TESTING
NVLAP LAB CODE 600118-0

SAR TEST REPORT

No. I19Z60229-SEM03

For

TCL Communication Ltd.

HSUPA/HSDPA/UMTS 5 Bands/GSM Quad Bands/LTE 17 bands mobile phone

Model name: T770B

With

Hardware Version: 03

Software Version: 3C2G

FCC ID: 2ACCJN036

Issued Date: 2020-3-2

Note:

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Test Laboratory:

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I19Z62229-SEM03	Rev.0	2020-3-2	Initial creation of test report

TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

Company Name:	CTTL(Shouxiang)
Address:	No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District, Beijing, P. R. China100191

1.2 Testing Environment

Temperature:	18°C~25°C,
Relative humidity:	30%~ 70%
Ground system resistance:	< 0.5 Ω
Ambient noise & Reflection:	< 0.012 W/kg

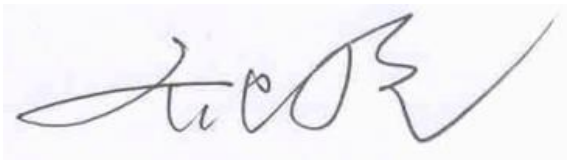
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	February 6, 2020
Testing End Date:	February 12, 2020

1.4 Signature

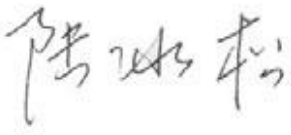
Lin Xiaojun

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2 Statement of Compliance

The maximum results of SAR found during testing for TCL Communication Ltd. HSUPA/HSDPA/UMTS 5 Bands/GSM Quad Bands/LTE 17 bands mobile phone T770B are as follows:

Table 2.1: Highest Reported SAR (1g)

Exposure Configuration	Technology Band	Highest Reported SAR 1g(W/kg)	Equipment Class
Head (Separation Distance 0mm)	GSM 850	0.37	PCE
	PCS 1900	0.05	
	UMTS FDD 5	0.30	
	UMTS FDD 4	0.10	
	UMTS FDD 2	0.08	
	LTE Band 7	1.12	
	LTE Band 12	1.02	
	LTE Band 13	1.00	
	LTE Band 25	0.07	
	LTE Band 26	0.18	
	LTE Band 41	0.69	
	LTE Band 66	0.09	
	WLAN 2.4 GHz	0.55	DTS
	WLAN 5 GHz	0.37	UNII
Hotspot (Separation Distance 10mm)	GSM 850	0.75	PCE
	PCS 1900	0.47	
	UMTS FDD 5	0.62	
	UMTS FDD 4	1.19	
	UMTS FDD 2	1.06	
	LTE Band 7	0.58	
	LTE Band 12	0.31	
	LTE Band 13	0.37	
	LTE Band 25	1.05	
	LTE Band 26	0.36	
	LTE Band 41	0.39	
	LTE Band 66	1.22	
	WLAN 2.4 GHz	0.20	DTS
	WLAN 5 GHz	0.49	UNII
Body-worn (Separation Distance 15mm)	PCS 1900	0.39	PCE
	UMTS FDD 4	0.97	
	UMTS FDD 2	0.96	
	LTE Band 25	0.56	
	LTE Band 66	1.00	

The SAR values found for the Mobile Phone are below the maximum recommended levels of 1.6 W/kg as averaged over any 1g tissue according to the ANSI C95.1-1992.

For body operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance of 10 mm for hotspot and 15mm for body worn between this device and the body of the user. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output.

The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report. The highest reported SAR value is obtained at the case of **(Table 2.1),** and the values are**: 1.22 W/kg(1g).**

Table 2.2: The sum of reported SAR values for cellular antenna and WiFi

	Position	Band	Cellular antenna	WiFi	Sum
Highest reported SAR value for Head	Left hand, Tilt 15°	LTE B12	0.98	0.49	**1.47**
Highest reported SAR value for Body	Rear 10mm	LTE B66	0.91	0.49	**1.40**

Note1: we have evaluated and chose the highest value of WiFi 2.4G and 5G in the above table.
Note2: we have evaluated and chose the highest value of body 10mm and 15mm in the above table.

Table 2.3: The sum of reported SAR values for cellular antenna and BT

	Position	Band	Cellular antenna	BT	Sum
Maximum reported SAR value for Head	Right hand, Touch cheek	LTE B7	1.12	<0.01[1]	**1.12**
Maximum reported SAR value for Body	Rear 10mm	LTE B66	0.91	0.26[2]	**1.17**
	Bottom 10mm	LTE B66	1.22	/	**1.22**
	Rear 15mm	LTE B66	1.00	0.17[2]	**1.17**

[1] – The head SAR of BT is too low to get it, so the “<0.01” is used to indicate the head SAR of BT.
[2] - Estimated SAR for Bluetooth (see the table 13.3)

According to the above tables, the highest sum of reported SAR values is **1.47 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

According to the KDB648474 D04, 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 Publication 865664 D01 to address interactive hand use exposure conditions. 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

Table 2.4: 0mm Reported SAR for phablet (10g)

Exposure Configuration	Technology Band	Highest Reported SAR 10g(W/kg)	Limit 10g (W/kg)
10g extremity SAR (Separation Distance 0mm)	UMTS FDD 4	3.33	4.0
	UMTS FDD 2	3.33	4.0
	LTE Band 25	2.26	4.0
	LTE Band 66	2.83	4.0

3 Client Information

3.1 Applicant Information

Company Name:	TCL Communication Ltd.
Address/Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
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Fax:	0086-75536612000-81722

3.2 Manufacturer Information

Company Name:	TCL Communication Ltd.
Address/Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City:	Hong Kong
Country:	China
Contact Person:	Gong Zhizhou
E-mail:	zhizhou.gong@tcl.com
Telephone:	0086-755-36611722
Fax:	0086-75536612000-81722

4 Equipment Under Test (EUT) and Ancillary Equipment (AE)

4.1 About EUT

Description:	HSUPA/HSDPA/UMTS 5 Bands/GSM Quad Bands/LTE 17 bands mobile phone
Model name:	T770B
Operating mode(s):	GSM 850/900/1800/1900, UMTS FDD 1/2/4/5/8, BT, Wi-Fi LTE Band 1/2/3/4/5/7/8/12/13/17/25/26/28/38/40/41/66
Tested Tx Frequency:	825 – 848.8 MHz (GSM 850)
	1850.2 – 1910 MHz (GSM 1900)
	826.4–846.6 MHz (WCDMA 850 Band V)
	1712.4 – 1752.6 MHz (WCDMA 1700 Band IV)
	1852.4–1907.6 MHz (WCDMA1900 Band II)
	2502.5 – 2567.5 MHz (LTE Band 7)
	699.7 – 715.3 MHz (LTE Band 12)
	779.5 –784.5 MHz (LTE Band 13)
	1850.7 –1914.3 MHz (LTE Band 25)
	814.7–848.3 MHz (LTE Band 26)
	2498.5 – 2687.5 MHz (LTE Band41)
	1710.7 –1779.3 MHz (LTE Band 66)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	5150-5825 MHz (Wi-Fi 5G)
GPRS/EGPRS Multislot Class:	12
GPRS capability Class:	B
Test device Production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Accessories/Body-worn configurations:	Headset
Hotspot mode:	Support
VoIP:	Support
Product Dimension:	L: 162.2mm W: 75.6mm overall diagonal: 171.7mm

4.2Internal Identification of EUT used during the test

EUT ID*	IMEI	HW	SW Version
EUT1	015658000201804	03	3C2G
EUT2	015658000201713	03	3C2G
EUT3	015658000201788	03	3C2G
EUT4	015658000201796	03	3C2G
EUT5	015658000201523	03	3C2G

*EUT ID: is used to identify the test sample in the lab internally.

Note: It is performed to test SAR with the EUT1&2&3&4 and conducted power with the EUT5.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	TLp038D7	/	VEKEN
AE2	Battery	TLp038D1	/	BYD
AE3	Headset	SOCL110WTT-EU	/	TES

*AE ID: is used to identify the test sample in the lab internally.

5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

ANSI C95.1–1992:IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

5.2 Applicable Measurement Standards

IEEE 1528–2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

KDB447498 D01: General RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

KDB648474 D04 Handset SAR v01r03: SAR Evaluation Considerations for Wireless Handsets.

KDB941225 D01 SAR test for 3G devices v03r01: SAR Measurement Procedures for 3G Devices

KDB941225 D05 SAR for LTE Devices v02r05: SAR Evaluation Considerations for LTE Devices

KDB941225 D06 Hotspot Mode SAR v02r01: SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities

KDB248227 D01 802.11 Wi-Fi SAR v02r02: SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

KDB865664 D01SAR measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz.

KDB865664 D02RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations

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:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = c\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific head capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

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

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

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

7 Tissue Simulating Liquids

7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid

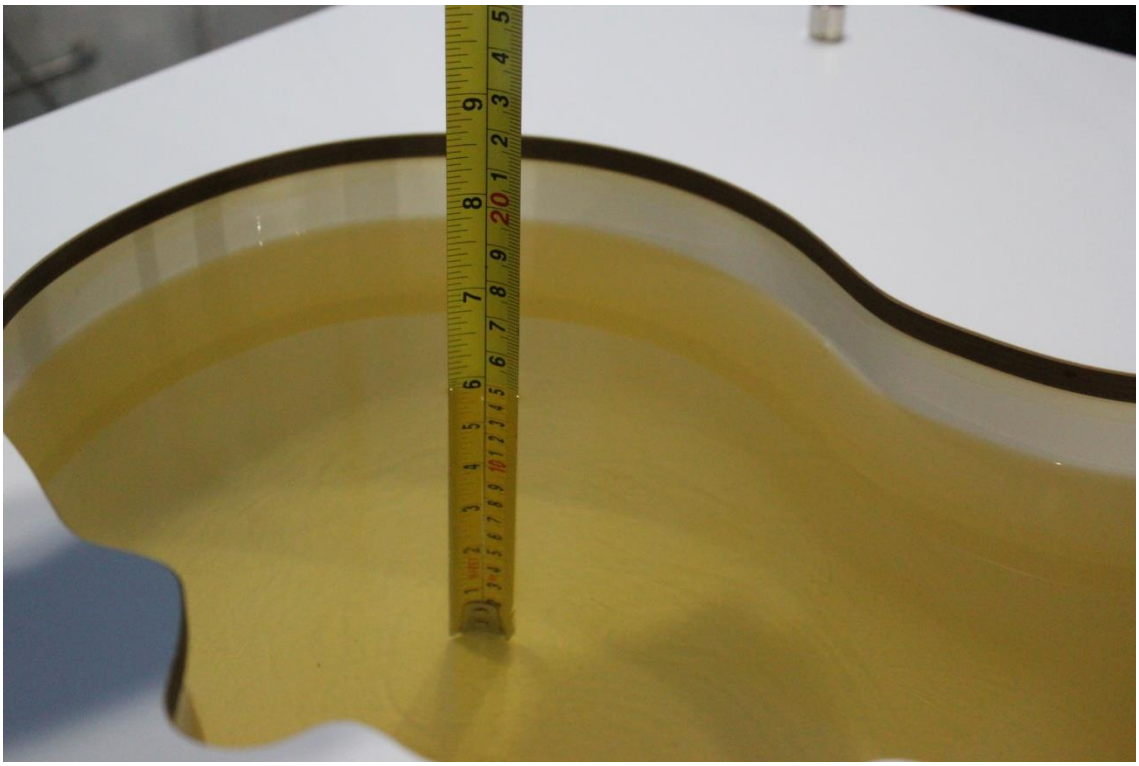
Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5% Range	Permittivity(ε)	± 5% Range
750	Head	0.89	0.85～0.93	41.94	39.8～44.0
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
1750	Head	1.37	1.30～1.44	40.08	38.1～42.1
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
2450	Head	1.80	1.71～1.89	39.2	37.2～41.2
2600	Head	1.96	1.86～2.06	39.01	37.1～41.0
5250	Head	4.71	4.47～4.95	35.93	34.13～37.73
5600	Head	5.07	4.82～5.32	35.53	33.8～37.3
5750	Head	5.22	4.96～5.48	35.36	33.59～37.13

7.2 Dielectric Performance

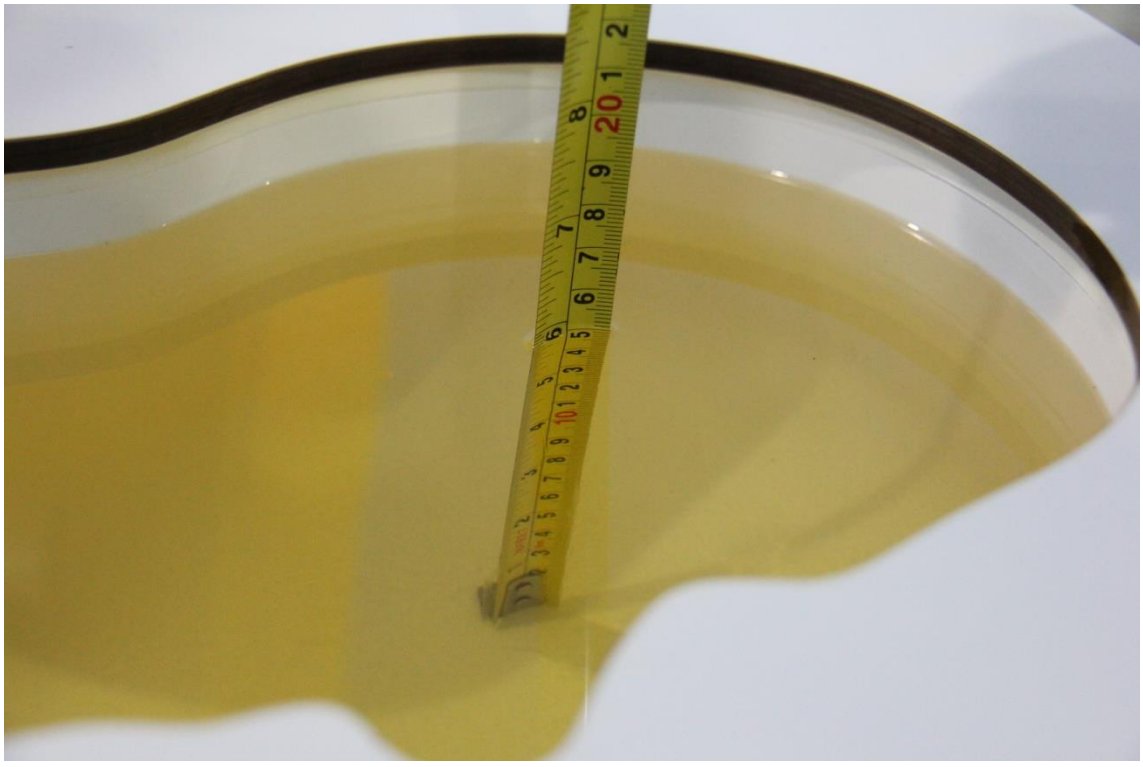
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2020-2-6	Head	750 MHz	42.5	1.34	0.89	0.00
2020-2-7	Head	835 MHz	40.69	-1.95	0.888	-1.33
2020-2-8	Head	1750 MHz	40.2	0.30	1.354	-1.17
2020-2-9	Head	1900 MHz	39.38	-1.55	1.411	0.79
2020-2-10	Head	2450 MHz	39.83	1.61	1.818	1.00
2020-2-11	Head	2600 MHz	39.01	0.00	1.956	-0.20
2020-2-12	Head	5250 MHz	36.07	0.39	4.729	0.40
2020-2-12	Head	5600 MHz	35.75	0.62	5.153	1.64
2020-2-12	Head	5750 MHz	35.73	1.05	5.201	-0.36

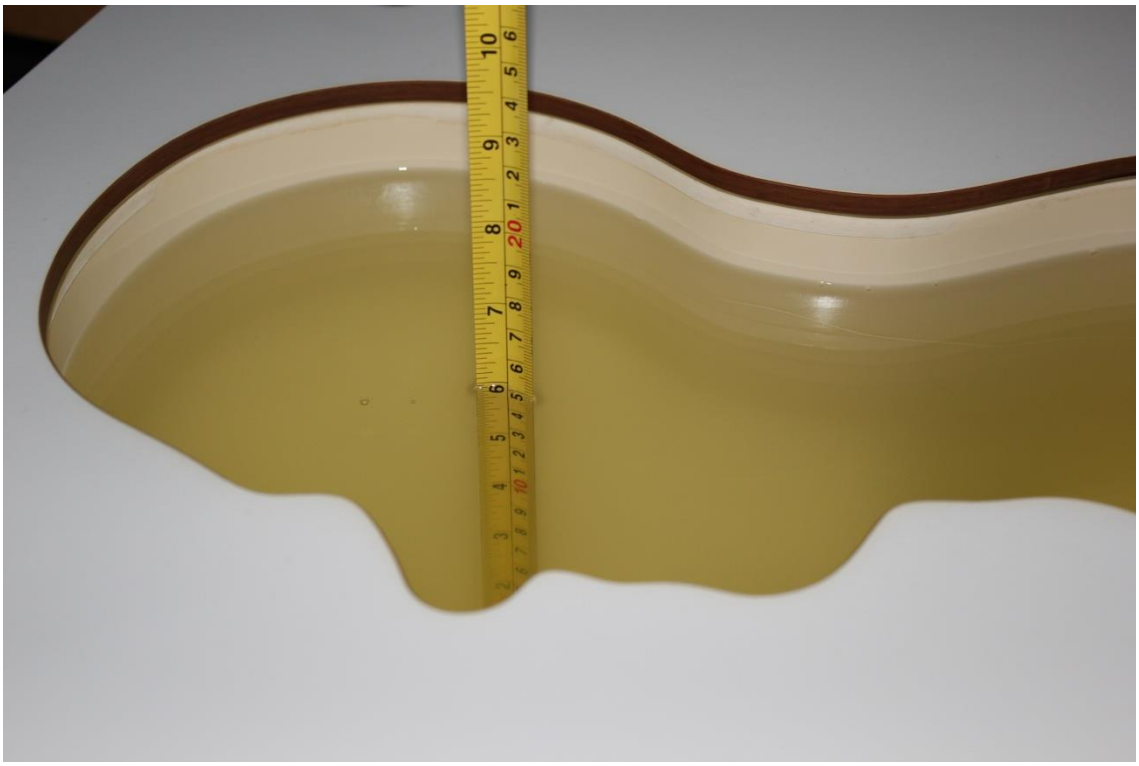
Note: The liquid temperature is 22.0℃



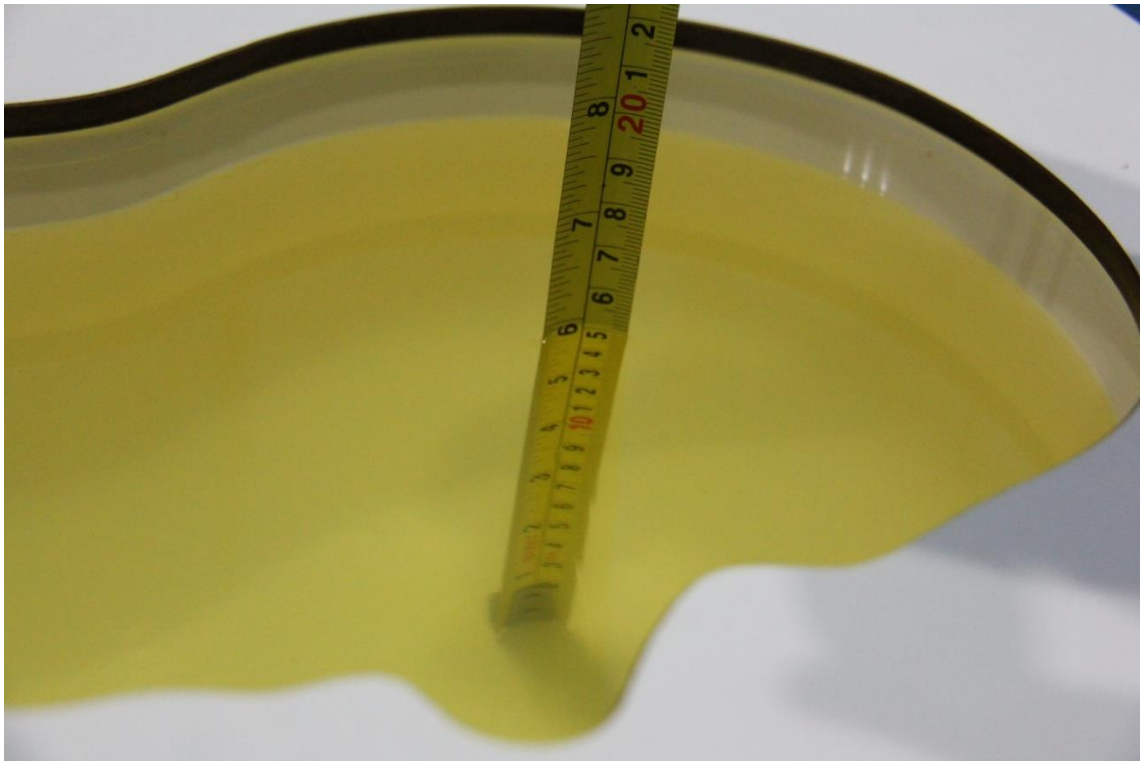
Picture 7-1 Liquid depth in the Head Phantom (750MHz)



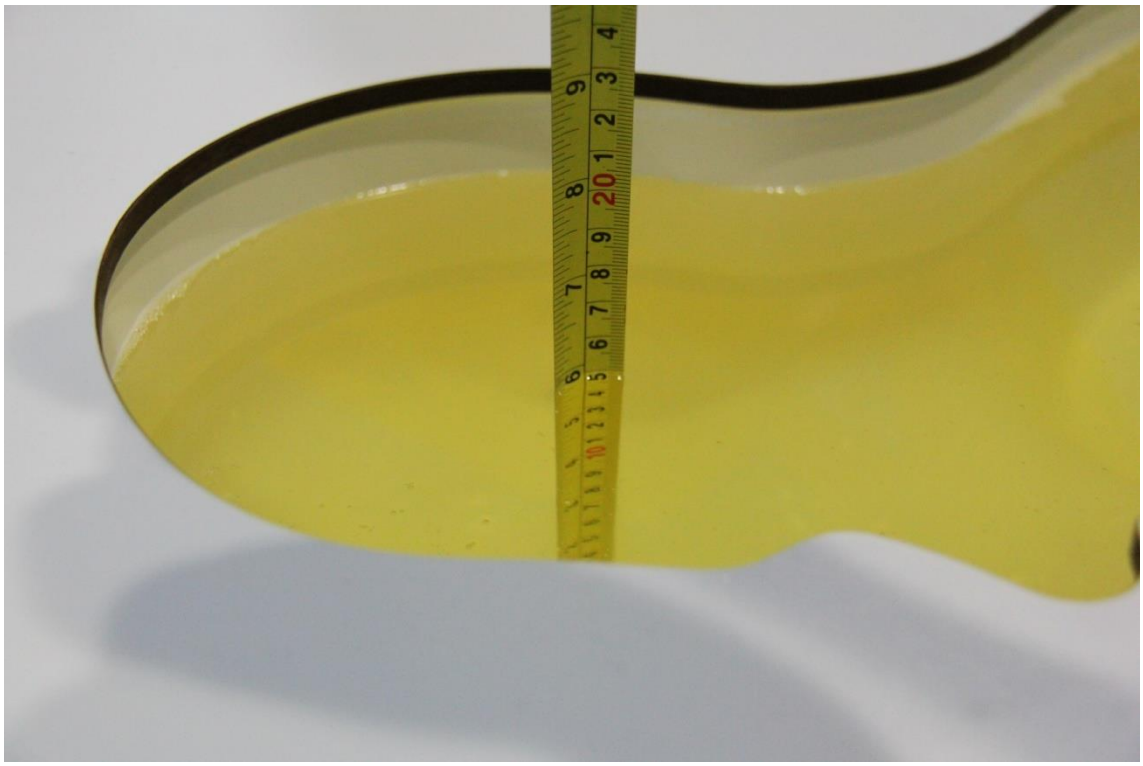
Picture 7-2 Liquid depth in the Head Phantom (835 MHz)



Picture 7-3 Liquid depth in the Head Phantom (1750 MHz)

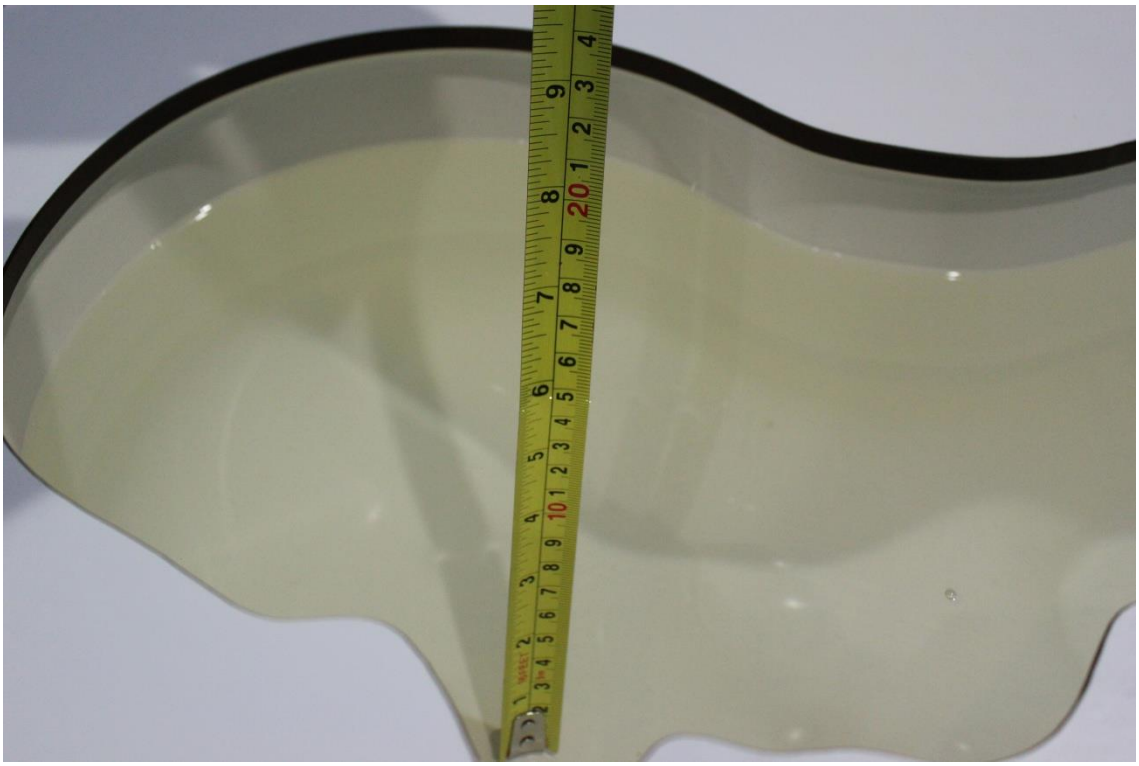


Picture 7-4 Liquid depth in the Head Phantom (1900 MHz)



Picture 7-5 Liquid depth in the Head Phantom (2450MHz)

Picture 7-6 Liquid depth in the Head Phantom (2600 MHz)

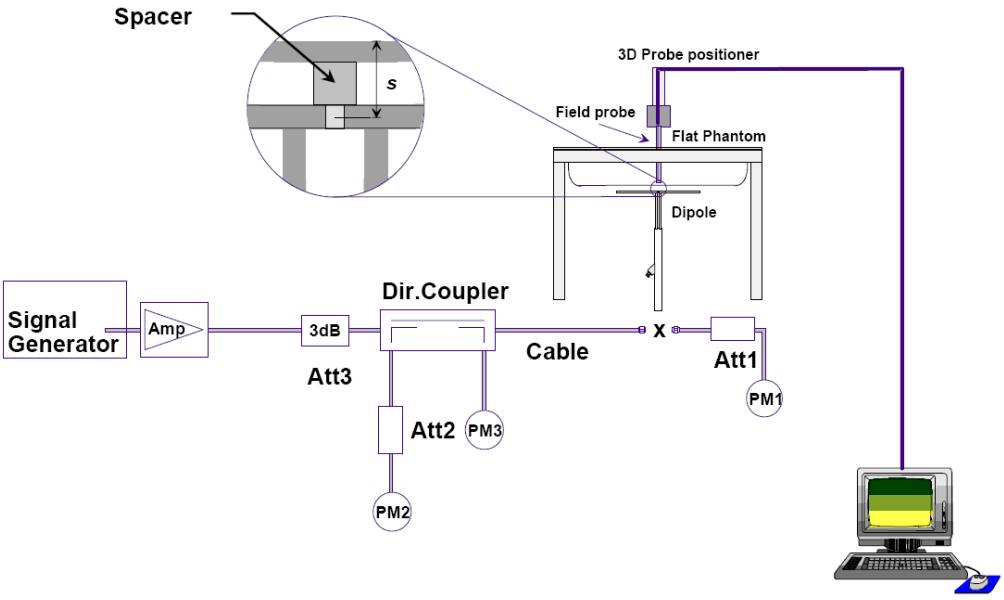


Picture 7-7Liquid depth in the Head Phantom (5GHz)

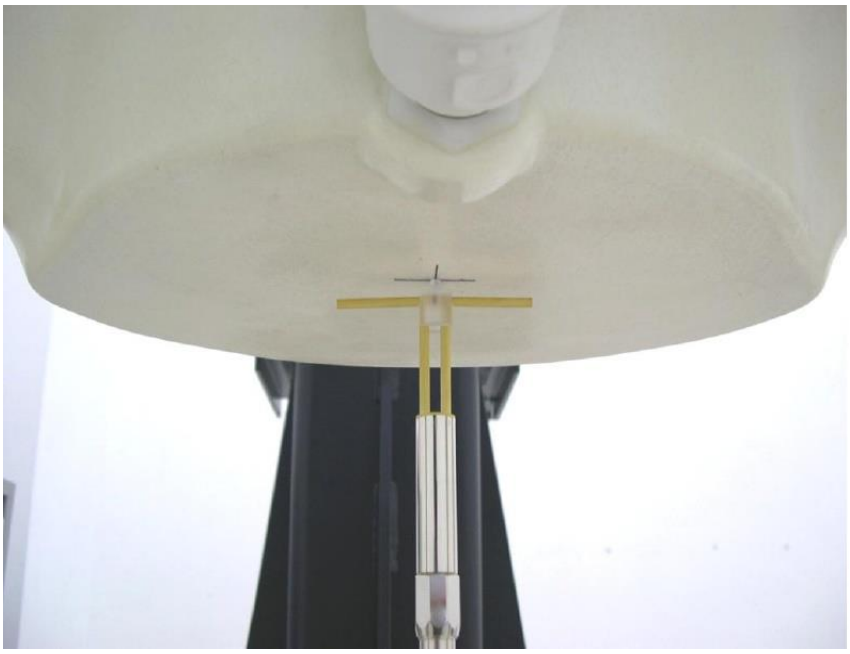
8 System verification

8.1 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:



Picture 8.1 System Setup for System Evaluation



Picture 8.2 Photo of Dipole Setup

8.2 System Verification

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device.

The system verification results are required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR. The details are presented in annex B.

Table 8.1: System Verification of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2020-2-6	750 MHz	5.57	8.57	5.44	8.72	-2.33%	1.75%
2020-2-7	835 MHz	6.29	9.70	6.24	9.8	-0.79%	1.03%
2020-2-8	1750 MHz	19.3	36.6	19.68	36.48	1.97%	-0.33%
2020-2-9	1900 MHz	20.8	39.7	20.72	40.04	-0.38%	0.86%
2020-2-10	2450 MHz	24.2	51.6	24.48	51.12	1.16%	-0.93%
2020-2-11	2600 MHz	25.1	55.8	25.16	55.64	0.24%	-0.29%
2020-2-12	5250 MHz	23.2	80.4	23.5	79.9	1.21%	-0.60%
2020-2-12	5600 MHz	24.1	84.5	24.0	84.7	-0.41%	0.26%
2020-2-12	5750 MHz	23.0	80.4	23.3	79.6	1.22%	-1.00%

9 Measurement Procedures

9.1 Tests to be performed

In order to determine the highest value of the peak spatial-average SAR of a handset, all device positions, configurations and operational modes shall be tested for each frequency band according to steps 1 to 3 below. A flowchart of the test process is shown in picture 9.1.

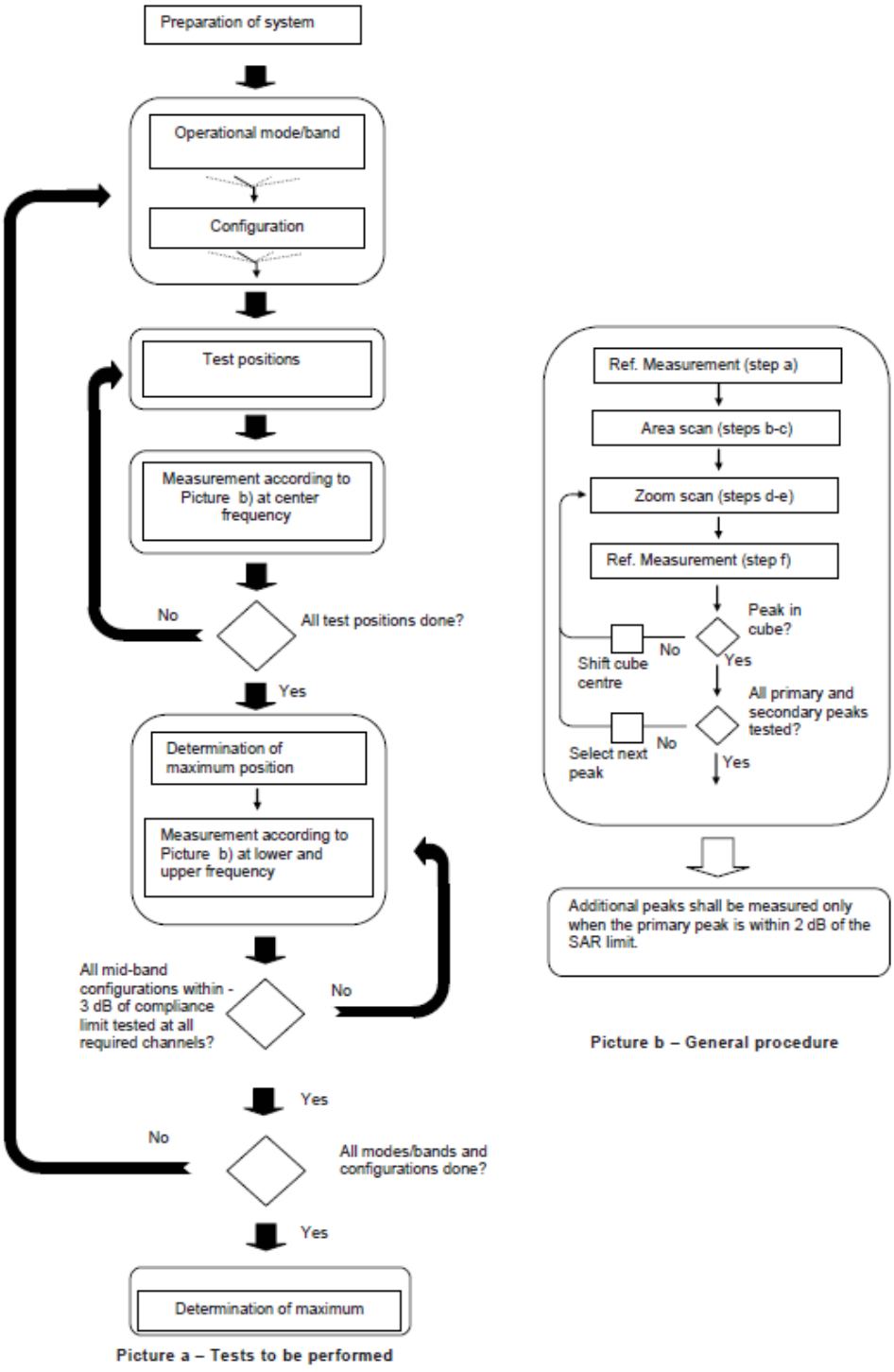
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

a) all device positions (cheek and tilt, for both left and right sides of the SAM phantom, as described in annex D),
b) all configurations for each device position in a), e.g., antenna extended and retracted, and
c) all operational modes, e.g., analogue and digital, for each device position in a) and configuration in b) in each frequency band.

If more than three frequencies need to be tested according to 11.1 (i.e., $N_c > 3$), then all frequencies, configurations and modes shall be tested for all of the above test conditions.

Step 2: For the condition providing highest peak spatial-average SAR determined in Step 1,perform all tests described in 9.2 at all other test frequencies, i.e., lowest and highest frequencies. In addition, for all other conditions (device position, configuration and operational mode) where the peak spatial-average SAR value determined in Step 1 is within3 dB of the applicable SAR limit, it is recommended that all other test frequencies shall be tested as well.

Step 3: Examine all data to determine the highest value of the peak spatial-average SAR found in Steps 1 to 2.



Picture 9.1Block diagram of the tests to be performed

9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the

higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2003. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 <u>reported</u> 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.</td></tr>
</table>

9.3 WCDMA Measurement Procedures for SAR

The following procedures are applicable to WCDMA handsets operating under 3GPP Release99, Release 5 and Release 6. The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & $DPDCH_n$), HSDPA and HSPA (HSUPA/HSDPA) modes according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with the same RMC or AMR, when required. SAR for Release 5 HSDPA and Release 6 HSPA are measured using the applicable FRC (fixed reference channel) and E-DCH reference channel configurations. Maximum output power is verified according to applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. When Maximum Power Reduction (MPR) is not implemented according to Cubic Metric (CM) requirements for Release 6 HSPA, the following procedures do not apply.

For Release 5 HSDPA Data Devices:

Sub-test	β_c	β_d	β_d （SF）	β_c/β_d	β_{hs}	CM/dB
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15	15/15	64	12/15	24/25	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

For Release 6 HSPA Data Devices

Sub-test	β_c	β_d	β_d （SF）	β_c/β_d	β_{hs}	β_{ec}	β_{ed}	β_{ed} （SF）	β_{ed} （codes）	CM (dB)	MPR (dB)	AG Index	E-TFCI
1	11/15	15/15	64	11/15	22/15	209/225	1039/225	4	1	1.5	1.5	20	75
2	6/15	15/15	64	6/15	12/15	12/15	12/15	4	1	1.5	1.5	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	1.5	1.5	15	92
4	2/15	15/15	64	2/15	4/15	4/15	56/75	4	1	1.5	1.5	17	71
5	15/15	15/15	64	15/15	24/15	30/15	134/15	4	1	1.5	1.5	21	81

Rel.8 DC-HSDPA (Cat 24)

SAR test exclusion for Rel.8 DC-HSDPA must satisfy the SAR test exclusion requirements of Rel.5 HSDPA. SAR test exclusion for DC-HSDPA devices is determined by power measurements according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to qualify for SAR test exclusion.

9.4 SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Rohde & Rchwarz CMW500. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the CMW 500.
It is performed for conducted power and SAR based on the KDB941225 D05.
SAR is evaluated separately according to the following procedures for the different test positions in each exposure condition – head, body, body-worn accessories and other use conditions. The procedures in the following subsections are applied separately to test each LTE frequency band.

1) QPSK with 1 RB allocation
   Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
2) QPSK with 50% RB allocation
   The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.
3) QPSK with 100% RB allocation
   For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 v02r05 and the SAR test guidance provided in April 2013 TCB works hop notes. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05 v02r05. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211.

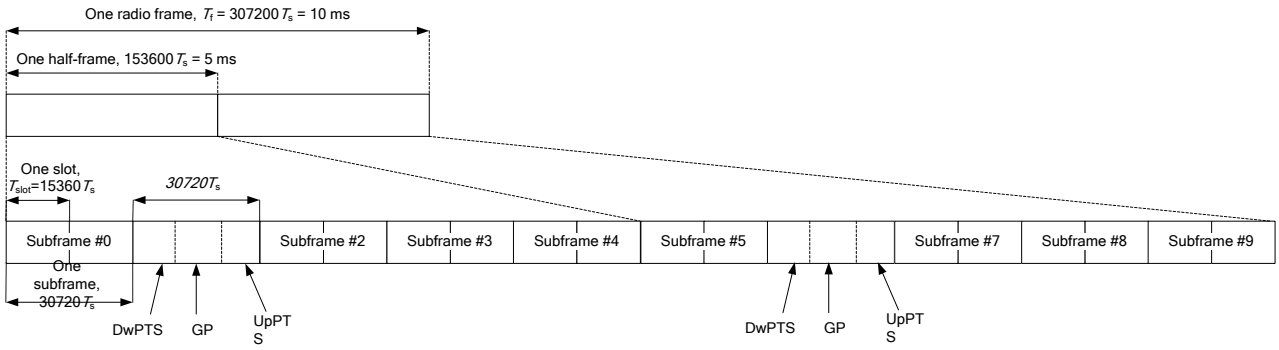


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

Table 9.1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 9.2: Uplink-downlink configurations

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

Duty factor is calculated by:

Duty factor = uplink frame*6+UpPTS*2/one frame length

= (30720.T_s * 6+5120. T_s*2)/307200.T_s

= 0.633

According to the KDB 447498 D01, SAR should be evaluated at more than 3 frequencies for devices supporting transmit bands wider than 100MHz. Oct.2014 FCC-TCB conference notes (Dec. 2014 rev.) specifies the 5 test channels to use for 3GPP band 41 SAR evaluation.

9.5 Bluetooth & Wi-Fi Measurement Procedures for SAR

Normal network operating configurations are not suitable for measuring the SAR of 802.11 transmitters in general. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure that the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in a test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

9.6 Power Drift

To control the output power stability during the SAR test, DASY4 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in section14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

10 Area Scan Based 1-g SAR

10.1 Requirement of KDB

According to the KDB447498 D01 v05, when the implementation is based the specific polynomial fit algorithm as presented at the 29th Bioelectromagnetics Society meeting (2007) and the estimated 1-gSAR is ≤ 1.2 W/kg, a zoom scan measurement is not required provided it is also not needed for any other purpose; for example, if the peak SAR location required for simultaneous transmission SAR test exclusion can be determined accurately by the SAR system or manually to discriminate between distinctive peaks and scattered noisy SAR distributions from area scans.

There must not be any warning or alert messages due to various measurement concerns identified by the SAR system; for example, noise in measurements, peaks too close to scan boundary, peaks are too sharp, spatial resolution and uncertainty issues etc. The SAR system verification must also demonstrate that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR (See Annex B). When all the SAR results for each exposure condition in a frequency band and wireless mode are based on estimated 1-g SAR, the 1-g SAR for the highest SAR configuration must be determined by a zoom scan.

10.2 Fast SAR Algorithms

The approach is based on the area scan measurement applying a frequency dependent attenuation parameter. This attenuation parameter was empirically determined by analyzing a large number of phones. The MOTOROLA FAST SAR was developed and validated by the MOTOROLA Research Group in Ft. Lauderdale.

In the initial study, an approximation algorithm based on Linear fit was developed. The accuracy of the algorithm has been demonstrated across a broad frequency range (136-2450 MHz)and for both 1- and 10-g averaged SAR using a sample of 264 SAR measurements from 55wireless handsets. For the sample size studied, the root-mean-squared errors of the algorithm mare 1.2% and 5.8% for 1- and 10-g averaged SAR, respectively. The paper describing the algorithm in detail is expected to be published in August 2004 within the Special Issue of Transactions on MTT.

In the second step, the same research group optimized the fitting algorithm to an Polynomial fit whereby the frequency validity was extended to cover the range 30-6000MHz. Details of this study can be found in the BEMS 2007 Proceedings.

Both algorithms are implemented in DASY software.

11 Conducted Output Power

For Main antenna, there are two sets of tune-up power, Normal power and Low power, used for different use cases for GSM1900, W1700/1900 and LTE Band 25/66. Normal power status is applied for head test and body worn test of above bands. Low power status is applied for hotspot test of above bands. For other bands, Normal power status is applied for both head and body test.

For WiFi antenna, there are two sets of tune-up power, Normal power and Low power. Normal power status is applied for body test of WiFi-2.4G and for head test of WiFi-5G. Low power status is applied for head test of WiFi-2.4G and body test of WiFi-5G.

11.1 GSM Measurement result

During the process of testing, the EUT was controlled via Agilent Digital Radio Communication tester (E5515C) to ensure the maximum power transmission and proper modulation. This result contains conducted output power for the EUT. In all cases, the measured peak output power should be greater and within 5% than EMI measurement.

Normal Power

Table 11.1-1: The conducted power measurement results for GSM, GPRS and EGPRS

GSM 850	Measured Power (dBm)			Tune up	calculation	Averaged Power (dBm)		
Speech (GMSK)	251	190	128			251	190	128
1 Txslot	32.79	32.81	32.75	**34.5**	/	/	/	/
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	251	190	128			251	190	128
1 Txslot	32.68	32.66	32.55	**34.5**	-9.03	23.65	23.63	23.52
2 Txslots	31.03	30.99	30.76	**32.5**	-6.02	25.01	24.97	24.74
3Txslots	**29.87**	**29.79**	**29.52**	**31.5**	-4.26	**25.61**	**25.53**	**25.26**
4 Txslots	28.60	28.41	28.16	**30**	-3.01	25.59	25.40	25.15
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	251	190	128			251	190	128
1 Txslot	32.67	32.66	32.53	**34.5**	-9.03	23.64	23.63	23.50
2 Txslots	31.02	30.98	30.75	**32.5**	-6.02	25.00	24.96	24.73
3Txslots	**29.86**	**29.78**	**29.48**	**31.5**	-4.26	**25.60**	**25.52**	**25.22**
4 Txslots	28.59	28.41	28.14	**30**	-3.01	25.58	25.40	25.13
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	251	190	128			251	190	128
1 Txslot	25.93	25.85	25.82	**27.5**	-9.03	16.90	16.82	16.79
2 Txslots	24.10	24.81	24.42	**25.5**	-6.02	18.08	18.79	18.40
3Txslots	23.05	22.89	22.89	**24.5**	-4.26	18.79	18.63	18.63
4 Txslots	21.79	21.99	21.76	**23.5**	-3.01	18.78	18.98	18.75
PCS1900	Measured Power (dBm)			Tune up	calculation	Averaged Power (dBm)		
Speech (GMSK)	810	661	512			810	661	512
1 Txslot	30.26	30.44	30.22	**32**	/	/	/	/

PCS1900 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	30.36	30.46	30.26	**32**	-9.03	21.33	21.43	21.23
2 Txslots	**28.46**	**28.19**	**28.05**	**29.5**	-6.02	**22.44**	**22.17**	**22.03**
3Txslots	26.32	26.14	25.92	**27**	-4.26	22.06	21.88	21.66
4 Txslots	25.20	25.01	24.81	**26**	-3.01	22.19	22.00	21.80
PCS1900 EGPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	30.37	30.49	30.26	**32**	-9.03	21.34	21.46	21.23
2 Txslots	**28.41**	**28.23**	**28.05**	**29.5**	-6.02	**22.39**	**22.21**	**22.03**
3Txslots	26.24	26.18	25.82	**27**	-4.26	21.98	21.92	21.56
4 Txslots	25.22	25.04	24.89	**26**	-3.01	22.21	22.03	21.88
PCS1900 EGPRS (8PSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	25.85	25.62	25.35	**27**	-9.03	16.82	16.59	16.32
2 Txslots	24.57	23.86	23.87	**25**	-6.02	18.55	17.84	17.85
3Txslots	22.95	22.69	22.36	**24**	-4.26	18.69	18.43	18.10
4 Txslots	21.65	21.35	21.07	**23**	-3.01	18.64	18.34	18.06

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 3Txslots for GSM850 and 2Txslots for GSM1900.

Low Power

Table 11.1-2: The conducted power measurement results for GSM, GPRS and EGPRS

PCS1900	Measured Power (dBm)			Tune up	calculation	Averaged Power (dBm)		
Speech (GMSK)	810	661	512			810	661	512
1 Txslot	29.35	29.37	29.07	**30**	/	/	/	/
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	810	661	512			810	661	512
1 Txslot	29.54	29.42	29.13	**30**	-9.03	20.51	20.39	20.10
2 Txslots	26.94	26.88	26.87	**27**	-6.02	**20.92**	**20.86**	**20.85**
3Txslots	24.92	24.67	24.65	**25**	-4.26	20.66	20.41	20.39
4 Txslots	23.92	23.58	23.57	**24**	-3.01	20.91	20.57	20.56
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	810	661	512			810	661	512
1 Txslot	29.39	29.38	29.07	**30**	-9.03	20.36	20.35	20.04
2 Txslots	26.92	26.82	26.79	**27**	-6.02	**20.90**	**20.80**	**20.77**
3Txslots	24.94	24.62	24.57	**25**	-4.26	20.68	20.36	20.31
4 Txslots	23.83	23.53	23.50	**24**	-3.01	20.82	20.52	20.49
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	810	661	512			810	661	512
1 Txslot	23.96	23.70	23.71	**25**	-9.03	14.93	14.67	14.68
2 Txslots	22.37	22.11	22.12	**23**	-6.02	16.35	16.09	16.10
3Txslots	21.17	21.12	21.23	**22**	-4.26	16.91	16.86	16.97
4 Txslots	19.95	19.72	19.68	**20**	-3.01	16.94	16.71	16.67

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

According to the conducted power as above, the body measurements are performed with 2Txslots for GSM1900.

11.2 WCDMA Measurement result

Normal power

Table 11.2-1: The conducted Power for WCDMA

Item	band	FDDV result			
	ARFCN	4132 (826.4MHz)	4182 (836.4MHz)	4233 (846.6MHz)	Tune up
WCDMA	\	24.44	24.47	24.60	25
HSUPA	1	23.25	23.10	23.29	24
	2	21.19	21.14	21.31	23
	3	22.28	22.17	22.25	24
	4	21.26	21.15	21.27	23
	5	23.27	23.11	23.34	24
DC-HSDPA	1	23.19	23.11	23.28	24
	2	23.22	23.14	23.33	24
	3	22.69	22.64	22.86	24
	4	22.67	22.63	22.81	24
Item	band	FDDIV result			
	ARFCN	1312 (1712.4MHz)	1412 (1732.4MHz)	1513 (1752.6MHz)	
WCDMA	\	23.59	23.57	23.56	24.5
HSUPA	1	22.11	22.17	22.14	23.5
	2	20.15	20.23	20.19	22
	3	21.21	21.19	21.20	23
	4	20.17	20.19	20.20	22
	5	22.17	22.13	22.20	23.5
DC-HSDPA	1	22.11	22.14	22.20	23.5
	2	22.12	22.16	22.17	23.5
	3	21.67	21.69	21.71	23.5
	4	21.66	21.68	21.70	23.5
Item	band	FDDII result			
	ARFCN	9262 (1852.4MHz)	9400 (1880MHz)	9538 (1907.6MHz)	
WCDMA	\	24.47	24.54	24.74	24.8
HSUPA	1	23.04	23.14	23.23	23.5
	2	21.17	21.20	21.21	23
	3	22.04	22.14	22.23	23.5
	4	21.12	21.13	21.23	23
	5	23.1	23.12	23.17	23.5
DC-HSDPA	1	23.06	23.12	23.21	23.5
	2	23.08	23.15	23.22	23.5
	3	22.58	22.66	22.78	23.5
	4	22.59	22.62	22.77	23.5

Low power

Table 11.2-2: The conducted Power for WCDMA

Item	band	FDDIV result			
	ARFCN	1312 (1712.4MHz)	1412 (1732.4MHz)	1513 (1752.6MHz)	
WCDMA	\	20.58	20.51	20.56	21
HSUPA	1	19.01	19.07	19.04	21
	2	17.05	17.13	17.09	19
	3	18.11	18.09	18.10	20
	4	17.07	17.09	17.10	19
	5	19.07	19.03	19.10	21
DC-HSDPA	1	19.01	19.03	19.07	21
	2	19.00	19.04	19.05	21
	3	18.50	18.54	18.57	20
	4	18.49	18.51	18.55	20
Item	band	FDDII result			
	ARFCN	9262 (1852.4MHz)	9400 (1880MHz)	9538 (1907.6MHz)	
WCDMA	\	20.47	20.51	20.71	21
HSUPA	1	19.02	19.12	19.21	21
	2	17.15	17.18	17.19	19
	3	18.02	18.12	18.21	20
	4	17.1	17.11	17.21	19
	5	19.08	19.10	19.15	21
DC-HSDPA	1	19.04	18.82	19.03	20
	2	19.07	18.84	19.02	20
	3	18.58	18.41	18.61	20
	4	18.55	18.38	18.58	20

11.3 LTE Measurement result

Maximum Target Power for Production Unit – Normal Power

LTE Band 2				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	23.5+/- 1
QPSK	20	> 18	1	22.5+/- 1
16QAM	20	≤ 18	1	22.5+/- 1
16QAM	20	> 18	2	21.5+/- 1
64QAM	20	≤ 18	2	21.5+/- 1
64QAM	20	> 18	3	20.5+/- 1
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

LTE Band 4				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	23.5+/- 1
QPSK	20	> 18	1	22.5+/- 1
16QAM	20	≤ 18	1	22.5+/- 1
16QAM	20	> 18	2	21.5+/- 1
64QAM	20	≤ 18	2	21.5+/- 1
64QAM	20	> 18	3	20.5+/- 1
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

LTE Band 5				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

LTE Band 7				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	22.6+/- 1
QPSK	20	> 18	1	21.6+/- 1
16QAM	20	≤ 18	1	21.6+/- 1
16QAM	20	> 18	1	21.6+/- 1
64QAM	20	≤ 18	2	20.6+/- 1
64QAM	20	> 18	2	20.6+/- 1
QPSK	15	≤ 16	0	22.6+/- 1
QPSK	15	> 16	1	21.6+/- 1
16QAM	15	≤ 16	1	21.6+/- 1
16QAM	15	> 16	1	21.6+/- 1
64QAM	15	≤ 16	2	20.7+/- 1
64QAM	15	> 16	2	20.7+/- 1
QPSK	10	≤ 12	0	22.6+/- 1
QPSK	10	> 12	1	21.6+/- 1
16QAM	10	≤ 12	1	21.6+/- 1
16QAM	10	> 12	1	21.6+/- 1
64QAM	10	≤ 12	2	20.6+/- 1
64QAM	10	> 12	2	20.6+/- 1
QPSK	5	≤ 8	0	22.6+/- 1
QPSK	5	> 8	1	21.6+/- 1
16QAM	5	≤ 8	1	21.7+/- 1
16QAM	5	> 8	1	21.7+/- 1
64QAM	5	≤ 8	2	20.6+/- 1
64QAM	5	> 8	2	20.6+/- 1

LTE Band 12				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	10	≤ 12	0	23.2+/- 1
QPSK	10	> 12	1	22.2+/- 1
16QAM	10	≤ 12	1	22.2+/- 1
16QAM	10	> 12	2	21.2+/- 1
64QAM	10	≤ 12	2	21.2+/- 1
64QAM	10	> 12	3	20.2+/- 1
QPSK	5	≤ 8	0	23.2+/- 1
QPSK	5	> 8	1	22.2+/- 1
16QAM	5	≤ 8	1	22.2+/- 1
16QAM	5	> 8	2	21.2+/- 1
64QAM	5	≤ 8	2	21.2+/- 1
64QAM	5	> 8	3	20.2+/- 1
QPSK	3	≤ 4	0	23.2+/- 1
QPSK	3	> 4	1	22.2+/- 1
16QAM	3	≤ 4	1	22.2+/- 1
16QAM	3	> 4	2	21.2+/- 1
64QAM	3	≤ 4	2	21.2+/- 1
64QAM	3	> 4	3	20.2+/- 1
QPSK	1.4	≤ 5	0	23.2+/- 1
QPSK	1.4	> 5	1	22.2+/- 1
16QAM	1.4	≤ 5	1	22.2+/- 1
16QAM	1.4	> 5	2	21.2+/- 1
64QAM	1.4	> 5	2	21.2+/- 1
64QAM	1.4	> 5	3	20.2+/- 1

LTE Band 13				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1

LTE Band 17				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	10	≤ 12	0	23.2+/- 1
QPSK	10	> 12	1	22.2+/- 1
16QAM	10	≤ 12	1	22.2+/- 1
16QAM	10	> 12	2	21.2+/- 1
64QAM	10	≤ 12	2	21.2+/- 1
64QAM	10	> 12	3	20.2+/- 1
QPSK	5	≤ 8	0	23.2+/- 1
QPSK	5	> 8	1	22.2+/- 1
16QAM	5	≤ 8	1	22.2+/- 1
16QAM	5	> 8	2	21.2+/- 1
64QAM	5	≤ 8	2	21.2+/- 1
64QAM	5	> 8	3	20.2+/- 1
QPSK	3	≤ 4	0	23.2+/- 1
QPSK	3	> 4	1	22.2+/- 1
16QAM	3	≤ 4	1	22.2+/- 1
16QAM	3	> 4	2	21.2+/- 1
64QAM	3	≤ 4	2	21.2+/- 1
64QAM	3	> 4	3	20.2+/- 1
QPSK	1.4	≤ 5	0	23.2+/- 1
QPSK	1.4	> 5	1	22.2+/- 1
16QAM	1.4	≤ 5	1	22.2+/- 1
16QAM	1.4	> 5	2	21.2+/- 1
64QAM	1.4	> 5	2	21.2+/- 1
64QAM	1.4	> 5	3	20.2+/- 1

LTE Band 25				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	23.5+/- 1
QPSK	20	> 18	1	22.5+/- 1
16QAM	20	≤ 18	1	22.5+/- 1
16QAM	20	> 18	2	21.5+/- 1
64QAM	20	≤ 18	2	21.5+/- 1
64QAM	20	> 18	3	20.5+/- 1
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

LTE Band 26				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

LTE Band 41				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	24.0+/- 1
QPSK	20	> 18	1	23.0+/- 1
16QAM	20	≤ 18	1	23.0+/- 1
16QAM	20	> 18	2	22.0+/- 1
64QAM	20	≤ 18	2	22.0+/- 1
64QAM	20	> 18	3	21.0+/- 1
QPSK	15	≤ 16	0	24.0+/- 1
QPSK	15	> 16	1	23.0+/- 1
16QAM	15	≤ 16	1	23.0+/- 1
16QAM	15	> 16	2	22.0+/- 1
64QAM	15	≤ 16	2	22.0+/- 1
64QAM	15	> 16	3	21.0+/- 1
QPSK	10	≤ 12	0	24.0+/- 1
QPSK	10	> 12	1	23.0+/- 1
16QAM	10	≤ 12	1	23.0+/- 1
16QAM	10	> 12	2	22.0+/- 1
64QAM	10	≤ 12	2	22.0+/- 1
64QAM	10	> 12	3	21.0+/- 1
QPSK	5	≤ 8	0	24.0+/- 1
QPSK	5	> 8	1	23.0+/- 1
16QAM	5	≤ 8	1	23.0+/- 1
16QAM	5	> 8	2	22.0+/- 1
64QAM	5	≤ 8	2	22.0+/- 1
64QAM	5	> 8	3	21.0+/- 1

LTE Band 66				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	23.5+/- 1
QPSK	20	> 18	1	22.5+/- 1
16QAM	20	≤ 18	1	22.5+/- 1
16QAM	20	> 18	2	21.5+/- 1
64QAM	20	≤ 18	2	21.5+/- 1
64QAM	20	> 18	3	20.5+/- 1
QPSK	15	≤ 16	0	23.5+/- 1
QPSK	15	> 16	1	22.5+/- 1
16QAM	15	≤ 16	1	22.5+/- 1
16QAM	15	> 16	2	21.5+/- 1
64QAM	15	≤ 16	2	21.5+/- 1
64QAM	15	> 16	3	20.5+/- 1
QPSK	10	≤ 12	0	23.5+/- 1
QPSK	10	> 12	1	22.5+/- 1
16QAM	10	≤ 12	1	22.5+/- 1
16QAM	10	> 12	2	21.5+/- 1
64QAM	10	≤ 12	2	21.5+/- 1
64QAM	10	> 12	3	20.5+/- 1
QPSK	5	≤ 8	0	23.5+/- 1
QPSK	5	> 8	1	22.5+/- 1
16QAM	5	≤ 8	1	22.5+/- 1
16QAM	5	> 8	2	21.5+/- 1
64QAM	5	≤ 8	2	21.5+/- 1
64QAM	5	> 8	3	20.5+/- 1
QPSK	3	≤ 4	0	23.5+/- 1
QPSK	3	> 4	1	22.5+/- 1
16QAM	3	≤ 4	1	22.5+/- 1
16QAM	3	> 4	2	21.5+/- 1
64QAM	3	≤ 4	2	21.5+/- 1
64QAM	3	> 4	3	20.5+/- 1
QPSK	1.4	≤ 5	0	23.5+/- 1
QPSK	1.4	> 5	1	22.5+/- 1
16QAM	1.4	≤ 5	1	22.5+/- 1
16QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	2	21.5+/- 1
64QAM	1.4	> 5	3	20.5+/- 1

Maximum Target Power for Production Unit – Low Power

LTE Band 2				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	20.0+/- 1
QPSK	20	> 18	0	20.0+/- 1
16QAM	20	≤ 18	0	20.0+/- 1
16QAM	20	> 18	0	20.0+/- 1
64QAM	20	≤ 18	0	20.0+/- 1
64QAM	20	> 18	0	20.0+/- 1
QPSK	15	≤ 16	0	20.0+/- 1
QPSK	15	> 16	0	20.0+/- 1
16QAM	15	≤ 16	0	20.0+/- 1
16QAM	15	> 16	0	20.0+/- 1
64QAM	15	≤ 16	0	20.0+/- 1
64QAM	15	> 16	0	20.0+/- 1
QPSK	10	≤ 12	0	20.0+/- 1
QPSK	10	> 12	0	20.0+/- 1
16QAM	10	≤ 12	0	20.0+/- 1
16QAM	10	> 12	0	20.0+/- 1
64QAM	10	≤ 12	0	20.0+/- 1
64QAM	10	> 12	0	20.0+/- 1
QPSK	5	≤ 8	0	20.0+/- 1
QPSK	5	> 8	0	20.0+/- 1
16QAM	5	≤ 8	0	20.0+/- 1
16QAM	5	> 8	0	20.0+/- 1
64QAM	5	≤ 8	0	20.0+/- 1
64QAM	5	> 8	0	20.0+/- 1

LTE Band 4				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	20.0+/- 1
QPSK	20	> 18	0	20.0+/- 1
16QAM	20	≤ 18	0	20.0+/- 1
16QAM	20	> 18	0	20.0+/- 1
64QAM	20	≤ 18	0	20.0+/- 1
64QAM	20	> 18	0	20.0+/- 1
QPSK	15	≤ 16	0	20.0+/- 1
QPSK	15	> 16	0	20.0+/- 1
16QAM	15	≤ 16	0	20.0+/- 1
16QAM	15	> 16	0	20.0+/- 1
64QAM	15	≤ 16	0	20.0+/- 1
64QAM	15	> 16	0	20.0+/- 1
QPSK	10	≤ 12	0	20.0+/- 1
QPSK	10	> 12	0	20.0+/- 1
16QAM	10	≤ 12	0	20.0+/- 1
16QAM	10	> 12	0	20.0+/- 1
64QAM	10	≤ 12	0	20.0+/- 1
64QAM	10	> 12	0	20.0+/- 1
QPSK	5	≤ 8	0	20.0+/- 1
QPSK	5	> 8	0	20.0+/- 1
16QAM	5	≤ 8	0	20.0+/- 1
16QAM	5	> 8	0	20.0+/- 1
64QAM	5	≤ 8	0	20.0+/- 1
64QAM	5	> 8	0	20.0+/- 1
QPSK	3	≤ 4	0	20.0+/- 1
QPSK	3	> 4	0	20.0+/- 1
16QAM	3	≤ 4	0	20.0+/- 1
16QAM	3	> 4	0	20.0+/- 1
64QAM	3	≤ 4	0	20.0+/- 1
64QAM	3	> 4	0	20.0+/- 1
QPSK	1.4	≤ 5	0	20.0+/- 1
QPSK	1.4	> 5	0	20.0+/- 1
16QAM	1.4	≤ 5	0	20.0+/- 1
16QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1

LTE Band 25				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	20.0+/- 1
QPSK	20	> 18	0	20.0+/- 1
16QAM	20	≤ 18	0	20.0+/- 1
16QAM	20	> 18	0	20.0+/- 1
64QAM	20	≤ 18	0	20.0+/- 1
64QAM	20	> 18	0	20.0+/- 1
QPSK	15	≤ 16	0	20.0+/- 1
QPSK	15	> 16	0	20.0+/- 1
16QAM	15	≤ 16	0	20.0+/- 1
16QAM	15	> 16	0	20.0+/- 1
64QAM	15	≤ 16	0	20.0+/- 1
64QAM	15	> 16	0	20.0+/- 1
QPSK	10	≤ 12	0	20.0+/- 1
QPSK	10	> 12	0	20.0+/- 1
16QAM	10	≤ 12	0	20.0+/- 1
16QAM	10	> 12	0	20.0+/- 1
64QAM	10	≤ 12	0	20.0+/- 1
64QAM	10	> 12	0	20.0+/- 1
QPSK	5	≤ 8	0	20.0+/- 1
QPSK	5	> 8	0	20.0+/- 1
16QAM	5	≤ 8	0	20.0+/- 1
16QAM	5	> 8	0	20.0+/- 1
64QAM	5	≤ 8	0	20.0+/- 1
64QAM	5	> 8	0	20.0+/- 1
QPSK	3	≤ 4	0	20.0+/- 1
QPSK	3	> 4	0	20.0+/- 1
16QAM	3	≤ 4	0	20.0+/- 1
16QAM	3	> 4	0	20.0+/- 1
64QAM	3	≤ 4	0	20.0+/- 1
64QAM	3	> 4	0	20.0+/- 1
QPSK	1.4	≤ 5	0	20.0+/- 1
QPSK	1.4	> 5	0	20.0+/- 1
16QAM	1.4	≤ 5	0	20.0+/- 1
16QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1

LTE Band 66				
Modulation	**BW (MHz)**	**RB size**	**Target MPR**	**Target Power**
QPSK	20	≤ 18	0	20.0+/- 1
QPSK	20	> 18	0	20.0+/- 1
16QAM	20	≤ 18	0	20.0+/- 1
16QAM	20	> 18	0	20.0+/- 1
64QAM	20	≤ 18	0	20.0+/- 1
64QAM	20	> 18	0	20.0+/- 1
QPSK	15	≤ 16	0	20.0+/- 1
QPSK	15	> 16	0	20.0+/- 1
16QAM	15	≤ 16	0	20.0+/- 1
16QAM	15	> 16	0	20.0+/- 1
64QAM	15	≤ 16	0	20.0+/- 1
64QAM	15	> 16	0	20.0+/- 1
QPSK	10	≤ 12	0	20.0+/- 1
QPSK	10	> 12	0	20.0+/- 1
16QAM	10	≤ 12	0	20.0+/- 1
16QAM	10	> 12	0	20.0+/- 1
64QAM	10	≤ 12	0	20.0+/- 1
64QAM	10	> 12	0	20.0+/- 1
QPSK	5	≤ 8	0	20.0+/- 1
QPSK	5	> 8	0	20.0+/- 1
16QAM	5	≤ 8	0	20.0+/- 1
16QAM	5	> 8	0	20.0+/- 1
64QAM	5	≤ 8	0	20.0+/- 1
64QAM	5	> 8	0	20.0+/- 1
QPSK	3	≤ 4	0	20.0+/- 1
QPSK	3	> 4	0	20.0+/- 1
16QAM	3	≤ 4	0	20.0+/- 1
16QAM	3	> 4	0	20.0+/- 1
64QAM	3	≤ 4	0	20.0+/- 1
64QAM	3	> 4	0	20.0+/- 1
QPSK	1.4	≤ 5	0	20.0+/- 1
QPSK	1.4	> 5	0	20.0+/- 1
16QAM	1.4	≤ 5	0	20.0+/- 1
16QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1
64QAM	1.4	> 5	0	20.0+/- 1

Normal power

Table 11.3-1: The conducted Power for LTE

Band 7					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
5 MHz	1RB High (24)	2567.5	23.17	21.95	21.07
		2535	23.22	21.96	21.08
		2502.5	23.06	22.26	21.38
	1RB Middle (12)	2567.5	23.18	21.93	21.05
		2535	23.21	21.90	21.02
		2502.5	23.03	22.27	21.39
	1RB Low (0)	2567.5	23.14	21.88	21.00
		2535	23.17	21.88	21.00
		2502.5	22.96	22.22	21.34
	12RB High (13)	2567.5	22.26	21.38	20.58
		2535	22.18	21.29	20.49
		2502.5	22.14	21.35	20.55
	12RB Middle (6)	2567.5	22.23	21.36	20.56
		2535	22.18	21.32	20.52
		2502.5	22.14	21.35	20.55
	12RB Low (0)	2567.5	22.15	21.33	20.53
		2535	22.15	21.25	20.45
		2502.5	22.14	21.28	20.48
	25RB (0)	2567.5	22.20	21.25	20.45
		2535	22.20	21.24	20.44
		2502.5	22.16	21.25	20.45
10 MHz	1RB High (49)	2565	23.09	21.88	21.00
		2535	23.18	21.72	20.84
		2505	23.03	22.12	21.24
	1RB Middle (24)	2565	23.04	21.84	20.96
		2535	23.03	21.67	20.79
		2505	23.09	22.13	21.25
	1RB Low (0)	2565	23.06	21.87	20.99
		2535	23.01	21.64	20.76
		2505	23.02	22.08	21.20
	25RB High (25)	2565	22.25	21.38	20.58
		2535	22.23	21.27	20.47
		2505	22.09	21.19	20.39
	25RB Middle (12)	2565	22.23	21.38	20.58
		2535	22.21	21.24	20.44
		2505	22.14	21.28	20.48
	25RB Low (0)	2565	22.28	21.43	20.53
		2535	22.15	21.21	20.41
		2505	22.11	21.22	20.42
	50RB (0)	2565	22.34	21.39	20.59
		2535	22.22	21.22	20.42
		2505	22.06	21.16	20.36

15 MHz	1RB High (74)	2562.5	23.18	21.74	20.94
		2535	23.02	21.11	20.31
		2507.5	23.07	21.57	20.77
	1RB Middle (37)	2562.5	23.09	21.61	20.81
		2535	23.08	21.08	20.28
		2507.5	23.13	21.56	20.76
	1RB Low (0)	2562.5	23.09	21.65	20.85
		2535	23.00	21.06	20.26
		2507.5	23.08	21.50	20.70
	36RB High (38)	2562.5	22.17	21.20	20.40
		2535	22.20	21.20	20.40
		2507.5	22.08	21.18	20.38
	36RB Middle (19)	2562.5	22.26	21.27	20.47
		2535	22.21	21.20	20.40
		2507.5	22.04	21.14	20.34
	36RB Low (0)	2562.5	22.17	21.18	20.38
		2535	22.12	21.16	20.36
		2507.5	22.07	21.17	20.37
	75RB (0)	2562.5	22.21	21.27	20.47
		2535	22.15	21.21	20.41
		2507.5	22.02	21.07	20.27
20 MHz	1RB High (99)	2560	23.10	21.80	21.00
		2535	23.08	21.66	20.86
		2510	23.07	21.60	20.80
	1RB Middle (50)	2560	23.03	21.76	20.96
		2535	23.04	21.62	20.82
		2510	22.92	21.44	20.64
	1RB Low (0)	2560	22.98	21.65	20.85
		2535	23.01	21.66	20.86
		2510	22.93	21.49	20.69
	50RB High (50)	2560	22.32	21.43	20.57
		2535	22.28	21.33	20.53
		2510	22.18	21.20	20.40
	50RB Middle (25)	2560	22.28	21.41	20.59
		2535	22.29	21.33	20.53
		2510	22.14	21.19	20.39
	50RB Low (0)	2560	22.20	21.30	20.50
		2535	22.18	21.24	20.44
		2510	22.03	21.10	20.30
	100RB (0)	2560	22.25	21.39	20.59
		2535	22.23	21.28	20.48
		2510	22.12	21.18	20.38

Band 12					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	715.3	23.71	21.38	20.49
		707.5	23.88	21.59	20.70
		699.7	23.83	21.84	20.95
	1RB Middle (3)	715.3	23.74	21.41	20.52
		707.5	23.92	21.63	20.74
		699.7	23.90	21.92	21.03
	1RB Low (0)	715.3	23.66	21.33	20.44
		707.5	23.92	21.59	20.70
		699.7	23.87	21.88	20.99
	3RB High (3)	715.3	23.69	21.57	20.68
		707.5	23.90	21.56	20.67
		699.7	23.85	21.68	20.79
	3RB Middle (1)	715.3	23.74	21.62	20.73
		707.5	23.92	21.62	20.73
		699.7	23.91	21.75	20.86
	3RB Low (0)	715.3	23.69	21.56	20.67
		707.5	23.86	21.57	20.68
		699.7	23.86	21.72	20.83
	6RB (0)	715.3	21.69	21.52	20.63
		707.5	21.84	21.55	20.66
		699.7	21.79	21.34	20.45
3 MHz	1RB High (14)	714.5	23.73	21.26	20.37
		707.5	23.93	21.89	21.00
		700.5	23.88	21.52	20.63
	1RB Middle (7)	714.5	23.81	21.38	20.49
		707.5	23.99	22.00	21.11
		700.5	24.00	21.64	20.75
	1RB Low (0)	714.5	23.77	21.27	20.38
		707.5	23.89	21.88	20.99
		700.5	23.96	21.60	20.71
	8RB High (7)	714.5	21.83	21.57	20.68
		707.5	21.88	21.61	20.72
		700.5	21.90	21.56	20.67
	8RB Middle (4)	714.5	21.86	21.61	20.72
		707.5	21.96	21.63	20.74
		700.5	21.95	21.59	20.70
	8RB Low (0)	714.5	21.84	21.58	20.69
		707.5	21.93	21.62	20.73
		700.5	21.92	21.57	20.68
	15RB (0)	714.5	21.88	21.50	20.61
		707.5	21.89	21.58	20.69
		700.5	21.92	21.48	20.59
5 MHz	1RB High (24)	713.5	23.75	21.49	20.60
		707.5	23.85	21.67	20.78
		701.5	23.98	22.06	21.17

	1RB Middle (12)	713.5	23.72	21.51	20.62
		707.5	23.88	21.66	20.77
		701.5	23.85	22.02	21.13
	1RB Low (0)	713.5	23.78	21.51	20.62
		707.5	23.88	21.65	20.76
		701.5	23.94	22.05	21.16
	12RB High (13)	713.5	21.88	21.52	20.63
		707.5	21.89	21.56	20.67
		701.5	22.03	21.77	20.88
	12RB Middle (6)	713.5	21.87	21.59	20.70
		707.5	21.94	21.68	20.79
		701.5	21.95	21.70	20.81
	12RB Low (0)	713.5	21.89	21.57	20.68
		707.5	21.93	21.64	20.75
		701.5	21.93	21.71	20.82
	25RB (0)	713.5	21.83	21.40	20.51
		707.5	21.92	21.60	20.71
		701.5	22.07	21.69	20.80
10 MHz	1RB High (49)	711	23.93	21.41	20.52
		707.5	23.97	21.88	20.99
		704	23.90	21.53	20.64
	1RB Middle (24)	711	23.92	21.46	20.57
		707.5	23.93	21.92	21.03
		704	23.93	21.57	20.68
	1RB Low (0)	711	23.89	21.45	20.56
		707.5	23.85	21.78	20.89
		704	23.87	21.51	20.62
	25RB High (25)	711	21.96	21.57	20.68
		707.5	21.95	21.57	20.68
		704	21.98	21.65	20.76
	25RB Middle (12)	711	21.98	21.63	20.74
		707.5	21.93	21.61	20.72
		704	22.00	21.75	20.86
	25RB Low (0)	711	21.99	21.59	20.70
		707.5	21.97	21.61	20.72
		704	22.05	21.70	20.81
	50RB (0)	711	21.98	21.57	20.68
		707.5	21.95	21.61	20.72
		704	21.99	21.65	20.76

Band 13					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
5 MHz	1RB High (24)	784.5	24.01	22.39	21.83
		782	24.03	22.26	21.82
		779.5	23.97	22.37	21.83
	1RB Middle (12)	784.5	24.04	22.22	21.88
		782	24.04	22.32	21.98
		779.5	23.90	22.27	21.83
	1RB Low (0)	784.5	23.98	22.29	21.94
		782	24.10	22.30	21.86
		779.5	24.00	22.25	21.94
	12RB High (13)	784.5	21.96	21.60	20.96
		782	21.91	21.61	20.97
		779.5	22.02	21.73	21.09
	12RB Middle (6)	784.5	22.03	21.63	20.99
		782	21.99	21.69	21.05
		779.5	22.07	21.79	21.15
	12RB Low (0)	784.5	22.01	21.66	21.02
		782	21.97	21.66	21.02
		779.5	21.98	21.62	20.98
	25RB (0)	784.5	22.00	21.52	20.88
		782	21.97	21.61	20.97
		779.5	22.03	21.67	21.03
10 MHz	1RB High (49)	782	23.93	22.06	21.87
	1RB Middle (24)	782	23.92	22.19	21.95
	1RB Low (0)	782	23.95	22.67	21.96
	25RB High (25)	782	22.01	21.65	21.01
	25RB Middle (12)	782	22.01	21.72	21.08
	25RB Low (0)	782	22.13	21.71	21.07
	50RB (0)	782	21.98	21.64	21.00

Band 25					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1914.3	23.96	21.51	20.52
		1882.5	24.18	21.77	20.78
		1850.7	24.15	22.05	21.06
	1RB Middle (3)	1914.3	24.06	21.56	20.57
		1882.5	24.24	21.82	20.83
		1850.7	24.26	22.12	21.13
	1RB Low (0)	1914.3	23.98	21.58	20.59
		1882.5	24.25	21.73	20.74
		1850.7	24.20	22.04	21.05
	3RB High (3)	1914.3	24.04	21.71	20.72
		1882.5	24.07	21.71	20.72
		1850.7	24.10	21.88	20.89
	3RB Middle (1)	1914.3	24.08	21.82	20.83
		1882.5	24.10	21.78	20.79
		1850.7	24.20	21.96	20.97
	3RB Low (0)	1914.3	24.08	21.75	20.76
		1882.5	24.02	21.69	20.70
		1850.7	24.11	21.92	20.93
	6RB (0)	1914.3	22.08	21.65	20.66
		1882.5	22.11	21.78	20.79
		1850.7	22.13	21.59	20.60
3 MHz	1RB High (14)	1913.5	24.16	21.53	20.54
		1882.5	24.22	21.60	20.61
		1851.5	24.13	22.06	21.07
	1RB Middle (7)	1913.5	24.20	21.65	20.66
		1882.5	24.39	21.75	20.76
		1851.5	24.31	22.20	21.21
	1RB Low (0)	1913.5	24.21	21.58	20.59
		1882.5	24.22	21.63	20.64
		1851.5	24.19	22.06	21.07
	8RB High (7)	1913.5	22.31	21.61	20.62
		1882.5	22.22	21.87	20.88
		1851.5	22.19	21.82	20.83
	8RB Middle (4)	1913.5	22.25	21.66	20.67
		1882.5	22.27	21.90	20.91
		1851.5	22.19	21.85	20.86
	8RB Low (0)	1913.5	22.29	21.59	20.60
		1882.5	22.27	21.87	20.88
		1851.5	22.20	21.84	20.85
	15RB (0)	1913.5	22.31	21.55	20.56
		1882.5	22.20	21.77	20.78
		1851.5	22.18	21.77	20.78
5 MHz	1RB High (24)	1912.5	24.05	21.61	20.62
		1882.5	24.21	22.24	21.25

		1852.5	24.19	21.78	20.79
	1RB Middle (12)	1912.5	24.06	21.68	20.69
		1882.5	24.24	22.29	21.30
		1852.5	24.20	21.81	20.82
	1RB Low (0)	1912.5	24.12	21.67	20.68
		1882.5	24.22	22.20	21.21
		1852.5	24.20	21.80	20.81
	12RB High (13)	1912.5	21.93	21.64	20.65
		1882.5	22.22	21.90	20.91
		1852.5	22.17	21.74	20.75
	12RB Middle (6)	1912.5	22.01	21.68	20.69
		1882.5	22.26	21.90	20.91
		1852.5	22.20	21.82	20.83
	12RB Low (0)	1912.5	22.01	21.66	20.67
		1882.5	22.23	21.88	20.89
		1852.5	22.16	21.80	20.81
	25RB (0)	1912.5	22.00	21.58	20.59
		1882.5	22.24	21.84	20.85
		1852.5	22.15	21.66	20.67
10 MHz	1RB High (49)	1910	24.23	21.59	20.60
		1882.5	24.30	21.70	20.71
		1855	24.24	22.12	21.13
	1RB Middle (24)	1910	24.21	21.57	20.58
		1882.5	24.25	21.70	20.71
		1855	24.22	22.07	21.08
	1RB Low (0)	1910	24.23	21.56	20.57
		1882.5	24.32	21.77	20.78
		1855	24.28	22.12	21.13
	25RB High (25)	1910	22.23	21.66	20.67
		1882.5	22.21	21.80	20.81
		1855	22.18	21.76	20.77
	25RB Middle (12)	1910	22.20	21.70	20.71
		1882.5	22.25	21.84	20.85
		1855	22.18	21.77	20.78
	25RB Low (0)	1910	22.16	21.66	20.67
		1882.5	22.23	21.80	20.81
		1855	22.14	21.79	20.80
	50RB (0)	1910	22.21	21.61	20.62
		1882.5	22.25	21.78	20.79
		1855	22.12	21.77	20.78
15 MHz	1RB High (74)	1907.5	23.87	21.83	20.84
		1882.5	24.13	21.58	20.59
		1857.5	24.18	22.06	21.07
	1RB Middle (37)	1907.5	24.01	21.86	20.87
		1882.5	24.19	21.64	20.65
		1857.5	24.30	22.12	21.13
	1RB Low (0)	1907.5	24.00	21.89	20.90
		1882.5	24.18	21.64	20.65

		1857.5	24.23	22.12	21.13
	36RB High (38)	1907.5	21.91	21.50	20.51
		1882.5	22.22	21.75	20.76
		1857.5	22.19	21.83	20.84
	36RB Middle (19)	1907.5	21.97	21.55	20.56
		1882.5	22.20	21.79	20.80
		1857.5	22.22	21.89	20.90
	36RB Low (0)	1907.5	21.93	21.52	20.53
		1882.5	22.15	21.75	20.76
		1857.5	22.17	21.82	20.83
	75RB (0)	1907.5	21.90	21.54	20.55
		1882.5	22.13	21.80	20.81
		1857.5	22.19	21.83	20.84
20 MHz	1RB High (99)	1905	23.86	21.97	20.98
		1882.5	24.19	22.13	21.14
		1860	24.20	22.17	21.18
	1RB Middle (50)	1905	23.94	21.99	21.00
		1882.5	24.21	22.13	21.14
		1860	24.24	22.14	21.15
	1RB Low (0)	1905	23.91	22.02	21.03
		1882.5	24.21	22.14	21.15
		1860	24.22	22.10	21.11
	50RB High (50)	1905	21.95	21.56	20.57
		1882.5	22.20	21.76	20.77
		1860	22.20	21.78	20.79
	50RB Middle (25)	1905	21.99	21.58	20.59
		1882.5	22.22	21.84	20.85
		1860	22.27	21.80	20.81
	50RB Low (0)	1905	21.95	21.55	20.56
		1882.5	22.23	21.76	20.77
		1860	22.20	21.78	20.79
	100RB (0)	1905	21.95	21.57	20.58
		1882.5	22.21	21.73	20.74
		1860	22.25	21.77	20.78

Band 26					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	848.3	24.05	21.65	20.53
		831.5	24.10	21.81	20.59
		814.7	24.04	21.96	20.74
	1RB Middle (3)	848.3	24.03	21.68	20.66
		831.5	24.16	21.88	20.66
		814.7	24.12	22.01	20.79
	1RB Low (0)	848.3	24.09	21.63	20.61
		831.5	24.10	21.80	20.58
		814.7	24.07	22.01	20.79
	3RB High (3)	848.3	24.07	21.82	20.60
		831.5	24.06	21.77	20.55
		814.7	24.03	21.80	20.58
	3RB Middle (1)	848.3	24.14	21.91	20.69
		831.5	24.10	21.85	20.63
		814.7	24.13	21.90	20.68
	3RB Low (0)	848.3	24.15	21.88	20.66
		831.5	24.03	21.78	20.56
		814.7	24.06	21.87	20.65
	6RB (0)	848.3	22.08	21.75	20.53
		831.5	22.06	21.82	20.60
		814.7	22.02	21.52	20.30
3 MHz	1RB High (14)	847.5	24.12	22.01	20.79
		831.5	24.09	21.73	20.51
		815.5	24.08	21.77	20.55
	1RB Middle (7)	847.5	24.09	22.16	20.94
		831.5	24.18	21.87	20.65
		815.5	24.17	21.86	20.64
	1RB Low (0)	847.5	24.07	22.06	20.84
		831.5	24.11	21.80	20.58
		815.5	24.12	21.81	20.59
	8RB High (7)	847.5	22.13	21.72	20.50
		831.5	22.16	21.80	20.58
		815.5	22.14	21.79	20.57
	8RB Middle (4)	847.5	22.16	21.79	20.57
		831.5	22.17	21.86	20.64
		815.5	22.17	21.85	20.63
	8RB Low (0)	847.5	22.17	21.77	20.55
		831.5	22.14	21.83	20.61
		815.5	22.17	21.78	20.56
	15RB (0)	847.5	22.20	21.76	20.54
		831.5	22.15	21.77	20.55
		815.5	22.19	21.78	20.56
5 MHz	1RB High (24)	846.5	24.05	21.75	20.53
		831.5	24.17	21.90	20.68

		816.5	24.12	22.32	21.10
	1RB Middle (12)	846.5	24.12	21.79	20.57
		831.5	24.23	21.93	20.71
		816.5	24.08	22.23	21.01
	1RB Low (0)	846.5	24.14	21.78	20.56
		831.5	24.23	21.95	20.73
		816.5	24.10	22.24	21.02
	12RB High (13)	846.5	22.11	21.75	20.53
		831.5	22.18	21.86	20.64
		816.5	22.22	22.04	20.82
	12RB Middle (6)	846.5	22.18	21.82	20.60
		831.5	22.22	21.91	20.69
		816.5	22.16	21.90	20.68
	12RB Low (0)	846.5	22.19	21.82	20.60
		831.5	22.19	21.90	20.68
		816.5	22.15	21.88	20.66
	25RB (0)	846.5	22.12	21.68	20.46
		831.5	22.20	21.85	20.63
		816.5	22.29	21.94	20.72
10 MHz	1RB High (49)	844	24.04	21.50	20.58
		831.5	24.07	22.09	20.87
		820	24.04	21.77	20.55
	1RB Middle (24)	844	24.06	21.62	20.60
		831.5	24.11	22.12	20.90
		820	24.11	21.84	20.62
	1RB Low (0)	844	24.12	21.71	20.59
		831.5	24.06	22.07	20.85
		820	24.06	21.73	20.51
	25RB High (25)	844	22.12	21.79	20.57
		831.5	22.17	21.82	20.60
		820	22.21	21.91	20.69
	25RB Middle (12)	844	22.19	21.85	20.63
		831.5	22.22	21.91	20.69
		820	22.24	21.99	20.77
	25RB Low (0)	844	22.15	21.84	20.62
		831.5	22.17	21.86	20.64
		820	22.23	21.98	20.76
	50RB (0)	844	22.18	21.82	20.60
		831.5	22.18	21.85	20.63
		820	22.23	21.93	20.71
15 MHz	1RB High (74)	841.5	24.01	21.56	20.54
		831.5	24.03	22.08	20.86
		822.5	24.18	22.22	21.00
	1RB Middle (37)	841.5	24.07	21.68	20.66
		831.5	24.12	22.17	20.95
		822.5	24.19	22.22	21.00
	1RB Low (0)	841.5	24.06	21.65	20.63
		831.5	24.11	22.15	20.93

		822.5	24.16	22.13	20.91
	36RB High (38)	841.5	22.10	21.73	20.51
		831.5	22.15	21.78	20.56
		822.5	22.25	21.83	20.61
	36RB Middle (19)	841.5	22.07	21.73	20.51
		831.5	22.20	21.83	20.61
		822.5	22.23	21.80	20.58
	36RB Low (0)	841.5	22.07	21.73	20.51
		831.5	22.17	21.85	20.63
		822.5	22.24	21.79	20.57
	75RB (0)	841.5	22.05	21.70	20.48
		831.5	22.13	21.78	20.56
		822.5	22.14	21.82	20.60

Band 41					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
5 MHz	1RB High (24)	2687.5	24.58	22.42	21.69
		2640.3	24.60	22.68	21.95
		2593	24.64	22.16	21.43
		2545.8	24.20	22.22	21.49
		2498.5	24.18	22.17	21.44
	1RB Middle (12)	2687.5	24.52	22.44	21.71
		2640.3	24.59	22.74	22.01
		2593	24.59	22.26	21.53
		2545.8	24.39	22.26	21.53
		2498.5	23.96	22.09	21.36
	1RB Low (0)	2687.5	24.50	22.42	21.69
		2640.3	24.51	22.30	21.57
		2593	24.24	22.16	21.43
		2545.8	24.35	22.21	21.48
		2498.5	24.00	22.35	21.62
	12RB High (13)	2687.5	22.62	22.19	21.46
		2640.3	22.60	22.35	21.62
		2593	22.54	22.23	21.50
		2545.8	22.36	21.97	21.24
		2498.5	22.24	21.99	21.26
	12RB Middle (6)	2687.5	22.57	22.20	21.47
		2640.3	22.57	22.36	21.63
		2593	22.54	22.21	21.48
		2545.8	22.34	21.96	21.23
		2498.5	22.23	21.98	21.25

	12RB Low (0)	2687.5	22.52	22.13	21.40
		2640.3	22.51	22.33	21.60
		2593	22.49	22.14	21.41
		2545.8	22.28	21.91	21.18
		2498.5	22.20	21.97	21.24
	25RB (0)	2687.5	22.53	22.19	21.46
		2640.3	22.58	22.23	21.50
		2593	22.52	22.14	21.41
		2545.8	22.31	21.95	21.22
		2498.5	22.26	21.87	21.14
10 MHz	1RB High (49)	2685	24.58	22.62	21.89
		2639	24.54	22.66	21.93
		2593	24.63	22.45	21.72
		2547	24.40	22.48	21.75
		2501	24.14	22.26	21.53
	1RB Middle (24)	2685	24.50	22.61	21.88
		2639	24.41	22.57	21.84
		2593	24.48	22.39	21.66
		2547	24.29	22.39	21.66
		2501	24.16	22.29	21.56
	1RB Low (0)	2685	24.57	22.63	21.90
		2639	24.48	22.61	21.88
		2593	24.55	22.38	21.65
		2547	24.26	22.32	21.59
		2501	24.11	22.20	21.47
	25RB High (25)	2685	22.46	22.13	21.40
		2639	22.69	22.37	21.64
		2593	22.65	22.05	21.32
		2547	22.41	22.07	21.34
		2501	22.28	21.90	21.17
	25RB Middle (12)	2685	22.61	22.11	21.38
		2639	22.46	22.46	21.73
		2593	22.37	22.30	21.57
		2547	22.38	22.03	21.30
		2501	22.34	22.02	21.29
	25RB Low (0)	2685	22.71	22.11	21.38
		2639	22.73	22.45	21.72
		2593	22.52	22.20	21.47
		2547	22.27	22.02	21.29
		2501	22.28	21.96	21.23

	50RB (0)	2685	22.67	22.33	21.60
		2639	22.69	22.38	21.65
		2593	22.53	22.18	21.45
		2547	22.37	22.02	21.29
		2501	22.22	21.90	21.17
15 MHz	1RB High (74)	2682.5	24.51	22.67	21.94
		2637.8	24.60	22.35	21.62
		2593	24.68	22.57	21.84
		2548.3	24.49	22.45	21.72
		2503.5	24.02	22.24	21.51
	1RB Middle (37)	2682.5	24.58	22.69	21.96
		2637.8	24.57	22.29	21.56
		2593	24.60	22.15	21.42
		2548.3	24.15	22.48	21.75
		2503.5	24.26	22.11	21.38
	1RB Low (0)	2682.5	24.60	22.43	21.70
		2637.8	24.31	22.66	21.93
		2593	24.29	22.53	21.80
		2548.3	24.17	22.46	21.73
		2503.5	24.19	22.19	21.46
	36RB High (38)	2682.5	22.54	22.19	21.46
		2637.8	22.37	22.29	21.56
		2593	22.59	22.23	21.50
		2548.3	22.44	21.88	21.15
		2503.5	22.22	21.84	21.11
	36RB Middle (19)	2682.5	22.48	22.24	21.51
		2637.8	22.75	22.11	21.38
		2593	22.53	22.17	21.44
		2548.3	22.35	21.92	21.19
		2503.5	22.19	21.91	21.18
	36RB Low (0)	2682.5	22.59	22.24	21.51
		2637.8	22.69	22.35	21.62
		2593	22.49	22.15	21.42
		2548.3	22.29	21.85	21.12
		2503.5	22.14	21.80	21.07
	75RB (0)	2682.5	22.60	22.25	21.52
		2637.8	22.64	22.26	21.53
		2593	22.44	22.11	21.38
		2548.3	22.37	21.95	21.22
		2503.5	22.19	21.76	21.03
20 MHz	1RB High (99)	2680	24.52	22.68	21.95
		2636.5	24.74	22.62	21.89

		2593	24.36	22.51	21.78
		2549.5	24.13	22.34	21.61
		2506	24.19	22.36	21.63
	1RB Middle (50)	2680	24.46	22.72	21.99
		2636.5	24.79	22.30	21.57
		2593	24.57	22.39	21.66
		2549.5	24.17	22.36	21.63
		2506	24.27	22.39	21.22
	1RB Low (0)	2680	24.58	22.37	21.64
		2636.5	24.66	22.28	21.55
		2593	24.55	22.10	21.37
		2549.5	24.25	22.32	21.59
		2506	24.30	22.15	21.42
	50RB High (50)	2680	22.80	22.43	21.70
		2636.5	22.82	22.23	21.50
		2593	22.47	22.31	21.58
		2549.5	22.36	22.11	21.38
		2506	22.30	21.98	21.25
	50RB Middle (25)	2680	22.78	22.27	21.54
		2636.5	22.58	22.21	21.48
		2593	22.68	22.33	21.60
		2549.5	22.45	22.10	21.37
		2506	22.27	21.94	21.21
	50RB Low (0)	2680	22.52	22.37	21.64
		2636.5	22.79	22.40	21.67
		2593	22.60	22.08	21.35
		2549.5	22.36	22.03	21.30
		2506	22.22	21.75	21.02
	100RB (0)	2680	22.66	22.27	21.54
		2636.5	22.73	22.37	21.64
		2593	22.55	22.25	21.52
		2549.5	22.27	21.94	21.21
		2506	22.26	21.90	21.17

Band 66					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1779.3	24.06	21.64	20.59
		1745	24.15	21.85	20.66
		1710.7	24.14	21.98	20.79
	1RB Middle (3)	1779.3	24.11	21.74	20.55
		1745	24.17	21.92	20.73
		1710.7	24.23	22.03	20.84
	1RB Low (0)	1779.3	24.06	21.68	20.57
		1745	24.19	21.84	20.65
		1710.7	24.18	21.96	20.77
	3RB High (3)	1779.3	24.07	21.92	20.73
		1745	24.14	21.88	20.69
		1710.7	24.02	21.83	20.64
	3RB Middle (1)	1779.3	24.11	21.95	20.76
		1745	24.20	21.87	20.68
		1710.7	24.03	21.94	20.75
	3RB Low (0)	1779.3	24.02	21.88	20.69
		1745	24.13	21.88	20.69
		1710.7	23.98	21.91	20.72
	6RB (0)	1779.3	22.02	21.81	20.62
		1745	22.03	21.84	20.65
		1710.7	22.01	21.53	20.54
3 MHz	1RB High (14)	1778.5	24.10	21.56	20.57
		1745	24.14	22.11	20.92
		1711.5	24.08	21.72	20.53
	1RB Middle (7)	1778.5	24.20	21.69	20.50
		1745	24.28	22.23	21.04
		1711.5	24.29	21.79	20.60
	1RB Low (0)	1778.5	24.05	21.57	20.68
		1745	24.13	22.14	20.95
		1711.5	24.18	21.72	20.53
	8RB High (7)	1778.5	22.07	21.81	20.62
		1745	22.12	21.85	20.66
		1711.5	22.12	21.73	20.54
	8RB Middle (4)	1778.5	22.14	21.85	20.66
		1745	22.16	21.87	20.68
		1711.5	22.14	21.85	20.66
	8RB Low (0)	1778.5	22.12	21.84	20.65
		1745	22.13	21.83	20.64
		1711.5	22.13	21.71	20.52
	15RB (0)	1778.5	22.15	21.78	20.59
		1745	22.18	21.84	20.65
		1711.5	22.14	21.68	20.49
5 MHz	1RB High (24)	1777.5	24.07	21.79	20.60
		1745	24.24	21.92	20.73

		1712.5	24.07	22.23	21.04
	1RB Middle (12)	1777.5	24.16	21.79	20.60
		1745	24.29	21.94	20.75
		1712.5	24.18	22.24	21.05
	1RB Low (0)	1777.5	24.12	21.83	20.64
		1745	24.27	21.87	20.68
		1712.5	24.18	22.14	20.95
	12RB High (13)	1777.5	22.14	21.80	20.61
		1745	22.18	21.86	20.67
		1712.5	22.13	21.89	20.70
	12RB Middle (6)	1777.5	22.19	21.84	20.65
		1745	22.20	21.93	20.74
		1712.5	22.15	21.92	20.73
	12RB Low (0)	1777.5	22.15	21.83	20.64
		1745	22.17	21.87	20.68
		1712.5	22.14	21.90	20.71
	25RB (0)	1777.5	22.15	21.72	20.53
		1745	22.20	21.84	20.65
		1712.5	22.16	21.81	20.62
10 MHz	1RB High (49)	1775	24.05	21.66	20.76
		1745	24.11	21.67	20.69
		1715	24.07	22.16	20.97
	1RB Middle (24)	1775	24.14	21.74	20.55
		1745	24.19	21.70	20.51
		1715	24.17	22.13	20.94
	1RB Low (0)	1775	24.11	21.71	20.52
		1745	24.16	21.65	20.56
		1715	24.25	22.04	20.85
	25RB High (25)	1775	22.19	21.84	20.65
		1745	22.17	21.83	20.64
		1715	22.14	21.87	20.68
	25RB Middle (12)	1775	22.13	21.87	20.68
		1745	22.22	21.86	20.67
		1715	22.20	21.85	20.66
	25RB Low (0)	1775	22.17	21.84	20.65
		1745	22.17	21.82	20.63
		1715	22.14	21.79	20.60
	50RB (0)	1775	22.12	21.80	20.61
		1745	22.22	21.82	20.63
		1715	22.16	21.82	20.63
15 MHz	1RB High (74)	1772.5	24.10	22.05	20.86
		1745	24.08	21.64	20.69
		1717.5	24.13	22.15	20.96
	1RB Middle (37)	1772.5	24.10	22.10	20.91
		1745	24.11	21.65	20.81
		1717.5	24.11	22.18	20.99
	1RB Low (0)	1772.5	24.10	22.00	20.81
		1745	24.17	21.59	20.83

		1717.5	24.21	22.07	20.88
	36RB High (38)	1772.5	22.15	21.67	20.48
		1745	22.18	21.75	20.56
		1717.5	22.14	21.89	20.70
	36RB Middle (19)	1772.5	22.17	21.72	20.53
		1745	22.20	21.82	20.63
		1717.5	22.16	21.87	20.68
	36RB Low (0)	1772.5	22.11	21.69	20.50
		1745	22.12	21.74	20.55
		1717.5	22.11	21.81	20.62
	75RB (0)	1772.5	22.14	21.72	20.53
		1745	22.13	21.83	20.64
		1717.5	22.16	21.82	20.63
20 MHz	1RB High (99)	1770	24.07	22.18	20.99
		1745	24.12	22.19	21.00
		1720	24.18	22.12	20.93
	1RB Middle (50)	1770	24.06	22.15	20.96
		1745	24.13	22.20	21.01
		1720	24.12	22.19	21.00
	1RB Low (0)	1770	24.14	22.16	20.97
		1745	24.15	22.12	20.93
		1720	24.17	22.03	20.84
	50RB High (50)	1770	22.10	21.77	20.58
		1745	22.21	21.88	20.69
		1720	22.20	21.83	20.64
	50RB Middle (25)	1770	22.15	21.77	20.58
		1745	22.22	21.85	20.66
		1720	22.20	21.84	20.65
	50RB Low (0)	1770	22.15	21.78	20.59
		1745	22.20	21.81	20.62
		1720	22.17	21.76	20.57
	100RB (0)	1770	22.19	21.79	20.60
		1745	22.15	21.82	20.63
		1720	22.16	21.85	20.66

Low power

Table 11.3-2: The conducted Power for LTE

Band 25					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	QPSK	16QAM	64QAM
	RB offset (Start RB)		Actual output power (dBm)	Actual output power (dBm)	Actual output power (dBm)
1.4 MHz	1RB High (5)	1914.3	19.78	20.03	19.84
		1882.5	20.09	20.22	20.03
		1850.7	20.11	20.56	20.37
	1RB Middle (3)	1914.3	19.89	20.06	19.87
		1882.5	20.12	20.28	20.09
		1850.7	20.17	20.62	20.43
	1RB Low (0)	1914.3	19.83	19.99	19.80
		1882.5	20.12	20.17	19.98
		1850.7	20.08	20.57	20.38
	3RB High (3)	1914.3	19.87	20.18	19.99
		1882.5	20.04	20.17	19.98
		1850.7	20.10	20.39	20.20
	3RB Middle (1)	1914.3	19.93	20.28	20.09
		1882.5	20.08	20.22	20.03
		1850.7	20.17	20.48	20.29
	3RB Low (0)	1914.3	19.87	20.19	20.00
		1882.5	20.03	20.17	19.98
		1850.7	20.13	20.44	20.25
	6RB (0)	1914.3	19.86	20.17	19.98
		1882.5	20.06	20.30	20.11
		1850.7	20.04	20.12	19.93
3 MHz	1RB High (14)	1913.5	19.92	20.01	19.82
		1882.5	20.12	20.08	19.89
		1851.5	20.10	20.51	20.32
	1RB Middle (7)	1913.5	19.95	20.16	19.97
		1882.5	20.27	20.23	20.04
		1851.5	20.25	20.70	20.51
	1RB Low (0)	1913.5	19.96	20.08	19.89
		1882.5	20.11	20.09	19.90
		1851.5	20.08	20.52	20.33
	8RB High (7)	1913.5	19.97	20.10	19.91
		1882.5	20.13	20.31	20.12
		1851.5	20.13	20.27	20.08
	8RB Middle (4)	1913.5	20.01	20.12	19.93
		1882.5	20.18	20.35	20.16
		1851.5	20.13	20.30	20.11
	8RB Low (0)	1913.5	20.01	20.10	19.91
		1882.5	20.17	20.35	20.16
		1851.5	20.14	20.29	20.10
	15RB (0)	1913.5	19.97	20.02	19.83
		1882.5	20.16	20.26	20.07
		1851.5	20.11	20.27	20.08

5 MHz	1RB High (24)	1912.5	20.26	20.11	19.92
		1882.5	20.26	20.34	20.15
		1852.5	20.06	20.65	20.46
	1RB Middle (12)	1912.5	19.98	20.13	19.94
		1882.5	20.32	20.40	20.21
		1852.5	20.09	20.75	20.56
	1RB Low (0)	1912.5	20.24	20.10	19.91
		1882.5	20.23	20.40	20.21
		1852.5	20.07	20.71	20.52
	12RB High (13)	1912.5	19.93	20.15	19.96
		1882.5	20.17	20.29	20.10
		1852.5	20.14	20.37	20.18
	12RB Middle (6)	1912.5	20.24	20.18	19.99
		1882.5	20.18	20.32	20.13
		1852.5	20.16	20.39	20.20
	12RB Low (0)	1912.5	19.99	20.14	19.95
		1882.5	20.16	20.35	20.16
		1852.5	20.17	20.43	20.24
	25RB (0)	1912.5	19.96	20.02	19.83
		1882.5	20.18	20.27	20.08
		1852.5	20.15	20.32	20.13
10 MHz	1RB High (49)	1910	19.90	19.97	19.78
		1882.5	20.24	20.22	20.03
		1855	20.15	20.65	20.46
	1RB Middle (24)	1910	19.94	20.06	19.87
		1882.5	20.20	20.18	19.99
		1855	20.14	20.59	20.40
	1RB Low (0)	1910	19.94	20.09	19.90
		1882.5	20.22	20.25	20.06
		1855	20.19	20.68	20.49
	25RB High (25)	1910	19.98	20.13	19.94
		1882.5	20.17	20.21	20.02
		1855	20.08	20.27	20.08
	25RB Middle (12)	1910	20.00	20.17	19.98
		1882.5	20.22	20.31	20.12
		1855	20.15	20.32	20.13
	25RB Low (0)	1910	19.95	20.14	19.95
		1882.5	20.18	20.26	20.07
		1855	20.09	20.26	20.07
	50RB (0)	1910	19.99	20.09	19.90
		1882.5	20.19	20.24	20.05
		1855	20.10	20.29	20.10
15 MHz	1RB High (74)	1907.5	20.34	20.39	20.20
		1882.5	20.43	20.12	19.93
		1857.5	20.15	20.58	20.39
	1RB Middle (37)	1907.5	20.20	20.42	20.23
		1882.5	20.17	20.12	19.93
		1857.5	20.21	20.64	20.45

	1RB Low (0)	1907.5	20.18	20.46	20.27
		1882.5	20.13	20.10	19.91
		1857.5	20.19	20.68	20.49
	36RB High (38)	1907.5	20.24	20.05	19.86
		1882.5	20.18	20.27	20.08
		1857.5	20.20	20.35	20.16
	36RB Middle (19)	1907.5	20.22	20.04	19.85
		1882.5	20.22	20.33	20.14
		1857.5	20.26	20.42	20.23
	36RB Low (0)	1907.5	20.18	20.05	19.86
		1882.5	20.19	20.28	20.09
		1857.5	20.20	20.36	20.17
	75RB (0)	1907.5	20.22	20.06	19.87
		1882.5	20.17	20.30	20.11
		1857.5	20.23	20.36	20.17
20 MHz	1RB High (99)	1905	20.18	20.43	20.24
		1882.5	20.20	20.66	20.47
		1860	20.17	20.86	20.67
	1RB Middle (50)	1905	20.19	20.49	20.30
		1882.5	20.19	20.63	20.44
		1860	20.17	20.86	20.67
	1RB Low (0)	1905	20.16	20.49	20.30
		1882.5	20.19	20.64	20.45
		1860	20.18	20.83	20.64
	50RB High (50)	1905	20.17	20.09	19.90
		1882.5	20.19	20.27	20.08
		1860	20.22	20.39	20.20
	50RB Middle (25)	1905	20.26	20.15	19.96
		1882.5	20.21	20.29	20.10
		1860	20.28	20.38	20.19
	50RB Low (0)	1905	20.16	20.12	19.93
		1882.5	20.20	20.25	20.06
		1860	20.21	20.37	20.18
	100RB (0)	1905	20.22	20.13	19.94
		1882.5	20.20	20.28	20.09
		1860	20.23	20.36	20.17

Band 66					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1779.3	19.99	20.17	20.08
		1745	20.06	20.34	20.25
		1710.7	20.02	20.53	20.44
	1RB Middle (3)	1779.3	20.02	20.21	20.12
		1745	20.12	20.44	20.35
		1710.7	20.08	20.59	20.50
	1RB Low (0)	1779.3	19.94	20.15	20.06
		1745	20.06	20.34	20.25
		1710.7	20.03	20.50	20.41
	3RB High (3)	1779.3	20.00	20.32	20.23
		1745	20.11	20.40	20.31
		1710.7	20.11	20.35	20.26
	3RB Middle (1)	1779.3	20.14	20.45	20.36
		1745	20.18	20.45	20.36
		1710.7	20.19	20.48	20.39
	3RB Low (0)	1779.3	20.03	20.37	20.28
		1745	20.10	20.38	20.29
		1710.7	20.09	20.45	20.36
	6RB (0)	1779.3	19.96	20.29	20.20
		1745	20.06	20.32	20.23
		1710.7	19.98	20.08	19.99
3 MHz	1RB High (14)	1778.5	19.98	20.20	20.11
		1745	20.06	20.12	20.03
		1711.5	20.02	20.59	20.50
	1RB Middle (7)	1778.5	20.12	20.31	20.22
		1745	20.15	20.25	20.16
		1711.5	20.21	20.69	20.60
	1RB Low (0)	1778.5	20.01	20.26	20.17
		1745	20.02	20.15	20.06
		1711.5	20.07	20.58	20.49
	8RB High (7)	1778.5	20.04	20.21	20.12
		1745	20.08	20.38	20.29
		1711.5	20.07	20.27	20.18
	8RB Middle (4)	1778.5	20.11	20.28	20.19
		1745	20.14	20.39	20.30
		1711.5	20.14	20.35	20.26
	8RB Low (0)	1778.5	20.02	20.23	20.14
		1745	20.09	20.34	20.25
		1711.5	20.10	20.29	20.20
	15RB (0)	1778.5	20.09	20.17	20.08
		1745	20.15	20.33	20.24
		1711.5	20.14	20.28	20.19
5 MHz	1RB High (24)	1777.5	20.09	20.27	20.18
		1745	20.15	20.44	20.35

		1712.5	20.03	20.74	20.65
	1RB Middle (12)	1777.5	20.10	20.27	20.18
		1745	20.18	20.41	20.32
		1712.5	20.04	20.77	20.68
	1RB Low (0)	1777.5	20.04	20.28	20.19
		1745	20.18	20.36	20.27
		1712.5	20.01	20.72	20.63
	12RB High (13)	1777.5	20.07	20.27	20.18
		1745	20.12	20.40	20.31
		1712.5	20.12	20.46	20.37
	12RB Middle (6)	1777.5	20.13	20.31	20.22
		1745	20.18	20.42	20.33
		1712.5	20.15	20.46	20.37
	12RB Low (0)	1777.5	20.11	20.29	20.20
		1745	20.15	20.40	20.31
		1712.5	20.13	20.40	20.31
	25RB (0)	1777.5	20.14	20.16	20.07
		1745	20.20	20.37	20.28
		1712.5	20.16	20.34	20.25
10 MHz	1RB High (49)	1775	20.06	20.15	20.06
		1745	20.04	20.15	20.06
		1715	20.07	20.62	20.53
	1RB Middle (24)	1775	20.13	20.24	20.15
		1745	20.06	20.19	20.10
		1715	20.13	20.69	20.60
	1RB Low (0)	1775	20.06	20.22	20.13
		1745	20.06	20.19	20.10
		1715	20.09	20.57	20.48
	25RB High (25)	1775	20.17	20.29	20.20
		1745	20.20	20.36	20.27
		1715	20.17	20.36	20.27
	25RB Middle (12)	1775	20.16	20.34	20.25
		1745	20.20	20.39	20.30
		1715	20.19	20.38	20.29
	25RB Low (0)	1775	20.14	20.34	20.25
		1745	20.15	20.35	20.26
		1715	20.14	20.36	20.27
	50RB (0)	1775	20.18	20.22	20.13
		1745	20.21	20.28	20.19
		1715	20.16	20.33	20.24
15 MHz	1RB High (74)	1772.5	20.06	20.57	20.48
		1745	20.04	20.18	20.09
		1717.5	20.08	20.66	20.57
	1RB Middle (37)	1772.5	20.05	20.65	20.56
		1745	20.04	20.19	20.10
		1717.5	20.11	20.68	20.59
	1RB Low (0)	1772.5	20.07	20.59	20.50
		1745	20.05	20.15	20.06

		1717.5	20.10	20.58	20.49
	36RB High (38)	1772.5	20.08	20.14	20.05
		1745	20.15	20.27	20.18
		1717.5	20.10	20.35	20.26
	36RB Middle (19)	1772.5	20.06	20.20	20.11
		1745	20.16	20.28	20.19
		1717.5	20.17	20.37	20.28
	36RB Low (0)	1772.5	20.04	20.11	20.02
		1745	20.08	20.26	20.17
		1717.5	20.05	20.30	20.21
	75RB (0)	1772.5	20.04	20.13	20.04
		1745	20.13	20.27	20.18
		1717.5	20.09	20.28	20.19
20 MHz	1RB High (99)	1770	19.99	20.68	20.59
		1745	20.04	20.73	20.64
		1720	20.10	20.68	20.59
	1RB Middle (50)	1770	19.99	20.68	20.59
		1745	20.08	20.72	20.63
		1720	20.06	20.71	20.62
	1RB Low (0)	1770	20.06	20.75	20.66
		1745	20.02	20.61	20.52
		1720	20.02	20.60	20.51
	50RB High (50)	1770	20.11	20.22	20.13
		1745	20.14	20.37	20.28
		1720	20.18	20.29	20.20
	50RB Middle (25)	1770	20.08	20.27	20.18
		1745	20.18	20.40	20.31
		1720	20.23	20.33	20.24
	50RB Low (0)	1770	20.14	20.32	20.23
		1745	20.17	20.31	20.22
		1720	20.14	20.31	20.22
	100RB (0)	1770	20.12	20.33	20.24
		1745	20.12	20.33	20.24
		1720	20.14	20.30	20.21

The device supports downlink Release 10 LTE Carrier Aggregation (CA) only. It supports 2 and 3 carriers in the downlink. Other Release 10 features are not supported, including Uplink Carrier Aggregation, Enhanced SC-FDMA and Uplink MIMO or other antenna diversity configurations etc. All uplink communications are identical to the Release 8 Specifications. According to KDB 941225 D05A, the downlink LTE CA SAR test is not required and PAG requirements can be excluded.

The following conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A. Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

The conducted power measurement results of downlink LTE CA are as below – Normal power:

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Band width (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Band width (MHz)	SCC DL Channel	Rel 8 LTETx Power (dBm)	Rel 10 DL LTE CA Tx Power (dBm)
7A-4A	7	5	1	24	25	0	21100	3100	4	20	2175	23.22	23.20
7A-2A	7	5	1	24	25	0	21100	3100	2	20	900	23.22	23.16
7A-5A	7	5	1	24	25	0	21100	3100	5	10	2525	23.22	23.10
7A-28A	7	5	1	24	25	0	21100	3100	28	20	9460	23.22	23.20
7C	7	15	1	74	75	0	21375	3375	7	15	3225	23.18	21.84
66A-66A	66	10	1	0	50	0	132022	66486	66	20	67236	24.25	21.37

Note: Testing is not required in bands or modes not intended/allowed for US operation.

The conducted power measurement results of downlink LTE CA are as below – Low power:

DL LTE CA Class	PCC								SCC			Power	
	PCC Band	PCC Band width (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Band width (MHz)	SCC DL Channel	Rel 8 LTETx Power (dBm)	Rel 10 DL LTE CA Tx Power (dBm)
66A-66A	66	20	50	25	100	0	132072	66536	66	20	67236	20.23	19.52

Note: Testing is not required in bands or modes not intended/allowed for US operation.

11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 8.22dBm.
The maximum tune up of BT antenna is 11dBm.

The average conducted power for Wi-Fi is as following:

Normal Power

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	19.09	/	19.47	/
6	18.07	/	18.38	/
11	19.30	19.50	19.51	19.26
Tune up	19.5	19.6	19.6	19.5

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	18.58	/	/	19.15	/	/	/	/
6	17.65	/	/	18.43	/	/	/	/
11	18.61	18.54	18.53	19.27	18.28	18.06	18.08	18.05
Tune up	19	19	19	19.3	18.5	18.5	18.5	18.5

802.11n (dBm) - HT20 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	18.35	/	/	/	/	/	/	/
6	17.40	/	/	/	/	/	/	/
11	18.38	18.23	18.32	18.28	17.18	17.14	17.18	17.16
Tune up	18.5	18.5	18.5	18.5	17.5	17.5	17.5	17.5

802.11n (dBm) – HT40 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
3	17.81	/	/	/	/	/	/	/
6	17.69	/	/	/	/	/	/	/
9	17.89	17.88	17.85	17.76	17.70	16.41	16.43	15.87
Tune up	18	18	18	18	18	17	17	17

802.11a (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
36	16.15	/	/	/	/	/	/	/
40	16.45	/	/	/	/	/	/	/
44	16.84	/	/	/	/	/	/	/
48	17.38	16.83	16.14	16.91	15.83	15.14	15.18	15.09
Tune up	17.5	17	17	17	16.5	16.5	16	16
52	17.67	/	/	/	/	/	/	/
56	17.75	17.61	16.55	17.44	16.16	15.62	15.60	15.56
60	17.64	/	/	/	/	/	/	/
64	17.21	/	/	/	/	/	/	/
Tune up	17.8	17.8	17	17.5	17	16	16	16
100	16.63	/	/	/	/	/	/	/
104	16.97	/	/	/	/	/	/	/
108	17.31	/	/	/	/	/	/	/
112	17.42	/	/	/	/	/	/	/
116	17.41	/	/	/	/	/	/	/
120	17.69	/	/	/	/	/	/	/
124	17.60	/	/	/	/	/	/	/
128	17.74	/	/	/	/	/	/	/
132	17.90	/	/	/	/	/	/	/
136	18.25	/	/	/	/	/	/	/
140	18.49	18.46	17.26	18.27	17.27	16.46	16.48	16.41
144	18.43	/	/	/	/	/	/	/
Tune up	18.6	18.5	17.5	18.3	17.5	17	17	17
149	18.33	18.28	17.35	18.19	17.07	16.43	16.39	16.40
153	17.99	/	/	/	/	/	/	/
157	17.47	/	/	/	/	/	/	/
Tune up	18.5	18.3	17.5	18.3	17.5	17	17	17
161	16.89	/	/	/	/	/	/	/
165	16.54	/	/	/	/	/	/	/
Tune up	17.2	/	/	/	/	/	/	/

Low Power

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	15.71	/	/	17.63
6	15.81	/	/	16.55
11	17.30	17.41	17.66	17.68
Tune up	17.5	17.5	17.7	17.7

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	16.25	/	/	17.01	/	/	/	/
6	15.13	/	/	15.90	/	/	/	/
11	16.45	16.41	16.39	17.22	16.00	15.79	15.79	15.80
Tune up	16.5	16.5	16.5	17.3	16	16	16	16

802.11n (dBm) - HT20 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	16.05	/	/	/	/	/	/	/
6	14.97	/	/	/	/	/	/	/
11	16.26	16.12	16.03	16.00	14.82	14.81	14.84	14.76
Tune up	16.5	16.5	16.5	16	16	16	16	16

802.11n (dBm) – HT40 (2.4G)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
3	15.60	/	/	/	/	/	/	/
6	14.52	/	/	/	/	/	/	/
9	15.81	15.67	15.58	15.55	14.37	14.36	14.39	14.31
Tune up	16	16	16	16	16	15	15	15

802.11n-20M (dBm)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
36	13.51	/	/	/	/	/	/	/
40	14.09	/	/	/	/	/	/	/
44	14.61	/	/	/	/	/	/	/
48	15.26	15.07	14.89	14.85	13.37	13.38	13.44	13.34
Tune up	15.5	15.5	15.5	15.5	14	14	14	14

802.11ac-80M (dBm)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
58	14.22	13.43	13.48	13.36	12.88	12.72	11.69	11.71	9.87	9.26
Tune up	15	14.5	14.5	14.5	13.5	13.5	12.5	12.5	11.5	11

802.11ac-40M (dBm)

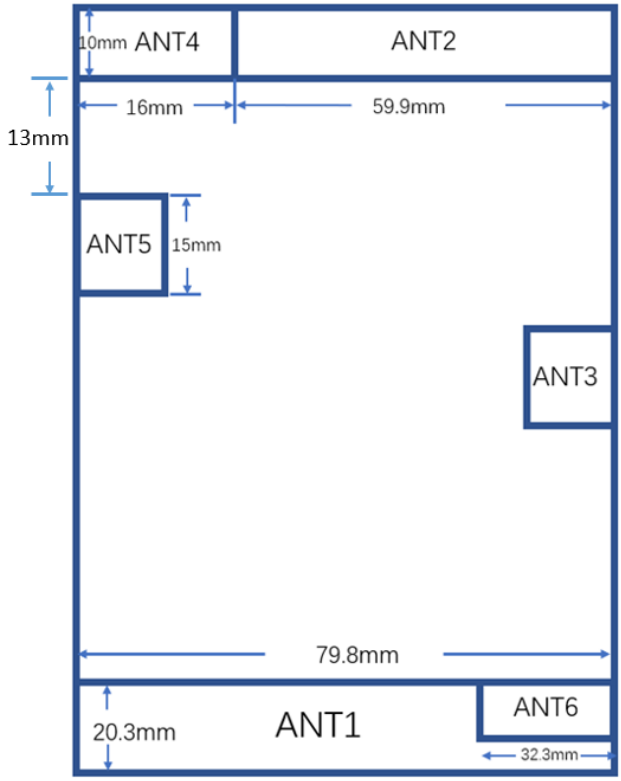
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
102	13.52	/	/	/	/	/	/	/	/	/
110	14.08	/	/	/	/	/	/	/	/	/
118	13.54	/	/	/	/	/	/	/	/	/
126	14.40	/	/	/	/	/	/	/	/	/
134	15.25	/	/	/	/	/	/	/	/	/
142	15.49	15.11	15.09	14.95	14.50	14.45	13.46	13.41	11.60	11.54
Tune up	16	15.5	15.5	15.5	15	15	14	14	12	12
151	14.94	14.69	14.67	14.57	13.99	13.97	12.98	12.93	11.08	11.04
159	14.05	/	/	/	/	/	/	/	/	/
Tune up	15.5	15.5	15.5	15.5	15	15	14	14	12	12

12 Simultaneous TX SAR Considerations

12.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g and Bluetooth devices which may simultaneously transmit with the licensed transmitter.
For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters.

12.2 Transmit Antenna Separation Distances



ANT1:Priamry Antenna
2G:GSM850/900/1800/1900
3G:WCDMA B1/B2/B3/B4/B5/B8
4G:LTE B1/B2/B3/B4/B5/B8/
B25/B26/B66
ANT2:Priamry Antenna
4G:LTE B12/B13/B17/B28
ANT3:Priamry Antenna
LTE B7/B38/B40/B41
ANT4:2.4G WIFI/GPS/BT
ANT5:5G WIFI Antenna
ANT6:High Band Diversity
Antenna

Picture 12.1 Antenna Locations

12.3 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR v01, the edges with less than 2.5 cm distance to the antennas need to be tested for SAR.

SAR measurement positions						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
ANT1	Yes	Yes	Yes	Yes	No	Yes
ANT2	Yes	Yes	Yes	Yes	Yes	No
ANT3	Yes	Yes	Yes	No	No	No
ANT4	Yes	Yes	No	Yes	Yes	No
ANT5	Yes	Yes	No	Yes	Yes	No

12.4 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold 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, where

- 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

Table 12.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	Position	SAR test exclusion threshold(mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.441	Head	9.60	11	12.59	No
		Body	19.20	11	12.59	Yes
2.4GHz WLAN	2.45	Head	9.58	19.6	91.2	No
		Body	19.17	19.6	91.2	No

13 Evaluation of Simultaneous

Table 13.1: The sum of reported SAR values for cellular antenna and WiFi

	Position	Band	Cellular antenna	WiFi	Sum
Highest reported SAR value for Head	Left hand, Tilt 15°	LTE B12	0.98	0.49	**1.47**
Highest reported SAR value for Body	Rear 10mm	LTE B66	0.91	0.49	**1.40**

Note1: we have evaluated and chose the highest value of WiFi 2.4G and 5G in the above table.
Note2: we have evaluated and chose the highest value of body 10mm and 15mm in the above table.

Table 13.2: The sum of reported SAR values for cellular antenna and BT

	Position	Band	Cellular antenna	BT	Sum
Maximum reported SAR value for Head	Right hand, Touch cheek	LTE B7	1.12	<0.01[1]	**1.12**
Maximum reported SAR value for Body	Rear 10mm	LTE B66	0.91	0.26[2]	**1.17**
	Bottom 10mm	LTE B66	1.22	/	**1.22**
	Rear 15mm	LTE B66	1.00	0.17[2]	**1.17**

[1] – The head SAR of BT is too low to get it, so the "<0.01" is used to indicate the head SAR of BT.
[2] - Estimated SAR for Bluetooth (see the table 13.3)

Table 13.3: Estimated SAR for Bluetooth

Mode/Band	F (GHz)	Position	Distance (mm)	Upper limit of power *		Estimated$_{1g}$ (W/kg)
				dBm	mW	
Bluetooth	2.441	Body	10	11	12.59	0.26
Bluetooth	2.441	Body	15	11	12.59	0.17

* - Maximum possible output power declared by manufacturer

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

Conclusion:
According to the above tables, the sum of reported SAR values is<1.6W/kg. So the simultaneous transmission SAR with volume scans is not required.

14 SAR Test Result

It is determined by user manual for the distance between the EUT and the phantom bottom. The distance is 10 mm or 15mm and just applied to the condition of body worn accessory.

It is performed for all SAR measurements with area scan based 1-g SAR estimation (Fast SAR). A zoom scan measurement is added when the estimated 1-gSAR is the highest measured SAR in each exposure configuration, wireless mode and frequency band combination or more than 1.2W/kg.

The calculated SAR is obtained by the following formula:

$$\text{Reported SAR} = \text{Measured SAR} \times 10^{(P_{Target}-P_{Measured})/10}$$

Where P_{Target} is the power of manufacturing upper limit;

$P_{Measured}$ is the measured power in chapter 11.

Table 14.1: Duty Cycle

Mode	Duty Cycle
GSM850	1:2.67
GSM1900	1:4
WCDMA&LTE FDD	1:1
LTE TDD	1:1.58

Note；

B1: the battery of TLp038D7 by VEKEN

B2: the battery of TLp038D1 by BYD

H: the headset of SOCL110WTT-EU by TES

C: the plastics battery cover

14.1 SAR results for Fast SAR

Table 14.1-1: SAR Values (GSM 850 MHz Band - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	Left	Touch	/	29.79	31.5	0.148	**0.22**	0.193	**0.29**	-0.05
190	836.6	Left	Tilt	/	29.79	31.5	0.071	**0.11**	0.093	**0.14**	0.12
251	848.8	Right	Touch	Fig.1	29.87	31.5	0.187	**0.27**	0.252	**0.37**	-0.07
190	836.6	Right	Touch	/	29.79	31.5	0.165	**0.24**	0.222	**0.33**	0.04
128	824.2	Right	Touch	/	29.52	31.5	0.173	**0.27**	0.231	**0.36**	-0.08
190	836.6	Right	Tilt	/	29.79	31.5	0.090	**0.13**	0.118	**0.17**	0.08
251	848.8	Right	Touch	B2	29.87	31.5	0.169	**0.25**	0.241	**0.35**	0.03

Note: the head SAR of GSM850 is tested with GPRS (3Txslots) mode because of VoIP.

Table 14.1-2: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	GPRS (3)	Front	/	29.79	31.5	0.201	**0.30**	0.353	**0.52**	-0.03
251	848.8	GPRS (3)	Rear	/	29.87	31.5	0.260	**0.38**	0.463	**0.67**	0.13
190	836.6	GPRS (3)	Rear	/	29.79	31.5	0.274	**0.41**	0.471	**0.70**	0.12
128	824.2	GPRS (3)	Rear	Fig.2	29.52	31.5	0.270	**0.43**	0.476	**0.75**	-0.01
190	836.6	GPRS (3)	Left	/	29.79	31.5	0.066	**0.10**	0.140	**0.21**	0.05
190	836.6	GPRS (3)	Right	/	29.79	31.5	0.111	**0.16**	0.191	**0.28**	0.00
190	836.6	GPRS (3)	Bottom	/	29.79	31.5	0.119	**0.18**	0.284	**0.42**	0.05
128	824.2	EGPRS (3)	Rear	/	29.48	31.5	0.267	**0.43**	0.465	**0.74**	-0.09
128	824.2	GPRS (3)	Rear	B2	29.52	31.5	0.253	**0.40**	0.455	**0.72**	0.08

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-3: SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
810	1909.8	Left	Touch	/	28.46	29.5	0.019	**0.02**	0.031	**0.04**	-0.03
661	1880	Left	Touch	Fig.3	28.19	29.5	0.024	**0.03**	0.039	**0.05**	-0.02
512	1850.2	Left	Touch	/	28.05	29.5	0.021	**0.03**	0.034	**0.05**	-0.13
661	1880	Left	Tilt	/	28.19	29.5	0.015	**0.02**	0.027	**0.04**	-0.04
661	1880	Right	Touch	/	28.19	29.5	0.020	**0.03**	0.030	**0.04**	-0.08
661	1880	Right	Tilt	/	28.19	29.5	0.014	**0.02**	0.025	**0.03**	0.09
661	1880	Left	Touch	B2	28.19	29.5	0.019	**0.03**	0.033	**0.04**	-0.06

Note: the head SAR of GSM1900 is tested with GPRS (3Txslots) mode because of VoIP.

Table 14.1-4: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	/	26.88	27	0.111	**0.11**	0.202	**0.21**	0.02
661	1880	GPRS (2)	Rear	/	26.88	27	0.159	**0.16**	0.315	**0.32**	-0.05
661	1880	GPRS (2)	Left	/	26.88	27	0.048	**0.05**	0.064	**0.07**	0.09
661	1880	GPRS (2)	Right	/	26.88	27	0.024	**0.02**	0.048	**0.05**	0.13
810	1909.8	GPRS (2)	Bottom	Fig.4	26.94	27	0.234	**0.24**	0.468	**0.47**	0.02
661	1880	GPRS (2)	Bottom	/	26.88	27	0.163	**0.17**	0.316	**0.32**	0.12
512	1850.2	GPRS (2)	Bottom	/	26.87	27	0.19	**0.20**	0.367	**0.38**	-0.08
810	1909.8	EGPRS (2)	Bottom	/	26.92	27	0.193	**0.20**	0.369	**0.38**	0.13
810	1909.8	GPRS (2)	Bottom	B2	26.94	27	0.221	**0.22**	0.456	**0.46**	0.05

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-5: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	/	28.19	29.5	0.105	**0.14**	0.177	**0.24**	-0.03
810	1909.8	GPRS (2)	Rear	/	28.46	29.5	0.112	**0.14**	0.191	**0.24**	-0.05
661	1880	GPRS (2)	Rear	Fig.5	28.19	29.5	0.168	**0.23**	0.287	**0.39**	-0.13
512	1850.2	GPRS (2)	Rear	/	28.05	29.5	0.1	**0.14**	0.171	**0.24**	-0.01
661	1880	EGPRS (2)	Rear	/	28.23	29.5	0.158	**0.21**	0.273	**0.37**	0.12
661	1880	GPRS (2)	Rear	B2	28.19	29.5	0.155	**0.21**	0.269	**0.36**	-0.08

Note: The distance between the EUT and the phantom bottom is 15mm.

Table 14.1-6: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
4182	836.4	Left	Touch	/	24.47	25	0.140	**0.16**	0.184	**0.21**	0.08
4182	836.4	Left	Tilt	/	24.47	25	0.114	**0.13**	0.147	**0.17**	0.04
4233	846.6	Right	Touch	/	24.44	25	0.176	**0.20**	0.240	**0.27**	-0.05
4182	836.4	Right	Touch	Fig.6	24.47	25	0.197	**0.22**	0.266	**0.30**	-0.05
4132	826.4	Right	Touch	/	24.60	25	0.184	**0.20**	0.248	**0.27**	0.13
4182	836.4	Right	Tilt	/	24.47	25	0.077	**0.09**	0.103	**0.12**	-0.13
4182	836.4	Right	Touch	B2	24.47	25	0.189	**0.21**	0.251	**0.28**	-0.06

Table 14.1-7: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4182	836.4	Front	/	24.47	25	0.236	**0.27**	0.436	**0.49**	0.10
4233	846.6	Rear	/	24.44	25	0.254	**0.29**	0.530	**0.60**	-0.11
4182	836.4	Rear	Fig.7	24.47	25	0.299	**0.34**	0.545	**0.62**	-0.08
4132	826.4	Rear	/	24.60	25	0.293	**0.32**	0.537	**0.59**	0.05
4182	836.4	Left	/	24.47	25	0.052	**0.06**	0.124	**0.14**	0.06
4182	836.4	Right	/	24.47	25	0.155	**0.18**	0.287	**0.32**	-0.11
4182	836.4	Bottom	/	24.47	25	0.160	**0.18**	0.417	**0.47**	0.04
4182	836.4	Rear	B2	24.47	25	0.288	**0.33**	0.536	**0.61**	0.09

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-8: SAR Values (WCDMA 1700 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
1513	1752.6	Left	Touch	/	23.59	24.5	0.035	**0.04**	0.055	**0.07**	-0.03
1412	1732.4	Left	Touch	Fig.8	23.57	24.5	0.049	**0.06**	0.078	**0.10**	0.12
1312	1712.4	Left	Touch	/	23.56	24.5	0.038	**0.05**	0.060	**0.07**	0.00
1412	1732.4	Left	Tilt	/	23.57	24.5	0.026	**0.03**	0.043	**0.05**	0.00
1412	1732.4	Right	Touch	/	23.57	24.5	0.023	**0.03**	0.037	**0.05**	0.05
1412	1732.4	Right	Tilt	/	23.57	24.5	0.021	**0.03**	0.028	**0.03**	-0.08
1412	1732.4	Left	Touch	B2	23.57	24.5	0.044	**0.05**	0.072	**0.09**	0.09

Table 14.1-9: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Front	/	20.51	21	0.252	**0.28**	0.460	**0.51**	-0.01
1513	1752.6	Rear	/	20.58	21	0.442	**0.49**	0.815	**0.90**	-0.06
1412	1732.4	Rear	/	20.51	21	0.440	**0.49**	0.808	**0.90**	-0.09
1312	1712.4	Rear	/	20.56	21	0.435	**0.48**	0.800	**0.89**	-0.07
1412	1732.4	Left	/	20.51	21	0.000	**0.00**	0.000	**0.00**	0.04
1412	1732.4	Right	/	20.51	21	0.090	**0.10**	0.170	**0.19**	0.01
1513	1752.6	Bottom	/	20.58	21	0.527	**0.58**	1.01	**1.11**	-0.01
1412	1732.4	Bottom	Fig.9	20.51	21	0.553	**0.62**	1.06	**1.19**	0.02
1312	1712.4	Bottom	/	20.56	21	0.533	**0.59**	1.02	**1.13**	-0.04
1412	1732.4	Bottom	B2	20.51	21	0.532	**0.60**	1.02	**1.14**	0.04

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-10: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Front	/	23.57	24.5	0.252	**0.31**	0.428	**0.53**	-0.08
1513	1752.6	Rear	/	23.59	24.5	0.422	**0.52**	0.728	**0.90**	-0.01
1412	1732.4	Rear	Fig.10	23.57	24.5	0.454	**0.56**	0.783	**0.97**	0.01
1312	1712.4	Rear	/	23.56	24.5	0.424	**0.53**	0.732	**0.91**	0.12
1412	1732.4	Rear	B2	23.57	24.5	0.448	**0.55**	0.776	**0.96**	0.04

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.1-11: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
9538	1907.6	Left	Touch	/	24.47	24.8	0.047	**0.05**	0.078	**0.08**	0.09
9400	1880	Left	Touch	/	24.54	24.8	0.036	**0.04**	0.060	**0.06**	0.12
9262	1852.4	Left	Touch	Fig.11	24.74	24.8	0.050	**0.05**	0.082	**0.08**	0.12
9400	1880	Left	Tilt	/	24.54	24.8	0.028	**0.03**	0.053	**0.06**	0.13
9400	1880	Right	Touch	/	24.54	24.8	0.023	**0.02**	0.040	**0.04**	-0.07
9400	1880	Right	Tilt	/	24.54	24.8	0.020	**0.02**	0.035	**0.04**	0.04
9262	1852.4	Left	Touch	B2	24.74	24.8	0.047	**0.05**	0.078	**0.08**	-0.06

Table 14.1-12: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	20.51	21	0.159	**0.18**	0.284	**0.32**	0.10
9400	1880	Rear	/	20.51	21	0.304	**0.34**	0.571	**0.64**	0.02
9400	1880	Left	/	20.51	21	0.019	**0.02**	0.030	**0.03**	-0.06
9400	1880	Right	/	20.51	21	0.054	**0.06**	0.108	**0.12**	0.08
9538	1907.6	Bottom	/	20.47	21	0.239	**0.27**	0.408	**0.46**	0.13
9400	1880	Bottom	/	20.51	21	0.404	**0.45**	0.787	**0.88**	-0.01
9262	1852.4	Bottom	Fig.12	20.71	21	0.511	**0.55**	0.995	**1.06**	-0.13
9262	1852.4	Bottom	B2	20.71	21	0.492	**0.53**	0.973	**1.04**	-0.05

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.1-13: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	24.54	24.8	0.285	**0.30**	0.492	**0.52**	0.13
9538	1907.6	Rear	/	24.47	24.8	0.478	**0.52**	0.839	**0.91**	0.08
9400	1880	Rear	Fig.13	24.54	24.8	0.514	**0.55**	0.902	**0.96**	-0.08
9262	1852.4	Rear	/	24.74	24.8	0.480	**0.49**	0.843	**0.85**	-0.05
9400	1880	Rear	B2	24.54	24.8	0.498	**0.53**	0.885	**0.94**	0.07

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.1-14: SAR Values (LTE Band7 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
21350	2560	1RB_High	Left	Touch	/	23.10	23.6	0.190	**0.21**	0.223	**0.25**	0.03
21350	2560	1RB_High	Left	Tilt	/	23.10	23.6	0.117	**0.13**	0.167	**0.19**	-0.05
21350	2560	1RB_High	Right	Touch	/	23.10	23.6	0.449	**0.50**	0.603	**0.68**	-0.05
21100	2535	1RB_High	Right	Touch	Fig.14	23.08	23.6	0.494	**0.56**	0.990	**1.12**	-0.12
20850	2510	1RB_High	Right	Touch	/	23.07	23.6	0.237	**0.27**	0.335	**0.38**	0.06
21350	2560	1RB_High	Right	Tilt	/	23.10	23.6	0.257	**0.29**	0.356	**0.40**	0.06
21350	2560	50RB_High	Left	Touch	/	22.32	22.6	0.161	**0.17**	0.191	**0.20**	-0.07
21350	2560	50RB_High	Left	Tilt	/	22.32	22.6	0.102	**0.11**	0.145	**0.15**	0.07
21350	2560	50RB_High	Right	Touch	/	22.32	22.6	0.381	**0.41**	0.514	**0.55**	-0.05
21350	2560	50RB_High	Right	Tilt	/	22.32	22.6	0.217	**0.23**	0.301	**0.32**	0.05
21350	2560	100RB	Right	Touch	/	22.25	22.6	0.376	**0.41**	0.507	**0.55**	0.08
21100	2535	1RB_High	Right	Touch	B2	23.08	23.6	0.476	**0.54**	0.969	**1.09**	-0.08
21100	2535	1RB_High	Right	Touch	C	23.08	23.6	0.482	**0.54**	0.977	**1.10**	0.07

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-15: SAR Values (LTE Band7 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
21350	2560	1RB_Mid	Front	/	23.10	23.6	0.127	**0.14**	0.256	**0.29**	-0.13
21350	2560	1RB_Mid	Rear	/	23.10	23.6	0.215	**0.24**	0.461	**0.52**	0.06
21350	2560	1RB_Mid	Left	Fig.15	23.10	23.6	0.232	**0.26**	0.521	**0.58**	-0.11
21350	2560	50RB_ High	Front	/	22.32	22.6	0.108	**0.12**	0.217	**0.23**	0.12
21350	2560	50RB_ High	Rear	/	22.32	22.6	0.180	**0.19**	0.385	**0.41**	-0.08
21350	2560	50RB_ High	Left	/	22.32	22.6	0.194	**0.21**	0.435	**0.46**	-0.04
21350	2560	1RB_Mid	Left	B2	23.10	23.6	0.226	**0.25**	0.505	**0.57**	0.09

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-16: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C						
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23095	707.5	1RB_High	Left	Touch	/	23.97	24.2	0.360	**0.38**	0.704	**0.74**	0.03
23130	711	1RB_High	Left	Tilt	/	23.93	24.2	0.399	**0.42**	0.812	**0.86**	0.05
23095	707.5	1RB_High	Left	Tilt	/	23.97	24.2	0.419	**0.44**	0.853	**0.90**	-0.10
23060	704	1RB_Mid	Left	Tilt	/	23.93	24.2	0.451	**0.48**	0.925	**0.98**	0.07
23130	711	1RB_High	Right	Touch	/	23.93	24.2	0.390	**0.42**	0.748	**0.80**	0.03
23095	707.5	1RB_High	Right	Touch	/	23.97	24.2	0.413	**0.44**	0.817	**0.86**	0.12
23060	704	1RB_Mid	Right	Touch	/	23.93	24.2	0.479	**0.51**	0.929	**0.99**	0.06
23130	711	1RB_High	Right	Tilt	/	23.93	24.2	0.383	**0.41**	0.788	**0.84**	-0.10
23095	707.5	1RB_High	Right	Tilt	/	23.97	24.2	0.450	**0.47**	0.903	**0.95**	-0.07
23060	704	1RB_Mid	Right	Tilt	Fig.16	23.93	24.2	0.461	**0.49**	0.958	**1.02**	0.04
23060	704	25RB_Low	Left	Touch	/	22.05	23.2	0.269	**0.35**	0.517	**0.67**	-0.11
23130	711	25RB_Low	Left	Tilt	/	21.99	23.2	0.264	**0.35**	0.536	**0.71**	0.08
23095	707.5	25RB_Low	Left	Tilt	/	21.97	23.2	0.285	**0.38**	0.581	**0.77**	0.08
23060	704	25RB_Low	Left	Tilt	/	22.05	23.2	0.304	**0.40**	0.622	**0.81**	0.06
23130	711	25RB_Low	Right	Touch	/	21.99	23.2	0.256	**0.34**	0.509	**0.67**	-0.04
23095	707.5	25RB_Low	Right	Touch	/	21.97	23.2	0.277	**0.37**	0.556	**0.74**	0.07
23060	704	25RB_Low	Right	Touch	/	22.05	23.2	0.319	**0.42**	0.630	**0.82**	0.11
23130	711	25RB_Low	Right	Tilt	/	21.99	23.2	0.278	**0.37**	0.565	**0.75**	0.09
23095	707.5	25RB_Low	Right	Tilt	/	21.97	23.2	0.321	**0.43**	0.648	**0.86**	-0.06
23060	704	25RB_Low	Right	Tilt	/	22.05	23.2	0.344	**0.45**	0.695	**0.91**	-0.08
23060	704	50RB	Left	Tilt	/	21.99	23.2	0.296	**0.39**	0.598	**0.79**	0.05
23060	704	50RB	Right	Touch	/	21.99	23.2	0.297	**0.39**	0.607	**0.80**	0.04
23060	704	50RB	Right	Tilt	/	21.99	23.2	0.307	**0.41**	0.617	**0.82**	-0.17
23060	704	1RB_Mid	Right	Tilt	B2	23.93	24.2	0.439	**0.47**	0.936	**1.00**	0.08

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-17: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C						
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
Ch.	MHz											
23095	707.5	1RB_High	Front	/	23.97	24.2	0.155	**0.16**	0.253	**0.27**	0.00	
23095	707.5	1RB_High	Rear	Fig.17	23.97	24.2	0.173	**0.18**	0.291	**0.31**	0.13	
23095	707.5	1RB_High	Left	/	23.97	24.2	0.160	**0.17**	0.279	**0.29**	0.04	
23095	707.5	1RB_High	Right	/	23.97	24.2	0.088	**0.09**	0.127	**0.13**	-0.12	
23095	707.5	1RB_High	Top	/	23.97	24.2	0.154	**0.16**	0.247	**0.26**	0.00	

23060	704	25RB_Low	Front	/	22.05	23.2	0.109	**0.14**	0.178	**0.23**	-0.06
23060	704	25RB_Low	Rear	/	22.05	23.2	0.122	**0.16**	0.206	**0.27**	0.13
23060	704	25RB_Low	Left	/	22.05	23.2	0.114	**0.15**	0.199	**0.26**	-0.08
23060	704	25RB_Low	Right	/	22.05	23.2	0.088	**0.11**	0.127	**0.17**	-0.09
23060	704	25RB_Low	Top	/	22.05	23.2	0.108	**0.14**	0.174	**0.23**	0.13
23095	707.5	1RB_High	Rear	B2	23.97	24.2	0.165	**0.17**	0.282	**0.30**	0.09

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-18: SAR Values (LTE Band13 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23230	782	1RB_Low	Left	Touch	/	23.95	24.5	0.246	**0.28**	0.688	**0.78**	0.08
23230	782	1RB_Low	Left	Tilt	/	23.95	24.5	0.432	**0.49**	0.825	**0.94**	-0.12
23230	782	1RB_Low	Right	Touch	/	23.95	24.5	0.416	**0.47**	0.847	**0.96**	-0.11
23230	782	1RB_Low	Right	Tilt	Fig.18	23.95	24.5	0.429	**0.49**	0.878	**1.00**	0.12
23230	782	25RB_Low	Left	Touch	/	22.03	23.5	0.212	**0.30**	0.422	**0.59**	-0.08
23230	782	25RB_Low	Left	Tilt	/	22.03	23.5	0.199	**0.28**	0.513	**0.72**	0.09
23230	782	25RB_Low	Right	Touch	/	22.03	23.5	0.284	**0.40**	0.557	**0.78**	0.13
23230	782	25RB_Low	Right	Tilt	/	22.03	23.5	0.267	**0.37**	0.546	**0.77**	-0.02
23230	782	1RB_Low	Right	Tilt	B2	23.95	24.5	0.407	**0.46**	0.865	**0.98**	0.06

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-19: SAR Values (LTE Band13 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
23230	782	1RB_Low	Front	/	23.95	24.5	0.165	**0.19**	0.278	**0.32**	-0.02
23230	782	1RB_Low	Rear	Fig.19	23.95	24.5	0.191	**0.22**	0.328	**0.37**	0.00
23230	782	1RB_Low	Left	/	23.95	24.5	0.205	**0.23**	0.307	**0.35**	0.00
23230	782	1RB_Low	Right	/	23.95	24.5	0.066	**0.07**	0.098	**0.11**	-0.02
23230	782	1RB_Low	Top	/	23.95	24.5	0.157	**0.18**	0.261	**0.30**	0.06
23230	782	25RB_Low	Front	/	22.13	23.5	0.101	**0.14**	0.171	**0.23**	-0.03
23230	782	25RB_Low	Rear	/	22.13	23.5	0.118	**0.16**	0.271	**0.37**	0.07
23230	782	25RB_Low	Left	/	22.13	23.5	0.127	**0.17**	0.192	**0.26**	0.04
23230	782	25RB_Low	Right	/	22.13	23.5	0.040	**0.05**	0.059	**0.08**	0.02
23230	782	25RB_Low	Top	/	22.13	23.5	0.093	**0.13**	0.163	**0.22**	0.06
23230	782	1RB_Low	Rear	B2	23.95	24.5	0.176	**0.20**	0.311	**0.35**	0.04

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-20: SAR Values (LTE Band25 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26340	1860	1RB_ Mid	Left	Touch	Fig.20	24.24	24.5	0.039	**0.04**	0.064	**0.07**	-0.09
26340	1860	1RB_ Mid	Left	Tilt	/	24.24	24.5	0.031	**0.03**	0.052	**0.06**	-0.01
26340	1860	1RB_ Mid	Right	Touch	/	24.24	24.5	0.036	**0.04**	0.060	**0.06**	-0.09
26340	1860	1RB_ Mid	Right	Tilt	/	24.24	24.5	0.030	**0.03**	0.048	**0.05**	-0.04
26340	1860	50RB_Mid	Left	Touch	/	22.27	23.5	0.028	**0.04**	0.042	**0.06**	-0.06
26340	1860	50RB_Mid	Left	Tilt	/	22.27	23.5	0.024	**0.03**	0.038	**0.05**	0.03
26340	1860	50RB_Mid	Right	Touch	/	22.27	23.5	0.026	**0.03**	0.040	**0.05**	0.04
26340	1860	50RB_Mid	Right	Tilt	/	22.27	23.5	0.020	**0.03**	0.031	**0.04**	0.08
26340	1860	1RB_ Mid	Left	Touch	B2	24.24	24.5	0.028	**0.03**	0.052	**0.06**	-0.06

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-21: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26365	1882.5	1RB_ High	Front	/	20.20	21	0.147	**0.18**	0.279	**0.34**	0.07
26365	1882.5	1RB_ High	Rear	/	20.20	21	0.257	**0.31**	0.501	**0.60**	0.04
26365	1882.5	1RB_ High	Left	/	20.20	21	0.030	**0.04**	0.050	**0.06**	0.03
26365	1882.5	1RB_ High	Right	/	20.20	21	0.051	**0.06**	0.108	**0.13**	0.02
26590	1905	1RB_ Mid	Bottom	Fig.21	20.19	21	0.448	**0.54**	0.875	**1.05**	-0.11
26365	1882.5	1RB_ High	Bottom	/	20.20	21	0.370	**0.44**	0.719	**0.86**	-0.01
26340	1860	1RB_ Low	Bottom	/	20.18	21	0.435	**0.53**	0.857	**1.04**	0.00
26340	1860	50RB_Mid	Front	/	20.28	21	0.151	**0.18**	0.285	**0.34**	0.08
26340	1860	50RB_Mid	Rear	/	20.28	21	0.263	**0.31**	0.513	**0.61**	0.00
26340	1860	50RB_Mid	Left	/	20.28	21	0.025	**0.03**	0.038	**0.04**	-0.07
26340	1860	50RB_Mid	Right	/	20.28	21	0.054	**0.06**	0.112	**0.13**	0.03
26590	1905	50RB_Mid	Bottom	/	20.26	21	0.401	**0.48**	0.777	**0.92**	-0.11
26365	1882.5	50RB_Mid	Bottom	/	20.21	21	0.421	**0.51**	0.821	**0.98**	-0.11
26340	1860	50RB_Mid	Bottom	/	20.28	21	0.423	**0.50**	0.824	**0.97**	-0.07
26340	1860	100RB	Bottom	/	20.23	21	0.409	**0.49**	0.802	**0.96**	0.04
26590	1905	1RB_ Mid	Bottom	B2	20.19	21	0.425	**0.51**	0.852	**1.03**	0.09

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-22: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26340	1860	1RB_ Mid	Front	/	24.24	24.5	0.213	**0.23**	0.317	**0.34**	-0.09
26340	1860	1RB_ Mid	Rear	Fig.22	24.24	24.5	0.303	**0.32**	0.526	**0.56**	0.05
26340	1860	50RB_Mid	Front	/	22.27	23.5	0.122	**0.16**	0.210	**0.28**	0.07
26340	1860	50RB_Mid	Rear	/	22.27	23.5	0.203	**0.27**	0.352	**0.47**	-0.09
26340	1860	1RB_ Mid	Rear	B2	24.24	24.5	0.282	**0.30**	0.507	**0.54**	0.07

Note1: The distance between the EUT and the phantom bottom is 15mm. Note2: The LTE mode is QPSK_10MHz.

Table 14.1-23: SAR Values (LTE Band26- Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26775	822.5	1RB_ Mid	Left	Touch	/	24.19	24.5	0.103	**0.11**	0.132	**0.14**	0.02
26775	822.5	1RB_ Mid	Left	Tilt	/	24.19	24.5	0.060	**0.06**	0.077	**0.08**	0.07
26775	822.5	1RB_ Mid	Right	Touch	Fig.23	24.19	24.5	0.128	**0.14**	0.168	**0.18**	-0.02
26775	822.5	1RB_ Mid	Right	Tilt	/	24.19	24.5	0.069	**0.07**	0.089	**0.10**	-0.11
26775	822.5	36RB_High	Left	Touch	/	22.25	23.5	0.064	**0.09**	0.083	**0.11**	0.12
26775	822.5	36RB_High	Left	Tilt	/	22.25	23.5	0.038	**0.05**	0.050	**0.07**	-0.03
26775	822.5	36RB_High	Right	Touch	/	22.25	23.5	0.084	**0.11**	0.111	**0.15**	0.13
26775	822.5	36RB_High	Right	Tilt	/	22.25	23.5	0.044	**0.06**	0.056	**0.07**	-0.01
26775	822.5	1RB_ Mid	Right	Touch	B2	24.19	24.5	0.117	**0.13**	0.155	**0.17**	0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-24: SAR Values (LTE Band26 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26775	822.5	1RB_ Mid	Front	/	24.19	24.5	0.164	**0.18**	0.259	**0.28**	0.05
26775	822.5	1RB_ Mid	Rear	Fig.24	24.19	24.5	0.190	**0.20**	0.335	**0.36**	-0.03
26775	822.5	1RB_ Mid	Left	/	24.19	24.5	0.048	**0.05**	0.098	**0.11**	-0.05
26775	822.5	1RB_ Mid	Right	/	24.19	24.5	0.101	**0.11**	0.158	**0.17**	-0.09
26775	822.5	1RB_ Mid	Bottom	/	24.19	24.5	0.119	**0.13**	0.260	**0.28**	0.02
26775	822.5	36RB_High	Front	/	22.25	23.5	0.108	**0.14**	0.171	**0.23**	-0.08
26775	822.5	36RB_High	Rear	/	22.25	23.5	0.125	**0.17**	0.218	**0.29**	0.10
26775	822.5	36RB_High	Left	/	22.25	23.5	0.032	**0.04**	0.064	**0.09**	0.01
26775	822.5	36RB_High	Right	/	22.25	23.5	0.064	**0.09**	0.101	**0.13**	-0.04
26775	822.5	36RB_High	Bottom	/	22.25	23.5	0.078	**0.10**	0.168	**0.22**	0.03
26775	822.5	1RB_ Mid	Rear	B2	24.19	24.5	0.179	**0.19**	0.317	**0.34**	-0.05

Note1: The distance between the EUT and the phantom bottom is 10mm. Note2: The LTE mode is QPSK_10MHz.

Table 14.1-25: SAR Values (LTE Band41 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
41055	2636.5	1RB_Mid	Left	Touch	/	24.79	25	0.143	**0.15**	0.269	**0.28**	-0.08
41055	2636.5	1RB_Mid	Left	Tilt	/	24.79	25	0.090	**0.09**	0.203	**0.21**	-0.01
41055	2636.5	1RB_Mid	Right	Touch	Fig.25	24.79	25	0.326	**0.34**	0.653	**0.69**	-0.12
41055	2636.5	1RB_Mid	Right	Tilt	/	24.79	25	0.170	**0.18**	0.373	**0.39**	-0.10
41055	2636.5	50RB_High	Left	Touch	/	22.82	24	0.091	**0.12**	0.173	**0.23**	0.01
41055	2636.5	50RB_High	Left	Tilt	/	22.82	24	0.065	**0.09**	0.137	**0.18**	0.13
41055	2636.5	50RB_High	Right	Touch	/	22.82	24	0.207	**0.27**	0.425	**0.56**	-0.02
41055	2636.5	50RB_High	Right	Tilt	/	22.82	24	0.109	**0.14**	0.239	**0.31**	0.11
41055	2636.5	1RB_Mid	Right	Touch	B2	24.79	25	0.315	**0.33**	0.634	**0.67**	0.08

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-26: SAR Values (LTE Band41 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
41055	2636.5	1RB_Mid	Front	/	24.79	25	0.091	**0.10**	0.177	**0.19**	0.13
41055	2636.5	1RB_Mid	Rear	/	24.79	25	0.143	**0.15**	0.286	**0.30**	-0.04
41055	2636.5	1RB_Mid	Left	Fig.26	24.79	25	0.182	**0.19**	0.372	**0.39**	-0.05
41055	2636.5	50RB_High	Front	/	22.82	24	0.058	**0.08**	0.114	**0.15**	0.11
41055	2636.5	50RB_High	Rear	/	22.82	24	0.091	**0.12**	0.181	**0.24**	-0.07
41055	2636.5	50RB_High	Left	/	22.82	24	0.106	**0.14**	0.237	**0.31**	0.09
41055	2636.5	1RB_Mid	Left	B2	24.79	25	0.164	**0.17**	0.354	**0.37**	0.03

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-27: SAR Values (LTE band66 - Head)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C						
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132072	1720	1RB_High	Left	Touch	Fig.27	24.18	24.5	0.053	**0.06**	0.081	**0.09**	0.09
132072	1720	1RB_High	Left	Tilt	/	24.18	24.5	0.047	**0.05**	0.071	**0.08**	0.12
132072	1720	1RB_High	Right	Touch	/	24.18	24.5	0.049	**0.05**	0.073	**0.08**	-0.09
132072	1720	1RB_High	Right	Tilt	/	24.18	24.5	0.042	**0.05**	0.062	**0.07**	-0.11
132333	1745	50RB_Mid	Left	Touch	/	22.22	23.5	0.035	**0.05**	0.053	**0.07**	0.06
132333	1745	50RB_Mid	Left	Tilt	/	22.22	23.5	0.031	**0.04**	0.050	**0.07**	0.06
132333	1745	50RB_Mid	Right	Touch	/	22.22	23.5	0.027	**0.04**	0.048	**0.06**	-0.10
132333	1745	50RB_Mid	Right	Tilt	/	22.22	23.5	0.021	**0.03**	0.041	**0.06**	-0.07
132072	1720	1RB_High	Left	Touch	B2	24.18	24.5	0.041	**0.04**	0.069	**0.07**	-0.06

Table 14.1-28: SAR Values (LTE band66 - Body)

Ambient Temperature: 22.9 °C						Liquid Temperature: 22.5°C						
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
Ch.	MHz											
132072	1720	1RB_High	Front	/	20.10	21	0.191	**0.23**	0.387	**0.48**	-0.01	
132572	1770	1RB_Low	Rear	/	20.06	21	0.308	**0.38**	0.655	**0.81**	-0.12	
132322	1745	1RB_Mid	Rear	/	20.08	21	0.323	**0.40**	0.675	**0.83**	-0.07	
132072	1720	1RB_High	Rear	/	20.10	21	0.347	**0.43**	0.735	**0.90**	-0.08	
132072	1720	1RB_High	Left	/	20.10	21	0.028	**0.03**	0.045	**0.06**	0.09	
132072	1720	1RB_High	Right	/	20.10	21	0.071	**0.09**	0.157	**0.19**	0.12	
132572	1770	1RB_Low	Bottom	/	20.06	21	0.382	**0.47**	0.849	**1.05**	-0.11	
132322	1745	1RB_Mid	Bottom	Fig.28	20.08	21	0.513	**0.63**	0.991	**1.22**	0.06	
132072	1720	1RB_High	Bottom	/	20.10	21	0.434	**0.53**	0.941	**1.16**	0.11	
132072	1720	50RB_Mid	Front	/	20.23	21	0.204	**0.24**	0.426	**0.51**	0.04	
132572	1770	50RB_Low	Rear	/	20.14	21	0.320	**0.39**	0.667	**0.81**	-0.11	
132322	1745	50RB_Mid	Rear	/	20.18	21	0.337	**0.41**	0.706	**0.85**	-0.09	
132072	1720	50RB_Mid	Rear	/	20.23	21	0.360	**0.43**	0.759	**0.91**	-0.01	
132072	1720	50RB_Mid	Left	/	20.23	21	0.022	**0.03**	0.040	**0.05**	-0.04	
132072	1720	50RB_Mid	Right	/	20.23	21	0.067	**0.08**	0.148	**0.18**	0.02	
132572	1770	50RB_Low	Bottom	/	20.14	21	0.382	**0.47**	0.833	**1.02**	-0.13	
132322	1745	50RB_Mid	Bottom	/	20.18	21	0.404	**0.49**	0.883	**1.07**	0.00	
132072	1720	50RB_Mid	Bottom	/	20.23	21	0.453	**0.54**	0.991	**1.18**	-0.02	
132072	1720	100RB	Rear	/	20.14	21	0.349	**0.43**	0.725	**0.88**	0.05	
132072	1720	100RB	Bottom	/	20.14	21	0.427	**0.52**	0.924	**1.13**	0.05	
132322	1745	1RB_Mid	Bottom	B2	20.08	21	0.417	**0.52**	0.951	**1.18**	0.06	
132322	1745	1RB_Mid	Bottom	H	20.08	21	0.505	**0.62**	0.983	**1.21**	0.05	
132322	1745	1RB_Mid	Bottom	C	20.08	21	0.496	**0.61**	0.971	**1.20**	0.09	

Note1: The distance between the EUT and the phantom bottom is 10mm. Note2: The LTE mode is QPSK_20MHz.

Table 14.1-29: SAR Values (LTE band66 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
132072	1720	1RB_High	Front	/	24.18	24.5	0.240	**0.26**	0.423	**0.46**	0.01
132572	1770	1RB_Low	Rear	/	24.14	24.5	0.371	**0.40**	0.659	**0.72**	0.06
132322	1745	1RB_Low	Rear	Fig.29	24.15	24.5	0.536	**0.58**	0.923	**1.00**	0.08
132072	1720	1RB_High	Rear	/	24.18	24.5	0.431	**0.46**	0.767	**0.83**	0.06
132333	1745	50RB_Mid	Front	/	22.22	23.5	0.149	**0.20**	0.257	**0.35**	0.11
132333	1745	50RB_Mid	Rear	/	22.22	23.5	0.245	**0.33**	0.448	**0.60**	0.02
132572	1770	100RB	Rear	/	22.19	23.5	0.229	**0.31**	0.408	**0.55**	0.11
132322	1745	1RB_Low	Rear	B2	24.15	24.5	0.529	**0.57**	0.915	**0.99**	0.07

Note1: The distance between the EUT and the phantom bottom is 15mm.
Note2: The LTE mode is QPSK_20MHz.

According to the KDB648474 D04, 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 Publication 865664 D01 to address interactive hand use exposure conditions. 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

Table 14.1-30: 0mm Reported SAR for phablet (10g)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Band	Frequency		Mode	Test Position	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
	Ch.	MHz									
WCDMA 1700	1412	1732.5	RMC	Bottom	23.57	24.5	2.69	**3.33**	6.59	**8.16**	0.11
WCDMA 1900	9262	1852.4	RMC	Bottom	24.74	24.8	3.28	**3.33**	7.78	**7.89**	-0.03
LTE Band 25	26590	1905	1RB_Mid	Bottom	23.94	24.5	1.99	**2.26**	4.71	**5.36**	-0.11
LTE Band 66	132322	1745	1RB_Low	Bottom	24.15	24.5	2.61	**2.83**	6.22	**6.75**	0.06

Note: The distance between the EUT and the phantom bottom is 0mm.

14.2 SAR results for Standard procedure

There is zoom scan measurement to be added for the highest measured SAR in each exposure configuration/band.

Table 14.2-1: SAR Values (GSM 850 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
251	848.8	Right	Touch	Fig.1	29.87	31.5	0.187	**0.27**	0.252	**0.37**	-0.07

Note: the head SAR of GSM850 is tested with GPRS (3Txslots) mode because of VoIP.

Table 14.2-2: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
128	824.2	GPRS (3)	Rear	Fig.2	29.52	31.5	0.270	**0.43**	0.476	**0.75**	-0.01

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-3: SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	Left	Touch	Fig.3	28.19	29.5	0.024	**0.03**	0.039	**0.05**	-0.02

Note: the head SAR of GSM1900 is tested with GPRS (3Txslots) mode because of VoIP.

Table 14.2-4: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
810	1909.8	GPRS (2)	Bottom	Fig.4	26.94	27	0.234	**0.24**	0.468	**0.47**	0.02

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-5: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Rear	Fig.5	28.19	29.5	0.168	**0.23**	0.287	**0.39**	-0.13

Note: The distance between the EUT and the phantom bottom is 15mm.

Table 14.2-6: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
4182	836.4	Right	Touch	Fig.6	24.47	25	0.197	**0.22**	0.266	**0.30**	-0.05

Table 14.2-7: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4182	836.4	Rear	Fig.7	24.47	25	0.299	**0.34**	0.545	**0.62**	-0.08

Note: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-8: SAR Values (WCDMA 1700 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
1412	1732.4	Left	Touch	Fig.8	23.57	24.5	0.049	**0.06**	0.078	**0.10**	0.12

Table 14.2-9: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Bottom	Fig.9	20.51	21	0.553	**0.62**	1.06	**1.19**	0.02

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-10: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Rear	Fig.10	23.57	24.5	0.454	**0.56**	0.783	**0.97**	0.01

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.2-11: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
9262	1852.4	Left	Touch	Fig.11	24.74	24.8	0.050	**0.05**	0.082	**0.08**	0.12

Table 14.2-12: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9262	1852.4	Bottom	Fig.12	20.71	21	0.511	**0.55**	0.995	**1.06**	-0.13

Note1: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-13: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Rear	Fig.13	24.54	24.8	0.514	**0.55**	0.902	**0.96**	-0.08

Note1: The distance between the EUT and the phantom bottom is 15mm.

Table 14.2-14: SAR Values (LTE Band7 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
21100	2535	1RB_High	Right	Touch	Fig.14	23.08	23.6	0.494	**0.56**	0.990	**1.12**	-0.12

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-15: SAR Values (LTE Band7 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
21350	2560	1RB_Mid	Left	Fig.15	23.10	23.6	0.232	**0.26**	0.521	**0.58**	-0.11

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-16: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23060	704	1RB_Mid	Right	Tilt	Fig.16	23.93	24.2	0.461	**0.49**	0.958	**1.02**	0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-17: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
23095	707.5	1RB_High	Rear	Fig.17	23.97	24.2	0.173	**0.18**	0.291	**0.31**	0.13

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-18: SAR Values (LTE Band13 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23230	782	1RB_Low	Right	Tilt	Fig.18	23.95	24.5	0.429	**0.49**	0.878	**1.00**	0.12

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-19: SAR Values (LTE Band13 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
23230	782	1RB_Low	Rear	Fig.19	23.95	24.5	0.191	**0.22**	0.328	**0.37**	0.00

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-20: SAR Values (LTE Band25 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26340	1860	1RB_ Mid	Left	Touch	Fig.20	24.24	24.5	0.039	**0.04**	0.064	**0.07**	-0.09

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-21: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26590	1905	1RB_ Mid	Bottom	Fig.21	20.19	21	0.448	**0.54**	0.875	**1.05**	-0.11

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_10MHz.

Table 14.2-22: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26340	1860	1RB_ Mid	Rear	Fig.22	24.24	24.5	0.303	**0.32**	0.526	**0.56**	0.05

Note1: The distance between the EUT and the phantom bottom is 15mm. Note2: The LTE mode is QPSK_10MHz.

Table 14.2-23: SAR Values (LTE Band26- Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26775	822.5	1RB_ Mid	Right	Touch	Fig.23	24.19	24.5	0.128	**0.14**	0.168	**0.18**	-0.02

Note1: The LTE mode is QPSK_10MHz.

Table 14.2-24: SAR Values (LTE Band26 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26775	822.5	1RB_ Mid	Rear	Fig.24	24.19	24.5	0.190	**0.20**	0.335	**0.36**	-0.03

Note1: The distance between the EUT and the phantom bottom is 10mm. Note2: The LTE mode is QPSK_10MHz.

Table 14.2-25: SAR Values (LTE Band41 - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
41055	2636.5	1RB_Mid	Right	Touch	Fig.25	24.79	25	0.326	**0.34**	0.653	**0.69**	-0.12

Note1: The LTE mode is QPSK_20MHz.

Table 14.2-26: SAR Values (LTE Band41 - Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)	
Ch.	MHz											
41055	2636.5	1RB_Mid	Left	Fig.26	24.79	25	0.182	**0.19**	0.372	**0.39**	-0.05	

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The LTE mode is QPSK_20MHz.

Table 14.2-27: SAR Values (LTE band66 - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132072	1720	1RB_High	Left	Touch	Fig.27	24.18	24.5	0.053	**0.06**	0.081	**0.09**	0.09

Table 14.2-28: SAR Values (LTE band66 - Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
132322	1745	1RB_Mid	Bottom	Fig.28	20.08	21	0.513	**0.63**	0.991	**1.22**	0.06

Note1: The distance between the EUT and the phantom bottom is 10mm. Note2: The LTE mode is QPSK_20MHz.

Table 14.2-29: SAR Values (LTE band66 - Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Mode	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
132322	1745	1RB_Low	Rear	Fig.29	24.15	24.5	0.536	**0.58**	0.923	**1.00**	0.08

Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The LTE mode is QPSK_20MHz.

14.3 WLAN Evaluation for 2.4G

According to the KDB248227 D01, SAR is measured for 2.4GHz 802.11b DSSS using the initial test position procedure.

Head Evaluation

Table 14.3-1: SAR Values (WLAN - Head)– 802.11b (Fast SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.										
2412	1	Left	Touch	/	17.68	17.7	0.301	**0.30**	0.567	**0.57**	-0.01
2412	1	Left	Tilt	/	17.68	17.7	0.241	**0.24**	0.495	**0.50**	0.07
2412	1	Right	Touch	/	17.68	17.7	0.127	**0.13**	0.230	**0.23**	-0.04
2412	1	Right	Tilt	/	17.68	17.7	0.113	**0.11**	0.217	**0.22**	0.05
2412	1	Left	Touch	B2	17.68	17.7	0.292	**0.29**	0.554	**0.56**	-0.03

As shown above table, the initial test position for head is “Left Touch”. So the head SAR of WLAN is presented as below:

Table 14.3-2: SAR Values (WLAN - Head)– 802.11b (Full SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.										
2412	1	Left	Touch	Fig.30	17.68	17.7	0.265	**0.27**	0.540	**0.54**	-0.01
2412	1	Left	Tilt	/	17.68	17.7	0.217	**0.22**	0.474	**0.48**	0.07
Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg. Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.											

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 14.3-3: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃							
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.						
2412	1	Left	Touch	98.94%	100%	**0.54**	**0.55**
2412	1	Left	Tilt	98.94%	100%	**0.48**	**0.49**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.

Body Evaluation

Table 14.3-4: SAR Values (WLAN - Body)– 802.11b (Fast SAR)

Ambient Temperature: 22.9 ºC					Liquid Temperature: 22.5ºC					
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.									
2412	1	Front	/	19.51	19.6	0.096	**0.10**	0.164	**0.17**	-0.10
2412	1	Rear	/	19.51	19.6	0.082	**0.08**	0.126	**0.13**	-0.10
2412	1	Right	/	19.51	19.6	0.103	**0.11**	0.198	**0.20**	0.00
2412	1	Top	/	19.51	19.6	0.043	**0.04**	0.090	**0.09**	0.02
2412	1	Right	B2	19.51	19.6	0.099	**0.10**	0.189	**0.19**	0.02

As shown above table, the initial test position for body is “Right”. So the body SAR of WLAN is presented as below:

Table 14.3-5: SAR Values (WLAN - Body)– 802.11b (Full SAR)

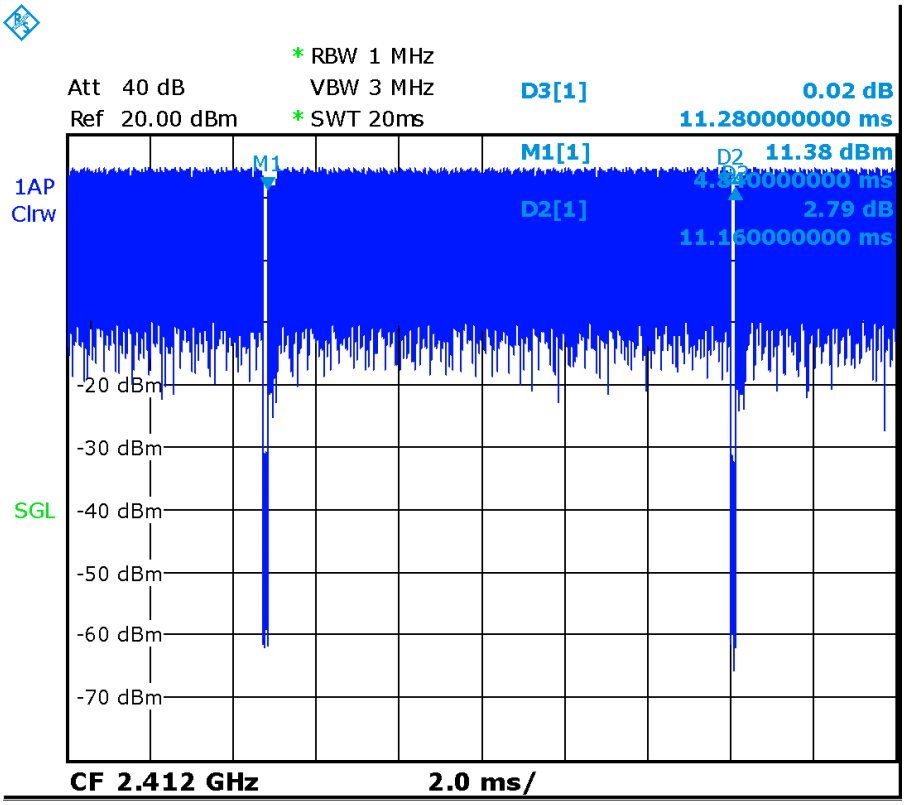
Ambient Temperature: 22.9 ºC					Liquid Temperature: 22.5ºC					
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.									
2412	1	Right	Fig.31	19.51	19.6	0.096	**0.10**	0.193	**0.20**	0.00
Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg. Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.										

According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

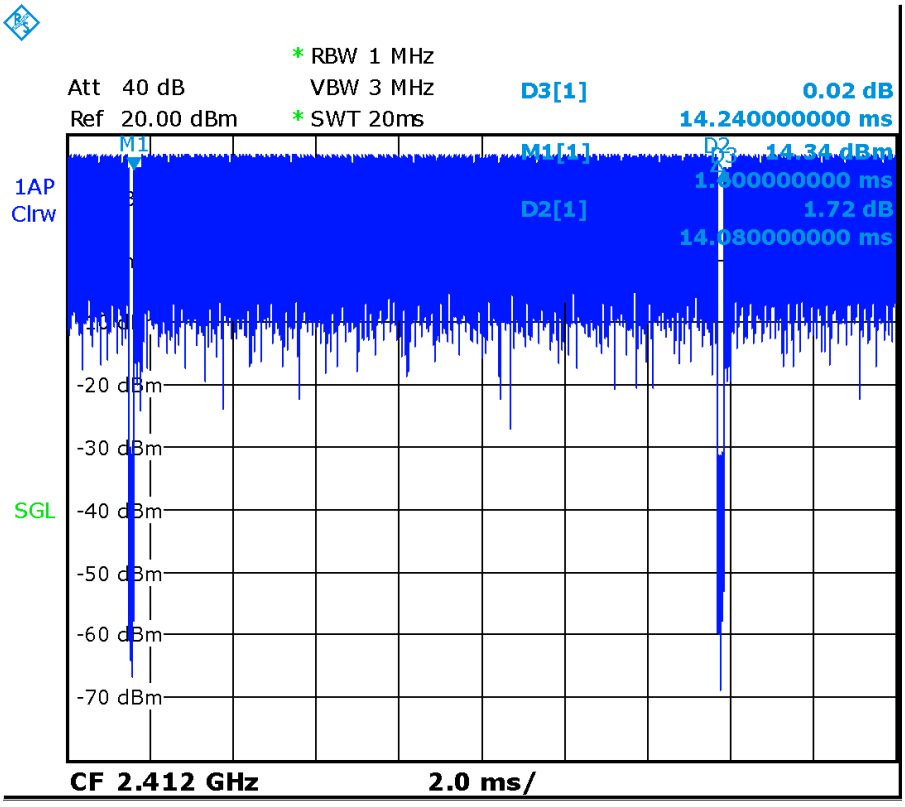
Table 14.3-6: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 ºC					Liquid Temperature: 22.5ºC	
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2412	1	Right	98.88%	100%	**0.20**	**0.20**

SAR is not required for OFDM because the 802.11b adjusted SAR ≤ 1.2 W/kg.



Picture 14.1 Duty factor plot for head



Picture 14.2 Duty factor plot for body

14.4 WLAN Evaluation For 5G

Table 14.4-1: OFDM mode specified maximum output power of WLAN antenna

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	X		X	X	X	X	X	
U-NII-2A	X		X	X	X	X	X	
U-NII-2C	X		X	X	X	X	X	
U-NII-3	X		X	X	X	X	X	
§ 15.247 (5.8 GHz)								
X: maximum(conducted) output power(mW), including tolerance, specified for production units								

Table 14.4-2: Maximum output power specified of WLAN antenna for head

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	56		55	50	54	50	40	
U-NII-2A	60		55	52	52	56	50	
U-NII-2C	72		68	63	68	63	50	
U-NII-3	71		63	50	45	45	50	
§ 15.247 (5.8 GHz)								

- The maximum output power specified for production units is the same for all channels, modulations and data rates in each channel bandwidth configuration of the 802.11a/g/n/ac modes.
- The blue highlighted cells represent highest output configurations in each standalone or aggregated frequency band, with tune-up tolerance included.

Table 14.4-3: Maximum output power specified of WLAN antenna for body

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	28		35	28	16	32	28	
U-NII-2A	28		28	30	16	28	32	
U-NII-2C	32		35	32	16	40	28	
U-NII-3	32		32	32	16	35	28	
§ 15.247 (5.8 GHz)								

- The maximum output power specified for production units is the same for all channels, modulations and data rates in each channel bandwidth configuration of the 802.11a/g/n/ac modes.
- The blue highlighted cells represent highest output configurations in each standalone or aggregated frequency band, with tune-up tolerance included.

Table 14.4-4: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations - head

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 **41/44/48/55**	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 **58/60/58/53**	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 **46/50/54/55** 116/120/124/128 **55/59/58/59** 132/136/140/144 **62/67/71/70**	100/104/108/112 116/132/136/140 Lower power	102/110/134 Lower power	100/104/108 /112 116/132/136/ 140 Lower power	102/110/134 Lower power	106 Lower power
U-NII-3	149/153/157/161/165 **68/63/56/49/45**	149/153/157/16 1/165 Lower power	151/159 Lower power	149/153/157 /161/165 Lower power	151/159 Lower power	155 Lower power

- The **bold numbers** is the maximum output measured power (mW).
- Channels with measured maximum power within 0.25dB are considered to have the same measured output. Channels selected for initial test configuration are highlighted in yellow.

Table 14.4-5: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations - body

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 Lower power	36/40/44/48 **22/26/29/34**	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 Lower power	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 **26**
U-NII-2C	100/104/108/112 116/132/136/140/ 144 Lower power	100/104/108/112 116/132/136/140 Lower power	102/110/134 Lower power	100/104/108/112 116/132/136/140 Lower power	102/110/118/ 126/134/142 **22/26/23** **28/33/35**	106 Lower power
U-NII-3	149/153/157/161 /165 Lower power	149/153/157/161 /165 Lower power	151/159 Lower power	149/153/157/161 /165 Lower power	151/159 **31/25**	155 Lower power

- The **bold numbers** is the maximum output measured power (mW).
- Channels with measured maximum power within 0.25dB are considered to have the same measured output. Channels selected for initial test configuration are highlighted in yellow.

Table 14.4-6: Reported SAR of initial test configuration for Head

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48 UNII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.37**	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112/116/120/124/128/132/136/140/144 **0.18**	100/104/108/112 116/132/136/140	102/110/118/ 126/134	100/104/108/112 116/132/136/140	102/110 /134	106
U-NII-3	149/153/157/161/165 **0.13**	149/153/157/161/ 165	151/159	149/153/157/161 /165	151/159	155
Highest measured output power channel tested initially are in yellow highlight. The tune up of UNII-1 is less than UNII-2A. SAR is measured for UNII-2A band first. Adjusted SAR of UNII-2A band is ≤ 1.2 W/kg. SAR is not required for UNII-1 band.						

Table 14.4-7: Reported SAR of initial test configuration for Body

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48 **0.48**	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64	52/56/60/64	54/62	52/56/60/64	54/62	58 **0.28**
U-NII-2C	100/104/108/112/116/120/ 124/128/132/136/140/144	100/104/108/112 116/132/136/140	102/110/118/ 126/134	100/104/108/112 116/132/136/140	102/110/118/ 126/134/142 **0.49**	106
U-NII-3	149/153/157/161/165	149/153/157/161/ 165	151/159	149/153/157/161 /165	151/159 **0.46**	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 14.4-8: SAR Values (WLAN - Head)

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
56	5280	Left	Touch	/	17.75	17.8	0.085	**0.09**	0.291	**0.29**	0.00
56	5280	Left	Tilt	Fig.32	17.75	17.8	0.102	**0.10**	0.366	**0.37**	-0.02
56	5280	Right	Touch	/	17.75	17.8	0.041	**0.04**	0.163	**0.16**	-0.13
56	5280	Right	Tilt	/	17.75	17.8	0.054	**0.05**	0.216	**0.22**	0.08
140	5700	Left	Touch	/	18.49	18.6	0.047	**0.05**	0.128	**0.13**	0.08
140	5700	Left	Tilt	/	18.49	18.6	0.054	**0.06**	0.179	**0.18**	-0.09
140	5700	Right	Touch	/	18.49	18.6	0.041	**0.04**	0.111	**0.11**	0.10
140	5700	Right	Tilt	/	18.49	18.6	0.046	**0.05**	0.122	**0.13**	0.05
149	5745	Left	Touch	/	18.33	18.5	0.040	**0.04**	0.091	**0.09**	0.02
149	5745	Left	Tilt	/	18.33	18.5	0.047	**0.05**	0.127	**0.13**	0.12
149	5745	Right	Touch	/	18.33	18.5	0.035	**0.04**	0.079	**0.08**	0.02
149	5745	Right	Tilt	/	18.33	18.5	0.039	**0.04**	0.086	**0.09**	0.00
56	5280	Left	Tilt	B2	17.75	17.8	0.089	**0.09**	0.351	**0.36**	0.05

Table 14.4-9: SAR Values (WLAN - Body)

Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
48	5240	Front	/	15.26	15.5	0.016	**0.02**	0.049	**0.05**	-0.01
48	5240	Rear	/	15.26	15.5	0.152	**0.16**	0.454	**0.48**	-0.01
48	5240	Right	/	15.26	15.5	0.067	**0.07**	0.202	**0.21**	-0.04
48	5240	Top	/	15.26	15.5	0.029	**0.03**	0.086	**0.09**	-0.10
58	5290	Front	/	14.22	15	0.008	**0.01**	0.025	**0.03**	-0.01
58	5290	Rear	/	14.22	15	0.073	**0.09**	0.232	**0.28**	-0.01
58	5290	Right	/	14.22	15	0.037	**0.04**	0.103	**0.12**	-0.04
58	5290	Top	/	14.22	15	0.018	**0.02**	0.044	**0.05**	-0.10
142	5710	Front	/	15.49	16	0.011	**0.01**	0.027	**0.03**	-0.12
142	5710	Rear	Fig.33	15.49	16	0.133	**0.15**	0.433	**0.49**	-0.11
142	5710	Right	/	15.49	16	0.039	**0.04**	0.118	**0.13**	-0.09
142	5710	Top	/	15.49	16	0.037	**0.04**	0.096	**0.11**	-0.12
151	5755	Front	/	14.94	15.5	0.014	**0.02**	0.043	**0.05**	0.11
151	5755	Rear	/	14.94	15.5	0.131	**0.15**	0.403	**0.46**	0.09
151	5755	Right	/	14.94	15.5	0.046	**0.05**	0.138	**0.16**	0.09
151	5755	Top	/	14.94	15.5	0.029	**0.03**	0.075	**0.09**	0.12
142	5710	Rear	B2	15.49	16	0.119	**0.13**	0.415	**0.47**	0.07
142	5710	Rear	Note2	15.49	16	0.120	**0.13**	0.336	**0.38**	-0.05

Note1: The distance between the EUT and the phantom bottom is 10mm.

Note2: The distance between the EUT and the phantom bottom is 15mm for Evaluation of Simultaneous.

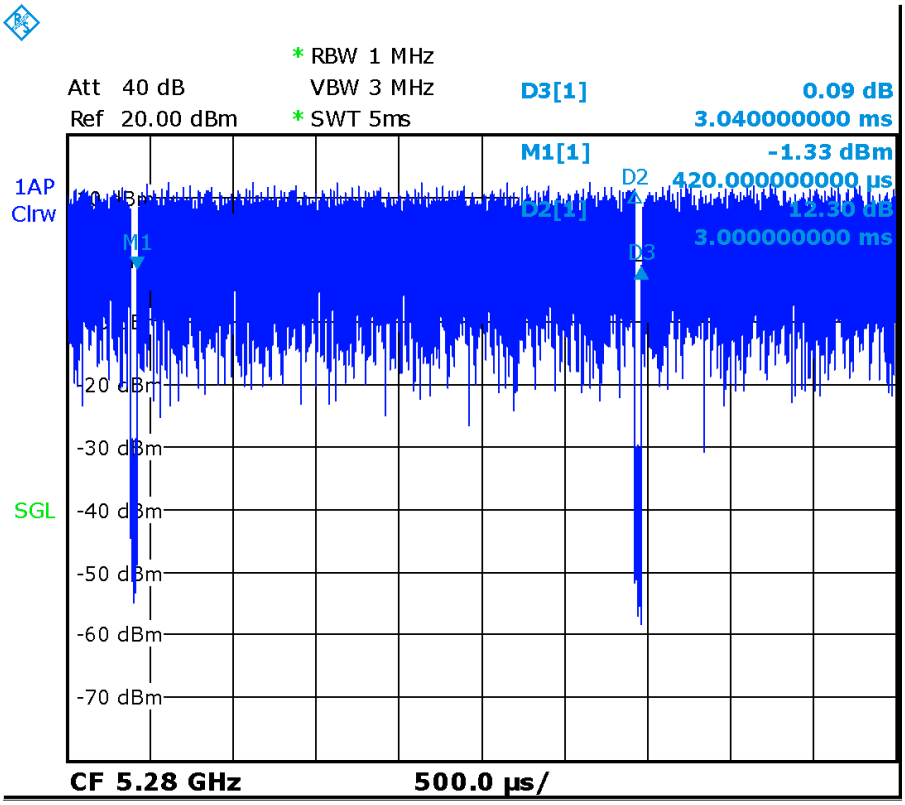
According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 14.4-10: SAR Values (WLAN - Head) - Scaled Reported SAR

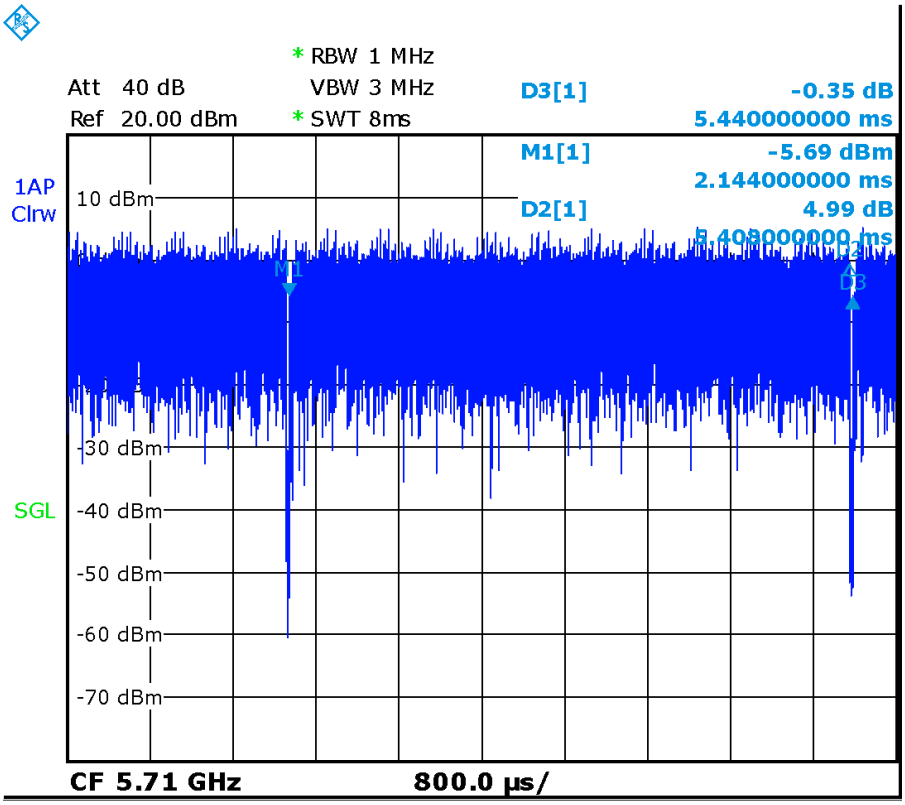
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5280	56	Left	Tilt	98.68%	100%	**0.37**	**0.37**

Table 14.4-11: SAR Values (WLAN - Body) – Scaled Reported SAR

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5710	142	Rear	10	99.41%	100%	**0.49**	**0.49**
5710	142	Rear	15	99.41%	100%	**0.38**	**0.38**



Picture 14.3 The plot of duty factor for head



Picture 14.4 The plot of duty factor for body

15 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

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

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Table 15.1: SAR Measurement Variability for Body W1700 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
1412	1732.5	Bottom	10	1.06	1.05	1.01	/

Table 15.2: SAR Measurement Variability for Body W1900 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
9262	1852.4	Bottom	10	0.995	0.991	1.00	/
9400	1880	Rear	15	0.902	0.894	1.01	

Table 15.3: SAR Measurement Variability for Head LTE B7 (1g)

Frequency		Mode	Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
21100	2535	1RB_High	Right	Cheek	0.990	0.979	1.01	/

Table 15.4: SAR Measurement Variability for Head LTE B12 (1g)

Frequency		Mode	Side	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
23060	704	1RB_Mid	Right	Tilt	0.958	0.944	1.01	/

Table 15.5: SAR Measurement Variability for Body LTE B25 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
26590	1905	1RB_Mid	Bottom	10	0.875	0.862	1.02	/

Table 15.6: SAR Measurement Variability for Body LTE B66 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
132322	1745	1RB_Mid	Bottom	10	0.991	0.984	1.01	/
132322	1745	1RB_Low	Rear	15	0.923	0.909	1.02	

16 Measurement Uncertainty

16.1 Measurement Uncertainty for Normal SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521

Combined standard uncertainty	$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$					19.1	18.9	

16.2 Measurement Uncertainty for Normal SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	√3	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	√3	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	√3	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	√3	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	√3	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	√3	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	√3	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	√3	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	√3	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.8	R	√3	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	√3	1	1	3.9	3.9	∞
13	Post-processing	B	4.0	R	√3	1	1	2.3	2.3	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	√3	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	√3	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	√3	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity	B	5.0	R	√3	0.6	0.49	1.7	1.4	∞

	(target)									
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						10.7	10.6	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						21.4	21.1	

16.3 Measurement Uncertainty for Fast SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞

19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						10.4	10.3	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						20.8	20.6	

16.4 Measurement Uncertainty for Fast SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71

16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.5	13.4	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						27.0	26.8	

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5239A	MY55491241	June 10, 2019	One year
02	Power meter	NRP2	106277	September 4, 2019	One year
03	Power sensor	NRP8S	104291		
04	Signal Generator	E4438C	MG3700A	June 18, 2019	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
07	BTS	CMW500	166370	June 27, 2019	One year
08	E-field Probe	SPEAG EX3DV4	7307	May 24, 2019	One year
09	DAE	SPEAG DAE4	1289	April 11,2019	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	July 18, 2019	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	July 18,2019	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	July 16,2019	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 17,2019	One year
15	Dipole Validation Kit	SPEAG D2450V2	853	July 17,2019	One year
16	Dipole Validation Kit	SPEAG D2600V2	1012	July 17,2019	One year
17	Dipole Validation Kit	SPEAG D5GHzV2	1060	July 22, 2019	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH251 Right Cheek
Date: 2/7/2020
Electronics: DAE4 Sn1289
Medium: head 835 MHz
Medium parameters used: f = 848.8; σ = 0.901 mho/m; εr = 40.67; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: GSM850 848.8 Duty Cycle: 1:2.67
Probe: EX3DV4 – SN7307 ConvF(10.45,10.45,10.45)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.306 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.913 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.333 W/kg
SAR(1 g) = 0.252 W/kg; SAR(10 g) = 0.187 W/kg
Maximum value of SAR (measured) = 0.295 W/kg

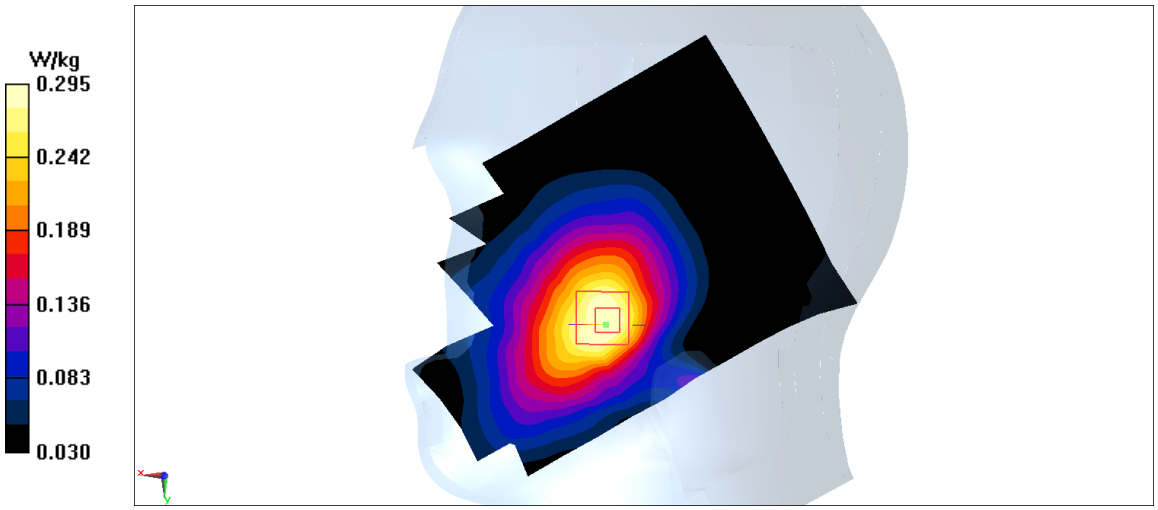


Fig A.1

GSM850_CH128 Rear
Date: 2/7/2020
Electronics: DAE4 Sn1289
Medium: head 835 MHz
Medium parameters used: f = 824.2; σ = 0.878 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: GSM850 824.2 Duty Cycle: 1:2.67
Probe: EX3DV4 – SN7307 ConvF(10.45,10.45,10.45)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.634 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.844 W/kg
SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.27 W/kg
Maximum value of SAR (measured) = 0.659 W/kg

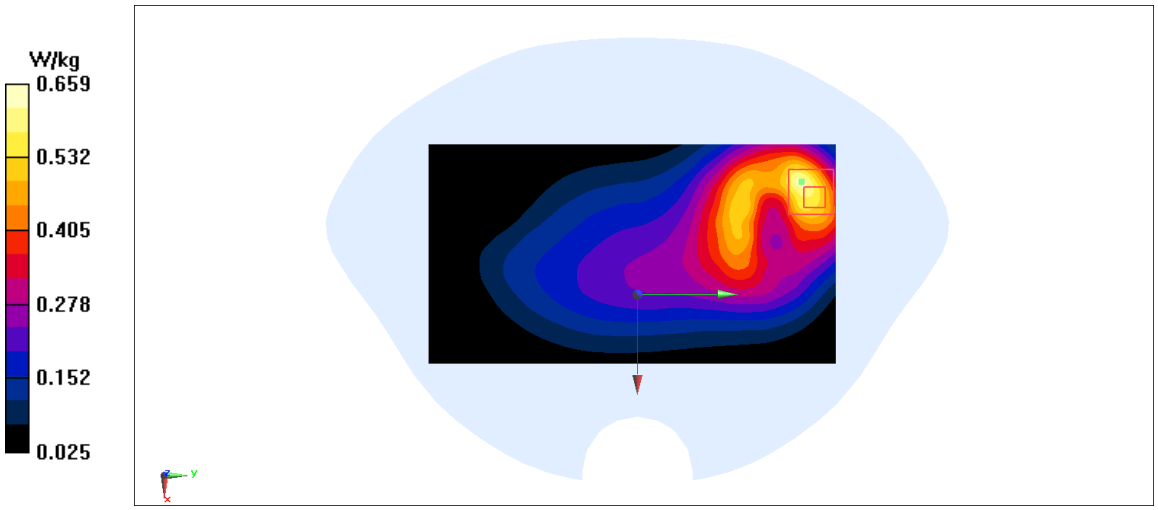


Fig A.2

PCS1900_CH661 Left Cheek
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1880 Duty Cycle: 1:4
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0606 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.868 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.058 W/kg
SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.024 W/kg
Maximum value of SAR (measured) = 0.0464 W/kg

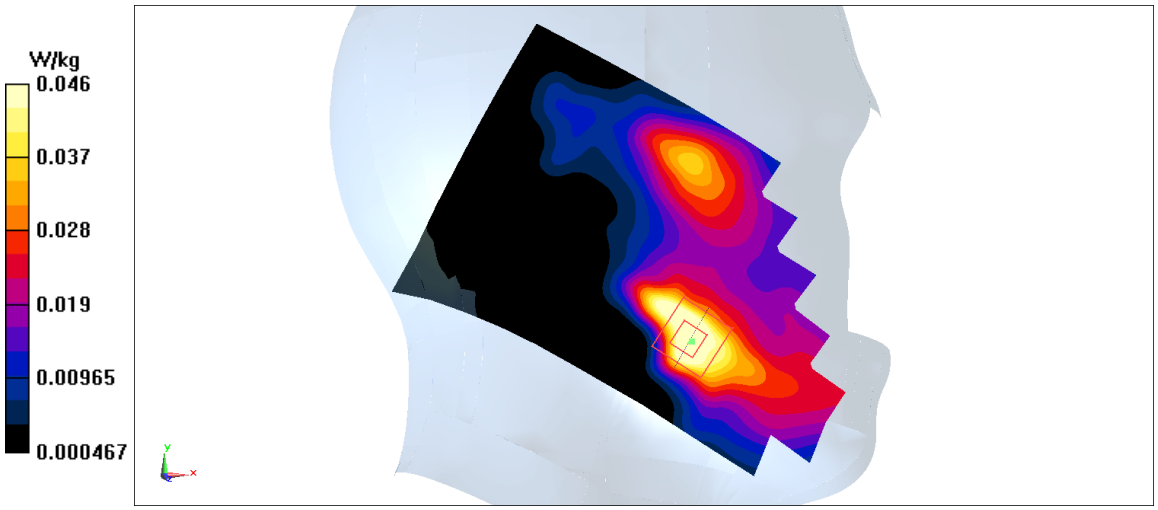


Fig A.3

PCS1900_CH810 Bottom
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1909.8; σ = 1.42 mho/m; εr = 39.37; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1909.8 Duty Cycle: 1:4
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.718 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.89 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.468 W/kg; SAR(10 g) = 0.234 W/kg
Maximum value of SAR (measured) = 0.485 W/kg

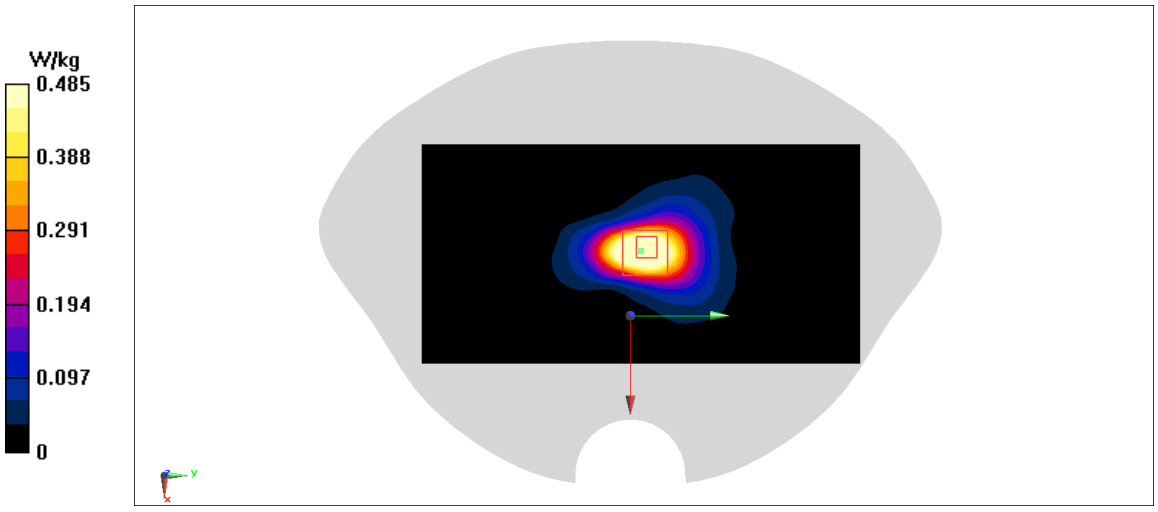


Fig A.4

PCS1900_CH661 Rear
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1880 Duty Cycle: 1:4
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.443 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.125 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.525 W/kg
SAR(1 g) = 0.287 W/kg; SAR(10 g) = 0.168 W/kg
Maximum value of SAR (measured) = 0.314 W/kg

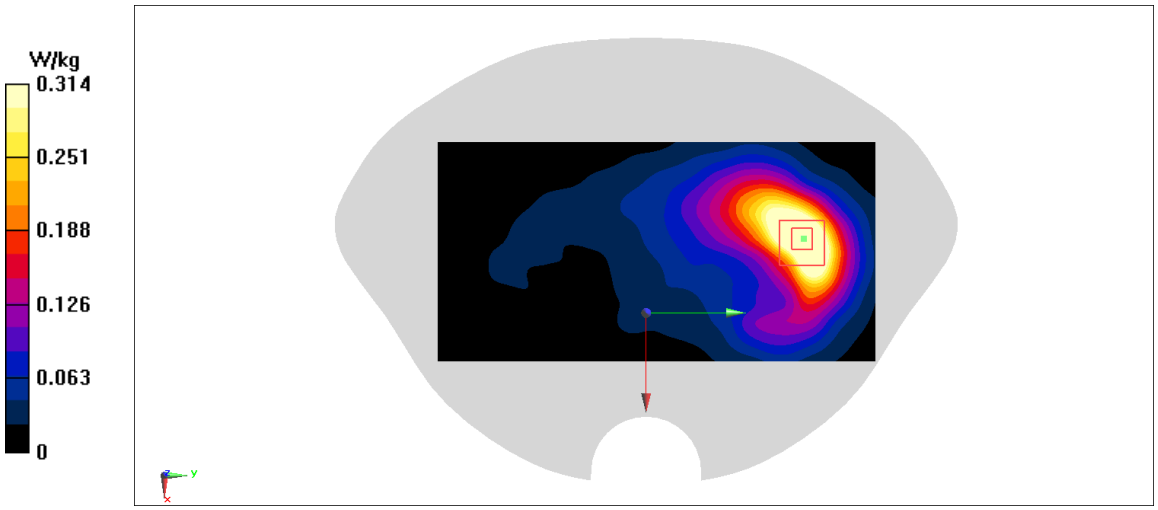


Fig A.5

WCDMA1900-BII_CH9262 Left Cheek
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1852.4; σ = 1.365 mho/m; εr = 39.44; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1852.4 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.116 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.711 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.123 W/kg
SAR(1 g) = 0.082 W/kg; SAR(10 g) = 0.05 W/kg
Maximum value of SAR (measured) = 0.0983 W/kg

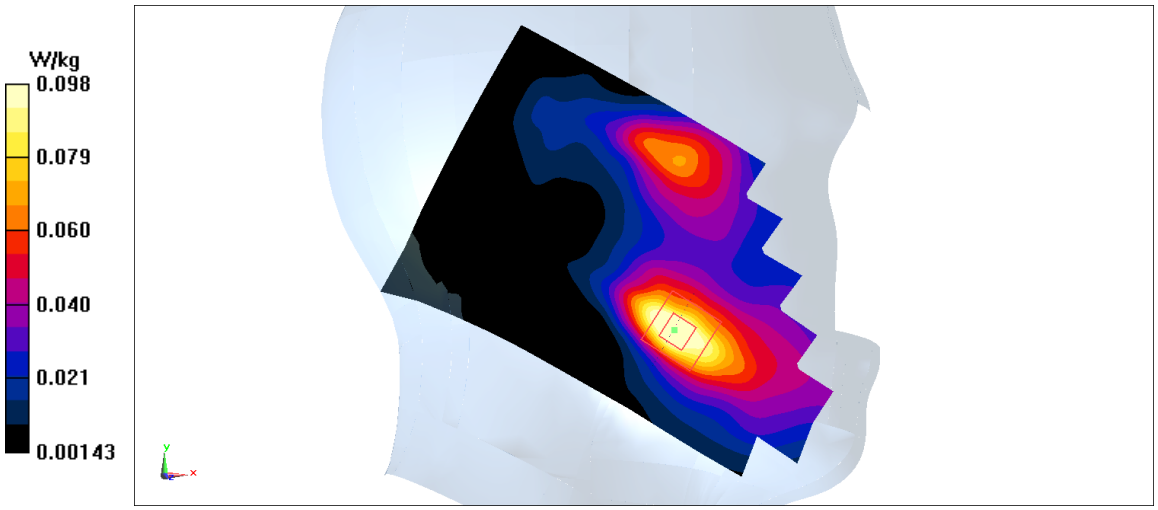


Fig A.6

WCDMA1900-BII_CH9262 Bottom
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1852.4; σ = 1.365 mho/m; εr = 39.44; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA1900-BII 1852.4 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.45 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.13 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 0.995 W/kg; SAR(10 g) = 0.511 W/kg
Maximum value of SAR (measured) = 1.42 W/kg

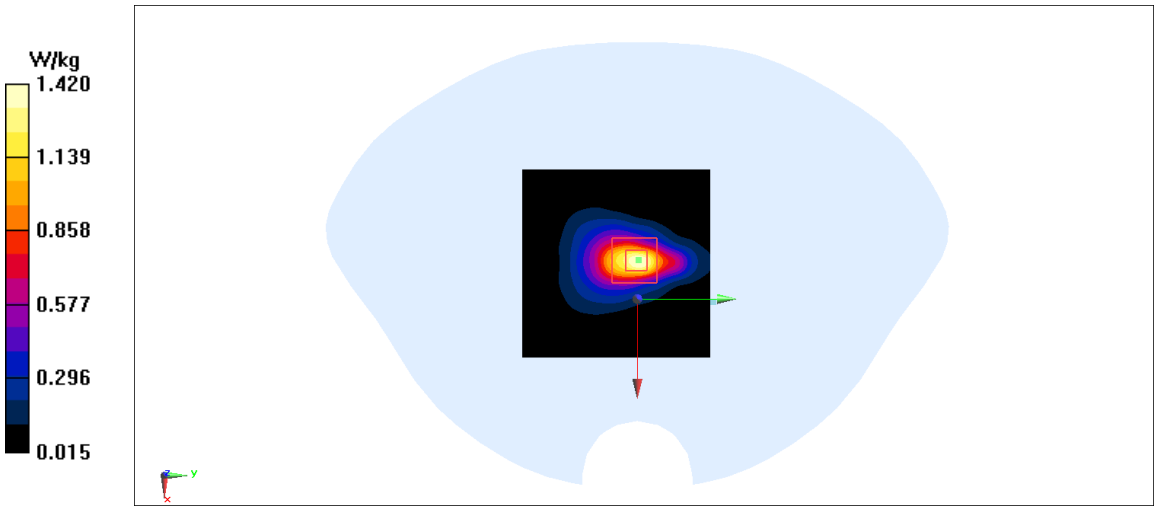


Fig A.7

WCDMA1900-BII_CH9400 Rear
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA1900-BII 1880 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.2 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.394 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.902 W/kg; SAR(10 g) = 0.514 W/kg
Maximum value of SAR (measured) = 1.21 W/kg

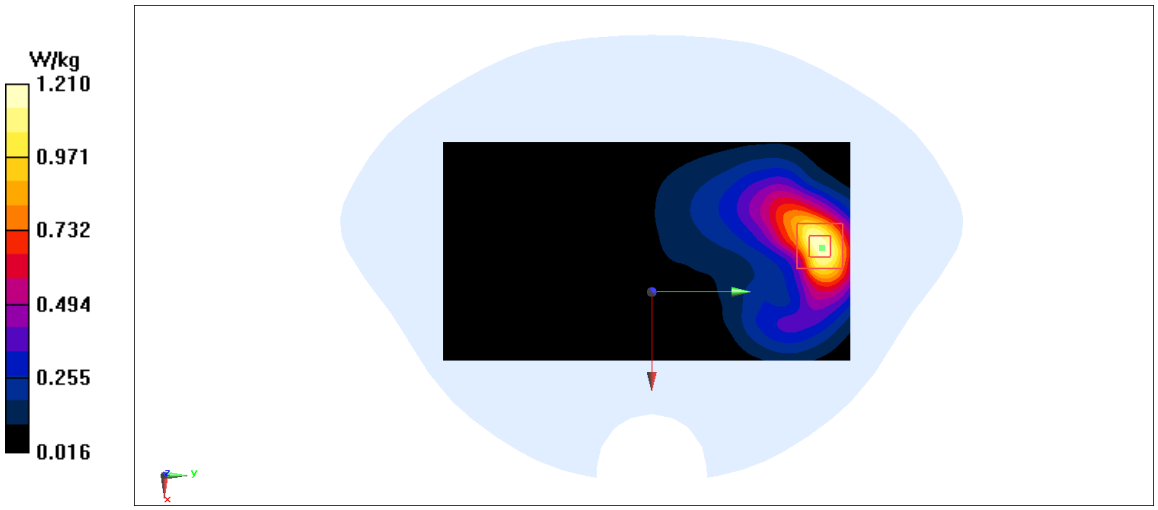


Fig A.8

WCDMA1700-BIV_CH1412 Left Cheek
Date: 2/8/2020
Electronics: DAE4 Sn1289
Medium: head 1750 MHz
Medium parameters used: f = 1732.4; σ = 1.337 mho/m; εr = 40.22; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.4 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.86,8.86,8.86)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.105 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.962 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.117 W/kg
SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.049 W/kg
Maximum value of SAR (measured) = 0.0922 W/kg

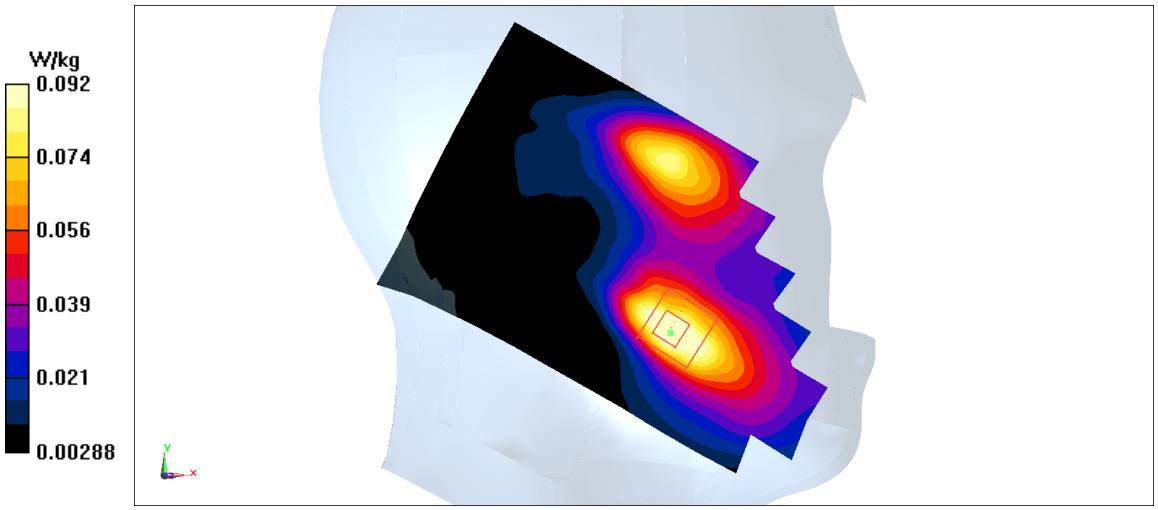


Fig A.9

WCDMA1700-BIV_CH1412 Bottom
Date: 2/8/2020
Electronics: DAE4 Sn1289
Medium: head 1750 MHz
Medium parameters used: f = 1732.5; σ = 1.337 mho/m; εr = 40.22; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.5 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.86,8.86,8.86)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.51 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 32.42 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.553 W/kg
Maximum value of SAR (measured) = 1.49 W/kg

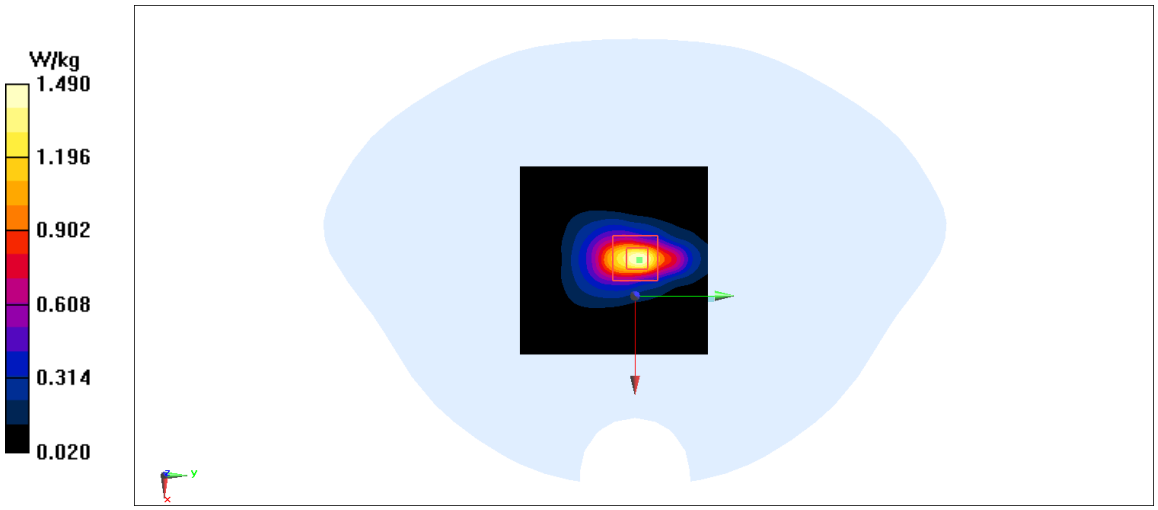


Fig A.10

WCDMA1700-BIV_CH1412 Rear
Date: 2/8/2020
Electronics: DAE4 Sn1289
Medium: head 1750 MHz
Medium parameters used: f = 1732.5; σ = 1.337 mho/m; εr = 40.22; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.5 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.86,8.86,8.86)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.608 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.783 W/kg; SAR(10 g) = 0.454 W/kg
Maximum value of SAR (measured) = 1.04 W/kg

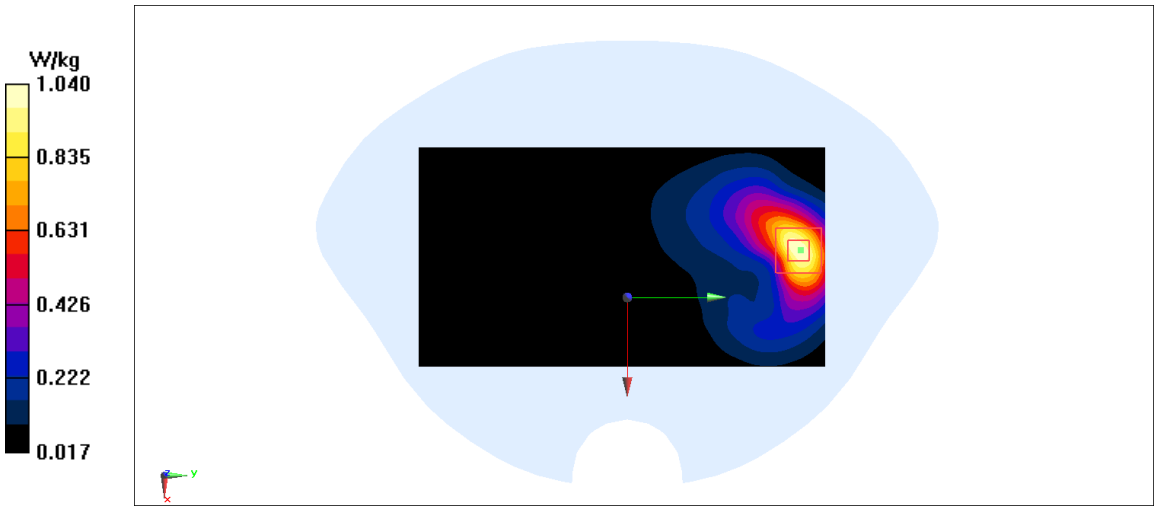


Fig A.11

WCDMA850-BV_CH4183 Right Cheek
Date: 2/7/2020
Electronics: DAE4 Sn1289
Medium: head 835 MHz
Medium parameters used: f = 836.6; σ = 0.89 mho/m; εr = 40.69; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA850-BV 836.6 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.45,10.45,10.45)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.325 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.819 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.357 W/kg
SAR(1 g) = 0.266 W/kg; SAR(10 g) = 0.197 W/kg
Maximum value of SAR (measured) = 0.312 W/kg

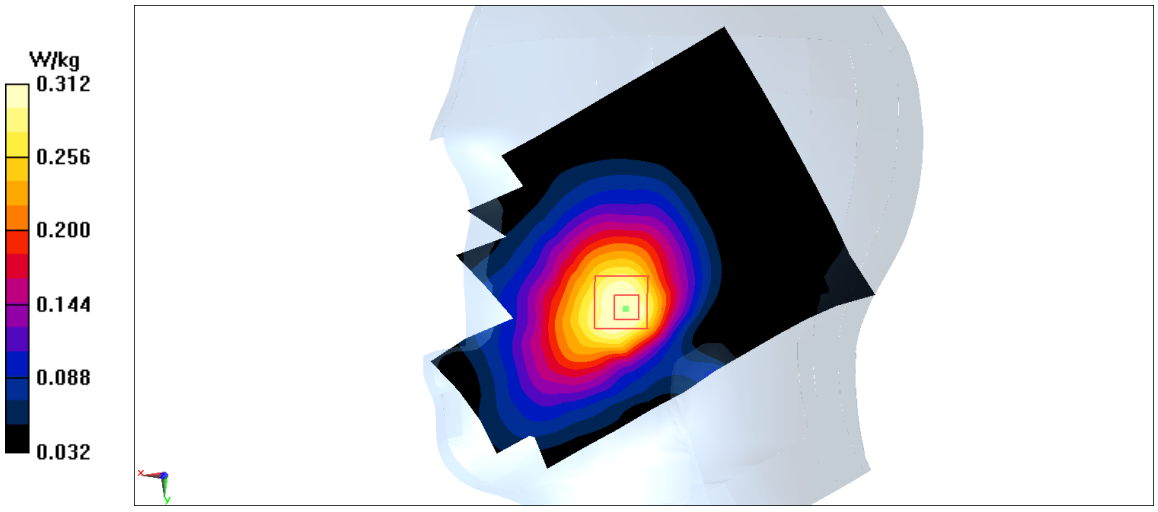


Fig A.12

WCDMA850-BV_CH4183 Rear
Date: 2/7/2020
Electronics: DAE4 Sn1289
Medium: head 835 MHz
Medium parameters used: f = 836.6; σ = 0.89 mho/m; εr = 40.69; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA850-BV 836.6 Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.45,10.45,10.45)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.638 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.62 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.941 W/kg
SAR(1 g) = 0.545 W/kg; SAR(10 g) = 0.299 W/kg
Maximum value of SAR (measured) = 0.747 W/kg

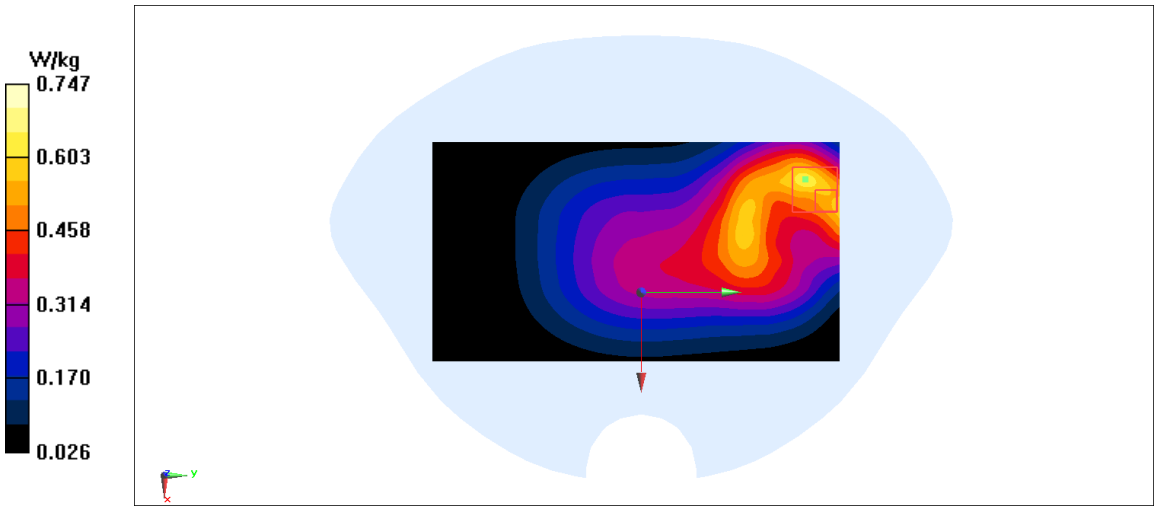


Fig A.13

LTE2500-FDD7_CH21100 Right Cheek
Date: 2/11/2020
Electronics: DAE4 Sn1289
Medium: head 2600 MHz
Medium parameters used: f = 2535 MHz; σ = 1.894 mho/m; εr = 39.09; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2535 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(7.65,7.65,7.65)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.59 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.539 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.1 W/kg
SAR(1 g) = 0.99 W/kg; SAR(10 g) = 0.494 W/kg
Maximum value of SAR (measured) = 1.49 W/kg

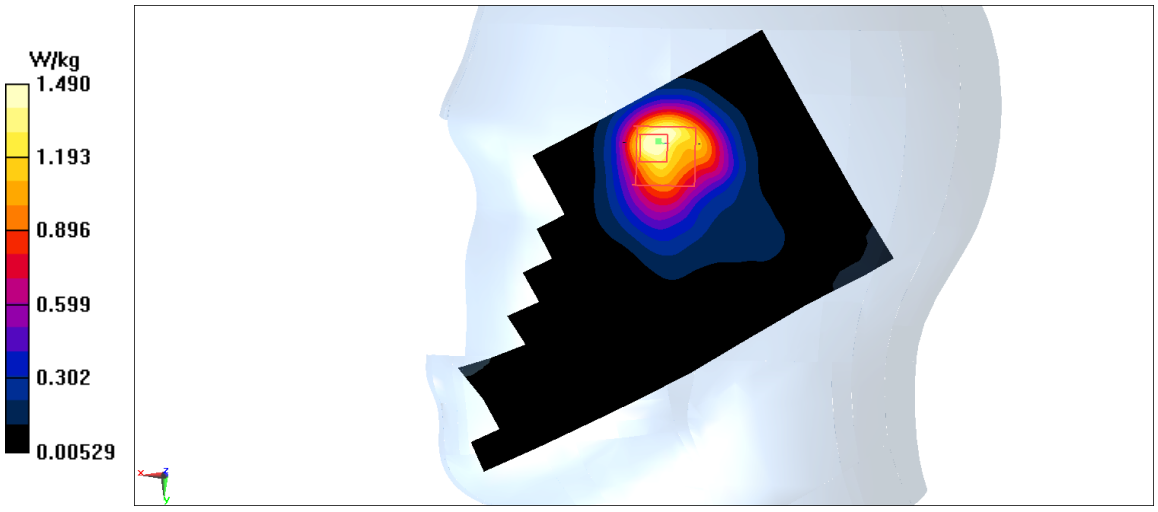


Fig A.14

LTE2500-FDD7_CH21350 Left
Date: 2/11/2020
Electronics: DAE4 Sn1289
Medium: head 2600 MHz
Medium parameters used: f = 2560 MHz; σ = 1.918 mho/m; εr = 39.06; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2560 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(7.65,7.65,7.65)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.802 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.457 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.521 W/kg; SAR(10 g) = 0.232 W/kg
Maximum value of SAR (measured) = 0.813 W/kg

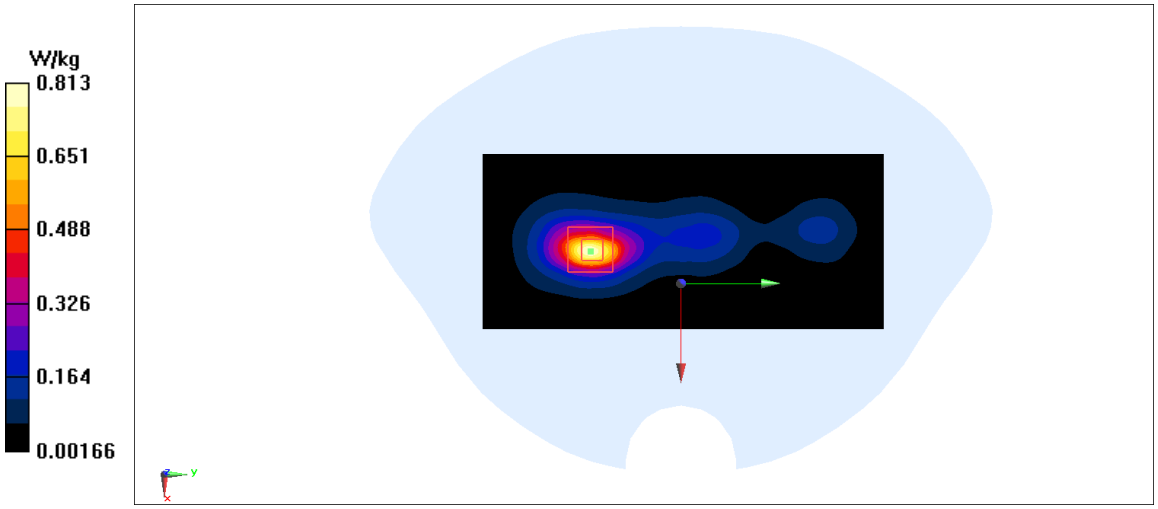


Fig A.15

LTE700-FDD12_CH23060 Right Tilt
Date: 2/6/2020
Electronics: DAE4 Sn1289
Medium: head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.846 mho/m; εr = 42.56; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.58,10.58,10.58)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.92 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.56 W/kg
SAR(1 g) = 0.958 W/kg; SAR(10 g) = 0.461 W/kg
Maximum value of SAR (measured) = 1.61 W/kg

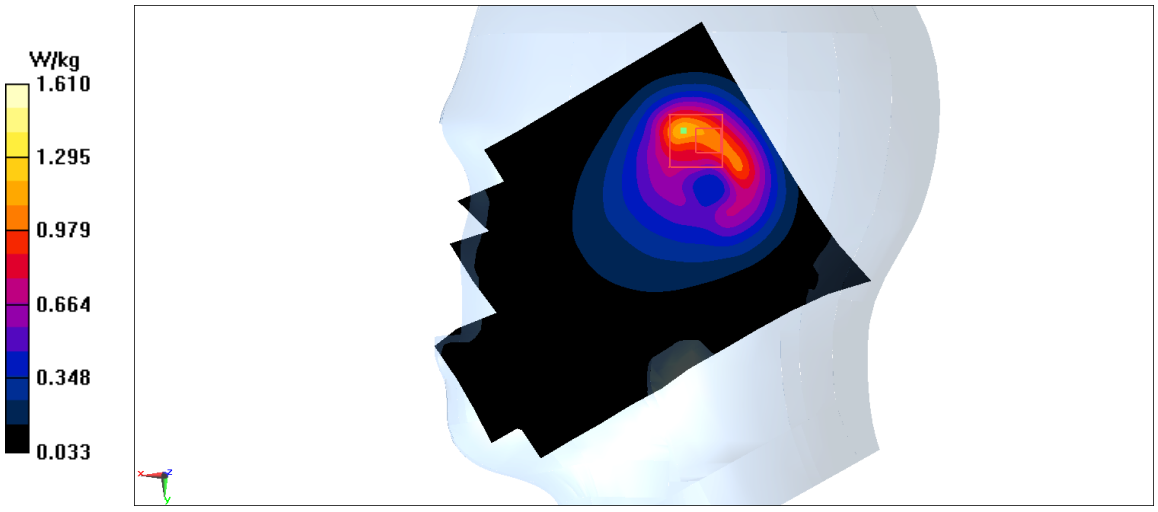


Fig A.16

LTE700-FDD12_CH23095 Rear
Date: 2/6/2020
Electronics: DAE4 Sn1289
Medium: head 750 MHz
Medium parameters used: f = 707.5 MHz; σ = 0.85 mho/m; εr = 42.55; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.58,10.58,10.58)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.397 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.12 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.505 W/kg
SAR(1 g) = 0.291 W/kg; SAR(10 g) = 0.173 W/kg
Maximum value of SAR (measured) = 0.396 W/kg

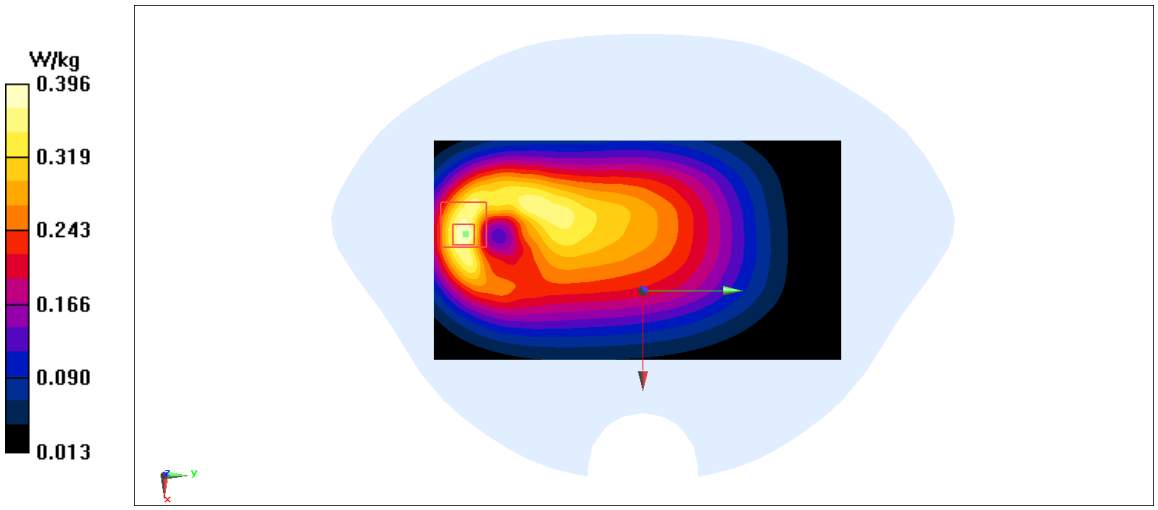


Fig A.17

LTE750-FDD13_CH23230 Right Tilt
Date: 2/6/2020
Electronics: DAE4 Sn1289
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.92 mho/m; εr = 42.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.58,10.58,10.58)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.04 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.32 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 2.39 W/kg
SAR(1 g) = 0.878 W/kg; SAR(10 g) = 0.429 W/kg
Maximum value of SAR (measured) = 1.41 W/kg

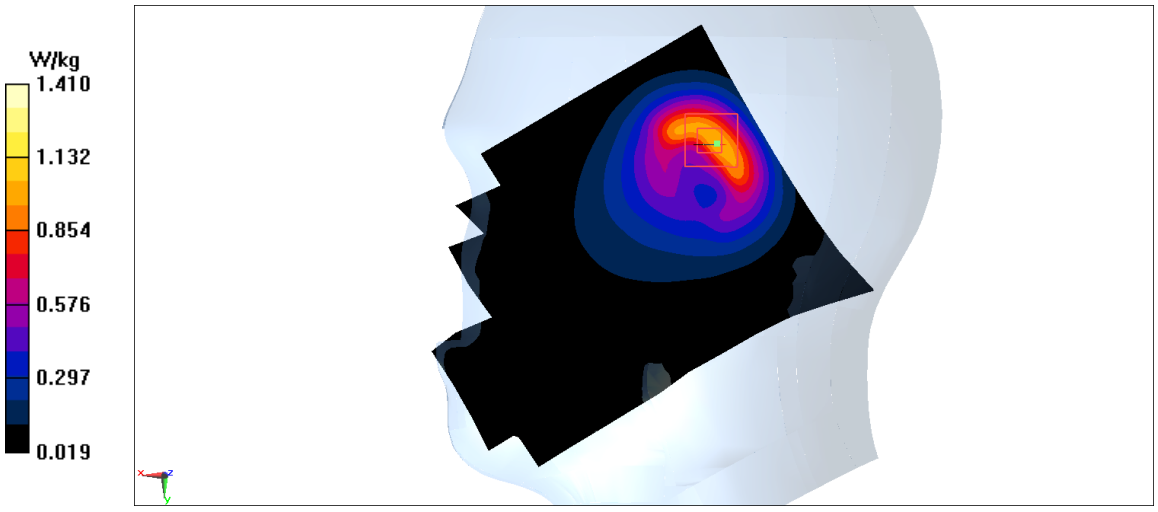


Fig A.18

LTE750-FDD13_CH23230 Rear
Date: 2/6/2020
Electronics: DAE4 Sn1289
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.92 mho/m; εr = 42.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.58,10.58,10.58)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.457 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.51 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.578 W/kg
SAR(1 g) = 0.328 W/kg; SAR(10 g) = 0.191 W/kg
Maximum value of SAR (measured) = 0.451 W/kg

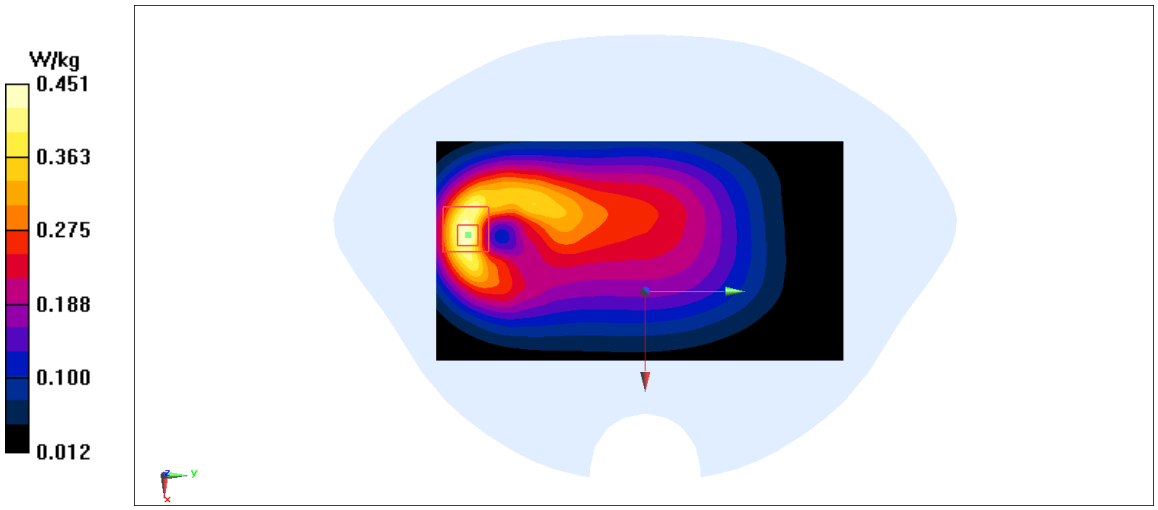


Fig A.19

LTE1900-FDD25_CH26340 Left Cheek
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.084 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.042 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.096 W/kg
SAR(1 g) = 0.064 W/kg; SAR(10 g) = 0.039 W/kg
Maximum value of SAR (measured) = 0.0761 W/kg

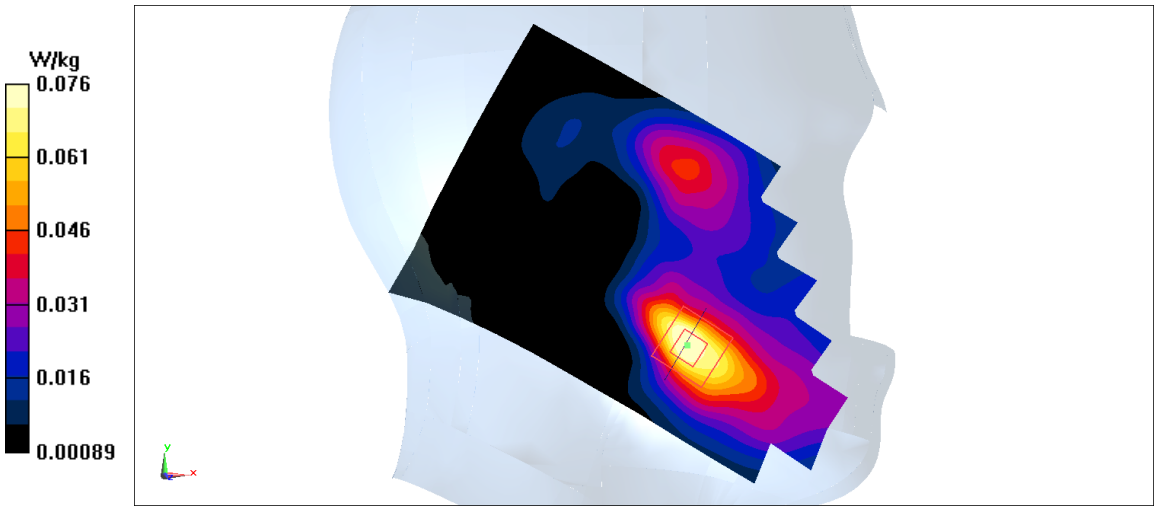


Fig A.20

LTE1900-FDD25_CH26590 Bottom
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1905 MHz; σ = 1.416 mho/m; εr = 39.37; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1905 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.29 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.3 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.875 W/kg; SAR(10 g) = 0.448 W/kg
Maximum value of SAR (measured) = 1.25 W/kg

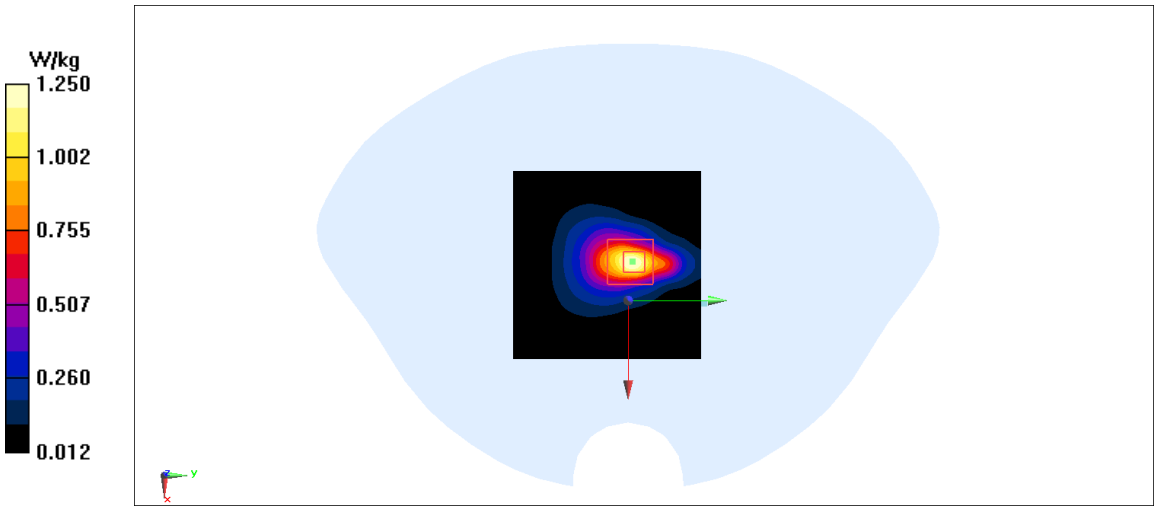


Fig A.21

LTE1900-FDD25_CH26340 Rear
Date: 2/9/2020
Electronics: DAE4 Sn1289
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.392 mho/m; εr = 39.4; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE1900-FDD25 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(8.56,8.56,8.56)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.696 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.089 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.848 W/kg
SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.303 W/kg
Maximum value of SAR (measured) = 0.702 W/kg

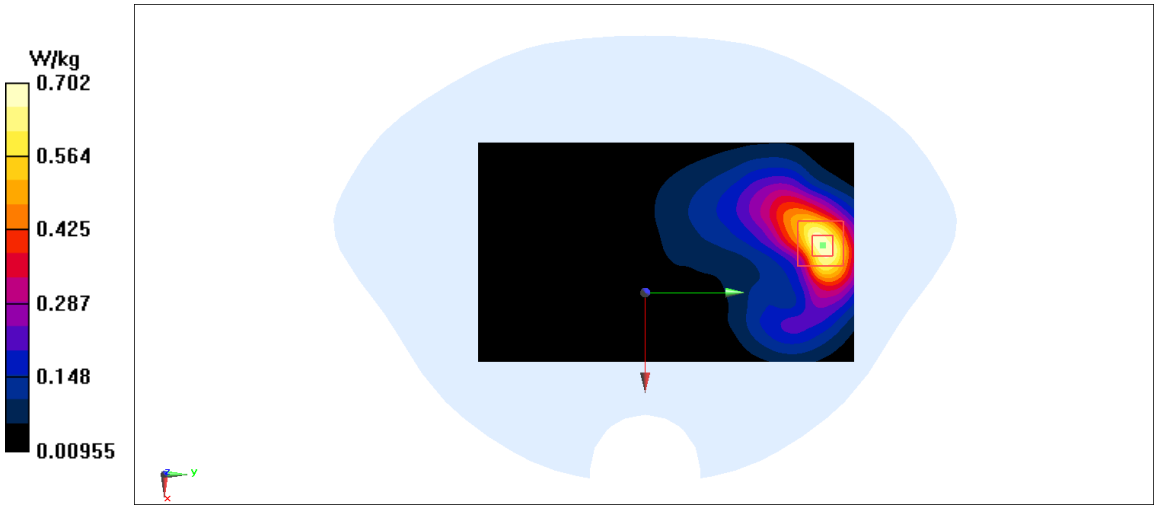


Fig A.22

LTE850-FDD26_CH26775 Right Cheek
Date: 2/7/2020
Electronics: DAE4 Sn1289
Medium: head 835 MHz
Medium parameters used: f = 822.5 MHz; σ = 0.876 mho/m; εr = 40.71; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE850-FDD26 822.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7307 ConvF(10.45,10.45,10.45)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.196 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.82 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.168 W/kg; SAR(10 g) = 0.128 W/kg
Maximum value of SAR (measured) = 0.193 W/kg

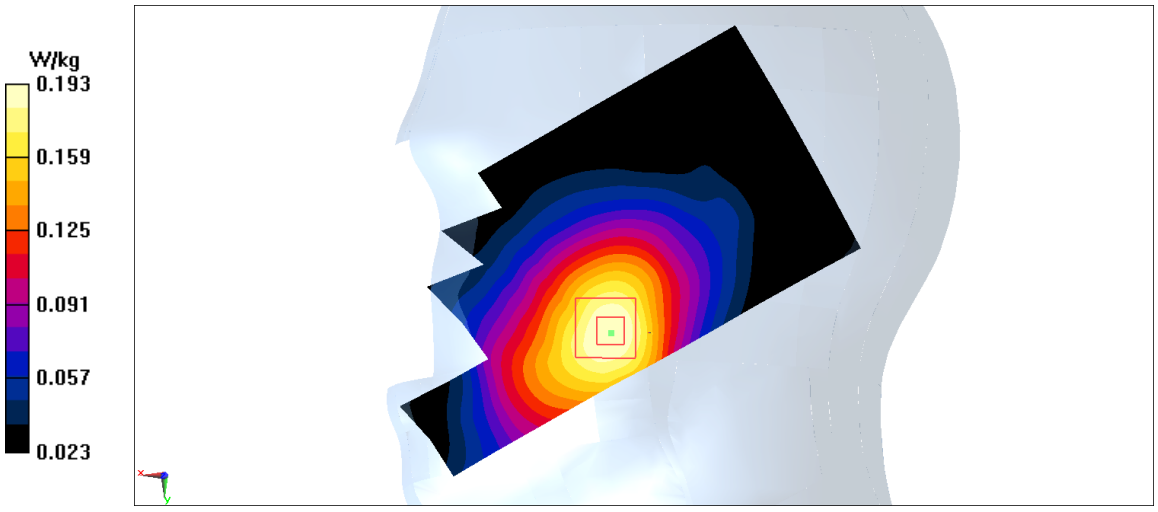


Fig A.23