TESTING
NVLAP LAB CODE 600118-0

SAR TEST REPORT

No. I22Z61733-SEM01

For

BLU Products,Inc.

Smart Phone

Model Name: STUDIO MINI 2023

with

Hardware Version: V1.0

Software Version: BLU_ST1020T_V12.0.01.39_ASW_20221109_0005

FCC ID: YHLBLUSTMN22

Issued Date: 2022-11-16

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

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: cttl_terminals@caict.ac.cn, website: www.caict.ac.cn

REPORT HISTORY

Report Number	Revision	Issue Date	Description
I22Z61733-SEM01	Rev.0	2022-11-16	Initial creation of test report

TABLE OF CONTENT

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 Ω
Ambient noise & Reflection:	< 0.012 W/kg

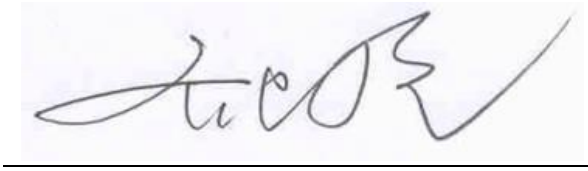
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Yao Juming
Testing Start Date:	October 20, 2022
Testing End Date:	November 11, 2022

1.4 Signature

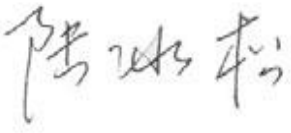
Yao Juming

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for BLU Products,Inc. Smart Phone, STUDIO MINI 2023 is as follows:

Table 2.1: Highest Reported SAR (1g)

Technology Band	Head (Separation Distance 0mm)	Hotspot (Separation Distance 10mm)	Body-Worn (Separation Distance 15mm)	Phablet SAR(10g) (Separation Distance 0mm)	Equipment Class
GSM850	**0.34**	**0.66**	**0.66**	/	PCE
GSM1900	**0.15**	**1.24**	**0.81**	**2.25**	
WCDMA1900	**0.22**	**1.24**	**0.97**	**3.07**	
WCDMA1700	**0.17**	**0.97**	**0.88**	**2.69**	
WCDMA 850	**0.36**	**0.52**	**0.52**	/	
LTE Band12	**0.26**	**0.42**	**0.42**	/	
LTE Band25	**0.18**	**1.18**	**1.08**	**3.17**	
LTE Band26	**0.42**	**0.62**	**0.62**	/	
LTE Band41-PC3	**0.12**	**0.59**	**0.59**	/	
LTE Band41-PC2	**0.17**	**1.12**	**1.12**	/	
LTE Band66	**0.19**	**1.19**	**0.73**	**3.16**	
LTE Band71	**0.26**	**0.48**	**0.48**	/	
WLAN 2.4GHz	**1.12**	**0.61**	**0.25**	**1.28**	DTS
BT	**0.07**	**0.02**	**0.02**	/	DSS

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

For body operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance of 10 mm 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: 1.12 W/kg (1g)

Body: 1.24 W/kg (1g)

Remark：

This device supports both LTE B2/B5/B4 and LTE B25/B26/B66. Since the supported frequency span for LTE B2/B5/B4 falls completely within the supports frequency span for LTE B25/B26/B66, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25/B26/B66.

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

	Position	Main antenna	WiFi-2.4G	Sum
Highest SAR value for Head	Left head, Touch (LTE B26)	0.38	1.12	**1.50**
Highest SAR value for Body	Rear 10mm (WCDMA B4)	0.97	0.61	**1.58**

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

	Position	Main antenna	BT	Sum
Highest SAR value for Head	Right head, Touch (GSM850)	0.42	<0.01	**0.42**
Highest SAR value for Body	Rear 10mm (GSM1900)	1.24	<0.01	**1.24**
	Rear 10mm (WCDMA B2)	1.24	<0.01	**1.24**

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.

According to the above tables, the highest sum of reported SAR values is **1.58 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

3 Client Information

3.1 Applicant Information

Company Name:	BLU Products,Inc.
Address/Post:	10814 NW 33rd St # 100 Doral, FL 33172,USA
Contact Person:	Zeng wei
Contact Email:	zwei@ctasiasz.com
Telephone:	305.715.7171
Fax:	305.436.8819

3.2 Manufacturer Information

Company Name:	BLU Products,Inc.
Address/Post:	10814 NW 33rd St # 100 Doral, FL 33172,USA
Contact Person:	Zeng wei
Contact Email:	zwei@ctasiasz.com
Telephone:	305.715.7171
Fax:	305.436.8819

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

4.1 About EUT

Description:	Smart Phone
Model name:	STUDIO MINI 2023
Operating mode(s):	GSM8501900, WCDMA B2/B4/B5 LTE Band 2/4/5/12/25/26/41/66/71 BT, Wi-Fi2.4G
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 II)
	1710-1755 MHz (WCDMA1700 Band IV)
	699.7 – 715.3 MHz (LTE Band 12)
	1850.7 – 1914.3 MHz (LTE Band 25)
	814.7 – 848.3 MHz (LTE Band 26)
	2498.5 – 2687.5 MHz (LTE Band41)
	1710.7 –1779.3 MHz (LTE Band 66)
	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	353587400015037	V1.0	BLU_ST1020T_V12.0.01.39_ASW_20221109_0005
EUT2	353587400016159	V1.0	BLU_ST1020T_V12.0.01.39_ASW_20221109_0005
EUT3	353587400011705	V1.0	BLU_ST1020T_V12.0.01.39_ASW_20221109_0005
EUT4	353587400016365	V1.0	BLU_ST1020T_V12.0.01.39_ASW_20221109_0005

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

Note: It is performed to test SAR with the EUT1~3 and conducted power with the EUT4.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	C716204250T	/	Guangdong Fenghua New 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 (ρ) . The equation description is as below:

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

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

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

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

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

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

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

7 Tissue Simulating Liquids

7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid

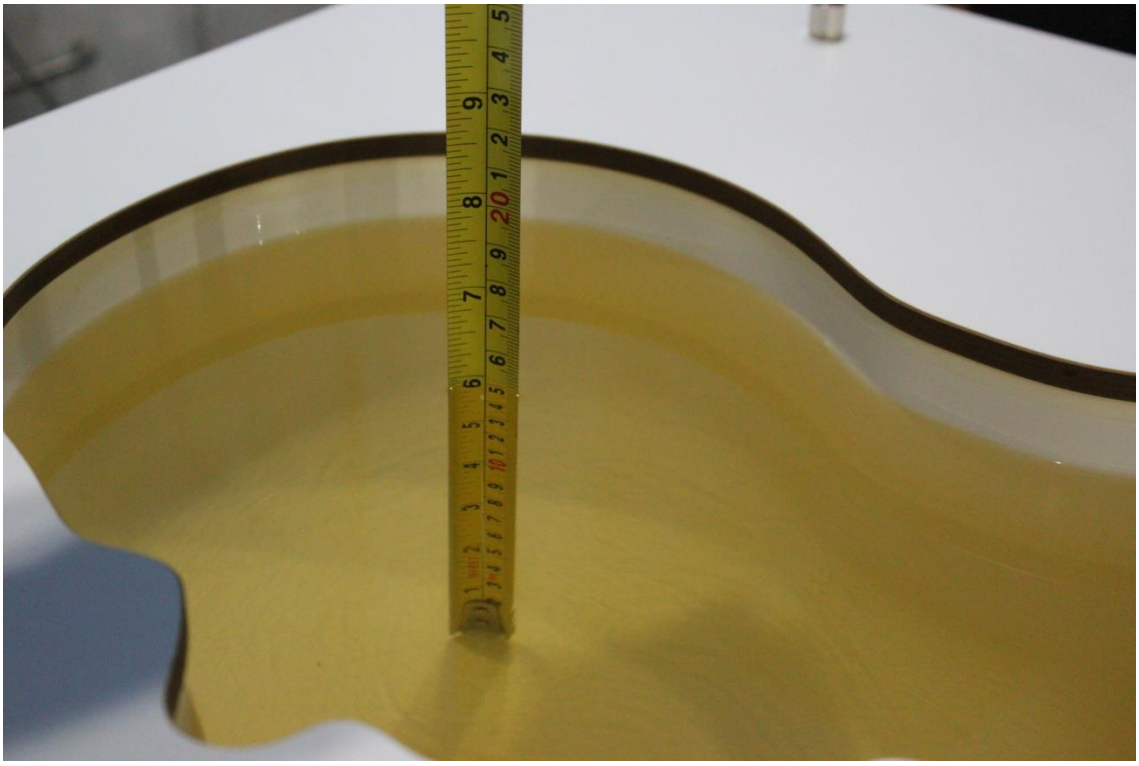
Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5%Range	Permittivity(ε)	± 5%Range
750	Head	0.89	0.85～0.93	41.94	39.8～44.0
900	Head	0.97	0.92～1.02	41.50	39.40～43.60
1800	Head	1.40	1.33～1.47	40.00	38.00～42.00
1900	Head	1.40	1.33～1.47	40.00	38.00～42.00
2450	Head	1.80	1.71～1.89	39.20	37.30～41.10
2600	Head	1.96	1.86～2.06	39.01	37.06～40.96

7.2 Dielectric Performance

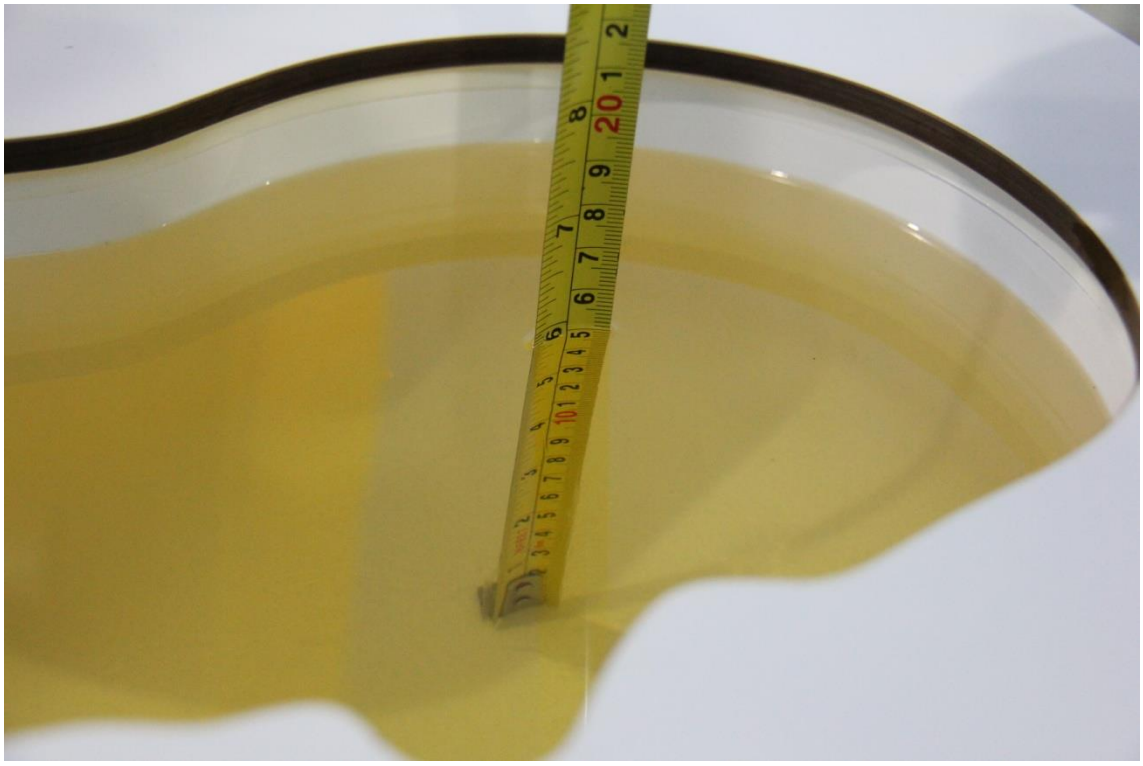
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date yyyy/mm/dd	Frequency	Type	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2022-10-20	750MHz	Head	42.92	2.34	0.877	-1.46
2022-10-22	900MHz	Head	40.97	-1.28	0.955	-1.55
2022-10-26	1800MHz	Head	38.96	-2.60	1.403	0.21
2022-11-5	1900MHz	Head	39.62	-0.95	1.439	2.79
2022-11-8	2450MHz	Head	38.64	-1.43	1.841	2.28
2022-11-11	2600MHz	Head	38.74	-0.69	1.974	0.71

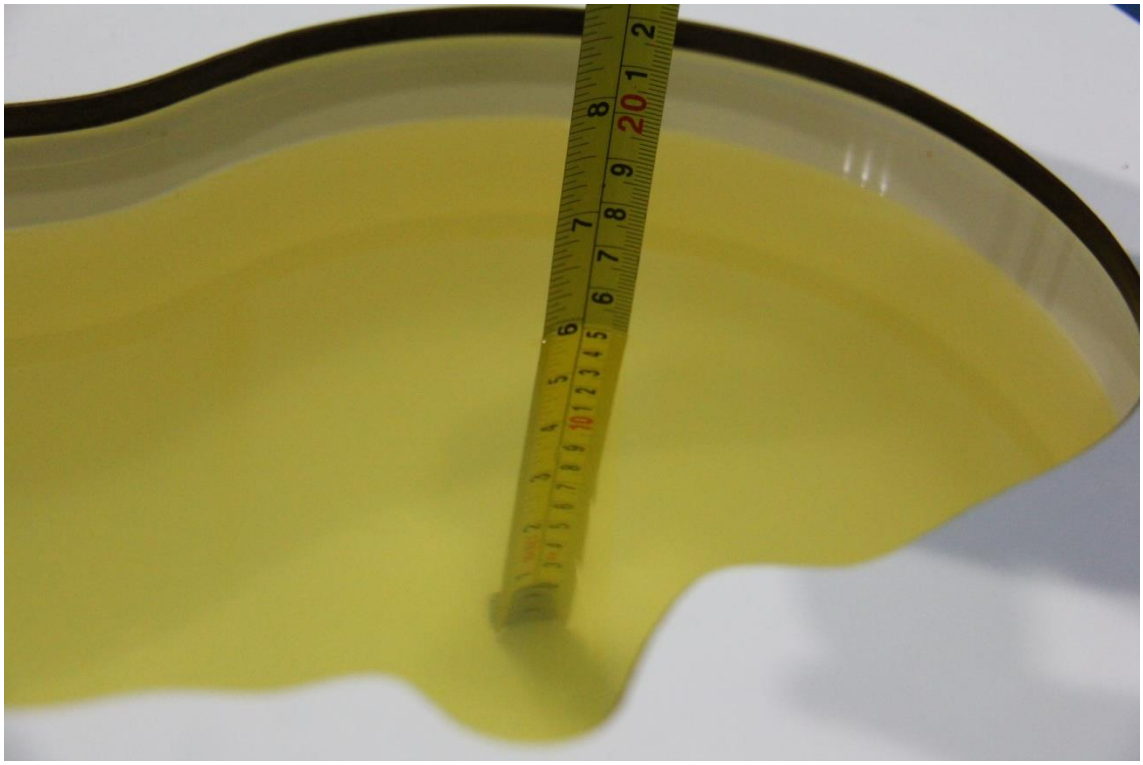
Note: The liquid temperature is 22.0℃



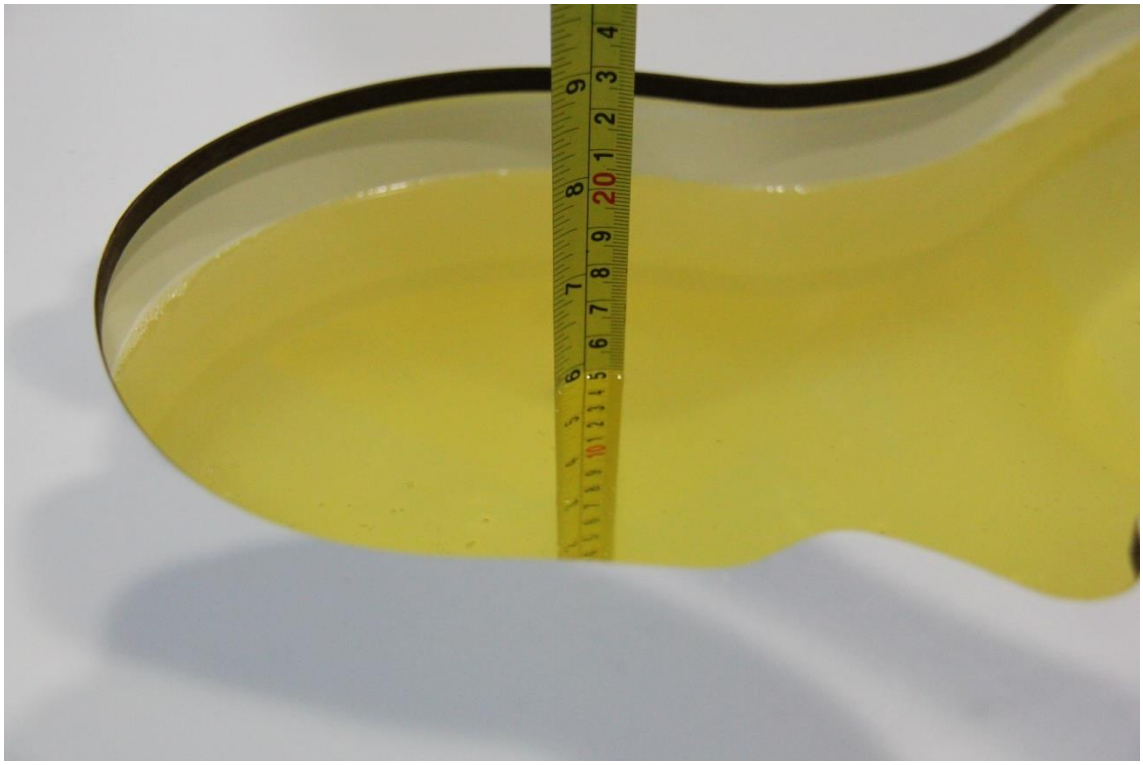
Picture 7-1 Liquid depth in the Head Phantom (750MHz)



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



Picture 7-3 Liquid depth in the Head Phantom (1900 MHz)



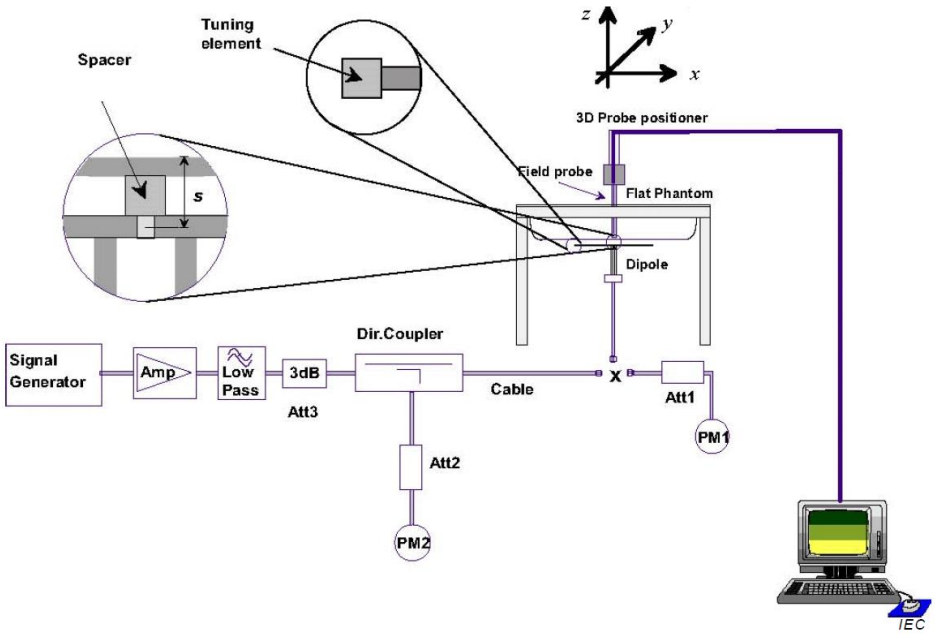
Picture 7-4 Liquid depth in the Head Phantom (2450MHz)

Picture 7-5 Liquid depth in the Head Phantom (2600 MHz)

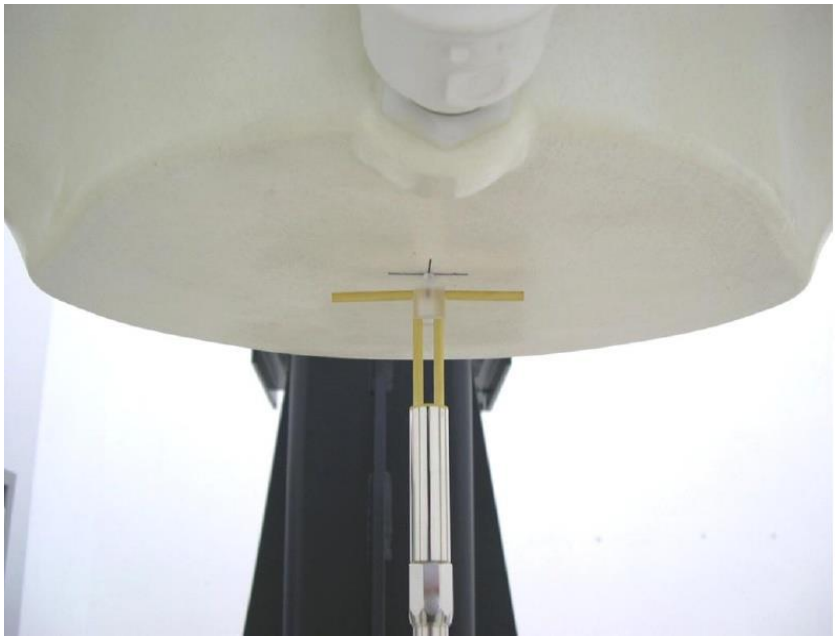
8 System verification

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	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
(yyyy-mm-dd)		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2022-10-20	750MHz	5.64	8.63	5.40	8.32	-4.26%	-3.59%
2022-10-22	900MHz	7.05	11.00	6.84	10.88	-2.98%	-1.09%
2022-10-26	1800MHz	20.20	38.80	20.48	39.48	1.39%	1.75%
2022-11-5	1900MHz	20.70	39.70	20.60	39.52	-0.48%	-0.45%
2022-11-8	2450MHz	24.9	52.7	25.1	53.5	0.88%	1.48%
2022-11-11	2600MHz	25.2	55.8	25.0	55.6	-0.63%	-0.29%

9 Measurement Procedures

9.1 Tests to be performed

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

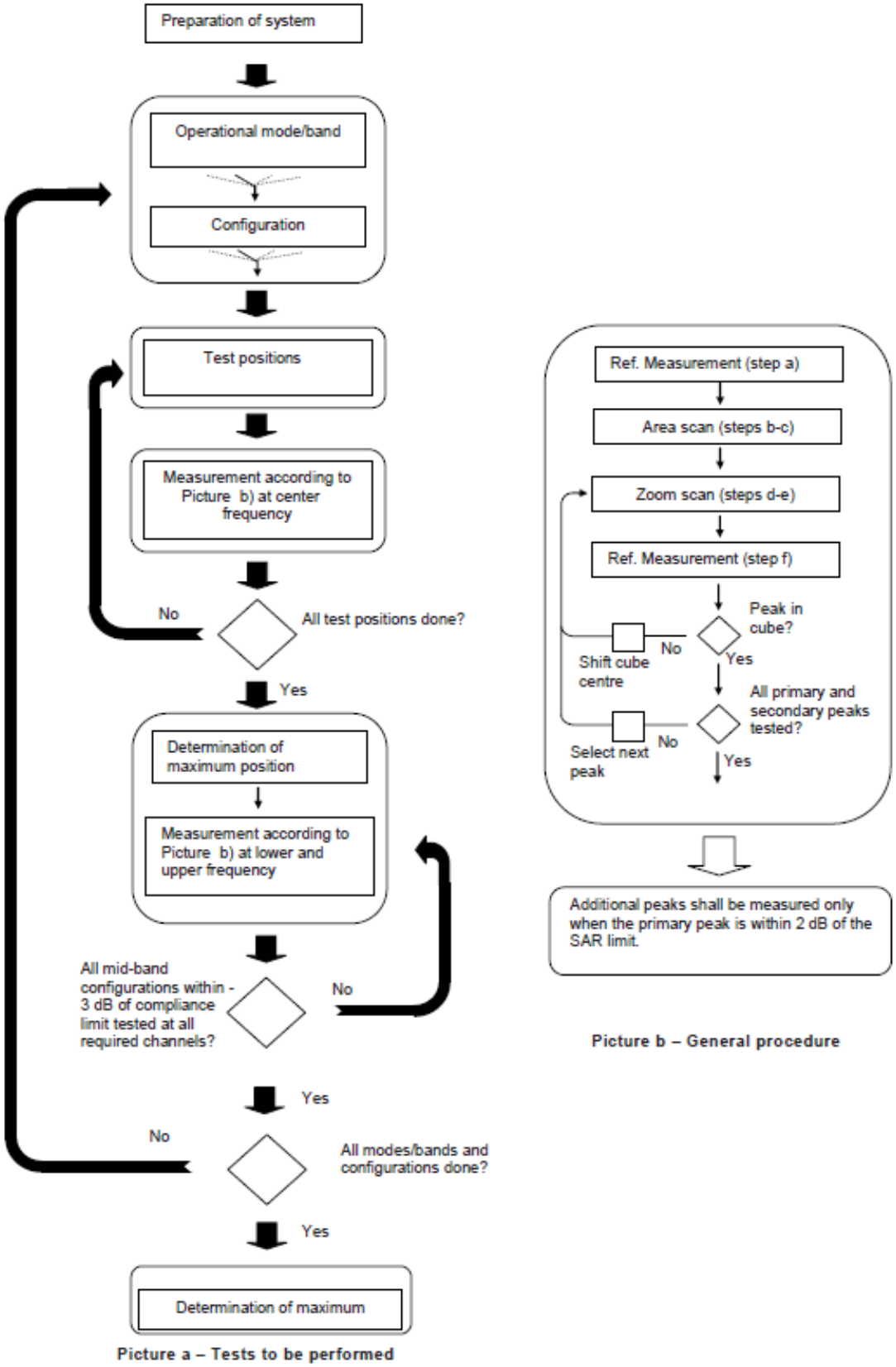
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

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

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

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

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



Picture a – Tests to be performed

Picture b – General procedure

Picture 9.1Block diagram of the tests to be performed

9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2003. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.
* When zoom scan is required and the <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

9.3 WCDMA Measurement Procedures for SAR

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

For Release 5 HSDPA Data Devices:

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

For Release 6 HSPA Data Devices

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

Rel.8 DC-HSDPA (Cat 24)

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

9.4 SAR Measurement for LTE

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

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

TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 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.

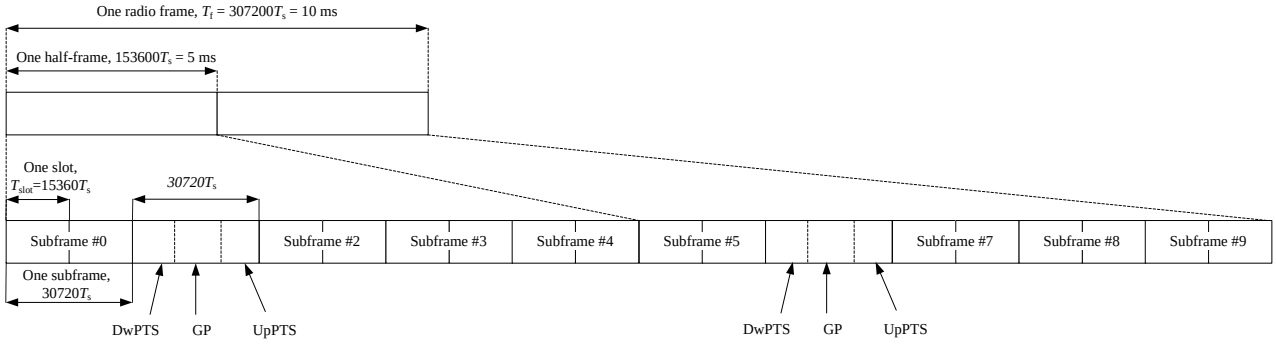


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

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	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Table 9.2: Uplink-downlink configurations

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

Duty factor is calculated by:

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

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

= 0.633

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 section14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

10 Area Scan Based 1-g SAR

10.1 Requirement of KDB

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

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

10.2 Fast SAR Algorithms

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

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

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

Both algorithms are implemented in DASY software.

11 Conducted Output Power

Antenna	Receiver on (head scenario)	Receiver off+ Hotspot off (body scenario)	Receiver off+ Hotspot on (body/other scenario)
Main Antenna	Power Level A1	Power Level B1	Power Level C1

For WWAN, when the phone receiver is off and hotspot is off, the power reduction (Power level B1) will be implemented immediately at GSM1900, WCDMA B2/B4 and LTE B25/B41/B66 and normal power (Power Level A1) is applied for other bands. When the phone receiver is off and hotspot is on, the power reduction (Power Level C1) will be implemented immediately at GSM1900, WCDMA B2/B4 and LTE B25/B41/B66 and normal power (Power Level A1) is applied for other bands. If receiver is on, normal Power (Power Level A1) is applied for all bands.

11.1 GSM Measurement result

Table 11.1-1: The conducted power measurement results–GSM850 (Power Level A1/B1/C1)

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	32.43	32.45	32.42	33.50	/	/	/	/
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	32.46	32.48	32.46	33.50	-9.03	23.43	23.45	23.43
2 Txslots	30.91	30.97	30.97	31.50	-6.02	24.89	24.95	24.95
3 Txslots	28.83	28.93	28.97	29.50	-4.26	24.57	24.67	24.71
4 Txslots	26.82	26.94	26.98	27.50	-3.01	23.81	23.93	23.97
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	32.47	32.52	32.48	33.50	-9.03	23.44	23.49	23.45
2 Txslots	30.94	31.01	31.00	31.50	-6.02	24.92	24.99	24.98
3 Txslots	28.86	28.96	29.00	29.50	-4.26	24.60	24.70	24.74
4 Txslots	26.86	26.97	27.01	27.50	-3.01	23.85	23.96	24.00
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	26.79	26.83	26.67	27.50	-9.03	17.76	17.80	17.64
2 Txslots	24.83	24.85	24.70	25.50	-6.02	18.81	18.83	18.68
3Txslots	22.81	22.80	22.65	23.50	-4.26	18.55	18.54	18.39
4 Txslots	20.63	20.62	20.74	21.50	-3.01	17.62	17.61	17.73

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-GSM1900 (Power Level A1)

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	29.64	29.53	29.40	30.50	/	/	/	/
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	29.61	29.49	29.34	30.50	-9.03	20.58	20.46	20.31
2 Txslots	28.07	27.95	27.81	28.50	-6.02	22.05	21.93	21.79
3 Txslots	26.05	25.90	25.77	26.50	-4.26	21.79	21.64	21.51
4 Txslots	24.03	23.88	23.77	24.50	-3.01	21.02	20.87	20.76
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	29.58	29.49	29.33	30.50	-9.03	20.55	20.46	20.30
2 Txslots	28.06	27.95	27.79	28.50	-6.02	22.04	21.93	21.77
3 Txslots	26.02	25.90	25.75	26.50	-4.26	21.76	21.64	21.49
4 Txslots	24.00	23.88	23.75	24.50	-3.01	20.99	20.87	20.74
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	25.89	25.96	25.86	26.50	-9.03	16.86	16.93	16.83
2 Txslots	23.79	23.88	23.93	24.50	-6.02	17.77	17.86	17.91
3Txslots	21.64	21.72	22.28	22.50	-4.26	17.38	17.46	18.02
4 Txslots	19.51	20.23	19.47	20.50	-3.01	16.50	17.22	16.46

NOTES:

1) Division Factors

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

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

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

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

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

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

Table 11.1-3: The conducted power measurement results-GSM1900 (Power Level B1)

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	27.13	26.99	26.91	27.50	/	/	/	/
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	27.13	26.95	26.87	27.50	-9.03	18.10	17.92	17.84
2 Txslots	24.15	24.01	23.98	25.50	-6.02	18.13	17.99	17.96
3 Txslots	22.28	22.14	22.11	23.50	-4.26	18.02	17.88	17.85
4 Txslots	21.00	20.88	20.81	21.50	-3.01	17.99	17.87	17.80
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	27.12	26.92	26.91	27.50	-9.03	18.09	17.89	17.88
2 Txslots	24.14	24.01	23.97	25.50	-6.02	18.12	17.99	17.95
3 Txslots	22.27	22.14	22.10	23.50	-4.26	18.01	17.88	17.84
4 Txslots	20.98	20.87	20.80	21.50	-3.01	17.97	17.86	17.79
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	25.89	25.96	25.88	26.50	-9.03	16.86	16.93	16.85
2 Txslots	22.73	22.83	22.88	23.50	-6.02	16.71	16.81	16.86
3Txslots	20.85	21.04	20.92	21.50	-4.26	16.59	16.78	16.66
4 Txslots	19.57	19.52	19.53	20.50	-3.01	16.56	16.51	16.52

NOTES:

1) Division Factors

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

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

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

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

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

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

Table 11.1-4: The conducted power measurement results-GSM1900 (Power Level C1)

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	26.16	26.04	25.94	26.50	/	/	/	/
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	26.24	26.11	26.04	26.50	-9.03	17.21	17.08	17.01
2 Txslots	23.54	23.33	23.36	24.50	-6.02	17.52	17.31	17.34
3 Txslots	21.46	21.34	21.25	22.50	-4.26	17.20	17.08	16.99
4 Txslots	20.09	20.01	19.95	20.50	-3.01	17.08	17.00	16.94
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	26.15	26.06	25.96	26.50	-9.03	17.12	17.03	16.93
2 Txslots	23.57	23.39	23.31	24.50	-6.02	17.55	17.37	17.29
3 Txslots	21.39	21.30	21.19	22.50	-4.26	17.13	17.04	16.93
4 Txslots	20.02	19.96	19.90	20.50	-3.01	17.01	16.95	16.89
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	25.93	25.94	25.91	26.50	-9.03	16.90	16.91	16.88
2 Txslots	22.71	22.75	22.75	23.50	-6.02	16.69	16.73	16.73
3Txslots	20.84	20.82	20.82	21.50	-4.26	16.58	16.56	16.56
4 Txslots	19.33	19.23	19.22	20.50	-3.01	16.32	16.22	16.21

NOTES:

1) Division Factors

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

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

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

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

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

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

11.2 WCDMA Measurement result

Table 11.2-1: The conducted Power for WCDMA B5 (Power Level A1/B1/C1)

WCDMA850	FDDV result (dBm)			Tune up
	4233/4458	4183/4408	4132/4357	
	(846.6MHz)	(836.6MHz)	(826.4MHz)	
	23.12	23.13	23.26	24.50
HSUPA	20.64	20.28	20.35	21.50
	20.26	20.27	20.33	21.50
	21.22	21.28	21.34	22.50
	19.76	19.76	19.82	21.50
	21.23	21.26	21.33	22.50
HSPA+	21.73	21.87	21.81	23.00
DC-HSDPA	22.55	22.57	22.59	23.00
	22.04	22.12	22.17	23.00
	22.09	22.06	22.12	22.50
	21.74	21.77	21.76	22.50

Table 11.2-2: The conducted Power for WCDMA B2/B4 (Power Level A1)

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938	9400/9800	9262/9662	
	(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	22.92	23.04	22.97	24.50
HSUPA	19.96	20.03	20.05	21.50
	19.98	20.02	20.04	21.50
	20.97	21.01	21.05	22.50
	19.50	19.52	19.53	21.50
	20.94	20.78	21.02	22.50
HSPA+	21.51	21.55	21.56	23.00
DC-HSDPA	21.93	22.03	22.06	23.50
	21.78	22.01	22.05	23.00
	21.45	21.54	21.57	23.00
	21.42	21.52	21.56	23.00

WCDMA1700	FDDIV result (dBm)			Tune up
	1513/1738	1412/1637	1312/1537	
	(1752.6MHz)	(1732.4MHz)	(1712.4MHz)	
	23.14	23.12	23.21	24.50
HSUPA	20.16	20.12	20.23	21.50
	20.18	20.13	20.25	21.50
	21.16	21.12	21.21	22.50
	19.67	19.65	19.74	21.50
	21.13	21.12	21.22	22.50
HSPA+	21.77	21.67	21.76	23.00
DC-HSDPA	22.09	22.11	22.21	23.00
	21.95	22.03	22.08	23.00
	21.61	21.59	21.74	22.50
	21.63	21.64	21.72	22.50

Table 11.2-3: The conducted Power for WCDMA B2/B4 (Power Level B1)

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938	9400/9800	9262/9662	
	(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	20.02	20.01	20.12	21.00
HSUPA	17.94	17.98	17.95	18.00
	17.79	17.80	17.99	18.00
	18.97	18.95	19.97	19.00
	17.62	17.40	17.53	18.00
	18.93	18.94	18.94	19.00
HSPA+	19.42	19.46	19.47	19.50
DC-HSDPA	19.76	19.97	19.87	20.00
	19.43	19.29	19.23	19.50
	18.60	18.78	18.74	19.50
	18.74	18.82	18.73	19.50

WCDMA1700	FDDIV result (dBm)			Tune up
	1513/1738	1412/1637	1312/1537	
	(1752.6MHz)	(1732.4MHz)	(1712.4MHz)	
	20.07	20.08	20.18	21.50
HSUPA	18.31	18.15	18.18	18.50
	18.12	18.15	18.16	18.50
	18.82	18.85	18.99	19.50
	17.57	17.75	17.69	18.50
	19.00	19.03	19.11	19.50
HSPA+	19.53	19.76	19.71	20.00
DC-HSDPA	19.87	19.73	19.87	20.00
	19.95	19.93	19.89	20.00
	18.75	18.88	18.91	19.50
	18.71	18.79	18.88	19.50

Table 11.2-4: The conducted Power for WCDMA B2/B4 (Power Level C1)

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938	9400/9800	9262/9662	
	(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	16.99	17.05	17.11	18.50
HSUPA	14.91	14.95	14.96	15.50
	14.94	14.93	14.96	15.50
	15.94	15.99	15.96	16.50
	14.43	14.48	14.49	15.50
	15.89	15.92	15.96	16.50
HSPA+	16.53	16.60	16.57	17.00
DC-HSDPA	16.97	17.06	17.05	17.50
	16.97	19.96	16.95	17.00
	16.46	16.58	16.57	17.00
	16.47	16.57	16.55	17.00

WCDMA1700	FDDIV result (dBm)			Tune up
	1513/1738	1412/1637	1312/1537	
	(1752.6MHz)	(1732.4MHz)	(1712.4MHz)	
	17.12	17.17	17.23	18.50
HSUPA	15.00	15.02	15.10	15.50
	15.07	15.01	15.07	15.50
	16.06	16.02	16.07	16.50
	14.55	14.51	14.62	15.50
	16.04	16.00	16.10	16.50
HSPA+	16.70	16.64	16.85	17.00
DC-HSDPA	16.86	16.86	16.98	17.00
	16.85	16.87	16.97	17.00
	16.61	16.63	16.71	16.50
	16.58	16.59	16.68	16.50

11.3 LTE Measurement result

Maximum Target Power for Production Unit

Band	Tune up (dBm)		
	Receiver on (head scenario)	**Receiver off+ Hotspot off** (body scenario)	**Receiver off+ Hotspot on** (body/other scenario)
	Power Level A1	Power Level B1	Power Level C1
LTE B12	25	25	25
LTE B25	24.5	21	18.5
LTE B26	25	25	25
LTE B41-PC3	24	23	23
LTE B41-PC2	27	26	26
LTE B66	24.5	21	19.5
LTE B71	25	25	25

Maximum Power Reduction (MPR) for LTE

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	3
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	3

LTE Band12 (Power Level A1/B1/C1)

LTE BAND12					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	715.3 (23173)	23.76	23.13	22.08
		707.5 (23095)	23.84	23.28	22.10
		699.7 (23017)	23.84	23.20	22.13
	1RB-Middle (3)	715.3 (23173)	23.95	23.31	22.24
		707.5 (23095)	23.97	23.26	22.15
		699.7 (23017)	23.98	23.40	22.24
	1RB-Low (0)	715.3 (23173)	23.78	23.14	22.15
		707.5 (23095)	23.81	23.13	22.01
		699.7 (23017)	23.83	23.12	22.09
	3RB-High (3)	715.3 (23173)	23.88	22.93	22.12
		707.5 (23095)	23.93	23.03	22.07
		699.7 (23017)	23.97	23.00	22.14
	3RB-Middle (1)	715.3 (23173)	23.91	22.98	22.15

		707.5 (23095)	23.93	22.97	22.11
		699.7 (23017)	23.97	23.02	22.06
	3RB-Low (0)	715.3 (23173)	23.89	22.96	22.10
		707.5 (23095)	23.90	22.97	22.02
		699.7 (23017)	23.91	22.90	22.04
	6RB (0)	715.3 (23173)	22.89	22.07	20.94
		707.5 (23095)	22.94	22.05	20.94
		699.7 (23017)	22.91	22.06	20.92
3MHz	1RB-High (14)	714.5 (23165)	23.83	23.23	22.17
		707.5 (23095)	23.89	23.22	22.13
		700.5 (23025)	23.91	23.25	22.14
	1RB-Middle (7)	714.5 (23165)	24.02	23.38	22.37
		707.5 (23095)	24.05	23.43	22.25
		700.5 (23025)	24.09	23.39	22.37
	1RB-Low (0)	714.5 (23165)	23.90	23.20	22.12
		707.5 (23095)	23.91	23.31	22.23
		700.5 (23025)	23.92	23.29	22.22
	8RB-High (7)	714.5 (23165)	22.94	22.07	21.01
		707.5 (23095)	22.96	22.04	21.03
		700.5 (23025)	22.96	22.01	21.03
	8RB-Middle (4)	714.5 (23165)	22.97	22.12	21.03
		707.5 (23095)	23.00	22.08	21.02
		700.5 (23025)	23.01	22.09	21.04
	8RB-Low (0)	714.5 (23165)	22.97	22.04	21.03
		707.5 (23095)	22.95	22.01	20.98
		700.5 (23025)	22.95	22.04	21.01
	15RB (0)	714.5 (23165)	22.91	21.96	20.93
		707.5 (23095)	22.93	21.99	20.94
		700.5 (23025)	22.92	21.95	20.97
5MHz	1RB-High (24)	713.5 (23155)	23.79	23.20	22.11
		707.5 (23095)	23.80	23.08	21.98
		701.5 (23035)	23.81	23.26	22.05
	1RB-Middle (12)	713.5 (23155)	24.12	23.53	22.40
		707.5 (23095)	24.11	23.43	22.34
		701.5 (23035)	24.13	23.43	22.35
	1RB-Low (0)	713.5 (23155)	23.80	23.12	22.02
		707.5 (23095)	23.85	23.30	22.07
		701.5 (23035)	23.85	23.13	21.98
	12RB-High (13)	713.5 (23155)	22.93	21.96	20.95
		707.5 (23095)	23.02	22.04	21.00
		701.5 (23035)	22.94	21.94	20.95
	12RB-Middle (6)	713.5 (23155)	23.02	22.05	21.02

		707.5 (23095)	23.06	22.05	21.05
		701.5 (23035)	23.03	22.02	21.03
	12RB-Low (0)	713.5 (23155)	23.03	22.05	21.03
		707.5 (23095)	22.95	21.97	20.94
		701.5 (23035)	22.98	22.00	20.98
	25RB (0)	713.5 (23155)	23.00	22.02	21.00
		707.5 (23095)	22.99	22.02	20.98
		701.5 (23035)	22.94	21.96	20.94
10MHz	1RB-High (49)	711 (23130)	23.84	23.19	22.06
		707.5 (23095)	23.83	23.18	22.01
		704 (23060)	23.84	23.16	22.10
	1RB-Middle (24)	711 (23130)	23.95	23.21	22.11
		707.5 (23095)	23.94	23.38	22.22
		704 (23060)	24.02	23.49	22.23
	1RB-Low (0)	711 (23130)	23.93	23.26	22.07
		707.5 (23095)	23.91	23.30	22.23
		704 (23060)	23.91	23.26	22.16
	25RB-High (25)	711 (23130)	22.77	21.81	20.76
		707.5 (23095)	22.91	21.94	20.95
		704 (23060)	22.97	22.02	21.01
	25RB-Middle (12)	711 (23130)	22.94	21.97	20.95
		707.5 (23095)	22.93	21.98	20.96
		704 (23060)	22.97	22.00	20.99
	25RB-Low (0)	711 (23130)	22.87	21.90	20.91
		707.5 (23095)	22.93	21.99	20.96
		704 (23060)	23.01	22.05	21.03
	50RB (0)	711 (23130)	22.80	21.84	20.85
		707.5 (23095)	22.91	21.92	20.91
		704 (23060)	23.00	22.02	21.02

LTE Band25 (Power Level A1)

LTE BAND25					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1914.3 (26683)	23.47	22.65	21.56
		1882.5 (26365)	23.38	22.74	21.61
		1850.7 (26047)	23.32	22.51	21.51
	1RB-Middle (3)	1914.3 (26683)	23.54	22.73	21.62
		1882.5 (26365)	23.46	22.74	21.67
		1850.7 (26047)	23.40	22.70	21.51
	1RB-Low (0)	1914.3 (26683)	23.44	22.64	21.57
		1882.5 (26365)	23.40	22.63	21.57

		1850.7 (26047)	23.32	22.53	21.51
	3RB-High (3)	1914.3 (26683)	23.54	22.46	21.60
		1882.5 (26365)	23.48	22.49	21.65
		1850.7 (26047)	23.42	22.38	21.51
	3RB-Middle (1)	1914.3 (26683)	23.54	22.58	21.63
		1882.5 (26365)	23.52	22.50	21.64
		1850.7 (26047)	23.44	22.43	21.52
	3RB-Low (0)	1914.3 (26683)	23.53	22.48	21.62
		1882.5 (26365)	23.49	22.50	21.60
		1850.7 (26047)	23.38	22.45	21.47
	6RB (0)	1914.3 (26683)	22.57	21.61	20.54
		1882.5 (26365)	22.48	21.60	20.51
		1850.7 (26047)	22.43	21.51	20.45
3MHz	1RB-High (14)	1913.5 (26675)	23.57	22.68	21.66
		1882.5 (26365)	23.48	22.77	21.64
		1851.5 (26055)	23.39	22.61	21.52
	1RB-Middle (7)	1913.5 (26675)	23.61	22.88	21.76
		1882.5 (26365)	23.60	22.93	21.73
		1851.5 (26055)	23.52	22.71	21.71
	1RB-Low (0)	1913.5 (26675)	23.55	22.75	21.61
		1882.5 (26365)	23.49	22.87	21.66
		1851.5 (26055)	23.41	22.71	21.62
	8RB-High (7)	1913.5 (26675)	22.55	21.63	20.58
		1882.5 (26365)	22.50	21.58	20.55
		1851.5 (26055)	22.41	21.45	20.48
	8RB-Middle (4)	1913.5 (26675)	22.60	21.63	20.63
		1882.5 (26365)	22.54	21.59	20.59
		1851.5 (26055)	22.43	21.47	20.48
	8RB-Low (0)	1913.5 (26675)	22.60	21.65	20.62
		1882.5 (26365)	22.50	21.60	20.59
		1851.5 (26055)	22.40	21.48	20.48
	15RB (0)	1913.5 (26675)	22.61	21.60	20.56
		1882.5 (26365)	22.50	21.51	20.50
		1851.5 (26055)	22.45	21.44	20.42
5MHz	1RB-High (24)	1912.5 (26665)	23.53	22.71	21.66
		1882.5 (26365)	23.47	22.77	21.60
		1852.5 (26065)	23.36	22.61	21.52
	1RB-Middle (12)	1912.5 (26665)	23.70	22.77	21.82
		1882.5 (26365)	23.59	22.88	21.74
		1852.5 (26065)	23.51	22.65	21.60
	1RB-Low (0)	1912.5 (26665)	23.52	22.81	21.72
		1882.5 (26365)	23.46	22.75	21.59

		1852.5 (26065)	23.39	22.65	21.57
	12RB-High (13)	1912.5 (26665)	22.59	21.57	20.54
		1882.5 (26365)	22.51	21.53	20.54
		1852.5 (26065)	22.40	21.40	20.46
	12RB-Middle (6)	1912.5 (26665)	22.65	21.61	20.65
		1882.5 (26365)	22.54	21.55	20.58
		1852.5 (26065)	22.46	21.47	20.50
	12RB-Low (0)	1912.5 (26665)	22.61	21.59	20.58
		1882.5 (26365)	22.52	21.50	20.56
		1852.5 (26065)	22.41	21.41	20.50
	25RB (0)	1912.5 (26665)	22.63	21.63	20.55
		1882.5 (26365)	22.53	21.56	20.56
		1852.5 (26065)	22.42	21.45	20.44
10MHz	1RB-High (49)	1910 (26640)	23.56	22.69	21.66
		1882.5 (26365)	23.47	22.73	21.66
		1855 (26090)	23.39	22.59	21.56
	1RB-Middle (24)	1910 (26640)	23.64	22.75	21.74
		1882.5 (26365)	23.55	22.80	21.75
		1855 (26090)	23.44	22.68	21.52
	1RB-Low (0)	1910 (26640)	23.56	22.88	21.72
		1882.5 (26365)	23.51	22.84	21.71
		1855 (26090)	23.39	22.69	21.52
	25RB-High (25)	1910 (26640)	22.66	21.63	20.58
		1882.5 (26365)	22.55	21.54	20.56
		1855 (26090)	22.46	21.44	20.47
	25RB-Middle (12)	1910 (26640)	22.65	21.62	20.61
		1882.5 (26365)	22.56	21.57	20.58
		1855 (26090)	22.46	21.47	20.47
	25RB-Low (0)	1910 (26640)	22.71	21.71	20.69
		1882.5 (26365)	22.58	21.58	20.57
		1855 (26090)	22.43	21.47	20.47
	50RB (0)	1910 (26640)	22.70	21.67	20.62
		1882.5 (26365)	22.58	21.59	20.58
		1855 (26090)	22.49	21.48	20.46
15MHz	1RB-High (74)	1907.5 (26615)	23.49	22.76	21.63
		1882.5 (26365)	23.47	22.72	21.70
		1857.5 (26115)	23.36	22.65	21.56
	1RB-Middle (37)	1907.5 (26615)	23.51	22.84	21.61
		1882.5 (26365)	23.45	22.76	21.67
		1857.5 (26115)	23.34	22.66	21.51
	1RB-Low (0)	1907.5 (26615)	23.50	22.92	21.66
		1882.5 (26365)	23.47	22.85	21.70

		1857.5 (26115)	23.38	22.68	21.53
	36RB-High (38)	1907.5 (26615)	22.63	21.59	20.63
		1882.5 (26365)	22.52	21.52	20.54
		1857.5 (26115)	22.46	21.47	20.48
	36RB-Middle (19)	1907.5 (26615)	22.63	21.61	20.66
		1882.5 (26365)	22.56	21.55	20.60
		1857.5 (26115)	22.45	21.42	20.46
	36RB-Low (0)	1907.5 (26615)	22.66	21.63	20.67
		1882.5 (26365)	22.56	21.57	20.59
		1857.5 (26115)	22.48	21.46	20.48
	75RB (0)	1907.5 (26615)	22.67	21.65	20.63
		1882.5 (26365)	22.55	21.56	20.52
		1857.5 (26115)	22.46	21.45	20.44
20MHz	1RB-High (99)	1905 (26590)	23.37	22.60	21.45
		1882.5 (26365)	23.34	22.55	21.51
		1860 (26140)	23.27	22.63	21.44
	1RB-Middle (50)	1905 (26590)	23.60	22.88	21.76
		1882.5 (26365)	23.52	22.75	21.71
		1860 (26140)	23.45	22.62	21.59
	1RB-Low (0)	1905 (26590)	23.40	22.64	21.52
		1882.5 (26365)	23.35	22.63	21.54
		1860 (26140)	23.25	22.46	21.36
	50RB-High (50)	1905 (26590)	22.58	21.56	20.55
		1882.5 (26365)	22.55	21.55	20.55
		1860 (26140)	22.53	21.53	20.53
	50RB-Middle (25)	1905 (26590)	22.63	21.63	20.65
		1882.5 (26365)	22.59	21.60	20.59
		1860 (26140)	22.51	21.47	20.49
	50RB-Low (0)	1905 (26590)	22.69	21.68	20.69
		1882.5 (26365)	22.58	21.63	20.61
		1860 (26140)	22.52	21.52	20.52
	100RB (0)	1905 (26590)	22.62	21.62	20.64
		1882.5 (26365)	22.59	21.61	20.58
		1860 (26140)	22.52	21.51	20.51

LTE Band25 (Power Level B1)

LTE BAND25					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1914.3 (26683)	20.50	20.77	20.56
		1882.5 (26365)	20.42	20.79	20.60
		1850.7 (26047)	20.36	20.69	20.54
	1RB-Middle (3)	1914.3 (26683)	20.63	20.80	20.65
		1882.5 (26365)	20.48	20.90	20.68
		1850.7 (26047)	20.40	20.72	20.60
	1RB-Low (0)	1914.3 (26683)	20.49	20.79	20.65
		1882.5 (26365)	20.44	20.72	20.57
		1850.7 (26047)	20.34	20.63	20.52
	3RB-High (3)	1914.3 (26683)	20.57	20.54	20.69
		1882.5 (26365)	20.53	20.51	20.64
		1850.7 (26047)	20.44	20.41	20.58
	3RB-Middle (1)	1914.3 (26683)	20.63	20.63	20.67
		1882.5 (26365)	20.54	20.54	20.67
		1850.7 (26047)	20.47	20.55	20.56
	3RB-Low (0)	1914.3 (26683)	20.58	20.59	20.63
		1882.5 (26365)	20.54	20.56	20.65
		1850.7 (26047)	20.45	20.40	20.55
	6RB (0)	1914.3 (26683)	20.58	20.69	20.59
		1882.5 (26365)	20.48	20.62	20.54
		1850.7 (26047)	20.45	20.53	20.44
3MHz	1RB-High (14)	1913.5 (26675)	20.59	20.80	20.75
		1882.5 (26365)	20.48	20.83	20.70
		1851.5 (26055)	20.41	20.69	20.61
	1RB-Middle (7)	1913.5 (26675)	20.71	20.92	20.77
		1882.5 (26365)	20.62	21.03	20.80
		1851.5 (26055)	20.53	20.75	20.67
	1RB-Low (0)	1913.5 (26675)	20.58	20.90	20.78
		1882.5 (26365)	20.48	20.86	20.70
		1851.5 (26055)	20.44	20.78	20.63
	8RB-High (7)	1913.5 (26675)	20.61	20.66	20.63
		1882.5 (26365)	20.51	20.60	20.56
		1851.5 (26055)	20.43	20.51	20.47
	8RB-Middle (4)	1913.5 (26675)	20.65	20.65	20.64
		1882.5 (26365)	20.54	20.63	20.59
		1851.5 (26055)	20.48	20.53	20.50
	8RB-Low (0)	1913.5 (26675)	20.62	20.67	20.65
		1882.5 (26365)	20.53	20.63	20.59

		1851.5 (26055)	20.47	20.54	20.49
	15RB (0)	1913.5 (26675)	20.61	20.63	20.55
		1882.5 (26365)	20.50	20.55	20.52
		1851.5 (26055)	20.44	20.45	20.44
5MHz	1RB-High (24)	1912.5 (26665)	20.57	20.76	20.76
		1882.5 (26365)	20.50	20.88	20.71
		1852.5 (26065)	20.38	20.66	20.53
	1RB-Middle (12)	1912.5 (26665)	20.69	21.01	20.85
		1882.5 (26365)	20.67	20.98	20.80
		1852.5 (26065)	20.56	20.82	20.81
	1RB-Low (0)	1912.5 (26665)	20.56	20.89	20.77
		1882.5 (26365)	20.49	20.86	20.68
		1852.5 (26065)	20.40	20.75	20.56
	12RB-High (13)	1912.5 (26665)	20.54	20.56	20.56
		1882.5 (26365)	20.54	20.52	20.56
		1852.5 (26065)	20.43	20.43	20.51
	12RB-Middle (6)	1912.5 (26665)	20.64	20.60	20.66
		1882.5 (26365)	20.56	20.58	20.59
		1852.5 (26065)	20.47	20.52	20.53
	12RB-Low (0)	1912.5 (26665)	20.60	20.60	20.61
		1882.5 (26365)	20.52	20.52	20.57
		1852.5 (26065)	20.46	20.45	20.51
	25RB (0)	1912.5 (26665)	20.60	20.60	20.56
		1882.5 (26365)	20.53	20.59	20.57
		1852.5 (26065)	20.42	20.47	20.47
10MHz	1RB-High (49)	1910 (26640)	20.54	20.82	20.66
		1882.5 (26365)	20.49	20.69	20.69
		1855 (26090)	20.40	20.67	20.58
	1RB-Middle (24)	1910 (26640)	20.66	20.94	20.81
		1882.5 (26365)	20.59	20.98	20.74
		1855 (26090)	20.47	20.65	20.63
	1RB-Low (0)	1910 (26640)	20.58	20.94	20.77
		1882.5 (26365)	20.50	20.83	20.72
		1855 (26090)	20.43	20.61	20.62
	25RB-High (25)	1910 (26640)	20.58	20.59	20.56
		1882.5 (26365)	20.55	20.57	20.56
		1855 (26090)	20.45	20.46	20.48
	25RB-Middle (12)	1910 (26640)	20.64	20.65	20.66
		1882.5 (26365)	20.55	20.59	20.58
		1855 (26090)	20.47	20.48	20.49
	25RB-Low (0)	1910 (26640)	20.70	20.71	20.70
		1882.5 (26365)	20.57	20.61	20.60

		1855 (26090)	20.46	20.49	20.47
	50RB (0)	1910 (26640)	20.62	20.69	20.64
		1882.5 (26365)	20.57	20.61	20.60
		1855 (26090)	20.46	20.49	20.47
15MHz	1RB-High (74)	1907.5 (26615)	20.56	20.84	20.70
		1882.5 (26365)	20.52	20.83	20.70
		1857.5 (26115)	20.41	20.63	20.55
	1RB-Middle (37)	1907.5 (26615)	20.55	20.85	20.72
		1882.5 (26365)	20.50	20.73	20.60
		1857.5 (26115)	20.39	20.56	20.49
	1RB-Low (0)	1907.5 (26615)	20.59	20.85	20.72
		1882.5 (26365)	20.50	20.84	20.77
		1857.5 (26115)	20.43	20.75	20.64
	36RB-High (38)	1907.5 (26615)	20.62	20.58	20.61
		1882.5 (26365)	20.54	20.51	20.56
		1857.5 (26115)	20.48	20.46	20.50
	36RB-Middle (19)	1907.5 (26615)	20.64	20.63	20.65
		1882.5 (26365)	20.58	20.56	20.60
		1857.5 (26115)	20.45	20.44	20.46
	36RB-Low (0)	1907.5 (26615)	20.68	20.68	20.70
		1882.5 (26365)	20.56	20.56	20.60
		1857.5 (26115)	20.49	20.48	20.49
	75RB (0)	1907.5 (26615)	20.62	20.64	20.64
		1882.5 (26365)	20.56	20.58	20.57
		1857.5 (26115)	20.45	20.46	20.46
20MHz	1RB-High (99)	1905 (26590)	20.40	20.77	20.50
		1882.5 (26365)	20.36	20.71	20.51
		1860 (26140)	20.30	20.61	20.53
	1RB-Middle (50)	1905 (26590)	20.75	20.89	20.76
		1882.5 (26365)	20.73	20.89	20.73
		1860 (26140)	20.71	20.83	20.63
	1RB-Low (0)	1905 (26590)	20.41	20.71	20.57
		1882.5 (26365)	20.33	20.66	20.53
		1860 (26140)	20.27	20.47	20.49
	50RB-High (50)	1905 (26590)	20.54	20.58	20.56
		1882.5 (26365)	20.51	20.53	20.54
		1860 (26140)	20.51	20.52	20.51
	50RB-Middle (25)	1905 (26590)	20.60	20.65	20.65
		1882.5 (26365)	20.58	20.60	20.62
		1860 (26140)	20.45	20.52	20.51
	50RB-Low (0)	1905 (26590)	20.76	20.69	20.71
		1882.5 (26365)	20.74	20.62	20.61

		1860 (26140)	20.73	20.52	20.53
	100RB (0)	1905 (26590)	20.61	20.60	20.65
		1882.5 (26365)	20.56	20.58	20.59
		1860 (26140)	20.69	20.50	20.53

LTE Band25 (Power Level C1)

LTE BAND25					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1914.3 (26683)	17.43	17.83	17.69
		1882.5 (26365)	17.41	17.75	17.63
		1850.7 (26047)	17.32	17.64	17.52
	1RB-Middle (3)	1914.3 (26683)	17.53	17.88	17.67
		1882.5 (26365)	17.46	17.83	17.72
		1850.7 (26047)	17.37	17.65	17.65
	1RB-Low (0)	1914.3 (26683)	17.45	17.78	17.64
		1882.5 (26365)	17.39	17.70	17.64
		1850.7 (26047)	17.32	17.59	17.53
	3RB-High (3)	1914.3 (26683)	17.55	17.59	17.68
		1882.5 (26365)	17.46	17.51	17.58
		1850.7 (26047)	17.39	17.47	17.59
	3RB-Middle (1)	1914.3 (26683)	17.60	17.62	17.77
		1882.5 (26365)	17.49	17.61	17.72
		1850.7 (26047)	17.46	17.46	17.57
	3RB-Low (0)	1914.3 (26683)	17.55	17.54	17.70
		1882.5 (26365)	17.47	17.56	17.61
		1850.7 (26047)	17.42	17.47	17.52
	6RB (0)	1914.3 (26683)	17.58	17.69	17.62
		1882.5 (26365)	17.47	17.62	17.50
		1850.7 (26047)	17.43	17.55	17.45
3MHz	1RB-High (14)	1913.5 (26675)	17.54	17.80	17.74
		1882.5 (26365)	17.47	17.79	17.66
		1851.5 (26055)	17.37	17.75	17.61
	1RB-Middle (7)	1913.5 (26675)	17.61	18.02	17.83
		1882.5 (26365)	17.60	17.91	17.80
		1851.5 (26055)	17.48	17.81	17.73
	1RB-Low (0)	1913.5 (26675)	17.53	17.92	17.76
		1882.5 (26365)	17.47	17.83	17.66
		1851.5 (26055)	17.40	17.73	17.62
	8RB-High (7)	1913.5 (26675)	17.55	17.64	17.66
		1882.5 (26365)	17.47	17.60	17.57
		1851.5 (26055)	17.43	17.53	17.49

	8RB-Middle (4)	1913.5 (26675)	17.58	17.67	17.68
		1882.5 (26365)	17.48	17.60	17.60
		1851.5 (26055)	17.40	17.53	17.50
	8RB-Low (0)	1913.5 (26675)	17.59	17.70	17.65
		1882.5 (26365)	17.49	17.58	17.60
		1851.5 (26055)	17.40	17.56	17.49
	15RB (0)	1913.5 (26675)	17.58	17.63	17.61
		1882.5 (26365)	17.49	17.52	17.53
		1851.5 (26055)	17.43	17.47	17.47
5MHz	1RB-High (24)	1912.5 (26665)	17.52	17.89	17.69
		1882.5 (26365)	17.50	17.78	17.65
		1852.5 (26065)	17.34	17.73	17.53
	1RB-Middle (12)	1912.5 (26665)	17.66	17.87	17.90
		1882.5 (26365)	17.62	17.94	17.86
		1852.5 (26065)	17.52	17.76	17.72
	1RB-Low (0)	1912.5 (26665)	17.55	17.88	17.80
		1882.5 (26365)	17.46	17.70	17.70
		1852.5 (26065)	17.41	17.69	17.54
	12RB-High (13)	1912.5 (26665)	17.57	17.55	17.55
		1882.5 (26365)	17.52	17.55	17.52
		1852.5 (26065)	17.38	17.40	17.44
	12RB-Middle (6)	1912.5 (26665)	17.63	17.65	17.67
		1882.5 (26365)	17.53	17.57	17.59
		1852.5 (26065)	17.45	17.44	17.49
	12RB-Low (0)	1912.5 (26665)	17.57	17.59	17.59
		1882.5 (26365)	17.51	17.53	17.58
		1852.5 (26065)	17.41	17.42	17.45
	25RB (0)	1912.5 (26665)	17.59	17.61	17.59
		1882.5 (26365)	17.53	17.55	17.55
		1852.5 (26065)	17.40	17.45	17.45
10MHz	1RB-High (49)	1910 (26640)	17.53	17.91	17.72
		1882.5 (26365)	17.50	17.86	17.70
		1855 (26090)	17.37	17.71	17.59
	1RB-Middle (24)	1910 (26640)	17.63	18.00	17.82
		1882.5 (26365)	17.57	17.91	17.83
		1855 (26090)	17.47	17.69	17.65
	1RB-Low (0)	1910 (26640)	17.56	17.85	17.70
		1882.5 (26365)	17.48	17.82	17.72
		1855 (26090)	17.39	17.73	17.62
	25RB-High (25)	1910 (26640)	17.61	17.59	17.56
		1882.5 (26365)	17.53	17.54	17.56
		1855 (26090)	17.44	17.47	17.47

	25RB-Middle (12)	1910 (26640)	17.65	17.62	17.62
		1882.5 (26365)	17.53	17.57	17.56
		1855 (26090)	17.47	17.47	17.47
	25RB-Low (0)	1910 (26640)	17.67	17.69	17.68
		1882.5 (26365)	17.59	17.57	17.57
		1855 (26090)	17.45	17.46	17.49
	50RB (0)	1910 (26640)	17.61	17.64	17.66
		1882.5 (26365)	17.60	17.58	17.58
		1855 (26090)	17.46	17.50	17.45
15MHz	1RB-High (74)	1907.5 (26615)	17.51	17.85	17.70
		1882.5 (26365)	17.50	17.74	17.65
		1857.5 (26115)	17.37	17.76	17.55
	1RB-Middle (37)	1907.5 (26615)	17.53	17.87	17.74
		1882.5 (26365)	17.45	17.79	17.71
		1857.5 (26115)	17.38	17.62	17.58
	1RB-Low (0)	1907.5 (26615)	17.56	17.92	17.78
		1882.5 (26365)	17.49	17.74	17.70
		1857.5 (26115)	17.41	17.69	17.61
	36RB-High (38)	1907.5 (26615)	17.61	17.60	17.61
		1882.5 (26365)	17.56	17.53	17.55
		1857.5 (26115)	17.47	17.47	17.48
	36RB-Middle (19)	1907.5 (26615)	17.65	17.63	17.68
		1882.5 (26365)	17.58	17.55	17.58
		1857.5 (26115)	17.45	17.46	17.47
	36RB-Low (0)	1907.5 (26615)	17.68	17.65	17.64
		1882.5 (26365)	17.57	17.56	17.58
		1857.5 (26115)	17.48	17.46	17.45
	75RB (0)	1907.5 (26615)	17.63	17.65	17.66
		1882.5 (26365)	17.56	17.59	17.56
		1857.5 (26115)	17.46	17.46	17.45
20MHz	1RB-High (99)	1905 (26590)	17.40	17.67	17.62
		1882.5 (26365)	17.36	17.71	17.56
		1860 (26140)	17.29	17.51	17.49
	1RB-Middle (50)	1905 (26590)	17.82	17.93	17.80
		1882.5 (26365)	17.78	17.88	17.63
		1860 (26140)	17.75	17.73	17.63
	1RB-Low (0)	1905 (26590)	17.40	17.67	17.60
		1882.5 (26365)	17.32	17.63	17.50
		1860 (26140)	17.27	17.65	17.43
	50RB-High (50)	1905 (26590)	17.57	17.58	17.59
		1882.5 (26365)	17.54	17.57	17.56
		1860 (26140)	17.48	17.53	17.52

	50RB-Middle (25)	1905 (26590)	17.61	17.64	17.64
		1882.5 (26365)	17.57	17.60	17.61
		1860 (26140)	17.47	17.50	17.46
	50RB-Low (0)	1905 (26590)	17.80	17.70	17.68
		1882.5 (26365)	17.75	17.62	17.63
		1860 (26140)	17.71	17.54	17.51
	100RB (0)	1905 (26590)	17.62	17.63	17.62
		1882.5 (26365)	17.59	17.60	17.59
		1860 (26140)	17.68	17.54	17.50

LTE Band26 (Power Level A1/B1/C1)

LTE BAND26					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (27033)	23.74	22.97	21.87
		831.5 (26865)	23.80	22.99	22.02
		814.7 (26697)	23.77	22.95	21.92
	1RB-Middle (3)	848.3 (27033)	23.84	23.06	22.03
		831.5 (26865)	23.91	23.21	22.12
		814.7 (26697)	23.86	23.02	21.98
	1RB-Low (0)	848.3 (27033)	23.73	22.96	21.92
		831.5 (26865)	23.80	23.03	21.99
		814.7 (26697)	23.78	22.96	22.02
	3RB-High (3)	848.3 (27033)	23.82	22.81	21.98
		831.5 (26865)	23.88	22.91	21.99
		814.7 (26697)	23.91	22.80	21.95
	3RB-Middle (1)	848.3 (27033)	23.87	22.87	22.03
		831.5 (26865)	23.92	22.92	22.01
		814.7 (26697)	23.93	22.86	21.97
	3RB-Low (0)	848.3 (27033)	23.83	22.81	21.94
		831.5 (26865)	23.89	22.87	21.99
		814.7 (26697)	23.89	22.87	21.95
	6RB (0)	848.3 (27033)	22.86	21.97	20.88
		831.5 (26865)	22.93	22.02	20.87
		814.7 (26697)	22.90	21.99	20.85
3MHz	1RB-High (14)	847.5 (27025)	23.77	23.01	22.08
		831.5 (26865)	23.90	23.11	22.10
		815.5 (26705)	23.11	22.30	21.13
	1RB-Middle (7)	847.5 (27025)	23.90	23.15	22.13
		831.5 (26865)	23.98	23.19	22.20
		815.5 (26705)	23.13	22.44	21.28
	1RB-Low (0)	847.5 (27025)	23.79	23.07	21.92

		831.5 (26865)	23.87	23.11	22.07
		815.5 (26705)	23.08	22.36	21.25
	8RB-High (7)	847.5 (27025)	22.83	21.90	20.83
		831.5 (26865)	22.92	21.95	20.93
		815.5 (26705)	22.08	21.14	20.16
	8RB-Middle (4)	847.5 (27025)	22.84	21.90	20.89
		831.5 (26865)	22.91	21.97	20.92
		815.5 (26705)	22.11	21.16	20.18
	8RB-Low (0)	847.5 (27025)	22.84	21.93	20.86
		831.5 (26865)	22.90	21.95	20.94
		815.5 (26705)	22.10	21.18	20.17
	15RB (0)	847.5 (27025)	22.82	21.88	20.79
		831.5 (26865)	22.91	21.93	20.91
		815.5 (26705)	22.10	21.12	20.09
5MHz	1RB-High (24)	846.5 (27015)	23.77	22.96	22.03
		831.5 (26865)	23.84	23.16	22.13
		816.5 (26715)	23.87	23.10	22.09
	1RB-Middle (12)	846.5 (27015)	23.93	23.17	22.06
		831.5 (26865)	23.99	23.17	22.14
		816.5 (26715)	24.00	23.20	22.15
	1RB-Low (0)	846.5 (27015)	23.77	22.96	21.95
		831.5 (26865)	23.84	23.19	22.07
		816.5 (26715)	23.82	23.14	22.01
	12RB-High (13)	846.5 (27015)	22.83	21.82	20.84
		831.5 (26865)	22.92	21.93	20.93
		816.5 (26715)	22.96	21.95	20.95
	12RB-Middle (6)	846.5 (27015)	22.85	21.89	20.86
		831.5 (26865)	22.94	21.95	20.94
		816.5 (26715)	22.95	21.94	20.93
	12RB-Low (0)	846.5 (27015)	22.92	21.92	20.88
		831.5 (26865)	22.91	21.89	20.89
		816.5 (26715)	22.94	21.89	20.92
	25RB (0)	846.5 (27015)	22.92	21.95	20.91
		831.5 (26865)	22.91	21.93	20.89
		816.5 (26715)	22.94	21.94	20.91
10MHz	1RB-High (49)	844 (26990)	23.79	23.02	21.99
		831.5 (26865)	23.86	23.18	21.96
		820 (26750)	23.87	23.20	22.10
	1RB-Middle (24)	844 (26990)	23.86	23.15	22.87
		831.5 (26865)	23.92	23.23	22.02
		820 (26750)	23.94	23.23	22.18
	1RB-Low (0)	844 (26990)	23.86	23.22	22.35

		831.5 (26865)	23.91	23.16	22.10
		820 (26750)	23.86	23.15	22.00
	25RB-High (25)	844 (26990)	22.77	21.79	21.79
		831.5 (26865)	22.93	21.95	20.95
		820 (26750)	23.01	22.04	21.02
	25RB-Middle (12)	844 (26990)	22.88	21.87	21.89
		831.5 (26865)	22.94	21.94	20.94
		820 (26750)	22.98	22.00	21.01
	25RB-Low (0)	844 (26990)	22.92	21.95	21.95
		831.5 (26865)	22.98	22.01	20.95
		820 (26750)	23.01	22.03	21.04
	50RB (0)	844 (26990)	22.86	21.88	20.86
		831.5 (26865)	22.97	21.97	20.95
		820 (26750)	23.03	22.07	21.04
15MHz	1RB-High (74)	841.5 (26965)	23.74	23.05	21.95
		831.5 (26865)	23.79	23.15	22.03
		822.5 (26775)	23.80	23.06	22.01
	1RB-Middle (37)	841.5 (26965)	23.82	23.15	21.95
		831.5 (26865)	23.84	23.04	22.04
		822.5 (26775)	23.83	23.27	22.07
	1RB-Low (0)	841.5 (26965)	23.87	23.24	22.03
		831.5 (26865)	23.88	23.25	22.03
		822.5 (26775)	23.85	23.07	22.01
	36RB-High (38)	841.5 (26965)	22.80	21.81	20.81
		831.5 (26865)	22.99	21.95	20.96
		822.5 (26775)	22.99	21.95	20.95
	36RB-Middle (19)	841.5 (26965)	22.94	21.94	20.91
		831.5 (26865)	22.96	21.93	20.94
		822.5 (26775)	22.95	21.92	20.94
	36RB-Low (0)	841.5 (26965)	22.96	21.96	20.94
		831.5 (26865)	23.01	21.95	20.98
		822.5 (26775)	22.97	21.95	20.95
	75RB (0)	841.5 (26965)	22.86	21.89	20.84
		831.5 (26865)	22.97	21.98	20.96
		822.5 (26775)	22.98	21.97	20.97

LTE Band41 PC3 (Power Level A1)

LTE BAND41-PC3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	23.11	22.26	20.76
		2640.3(41093)	23.09	22.15	20.76
		2593 (40620)	22.96	22.05	20.58
		2545.8(40148)	23.04	22.14	20.69
		2498.5 (39675)	22.83	21.95	20.48
	1RB-Middle (12)	2687.5 (41565)	23.28	22.40	21.10
		2640.3(41093)	23.24	22.36	20.91
		2593 (40620)	23.12	22.20	20.88
		2545.8(40148)	23.23	22.33	20.87
		2498.5 (39675)	22.99	22.10	20.74
	1RB-Low (0)	2687.5 (41565)	23.18	22.24	20.72
		2640.3(41093)	23.10	22.22	20.76
		2593 (40620)	23.01	22.08	20.64
		2545.8(40148)	23.07	22.16	20.70
		2498.5 (39675)	22.84	21.95	20.48
	12RB-High (13)	2687.5 (41565)	22.12	21.13	20.19
		2640.3(41093)	22.08	21.05	20.11
		2593 (40620)	21.95	20.90	20.00
		2545.8(40148)	22.07	20.99	20.10
		2498.5 (39675)	21.85	20.73	19.84
	12RB-Middle (6)	2687.5 (41565)	22.22	21.16	20.22
		2640.3(41093)	22.15	21.09	20.20
		2593 (40620)	22.04	20.96	20.09
		2545.8(40148)	22.14	21.07	20.14
		2498.5 (39675)	21.89	20.77	19.94
	12RB-Low (0)	2687.5 (41565)	22.15	21.07	20.17
		2640.3(41093)	22.11	21.00	20.12
		2593 (40620)	21.95	20.87	19.99
		2545.8(40148)	22.06	20.95	20.12
		2498.5 (39675)	21.77	20.72	19.82
	25RB (0)	2687.5 (41565)	22.18	21.17	20.21
		2640.3(41093)	22.14	21.14	20.17
		2593 (40620)	21.99	20.97	20.07
		2545.8(40148)	22.08	21.09	20.13
		2498.5 (39675)	21.79	20.84	19.96
10MHz	1RB-High (49)	2685 (41540)	23.19	22.30	20.81

		2639(41080)	23.13	22.57	20.76
		2593 (40620)	23.05	22.09	20.64
		2547(40160)	23.13	22.20	20.76
		2501 (39700)	22.93	21.98	20.54
	1RB-Middle (24)	2685 (41540)	23.28	22.38	20.96
		2639(41080)	23.21	22.31	20.85
		2593 (40620)	23.05	22.15	20.70
		2547(40160)	23.18	22.26	20.79
		2501 (39700)	22.92	22.08	20.56
	1RB-Low (0)	2685 (41540)	23.27	22.35	20.88
		2639(41080)	22.98	22.12	20.88
		2593 (40620)	23.13	22.20	20.71
		2547(40160)	23.16	22.25	20.76
		2501 (39700)	22.91	21.99	20.53
	25RB-High (25)	2685 (41540)	22.20	21.18	20.20
		2639(41080)	22.13	21.12	20.12
		2593 (40620)	22.06	21.03	20.04
		2547(40160)	22.08	21.10	20.10
		2501 (39700)	21.85	20.86	19.88
	25RB-Middle (12)	2685 (41540)	22.23	21.21	20.31
		2639(41080)	22.16	21.17	20.16
		2593 (40620)	22.02	21.02	20.06
		2547(40160)	22.18	21.14	20.18
		2501 (39700)	21.90	20.92	19.92
	25RB-Low (0)	2685 (41540)	22.24	21.24	20.24
		2639(41080)	22.17	21.14	20.17
		2593 (40620)	22.06	21.05	20.13
		2547(40160)	22.11	21.13	20.12
		2501 (39700)	21.83	20.85	19.88
	50RB (0)	2685 (41540)	22.23	21.27	20.28
		2639(41080)	22.17	21.15	20.12
		2593 (40620)	22.03	21.07	20.09
		2547(40160)	22.13	21.16	20.10
		2501 (39700)	21.83	20.90	19.84
15MHz	1RB-High (74)	2682.5 (41515)	23.09	22.36	20.60
		2637.8(41068)	23.23	22.30	20.77
		2593 (40620)	23.10	22.13	20.66
		2548.3(40173)	23.20	22.33	20.74
		2503.5 (39725)	22.98	22.00	20.51
	1RB-Middle (37)	2682.5 (41515)	23.46	22.47	20.96

		2637.8(41068)	23.38	22.43	20.89
		2593 (40620)	23.21	22.21	20.73
		2548.3(40173)	23.26	22.29	20.83
		2503.5 (39725)	23.05	22.06	20.60
	1RB-Low (0)	2682.5 (41515)	23.40	22.42	20.95
		2637.8(41068)	23.39	22.39	20.86
		2593 (40620)	23.27	22.28	20.77
		2548.3(40173)	23.26	22.30	20.87
		2503.5 (39725)	23.01	22.02	20.58
	36RB-High (38)	2682.5 (41515)	22.42	21.28	20.21
		2637.8(41068)	22.33	21.20	20.21
		2593 (40620)	22.18	21.08	20.03
		2548.3(40173)	22.28	21.20	20.14
		2503.5 (39725)	22.06	20.97	19.94
	36RB-Middle (19)	2682.5 (41515)	22.43	21.32	20.29
		2637.8(41068)	22.35	21.21	20.23
		2593 (40620)	22.22	21.12	20.08
		2548.3(40173)	22.30	21.16	20.15
		2503.5 (39725)	22.03	20.91	19.94
	36RB-Low (0)	2682.5 (41515)	22.47	21.30	20.27
		2637.8(41068)	22.42	21.25	20.23
		2593 (40620)	22.27	21.12	20.13
		2548.3(40173)	22.27	21.15	20.16
		2503.5 (39725)	21.96	20.92	19.88
	75RB (0)	2682.5 (41515)	22.42	21.39	20.35
		2637.8(41068)	22.35	21.30	20.24
		2593 (40620)	22.24	21.25	20.15
		2548.3(40173)	22.27	21.27	20.22
		2503.5 (39725)	22.00	20.98	19.94
20MHz	1RB-High (99)	2680 (41490)	23.11	22.16	20.63
		2636.5(41055)	23.02	22.06	20.55
		2593 (40620)	22.85	21.84	20.43
		2549.5(40185)	22.97	22.02	20.56
		2506 (39750)	22.77	21.83	20.33
	1RB-Middle (50)	2680 (41490)	23.44	22.45	20.91
		2636.5(41055)	23.32	22.41	20.84
		2593 (40620)	23.13	22.23	20.74
		2549.5(40185)	23.21	22.25	20.77
		2506 (39750)	23.01	22.05	20.68
	1RB-Low (0)	2680 (41490)	23.23	22.25	20.76

		2636.5(41055)	23.13	22.17	20.59
		2593 (40620)	23.06	22.12	20.59
		2549.5(40185)	23.02	22.11	20.60
		2506 (39750)	22.74	21.81	20.30
	50RB-High (50)	2680 (41490)	22.38	21.38	20.30
		2636.5(41055)	22.21	21.23	20.22
		2593 (40620)	22.11	21.14	20.08
		2549.5(40185)	22.18	21.20	20.09
		2506 (39750)	22.01	21.03	19.97
	50RB-Middle (25)	2680 (41490)	22.42	21.41	20.35
		2636.5(41055)	22.27	21.22	20.18
		2593 (40620)	22.12	21.14	20.09
		2549.5(40185)	22.20	21.20	20.08
		2506 (39750)	21.90	20.96	19.86
	50RB-Low (0)	2680 (41490)	22.43	21.45	20.41
		2636.5(41055)	22.31	21.31	20.24
		2593 (40620)	22.14	21.19	20.17
		2549.5(40185)	22.18	21.21	20.13
		2506 (39750)	21.84	20.94	19.90
	100RB (0)	2680 (41490)	22.43	21.34	20.34
		2636.5(41055)	22.33	21.28	20.25
		2593 (40620)	22.15	21.20	20.15
		2549.5(40185)	22.22	21.14	20.12
		2506 (39750)	21.97	20.94	19.89

LTE Band41 PC3 (Power Level B1/C1)

LTE BAND41-PC3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	22.05	22.23	20.79
		2640.3(41093)	22.07	22.07	20.77
		2593 (40620)	21.97	22.05	20.62
		2545.8(40148)	22.04	22.19	20.71
		2498.5 (39675)	21.86	21.99	20.51
	1RB-Middle (12)	2687.5 (41565)	22.42	22.44	21.05
		2640.3(41093)	22.27	22.39	20.92
		2593 (40620)	22.19	22.28	20.85
		2545.8(40148)	22.26	22.34	20.90
		2498.5 (39675)	22.10	22.14	20.75
	1RB-Low (0)	2687.5 (41565)	22.22	22.28	20.81

		2640.3(41093)	22.13	22.15	20.76
		2593 (40620)	22.00	22.12	20.64
		2545.8(40148)	22.09	22.22	20.75
		2498.5 (39675)	21.89	22.00	20.58
	12RB-High (13)	2687.5 (41565)	22.15	21.03	20.19
		2640.3(41093)	22.10	21.04	20.13
		2593 (40620)	21.96	20.92	19.98
		2545.8(40148)	22.08	21.03	20.12
		2498.5 (39675)	21.88	20.84	19.91
	12RB-Middle (6)	2687.5 (41565)	22.22	21.10	20.24
		2640.3(41093)	22.16	21.08	20.19
		2593 (40620)	22.02	20.99	20.11
		2545.8(40148)	22.12	21.08	20.17
		2498.5 (39675)	21.85	20.92	19.97
	12RB-Low (0)	2687.5 (41565)	22.16	21.07	20.23
		2640.3(41093)	22.11	21.05	20.14
		2593 (40620)	22.00	20.95	20.04
		2545.8(40148)	22.09	21.02	20.12
		2498.5 (39675)	21.86	20.83	19.89
	25RB (0)	2687.5 (41565)	22.10	21.22	20.27
		2640.3(41093)	22.16	21.12	20.18
		2593 (40620)	22.02	21.06	20.04
		2545.8(40148)	22.14	21.13	20.15
		2498.5 (39675)	21.90	20.92	19.94
10MHz	1RB-High (49)	2685 (41540)	22.12	22.26	20.84
		2639(41080)	22.10	22.11	20.79
		2593 (40620)	22.00	22.06	20.65
		2547(40160)	22.09	22.18	20.75
		2501 (39700)	21.92	22.03	20.54
	1RB-Middle (24)	2685 (41540)	22.19	22.35	20.85
		2639(41080)	22.18	22.29	20.87
		2593 (40620)	21.94	22.14	20.62
		2547(40160)	22.19	22.26	20.84
		2501 (39700)	21.86	22.08	20.53
	1RB-Low (0)	2685 (41540)	22.14	22.31	20.80
		2639(41080)	22.20	22.29	20.86
		2593 (40620)	22.06	22.23	20.72
		2547(40160)	22.13	22.27	20.80
		2501 (39700)	21.90	22.02	20.59
	25RB-High (25)	2685 (41540)	22.14	21.14	20.22

		2639(41080)	22.10	21.10	20.16
		2593 (40620)	22.02	21.08	20.07
		2547(40160)	22.04	21.11	20.14
		2501 (39700)	21.86	20.91	19.98
	25RB-Middle (12)	2685 (41540)	22.17	21.22	20.23
		2639(41080)	22.17	21.13	20.22
		2593 (40620)	21.97	21.03	20.05
		2547(40160)	22.11	21.12	20.20
		2501 (39700)	21.87	20.94	19.99
	25RB-Low (0)	2685 (41540)	22.21	21.20	20.26
		2639(41080)	22.10	21.14	20.18
		2593 (40620)	22.02	21.05	20.11
		2547(40160)	22.11	21.13	20.18
		2501 (39700)	21.85	20.93	19.91
	50RB (0)	2685 (41540)	22.15	21.22	20.27
		2639(41080)	22.16	21.15	20.16
		2593 (40620)	22.07	21.15	20.07
		2547(40160)	22.08	21.16	20.13
		2501 (39700)	21.89	20.96	19.91
15MHz	1RB-High (74)	2682.5 (41515)	22.01	22.21	20.77
		2637.8(41068)	22.02	22.12	20.68
		2593 (40620)	21.90	22.00	20.59
		2548.3(40173)	22.02	22.20	20.72
		2503.5 (39725)	21.85	21.98	20.54
	1RB-Middle (37)	2682.5 (41515)	22.16	22.29	20.88
		2637.8(41068)	22.08	22.26	20.81
		2593 (40620)	21.93	22.14	20.63
		2548.3(40173)	22.10	22.21	20.77
		2503.5 (39725)	21.94	22.06	20.60
	1RB-Low (0)	2682.5 (41515)	22.05	22.28	20.71
		2637.8(41068)	22.18	22.17	20.83
		2593 (40620)	22.05	22.17	20.70
		2548.3(40173)	22.09	22.21	20.78
		2503.5 (39725)	21.87	21.95	20.55
	36RB-High (38)	2682.5 (41515)	22.11	21.16	20.15
		2637.8(41068)	22.11	21.08	20.09
		2593 (40620)	21.98	21.00	19.96
		2548.3(40173)	22.08	21.09	20.08
		2503.5 (39725)	21.93	20.87	19.93
	36RB-Middle (19)	2682.5 (41515)	22.20	21.16	20.20

		2637.8(41068)	22.15	21.09	20.14
		2593 (40620)	21.97	21.00	20.02
		2548.3(40173)	22.13	21.11	20.13
		2503.5 (39725)	21.91	20.82	19.89
	36RB-Low (0)	2682.5 (41515)	22.21	21.18	20.24
		2637.8(41068)	22.18	21.14	20.15
		2593 (40620)	22.05	21.04	20.06
		2548.3(40173)	22.08	21.06	20.12
		2503.5 (39725)	21.88	20.86	19.86
	75RB (0)	2682.5 (41515)	22.18	21.25	20.27
		2637.8(41068)	22.14	21.15	20.14
		2593 (40620)	22.07	21.12	20.10
		2548.3(40173)	22.14	21.16	20.16
		2503.5 (39725)	21.84	20.95	19.90
20MHz	1RB-High (99)	2680 (41490)	21.86	22.04	20.56
		2636.5(41055)	21.82	21.97	20.48
		2593 (40620)	21.70	21.74	20.37
		2549.5(40185)	21.81	21.94	20.45
		2506 (39750)	21.62	21.78	20.30
	1RB-Middle (50)	2680 (41490)	22.12	22.35	20.85
		2636.5(41055)	22.11	22.18	20.78
		2593 (40620)	22.02	22.05	20.77
		2549.5(40185)	22.02	22.14	20.77
		2506 (39750)	21.85	21.99	20.49
	1RB-Low (0)	2680 (41490)	21.97	22.11	20.67
		2636.5(41055)	21.91	22.03	20.62
		2593 (40620)	21.89	21.99	20.48
		2549.5(40185)	21.88	22.00	20.54
		2506 (39750)	21.62	21.72	20.28
	50RB-High (50)	2680 (41490)	22.13	21.21	20.21
		2636.5(41055)	22.03	21.15	20.11
		2593 (40620)	21.90	21.00	20.03
		2549.5(40185)	22.01	21.11	20.07
		2506 (39750)	21.85	20.88	19.95
	50RB-Middle (25)	2680 (41490)	22.18	21.25	20.25
		2636.5(41055)	22.05	21.10	20.08
		2593 (40620)	21.95	21.06	20.06
		2549.5(40185)	22.04	21.10	20.06
		2506 (39750)	21.78	20.84	19.79
	50RB-Low (0)	2680 (41490)	22.23	21.32	20.30

		2636.5(41055)	22.12	21.14	20.18
		2593 (40620)	22.03	21.07	20.10
		2549.5(40185)	22.00	21.09	20.08
		2506 (39750)	21.73	20.81	19.84
	100RB (0)	2680 (41490)	22.21	21.24	20.27
		2636.5(41055)	22.14	21.18	20.11
		2593 (40620)	22.07	21.05	20.10
		2549.5(40185)	22.04	21.08	20.07
		2506 (39750)	21.83	20.82	19.89

LTE Band41 PC2 (Power Level A1)

LTE BAND41-PC2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	26.08	25.31	24.10
		2640.3(41093)	26.02	25.24	24.02
		2593 (40620)	25.89	25.08	23.88
		2545.8(40148)	25.99	25.20	23.99
		2498.5 (39675)	25.78	24.98	23.78
	1RB-Middle (12)	2687.5 (41565)	26.12	25.35	24.14
		2640.3(41093)	26.08	25.31	24.04
		2593 (40620)	25.97	25.13	23.92
		2545.8(40148)	26.07	25.24	23.94
		2498.5 (39675)	25.81	25.01	23.77
	1RB-Low (0)	2687.5 (41565)	26.10	25.34	24.14
		2640.3(41093)	26.07	25.25	24.04
		2593 (40620)	25.95	25.13	23.94
		2545.8(40148)	26.02	25.23	23.99
		2498.5 (39675)	25.79	24.99	23.79
	12RB-High (13)	2687.5 (41565)	25.12	24.15	23.20
		2640.3(41093)	25.10	24.12	23.18
		2593 (40620)	24.96	23.99	23.01
		2545.8(40148)	25.03	24.08	23.12
		2498.5 (39675)	24.83	23.87	22.88
	12RB-Middle (6)	2687.5 (41565)	25.14	24.20	23.22
		2640.3(41093)	25.11	24.15	23.20
		2593 (40620)	24.99	24.02	23.06
		2545.8(40148)	25.10	24.11	23.16
		2498.5 (39675)	24.87	23.90	22.92
	12RB-Low (0)	2687.5 (41565)	25.13	24.17	23.21

		2640.3(41093)	25.10	24.14	23.17
		2593 (40620)	24.98	24.01	23.03
		2545.8(40148)	25.04	24.06	23.12
		2498.5 (39675)	24.84	23.86	22.86
	25RB (0)	2687.5 (41565)	25.14	24.20	23.23
		2640.3(41093)	25.11	24.15	23.20
		2593 (40620)	24.99	24.02	23.04
		2545.8(40148)	25.09	24.17	23.14
		2498.5 (39675)	24.84	23.89	22.91
10MHz	1RB-High (49)	2685 (41540)	26.09	25.31	24.12
		2639(41080)	26.03	25.24	24.03
		2593 (40620)	25.93	25.12	23.89
		2547(40160)	26.00	25.24	23.94
		2501 (39700)	25.80	25.04	23.82
	1RB-Middle (24)	2685 (41540)	26.16	25.43	24.20
		2639(41080)	26.10	25.32	24.11
		2593 (40620)	25.98	25.17	23.96
		2547(40160)	26.10	25.31	24.07
		2501 (39700)	25.83	25.04	23.85
	1RB-Low (0)	2685 (41540)	26.16	25.39	24.15
		2639(41080)	26.11	25.32	24.08
		2593 (40620)	26.01	25.21	23.98
		2547(40160)	26.08	25.25	24.04
		2501 (39700)	25.80	25.00	23.80
	25RB-High (25)	2685 (41540)	25.13	24.18	23.25
		2639(41080)	25.12	24.15	23.21
		2593 (40620)	25.01	24.06	23.06
		2547(40160)	25.03	24.08	23.15
		2501 (39700)	24.86	23.93	22.93
	25RB-Middle (12)	2685 (41540)	25.16	24.22	23.26
		2639(41080)	25.11	24.16	23.24
		2593 (40620)	25.00	24.02	23.05
		2547(40160)	25.07	24.13	23.18
		2501 (39700)	24.87	23.88	22.94
	25RB-Low (0)	2685 (41540)	25.20	24.25	23.30
		2639(41080)	25.14	24.18	23.23
		2593 (40620)	25.04	24.09	23.08
		2547(40160)	25.01	24.04	23.13
		2501 (39700)	24.84	23.88	22.87
	50RB (0)	2685 (41540)	25.18	24.22	23.20

		2639(41080)	25.13	24.19	23.17
		2593 (40620)	25.06	24.11	23.04
		2547(40160)	25.04	24.10	23.09
		2501 (39700)	24.86	23.92	22.86
15MHz	1RB-High (74)	2682.5 (41515)	26.02	25.26	24.04
		2637.8(41068)	25.97	25.18	23.96
		2593 (40620)	25.82	25.04	23.82
		2548.3(40173)	25.99	25.16	23.82
		2503.5 (39725)	25.77	24.98	23.69
	1RB-Middle (37)	2682.5 (41515)	26.09	25.35	24.14
		2637.8(41068)	26.03	25.28	24.04
		2593 (40620)	25.92	25.11	23.89
		2548.3(40173)	26.04	25.21	23.99
		2503.5 (39725)	25.78	25.00	23.79
	1RB-Low (0)	2682.5 (41515)	26.10	25.37	24.14
		2637.8(41068)	26.07	25.30	24.06
		2593 (40620)	25.99	25.18	23.96
		2548.3(40173)	26.03	25.22	23.90
		2503.5 (39725)	25.74	24.93	23.73
	36RB-High (38)	2682.5 (41515)	25.13	24.10	23.13
		2637.8(41068)	25.10	24.06	23.06
		2593 (40620)	24.99	23.95	22.96
		2548.3(40173)	25.03	24.02	23.04
		2503.5 (39725)	24.85	23.77	22.86
	36RB-Middle (19)	2682.5 (41515)	25.16	24.13	23.15
		2637.8(41068)	25.12	24.09	23.08
		2593 (40620)	24.99	23.95	22.97
		2548.3(40173)	25.06	24.05	23.08
		2503.5 (39725)	24.75	23.89	22.83
	36RB-Low (0)	2682.5 (41515)	25.18	24.16	23.20
		2637.8(41068)	25.14	24.11	23.14
		2593 (40620)	25.04	24.01	23.01
		2548.3(40173)	25.07	24.04	23.06
		2503.5 (39725)	24.89	23.85	22.81
	75RB (0)	2682.5 (41515)	25.15	24.18	23.19
		2637.8(41068)	25.10	24.14	23.23
		2593 (40620)	25.02	24.05	23.03
		2548.3(40173)	25.04	24.08	23.08
		2503.5 (39725)	24.81	23.93	22.86
20MHz	1RB-High (99)	2680 (41490)	25.87	25.08	23.87

		2636.5(41055)	25.80	25.01	23.79
		2593 (40620)	25.66	24.84	23.62
		2549.5(40185)	25.80	24.99	23.75
		2506 (39750)	25.58	24.80	23.58
	1RB-Middle (50)	2680 (41490)	26.14	25.36	24.15
		2636.5(41055)	26.08	25.27	24.06
		2593 (40620)	25.95	25.12	23.91
		2549.5(40185)	26.05	25.22	24.01
		2506 (39750)	25.78	24.96	23.78
	1RB-Low (0)	2680 (41490)	25.98	25.21	23.99
		2636.5(41055)	25.91	25.07	23.87
		2593 (40620)	25.85	25.05	23.81
		2549.5(40185)	25.84	25.02	23.81
		2506 (39750)	25.56	24.74	23.54
	50RB-High (50)	2680 (41490)	25.11	24.17	23.15
		2636.5(41055)	25.08	24.13	23.12
		2593 (40620)	24.96	24.00	22.94
		2549.5(40185)	25.04	24.08	23.06
		2506 (39750)	24.85	23.92	22.85
	50RB-Middle (25)	2680 (41490)	25.19	24.25	23.23
		2636.5(41055)	25.09	24.15	23.11
		2593 (40620)	25.01	24.06	23.02
		2549.5(40185)	25.04	24.11	23.06
		2506 (39750)	24.76	23.85	22.80
	50RB-Low (0)	2680 (41490)	25.20	24.23	23.24
		2636.5(41055)	25.13	24.20	23.16
		2593 (40620)	25.01	24.07	23.03
		2549.5(40185)	25.04	24.07	23.05
		2506 (39750)	24.74	23.82	22.77
	100RB (0)	2680 (41490)	25.18	24.22	23.21
		2636.5(41055)	25.12	24.15	23.14
		2593 (40620)	25.03	24.03	23.01
		2549.5(40185)	25.06	24.08	23.04
		2506 (39750)	24.79	23.83	22.81

LTE Band41 PC2 (Power Level B1/C1)

LTE BAND41-PC2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	25.09	25.28	24.08
		2640.3(41093)	25.06	25.24	24.03
		2593 (40620)	24.94	25.07	23.88
		2545.8(40148)	24.95	25.21	23.95
		2498.5 (39675)	24.84	25.00	23.81
	1RB-Middle (12)	2687.5 (41565)	25.14	25.32	24.15
		2640.3(41093)	25.12	25.26	24.08
		2593 (40620)	25.00	25.13	23.93
		2545.8(40148)	25.02	25.25	23.98
		2498.5 (39675)	24.86	25.03	23.83
	1RB-Low (0)	2687.5 (41565)	25.12	25.30	24.14
		2640.3(41093)	25.09	25.24	24.06
		2593 (40620)	24.99	25.13	23.94
		2545.8(40148)	25.14	25.23	24.04
		2498.5 (39675)	24.84	24.98	23.82
	12RB-High (13)	2687.5 (41565)	25.14	24.18	23.22
		2640.3(41093)	25.13	24.15	23.19
		2593 (40620)	24.98	24.02	23.02
		2545.8(40148)	25.16	24.17	23.18
		2498.5 (39675)	24.91	23.92	22.94
	12RB-Middle (6)	2687.5 (41565)	25.17	24.22	23.26
		2640.3(41093)	25.15	24.15	23.20
		2593 (40620)	25.03	24.04	23.07
		2545.8(40148)	25.15	24.22	23.21
		2498.5 (39675)	24.92	23.95	22.99
	12RB-Low (0)	2687.5 (41565)	25.15	24.19	23.23
		2640.3(41093)	25.13	24.13	23.20
		2593 (40620)	25.02	24.04	23.02
		2545.8(40148)	25.09	24.14	23.16
		2498.5 (39675)	24.88	23.92	22.92
	25RB (0)	2687.5 (41565)	25.16	24.21	23.25
		2640.3(41093)	25.15	24.19	23.22
		2593 (40620)	25.00	24.05	23.06
		2545.8(40148)	25.10	24.12	23.17
		2498.5 (39675)	24.89	23.95	22.97
10MHz	1RB-High (49)	2685 (41540)	25.11	25.33	24.12

		2639(41080)	25.07	25.25	24.04
		2593 (40620)	24.96	25.15	23.91
		2547(40160)	25.07	25.24	24.13
		2501 (39700)	24.89	25.06	23.87
	1RB-Middle (24)	2685 (41540)	25.19	25.39	24.21
		2639(41080)	25.16	25.33	24.12
		2593 (40620)	25.02	25.20	24.00
		2547(40160)	25.13	25.33	24.11
		2501 (39700)	24.91	25.07	23.87
	1RB-Low (0)	2685 (41540)	25.15	25.37	24.18
		2639(41080)	25.13	25.33	24.10
		2593 (40620)	25.02	25.22	24.00
		2547(40160)	25.10	25.29	24.09
		2501 (39700)	24.85	25.08	23.85
	25RB-High (25)	2685 (41540)	25.15	24.20	23.26
		2639(41080)	25.13	24.19	23.24
		2593 (40620)	25.05	24.08	23.10
		2547(40160)	25.08	24.15	23.20
		2501 (39700)	24.93	23.96	22.99
	25RB-Middle (12)	2685 (41540)	25.18	24.22	23.28
		2639(41080)	25.12	24.18	23.23
		2593 (40620)	25.00	24.05	23.09
		2547(40160)	25.10	24.16	23.23
		2501 (39700)	24.88	23.95	23.00
	25RB-Low (0)	2685 (41540)	25.20	24.26	23.29
		2639(41080)	25.16	24.22	23.27
		2593 (40620)	25.08	24.12	23.11
		2547(40160)	25.06	24.13	23.18
		2501 (39700)	24.91	23.96	22.95
	50RB (0)	2685 (41540)	25.19	24.24	23.24
		2639(41080)	25.16	24.21	23.19
		2593 (40620)	25.07	24.13	23.05
		2547(40160)	25.07	24.11	23.15
		2501 (39700)	24.92	23.98	22.91
15MHz	1RB-High (74)	2682.5 (41515)	25.02	25.23	24.04
		2637.8(41068)	24.99	25.18	23.99
		2593 (40620)	24.98	25.05	23.83
		2548.3(40173)	24.97	25.18	24.04
		2503.5 (39725)	24.91	25.00	23.78
	1RB-Middle (37)	2682.5 (41515)	25.13	25.33	24.13

		2637.8(41068)	25.05	25.21	24.06
		2593 (40620)	24.98	25.12	23.91
		2548.3(40173)	25.05	25.23	24.02
		2503.5 (39725)	24.97	25.02	23.83
	1RB-Low (0)	2682.5 (41515)	25.12	25.33	24.14
		2637.8(41068)	25.09	25.29	24.08
		2593 (40620)	24.99	25.18	23.99
		2548.3(40173)	25.03	25.23	24.03
		2503.5 (39725)	24.80	24.97	23.78
	36RB-High (38)	2682.5 (41515)	25.12	24.09	23.17
		2637.8(41068)	25.10	24.08	23.10
		2593 (40620)	24.98	23.99	22.98
		2548.3(40173)	25.08	24.04	23.08
		2503.5 (39725)	25.00	23.91	22.93
	36RB-Middle (19)	2682.5 (41515)	25.16	24.13	23.15
		2637.8(41068)	25.11	24.10	23.14
		2593 (40620)	25.02	23.96	23.02
		2548.3(40173)	25.10	24.06	23.09
		2503.5 (39725)	24.94	23.79	22.88
	36RB-Low (0)	2682.5 (41515)	25.19	24.17	23.21
		2637.8(41068)	25.15	24.13	23.13
		2593 (40620)	25.05	24.03	23.02
		2548.3(40173)	25.09	24.07	23.10
		2503.5 (39725)	24.85	23.85	22.87
	75RB (0)	2682.5 (41515)	25.15	24.19	23.22
		2637.8(41068)	25.12	24.15	23.15
		2593 (40620)	24.96	24.04	23.05
		2548.3(40173)	25.08	24.12	23.12
		2503.5 (39725)	24.78	23.91	22.91
20MHz	1RB-High (99)	2680 (41490)	24.92	25.14	23.93
		2636.5(41055)	24.88	25.07	23.86
		2593 (40620)	24.72	24.91	23.68
		2549.5(40185)	24.84	25.04	23.81
		2506 (39750)	24.67	24.90	23.67
	1RB-Middle (50)	2680 (41490)	25.19	25.42	24.20
		2636.5(41055)	25.15	25.33	24.12
		2593 (40620)	25.03	25.18	23.99
		2549.5(40185)	25.11	25.30	24.06
		2506 (39750)	24.89	25.10	23.87
	1RB-Low (0)	2680 (41490)	25.03	25.25	24.03

		2636.5(41055)	24.96	25.15	23.94
		2593 (40620)	24.89	25.12	23.89
		2549.5(40185)	24.93	25.13	23.89
		2506 (39750)	24.65	24.85	23.62
	50RB-High (50)	2680 (41490)	25.10	24.16	23.20
		2636.5(41055)	25.14	24.20	23.17
		2593 (40620)	24.97	24.05	23.02
		2549.5(40185)	25.06	24.08	23.10
		2506 (39750)	24.90	23.98	22.95
	50RB-Middle (25)	2680 (41490)	25.19	24.24	23.24
		2636.5(41055)	25.11	24.19	23.18
		2593 (40620)	25.04	24.08	23.07
		2549.5(40185)	25.08	24.14	23.12
		2506 (39750)	24.82	23.91	22.89
	50RB-Low (0)	2680 (41490)	25.22	24.24	23.25
		2636.5(41055)	25.19	24.22	23.21
		2593 (40620)	25.05	24.10	23.08
		2549.5(40185)	25.09	24.16	23.10
		2506 (39750)	24.85	23.88	22.87
	100RB (0)	2680 (41490)	25.18	24.23	23.24
		2636.5(41055)	25.16	24.18	23.19
		2593 (40620)	25.04	24.09	23.07
		2549.5(40185)	25.09	24.12	23.10
		2506 (39750)	24.86	23.92	22.89

LTE Band66 (Power Level A1)

LTE BAND66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	23.53	22.65	21.62
		1745 (132322)	23.48	22.77	21.69
		1710.7 (131979)	23.60	22.84	21.70
	1RB-Middle (3)	1779.3 (132665)	23.66	22.77	21.66
		1745 (132322)	23.58	22.81	21.67
		1710.7 (131979)	23.73	22.92	21.73
	1RB-Low (0)	1779.3 (132665)	23.53	22.69	21.64
		1745 (132322)	23.46	22.75	21.71
		1710.7 (131979)	23.58	22.79	21.70
	3RB-High (3)	1779.3 (132665)	23.59	22.59	21.72
		1745 (132322)	23.58	22.58	21.69
		1710.7 (131979)	23.70	22.67	21.81

	3RB-Middle (1)	1779.3 (132665)	23.65	22.66	21.75
		1745 (132322)	23.65	22.60	21.72
		1710.7 (131979)	23.74	22.74	21.80
	3RB-Low (0)	1779.3 (132665)	23.63	22.57	21.68
		1745 (132322)	23.59	22.58	21.66
		1710.7 (131979)	23.68	22.69	21.74
	6RB (0)	1779.3 (132665)	22.64	21.71	20.59
		1745 (132322)	22.59	21.70	20.56
		1710.7 (131979)	22.70	21.80	20.70
3MHz	1RB-High (14)	1778.5 (132657)	23.59	22.81	21.64
		1745 (132322)	23.46	22.73	21.64
		1711.5 (131987)	23.59	22.86	21.76
	1RB-Middle (7)	1778.5 (132657)	23.64	22.73	21.76
		1745 (132322)	23.64	22.86	21.84
		1711.5 (131987)	23.75	22.97	21.78
	1RB-Low (0)	1778.5 (132657)	23.50	22.72	21.60
		1745 (132322)	23.50	22.84	21.67
		1711.5 (131987)	23.63	22.93	21.70
	8RB-High (7)	1778.5 (132657)	22.57	21.63	20.56
		1745 (132322)	22.52	21.60	20.51
		1711.5 (131987)	22.59	21.72	20.66
	8RB-Middle (4)	1778.5 (132657)	22.61	21.62	20.59
		1745 (132322)	22.53	21.59	20.57
		1711.5 (131987)	22.65	21.70	20.72
	8RB-Low (0)	1778.5 (132657)	22.59	21.58	20.59
		1745 (132322)	22.52	21.59	20.58
		1711.5 (131987)	22.64	21.73	20.68
	15RB (0)	1778.5 (132657)	22.59	21.58	20.57
		1745 (132322)	22.54	21.55	20.51
		1711.5 (131987)	22.60	21.66	20.57
5MHz	1RB-High (24)	1777.5 (132647)	23.51	22.72	21.60
		1745 (132322)	23.43	22.68	21.65
		1712.5 (131997)	23.54	22.93	21.68
	1RB-Middle (12)	1777.5 (132647)	23.69	22.74	21.77
		1745 (132322)	23.63	22.95	21.83
		1712.5 (131997)	23.69	23.00	21.76
	1RB-Low (0)	1777.5 (132647)	23.47	22.57	21.55
		1745 (132322)	23.49	22.77	21.74
		1712.5 (131997)	23.60	22.84	21.73
	12RB-High (13)	1777.5 (132647)	22.56	21.49	20.44
		1745 (132322)	22.52	21.51	20.53
		1712.5 (131997)	22.59	21.64	20.64

	12RB-Middle (6)	1777.5 (132647)	22.61	21.54	20.53
		1745 (132322)	22.58	21.57	20.59
		1712.5 (131997)	22.64	21.67	20.69
	12RB-Low (0)	1777.5 (132647)	22.59	21.53	20.56
		1745 (132322)	22.56	21.56	20.55
		1712.5 (131997)	22.62	21.63	20.64
	25RB (0)	1777.5 (132647)	22.57	21.55	20.49
		1745 (132322)	22.55	21.54	20.53
		1712.5 (131997)	22.61	21.65	20.62
10MHz	1RB-High (49)	1775 (132622)	23.59	22.84	21.59
		1745 (132322)	23.52	22.81	21.65
		1715 (132022)	23.62	22.97	21.79
	1RB-Middle (24)	1775 (132622)	23.52	22.74	21.73
		1745 (132322)	23.60	22.85	21.74
		1715 (132022)	23.64	22.98	21.76
	1RB-Low (0)	1775 (132622)	23.53	22.71	21.69
		1745 (132322)	23.59	22.87	21.66
		1715 (132022)	23.63	22.93	21.75
	25RB-High (25)	1775 (132622)	22.44	21.43	20.44
		1745 (132322)	22.54	21.56	20.54
		1715 (132022)	22.68	21.71	20.70
	25RB-Middle (12)	1775 (132622)	22.57	21.55	20.55
		1745 (132322)	22.60	21.60	20.59
		1715 (132022)	22.64	21.68	20.65
	25RB-Low (0)	1775 (132622)	22.63	21.61	20.62
		1745 (132322)	22.61	21.63	20.58
		1715 (132022)	22.64	21.65	20.63
	50RB (0)	1775 (132622)	22.55	21.52	20.55
		1745 (132322)	22.59	21.62	20.60
		1715 (132022)	22.70	21.69	20.70
15MHz	1RB-High (74)	1772.5 (132597)	23.51	22.75	21.57
		1745 (132322)	23.40	22.81	21.63
		1717.5 (132047)	23.54	22.85	21.76
	1RB-Middle (37)	1772.5 (132597)	23.42	22.65	21.61
		1745 (132322)	23.49	22.84	21.66
		1717.5 (132047)	23.56	22.90	21.77
	1RB-Low (0)	1772.5 (132597)	23.44	22.76	21.64
		1745 (132322)	23.49	22.87	21.63
		1717.5 (132047)	23.57	22.92	21.67
	36RB-High (38)	1772.5 (132597)	22.51	21.45	20.49
		1745 (132322)	22.55	21.53	20.53
		1717.5 (132047)	22.71	21.68	20.72

	36RB-Middle (19)	1772.5 (132597)	22.60	21.57	20.56
		1745 (132322)	22.61	21.56	20.58
		1717.5 (132047)	22.68	21.62	20.71
	36RB-Low (0)	1772.5 (132597)	22.63	21.60	20.62
		1745 (132322)	22.64	21.59	20.62
		1717.5 (132047)	22.65	21.61	20.63
	75RB (0)	1772.5 (132597)	22.58	21.53	20.52
		1745 (132322)	22.57	21.55	20.56
		1717.5 (132047)	22.67	21.67	20.67
20MHz	1RB-High (99)	1770 (132572)	23.37	22.59	21.50
		1745 (132322)	23.32	22.63	21.57
		1720 (132072)	23.40	22.78	21.66
	1RB-Middle (50)	1770 (132572)	23.55	22.81	21.68
		1745 (132322)	23.55	22.83	21.75
		1720 (132072)	23.67	23.06	21.85
	1RB-Low (0)	1770 (132572)	23.34	22.64	21.55
		1745 (132322)	23.40	22.75	21.59
		1720 (132072)	23.48	22.70	21.64
	50RB-High (50)	1770 (132572)	22.47	21.46	20.46
		1745 (132322)	22.53	21.54	20.54
		1720 (132072)	22.76	21.75	20.76
	50RB-Middle (25)	1770 (132572)	22.61	21.62	20.63
		1745 (132322)	22.63	21.63	20.63
		1720 (132072)	22.69	21.69	20.68
	50RB-Low (0)	1770 (132572)	22.67	21.68	20.69
		1745 (132322)	22.71	21.73	20.70
		1720 (132072)	22.69	21.71	20.71
	100RB (0)	1770 (132572)	22.58	21.55	20.57
		1745 (132322)	22.62	21.62	20.64
		1720 (132072)	22.70	21.70	20.70

LTE Band66 (Power Level B1)

LTE BAND66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	20.03	20.29	20.18
		1745 (132322)	20.01	20.35	20.26
		1710.7 (131979)	20.13	20.40	20.28
	1RB-Middle (3)	1779.3 (132665)	20.11	20.25	20.29
		1745 (132322)	20.14	20.41	20.31
		1710.7 (131979)	20.21	20.52	20.34
	1RB-Low (0)	1779.3 (132665)	20.03	20.23	20.21
		1745 (132322)	20.03	20.34	20.20
		1710.7 (131979)	20.06	20.41	20.29
	3RB-High (3)	1779.3 (132665)	20.16	20.06	20.21
		1745 (132322)	20.14	20.10	20.16
		1710.7 (131979)	20.21	20.21	20.31
	3RB-Middle (1)	1779.3 (132665)	20.19	20.17	20.25
		1745 (132322)	20.15	20.19	20.23
		1710.7 (131979)	20.29	20.23	20.33
	3RB-Low (0)	1779.3 (132665)	20.14	20.13	20.26
		1745 (132322)	20.11	20.06	20.24
		1710.7 (131979)	20.21	20.24	20.32
	6RB (0)	1779.3 (132665)	20.16	20.22	20.15
		1745 (132322)	20.11	20.25	20.11
		1710.7 (131979)	20.22	20.32	20.17
3MHz	1RB-High (14)	1778.5 (132657)	20.08	20.29	20.13
		1745 (132322)	20.05	20.35	20.16
		1711.5 (131987)	20.11	20.44	20.24
	1RB-Middle (7)	1778.5 (132657)	20.23	20.37	20.37
		1745 (132322)	20.20	20.46	20.33
		1711.5 (131987)	20.30	20.53	20.37
	1RB-Low (0)	1778.5 (132657)	20.04	20.22	20.12
		1745 (132322)	20.03	20.42	20.31
		1711.5 (131987)	20.18	20.49	20.28
	8RB-High (7)	1778.5 (132657)	20.09	20.12	20.12
		1745 (132322)	20.06	20.13	20.11
		1711.5 (131987)	20.14	20.23	20.14
	8RB-Middle (4)	1778.5 (132657)	20.11	20.15	20.13
		1745 (132322)	20.08	20.13	20.09
		1711.5 (131987)	20.17	20.26	20.20
	8RB-Low (0)	1778.5 (132657)	20.12	20.13	20.14
		1745 (132322)	20.07	20.14	20.12

		1711.5 (131987)	20.19	20.27	20.18
	15RB (0)	1778.5 (132657)	20.09	20.09	20.09
		1745 (132322)	20.06	20.08	20.04
		1711.5 (131987)	20.13	20.15	20.12
5MHz	1RB-High (24)	1777.5 (132647)	20.06	20.27	20.11
		1745 (132322)	20.02	20.26	20.14
		1712.5 (131997)	20.08	20.41	20.26
	1RB-Middle (12)	1777.5 (132647)	20.21	20.31	20.22
		1745 (132322)	20.17	20.57	20.32
		1712.5 (131997)	20.27	20.58	20.35
	1RB-Low (0)	1777.5 (132647)	20.00	20.24	20.15
		1745 (132322)	20.04	20.30	20.21
		1712.5 (131997)	20.13	20.44	20.23
	12RB-High (13)	1777.5 (132647)	20.01	19.99	20.02
		1745 (132322)	20.04	20.06	20.05
		1712.5 (131997)	20.13	20.13	20.17
	12RB-Middle (6)	1777.5 (132647)	20.10	20.08	20.10
		1745 (132322)	20.10	20.12	20.10
		1712.5 (131997)	20.17	20.18	20.24
	12RB-Low (0)	1777.5 (132647)	20.12	20.11	20.09
		1745 (132322)	20.07	20.08	20.09
		1712.5 (131997)	20.15	20.15	20.16
	25RB (0)	1777.5 (132647)	20.06	20.05	20.04
		1745 (132322)	20.07	20.10	20.06
		1712.5 (131997)	20.14	20.16	20.18
10MHz	1RB-High (49)	1775 (132622)	20.08	20.28	20.24
		1745 (132322)	20.04	20.38	20.26
		1715 (132022)	20.14	20.54	20.30
	1RB-Middle (24)	1775 (132622)	20.09	20.29	20.22
		1745 (132322)	20.13	20.44	20.29
		1715 (132022)	20.20	20.52	20.38
	1RB-Low (0)	1775 (132622)	20.07	20.40	20.30
		1745 (132322)	20.10	20.46	20.24
		1715 (132022)	20.20	20.40	20.35
	25RB-High (25)	1775 (132622)	19.98	19.99	19.95
		1745 (132322)	20.06	20.06	20.07
		1715 (132022)	20.22	20.24	20.22
	25RB-Middle (12)	1775 (132622)	20.08	20.11	20.08
		1745 (132322)	20.13	20.12	20.14
		1715 (132022)	20.17	20.18	20.17
	25RB-Low (0)	1775 (132622)	20.15	20.16	20.15
		1745 (132322)	20.14	20.15	20.16

		1715 (132022)	20.15	20.19	20.17
	50RB (0)	1775 (132622)	20.05	20.08	20.08
		1745 (132322)	20.10	20.11	20.10
		1715 (132022)	20.22	20.22	20.22
15MHz	1RB-High (74)	1772.5 (132597)	20.02	20.25	20.15
		1745 (132322)	20.00	20.24	20.10
		1717.5 (132047)	20.13	20.36	20.32
	1RB-Middle (37)	1772.5 (132597)	20.01	20.30	20.08
		1745 (132322)	20.07	20.41	20.20
		1717.5 (132047)	20.13	20.38	20.32
	1RB-Low (0)	1772.5 (132597)	20.06	20.36	20.17
		1745 (132322)	20.09	20.40	20.28
		1717.5 (132047)	20.15	20.44	20.25
	36RB-High (38)	1772.5 (132597)	20.05	20.02	20.03
		1745 (132322)	20.09	20.06	20.07
		1717.5 (132047)	20.24	20.22	20.25
	36RB-Middle (19)	1772.5 (132597)	20.14	20.10	20.14
		1745 (132322)	20.11	20.15	20.16
		1717.5 (132047)	20.20	20.17	20.20
	36RB-Low (0)	1772.5 (132597)	20.15	20.14	20.17
		1745 (132322)	20.16	20.17	20.15
		1717.5 (132047)	20.17	20.16	20.18
	75RB (0)	1772.5 (132597)	20.09	20.10	20.09
		1745 (132322)	20.10	20.12	20.09
		1717.5 (132047)	20.20	20.22	20.20
20MHz	1RB-High (99)	1770 (132572)	20.07	20.33	20.20
		1745 (132322)	20.05	20.37	20.25
		1720 (132072)	20.14	20.48	20.32
	1RB-Middle (50)	1770 (132572)	20.30	20.56	20.39
		1745 (132322)	20.31	20.61	20.48
		1720 (132072)	20.43	20.61	20.61
	1RB-Low (0)	1770 (132572)	20.09	20.39	20.22
		1745 (132322)	20.14	20.43	20.29
		1720 (132072)	20.25	20.42	20.32
	50RB-High (50)	1770 (132572)	20.22	20.22	20.21
		1745 (132322)	20.23	20.27	20.24
		1720 (132072)	20.44	20.43	20.45
	50RB-Middle (25)	1770 (132572)	20.33	20.33	20.31
		1745 (132322)	20.32	20.35	20.32
		1720 (132072)	20.37	20.40	20.38
	50RB-Low (0)	1770 (132572)	20.35	20.36	20.36
		1745 (132322)	20.37	20.39	20.40

		1720 (132072)	20.38	20.40	20.37
	100RB (0)	1770 (132572)	20.25	20.27	20.28
		1745 (132322)	20.31	20.30	20.31
		1720 (132072)	20.39	20.37	20.40

LTE Band66 (Power Level C1)

LTE BAND66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	18.51	18.75	18.59
		1745 (132322)	18.51	18.71	18.68
		1710.7 (131979)	18.60	18.76	18.81
	1RB-Middle (3)	1779.3 (132665)	18.58	18.84	18.67
		1745 (132322)	18.58	18.91	18.76
		1710.7 (131979)	18.71	18.93	18.82
	1RB-Low (0)	1779.3 (132665)	18.50	18.60	18.62
		1745 (132322)	18.49	18.68	18.68
		1710.7 (131979)	18.58	18.79	18.70
	3RB-High (3)	1779.3 (132665)	18.61	18.61	18.63
		1745 (132322)	18.61	18.58	18.64
		1710.7 (131979)	18.70	18.70	18.69
	3RB-Middle (1)	1779.3 (132665)	18.65	18.64	18.68
		1745 (132322)	18.64	18.62	18.71
		1710.7 (131979)	18.77	18.76	18.82
	3RB-Low (0)	1779.3 (132665)	18.62	18.56	18.72
		1745 (132322)	18.59	18.60	18.73
		1710.7 (131979)	18.71	18.72	18.77
	6RB (0)	1779.3 (132665)	18.62	18.72	18.59
		1745 (132322)	18.58	18.69	18.60
		1710.7 (131979)	18.69	18.81	18.67
3MHz	1RB-High (14)	1778.5 (132657)	18.54	18.73	18.66
		1745 (132322)	18.53	18.75	18.70
		1711.5 (131987)	18.58	18.85	18.79
	1RB-Middle (7)	1778.5 (132657)	18.65	18.96	18.72
		1745 (132322)	18.65	18.84	18.79
		1711.5 (131987)	18.77	19.00	18.90
	1RB-Low (0)	1778.5 (132657)	18.52	18.77	18.56
		1745 (132322)	18.52	18.82	18.71
		1711.5 (131987)	18.63	18.85	18.74
	8RB-High (7)	1778.5 (132657)	18.52	18.59	18.55
		1745 (132322)	18.54	18.60	18.56
		1711.5 (131987)	18.59	18.69	18.63

	8RB-Middle (4)	1778.5 (132657)	18.57	18.60	18.58
		1745 (132322)	18.53	18.66	18.57
		1711.5 (131987)	18.68	18.73	18.72
	8RB-Low (0)	1778.5 (132657)	18.59	18.60	18.60
		1745 (132322)	18.53	18.61	18.57
		1711.5 (131987)	18.63	18.74	18.67
	15RB (0)	1778.5 (132657)	18.56	18.56	18.54
		1745 (132322)	18.51	18.54	18.55
		1711.5 (131987)	18.58	18.65	18.62
5MHz	1RB-High (24)	1777.5 (132647)	18.51	18.74	18.50
		1745 (132322)	18.49	18.83	18.67
		1712.5 (131997)	18.57	18.76	18.74
	1RB-Middle (12)	1777.5 (132647)	18.65	18.80	18.75
		1745 (132322)	18.65	18.94	18.75
		1712.5 (131997)	18.67	18.98	18.82
	1RB-Low (0)	1777.5 (132647)	18.44	18.69	18.61
		1745 (132322)	18.50	18.73	18.70
		1712.5 (131997)	18.60	18.76	18.75
	12RB-High (13)	1777.5 (132647)	18.48	18.45	18.48
		1745 (132322)	18.53	18.54	18.57
		1712.5 (131997)	18.62	18.63	18.67
	12RB-Middle (6)	1777.5 (132647)	18.59	18.54	18.59
		1745 (132322)	18.58	18.58	18.60
		1712.5 (131997)	18.70	18.68	18.69
	12RB-Low (0)	1777.5 (132647)	18.58	18.56	18.58
		1745 (132322)	18.57	18.56	18.58
		1712.5 (131997)	18.62	18.61	18.63
	25RB (0)	1777.5 (132647)	18.52	18.54	18.51
		1745 (132322)	18.54	18.56	18.57
		1712.5 (131997)	18.63	18.65	18.64
10MHz	1RB-High (49)	1775 (132622)	18.52	18.72	18.58
		1745 (132322)	18.54	18.86	18.67
		1715 (132022)	18.62	18.94	18.84
	1RB-Middle (24)	1775 (132622)	18.54	18.81	18.62
		1745 (132322)	18.61	18.86	18.75
		1715 (132022)	18.69	18.98	18.90
	1RB-Low (0)	1775 (132622)	18.57	18.86	18.64
		1745 (132322)	18.59	18.75	18.76
		1715 (132022)	18.64	18.88	18.74
	25RB-High (25)	1775 (132622)	18.44	18.44	18.42
		1745 (132322)	18.53	18.54	18.54
		1715 (132022)	18.63	18.67	18.69

	25RB-Middle (12)	1775 (132622)	18.55	18.53	18.56
		1745 (132322)	18.58	18.60	18.58
		1715 (132022)	18.67	18.64	18.66
	25RB-Low (0)	1775 (132622)	18.58	18.59	18.59
		1745 (132322)	18.62	18.62	18.61
		1715 (132022)	18.63	18.64	18.63
	50RB (0)	1775 (132622)	18.53	18.53	18.51
		1745 (132322)	18.60	18.56	18.60
		1715 (132022)	18.66	18.69	18.71
15MHz	1RB-High (74)	1772.5 (132597)	18.51	18.68	18.58
		1745 (132322)	18.50	18.83	18.63
		1717.5 (132047)	18.58	18.86	18.77
	1RB-Middle (37)	1772.5 (132597)	18.49	18.79	18.65
		1745 (132322)	18.56	18.79	18.67
		1717.5 (132047)	18.61	18.79	18.81
	1RB-Low (0)	1772.5 (132597)	18.51	18.73	18.68
		1745 (132322)	18.54	18.83	18.73
		1717.5 (132047)	18.63	18.79	18.78
	36RB-High (38)	1772.5 (132597)	18.51	18.48	18.48
		1745 (132322)	18.56	18.53	18.56
		1717.5 (132047)	18.72	18.69	18.71
	36RB-Middle (19)	1772.5 (132597)	18.61	18.60	18.58
		1745 (132322)	18.60	18.58	18.60
		1717.5 (132047)	18.68	18.65	18.69
	36RB-Low (0)	1772.5 (132597)	18.64	18.61	18.61
		1745 (132322)	18.64	18.64	18.62
		1717.5 (132047)	18.66	18.62	18.61
	75RB (0)	1772.5 (132597)	18.57	18.56	18.54
		1745 (132322)	18.60	18.59	18.57
		1717.5 (132047)	18.68	18.69	18.66
20MHz	1RB-High (99)	1770 (132572)	18.36	18.58	18.54
		1745 (132322)	18.39	18.55	18.51
		1720 (132072)	18.42	18.71	18.63
	1RB-Middle (50)	1770 (132572)	18.59	18.86	18.73
		1745 (132322)	18.68	18.98	18.78
		1720 (132072)	18.72	18.95	18.92
	1RB-Low (0)	1770 (132572)	18.34	18.57	18.54
		1745 (132322)	18.45	18.71	18.63
		1720 (132072)	18.49	18.81	18.66
	50RB-High (50)	1770 (132572)	18.52	18.53	18.49
		1745 (132322)	18.49	18.54	18.53
		1720 (132072)	18.72	18.73	18.73

	50RB-Middle (25)	1770 (132572)	18.62	18.65	18.62
		1745 (132322)	18.62	18.63	18.63
		1720 (132072)	18.66	18.66	18.66
	50RB-Low (0)	1770 (132572)	18.64	18.66	18.64
		1745 (132322)	18.69	18.70	18.68
		1720 (132072)	18.65	18.67	18.67
	100RB (0)	1770 (132572)	18.58	18.57	18.56
		1745 (132322)	18.60	18.60	18.58
		1720 (132072)	18.67	18.65	18.66

LTE Band71 (Power Level A1/B1/C1)

LTE BAND71					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	695.5 (133447)	23.80	22.94	21.94
		680.5 (133297)	23.89	23.17	22.08
		665.5 (133147)	23.83	23.14	22.00
	1RB-Middle (12)	695.5 (133447)	24.01	23.26	22.13
		680.5 (133297)	24.11	23.21	22.11
		665.5 (133147)	23.95	23.26	22.09
	1RB-Low (0)	695.5 (133447)	23.86	23.04	21.97
		680.5 (133297)	23.87	23.19	22.03
		665.5 (133147)	23.86	22.97	21.98
	12RB-High (13)	695.5 (133447)	22.88	21.84	20.86
		680.5 (133297)	22.89	21.89	20.88
		665.5 (133147)	22.80	21.83	20.83
	12RB-Middle (6)	695.5 (133447)	22.92	21.89	20.92
		680.5 (133297)	22.97	21.99	21.00
		665.5 (133147)	22.93	21.95	20.92
	12RB-Low (0)	695.5 (133447)	22.85	21.82	20.86
		680.5 (133297)	23.03	21.98	20.98
		665.5 (133147)	22.86	21.86	20.84
	25RB (0)	695.5 (133447)	22.87	21.87	20.86
		680.5 (133297)	22.96	21.96	20.98
		665.5 (133147)	22.86	21.88	20.82
10MHz	1RB-High (49)	693 (132422)	23.22	22.51	21.34
		680.5 (133297)	23.95	23.24	22.06
		668 (133172)	23.87	23.20	22.03
	1RB-Middle (24)	693 (132422)	23.27	22.57	21.46
		680.5 (133297)	23.97	23.22	22.11
		668 (133172)	23.92	23.21	22.11
	1RB-Low (0)	693 (132422)	23.24	22.47	21.36

		680.5 (133297)	23.90	23.20	21.99
		668 (133172)	23.88	23.10	22.01
	25RB-High (25)	693 (132422)	22.23	21.25	20.22
		680.5 (133297)	22.89	21.92	20.92
		668 (133172)	23.04	22.07	21.08
	25RB-Middle (12)	693 (132422)	22.30	21.31	20.31
		680.5 (133297)	22.98	21.98	20.99
		668 (133172)	22.95	21.98	20.95
	25RB-Low (0)	693 (132422)	22.35	21.34	20.32
		680.5 (133297)	23.12	22.12	21.09
		668 (133172)	23.13	22.09	21.07
	50RB (0)	693 (132422)	22.31	21.35	20.30
		680.5 (133297)	23.00	22.02	21.02
		668 (133172)	23.11	22.08	21.07
15MHz	1RB-High (74)	690.5 (133397)	23.79	22.88	21.88
		680.5 (133297)	23.84	23.18	21.97
		670.5 (133197)	23.78	22.96	21.99
	1RB-Middle (37)	690.5 (133397)	23.88	23.22	22.11
		680.5 (133297)	23.88	23.26	22.06
		670.5 (133197)	23.91	23.13	22.13
	1RB-Low (0)	690.5 (133397)	23.93	23.27	22.12
		680.5 (133297)	23.87	23.22	22.07
		670.5 (133197)	23.86	23.08	21.93
	36RB-High (38)	690.5 (133397)	23.01	21.98	21.00
		680.5 (133297)	22.93	21.94	20.97
		670.5 (133197)	23.04	22.00	21.00
	36RB-Middle (19)	690.5 (133397)	22.95	21.91	20.92
		680.5 (133297)	22.97	21.97	20.98
		670.5 (133197)	22.94	21.91	20.94
	36RB-Low (0)	690.5 (133397)	22.95	21.89	20.94
		680.5 (133297)	22.99	21.99	20.99
		670.5 (133197)	23.07	22.04	21.05
	75RB (0)	690.5 (133397)	22.96	21.94	20.94
		680.5 (133297)	22.99	21.98	20.97
		670.5 (133197)	23.05	22.04	21.00
20MHz	1RB-High (99)	688 (133372)	23.63	22.89	21.82
		683 (133322)	23.66	22.95	21.86
		673 (133222)	23.69	23.01	21.86
	1RB-Middle (50)	688 (133372)	23.93	23.21	22.03
		683 (133322)	23.96	23.27	22.15
		673 (133222)	23.89	23.11	22.04
	1RB-Low (0)	688 (133372)	23.72	23.04	21.89

		683 (133322)	23.71	22.98	21.92
		673 (133222)	23.70	22.84	21.84
	50RB-High (50)	688 (133372)	23.06	22.04	21.04
		683 (133322)	23.06	22.07	21.05
		673 (133222)	22.78	21.78	20.75
	50RB-Middle (25)	688 (133372)	22.95	21.95	20.95
		683 (133322)	22.97	21.97	20.98
		673 (133222)	22.89	21.89	20.89
	50RB-Low (0)	688 (133372)	23.12	22.15	21.12
		683 (133322)	23.13	22.12	21.09
		673 (133222)	23.03	22.05	21.03
	100RB (0)	688 (133372)	23.07	22.04	21.04
		683 (133322)	23.08	22.07	21.07
		673 (133222)	22.85	21.86	20.84

11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 10.34dBm.
The maximum tune up of BT antenna is 11dBm.

Antenna	**Receiver on** (head scenario)	**Receiver off+ Hotspot off** (body scenario)	**Receiver off+ Hotspot on** (body/other scenario)
WIFI Antenna	Power Level A1	Power Level B1	Power Level C1

The average conducted power for Wi-Fi 2.4G is as following-Power Level A1

802.11b	
Channel\data rate	1Mbps
11(2462MHz)	18.03
6(2437(MHz)	18.06
1(2412MHz)	17.74
Tune up	18.50
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	/
6(2437(MHz)	17.68
1(2412MHz)	/
Tune up	18.50
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	/
6(2437(MHz)	17.58
1(2412MHz)	/
Tune up	18.00

The average conducted power for Wi-Fi 2.4G is as following-Power Level B1/C1

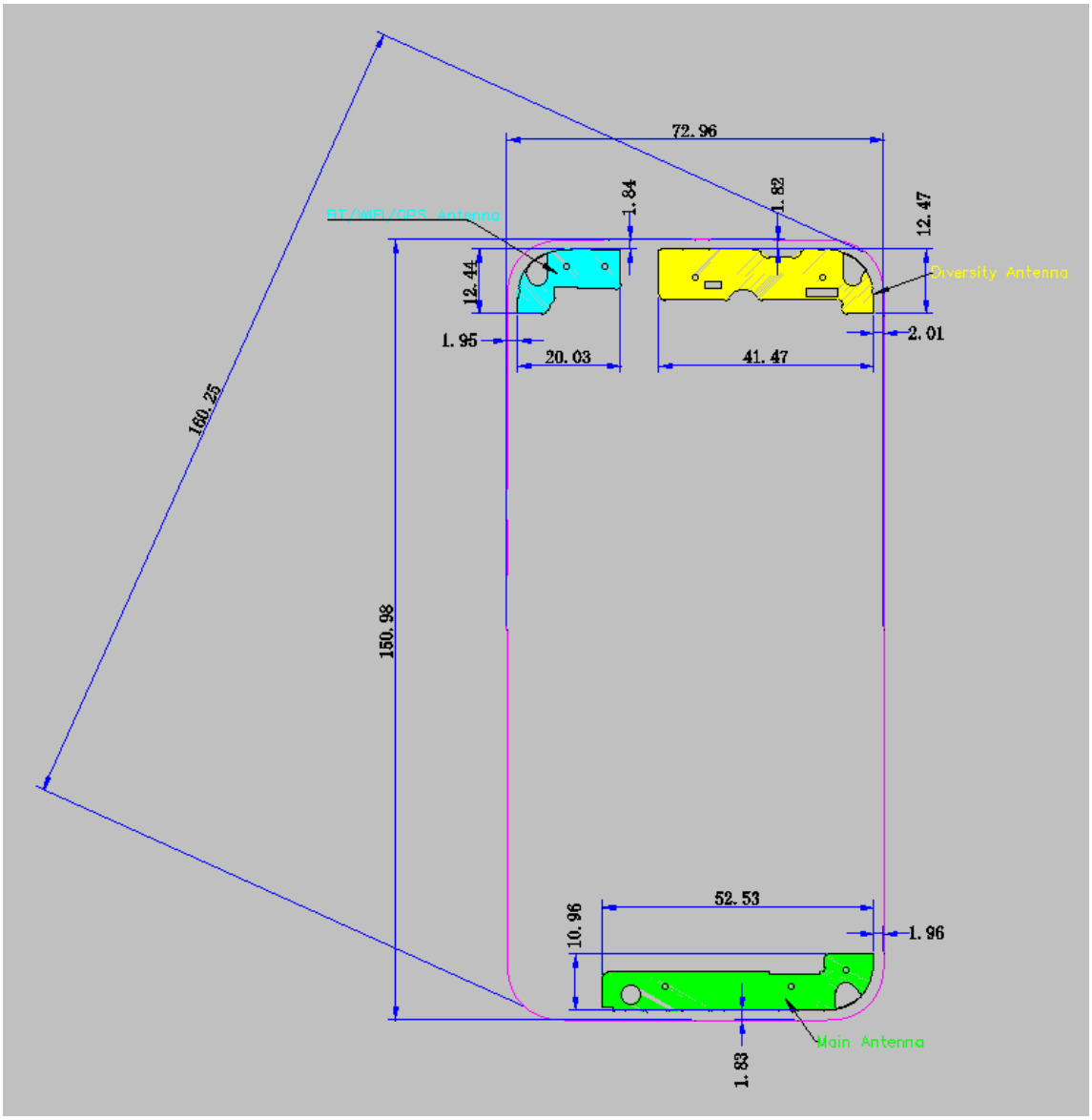
802.11b	
Channel\data rate	1Mbps
11(2462MHz)	18.84
Tune up	19.00
6(2437(MHz)	19.89
Tune up	20.50
1(2412MHz)	18.59
Tune up	19.00
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	14.48
Tune up	14.50
6(2437(MHz)	18.88
Tune up	19.00
1(2412MHz)	14.33
Tune up	14.50
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	14.89
Tune up	15.00
6(2437(MHz)	18.92
Tune up	19.00
1(2412MHz)	15.24
Tune up	15.50

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 a/b/g and Bluetooth devices which may simultaneously transmit with the licensed transmitter.
For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters.

12.2 Transmit Antenna Separation Distances



Picture 12.1 Antenna location

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	No	Yes	Yes	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
Highest SAR value for Head	Left head, Touch (LTE B26)	0.38	1.12	**1.50**
Highest SAR value for Body	Rear 10mm (WCDMA B4)	0.97	0.61	**1.58**

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

	Position	Main antenna	BT	Sum
Highest SAR value for Head	Right head, Touch (GSM850)	0.42	<0.01	**0.42**
Highest SAR value for Body	Rear 10mm (GSM1900)	1.24	<0.01	**1.24**
	Rear 10mm (WCDMA B2)	1.24	<0.01	**1.24**

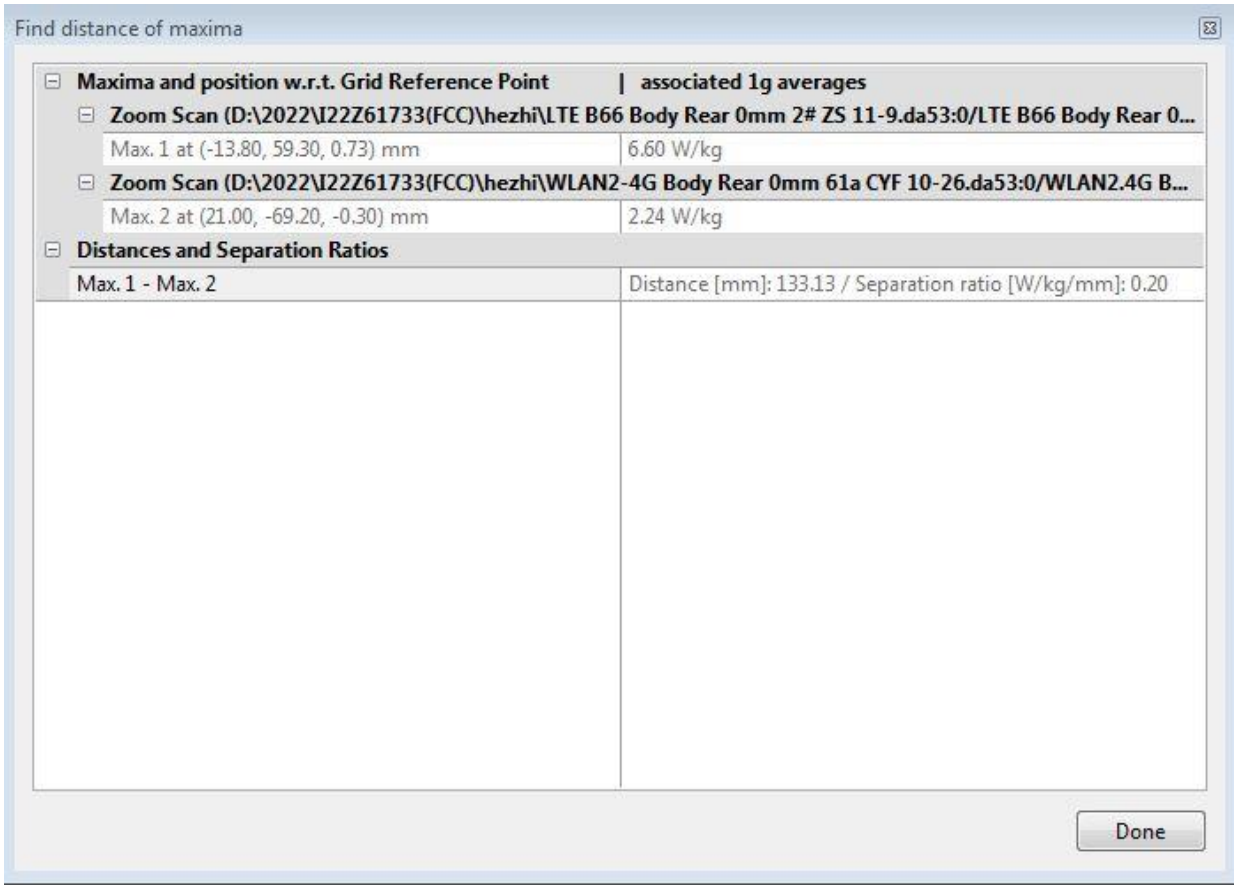
Conclusion:

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.

Table 13.5: The sum of reported SAR values for main antenna and WiFi2.4G (SPLSR)

/	Position	Band	Main antenna SAR1	WiFi SAR2	Sum (1g)	Distance (mm) Ri	Ratio	Limit
Highest reported SAR value for Hotspot	Rear 10mm	GSM850	0.66	0.61	**1.27**	/	/	≤0.04
	Rear 10mm	GSM1900	1.24	0.61	**1.85**	136.8	0.02	
	Rear 10mm	WCDMA B2	1.15	0.61	**1.76**	132.73	0.02	
	Rear 10mm	WCDMA B4	0.97	0.61	**1.58**	/	/	
	Rear 10mm	LTE B12	0.42	0.61	**1.03**	/	/	
	Rear 10mm	LTE B25	1.18	0.61	**1.79**	144.08	0.02	
	Rear 10mm	LTE B26	0.62	0.61	**1.23**	/	/	
	Rear 10mm	LTE B41 PC2	1.12	0.61	**1.73**	134.15	0.02	
	Rear 10mm	LTE B66	1.19	0.61	**1.80**	133.82	0.02	
Highest reported SAR value for Phablet	Rear 0mm	GSM1900	2.23	1.28	**3.51**	/	/	≤0.10
	Rear 0mm	WCDMA B2	3.07	1.28	**4.35**	140.57	0.06	
	Rear 0mm	WCDMA B4	2.57	1.28	**3.85**	/	/	
	Rear 0mm	LTE B25	3.17	1.28	**4.45**	149.96	0.06	
	Rear 0mm	LTE B66	3.16	1.28	**4.44**	133.13	0.07	

According to the KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by (SAR1 + SAR2)1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion. When 10-g SAR applies, the ratio must be ≤ 0.10. SAR1 and SAR2 are the highest reported or estimated SAR values for each antenna in the pair, and Ri is the separation distance in mm between the peak SAR locations for the antenna pair.



Picture 13.1 Distance evaluation for LTE B66 and WiFi2.4G Body (Rear 0mm)

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:

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

Where P_{Target} is the power of manufacturing upper limit;
$P_{Measured}$ is the measured power in chapter 11.

Table 14.1: Duty Cycle

Mode	Duty Cycle
GSM 850/1900	1:4
GPRS/EGPRS 850/1900	1:4
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)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
251	848.8	Left	Cheek	/	30.91	31.5	0.261	**0.30**	0.206	**0.24**	-0.08
190	836.6	Left	Cheek	Fig.1	30.97	31.5	0.299	**0.34**	0.237	**0.27**	0.04
128	824.2	Left	Cheek	/	30.97	31.5	0.235	**0.27**	0.187	**0.21**	-0.02
190	836.6	Left	Tilt	/	30.97	31.5	0.174	**0.20**	0.14	**0.16**	0.13
190	836.6	Right	Cheek	/	30.97	31.5	0.295	**0.33**	0.23	**0.26**	-0.13
190	836.6	Right	Tilt	/	30.97	31.5	0.202	**0.23**	0.161	**0.18**	-0.14

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

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	GPRS (2)	Front	/	30.97	31.5	0.334	**0.38**	0.263	**0.30**	0.12
251	848.8	GPRS (2)	Rear	/	30.91	31.5	0.535	**0.61**	0.425	**0.49**	-0.13
190	836.6	GPRS (2)	Rear	Fig.2	30.97	31.5	0.583	**0.66**	0.452	**0.51**	0.12
128	824.2	GPRS (2)	Rear	/	30.97	31.5	0.566	**0.64**	0.438	**0.49**	-0.06
190	836.6	GPRS (2)	Left	/	30.97	31.5	0.234	**0.26**	0.175	**0.20**	-0.09
190	836.6	GPRS (2)	Right	/	30.97	31.5	0.294	**0.33**	0.223	**0.25**	0.09
190	836.6	GPRS (2)	Bottom	/	30.97	31.5	0.139	**0.16**	0.089	**0.10**	-0.18
190	836.6	EGPRS (2)	Rear	/	31.01	31.5	0.562	**0.63**	0.437	**0.49**	-0.06

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

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	Left	Cheek	/	27.95	28.5	0.079	**0.09**	0.049	**0.06**	-0.14
661	1880	Left	Tilt	/	27.95	28.5	0.04	**0.05**	0.024	**0.03**	-0.15
810	1909.8	Right	Cheek	/	28.07	28.5	0.122	**0.13**	0.072	**0.08**	0.07
661	1880	Right	Cheek	Fig.3	27.95	28.5	0.129	**0.15**	0.076	**0.09**	0.17
512	1850.2	Right	Cheek	/	27.81	28.5	0.107	**0.13**	0.061	**0.07**	0.03
661	1880	Right	Tilt	/	27.95	28.5	<0.01	<0.01	<0.01	<0.01	/

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	/	24.01	25.5	0.24	**0.34**	0.137	**0.19**	-0.1
810	1909.8	GPRS (2)	Rear	Fig.4	24.15	25.5	0.59	**0.81**	0.322	**0.44**	0.11
661	1880	GPRS (2)	Rear	/	24.01	25.5	0.538	**0.76**	0.298	**0.42**	0.06
512	1850.2	GPRS (2)	Rear	/	23.98	25.5	0.447	**0.63**	0.244	**0.35**	0.15
810	1909.8	EGPRS (2)	Rear	/	24.14	25.5	0.573	**0.78**	0.315	**0.43**	0.09

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

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	/	23.33	24.5	0.361	**0.47**	0.192	**0.25**	-0.08
810	1909.8	GPRS (2)	Rear	Fig.5	23.54	24.5	0.991	**1.24**	0.502	**0.63**	-0.16
661	1880	GPRS (2)	Rear	/	23.33	24.5	0.828	**1.08**	0.427	**0.56**	0.13
512	1850.2	GPRS (2)	Rear	/	23.36	24.5	0.652	**0.85**	0.332	**0.43**	0.04
661	1880	GPRS (2)	Left	/	23.33	24.5	<0.01	<0.01	<0.01	<0.01	/
661	1880	GPRS (2)	Right	/	23.33	24.5	<0.01	<0.01	<0.01	<0.01	/
810	1909.8	GPRS (2)	Bottom	/	23.54	24.5	0.975	**1.22**	0.514	**0.64**	-0.18
661	1880	GPRS (2)	Bottom	/	23.33	24.5	0.875	**1.15**	0.44	**0.58**	0.08
512	1850.2	GPRS (2)	Bottom	/	23.36	24.5	0.639	**0.83**	0.318	**0.41**	-0.11
810	1909.8	EGPRS (2)	Rear	/	23.57	24.5	0.974	**1.21**	0.485	**0.60**	0.09

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

Table 14.1-6: SAR Values (WCDMA 1900 MHz Band - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
9400	1880	Left	Cheek	/	23.04	24.5	0.101	**0.14**	0.038	**0.05**	-0.11
9400	1880	Left	Tilt	/	23.04	24.5	<0.01	<0.01	<0.01	<0.01	/
9538	1907.6	Right	Cheek	Fig.6	22.92	24.5	0.152	**0.22**	0.091	**0.13**	-0.06
9400	1880	Right	Cheek	/	23.04	24.5	0.146	**0.20**	0.087	**0.12**	-0.18
9262	1852.4	Right	Cheek	/	22.97	24.5	0.145	**0.21**	0.087	**0.12**	0.09
9400	1880	Right	Tilt	/	23.04	24.5	<0.01	<0.01	<0.01	<0.01	/

Table 14.1-7: SAR Values (WCDMA 1900 MHz Band – Body worn)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	20.01	21	0.31	**0.39**	0.178	**0.22**	-0.03
9538	1907.6	Rear	/	20.02	21	0.571	**0.72**	0.316	**0.40**	0.06
9400	1880	Rear	/	20.01	21	0.704	**0.88**	0.385	**0.48**	0.13
9262	1852.4	Rear	Fig.7	20.12	21	0.796	**0.97**	0.431	**0.53**	-0.09

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

Table 14.1-8: SAR Values (WCDMA 1900 MHz Band - Hotspot)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	17.05	18.5	0.35	**0.49**	0.184	**0.26**	0.12
9538	1907.6	Rear	/	16.99	18.5	0.668	**0.95**	0.346	**0.49**	0.13
9400	1880	Rear	/	17.05	18.5	0.808	**1.13**	0.414	**0.58**	0.17
9262	1852.4	Rear	/	17.11	18.5	0.832	**1.15**	0.422	**0.58**	-0.18
9400	1880	Left	/	17.05	18.5	<0.01	<0.01	<0.01	<0.01	/
9400	1880	Right	/	17.05	18.5	<0.01	<0.01	<0.01	<0.01	/
9538	1907.6	Bottom	/	16.99	18.5	0.767	**1.09**	0.391	**0.55**	-0.05
9400	1880	Bottom	Fig.8	17.05	18.5	0.889	**1.24**	0.449	**0.63**	-0.03
9262	1852.4	Bottom	/	17.11	18.5	0.881	**1.21**	0.443	**0.61**	-0.14

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

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
1412	1732.4	Left	Cheek	/	23.12	24.5	0.077	**0.11**	0.052	**0.07**	0.01
1412	1732.4	Left	Tilt	/	23.12	24.5	0.056	**0.08**	0.036	**0.05**	0.12
1513	1752.6	Right	Cheek	/	23.14	24.5	0.118	**0.16**	0.074	**0.10**	-0.1
1412	1732.4	Right	Cheek	/	23.12	24.5	0.117	**0.16**	0.073	**0.10**	-0.02
1312	1712.4	Right	Cheek	Fig.9	23.21	24.5	0.125	**0.17**	0.08	**0.11**	0.02
1412	1732.4	Right	Tilt	/	23.12	24.5	0.046	**0.06**	0.03	**0.04**	-0.07

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.5	Front	/	20.08	21.5	0.283	**0.39**	0.168	**0.23**	0.14
1513	1752.6	Rear	Fig.10	20.07	21.5	0.635	**0.88**	0.358	**0.50**	-0.1
1412	1732.5	Rear	/	20.08	21.5	0.627	**0.87**	0.353	**0.49**	-0.16
1312	1712.4	Rear	/	20.18	21.5	0.632	**0.86**	0.357	**0.48**	0.17

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

Table 14.1-11: SAR Values (WCDMA 1700 MHz Band - Hotspot)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.5	Front	/	17.17	18.5	0.279	**0.38**	0.153	**0.21**	0.13
1513	1752.6	Rear	Fig.11	17.12	18.5	0.707	**0.97**	0.366	**0.50**	0.12
1412	1732.5	Rear	/	17.17	18.5	0.684	**0.93**	0.356	**0.48**	0.03
1312	1712.4	Rear	/	17.23	18.5	0.682	**0.91**	0.349	**0.47**	0.15
1412	1732.5	Left	/	17.17	18.5	<0.01	<0.01	<0.01	<0.01	/
1412	1732.5	Right	/	17.17	18.5	<0.01	<0.01	<0.01	<0.01	/
1513	1752.6	Bottom	/	17.12	18.5	0.674	**0.93**	0.349	**0.48**	-0.1
1412	1732.5	Bottom	/	17.17	18.5	0.641	**0.87**	0.331	**0.45**	-0.07
1312	1712.4	Bottom	/	17.23	18.5	0.602	**0.81**	0.31	**0.42**	0.05

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

Table 14.1-12: SAR Values (WCDMA 850 MHz Band - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz										
4183	836.6	Left	Cheek	/	23.13	24.5	0.236	**0.32**	0.195	**0.27**	0.09
4183	836.6	Left	Tilt	/	23.13	24.5	0.172	**0.24**	0.143	**0.20**	-0.1
4233	846.6	Right	Cheek	Fig.12	23.12	24.5	0.26	**0.36**	0.205	**0.28**	0.06
4183	836.6	Right	Cheek	/	23.13	24.5	0.247	**0.34**	0.196	**0.27**	-0.17
4132	826.4	Right	Cheek	/	23.26	24.5	0.258	**0.34**	0.204	**0.27**	-0.15
4183	836.6	Right	Tilt	/	23.13	24.5	0.178	**0.24**	0.145	**0.20**	-0.03

Table 14.1-13: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4183	836.6	Front	/	23.13	24.5	0.288	**0.39**	0.224	**0.31**	-0.17
4233	846.6	Rear	/	23.12	24.5	0.333	**0.46**	0.259	**0.36**	-0.01
4183	836.6	Rear	/	23.13	24.5	0.379	**0.52**	0.296	**0.41**	-0.06
4132	826.4	Rear	Fig.13	23.26	24.5	0.393	**0.52**	0.305	**0.41**	-0.02
4183	836.6	Left	/	23.13	24.5	0.204	**0.28**	0.147	**0.20**	-0.07
4183	836.6	Right	/	23.13	24.5	0.249	**0.34**	0.178	**0.24**	-0.17
4183	836.6	Bottom	/	23.13	24.5	0.129	**0.18**	0.081	**0.11**	-0.07

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

Table 14.1-14: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23060	704	1RB-Mid	Left	Cheek	/	24.03	25	0.201	**0.25**	0.163	**0.20**	0.12
23060	704	1RB-Mid	Left	Tilt	/	24.03	25	0.15	**0.19**	0.12	**0.15**	-0.08
23060	704	1RB-Mid	Right	Cheek	Fig.14	24.03	25	0.207	**0.26**	0.164	**0.21**	-0.06
23060	704	1RB-Mid	Right	Tilt	/	24.03	25	0.147	**0.18**	0.119	**0.15**	-0.12
23060	704	25RB-Low	Left	Cheek	/	23.01	24	0.152	**0.19**	0.122	**0.15**	-0.13
23060	704	25RB-Low	Left	Tilt	/	23.01	24	0.128	**0.16**	0.103	**0.13**	0.06
23060	704	25RB-Low	Right	Cheek	/	23.01	24	0.148	**0.19**	0.117	**0.15**	-0.08
23060	704	25RB-Low	Right	Tilt	/	23.01	24	0.111	**0.14**	0.088	**0.11**	0.17

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-15: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
23060	704	1RB-Mid Front	/	24.03	25	0.197	**0.25**	0.154	**0.19**	-0.06
23060	704	1RB-Mid Rear	Fig.15	24.03	25	0.338	**0.42**	0.263	**0.33**	-0.11
23060	704	1RB-Mid Left	/	24.03	25	0.22	**0.28**	0.162	**0.20**	0.17
23060	704	1RB-Mid Right	/	24.03	25	0.189	**0.24**	0.141	**0.18**	-0.12
23060	704	1RB-Mid Bottom	/	24.03	25	0.066	**0.08**	0.037	**0.05**	-0.17
23060	704	25RB-Low Front	/	23.01	24	0.153	**0.19**	0.12	**0.15**	0.12
23060	704	25RB-Low Rear	/	23.01	24	0.254	**0.32**	0.199	**0.25**	-0.16
23060	704	25RB-Low Left	/	23.01	24	0.169	**0.21**	0.122	**0.15**	-0.12
23060	704	25RB-Low Right	/	23.01	24	0.146	**0.18**	0.107	**0.13**	0.12
23060	704	25RB-Low Bottom	/	23.01	24	0.045	**0.06**	0.027	**0.03**	0.15

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-16: SAR Values (LTE Band25 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26590	1905	1RB-Mid	Left	Cheek	/	23.6	24.5	0.098	**0.12**	0.037	**0.05**	0.05
26590	1905	1RB-Mid	Left	Tilt	/	23.6	24.5	0.064	**0.08**	0.04	**0.05**	-0.11
26590	1905	1RB-Mid	Right	Cheek	Fig.16	23.6	24.5	0.149	**0.18**	0.089	**0.11**	0.05
26590	1905	1RB-Mid	Right	Tilt	/	23.6	24.5	0.038	**0.05**	0.024	**0.03**	0.01
26590	1905	50RB-Low	Left	Cheek	/	22.69	23.5	0.08	**0.10**	0.03	**0.04**	0.08
26590	1905	50RB-Low	Left	Tilt	/	22.69	23.5	0.038	**0.05**	0.023	**0.03**	-0.11
26590	1905	50RB-Low	Right	Cheek	/	22.69	23.5	0.121	**0.15**	0.072	**0.09**	-0.1
26590	1905	50RB-Low	Right	Tilt	/	22.69	23.5	<0.01	<0.01	<0.01	<0.01	/

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-17: SAR Values (LTE Band25 – Body Worn)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26590	1905	1RB-Mid Front	/	20.75	21	0.336	**0.36**	0.195	**0.21**	0.15
26590	1905	1RB-Mid Rear	/	20.75	21	0.783	**0.83**	0.437	**0.46**	0.1
26365	1882.5	1RB-Mid Rear	/	20.73	21	0.899	**0.96**	0.49	**0.52**	-0.05
26140	1860	1RB-Mid Rear	Fig.17	20.71	21	1.01	**1.08**	0.548	**0.59**	-0.06
26140	1860	100RB Rear	/	20.69	21	0.978	**1.05**	0.533	**0.57**	0.09
26590	1905	50RB-Low Front	/	20.76	21	0.353	**0.37**	0.204	**0.22**	0.09
26590	1905	50RB-Low Rear	/	20.76	21	0.808	**0.85**	0.448	**0.47**	-0.11
26365	1882.5	50RB-Low Rear	/	20.74	21	0.939	**1.00**	0.512	**0.54**	0.12
26140	1860	50RB-Low Rear	/	20.73	21	0.952	**1.01**	0.52	**0.55**	0.13

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-18: SAR Values (LTE Band25 – Hotspot)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26590	1905	1RB-Mid Front	/	17.82	18.5	0.323	**0.38**	0.171	**0.20**	-0.05
26590	1905	1RB-Mid Rear	/	17.82	18.5	0.838	**0.98**	0.427	**0.50**	-0.06
26365	1882.5	1RB-Mid Rear	/	17.78	18.5	0.914	**1.08**	0.465	**0.55**	0.01
26140	1860	1RB-Mid Rear	Fig.18	17.75	18.5	0.989	**1.18**	0.5	**0.59**	-0.1
26140	1860	100RB Rear	/	17.68	18.5	0.944	**1.14**	0.476	**0.57**	-0.06
26590	1905	1RB-Mid Left	/	17.82	18.5	<0.01	<0.01	<0.01	<0.01	/
26590	1905	1RB-Mid Right	/	17.82	18.5	<0.01	<0.01	<0.01	<0.01	/
26590	1905	1RB-Mid Bottom	/	17.82	18.5	0.87	**1.02**	0.446	**0.52**	-0.14
26365	1882.5	1RB-Mid Bottom	/	17.78	18.5	0.978	**1.15**	0.496	**0.59**	-0.09
26140	1860	1RB-Mid Bottom	/	17.75	18.5	0.972	**1.16**	0.493	**0.59**	0.02
26140	1860	100RB Bottom	/	17.68	18.5	0.944	**1.14**	0.476	**0.57**	-0.06
26590	1905	50RB-Low Front	/	17.8	18.5	0.335	**0.39**	0.179	**0.21**	0.05
26590	1905	50RB-Low Rear	/	17.8	18.5	0.816	**0.96**	0.414	**0.49**	-0.03
26365	1882.5	50RB-Low Rear	/	17.75	18.5	0.934	**1.11**	0.472	**0.56**	0.09
26140	1860	50RB-Low Rear	/	17.71	18.5	0.971	**1.16**	0.487	**0.58**	-0.07
26590	1905	50RB-Low Left	/	17.8	18.5	<0.01	<0.01	<0.01	<0.01	/
26590	1905	50RB-Low Right	/	17.8	18.5	<0.01	<0.01	<0.01	<0.01	/
26590	1905	50RB-Low Bottom	/	17.8	18.5	0.854	**1.00**	0.437	**0.51**	-0.02

26365	1882.5	50RB-Low Bottom	/	17.75	18.5	0.952	**1.13**	0.488	**0.58**	0.06
26140	1860	50RB-Low Bottom	/	17.71	18.5	0.941	**1.13**	0.476	**0.57**	0.11

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-19: SAR Values (LTE Band26 - Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26865	831.5	1RB-Low	Left	Cheek	/	23.88	25	0.294	**0.38**	0.236	**0.31**	-0.03
26865	831.5	1RB-Low	Left	Tilt	/	23.88	25	0.211	**0.27**	0.172	**0.22**	0.02
26865	831.5	1RB-Low	Right	Cheek	Fig.19	23.88	25	0.321	**0.42**	0.251	**0.32**	0.16
26865	831.5	1RB-Low	Right	Tilt	/	23.88	25	0.244	**0.32**	0.195	**0.25**	0.03
26865	831.5	36RB-Low	Left	Cheek	/	23.01	24	0.264	**0.33**	0.213	**0.27**	0.12
26865	831.5	36RB-Low	Left	Tilt	/	23.01	24	0.212	**0.27**	0.172	**0.22**	0.12
26865	831.5	36RB-Low	Right	Cheek	/	23.01	24	0.284	**0.36**	0.223	**0.28**	-0.05
26865	831.5	36RB-Low	Right	Tilt	/	23.01	24	0.215	**0.27**	0.173	**0.22**	0.07

Note1: The LTE mode is QPSK_15MHz.

Table 14.1-20: SAR Values (LTE Band26 – Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26865	831.5	1RB-Low Front	/	23.88	25	0.333	**0.43**	0.256	**0.33**	0.12
26865	831.5	1RB-Low Rear	Fig.20	23.88	25	0.477	**0.62**	0.368	**0.48**	0.02
26865	831.5	1RB-Low Left	/	23.88	25	0.232	**0.30**	0.166	**0.21**	0.1
26865	831.5	1RB-Low Right	/	23.88	25	0.275	**0.36**	0.195	**0.25**	0.11
26865	831.5	1RB-Low Bottom	/	23.88	25	0.136	**0.18**	0.083	**0.11**	-0.1
26865	831.5	36RB-Low Front	/	23.01	24	0.283	**0.36**	0.219	**0.28**	0.12
26865	831.5	36RB-Low Rear	/	23.01	24	0.409	**0.51**	0.314	**0.39**	0.04
26865	831.5	36RB-Low Left	/	23.01	24	0.211	**0.27**	0.15	**0.19**	0.09
26865	831.5	36RB-Low Right	/	23.01	24	0.242	**0.30**	0.171	**0.21**	0.12
26865	831.5	36RB-Low Bottom	/	23.01	24	0.118	**0.15**	0.073	**0.09**	-0.01

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-21: SAR Values (LTE Band41 PC3 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
41490	2680	1RB-Mid	Left	Cheek	Fig.21	23.44	24	0.102	**0.12**	0.053	**0.06**	-0.13
41490	2680	1RB-Mid	Left	Tilt	/	23.44	24	<0.01	<0.01	<0.01	<0.01	/
41490	2680	1RB-Mid	Right	Cheek		23.44	24	0.064	**0.07**	0.037	**0.04**	-0.11
41490	2680	1RB-Mid	Right	Tilt	/	23.44	24	0.05	**0.06**	0.026	**0.03**	0.05
41490	2680	50RB-Low	Left	Cheek	/	22.43	23	0.076	**0.09**	0.04	**0.05**	-0.09
41490	2680	50RB-Low	Left	Tilt	/	22.43	23	<0.01	<0.01	<0.01	<0.01	/
41490	2680	50RB-Low	Right	Cheek	/	22.43	23	0.055	**0.06**	0.031	**0.04**	0.12
41490	2680	50RB-Low	Right	Tilt	/	22.43	23	<0.01	<0.01	<0.01	<0.01	/

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-22: SAR Values (LTE Band41 PC3 – Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
41490	2680	1RB-Mid Front	/	22.12	23	0.167	**0.20**	0.086	**0.11**	-0.09
41490	2680	1RB-Mid Rear	/	22.12	23	0.479	**0.59**	0.227	**0.28**	0.11
41490	2680	1RB-Mid Left	/	22.12	23	0.068	**0.08**	0.036	**0.04**	-0.09
41490	2680	1RB-Mid Right	/	22.12	23	0.065	**0.08**	0.028	**0.03**	-0.18
41490	2680	1RB-Mid Bottom	Fig.22	22.12	23	0.485	**0.59**	0.227	**0.28**	0.07
41490	2680	50RB-Low Front	/	22.23	23	0.126	**0.15**	0.064	**0.08**	0.07
41490	2680	50RB-Low Rear	/	22.23	23	0.359	**0.43**	0.172	**0.21**	0.02
41490	2680	50RB-Low Left	/	22.23	23	0.053	**0.06**	0.029	**0.03**	0.09
41490	2680	50RB-Low Right	/	22.23	23	0.034	**0.04**	0.015	**0.02**	-0.06
41490	2680	50RB-Low Bottom	/	22.23	23	0.372	**0.44**	0.174	**0.21**	0.09

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 Band41 PC2 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
41490	2680	1RB-Mid	Left	Cheek	Fig.23	26.14	27	0.139	**0.17**	0.072	**0.09**	0.08
41490	2680	1RB-Mid	Left	Tilt	/	26.14	27	0.029	**0.04**	0.017	**0.02**	0.11
41490	2680	1RB-Mid	Right	Cheek	/	26.14	27	0.061	**0.07**	0.037	**0.05**	-0.09
41490	2680	1RB-Mid	Right	Tilt	/	26.14	27	0.049	**0.06**	0.027	**0.03**	-0.11
41490	2680	50RB-Low	Left	Cheek	/	25.2	26	0.104	**0.13**	0.054	**0.06**	0.07
41490	2680	50RB-Low	Left	Tilt	/	25.2	26	<0.01	<0.01	<0.01	<0.01	/
41490	2680	50RB-Low	Right	Cheek	/	25.2	26	0.047	**0.06**	0.028	**0.03**	-0.07
41490	2680	50RB-Low	Right	Tilt	/	25.2	26	0.037	**0.04**	0.02	**0.02**	-0.12

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-24: SAR Values (LTE Band41 PC2 – Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
41490	2680	1RB-Mid Front	/	25.19	26	0.198	**0.24**	0.105	**0.13**	-0.11
41490	2680	1RB-Mid Rear	/	25.19	26	0.59	**0.71**	0.279	**0.34**	0.18
41055	2636.5	1RB-Mid Rear	/	25.15	26	0.573	**0.70**	0.283	**0.34**	-0.11
40620	2593	1RB-Mid Rear	/	25.03	26	0.675	**0.84**	0.335	**0.42**	0.15
40185	2549.5	1RB-Mid Rear	/	25.11	26	0.808	**0.99**	0.403	**0.49**	0.14
39750	2506	1RB-Mid Rear	Fig.24	24.89	26	0.871	**1.12**	0.431	**0.56**	-0.04
39750	2506	100RB Rear	/	25.18	26	0.857	**1.04**	0.423	**0.51**	0.14
41490	2680	1RB-Mid Left	/	25.19	26	0.072	**0.09**	0.042	**0.05**	-0.07
41490	2680	1RB-Mid Right	/	25.19	26	0.052	**0.06**	0.03	**0.04**	-0.14
41490	2680	1RB-Mid Bottom	/	25.19	26	0.54	**0.65**	0.271	**0.33**	0.09
41490	2680	50RB-Low Front	/	25.22	26	0.149	**0.18**	0.078	**0.09**	-0.12
41490	2680	50RB-Low Rear	/	25.22	26	0.425	**0.51**	0.212	**0.25**	0.14
41490	2680	50RB-Low Left	/	25.22	26	0.058	**0.07**	0.033	**0.04**	-0.09
41490	2680	50RB-Low Right	/	25.22	26	0.036	**0.04**	0.022	**0.03**	0.17
41490	2680	50RB-Low Bottom	/	25.22	26	0.413	**0.49**	0.208	**0.25**	-0.11

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-25: SAR Values (LTE Band66 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132072	1720	1RB-Mid	Left	Cheek	/	23.67	24.5	0.107	**0.13**	0.071	**0.09**	-0.12
132072	1720	1RB-Mid	Left	Tilt	/	23.67	24.5	0.068	**0.08**	0.044	**0.05**	-0.02
132072	1720	1RB-Mid	Right	Cheek	Fig.25	23.67	24.5	0.157	**0.19**	0.101	**0.12**	0.09
132072	1720	1RB-Mid	Right	Tilt	/	23.67	24.5	0.058	**0.07**	0.037	**0.04**	0.01
132072	1720	50RB-High	Left	Cheek	/	22.76	23.5	0.08	**0.09**	0.054	**0.06**	-0.09
132072	1720	50RB-High	Left	Tilt	/	22.76	23.5	0.042	**0.05**	0.028	**0.03**	0.04
132072	1720	50RB-High	Right	Cheek	/	22.76	23.5	0.127	**0.15**	0.081	**0.10**	0.16
132072	1720	50RB-High	Right	Tilt	/	22.76	23.5	0.045	**0.05**	0.028	**0.03**	-0.07

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-26: SAR Values (LTE Band66 – Body worn)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132072	1720	1RB-Mid Front	/	20.43	21	0.256	**0.29**	0.153	**0.17**	-0.1
132072	1720	1RB-Mid Rear	/	20.43	21	0.612	**0.70**	0.342	**0.39**	0.14
132322	1745	1RB-Mid Rear	Fig.26	20.31	21	0.626	**0.73**	0.351	**0.41**	-0.1
132572	1770	1RB-Mid Rear	/	20.3	21	0.57	**0.67**	0.319	**0.37**	0.04
132072	1720	50RB-High Front	/	20.44	21	0.259	**0.29**	0.155	**0.18**	0.1
132072	1720	50RB-High Rear	/	20.44	21	0.609	**0.69**	0.34	**0.39**	0.17

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-27: SAR Values (LTE Band66 – Hotspot)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132072	1720	1RB-Mid Front	/	18.72	19.5	0.387	**0.46**	0.211	**0.25**	0.07
132072	1720	1RB-Mid Rear	/	18.72	19.5	0.933	**1.12**	0.49	**0.59**	0.15
132322	1745	1RB-Mid Rear	Fig.27	18.68	19.5	0.985	**1.19**	0.503	**0.61**	-0.1
132572	1770	1RB-Mid Rear	/	18.59	19.5	0.89	**1.10**	0.459	**0.57**	-0.09
132572	1770	100RB Rear	/	18.58	19.5	0.867	**1.07**	0.446	**0.55**	0.06
132072	1720	1RB-Mid Left	/	18.72	19.5	<0.01	<0.01	<0.01	<0.01	/
132072	1720	1RB-Mid Right	/	18.72	19.5	<0.01	<0.01	<0.01	<0.01	/
132072	1720	1RB-Mid Bottom	/	18.72	19.5	0.89	**1.07**	0.459	**0.55**	-0.14
132322	1745	1RB-Mid Bottom	/	18.68	19.5	0.91	**1.10**	0.471	**0.57**	0.01
132572	1770	1RB-Mid Bottom	/	18.59	19.5	0.828	**1.02**	0.429	**0.53**	0.07
132572	1770	100RB Bottom	/	18.58	19.5	0.804	**0.99**	0.414	**0.51**	-0.13
132072	1720	50RB-High Front	/	18.72	19.5	0.369	**0.44**	0.201	**0.24**	0.05
132072	1720	50RB-High Rear	/	18.72	19.5	0.899	**1.08**	0.469	**0.56**	-0.16
132072	1720	50RB-High Left	/	18.72	19.5	<0.01	<0.01	<0.01	<0.01	/
132072	1720	50RB-High Right	/	18.72	19.5	<0.01	<0.01	<0.01	<0.01	/
132072	1720	50RB-High Bottom	/	18.72	19.5	0.842	**1.01**	0.432	**0.52**	-0.18

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-28: SAR Values (LTE Band71 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz											
133322	683	1RB-Mid	Left	Cheek	/	23.96	25	0.186	**0.24**	0.149	**0.19**	0.06
133322	683	1RB-Mid	Left	Tilt	/	23.96	25	0.133	**0.17**	0.108	**0.14**	-0.17
133322	683	1RB-Mid	Right	Cheek	Fig.28	23.96	25	0.201	**0.26**	0.161	**0.20**	0.08
133322	683	1RB-Mid	Right	Tilt	/	23.96	25	0.133	**0.17**	0.108	**0.14**	-0.09
133322	683	50RB-Low	Left	Cheek	/	23.13	24	0.159	**0.19**	0.127	**0.16**	0.09
133322	683	50RB-Low	Left	Tilt	/	23.13	24	0.11	**0.13**	0.089	**0.11**	0.11
133322	683	50RB-Low	Right	Cheek	/	23.13	24	0.175	**0.21**	0.14	**0.17**	0.18
133322	683	50RB-Low	Right	Tilt	/	23.13	24	0.115	**0.14**	0.094	**0.11**	-0.07

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-29: SAR Values (LTE Band71 – Body)

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C						
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
Ch.	MHz									
133322	683	1RB-Middle Front	/	23.96	25	0.236	**0.30**	0.184	**0.23**	0.17
133322	683	1RB-Middle Rear	Fig.29	23.96	25	0.374	**0.48**	0.287	**0.36**	-0.04
133322	683	1RB-Middle Left	/	23.96	25	0.277	**0.35**	0.198	**0.25**	-0.09
133322	683	1RB-Middle Right	/	23.96	25	0.228	**0.29**	0.165	**0.21**	0.09
133322	683	1RB-Mid Bottom	/	23.96	25	0.083	**0.11**	0.048	**0.06**	-0.1
133322	683	50RB-Low Front	/	23.13	24	0.2	**0.24**	0.154	**0.19**	0.07
133322	683	50RB-Low Rear	/	23.13	24	0.313	**0.38**	0.241	**0.29**	0.08
133322	683	50RB-Low Left	/	23.13	24	0.215	**0.26**	0.154	**0.19**	-0.07
133322	683	50RB-Low Right	/	23.13	24	0.182	**0.22**	0.13	**0.16**	-0.14
133322	683	50RB-Low Bottom	/	23.13	24	0.067	**0.08**	0.039	**0.05**	0.01

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

Note2: The LTE mode is QPSK_20MHz.

14.2 WLAN Evaluation for 2.4G

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.

SAR Test reduction was applied from KDB 248227 guidance, when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

Head Evaluation

Table 14.2-1: SAR Values (WLAN - Head)– 802.11b

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		**Side**	**Test Position**	**Note**	**Conducted Power (dBm)**	**Max. tune-up Power (dBm)**	**Measured SAR(1g) (W/kg)**	**Reported SAR(1g)(W/kg)**	**Measured SAR(10g) (W/kg)**	**Reported SAR(10g)(W/kg)**	**Power Drift (dB)**
Ch.	MHz										
11	2462	Left	Cheek	Fig.30	17.96	18.5	0.985	**1.12**	0.514	**0.58**	0.04
6	2437	Left	Cheek	/	18.08	18.5	0.8	**0.88**	0.418	**0.46**	-0.12
1	2412	Left	Cheek	/	17.81	18.5	0.852	**1.00**	0.433	**0.51**	0.02
6	2437	Left	Tilt	/	18.08	18.5	0.568	**0.63**	0.295	**0.32**	0.07
6	2437	Right	Cheek	/	18.08	18.5	0.411	**0.45**	0.243	**0.27**	-0.06
6	2437	Right	Tilt	/	18.08	18.5	0.256	**0.28**	0.149	**0.16**	-0.11

Table 14.2-2: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃							
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.						
2462	11	Left	Cheek	100%	100%	**1.12**	**1.12**

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

Body Evaluation

Table 14.2-3: SAR Values (WLAN - Body)– 802.11b

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Note/ Fig.No	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Power Drift (dB)
Ch.	MHz									
6	2437	Front	Note1	19.54	20.5	0.164	**0.20**	0.096	**0.12**	0.18
6	2437	Rear	Note1	19.54	20.5	0.199	**0.25**	0.111	**0.14**	0.14
6	2437	Front	Note2	19.54	20.5	0.404	**0.50**	0.224	**0.28**	-0.13
6	2437	Rear	Note2/ Fig31	19.54	20.5	0.492	**0.61**	0.264	**0.33**	0.05
6	2437	Right	Note2	19.54	20.5	0.477	**0.60**	0.221	**0.28**	0.09
6	2437	Top	Note2	19.54	20.5	0.122	**0.15**	0.063	**0.08**	-0.18

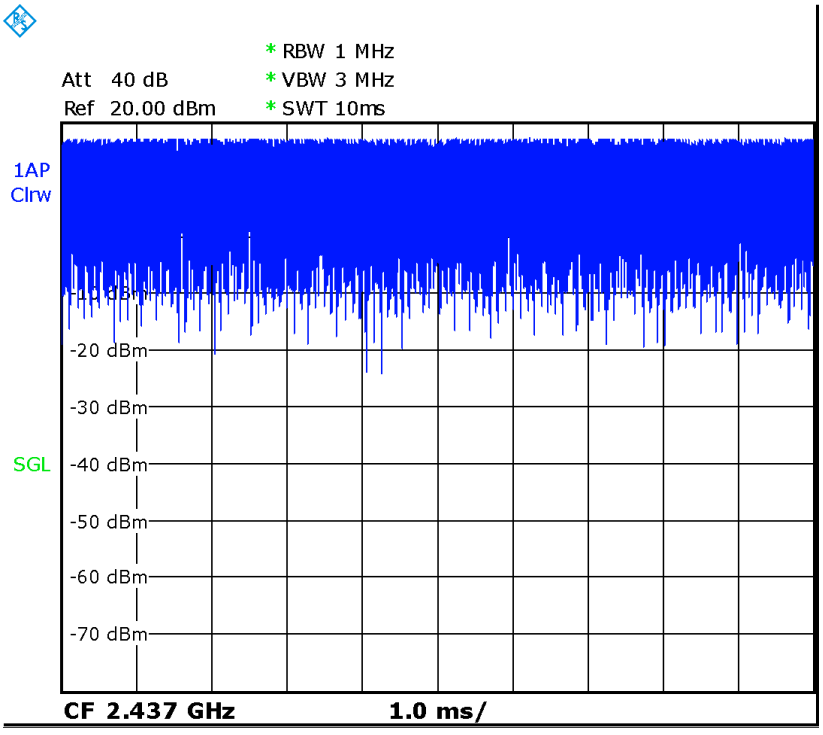
Note1: The distance between the EUT and the phantom bottom is 15mm.

Note2: The distance between the EUT and the phantom bottom is 10mm.

Table 14.2-4: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃						
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
Ch.	MHz					
6	2437	Rear 10mm	100%	100%	**0.61**	**0.61**

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



Picture 14.2-1 Duty factor plot

14.3 WLAN Evaluation For BT

Table 14.3-1: SAR Values (BT - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Fig.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										
78	2480	Left	Cheek	Fig.32	10.34	11	0.058	**0.07**	0.027	**0.03**	-0.06
78	2480	Left	Tilt	/	10.34	11	0.042	**0.05**	0.021	**0.02**	-0.09
78	2480	Right	Cheek	/	10.34	11	<0.01	<0.01	<0.01	<0.01	/
78	2480	Right	Tilt	/	10.34	11	<0.01	<0.01	<0.01	<0.01	/

Table 14.3-2: SAR Values (BT - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Fig.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									
78	2480	Front	/	10.34	11	<0.01	<0.01	<0.01	<0.01	/
78	2480	Rear	Fig.33	10.34	11	0.017	**0.02**	0.006	**0.01**	0.04
78	2480	Left	/	10.34	11	<0.01	<0.01	<0.01	<0.01	/
78	2480	Top	/	10.34	11	<0.01	<0.01	<0.01	<0.01	/

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

14.4 SAR results for 10-g extremity SAR

According to the KDB648474 D04, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg. If power reduction applied for hotspot mode, the SAR values should be scaled to normal power, and then compare it with 1.2W/kg.

Table 14.5-1: SAR Values for phablet

Band	Frequency		Test Mode	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								
GSM1900	810	1909.8	Rear GPRS(2)	24.15	25.5	3.18	**4.34**	1.29	**1.76**	0.15
GSM1900	661	1880	Rear GPRS(2)	24.01	25.5	3.63	**5.12**	1.58	**2.23**	0.16
GSM1900	512	1850.2	Rear GPRS(2)	23.98	25.5	3.25	**4.61**	1.42	**2.02**	0.06
GSM1900	810	1909.8	Bottom GPRS(2)	24.15	25.5	4.04	**5.51**	1.65	**2.25**	-0.09
GSM1900	661	1880	Bottom GPRS(2)	24.01	25.5	3.71	**5.23**	1.52	**2.14**	-0.06
GSM1900	512	1850.2	Bottom GPRS(2)	23.98	25.5	2.73	**3.87**	1.13	**1.60**	0.15
WCDMA1900	9538	1907.6	RMC Rear	20.02	21	5.16	**6.47**	2.13	**2.67**	-0.14
WCDMA1900	9400	1880	RMC Rear	20.01	21	5.52	**6.93**	2.28	**2.86**	0.03
WCDMA1900	9262	1852.4	RMC Rear	20.12	21	6.03	**7.38**	2.51	**3.07**	0.07
WCDMA1900	9538	1907.6	RMC Bottom	20.02	21	5.14	**6.44**	2.08	**2.61**	-0.15
WCDMA1900	9400	1880	RMC Bottom	20.01	21	5.9	**7.41**	2.35	**2.95**	-0.02
WCDMA1900	9262	1852.4	RMC Bottom	20.12	21	6.19	**7.58**	2.48	**3.04**	-0.07
WCDMA1700	1513	1752.6	RMC Rear	20.07	21.5	4.08	**5.67**	1.71	**2.38**	-0.05
WCDMA1700	1412	1732.5	RMC Rear	20.08	21.5	4.35	**6.03**	1.85	**2.57**	-0.08
WCDMA1700	1312	1712.4	RMC Rear	20.18	21.5	4.36	**5.91**	1.85	**2.51**	-0.08
WCDMA1700	1513	1752.6	RMC Bottom	20.07	21.5	4.73	**6.57**	1.92	**2.67**	-0.04
WCDMA1700	1412	1732.5	RMC Bottom	20.08	21.5	4.75	**6.59**	1.94	**2.69**	-0.12
WCDMA1700	1312	1712.4	RMC Bottom	20.18	21.5	4.66	**6.32**	1.9	**2.57**	0.07
LTE Band25	26590	1905	1RB-Mid Rear	20.75	21	5.14	**5.44**	2.22	**2.35**	-0.09
LTE Band25	26365	1882.5	1RB-Mid Rear	20.73	21	5.32	**5.66**	2.33	**2.48**	0.15
LTE Band25	26140	1860	1RB-Mid Rear	20.71	21	5.67	**6.06**	2.51	**2.68**	0.06
LTE Band25	26590	1905	1RB-Mid Bottom	20.75	21	5.83	**6.18**	2.35	**2.49**	0.16
LTE Band25	26365	1882.5	1RB-Mid Bottom	20.73	21	6.28	**6.68**	2.51	**2.67**	-0.11
LTE Band25	26140	1860	1RB-Mid Bottom	20.71	21	6.63	**7.09**	2.67	**2.85**	0.05
LTE Band25	26590	1905	50RB-Low Rear	20.76	21	6.65	**7.03**	2.68	**2.83**	-0.09
LTE Band25	26365	1882.5	50RB-Low Rear	20.74	21	6.81	**7.23**	2.77	**2.94**	0.06
LTE Band25	26140	1860	50RB-Low Rear	20.73	21	7.21	**7.67**	2.98	**3.17**	0.01
LTE Band25	26590	1905	50RB-Low Bottom	20.76	21	6.1	**6.45**	2.44	**2.58**	-0.08

LTE Band25	26365	1882.5	50RB-Low Bottom	20.74	21	6.55	**6.95**	2.61	**2.77**	-0.08
LTE Band25	26140	1860	50RB-Low Bottom	20.73	21	6.88	**7.32**	2.74	**2.92**	-0.19
LTE Band66	132072	1720	1RB-Mid Bottom	20.43	21	6.34	**7.23**	2.68	**3.06**	0.09
LTE Band66	132322	1745	1RB-Mid Bottom	20.31	21	6.11	**7.16**	2.53	**2.97**	0.07
LTE Band66	132572	1770	1RB-Mid Bottom	20.3	21	5.59	**6.57**	2.32	**2.73**	0.09
LTE Band66	132072	1720	50RB-High Rear	20.43	21	5.8	**6.61**	2.59	**2.95**	0.09
LTE Band66	132322	1745	50RB-High Rear	20.31	21	6.52	**7.64**	2.69	**3.15**	0.1
LTE Band66	132572	1770	50RB-High Rear	20.3	21	6.28	**7.38**	2.61	**3.07**	0.04
LTE Band66	132072	1720	50RB-High Bottom	20.44	21	6.6	**7.51**	2.78	**3.16**	0.12
LTE Band66	132322	1745	50RB-High Bottom	20.23	21	5.9	**7.04**	2.43	**2.90**	-0.18
LTE Band66	132572	1770	50RB-High Bottom	20.22	21	5.13	**6.14**	2.12	**2.54**	0.18
WIFI2.4G	6	2437	Rear	19.54	20.5	2.24	**2.79**	1.03	**1.28**	0.12

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

15 SAR Measurement Variability

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

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

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

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

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

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

Table 15.1: SAR Measurement Variability for Head&Body

Band	Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
	Ch.	MHz							
GSM1900	810	1909.8	GPRS(2)	Rear	10	0.991	0.985	1.01	/
GSM1900	810	1909.8	GPRS(2)	Bottom	10	0.975	0.962	1.01	/
WCDMA1900	9262	1852.4	RMC	Rear	10	0.832	0.817	1.02	/
WCDMA1900	9400	1880	RMC	Bottom	10	0.889	0.874	1.02	/
LTE B25	26140	1860	1RB-Mid	Rear	10	0.989	0.978	1.01	/
LTE B25	26365	1882.5	1RB-Mid	Bottom	10	0.978	0.965	1.01	/
LTE B66	132322	1745	1RB-Mid	Rear	10	0.985	0.964	1.02	/
LTE B66	132322	1745	1RB-Mid	Bottom	10	0.91	0.902	1.01	/
WIFI2.4G	11	2462	802.11b	Left Cheek	0	0.985	0.977	1.01	/

16 Measurement Uncertainty

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

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

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

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

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

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

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	∞
2	Isotropy	B	4.7	R	√3	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	√3	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	√3	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	√3	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	√3	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	√3	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	√3	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	√3	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	√3	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	√3	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	√3	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	√3	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	√3	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	√3	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	√3	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	√3	0.64	0.43	1.8	1.2	∞

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

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5

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

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 14, 2022	One year
02	Power sensor	NRP110T	101139	January 13, 2022	One year
03	Power sensor	NRP110T	101159		
04	Signal Generator	E4438C	MY49071430	January 13, 2022	One year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	159850	January 24, 2022	One year
07	E-field Probe	SPEAG EX3DV4	7548	August 1, 2022	One year
08	DAE	SPEAG DAE4	1331	September 1, 2021	One year
09	Dipole Validation Kit	SPEAG D750V3	1017	July 20,,2022	One year
10	Dipole Validation Kit	SPEAG D900V2	1d051	July 26,,2022	One year
11	Dipole Validation Kit	SPEAG D1800V2	2d145	July 18,,2022	One year
12	Dipole Validation Kit	SPEAG D1900V2	5d101	July 26,2022	One year
13	Dipole Validation Kit	SPEAG D2450V2	853	July 20,2022	One year
14	Dipole Validation Kit	SPEAG D2600V2	1012	July 20,2022	One year

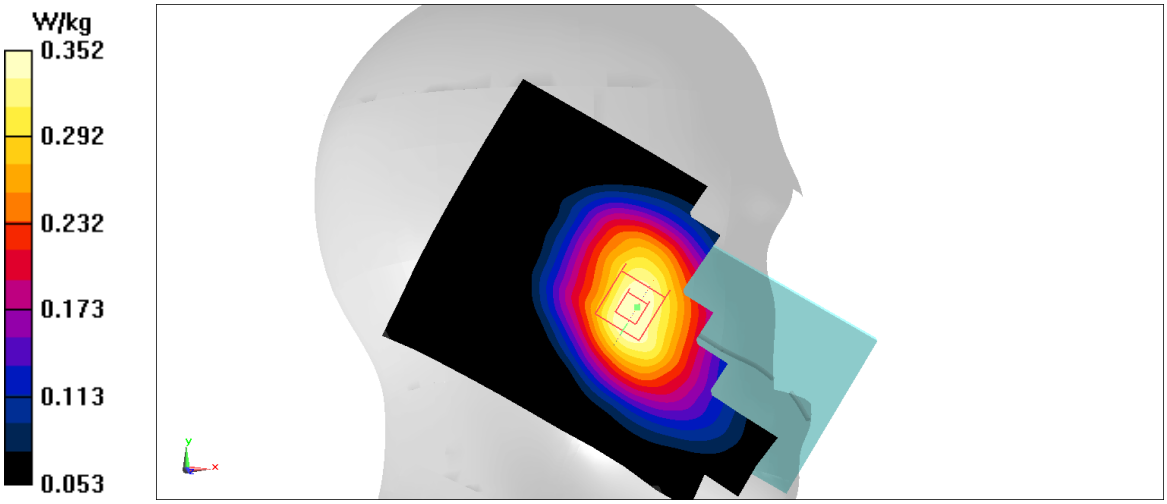
END OF REPORT BODY

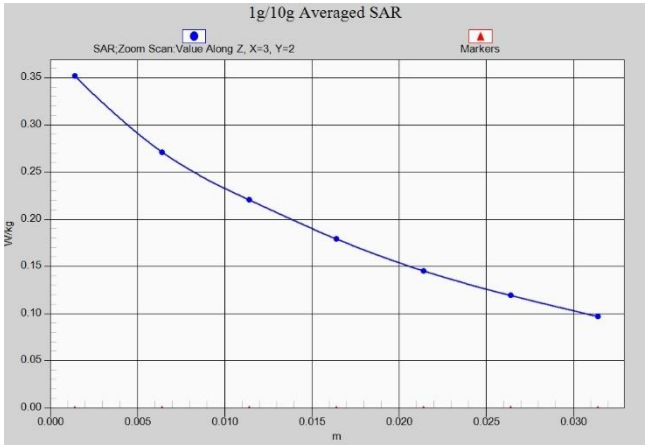
ANNEX A Graph Results

GSM850 Head
Date: 10/22/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 836.6 MHz; σ = 0.86 S/m; ε_r = 43.651; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: GSM850 2TX 836.6 MHz Duty Cycle: 1:4.00037
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.360 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.152 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.384 W/kg
SAR(1 g) = 0.299 W/kg; SAR(10 g) = 0.237 W/kg
Maximum value of SAR (measured) = 0.352 W/kg

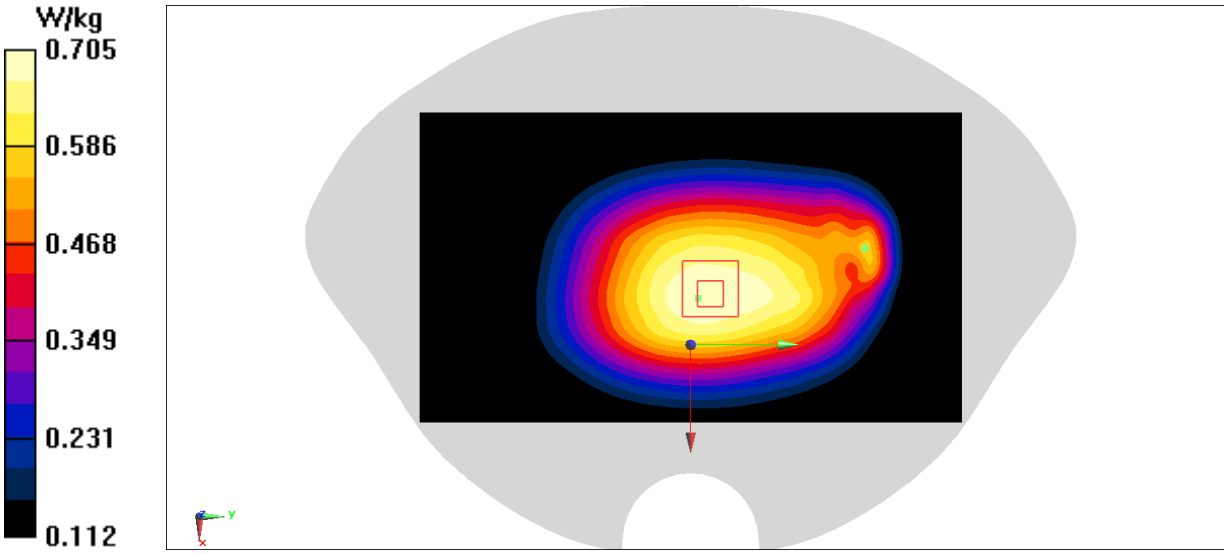


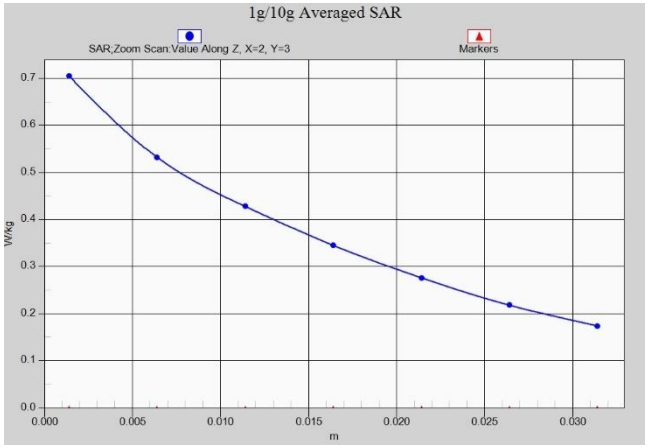


GSM850 Body
Date: 10/22/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 836.6 MHz; σ = 0.86 S/m; ε_r = 43.651; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: GSM850 2TX 836.6 MHz Duty Cycle: 1:4.00037
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.709 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.14 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.776 W/kg
SAR(1 g) = 0.583 W/kg; SAR(10 g) = 0.452 W/kg
Maximum value of SAR (measured) = 0.705 W/kg

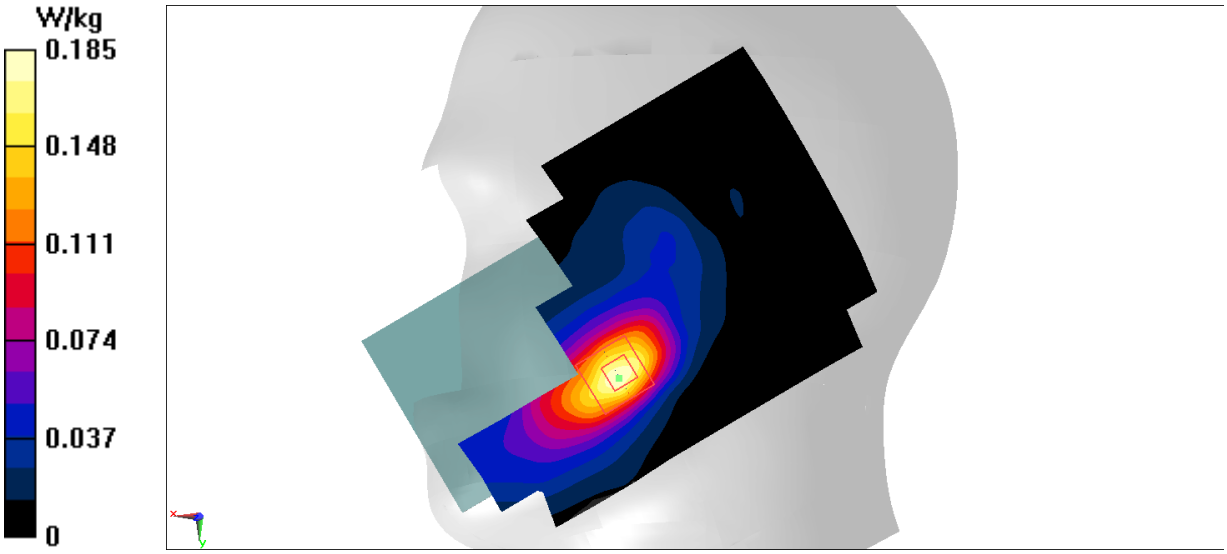


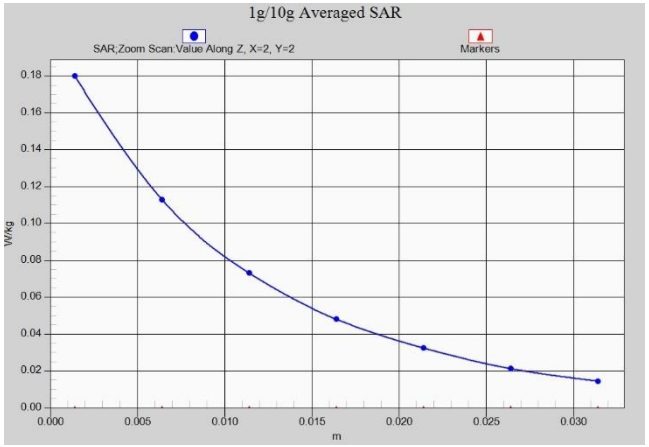


GSM1900 Head
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1880 MHz; σ = 1.477 S/m; ε_r = 40.713; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: GSM1900 2TX 1880 MHz Duty Cycle: 1:4.00037
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.185 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.566 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.209 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.180 W/kg

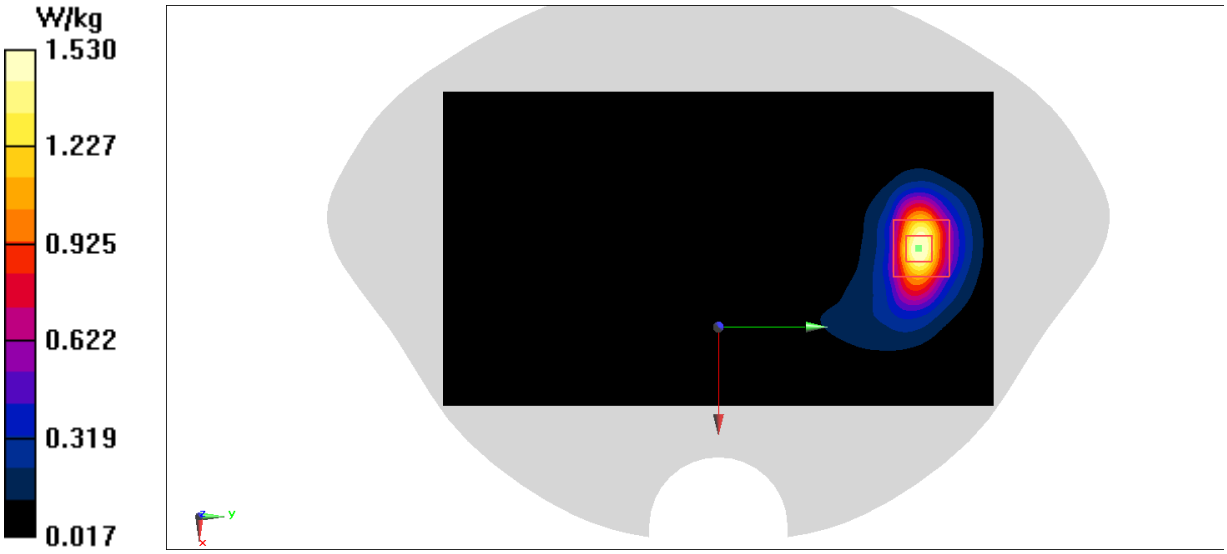


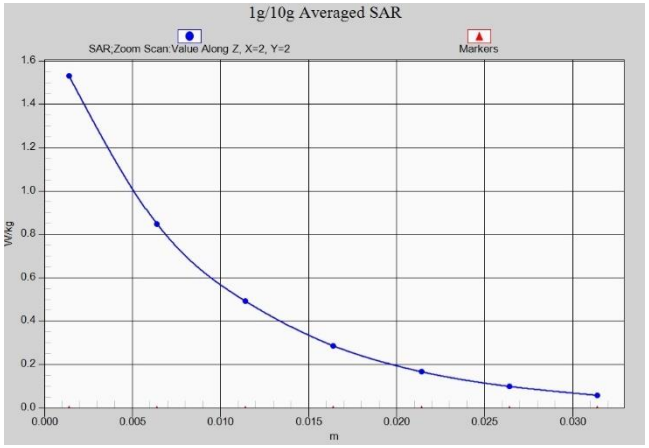


GSM1900 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1910 MHz; σ = 1.499 S/m; ε_r = 40.668; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: GSM1900 2TX 1909.8 MHz Duty Cycle: 1:4.00037
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.417 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.991 W/kg; SAR(10 g) = 0.502 W/kg
Maximum value of SAR (measured) = 1.53 W/kg

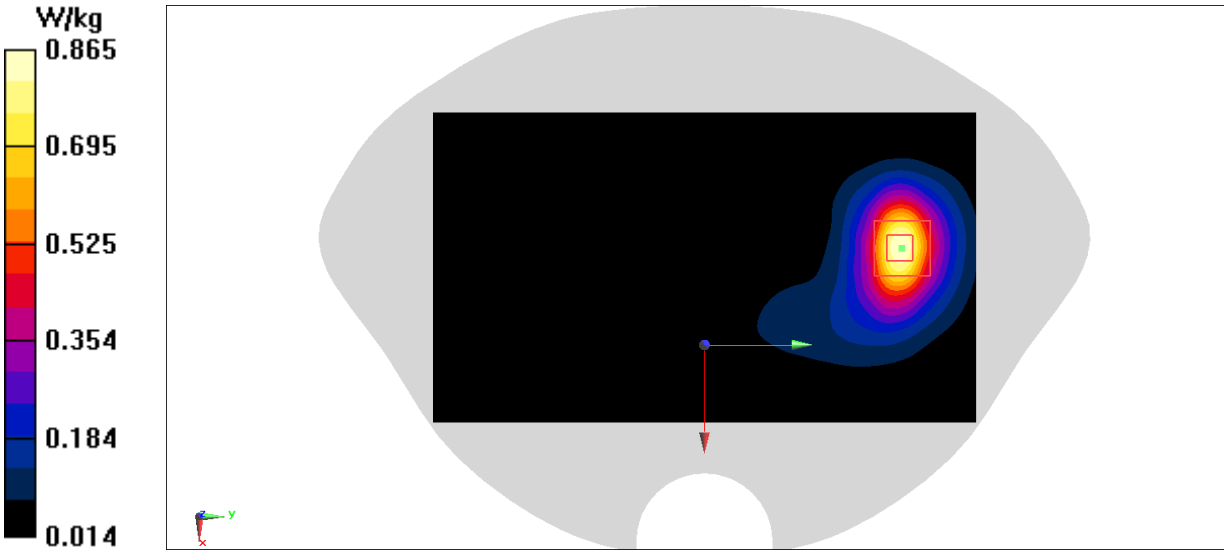


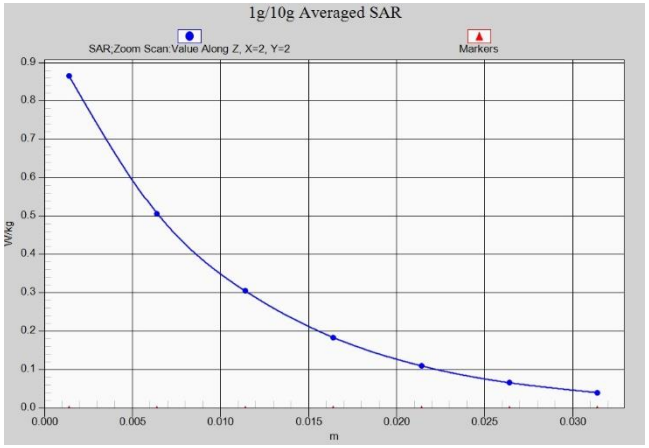


GSM1900 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1910 MHz; σ = 1.499 S/m; ε_r = 40.668; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: GSM1900 2TX 1909.8 MHz Duty Cycle: 1:4.00037
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.879 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.388 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.590 W/kg; SAR(10 g) = 0.322 W/kg
Maximum value of SAR (measured) = 0.865 W/kg

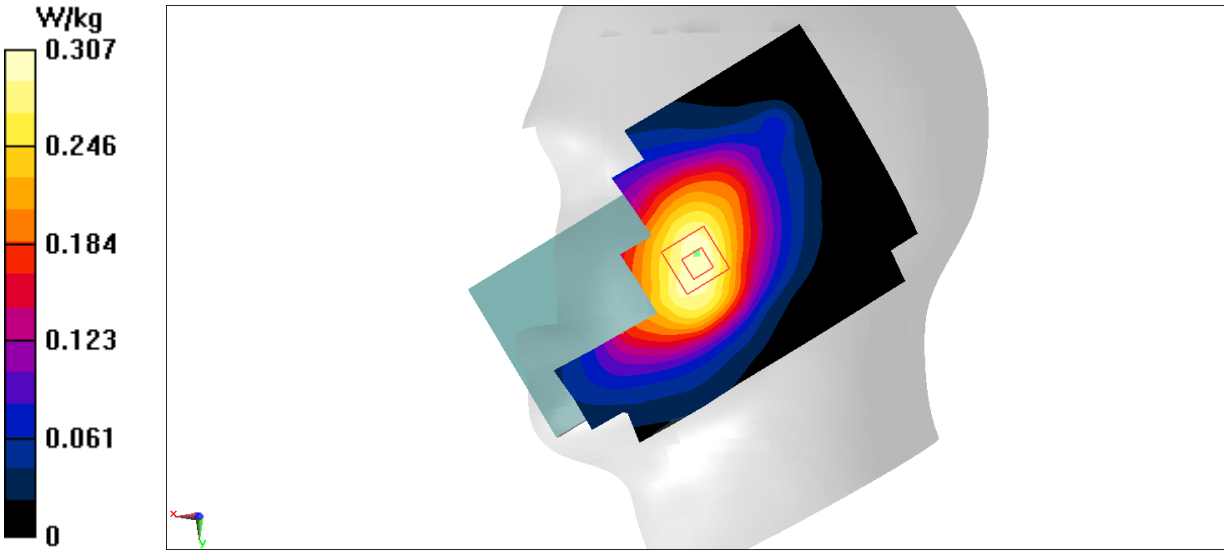


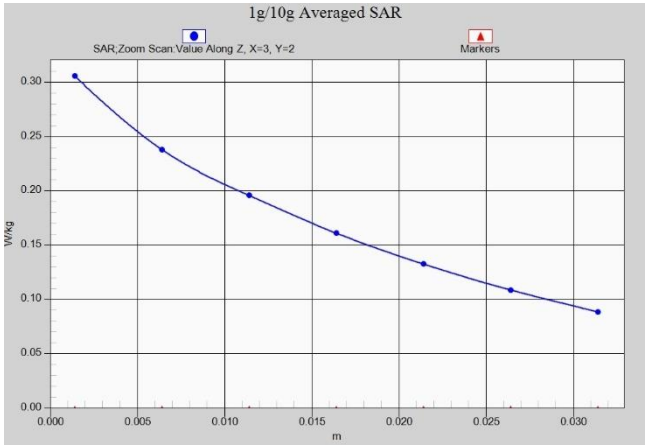


WCDMA850 Head
Date: 10/22/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 846.6 MHz; σ = 0.865 S/m; ε_r = 43.596; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA850(B5) 846.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.307 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.864 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.334 W/kg
SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.205 W/kg
Maximum value of SAR (measured) = 0.306 W/kg

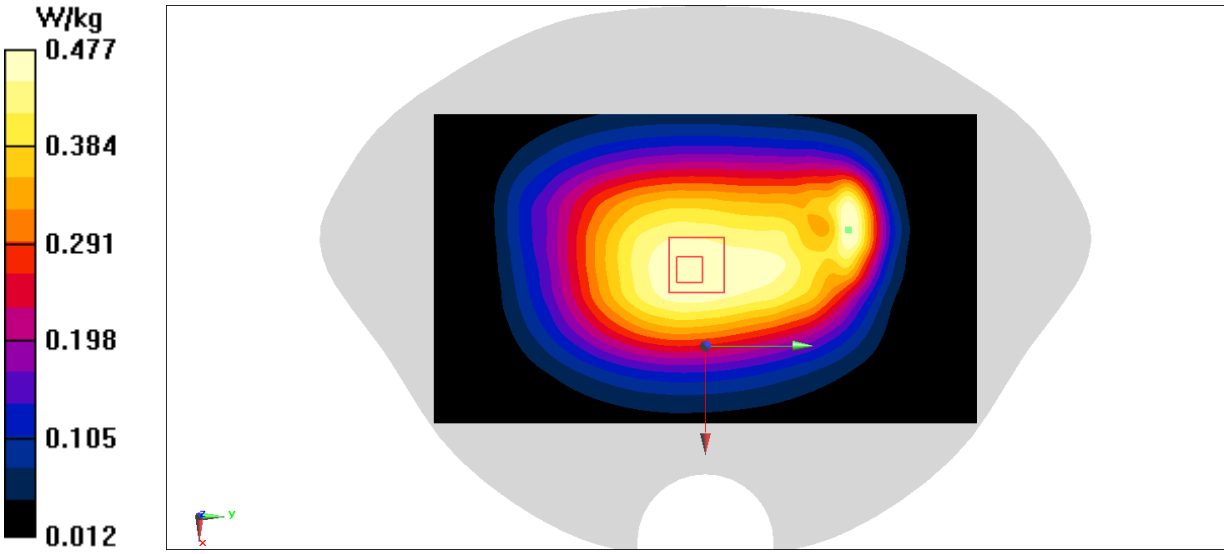


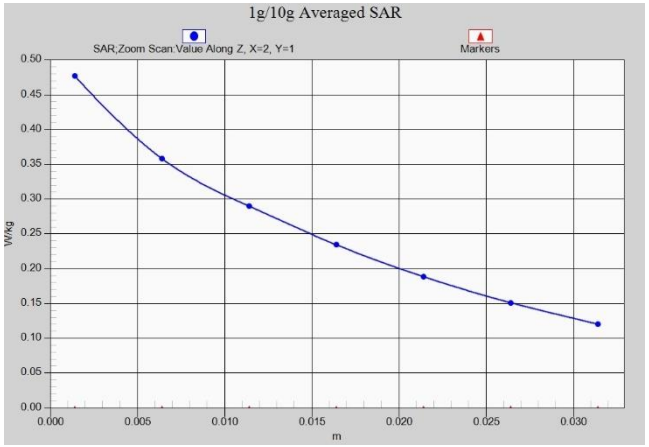


WCDMA850 Body
Date: 10/22/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 826.4 MHz; σ = 0.855 S/m; ε_r = 43.707; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA850(B5) 826.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.502 W/kg

Zoom Scan (7x12x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.13 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.559 W/kg
SAR(1 g) = 0.393 W/kg; SAR(10 g) = 0.305 W/kg
Maximum value of SAR (measured) = 0.477 W/kg

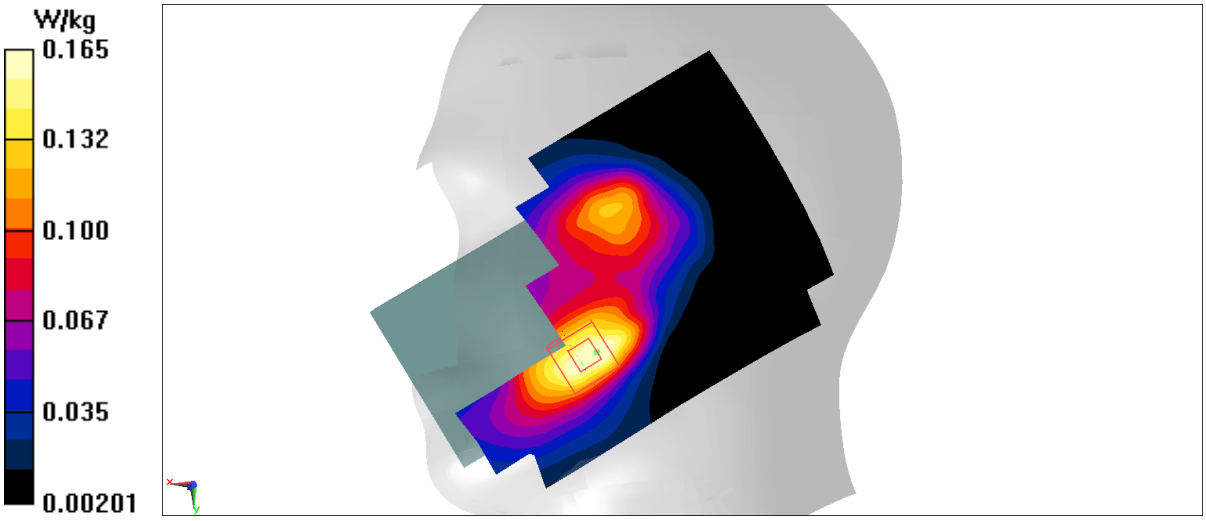


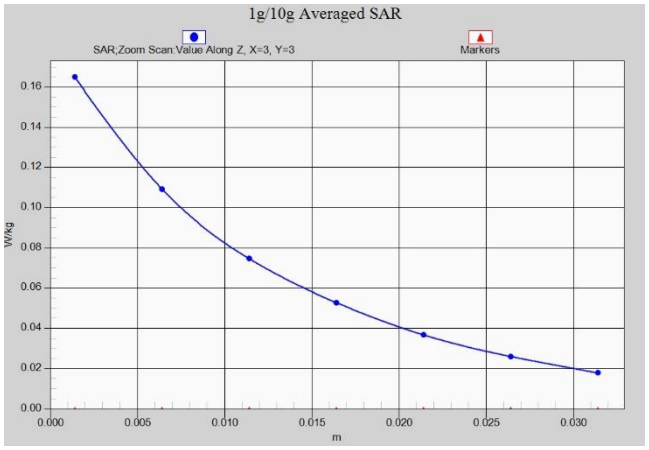


WCDMA1700 Head
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1712.4 MHz; σ = 1.366 S/m; ε_r = 41.178; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1700(B4) 1712.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.173 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.951 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.192 W/kg
SAR(1 g) = 0.125 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.165 W/kg

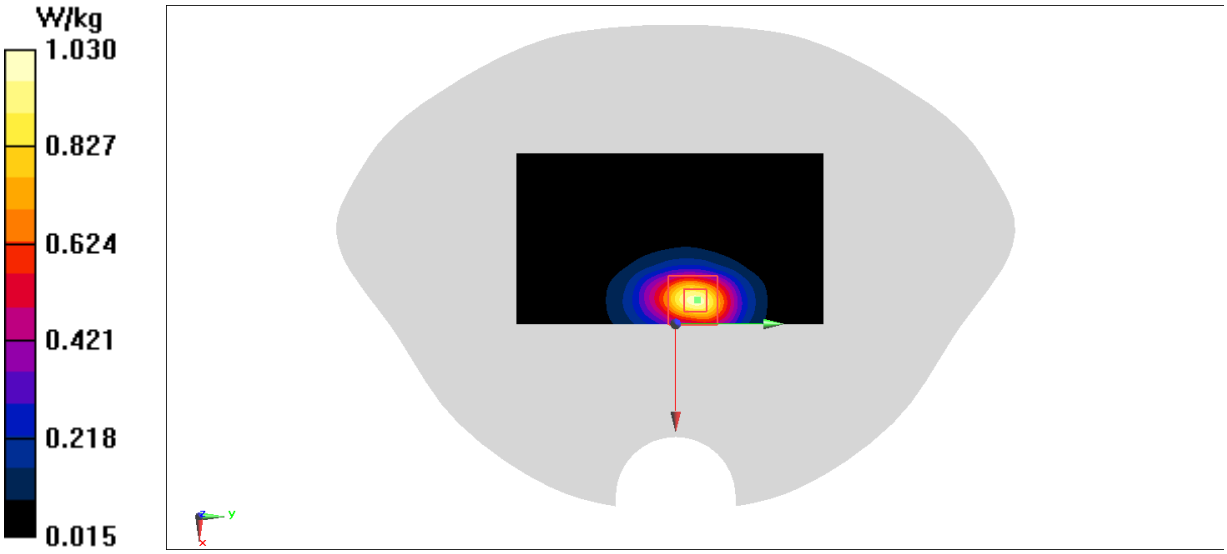


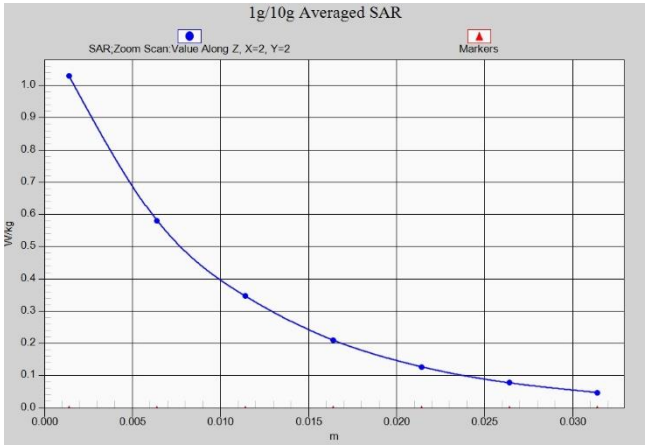


WCDMA1700 Body
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H650-7000M
Medium parameters used: f = 1752.6 MHz; σ = 1.371 S/m; ε_r = 41.91; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1700(B4) 1752.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (51x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.00 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.38 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.674 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 1.03 W/kg

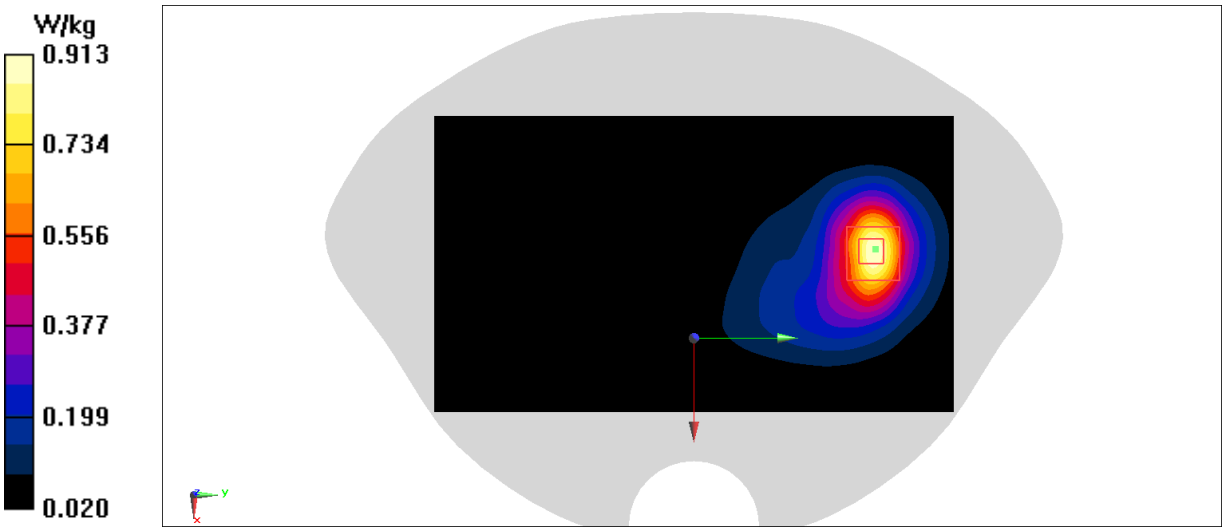


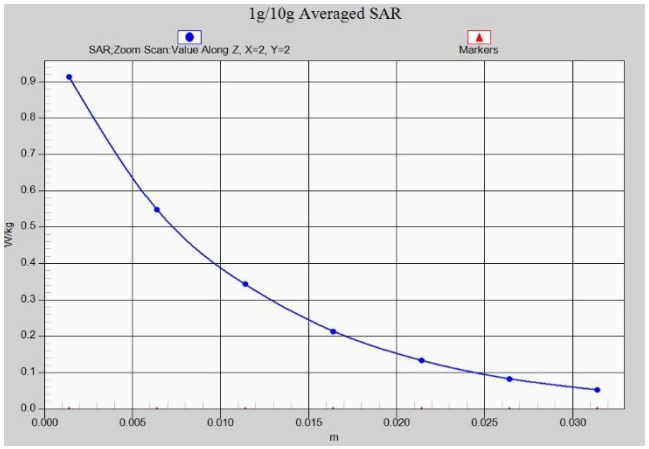


WCDMA1700 Body
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1752.6 MHz; σ = 1.394 S/m; ε_r = 41.025; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1700(B4) 1752.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.907 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.228 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.635 W/kg; SAR(10 g) = 0.358 W/kg
Maximum value of SAR (measured) = 0.913 W/kg

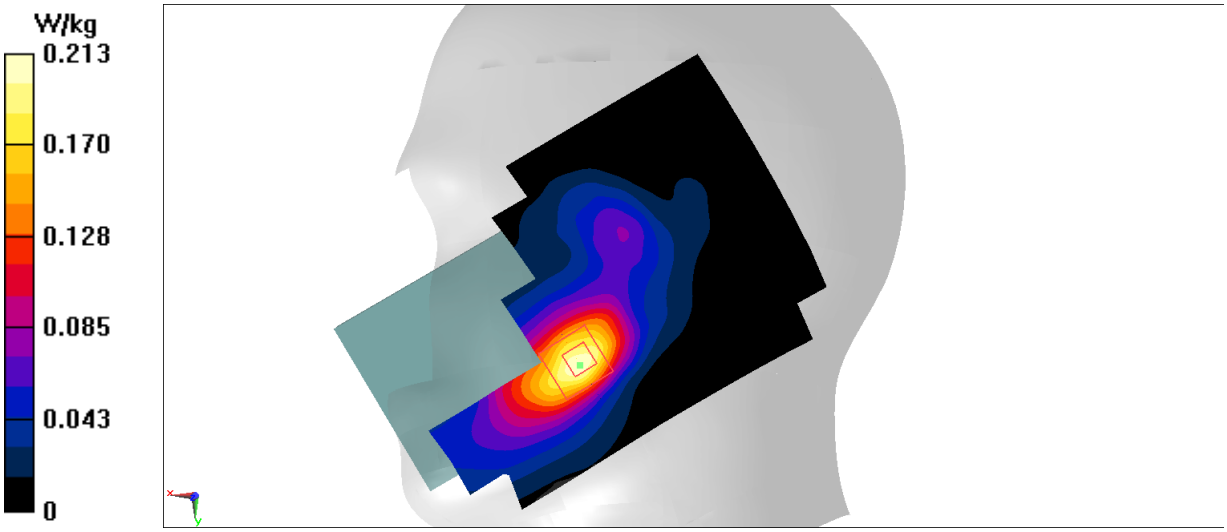


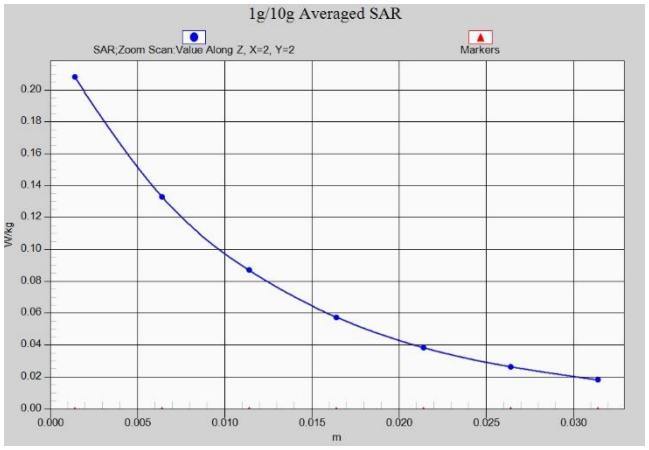


WCDMA1900 Head
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1907.6 MHz; σ = 1.497 S/m; ε_r = 40.673; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1900(B2) 1907.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.213 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.283 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.241 W/kg
SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.091 W/kg
Maximum value of SAR (measured) = 0.208 W/kg

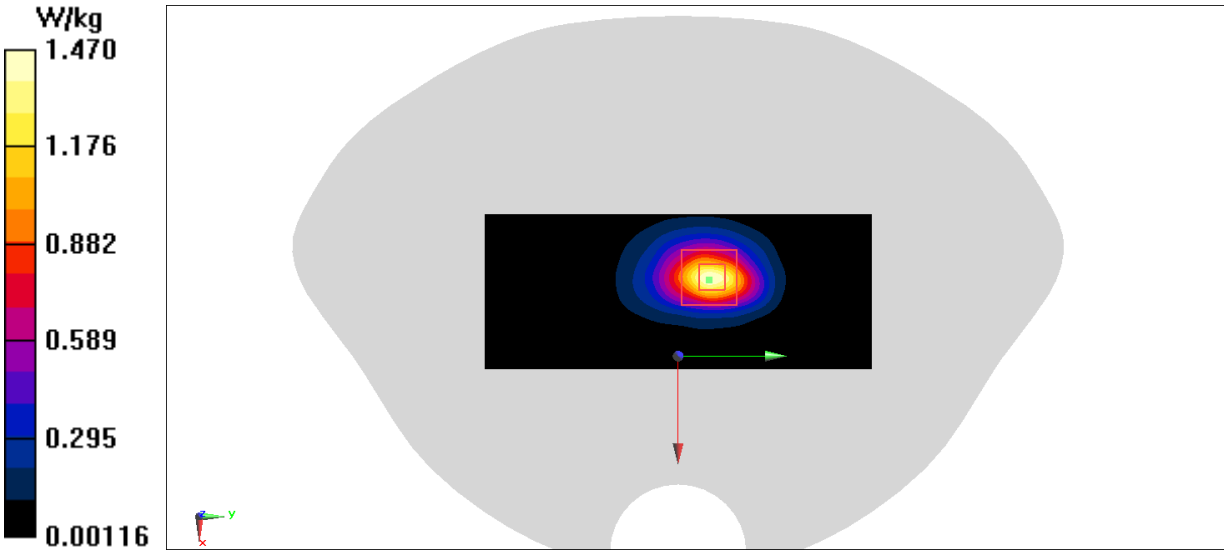


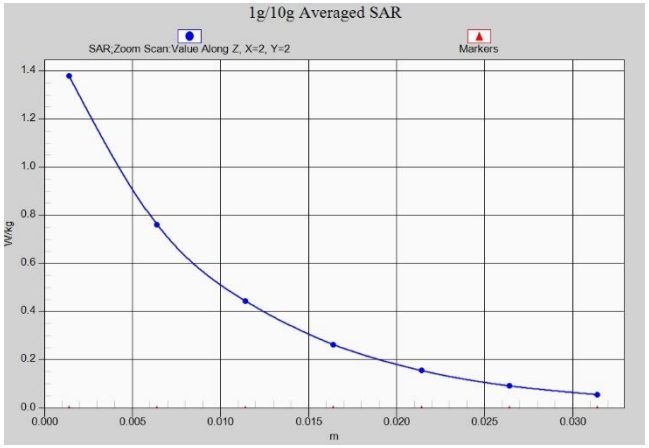


WCDMA1900 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1880 MHz; σ = 1.477 S/m; ε_r = 40.713; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1900(B2) 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.47 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.06 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 0.889 W/kg; SAR(10 g) = 0.449 W/kg
Maximum value of SAR (measured) = 1.38 W/kg

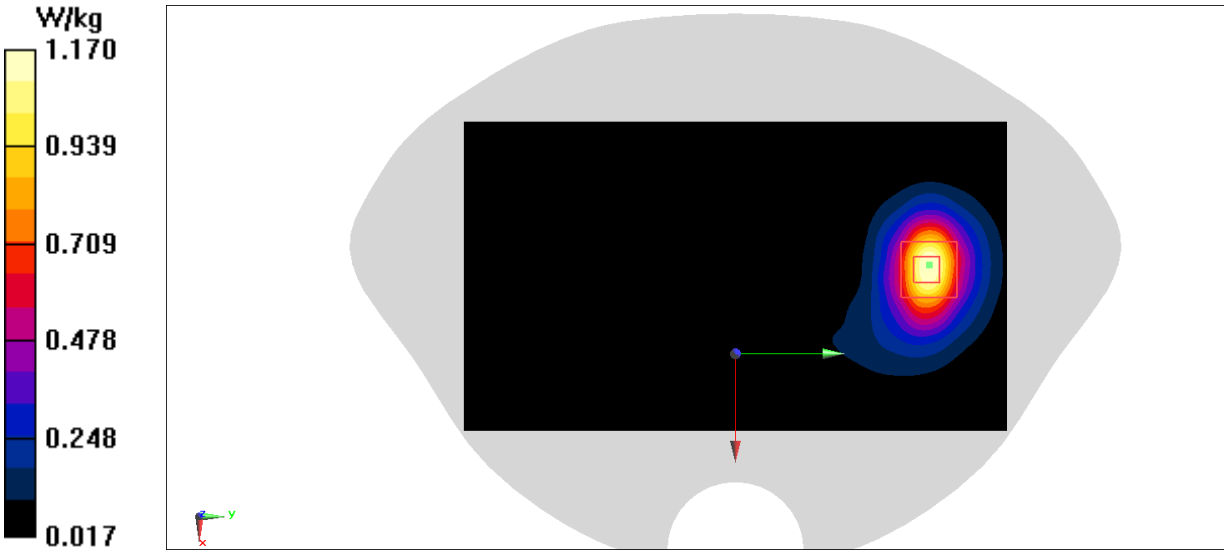


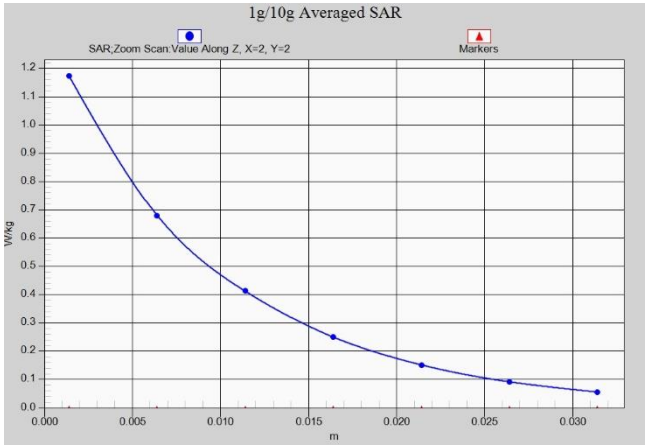


WCDMA1900 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1852.4 MHz; σ = 1.457 S/m; ε_r = 40.77; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WCDMA1900(B2) 1852.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.471 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.796 W/kg; SAR(10 g) = 0.431 W/kg
Maximum value of SAR (measured) = 1.17 W/kg

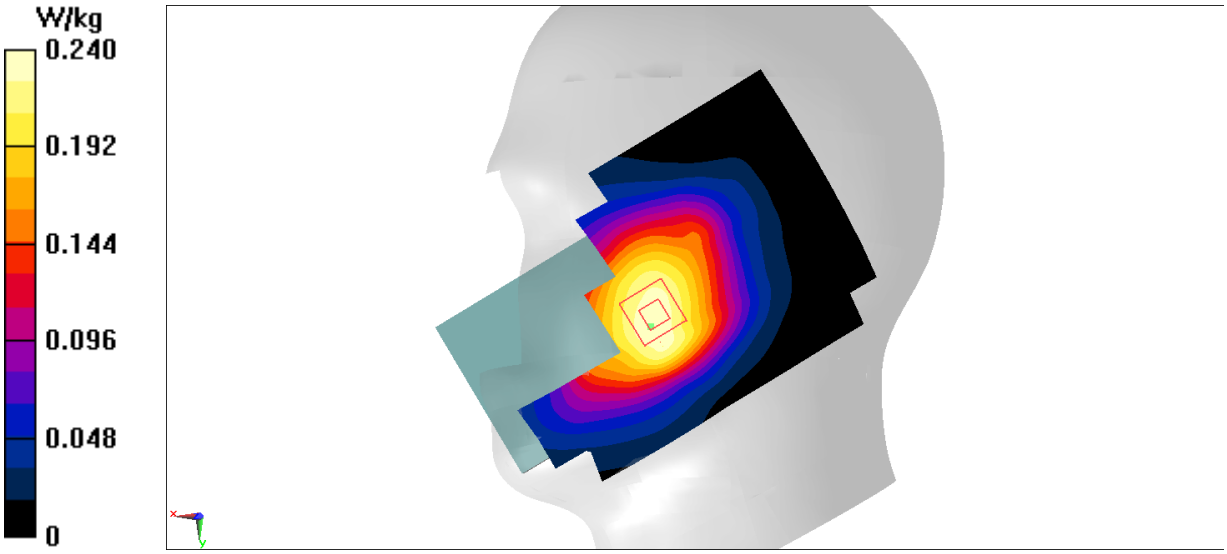


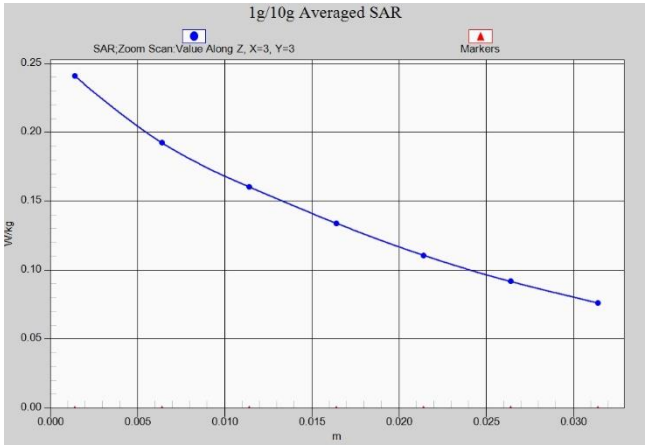


LTE B12 Head
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 704 MHz; σ = 0.802 S/m; ε_r = 44.172; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.240 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.380 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(1 g) = 0.207 W/kg; SAR(10 g) = 0.164 W/kg
Maximum value of SAR (measured) = 0.241 W/kg

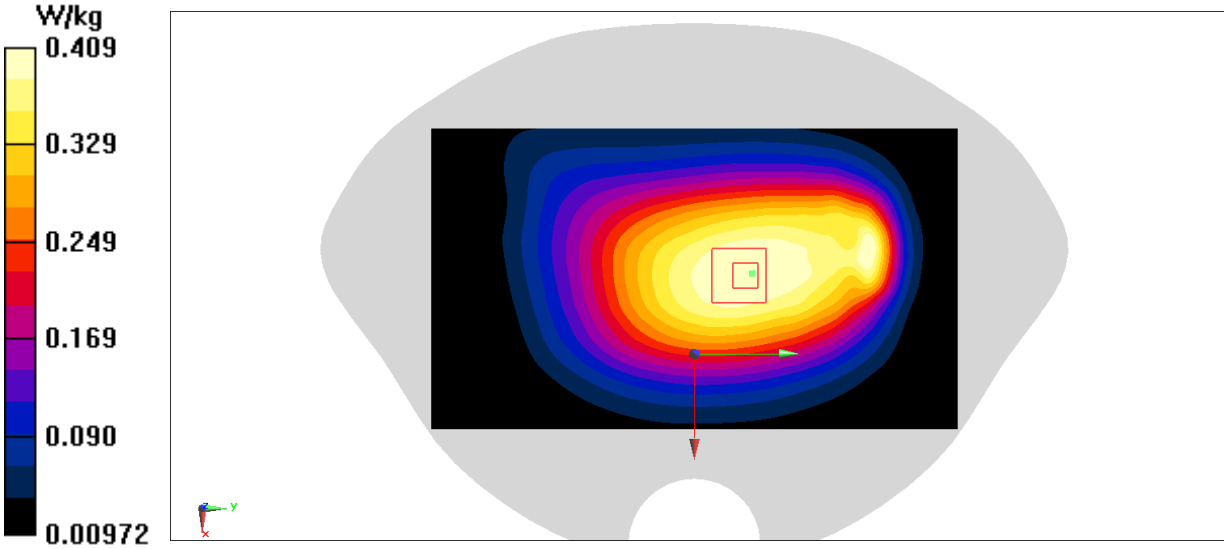


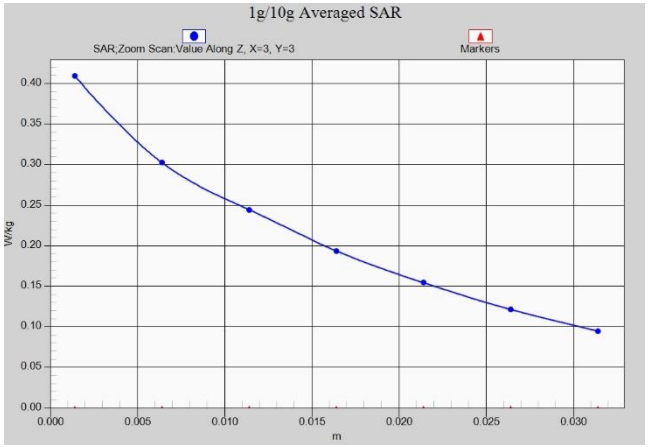


LTE B12 Body
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 704 MHz; σ = 0.802 S/m; ε_r = 44.172; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.413 W/kg

Zoom Scan (7x11x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.61 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.263 W/kg
Maximum value of SAR (measured) = 0.409 W/kg

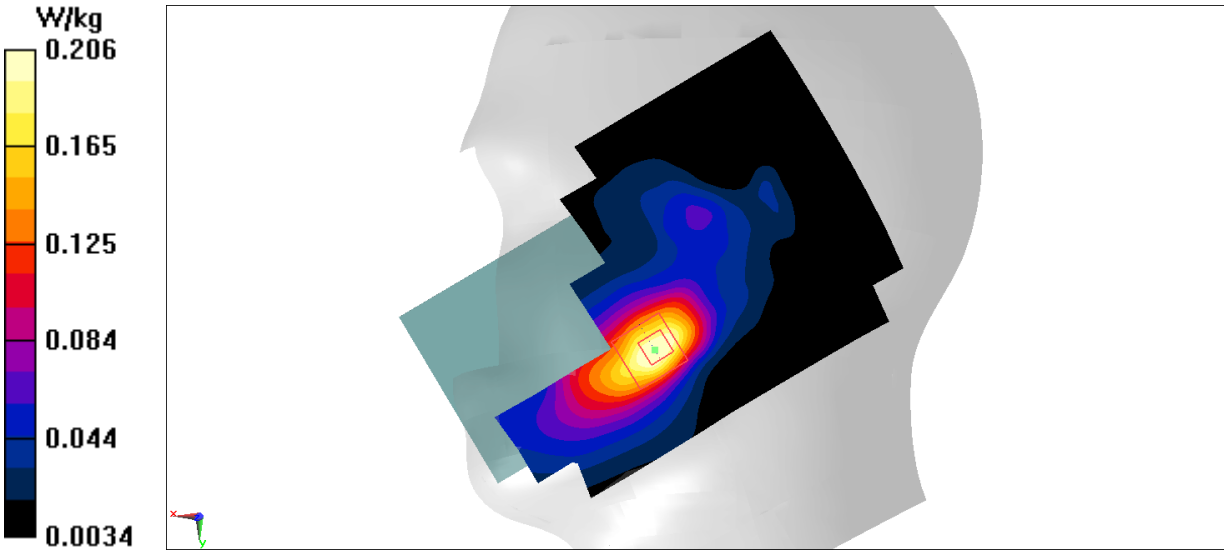


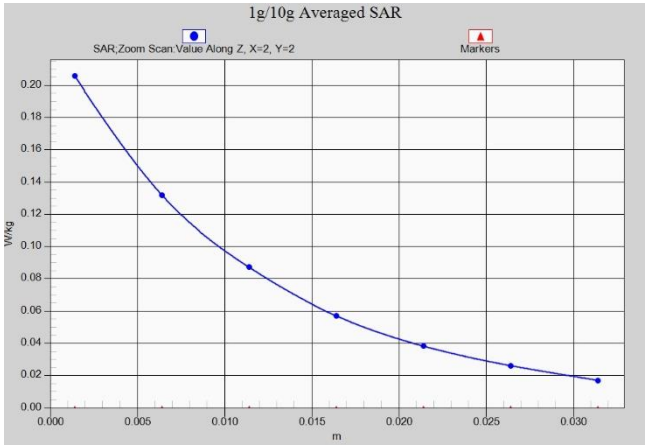


LTE B25 Head
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1905 MHz; σ = 1.495 S/m; ε_r = 40.679; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band25 1905 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.218 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.960 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.089 W/kg
Maximum value of SAR (measured) = 0.206 W/kg

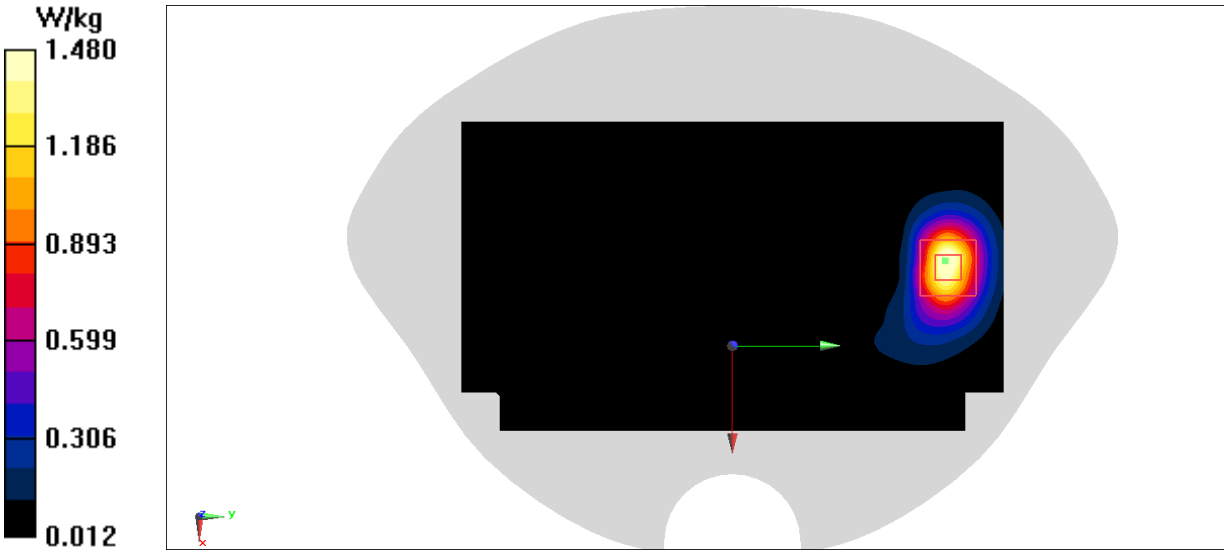


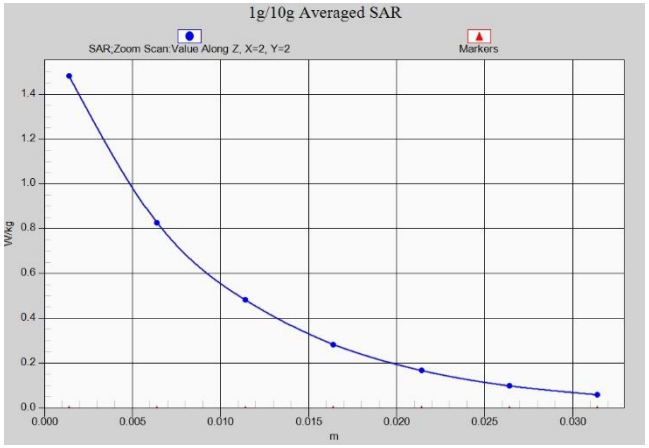


LTE B25 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1860 MHz; σ = 1.473 S/m; ε_r = 42.192; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band25 1860 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.58 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.162 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 0.989 W/kg; SAR(10 g) = 0.500 W/kg
Maximum value of SAR (measured) = 1.48 W/kg

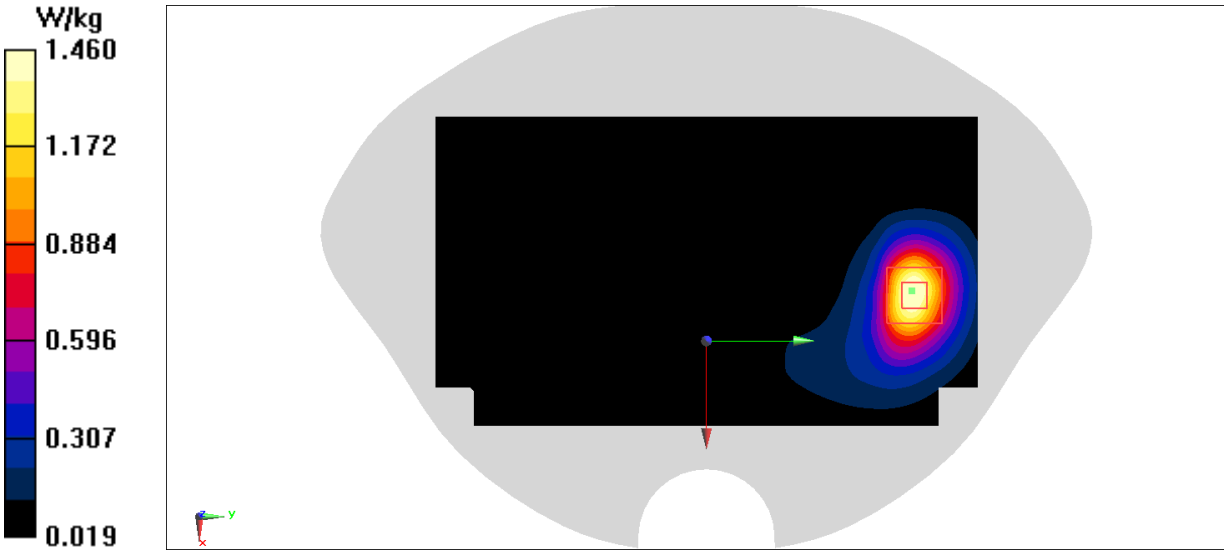


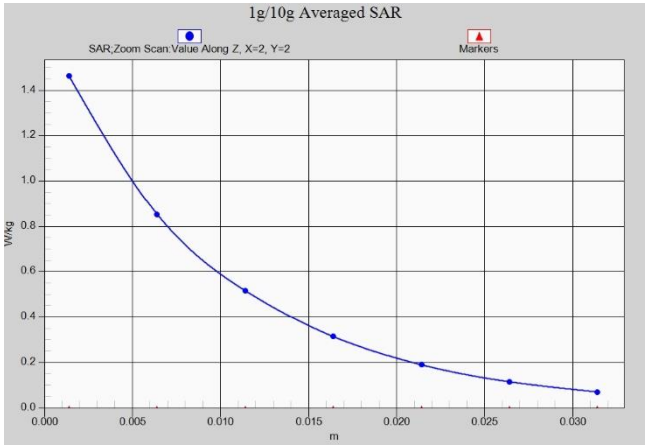


LTE B25 Body
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1860 MHz; σ = 1.473 S/m; ε_r = 42.192; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band25 1860 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.8, 7.8, 7.8)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.746 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.548 W/kg
Maximum value of SAR (measured) = 1.46 W/kg

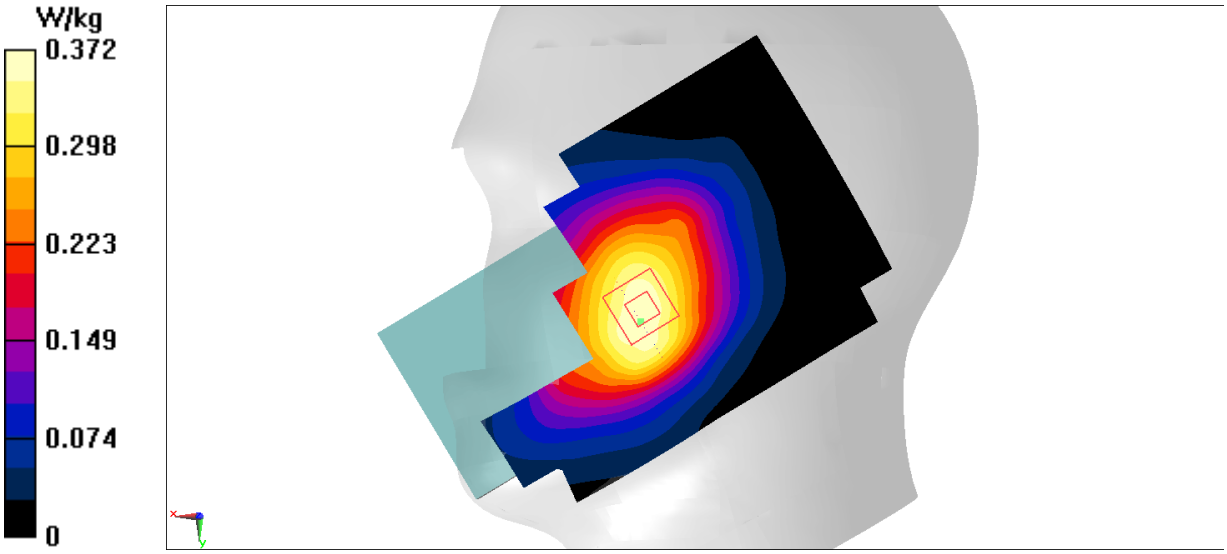


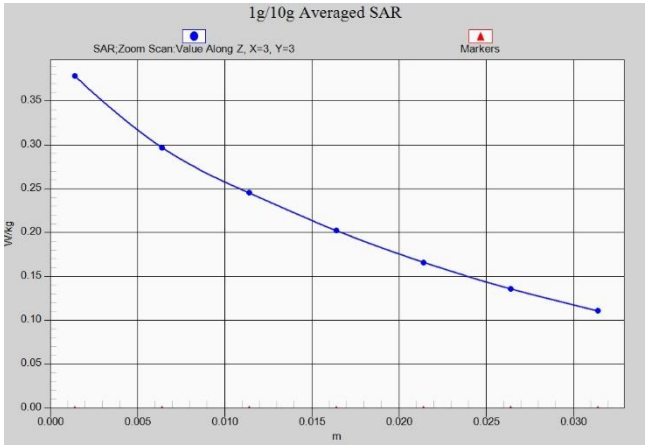


LTE B26 Head
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 831.5 MHz; σ = 0.858 S/m; ε_r = 43.68; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band26 15M 831.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.372 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.847 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.251 W/kg
Maximum value of SAR (measured) = 0.379 W/kg

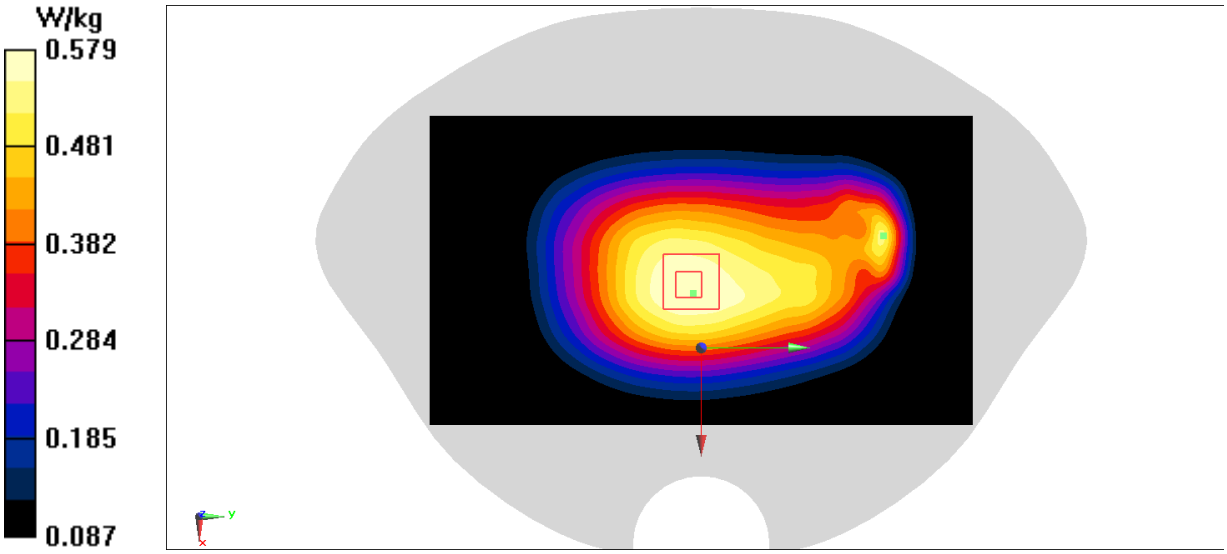


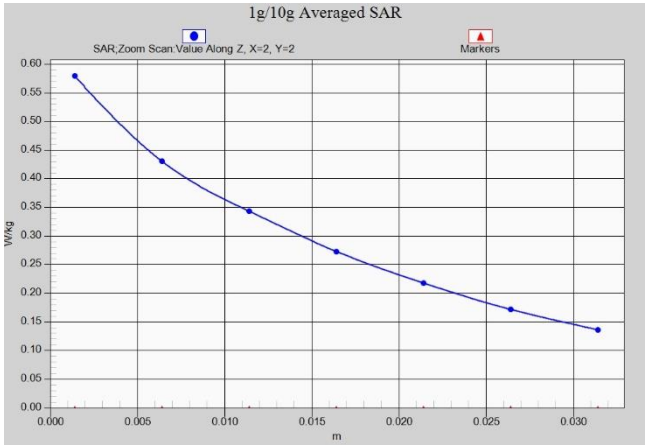


LTE B26 Body
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 831.5 MHz; σ = 0.858 S/m; ε_r = 43.68; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band26 15M 831.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.583 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.64 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.641 W/kg
SAR(1 g) = 0.477 W/kg; SAR(10 g) = 0.368 W/kg
Maximum value of SAR (measured) = 0.579 W/kg

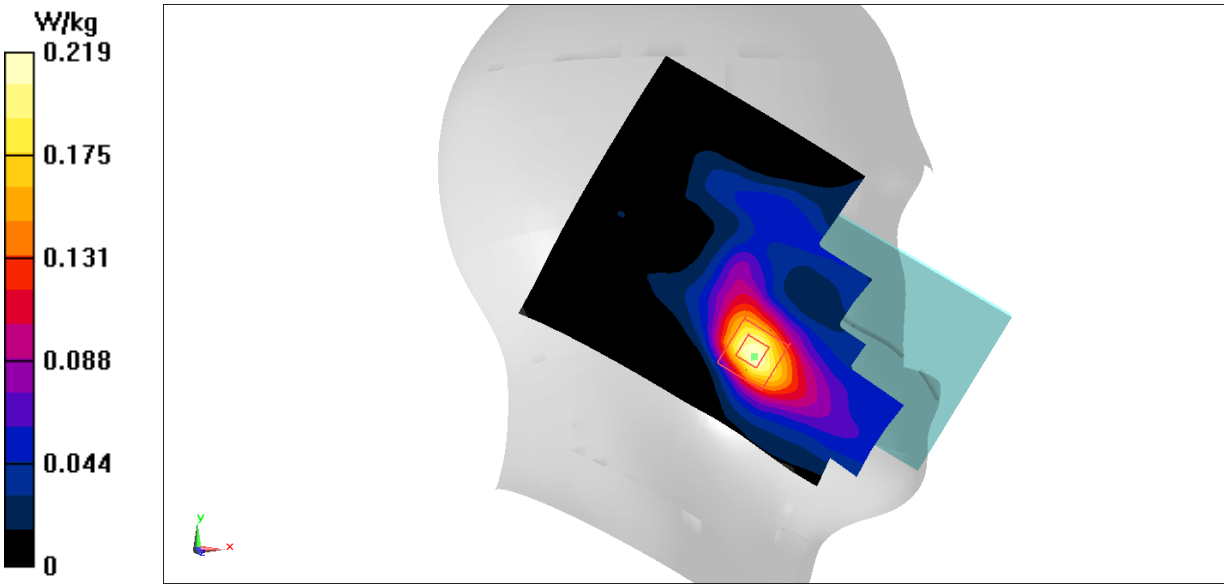


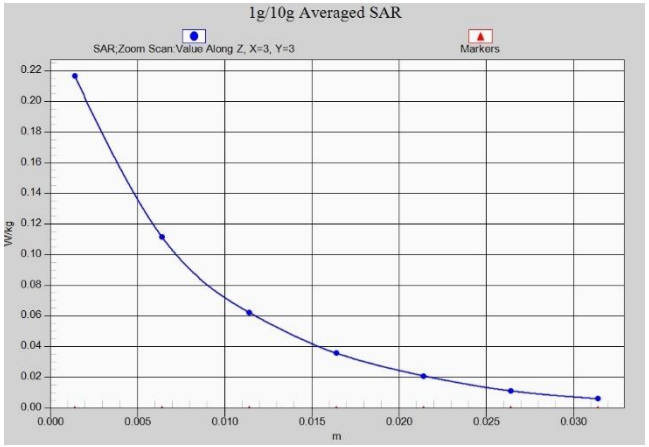


LTE B41 PC2 Head
Date: 11/11/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2680 MHz; σ = 2.121 S/m; ε_r = 38.986; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band41 2680 MHz Duty Cycle: 1:2.37
Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.219 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.278 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.139 W/kg; SAR(10 g) = 0.072 W/kg
Maximum value of SAR (measured) = 0.217 W/kg

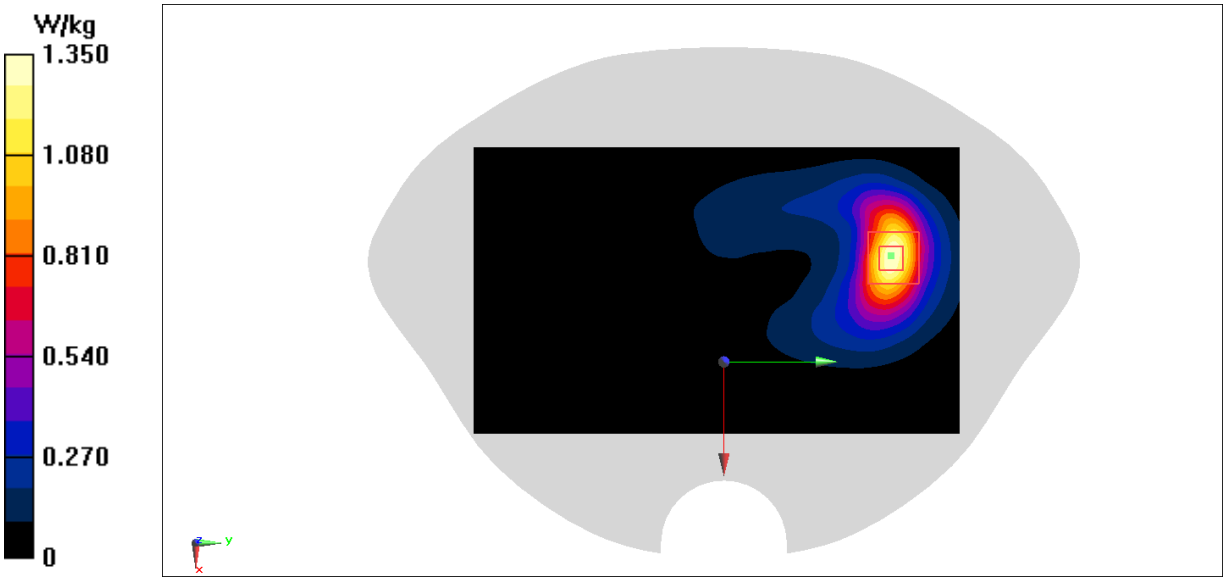


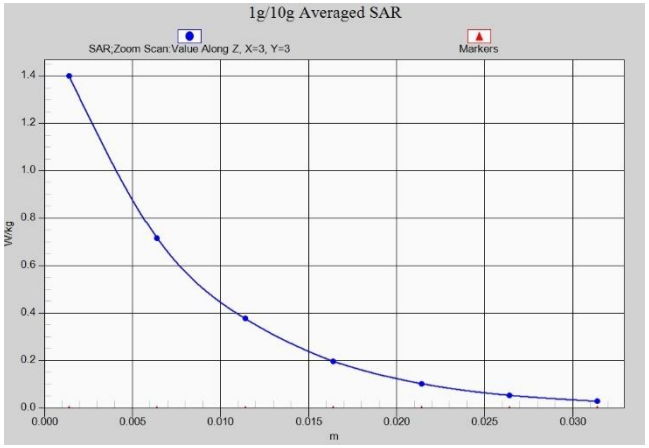


LTE B41 PC2 Body
Date: 11/11/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2506 MHz; σ = 1.962 S/m; ε_r = 39.401; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band41 2506 MHz Duty Cycle: 1:2.37
Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.35 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.957 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 0.871 W/kg; SAR(10 g) = 0.431 W/kg
Maximum value of SAR (measured) = 1.40 W/kg

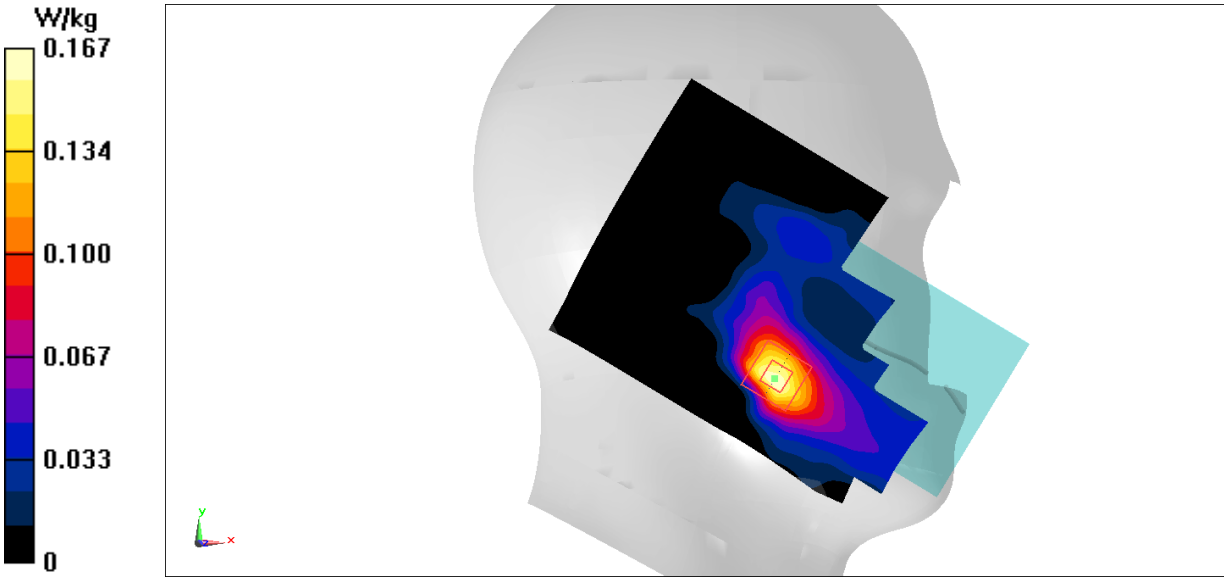


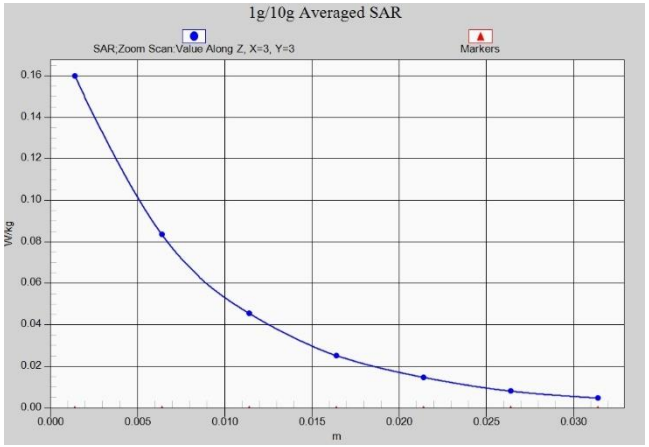


LTE B41 PC3 Head
Date: 11/11/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2680 MHz; σ = 2.121 S/m; ε_r = 38.986; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band41 2680 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.167 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.231 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.102 W/kg; SAR(10 g) = 0.053 W/kg
Maximum value of SAR (measured) = 0.160 W/kg

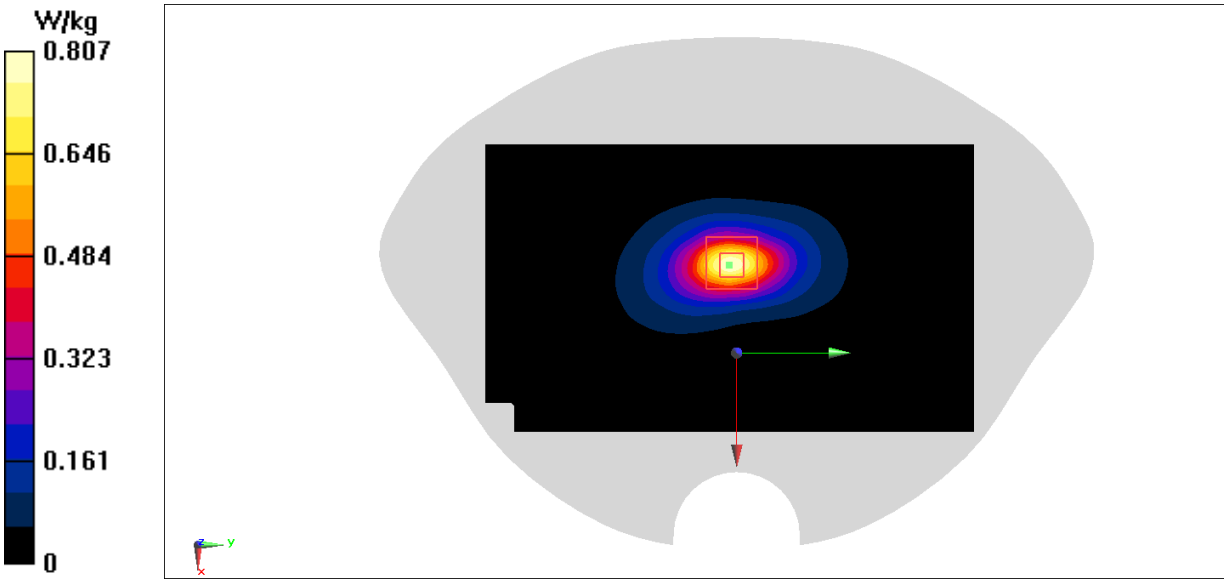


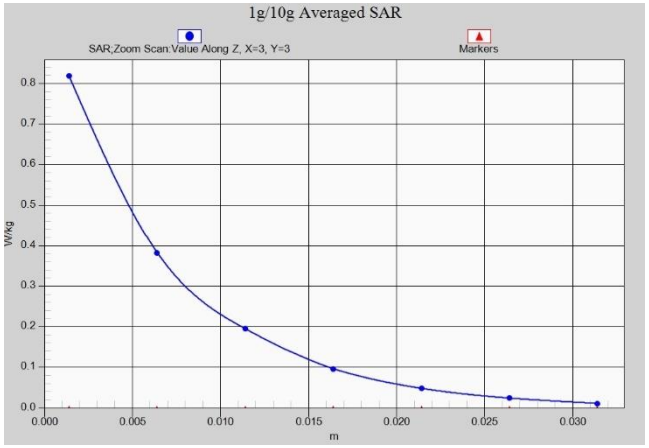


LTE B41 PC3 Body
Date: 11/11/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2680 MHz; σ = 2.136 S/m; ε_r = 40.446; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band41 2680 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 - SN7548 ConvF(7.12, 7.12, 7.12)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.807 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.343 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.485 W/kg; SAR(10 g) = 0.227 W/kg
Maximum value of SAR (measured) = 0.818 W/kg

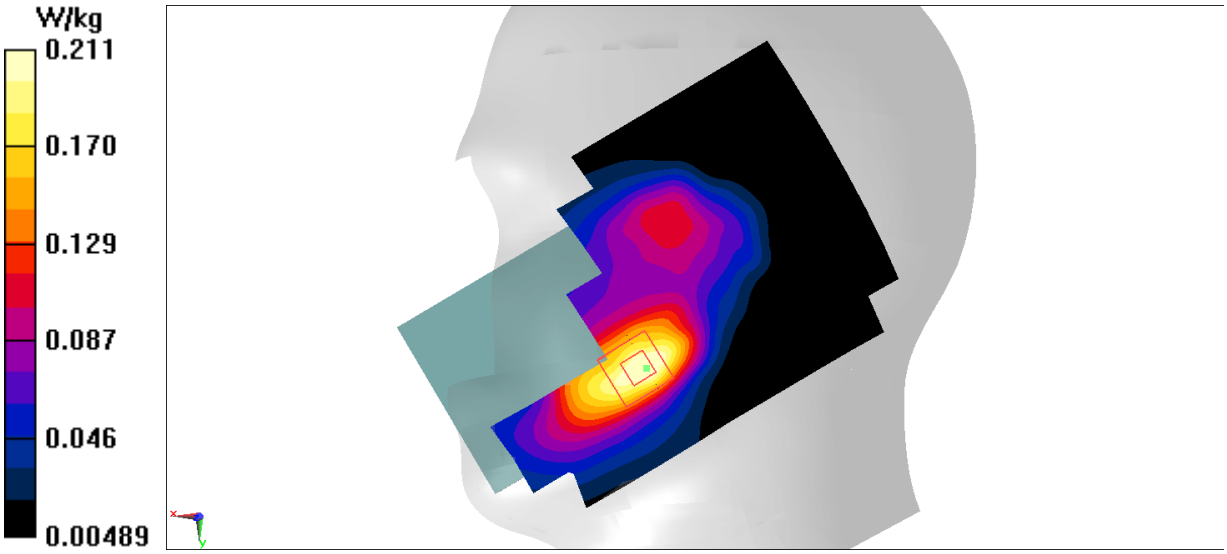


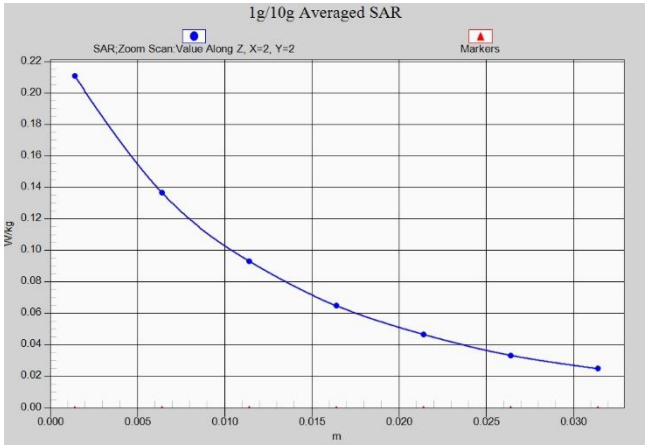


LTE B66 Head
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1720 MHz; σ = 1.371 S/m; ε_r = 41.155; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band66 1720 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.224 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.244 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.242 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.101 W/kg
Maximum value of SAR (measured) = 0.211 W/kg

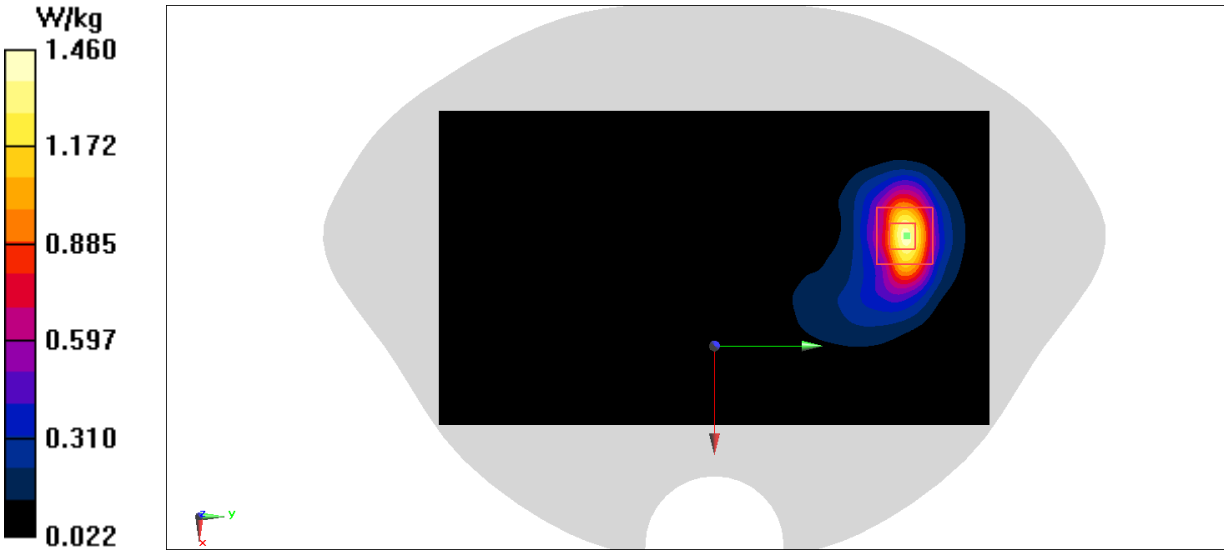


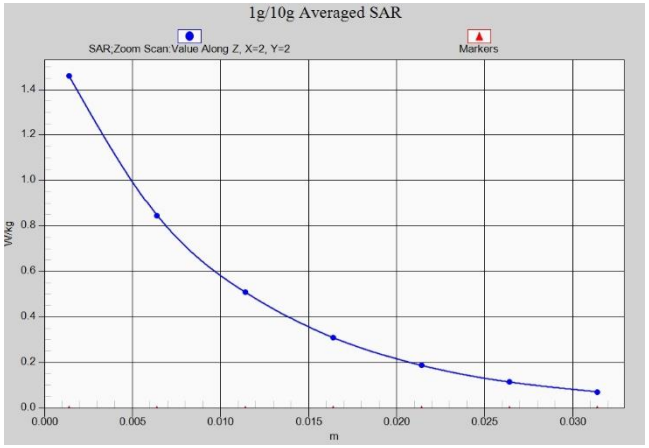


LTE B66 Body
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1745 MHz; σ = 1.389 S/m; ε_r = 41.055; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band66 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.41 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.996 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.503 W/kg
Maximum value of SAR (measured) = 1.46 W/kg

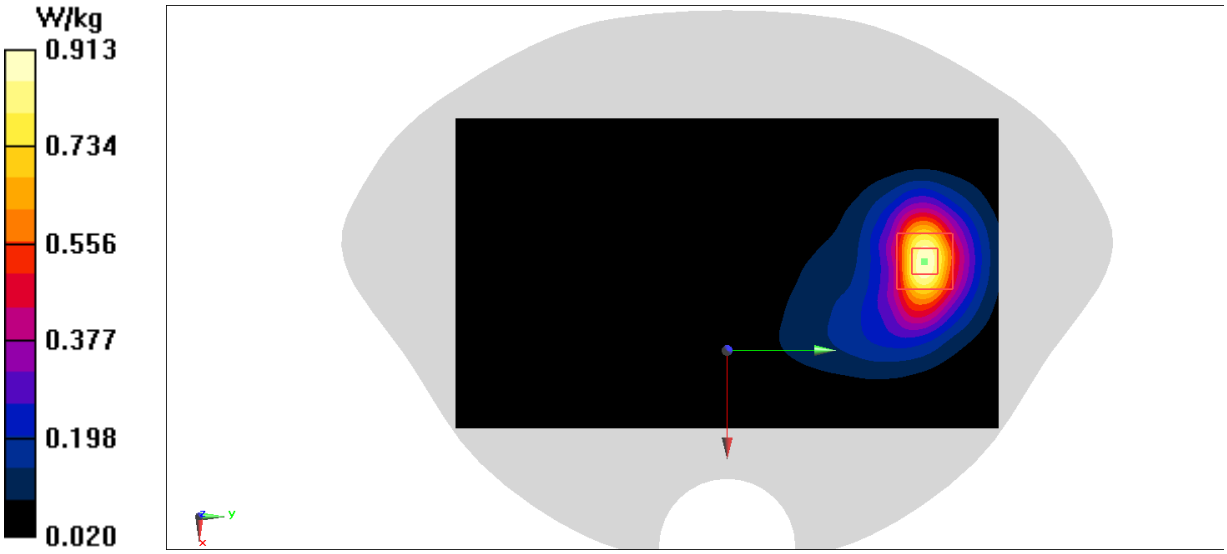


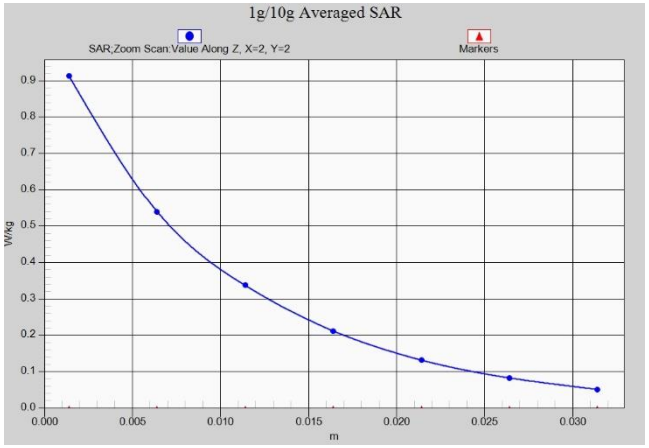


LTE B66 Body
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 1745 MHz; σ = 1.389 S/m; ε_r = 41.055; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band66 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(8.13, 8.13, 8.13)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.914 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.747 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.626 W/kg; SAR(10 g) = 0.351 W/kg
Maximum value of SAR (measured) = 0.913 W/kg

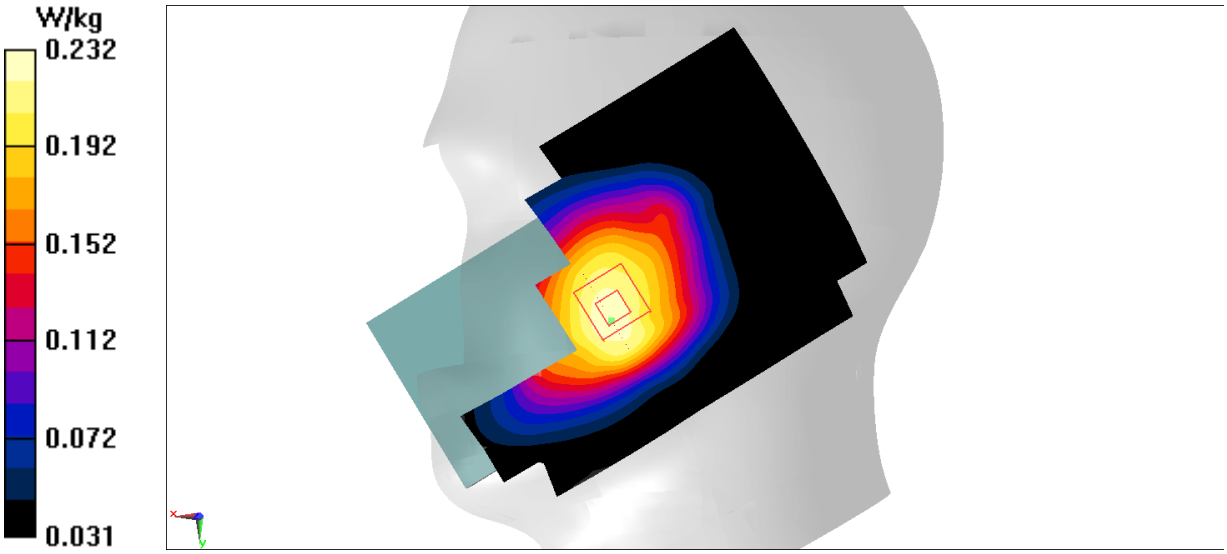


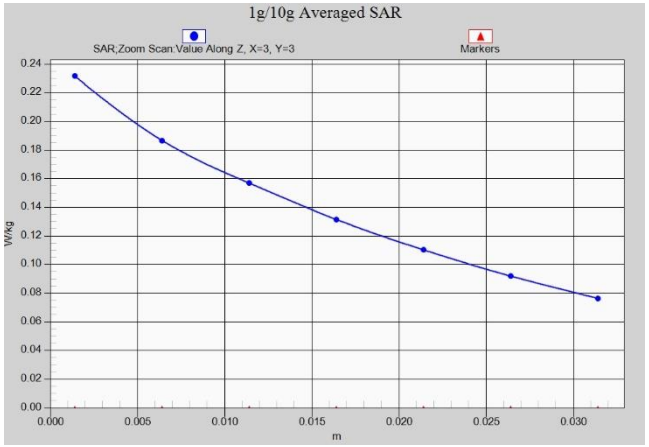


LTE B71 Head
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 683 MHz; σ = 0.794 S/m; ε_r = 44.263; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band71 683 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.232 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.145 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.249 W/kg
SAR(1 g) = 0.201 W/kg; SAR(10 g) = 0.161 W/kg
Maximum value of SAR (measured) = 0.232 W/kg

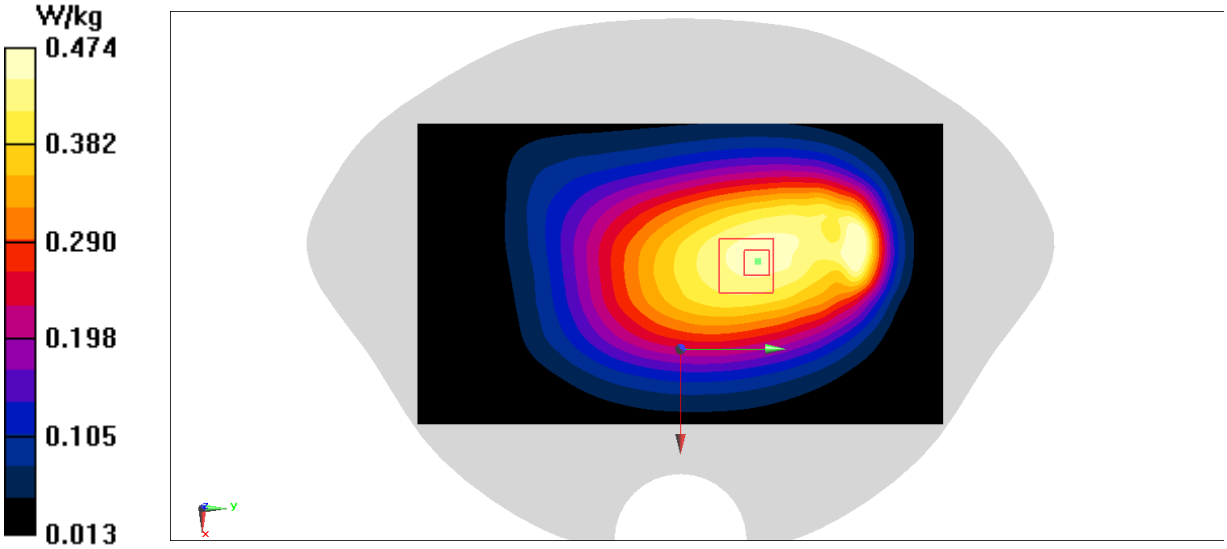


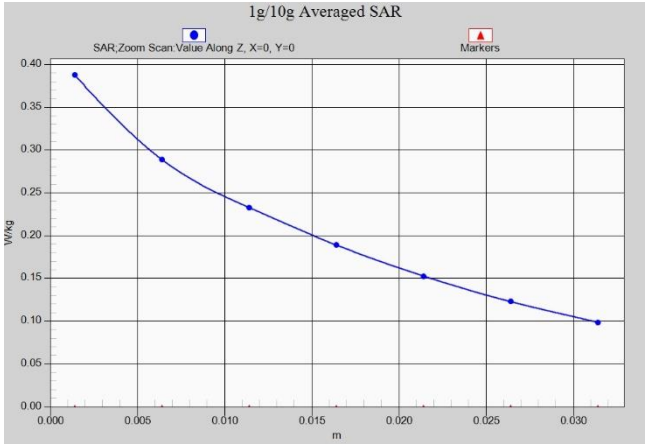


LTE B71 Body
Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 683 MHz; σ = 0.794 S/m; ε_r = 44.263; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: LTE Band71 683 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(10.3, 10.3, 10.3)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.512 W/kg

Zoom Scan (6x10x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.74 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.599 W/kg
SAR(1 g) = 0.374 W/kg; SAR(10 g) = 0.287 W/kg
Maximum value of SAR (measured) = 0.474 W/kg

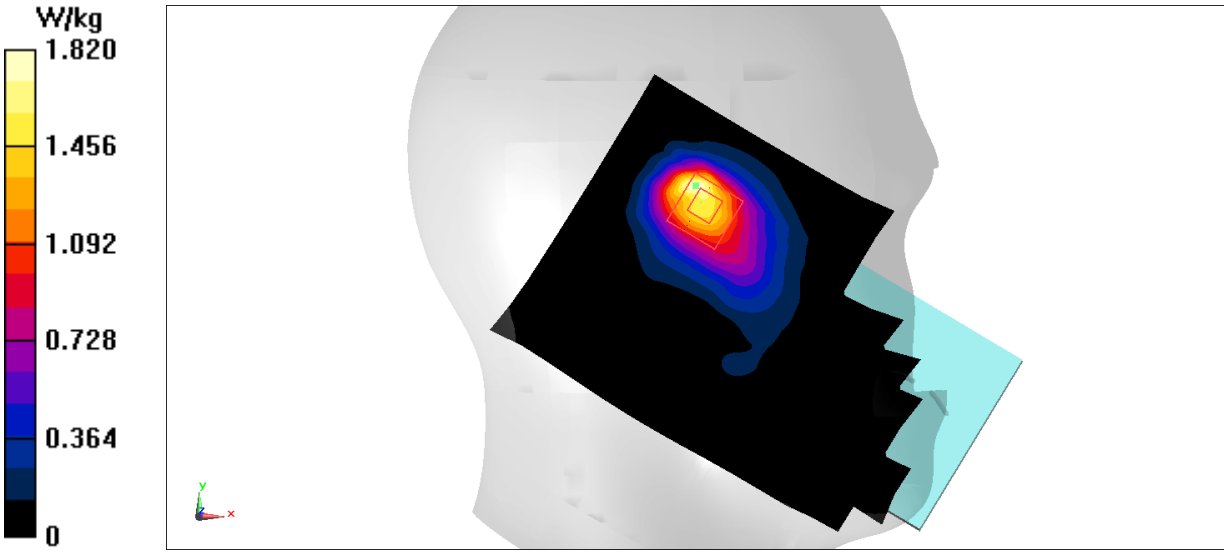


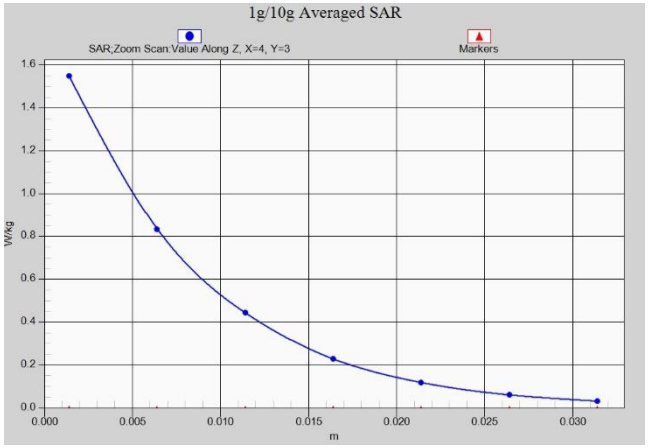


WLAN 2.4G Head
Date: 11/8/2022
Electronics: DAE4 Sn777
Medium: H700-6000M
Medium parameters used: f = 2462 MHz; σ = 1.846 S/m; ε_r = 40.665; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: WLan 2450 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7673 ConvF(7.57, 7.57, 7.57)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.82 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.227 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 0.985 W/kg; SAR(10 g) = 0.514 W/kg
Maximum value of SAR (measured) = 1.55 W/kg

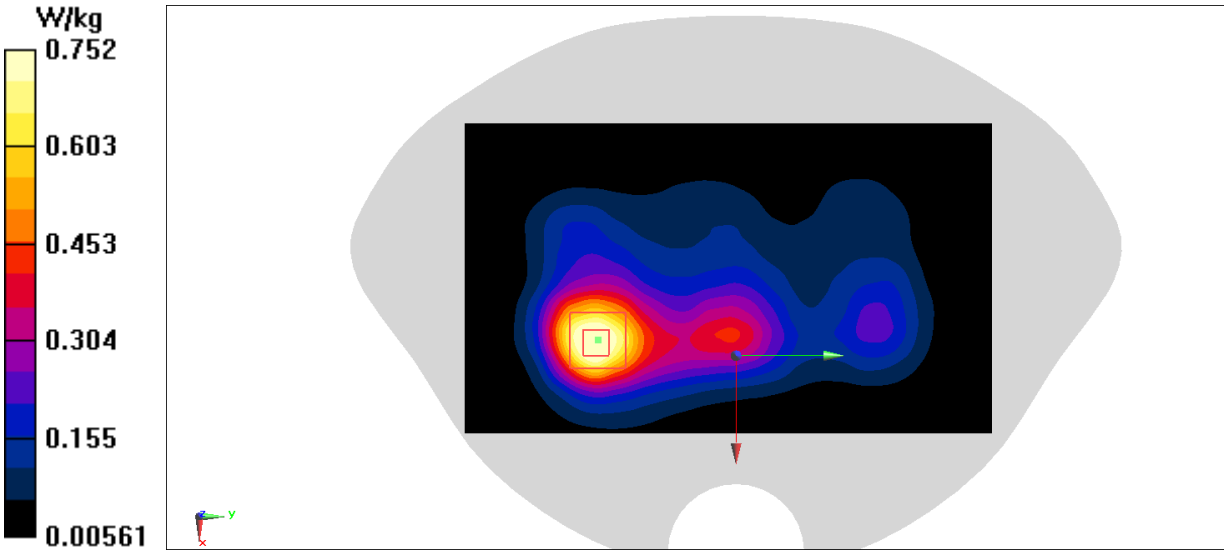


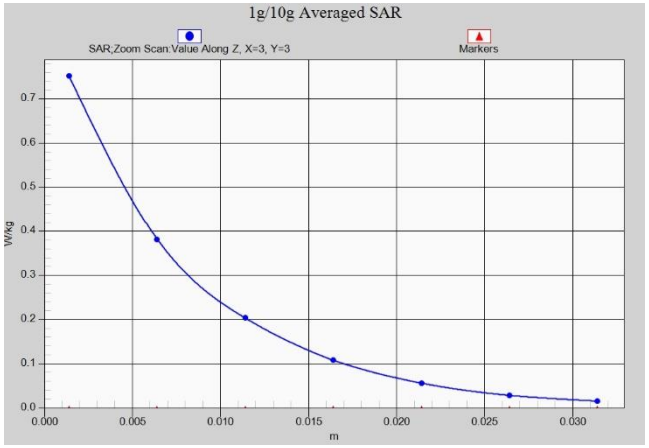


WLAN 2.4G Body
Date: 11/8/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2437 MHz; σ = 1.901 S/m; ε_r = 39.542; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: wifi 2450 2437 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.812 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.31 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.492 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 0.752 W/kg

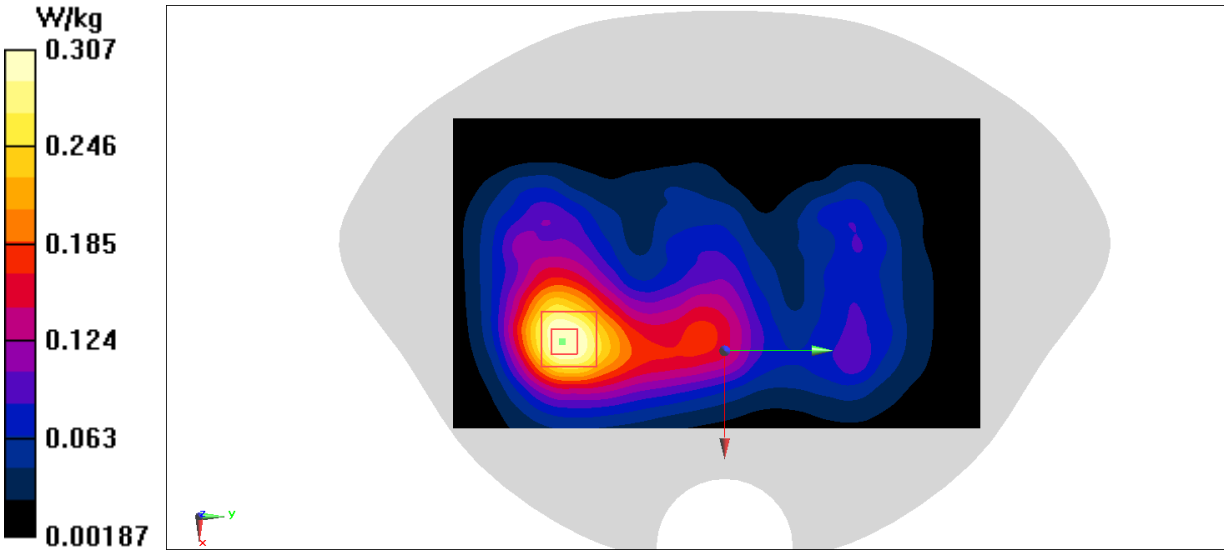


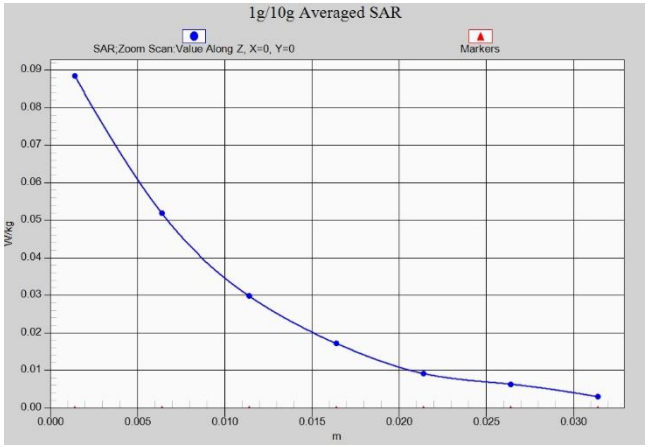


WLAN 2.4G Body
Date: 11/8/2022
Electronics: DAE4 Sn1331
Medium: H700-6000M
Medium parameters used: f = 2437 MHz; σ = 1.901 S/m; ε_r = 39.542; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: wifi 2450 2437 MHz Duty Cycle: 1:1
Probe: EX3DV4 - SN7548 ConvF(7.32, 7.32, 7.32)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.316 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.806 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.377 W/kg
SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.307 W/kg

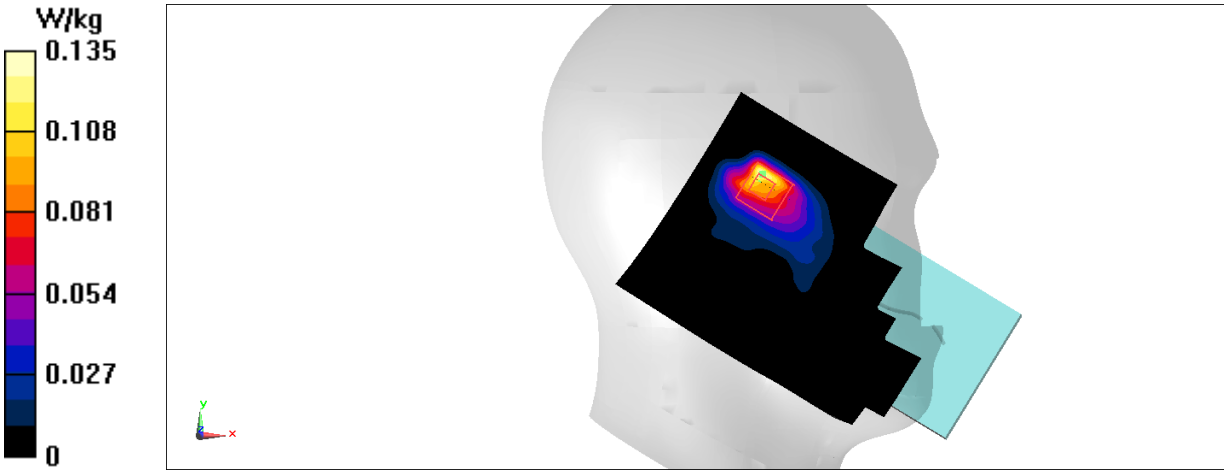


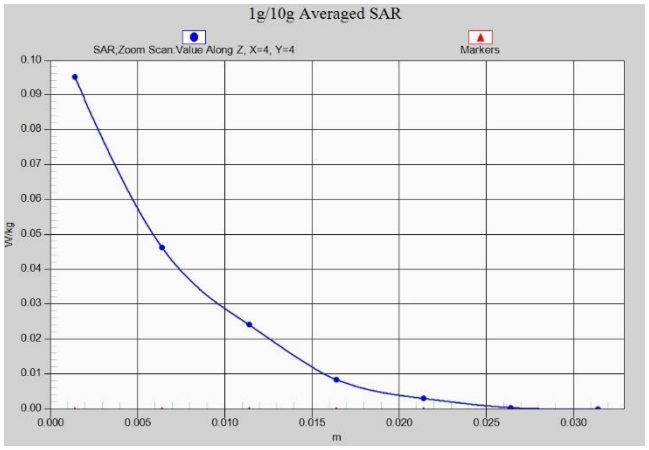


BT Head
Date: 11/8/2022
Electronics: DAE4 Sn1331
Medium: H650-7000M
Medium parameters used: f = 2480 MHz; σ = 1.905 S/m; ε_r = 40.379; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: BT 2480 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.32, 7.32, 7.32)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.135 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.250 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.119 W/kg
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.027 W/kg
Maximum value of SAR (measured) = 0.0951 W/kg

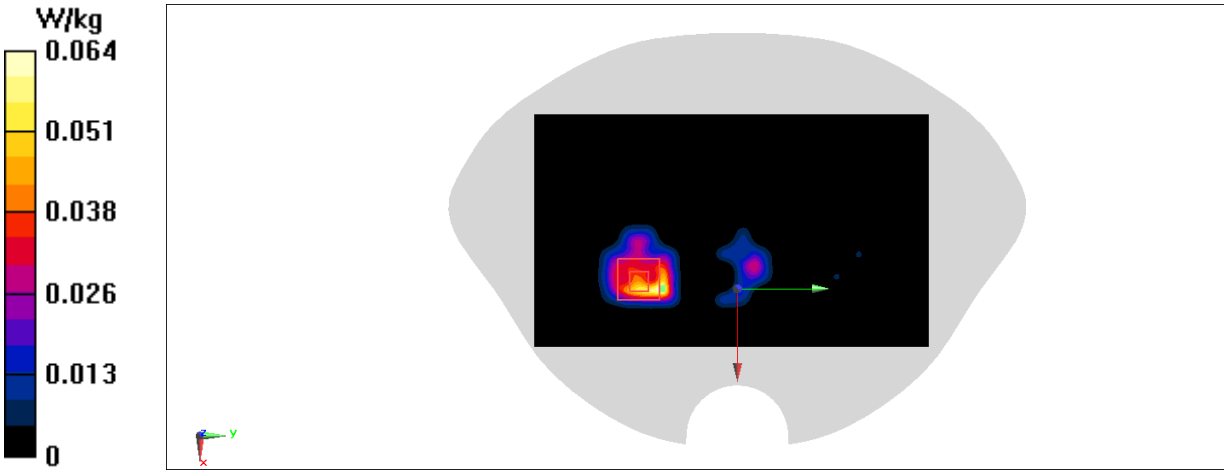


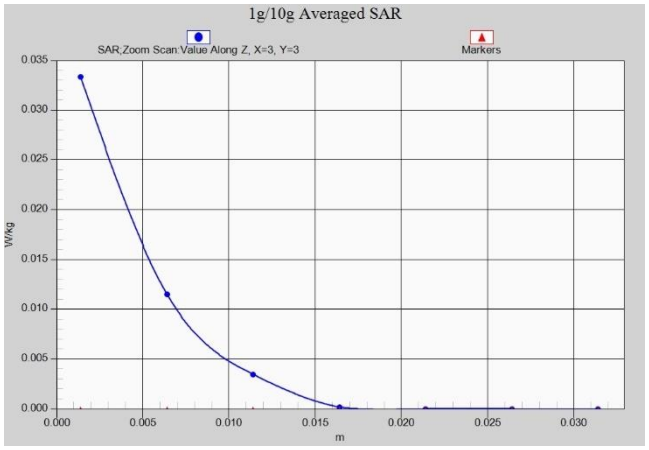


BT body
Date: 11/8/2022
Electronics: DAE4 Sn1331
Medium: H650-7000M
Medium parameters used: f = 2480 MHz; σ = 1.905 S/m; ε_r = 40.379; ρ = 1000 kg/m^3
Ambient Temperature:23.3ºC Liquid Temperature: 22.5ºC
Communication System: BT 2480 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.32, 7.32, 7.32)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0641 W/kg

Zoom Scan (7x10x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.286 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0430 W/kg
SAR(1 g) = 0.017 W/kg; SAR(10 g) = 0.00626 W/kg
Maximum value of SAR (measured) = 0.0333 W/kg





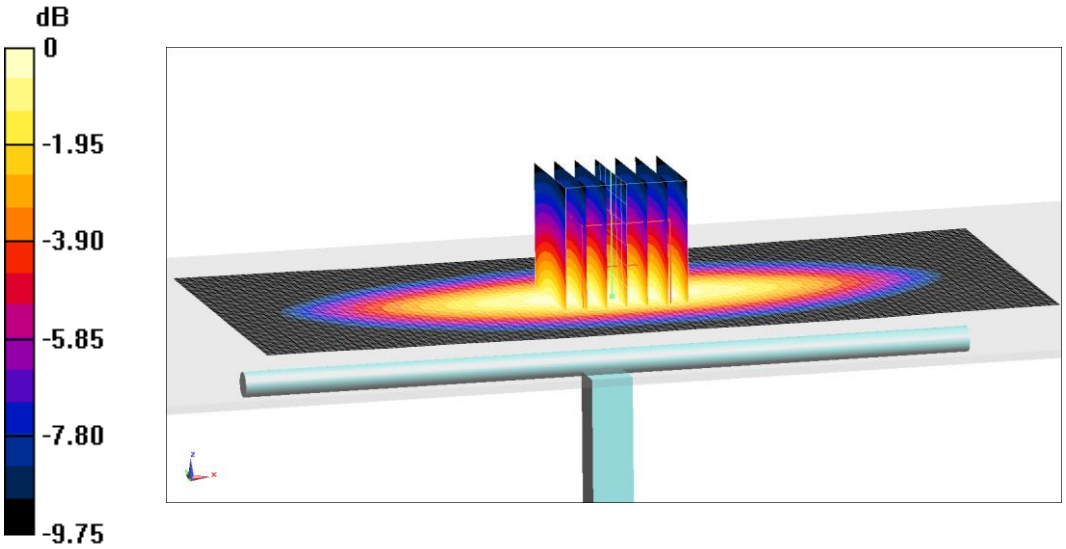
ANNEX B System Verification Results

750MHz

Date: 10/20/2022
Electronics: DAE4 Sn1331
Medium: Head 750MHz
Medium parameters used: f = 750MHz; σ =0.877 mho/m; ε_r = 42.92; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 750MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.3,10.3,10.3)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =63.14 V/m; Power Drift = 0.03
Fast SAR: SAR(1 g) = 2.11W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (interpolated) = 2.77 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =63.14 V/m; Power Drift = 0.03
Peak SAR (extrapolated) = 3.21 W/kg
SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.35 W/kg
Maximum value of SAR (measured) = 2.84 W/kg



0 dB = 2.84 W/kg = 4.53 dB W/kg

Fig.B.1 validation 750MHz 250mW

900MHz

Date: 10/22/2022

Electronics: DAE4 Sn1331

Medium: Head 900MHz

Medium parameters used: f = 900MHz; σ =0.955 mho/m; ε_r = 40.97; ρ = 1000 kg/m^3

Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC

Communication System: CW Frequency: 900MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7548 ConvF(9.81,9.81,9.81)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 64.3 V/m; Power Drift = 0.12

Fast SAR: SAR(1 g) = 2.68 W/kg; SAR(10 g) = 1.65 W/kg

Maximum value of SAR (interpolated) = 3.63 W/kg

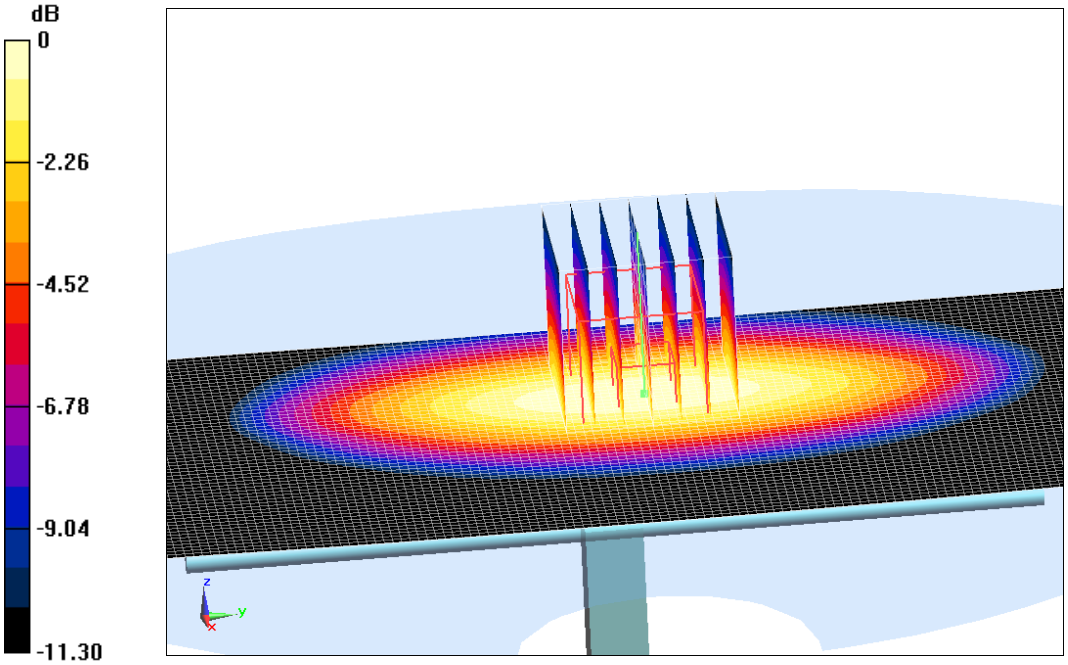
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value =64.3 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 4.04 W/kg

SAR(1 g) = 2.72 W/kg; SAR(10 g) = 1.71 W/kg

Maximum value of SAR (measured) = 3.7 W/kg



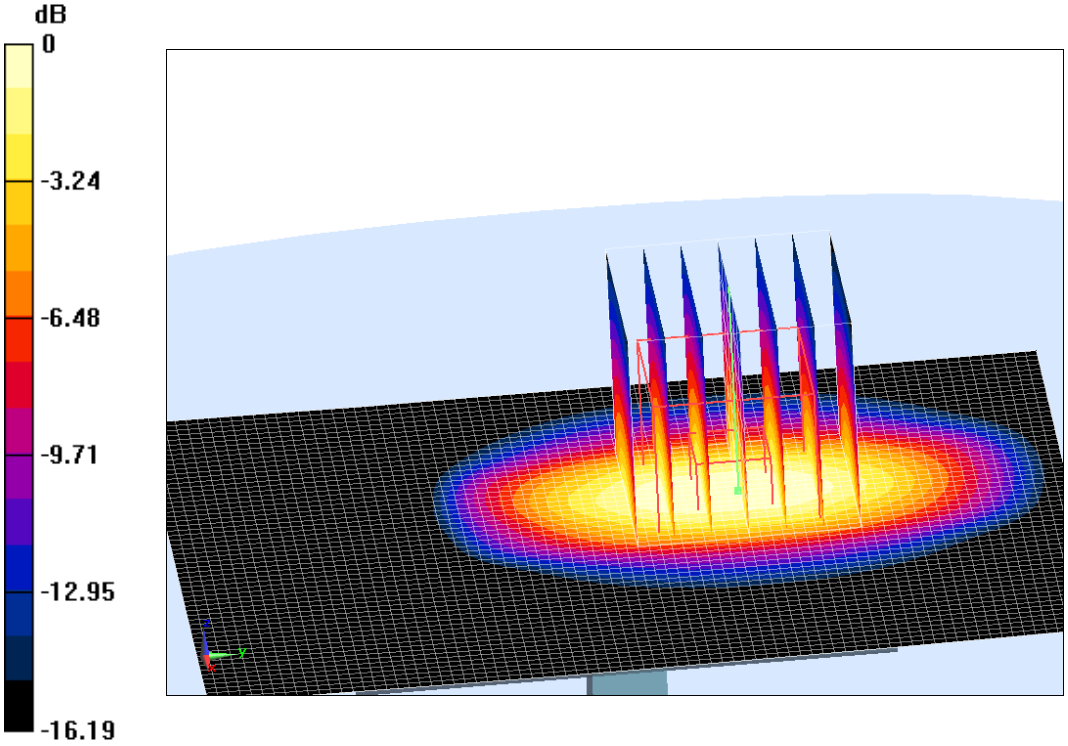
0 dB = 3.7 W/kg = 5.68 dB W/kg

Fig.B.2 validation 900MHz 250mW

1800MHz
Date: 10/26/2022
Electronics: DAE4 Sn1331
Medium: Head 1800MHz
Medium parameters used: f = 1800MHz; σ =1.403 mho/m; ε_r = 38.96; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 1800MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.13,8.13,8.13)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 107.29 V/m; Power Drift = -0.01
Fast SAR: SAR(1 g) = 9.85 W/kg; SAR(10 g) = 5.16 W/kg
Maximum value of SAR (interpolated) = 15.03 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =107.29 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 18.62 W/kg
SAR(1 g) = 9.87 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (measured) = 14.92 W/kg



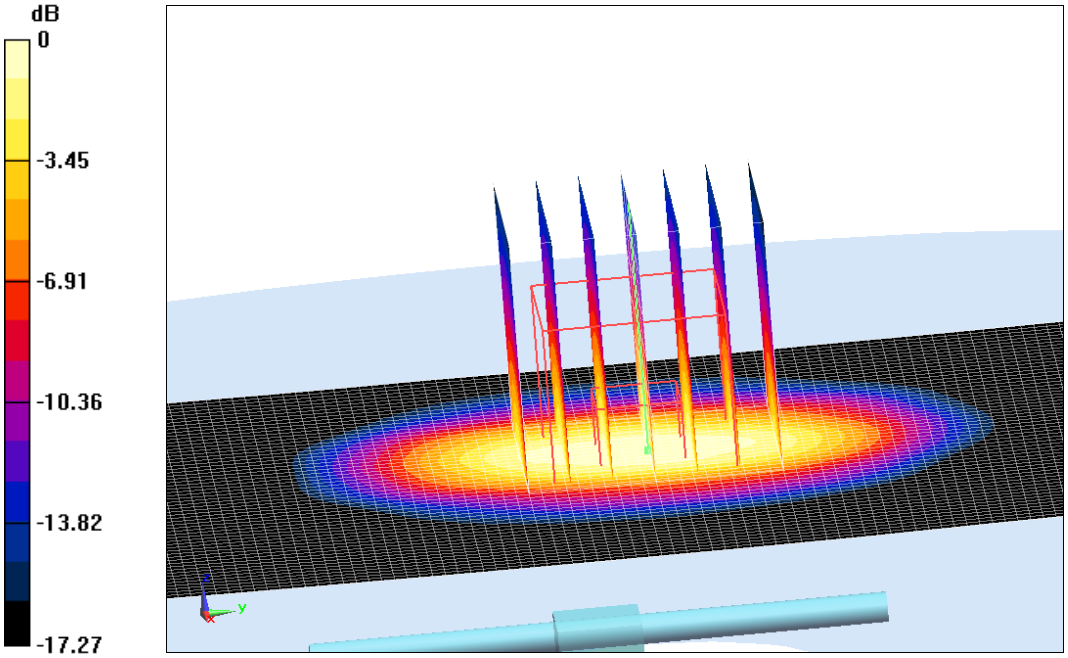
0 dB = 14.92 W/kg = 11.74 dB W/kg

Fig.B.3 validation 1800MHz 250mW

1900MHz
Date: 11/5/2022
Electronics: DAE4 Sn1331
Medium: Head 1900MHz
Medium parameters used: f = 1900MHz; σ =1.439 mho/m; ε_r = 39.62; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 1900MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.8,7.8,7.8)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =108.41 V/m; Power Drift = -0.15 dB
Fast SAR: SAR(1 g) = 9.87 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (interpolated) = 15.32 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =108.41 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 18.36 W/kg
SAR(1 g) = 9.88W/kg; SAR(10 g) = 5.15 W/kg
Maximum value of SAR (measured) = 15.11 W/kg



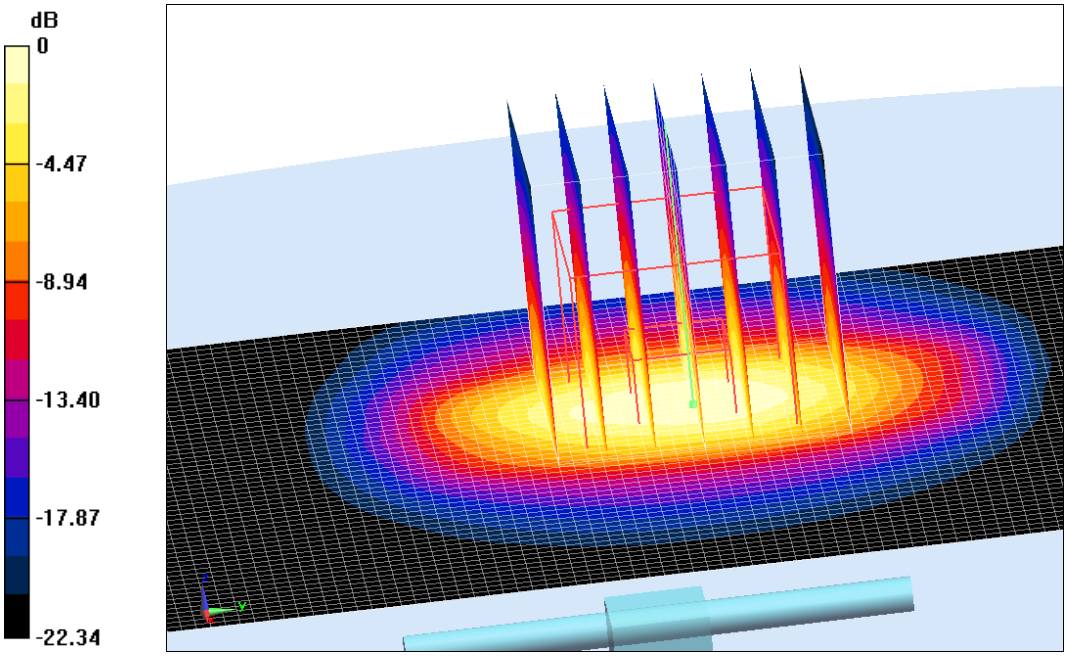
0 dB = 15.11 W/kg = 11.79 dB W/kg

Fig.B.4 validation 1900MHz 250mW

2450MHz
Date: 11/8/2022
Electronics: DAE4 Sn1331
Medium: Head 2450MHz
Medium parameters used: f = 2450MHz; σ =1.841 mho/m; ε_r = 38.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 2450MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.32,7.32,7.32)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =114.55 V/m; Power Drift = -0.08 dB
Fast SAR: SAR(1 g) = 13.32 W/kg; SAR(10 g) = 6.25 W/kg
Maximum value of SAR (interpolated) = 21.89 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =114.55 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 26.23 W/kg
SAR(1 g) = 13.37 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (measured) = 21.84 W/kg



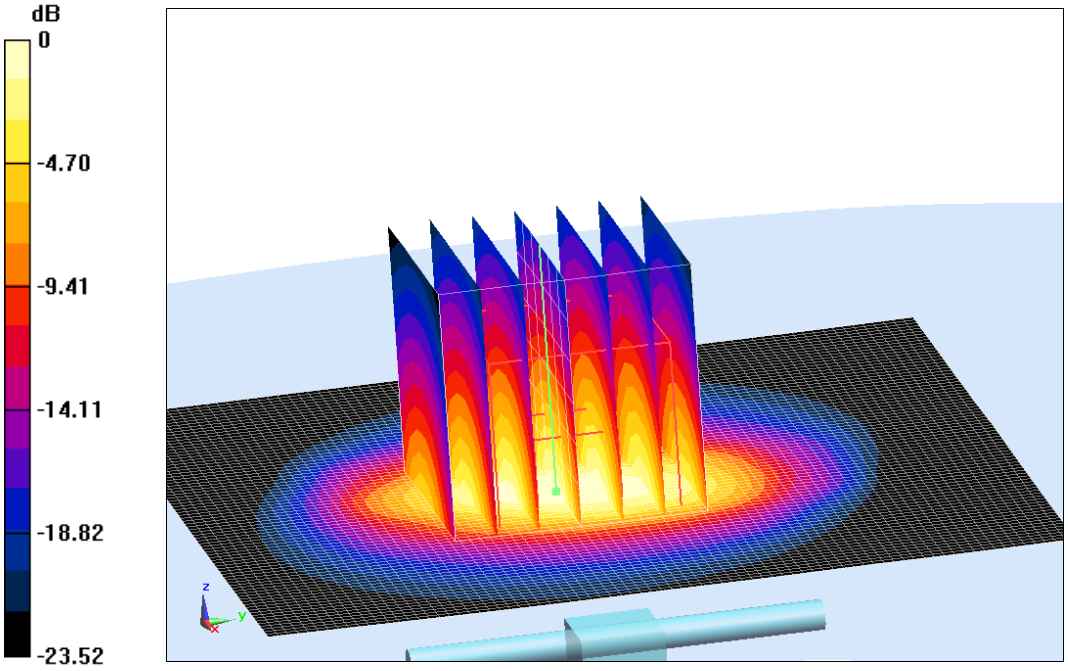
0 dB = 21.84 W/kg = 13.39 dB W/kg

Fig.B.5 validation 2450MHz 250mW

2600MHz
Date: 11/11/2022
Electronics: DAE4 Sn1331
Medium: Head 2600MHz
Medium parameters used: f = 2600MHz; σ =1.974 mho/m; ε_r = 38.74; ρ = 1000 kg/m^3
Ambient Temperature: 22.2ºC Liquid Temperature: 22ºC
Communication System: CW Frequency: 2600MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.12,7.12,7.12)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value =122.37 V/m; Power Drift = -0.09 dB
Fast SAR: SAR(1 g) = 13.85 W/kg; SAR(10 g) = 6.24 W/kg
Maximum value of SAR (interpolated) = 24.19 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =122.37 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 29.49 W/kg
SAR(1 g) = 13.91 W/kg; SAR(10 g) = 6.26 W/kg
Maximum value of SAR (measured) = 24.36 W/kg



0 dB = 24.36 W/kg = 13.87 dB W/kg

Fig.B.6 validation 2600MHz 250mW

The SAR system verification must be required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR.

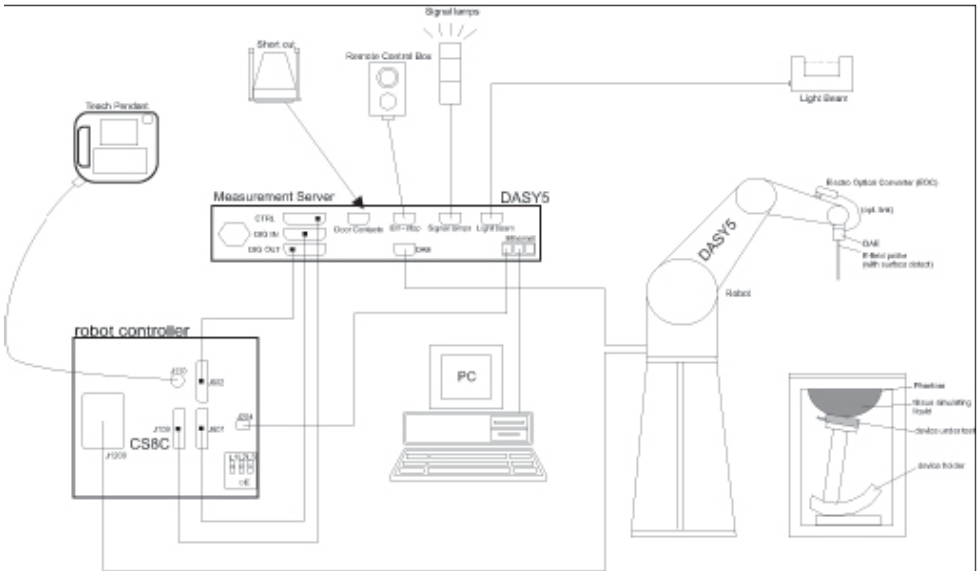
Table B.1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2022-10-20	750MHz	Head	2.11	2.08	1.44
2022-10-22	900MHz	Head	2.68	2.72	-1.47
2022-10-26	1800MHz	Head	9.85	9.87	-0.20
2022-11-5	1900MHz	Head	9.87	9.88	-0.10
2022-11-8	2450MHz	Head	13.32	13.37	-0.37
2022-11-11	2600MHz	Head	13.85	13.91	-0.43

ANNEX C SAR Measurement Setup

C.1 Measurement Set-up

The Dasy4 or DASY5 system for performing compliance tests is illustrated above graphically. This system consists of the following items:



Picture C.1SAR Lab Test Measurement Set-up

- A standard high precision 6-axis robot (StäubliTX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY4 or DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as
- warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

C.2 Dasy4 or DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY4 or DASY5 software reads the reflection durning a software approach and looks for the maximum using 2nd ord curve fitting. The approach is stopped at reaching the maximum.

Probe Specifications:

Model: ES3DV3, EX3DV4
Frequency 10MHz — 6.0GHz(EX3DV4)
Range: 10MHz — 4GHz(ES3DV3)
Calibration: In head and body simulating tissue at Frequencies from 835 up to 5800MHz
Linearity: ± 0.2 dB(30 MHz to 6 GHz) for EX3DV4
± 0.2 dB(30 MHz to 4 GHz) for ES3DV3
DynamicRange: 10 mW/kg — 100W/kg
Probe Length: 330 mm
Probe Tip
Length: 20 mm
Body Diameter: 12 mm
Tip Diameter: 2.5 mm (3.9 mm for ES3DV3)
Tip-Center: 1 mm (2.0mm for ES3DV3)
Application: SAR Dosimetry Testing
Compliance tests ofmobile phones
Dosimetry in strong gradient fields

Picture C.2Near-field Probe

Picture C.3E-field Probe

C.3 E-field Probe Calibration

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm^2) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and inn a waveguide or

other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm^2.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where:

Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

C.4 Other Test Equipment

C.4.1 Data Acquisition Electronics(DAE)

The data acquisition electronics consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

PictureC.4: DAE

C.4.2 Robot

The SPEAG DASY system uses the high precision robots (DASY4: RX90XL; DASY5: RX160L) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchron motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

Picture C.5DASY 4

Picture C.6DASY 5

C.4.3 Measurement Server

The Measurement server is based on a PC/104 CPU broad with CPU (dasy4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chipdisk (DASY4: 32 MB; DASY5: 128MB), RAM (DASY4: 64 MB, DASY5: 128MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O broad, which is directly connected to the PC/104 bus of the CPU broad.

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

Picture C.7 Server for DASY 4

Picture C.8 Server for DASY 5

C.4.4 Device Holder for Phantom

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ±20%. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

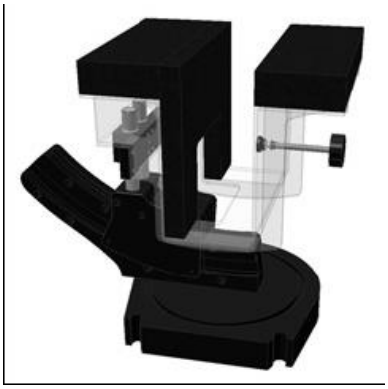
The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

<Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.

Picture C.9-1: Device Holder



Picture C.9-2: Laptop Extension Kit

C.4.5 Phantom

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a table. The shape of the shell is based on data from an anatomical study designed to
Represent the 90th percentile of the population. The phantom enables the dissymmetric evaluation of SAR for both left and right handed handset usage, as well as body-worn usage using the flat phantom region. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. The shell phantom has a 2mm shell thickness (except the ear region where shell thickness increases to 6 mm).

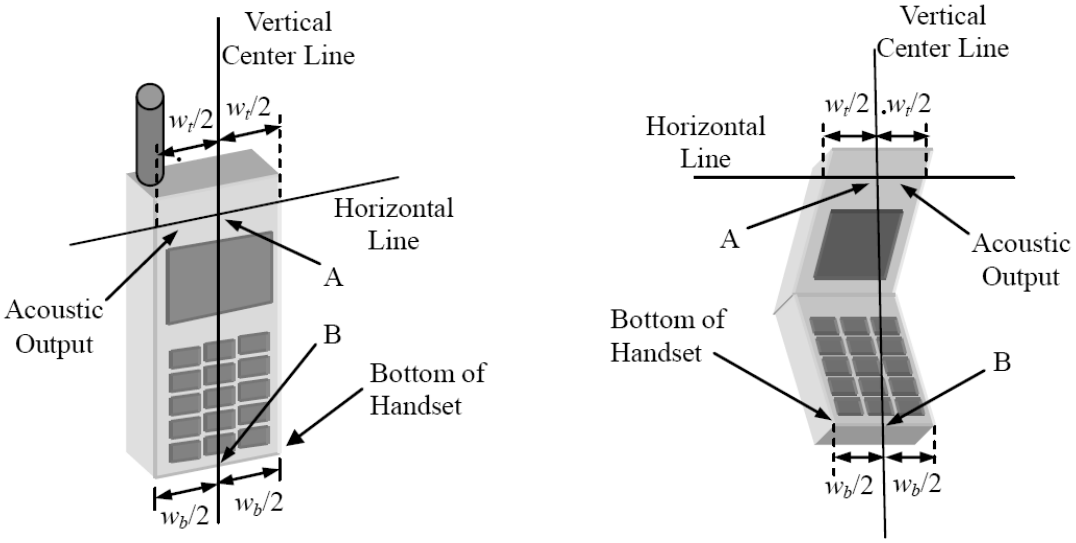
Shell Thickness: 2±0. 2 mm
Filling Volume: Approx. 25 liters
Dimensions: 810 x l000 x 500 mm (H x L x W)
Available: Special

Picture C.10: SAM Twin Phantom

ANNEX D Position of the wireless device in relation to the phantom

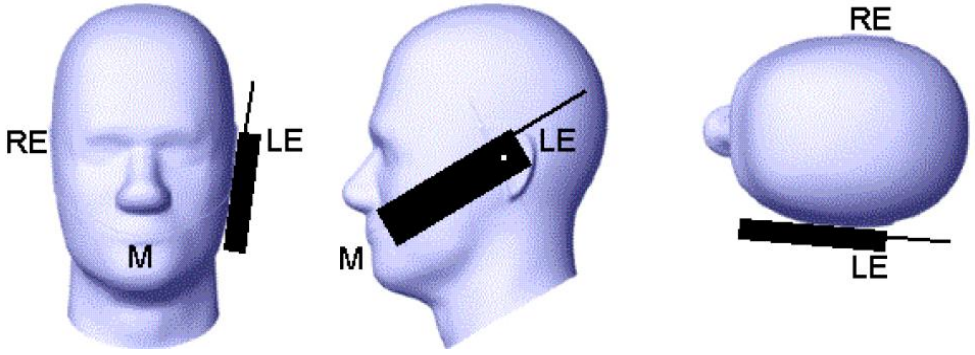
D.1 General considerations

This standard specifies two handset test positions against the head phantom – the “cheek” position and the “tilt” position.

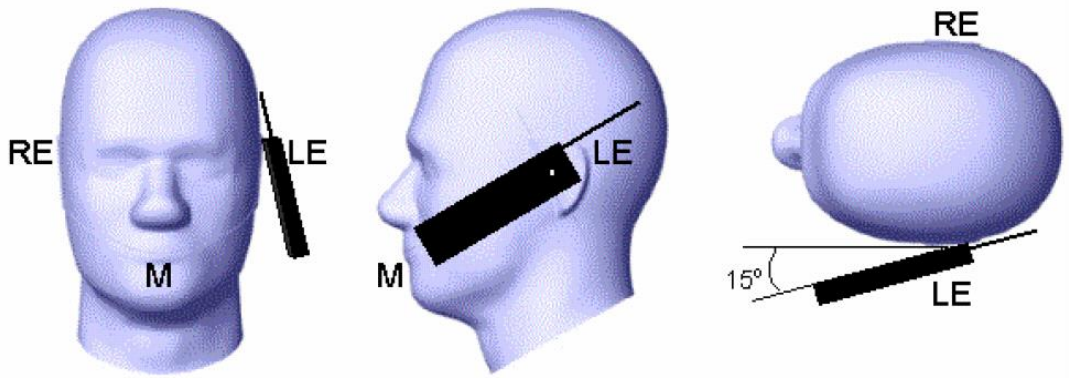


W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the width W_t of the handset at the level of the acoustic output
B	Midpoint of the width W_b of the bottom of the handset

Picture D.1-a Typical “fixed” case handset Picture D.1-b Typical “clam-shell” case handset



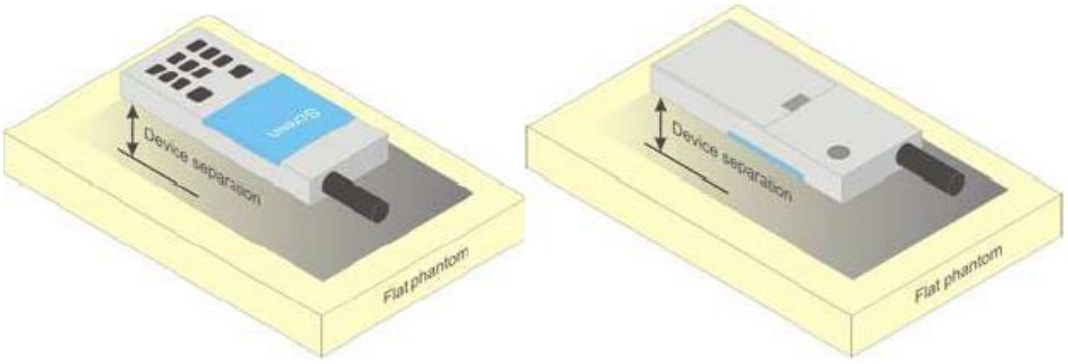
Picture D.2 Cheek position of the wireless device on the left side of SAM



Picture D.3 Tilt position of the wireless device on the left side of SAM

D.2 Body-worn device

A typical example of a body-worn device is a mobile phone, wireless enabled PDA or other battery operated wireless device with the ability to transmit while mounted on a person's body using a carry accessory approved by the wireless device manufacturer.

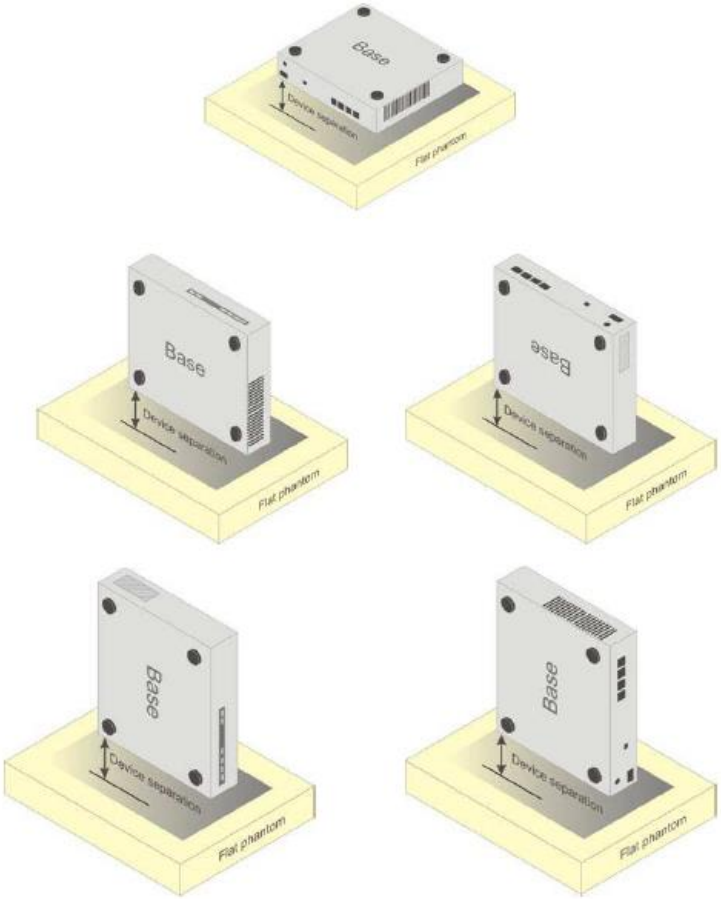


Picture D.4Test positions for body-worn devices

D.3 Desktop device

A typical example of a desktop device is a wireless enabled desktop computer placed on a table or desk when used.

The DUT shall be positioned at the distance and in the orientation to the phantom that corresponds to the intended use as specified by the manufacturer in the user instructions. For devices that employ an external antenna with variable positions, tests shall be performed for all antenna positions specified. Picture8.5 show positions for desktop device SAR tests. If the intended use is not specified, the device shall be tested directly against the flat phantom.



Picture D.5 Test positions for desktop devices

D.4 DUT Setup Photos

Picture D.6

ANNEX E Equivalent Media Recipes

The liquid used for the frequency range of 800-3000 MHz consisted of water, sugar, salt, preventol, glycol monobutyl and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table E.1 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528 and IEC 62209.

TableE.1: Composition of the Tissue Equivalent Matter

Frequency (MHz)	835Head	835Body	1900 Head	1900 Body	2450 Head	2450 Body	5800 Head	5800 Body
Ingredients (% by weight)								
Water	41.45	52.5	55.242	69.91	58.79	72.60	65.53	65.53
Sugar	56.0	45.0	\	\	\	\	\	\
Salt	1.45	1.4	0.306	0.13	0.06	0.18	\	\
Preventol	0.1	0.1	\	\	\	\	\	\
Cellulose	1.0	1.0	\	\	\	\	\	\
Glycol Monobutyl	\	\	44.452	29.96	41.15	27.22	\	\
Diethylenglycol monohexylether	\	\	\	\	\	\	17.24	17.24
Triton X-100	\	\	\	\	\	\	17.24	17.24
Dielectric Parameters Target Value	ε=41.5 σ=0.90	ε=55.2 σ=0.97	ε=40.0 σ=1.40	ε=53.3 σ=1.52	ε=39.2 σ=1.80	ε=52.7 σ=1.95	ε=35.3 σ=5.27	ε=48.2 σ=6.00

Note: There are a little adjustment respectively for 750, 1750, 2600, 5200, 5300 and 5600 based on the recipe of closest frequency in table E.1.

ANNEX F System Validation

The SAR system must be validated against its performance specifications before it is deployed. When SAR probes, system components or software are changed, upgraded or recalibrated, these must be validated with the SAR system(s) that operates with such components.

Table F.1: System Validation for 7548

Probe SN.	Liquid name	Validation date	Frequency point	Status (OK or Not)
7548	Head 750MHz	August.2,2022	750 MHz	OK
7548	Head 900MHz	August.2,2022	900 MHz	OK
7548	Head 1450MHz	August.2,2022	1450 MHz	OK
7548	Head 1750MHz	August.2,2022	1750 MHz	OK
7548	Head 1900MHz	August.2,2022	1900 MHz	OK
7548	Head 2000MHz	August.3,2022	2000 MHz	OK
7548	Head 2300MHz	August.3,2022	2300 MHz	OK
7548	Head 2450MHz	August.3,2022	2450 MHz	OK
7548	Head 2600MHz	August.3,2022	2600 MHz	OK
7548	Head 3300MHz	August.3,2022	3300 MHz	OK
7548	Head 3500MHz	August.3,2022	3500 MHz	OK
7548	Head 3700MHz	August.3,2022	3700 MHz	OK
7548	Head 5250MHz	August.4,2022	5250 MHz	OK
7548	Head 5600MHz	August.4,2022	5600 MHz	OK
7548	Head 5750MHz	August.4,2022	5750 MHz	OK