 Tx slot)		30.74	30.27	30.33	31.00	21.74	21.27	21.33	22.00
GPRS (GMSK, 1 Tx slot)		30.73	30.26	30.32	31.00	21.73	21.26	21.32	22.00
GPRS (GMSK, 2 Tx slots)		27.52	27.58	27.30	28.00	21.52	21.58	21.30	22.00
GPRS (GMSK, 3 Tx slots)		25.25	25.26	25.35	26.00	20.99	21.00	21.09	21.74
GPRS (GMSK, 4 Tx slots)		24.24	24.29	24.39	25.00	21.24	21.29	21.39	22.00
EDGE (8PSK, 1 Tx slot)		26.53	26.48	26.45	27.00	17.53	17.48	17.45	18.00
EDGE (8PSK, 2 Tx slots)		25.48	25.45	25.39	26.00	19.48	19.45	19.39	20.00
EDGE (8PSK, 3 Tx slots)		23.45	23.92	23.84	24.00	19.19	19.66	19.58	19.74
EDGE (8PSK, 4 Tx slots)		22.34	22.31	22.35	23.00	19.34	19.31	19.35	20.00
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.38	27.26	27.15	28.00	21.35	21.23	21.12	22.00
	GPRS (GMSK, 1 Tx slot)	27.36	27.24	27.14	28.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.37	27.23	27.14	28.00	21.32	21.18	21.10	22.00
	GPRS (GMSK, 1 Tx slot)	27.32	27.18	27.10	28.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.10	25.12	25.18	26.00	20.82	20.84	20.87	21.74
	GPRS (GMSK, 2 Tx slots)	25.07	25.09	25.11	26.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.36	27.26	27.14	28.00	20.50	20.42	20.31	21.09
	EDGE (8PSK, 1 Tx slot)	25.47	25.43	25.33	26.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	27.36	27.21	27.11	28.00	20.49	20.26	20.30	21.09
	EDGE (8PSK, 1 Tx slot)	25.46	25.10	25.36	26.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	25.11	25.13	25.16	26.00	19.80	20.10	20.04	20.51
	EDGE (8PSK, 2 Tx slots)	23.42	23.91	23.80	24.00				

Band GSM1900		Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel		512	661	810		512	661	810	
Frequency (MHz)		1850.2	1880	1909.8		1850.2	1880	1909.8	
GSM (GMSK, 1 Tx slot)		26.33	26.29	26.32	26.50	17.33	17.29	17.32	17.50
GPRS (GMSK, 1 Tx slot)		26.32	26.25	26.25	26.50	17.32	17.25	17.25	17.50
GPRS (GMSK, 2 Tx slots)		23.01	23.38	23.43	24.00	17.01	17.38	17.43	18.00
GPRS (GMSK, 3 Tx slots)		21.35	21.36	21.40	22.00	17.09	17.10	17.14	17.74
GPRS (GMSK, 4 Tx slots)		20.33	20.27	20.28	21.00	17.33	17.27	17.28	18.00
EDGE (8PSK, 1 Tx slot)		25.56	25.54	25.59	26.00	16.56	16.54	16.59	17.00
EDGE (8PSK, 2 Tx slots)		22.99	23.01	23.16	23.50	16.99	17.01	17.16	17.50
EDGE (8PSK, 3 Tx slots)		20.93	20.98	21.15	21.50	16.67	16.72	16.89	17.24
EDGE (8PSK, 4 Tx slots)		19.81	19.86	20.02	20.50	16.81	16.86	17.02	17.50
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	23.00	23.32	23.38	24.00	16.98	17.30	17.35	18.00
	GPRS (GMSK, 1 Tx slot)	23.00	23.33	23.36	24.00				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	22.98	23.26	23.37	24.00	16.94	17.21	17.33	18.00
	GPRS (GMSK, 1 Tx slot)	22.95	23.21	23.34	24.00				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	21.32	21.34	21.38	22.00	17.03	17.07	17.07	17.74
	GPRS (GMSK, 2 Tx slots)	21.28	21.32	21.31	22.00				
DTM 5 (2Tx slots)	GSM (GMSK, 1 Tx slot)	22.96	23.02	23.18	23.50	16.92	16.99	17.14	17.48
	EDGE (8PSK, 1 Tx slot)	22.93	23.00	23.15	23.50				
DTM 9 (2Tx slots)	GSM (GMSK, 1 Tx slot)	22.95	23.00	23.13	23.50	16.91	16.95	17.10	17.48
	EDGE (8PSK, 1 Tx slot)	22.92	22.95	23.11	23.50				
DTM 11 (3Tx slots)	GSM (GMSK, 1 Tx slot)	21.30	21.28	21.31	22.00	16.80	16.82	16.94	17.41
	EDGE (8PSK, 2 Tx slots)	20.93	20.98	21.15	21.50				

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
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

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with $\beta_{hs} = 30/15 * \beta_c$, and Δ_{CQI} = 24/15 with $\beta_{hs} = 24/15 * \beta_c$.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	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	β_{ed}1: 47/15 β_{ed}2: 47/15	4 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 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

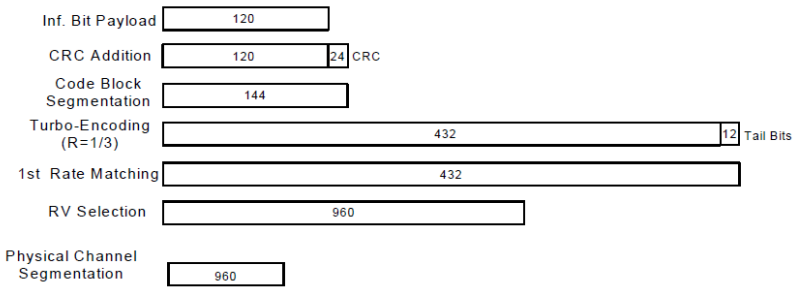


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03, SAR for Head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

<Full Power Mode>:

Band			WCDMA Band V			WCDMA Band II		
Tx Channel			4132	4182	4233	9262	9400	9538
Rx Channel			4357	4407	4458	9662	9800	9938
Frequency (MHz)			826.4	836.4	846.6	1852.4	1880	1907.6
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	23.69	23.57	23.76	22.75	22.80	22.81
	3GPP Rel 99	RMC 12.2Kbps	23.70	23.58	23.78	22.77	22.82	22.83
0	3GPP Rel 6	HSDPA Subtest-1	22.06	22.13	22.26	21.68	21.91	22.00
0	3GPP Rel 6	HSDPA Subtest-2	22.20	22.22	22.11	21.85	21.66	21.99
0.5	3GPP Rel 6	HSDPA Subtest-3	21.74	21.67	21.52	21.38	21.55	21.46
0.5	3GPP Rel 6	HSDPA Subtest-4	21.72	21.66	21.84	20.96	21.50	21.55
0	3GPP Rel 8	DC-HSDPA Subtest-1	21.58	21.52	21.56	21.57	21.61	21.52
0	3GPP Rel 8	DC-HSDPA Subtest-2	21.56	21.50	21.60	21.59	21.60	21.47
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	21.57	21.46	21.53	21.59	21.62	21.50
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	21.55	21.46	21.59	21.53	21.63	21.49
0	3GPP Rel 6	HSUPA Subtest-1	21.59	22.13	21.82	21.70	21.91	21.36
2	3GPP Rel 6	HSUPA Subtest-2	21.16	20.83	21.17	20.90	21.11	20.78
1	3GPP Rel 6	HSUPA Subtest-3	20.75	20.64	20.83	20.53	20.67	20.69
2	3GPP Rel 6	HSUPA Subtest-4	21.36	21.10	21.45	21.10	21.31	21.03
0	3GPP Rel 6	HSUPA Subtest-5	21.68	21.56	21.70	21.41	21.50	21.58

<Reduced Power Mode>:

Band			WCDMA Band V			WCDMA Band II		
Tx Channel			4132	4182	4233	9262	9400	9538
Rx Channel			4357	4407	4458	9662	9800	9938
Frequency (MHz)			826.4	836.4	846.6	1852.4	1880	1907.6
MPR (dB)	3GPP Rel 99	AMR 12.2Kbps	21.72	21.61	21.75	17.50	17.53	17.55
	3GPP Rel 99	RMC 12.2Kbps	21.75	21.63	21.76	17.51	17.55	17.56
0	3GPP Rel 6	HSDPA Subtest-1	18.98	18.98	18.91	16.22	16.28	16.30
0	3GPP Rel 6	HSDPA Subtest-2	18.93	18.98	18.91	16.45	16.48	16.51
0.5	3GPP Rel 6	HSDPA Subtest-3	18.07	18.13	18.40	15.88	15.92	15.99
0.5	3GPP Rel 6	HSDPA Subtest-4	18.04	18.45	18.39	15.84	15.88	15.96
0	3GPP Rel 8	DC-HSDPA Subtest-1	19.96	19.86	19.88	16.05	16.15	15.97
0	3GPP Rel 8	DC-HSDPA Subtest-2	19.85	19.83	19.90	16.03	16.14	15.98
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	19.87	19.74	19.85	16.02	16.13	15.97
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	19.90	19.75	19.82	16.03	16.16	16.01
0	3GPP Rel 6	HSUPA Subtest-1	18.00	18.06	17.94	16.15	16.15	16.21
2	3GPP Rel 6	HSUPA Subtest-2	17.50	17.64	17.45	15.73	15.76	15.77
1	3GPP Rel 6	HSUPA Subtest-3	17.09	17.18	17.70	15.38	15.42	15.46
2	3GPP Rel 6	HSUPA Subtest-4	17.75	17.82	17.68	15.82	15.86	15.89
0	3GPP Rel 6	HSUPA Subtest-5	18.24	18.35	18.18	15.92	15.96	16.02

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, 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.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r03, for QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r03, smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.

<Full Power Mode>

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	23.65	23.70	23.50	24.3	0
20	QPSK	1	49	23.53	23.65	23.33		
20	QPSK	1	99	23.16	23.17	23.28		
20	QPSK	50	0	22.51	22.62	22.41	23.3	1
20	QPSK	50	24	22.28	22.48	22.39		
20	QPSK	50	49	22.20	22.46	22.44		
20	QPSK	100	0	22.27	22.51	22.41		
20	16QAM	1	0	22.68	22.95	22.74	23.3	1
20	16QAM	1	49	22.32	22.90	22.72		
20	16QAM	1	99	21.98	22.75	22.89		
20	16QAM	50	0	21.45	21.62	21.38	22.3	2
20	16QAM	50	24	21.16	21.52	21.40		
20	16QAM	50	49	21.19	21.46	21.46		
20	16QAM	100	0	21.28	21.60	21.33		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	23.52	23.41	23.63	24.3	0
15	QPSK	1	37	23.33	23.35	23.32		
15	QPSK	1	74	23.09	23.40	23.35		
15	QPSK	36	0	22.67	22.36	22.64	23.3	1
15	QPSK	36	18	22.34	22.32	22.44		
15	QPSK	36	37	22.25	22.42	22.42		
15	QPSK	75	0	22.30	22.38	22.62		
15	16QAM	1	0	22.50	22.56	22.77	23.3	1
15	16QAM	1	37	22.17	22.35	22.30		
15	16QAM	1	74	22.19	22.54	22.30		
15	16QAM	36	0	21.57	21.38	21.57	22.3	2
15	16QAM	36	18	21.26	21.36	21.45		
15	16QAM	36	37	21.25	21.41	21.42		
15	16QAM	75	0	21.42	21.35	21.54		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	23.25	23.33	23.65	24.3	0
10	QPSK	1	24	23.49	23.51	23.45		
10	QPSK	1	49	22.87	23.41	23.26		
10	QPSK	25	0	22.42	22.24	22.49	23.3	1
10	QPSK	25	12	22.34	22.35	22.45		
10	QPSK	25	24	22.30	22.51	22.23		
10	QPSK	50	0	22.26	22.34	22.46		
10	16QAM	1	0	22.85	22.68	22.95	23.3	1
10	16QAM	1	24	22.74	22.46	22.94		
10	16QAM	1	49	22.59	22.75	22.26		
10	16QAM	25	0	21.35	21.23	21.60	22.3	2
10	16QAM	25	12	21.31	21.22	21.54		
10	16QAM	25	24	21.23	21.39	21.45		
10	16QAM	50	0	21.39	21.34	21.31		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	23.38	23.06	23.18	24.3	0
5	QPSK	1	12	23.17	23.02	23.67		
5	QPSK	1	24	23.04	23.17	23.11		
5	QPSK	12	0	22.33	22.25	22.30	23.3	1
5	QPSK	12	6	22.39	22.31	22.32		
5	QPSK	12	11	22.33	22.31	22.31		
5	QPSK	25	0	22.27	22.26	22.29		
5	16QAM	1	0	22.96	22.08	22.73	23.3	1
5	16QAM	1	12	22.83	22.57	22.86		
5	16QAM	1	24	22.89	22.58	22.83		
5	16QAM	12	0	21.25	21.24	21.23	22.3	2
5	16QAM	12	6	21.29	21.25	21.16		
5	16QAM	12	11	21.27	21.37	21.18		
5	16QAM	25	0	21.27	21.30	21.52		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	23.30	23.20	23.18	24.3	0
3	QPSK	1	7	23.60	23.35	23.28		
3	QPSK	1	14	23.45	23.27	23.20		
3	QPSK	8	0	22.34	22.34	22.35	23.3	1
3	QPSK	8	4	22.39	22.25	22.32		
3	QPSK	8	7	22.40	22.37	22.36		
3	QPSK	15	0	22.30	22.32	22.23		
3	16QAM	1	0	22.46	22.87	22.90	23.3	1
3	16QAM	1	7	22.95	22.82	22.99		
3	16QAM	1	14	22.88	22.67	22.92		
3	16QAM	8	0	21.43	21.58	21.37	22.3	2
3	16QAM	8	4	21.59	21.50	21.46		
3	16QAM	8	7	21.31	21.54	21.48		
3	16QAM	15	0	21.24	21.18	21.38		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	23.22	23.12	23.23	24.3	0
1.4	QPSK	1	2	23.26	23.24	23.37		
1.4	QPSK	1	5	23.13	23.21	23.24		
1.4	QPSK	3	0	23.25	23.37	23.27		
1.4	QPSK	3	1	23.25	23.45	23.21		
1.4	QPSK	3	2	23.29	23.26	23.34		
1.4	QPSK	6	0	22.37	22.36	22.40	23.3	1
1.4	16QAM	1	0	21.92	22.78	22.57	23.3	1
1.4	16QAM	1	2	22.03	22.41	22.21		
1.4	16QAM	1	5	21.87	22.58	22.32		
1.4	16QAM	3	0	22.70	22.12	22.50		
1.4	16QAM	3	1	22.71	22.45	22.55		
1.4	16QAM	3	2	22.74	22.27	22.59		
1.4	16QAM	6	0	21.32	20.89	21.41	22.3	2

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	23.41	23.35	23.51	24.0	0
20	QPSK	1	49	23.28	23.14	23.22		
20	QPSK	1	99	23.18	23.19	23.20		
20	QPSK	50	0	21.21	21.29	21.49	23.0	1
20	QPSK	50	24	21.11	21.27	21.26		
20	QPSK	50	49	21.04	21.28	21.40		
20	QPSK	100	0	21.07	21.30	21.38		
20	16QAM	1	0	22.52	22.53	22.61	23.0	1
20	16QAM	1	49	22.26	22.61	22.63		
20	16QAM	1	99	22.18	22.32	22.55		
20	16QAM	50	0	20.12	20.18	20.35	22.0	2
20	16QAM	50	24	20.03	20.19	20.18		
20	16QAM	50	49	20.12	20.28	20.12		
20	16QAM	100	0	20.34	20.31	20.06		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	23.17	23.25	23.30	24.0	0
15	QPSK	1	37	23.15	23.20	23.24		
15	QPSK	1	74	23.02	23.22	22.80		
15	QPSK	36	0	21.12	21.18	21.33	23.0	1
15	QPSK	36	18	21.03	21.18	21.41		
15	QPSK	36	37	21.08	21.21	21.33		
15	QPSK	75	0	21.04	21.18	21.30		
15	16QAM	1	0	22.14	22.88	22.96	23.0	1
15	16QAM	1	37	21.88	22.71	22.90		
15	16QAM	1	74	21.51	22.63	22.85		
15	16QAM	36	0	20.11	20.15	20.11	22.0	2
15	16QAM	36	18	20.12	20.03	20.10		
15	16QAM	36	37	20.01	20.07	20.13		
15	16QAM	75	0	20.09	20.14	20.22		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	23.44	23.47	23.48	24.0	0
10	QPSK	1	24	23.41	23.40	23.41		
10	QPSK	1	49	23.25	23.30	23.35		
10	QPSK	25	0	21.18	21.21	21.31	23.0	1
10	QPSK	25	12	21.14	21.17	21.27		
10	QPSK	25	24	21.11	21.25	21.42		
10	QPSK	50	0	21.20	21.31	21.52		
10	16QAM	1	0	22.93	22.79	22.56	23.0	1
10	16QAM	1	24	22.82	22.32	22.12		
10	16QAM	1	49	22.89	22.36	22.24		
10	16QAM	25	0	20.42	20.38	20.65	22.0	2
10	16QAM	25	12	20.26	20.35	20.62		
10	16QAM	25	24	20.35	20.45	20.58		
10	16QAM	50	0	20.25	20.26	20.55		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.95	23.04	23.25	24.0	0
5	QPSK	1	12	23.14	23.08	23.46		
5	QPSK	1	24	22.99	23.07	23.24		
5	QPSK	12	0	21.21	21.19	21.18	23.0	1
5	QPSK	12	6	21.15	21.19	21.31		
5	QPSK	12	11	21.16	21.15	21.42		
5	QPSK	25	0	21.18	21.23	21.40		
5	16QAM	1	0	22.19	22.23	22.51	23.0	1
5	16QAM	1	12	22.87	22.39	22.79		
5	16QAM	1	24	22.78	22.28	22.37		
5	16QAM	12	0	20.13	20.33	20.12	22.0	2
5	16QAM	12	6	20.18	20.31	20.23		
5	16QAM	12	11	20.20	20.40	20.17		
5	16QAM	25	0	20.45	20.13	20.39		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	23.18	23.11	23.24	24.0	0
3	QPSK	1	7	23.14	23.02	23.45		
3	QPSK	1	14	22.82	23.11	23.17		
3	QPSK	8	0	21.10	21.26	21.45	23.0	1
3	QPSK	8	4	21.20	21.31	21.46		
3	QPSK	8	7	21.10	21.28	21.37		
3	QPSK	15	0	21.12	21.21	21.33		
3	16QAM	1	0	21.81	22.41	22.40	23.0	1
3	16QAM	1	7	21.95	22.48	22.20		
3	16QAM	1	14	21.87	22.56	22.26		
3	16QAM	8	0	20.11	20.01	20.49	22.0	2
3	16QAM	8	4	20.13	20.10	20.41		
3	16QAM	8	7	20.08	20.08	20.43		
3	16QAM	15	0	20.25	20.11	20.38		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	22.76	23.31	23.26	24.0	0
1.4	QPSK	1	2	22.84	23.30	23.23		
1.4	QPSK	1	5	22.74	23.17	23.36		
1.4	QPSK	3	0	23.11	23.14	23.39		
1.4	QPSK	3	1	23.25	23.37	23.36		
1.4	QPSK	3	2	23.18	23.28	23.31		
1.4	QPSK	6	0	21.44	21.21	21.44	23.0	1
1.4	16QAM	1	0	22.88	22.38	22.80	23.0	1
1.4	16QAM	1	2	22.94	22.42	22.81		
1.4	16QAM	1	5	22.94	22.36	22.75		
1.4	16QAM	3	0	22.60	22.16	22.48		
1.4	16QAM	3	1	22.97	22.28	22.46		
1.4	16QAM	3	2	22.88	22.87	22.39		
1.4	16QAM	6	0	20.23	20.21	20.12	22.0	2

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune up Limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	21.59	21.82	21.80	22.0	0
20	QPSK	1	49	21.48	21.67	21.60		
20	QPSK	1	99	21.24	21.25	21.15		
20	QPSK	50	0	20.45	20.60	20.57	21.0	1
20	QPSK	50	24	20.39	20.54	20.51		
20	QPSK	50	49	20.35	20.48	20.43		
20	QPSK	100	0	20.43	20.55	20.54		
20	16QAM	1	0	20.80	20.98	20.70	21.0	1
20	16QAM	1	49	20.74	20.90	20.81		
20	16QAM	1	99	20.96	20.82	20.64		
20	16QAM	50	0	19.62	19.49	19.45	20.0	2
20	16QAM	50	24	19.45	19.44	19.40		
20	16QAM	50	49	19.40	19.46	19.30		
20	16QAM	100	0	19.48	19.60	19.51		
Channel				20825	21100	21375	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	21.64	21.60	21.56	22.0	0
15	QPSK	1	37	21.69	21.44	21.38		
15	QPSK	1	74	21.63	21.47	21.39		
15	QPSK	36	0	20.39	20.51	20.48	21.0	1
15	QPSK	36	18	20.41	20.47	20.39		
15	QPSK	36	37	20.43	20.47	20.36		
15	QPSK	75	0	20.43	20.44	20.43		
15	16QAM	1	0	20.95	20.47	20.91	21.0	1
15	16QAM	1	37	20.92	20.46	20.66		
15	16QAM	1	74	20.90	20.44	20.69		
15	16QAM	36	0	19.57	19.60	19.48	20.0	2
15	16QAM	36	18	19.47	19.47	19.38		
15	16QAM	36	37	19.49	19.46	19.36		
15	16QAM	75	0	19.48	19.45	19.52		
Channel				20800	21100	21400	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	21.48	21.62	21.62	22.0	0
10	QPSK	1	24	21.73	21.60	21.53		
10	QPSK	1	49	21.39	21.53	21.17		
10	QPSK	25	0	20.49	20.47	20.51	21.0	1
10	QPSK	25	12	20.38	20.43	20.40		
10	QPSK	25	24	20.44	20.40	20.43		
10	QPSK	50	0	20.45	20.42	20.39		
10	16QAM	1	0	20.96	20.79	20.46	21.0	1
10	16QAM	1	24	20.92	20.90	20.91		
10	16QAM	1	49	20.94	20.67	20.42		
10	16QAM	25	0	19.53	19.54	19.67	20.0	2
10	16QAM	25	12	19.42	19.50	19.58		
10	16QAM	25	24	19.48	19.42	19.51		
10	16QAM	50	0	19.49	19.49	19.54		

Channel				20775	21100	21425	Tune up Limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	21.35	21.29	21.37	22.0	0
5	QPSK	1	12	21.48	21.55	21.60		
5	QPSK	1	24	21.31	21.26	21.23		
5	QPSK	12	0	20.35	20.40	20.34	21.0	1
5	QPSK	12	6	20.35	20.50	20.43		
5	QPSK	12	11	20.34	20.45	20.42		
5	QPSK	25	0	20.41	20.48	20.37		
5	16QAM	1	0	20.92	20.43	20.41	21.0	1
5	16QAM	1	12	20.98	20.62	20.68		
5	16QAM	1	24	20.88	20.59	20.40		
5	16QAM	12	0	19.69	19.59	19.28	20.0	2
5	16QAM	12	6	19.41	19.49	19.23		
5	16QAM	12	11	19.42	19.43	19.22		
5	16QAM	25	0	19.49	19.75	19.27		

<Reduced Power Mode>

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	18.36	18.46	18.38	18.9	0
20	QPSK	1	49	18.23	18.39	18.36		
20	QPSK	1	99	17.87	17.99	18.34		
20	QPSK	50	0	17.97	18.06	17.94	18.9	0
20	QPSK	50	24	17.84	17.95	17.84		
20	QPSK	50	49	17.76	17.84	17.90		
20	QPSK	100	0	17.82	17.98	17.92		
20	16QAM	1	0	17.89	17.98	18.15	18.9	0
20	16QAM	1	49	18.17	17.90	18.37		
20	16QAM	1	99	17.72	17.95	17.93		
20	16QAM	50	0	18.01	17.86	18.09	18.9	0
20	16QAM	50	24	17.86	17.88	17.88		
20	16QAM	50	49	17.77	17.96	17.87		
20	16QAM	100	0	17.93	17.95	17.91		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	18.17	18.07	18.15	18.9	0
15	QPSK	1	37	18.13	18.20	17.83		
15	QPSK	1	74	17.90	18.00	17.81		
15	QPSK	36	0	18.09	17.87	17.98	18.9	0
15	QPSK	36	18	17.88	17.89	17.89		
15	QPSK	36	37	17.76	17.96	17.86		
15	QPSK	75	0	17.88	17.83	17.97		
15	16QAM	1	0	18.31	17.87	18.31	18.9	0
15	16QAM	1	37	18.30	17.78	18.08		
15	16QAM	1	74	18.21	17.70	17.98		
15	16QAM	36	0	18.14	17.90	17.84	18.9	0
15	16QAM	36	18	17.92	17.91	17.66		
15	16QAM	36	37	17.76	18.05	17.63		
15	16QAM	75	0	17.90	17.73	17.94		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	18.07	17.99	17.93	18.9	0
10	QPSK	1	24	18.18	18.10	18.20		
10	QPSK	1	49	17.63	18.17	17.67		
10	QPSK	25	0	17.84	17.80	17.94	18.9	0
10	QPSK	25	12	17.93	17.88	17.95		
10	QPSK	25	24	17.82	18.01	17.78		
10	QPSK	50	0	17.88	17.86	17.92		
10	16QAM	1	0	18.33	17.64	18.32	18.9	0
10	16QAM	1	24	18.41	17.54	18.33		
10	16QAM	1	49	18.12	17.66	18.10		
10	16QAM	25	0	17.74	18.05	17.78	18.9	0
10	16QAM	25	12	17.80	18.04	17.79		
10	16QAM	25	24	17.65	18.26	17.63		
10	16QAM	50	0	17.87	17.73	17.89		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	18.01	17.66	18.07	18.9	0
5	QPSK	1	12	17.86	17.81	17.93		
5	QPSK	1	24	17.83	17.79	17.38		
5	QPSK	12	0	17.81	17.83	17.80	18.9	0
5	QPSK	12	6	18.01	17.88	17.77		
5	QPSK	12	11	17.91	17.97	17.73		
5	QPSK	25	0	17.85	17.85	17.75		
5	16QAM	1	0	17.97	17.73	18.36	18.9	0
5	16QAM	1	12	18.15	18.04	17.55		
5	16QAM	1	24	18.30	18.11	17.39		
5	16QAM	12	0	17.86	17.60	17.66	18.9	0
5	16QAM	12	6	17.87	17.67	17.55		
5	16QAM	12	11	17.87	17.79	17.61		
5	16QAM	25	0	17.99	17.74	17.72		
Channel				19965	20175	20385	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1711.5	1732.5	1753.5		
3	QPSK	1	0	17.75	17.83	17.73	18.9	0
3	QPSK	1	7	17.89	17.86	17.84		
3	QPSK	1	14	18.07	17.98	17.60		
3	QPSK	8	0	17.77	17.79	17.79	18.9	0
3	QPSK	8	4	17.75	17.82	17.74		
3	QPSK	8	7	17.98	17.94	17.83		
3	QPSK	15	0	17.68	17.84	17.83		
3	16QAM	1	0	17.38	17.39	18.31	18.9	0
3	16QAM	1	7	17.45	17.55	17.94		
3	16QAM	1	14	17.54	17.54	18.16		
3	16QAM	8	0	17.71	17.75	17.68	18.9	0
3	16QAM	8	4	17.75	17.67	17.79		
3	16QAM	8	7	17.85	17.81	17.76		
3	16QAM	15	0	17.44	17.74	17.64		
Channel				19957	20175	20393	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1710.7	1732.5	1754.3		
1.4	QPSK	1	0	17.64	17.74	17.82	18.9	0
1.4	QPSK	1	2	17.90	17.84	17.85		
1.4	QPSK	1	5	17.73	17.82	17.81		
1.4	QPSK	3	0	17.80	17.69	17.89		
1.4	QPSK	3	1	17.91	17.76	17.82		
1.4	QPSK	3	2	17.77	17.79	17.71		
1.4	QPSK	6	0	17.76	17.74	17.79	18.9	0
1.4	16QAM	1	0	17.99	18.26	18.06	18.9	0
1.4	16QAM	1	2	18.28	17.97	18.15		
1.4	16QAM	1	5	17.96	18.15	18.25		
1.4	16QAM	3	0	18.06	17.56	17.66		
1.4	16QAM	3	1	18.38	18.18	17.83		
1.4	16QAM	3	2	17.30	18.33	17.68		
1.4	16QAM	6	0	17.64	17.61	17.51	18.9	0

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	15.52	15.44	15.66	17.0	0
20	QPSK	1	49	15.45	15.32	15.54		
20	QPSK	1	99	15.51	15.29	15.29		
20	QPSK	50	0	15.11	15.22	15.35	17.0	0
20	QPSK	50	24	15.08	15.10	15.08		
20	QPSK	50	49	15.02	15.11	15.10		
20	QPSK	100	0	15.12	15.23	15.35		
20	16QAM	1	0	15.01	15.19	15.08	17.0	0
20	16QAM	1	49	15.27	15.02	15.06		
20	16QAM	1	99	15.03	15.08	15.01		
20	16QAM	50	0	15.11	15.20	15.32	17.0	0
20	16QAM	50	24	15.07	15.15	15.24		
20	16QAM	50	49	15.02	15.10	15.25		
20	16QAM	100	0	15.13	15.14	15.20		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	15.17	15.21	15.18	17.0	0
15	QPSK	1	37	15.09	15.44	15.18		
15	QPSK	1	74	15.03	15.27	15.20		
15	QPSK	36	0	15.09	15.01	15.19	17.0	0
15	QPSK	36	18	15.05	15.10	15.16		
15	QPSK	36	37	15.08	15.05	15.11		
15	QPSK	75	0	15.00	15.16	15.18		
15	16QAM	1	0	15.11	15.59	15.45	17.0	0
15	16QAM	1	37	15.06	15.62	15.43		
15	16QAM	1	74	15.08	15.60	15.38		
15	16QAM	36	0	15.03	15.00	15.12	17.0	0
15	16QAM	36	18	15.03	15.04	15.08		
15	16QAM	36	37	15.05	15.03	15.14		
15	16QAM	75	0	15.09	15.06	15.10		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	15.35	15.03	15.08	17.0	0
10	QPSK	1	24	15.18	15.06	15.11		
10	QPSK	1	49	15.11	15.08	15.07		
10	QPSK	25	0	15.12	15.03	15.18	17.0	0
10	QPSK	25	12	15.08	15.09	15.15		
10	QPSK	25	24	15.07	15.06	15.15		
10	QPSK	50	0	15.03	15.11	15.10		
10	16QAM	1	0	15.63	15.11	15.57	17.0	0
10	16QAM	1	24	15.60	15.04	15.50		
10	16QAM	1	49	15.62	15.05	15.32		
10	16QAM	25	0	15.21	15.17	15.11	17.0	0
10	16QAM	25	12	15.15	15.16	15.08		
10	16QAM	25	24	15.03	15.24	15.08		
10	16QAM	50	0	15.08	15.10	15.04		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	15.05	15.11	15.22	17.0	0
5	QPSK	1	12	15.14	15.01	15.51		
5	QPSK	1	24	15.03	15.08	15.21		
5	QPSK	12	0	15.12	15.03	15.11	17.0	0
5	QPSK	12	6	15.09	15.06	15.09		
5	QPSK	12	11	15.02	15.03	15.17		
5	QPSK	25	0	15.06	15.04	15.09		
5	16QAM	1	0	15.04	15.33	15.31	17.0	0
5	16QAM	1	12	15.18	15.42	15.20		
5	16QAM	1	24	15.02	15.10	15.07		
5	16QAM	12	0	15.11	15.05	15.10	17.0	0
5	16QAM	12	6	15.05	15.03	15.13		
5	16QAM	12	11	15.01	15.01	15.03		
5	16QAM	25	0	15.04	15.09	15.09		
Channel				18615	18900	19185	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1851.5	1880	1908.5		
3	QPSK	1	0	15.11	15.15	15.02	17.0	0
3	QPSK	1	7	15.15	15.20	15.03		
3	QPSK	1	14	15.06	15.06	15.02		
3	QPSK	8	0	15.03	15.02	15.19	17.0	0
3	QPSK	8	4	15.10	15.08	15.12		
3	QPSK	8	7	15.16	15.05	15.18		
3	QPSK	15	0	15.02	15.08	15.04		
3	16QAM	1	0	15.12	15.19	15.15	17.0	0
3	16QAM	1	7	15.27	15.21	15.63		
3	16QAM	1	14	15.22	15.29	15.65		
3	16QAM	8	0	15.02	15.02	15.06	17.0	0
3	16QAM	8	4	15.02	15.11	15.01		
3	16QAM	8	7	15.02	15.08	15.08		
3	16QAM	15	0	15.08	15.03	15.08		
Channel				18607	18900	19193	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1850.7	1880	1909.3		
1.4	QPSK	1	0	15.03	15.03	15.07	17.0	0
1.4	QPSK	1	2	15.02	15.10	15.01		
1.4	QPSK	1	5	15.08	15.02	15.04		
1.4	QPSK	3	0	15.11	15.01	15.02		
1.4	QPSK	3	1	15.16	15.04	15.11		
1.4	QPSK	3	2	15.04	15.03	15.05		
1.4	QPSK	6	0	15.06	15.02	15.04	17.0	0
1.4	16QAM	1	0	15.01	15.32	15.43	17.0	0
1.4	16QAM	1	2	15.37	15.23	15.15		
1.4	16QAM	1	5	15.04	15.11	15.38		
1.4	16QAM	3	0	15.29	15.42	15.45		
1.4	16QAM	3	1	15.30	15.44	15.08		
1.4	16QAM	3	2	15.30	15.43	15.56		
1.4	16QAM	6	0	15.12	15.13	15.03	17.0	0

<LTE Band 7>

BW [MHz]	Modulation	RB Size	RB Offset	Measured Power			Tune-up limit (dBm)	MPR (dB)
Channel				20850	21100	21350		
Frequency (MHz)				2510	2535	2560		
20	QPSK	1	0	17.92	17.94	17.86	18.5	0
20	QPSK	1	49	17.91	17.65	17.67		
20	QPSK	1	99	17.88	17.57	17.59		
20	QPSK	50	0	17.54	17.60	17.56	18.5	0
20	QPSK	50	24	17.53	17.45	17.45		
20	QPSK	50	49	17.51	17.47	17.47		
20	QPSK	100	0	17.50	17.58	17.45		
20	16QAM	1	0	17.48	17.65	17.49	18.5	0
20	16QAM	1	49	17.67	17.72	17.56		
20	16QAM	1	99	17.31	17.54	17.30		
20	16QAM	50	0	17.50	17.51	17.53	18.5	0
20	16QAM	50	24	17.47	17.49	17.45		
20	16QAM	50	49	17.51	17.39	17.41		
20	16QAM	100	0	17.56	17.48	17.50		
Channel				20825	21100	21375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	QPSK	1	0	17.65	17.63	17.56	18.5	0
15	QPSK	1	37	17.68	17.83	17.77		
15	QPSK	1	74	17.63	17.49	17.47		
15	QPSK	36	0	17.43	17.43	17.47	18.5	0
15	QPSK	36	18	17.45	17.38	17.45		
15	QPSK	36	37	17.44	17.35	17.34		
15	QPSK	75	0	17.47	17.43	17.48		
15	16QAM	1	0	17.79	17.81	17.52	18.5	0
15	16QAM	1	37	17.63	17.59	17.33		
15	16QAM	1	74	17.43	17.65	17.21		
15	16QAM	36	0	17.55	17.50	17.52	18.5	0
15	16QAM	36	18	17.60	17.43	17.42		
15	16QAM	36	37	17.56	17.39	17.32		
15	16QAM	75	0	17.44	17.47	17.53		
Channel				20800	21100	21400	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	QPSK	1	0	17.42	17.51	17.53	18.5	0
10	QPSK	1	24	17.45	17.75	17.40		
10	QPSK	1	49	17.36	17.49	17.43		
10	QPSK	25	0	17.44	17.49	17.48	18.5	0
10	QPSK	25	12	17.39	17.40	17.37		
10	QPSK	25	24	17.39	17.41	17.39		
10	QPSK	50	0	17.41	17.41	17.43		
10	16QAM	1	0	17.79	17.82	17.45	18.5	0
10	16QAM	1	24	17.77	17.89	17.29		
10	16QAM	1	49	17.69	17.86	17.38		
10	16QAM	25	0	17.68	17.42	17.71	18.5	0
10	16QAM	25	12	17.51	17.36	17.59		
10	16QAM	25	24	17.65	17.28	17.61		
10	16QAM	50	0	17.42	17.57	17.30		

Channel				20775	21100	21425	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	QPSK	1	0	17.61	17.30	17.23	18.5	0
5	QPSK	1	12	17.43	17.55	17.68		
5	QPSK	1	24	17.47	17.23	17.27		
5	QPSK	12	0	17.44	17.41	17.40	18.5	0
5	QPSK	12	6	17.52	17.36	17.28		
5	QPSK	12	11	17.50	17.37	17.26		
5	QPSK	25	0	17.49	17.44	17.33		
5	16QAM	1	0	17.72	17.83	17.52	18.5	0
5	16QAM	1	12	17.51	17.88	17.58		
5	16QAM	1	24	17.21	17.35	17.37		
5	16QAM	12	0	17.38	17.38	17.32	18.5	0
5	16QAM	12	6	17.50	17.26	17.33		
5	16QAM	12	11	17.44	17.27	17.33		
5	16QAM	25	0	17.38	17.33	17.33		

<WLAN Conducted Power>

General Note:

1. For 2.4GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11b were selected for SAR evaluation. 802.11g/n HT20 were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11b mode.
2. For 5GHz WLAN SAR testing, highest average RF output power channel for the lowest data rate for 802.11a were selected for SAR evaluation. 802.11n HT20/HT40 were not investigated since the average output powers over all channels and data rates were not more than 0.25 dB higher than the tested channel in the lowest data rate of 802.11a mode.

<WLAN 2.4GHz>

WLAN 2.4GHz 802.11b Average Power (dBm)						
Power vs. Channel			Power vs. Data Rate			
Channel	Frequency (MHz)	Data Rate 1Mbps	Channel	2Mbps	5.5Mbps	11Mbps
CH 01	2412	17.30	CH 11	17.97	18.09	18.12
CH 06	2437	17.44				
CH 11	2462	18.14				

WLAN 2.4GHz 802.11g Average Power (dBm)									
Power vs. Channel			Power vs. Data Rate						
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 01	2412	13.16	CH 11	13.78	13.77	13.81	13.85	13.94	13.89	13.88
CH 06	2437	13.47								
CH 11	2462	13.96								

WLAN 2.4GHz 802.11n HT20 Average Power (dBm)									
Power vs. Channel			Power vs. MCS Index						
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412	11.42	CH 11	12.06	12.15	12.08	12.12	12.16	12.07	12.14
CH 06	2437	11.75								
CH 11	2462	12.20								

<WLAN 5GHz>

WLAN 5GHz 802.11a Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	Data Rate 6Mbps	Channel	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 36	5180	13.15	CH 48	13.35	13.34	13.39	13.47	13.44	13.51	13.50
CH 40	5200	12.48								
CH 44	5220	12.73								
CH 48	5240	13.52								
CH 149	5745	13.05	CH 157	13.24	13.22	13.28	13.26	13.30	13.34	13.28
CH 153	5765	13.01								
CH 157	5785	13.35								
CH 161	5805	12.74								
CH 165	5825	12.80								

WLAN 5GHz 802.11n HT20 Average Power (dBm)										
Power vs. Channel			Power vs. Data Rate							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 36	5180	11.59	CH 48	11.84	11.81	11.72	11.80	11.83	11.84	11.83
CH 40	5200	10.97								
CH 44	5220	11.26								
CH 48	5240	11.86								
CH 149	5745	11.41	CH 157	11.77	11.73	11.59	11.66	11.72	11.74	11.77
CH 153	5765	11.49								
CH 157	5785	11.80								
CH 161	5805	11.56								
CH 165	5825	11.30								

WLAN 5GHz 802.11n HT40 Average Power (dBm)										
Power vs. Channel			Power vs. MCS Index							
Channel	Frequency (MHz)	MCS Index MCS0	Channel	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 38	5190	11.45	CH 46	11.40	11.42	11.55	11.53	11.45	11.53	11.54
CH 46	5230	11.63								
CH 151	5755	11.51	CH 159	11.69	11.64	11.77	11.76	11.74	11.77	11.74
CH 159	5795	11.79								

13. Bluetooth Exclusions Applied

Mode Band	Average power(dBm)	
	Bluetooth v3.0 + EDR	Bluetooth v4.1 LE
2.4GHz Bluetooth	6.0	1.0

Note:
Per KDB 447498 D01v05r02, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

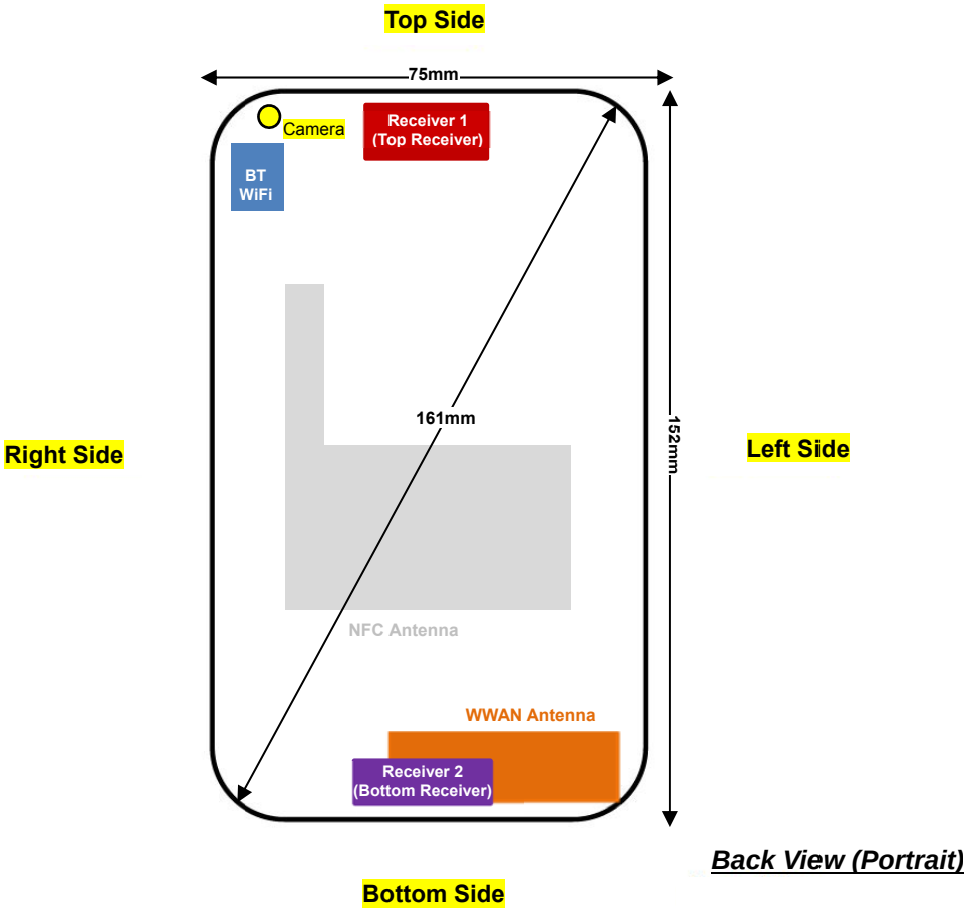
[(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

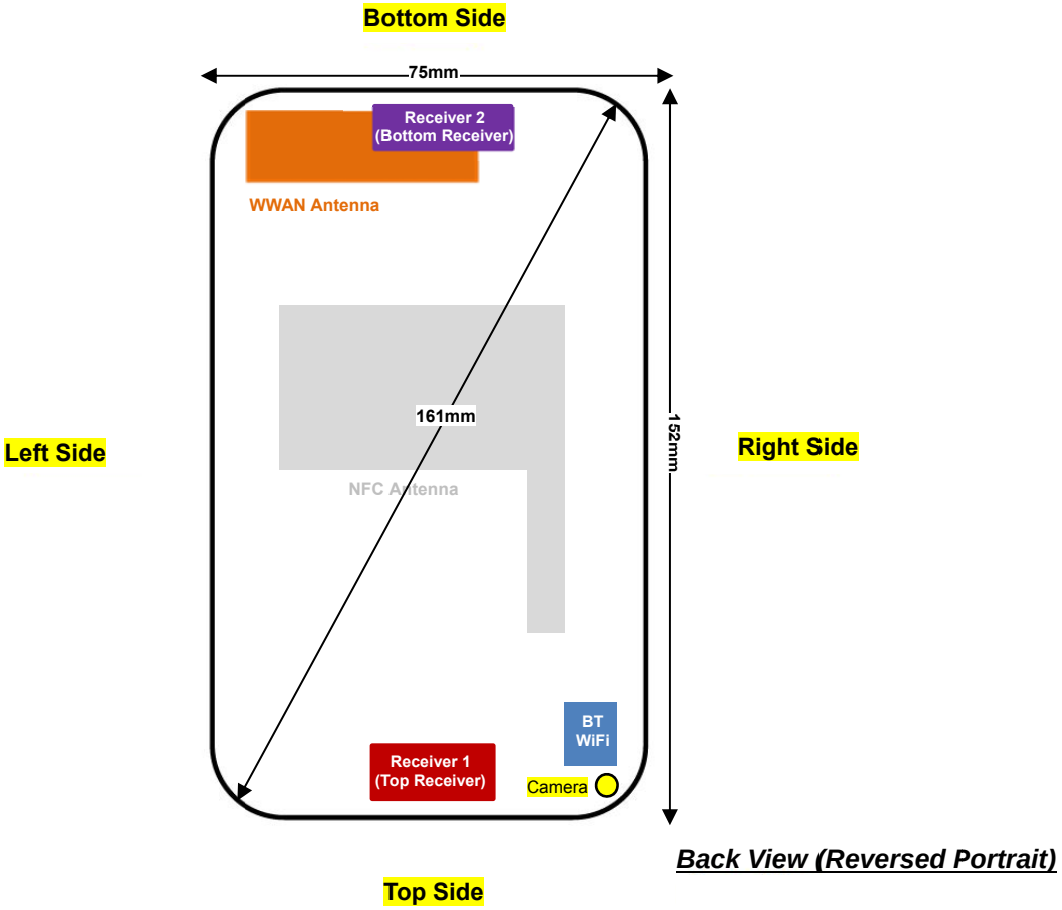
Bluetooth Max Power (dBm)	Separation Distance (mm)	Frequency (GHz)	Exclusion Thresholds
6.0	0	2.48	1.3

Note:
Per KDB 447498 D01v05r02, when the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. The test exclusion threshold is 1.3 which is <= 3, SAR testing is not required.

14. Antenna Location



Back View (Portrait)



Back View (Reversed Portrait)

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	135mm	≤ 25mm	31mm	≤ 25mm
Bluetooth & WLAN	≤ 25mm	≤ 25mm	≤ 25mm	125mm	≤ 25mm	65mm

Positions for SAR tests; Hotspot mode						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	Yes	Yes	No	Yes	No	Yes
Bluetooth & WLAN	Yes	Yes	Yes	No	Yes	No

General Note:
Referring to KDB 941225 D06 v02, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10 mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v05r02, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
   c. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v05r02, for each exposure position, 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:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB648474 D04v01r02, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, when hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg, therefore the LTE Band 2 was perform.
4. Pre KDB648474 D04v01r02, when the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.
5. The device have two receives function, the detail position please see the section 14, when in head position the voice call is coming, the user can choose any one receiver to response. And only when receiver 2 is enabled, the power reduction will be activated to limit the maximum power of any cellular band.
6. Per KDB 648474 D04, for additional accessories (batteries, NFC and wireless charging battery covers or similar accessory), need repeat SAR testing at the worst position (head, and body-worn, and hotspot), for each wireless mode and each band. In addition, for test cases where the measured SAR for a handset without the accessory is greater than 1.2 W/kg, these tests should be repeated with the additional accessories.

GSM Note:

1. Per KDB 941225 D01v03, considering the possibility of e.g. 3rd party VoIP operation for head and body-worn SAR test reduction for GSM, GPRS, EDGE and DTM modes is determined by the source-based time-averaged output power including tune-up tolerance. The 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. Therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.
2. Per KDB 941225 D01v03, for hotspot SAR test reduction for GPRS, EDGE and DTM modes are determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the EUT was set in GPRS (4Tx slots) for GSM850/GSM1900.

WCDMA Note:

1. Per KDB 941225 D01v03, SAR for head / Hotspot / Body-worn exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

WLAN Note:

1. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).
2. Additional WLAN 2.4GHz SAR with headset testing was performed for simultaneous transmission analysis.

LTE Note:

1. Per KDB 941225 D05v02r03, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r03, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.

15.1 Head SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 1	OFF	1	251	848.8	28.46	29.20	1.186	0.19	0.343	0.407
	GSM850	GPRS (4 Tx slots)	Right Tilted	Receiver 1	OFF	1	251	848.8	28.46	29.20	1.186	0.04	0.188	0.223
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	1	251	848.8	28.46	29.20	1.186	0.02	0.324	0.384
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 1	OFF	1	251	848.8	28.46	29.20	1.186	0.1	0.195	0.231
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 1	OFF	2	251	848.8	28.46	29.20	1.186	0.1	0.337	0.400
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	1	251	848.8	24.39	25.00	1.151	0.02	0.804	0.925
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	1	128	824.2	24.24	25.00	1.191	0.07	0.544	0.648
	GSM850	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	1	189	836.4	24.29	25.00	1.178	0.08	0.676	0.796
	GSM850	GPRS (4 Tx slots)	Right Tilted	Receiver 2	ON	1	251	848.8	24.39	25.00	1.151	0.07	0.563	0.648
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	251	848.8	24.39	25.00	1.151	0.09	0.872	1.003
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	128	824.2	24.24	25.00	1.191	-0.0005	0.775	0.923
#01	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	189	836.4	24.29	25.00	1.178	0.01	0.963	**1.134**
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	251	848.8	24.39	25.00	1.151	-0.06	0.811	0.933
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	128	824.2	24.24	25.00	1.191	-0.02	0.563	0.671
	GSM850	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	189	836.4	24.29	25.00	1.178	-0.02	0.678	0.798
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	189	836.4	24.29	25.00	1.178	-0.06	0.952	1.121
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	128	824.2	24.24	25.00	1.191	-0.11	0.735	0.876
	GSM850	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	251	848.8	24.39	25.00	1.151	-0.11	0.934	1.075
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Receiver 1	OFF	1	512	1850.2	25.43	26.10	1.167	0.067	0.170	0.198
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Receiver 1	OFF	1	512	1850.2	25.43	26.10	1.167	0.0037	0.085	0.099
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	1	512	1850.2	25.43	26.10	1.167	0.059	0.220	0.257
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 1	OFF	1	512	1850.2	25.43	26.10	1.167	0.07	0.140	0.163
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 1	OFF	2	512	1850.2	25.43	26.10	1.167	0.03	0.210	0.245
	GSM1900	GPRS (4 Tx slots)	Right Cheek	Receiver 2	ON	1	512	1850.2	20.33	21.00	1.167	-0.06	0.557	0.650
	GSM1900	GPRS (4 Tx slots)	Right Tilted	Receiver 2	ON	1	512	1850.2	20.33	21.00	1.167	-0.03	0.545	0.636
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	512	1850.2	20.33	21.00	1.167	-0.08	0.954	1.113
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	661	1880	20.27	21.00	1.183	0.04	1.020	1.207
#02	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	1	810	1909.8	20.28	21.00	1.180	-0.05	1.040	**1.228**
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	512	1850.2	20.33	21.00	1.167	0.04	0.866	1.010
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	661	1880	20.27	21.00	1.183	-0.02	0.877	1.038
	GSM1900	GPRS (4 Tx slots)	Left Tilted	Receiver 2	ON	1	810	1909.8	20.28	21.00	1.180	-0.03	0.902	1.065
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	810	1909.8	20.28	21.00	1.180	0.0093	1.010	1.192
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	512	1850.2	20.33	21.00	1.167	-0.02	1.030	1.202
	GSM1900	GPRS (4 Tx slots)	Left Cheek	Receiver 2	ON	2	661	1880	20.27	21.00	1.183	-0.03	0.959	1.135

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Power Reduction	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	1	4233	846.6	23.78	24.80	1.265	0.065	0.137	0.173
	WCDMA Band V	RMC12.2Kbps	Right Tilted	Receiver 1	OFF	1	4233	846.6	23.78	24.80	1.265	0.046	0.061	0.077
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	1	4233	846.6	23.78	24.80	1.265	0.02	0.221	0.280
	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 1	OFF	1	4233	846.6	23.78	24.80	1.265	0.041	0.129	0.163
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	2	4233	846.6	23.78	24.80	1.265	0.026	0.219	0.277
	WCDMA Band V	RMC12.2Kbps	Right Cheek	Receiver 2	ON	1	4233	846.6	21.76	22.50	1.186	0.06	0.461	0.547
	WCDMA Band V	RMC12.2Kbps	Right Tilted	Receiver 2	ON	1	4233	846.6	21.76	22.50	1.186	0.04	0.337	0.400
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	4233	846.6	21.76	22.50	1.186	-0.01	0.914	1.084
#03	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	4132	826.4	21.75	22.50	1.189	-0.04	1.010	**1.200**
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	4182	836.4	21.63	22.50	1.222	-0.01	0.943	1.152
	WCDMA Band V	RMC12.2Kbps	Left Tilted	Receiver 2	ON	1	4233	846.6	21.76	22.50	1.186	0.08	0.666	0.790
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	4132	826.4	21.75	22.50	1.189	-0.06	0.849	1.009
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	4182	836.4	21.63	22.50	1.222	-0.05	0.790	0.965
	WCDMA Band V	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	4233	846.6	21.76	22.50	1.186	-0.13	0.753	0.893
	WCDMA Band II	RMC12.2Kbps	Right Cheek	Receiver 1	OFF	1	9538	1907.6	22.83	23.20	1.089	0.14	0.255	0.278
	WCDMA Band II	RMC12.2Kbps	Right Tilted	Receiver 1	OFF	1	9538	1907.6	22.83	23.20	1.089	0.1	0.111	0.121
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	1	9538	1907.6	22.83	23.20	1.089	0.052	0.306	0.333
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 1	OFF	1	9538	1907.6	22.83	23.20	1.089	0.19	0.192	0.209
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 1	OFF	2	9538	1907.6	22.83	23.20	1.089	0.07	0.305	0.332
	WCDMA Band II	RMC12.2Kbps	Right Cheek	Receiver 2	ON	1	9538	1907.6	17.56	18.00	1.000	-0.05	0.705	0.705
	WCDMA Band II	RMC12.2Kbps	Right Tilted	Receiver 2	ON	1	9538	1907.6	17.56	18.00	1.107	0.07	0.677	0.749
#04	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	9538	1907.6	17.56	18.00	1.107	-0.04	1.250	**1.383**
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	9262	1852.4	17.51	18.00	1.119	-0.05	1.190	1.332
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	1	9400	1880	17.55	18.00	1.109	-0.08	1.130	1.253
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	1	9538	1907.6	17.56	18.00	1.107	-0.04	0.981	1.086
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	1	9262	1852.4	17.51	18.00	1.119	-0.04	0.872	0.976
	WCDMA Band II	RMC12.2Kbps	Left Tilted	Receiver 2	ON	1	9800	1880	17.55	18.00	1.109	-0.01	0.955	1.059
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	9538	1907.6	17.56	18.00	1.107	0.06	1.010	1.118
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	9262	1852.4	17.51	18.00	1.119	0.0076	1.100	1.231
	WCDMA Band II	RMC12.2Kbps	Left Cheek	Receiver 2	ON	2	9400	1880	17.55	18.00	1.109	0.04	1.170	1.298

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 4	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	1	20175	1732.5	23.70	24.30	1.148	-0.021	0.285	0.327
	LTE Band 4	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	1	20175	1732.5	22.62	23.30	1.169	0.07	0.226	0.264
	LTE Band 4	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	1	20175	1732.5	23.70	24.30	1.148	0.06	0.123	0.141
	LTE Band 4	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	1	20175	1732.5	22.62	23.30	1.169	0.025	0.098	0.115
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	1	20175	1732.5	23.70	24.30	1.148	0.19	0.326	0.374
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	1	20175	1732.5	22.62	23.30	1.169	0.04	0.294	0.344
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	1	20175	1732.5	23.70	24.30	1.148	0.15	0.169	0.194
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	1	20175	1732.5	22.62	23.30	1.169	0.14	0.136	0.159
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	2	20175	1732.5	23.70	24.30	1.148	0.11	0.322	0.370
	LTE Band 4	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	1	20175	1732.5	18.46	18.90	1.107	-0.03	0.495	0.548
	LTE Band 4	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	1	20175	1732.5	18.06	18.90	1.213	-0.03	0.500	0.607
	LTE Band 4	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	1	20175	1732.5	18.46	18.90	1.107	-0.09	0.520	0.575
	LTE Band 4	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	1	20175	1732.5	18.06	18.90	1.213	0.06	0.515	0.625
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	20175	1732.5	18.46	18.90	1.107	-0.18	1.030	1.140
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	20050	1720	18.36	18.90	1.132	0.02	0.948	1.074
	LTE Band 4	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	20300	1745	18.38	18.90	1.127	0.17	1.110	1.251
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	20175	1732.5	18.06	18.90	1.213	0.07	1.010	1.226
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	20050	1720	17.97	18.90	1.239	-0.09	0.953	1.181
#05	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	20300	1745	17.94	18.90	1.247	-0.05	1.120	**1.397**
	LTE Band 4	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	1	20175	1732.5	17.98	18.90	1.236	0.01	1.020	1.261
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	20175	1732.5	18.46	18.90	1.107	-0.16	0.776	0.859
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	20050	1720	18.36	18.90	1.132	0.05	0.690	0.781
	LTE Band 4	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	20300	1745	18.38	18.90	1.127	0.08	0.837	0.943
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	20175	1732.5	18.06	18.90	1.213	-0.01	0.773	0.938
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	20050	1720	17.97	18.90	1.239	-0.08	0.723	0.896
	LTE Band 4	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	20300	1745	17.94	18.90	1.247	-0.04	0.842	1.050
	LTE Band 4	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	1	20175	1732.5	17.98	18.90	1.236	-0.06	0.855	1.057
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	20300	1745	17.94	18.90	1.247	0.09	1.040	1.297
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	20175	1732.5	18.06	18.90	1.213	0.02	0.967	1.173
	LTE Band 4	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	20050	1720	17.97	18.90	1.239	-0.02	0.886	1.098

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	1	19100	1900	23.51	24.00	1.119	0.046	0.264	0.296
	LTE Band 2	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	1	19100	1900	21.49	23.00	1.416	0.069	0.163	0.231
	LTE Band 2	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	1	19100	1900	23.51	24.00	1.119	0.08	0.129	0.144
	LTE Band 2	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	1	19100	1900	21.49	23.00	1.416	0.021	0.077	0.109
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	1	19100	1900	23.51	24.00	1.119	0.031	0.366	0.410
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	1	19100	1900	21.49	23.00	1.416	0.029	0.232	0.328
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	1	19100	1900	23.51	24.00	1.119	0.1	0.211	0.236
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	1	19100	1900	21.49	23.00	1.416	0.14	0.123	0.174
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	2	19100	1900	23.51	24.00	1.119	0.01	0.360	0.403
	LTE Band 2	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	1	19100	1900	15.66	17.00	1.361	-0.03	0.372	0.506
	LTE Band 2	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	0.03	0.362	0.529
	LTE Band 2	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	1	19100	1900	15.66	17.00	1.361	-0.1	0.423	0.576
	LTE Band 2	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	-0.03	0.406	0.594
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	19100	1900	15.66	17.00	1.361	-0.14	0.830	1.130
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	18700	1860	15.52	17.00	1.406	-0.05	0.774	1.088
	LTE Band 2	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	18900	1880	15.44	17.00	1.432	0.06	0.805	1.153
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	-0.05	0.795	1.162
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	18700	1860	15.11	17.00	1.545	0.04	0.745	1.151
#06	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	18900	1880	15.22	17.00	1.507	-0.0024	0.776	**1.169**
	LTE Band 2	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	-0.1	0.767	1.121
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	19100	1900	15.66	17.00	1.361	-0.11	0.680	0.926
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	18700	1860	15.52	17.00	1.406	0.04	0.655	0.921
	LTE Band 2	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	18900	1880	15.44	17.00	1.432	0.07	0.711	1.018
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	-0.05	0.683	0.999
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	18700	1860	15.11	17.00	1.545	-0.04	0.654	1.011
	LTE Band 2	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	18900	1880	15.22	17.00	1.507	0.01	0.688	1.037
	LTE Band 2	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	1	19100	1900	15.35	17.00	1.462	-0.09	0.680	0.994
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	18900	1880	15.22	17.00	1.507	0.13	0.740	1.115
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	18700	1860	15.11	17.00	1.545	0.03	0.710	1.097
	LTE Band 2	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	2	19100	1900	15.35	17.00	1.462	0.1	0.739	1.081

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Receiver Enabled	Power Reduction	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 7	20M	QPSK	1	0	Right Cheek	Receiver 1	OFF	1	21100	2535	21.82	22.00	1.042	0.09	0.017	0.018
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Receiver 1	OFF	1	21100	2535	20.60	21.00	1.096	0.09	0.012	0.013
	LTE Band 7	20M	QPSK	1	0	Right Tilted	Receiver 1	OFF	1	21100	2535	21.82	22.00	1.042	0.01	0.010	0.010
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Receiver 1	OFF	1	21100	2535	20.60	21.00	1.096	0.07	0.008	0.009
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	1	21100	2535	21.82	22.00	1.042	0.02	0.023	0.024
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 1	OFF	1	21100	2535	20.60	21.00	1.096	0.02	0.018	0.020
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 1	OFF	1	21100	2535	21.82	22.00	1.042	0.17	0.007	0.007
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 1	OFF	1	21100	2535	20.60	21.00	1.096	0.1	0.002	0.002
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 1	OFF	2	21100	2535	21.82	22.00	1.042	0.1	0.022	0.023
	LTE Band 7	20M	QPSK	1	0	Right Cheek	Receiver 2	ON	1	21100	2535	17.94	18.50	1.138	-0.18	0.486	0.553
	LTE Band 7	20M	QPSK	50	0	Right Cheek	Receiver 2	ON	1	21100	2535	17.60	18.50	1.230	-0.11	0.495	0.609
	LTE Band 7	20M	QPSK	1	0	Right Tilted	Receiver 2	ON	1	21100	2535	17.94	18.50	1.138	-0.11	0.620	0.705
	LTE Band 7	20M	QPSK	50	0	Right Tilted	Receiver 2	ON	1	21100	2535	17.60	18.50	1.230	-0.01	0.644	0.792
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	21100	2535	17.94	18.50	1.138	-0.1	0.761	0.866
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	20850	2510	17.92	18.50	1.143	-0.16	0.763	0.872
	LTE Band 7	20M	QPSK	1	0	Left Cheek	Receiver 2	ON	1	21350	2560	17.86	18.50	1.159	-0.09	1.010	1.170
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	21100	2535	17.60	18.50	1.230	-0.15	0.865	1.064
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	20850	2510	17.54	18.50	1.247	-0.1	0.763	0.952
	LTE Band 7	20M	QPSK	50	0	Left Cheek	Receiver 2	ON	1	21350	2560	17.56	18.50	1.242	-0.17	0.965	1.198
	LTE Band 7	20M	QPSK	100	0	Left Cheek	Receiver 2	ON	1	21100	2535	17.58	18.50	1.236	-0.11	0.885	1.094
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	21100	2535	17.94	18.50	1.138	-0.05	0.968	1.101
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	20850	2510	17.92	18.50	1.143	-0.14	0.880	1.006
	LTE Band 7	20M	QPSK	1	0	Left Tilted	Receiver 2	ON	1	21350	2560	17.86	18.50	1.159	0.1	1.110	1.286
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	21100	2535	17.60	18.50	1.230	-0.13	1.000	1.230
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	20850	2510	17.54	18.50	1.247	0.04	0.682	0.851
	LTE Band 7	20M	QPSK	50	0	Left Tilted	Receiver 2	ON	1	21350	2560	17.56	18.50	1.242	-0.12	0.712	0.884
#07	LTE Band 7	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	1	21100	2535	17.58	18.50	1.236	-0.025	1.060	**1.310**
	LTE Band 7	20M	QPSK	100	0	Left Tilted	Receiver 2	ON	2	21100	2535	17.58	18.50	1.236	-0.02	1.010	1.248

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Receiver Enabled	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b_1Mbps	Right Cheek	Receiver 1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.15	0.149	0.199
	WLAN 2.4GHz	802.11b_1Mbps	Right Tilted	Receiver 1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.14	0.272	0.364
#08	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.03	0.974	**1.303**
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	1	1	2412	17.30	19.30	1.583	97.64	1.024	-0.02	0.515	0.835
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	1	6	2437	17.44	19.30	1.533	97.64	1.024	-0.02	0.699	1.097
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.01	0.720	0.963
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 1	1	1	2412	17.30	19.30	1.583	97.64	1.024	-0.04	0.330	0.535
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 1	1	6	2437	17.44	19.30	1.533	97.64	1.024	0.02	0.443	0.696
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	2	11	2462	18.14	19.30	1.306	97.64	1.024	0.05	0.905	1.210
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	2	1	2412	17.30	19.30	1.583	97.64	1.024	0.08	0.634	1.028
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 1	2	6	2437	17.44	19.30	1.533	97.64	1.024	0.03	0.635	0.997
	WLAN 2.4GHz	802.11b_1Mbps	Right Cheek	Receiver 2	1	11	2462	18.14	19.30	1.306	97.64	1.024	-0.13	0.032	0.043
	WLAN 2.4GHz	802.11b_1Mbps	Right Tilted	Receiver 2	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.16	0.029	0.039
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 2	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.15	0.033	0.044
	WLAN 2.4GHz	802.11b_1Mbps	Left Tilted	Receiver 2	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.13	0.015	0.020
	WLAN 2.4GHz	802.11b_1Mbps	Left Cheek	Receiver 2	2	11	2462	18.14	19.30	1.306	97.64	1.024	0.1	0.029	0.039
	WLAN 5.2GHz	802.11a_6Mbps	Right Cheek	Receiver 1	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.15	0.032	0.052
	WLAN 5.2GHz	802.11a_6Mbps	Right Tilted	Receiver 1	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.17	0.032	0.052
#09	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 1	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.03	0.309	**0.498**
	WLAN 5.2GHz	802.11a_6Mbps	Left Tilted	Receiver 1	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.14	0.158	0.255
	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 1	2	48	5240	13.52	15.00	1.406	87.26	1.146	0.01	0.300	0.483
	WLAN 5.2GHz	802.11a_6Mbps	Right Cheek	Receiver 2	1	48	5240	13.52	15.00	1.406	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.2GHz	802.11a_6Mbps	Right Tilted	Receiver 2	1	48	5240	13.52	15.00	1.406	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.2GHz	802.11a_6Mbps	Left Cheek	Receiver 2	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.03	0.000328	0.001
	WLAN 5.2GHz	802.11a_6Mbps	Left Tilted	Receiver 2	1	48	5240	13.52	15.00	1.406	87.26	1.146	0.05	0.000797	0.001
	WLAN 5.2GHz	802.11a_6Mbps	Left Tilted	Receiver 2	2	48	5240	13.52	15.00	1.406	87.26	1.146	0.07	0.000239	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 1	1	157	5785	13.35	14.30	1.244	87.26	1.146	0.06	0.093	0.133
	WLAN 5.8GHz	802.11a_6Mbps	Right Tilted	Receiver 1	1	157	5785	13.35	14.30	1.244	87.26	1.146	0.09	0.121	0.172
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	1	157	5785	13.35	14.30	1.244	87.26	1.146	0.02	0.850	1.212
#10	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	1	149	5785	13.05	13.30	1.059	87.26	1.146	0.036	1.140	**1.383**
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	1	165	5825	12.80	14.30	1.412	87.26	1.146	0.19	0.680	1.100
	WLAN 5.8GHz	802.11a_6Mbps	Left Tilted	Receiver 1	1	157	5785	13.35	14.30	1.244	87.26	1.146	0.07	0.342	0.488
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	2	149	5785	13.05	13.30	1.059	87.26	1.146	-0.05	0.948	1.150
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	2	157	5785	13.35	14.30	1.244	87.26	1.146	0.02	0.765	1.091
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 1	2	165	5825	12.80	14.30	1.412	87.26	1.146	0.078	0.729	1.180
	WLAN 5.8GHz	802.11a_6Mbps	Right Cheek	Receiver 2	1	157	5785	13.35	14.30	1.245	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Right Tilted	Receiver 2	1	157	5785	13.35	14.30	1.245	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Left Cheek	Receiver 2	1	157	5785	13.35	14.30	1.245	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Left Tilted	Receiver 2	1	157	5785	13.35	14.30	1.245	87.26	1.146	0	< 0.001	< 0.001
	WLAN 5.8GHz	802.11a_6Mbps	Left Tilted	Receiver 2	2	157	5785	13.35	14.30	1.245	87.26	1.146	0	< 0.001	< 0.001

15.2 Hotspot SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	1	1	251	848.8	28.46	29.20	1.186	0.02	0.406	0.481
#11	GSM850	GPRS (4 Tx slots)	Back	1	1	251	848.8	28.46	29.20	1.186	0.03	0.496	**0.588**
	GSM850	GPRS (4 Tx slots)	Left Side	1	1	251	848.8	28.46	29.20	1.186	0.04	0.409	0.485
	GSM850	GPRS (4 Tx slots)	Bottom Side	1	1	251	848.8	28.46	29.20	1.186	-0.06	0.248	0.294
	GSM850	GPRS (4 Tx slots)	Back	1	2	251	848.8	28.46	29.20	1.186	-0.03	0.488	0.579
	GSM1900	GPRS (4 Tx slots)	Front	1	1	512	1850.2	25.43	26.10	1.167	0.06	0.538	0.628
#12	GSM1900	GPRS (4 Tx slots)	Back	1	1	512	1850.2	25.43	26.10	1.167	-0.01	0.673	**0.785**
	GSM1900	GPRS (4 Tx slots)	Left Side	1	1	512	1850.2	25.43	26.10	1.167	0.09	0.303	0.354
	GSM1900	GPRS (4 Tx slots)	Bottom Side	1	1	512	1850.2	25.43	26.10	1.167	-0.07	0.647	0.755
	GSM1900	GPRS (4 Tx slots)	Back	1	2	512	1850.2	25.43	26.10	1.167	-0.01	0.642	0.749

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	1	1	4233	846.6	23.78	24.80	1.265	-0.17	0.275	0.348
#13	WCDMA Band V	RMC12.2Kbps	Back	1	1	4233	846.6	23.78	24.80	1.265	-0.09	0.372	**0.470**
	WCDMA Band V	RMC12.2Kbps	Left Side	1	1	4233	846.6	23.78	24.80	1.265	-0.03	0.301	0.381
	WCDMA Band V	RMC12.2Kbps	Bottom Side	1	1	4233	846.6	23.78	24.80	1.265	0.03	0.157	0.199
	WCDMA Band V	RMC12.2Kbps	Back	1	2	4233	846.6	23.78	24.80	1.265	0.05	0.326	0.412
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9538	1907.6	22.83	23.20	1.089	-0.02	0.964	1.050
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9262	1852.4	22.77	23.20	1.104	-0.0075	0.656	0.724
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9400	1880	22.82	23.20	1.091	0.13	0.702	0.766
#14	WCDMA Band II	RMC12.2Kbps	Back	1	1	9538	1907.6	22.83	23.20	1.089	-0.16	1.080	**1.176**
	WCDMA Band II	RMC12.2Kbps	Back	1	1	9262	1852.4	22.77	23.20	1.104	-0.0062	0.952	1.051
	WCDMA Band II	RMC12.2Kbps	Back	1	1	9400	1880	22.82	23.20	1.091	0.19	1.040	1.135
	WCDMA Band II	RMC12.2Kbps	Left Side	1	1	9538	1907.6	22.83	23.20	1.089	-0.05	0.439	0.478
	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	1	9538	1907.6	22.83	23.20	1.089	-0.08	1.010	1.100
	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	1	9262	1852.4	22.77	23.20	1.104	0.17	0.948	1.047
	WCDMA Band II	RMC12.2Kbps	Bottom Side	1	1	9400	1880	22.82	23.20	1.091	0.03	0.981	1.071
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9538	1907.6	22.83	23.20	1.089	-0.04	0.956	1.041
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9262	1852.4	22.77	23.20	1.104	-0.04	0.913	1.008
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9400	1880	22.82	23.20	1.091	-0.07	0.927	1.012

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 4	20M	QPSK	1	0	Front	1	1	20175	1732.5	23.70	24.30	1.148	0.0059	0.639	0.734
	LTE Band 4	20M	QPSK	50	0	Front	1	1	20175	1732.5	22.62	23.30	1.169	-0.08	0.522	0.610
#15	LTE Band 4	20M	QPSK	1	0	Back	1	1	20175	1732.5	23.70	24.30	1.148	-0.14	0.690	**0.792**
	LTE Band 4	20M	QPSK	50	0	Back	1	1	20175	1732.5	22.62	23.30	1.169	-0.12	0.559	0.654
	LTE Band 4	20M	QPSK	1	0	Left Side	1	1	20175	1732.5	23.70	24.30	1.148	0.01	0.339	0.389
	LTE Band 4	20M	QPSK	50	0	Left Side	1	1	20175	1732.5	22.62	23.30	1.169	0.03	0.288	0.337
	LTE Band 4	20M	QPSK	1	0	Bottom Side	1	1	20175	1732.5	23.70	24.30	1.148	0.08	0.549	0.630
	LTE Band 4	20M	QPSK	50	0	Bottom Side	1	1	20175	1732.5	22.62	23.30	1.169	0.01	0.445	0.520
	LTE Band 4	20M	QPSK	1	0	Back	1	2	20175	1732.5	23.70	24.30	1.148	0.1	0.650	0.746

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Front	1	1	19100	1900	23.51	24.00	1.119	0.1	1.030	1.153
	LTE Band 2	20M	QPSK	1	0	Front	1	1	18700	1860	23.41	24.00	1.146	-0.04	0.931	1.066
	LTE Band 2	20M	QPSK	1	0	Front	1	1	18900	1880	23.35	24.00	1.161	0.12	1.010	1.173
	LTE Band 2	20M	QPSK	50	0	Front	1	1	19100	1900	21.49	23.00	1.416	-0.03	0.638	0.903
	LTE Band 2	20M	QPSK	50	0	Front	1	1	18900	1880	21.29	23.00	1.483	-0.01	0.628	0.931
	LTE Band 2	20M	QPSK	50	0	Front	1	1	18700	1860	21.21	23.00	1.510	0.05	0.598	0.903
	LTE Band 2	20M	QPSK	100	0	Front	1	1	19100	1900	21.38	23.00	1.452	-0.04	0.631	0.916
	LTE Band 2	20M	QPSK	1	0	Back	1	1	19100	1900	23.51	24.00	1.119	-0.03	1.130	1.265
	LTE Band 2	20M	QPSK	1	0	Back	1	1	18700	1860	23.41	24.00	1.146	0.03	1.020	1.168
#16	LTE Band 2	20M	QPSK	1	0	Back	1	1	18900	1880	23.35	24.00	1.161	0.02	1.110	**1.289**
	LTE Band 2	20M	QPSK	50	0	Back	1	1	19100	1900	21.49	23.00	1.416	-0.03	0.701	0.992
	LTE Band 2	20M	QPSK	50	0	Back	1	1	18700	1860	21.21	23.00	1.510	-0.1	0.646	0.976
	LTE Band 2	20M	QPSK	50	0	Back	1	1	18900	1880	21.29	23.00	1.483	0.12	0.680	1.008
	LTE Band 2	20M	QPSK	100	0	Back	1	1	19100	1900	21.38	23.00	1.452	0.03	0.679	0.986
	LTE Band 2	20M	QPSK	1	0	Left Side	1	1	19100	1900	23.51	24.00	1.119	0.19	0.531	0.594
	LTE Band 2	20M	QPSK	50	0	Left Side	1	1	19100	1900	21.49	23.00	1.416	0.1	0.316	0.447
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	1	19100	1900	23.51	24.00	1.119	0.07	1.100	1.231
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	1	18700	1860	23.41	24.00	1.146	-0.09	0.975	1.117
	LTE Band 2	20M	QPSK	1	0	Bottom Side	1	1	18900	1880	23.35	24.00	1.161	-0.02	1.060	1.231
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	1	19100	1900	21.49	23.00	1.416	0.09	0.616	0.872
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	1	18700	1860	21.21	23.00	1.510	0.17	0.585	0.883
	LTE Band 2	20M	QPSK	50	0	Bottom Side	1	1	18900	1880	21.29	23.00	1.483	0.1	0.602	0.892
	LTE Band 2	20M	QPSK	100	0	Bottom Side	1	1	19100	1900	21.38	23.00	1.452	0.04	0.629	0.913
	LTE Band 2	20M	QPSK	1	0	Back	1	2	18900	1880	23.35	24.00	1.161	-0.02	1.030	1.196
	LTE Band 2	20M	QPSK	1	0	Back	1	2	18700	1860	23.41	24.00	1.146	-0.02	0.994	1.139
	LTE Band 2	20M	QPSK	1	0	Back	1	2	19100	1900	23.51	24.00	1.119	-0.11	1.000	1.119
	LTE Band 7	20M	QPSK	1	0	Front	1	1	21100	2535	21.82	22.00	1.042	-0.18	0.475	0.495
	LTE Band 7	20M	QPSK	50	0	Front	1	1	21100	2535	20.60	21.00	1.096	-0.14	0.381	0.418
	LTE Band 7	20M	QPSK	1	0	Back	1	1	21100	2535	21.82	22.00	1.042	0.04	0.892	0.930
	LTE Band 7	20M	QPSK	1	0	Back	1	1	20850	2510	21.59	22.00	1.099	-0.14	0.772	0.848
	LTE Band 7	20M	QPSK	1	0	Back	1	1	21350	2560	21.80	22.00	1.047	-0.18	1.030	1.079
	LTE Band 7	20M	QPSK	50	0	Back	1	1	21100	2535	20.60	21.00	1.096	0.17	0.737	0.808
	LTE Band 7	20M	QPSK	50	0	Back	1	1	20850	2510	20.45	21.00	1.135	0.16	0.703	0.798
	LTE Band 7	20M	QPSK	50	0	Back	1	1	21350	2560	20.57	21.00	1.104	0.17	0.840	0.927
	LTE Band 7	20M	QPSK	100	0	Back	1	1	21100	2535	20.55	21.00	1.109	0.022	0.855	0.948
	LTE Band 7	20M	QPSK	1	0	Left Side	1	1	21100	2535	21.82	22.00	1.042	-0.0042	0.074	0.077
	LTE Band 7	20M	QPSK	50	0	Left Side	1	1	21100	2535	20.60	21.00	1.096	0.061	0.058	0.064
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	1	21100	2535	21.82	22.00	1.042	0.19	0.967	1.008
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	1	20850	2510	21.59	22.00	1.099	0.025	0.837	0.920
#17	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	1	21350	2560	21.80	22.00	1.047	-0.07	1.140	**1.194**
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	1	21100	2535	20.60	21.00	1.096	0.036	0.809	0.887
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	1	20850	2510	20.45	21.00	1.135	0.021	0.648	0.735
	LTE Band 7	20M	QPSK	50	0	Bottom Side	1	1	21350	2560	20.57	21.00	1.104	-0.0013	0.918	1.014
	LTE Band 7	20M	QPSK	100	0	Bottom Side	1	1	21100	2535	20.55	21.00	1.109	0.028	0.798	0.885
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	2	21350	2560	21.80	22.00	1.047	-0.01	1.110	1.162
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	2	21100	2535	21.82	22.00	1.042	-0.11	0.918	0.957
	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	2	20850	2510	21.59	22.00	1.099	-0.07	0.865	0.951

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b_1Mbps	Front	1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.0011	0.092	0.123
#18	WLAN 2.4GHz	802.11b_1Mbps	Back	1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.05	0.223	**0.298**
	WLAN 2.4GHz	802.11b_1Mbps	Right Side	1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.02	0.072	0.096
	WLAN 2.4GHz	802.11b_1Mbps	Top Side	1	1	11	2462	18.14	19.30	1.306	97.64	1.024	0.065	0.061	0.082
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	2	11	2462	18.14	19.30	1.306	97.64	1.024	-0.096	0.17	0.227
	WLAN 5.8GHz	802.11a_6Mbps	Front	1	1	157	5785	13.35	14.30	1.245	87.26	1.146	0.06	0.280	0.399
#19	WLAN 5.8GHz	802.11a_6Mbps	Back	1	1	157	5785	13.35	14.30	1.245	87.26	1.146	-0.06	0.413	**0.589**
	WLAN 5.8GHz	802.11a_6Mbps	Right Side	1	1	157	5785	13.35	14.30	1.245	87.26	1.146	0.15	0.148	0.211
	WLAN 5.8GHz	802.11a_6Mbps	Top Side	1	1	157	5785	13.35	14.30	1.245	87.26	1.146	0.02	0.113	0.161
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	2	157	5785	13.35	14.30	1.245	87.26	1.146	0.077	0.357	0.509

15.3 Extremity SAR

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Reported 10g SAR (W/kg)
	LTE Band 2	20M	QPSK	1	0	Back	0	19100	1900	23.51	24.00	1.119	0.02	2.590	2.899
	LTE Band 2	20M	QPSK	1	0	Back	0	18700	1860	23.41	24.00	1.146	0.02	2.560	2.933
#20	LTE Band 2	20M	QPSK	1	0	Back	0	18900	1880	23.35	24.00	1.161	0.09	2.590	**3.008**
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	19100	1900	23.51	24.00	1.119	-0.06	2.170	2.429
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18700	1860	23.41	24.00	1.146	0.12	2.000	2.291
	LTE Band 2	20M	QPSK	1	0	Bottom Side	0	18900	1880	23.35	24.00	1.161	0.05	2.110	2.451

15.4 Body Worn Accessory SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (4 Tx slots)	Front	1	1	251	848.8	28.46	29.20	1.186	0.02	0.406	0.481
#21	GSM850	GPRS (4 Tx slots)	Back	1	1	251	848.8	28.46	29.20	1.186	0.03	0.496	**0.588**
	GSM850	GPRS (4 Tx slots)	Back	1	2	251	848.8	28.46	29.20	1.186	-0.03	0.488	0.579
	GSM1900	GPRS (4 Tx slots)	Front	1	1	512	1850.2	25.43	26.10	1.167	0.06	0.538	0.628
#22	GSM1900	GPRS (4 Tx slots)	Back	1	1	512	1850.2	25.43	26.10	1.167	-0.01	0.673	**0.785**
	GSM1900	GPRS (4 Tx slots)	Back	1	2	512	1850.2	25.43	26.10	1.167	-0.01	0.642	0.749

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA Band V	RMC12.2Kbps	Front	1	1	4233	846.6	23.78	24.80	1.265	-0.17	0.275	0.348
#23	WCDMA Band V	RMC12.2Kbps	Back	1	1	4233	846.6	23.78	24.80	1.265	-0.09	0.372	**0.470**
	WCDMA Band V	RMC12.2Kbps	Back	1	2	4233	846.6	23.78	24.80	1.265	0.05	0.326	0.412
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9538	1907.6	22.83	23.20	1.089	-0.02	0.964	1.050
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9262	1852.4	22.77	23.20	1.104	-0.0075	0.656	0.724
	WCDMA Band II	RMC12.2Kbps	Front	1	1	9400	1880	22.82	23.20	1.091	0.13	0.702	0.766
#24	WCDMA Band II	RMC12.2Kbps	Back	1	1	9538	1907.6	22.83	23.20	1.089	-0.16	1.080	**1.176**
	WCDMA Band II	RMC12.2Kbps	Back	1	1	9262	1852.4	22.77	23.20	1.104	-0.0062	0.952	1.051
	WCDMA Band II	RMC12.2Kbps	Back	1	1	9400	1880	22.82	23.20	1.091	0.19	1.040	1.135
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9538	1907.6	22.83	23.20	1.089	-0.04	0.956	1.041
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9262	1852.4	22.77	23.20	1.104	-0.04	0.913	1.008
	WCDMA Band II	RMC12.2Kbps	Back	1	2	9400	1880	22.82	23.20	1.091	-0.07	0.927	1.012

<LTE SAR>

Plot No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Battery	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 4	20M	QPSK	1	0	Front	1	1		20175	1732.5	23.70	24.30	1.148	0.0059	0.639	0.734
	LTE Band 4	20M	QPSK	50	0	Front	1	1		20175	1732.5	22.62	23.30	1.169	-0.08	0.522	0.610
#25	LTE Band 4	20M	QPSK	1	0	Back	1	1		20175	1732.5	23.70	24.30	1.148	-0.14	0.690	**0.792**
	LTE Band 4	20M	QPSK	50	0	Back	1	1		20175	1732.5	22.62	23.30	1.169	-0.12	0.559	0.654
	LTE Band 4	20M	QPSK	1	0	Back	1	2		20175	1732.5	23.70	24.30	1.148	0.1	0.650	0.746
	LTE Band 2	20M	QPSK	1	0	Front	1	1		19100	1900	23.51	24.00	1.119	0.1	1.030	1.153
	LTE Band 2	20M	QPSK	1	0	Front	1	1		18700	1860	23.41	24.00	1.146	-0.04	0.931	1.066
	LTE Band 2	20M	QPSK	1	0	Front	1	1		18900	1880	23.35	24.00	1.161	0.12	1.010	1.173
	LTE Band 2	20M	QPSK	50	0	Front	1	1		19100	1900	21.49	23.00	1.416	-0.03	0.638	0.903
	LTE Band 2	20M	QPSK	50	0	Front	1	1		18900	1880	21.29	23.00	1.483	-0.01	0.628	0.931
	LTE Band 2	20M	QPSK	50	0	Front	1	1		18700	1860	21.21	23.00	1.510	0.05	0.598	0.903
	LTE Band 2	20M	QPSK	100	0	Front	1	1		19100	1900	21.38	23.00	1.452	-0.04	0.631	0.916
	LTE Band 2	20M	QPSK	1	0	Back	1	1		19100	1900	23.51	24.00	1.119	-0.03	1.130	1.265
	LTE Band 2	20M	QPSK	1	0	Back	1	1		18700	1860	23.41	24.00	1.146	0.03	1.020	1.168
	LTE Band 2	20M	QPSK	1	0	Back	1	1		18900	1880	23.35	24.00	1.161	0.02	1.110	1.289
	LTE Band 2	20M	QPSK	50	0	Back	1	1		19100	1900	21.49	23.00	1.416	-0.03	0.701	0.992
	LTE Band 2	20M	QPSK	50	0	Back	1	1		18700	1860	21.21	23.00	1.510	-0.1	0.646	0.976
	LTE Band 2	20M	QPSK	50	0	Back	1	1		18900	1880	21.29	23.00	1.483	0.12	0.680	1.008
	LTE Band 2	20M	QPSK	100	0	Back	1	1		19100	1900	21.38	23.00	1.452	0.03	0.679	0.986
	LTE Band 2	20M	QPSK	1	0	Back	1	2		18900	1880	23.35	24.00	1.161	-0.02	1.030	1.196
	LTE Band 2	20M	QPSK	1	0	Back	1	2		18700	1860	23.41	24.00	1.146	-0.02	0.994	1.139
	LTE Band 2	20M	QPSK	1	0	Back	1	2		19100	1900	23.51	24.00	1.119	-0.11	1.000	1.119
	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 1	19100	1900	23.51	24.00	1.119	-0.16	1.170	1.310
	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 1	18700	1860	23.41	24.00	1.146	-0.02	1.060	1.214
#26	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 1	18900	1880	23.35	24.00	1.161	-0.14	1.140	**1.324**
	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 2	18900	1880	23.35	24.00	1.161	-0.03	1.080	1.254
	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 2	19100	1900	23.51	24.00	1.119	-0.09	1.110	1.243
	LTE Band 2	20M	QPSK	1	0	Back	1	1	Headset 2	18700	1860	23.41	24.00	1.146	0.06	0.984	1.127
	LTE Band 7	20M	QPSK	1	0	Front	1	1		21100	2535	21.82	22.00	1.042	-0.18	0.475	0.495
	LTE Band 7	20M	QPSK	50	0	Front	1	1		21100	2535	20.60	21.00	1.096	-0.14	0.381	0.418
	LTE Band 7	20M	QPSK	1	0	Back	1	1		21100	2535	21.82	22.00	1.042	0.04	0.892	0.930
	LTE Band 7	20M	QPSK	1	0	Back	1	1		20850	2510	21.59	22.00	1.099	-0.14	0.772	0.848
#27	LTE Band 7	20M	QPSK	1	0	Back	1	1		21350	2560	21.80	22.00	1.047	-0.18	1.030	**1.079**
	LTE Band 7	20M	QPSK	50	0	Back	1	1		21100	2535	20.60	21.00	1.096	0.17	0.737	0.808
	LTE Band 7	20M	QPSK	50	0	Back	1	1		20850	2510	20.45	21.00	1.135	0.16	0.703	0.798
	LTE Band 7	20M	QPSK	50	0	Back	1	1		21350	2560	20.57	21.00	1.104	0.17	0.840	0.927
	LTE Band 7	20M	QPSK	100	0	Back	1	1		21100	2535	20.55	21.00	1.109	0.022	0.855	0.948
	LTE Band 7	20M	QPSK	1	0	Back	1	2		21350	2560	21.80	22.00	1.047	0.06	0.995	1.042
	LTE Band 7	20M	QPSK	1	0	Back	1	2		21100	2535	21.82	22.00	1.042	0.022	0.878	0.915
	LTE Band 7	20M	QPSK	1	0	Back	1	2		20850	2510	21.59	22.00	1.099	0.084	0.846	0.930

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (cm)	Battery	Headset	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WLAN 2.4GHz	802.11b_1Mbps	Front	1	1		11	2462	18.14	19.30	1.306	97.64	1.024	0.0011	0.092	0.123
#28	WLAN 2.4GHz	802.11b_1Mbps	Back	1	1		11	2462	18.14	19.30	1.306	97.64	1.024	0.05	0.223	**0.298**
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	1	Headset 1	11	2462	18.14	19.30	1.306	97.64	1.024	-0.048	0.215	0.288
	WLAN 2.4GHz	802.11b_1Mbps	Back	1	2		11	2462	18.14	19.30	1.306	97.64	1.024	-0.096	0.17	0.227
	WLAN 5.2GHz	802.11a_6Mbps	Front	1	1		48	5240	13.52	15.00	1.406	87.26	1.146	0.07	0.049	0.079
#29	WLAN 5.2GHz	802.11a_6Mbps	Back	1	1		48	5240	13.52	15.00	1.406	87.26	1.146	0.035	0.070	**0.113**
	WLAN 5.2GHz	802.11a_6Mbps	Back	1	1	Headset 1	48	5240	13.52	15.00	1.406	87.26	1.146	-0.024	0.064	0.103
	WLAN 5.2GHz	802.11a_6Mbps	Back	1	2		48	5240	13.52	15.00	1.406	87.26	1.146	0.068	0.052	0.084
	WLAN 5.8GHz	802.11a_6Mbps	Front	1	1		157	5785	13.35	14.30	1.245	87.26	1.146	0.06	0.280	0.399
#30	WLAN 5.8GHz	802.11a_6Mbps	Back	1	1		157	5785	13.35	14.30	1.245	87.26	1.146	-0.06	0.413	**0.589**
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	1	Headset 1	157	5785	13.35	14.30	1.245	87.26	1.146	0.09	0.384	0.548
	WLAN 5.8GHz	802.11a_6Mbps	Back	1	2		157	5785	13.35	14.30	1.245	87.26	1.146	0.077	0.357	0.509

15.5 Repeated SAR Measurement

General Note:

1. Per KDB 865664 D01v01r03, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r03, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. Per KDB 865664 D01v01r03, if the extremity repeated SAR is necessary, the same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.
4. The ratio is the difference in percentage between original and repeated *measured SAR*.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

<1g Repeated SAR>

No.	Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA Band V	RMC12.2Kbps	Left Cheek	4132	826.4	21.75	22.50	1.189	-	-	-0.04	1.010	1	1.200
2nd	WCDMA Band V	RMC12.2Kbps	Left Cheek	4132	826.4	21.75	22.50	1.189	-	-	-0.15	0.995	1.015	1.183
1st	WCDMA Band II	RMC12.2Kbps	Left Cheek	9538	1907.6	17.56	18.00	1.107	-	-	-0.04	1.250	1	1.383
2nd	WCDMA Band II	RMC12.2Kbps	Left Cheek	9538	1907.6	17.56	18.00	1.107	-	-	-0.09	1.220	1.025	1.350
1st	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	11	2462	18.14	19.30	1.306	97.64	1.024	0.03	0.974	1	1.303
2nd	WLAN 2.4GHz	802.11b 1Mbps	Left Cheek	11	2462	18.14	19.30	1.306	97.64	1.024	0.13	0.968	1.006	1.295
1st	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	149	5745	13.05	13.30	1.059	87.26	1.146	0.036	1.140	1	1.383
2nd	WLAN 5.8GHz	802.11a 6Mbps	Left Cheek	149	5745	13.05	13.30	1.059	87.26	1.146	0.11	1.080	1.056	1.310

No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 4	20M	QPSK	50	0	Left Cheek	-	20300	1745	17.94	18.90	1.247	-0.05	1.120	1	1.397
2nd	LTE Band 4	20M	QPSK	50	0	Left Cheek	-	20300	1745	17.94	18.90	1.247	-0.15	1.070	1.047	1.335
1st	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	21350	2560	21.80	22.00	1.047	-0.07	1.140	1	1.194
2nd	LTE Band 7	20M	QPSK	1	0	Bottom Side	1	21350	2560	21.80	22.00	1.047	-0.01	1.090	1.046	1.141

<10g Repeated SAR>

No.	Band	BW (MHz)	Mode	RB Size	RB offset	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 10g SAR (W/kg)	Ratio	Reported 10g SAR (W/kg)
1st	LTE Band 2	20M	QPSK	1	0	Back	0	19100	1900	23.51	24.00	1.119	0.02	2.590	1	2.899
2nd	LTE Band 2	20M	QPSK	1	0	Back	0	19100	1900	23.51	24.00	1.119	0.15	2.470	1.049	2.765

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Head	Body-worn	Hotspot	Note
1.	GSM(voice) + WLAN 2.4GHz(data)	Yes	Yes		
2.	WCDMA(voice) + WLAN 2.4GHz(data)	Yes	Yes		
3.	LTE(voice) + WLAN 2.4GHz(data)	Yes	Yes		
4.	GSM(voice) + WLAN 5GHz(data)	Yes	Yes		
5.	WCDMA(voice) + WLAN 5GHz(data)	Yes	Yes		
6.	LTE(voice) + WLAN 5GHz(data)	Yes	Yes		
7.	GSM(voice) + Bluetooth(data)	Yes	Yes		
8.	WCDMA((voice) + Bluetooth(data)	Yes	Yes		
9.	LTE(voice) + Bluetooth(data)	Yes	Yes		
10.	GPRS/EDGE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
11.	WCDMA(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
12.	LTE(data) + WLAN 2.4GHz(data)	Yes	Yes	Yes	2.4GHz Hotspot
13.	GPRS/EDGE(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
14.	WCDMA(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
15.	LTE(data) + WLAN 5.2GHz(data)	Yes	Yes		WiFi Direct (GC)
16.	GPRS/EDGE(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
17.	WCDMA(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
18.	LTE(data) + WLAN 5.8GHz(data)	Yes	Yes	Yes	WiFi Direct (GC/GO)
19.	GPRS/EDGE(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
20.	WCDMA(data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering
21.	LTE(Data) + Bluetooth(data)	Yes	Yes	Yes	Bluetooth Tethering

General Note:

1. This device supported VoIP in GPRS, EGPRS, WCDMA and LTE (e.g. 3rd party VoIP) and LTE Supports VoLTE operation.
2. This device 2.4 GHz / 5.8GHz WLAN supports hotspot and WiFi Direct (GC / GO) operation, and 5.2GHz WLAN supports WiFi Direct (GC only).
3. WLAN and Bluetooth share the same antenna, and cannot transmit simultaneously.
4. EUT will choose each GSM, WCDMA and LTE according to the network signal condition; therefore, they will not operate simultaneously at any moment.
5. EUT will choose either WLAN 2.4GHz or WLAN 5GHz according to the network signal condition; therefore, 2.4GHz WLAN and 5GHz WLAN will not operate simultaneously at any moment.
6. The reported SAR summation is calculated based on the same configuration and test position.
7. Per KDB 447498 D01v05r02, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*), and the peak separation distance is determined from the square root of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
   v) The SPLSR calculated results please refer to section 15.4.
8. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05r02 based on the formula below.
   i) (*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)]·[$\sqrt{}$f(GHz)/*x*] W/kg for *test separation distances* ≤ 50 mm; where *x* = 7.5 for 1-g SAR, and *x* = 18.75 for 10-g SAR.
   ii) When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   iii) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distances* is > 50 mm.

Bluetooth Max Power	Exposure Position	Head	Hotspot	Body worn
	Test separation (mm)	0	10	10
6.0 dBm	Estimated SAR (W/kg)	0.168	0.084	0.084

16.1 Head Exposure Conditions

<Receiver1 configuration>:

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.407	0.199	0.61		
		Right Tilted	0.223	0.364	0.59		
		Left Cheek	0.384	1.303	**1.69**	**0.04**	**#1**
		Left Tilted	0.231	0.963	1.19		
	GSM1900	Right Cheek	0.198	0.199	0.40		
		Right Tilted	0.099	0.364	0.46		
		Left Cheek	0.257	1.303	1.56		
		Left Tilted	0.163	0.963	1.13		
WCDMA	Band V	Right Cheek	0.173	0.199	0.37		
		Right Tilted	0.077	0.364	0.44		
		Left Cheek	0.280	1.303	1.58		
		Left Tilted	0.163	0.963	1.13		
	Band II	Right Cheek	0.278	0.199	0.48		
		Right Tilted	0.121	0.364	0.49		
		Left Cheek	0.333	1.303	**1.64**	**0.02**	**#2**
		Left Tilted	0.209	0.963	1.17		
LTE	Band 4	Right Cheek	0.327	0.199	0.53		
		Right Tilted	0.141	0.364	0.51		
		Left Cheek	0.374	1.303	**1.68**	**0.03**	**#3**
		Left Tilted	0.194	0.963	1.16		
	Band 2	Right Cheek	0.296	0.199	0.50		
		Right Tilted	0.144	0.364	0.51		
		Left Cheek	0.410	1.303	**1.71**	**0.02**	**#4**
		Left Tilted	0.236	0.963	1.20		
	Band 7	Right Cheek	0.018	0.199	0.22		
		Right Tilted	0.010	0.364	0.37		
		Left Cheek	0.024	1.303	1.33		
		Left Tilted	0.007	0.963	0.97		

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.407	0.133	0.54		
		Right Tilted	0.223	0.172	0.40		
		Left Cheek	0.384	1.383	**1.77**	**0.04**	**#5**
		Left Tilted	0.231	0.488	0.72		
	GSM1900	Right Cheek	0.198	0.133	0.33		
		Right Tilted	0.099	0.172	0.27		
		Left Cheek	0.257	1.383	**1.64**	**0.02**	**#6**
		Left Tilted	0.163	0.488	0.65		
WCDMA	Band V	Right Cheek	0.173	0.133	0.31		
		Right Tilted	0.077	0.172	0.25		
		Left Cheek	0.280	1.383	**1.66**	**0.03**	**#7**
		Left Tilted	0.163	0.488	0.65		
	Band II	Right Cheek	0.278	0.133	0.41		
		Right Tilted	0.121	0.172	0.29		
		Left Cheek	0.333	1.383	**1.72**	**0.02**	**#8**
		Left Tilted	0.209	0.488	0.70		
LTE	Band 4	Right Cheek	0.327	0.133	0.46		
		Right Tilted	0.141	0.172	0.31		
		Left Cheek	0.374	1.383	**1.76**	**0.03**	**#9**
		Left Tilted	0.194	0.488	0.68		
	Band 2	Right Cheek	0.296	0.133	0.43		
		Right Tilted	0.144	0.172	0.32		
		Left Cheek	0.410	1.383	**1.79**	**0.03**	**#10**
		Left Tilted	0.236	0.488	0.72		
	Band 7	Right Cheek	0.018	0.133	0.15		
		Right Tilted	0.010	0.172	0.18		
		Left Cheek	0.024	1.383	1.41		
		Left Tilted	0.007	0.488	0.50		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Right Cheek	0.407	0.168	0.58		
		Right Tilted	0.223	0.168	0.39		
		Left Cheek	0.384	0.168	0.55		
		Left Tilted	0.231	0.168	0.40		
	GSM1900	Right Cheek	0.198	0.168	0.37		
		Right Tilted	0.099	0.168	0.27		
		Left Cheek	0.257	0.168	0.43		
		Left Tilted	0.163	0.168	0.33		
WCDMA	Band V	Right Cheek	0.173	0.168	0.34		
		Right Tilted	0.077	0.168	0.25		
		Left Cheek	0.280	0.168	0.45		
		Left Tilted	0.163	0.168	0.33		
	Band II	Right Cheek	0.278	0.168	0.45		
		Right Tilted	0.121	0.168	0.29		
		Left Cheek	0.333	0.168	0.50		
		Left Tilted	0.209	0.168	0.38		
LTE	Band 4	Right Cheek	0.327	0.168	0.50		
		Right Tilted	0.141	0.168	0.31		
		Left Cheek	0.374	0.168	0.54		
		Left Tilted	0.194	0.168	0.36		
	Band 2	Right Cheek	0.296	0.168	0.46		
		Right Tilted	0.144	0.168	0.31		
		Left Cheek	0.410	0.168	0.58		
		Left Tilted	0.236	0.168	0.40		
	Band 7	Right Cheek	0.018	0.168	0.19		
		Right Tilted	0.010	0.168	0.18		
		Left Cheek	0.024	0.168	0.19		
		Left Tilted	0.007	0.168	0.18		

<Receiver2 configuration>:

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Right Cheek	0.925	0.043	0.97		
		Right Tilted	0.648	0.039	0.69		
		Left Cheek	1.134	0.044	1.18		
		Left Tilted	0.933	0.020	0.95		
	GSM1900	Right Cheek	0.650	0.043	0.69		
		Right Tilted	0.636	0.039	0.68		
		Left Cheek	1.228	0.044	1.27		
		Left Tilted	1.065	0.020	1.09		
WCDMA	Band V	Right Cheek	0.547	0.043	0.59		
		Right Tilted	0.400	0.039	0.44		
		Left Cheek	1.200	0.044	1.24		
		Left Tilted	0.790	0.020	0.81		
	Band II	Right Cheek	0.705	0.043	0.75		
		Right Tilted	0.749	0.039	0.79		
		Left Cheek	1.383	0.044	1.43		
		Left Tilted	1.086	0.020	1.11		
LTE	Band 4	Right Cheek	0.607	0.043	0.65		
		Right Tilted	0.625	0.039	0.66		
		Left Cheek	1.397	0.044	1.44		
		Left Tilted	1.057	0.020	1.08		
	Band 2	Right Cheek	0.529	0.043	0.57		
		Right Tilted	0.594	0.039	0.63		
		Left Cheek	1.169	0.044	1.21		
		Left Tilted	1.037	0.020	1.06		
	Band 7	Right Cheek	0.609	0.043	0.65		
		Right Tilted	0.792	0.039	0.83		
		Left Cheek	1.198	0.044	1.24		
		Left Tilted	1.310	0.020	1.33		

WWAN Band		Exposure Position	WWAN PCE	WLAN NII	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Max. WLAN SAR (W/kg)			
GSM	GSM850	Right Cheek	0.925	< 0.001	0.93		
		Right Tilted	0.648	< 0.001	0.65		
		Left Cheek	1.134	0.001	1.14		
		Left Tilted	0.933	0.001	0.93		
	GSM1900	Right Cheek	0.650	< 0.001	0.65		
		Right Tilted	0.636	< 0.001	0.64		
		Left Cheek	1.228	0.001	1.23		
		Left Tilted	1.065	0.001	1.07		
WCDMA	Band V	Right Cheek	0.547	< 0.001	0.55		
		Right Tilted	0.400	< 0.001	0.40		
		Left Cheek	1.200	0.001	1.20		
		Left Tilted	0.790	0.001	0.79		
	Band II	Right Cheek	0.705	< 0.001	0.71		
		Right Tilted	0.749	< 0.001	0.75		
		Left Cheek	1.383	0.001	1.38		
		Left Tilted	1.086	0.001	1.09		
LTE	Band 4	Right Cheek	0.607	< 0.001	0.61		
		Right Tilted	0.625	< 0.001	0.63		
		Left Cheek	1.397	0.001	1.40		
		Left Tilted	1.057	0.001	1.06		
	Band 2	Right Cheek	0.529	< 0.001	0.53		
		Right Tilted	0.594	< 0.001	0.59		
		Left Cheek	1.169	0.001	1.17		
		Left Tilted	1.037	0.001	1.04		
	Band 7	Right Cheek	0.609	< 0.001	0.61		
		Right Tilted	0.792	< 0.001	0.79		
		Left Cheek	1.198	0.001	1.20		
		Left Tilted	1.310	0.001	1.31		

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Right Cheek	0.925	0.168	1.09		
		Right Tilted	0.648	0.168	0.82		
		Left Cheek	1.134	0.168	1.30		
		Left Tilted	0.933	0.168	1.10		
	GSM1900	Right Cheek	0.650	0.168	0.82		
		Right Tilted	0.636	0.168	0.80		
		Left Cheek	1.228	0.168	1.40		
		Left Tilted	1.065	0.168	1.23		
WCDMA	Band V	Right Cheek	0.547	0.168	0.72		
		Right Tilted	0.400	0.168	0.57		
		Left Cheek	1.200	0.168	1.37		
		Left Tilted	0.790	0.168	0.96		
	Band II	Right Cheek	0.705	0.168	0.87		
		Right Tilted	0.749	0.168	0.92		
		Left Cheek	1.383	0.168	1.55		
		Left Tilted	1.086	0.168	1.25		
LTE	Band 4	Right Cheek	0.607	0.168	0.78		
		Right Tilted	0.625	0.168	0.79		
		Left Cheek	1.397	0.168	1.57		
		Left Tilted	1.057	0.168	1.23		
	Band 2	Right Cheek	0.529	0.168	0.70		
		Right Tilted	0.594	0.168	0.76		
		Left Cheek	1.169	0.168	1.34		
		Left Tilted	1.037	0.168	1.21		
	Band 7	Right Cheek	0.609	0.168	0.78		
		Right Tilted	0.792	0.168	0.96		
		Left Cheek	1.198	0.168	1.37		
		Left Tilted	1.310	0.168	1.48		

16.2 Hotspot Exposure Conditions

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.481	0.123	0.60		
		Back	0.588	0.298	0.89		
		Left Side	0.485		0.49		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	0.294		0.29		
	GSM1900	Front	0.628	0.123	0.75		
		Back	0.785	0.298	1.08		
		Left Side	0.354		0.35		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	0.755		0.76		
WCDMA	Band V	Front	0.348	0.123	0.47		
		Back	0.470	0.298	0.77		
		Left Side	0.381		0.38		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	0.199		0.20		
	Band II	Front	1.050	0.123	1.17		
		Back	1.176	0.298	1.47		
		Left Side	0.478		0.48		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	1.100		1.10		
LTE	Band 4	Front	0.734	0.123	0.86		
		Back	0.792	0.298	1.09		
		Left Side	0.389		0.39		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	0.630		0.63		
	Band 2	Front	1.173	0.123	1.30		
		Back	1.289	0.298	**1.59**		
		Left Side	0.594		0.59		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	1.231		1.23		
	Band 7	Front	0.495	0.123	0.62		
		Back	1.079	0.298	1.38		
		Left Side	0.077		0.08		
		Right Side		0.096	0.10		
		Top Side		0.082	0.08		
		Bottom Side	1.194		1.19		

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.481	0.399	0.88		
		Back	0.588	0.589	1.18		
		Left Side	0.485		0.49		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	0.294		0.29		
	GSM1900	Front	0.628	0.399	1.03		
		Back	0.785	0.589	1.37		
		Left Side	0.354		0.35		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	0.755		0.76		
WCDMA	Band V	Front	0.348	0.399	0.75		
		Back	0.470	0.589	1.06		
		Left Side	0.381		0.38		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	0.199		0.20		
	Band II	Front	1.050	0.399	1.45		
		Back	1.176	0.589	**1.77**	**0.02**	**#11**
		Left Side	0.478		0.48		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	1.100		1.10		
LTE	Band 4	Front	0.734	0.399	1.13		
		Back	0.792	0.589	1.38		
		Left Side	0.389		0.39		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	0.630		0.63		
	Band 2	Front	1.173	0.399	**1.57**		
		Back	1.289	0.589	**1.88**	**0.02**	**#12**
		Left Side	0.594		0.59		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	1.231		1.23		
	Band 7	Front	0.495	0.399	0.89		
		Back	1.079	0.589	**1.67**	**0.01**	**#13**
		Left Side	0.077		0.08		
		Right Side		0.211	0.21		
		Top Side		0.161	0.16		
		Bottom Side	1.194		1.19		

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	Bluetooth DSS Estimated Bluetooth SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.481	0.084	0.57		
		Back	0.588	0.084	0.67		
		Left Side	0.485		0.49		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.294		0.29		
	GSM1900	Front	0.628	0.084	0.71		
		Back	0.785	0.084	0.87		
		Left Side	0.354		0.35		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.755		0.76		
WCDMA	Band V	Front	0.348	0.084	0.43		
		Back	0.470	0.084	0.55		
		Left Side	0.381		0.38		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.199		0.20		
	Band II	Front	1.050	0.084	1.13		
		Back	1.176	0.084	1.26		
		Left Side	0.478		0.48		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.100		1.10		
LTE	Band 4	Front	0.734	0.084	0.82		
		Back	0.792	0.084	0.88		
		Left Side	0.389		0.39		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	0.630		0.63		
	Band 2	Front	1.173	0.084	1.26		
		Back	1.289	0.084	1.37		
		Left Side	0.594		0.59		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.231		1.23		
	Band 7	Front	0.495	0.084	0.58		
		Back	1.079	0.084	1.16		
		Left Side	0.077		0.08		
		Right Side		0.084	0.08		
		Top Side		0.084	0.08		
		Bottom Side	1.194		1.19		

16.3 Body-Worn Accessory Exposure Conditions

WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN DTS Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.481	0.123	0.60		
		Back	0.588	0.298	0.89		
	GSM1900	Front	0.628	0.123	0.75		
		Back	0.785	0.298	1.08		
WCDMA	Band V	Front	0.348	0.123	0.47		
		Back	0.470	0.298	0.77		
	Band II	Front	1.050	0.123	1.17		
		Back	1.176	0.298	1.47		
LTE	Band 4	Front	0.734	0.123	0.86		
		Back	0.792	0.298	1.09		
	Band 2	Front	1.173	0.123	1.30		
		Back	1.289	0.298	1.59		
		Back with headset 1	1.324	0.288	**1.61**	**0.01**	**#14**
	Band 7	Front	0.495	0.123	0.62		
		Back	1.079	0.298	1.38		

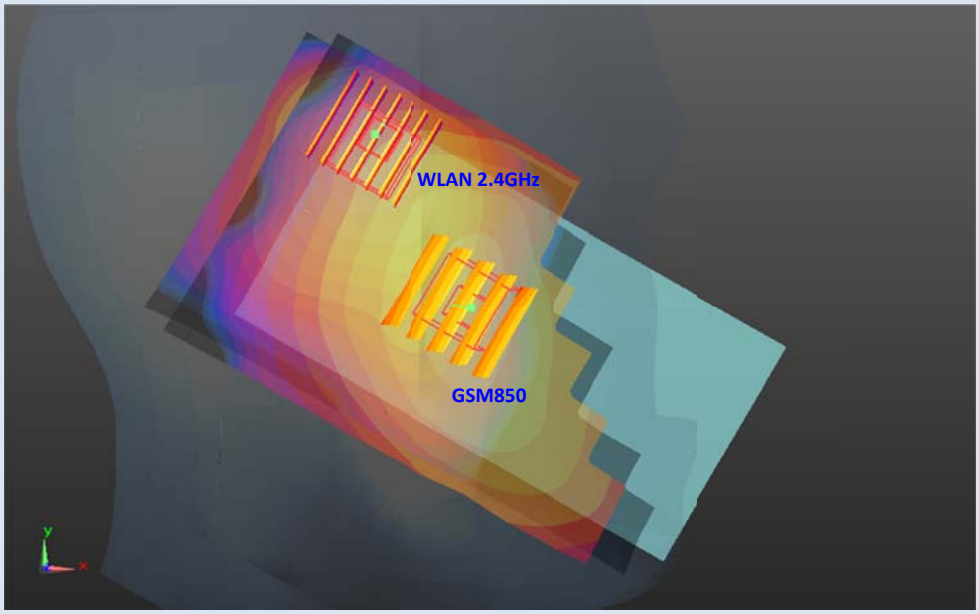
WWAN Band		Exposure Position	WWAN PCE Max. WWAN SAR (W/kg)	WLAN NII Max. WLAN SAR (W/kg)	Summed SAR (W/kg)	SPLSR	Case No
GSM	GSM850	Front	0.481	0.399	0.88		
		Back	0.588	0.589	1.18		
	GSM1900	Front	0.628	0.399	1.03		
		Back	0.785	0.589	1.37		
WCDMA	Band V	Front	0.348	0.399	0.75		
		Back	0.470	0.589	1.06		
	Band II	Front	1.050	0.399	1.45		
		Back	1.176	0.589	**1.77**	**0.02**	**#11**
LTE	Band 4	Front	0.734	0.399	1.13		
		Back	0.792	0.589	1.38		
	Band 2	Front	1.173	0.399	1.57		
		Back	1.289	0.589	**1.88**	**0.02**	**#12**
		Back with headset 1	1.324	0.548	**1.87**	**0.02**	**#15**
	Band 7	Front	0.495	0.399	0.89		
		Back	1.079	0.589	**1.67**	**0.01**	**#13**

WWAN Band		Exposure Position	WWAN PCE	Bluetooth DSS	Summed SAR (W/kg)	SPLSR	Case No
			Max. WWAN SAR (W/kg)	Estimated Bluetooth SAR (W/kg)			
GSM	GSM850	Front	0.481	0.084	0.57		
		Back	0.588	0.084	0.67		
	GSM1900	Front	0.628	0.084	0.71		
		Back	0.785	0.084	0.87		
WCDMA	Band V	Front	0.348	0.084	0.43		
		Back	0.470	0.084	0.55		
	Band II	Front	1.050	0.084	1.13		
		Back	1.176	0.084	1.26		
LTE	Band 4	Front	0.734	0.084	0.82		
		Back	0.792	0.084	0.88		
	Band 2	Front	1.173	0.084	1.26		
		Back	1.289	0.084	1.37		
		Back with headset 1	1.324	0.084	1.41		
	Band 7	Front	0.495	0.084	0.58		
		Back	1.079	0.084	1.16		

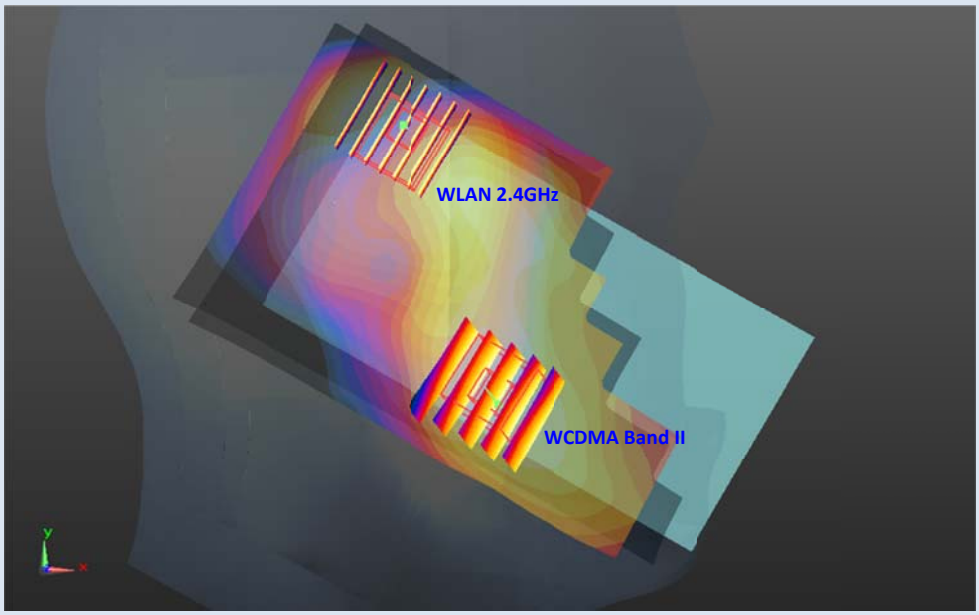
16.4 SPLSR Evaluation and Analysis

General Note: SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

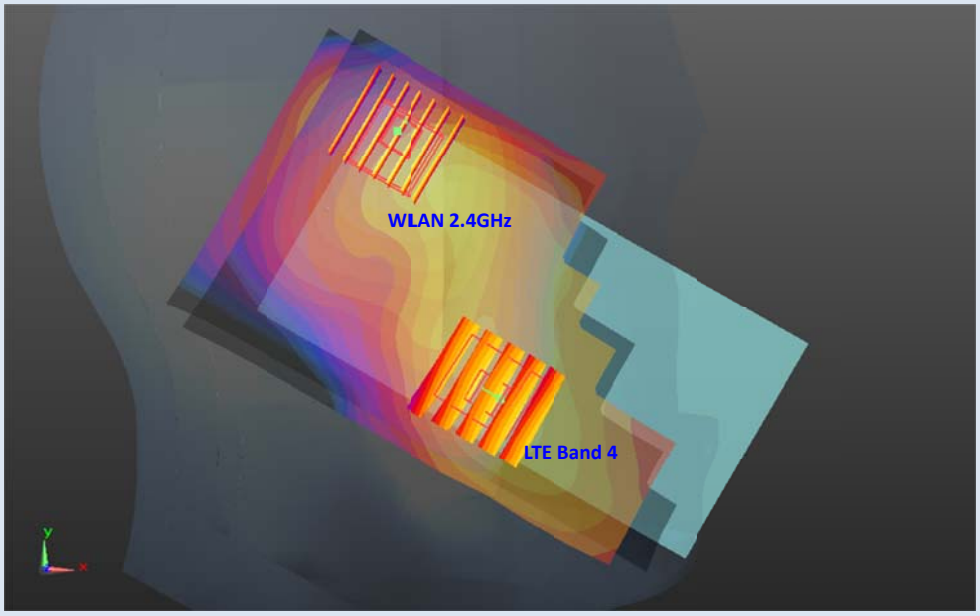
Case No #1 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	GSM850	0.384	0	0.0648	0.28	-0.174	61.3	1.69	0.04	Not required
	WLAN 2.4GHz	1.303	0	0.0399	0.336	-0.174				



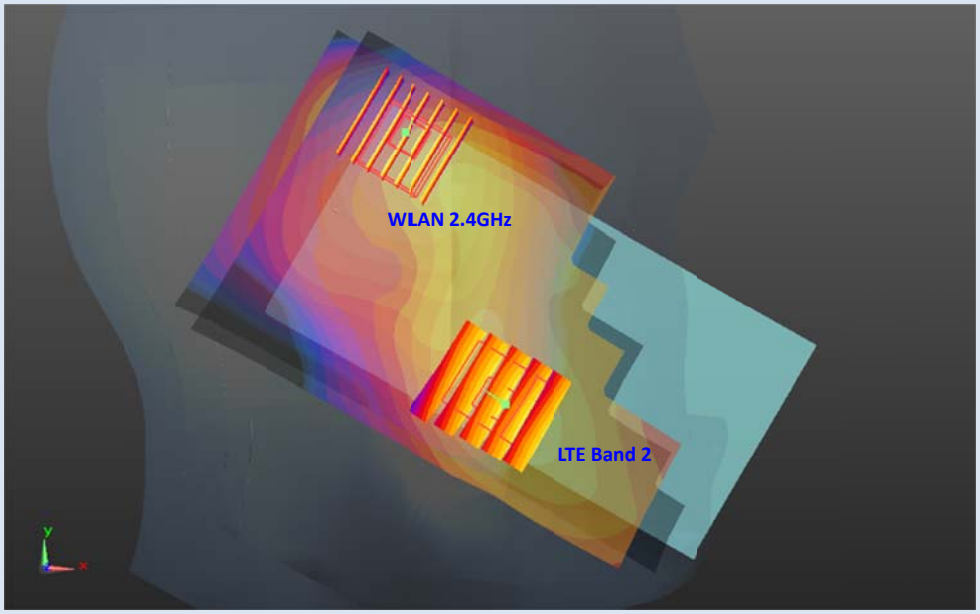
Case No #2 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band II	0.333	0	0.0652	0.247	-0.172	92.5	1.64	0.02	Not required
	WLAN 2.4GHz	1.303	0	0.0399	0.336	-0.174				



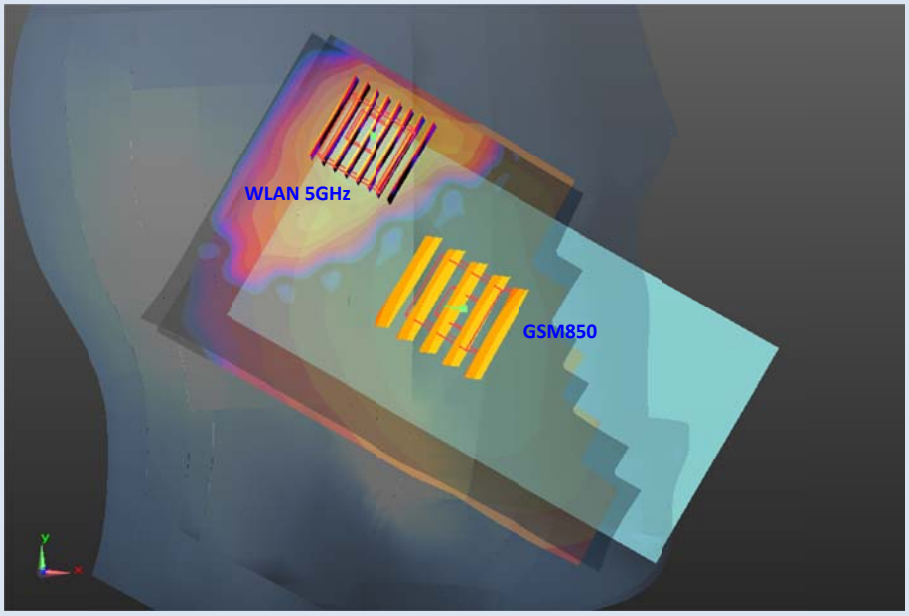
Case No #3 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 4	0.374	0	0.0605	0.255	-0.174	83.6	1.68	0.03	Not required
	WLAN 2.4GHz	1.303	0	0.0399	0.336	-0.174				



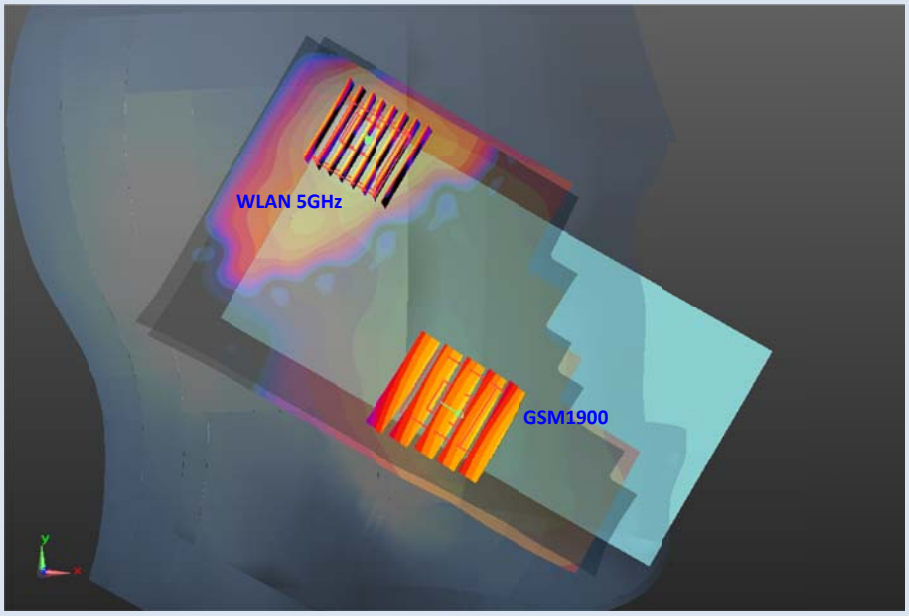
Case No #4 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 2	0.410	0	0.0665	0.25	-0.172	90.0	1.71	0.02	Not required
	WLAN 2.4GHz	1.303	0	0.0399	0.336	-0.174				



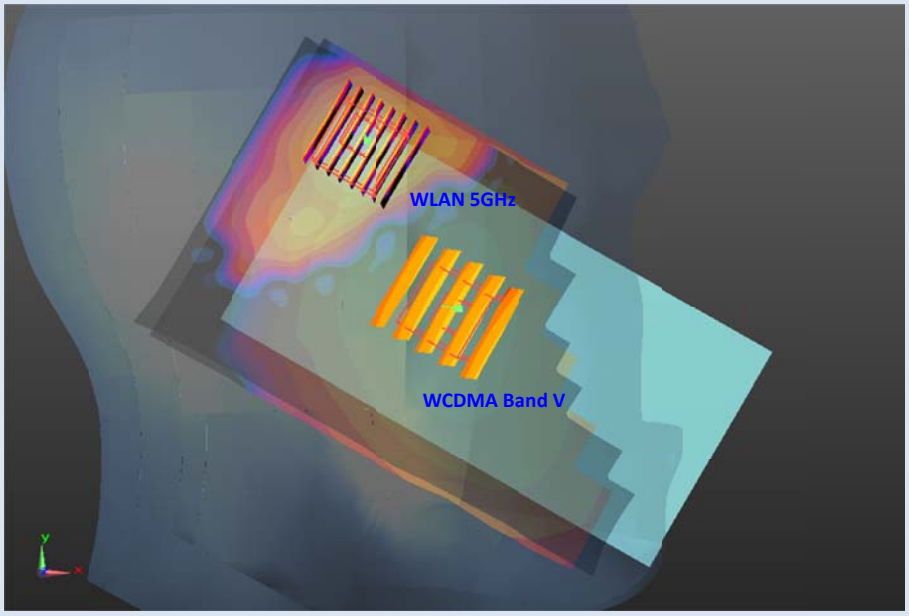
Case No #5 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	GSM850	0.384	0	0.0648	0.28	-0.174	62.8	1.77	0.04	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



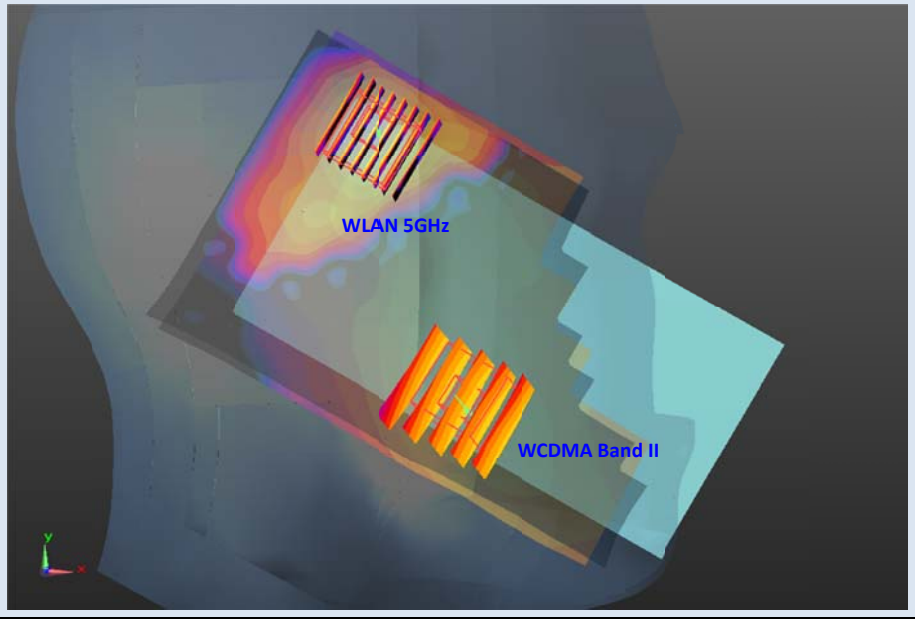
Case No #6 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	GSM1900	0.257	0	0.0658	0.248	-0.172	92.8	1.64	0.02	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



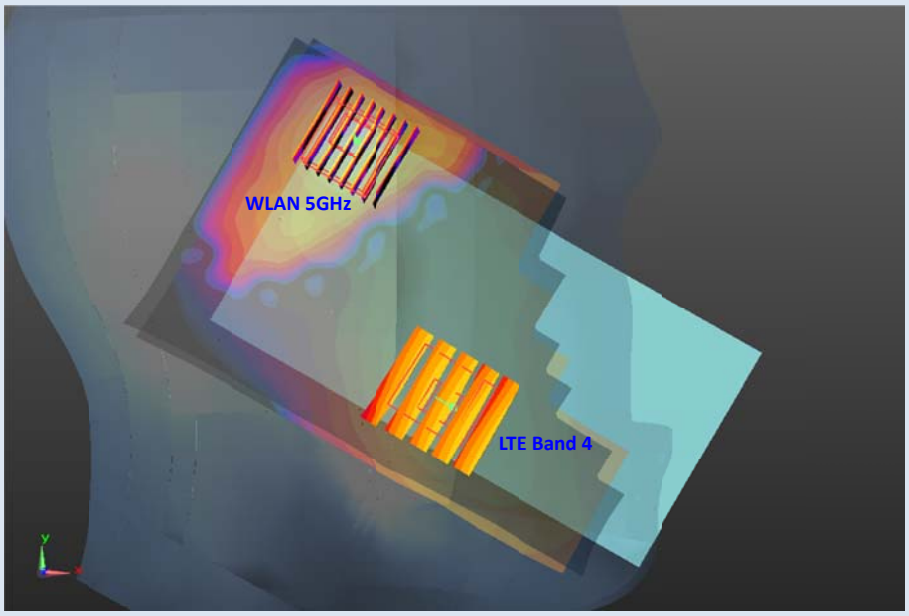
Case No #7 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band V	0.280	0	0.0656	0.281	-0.174	62.3	1.66	0.03	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



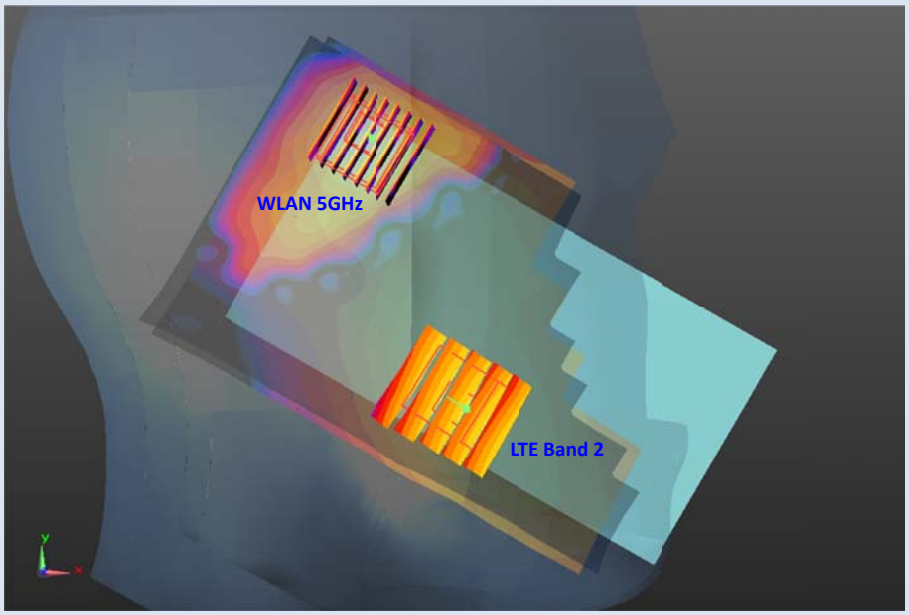
Case No #8 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	WCDMA Band II	0.333	0	0.0652	0.247	-0.172	93.6	1.72	0.02	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



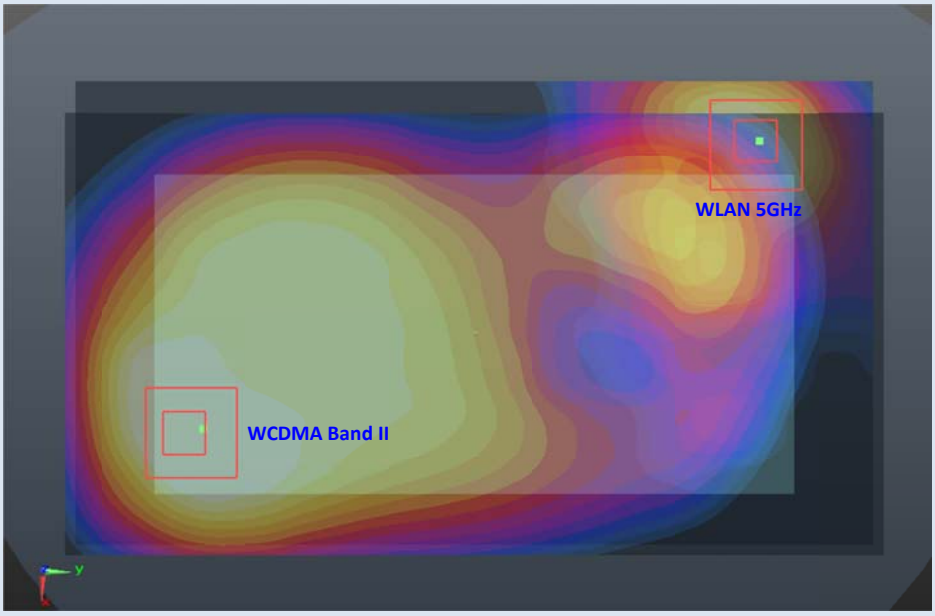
Case No #9 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 4	0.374	0	0.0605	0.255	-0.174	84.5	1.76	0.03	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



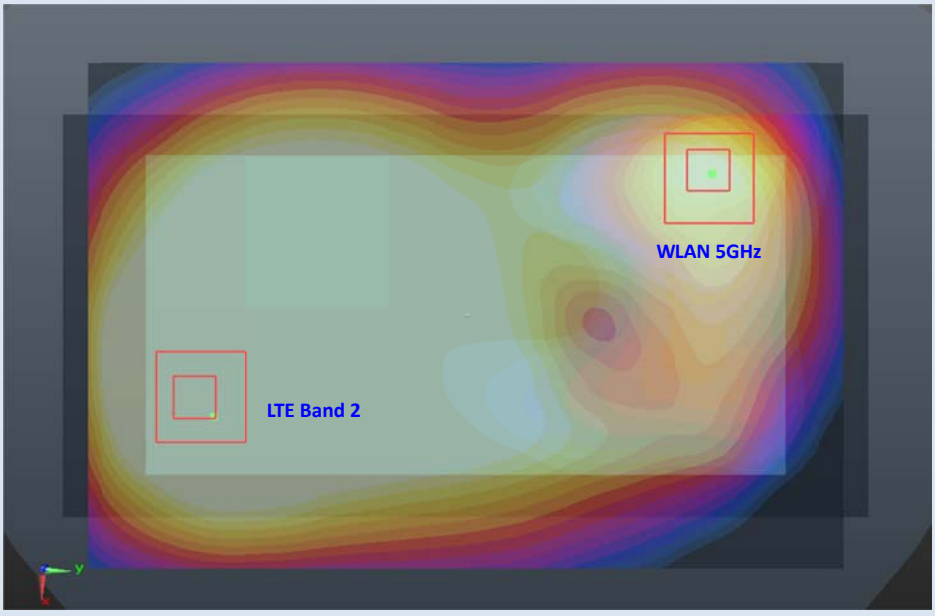
Case No #10 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Left Cheek	LTE Band 2	0.410	0	0.0665	0.25	-0.172	91.2	1.79	0.03	Not required
	WLAN 5GHz	1.383	0	0.0363	0.336	-0.174				



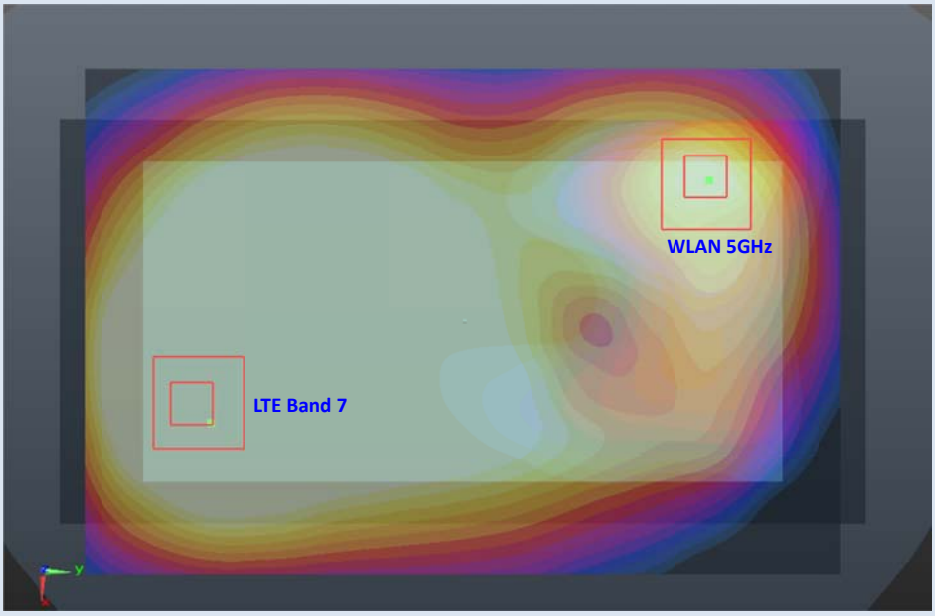
Case No #11 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Back	WCDMA Band II	1.176	1	0.0055	-0.0725	-0.206	153.6	1.77	0.02	Not required
	WLAN 5GHz	0.589	1	-0.061	0.066	-0.206				



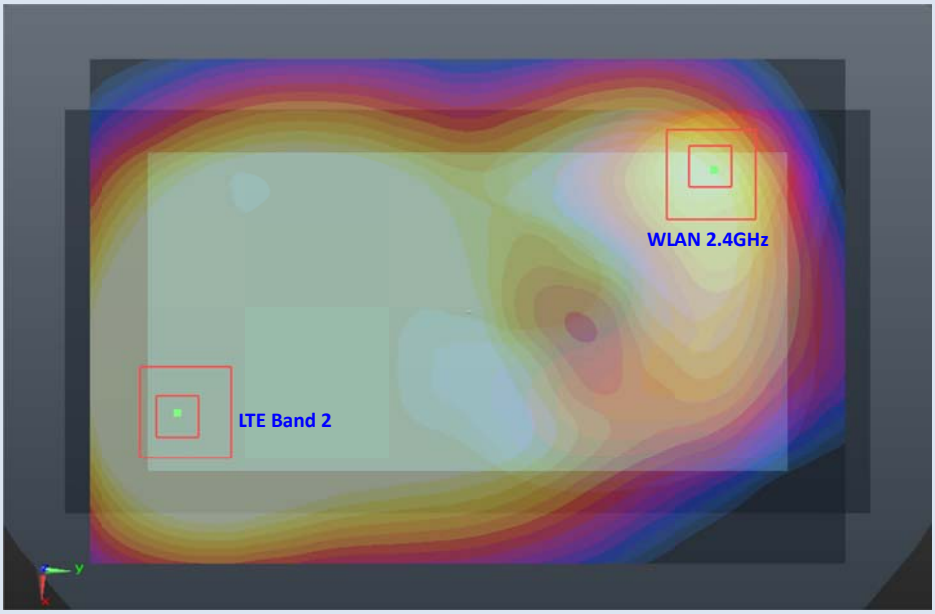
Case No #12 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Back	LTE Band 2	1.289	1	-0.001	-0.068	-0.206	146.8	1.88	0.02	Not required
	WLAN 5GHz	0.589	1	-0.061	0.066	-0.206				



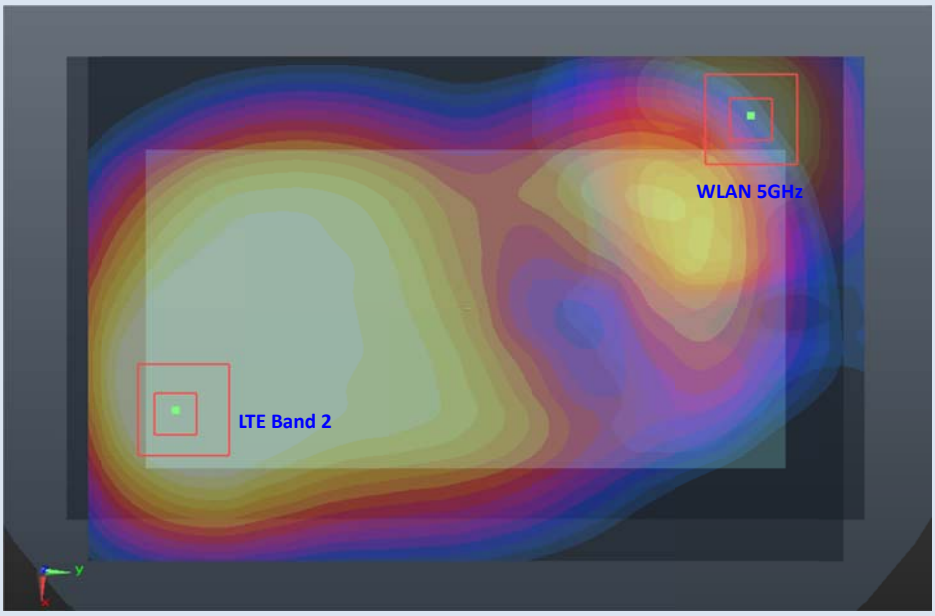
Case No #13 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Back	LTE Band 7	1.079	1	-0.005	-0.0746	-0.205	151.3	1.67	0.01	Not required
	WLAN 5GHz	0.589	1	-0.061	0.066	-0.206				



Case No #14 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m) X	Y	Z	3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
Back with / headset 1	LTE Band 2	1.324	1	0.007	-0.069	-0.206	142.3	1.61	0.01	Not required
	WLAN 2.4GHz	0.288	1	-0.053	0.06	-0.205				



Case No #15 / Position	Band	SAR (W/kg)	Gap (cm)	SAR peak location (m)			3D distance (mm)	Pair SAR sum (W/kg)	SPLSR	Simultaneous SAR
				X	Y	Z				
Back with / headset 1	LTE Band 2	1.324	1	0.007	-0.069	-0.206	153.0	1.87	0.02	Not required
	WLAN 5GHz	0.548	1	-0.065	0.066	-0.206				



Test Engineer : Frank Qiao

17. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[a]	1/k[b]	1/√3	1/√6	1/√2

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 17.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.0	Normal	1	1	1	± 6.0 %	± 6.0 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.4	Rectangular	√3	1	1	± 0.2 %	± 0.2 %
Probe Positioning	2.9	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Max. SAR Eval.	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 11.0 %	± 10.8 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						**± 22.0 %**	**± 21.5 %**

Table 17.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

Error Description	Uncertainty Value (±%)	Probability Distribution	Divisor	Ci (1g)	Ci (10g)	Standard Uncertainty (1g)	Standard Uncertainty (10g)
Measurement System							
Probe Calibration	6.55	Normal	1	1	1	± 6.55 %	± 6.55 %
Axial Isotropy	4.7	Rectangular	√3	0.7	0.7	± 1.9 %	± 1.9 %
Hemispherical Isotropy	9.6	Rectangular	√3	0.7	0.7	± 3.9 %	± 3.9 %
Boundary Effects	2.0	Rectangular	√3	1	1	± 1.2 %	± 1.2 %
Linearity	4.7	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
System Detection Limits	1.0	Rectangular	√3	1	1	± 0.6 %	± 0.6 %
Readout Electronics	0.3	Normal	1	1	1	± 0.3 %	± 0.3 %
Response Time	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Integration Time	2.6	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
RF Ambient Noise	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
RF Ambient Reflections	3.0	Rectangular	√3	1	1	± 1.7 %	± 1.7 %
Probe Positioner	0.8	Rectangular	√3	1	1	± 0.5 %	± 0.5 %
Probe Positioning	9.9	Rectangular	√3	1	1	± 5.7 %	± 5.7 %
Max. SAR Eval.	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Test Sample Related							
Device Positioning	2.9	Normal	1	1	1	± 2.9 %	± 2.9 %
Device Holder	3.6	Normal	1	1	1	± 3.6 %	± 3.6 %
Power Drift	5.0	Rectangular	√3	1	1	± 2.9 %	± 2.9 %
Phantom and Setup							
Phantom Uncertainty	4.0	Rectangular	√3	1	1	± 2.3 %	± 2.3 %
Liquid Conductivity (Target)	5.0	Rectangular	√3	0.64	0.43	± 1.8 %	± 1.2 %
Liquid Conductivity (Meas.)	2.5	Normal	1	0.64	0.43	± 1.6 %	± 1.1 %
Liquid Permittivity (Target)	5.0	Rectangular	√3	0.6	0.49	± 1.7 %	± 1.4 %
Liquid Permittivity (Meas.)	2.5	Normal	1	0.6	0.49	± 1.5 %	± 1.2 %
Combined Standard Uncertainty						± 12.8 %	± 12.6 %
Coverage Factor for 95 %						K=2	
Expanded Uncertainty						**± 25.6 %**	**± 25.2 %**

Table 17.3. Uncertainty Budget for frequency range 3 GHz to 6 GHz

18. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

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[5] SPEAG DASY System Handbook.

[6] FCC KDB 865664 D01 v01r03, "SAR Measurement Requirements for 100 MHz to 6 GHz", Feb 2014.

[7] FCC KDB 865664 D02 v01r01, “RF Exposure Compliance Reporting and Documentation Considerations” May 2013.

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[10] FCC KDB 248227 D01 v01r02, “SAR Measurement Procedures for 802.11 a/b/g Transmitters”, May 2007.

[11] FCC KDB 941225 D01 v03, “3G SAR MEAUREMENT PROCEDURES”, Oct 2014.

[12] FCC KDB 941225 D05 v02r03, “SAR Evaluation Considerations for LTE Devices”, Dec 2013.

[13] FCC KDB 941225 D06 v02, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2014.