



# SAR TEST REPORT

## No. I21Z62812-SEM03

**For**

**HMD Global Oy**

**GSM/WCDMA/LTE phone**

**Model Name: N139DL**

**with**

**Hardware Version: 2.0**

**Software Version: 00.2151.12.01**

**FCC ID: 2AJOTTA-1451**

**Issued Date: 2022-2-16**

**Note:**

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Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512,Fax:+86(0)10-62304633-2504

Email: [ctl\\_terminals@caict.ac.cn](mailto:ctl_terminals@caict.ac.cn), website: [www.caict.ac.cn](http://www.caict.ac.cn)



No.I21Z62812-SEM03

## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Issue Date</b>	<b>Description</b>
I21Z62812-SEM03	Rev.0	2022-2-16	Initial creation of test report

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## 1 Test Laboratory

### 1.1 Testing Location

Company Name:	CTTL
Address:	No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

### 1.2 Testing Environment

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

### 1.3 Project Data

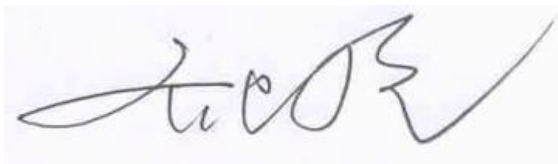
Project Leader:	Qi Dianyuan
Test Engineer:	Yao Juming
Testing Start Date:	January 22, 2022
Testing End Date:	January 27, 2022

### 1.4 Signature



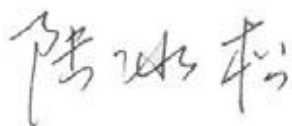
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**Yao Juming**  
(Prepared this test report)



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**Qi Dianyuan**  
(Reviewed this test report)



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**Lu Bingsong**  
Deputy Director of the laboratory  
(Approved this test report)

## 2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for HMD Global Oy GSM/WCDMA/LTE phone N139DL is as follows:

**Table 2.1: Highest Reported SAR (1g)**

Technology Band	Head	Hotspot	Body-Worn	Equipment Class
GSM850	0.49	0.59	0.75	PCE
GSM1900	0.42	1.13	0.77	
WCDMA1900	0.49	0.76	1.04	
WCDMA1700	0.57	0.87	1.12	
WCDMA 850	0.50	1.20	1.20	
LTE Band2	0.42	0.76	1.11	
LTE Band5	0.62	0.96	0.96	
LTE Band7	0.72	1.22	0.90	
LTE Band12	0.47	0.71	0.71	
LTE Band13	0.41	0.46	0.46	
LTE Band41-PC3	0.48	0.67	0.50	
LTE Band41-PC2	0.37	0.55	0.72	
LTE Band66	0.51	0.87	1.32	
LTE Band71	0.71	0.50	0.50	
WLAN 2.4GHz	0.34	0.23	0.10	DTS

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 15/10 mm 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:

**Head: 0.72 W/kg (1g)**

**Body: 1.32 W/kg (1g).**

Remark:

This device supports both LTE B4/B17 and LTE B66/B12. Since the supported frequency span for LTE B4/B17 falls completely within the supports frequency span for LTE B66/B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B66/B12.

**Table 2.2: The sum of SAR values for Main antenna + WiFi-2.4G**

	Position	Main antenna	WiFi-2.4G	Sum
<b>Highest SAR value for Head</b>	Left head, Touch (LTE B71)	0.71	0.34	<b>1.05</b>
<b>Highest SAR value for Body</b>	Rear 10mm (WCDMA B5)	1.20	0.23	<b>1.43</b>

**Table 2.3: The sum of SAR values for Main antenna +BT**

	Position	Main antenna	BT	Sum
<b>Highest SAR value for Head</b>	Right head, Touch (LTE B7)	0.72	0.10 <sup>[1]</sup>	<b>0.82</b>
<b>Highest SAR value for Body</b>	Rear 15mm (LTE B66)	1.32	0.03 <sup>[1]</sup>	<b>1.35</b>

[1] - Estimated SAR for Bluetooth (see the table 13.3)

According to the above tables, the highest sum of reported SAR values is **1.43 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

**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.

### 3 Client Information

#### 3.1 Applicant Information

Company Name:	HMD Global Oy
Address/Post:	Bertel Jungin aukio 9, 02600 Espoo, FINLAND
Contact Person:	Mikko Kahlos
Contact Email:	mikko.kahlos@hmdglobal.com
Telephone:	+358 408036126
Fax:	+97143697604

#### 3.2 Manufacturer Information

Company Name:	HMD Global Oy
Address/Post:	Bertel Jungin aukio 9, 02600 Espoo, FINLAND
Contact Person:	Mikko Kahlos
Contact Email:	mikko.kahlos@hmdglobal.com
Telephone:	+358 408036126
Fax:	+97143697604



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

### 4.1 About EUT

Description:	GSM/WCDMA/LTE phone
Model name:	N139DL
Operating mode(s):	GSM850/900/1800/1900, WCDMA B2/B4/B5 LTEBand2/4/5/7/12/13/17/41/66/71 BT, Wi-Fi(2.4G)
Tested Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	824 – 849 MHz (WCDMA 850 Band V)
	1850 – 1910 MHz (WCDMA1900 Band IV)
	1710-1755 MHz (WCDMA1700 Band II)
	1850.7 – 1909.3 MHz (LTE Band 2)
	824.7 – 848.3 MHz (LTE Band 5)
	2500 – 2570 MHz (LTE Band 7)
	699.7 – 715.3 MHz (LTE Band 12)
	779.5 – 784.5 MHz (LTE Band 13)
	2498.5 – 2687.5 MHz (LTE Band41)
	1710.7 –1779.3 MHz (LTE Band 66)
	665.5 –695.5 MHz (LTE Band 71)
2412 – 2462 MHz (Wi-Fi 2.4G)	
2400 – 2483.5 MHz (Bluetooth)	
GPRS/EGPRS Multislot Class:	12
Test device production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Hotspot mode:	Support

**4.2 Internal Identification of EUT used during the test**

EUT ID*	IMEI	HW Version	SW Version
EUT1	358712910023785	1.0	00.2151.12.01
EUT2	358712910024569	1.0	00.2151.12.01
EUT3	358712910024601	1.0	00.2151.12.01

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

**Note:** It is performed to test SAR with the EUT1~2 and conducted power with the EUT3.

**4.3 Internal Identification of AE used during the test**

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	HE402	/	SHENZHEN UTILITY ENERGY CO., LTD.

\*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 D01 SAR measurement 100 MHz to 6 GHz v01r04:** SAR Measurement Requirements for 100 MHz to 6 GHz.

**KDB865664 D02 RF 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 ( $\rho$ ). 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 heat capacity,  $\delta T$  is the temperature rise and  $\delta t$  is the exposure duration, or related to the electrical field in the tissue by

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

Where:  $\sigma$  is the conductivity of the tissue,  $\rho$  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**

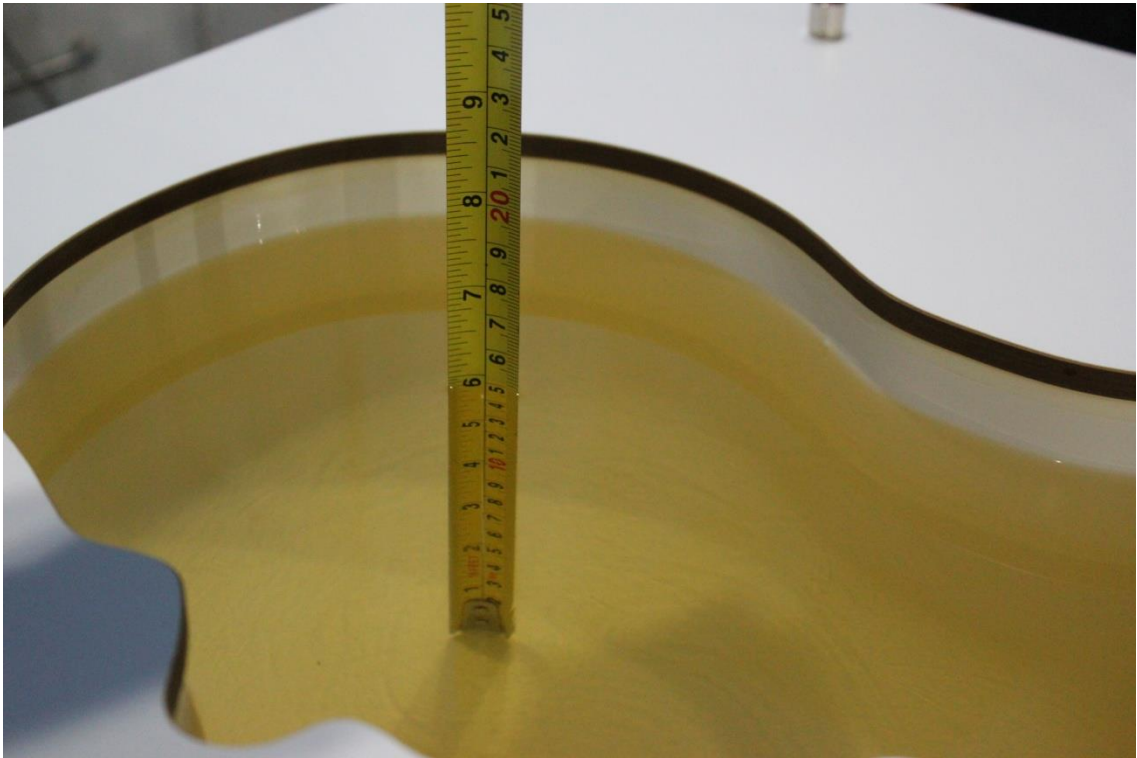
Frequency(MHz)	Liquid Type	Conductivity( $\sigma$ )	$\pm 5\%$ Range	Permittivity( $\epsilon$ )	$\pm 5\%$ Range
750	Head	0.89	0.85~0.93	41.94	39.8~44.0
835	Head	0.90	0.86~0.95	41.5	39.4~43.6
1750	Head	1.37	1.30~1.44	40.08	38.1~42.1
1900	Head	1.40	1.33~1.47	40.0	38.0~42.0
2450	Head	1.67	1.59~1.75	39.47	37.5~41.4
2600	Head	1.96	1.86~2.06	39.01	37.1~41.0

### 7.2 Dielectric Performance

**Table 7.2: Dielectric Performance of Tissue Simulating Liquid**

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity $\epsilon$	Drift (%)	Conductivity $\sigma$ (S/m)	Drift (%)
2022-1-22	Head	750 MHz	41.31	-1.50	0.8625	-3.09
2022-1-23	Head	835 MHz	40.95	-1.33	0.8802	-2.20
2022-1-24	Head	1750 MHz	43.02	7.34	1.382	0.88
2022-1-25	Head	1900 MHz	42.08	5.20	1.481	5.79
2022-1-26	Head	2450 MHz	41.6	6.12	1.915	6.39
2022-1-27	Head	2600 MHz	40.51	3.85	2.071	5.66

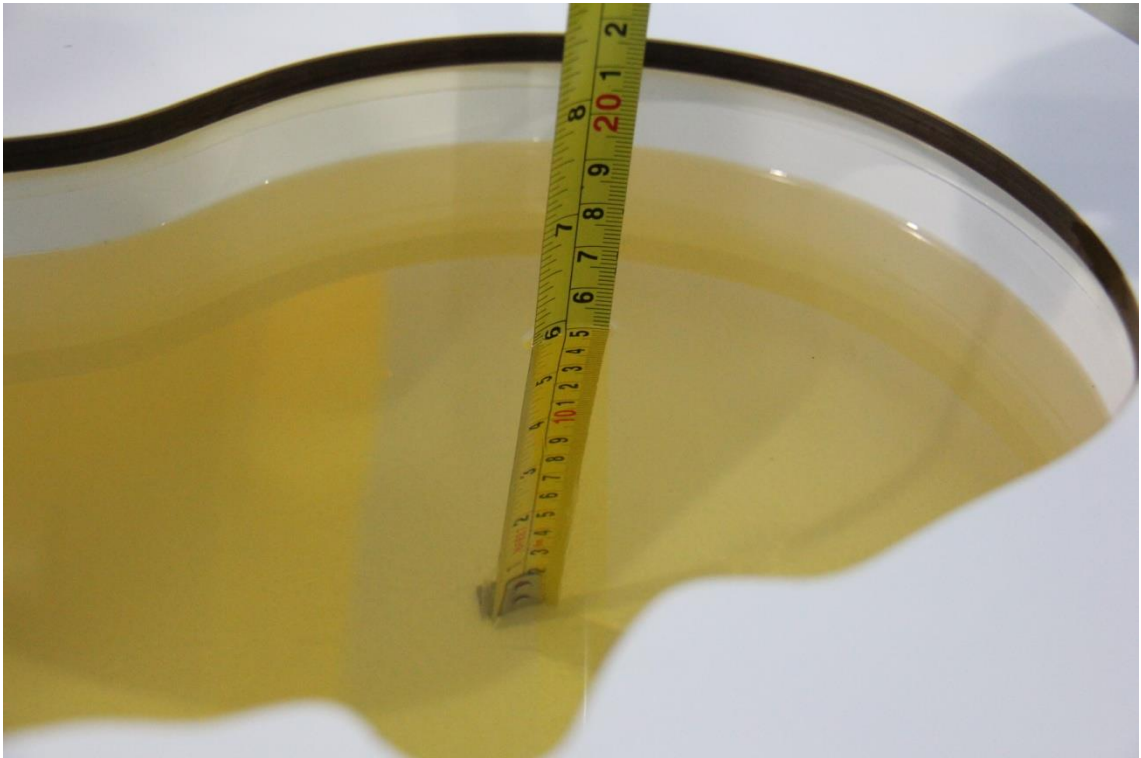
Note: The liquid temperature is 22.0°C



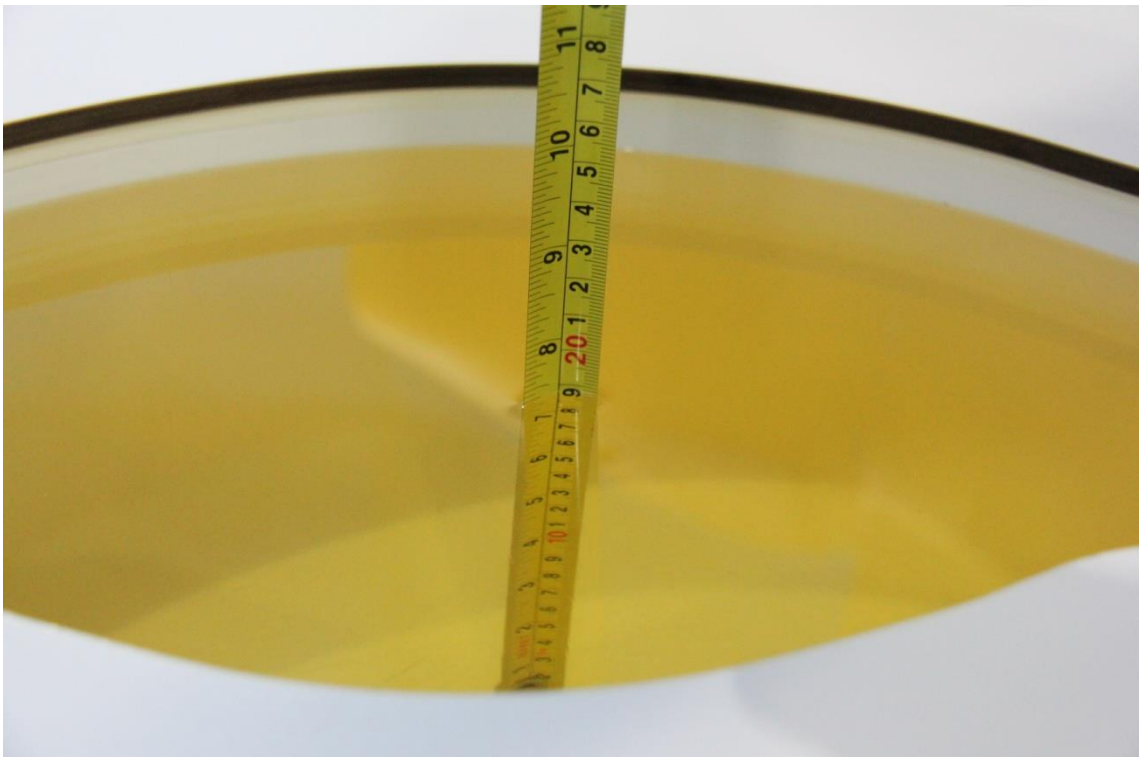
**Picture 7-1 Liquid depth in the Head Phantom (750MHz)**



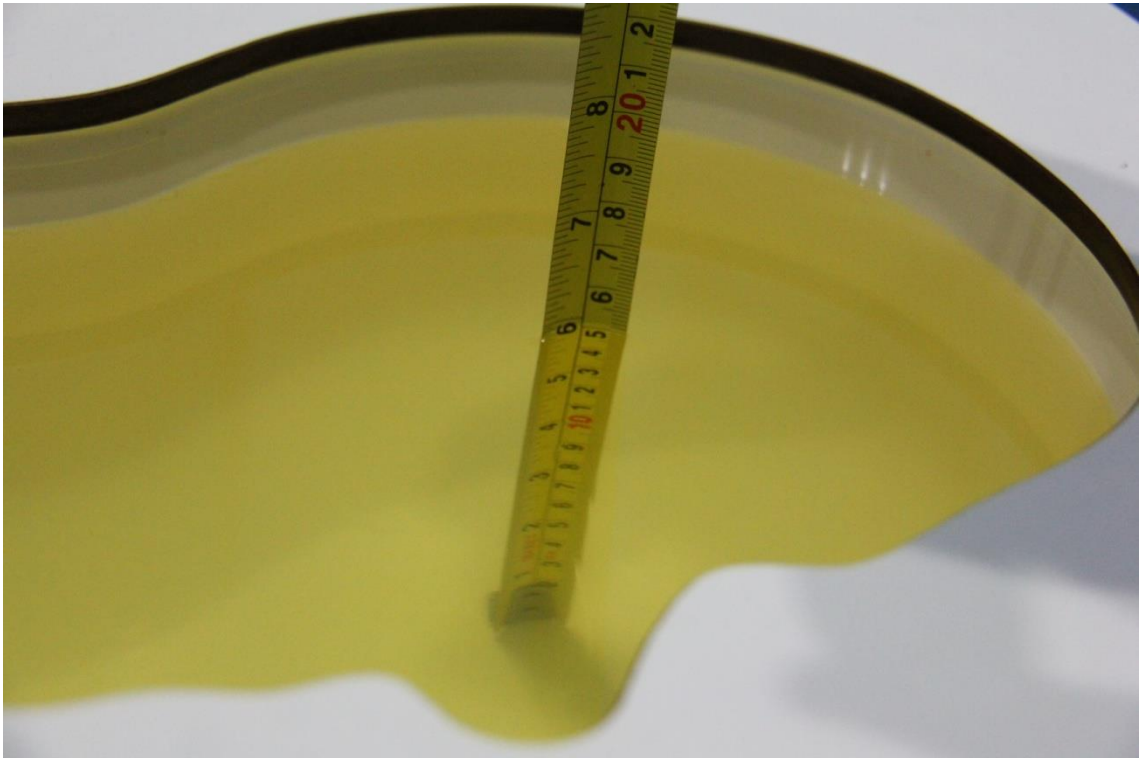
**Picture 7-2 Liquid depth in the Flat Phantom (750MHz)**



Picture 7-3 Liquid depth in the Head Phantom (835 MHz)



Picture 7-4 Liquid depth in the Flat Phantom (835 MHz)

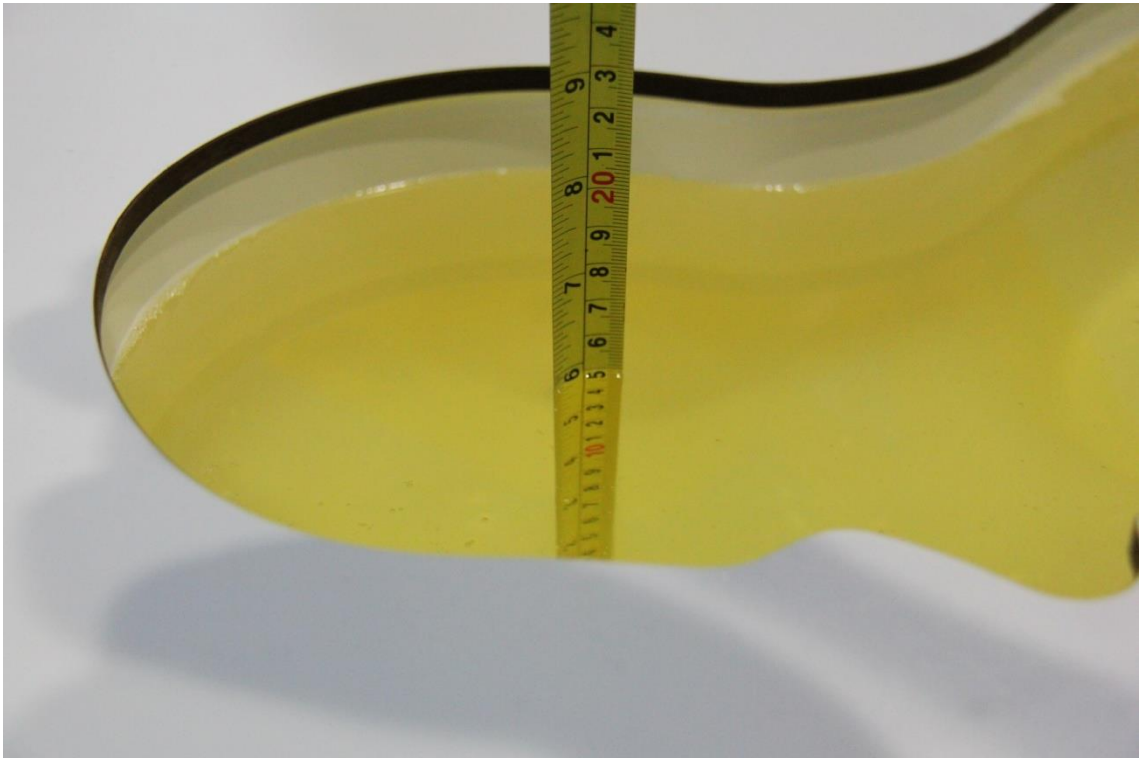


Picture 7-5 Liquid depth in the Head Phantom (1900 MHz)

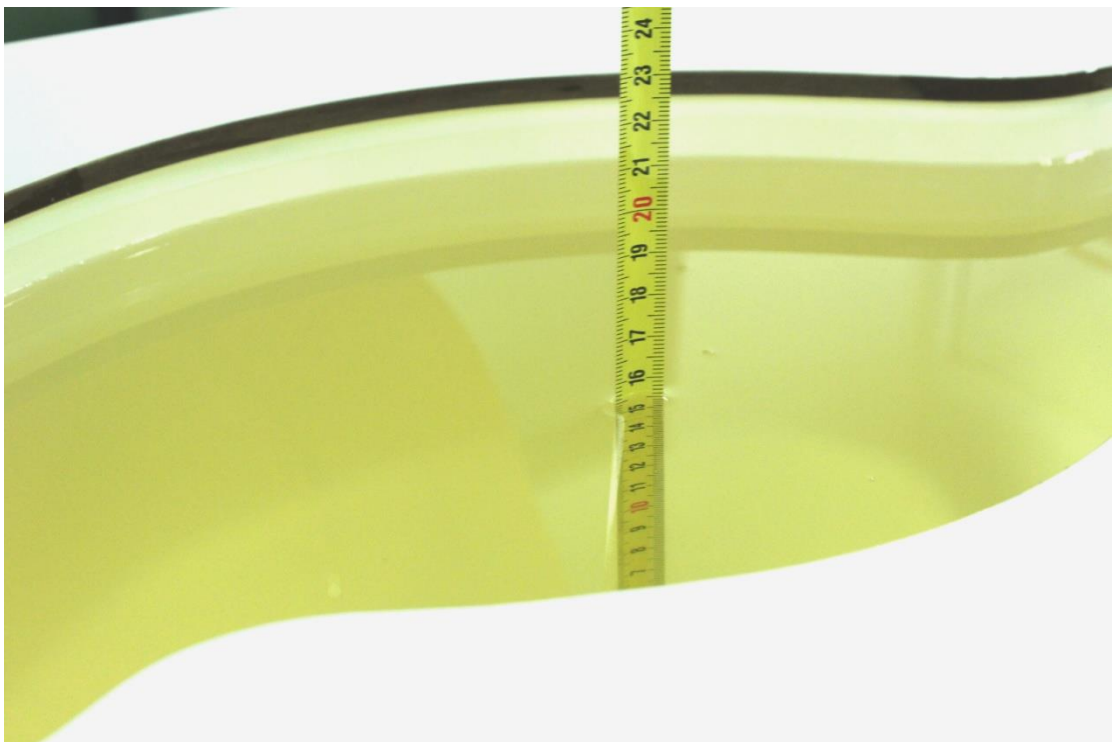


Picture 7-6 Liquid depth in the Flat Phantom (1900MHz)





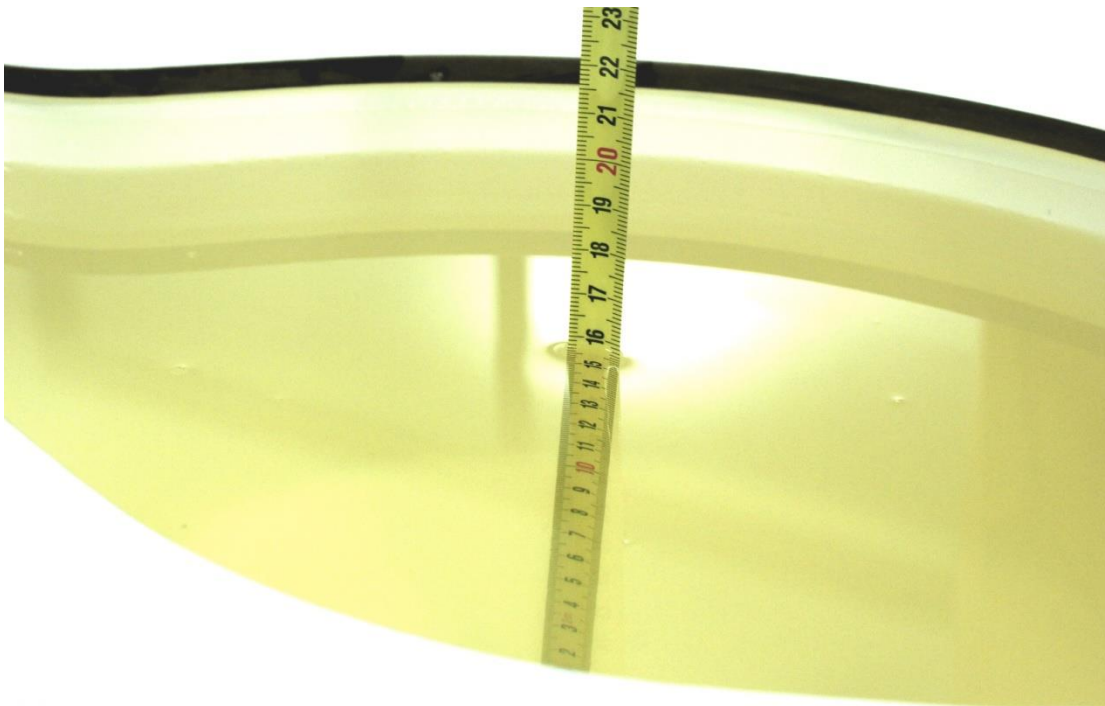
**Picture 7-7 Liquid depth in the Head Phantom (2450MHz)**



**Picture 7-8 Liquid depth in the Flat Phantom (2450MHz)**



Picture 7-9 Liquid depth in the Head Phantom (2600 MHz)

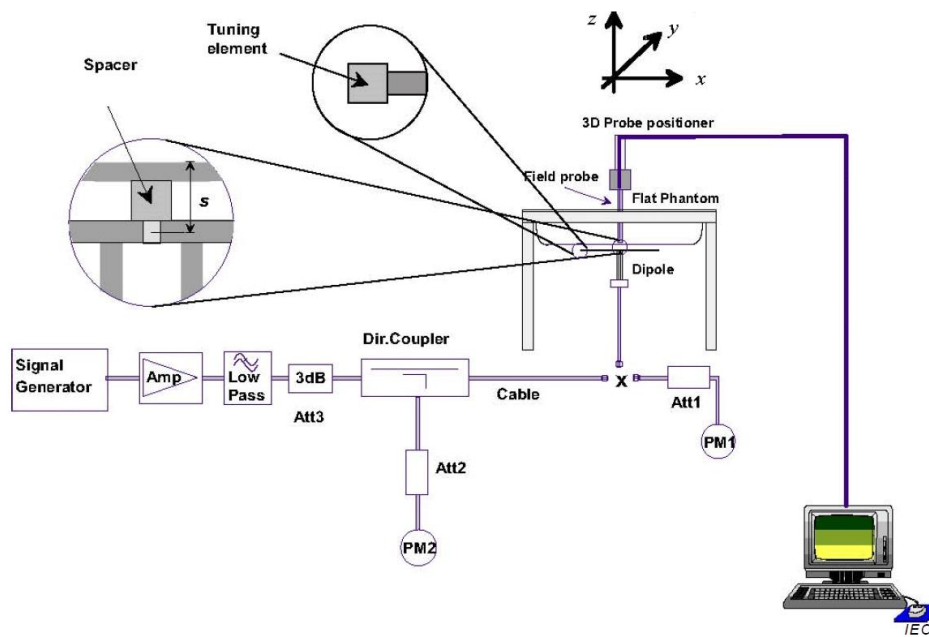


Picture 7-10 Liquid depth in the Flat Phantom (2600MHz)

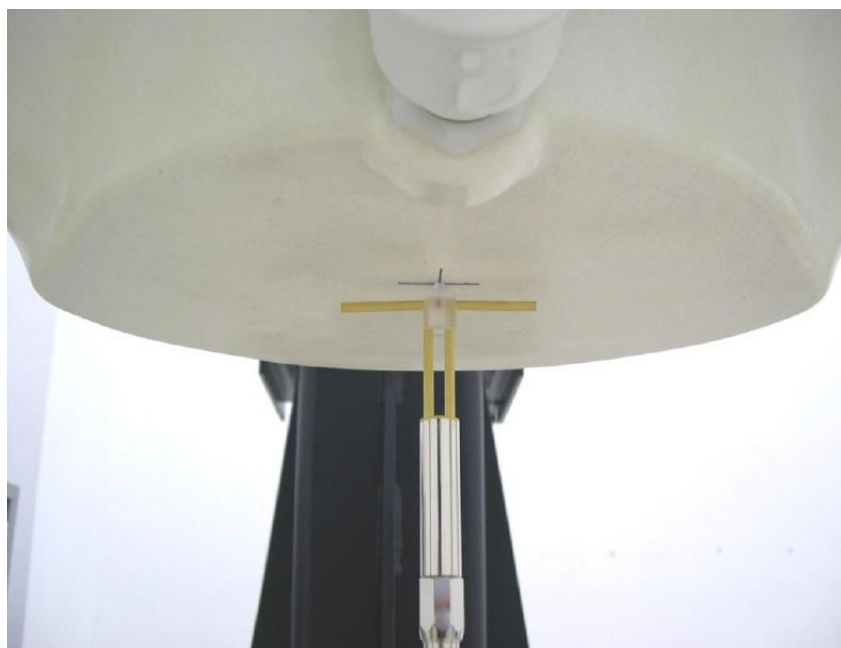
## 8 System verification

### 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
2022-1-22	750 MHz	5.65	8.68	5.56	8.48	-1.59%	-2.30%
2022-1-23	835 MHz	6.24	9.63	6.32	9.72	1.28%	0.93%
2022-1-24	1750 MHz	19.4	36.9	19.64	37.28	1.24%	1.03%
2022-1-25	1900 MHz	20.9	40.1	20.56	39.48	-1.63%	-1.55%
2022-1-26	2450 MHz	24.9	53.3	24.64	52.84	-1.04%	-0.86%
2022-1-27	2600 MHz	25.5	57.1	24.88	56.32	-2.43%	-1.37%

## 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.

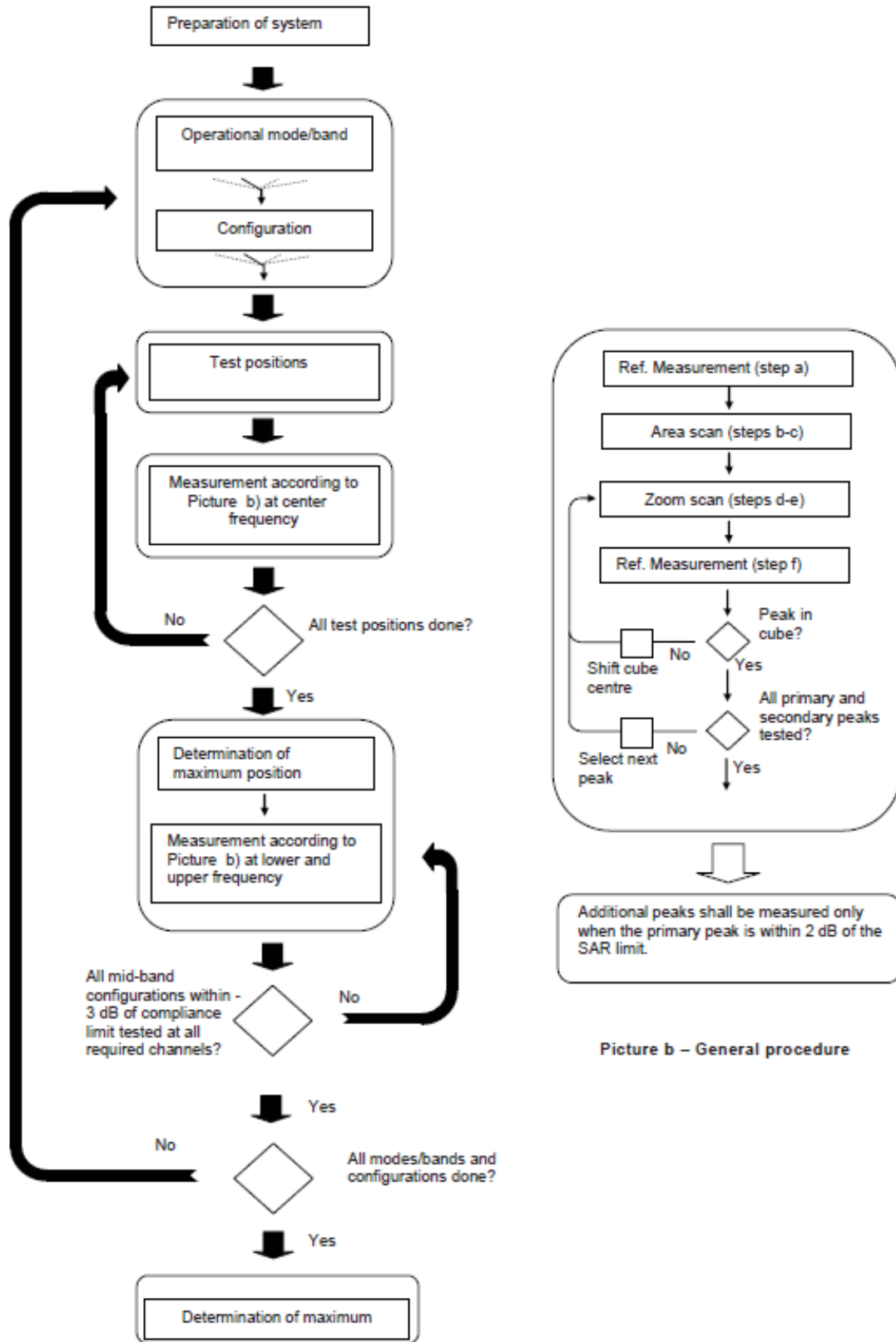
**Step 1:** The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band ( $f_c$ ) for:

- 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 within 3 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 a – Tests to be performed

Picture b – General procedure

Picture 9.1 Block 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.

		$\leq 3$ GHz	$> 3$ GHz	
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		$5 \pm 1$ mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm	
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$	
Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$		$\leq 2$ GHz: $\leq 15$ mm 2 – 3 GHz: $\leq 12$ mm	3 – 4 GHz: $\leq 12$ mm 4 – 6 GHz: $\leq 10$ mm	
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.		
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$		$\leq 2$ GHz: $\leq 8$ mm 2 – 3 GHz: $\leq 5$ mm*	3 – 4 GHz: $\leq 5$ mm* 4 – 6 GHz: $\leq 4$ mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	$\leq 5$ mm	3 – 4 GHz: $\leq 4$ mm 4 – 5 GHz: $\leq 3$ mm 5 – 6 GHz: $\leq 2$ mm	
	graded grid	$\Delta z_{Zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	$\leq 4$ mm	3 – 4 GHz: $\leq 3$ mm 4 – 5 GHz: $\leq 2.5$ mm 5 – 6 GHz: $\leq 2$ mm
		$\Delta z_{Zoom}(n>1)$ : between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	$\geq 30$ mm	3 – 4 GHz: $\geq 28$ mm 4 – 5 GHz: $\geq 25$ mm 5 – 6 GHz: $\geq 22$ mm	
Note: $\delta$ 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 <i>reported</i> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ 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.				

### 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<sub>n</sub>), 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	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c / \beta_d$	$\beta_{hs}$	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	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c / \beta_d$	$\beta_{hs}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$ (SF)	$\beta_{ed}$ (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	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	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 & Schwarz 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  $\leq 0.8$  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

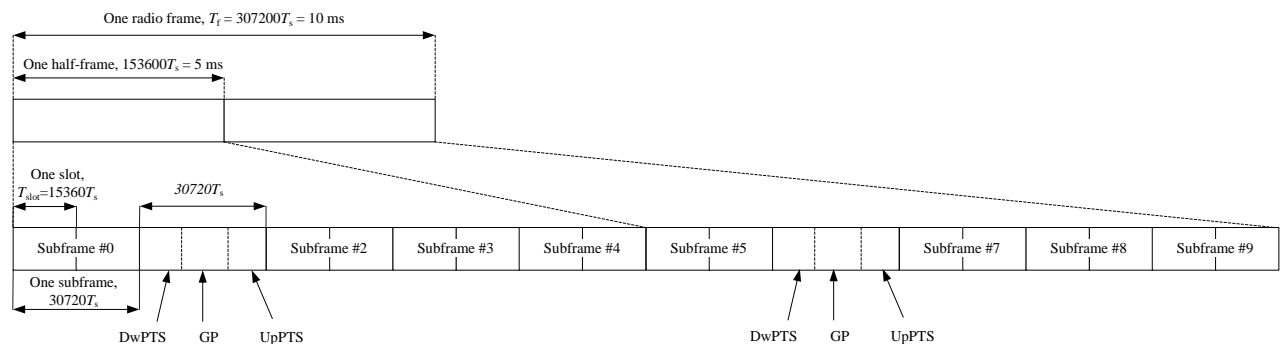
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

### 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  $\leq 0.8$  W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is  $> 1.45$  W/kg, the remaining required test channels must also be tested.

## TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 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. 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	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
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 =  $\text{uplink frame} \cdot 6 + \text{UpPTS} \cdot 2 / \text{one frame length}$

$$= (30720 \cdot T_s + 6 + 5120 \cdot T_s \cdot 2) / 307200 \cdot T_s$$

$$= 0.633$$

## 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, DASY5 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 section 14 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, 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  $\leq 1.2$  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 55 wireless handsets. For the sample size studied, the root-mean-squared errors of the algorithm are 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 GSM850/1900, WCDMA1700/1900 and LTE Band2/7/41/66. Low power status is applied for hotspot mode of above bands. For other bands, Normal power status is applied for both head and body test.

### 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.

**Table 11.1-1: The conducted power measurement results–GSM850 Normal power**

GSM 850 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	32.14	32.21	32.02	32.50	/	/	/	/
GSM 850 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	32.16	32.12	32.18	32.50	-9.03	23.13	23.09	23.15
<b>2 Txslots</b>	29.48	29.48	29.45	30.50	-6.02	23.46	23.46	23.43
3 Txslots	27.59	27.61	27.53	28.00	-4.26	23.33	23.35	23.27
4 Txslots	26.24	26.25	25.58	27.00	-3.01	23.23	23.24	22.57
GSM 850 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.98	31.96	31.85	32.50	-9.03	22.95	22.93	22.82
<b>2 Txslots</b>	29.30	29.33	29.35	30.50	-6.02	23.28	23.31	23.33
3 Txslots	27.43	27.49	27.47	28.00	-4.26	23.17	23.23	23.21
4 Txslots	26.12	26.16	25.51	27.00	-3.01	23.11	23.15	22.50
GSM 850 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	26.28	26.51	26.34	28.00	-9.03	17.25	17.48	17.31
2 Txslots	23.63	23.79	23.73	25.00	-6.02	17.61	17.77	17.71
3Txslots	21.90	21.99	22.77	23.00	-4.26	17.64	17.73	18.51
4 Txslots	21.23	21.47	20.69	22.00	-3.01	18.22	18.46	17.68

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 GSM850.**

**Table 11.1-2: The conducted power measurement results–GSM850 Low power**

GSM 850 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	29.11	29.16	29.08	30.00	/	/	/	/
GSM 850 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	29.09	29.10	29.01	30.00	-9.03	20.06	20.07	19.98
<b>2 Txslots</b>	26.38	26.38	26.30	28.00	-6.02	20.36	20.36	20.28
3 Txslots	23.97	24.14	24.12	26.00	-4.26	19.71	19.88	19.86
4 Txslots	22.79	22.98	23.12	25.00	-3.01	19.78	19.97	20.11
GSM 850 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	29.07	29.08	29.00	30.00	-9.03	20.04	20.05	19.97
<b>2 Txslots</b>	26.36	26.37	26.15	28.00	-6.02	20.34	20.35	20.13
3 Txslots	24.12	24.14	24.11	26.00	-4.26	19.86	19.88	19.85
4 Txslots	23.04	23.05	23.11	25.00	-3.01	20.03	20.04	20.10
GSM 850 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	26.28	26.51	26.34	28.00	-9.03	17.25	17.48	17.31
2 Txslots	23.63	23.79	23.73	25.00	-6.02	17.61	17.77	17.71
3Txslots	21.90	21.99	22.77	23.00	-4.26	17.64	17.73	18.51
4 Txslots	21.23	21.47	20.69	22.00	-3.01	18.22	18.46	17.68

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 GSM850.**

**Table 11.1-3: The conducted power measurement results-GSM1900 Normal power**

PCS1900 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	29.46	29.78	29.62	31.50	/	/	/	/
PCS1900 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	29.45	29.77	29.59	31.50	-9.03	20.42	20.74	20.56
2 Txslots	26.72	26.85	26.66	28.30	-6.02	20.70	20.83	20.64
3 Txslots	25.48	25.22	25.12	27.00	-4.26	21.22	20.96	20.86
<b>4 Txslots</b>	<b>24.36</b>	<b>23.97</b>	<b>24.03</b>	<b>25.50</b>	<b>-3.01</b>	<b>21.35</b>	<b>20.96</b>	<b>21.02</b>
PCS1900 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	29.42	29.74	29.57	31.50	-9.03	20.39	20.71	20.54
2 Txslots	26.70	26.89	26.66	28.30	-6.02	20.68	20.87	20.64
3Txslots	25.49	25.20	25.03	27.00	-4.26	21.23	20.94	20.77
<b>4 Txslots</b>	<b>24.35</b>	<b>24.11</b>	<b>24.03</b>	<b>25.50</b>	<b>-3.01</b>	<b>21.34</b>	<b>21.10</b>	<b>21.02</b>
PCS1900 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	25.72	25.78	25.70	27.00	-9.03	16.69	16.75	16.67
2 Txslots	22.75	23.00	22.52	24.00	-6.02	16.73	16.98	16.50
3Txslots	21.21	21.21	21.01	23.00	-4.26	16.95	16.95	16.75
4 Txslots	19.74	19.66	19.38	21.00	-3.01	16.73	16.65	16.37

**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 4Txslots for GSM1900.**

**Table 11.1-4: The conducted power measurement results-GSM1900 Low power**

PCS1900 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.02	28.22	27.83	29.50	/	/	/	/
PCS1900 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.01	28.27	27.85	29.50	-9.03	18.98	19.24	18.82
2 Txslots	24.92	25.44	24.59	26.00	-6.02	18.90	19.42	18.57
<b>3 Txslots</b>	23.62	24.18	24.35	25.00	-4.26	19.36	19.92	20.09
4 Txslots	22.06	22.62	22.75	23.50	-3.01	19.05	19.61	19.74
PCS1900 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	27.90	28.23	27.76	29.50	-9.03	18.87	19.20	18.73
2 Txslots	24.80	25.35	24.51	26.00	-6.02	18.78	19.33	18.49
<b>3Txslots</b>	24.57	24.10	24.27	25.00	-4.26	20.31	19.84	20.01
4 Txslots	21.98	22.53	22.69	23.50	-3.01	18.97	19.52	19.68
PCS1900 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	25.72	25.78	25.70	27.00	-9.03	16.69	16.75	16.67
2 Txslots	22.75	23.00	22.52	24.00	-6.02	16.73	16.98	16.50
3Txslots	21.21	21.21	21.01	23.00	-4.26	16.95	16.95	16.75
4 Txslots	19.74	19.66	19.38	21.00	-3.01	16.73	16.65	16.37

**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 GSM1900.**



## 11.2 WCDMA Measurement result

Table 11.2-1: The conducted Power for WCDMA B5

WCDMA850	FDDV result (dBm)			Tune up
	4233/4458	4183/4408	4132/4357	
	(846.6MHz)	(836.6MHz)	(826.4MHz)	
	23.07	23.11	23.07	24.00
HSUPA	21.91	21.71	21.44	22.50
	20.77	20.83	20.50	22.50
	20.57	20.51	20.66	22.50
	21.35	21.27	20.92	22.50
	21.85	21.82	21.81	22.50
HSPA+	21.37	21.34	20.47	22.50
DC-HSDPA	21.93	22.78	21.94	23.00
	21.95	21.90	21.85	23.00
	21.35	21.36	21.43	22.50
	21.42	21.44	21.51	22.50

**Table 11.2-2: The conducted Power for WCDMA B2/B4 –Normal Power**

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938 (1907.6MHz)	9400/9800 (1880MHz)	9262/9662 (1852.4MHz)	
	23.27	23.47	23.44	
HSUPA	23.02	23.14	23.12	25.00
	21.47	21.46	21.45	23.00
	21.57	21.57	21.53	23.50
	22.01	21.89	21.82	22.50
	22.75	22.88	22.66	24.00
HSPA+	22.36	22.54	22.47	24.00
DC-HSDPA	23.01	23.13	23.03	25.00
	23.09	23.04	23.05	25.00
	22.25	22.59	22.58	24.50
	22.59	22.53	22.53	24.50

WCDMA1700	FDDIV result (dBm)			Tune up
	1513/1738 (1752.6MHz)	1412/1637 (1732.4MHz)	1312/1537 (1712.4MHz)	
	23.20	23.15	23.11	
HSUPA	21.94	21.44	21.84	23.00
	20.95	20.59	20.91	23.00
	21.12	21.12	21.01	23.00
	21.29	20.86	21.26	23.00
	21.93	21.91	22.29	23.00
HSPA+	21.57	21.40	21.73	23.00
DC-HSDPA	21.88	21.95	22.32	23.00
	22.25	21.91	22.28	23.00
	21.38	21.58	21.79	23.00
	21.43	21.48	21.77	23.00

Table 11.2-3: The conducted Power for WCDMA B2/B4 –Low Power

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938 (1907.6MHz)	9400/9800 (1880MHz)	9262/9662 (1852.4MHz)	
	19.74	20.08	20.09	21.00
HSUPA	19.11	19.17	19.18	21.00
	18.52	18.70	18.57	20.50
	18.70	18.88	18.69	20.50
	18.57	18.58	18.67	20.50
	19.15	19.13	19.12	20.50
HSPA+	19.10	19.24	19.17	21.00
DC-HSDPA	19.13	19.19	19.14	21.00
	19.23	19.21	19.21	21.00
	18.75	18.72	18.74	20.50
	18.74	18.72	18.77	20.50

WCDMA1700	FDDIV result (dBm)			Tune up
	1513/1738 (1752.6MHz)	1412/1637 (1732.4MHz)	1312/1537 (1712.4MHz)	
	19.67	19.63	19.69	20.50
HSUPA	18.44	18.20	18.29	20.00
	17.46	17.01	17.41	18.50
	16.77	17.21	17.32	18.50
	18.04	17.52	17.72	18.50
	18.52	18.39	18.60	19.00
HSPA+	18.09	18.00	18.33	19.00
DC-HSDPA	18.51	18.47	18.79	19.00
	18.78	18.49	18.81	19.00
	18.01	17.99	18.32	18.50
	18.04	18.03	18.22	18.50

### 11.3 LTE Measurement result

#### Maximum Target Power for Production Unit

Band	Tune up (dBm)	
	Normal power	Low power
LTE B2	25.5	21.5
LTE B5	25.5	/
LTE B7	24.5	21
LTE B12	25	/
LTE B13	24	/
LTE B41-PC3	24.5	22.5
LTE B41-PC2	26.5	22
LTE B66	25	21
LTE B71	24.5	/

LTE B2-Normal power					
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	
1.4MHz	1RB-High (5)	1909.3 (19193)	24.55	23.05	
		1880 (18900)	24.53	23.74	
		1850.7 (18607)	24.43	23.60	
	1RB-Middle (3)	1909.3 (19193)	24.69	23.42	
		1880 (18900)	24.76	23.62	
		1850.7 (18607)	24.45	23.36	
	1RB-Low (0)	1909.3 (19193)	24.37	23.08	
		1880 (18900)	24.77	23.47	
		1850.7 (18607)	24.75	23.06	
	3RB-High (3)	1909.3 (19193)	24.66	23.32	
		1880 (18900)	24.99	23.66	
		1850.7 (18607)	24.87	23.86	
	3RB-Middle (1)	1909.3 (19193)	24.70	23.43	
		1880 (18900)	25.13	23.82	
		1850.7 (18607)	24.79	23.63	
	3RB-Low (0)	1909.3 (19193)	24.77	23.43	
		1880 (18900)	25.03	23.74	
		1850.7 (18607)	24.83	23.47	
	6RB (0)	1909.3 (19193)	23.42	22.41	
		1880 (18900)	23.81	22.87	
		1850.7 (18607)	23.62	22.67	
	3MHz	1RB-High (14)	1908.5 (19185)	24.40	22.93
			1880 (18900)	24.85	23.88
			1851.5 (18615)	24.57	23.81
1RB-Middle (7)		1908.5 (19185)	24.54	23.31	
		1880 (18900)	24.71	23.59	
		1851.5 (18615)	24.89	23.26	
1RB-Low (0)		1908.5 (19185)	24.55	23.10	
		1880 (18900)	24.77	23.22	
		1851.5 (18615)	24.61	23.09	
8RB-High (7)		1908.5 (19185)	23.49	22.51	
		1880 (18900)	23.92	22.91	
		1851.5 (18615)	23.60	22.73	
8RB-Middle (4)		1908.5 (19185)	23.57	22.68	
		1880 (18900)	23.83	22.94	
		1851.5 (18615)	23.65	22.76	
8RB-Low (0)		1908.5 (19185)	23.61	22.71	
		1880 (18900)	23.78	22.88	
		1851.5 (18615)	23.60	22.71	
15RB (0)		1908.5 (19185)	23.44	22.64	
		1880 (18900)	23.90	22.87	
		1851.5 (18615)	23.61	22.58	

5MHz	1RB-High (24)	1907.5 (19175)	24.21	22.92
		1880 (18900)	24.79	23.12
		1852.5 (18625)	24.39	23.62
	1RB-Middle (12)	1907.5 (19175)	24.51	23.66
		1880 (18900)	25.04	23.47
		1852.5 (18625)	24.49	23.32
	1RB-Low (0)	1907.5 (19175)	24.62	23.32
		1880 (18900)	24.76	23.42
		1852.5 (18625)	24.52	23.07
	12RB-High (13)	1907.5 (19175)	23.37	22.31
		1880 (18900)	23.79	22.76
		1852.5 (18625)	23.62	22.72
	12RB-Middle (6)	1907.5 (19175)	23.50	22.44
		1880 (18900)	23.87	22.75
		1852.5 (18625)	23.55	22.71
	12RB-Low (0)	1907.5 (19175)	23.48	22.63
		1880 (18900)	23.66	22.74
		1852.5 (18625)	23.52	22.52
25RB (0)	1907.5 (19175)	23.52	22.58	
	1880 (18900)	23.83	22.90	
	1852.5 (18625)	23.59	22.56	
10MHz	1RB-High (49)	1905 (19150)	24.49	23.77
		1880 (18900)	24.93	23.73
		1855 (18650)	24.77	23.46
	1RB-Middle (24)	1905 (19150)	24.74	23.16
		1880 (18900)	24.85	23.27
		1855 (18650)	24.69	23.25
	1RB-Low (0)	1905 (19150)	24.86	23.13
		1880 (18900)	24.58	22.97
		1855 (18650)	24.70	23.48
	25RB-High (25)	1905 (19150)	23.58	22.88
		1880 (18900)	23.76	23.01
		1855 (18650)	23.55	22.80
	25RB-Middle (12)	1905 (19150)	23.80	23.10
		1880 (18900)	23.82	22.96
		1855 (18650)	23.60	22.67
	25RB-Low (0)	1905 (19150)	23.72	22.74
		1880 (18900)	23.76	22.74
		1855 (18650)	23.52	22.58
50RB (0)	1905 (19150)	23.67	22.71	
	1880 (18900)	23.85	22.84	
	1855 (18650)	23.57	22.64	

15MHz	1RB-High (74)	1902.5 (19125)	24.48	23.71	
		1880 (18900)	24.73	23.31	
		1857.5 (18675)	24.69	23.19	
	1RB-Middle (37)	1902.5 (19125)	24.71	23.84	
		1880 (18900)	24.82	23.37	
		1857.5 (18675)	24.65	23.11	
	1RB-Low (0)	1902.5 (19125)	24.46	23.28	
		1880 (18900)	24.83	23.36	
		1857.5 (18675)	24.63	22.83	
	36RB-High (38)	1902.5 (19125)	23.70	22.73	
		1880 (18900)	23.85	22.91	
		1857.5 (18675)	23.69	22.75	
	36RB-Middle (19)	1902.5 (19125)	23.72	22.85	
		1880 (18900)	23.83	22.98	
		1857.5 (18675)	23.62	22.61	
	36RB-Low (0)	1902.5 (19125)	23.56	22.56	
		1880 (18900)	23.69	22.81	
		1857.5 (18675)	23.58	22.56	
	75RB (0)	1902.5 (19125)	23.68	22.60	
		1880 (18900)	23.83	22.88	
		1857.5 (18675)	23.73	22.71	
	20MHz	1RB-High (99)	1900 (19100)	24.15	22.85
			1880 (18900)	24.47	23.11
			1860 (18700)	24.53	23.19
		1RB-Middle (50)	1900 (19100)	24.56	23.26
			1880 (18900)	24.59	23.18
			1860 (18700)	24.57	23.26
1RB-Low (0)		1900 (19100)	24.42	23.19	
		1880 (18900)	24.49	23.18	
		1860 (18700)	24.20	22.99	
50RB-High (50)		1900 (19100)	23.47	22.61	
		1880 (18900)	23.44	22.66	
		1860 (18700)	23.59	22.51	
50RB-Middle (25)		1900 (19100)	23.45	22.65	
		1880 (18900)	23.61	22.75	
		1860 (18700)	23.42	22.61	
50RB-Low (0)		1900 (19100)	23.41	22.67	
		1880 (18900)	23.59	22.66	
		1860 (18700)	23.48	22.40	
100RB (0)		1900 (19100)	23.40	22.56	
		1880 (18900)	23.66	22.54	
		1860 (18700)	23.53	22.54	

LTE B5-Normal power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
1.4MHz	1RB-High (5)	848.3 (20643)	24.22	23.48
		836.5 (20525)	24.92	23.22
		824.7 (20407)	24.52	24.23
	1RB-Middle (3)	848.3 (20643)	24.39	23.69
		836.5 (20525)	24.78	23.46
		824.7 (20407)	24.69	24.45
	1RB-Low (0)	848.3 (20643)	24.48	23.74
		836.5 (20525)	24.74	23.18
		824.7 (20407)	24.61	23.72
	3RB-High (3)	848.3 (20643)	24.25	23.26
		836.5 (20525)	24.96	23.78
		824.7 (20407)	25.03	24.06
	3RB-Middle (1)	848.3 (20643)	24.43	23.52
		836.5 (20525)	25.01	23.75
		824.7 (20407)	24.98	23.74
	3RB-Low (0)	848.3 (20643)	24.42	23.50
		836.5 (20525)	24.96	24.07
		824.7 (20407)	24.93	23.73
	6RB (0)	848.3 (20643)	23.97	22.86
		836.5 (20525)	23.93	22.74
		824.7 (20407)	23.83	22.68
3MHz	1RB-High (14)	847.5 (20635)	24.42	23.14
		836.5 (20525)	24.72	23.94
		825.5 (20415)	24.76	23.17
	1RB-Middle (7)	847.5 (20635)	24.83	23.55
		836.5 (20525)	24.95	23.60
		825.5 (20415)	24.80	23.48
	1RB-Low (0)	847.5 (20635)	24.97	23.66
		836.5 (20525)	24.80	23.30
		825.5 (20415)	24.74	23.22
	8RB-High (7)	847.5 (20635)	23.94	22.95
		836.5 (20525)	23.96	22.93
		825.5 (20415)	23.87	22.87
	8RB-Middle (4)	847.5 (20635)	24.11	23.04
		836.5 (20525)	23.88	22.93
		825.5 (20415)	23.84	22.99
	8RB-Low (0)	847.5 (20635)	23.95	22.98
		836.5 (20525)	23.79	22.94
		825.5 (20415)	23.82	22.87
15RB (0)	847.5 (20635)	23.98	22.82	
	836.5 (20525)	23.91	22.92	
	825.5 (20415)	23.71	22.92	



5MHz	1RB-High (24)	846.5 (20625)	24.64	23.23	
		836.5 (20525)	24.72	23.16	
		826.5 (20425)	24.57	23.13	
	1RB-Middle (12)	846.5 (20625)	24.87	23.50	
		836.5 (20525)	24.71	23.43	
		826.5 (20425)	24.56	23.59	
	1RB-Low (0)	846.5 (20625)	24.63	23.39	
		836.5 (20525)	24.51	23.14	
		826.5 (20425)	24.61	23.13	
	12RB-High (13)	846.5 (20625)	23.81	22.73	
		836.5 (20525)	23.78	22.75	
		826.5 (20425)	23.83	22.63	
	12RB-Middle (6)	846.5 (20625)	23.88	22.82	
		836.5 (20525)	23.66	22.64	
		826.5 (20425)	23.82	22.50	
	12RB-Low (0)	846.5 (20625)	23.81	22.50	
		836.5 (20525)	23.98	22.66	
		826.5 (20425)	23.75	22.76	
	25RB (0)	846.5 (20625)	23.66	22.72	
		836.5 (20525)	23.88	22.55	
		826.5 (20425)	23.79	22.80	
	10MHz	1RB-High (49)	844 (20600)	23.88	22.96
			836.5 (20525)	24.31	22.90
			829 (20450)	24.36	22.95
1RB-Middle (24)		844 (20600)	24.45	23.41	
		836.5 (20525)	24.44	23.12	
		829 (20450)	24.34	23.41	
1RB-Low (0)		844 (20600)	24.15	22.96	
		836.5 (20525)	24.44	22.85	
		829 (20450)	24.22	22.53	
25RB-High (25)		844 (20600)	23.20	22.30	
		836.5 (20525)	23.36	22.39	
		829 (20450)	23.19	22.23	
25RB-Middle (12)		844 (20600)	23.37	22.39	
		836.5 (20525)	23.28	22.65	
		829 (20450)	23.34	22.40	
25RB-Low (0)		844 (20600)	23.27	22.38	
		836.5 (20525)	23.21	22.51	
		829 (20450)	23.36	22.42	
50RB (0)		844 (20600)	23.40	22.34	
		836.5 (20525)	23.35	22.39	
		829 (20450)	23.43	22.48	

LTE B7-Normal power					
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	
5MHz	1RB-High (24)	2567.5 (21425)	24.26	22.76	
		2535 (21100)	24.19	22.60	
		2502.5 (20775)	24.26	22.59	
	1RB-Middle (12)	2567.5 (21425)	24.25	22.97	
		2535 (21100)	24.24	22.87	
		2502.5 (20775)	24.10	22.92	
	1RB-Low (0)	2567.5 (21425)	24.27	22.84	
		2535 (21100)	24.11	22.71	
		2502.5 (20775)	24.09	22.87	
	12RB-High (13)	2567.5 (21425)	23.37	22.47	
		2535 (21100)	23.41	22.23	
		2502.5 (20775)	23.46	22.19	
	12RB-Middle (6)	2567.5 (21425)	23.39	22.30	
		2535 (21100)	23.31	22.13	
		2502.5 (20775)	23.30	22.04	
	12RB-Low (0)	2567.5 (21425)	23.49	22.18	
		2535 (21100)	23.42	22.15	
		2502.5 (20775)	23.39	22.17	
	25RB (0)	2567.5 (21425)	23.34	22.41	
		2535 (21100)	23.39	22.27	
		2502.5 (20775)	23.38	22.33	
	10MHz	1RB-High (49)	2565 (21400)	24.23	22.77
			2535 (21100)	24.41	22.64
			2505 (20800)	24.32	22.99
1RB-Middle (24)		2565 (21400)	24.34	22.89	
		2535 (21100)	24.42	22.59	
		2505 (20800)	24.13	23.20	
1RB-Low (0)		2565 (21400)	24.42	22.72	
		2535 (21100)	24.25	23.13	
		2505 (20800)	24.28	22.70	
25RB-High (25)		2565 (21400)	23.36	22.37	
		2535 (21100)	23.26	22.13	
		2505 (20800)	23.41	22.39	
25RB-Middle (12)		2565 (21400)	23.40	22.30	
		2535 (21100)	23.33	22.29	
		2505 (20800)	23.34	22.42	
25RB-Low (0)		2565 (21400)	23.48	22.43	
		2535 (21100)	23.35	22.43	
		2505 (20800)	23.38	22.42	
50RB (0)		2565 (21400)	23.36	22.31	
		2535 (21100)	23.40	22.27	
		2505 (20800)	23.33	22.39	

15MHz	1RB-High (74)	2562.5 (21375)	24.26	23.25	
		2535 (21100)	24.37	23.39	
		2507.5 (20825)	24.28	22.66	
	1RB-Middle (37)	2562.5 (21375)	24.34	23.41	
		2535 (21100)	24.26	23.07	
		2507.5 (20825)	23.99	22.85	
	1RB-Low (0)	2562.5 (21375)	24.44	23.47	
		2535 (21100)	24.25	23.13	
		2507.5 (20825)	24.28	22.82	
	36RB-High (38)	2562.5 (21375)	23.34	22.32	
		2535 (21100)	23.29	22.24	
		2507.5 (20825)	23.38	22.21	
	36RB-Middle (19)	2562.5 (21375)	23.35	22.33	
		2535 (21100)	23.26	22.20	
		2507.5 (20825)	23.24	22.24	
	36RB-Low (0)	2562.5 (21375)	23.46	22.35	
		2535 (21100)	23.30	22.21	
		2507.5 (20825)	23.16	22.17	
	75RB (0)	2562.5 (21375)	23.34	22.35	
		2535 (21100)	23.29	22.42	
		2507.5 (20825)	23.28	22.31	
	20MHz	1RB-High (99)	2560 (21350)	24.00	22.51
			2535 (21100)	23.95	22.37
			2510 (20850)	23.67	22.92
		1RB-Middle (50)	2560 (21350)	24.14	23.22
			2535 (21100)	24.03	22.30
			2510 (20850)	24.03	23.36
1RB-Low (0)		2560 (21350)	24.06	22.37	
		2535 (21100)	23.98	22.00	
		2510 (20850)	23.92	23.04	
50RB-High (50)		2560 (21350)	22.91	22.00	
		2535 (21100)	22.91	21.92	
		2510 (20850)	22.81	21.92	
50RB-Middle (25)		2560 (21350)	22.95	22.02	
		2535 (21100)	22.85	21.88	
		2510 (20850)	22.97	22.07	
50RB-Low (0)		2560 (21350)	23.08	22.08	
		2535 (21100)	22.89	21.86	
		2510 (20850)	22.98	22.25	
100RB (0)		2560 (21350)	22.92	21.98	
		2535 (21100)	23.02	22.03	
		2510 (20850)	22.97	21.96	

LTE B12-Normal power					
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	
1.4MHz	1RB-High (5)	715.3 (23173)	23.98	23.22	
		707.5 (23095)	24.11	23.15	
		699.7 (23017)	23.71	23.03	
	1RB-Middle (3)	715.3 (23173)	23.88	23.51	
		707.5 (23095)	24.23	23.27	
		699.7 (23017)	24.02	23.15	
	1RB-Low (0)	715.3 (23173)	23.93	22.71	
		707.5 (23095)	23.92	22.42	
		699.7 (23017)	23.81	23.26	
	3RB-High (3)	715.3 (23173)	24.14	22.92	
		707.5 (23095)	24.08	22.87	
		699.7 (23017)	23.95	23.13	
	3RB-Middle (1)	715.3 (23173)	24.10	23.01	
		707.5 (23095)	24.09	23.37	
		699.7 (23017)	24.01	22.91	
	3RB-Low (0)	715.3 (23173)	24.15	22.95	
		707.5 (23095)	24.13	23.24	
		699.7 (23017)	24.07	22.86	
	6RB (0)	715.3 (23173)	22.91	21.92	
		707.5 (23095)	23.13	21.96	
		699.7 (23017)	22.84	21.83	
	3MHz	1RB-High (14)	714.5 (23165)	23.95	22.93
			707.5 (23095)	24.07	23.04
			700.5 (23025)	23.78	22.26
		1RB-Middle (7)	714.5 (23165)	24.03	22.76
			707.5 (23095)	24.08	22.68
			700.5 (23025)	23.76	22.38
1RB-Low (0)		714.5 (23165)	23.92	22.49	
		707.5 (23095)	24.15	22.61	
		700.5 (23025)	23.83	22.58	
8RB-High (7)		714.5 (23165)	22.95	22.03	
		707.5 (23095)	23.13	22.25	
		700.5 (23025)	22.90	21.94	
8RB-Middle (4)		714.5 (23165)	23.01	21.96	
		707.5 (23095)	23.04	22.16	
		700.5 (23025)	22.85	21.98	
8RB-Low (0)		714.5 (23165)	22.84	21.87	
		707.5 (23095)	23.07	22.03	
		700.5 (23025)	22.88	21.85	
15RB (0)		714.5 (23165)	22.96	22.02	
		707.5 (23095)	23.11	22.10	
		700.5 (23025)	22.96	21.85	

5MHz	1RB-High (24)	713.5 (23155)	23.79	22.33
		707.5 (23095)	23.91	22.15
		701.5 (23035)	23.93	22.95
	1RB-Middle (12)	713.5 (23155)	23.66	22.39
		707.5 (23095)	23.97	22.45
		701.5 (23035)	23.74	22.43
	1RB-Low (0)	713.5 (23155)	23.72	22.36
		707.5 (23095)	23.98	22.38
		701.5 (23035)	23.65	22.23
	12RB-High (13)	713.5 (23155)	22.86	21.67
		707.5 (23095)	23.07	22.03
		701.5 (23035)	22.93	21.91
	12RB-Middle (6)	713.5 (23155)	22.79	21.83
		707.5 (23095)	23.08	21.90
		701.5 (23035)	22.86	21.64
	12RB-Low (0)	713.5 (23155)	22.82	21.77
		707.5 (23095)	23.00	21.84
		701.5 (23035)	22.75	21.62
	25RB (0)	713.5 (23155)	22.89	21.90
		707.5 (23095)	23.04	22.18
		701.5 (23035)	22.84	21.83
10MHz	1RB-High (49)	711 (23130)	23.91	22.60
		707.5 (23095)	23.95	22.23
		704 (23060)	23.94	22.66
	1RB-Middle (24)	711 (23130)	24.03	22.44
		707.5 (23095)	24.10	22.40
		704 (23060)	24.07	22.36
	1RB-Low (0)	711 (23130)	23.71	22.39
		707.5 (23095)	23.86	22.05
		704 (23060)	23.89	22.50
	25RB-High (25)	711 (23130)	22.81	22.03
		707.5 (23095)	22.89	21.80
		704 (23060)	22.98	22.23
	25RB-Middle (12)	711 (23130)	22.89	22.03
		707.5 (23095)	23.00	21.93
		704 (23060)	22.99	21.97
	25RB-Low (0)	711 (23130)	23.00	22.02
		707.5 (23095)	23.12	21.95
		704 (23060)	23.05	21.74
50RB (0)	711 (23130)	22.91	21.93	
	707.5 (23095)	22.98	22.02	
	704 (23060)	22.98	21.94	

LTE B13-Normal power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	784.5 (23255)	22.96	22.39
		782 (23230)	23.20	22.47
		779.5 (23205)	23.03	21.59
	1RB-Middle (12)	784.5 (23255)	23.16	21.74
		782 (23230)	23.32	21.93
		779.5 (23205)	23.30	22.59
	1RB-Low (0)	784.5 (23255)	23.12	21.61
		782 (23230)	23.29	22.16
		779.5 (23205)	23.23	21.57
	12RB-High (13)	784.5 (23255)	22.19	21.26
		782 (23230)	22.33	21.26
		779.5 (23205)	22.31	21.14
	12RB-Middle (6)	784.5 (23255)	22.28	21.20
		782 (23230)	22.31	21.03
		779.5 (23205)	22.48	21.33
	12RB-Low (0)	784.5 (23255)	22.23	21.00
		782 (23230)	22.39	21.20
		779.5 (23205)	22.44	21.23
	25RB (0)	784.5 (23255)	22.36	21.31
		782 (23230)	22.30	21.32
		779.5 (23205)	22.39	21.24
10MHz	1RB-High (49)	782 (23230)	22.95	21.20
	1RB-Middle (24)	782 (23230)	23.26	21.51
	1RB-Low (0)	782 (23230)	23.25	21.67
	25RB-High (25)	782 (23230)	22.18	21.22
	25RB-Middle (12)	782 (23230)	22.27	21.21
	25RB-Low (0)	782 (23230)	22.37	21.51
	50RB (0)	782 (23230)	22.23	21.20

LTE B41 PC3-Normal power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	23.51	22.58
		2640.3(41093)	23.48	22.50
		2593 (40620)	24.06	22.80
		2545.8(40148)	24.42	22.72
		2498.5 (39675)	24.42	22.98
	1RB-Middle (12)	2687.5 (41565)	23.97	22.62
		2640.3(41093)	23.91	22.68
		2593 (40620)	24.43	23.25
		2545.8(40148)	24.47	23.33
		2498.5 (39675)	24.50	23.12
	1RB-Low (0)	2687.5 (41565)	23.97	22.62
		2640.3(41093)	23.95	22.34
		2593 (40620)	24.48	22.86
		2545.8(40148)	24.45	22.83
		2498.5 (39675)	24.38	23.07
	12RB-High (13)	2687.5 (41565)	23.01	21.61
		2640.3(41093)	22.96	21.70
		2593 (40620)	23.48	22.12
		2545.8(40148)	23.49	22.25
		2498.5 (39675)	23.47	22.24
	12RB-Middle (6)	2687.5 (41565)	22.72	21.71
		2640.3(41093)	23.02	21.68
		2593 (40620)	23.41	22.08
		2545.8(40148)	23.43	22.13
		2498.5 (39675)	23.26	22.23
	12RB-Low (0)	2687.5 (41565)	23.04	21.86
		2640.3(41093)	23.07	21.74
		2593 (40620)	23.42	22.41
		2545.8(40148)	23.45	22.23
		2498.5 (39675)	23.22	22.27
25RB (0)	2687.5 (41565)	23.03	21.97	
	2640.3(41093)	22.79	21.95	
	2593 (40620)	23.43	22.44	
	2545.8(40148)	23.48	22.47	
	2498.5 (39675)	23.26	22.43	

10MHz	1RB-High (49)	2685 (41540)	24.00	22.72
		2639(41080)	23.86	22.52
		2593 (40620)	24.33	23.42
		2547(40160)	24.30	23.28
		2501 (39700)	24.41	23.42
	1RB-Middle (24)	2685 (41540)	23.94	22.83
		2639(41080)	24.17	22.71
		2593 (40620)	24.45	23.43
		2547(40160)	24.43	23.50
		2501 (39700)	24.48	23.34
	1RB-Low (0)	2685 (41540)	23.83	22.93
		2639(41080)	23.80	22.80
		2593 (40620)	24.48	23.45
		2547(40160)	24.45	23.46
		2501 (39700)	24.48	23.41
	25RB-High (25)	2685 (41540)	23.08	21.95
		2639(41080)	22.71	21.92
		2593 (40620)	23.43	22.46
		2547(40160)	23.42	22.47
		2501 (39700)	23.43	22.49
	25RB-Middle (12)	2685 (41540)	22.72	21.89
		2639(41080)	22.66	21.96
		2593 (40620)	23.48	22.49
		2547(40160)	23.41	22.45
		2501 (39700)	23.39	22.42
	25RB-Low (0)	2685 (41540)	22.71	22.07
		2639(41080)	22.78	22.08
		2593 (40620)	23.41	22.41
		2547(40160)	23.47	22.43
		2501 (39700)	23.26	22.49
50RB (0)	2685 (41540)	23.07	22.20	
	2639(41080)	22.74	22.08	
	2593 (40620)	23.42	22.48	
	2547(40160)	23.49	22.39	
	2501 (39700)	23.31	22.50	



15MHz	1RB-High (74)	2682.5 (41515)	23.94	22.31
		2637.8(41068)	23.53	22.93
		2593 (40620)	24.08	23.29
		2548.3(40173)	24.15	23.27
		2503.5 (39725)	24.44	23.50
	1RB-Middle (37)	2682.5 (41515)	23.98	22.49
		2637.8(41068)	23.62	22.64
		2593 (40620)	24.23	22.80
		2548.3(40173)	24.02	23.35
		2503.5 (39725)	24.33	23.41
	1RB-Low (0)	2682.5 (41515)	23.90	22.41
		2637.8(41068)	23.76	22.79
		2593 (40620)	24.03	23.25
		2548.3(40173)	24.31	23.13
		2503.5 (39725)	24.24	23.34
	36RB-High (38)	2682.5 (41515)	22.63	21.73
		2637.8(41068)	22.72	22.06
		2593 (40620)	23.23	22.20
		2548.3(40173)	23.31	22.08
		2503.5 (39725)	23.48	22.40
	36RB-Middle (19)	2682.5 (41515)	22.69	21.65
		2637.8(41068)	22.68	21.63
		2593 (40620)	23.30	22.16
		2548.3(40173)	23.27	22.06
		2503.5 (39725)	23.44	22.45
	36RB-Low (0)	2682.5 (41515)	22.65	21.94
		2637.8(41068)	22.84	21.71
		2593 (40620)	23.16	22.02
		2548.3(40173)	23.38	22.07
		2503.5 (39725)	23.47	22.47
75RB (0)	2682.5 (41515)	22.63	21.69	
	2637.8(41068)	22.78	21.88	
	2593 (40620)	23.25	22.36	
	2548.3(40173)	23.34	22.36	
	2503.5 (39725)	23.45	22.10	

20MHz	1RB-High (99)	2680 (41490)	23.39	22.23
		2636.5(41055)	23.38	22.25
		2593 (40620)	23.93	22.94
		2549.5(40185)	24.19	22.76
		2506 (39750)	24.07	22.85
	1RB-Middle (50)	2680 (41490)	23.69	22.31
		2636.5(41055)	23.91	22.55
		2593 (40620)	24.16	22.98
		2549.5(40185)	24.29	23.07
		2506 (39750)	24.27	22.95
	1RB-Low (0)	2680 (41490)	23.63	22.34
		2636.5(41055)	23.88	22.53
		2593 (40620)	24.13	23.02
		2549.5(40185)	24.22	22.92
		2506 (39750)	24.10	22.80
	50RB-High (50)	2680 (41490)	22.42	21.62
		2636.5(41055)	22.55	21.73
		2593 (40620)	23.12	22.34
		2549.5(40185)	23.27	22.22
		2506 (39750)	23.18	22.19
	50RB-Middle (25)	2680 (41490)	22.40	21.69
		2636.5(41055)	22.49	21.56
		2593 (40620)	23.32	22.38
		2549.5(40185)	23.30	22.23
		2506 (39750)	23.27	22.27
	50RB-Low (0)	2680 (41490)	22.56	21.76
		2636.5(41055)	22.74	21.72
		2593 (40620)	23.13	22.34
		2549.5(40185)	23.35	22.36
		2506 (39750)	23.10	22.19
100RB (0)	2680 (41490)	22.38	21.75	
	2636.5(41055)	22.66	21.73	
	2593 (40620)	23.32	22.34	
	2549.5(40185)	23.34	22.33	
	2506 (39750)	23.17	22.26	

LTE B41 PC2-Normal power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	25.72	24.46
		2640.3(41093)	25.85	24.42
		2593 (40620)	26.14	24.89
		2545.8(40148)	26.19	25.01
		2498.5 (39675)	26.28	25.04
	1RB-Middle (12)	2687.5 (41565)	26.17	24.56
		2640.3(41093)	25.77	24.53
		2593 (40620)	26.34	24.87
		2545.8(40148)	26.46	25.01
		2498.5 (39675)	26.27	25.02
	1RB-Low (0)	2687.5 (41565)	25.72	24.48
		2640.3(41093)	25.71	24.44
		2593 (40620)	26.31	24.97
		2545.8(40148)	26.42	24.94
		2498.5 (39675)	26.30	24.92
	12RB-High (13)	2687.5 (41565)	24.73	23.82
		2640.3(41093)	24.86	23.88
		2593 (40620)	25.32	24.43
		2545.8(40148)	25.31	24.42
		2498.5 (39675)	25.30	24.34
	12RB-Middle (6)	2687.5 (41565)	24.79	23.61
		2640.3(41093)	24.78	23.76
		2593 (40620)	25.24	24.34
		2545.8(40148)	25.32	24.35
		2498.5 (39675)	25.33	24.38
	12RB-Low (0)	2687.5 (41565)	24.78	23.59
		2640.3(41093)	24.78	23.91
		2593 (40620)	25.32	24.42
		2545.8(40148)	25.38	24.40
		2498.5 (39675)	25.48	24.42
25RB (0)	2687.5 (41565)	24.84	23.67	
	2640.3(41093)	24.78	24.02	
	2593 (40620)	25.20	24.32	
	2545.8(40148)	25.31	24.42	
	2498.5 (39675)	25.35	24.24	

10MHz	1RB-High (49)	2685 (41540)	25.80	24.60
		2639(41080)	25.84	24.41
		2593 (40620)	26.28	24.99
		2547(40160)	26.42	25.00
		2501 (39700)	26.33	25.08
	1RB-Middle (24)	2685 (41540)	25.82	24.67
		2639(41080)	25.85	24.36
		2593 (40620)	26.32	25.11
		2547(40160)	26.41	25.10
		2501 (39700)	26.48	25.25
	1RB-Low (0)	2685 (41540)	25.91	24.51
		2639(41080)	26.02	24.53
		2593 (40620)	26.46	24.92
		2547(40160)	26.43	24.98
		2501 (39700)	26.41	25.12
	25RB-High (25)	2685 (41540)	24.81	23.97
		2639(41080)	24.82	23.81
		2593 (40620)	25.32	24.24
		2547(40160)	25.41	24.41
		2501 (39700)	25.42	24.45
	25RB-Middle (12)	2685 (41540)	24.73	23.81
		2639(41080)	24.73	23.67
		2593 (40620)	25.24	24.42
		2547(40160)	25.36	24.35
		2501 (39700)	25.41	24.43
	25RB-Low (0)	2685 (41540)	24.86	23.96
		2639(41080)	24.96	23.72
		2593 (40620)	25.41	24.50
		2547(40160)	25.44	24.35
		2501 (39700)	25.50	24.27
50RB (0)	2685 (41540)	24.83	23.84	
	2639(41080)	24.77	23.85	
	2593 (40620)	25.43	24.36	
	2547(40160)	25.39	24.50	
	2501 (39700)	25.39	24.36	

15MHz	1RB-High (74)	2682.5 (41515)	25.67	24.45
		2637.8(41068)	25.82	24.43
		2593 (40620)	26.33	24.99
		2548.3(40173)	26.23	25.08
		2503.5 (39725)	26.22	25.01
	1RB-Middle (37)	2682.5 (41515)	25.71	24.30
		2637.8(41068)	25.72	24.43
		2593 (40620)	26.13	24.98
		2548.3(40173)	26.43	24.97
		2503.5 (39725)	26.26	24.91
	1RB-Low (0)	2682.5 (41515)	25.55	24.59
		2637.8(41068)	25.87	24.67
		2593 (40620)	26.38	25.10
		2548.3(40173)	26.41	25.09
		2503.5 (39725)	26.31	24.90
	36RB-High (38)	2682.5 (41515)	24.81	23.69
		2637.8(41068)	24.78	23.81
		2593 (40620)	25.32	24.44
		2548.3(40173)	25.38	24.33
		2503.5 (39725)	25.30	24.09
	36RB-Middle (19)	2682.5 (41515)	24.71	23.59
		2637.8(41068)	24.72	23.66
		2593 (40620)	25.37	24.38
		2548.3(40173)	25.32	24.25
		2503.5 (39725)	25.25	24.11
	36RB-Low (0)	2682.5 (41515)	24.83	23.71
		2637.8(41068)	24.88	23.71
		2593 (40620)	25.38	24.30
		2548.3(40173)	25.46	24.37
		2503.5 (39725)	25.30	24.15
75RB (0)	2682.5 (41515)	24.72	23.74	
	2637.8(41068)	24.81	23.85	
	2593 (40620)	25.37	24.41	
	2548.3(40173)	25.33	24.39	
	2503.5 (39725)	25.26	24.09	

20MHz	1RB-High (99)	2680 (41490)	25.50	24.32
		2636.5(41055)	25.56	24.26
		2593 (40620)	26.00	24.78
		2549.5(40185)	25.98	24.72
		2506 (39750)	26.06	24.75
	1RB-Middle (50)	2680 (41490)	25.79	24.65
		2636.5(41055)	25.95	24.68
		2593 (40620)	26.38	25.12
		2549.5(40185)	26.36	24.89
		2506 (39750)	26.16	24.93
	1RB-Low (0)	2680 (41490)	25.79	24.44
		2636.5(41055)	25.86	24.66
		2593 (40620)	26.31	25.00
		2549.5(40185)	26.15	24.86
		2506 (39750)	26.01	24.84
	50RB-High (50)	2680 (41490)	24.76	23.74
		2636.5(41055)	24.73	23.49
		2593 (40620)	25.16	24.12
		2549.5(40185)	25.20	24.18
		2506 (39750)	25.21	24.01
	50RB-Middle (25)	2680 (41490)	24.62	23.59
		2636.5(41055)	24.74	23.52
		2593 (40620)	25.28	24.26
		2549.5(40185)	25.17	24.15
		2506 (39750)	25.12	24.03
	50RB-Low (0)	2680 (41490)	24.76	23.84
		2636.5(41055)	24.92	23.69
		2593 (40620)	25.20	24.26
		2549.5(40185)	25.25	24.25
		2506 (39750)	25.03	23.85
100RB (0)	2680 (41490)	24.69	23.66	
	2636.5(41055)	24.83	23.60	
	2593 (40620)	25.23	24.29	
	2549.5(40185)	25.32	24.31	
	2506 (39750)	25.13	24.05	

LTE B66-Normal power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
1.4MHz	1RB-High (5)	1779.3 (132665)	23.55	22.26
		1745 (132322)	24.03	23.24
		1710.7 (131979)	23.70	23.01
	1RB-Middle (3)	1779.3 (132665)	23.70	22.35
		1745 (132322)	24.10	22.90
		1710.7 (131979)	24.10	23.10
	1RB-Low (0)	1779.3 (132665)	23.69	22.21
		1745 (132322)	24.03	22.65
		1710.7 (131979)	24.03	22.42
	3RB-High (3)	1779.3 (132665)	23.94	22.97
		1745 (132322)	24.24	23.01
		1710.7 (131979)	24.22	22.91
	3RB-Middle (1)	1779.3 (132665)	23.94	22.69
		1745 (132322)	24.26	22.89
		1710.7 (131979)	24.16	22.97
	3RB-Low (0)	1779.3 (132665)	23.85	22.94
		1745 (132322)	24.32	23.11
		1710.7 (131979)	24.12	22.78
	6RB (0)	1779.3 (132665)	22.63	21.71
		1745 (132322)	23.05	22.09
		1710.7 (131979)	22.98	22.08
3MHz	1RB-High (14)	1778.5 (132657)	23.49	22.08
		1745 (132322)	23.99	22.85
		1711.5 (131987)	24.01	23.13
	1RB-Middle (7)	1778.5 (132657)	23.65	22.45
		1745 (132322)	24.02	22.87
		1711.5 (131987)	24.20	22.65
	1RB-Low (0)	1778.5 (132657)	23.76	22.30
		1745 (132322)	24.28	22.35
		1711.5 (131987)	24.04	22.34
	8RB-High (7)	1778.5 (132657)	22.67	22.00
		1745 (132322)	23.06	22.17
		1711.5 (131987)	22.99	22.23
	8RB-Middle (4)	1778.5 (132657)	22.68	21.88
		1745 (132322)	23.12	22.33
		1711.5 (131987)	23.05	22.28
	8RB-Low (0)	1778.5 (132657)	22.71	21.91
		1745 (132322)	23.08	22.27
		1711.5 (131987)	23.04	22.16
	15RB (0)	1778.5 (132657)	22.77	21.87
		1745 (132322)	23.08	22.15
		1711.5 (131987)	23.10	22.13

5MHz	1RB-High (24)	1777.5 (132647)	23.40	22.37
		1745 (132322)	23.91	22.50
		1712.5 (131997)	23.99	22.41
	1RB-Middle (12)	1777.5 (132647)	23.65	22.39
		1745 (132322)	23.96	22.79
		1712.5 (131997)	24.13	22.80
	1RB-Low (0)	1777.5 (132647)	23.87	22.37
		1745 (132322)	24.19	22.30
		1712.5 (131997)	24.09	22.68
	12RB-High (13)	1777.5 (132647)	22.65	21.59
		1745 (132322)	23.22	22.01
		1712.5 (131997)	22.97	22.09
	12RB-Middle (6)	1777.5 (132647)	22.75	21.64
		1745 (132322)	23.12	21.99
		1712.5 (131997)	23.09	22.10
	12RB-Low (0)	1777.5 (132647)	22.77	21.94
		1745 (132322)	23.10	22.04
		1712.5 (131997)	23.08	22.20
25RB (0)	1777.5 (132647)	22.66	21.64	
	1745 (132322)	23.23	22.05	
	1712.5 (131997)	23.03	22.04	
10MHz	1RB-High (49)	1775 (132622)	23.71	22.17
		1745 (132322)	23.96	22.63
		1715 (132022)	24.01	22.60
	1RB-Middle (24)	1775 (132622)	23.89	22.98
		1745 (132322)	24.24	23.01
		1715 (132022)	23.92	22.81
	1RB-Low (0)	1775 (132622)	23.90	22.97
		1745 (132322)	24.26	22.91
		1715 (132022)	24.07	22.76
	25RB-High (25)	1775 (132622)	22.66	21.86
		1745 (132322)	23.02	22.09
		1715 (132022)	22.92	21.83
	25RB-Middle (12)	1775 (132622)	22.79	21.80
		1745 (132322)	23.10	22.18
		1715 (132022)	23.07	22.07
	25RB-Low (0)	1775 (132622)	22.83	21.90
		1745 (132322)	23.18	22.25
		1715 (132022)	23.02	22.20
50RB (0)	1775 (132622)	22.78	21.68	
	1745 (132322)	23.10	22.16	
	1715 (132022)	22.92	22.12	



15MHz	1RB-High (74)	1772.5 (132597)	23.48	22.43
		1745 (132322)	23.98	22.73
		1717.5 (132047)	24.03	22.60
	1RB-Middle (37)	1772.5 (132597)	23.76	22.62
		1745 (132322)	24.18	22.60
		1717.5 (132047)	24.06	22.76
	1RB-Low (0)	1772.5 (132597)	23.82	22.74
		1745 (132322)	24.13	22.72
		1717.5 (132047)	24.26	22.80
	36RB-High (38)	1772.5 (132597)	22.70	21.63
		1745 (132322)	23.12	22.06
		1717.5 (132047)	23.04	22.02
	36RB-Middle (19)	1772.5 (132597)	22.79	21.73
		1745 (132322)	23.15	22.18
		1717.5 (132047)	23.02	21.99
	36RB-Low (0)	1772.5 (132597)	22.86	21.88
		1745 (132322)	23.10	22.22
		1717.5 (132047)	23.05	22.03
75RB (0)	1772.5 (132597)	22.74	21.77	
	1745 (132322)	23.07	22.20	
	1717.5 (132047)	22.95	22.13	
20MHz	1RB-High (99)	1770 (132572)	23.46	22.33
		1745 (132322)	23.77	22.28
		1720 (132072)	23.86	22.18
	1RB-Middle (50)	1770 (132572)	23.89	22.55
		1745 (132322)	24.17	23.25
		1720 (132072)	23.96	22.43
	1RB-Low (0)	1770 (132572)	23.84	22.56
		1745 (132322)	23.96	22.29
		1720 (132072)	23.84	22.17
	50RB-High (50)	1770 (132572)	22.73	21.57
		1745 (132322)	22.92	21.85
		1720 (132072)	22.77	21.82
	50RB-Middle (25)	1770 (132572)	22.88	21.67
		1745 (132322)	23.00	22.03
		1720 (132072)	22.86	21.73
	50RB-Low (0)	1770 (132572)	22.79	21.60
		1745 (132322)	22.97	22.08
		1720 (132072)	22.79	21.75
100RB (0)	1770 (132572)	22.78	21.69	
	1745 (132322)	22.96	21.87	
	1720 (132072)	22.84	21.77	

LTE B71-Normal power					
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	
5MHz	1RB-High (24)	695.5 (133447)	23.01	21.80	
		680.5 (133297)	23.29	21.91	
		665.5 (133147)	23.13	21.82	
	1RB-Middle (12)	695.5 (133447)	23.17	21.76	
		680.5 (133297)	23.44	22.10	
		665.5 (133147)	23.24	21.90	
	1RB-Low (0)	695.5 (133447)	23.19	21.53	
		680.5 (133297)	23.38	21.93	
		665.5 (133147)	23.20	21.99	
	12RB-High (13)	695.5 (133447)	22.28	20.95	
		680.5 (133297)	22.41	21.34	
		665.5 (133147)	22.49	21.45	
	12RB-Middle (6)	695.5 (133447)	22.18	20.85	
		680.5 (133297)	22.50	21.00	
		665.5 (133147)	22.45	21.32	
	12RB-Low (0)	695.5 (133447)	22.26	20.99	
		680.5 (133297)	22.43	20.97	
		665.5 (133147)	22.49	21.44	
	25RB (0)	695.5 (133447)	22.26	21.05	
		680.5 (133297)	22.49	21.21	
		665.5 (133147)	22.47	21.45	
	10MHz	1RB-High (49)	693 (132422)	23.17	21.69
			680.5 (133297)	23.35	21.86
			668 (133172)	23.50	22.69
		1RB-Middle (24)	693 (132422)	23.55	21.87
			680.5 (133297)	23.56	21.85
			668 (133172)	23.60	22.06
1RB-Low (0)		693 (132422)	23.23	22.03	
		680.5 (133297)	23.28	21.94	
		668 (133172)	23.42	22.13	
25RB-High (25)		693 (132422)	22.50	21.43	
		680.5 (133297)	22.42	21.51	
		668 (133172)	22.61	21.53	
25RB-Middle (12)		693 (132422)	22.49	21.36	
		680.5 (133297)	22.40	21.51	
		668 (133172)	22.62	21.54	
25RB-Low (0)		693 (132422)	22.47	21.36	
		680.5 (133297)	22.46	21.38	
		668 (133172)	22.65	21.66	
50RB (0)		693 (132422)	22.43	21.34	
		680.5 (133297)	22.48	21.41	
		668 (133172)	22.60	21.64	

15MHz	1RB-High (74)	690.5 (133397)	23.08	21.68
		680.5 (133297)	23.27	22.44
		670.5 (133197)	23.49	22.63
	1RB-Middle (37)	690.5 (133397)	23.36	21.66
		680.5 (133297)	23.27	21.87
		670.5 (133197)	23.56	22.70
	1RB-Low (0)	690.5 (133397)	23.49	21.76
		680.5 (133297)	23.43	21.72
		670.5 (133197)	23.57	22.27
	36RB-High (38)	690.5 (133397)	22.23	21.28
		680.5 (133297)	22.49	21.36
		670.5 (133197)	22.56	21.37
	36RB-Middle (19)	690.5 (133397)	22.29	21.47
		680.5 (133297)	22.40	21.27
		670.5 (133197)	22.61	21.50
	36RB-Low (0)	690.5 (133397)	22.42	21.36
		680.5 (133297)	22.46	21.36
		670.5 (133197)	22.66	21.63
75RB (0)	690.5 (133397)	22.32	21.29	
	680.5 (133297)	22.54	21.52	
	670.5 (133197)	22.60	21.50	
20MHz	1RB-High (99)	688 (133372)	22.98	22.02
		683 (133322)	22.86	21.61
		673 (133222)	23.07	22.15
	1RB-Middle (50)	688 (133372)	23.34	22.69
		683 (133322)	23.48	22.74
		673 (133222)	23.50	22.33
	1RB-Low (0)	688 (133372)	23.31	21.96
		683 (133322)	23.10	22.13
		673 (133222)	23.24	22.22
	50RB-High (50)	688 (133372)	22.27	21.22
		683 (133322)	22.37	21.30
		673 (133222)	22.36	21.72
	50RB-Middle (25)	688 (133372)	22.46	21.47
		683 (133322)	22.41	21.36
		673 (133222)	22.59	21.80
	50RB-Low (0)	688 (133372)	22.42	21.41
		683 (133322)	22.44	21.30
		673 (133222)	22.60	21.77
100RB (0)	688 (133372)	22.44	21.23	
	683 (133322)	22.39	21.42	
	673 (133222)	22.52	21.67	

LTE B2-Low power					
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	
1.4MHz	1RB-High (5)	1909.3 (19193)	19.49	19.01	
		1880 (18900)	19.60	19.43	
		1850.7 (18607)	19.68	19.70	
	1RB-Middle (3)	1909.3 (19193)	19.47	19.36	
		1880 (18900)	19.77	19.47	
		1850.7 (18607)	19.72	19.41	
	1RB-Low (0)	1909.3 (19193)	19.53	19.00	
		1880 (18900)	19.61	19.38	
		1850.7 (18607)	19.51	19.17	
	3RB-High (3)	1909.3 (19193)	19.50	19.56	
		1880 (18900)	19.95	19.57	
		1850.7 (18607)	19.73	19.51	
	3RB-Middle (1)	1909.3 (19193)	19.73	19.66	
		1880 (18900)	19.89	20.17	
		1850.7 (18607)	19.86	19.53	
	3RB-Low (0)	1909.3 (19193)	19.64	19.56	
		1880 (18900)	19.87	19.79	
		1850.7 (18607)	19.70	19.43	
	6RB (0)	1909.3 (19193)	19.56	19.58	
		1880 (18900)	19.80	19.64	
		1850.7 (18607)	19.66	19.56	
	3MHz	1RB-High (14)	1908.5 (19185)	19.46	18.98
			1880 (18900)	19.75	20.09
			1851.5 (18615)	19.52	19.20
1RB-Middle (7)		1908.5 (19185)	19.57	19.40	
		1880 (18900)	19.94	20.11	
		1851.5 (18615)	19.64	19.42	
1RB-Low (0)		1908.5 (19185)	19.54	19.10	
		1880 (18900)	19.82	19.36	
		1851.5 (18615)	19.68	19.26	
8RB-High (7)		1908.5 (19185)	19.60	19.55	
		1880 (18900)	19.89	20.03	
		1851.5 (18615)	19.68	19.47	
8RB-Middle (4)		1908.5 (19185)	19.54	19.67	
		1880 (18900)	19.88	19.96	
		1851.5 (18615)	19.70	19.43	
8RB-Low (0)		1908.5 (19185)	19.56	19.72	
		1880 (18900)	19.84	19.94	
		1851.5 (18615)	19.64	19.61	
15RB (0)	1908.5 (19185)	19.52	19.63		
	1880 (18900)	19.86	19.84		
	1851.5 (18615)	19.66	19.42		

5MHz	1RB-High (24)	1907.5 (19175)	19.45	19.08
		1880 (18900)	19.74	19.31
		1852.5 (18625)	19.58	19.10
	1RB-Middle (12)	1907.5 (19175)	19.61	19.34
		1880 (18900)	19.74	19.48
		1852.5 (18625)	19.75	19.34
	1RB-Low (0)	1907.5 (19175)	19.55	19.27
		1880 (18900)	19.72	19.47
		1852.5 (18625)	19.58	19.25
	12RB-High (13)	1907.5 (19175)	19.52	19.56
		1880 (18900)	19.79	19.75
		1852.5 (18625)	19.71	19.64
	12RB-Middle (6)	1907.5 (19175)	19.61	19.60
		1880 (18900)	19.86	19.87
		1852.5 (18625)	19.67	19.62
	12RB-Low (0)	1907.5 (19175)	19.67	19.45
		1880 (18900)	19.85	19.80
		1852.5 (18625)	19.64	19.53
25RB (0)	1907.5 (19175)	19.56	19.73	
	1880 (18900)	19.84	19.82	
	1852.5 (18625)	19.62	19.65	
10MHz	1RB-High (49)	1905 (19150)	19.61	19.27
		1880 (18900)	19.87	19.30
		1855 (18650)	19.75	19.96
	1RB-Middle (24)	1905 (19150)	19.76	19.34
		1880 (18900)	19.89	19.72
		1855 (18650)	19.78	19.76
	1RB-Low (0)	1905 (19150)	19.47	19.37
		1880 (18900)	19.64	19.47
		1855 (18650)	19.52	19.25
	25RB-High (25)	1905 (19150)	19.60	19.60
		1880 (18900)	19.82	19.83
		1855 (18650)	19.60	19.76
	25RB-Middle (12)	1905 (19150)	19.78	19.79
		1880 (18900)	19.88	19.98
		1855 (18650)	19.66	19.72
	25RB-Low (0)	1905 (19150)	19.72	19.75
		1880 (18900)	19.82	19.90
		1855 (18650)	19.67	19.62
50RB (0)	1905 (19150)	19.66	19.77	
	1880 (18900)	19.78	19.82	
	1855 (18650)	19.73	19.67	

15MHz	1RB-High (74)	1902.5 (19125)	19.27	19.64	
		1880 (18900)	19.82	19.31	
		1857.5 (18675)	19.82	19.79	
	1RB-Middle (37)	1902.5 (19125)	19.71	19.84	
		1880 (18900)	19.82	19.94	
		1857.5 (18675)	19.69	19.77	
	1RB-Low (0)	1902.5 (19125)	19.43	19.28	
		1880 (18900)	19.76	19.48	
		1857.5 (18675)	19.64	19.18	
	36RB-High (38)	1902.5 (19125)	19.70	19.63	
		1880 (18900)	19.78	19.84	
		1857.5 (18675)	19.76	19.65	
	36RB-Middle (19)	1902.5 (19125)	19.68	19.74	
		1880 (18900)	19.83	19.91	
		1857.5 (18675)	19.68	19.69	
	36RB-Low (0)	1902.5 (19125)	19.59	19.57	
		1880 (18900)	19.77	19.73	
		1857.5 (18675)	19.55	19.56	
	75RB (0)	1902.5 (19125)	19.70	19.72	
		1880 (18900)	19.84	19.85	
		1857.5 (18675)	19.71	19.70	
	20MHz	1RB-High (99)	1900 (19100)	19.24	18.92
			1880 (18900)	19.54	19.04
			1860 (18700)	19.65	19.18
		1RB-Middle (50)	1900 (19100)	19.77	19.36
			1880 (18900)	19.72	19.58
			1860 (18700)	19.65	19.31
1RB-Low (0)		1900 (19100)	19.55	19.13	
		1880 (18900)	19.45	19.19	
		1860 (18700)	19.46	18.94	
50RB-High (50)		1900 (19100)	19.63	19.78	
		1880 (18900)	19.70	19.77	
		1860 (18700)	19.60	19.67	
50RB-Middle (25)		1900 (19100)	19.69	19.76	
		1880 (18900)	19.78	19.66	
		1860 (18700)	19.65	19.74	
50RB-Low (0)		1900 (19100)	19.59	19.74	
		1880 (18900)	19.77	19.87	
		1860 (18700)	19.50	19.47	
100RB (0)		1900 (19100)	19.66	19.60	
		1880 (18900)	19.76	19.80	
		1860 (18700)	19.61	19.55	

LTE B7-Low power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	2567.5 (21425)	20.23	19.71
		2535 (21100)	20.23	20.37
		2502.5 (20775)	20.38	20.42
	1RB-Middle (12)	2567.5 (21425)	20.37	19.96
		2535 (21100)	20.29	20.03
		2502.5 (20775)	20.31	19.98
	1RB-Low (0)	2567.5 (21425)	20.33	19.84
		2535 (21100)	20.24	19.64
		2502.5 (20775)	20.24	19.87
	12RB-High (13)	2567.5 (21425)	20.29	20.38
		2535 (21100)	20.39	20.39
		2502.5 (20775)	20.44	20.57
	12RB-Middle (6)	2567.5 (21425)	20.41	20.47
		2535 (21100)	20.33	20.33
		2502.5 (20775)	20.34	20.24
	12RB-Low (0)	2567.5 (21425)	20.39	20.40
		2535 (21100)	20.31	20.40
		2502.5 (20775)	20.30	20.22
	25RB (0)	2567.5 (21425)	20.34	20.52
		2535 (21100)	20.35	20.44
		2502.5 (20775)	20.38	20.51
10MHz	1RB-High (49)	2565 (21400)	20.19	19.68
		2535 (21100)	20.45	19.98
		2505 (20800)	20.42	19.81
	1RB-Middle (24)	2565 (21400)	20.43	20.20
		2535 (21100)	20.33	19.64
		2505 (20800)	20.48	20.28
	1RB-Low (0)	2565 (21400)	20.40	20.14
		2535 (21100)	20.33	19.95
		2505 (20800)	20.32	19.88
	25RB-High (25)	2565 (21400)	20.39	20.51
		2535 (21100)	20.30	20.40
		2505 (20800)	20.44	20.50
	25RB-Middle (12)	2565 (21400)	20.43	20.56
		2535 (21100)	20.30	20.47
		2505 (20800)	20.48	20.45
	25RB-Low (0)	2565 (21400)	20.47	20.54
		2535 (21100)	20.36	20.37
		2505 (20800)	20.33	20.24
	50RB (0)	2565 (21400)	20.46	20.53
		2535 (21100)	20.42	20.33
		2505 (20800)	20.42	20.43

15MHz	1RB-High (74)	2562.5 (21375)	20.18	19.92	
		2535 (21100)	20.46	19.56	
		2507.5 (20825)	20.34	20.52	
	1RB-Middle (37)	2562.5 (21375)	20.24	20.15	
		2535 (21100)	20.25	19.46	
		2507.5 (20825)	20.42	20.01	
	1RB-Low (0)	2562.5 (21375)	20.35	20.34	
		2535 (21100)	20.26	19.52	
		2507.5 (20825)	20.40	20.00	
	36RB-High (38)	2562.5 (21375)	20.45	20.32	
		2535 (21100)	20.44	20.46	
		2507.5 (20825)	20.46	20.43	
	36RB-Middle (19)	2562.5 (21375)	20.49	20.42	
		2535 (21100)	20.37	20.32	
		2507.5 (20825)	20.44	20.35	
	36RB-Low (0)	2562.5 (21375)	20.47	20.45	
		2535 (21100)	20.35	20.46	
		2507.5 (20825)	20.33	20.32	
	75RB (0)	2562.5 (21375)	20.44	20.52	
		2535 (21100)	20.44	20.34	
		2507.5 (20825)	20.48	20.43	
	20MHz	1RB-High (99)	2560 (21350)	20.12	20.07
			2535 (21100)	20.31	20.56
			2510 (20850)	20.15	20.02
		1RB-Middle (50)	2560 (21350)	20.49	20.32
			2535 (21100)	20.32	20.20
			2510 (20850)	20.39	20.06
1RB-Low (0)		2560 (21350)	20.43	20.15	
		2535 (21100)	20.18	20.03	
		2510 (20850)	20.20	20.06	
50RB-High (50)		2560 (21350)	20.33	20.28	
		2535 (21100)	20.24	20.31	
		2510 (20850)	20.28	20.30	
50RB-Middle (25)		2560 (21350)	20.37	20.49	
		2535 (21100)	20.30	20.32	
		2510 (20850)	20.31	20.34	
50RB-Low (0)		2560 (21350)	20.44	20.50	
		2535 (21100)	20.40	20.16	
		2510 (20850)	20.43	20.28	
100RB (0)		2560 (21350)	20.40	20.33	
		2535 (21100)	20.33	20.27	
		2510 (20850)	20.36	20.28	



LTE B66-Low power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
1.4MHz	1RB-High (5)	1779.3 (132665)	19.23	18.80
		1745 (132322)	19.51	19.75
		1710.7 (131979)	19.55	19.13
	1RB-Middle (3)	1779.3 (132665)	19.22	18.94
		1745 (132322)	19.65	19.18
		1710.7 (131979)	19.72	19.20
	1RB-Low (0)	1779.3 (132665)	19.15	18.91
		1745 (132322)	19.59	19.14
		1710.7 (131979)	19.55	18.94
	3RB-High (3)	1779.3 (132665)	19.31	19.29
		1745 (132322)	19.73	19.60
		1710.7 (131979)	19.75	19.60
	3RB-Middle (1)	1779.3 (132665)	19.30	19.44
		1745 (132322)	19.76	19.75
		1710.7 (131979)	19.71	19.46
	3RB-Low (0)	1779.3 (132665)	19.28	19.34
		1745 (132322)	19.81	19.54
		1710.7 (131979)	19.75	19.53
	6RB (0)	1779.3 (132665)	19.32	19.22
		1745 (132322)	19.61	19.47
		1710.7 (131979)	19.66	19.72
3MHz	1RB-High (14)	1778.5 (132657)	19.16	18.79
		1745 (132322)	19.51	19.63
		1711.5 (131987)	19.55	19.24
	1RB-Middle (7)	1778.5 (132657)	19.33	19.07
		1745 (132322)	19.76	19.34
		1711.5 (131987)	19.68	19.39
	1RB-Low (0)	1778.5 (132657)	19.32	18.92
		1745 (132322)	19.69	19.04
		1711.5 (131987)	19.67	18.91
	8RB-High (7)	1778.5 (132657)	19.36	19.55
		1745 (132322)	19.74	19.74
		1711.5 (131987)	19.63	19.66
	8RB-Middle (4)	1778.5 (132657)	19.32	19.47
		1745 (132322)	19.65	19.86
		1711.5 (131987)	19.67	19.79
	8RB-Low (0)	1778.5 (132657)	19.31	19.48
		1745 (132322)	19.71	19.79
		1711.5 (131987)	19.66	19.68
	15RB (0)	1778.5 (132657)	19.29	19.33
		1745 (132322)	19.62	19.45
		1711.5 (131987)	19.55	19.53

5MHz	1RB-High (24)	1777.5 (132647)	19.16	18.58
		1745 (132322)	19.35	19.18
		1712.5 (131997)	19.57	18.61
	1RB-Middle (12)	1777.5 (132647)	19.42	18.82
		1745 (132322)	19.93	19.34
		1712.5 (131997)	19.70	19.25
	1RB-Low (0)	1777.5 (132647)	19.31	18.81
		1745 (132322)	19.72	19.12
		1712.5 (131997)	19.49	19.20
	12RB-High (13)	1777.5 (132647)	19.28	19.15
		1745 (132322)	19.60	19.50
		1712.5 (131997)	19.52	19.65
	12RB-Middle (6)	1777.5 (132647)	19.39	19.34
		1745 (132322)	19.68	19.58
		1712.5 (131997)	19.66	19.52
	12RB-Low (0)	1777.5 (132647)	19.35	19.44
		1745 (132322)	19.63	19.68
		1712.5 (131997)	19.62	19.58
25RB (0)	1777.5 (132647)	19.26	19.45	
	1745 (132322)	19.57	19.56	
	1712.5 (131997)	19.57	19.69	
10MHz	1RB-High (49)	1775 (132622)	19.18	18.78
		1745 (132322)	19.54	19.34
		1715 (132022)	19.63	19.24
	1RB-Middle (24)	1775 (132622)	19.39	19.15
		1745 (132322)	19.68	19.53
		1715 (132022)	19.66	19.56
	1RB-Low (0)	1775 (132622)	19.37	18.67
		1745 (132322)	19.50	19.36
		1715 (132022)	19.53	19.41
	25RB-High (25)	1775 (132622)	19.34	19.36
		1745 (132322)	19.63	19.69
		1715 (132022)	19.62	19.57
	25RB-Middle (12)	1775 (132622)	19.41	19.32
		1745 (132322)	19.72	19.86
		1715 (132022)	19.62	19.77
	25RB-Low (0)	1775 (132622)	19.42	19.35
		1745 (132322)	19.74	19.78
		1715 (132022)	19.62	19.78
50RB (0)	1775 (132622)	19.32	19.26	
	1745 (132322)	19.68	19.52	
	1715 (132022)	19.72	19.66	

15MHz	1RB-High (74)	1772.5 (132597)	19.24	19.05
		1745 (132322)	19.59	19.07
		1717.5 (132047)	19.46	19.44
	1RB-Middle (37)	1772.5 (132597)	19.28	19.51
		1745 (132322)	19.69	19.21
		1717.5 (132047)	19.66	19.43
	1RB-Low (0)	1772.5 (132597)	19.15	19.07
		1745 (132322)	19.56	18.84
		1717.5 (132047)	19.61	19.56
	36RB-High (38)	1772.5 (132597)	19.37	19.24
		1745 (132322)	19.64	19.57
		1717.5 (132047)	19.61	19.64
	36RB-Middle (19)	1772.5 (132597)	19.37	19.36
		1745 (132322)	19.74	19.74
		1717.5 (132047)	19.66	19.65
	36RB-Low (0)	1772.5 (132597)	19.34	19.33
		1745 (132322)	19.72	19.73
		1717.5 (132047)	19.57	19.69
75RB (0)	1772.5 (132597)	19.40	19.30	
	1745 (132322)	19.64	19.74	
	1717.5 (132047)	19.64	19.65	
20MHz	1RB-High (99)	1770 (132572)	19.06	18.81
		1745 (132322)	19.29	19.39
		1720 (132072)	19.44	18.96
	1RB-Middle (50)	1770 (132572)	19.56	19.00
		1745 (132322)	19.75	19.41
		1720 (132072)	19.64	19.10
	1RB-Low (0)	1770 (132572)	19.26	19.01
		1745 (132322)	19.33	19.17
		1720 (132072)	19.53	18.85
	50RB-High (50)	1770 (132572)	19.28	19.35
		1745 (132322)	19.49	19.56
		1720 (132072)	19.45	19.31
	50RB-Middle (25)	1770 (132572)	19.48	19.38
		1745 (132322)	19.65	19.60
		1720 (132072)	19.53	19.41
	50RB-Low (0)	1770 (132572)	19.30	19.26
		1745 (132322)	19.55	19.60
		1720 (132072)	19.55	19.38
100RB (0)	1770 (132572)	19.56	19.29	
	1745 (132322)	19.69	19.51	
	1720 (132072)	19.55	19.59	

LTE B41 PC3-Low power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	20.51	20.51
		2640.3(41093)	21.14	20.87
		2593 (40620)	21.21	20.84
		2545.8(40148)	21.14	20.79
		2498.5 (39675)	21.51	21.25
	1RB-Middle (12)	2687.5 (41565)	21.13	20.64
		2640.3(41093)	20.85	20.64
		2593 (40620)	21.32	21.09
		2545.8(40148)	21.50	21.26
		2498.5 (39675)	21.52	21.20
	1RB-Low (0)	2687.5 (41565)	21.12	20.53
		2640.3(41093)	20.53	20.53
		2593 (40620)	21.49	21.34
		2545.8(40148)	21.67	20.85
		2498.5 (39675)	21.60	21.25
	12RB-High (13)	2687.5 (41565)	21.01	20.60
		2640.3(41093)	20.69	20.70
		2593 (40620)	21.27	21.17
		2545.8(40148)	21.60	21.19
		2498.5 (39675)	21.68	21.55
	12RB-Middle (6)	2687.5 (41565)	21.11	20.62
		2640.3(41093)	20.72	20.73
		2593 (40620)	21.16	21.02
		2545.8(40148)	21.63	21.25
		2498.5 (39675)	21.63	21.39
	12RB-Low (0)	2687.5 (41565)	21.12	20.63
		2640.3(41093)	20.72	20.72
		2593 (40620)	21.16	21.08
		2545.8(40148)	21.68	21.18
		2498.5 (39675)	21.64	21.50
25RB (0)	2687.5 (41565)	21.11	20.85	
	2640.3(41093)	20.71	20.75	
	2593 (40620)	21.13	21.44	
	2545.8(40148)	21.59	21.52	
	2498.5 (39675)	21.55	21.55	

10MHz	1RB-High (49)	2685 (41540)	21.18	20.58
		2639(41080)	21.09	20.64
		2593 (40620)	21.45	20.90
		2547(40160)	21.32	21.30
		2501 (39700)	21.36	21.21
	1RB-Middle (24)	2685 (41540)	21.32	20.99
		2639(41080)	21.21	20.84
		2593 (40620)	21.78	20.97
		2547(40160)	21.86	21.45
		2501 (39700)	21.86	21.35
	1RB-Low (0)	2685 (41540)	21.15	20.63
		2639(41080)	21.22	20.44
		2593 (40620)	21.81	21.29
		2547(40160)	21.72	21.30
		2501 (39700)	21.46	20.88
	25RB-High (25)	2685 (41540)	21.22	21.09
		2639(41080)	21.15	20.76
		2593 (40620)	21.71	21.61
		2547(40160)	21.82	21.34
		2501 (39700)	21.80	21.63
	25RB-Middle (12)	2685 (41540)	21.18	20.77
		2639(41080)	21.13	20.98
		2593 (40620)	21.24	21.52
		2547(40160)	21.74	21.34
		2501 (39700)	21.80	21.61
	25RB-Low (0)	2685 (41540)	21.24	21.02
		2639(41080)	20.84	21.11
		2593 (40620)	21.71	21.58
		2547(40160)	21.74	21.56
		2501 (39700)	21.71	21.39
50RB (0)	2685 (41540)	21.22	21.04	
	2639(41080)	21.09	21.21	
	2593 (40620)	21.72	21.82	
	2547(40160)	21.77	21.44	
	2501 (39700)	21.67	21.46	

15MHz	1RB-High (74)	2682.5 (41515)	21.04	20.76
		2637.8(41068)	21.09	20.91
		2593 (40620)	21.28	20.83
		2548.3(40173)	21.69	21.32
		2503.5 (39725)	21.64	21.63
	1RB-Middle (37)	2682.5 (41515)	21.11	20.69
		2637.8(41068)	21.01	20.44
		2593 (40620)	21.67	20.87
		2548.3(40173)	21.38	21.38
		2503.5 (39725)	21.54	21.00
	1RB-Low (0)	2682.5 (41515)	21.12	20.76
		2637.8(41068)	20.86	20.80
		2593 (40620)	21.71	21.03
		2548.3(40173)	21.64	21.33
		2503.5 (39725)	21.41	21.27
	36RB-High (38)	2682.5 (41515)	21.16	20.72
		2637.8(41068)	21.10	21.17
		2593 (40620)	21.79	21.41
		2548.3(40173)	21.81	21.25
		2503.5 (39725)	21.64	21.16
	36RB-Middle (19)	2682.5 (41515)	21.22	20.67
		2637.8(41068)	21.10	20.74
		2593 (40620)	21.85	21.35
		2548.3(40173)	21.78	21.29
		2503.5 (39725)	21.64	21.16
	36RB-Low (0)	2682.5 (41515)	21.17	20.72
		2637.8(41068)	20.93	20.78
		2593 (40620)	21.85	21.64
		2548.3(40173)	21.88	21.40
		2503.5 (39725)	21.63	21.15
75RB (0)	2682.5 (41515)	21.17	20.86	
	2637.8(41068)	21.15	21.16	
	2593 (40620)	21.81	21.84	
	2548.3(40173)	21.85	21.42	
	2503.5 (39725)	21.53	21.17	

20MHz	1RB-High (99)	2680 (41490)	20.53	20.08
		2636.5(41055)	20.54	20.15
		2593 (40620)	21.13	20.68
		2549.5(40185)	21.12	21.12
		2506 (39750)	20.97	20.91
	1RB-Middle (50)	2680 (41490)	20.69	20.23
		2636.5(41055)	20.79	20.34
		2593 (40620)	21.25	21.09
		2549.5(40185)	21.27	21.10
		2506 (39750)	21.08	20.69
	1RB-Low (0)	2680 (41490)	20.80	20.27
		2636.5(41055)	20.74	20.57
		2593 (40620)	21.18	21.07
		2549.5(40185)	21.04	21.05
		2506 (39750)	20.91	20.53
	50RB-High (50)	2680 (41490)	20.69	20.62
		2636.5(41055)	20.62	20.70
		2593 (40620)	21.24	21.07
		2549.5(40185)	21.31	21.22
		2506 (39750)	21.12	21.19
	50RB-Middle (25)	2680 (41490)	20.65	20.63
		2636.5(41055)	20.68	20.57
		2593 (40620)	21.33	21.33
		2549.5(40185)	21.35	21.23
		2506 (39750)	21.17	21.17
	50RB-Low (0)	2680 (41490)	20.71	20.72
		2636.5(41055)	20.80	20.69
		2593 (40620)	21.22	21.21
		2549.5(40185)	21.27	21.35
		2506 (39750)	21.06	21.05
100RB (0)	2680 (41490)	20.70	20.71	
	2636.5(41055)	20.72	20.70	
	2593 (40620)	21.25	21.24	
	2549.5(40185)	21.25	21.23	
	2506 (39750)	21.15	21.13	

LTE B41 PC2-Low power				
BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	20.60	20.43
		2640.3(41093)	20.71	17.41
		2593 (40620)	21.28	20.95
		2545.8(40148)	21.21	20.80
		2498.5 (39675)	21.13	20.74
	1RB-Middle (12)	2687.5 (41565)	20.80	20.48
		2640.3(41093)	20.78	20.36
		2593 (40620)	21.31	21.11
		2545.8(40148)	21.50	21.00
		2498.5 (39675)	21.65	20.97
	1RB-Low (0)	2687.5 (41565)	20.73	20.18
		2640.3(41093)	20.73	20.26
		2593 (40620)	21.35	21.01
		2545.8(40148)	21.36	20.85
		2498.5 (39675)	21.16	20.84
	12RB-High (13)	2687.5 (41565)	20.68	20.60
		2640.3(41093)	20.86	20.76
		2593 (40620)	21.34	21.23
		2545.8(40148)	21.30	21.17
		2498.5 (39675)	21.33	21.37
	12RB-Middle (6)	2687.5 (41565)	20.71	20.64
		2640.3(41093)	20.76	20.86
		2593 (40620)	21.23	21.26
		2545.8(40148)	21.32	21.26
		2498.5 (39675)	21.27	21.13
	12RB-Low (0)	2687.5 (41565)	20.71	20.64
		2640.3(41093)	20.78	20.58
		2593 (40620)	21.32	21.31
		2545.8(40148)	21.43	21.46
		2498.5 (39675)	21.29	21.12
25RB (0)	2687.5 (41565)	20.71	20.63	
	2640.3(41093)	20.74	20.68	
	2593 (40620)	21.19	21.20	
	2545.8(40148)	21.29	21.27	
	2498.5 (39675)	21.31	21.35	



10MHz	1RB-High (49)	2685 (41540)	20.68	20.37
		2639(41080)	20.80	20.42
		2593 (40620)	21.25	20.99
		2547(40160)	21.21	21.00
		2501 (39700)	21.30	21.02
	1RB-Middle (24)	2685 (41540)	20.88	20.54
		2639(41080)	20.89	20.54
		2593 (40620)	21.34	20.88
		2547(40160)	21.60	21.04
		2501 (39700)	21.53	21.17
	1RB-Low (0)	2685 (41540)	20.83	20.45
		2639(41080)	20.93	20.55
		2593 (40620)	21.34	21.16
		2547(40160)	21.28	20.99
		2501 (39700)	21.33	20.99
	25RB-High (25)	2685 (41540)	20.83	21.03
		2639(41080)	20.84	20.99
		2593 (40620)	21.32	21.55
		2547(40160)	21.40	21.50
		2501 (39700)	21.38	21.35
	25RB-Middle (12)	2685 (41540)	20.80	21.00
		2639(41080)	20.83	20.77
		2593 (40620)	21.30	21.47
		2547(40160)	21.43	21.71
		2501 (39700)	21.37	21.63
	25RB-Low (0)	2685 (41540)	20.74	20.94
		2639(41080)	20.80	20.76
		2593 (40620)	21.31	21.23
		2547(40160)	21.44	21.72
		2501 (39700)	21.32	21.46
50RB (0)	2685 (41540)	20.84	20.87	
	2639(41080)	20.76	20.95	
	2593 (40620)	21.32	21.39	
	2547(40160)	21.37	21.41	
	2501 (39700)	21.37	21.24	

15MHz	1RB-High (74)	2682.5 (41515)	20.83	20.47
		2637.8(41068)	20.81	20.41
		2593 (40620)	21.27	20.96
		2548.3(40173)	21.42	20.99
		2503.5 (39725)	21.28	20.93
	1RB-Middle (37)	2682.5 (41515)	20.83	20.46
		2637.8(41068)	20.72	20.45
		2593 (40620)	21.44	21.00
		2548.3(40173)	21.33	20.87
		2503.5 (39725)	21.13	20.93
	1RB-Low (0)	2682.5 (41515)	20.76	20.59
		2637.8(41068)	20.84	20.67
		2593 (40620)	21.35	21.06
		2548.3(40173)	21.32	21.01
		2503.5 (39725)	21.11	20.84
	36RB-High (38)	2682.5 (41515)	20.78	20.66
		2637.8(41068)	20.81	20.74
		2593 (40620)	21.33	21.26
		2548.3(40173)	21.43	21.31
		2503.5 (39725)	21.28	21.14
	36RB-Middle (19)	2682.5 (41515)	20.74	20.63
		2637.8(41068)	20.72	20.71
		2593 (40620)	21.45	21.29
		2548.3(40173)	21.34	21.35
		2503.5 (39725)	21.24	21.14
	36RB-Low (0)	2682.5 (41515)	20.81	20.67
		2637.8(41068)	20.82	20.82
		2593 (40620)	21.41	21.28
		2548.3(40173)	21.42	21.47
		2503.5 (39725)	21.13	21.13
75RB (0)	2682.5 (41515)	20.80	20.71	
	2637.8(41068)	20.77	20.81	
	2593 (40620)	21.38	21.32	
	2548.3(40173)	21.38	21.38	
	2503.5 (39725)	21.19	21.15	

20MHz	1RB-High (99)	2680 (41490)	20.38	19.99
		2636.5(41055)	20.31	20.12
		2593 (40620)	20.82	20.61
		2549.5(40185)	20.76	20.55
		2506 (39750)	20.73	20.62
	1RB-Middle (50)	2680 (41490)	20.62	20.34
		2636.5(41055)	20.55	20.40
		2593 (40620)	21.16	20.92
		2549.5(40185)	21.15	20.76
		2506 (39750)	20.85	20.69
	1RB-Low (0)	2680 (41490)	20.58	20.29
		2636.5(41055)	20.60	20.44
		2593 (40620)	20.97	20.76
		2549.5(40185)	21.08	20.59
		2506 (39750)	20.74	20.45
	50RB-High (50)	2680 (41490)	20.39	20.52
		2636.5(41055)	20.48	20.54
		2593 (40620)	20.99	20.92
		2549.5(40185)	21.06	21.15
		2506 (39750)	20.88	20.98
	50RB-Middle (25)	2680 (41490)	20.45	20.35
		2636.5(41055)	20.43	20.51
		2593 (40620)	21.13	21.09
		2549.5(40185)	21.11	21.15
		2506 (39750)	20.87	20.94
	50RB-Low (0)	2680 (41490)	20.48	20.35
		2636.5(41055)	20.55	20.53
		2593 (40620)	21.04	20.96
		2549.5(40185)	21.01	21.11
		2506 (39750)	20.81	20.82
100RB (0)	2680 (41490)	20.38	20.36	
	2636.5(41055)	20.57	20.53	
	2593 (40620)	20.98	21.08	
	2549.5(40185)	20.99	20.99	
	2506 (39750)	20.92	20.93	

#### 11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 3.15dBm.

The maximum tune up of BT antenna is 4dBm.

The average conducted power for Wi-Fi 2.4G is as following:

802.11b								
Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
11(2462MHz)	14.88	14.79	14.85	14.77				
6(2437(MHz)	14.46	/	/	/				
1(2412MHz)	13.61	/	/	/				
Tune up	15.50	15.50	15.50	15.50				
802.11g								
Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
11(2462MHz)	14.16	14.06	14.09	14.02	13.91	11.66	11.58	11.47
6(2437(MHz)	13.96	/	/	/	/	/	/	/
1(2412MHz)	13.52	/	/	/	/	/	/	/
Tune up	15.00	15.00	15.00	15.00	15.00	12.50	12.50	12.50
802.11n-20MHz								
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
11(2462MHz)	12.06	/	/	/	/	/	/	/
6(2437(MHz)	12.87	12.78	12.71	12.72	12.62	10.46	10.34	10.26
1(2412MHz)	12.13	/	/	/	/	/	/	/
Tune up	13.50	13.50	13.50	13.50	13.50	11.50	11.50	11.50



## **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 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**

Please refer to the picture of antenna locations in the document: “The Photos of SAR test - I21Z62812”

### 12.3 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR, 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
WWAN-Main	Yes	Yes	Yes	Yes	No	Yes
WIFI	Yes	Yes	Yes	No	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  $\leq 50$  mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, where

- $f(\text{GHz})$  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	4	2.51	Yes
		Body	19.20	4	2.51	Yes
2.4GHz WLAN	2.45	Head	9.58	15.5	35.48	No
		Body	19.17	15.5	35.48	No

### 13 Evaluation of Simultaneous

**Table 13.1: The sum of SAR values for Main antenna + WiFi-2.4G**

	Position	Main antenna	WiFi-2.4G	Sum
<b>Highest SAR value for Head</b>	Left head, Touch (LTE B71)	0.71	0.34	<b>1.05</b>
<b>Highest SAR value for Body</b>	Rear 10mm (WCDMA B5)	1.20	0.23	<b>1.43</b>

**Table 13.2: The sum of SAR values for Main antenna +BT**

	Position	Main antenna	BT	Sum
<b>Highest SAR value for Head</b>	Right head, Touch (LTE B7)	0.72	0.10 <sup>[1]</sup>	<b>0.82</b>
<b>Highest SAR value for Body</b>	Rear 15mm (LTE B66)	1.32	0.03 <sup>[1]</sup>	<b>1.35</b>

[1] - 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 <sub>1g</sub> (W/kg)
				dBm	mW	
Bluetooth	2.441	Head	5	4	2.51	0.10
Bluetooth	2.441	Body	10	4	2.51	0.05
Bluetooth	2.441	Body	15	4	2.51	0.03

\* - 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:

$(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f(\text{GHz})} / x] \text{ W/kg}$  for test separation distances  $\leq 50 \text{ mm}$ ;

where  $x = 7.5$  for 1-g SAR.

When the minimum test separation distance is  $< 5 \text{ mm}$ , a distance of  $5 \text{ mm}$  is applied to determine SAR test exclusion

#### Conclusion:

According to the above tables, the sum of reported SAR values is  $< 1.6 \text{ W/kg}$ . 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 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-g SAR 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:

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

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

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

**Table 14.1: Duty Cycle**

Mode	Duty Cycle
GSM 850/1900	1:8.3
GPRS/EGPRS 850/1900	1:4, 1:2 or 1:2.67
WCDMA&LTE FDD	1:1
LTE TDD	1:1.58 or 1:2.37

### 14.1 SAR results for 2G/3G/4G

**Table 14.1-1: SAR Values (GSM 850 MHz Band – 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)
Ch.	MHz										
190	836.6	Left	Cheek	/	32.14	32.50	0.317	<b>0.34</b>	0.432	<b>0.47</b>	-0.05
190	836.6	Left	Cheek	Fig.1	32.21	32.50	0.331	<b>0.35</b>	0.458	<b>0.49</b>	0.07
251	848.8	Left	Cheek	/	32.02	32.50	0.294	<b>0.33</b>	0.411	<b>0.46</b>	0.07
190	836.6	Left	Tilt	/	32.21	32.50	0.144	<b>0.15</b>	0.188	<b>0.20</b>	-0.13
128	824.2	Right	Cheek	/	32.21	32.50	0.258	<b>0.28</b>	0.351	<b>0.38</b>	0.02
190	836.6	Right	Tilt	/	32.21	32.50	0.144	<b>0.15</b>	0.188	<b>0.20</b>	-0.09



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

Frequency		Mode (number of timeslots)	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)
Ch.	MHz										
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5 °C											
190	836.6	GPRS (2)	Front	/	29.48	30.50	0.26	<b>0.33</b>	0.35	<b>0.44</b>	0.08
251	848.8	GPRS (2)	Rear	/	29.48	30.50	0.392	<b>0.50</b>	0.553	<b>0.70</b>	-0.09
190	836.6	GPRS (2)	Rear	Fig.2	29.48	30.50	0.429	<b>0.54</b>	0.594	<b>0.75</b>	-0.03
128	824.2	GPRS (2)	Rear	/	29.45	30.50	0.414	<b>0.53</b>	0.576	<b>0.73</b>	-0.10
190	836.6	GPRS (2)	Rear	Unfold	29.48	30.50	0.3	<b>0.38</b>	0.438	<b>0.55</b>	0.02
190	836.6	EGPRS (2)	Rear	/	29.33	30.50	0.403	<b>0.53</b>	0.562	<b>0.74</b>	-0.17

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

**Table 14.1-3: SAR Values (GSM 850 MHz Band - Hotspot)**

Frequency		Mode (number of timeslots)	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)
Ch.	MHz										
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5 °C											
190	836.6	GPRS (2)	Front	/	26.38	28.00	0.162	<b>0.24</b>	0.24	<b>0.35</b>	-0.05
251	848.8	GPRS (2)	Rear	Fig.3	26.38	28.00	0.289	<b>0.42</b>	0.404	<b>0.59</b>	0.06
190	836.6	GPRS (2)	Rear	/	26.38	28.00	0.245	<b>0.36</b>	0.38	<b>0.55</b>	0.05
128	824.2	GPRS (2)	Rear	/	26.30	28.00	0.265	<b>0.39</b>	0.394	<b>0.58</b>	-0.15
190	836.6	GPRS (2)	Rear	Unfold	26.38	28.00	0.211	<b>0.31</b>	0.34	<b>0.49</b>	0.09
190	836.6	GPRS (2)	Left	/	26.38	28.00	0.052	<b>0.08</b>	0.081	<b>0.12</b>	-0.13
190	836.6	GPRS (2)	Right	/	26.38	28.00	0.162	<b>0.24</b>	0.241	<b>0.35</b>	-0.09
190	836.6	GPRS (2)	Bottom	/	26.38	28.00	0.049	<b>0.07</b>	0.097	<b>0.14</b>	0.18
251	848.8	EGPRS (2)	Rear	/	26.36	28.00	0.283	<b>0.41</b>	0.389	<b>0.57</b>	0.16

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

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

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measure d SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measure d SAR(1g) (W/kg)	Reporte d SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5 °C											
810	1909.8	Left	Cheek	/	29.46	31.50	0.104	<b>0.17</b>	0.17	<b>0.27</b>	-0.05
661	1880	Left	Cheek	/	29.78	31.50	0.12	<b>0.18</b>	0.207	<b>0.31</b>	0.16
512	1850.2	Left	Cheek	Fig.4	29.62	31.50	0.161	<b>0.25</b>	0.274	<b>0.42</b>	0.09
661	1880	Left	Tilt	/	29.78	31.50	0.061	<b>0.09</b>	0.078	<b>0.12</b>	-0.17
661	1880	Right	Cheek	/	29.78	31.50	0.146	<b>0.22</b>	0.199	<b>0.30</b>	0.12
661	1880	Right	Tilt	/	29.78	31.50	0.042	<b>0.06</b>	0.056	<b>0.08</b>	-0.07

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

Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducte d 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 (4)	Front	/	23.97	25.50	0.113	<b>0.16</b>	0.182	<b>0.26</b>	0.06
661	1880	GPRS (4)	Rear	/	23.97	25.50	0.241	<b>0.34</b>	0.374	<b>0.53</b>	-0.09
810	1909.8	GPRS (4)	Rear	Unfold	24.36	25.50	0.19	<b>0.25</b>	0.309	<b>0.40</b>	-0.03
661	1880	GPRS (4)	Rear	Unfold	23.97	25.50	0.259	<b>0.37</b>	0.419	<b>0.60</b>	0.04
512	1850.2	GPRS (4)	Rear	Unfold/ Fig.5	24.03	25.50	0.329	<b>0.46</b>	0.551	<b>0.77</b>	0.02
512	1850.2	EGPRS (4)	Rear	/	24.03	25.50	0.311	<b>0.44</b>	0.533	<b>0.75</b>	0.13

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

**Table 14.1-6: SAR Values (GSM 1900 MHz Band – Hotspot)**

Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducte d 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 (3)	Front	/	24.18	25.00	0.151	<b>0.18</b>	0.249	<b>0.30</b>	-0.17
661	1880	GPRS (3)	Rear	/	24.18	25.00	0.351	<b>0.42</b>	0.605	<b>0.73</b>	0.13
661	1880	GPRS (3)	Rear	Unfold	24.18	25.00	0.375	<b>0.45</b>	0.626	<b>0.76</b>	0.15
661	1880	GPRS (3)	Left	/	24.18	25.00	0.099	<b>0.12</b>	0.171	<b>0.21</b>	0.08
661	1880	GPRS (3)	Right	/	24.18	25.00	0.059	<b>0.07</b>	0.094	<b>0.11</b>	-0.09
810	1909.8	GPRS (3)	Bottom	/	23.62	25.00	0.25	<b>0.34</b>	0.449	<b>0.62</b>	-0.07
661	1880	GPRS (3)	Bottom	/	24.18	25.00	0.369	<b>0.45</b>	0.659	<b>0.80</b>	0.14
512	1850.2	GPRS (3)	Bottom	Fig.6	24.35	25.00	0.526	<b>0.61</b>	0.975	<b>1.13</b>	-0.05
512	1850.2	EGPRS (3)	Bottom	/	24.27	25.00	0.485	<b>0.57</b>	0.934	<b>1.10</b>	-0.01

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

**Table 14.1-7: SAR Values (WCDMA 1900 MHz Band - 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)
Ch.	MHz										
9538	1907.6	Left	Cheek	/	23.27	25.00	0.194	<b>0.29</b>	0.312	<b>0.46</b>	0.03
9400	1880	Left	Cheek	/	23.47	25.00	0.171	<b>0.24</b>	0.278	<b>0.40</b>	0.11
9262	1852.4	Left	Cheek	Fig.7	23.44	25.00	0.213	<b>0.31</b>	0.342	<b>0.49</b>	0.05
9400	1880	Left	Tilt	/	23.47	25.00	0.094	<b>0.13</b>	0.132	<b>0.19</b>	0.08
9400	1880	Right	Cheek	/	23.47	25.00	0.155	<b>0.22</b>	0.219	<b>0.31</b>	0.15
9400	1880	Right	Tilt	/	23.47	25.00	0.076	<b>0.11</b>	0.126	<b>0.18</b>	-0.05

**Table 14.1-8: SAR Values (WCDMA 1900 MHz Band – Body worn)**

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)
Ch.	MHz									
9400	1880	Front	/	23.47	25.00	0.201	<b>0.29</b>	0.325	<b>0.46</b>	0.03
9538	1907.6	Rear	/	23.27	25.00	0.312	<b>0.46</b>	0.516	<b>0.77</b>	0.18
9400	1880	Rear	/	23.47	25.00	0.398	<b>0.57</b>	0.656	<b>0.93</b>	0.01
9262	1852.4	Rear	Fig.8	23.44	25.00	0.444	<b>0.64</b>	0.724	<b>1.04</b>	-0.05
9538	1907.6	Rear	Unfold	23.27	25.00	0.303	<b>0.45</b>	0.502	<b>0.75</b>	-0.16
9400	1880	Rear	Unfold	23.47	25.00	0.381	<b>0.54</b>	0.645	<b>0.92</b>	-0.03
9262	1852.4	Rear	Unfold	23.44	25.00	0.426	<b>0.61</b>	0.708	<b>1.01</b>	0.08

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

**Table 14.1-9: SAR Values (WCDMA 1900 MHz Band - Hotspot)**

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)
Ch.	MHz									
9400	1880	Front	/	20.08	21.00	0.12	<b>0.15</b>	0.2	<b>0.25</b>	-0.11
9400	1880	Rear	/	20.08	21.00	0.294	<b>0.36</b>	0.509	<b>0.63</b>	-0.13
9400	1880	Rear	Unfold	20.08	21.00	0.291	<b>0.36</b>	0.511	<b>0.63</b>	0.14
9400	1880	Left	/	20.08	21.00	0.09	<b>0.11</b>	0.155	<b>0.19</b>	0.09
9400	1880	Right	/	20.08	21.00	0.036	<b>0.04</b>	0.069	<b>0.09</b>	0.12
9538	1907.6	Bottom	/	19.74	21.00	0.149	<b>0.20</b>	0.373	<b>0.50</b>	-0.02
9400	1880	Bottom	Fig.9	20.08	21.00	0.329	<b>0.41</b>	0.611	<b>0.76</b>	0.12
9262	1852.4	Bottom	/	20.09	21.00	0.146	<b>0.18</b>	0.411	<b>0.51</b>	-0.02

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

**Table 14.1-10: SAR Values (WCDMA 1700 MHz Band - 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)
Ch.	MHz										
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C											
1412	1732.4	Left	Cheek	/	22.89	24.00	0.23	<b>0.30</b>	0.431	<b>0.56</b>	-0.12
1412	1732.4	Left	Tilt	/	22.89	24.00	0.068	<b>0.09</b>	0.107	<b>0.14</b>	0.06
1513	1752.6	Right	Cheek	/	23.20	24.00	0.17	<b>0.20</b>	0.288	<b>0.35</b>	-0.08
1412	1732.4	Right	Cheek	Fig.10	22.89	24.00	0.27	<b>0.35</b>	0.44	<b>0.57</b>	0.03
1312	1712.4	Right	Cheek	/	23.11	24.00	0.201	<b>0.25</b>	0.351	<b>0.43</b>	0.18
1412	1732.4	Right	Tilt	/	22.89	24.00	0.049	<b>0.06</b>	0.077	<b>0.10</b>	0.12

**Table 14.1-11: SAR Values (WCDMA 1700 MHz Band – Body worn)**

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)
Ch.	MHz									
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C										
1412	1732.4	Front	/	22.89	24.00	0.22	<b>0.28</b>	0.346	<b>0.45</b>	0.08
1513	1752.6	Rear	Fig.11	23.20	24.00	0.581	<b>0.70</b>	0.934	<b>1.12</b>	0.10
1412	1732.4	Rear	/	23.15	24.00	0.563	<b>0.68</b>	0.909	<b>1.11</b>	0.14
1312	1712.4	Rear	/	23.11	24.00	0.517	<b>0.63</b>	0.838	<b>1.03</b>	-0.05
1412	1732.4	Rear	Unfold	22.89	24.00	0.331	<b>0.43</b>	0.522	<b>0.67</b>	-0.08

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

**Table 14.1-12: SAR Values (WCDMA 1700 MHz Band - Hotspot)**

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)
Ch.	MHz									
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C										
1412	1732.4	Front	/	19.45	20.50	0.112	<b>0.14</b>	0.181	<b>0.23</b>	-0.04
1412	1732.4	Rear	/	19.45	20.50	0.357	<b>0.45</b>	0.598	<b>0.76</b>	0.02
1412	1732.4	Rear	Unfold	19.45	20.50	0.256	<b>0.33</b>	0.42	<b>0.53</b>	-0.15
1412	1732.4	Left	/	19.45	20.50	0.091	<b>0.12</b>	0.15	<b>0.19</b>	0.12
1412	1732.4	Right	/	19.45	20.50	0.043	<b>0.05</b>	0.074	<b>0.09</b>	0.02
1513	1752.6	Bottom	/	19.67	20.50	0.387	<b>0.47</b>	0.696	<b>0.84</b>	0.06
1412	1732.4	Bottom	/	19.63	20.50	0.387	<b>0.47</b>	0.705	<b>0.86</b>	-0.11
1312	1712.4	Bottom	Fig.12	19.69	20.50	0.396	<b>0.48</b>	0.718	<b>0.87</b>	0.02

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

**Table 14.1-13: SAR Values (WCDMA 850 MHz Band - 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)
Ch.	MHz										
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C											
4233	846.6	Left	Cheek	Fig.13	22.87	24.00	0.282	<b>0.37</b>	0.384	<b>0.50</b>	-0.06
4183	836.6	Left	Cheek	/	22.97	24.00	0.271	<b>0.34</b>	0.369	<b>0.47</b>	0.05
4132	826.4	Left	Cheek	/	22.96	24.00	0.257	<b>0.33</b>	0.349	<b>0.44</b>	0.17
4183	836.6	Left	Tilt	/	22.97	24.00	0.101	<b>0.13</b>	0.132	<b>0.17</b>	0.01
4183	836.6	Right	Cheek	/	22.97	24.00	0.239	<b>0.30</b>	0.318	<b>0.40</b>	0.01
4183	836.6	Right	Tilt	/	22.97	24.00	0.047	<b>0.06</b>	0.064	<b>0.08</b>	-0.03

**Table 14.1-14: SAR Values (WCDMA 850 MHz Band - 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)
Ch.	MHz									
Ambient Temperature: 22.9 °C      Liquid Temperature: 22.5°C										
4183	836.6	Front	/	23.11	24.00	0.434	<b>0.53</b>	0.596	<b>0.73</b>	0.11
4233	846.6	Rear	/	23.07	24.00	0.634	<b>0.79</b>	0.892	<b>1.11</b>	-0.17
4183	836.6	Rear	/	23.11	24.00	0.674	<b>0.83</b>	0.948	<b>1.16</b>	-0.08
4132	826.4	Rear	Fig.14	23.07	24.00	0.691	<b>0.86</b>	0.971	<b>1.20</b>	0.07
4183	836.6	Rear	unfold	22.97	24.00	0.499	<b>0.63</b>	0.742	<b>0.94</b>	0.04
4183	836.6	Left	/	23.11	24.00	0.329	<b>0.40</b>	0.472	<b>0.58</b>	0.12
4183	836.6	Right	/	23.11	24.00	0.379	<b>0.47</b>	0.553	<b>0.68</b>	-0.03
4183	836.6	Bottom	/	23.11	24.00	0.12	<b>0.15</b>	0.215	<b>0.26</b>	0.11
4132	826.4	Rear	H1	23.07	24.00	0.673	<b>0.83</b>	0.934	<b>1.16</b>	-0.09

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

**Table 14.1-15: SAR Values (LTE Band2 - Head)**

Frequency		Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5 °C					
Ch.	MHz	Mode	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)
18900	1880	1RB_Mid	Left	Cheek	Fig.15	24.59	25.50	0.223	<b>0.27</b>	0.343	<b>0.42</b>	0.07
18900	1880	1RB_Mid	Left	Tilt	/	24.59	25.50	0.132	<b>0.16</b>	0.196	<b>0.24</b>	-0.03
18900	1880	1RB_Mid	Right	Cheek	/	24.59	25.50	0.152	<b>0.19</b>	0.236	<b>0.29</b>	-0.13
18900	1880	1RB_Mid	Right	Tilt	/	24.59	25.50	0.123	<b>0.15</b>	0.212	<b>0.26</b>	-0.13
18900	1880	50RB-Mid	Left	Cheek	/	23.61	24.50	0.141	<b>0.17</b>	0.243	<b>0.30</b>	0.14
18900	1880	50RB-Mid	Left	Tilt	/	23.61	24.50	0.1	<b>0.12</b>	0.148	<b>0.18</b>	-0.13
18900	1880	50RB-Mid	Right	Cheek	/	23.61	24.50	0.154	<b>0.19</b>	0.245	<b>0.30</b>	-0.11
18900	1880	50RB-Mid	Right	Tilt	/	23.61	24.50	0.091	<b>0.11</b>	0.157	<b>0.19</b>	0.05

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-16: SAR Values (LTE Band2 – Body worn)**

Frequency		Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5 °C				
Ch.	MHz	Mode	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)	
18900	1880	1RB-Mid Front	/	24.59	25.50	0.235	<b>0.29</b>	0.382	<b>0.47</b>	-0.17	
19100	1900	1RB-Mid Rear	/	24.56	25.50	0.387	<b>0.48</b>	0.642	<b>0.80</b>	0.05	
18900	1880	1RB-Mid Rear	/	24.59	25.50	0.511	<b>0.63</b>	0.83	<b>1.02</b>	0.02	
18700	1860	1RB-Mid Rear	Fig.16	24.57	25.50	0.54	<b>0.67</b>	0.9	<b>1.11</b>	0.15	
18700	1860	100RB Rear	/	23.53	24.50	0.44	<b>0.55</b>	0.739	<b>0.92</b>	0.07	
19100	1900	1RB-Mid Rear	Unfold	24.56	25.50	0.43	<b>0.53</b>	0.732	<b>0.91</b>	-0.17	
18900	1880	1RB-Mid Rear	Unfold	24.59	25.50	0.464	<b>0.57</b>	0.785	<b>0.97</b>	0.05	
18700	1860	1RB-Mid Rear	Unfold	24.57	25.50	0.513	<b>0.64</b>	0.864	<b>1.07</b>	0.06	
18700	1860	100RB Rear	Unfold	23.53	24.50	0.392	<b>0.49</b>	0.661	<b>0.83</b>	-0.10	
18900	1880	50RB-Mid Front	/	23.61	24.50	0.18	<b>0.22</b>	0.293	<b>0.36</b>	0.07	
18900	1880	50RB-Mid Rear	/	23.61	24.50	0.393	<b>0.48</b>	0.643	<b>0.79</b>	0.08	
18900	1880	50RB-Mid Rear	Unfold	23.61	24.50	0.349	<b>0.43</b>	0.6	<b>0.74</b>	0.01	

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-17: SAR Values (LTE Band2 – Hotspot)**

Frequency		Mode	Figure No.	Conduct ed Power (dBm)	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C		Power Drift (dB)	
Ch.	MHz				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)
18900	1880	1RB-Mid Front	/	20.17	21.50	0.103	<b>0.14</b>	0.17	<b>0.23</b>	-0.03
18900	1880	1RB-Mid Rear	/	20.17	21.50	0.271	<b>0.37</b>	0.463	<b>0.63</b>	-0.16
18900	1880	1RB-Mid Rear	Unfold	20.17	21.50	0.259	<b>0.35</b>	0.458	<b>0.62</b>	-0.18
18900	1880	1RB-Mid Left	/	20.17	21.50	0.085	<b>0.12</b>	0.148	<b>0.20</b>	0.03
18900	1880	1RB-Mid Right	/	20.17	21.50	0.063	<b>0.09</b>	0.114	<b>0.15</b>	0.05
18900	1880	1RB-Mid Bottom	Fig.17	20.17	21.50	0.308	<b>0.42</b>	0.576	<b>0.78</b>	-0.01
18900	1880	50RB-Mid Front	/	20.18	21.50	0.098	<b>0.13</b>	0.16	<b>0.22</b>	-0.18
18900	1880	50RB-Low Rear	/	20.18	21.50	0.259	<b>0.35</b>	0.442	<b>0.60</b>	-0.11
18900	1880	50RB-Low Rear	Unfold	20.18	21.50	0.235	<b>0.32</b>	0.411	<b>0.56</b>	0.12
18900	1880	50RB-Low Left	/	20.18	21.50	0.07	<b>0.09</b>	0.121	<b>0.16</b>	0.13
18900	1880	50RB-Low Right	/	20.18	21.50	0.065	<b>0.09</b>	0.118	<b>0.16</b>	-0.14
18900	1880	50RB-Low Bottom	/	20.18	21.50	0.295	<b>0.40</b>	0.553	<b>0.75</b>	0.15

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 Band5 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C		Power Drift (dB)		
Ch.	MHz					Condu cted Power (dBm)	Max. tune-up Power (dBm)	Measure d SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)		Measure d SAR(1g) (W/kg)	Reporte d SAR(1g) (W/kg)
20600	844	1RB_Mid	Left	Cheek	Fig.18	24.45	25.50	0.324	<b>0.41</b>	0.489	<b>0.62</b>	0.05
20600	844	1RB_Mid	Left	Tilt	/	24.45	25.50	0.153	<b>0.19</b>	0.21	<b>0.27</b>	-0.13
20600	844	1RB_Mid	Right	Cheek	/	24.45	25.50	0.265	<b>0.34</b>	0.353	<b>0.45</b>	0.07
20600	844	1RB_Mid	Right	Tilt	/	24.45	25.50	0.15	<b>0.19</b>	0.208	<b>0.26</b>	0.04
20600	844	25RB-Mid	Left	Cheek	/	23.37	24.50	0.3	<b>0.39</b>	0.442	<b>0.57</b>	-0.17
20600	844	25RB-Mid	Left	Tilt	/	23.37	24.50	0.114	<b>0.15</b>	0.158	<b>0.20</b>	0.10
20600	844	25RB-Mid	Right	Cheek	/	23.37	24.50	0.214	<b>0.28</b>	0.331	<b>0.43</b>	-0.11
20600	844	25RB-Mid	Right	Tilt	/	23.37	24.50	0.112	<b>0.15</b>	0.156	<b>0.20</b>	0.15

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-19: SAR Values (LTE Band5 – Body)**

Frequency		Mode	Figure No.	Conduct ed Power (dBm)	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C			Power Drift (dB)
Ch.	MHz				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)	
20600	844	1RB-Mid Front	/	24.45	25.50	0.29	<b>0.37</b>	0.405	<b>0.52</b>	0.01
20600	844	1RB-Mid Rear	Fig.19	24.45	25.50	0.514	<b>0.65</b>	0.752	<b>0.96</b>	0.04
20525	836.5	1RB-Mid Rear		24.44	25.50	0.446	<b>0.57</b>	0.63	<b>0.80</b>	-0.04
20450	829	1RB-Mid Rear		24.34	25.50	0.444	<b>0.58</b>	0.626	<b>0.82</b>	0.08
20600	844	100RB Rear		23.40	24.50	0.423	<b>0.54</b>	0.61	<b>0.79</b>	0.11
20600	844	1RB-Mid Rear	Unfold	24.45	25.50	0.328	<b>0.42</b>	0.504	<b>0.64</b>	-0.06
20600	844	1RB-Mid Left	/	24.45	25.50	0.231	<b>0.29</b>	0.341	<b>0.43</b>	-0.08
20600	844	1RB-Mid Right	/	24.45	25.50	0.22	<b>0.28</b>	0.324	<b>0.41</b>	0.09
20600	844	1RB-Mid Bottom	/	24.45	25.50	0.174	<b>0.22</b>	0.314	<b>0.40</b>	-0.12
20600	844	25RB-Mid Front	/	23.37	24.50	0.259	<b>0.34</b>	0.367	<b>0.48</b>	-0.08
20600	844	25RB-Mid Rear	/	23.37	24.50	0.428	<b>0.56</b>	0.612	<b>0.79</b>	0.14
20600	844	25RB-Mid Rear	Unfold	23.37	24.50	0.319	<b>0.41</b>	0.5	<b>0.65</b>	0.06
20600	844	25RB-Mid Left	/	23.37	24.50	0.199	<b>0.26</b>	0.295	<b>0.38</b>	-0.13
20600	844	25RB-Mid Right	/	23.37	24.50	0.197	<b>0.26</b>	0.282	<b>0.37</b>	-0.15
20600	844	25RB-Mid Bottom	/	23.37	24.50	0.149	<b>0.19</b>	0.267	<b>0.35</b>	0.03

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 Band7 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C			Power Drift (dB)	
Ch.	MHz					Condu cted Power (dBm)	Max. tune-up Power (dBm)	Measure d SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measure d SAR(1g) (W/kg)		Reporte d SAR(1g) (W/kg)
21350	2560	1RB_Mid	Left	Cheek	/	24.14	24.50	0.145	<b>0.16</b>	0.446	<b>0.48</b>	-0.03
21350	2560	1RB_Mid	Left	Tilt	/	24.14	24.50	0.067	<b>0.07</b>	0.156	<b>0.17</b>	0.13
21350	2560	1RB_Mid	Right	Cheek	Fig.20	24.14	24.50	0.284	<b>0.31</b>	0.662	<b>0.72</b>	0.07
21350	2560	1RB_Mid	Right	Tilt	/	24.14	24.50	0.052	<b>0.06</b>	0.119	<b>0.13</b>	-0.15
21350	2560	50RB-Low	Left	Cheek	/	23.08	23.50	0.135	<b>0.15</b>	0.368	<b>0.41</b>	0.15
21350	2560	50RB-Low	Left	Tilt	/	23.08	23.50	0.056	<b>0.06</b>	0.132	<b>0.15</b>	-0.02
21350	2560	50RB-Low	Right	Cheek	/	23.08	23.50	0.234	<b>0.26</b>	0.55	<b>0.61</b>	0.08
21350	2560	50RB-Low	Right	Tilt	/	23.08	23.50	0.034	<b>0.04</b>	0.064	<b>0.07</b>	0.02

Note1: The LTE mode is QPSK\_20MHz.



**Table 14.1-21: SAR Values (LTE Band7 – Body worn)**

Frequency		Mode	Figure No.	Conduct ed Power (dBm)	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C			Power Drift (dB)
Ch.	MHz				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)	
21350	2560	1RB-Mid Front	/	24.14	24.50	0.077	<b>0.08</b>	0.153	<b>0.17</b>	0.03
21350	2560	1RB-Mid Rear	Fig.21	24.14	24.50	0.3	<b>0.33</b>	0.555	<b>0.60</b>	-0.12
20850	2510	1RB-Mid Rear	Unfold	24.03	24.50	0.357	<b>0.40</b>	0.648	<b>0.72</b>	-0.15
21100	2535	1RB-Mid Rear	Unfold	24.03	24.50	0.362	<b>0.40</b>	0.673	<b>0.75</b>	0.04
21350	2560	1RB-Mid Rear	Unfold/Fig.21	24.14	24.50	0.455	<b>0.49</b>	0.827	<b>0.90</b>	0.03
21350	2560	100RB Rear	Unfold	22.92	23.50	0.321	<b>0.37</b>	0.589	<b>0.67</b>	-0.15
21350	2560	50RB-Low Front	/	23.08	23.50	0.069	<b>0.08</b>	0.13	<b>0.14</b>	0.09
21350	2560	50RB-Low Rear	/	23.08	23.50	0.248	<b>0.27</b>	0.466	<b>0.51</b>	-0.12
21350	2560	50RB-Low Rear	Unfold	23.08	23.50	0.258	<b>0.28</b>	0.496	<b>0.55</b>	0.17

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-22: SAR Values (LTE Band7 – Hotspot)**

Frequency		Mode	Figure No.	Conduct ed Power (dBm)	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5°C			Power Drift (dB)
Ch.	MHz				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)	
21350	2560	1RB-Mid Front	/	20.49	21.00	0.09	<b>0.10</b>	0.17	<b>0.19</b>	0.10
21350	2560	1RB-Mid Rear	/	20.49	21.00	0.327	<b>0.37</b>	0.572	<b>0.64</b>	-0.02
21350	2560	1RB-Mid Rear	Unfold	20.49	21.00	0.342	<b>0.38</b>	0.648	<b>0.73</b>	-0.03
21350	2560	1RB-Mid Left	/	20.49	21.00	0.118	<b>0.13</b>	0.208	<b>0.23</b>	-0.17
21350	2560	1RB-Mid Right	/	20.49	21.00	0.08	<b>0.09</b>	0.149	<b>0.17</b>	-0.16
20850	2510	1RB-Mid Bottom	/	20.39	21.00	0.392	<b>0.45</b>	0.883	<b>1.02</b>	0.12
21100	2535	1RB-Mid Bottom	Fig.22	20.32	21.00	0.454	<b>0.53</b>	1.04	<b>1.22</b>	0.12
21350	2560	1RB-Mid Bottom	/	20.49	21.00	0.434	<b>0.49</b>	1	<b>1.12</b>	-0.17
21350	2560	50RB-Low Front	/	20.44	21.00	0.083	<b>0.09</b>	0.157	<b>0.18</b>	0.01
21350	2560	50RB-Low Rear	/	20.44	21.00	0.34	<b>0.39</b>	0.605	<b>0.69</b>	0.15
21350	2560	50RB-Low Rear	Unfold	20.44	21.00	0.346	<b>0.39</b>	0.651	<b>0.74</b>	-0.18
21350	2560	50RB-Low Left	/	20.44	21.00	0.123	<b>0.14</b>	0.224	<b>0.25</b>	-0.05
21350	2560	50RB-Low Right	/	20.44	21.00	0.082	<b>0.09</b>	0.148	<b>0.17</b>	0.09
20850	2510	50RB-Low Bottom	/	20.43	21.00	0.374	<b>0.43</b>	0.836	<b>0.95</b>	0.02
21100	2535	50RB-Low Bottom	/	20.40	21.00	0.445	<b>0.51</b>	1.02	<b>1.17</b>	-0.13
21350	2560	50RB-Low Bottom	/	20.44	21.00	0.431	<b>0.49</b>	0.995	<b>1.13</b>	0.14
21100	2535	100RB Bottom	/	20.33	21.00	0.438	<b>0.51</b>	1.01	<b>1.18</b>	-0.11
21100	2535	1RB-Mid Bottom	H	20.32	21.00	0.421	<b>0.49</b>	0.987	<b>1.15</b>	-0.06

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-23: SAR Values (LTE Band12 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Conduct ed Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measure d SAR(1g) (W/kg)	Reporte d SAR(1g) (W/kg)	Pow er Drift (dB)
Ch.	MHz											
23095	707.5	1RB-Mid	Left	Cheek	Fig.23	24.10	25.00	0.246	<b>0.30</b>	0.386	<b>0.47</b>	-0.03
23095	707.5	1RB-Mid	Left	Tilt	/	24.10	25.00	0.112	<b>0.14</b>	0.152	<b>0.19</b>	0.02
23095	707.5	1RB-Mid	Right	Cheek	/	24.10	25.00	0.157	<b>0.19</b>	0.216	<b>0.27</b>	0.14
23095	707.5	1RB-Mid	Right	Tilt	/	24.10	25.00	0.089	<b>0.11</b>	0.122	<b>0.15</b>	0.03
23095	707.5	25RB-Low	Left	Cheek	/	23.12	24.00	0.175	<b>0.21</b>	0.266	<b>0.33</b>	0.14
23095	707.5	25RB-Low	Left	Tilt	/	23.12	24.00	0.076	<b>0.09</b>	0.109	<b>0.13</b>	0.18
23095	707.5	25RB-Low	Right	Cheek	/	23.12	24.00	0.137	<b>0.17</b>	0.182	<b>0.22</b>	0.05
23095	707.5	25RB-Low	Right	Tilt	/	23.12	24.00	0.067	<b>0.08</b>	0.089	<b>0.11</b>	0.10

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-24: SAR Values (LTE Band12 – Body)**

Frequency		Mode	Figure No.	Conduct ed 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-Mid Front	/	24.10	25.00	0.106	<b>0.13</b>	0.166	<b>0.20</b>	-0.18
23095	707.5	1RB-Mid Rear	Fig.24	24.10	25.00	0.411	<b>0.51</b>	0.575	<b>0.71</b>	-0.19
23095	707.5	1RB-Mid Rear	Unfold	24.10	25.00	0.169	<b>0.21</b>	0.223	<b>0.27</b>	-0.17
23095	707.5	1RB-Mid Left	/	24.10	25.00	0.184	<b>0.23</b>	0.277	<b>0.34</b>	0.04
23095	707.5	1RB-Mid Right	/	24.10	25.00	0.158	<b>0.19</b>	0.233	<b>0.29</b>	-0.17
23095	707.5	1RB-Mid Bottom	/	24.10	25.00	0.036	<b>0.04</b>	0.062	<b>0.08</b>	0.18
23095	707.5	25RB-Low Front	/	23.12	24.00	0.09	<b>0.11</b>	0.141	<b>0.17</b>	-0.15
23095	707.5	25RB-Low Rear	/	23.12	24.00	0.317	<b>0.39</b>	0.445	<b>0.54</b>	-0.01
23095	707.5	25RB-Low Rear	Unfold	23.12	24.00	0.134	<b>0.16</b>	0.18	<b>0.22</b>	0.16
23095	707.5	25RB-Low Left	/	23.12	24.00	0.15	<b>0.18</b>	0.226	<b>0.28</b>	0.15
23095	707.5	25RB-Low Right	/	23.12	24.00	0.136	<b>0.17</b>	0.199	<b>0.24</b>	0.02
23095	707.5	25RB-Low Bottom	/	23.12	24.00	0.027	<b>0.03</b>	0.045	<b>0.06</b>	-0.17

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 Band13 - Head)**

Frequency		Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5°C					
Ch.	MHz	Mode	Side	Test Position	Figure No.	Conduct ed 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)
23230	782	1RB-Mid	Left	Cheek	Fig.25	23.26	24.00	0.231	<b>0.27</b>	0.343	<b>0.41</b>	0.12
23230	782	1RB-Mid	Left	Tilt	/	23.26	24.00	0.097	<b>0.12</b>	0.134	<b>0.16</b>	0.18
23230	782	1RB-Mid	Right	Cheek	/	23.26	24.00	0.191	<b>0.23</b>	0.294	<b>0.35</b>	0.16
23230	782	1RB-Mid	Right	Tilt	/	23.26	24.00	0.098	<b>0.12</b>	0.136	<b>0.16</b>	-0.02
23230	782	25RB-Low	Left	Cheek	/	22.37	23.00	0.2	<b>0.23</b>	0.297	<b>0.34</b>	0.04
23230	782	25RB-Low	Left	Tilt	/	22.37	23.00	0.077	<b>0.09</b>	0.105	<b>0.12</b>	0.15
23230	782	25RB-Low	Right	Cheek	/	22.37	23.00	0.138	<b>0.16</b>	0.214	<b>0.25</b>	0.18
23230	782	25RB-Low	Right	Tilt	/	22.37	23.00	0.07	<b>0.08</b>	0.096	<b>0.11</b>	-0.06

Note1: The LTE mode is QPSK\_10MHz.

**Table 14.1-26: SAR Values (LTE Band13 – Body)**

Frequency		Ambient Temperature: 22.9 °C					Liquid Temperature: 22.5°C				
Ch.	MHz	Mode	Figure No.	Conduct ed 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)	
23230	782	1RB-Low Front	/	23.26	24.00	0.123	<b>0.15</b>	0.179	<b>0.21</b>	0.09	
23230	782	1RB-Low Rear	Fig.26	23.26	24.00	0.268	<b>0.32</b>	0.387	<b>0.46</b>	0.13	
23230	782	1RB-Low Rear	Unfold	23.26	24.00	0.164	<b>0.19</b>	0.261	<b>0.31</b>	-0.12	
23230	782	1RB-Low Left	/	23.26	24.00	0.108	<b>0.13</b>	0.165	<b>0.20</b>	0.11	
23230	782	1RB-Low Right	/	23.26	24.00	0.164	<b>0.19</b>	0.264	<b>0.31</b>	0.12	
23230	782	1RB-Low Bottom	/	23.26	24.00	0.085	<b>0.10</b>	0.164	<b>0.19</b>	0.16	
23230	782	25RB-Low Front	/	22.37	23.00	0.093	<b>0.11</b>	0.134	<b>0.15</b>	-0.08	
23230	782	25RB-Low Rear	/	22.37	23.00	0.179	<b>0.21</b>	0.27	<b>0.31</b>	0.14	
23230	782	25RB-Low Rear	Unfold	22.37	23.00	0.126	<b>0.15</b>	0.201	<b>0.23</b>	-0.15	
23230	782	25RB-Low Right	/	22.37	23.00	0.079	<b>0.09</b>	0.12	<b>0.14</b>	-0.13	
23230	782	25RB-Low Bottom	/	22.37	23.00	0.126	<b>0.15</b>	0.202	<b>0.23</b>	-0.02	

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

Note2: The LTE mode is QPSK\_10MHz.

**Table 14.1-27: SAR Values (LTE Band41 PC3 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5 °C		Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz					Conduct ed Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)			
40185	2549.5	1RB-Mid	Left	Cheek	Fig.27	24.29	24.50	0.236	<b>0.25</b>	0.455	<b>0.48</b>	0.05
40185	2549.5	1RB-Mid	Left	Tilt	/	24.29	24.50	0.05	<b>0.05</b>	0.086	<b>0.09</b>	-0.01
40185	2549.5	1RB-Mid	Right	Cheek	/	24.29	24.50	0.173	<b>0.18</b>	0.29	<b>0.30</b>	0.15
40185	2549.5	1RB-Mid	Right	Tilt	/	24.29	24.50	0.026	<b>0.03</b>	0.047	<b>0.05</b>	-0.04
40185	2549.5	50RB-Low	Left	Cheek	/	23.35	23.50	0.106	<b>0.11</b>	0.206	<b>0.21</b>	0.16
40185	2549.5	50RB-Low	Left	Tilt	/	23.35	23.50	0.033	<b>0.03</b>	0.055	<b>0.06</b>	0.13
40185	2549.5	50RB-Low	Right	Cheek	/	23.35	23.50	0.137	<b>0.14</b>	0.231	<b>0.24</b>	-0.01
40185	2549.5	50RB-Low	Right	Tilt	/	23.35	23.50	0.029	<b>0.03</b>	0.05	<b>0.05</b>	-0.17

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-28: SAR Values (LTE Band41 PC3– Body worn)**

Frequency		Mode	Figure No.	Ambient Temperature: 22.9 °C		Liquid Temperature: 22.5 °C		Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz			Conduct ed Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)			
40185	2549.5	1RB-Mid Front	/	24.29	24.50	0.078	<b>0.08</b>	0.138	<b>0.14</b>	0.05
40185	2549.5	1RB-Mid Rear	Fig.28	24.29	24.50	0.265	<b>0.28</b>	0.472	<b>0.50</b>	0.09
40185	2549.5	1RB-Mid Rear	Unfold	24.29	24.50	0.221	<b>0.23</b>	0.398	<b>0.42</b>	0.05
40185	2549.5	50RB-Low Front	/	23.35	23.50	0.056	<b>0.06</b>	0.102	<b>0.11</b>	-0.07
40185	2549.5	50RB-Low Rear	/	23.35	23.50	0.203	<b>0.21</b>	0.36	<b>0.37</b>	0.07
40185	2549.5	50RB-Low Rear	Unfold	23.35	23.50	0.197	<b>0.20</b>	0.365	<b>0.38</b>	0.15

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-29: SAR Values (LTE Band41 PC3 – Hotspot)**

Frequency		Mode	Figure No.	Conduct ed 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									
40185	2549.5	1RB-Mid Front	/	21.27	22.50	0.04	<b>0.05</b>	0.069	<b>0.09</b>	-0.17
40185	2549.5	1RB-Mid Rear	/	21.27	22.50	0.152	<b>0.20</b>	0.288	<b>0.38</b>	0.06
40185	2549.5	1RB-Mid Rear	Unfold	21.27	22.50	0.185	<b>0.25</b>	0.349	<b>0.46</b>	0.12
40185	2549.5	1RB-Mid Left	/	21.27	22.50	0.08	<b>0.11</b>	0.136	<b>0.18</b>	-0.04
40185	2549.5	1RB-Mid Right	/	21.27	22.50	0.036	<b>0.05</b>	0.064	<b>0.08</b>	-0.02
40185	2549.5	1RB-Mid Bottom	/	21.27	22.50	0.235	<b>0.31</b>	0.487	<b>0.65</b>	-0.04
40185	2549.5	50RB-Mid Front	/	21.35	22.50	0.039	<b>0.05</b>	0.068	<b>0.09</b>	0.09
40185	2549.5	50RB-Mid Rear	/	21.35	22.50	0.143	<b>0.19</b>	0.271	<b>0.35</b>	0.01
40185	2549.5	50RB-Mid Rear	Unfold	21.35	22.50	0.184	<b>0.24</b>	0.347	<b>0.45</b>	0.05
40185	2549.5	50RB-Mid Left	/	21.35	22.50	0.07	<b>0.09</b>	0.121	<b>0.16</b>	-0.03
40185	2549.5	50RB-Mid Right	/	21.35	22.50	0.034	<b>0.04</b>	0.059	<b>0.08</b>	0.14
40185	2549.5	50RB-Mid Bottom	Fig.29	21.35	22.50	0.245	<b>0.32</b>	0.514	<b>0.67</b>	0.09

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-30: SAR Values (LTE Band41 PC2 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Conduct ed Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measure d SAR(1g) (W/kg)	Reporte d SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
40620	2593	1RB-Mid	Left	Cheek	/	26.38	26.5	0.12	<b>0.12</b>	0.321	<b>0.33</b>	0.16
40620	2593	1RB-Mid	Left	Tilt	/	26.38	26.5	0.041	<b>0.04</b>	0.093	<b>0.10</b>	0.01
40620	2593	1RB-Mid	Right	Cheek	/	26.38	26.5	0.12	<b>0.12</b>	0.283	<b>0.29</b>	-0.02
40620	2593	1RB-Mid	Right	Tilt	/	26.38	26.5	<0.01	<0.01	<0.01	<0.01	/
40620	2593	50RB-Mid	Left	Cheek	/	25.28	25.5	0.106	<b>0.11</b>	0.321	<b>0.34</b>	0.16
40620	2593	50RB-Mid	Left	Tilt	/	25.28	25.5	0.044	<b>0.05</b>	0.106	<b>0.11</b>	0.09
40620	2593	50RB-Mid	Right	Cheek	Fig.30	25.28	25.5	0.147	<b>0.15</b>	0.352	<b>0.37</b>	0.06
40620	2593	50RB-Mid	Right	Tilt	/	25.28	25.5	<0.01	<0.01	<0.01	<0.01	/

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-31: SAR Values (LTE Band41 PC2– Body worn)**

Frequency		Mode	Figure No.	Conduct ed 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									
		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C				
40620	2593	1RB-Mid Front	/	26.38	26.5	0.101	<b>0.10</b>	0.185	<b>0.19</b>	-0.12
40620	2593	1RB-Mid Rear	/	26.38	26.5	0.336	<b>0.35</b>	0.624	<b>0.64</b>	0.09
40620	2593	1RB-Mid Rear	Unfold /Fig.31	26.38	26.5	0.357	<b>0.37</b>	0.699	<b>0.72</b>	0.06
40620	2593	50RB-Mid Front	/	25.28	25.5	0.083	<b>0.09</b>	0.154	<b>0.16</b>	-0.03
40620	2593	50RB-Mid Rear	/	25.28	25.5	0.261	<b>0.27</b>	0.476	<b>0.50</b>	0.11
40620	2593	50RB-Mid Rear	Unfold	25.28	25.5	0.288	<b>0.30</b>	0.565	<b>0.59</b>	0.06

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-32: SAR Values (LTE Band41 PC2 – Hotspot)**

Frequency		Mode	Figure No.	Conduct ed 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									
		Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C				
40620	2593	1RB-Mid Front	/	21.16	22	0.032	<b>0.04</b>	0.063	<b>0.08</b>	-0.13
40620	2593	1RB-Mid Rear	/	21.16	22	0.116	<b>0.14</b>	0.261	<b>0.32</b>	-0.07
40620	2593	1RB-Mid Rear	Unfold	21.16	22	0.15	<b>0.18</b>	0.315	<b>0.38</b>	-0.11
40620	2593	1RB-Mid Left	/	21.16	22	0.053	<b>0.06</b>	0.108	<b>0.13</b>	0.04
40620	2593	1RB-Mid Right	/	21.16	22	0.034	<b>0.04</b>	0.064	<b>0.08</b>	0.10
40620	2593	1RB-Mid Bottom	/	21.16	22	0.158	<b>0.19</b>	0.354	<b>0.43</b>	-0.11
40620	2593	50RB-Mid Front	/	21.13	22	0.035	<b>0.04</b>	0.069	<b>0.08</b>	-0.14
40620	2593	50RB-Mid Rear	/	21.13	22	0.123	<b>0.15</b>	0.267	<b>0.33</b>	0.14
40620	2593	50RB-Mid Rear	Unfold	21.13	22	0.153	<b>0.19</b>	0.319	<b>0.39</b>	-0.08
40620	2593	50RB-Mid Left	/	21.13	22	0.069	<b>0.08</b>	0.134	<b>0.16</b>	0.17
40620	2593	50RB-Mid Right	/	21.13	22	0.037	<b>0.05</b>	0.07	<b>0.09</b>	0.03
40620	2593	50RB-Mid Bottom	Fig.32	21.13	22	0.197	<b>0.24</b>	0.451	<b>0.55</b>	0.02

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

Note2: The LTE mode is QPSK\_20MHz.

**Table 14.1-33: SAR Values (LTE Band66 - Head)**

Frequency		Mode	Side	Test Position	Figure No.	Conduct ed Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measure d SAR(1g) (W/kg)	Reporte d SAR(1g) (W/kg)	Pow er Drift (dB)
Ch.	MHz											
132322	1745	1RB-Mid	Left	Cheek	Fig.33	24.09	25.00	0.267	<b>0.33</b>	0.412	<b>0.51</b>	0.04
132322	1745	1RB-Mid	Left	Tilt	/	24.09	25.00	0.127	<b>0.16</b>	0.149	<b>0.18</b>	0.11
132322	1745	1RB-Mid	Right	Cheek	/	24.09	25.00	0.196	<b>0.24</b>	0.298	<b>0.37</b>	-0.11
132322	1745	1RB-Mid	Right	Tilt	/	24.09	25.00	0.101	<b>0.12</b>	0.116	<b>0.14</b>	-0.05
132322	1745	50RB-Mid	Left	Cheek	/	23.00	24.00	0.184	<b>0.23</b>	0.291	<b>0.37</b>	0.02
132322	1745	50RB-Mid	Left	Tilt	/	23.00	24.00	0.086	<b>0.11</b>	0.1	<b>0.13</b>	-0.12
132322	1745	50RB-Mid	Right	Cheek	/	23.00	24.00	0.145	<b>0.18</b>	0.222	<b>0.28</b>	-0.06
132322	1745	50RB-Mid	Right	Tilt	/	23.00	24.00	0.077	<b>0.10</b>	0.089	<b>0.11</b>	0.08

Note1: The LTE mode is QPSK\_20MHz.

**Table 14.1-34: SAR Values (LTE Band66 – Body worn)**

Frequency		Mode	Figure No.	Conduct ed 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-Mid Front	/	24.09	25.00	0.229	<b>0.28</b>	0.352	<b>0.43</b>	-0.01
132572	1770	1RB-Mid Rear	/	23.89	25.00	0.621	<b>0.80</b>	0.989	<b>1.28</b>	-0.02
132322	1745	1RB-Mid Rear	Fig.34	24.17	25.00	0.677	<b>0.82</b>	1.09	<b>1.32</b>	0.07
132072	1720	1RB-Mid Rear	/	23.96	25.00	0.436	<b>0.55</b>	0.708	<b>0.90</b>	0.06
132322	1745	100RB Rear	/	22.96	24.00	0.518	<b>0.66</b>	0.835	<b>1.06</b>	0.12
132572	1770	1RB-Mid Rear	Unfold	23.89	25.00	0.385	<b>0.50</b>	0.612	<b>0.79</b>	0.03
132322	1745	1RB-Mid Rear	Unfold	24.17	25.00	0.414	<b>0.50</b>	0.654	<b>0.79</b>	-0.01
132072	1720	1RB-Mid Rear	Unfold	23.96	25.00	0.345	<b>0.44</b>	0.543	<b>0.69</b>	0.15
132322	1745	100RB Rear	Unfold	22.96	24.00	0.402	<b>0.51</b>	0.633	<b>0.80</b>	0.17
132322	1745	50RB-Low Front	/	23.00	24.00	0.179	<b>0.23</b>	0.275	<b>0.35</b>	-0.17
132572	1770	50RB-Low Rear	/	22.88	24.00	0.495	<b>0.64</b>	0.792	<b>1.03</b>	-0.18
132322	1745	50RB-Low Rear	/	23.00	24.00	0.514	<b>0.65</b>	0.827	<b>1.04</b>	0.07
132072	1720	50RB-Low Rear	/	22.86	24.00	0.522	<b>0.68</b>	0.726	<b>0.94</b>	-0.13
132322	1745	50RB-Low Rear	Unfold	23.00	24.00	0.339	<b>0.43</b>	0.537	<b>0.68</b>	0.12
132322	1745	1RB-Mid Rear	/	24.17	25.00	0.635	<b>0.77</b>	1.05	<b>1.27</b>	-0.06

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

Note2: The LTE mode is QPSK\_20MHz.