TESTING
NVLAP LAB CODE 600118-0

SAR TEST REPORT

No. I21Z62272-SEM03

For

TCL Communication Ltd.

GSM/UMTS/LTE mobile phone

Model Name: T701DL,T671G

with

Hardware Version: PIO

Software Version: vC47

FCC ID: 2ACCJN055

Issued Date: 2022-1-24

Note:

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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:

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I21Z62272-SEM03	Rev.0	2022-1-24	Initial creation of test report

TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

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

1.2 Testing Environment

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

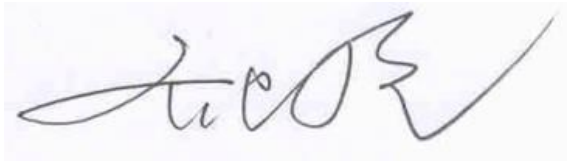
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Yao Juming
Testing Start Date:	January 10, 2022
Testing End Date:	January 18, 2022

1.4 Signature

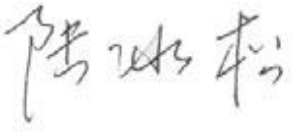
Yao Juming

(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 TCL Communication Ltd. GSM/UMTS/LTE mobile phone T701DL,T671G are as follows:

Table 2.1: Highest Reported SAR (1g)

Technology Band	Head	Hotspot	Body-Worn	Phablet(10g)	Equipment Class
GSM850	**0.95**	**0.36**	**0.36**	/	PCE
GSM1900	**0.08**	**0.52**	**0.46**	/	
WCDMA1900	**0.21**	**1.08**	**0.81**	**3.24**	
WCDMA 1700	**0.11**	**0.91**	**0.59**	**3.77**	
WCDMA 850	**0.67**	**0.46**	**0.46**	/	
LTE Band12	**0.69**	**0.37**	**0.30**	/	
LTE Band13	**0.91**	**0.50**	**0.42**	/	
LTE Band25	**0.20**	**1.13**	**0.82**	**3.13**	
LTE Band26	**0.88**	**0.56**	**0.56**	/	
LTE Band41-PC3	**0.37**	**0.64**	**0.64**	/	
LTE Band41-PC2	**0.30**	**0.63**	**0.63**	/	
LTE Band66	**0.12**	**1.29**	**0.56**	**3.78**	
LTE Band71	**0.72**	**0.47**	**0.32**	/	
WLAN 2.4GHz	**1.06**	**0.64**	**0.64**	**1.42**	DTS
WLAN 5GHz	**1.42**	**0.71**	**0.71**	**0.98**	NII

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 10/15 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: 1.42 W/kg (1g)

Body: 1.29 W/kg (1g)

Remark：

This device supports both LTE B2/B4/B5 and B25/B66/B26.Since the supported frequency span for LTE B2/B4/B5 falls completely within the supports frequency span for LTE B25/B66/B26, 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/B66/B26.

Table 2.2: The sum of SAR values for Main antenna + WiFi-2.4G (1g)

	Position	Main antenna	WiFi-2.4G	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.40	**1.50**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.94	0.64	**1.58**

Table 2.3: The sum of SAR values for Main antenna + WiFi-5G (1g)

	Position	Main antenna	WiFi-5G	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.35	**1.45**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.87	0.71	**1.58**

Table 2.4: The sum of SAR values for main antenna and BT (1g)

	Position	Main antenna	BT	Sum
Maximum reported SAR value for Head	Right head, Cheek (WCDMA850)	1.10	<0.01	**1.10**
Maximum reported SAR value for Body	Rear 10mm (WCDMA1900)	0.98	<0.01	**0.98**

Table 2.5: The sum of SAR values for Main antenna + WiFi-5G + BT (1g)

	Position	Main antenna	WiFi-5G	BT	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.35	<0.01	**1.45**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.87	0.71	<0.01	**1.58**

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:	TCL Communication Ltd.
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Contact Email:	peter.yang@tcl.com
Telephone:	+86 755 3664 5759
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3.2 Manufacturer Information

Company Name:	TCL Communication Ltd.
Address/Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Contact Person:	Peter yang
Contact Email:	peter.yang@tcl.com
Telephone:	+86 755 3664 5759
Fax:	+86 755 3661 2000-81722

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

4.1 About EUT

Description:	GSM/UMTS/LTE mobile phone
Model name:	T701DL,T671G
Operating mode(s):	GSM850/900/1800/1900, WCDMA850/1700/1900 LTE Band 2/4/5/12/13/25/26/41/66/71 BT, Wi-Fi(2.4G/5G)
Tested Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	824 – 849 MHz (WCDMA 850 Band V)
	1850 – 1910 MHz (WCDMA1900 Band IV)
	1850 – 1910 MHz (WCDMA1900 Band II)
	699.7 – 715.3 MHz (LTE Band 12)
	779.5 –784.5 MHz (LTE Band 13)
	1850.7–1914.3 MHz (LTE Band 25)
	814.7–848.3 MHz (LTE Band 26)
	2498.5 –2687.5 MHz (LTE Band 41)
	1710.7 –1779.3 MHz (LTE Band 66)
	665.5 –695.5 MHz (LTE Band 71)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	5180 – 5240 MHz (Wi-Fi 5.2G)
	5260 – 5320 MHz (Wi-Fi 5.3G)
	5500 – 5700 MHz (Wi-Fi 5.5G)
	5745 – 5825 MHz (Wi-Fi 5.8G)
	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	016054000028455	PIO	vC47
EUT2	016054000025550	PIO	vC47
EUT3	016054000025469	PIO	vC47
EUT4	016054000025477	PIO	vC47

*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	TLp048A7	/	VEKEN

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

5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

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

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

5.2 Applicable Measurement Standards

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

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

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

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

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

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

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

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

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

TCB Workshop Nov 2017: RF Exposure Procedures (Carrier Aggregation SAR)

6 Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

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

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

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

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

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

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

7 Tissue Simulating Liquids

7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid

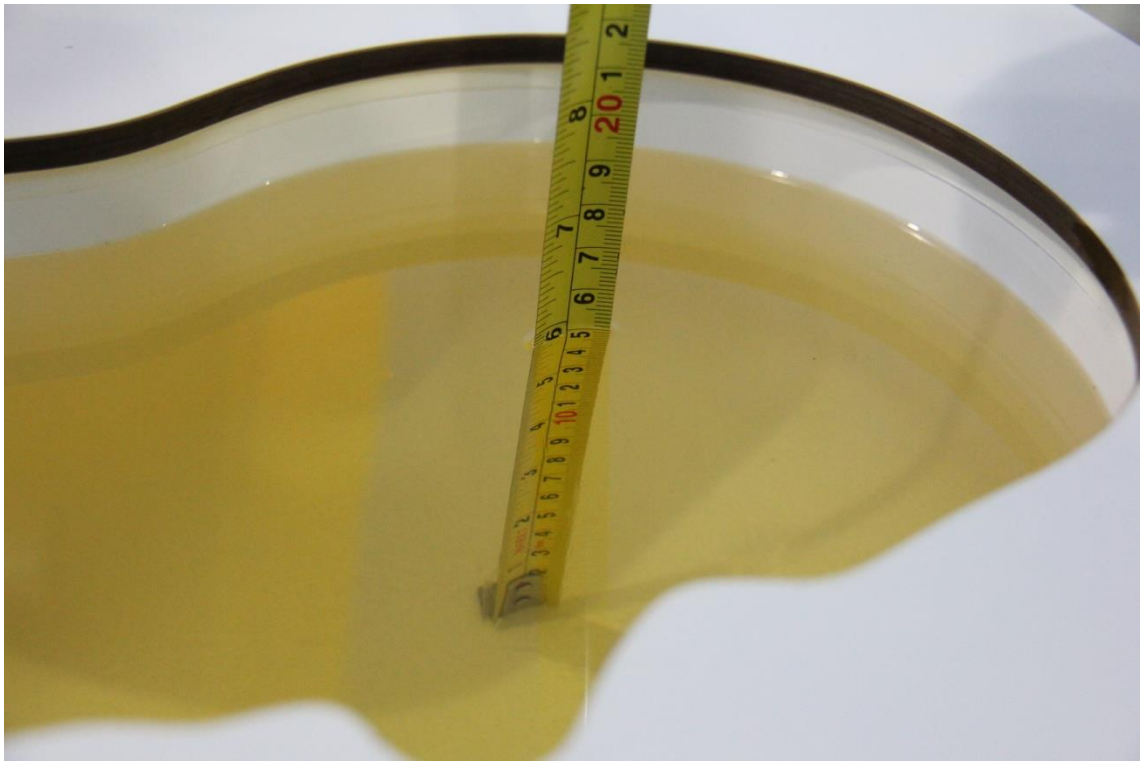
Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5% Range	Permittivity(ε)	± 5% Range
750	Head	0.89	0.85～0.93	41.94	39.8～44.0
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
1800	Head	1.40	1.33～1.47	40.0	38.0～42.0
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
2450	Head	1.67	1.59～1.75	39.47	37.5～41.4
2600	Head	1.96	1.86～2.06	39.01	37.1～41.0
5250	Head	4.66	4.43～4.89	35.99	34.19～37.79
5600	Head	5.07	4.82～5.32	35.53	33.75～37.31
5750	Head	5.22	4.96～5.48	35.36	33.59～37.13

7.2 Dielectric Performance

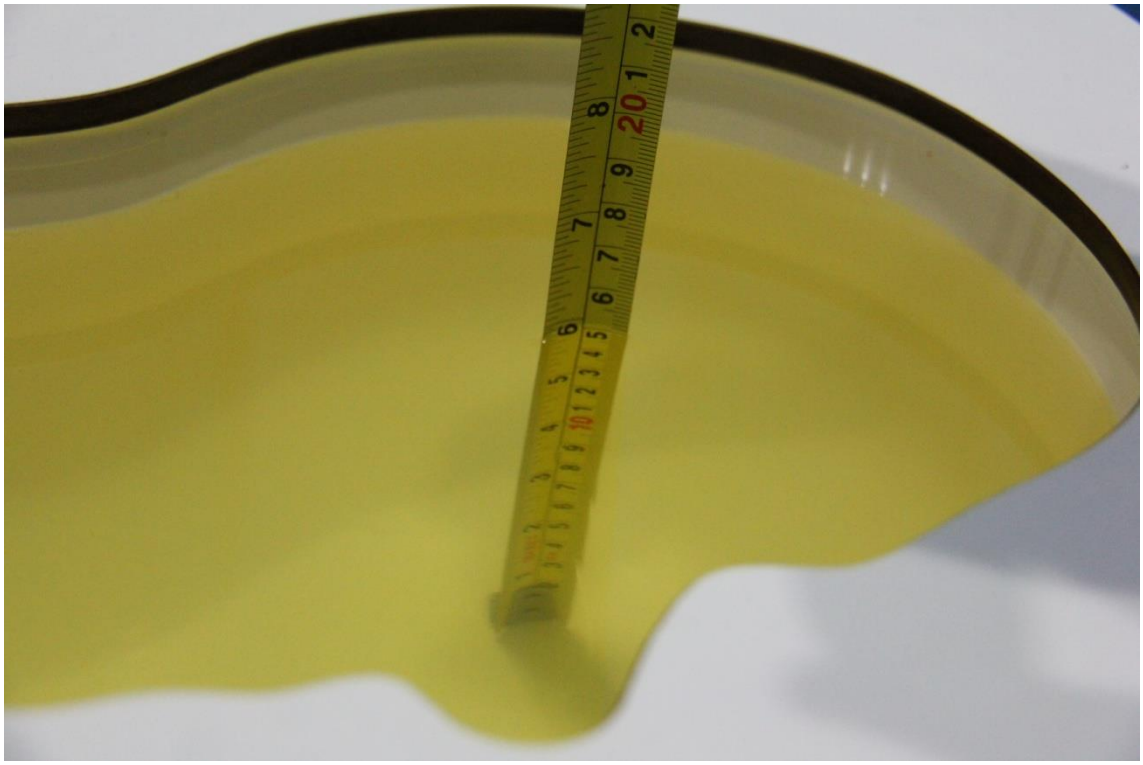
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2022-1-13	Head	750 MHz	45.06	7.44%	0.8348	-6.20%
2022-1-14	Head	835 MHz	44.84	8.05%	0.8703	-3.30%
2022-1-15	Head	1800 MHz	42.83	7.08%	1.411	0.79%
2022-1-16	Head	1900 MHz	42.39	5.98%	1.474	5.29%
2022-1-17	Head	2450 MHz	40.99	4.57%	1.895	5.28%
2022-1-18	Head	2600 MHz	40.77	4.51%	2.029	3.52%
2022-1-10	Head	5250 MHz	35.38	-1.53%	4.734	0.51%
2022-1-11	Head	5600 MHz	34.71	-2.31%	5.11	0.79%
2022-1-12	Head	5750 MHz	34.43	-2.63%	5.268	0.92%

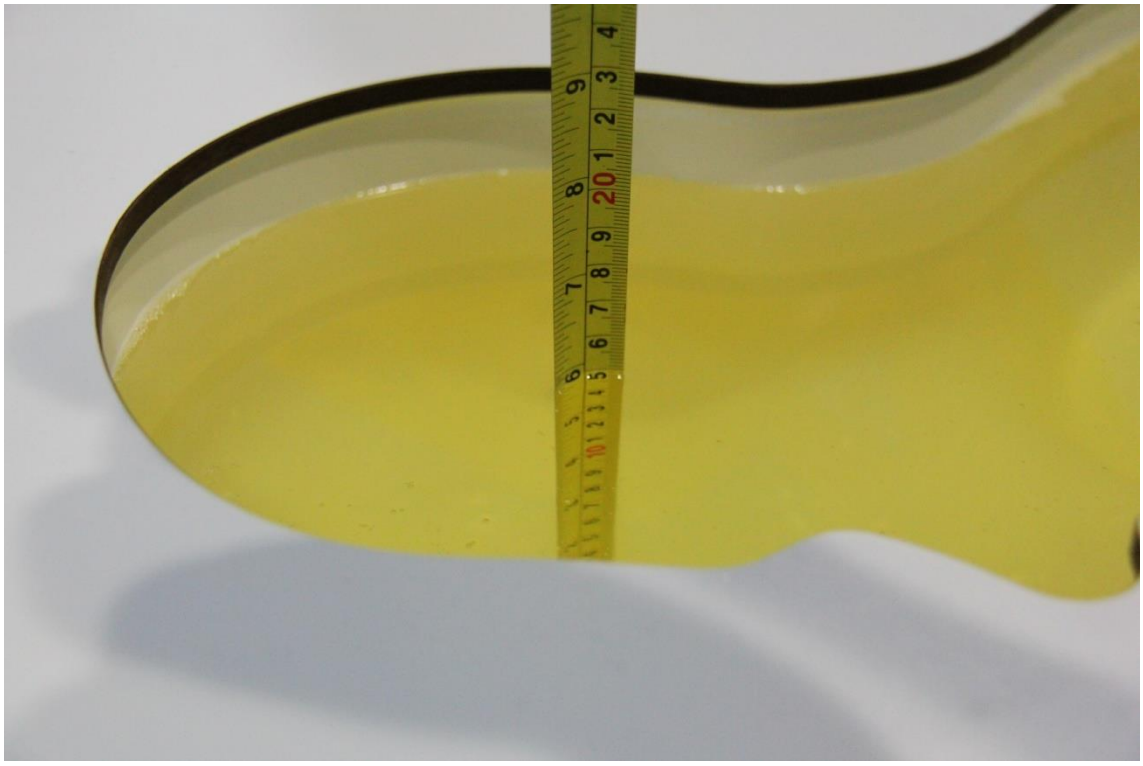
Note: The liquid temperature is 22.0℃



Picture 7-1 Liquid depth in the Head Phantom (835 MHz)

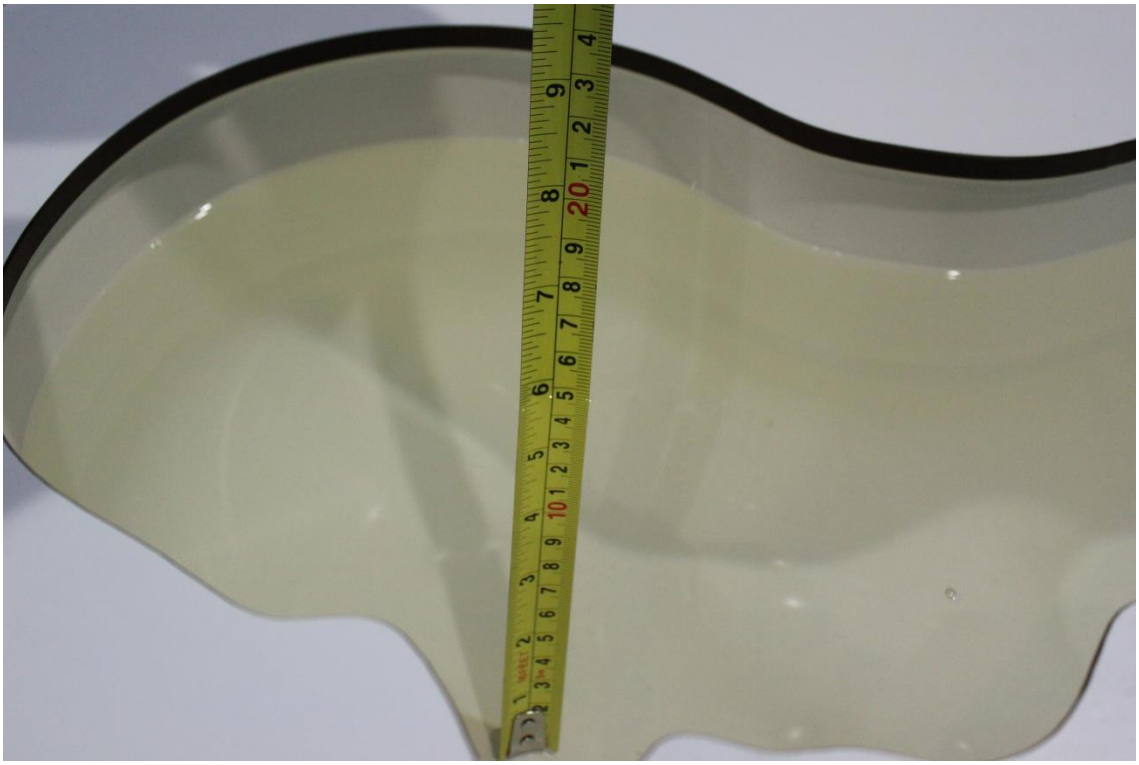


Picture 7-2 Liquid depth in the Head Phantom (1900 MHz)



Picture 7-3 Liquid depth in the Head Phantom (2450MHz)

Picture 7-4 Liquid depth in the Head Phantom (2600 MHz)

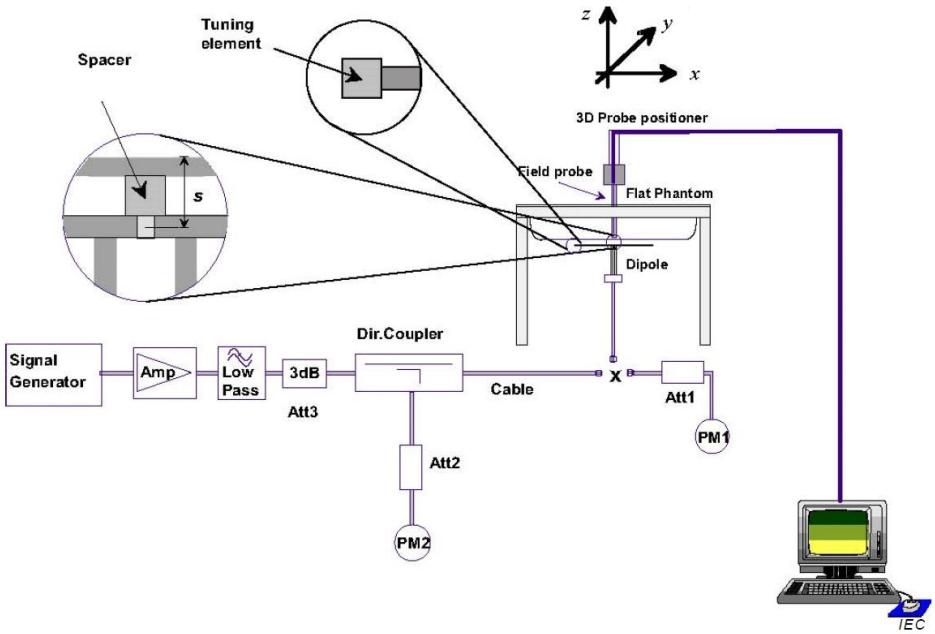


Picture 7-5 Liquid depth in the Head Phantom (5GHz)

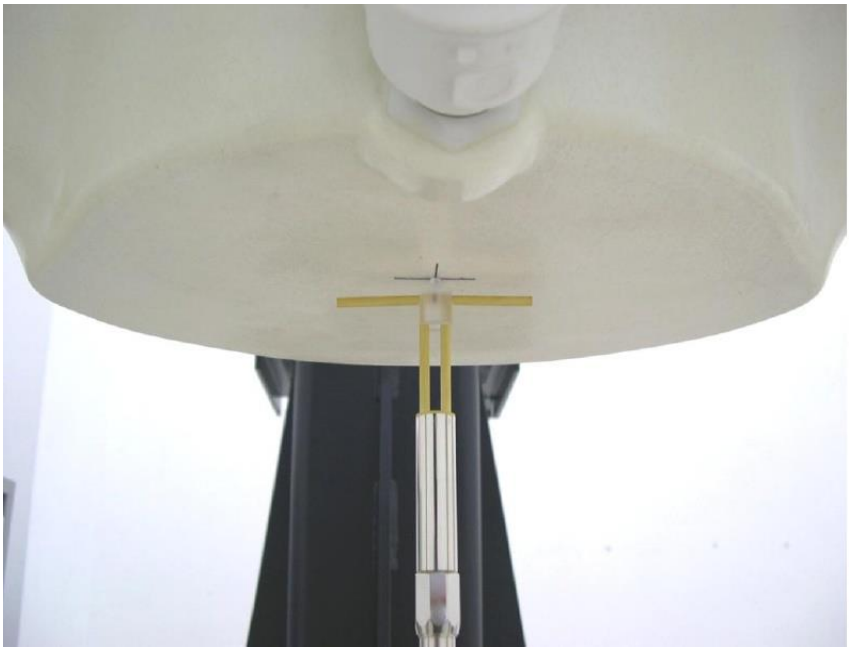
8 System verification

8.1 System Setup

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



Picture 8.1 System Setup for System Evaluation



Picture 8.2 Photo of Dipole Setup

8.2 System Verification

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

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

Table 8.1: System Verification of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2022-1-13	750 MHz	5.65	8.68	5.52	8.44	-2.30%	-2.76%
2022-1-14	835 MHz	6.24	9.63	6.08	9.40	-2.56%	-2.39%
2022-1-15	1800 MHz	19.9	38.3	20.5	39.0	2.91%	1.83%
2022-1-16	1900 MHz	20.9	40.1	20.8	39.4	-0.48%	-1.75%
2022-1-17	2450 MHz	24.9	53.3	25.1	53.8	0.72%	0.94%
2022-1-18	2600 MHz	25.5	57.1	25.3	58.1	-0.71%	1.72%
2022-1-10	5250 MHz	22.8	79.4	23.7	82.2	3.95%	3.53%
2022-1-11	5600 MHz	23.4	82.7	23.3	82	-0.43%	-0.85%
2022-1-12	5750 MHz	22.3	78.8	22.8	81.5	2.24%	3.43%

9 Measurement Procedures

9.1 Tests to be performed

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

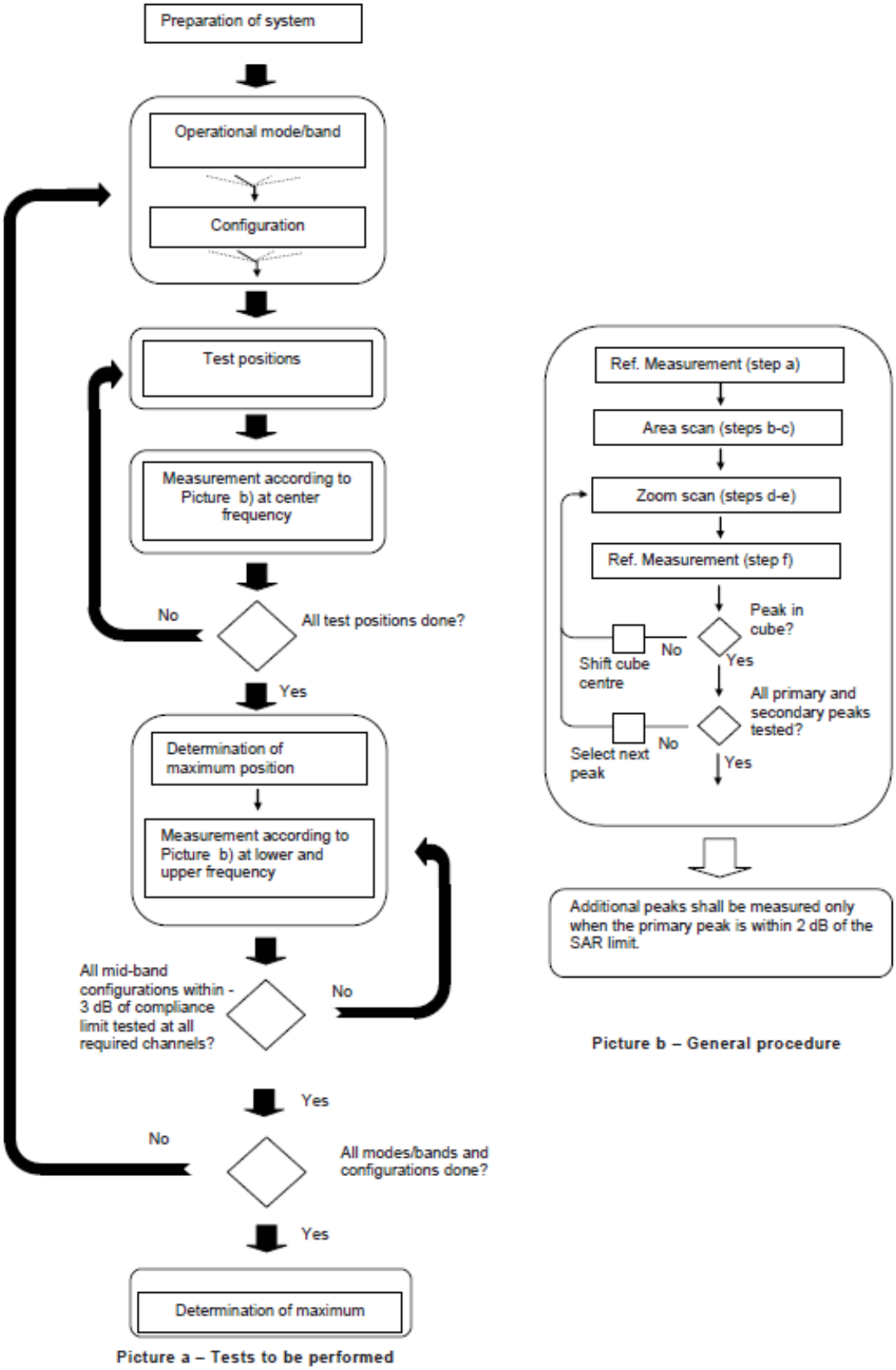
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

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

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

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

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



Picture 9.1Block diagram of the tests to be performed

9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013. 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.

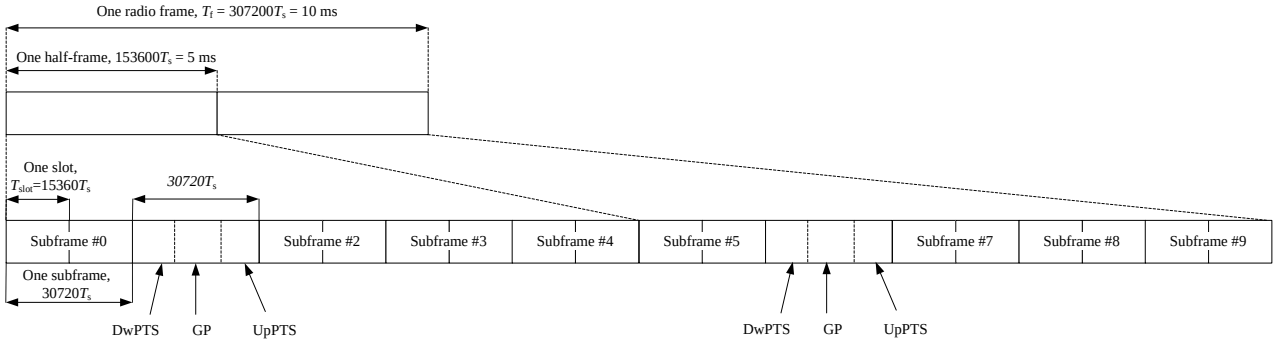


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

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

10 Area Scan Based 1-g SAR

10.1 Requirement of KDB

According to the KDB447498 D01, 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

Table11: Summary of Receiver detection mechanism

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

For WWAN, When the phone is in body mode (receiver off) and hotspot worked, then power reduction will be implemented immediately at GSM1900, WCDMA B2/B4 and LTE B25/B66. When the phone is in head mode (receiver on), then power reduction will be implemented immediately at WCDMA B5 and LTE B26.

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	31.88	31.99	31.74	33.00	/	/	/	/
GSM 850 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.89	31.99	31.72	33.00	-9.03	22.86	22.96	22.69
2 Txslots	28.44	28.58	28.37	30.00	-6.02	22.42	22.56	22.35
3 Txslots	27.48	27.63	27.43	28.50	-4.26	23.22	23.37	23.17
4 Txslots	26.38	26.55	26.33	27.00	-3.01	23.37	23.54	23.32
GSM 850 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.88	31.97	31.72	33.00	-9.03	22.85	22.94	22.69
2 Txslots	28.43	28.56	28.37	30.00	-6.02	22.41	22.54	22.35
3 Txslots	27.48	27.60	27.43	28.50	-4.26	23.22	23.34	23.17
4 Txslots	26.38	26.53	26.32	27.00	-3.01	23.37	23.52	23.31
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	26.77	26.41	26.43	27.00	-9.03	17.74	17.38	17.40
2 Txslots	22.61	22.29	22.28	24.00	-6.02	16.59	16.27	16.26
3Txslots	21.51	21.76	21.51	23.50	-4.26	17.25	17.50	17.25
4 Txslots	21.05	20.15	20.09	22.00	-3.01	18.04	17.14	17.08

NOTES:

1) Division Factors

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

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

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

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

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

According to the conducted power as above, the body measurements are performed with 4Txslots for GSM850.

Table 11.1-2: The conducted power measurement results-GSM1900 Power Level A1/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	28.35	28.48	28.58	30.00	/	/	/	/
PCS1900 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.37	28.48	28.56	30.00	-9.03	19.34	19.45	19.53
2 Txslots	25.54	25.59	25.53	27.00	-6.02	19.52	19.57	19.51
3 Txslots	24.67	24.73	24.66	25.00	-4.26	20.41	20.47	20.40
4 Txslots	23.70	23.76	23.67	24.00	-3.01	20.69	20.75	20.66
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	28.34	28.46	28.55	30.00	-9.03	19.31	19.43	19.52
2 Txslots	25.52	25.57	25.51	27.00	-6.02	19.50	19.55	19.49
3Txslots	24.66	24.72	24.64	25.00	-4.26	20.40	20.46	20.38
4 Txslots	23.69	23.75	23.66	24.00	-3.01	20.68	20.74	20.65
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	25.04	25.19	24.56	26.00	-9.03	16.01	16.16	15.53
2 Txslots	21.50	21.07	21.03	23.00	-6.02	15.48	15.05	15.01
3Txslots	20.02	19.88	19.83	21.50	-4.26	15.76	15.62	15.57
4 Txslots	19.14	18.71	18.61	20.00	-3.01	16.13	15.70	15.60

NOTES:

1) Division Factors

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

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

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

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

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

According to the conducted power as above, the body measurements are performed with

4Txslots for GSM1900.

Table 11.1-3: 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	28.00	27.78	27.86	28.00	/	/	/	/
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	27.99	27.77	27.83	28.00	-9.03	18.96	18.74	18.80
2 Txslots	25.38	25.02	24.98	25.50	-6.02	19.36	19.00	18.96
3 Txslots	24.54	24.16	24.07	25.00	-4.26	20.28	19.90	19.81
4 Txslots	23.56	23.19	23.08	24.00	-3.01	20.55	20.18	20.07
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	28.00	27.78	27.83	28.00	-9.03	18.97	18.75	18.80
2 Txslots	25.38	25.02	24.98	25.50	-6.02	19.36	19.00	18.96
3Txslots	24.54	24.16	24.07	25.00	-4.26	20.28	19.90	19.81
4 Txslots	23.56	23.19	23.07	24.00	-3.01	20.55	20.18	20.06
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	25.32	24.55	24.55	25.50	-9.03	16.29	15.52	15.52
2 Txslots	21.48	21.09	20.75	22.00	-6.02	15.46	15.07	14.73
3Txslots	20.09	19.64	19.41	20.50	-4.26	15.83	15.38	15.15
4 Txslots	18.75	18.27	18.52	20.00	-3.01	15.74	15.26	15.51

NOTES:

1) Division Factors

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

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

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

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

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

According to the conducted power as above, the body measurements are performed with 4Txslots for GSM1900.

11.2 WCDMA Measurement result

Table 11.2-1: The conducted Power for WCDMA Band2-Power Level A1/B1

WCDMA1900	Sub test	FDDII result (dBm)			Tune up
		9538/9938	9400/9800	9262/9662	
		(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	/	23.51	23.60	23.62	24.50
HSUPA	1	20.52	20.59	20.65	22.50
	2	20.51	20.58	20.61	22.50
	3	21.51	21.59	21.62	23.00
	4	20.03	20.07	20.08	22.00
	5	21.47	21.56	21.58	23.00
DC-HSDPA	1	22.04	22.08	22.12	22.50
	2	22.65	22.69	22.67	23.00
	3	22.63	22.65	22.64	23.00
	4	22.08	22.09	22.13	22.50

Table 11.2-2: The conducted Power for WCDMA Band2-Power Level C1

WCDMA1900	Sub test	FDDII result (dBm)			Tune up
		9538/9938	9400/9800	9262/9662	
		(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	/	22.16	22.33	22.35	22.50
HSUPA	1	17.74	17.92	17.95	19.50
	2	17.72	17.93	17.92	19.50
	3	18.70	18.84	18.87	20.50
	4	17.25	17.43	17.38	19.00
	5	18.66	18.87	18.85	20.50
DC-HSDPA	1	19.22	19.35	19.36	21.00
	2	19.79	19.90	19.89	20.00
	3	19.78	19.88	19.90	20.00
	4	19.34	19.42	19.38	19.50

Table 11.2-3: The conducted Power for WCDMA Band4-Power Level A1/B1

WCDMA1700	Sub test	FDDIV result (dBm)			Tune up
		1513/1738	1412/1637	1312/1537	
		(1752.6MHz)	(1732.4MHz)	(1712.4MHz)	
	/	23.53	23.61	23.64	23.80
HSUPA	1	20.51	20.60	20.66	22.00
	2	20.50	20.57	20.63	22.00
	3	21.52	21.61	21.65	22.00
	4	20.00	20.06	20.12	22.00
	5	21.51	21.55	21.61	22.00
DC-HSDPA	1	22.06	22.09	22.25	22.50
	2	22.54	22.56	22.64	23.00
	3	22.51	22.52	22.61	23.00
	4	22.02	22.00	22.17	22.50

Table 11.2-4: The conducted Power for WCDMA Band4-Power Level C1

WCDMA1700	Sub test	FDDIV result (dBm)			Tune up
		1513/1738	1412/1637	1312/1537	
		(1752.6MHz)	(1732.4MHz)	(1712.4MHz)	
	/	22.41	22.43	22.48	22.50
HSUPA	1	18.01	18.03	18.08	20.00
	2	18.02	18.02	18.07	20.00
	3	19.02	19.04	19.11	21.00
	4	17.51	17.54	17.53	19.50
	5	19.02	19.00	19.04	21.00
DC-HSDPA	1	19.52	19.63	19.50	20.50
	2	19.91	19.98	19.97	20.00
	3	19.90	19.98	19.97	20.00
	4	19.44	19.50	19.48	19.50

Table 11.2-5: The conducted Power for WCDMA Band5-Power Level A1

WCDMA850	Sub test	FDDV result (dBm)			Tune up
		4233/4458	4183/4408	4132/4357	
		(846.6MHz)	(836.6MHz)	(826.4MHz)	
	/	23.02	22.95	22.91	23.50
HSUPA	1	21.31	21.26	21.25	23.00
	2	21.30	21.21	21.24	22.50
	3	22.26	22.15	22.17	23.00
	4	20.84	20.73	20.75	22.50
	5	22.24	22.17	22.15	23.00
DC-HSDPA	1	22.49	22.37	22.48	22.50
	2	21.98	21.97	21.99	22.00
	3	21.97	21.96	21.98	22.00
	4	21.48	21.47	21.49	21.50

Table 11.2-6: The conducted Power for WCDMA Band5-Power Level B1/C1

WCDMA850	Sub test	FDDV result (dBm)			Tune up
		4233/4458	4183/4408	4132/4357	
		(846.6MHz)	(836.6MHz)	(826.4MHz)	
	/	24.31	24.25	24.27	24.50
HSUPA	1	21.31	21.26	21.25	23.00
	2	21.30	21.21	21.24	22.50
	3	22.26	22.15	22.17	23.00
	4	20.84	20.73	20.75	22.50
	5	22.24	22.17	22.15	23.00
DC-HSDPA	1	22.49	22.37	22.48	22.50
	2	21.98	21.97	21.99	22.00
	3	21.97	21.96	21.98	22.00
	4	21.48	21.47	21.49	21.50

11.3 LTE Measurement result

Maximum Target Power for Production Unit – Power Level A1/B1/C1

Band	Tune up (dBm)		
	Receiver on (head scenario)	**Receiver off + Hotspot off (Body scenario)**	**Receiver off + Hotspot on (Hotspot scenario)**
	Level A1	Level B1	Level C1
Band 12	24.5	24.5	24.5
Band 13	24.5	24.5	24.5
Band 25	24	24	22
Band 26	23.5	24.5	24.5
Band 41-PC3	24	24	24
Band 41-PC2	26	26	26
Band 66	23.5	23.5	22
Band 71	24	24	24

LTE B12-Power Level A1/B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	715.3 (23173)	23.73	22.99	21.94
		707.5 (23095)	23.76	23.11	21.98
		699.7 (23017)	23.80	23.12	22.11
	1RB-Middle (3)	715.3 (23173)	23.89	23.19	22.09
		707.5 (23095)	23.92	23.24	22.06
		699.7 (23017)	23.94	23.27	22.26
	1RB-Low (0)	715.3 (23173)	23.74	22.96	21.97
		707.5 (23095)	23.79	23.12	21.95
		699.7 (23017)	23.84	23.17	22.24
	3RB-High (3)	715.3 (23173)	23.84	22.87	21.93
		707.5 (23095)	23.87	22.88	21.98
		699.7 (23017)	23.95	22.92	22.10
	3RB-Middle (1)	715.3 (23173)	23.90	22.84	22.01
		707.5 (23095)	23.92	22.92	22.05
		699.7 (23017)	24.00	23.00	22.14
	3RB-Low (0)	715.3 (23173)	23.86	22.78	22.00
		707.5 (23095)	23.89	22.87	22.04
		699.7 (23017)	23.92	22.87	22.10
	6RB (0)	715.3 (23173)	22.85	21.97	20.91
		707.5 (23095)	22.89	21.98	20.93
		699.7 (23017)	22.96	22.12	21.00
3MHz	1RB-High (14)	714.5 (23165)	23.76	23.05	23.74
		707.5 (23095)	23.78	22.99	21.95
		700.5 (23025)	23.86	23.19	22.14
	1RB-Middle (7)	714.5 (23165)	23.89	23.20	23.89
		707.5 (23095)	23.89	23.23	22.36
		700.5 (23025)	23.98	23.33	22.30
	1RB-Low (0)	714.5 (23165)	23.77	23.13	23.77
		707.5 (23095)	23.81	23.18	22.10
		700.5 (23025)	23.90	23.24	22.12
	8RB-High (7)	714.5 (23165)	22.79	21.87	20.96
		707.5 (23095)	22.81	21.93	20.97
		700.5 (23025)	22.87	22.04	21.02
	8RB-Middle (4)	714.5 (23165)	22.84	21.91	21.01
		707.5 (23095)	22.87	21.94	21.01
		700.5 (23025)	22.92	22.07	21.06
	8RB-Low (0)	714.5 (23165)	22.83	21.89	20.98
		707.5 (23095)	22.86	21.98	21.02
		700.5 (23025)	22.91	22.08	21.05
	15RB (0)	714.5 (23165)	22.81	21.83	20.91
		707.5 (23095)	22.84	21.87	20.93
		700.5 (23025)	22.89	22.00	21.00

5MHz	1RB-High (24)	713.5 (23155)	23.67	22.94	21.84
		707.5 (23095)	23.66	22.90	21.83
		701.5 (23035)	23.72	23.00	21.97
	1RB-Middle (12)	713.5 (23155)	23.95	23.23	22.22
		707.5 (23095)	24.02	23.27	22.16
		701.5 (23035)	24.04	23.37	22.34
	1RB-Low (0)	713.5 (23155)	23.71	23.05	22.02
		707.5 (23095)	23.78	23.05	22.02
		701.5 (23035)	23.79	23.14	22.11
	12RB-High (13)	713.5 (23155)	22.79	21.80	20.86
		707.5 (23095)	22.86	21.85	20.95
		701.5 (23035)	22.88	21.93	20.99
	12RB-Middle (6)	713.5 (23155)	22.89	21.89	20.98
		707.5 (23095)	22.94	21.93	21.01
		701.5 (23035)	22.94	21.99	21.07
	12RB-Low (0)	713.5 (23155)	22.85	21.84	20.93
		707.5 (23095)	22.88	21.91	20.97
		701.5 (23035)	22.94	22.02	21.02
	25RB (0)	713.5 (23155)	22.85	21.86	20.91
		707.5 (23095)	22.89	21.90	20.95
		701.5 (23035)	22.92	22.02	20.99
10MHz	1RB-High (49)	711 (23130)	23.73	23.08	21.95
		707.5 (23095)	23.73	22.94	21.95
		704 (23060)	23.75	23.04	21.99
	1RB-Middle (24)	711 (23130)	23.96	23.20	22.14
		707.5 (23095)	23.94	23.16	22.18
		704 (23060)	23.97	23.21	22.23
	1RB-Low (0)	711 (23130)	23.86	23.14	22.08
		707.5 (23095)	23.85	23.11	22.18
		704 (23060)	23.89	23.12	22.16
	25RB-High (25)	711 (23130)	22.84	21.86	20.91
		707.5 (23095)	22.88	21.91	20.97
		704 (23060)	22.95	21.98	21.01
	25RB-Middle (12)	711 (23130)	22.92	21.90	20.98
		707.5 (23095)	22.94	21.97	21.00
		704 (23060)	22.96	22.05	21.03
	25RB-Low (0)	711 (23130)	22.91	21.94	21.01
		707.5 (23095)	22.95	21.96	21.02
		704 (23060)	23.02	22.11	21.10
	50RB (0)	711 (23130)	22.89	21.90	20.96
		707.5 (23095)	22.94	21.95	20.99
		704 (23060)	22.98	22.06	21.05

LTE B13-Power Level A1/B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**16QAM**
5MHz	1RB-High (24)	784.5 (23255)	23.78	23.07	21.91
		782 (23230)	23.78	23.18	22.01
		779.5 (23205)	23.80	23.11	22.00
	1RB-Middle (12)	784.5 (23255)	24.06	23.42	22.32
		782 (23230)	24.02	23.31	22.29
		779.5 (23205)	24.03	23.25	22.20
	1RB-Low (0)	784.5 (23255)	23.83	23.06	22.07
		782 (23230)	23.81	23.17	22.02
		779.5 (23205)	23.79	23.03	21.95
	12RB-High (13)	784.5 (23255)	22.88	21.87	20.97
		782 (23230)	22.99	21.96	21.06
		779.5 (23205)	22.92	21.97	21.03
	12RB-Middle (6)	784.5 (23255)	22.99	22.01	21.10
		782 (23230)	23.00	22.03	21.10
		779.5 (23205)	22.97	22.00	21.07
	12RB-Low (0)	784.5 (23255)	22.92	21.91	20.97
		782 (23230)	22.96	21.96	21.07
		779.5 (23205)	22.82	21.81	20.90
	25RB (0)	784.5 (23255)	22.89	21.90	20.99
		782 (23230)	22.97	22.01	21.04
		779.5 (23205)	22.88	21.90	20.95
10MHz	1RB-High (49)	782 (23230)	23.83	23.22	22.02
	1RB-Middle (24)	782 (23230)	24.00	23.29	22.28
	1RB-Low (0)	782 (23230)	23.90	23.20	22.13
	25RB-High (25)	782 (23230)	22.97	22.01	21.09
	25RB-Middle (12)	782 (23230)	23.01	22.07	21.08
	25RB-Low (0)	782 (23230)	23.04	22.06	21.11
	50RB (0)	782 (23230)	23.04	22.04	21.12

LTE B25-Power Level A1/B1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1914.3 (26683)	23.25	22.41	21.42
		1882.5 (26365)	23.31	22.60	21.51
		1850.7 (26047)	23.36	22.68	21.63
	1RB-Middle (3)	1914.3 (26683)	23.35	22.63	21.60
		1882.5 (26365)	23.45	22.67	21.64
		1850.7 (26047)	23.51	22.84	21.62
	1RB-Low (0)	1914.3 (26683)	23.25	22.40	21.38
		1882.5 (26365)	23.26	22.63	21.42
		1850.7 (26047)	23.36	22.61	21.51
	3RB-High (3)	1914.3 (26683)	23.36	22.32	21.38
		1882.5 (26365)	23.42	22.33	21.46
		1850.7 (26047)	23.48	22.47	21.55
	3RB-Middle (1)	1914.3 (26683)	23.46	22.33	21.42
		1882.5 (26365)	23.48	22.47	21.53
		1850.7 (26047)	23.52	22.53	21.61
	3RB-Low (0)	1914.3 (26683)	23.37	22.33	21.47
		1882.5 (26365)	23.39	22.31	21.45
		1850.7 (26047)	23.50	22.45	21.63
	6RB (0)	1914.3 (26683)	22.40	21.45	20.31
		1882.5 (26365)	22.44	21.49	20.41
		1850.7 (26047)	22.52	21.59	20.53
3MHz	1RB-High (14)	1913.5 (26675)	23.26	22.40	21.46
		1882.5 (26365)	23.32	22.54	21.48
		1851.5 (26055)	23.42	22.67	21.59
	1RB-Middle (7)	1913.5 (26675)	23.46	22.64	21.53
		1882.5 (26365)	23.49	22.69	21.71
		1851.5 (26055)	23.50	22.89	21.78
	1RB-Low (0)	1913.5 (26675)	23.27	22.58	21.53
		1882.5 (26365)	23.27	22.56	21.51
		1851.5 (26055)	23.40	22.71	21.62
	8RB-High (7)	1913.5 (26675)	22.30	21.36	20.34
		1882.5 (26365)	22.39	21.42	20.45
		1851.5 (26055)	22.43	21.51	20.50
	8RB-Middle (4)	1913.5 (26675)	22.36	21.37	20.39
		1882.5 (26365)	22.41	21.46	20.46
		1851.5 (26055)	22.46	21.55	20.54
	8RB-Low (0)	1913.5 (26675)	22.37	21.39	20.39
		1882.5 (26365)	22.35	21.42	20.44
		1851.5 (26055)	22.44	21.52	20.53
	15RB (0)	1913.5 (26675)	22.32	21.35	20.33
		1882.5 (26365)	22.38	21.39	20.39
		1851.5 (26055)	22.45	21.46	20.48

5MHz	1RB-High (24)	1912.5 (26665)	23.17	22.29	21.25
		1882.5 (26365)	23.21	22.42	21.41
		1852.5 (26065)	23.28	22.58	21.47
	1RB-Middle (12)	1912.5 (26665)	23.45	22.65	21.62
		1882.5 (26365)	23.49	22.72	21.68
		1852.5 (26065)	23.60	22.93	21.80
	1RB-Low (0)	1912.5 (26665)	23.19	22.38	21.42
		1882.5 (26365)	23.13	22.46	21.40
		1852.5 (26065)	23.30	22.50	21.60
	12RB-High (13)	1912.5 (26665)	22.22	21.22	20.26
		1882.5 (26365)	22.38	21.38	20.42
		1852.5 (26065)	22.50	21.51	20.51
	12RB-Middle (6)	1912.5 (26665)	22.38	21.39	20.42
		1882.5 (26365)	22.39	21.41	20.45
		1852.5 (26065)	22.50	21.47	20.51
	12RB-Low (0)	1912.5 (26665)	22.39	21.36	20.40
		1882.5 (26365)	22.31	21.32	20.30
		1852.5 (26065)	22.42	21.46	20.45
	25RB (0)	1912.5 (26665)	22.34	21.34	20.35
		1882.5 (26365)	22.34	21.40	20.37
		1852.5 (26065)	22.46	21.47	20.48
10MHz	1RB-High (49)	1910 (26640)	23.21	22.49	21.43
		1882.5 (26365)	23.28	22.60	21.44
		1855 (26090)	23.34	22.66	21.55
	1RB-Middle (24)	1910 (26640)	23.34	22.53	21.66
		1882.5 (26365)	23.42	22.69	21.61
		1855 (26090)	23.45	22.76	21.63
	1RB-Low (0)	1910 (26640)	23.26	22.51	21.48
		1882.5 (26365)	23.18	22.45	21.37
		1855 (26090)	23.42	22.75	21.65
	25RB-High (25)	1910 (26640)	22.25	21.24	20.25
		1882.5 (26365)	22.45	21.48	20.48
		1855 (26090)	22.59	21.58	20.58
	25RB-Middle (12)	1910 (26640)	22.34	21.35	20.37
		1882.5 (26365)	22.37	21.38	20.40
		1855 (26090)	22.48	21.49	20.51
	25RB-Low (0)	1910 (26640)	22.32	21.34	20.32
		1882.5 (26365)	22.31	21.33	20.34
		1855 (26090)	22.41	21.41	20.42
	50RB (0)	1910 (26640)	22.29	21.28	20.30
		1882.5 (26365)	22.42	21.42	20.44
		1855 (26090)	22.54	21.52	20.52

15MHz	1RB-High (74)	1907.5 (26615)	23.18	22.38	21.39
		1882.5 (26365)	23.19	22.47	21.36
		1857.5 (26115)	23.27	22.54	21.42
	1RB-Middle (37)	1907.5 (26615)	23.28	22.63	21.50
		1882.5 (26365)	23.33	22.57	21.55
		1857.5 (26115)	23.37	22.63	21.59
	1RB-Low (0)	1907.5 (26615)	23.25	22.59	21.44
		1882.5 (26365)	23.12	22.46	21.33
		1857.5 (26115)	23.31	22.56	21.56
	36RB-High (38)	1907.5 (26615)	22.32	21.29	20.38
		1882.5 (26365)	22.41	21.36	20.42
		1857.5 (26115)	22.48	21.49	20.48
	36RB-Middle (19)	1907.5 (26615)	22.36	21.39	20.40
		1882.5 (26365)	22.37	21.34	20.37
		1857.5 (26115)	22.46	21.41	20.46
	36RB-Low (0)	1907.5 (26615)	22.36	21.34	20.40
		1882.5 (26365)	22.28	21.30	20.31
		1857.5 (26115)	22.38	21.35	20.37
	75RB (0)	1907.5 (26615)	22.31	21.32	20.47
		1882.5 (26365)	22.33	21.34	20.34
		1857.5 (26115)	22.44	21.43	20.44
20MHz	1RB-High (99)	1905 (26590)	23.19	22.41	21.36
		1882.5 (26365)	23.15	22.45	21.39
		1860 (26140)	23.29	22.61	21.50
	1RB-Middle (50)	1905 (26590)	23.42	22.75	21.71
		1882.5 (26365)	23.57	22.60	21.67
		1860 (26140)	23.55	22.82	21.73
	1RB-Low (0)	1905 (26590)	23.42	22.75	21.58
		1882.5 (26365)	23.13	22.38	21.25
		1860 (26140)	23.32	22.62	21.52
	50RB-High (50)	1905 (26590)	22.36	21.37	20.38
		1882.5 (26365)	22.43	21.43	20.48
		1860 (26140)	22.45	21.45	20.46
	50RB-Middle (25)	1905 (26590)	22.44	21.45	20.47
		1882.5 (26365)	22.39	21.40	20.42
		1860 (26140)	22.53	21.51	20.54
	50RB-Low (0)	1905 (26590)	22.52	21.62	20.63
		1882.5 (26365)	22.57	21.29	20.30
		1860 (26140)	22.37	21.34	20.38
	100RB (0)	1905 (26590)	22.49	21.48	20.50
		1882.5 (26365)	22.39	21.35	20.39
		1860 (26140)	22.40	21.35	20.41

LTE B25-Power Level C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1914.3 (26683)	21.26	21.53	21.34
		1882.5 (26365)	21.32	21.66	21.47
		1850.7 (26047)	21.39	21.69	21.61
	1RB-Middle (3)	1914.3 (26683)	21.45	21.67	21.60
		1882.5 (26365)	21.52	21.75	21.73
		1850.7 (26047)	21.56	21.92	21.71
	1RB-Low (0)	1914.3 (26683)	21.32	21.54	21.45
		1882.5 (26365)	21.30	21.69	21.59
		1850.7 (26047)	21.38	21.66	21.58
	3RB-High (3)	1914.3 (26683)	21.43	21.41	21.42
		1882.5 (26365)	21.45	21.49	21.55
		1850.7 (26047)	21.49	21.53	21.65
	3RB-Middle (1)	1914.3 (26683)	21.51	21.46	21.49
		1882.5 (26365)	21.47	21.49	21.56
		1850.7 (26047)	21.58	21.64	21.65
	3RB-Low (0)	1914.3 (26683)	21.40	21.40	21.46
		1882.5 (26365)	21.41	21.40	21.51
		1850.7 (26047)	21.49	21.56	21.64
	6RB (0)	1914.3 (26683)	21.44	21.45	20.41
		1882.5 (26365)	21.40	21.56	20.44
		1850.7 (26047)	21.49	21.62	20.58
3MHz	1RB-High (14)	1913.5 (26675)	21.26	21.47	21.44
		1882.5 (26365)	21.30	21.52	21.54
		1851.5 (26055)	21.39	21.64	21.61
	1RB-Middle (7)	1913.5 (26675)	21.43	21.66	21.66
		1882.5 (26365)	21.52	21.78	21.71
		1851.5 (26055)	21.58	21.86	21.74
	1RB-Low (0)	1913.5 (26675)	21.33	21.56	21.49
		1882.5 (26365)	21.27	21.54	21.43
		1851.5 (26055)	21.39	21.67	21.58
	8RB-High (7)	1913.5 (26675)	21.30	21.29	20.35
		1882.5 (26365)	21.34	21.44	20.42
		1851.5 (26055)	21.37	21.50	20.51
	8RB-Middle (4)	1913.5 (26675)	21.35	21.40	20.42
		1882.5 (26365)	21.39	21.46	20.47
		1851.5 (26055)	21.42	21.52	20.53
	8RB-Low (0)	1913.5 (26675)	21.32	21.38	20.43
		1882.5 (26365)	21.32	21.40	20.41
		1851.5 (26055)	21.39	21.51	20.53
	15RB (0)	1913.5 (26675)	21.32	21.35	20.34
		1882.5 (26365)	21.32	21.39	20.38
		1851.5 (26055)	21.36	21.45	20.43

5MHz	1RB-High (24)	1912.5 (26665)	21.15	21.33	21.32
		1882.5 (26365)	21.23	21.50	21.41
		1852.5 (26065)	21.28	21.50	21.51
	1RB-Middle (12)	1912.5 (26665)	21.47	21.83	21.72
		1882.5 (26365)	21.46	21.74	21.74
		1852.5 (26065)	21.52	21.93	21.67
	1RB-Low (0)	1912.5 (26665)	21.24	21.59	21.44
		1882.5 (26365)	21.09	21.44	21.27
		1852.5 (26065)	21.29	21.71	21.43
	12RB-High (13)	1912.5 (26665)	21.23	21.20	20.26
		1882.5 (26365)	21.40	21.43	20.46
		1852.5 (26065)	21.43	21.44	20.51
	12RB-Middle (6)	1912.5 (26665)	21.38	21.38	20.43
		1882.5 (26365)	21.38	21.37	20.42
		1852.5 (26065)	21.46	21.47	20.52
	12RB-Low (0)	1912.5 (26665)	21.40	21.37	20.46
		1882.5 (26365)	21.28	21.30	20.33
		1852.5 (26065)	21.39	21.43	20.46
	25RB (0)	1912.5 (26665)	21.32	21.30	20.32
		1882.5 (26365)	21.37	21.36	20.40
		1852.5 (26065)	21.39	21.47	20.46
10MHz	1RB-High (49)	1910 (26640)	21.25	21.57	21.40
		1882.5 (26365)	21.30	21.66	21.52
		1855 (26090)	21.38	21.64	21.57
	1RB-Middle (24)	1910 (26640)	21.51	21.85	21.63
		1882.5 (26365)	21.47	21.70	21.69
		1855 (26090)	21.48	21.87	21.76
	1RB-Low (0)	1910 (26640)	21.39	21.75	21.64
		1882.5 (26365)	21.14	21.51	21.33
		1855 (26090)	21.35	21.75	21.55
	25RB-High (25)	1910 (26640)	21.29	21.28	20.30
		1882.5 (26365)	21.48	21.50	20.50
		1855 (26090)	21.54	21.57	20.58
	25RB-Middle (12)	1910 (26640)	21.45	21.46	20.45
		1882.5 (26365)	21.36	21.38	20.40
		1855 (26090)	21.47	21.50	20.52
	25RB-Low (0)	1910 (26640)	21.43	21.45	20.46
		1882.5 (26365)	21.25	21.29	20.32
		1855 (26090)	21.37	21.43	20.44
	50RB (0)	1910 (26640)	21.39	21.38	20.42
		1882.5 (26365)	21.40	21.43	20.43
		1855 (26090)	21.51	21.54	20.55

15MHz	1RB-High (74)	1907.5 (26615)	21.25	21.42	21.38
		1882.5 (26365)	21.28	21.59	21.47
		1857.5 (26115)	21.37	21.73	21.56
	1RB-Middle (37)	1907.5 (26615)	21.45	21.77	21.62
		1882.5 (26365)	21.35	21.67	21.54
		1857.5 (26115)	21.46	21.79	21.63
	1RB-Low (0)	1907.5 (26615)	21.44	21.83	21.71
		1882.5 (26365)	21.15	21.53	21.31
		1857.5 (26115)	21.34	21.65	21.58
	36RB-High (38)	1907.5 (26615)	21.39	21.39	20.42
		1882.5 (26365)	21.48	21.44	20.49
		1857.5 (26115)	21.55	21.51	20.59
	36RB-Middle (19)	1907.5 (26615)	21.49	21.49	20.53
		1882.5 (26365)	21.39	21.40	20.43
		1857.5 (26115)	21.46	21.46	20.50
	36RB-Low (0)	1907.5 (26615)	21.53	21.52	20.56
		1882.5 (26365)	21.27	21.29	20.31
		1857.5 (26115)	21.38	21.36	20.43
	75RB (0)	1907.5 (26615)	21.46	21.47	20.45
		1882.5 (26365)	21.36	21.38	20.38
		1857.5 (26115)	21.46	21.48	20.47
20MHz	1RB-High (99)	1905 (26590)	21.24	21.55	21.41
		1882.5 (26365)	21.28	21.52	21.48
		1860 (26140)	21.35	21.71	21.61
	1RB-Middle (50)	1905 (26590)	21.59	21.88	21.83
		1882.5 (26365)	21.49	21.87	21.78
		1860 (26140)	21.54	21.90	21.78
	1RB-Low (0)	1905 (26590)	21.62	21.93	21.79
		1882.5 (26365)	21.11	21.54	21.45
		1860 (26140)	21.35	21.62	21.57
	50RB-High (50)	1905 (26590)	21.45	21.48	20.49
		1882.5 (26365)	21.52	21.54	20.59
		1860 (26140)	21.52	21.54	20.57
	50RB-Middle (25)	1905 (26590)	21.54	21.57	20.61
		1882.5 (26365)	21.44	21.47	20.50
		1860 (26140)	21.54	21.54	20.58
	50RB-Low (0)	1905 (26590)	21.71	21.74	20.75
		1882.5 (26365)	21.34	21.37	20.40
		1860 (26140)	21.30	21.38	20.40
	100RB (0)	1905 (26590)	21.57	21.59	20.63
		1882.5 (26365)	21.43	21.43	20.48
		1860 (26140)	21.42	21.46	20.48

LTE B26-Power Level A1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (27033)	22.58	21.82	21.01
		831.5 (26865)	22.69	22.17	21.10
		814.7 (26697)	23.00	22.10	20.81
	1RB-Middle (3)	848.3 (27033)	23.02	22.37	21.38
		831.5 (26865)	22.88	22.41	21.29
		814.7 (26697)	22.68	22.30	21.32
	1RB-Low (0)	848.3 (27033)	22.94	21.98	20.93
		831.5 (26865)	22.52	22.29	20.96
		814.7 (26697)	22.88	22.11	21.01
	3RB-High (3)	848.3 (27033)	22.15	20.84	20.08
		831.5 (26865)	22.11	20.95	20.15
		814.7 (26697)	21.97	20.92	19.68
	3RB-Middle (1)	848.3 (27033)	22.16	21.20	19.84
		831.5 (26865)	21.80	21.02	20.02
		814.7 (26697)	21.67	21.02	19.74
	3RB-Low (0)	848.3 (27033)	22.10	21.16	19.91
		831.5 (26865)	21.98	21.03	19.88
		814.7 (26697)	21.98	20.80	20.12
	6RB (0)	848.3 (27033)	22.17	21.21	20.10
		831.5 (26865)	22.08	20.94	19.83
		814.7 (26697)	21.88	20.94	19.60
3MHz	1RB-High (14)	847.5 (27025)	22.88	22.27	21.14
		831.5 (26865)	22.99	22.15	21.22
		815.5 (26705)	22.97	21.96	21.13
	1RB-Middle (7)	847.5 (27025)	23.07	22.07	21.10
		831.5 (26865)	22.70	22.11	21.07
		815.5 (26705)	22.60	22.39	20.92
	1RB-Low (0)	847.5 (27025)	23.01	22.17	20.96
		831.5 (26865)	22.89	22.08	21.09
		815.5 (26705)	22.68	21.88	21.07
	8RB-High (7)	847.5 (27025)	22.08	21.07	19.91
		831.5 (26865)	21.92	20.84	19.75
		815.5 (26705)	21.67	20.77	20.02
	8RB-Middle (4)	847.5 (27025)	21.84	21.00	20.11
		831.5 (26865)	21.85	20.75	19.88
		815.5 (26705)	21.71	21.12	20.07
	8RB-Low (0)	847.5 (27025)	21.81	20.92	19.97
		831.5 (26865)	21.96	20.84	19.85
		815.5 (26705)	21.88	20.79	19.68
	15RB (0)	847.5 (27025)	22.09	20.97	19.83
		831.5 (26865)	21.85	20.84	19.93
		815.5 (26705)	21.78	20.96	19.68

5MHz	1RB-High (24)	846.5 (27015)	23.05	21.89	20.98
		831.5 (26865)	22.64	22.26	21.29
		816.5 (26715)	22.91	22.21	21.06
	1RB-Middle (12)	846.5 (27015)	23.02	22.30	21.09
		831.5 (26865)	22.70	22.08	21.00
		816.5 (26715)	22.59	21.98	21.14
	1RB-Low (0)	846.5 (27015)	22.80	22.00	21.36
		831.5 (26865)	22.61	22.26	21.21
		816.5 (26715)	22.84	21.84	20.96
	12RB-High (13)	846.5 (27015)	22.11	20.87	19.88
		831.5 (26865)	21.98	20.95	20.15
		816.5 (26715)	21.92	20.91	20.07
	12RB-Middle (6)	846.5 (27015)	22.11	20.88	20.27
		831.5 (26865)	22.16	20.75	20.21
		816.5 (26715)	21.66	20.85	19.79
	12RB-Low (0)	846.5 (27015)	21.95	21.11	19.82
		831.5 (26865)	21.87	20.80	19.77
		816.5 (26715)	21.86	21.09	20.08
	25RB (0)	846.5 (27015)	21.83	21.00	19.82
		831.5 (26865)	22.18	21.18	19.75
		816.5 (26715)	21.81	20.71	19.58
10MHz	1RB-High (49)	844 (26990)	22.80	22.21	20.84
		831.5 (26865)	22.72	21.97	21.15
		820 (26750)	22.83	21.83	20.78
	1RB-Middle (24)	844 (26990)	23.10	21.96	21.13
		831.5 (26865)	22.73	22.25	21.34
		820 (26750)	22.89	22.27	21.08
	1RB-Low (0)	844 (26990)	22.60	22.38	21.22
		831.5 (26865)	22.88	21.93	21.19
		820 (26750)	22.64	21.72	20.98
	25RB-High (25)	844 (26990)	21.69	20.79	20.01
		831.5 (26865)	22.08	20.94	20.00
		820 (26750)	21.82	20.79	20.10
	25RB-Middle (12)	844 (26990)	21.98	20.92	19.89
		831.5 (26865)	21.71	20.98	20.00
		820 (26750)	21.67	20.74	19.73
	25RB-Low (0)	844 (26990)	21.82	20.97	19.85
		831.5 (26865)	21.82	21.07	20.15
		820 (26750)	21.88	20.93	19.70
	50RB (0)	844 (26990)	21.78	20.75	20.21
		831.5 (26865)	22.06	21.07	19.77
		820 (26750)	21.77	20.95	19.69

15MHz	1RB-High (74)	841.5 (26965)	22.80	22.07	20.97
		831.5 (26865)	22.74	22.08	21.07
		822.5 (26775)	22.75	22.05	20.99
	1RB-Middle (37)	841.5 (26965)	22.91	22.17	21.19
		831.5 (26865)	22.86	22.25	21.21
		822.5 (26775)	22.79	22.22	21.07
	1RB-Low (0)	841.5 (26965)	22.80	22.13	21.12
		831.5 (26865)	22.75	22.09	21.08
		822.5 (26775)	22.71	21.95	20.98
	36RB-High (38)	841.5 (26965)	21.90	20.92	19.96
		831.5 (26865)	21.95	20.96	20.00
		822.5 (26775)	21.80	20.82	19.89
	36RB-Middle (19)	841.5 (26965)	22.00	21.05	20.05
		831.5 (26865)	21.92	20.98	20.02
		822.5 (26775)	21.85	20.90	19.93
	36RB-Low (0)	841.5 (26965)	21.92	20.96	19.97
		831.5 (26865)	21.93	20.98	20.00
		822.5 (26775)	21.80	20.85	19.87
	75RB (0)	841.5 (26965)	21.93	20.97	19.96
		831.5 (26865)	21.94	21.02	19.99
		822.5 (26775)	21.76	20.83	19.81

LTE B26-Power Level B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (27033)	23.82	22.88	21.94
		831.5 (26865)	23.80	23.05	22.00
		814.7 (26697)	23.83	23.01	22.01
	1RB-Middle (3)	848.3 (27033)	23.97	23.06	21.94
		831.5 (26865)	23.87	23.20	22.10
		814.7 (26697)	23.92	23.11	22.09
	1RB-Low (0)	848.3 (27033)	23.84	22.87	21.92
		831.5 (26865)	23.78	22.98	21.98
		814.7 (26697)	23.81	23.14	22.06
	3RB-High (3)	848.3 (27033)	23.95	22.80	21.91
		831.5 (26865)	23.90	22.84	21.98
		814.7 (26697)	23.91	22.85	22.03
	3RB-Middle (1)	848.3 (27033)	24.02	22.81	22.00
		831.5 (26865)	23.96	22.90	22.03
		814.7 (26697)	23.98	23.02	22.09
	3RB-Low (0)	848.3 (27033)	23.96	22.80	21.97
		831.5 (26865)	23.90	22.90	21.98
		814.7 (26697)	23.93	22.91	22.09
	6RB (0)	848.3 (27033)	22.98	21.98	20.95
		831.5 (26865)	22.95	22.04	20.96
		814.7 (26697)	22.99	22.06	20.92
3MHz	1RB-High (14)	847.5 (27025)	23.87	22.94	21.98
		831.5 (26865)	23.82	23.10	22.05
		815.5 (26705)	23.82	23.02	22.08
	1RB-Middle (7)	847.5 (27025)	24.06	23.09	22.15
		831.5 (26865)	24.03	23.30	22.22
		815.5 (26705)	23.97	23.32	22.24
	1RB-Low (0)	847.5 (27025)	23.87	22.94	22.05
		831.5 (26865)	23.85	23.08	22.04
		815.5 (26705)	23.88	23.15	22.15
	8RB-High (7)	847.5 (27025)	22.94	21.89	20.96
		831.5 (26865)	22.91	21.98	20.99
		815.5 (26705)	22.91	21.99	20.97
	8RB-Middle (4)	847.5 (27025)	22.99	21.98	20.99
		831.5 (26865)	22.93	22.02	21.00
		815.5 (26705)	22.95	22.03	21.03
	8RB-Low (0)	847.5 (27025)	22.95	21.98	21.01
		831.5 (26865)	22.91	21.97	21.00
		815.5 (26705)	22.95	22.04	21.03
	15RB (0)	847.5 (27025)	22.97	21.93	20.94
		831.5 (26865)	22.94	21.93	20.94
		815.5 (26705)	22.93	21.96	20.96

5MHz	1RB-High (24)	846.5 (27015)	23.76	22.88	21.82
		831.5 (26865)	23.69	22.96	21.91
		816.5 (26715)	23.73	22.93	21.93
	1RB-Middle (12)	846.5 (27015)	24.04	23.14	22.11
		831.5 (26865)	24.03	23.24	22.15
		816.5 (26715)	24.09	23.35	22.29
	1RB-Low (0)	846.5 (27015)	23.75	22.96	21.92
		831.5 (26865)	23.70	22.97	22.03
		816.5 (26715)	23.74	23.01	22.05
	12RB-High (13)	846.5 (27015)	22.87	21.80	20.91
		831.5 (26865)	22.90	21.91	20.94
		816.5 (26715)	22.96	21.95	21.00
	12RB-Middle (6)	846.5 (27015)	23.01	21.95	21.01
		831.5 (26865)	22.98	21.96	21.02
		816.5 (26715)	23.01	22.03	21.05
	12RB-Low (0)	846.5 (27015)	22.98	21.98	21.01
		831.5 (26865)	22.92	21.93	20.94
		816.5 (26715)	22.92	21.91	20.97
	25RB (0)	846.5 (27015)	22.98	21.95	20.95
		831.5 (26865)	22.96	21.94	20.94
		816.5 (26715)	22.98	22.00	20.99
10MHz	1RB-High (49)	844 (26990)	23.84	22.85	21.98
		831.5 (26865)	23.76	23.03	21.90
		820 (26750)	23.84	23.15	22.03
	1RB-Middle (24)	844 (26990)	23.97	23.12	22.17
		831.5 (26865)	23.92	23.23	22.15
		820 (26750)	23.99	23.18	22.19
	1RB-Low (0)	844 (26990)	23.78	23.02	21.99
		831.5 (26865)	23.84	23.05	22.05
		820 (26750)	23.91	23.09	22.11
	25RB-High (25)	844 (26990)	22.90	21.84	21.83
		831.5 (26865)	22.98	21.98	20.97
		820 (26750)	22.99	21.99	21.01
	25RB-Middle (12)	844 (26990)	23.00	21.97	21.95
		831.5 (26865)	22.97	21.97	20.96
		820 (26750)	22.99	21.99	20.98
	25RB-Low (0)	844 (26990)	23.02	22.02	22.00
		831.5 (26865)	23.06	22.05	21.04
		820 (26750)	22.92	21.93	20.91
	50RB (0)	844 (26990)	22.95	21.93	20.95
		831.5 (26865)	23.00	22.01	20.99
		820 (26750)	22.94	21.97	20.97

15MHz	1RB-High (74)	841.5 (26965)	23.64	22.78	21.78
		831.5 (26865)	23.55	22.70	21.69
		822.5 (26775)	23.61	22.94	21.80
	1RB-Middle (37)	841.5 (26965)	23.73	22.91	21.93
		831.5 (26865)	23.75	22.98	21.90
		822.5 (26775)	23.74	23.01	22.00
	1RB-Low (0)	841.5 (26965)	23.66	22.93	21.84
		831.5 (26865)	23.68	23.08	21.98
		822.5 (26775)	23.69	23.08	22.02
	36RB-High (38)	841.5 (26965)	22.78	21.71	20.74
		831.5 (26865)	22.86	21.80	20.82
		822.5 (26775)	22.75	21.71	20.76
	36RB-Middle (19)	841.5 (26965)	22.85	21.80	20.81
		831.5 (26865)	22.84	21.81	20.84
		822.5 (26775)	22.83	21.82	20.85
	36RB-Low (0)	841.5 (26965)	22.77	21.70	20.75
		831.5 (26865)	22.90	21.88	20.89
		822.5 (26775)	22.76	21.74	20.77
	75RB (0)	841.5 (26965)	22.79	21.73	20.74
		831.5 (26865)	22.85	21.85	20.84
		822.5 (26775)	22.73	21.75	20.74

LTE B41 PC3-Power Level A1/B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	22.30	21.51	20.10
		2640.3(41093)	22.58	21.77	20.29
		2593 (40620)	22.59	21.76	20.33
		2545.8(40148)	22.64	21.79	20.40
		2498.5 (39675)	22.61	21.77	20.32
	1RB-Middle (12)	2687.5 (41565)	22.54	21.81	20.36
		2640.3(41093)	22.91	22.07	20.64
		2593 (40620)	22.91	22.07	20.67
		2545.8(40148)	22.97	22.10	20.68
		2498.5 (39675)	22.79	21.94	20.62
	1RB-Low (0)	2687.5 (41565)	22.39	21.56	20.09
		2640.3(41093)	22.64	21.75	20.40
		2593 (40620)	22.66	21.77	20.39
		2545.8(40148)	22.72	21.84	20.45
		2498.5 (39675)	22.57	21.68	20.25
	12RB-High (13)	2687.5 (41565)	21.46	20.38	19.51
		2640.3(41093)	21.65	20.59	19.75
		2593 (40620)	21.73	20.68	19.76
		2545.8(40148)	21.79	20.76	19.88
		2498.5 (39675)	21.71	20.71	19.80
	12RB-Middle (6)	2687.5 (41565)	21.52	20.51	19.59
		2640.3(41093)	21.77	20.67	19.82
		2593 (40620)	21.84	20.76	19.84
		2545.8(40148)	21.91	20.79	19.91
		2498.5 (39675)	21.72	20.70	19.80
	12RB-Low (0)	2687.5 (41565)	21.51	20.50	19.53
		2640.3(41093)	21.74	20.67	19.79
		2593 (40620)	21.75	20.71	19.79
		2545.8(40148)	21.78	20.74	19.89
		2498.5 (39675)	21.59	20.57	19.72
	25RB (0)	2687.5 (41565)	21.41	20.50	19.58
		2640.3(41093)	21.73	20.76	19.82
		2593 (40620)	21.76	20.77	19.82
		2545.8(40148)	21.75	20.82	19.89
		2498.5 (39675)	21.62	20.66	19.79

10MHz	1RB-High (49)	2685 (41540)	22.43	21.59	20.13
		2639(41080)	22.59	21.77	20.39
		2593 (40620)	22.70	21.84	20.40
		2547(40160)	22.71	21.86	20.40
		2501 (39700)	22.75	21.91	20.51
	1RB-Middle (24)	2685 (41540)	22.51	21.73	20.33
		2639(41080)	22.81	21.99	20.45
		2593 (40620)	22.78	21.93	20.57
		2547(40160)	22.86	21.96	20.62
		2501 (39700)	22.87	21.98	20.48
	1RB-Low (0)	2685 (41540)	22.51	21.66	20.19
		2639(41080)	22.75	21.92	20.47
		2593 (40620)	22.72	21.90	20.43
		2547(40160)	22.83	21.97	20.50
		2501 (39700)	22.61	21.74	20.33
	25RB-High (25)	2685 (41540)	21.50	20.49	19.61
		2639(41080)	21.79	20.85	19.86
		2593 (40620)	21.85	20.83	19.90
		2547(40160)	21.85	20.87	19.95
		2501 (39700)	21.78	20.81	19.93
	25RB-Middle (12)	2685 (41540)	21.61	20.65	19.66
		2639(41080)	21.76	20.80	19.88
		2593 (40620)	21.83	20.82	19.85
		2547(40160)	21.88	20.92	19.95
		2501 (39700)	21.78	20.87	19.93
	25RB-Low (0)	2685 (41540)	21.64	20.65	19.70
		2639(41080)	21.85	20.88	19.90
		2593 (40620)	21.86	20.86	19.87
		2547(40160)	21.87	20.90	20.00
		2501 (39700)	21.65	20.76	19.84
	50RB (0)	2685 (41540)	21.64	20.72	19.66
		2639(41080)	21.88	20.95	19.89
		2593 (40620)	21.89	20.93	19.89
		2547(40160)	21.90	20.99	19.99
		2501 (39700)	21.83	20.87	19.89

15MHz	1RB-High (74)	2682.5 (41515)	22.37	21.50	20.09
		2637.8(41068)	22.52	21.70	20.21
		2593 (40620)	22.60	21.76	20.33
		2548.3(40173)	22.62	21.78	20.37
		2503.5 (39725)	22.73	21.94	20.49
	1RB-Middle (37)	2682.5 (41515)	22.44	21.57	20.16
		2637.8(41068)	22.70	21.86	20.39
		2593 (40620)	22.80	21.92	20.37
		2548.3(40173)	22.75	21.88	20.49
		2503.5 (39725)	22.78	21.90	20.49
	1RB-Low (0)	2682.5 (41515)	22.44	21.57	20.19
		2637.8(41068)	22.67	21.85	20.45
		2593 (40620)	22.66	21.81	20.46
		2548.3(40173)	22.77	21.87	20.43
		2503.5 (39725)	22.56	21.70	20.27
	36RB-High (38)	2682.5 (41515)	21.41	20.39	19.50
		2637.8(41068)	21.70	20.71	19.78
		2593 (40620)	21.76	20.76	19.78
		2548.3(40173)	21.75	20.74	19.83
		2503.5 (39725)	21.83	20.85	19.84
	36RB-Middle (19)	2682.5 (41515)	21.54	20.52	19.60
		2637.8(41068)	21.81	20.75	19.85
		2593 (40620)	21.76	20.75	19.79
		2548.3(40173)	21.80	20.80	19.90
		2503.5 (39725)	21.80	20.80	19.86
	36RB-Low (0)	2682.5 (41515)	21.53	20.53	19.59
		2637.8(41068)	21.77	20.76	19.83
		2593 (40620)	21.76	20.78	19.80
		2548.3(40173)	21.80	20.84	19.88
		2503.5 (39725)	21.68	20.69	19.74
	75RB (0)	2682.5 (41515)	21.56	20.60	19.60
		2637.8(41068)	21.80	20.84	19.87
		2593 (40620)	21.79	20.83	19.84
		2548.3(40173)	21.83	20.87	19.89
		2503.5 (39725)	21.77	20.82	19.90

20MHz	1RB-High (99)	2680 (41490)	22.75	21.80	20.53
		2636.5(41055)	22.84	21.98	20.53
		2593 (40620)	22.73	21.88	20.52
		2549.5(40185)	22.83	21.96	20.56
		2506 (39750)	22.99	22.10	20.70
	1RB-Middle (50)	2680 (41490)	23.01	22.13	20.74
		2636.5(41055)	23.20	22.29	20.88
		2593 (40620)	23.07	22.20	20.76
		2549.5(40185)	23.14	22.27	20.82
		2506 (39750)	23.16	22.30	20.87
	1RB-Low (0)	2680 (41490)	22.86	22.03	20.60
		2636.5(41055)	22.95	22.14	20.73
		2593 (40620)	22.85	22.02	20.60
		2549.5(40185)	22.99	22.12	20.66
		2506 (39750)	22.84	21.94	20.51
	50RB-High (50)	2680 (41490)	21.88	20.98	19.93
		2636.5(41055)	22.22	21.16	20.14
		2593 (40620)	22.05	21.11	20.11
		2549.5(40185)	22.06	21.13	20.05
		2506 (39750)	22.20	21.25	20.20
	50RB-Middle (25)	2680 (41490)	22.01	21.07	20.01
		2636.5(41055)	22.16	21.26	20.20
		2593 (40620)	22.06	21.12	20.06
		2549.5(40185)	22.08	21.20	20.15
		2506 (39750)	22.11	21.19	20.22
	50RB-Low (0)	2680 (41490)	22.02	21.12	20.06
		2636.5(41055)	22.12	21.21	20.15
		2593 (40620)	22.04	21.10	20.06
		2549.5(40185)	22.10	21.16	20.18
		2506 (39750)	22.00	21.06	20.12
	100RB (0)	2680 (41490)	21.90	20.97	19.97
		2636.5(41055)	22.04	21.19	20.12
		2593 (40620)	22.03	21.04	20.03
		2549.5(40185)	22.05	21.11	20.11
		2506 (39750)	22.08	21.14	20.18

LTE B41 PC2-Power Level A1/B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2687.5 (41565)	25.22	24.49	23.26
		2640.3(41093)	25.48	24.72	23.51
		2593 (40620)	25.49	24.72	23.53
		2545.8(40148)	25.59	24.78	23.57
		2498.5 (39675)	25.56	24.70	23.52
	1RB-Middle (12)	2687.5 (41565)	25.37	24.59	23.39
		2640.3(41093)	25.64	24.85	23.66
		2593 (40620)	25.66	24.85	23.67
		2545.8(40148)	25.73	24.91	23.71
		2498.5 (39675)	25.64	24.77	23.57
	1RB-Low (0)	2687.5 (41565)	25.28	24.53	23.35
		2640.3(41093)	25.57	24.78	23.58
		2593 (40620)	25.57	24.76	23.58
		2545.8(40148)	25.63	24.79	23.61
		2498.5 (39675)	25.46	24.61	23.45
	12RB-High (13)	2687.5 (41565)	24.39	23.44	22.48
		2640.3(41093)	24.68	23.66	22.72
		2593 (40620)	24.67	23.69	22.73
		2545.8(40148)	24.72	23.78	22.81
		2498.5 (39675)	24.66	23.66	22.75
	12RB-Middle (6)	2687.5 (41565)	24.50	23.51	22.56
		2640.3(41093)	24.74	23.75	22.80
		2593 (40620)	24.75	23.73	22.79
		2545.8(40148)	24.79	23.80	22.87
		2498.5 (39675)	24.65	23.66	22.73
	12RB-Low (0)	2687.5 (41565)	24.45	23.45	22.51
		2640.3(41093)	24.68	23.68	22.74
		2593 (40620)	24.70	23.70	22.74
		2545.8(40148)	24.70	23.76	22.80
		2498.5 (39675)	24.57	23.53	22.64
	25RB (0)	2687.5 (41565)	24.41	23.50	22.54
		2640.3(41093)	24.66	23.70	22.76
		2593 (40620)	24.68	23.73	22.77
		2545.8(40148)	24.70	23.76	22.85
		2498.5 (39675)	24.58	23.63	22.73

10MHz	1RB-High (49)	2685 (41540)	25.41	24.60	23.37
		2639(41080)	25.52	24.79	23.55
		2593 (40620)	25.59	24.82	23.60
		2547(40160)	25.64	24.83	23.61
		2501 (39700)	25.68	24.85	23.65
	1RB-Middle (24)	2685 (41540)	25.50	24.72	23.52
		2639(41080)	25.75	24.94	23.74
		2593 (40620)	25.75	24.96	23.76
		2547(40160)	25.83	25.00	23.81
		2501 (39700)	25.76	24.92	23.71
	1RB-Low (0)	2685 (41540)	25.39	24.65	23.44
		2639(41080)	25.65	24.89	23.68
		2593 (40620)	25.64	24.88	23.66
		2547(40160)	25.73	24.95	23.72
		2501 (39700)	25.56	24.73	23.49
	25RB-High (25)	2685 (41540)	24.44	23.50	22.60
		2639(41080)	24.70	23.76	22.81
		2593 (40620)	24.77	23.80	22.86
		2547(40160)	24.78	23.82	22.92
		2501 (39700)	24.74	23.80	22.89
	25RB-Middle (12)	2685 (41540)	24.52	23.57	22.53
		2639(41080)	24.75	23.79	22.86
		2593 (40620)	24.72	23.76	22.83
		2547(40160)	24.80	23.84	22.92
		2501 (39700)	24.72	23.76	22.85
	25RB-Low (0)	2685 (41540)	24.54	23.62	22.62
		2639(41080)	24.77	23.83	22.89
		2593 (40620)	24.73	23.79	22.83
		2547(40160)	24.77	23.82	22.93
		2501 (39700)	24.62	23.65	22.76
	50RB (0)	2685 (41540)	24.51	23.56	22.55
		2639(41080)	24.79	23.79	22.80
		2593 (40620)	24.78	23.83	22.79
		2547(40160)	24.81	23.86	22.84
		2501 (39700)	24.74	23.76	22.77

15MHz	1RB-High (74)	2682.5 (41515)	25.28	24.47	23.27
		2637.8(41068)	25.44	24.66	23.45
		2593 (40620)	25.50	24.73	23.52
		2548.3(40173)	25.53	24.75	23.55
		2503.5 (39725)	25.68	24.88	23.68
	1RB-Middle (37)	2682.5 (41515)	25.40	24.60	23.42
		2637.8(41068)	25.63	24.82	23.64
		2593 (40620)	25.66	24.90	23.66
		2548.3(40173)	25.73	24.90	23.70
		2503.5 (39725)	25.69	24.84	23.65
	1RB-Low (0)	2682.5 (41515)	25.37	24.62	23.39
		2637.8(41068)	25.62	24.84	23.63
		2593 (40620)	25.62	24.82	23.63
		2548.3(40173)	25.68	24.88	23.66
		2503.5 (39725)	25.52	24.68	23.47
	36RB-High (38)	2682.5 (41515)	24.43	23.37	22.37
		2637.8(41068)	24.77	23.65	22.68
		2593 (40620)	24.76	23.63	22.70
		2548.3(40173)	24.70	23.68	22.78
		2503.5 (39725)	24.81	23.73	22.76
	36RB-Middle (19)	2682.5 (41515)	24.51	23.45	22.48
		2637.8(41068)	24.72	23.73	22.73
		2593 (40620)	24.77	23.65	22.70
		2548.3(40173)	24.82	23.75	22.77
		2503.5 (39725)	24.75	23.69	22.74
	36RB-Low (0)	2682.5 (41515)	24.53	23.49	22.49
		2637.8(41068)	24.75	23.74	22.73
		2593 (40620)	24.73	23.63	22.71
		2548.3(40173)	24.80	23.72	22.81
		2503.5 (39725)	24.65	23.60	22.63
	75RB (0)	2682.5 (41515)	24.48	23.48	22.49
		2637.8(41068)	24.72	23.66	22.75
		2593 (40620)	24.65	23.67	22.74
		2548.3(40173)	24.66	23.68	22.79
		2503.5 (39725)	24.70	23.71	22.76

20MHz	1RB-High (99)	2680 (41490)	25.34	24.57	23.37
		2636.5(41055)	25.52	24.73	23.54
		2593 (40620)	25.43	24.69	23.46
		2549.5(40185)	25.49	24.72	23.53
		2506 (39750)	25.62	24.88	23.66
	1RB-Middle (50)	2680 (41490)	25.61	24.87	23.69
		2636.5(41055)	25.79	25.01	23.83
		2593 (40620)	25.70	24.93	23.76
		2549.5(40185)	25.84	24.99	23.79
		2506 (39750)	25.83	25.03	23.83
	1RB-Low (0)	2680 (41490)	25.53	24.77	23.55
		2636.5(41055)	25.66	24.90	23.68
		2593 (40620)	25.54	24.80	23.57
		2549.5(40185)	25.68	24.85	23.65
		2506 (39750)	25.51	24.68	23.47
	50RB-High (50)	2680 (41490)	24.48	23.54	22.58
		2636.5(41055)	24.79	23.83	22.83
		2593 (40620)	24.73	23.76	22.74
		2549.5(40185)	24.85	23.81	22.78
		2506 (39750)	24.82	23.91	22.88
	50RB-Middle (25)	2680 (41490)	24.67	23.71	22.69
		2636.5(41055)	24.84	23.82	22.89
		2593 (40620)	24.74	23.77	22.76
		2549.5(40185)	24.77	23.78	22.83
		2506 (39750)	24.84	23.85	22.87
	50RB-Low (0)	2680 (41490)	24.68	23.73	22.70
		2636.5(41055)	24.80	23.85	22.83
		2593 (40620)	24.72	23.75	22.73
		2549.5(40185)	24.78	23.84	22.84
		2506 (39750)	24.73	23.73	22.74
	100RB (0)	2680 (41490)	24.67	23.67	22.68
		2636.5(41055)	24.86	23.88	22.85
		2593 (40620)	24.80	23.80	22.77
		2549.5(40185)	24.82	23.82	22.83
		2506 (39750)	24.86	23.87	22.84

LTE B66-Power Level A1/B1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	23.16	22.46	21.33
		1745 (132322)	23.22	22.47	21.35
		1710.7 (131979)	23.32	22.48	21.48
	1RB-Middle (3)	1779.3 (132665)	23.34	22.46	21.48
		1745 (132322)	23.38	22.46	21.49
		1710.7 (131979)	23.42	22.47	21.47
	1RB-Low (0)	1779.3 (132665)	23.17	22.34	21.38
		1745 (132322)	23.19	22.47	21.38
		1710.7 (131979)	23.32	22.47	21.47
	3RB-High (3)	1779.3 (132665)	23.30	22.17	21.38
		1745 (132322)	23.32	22.30	21.43
		1710.7 (131979)	23.42	22.43	21.47
	3RB-Middle (1)	1779.3 (132665)	23.37	22.30	21.41
		1745 (132322)	23.37	22.32	21.48
		1710.7 (131979)	23.50	22.50	21.46
	3RB-Low (0)	1779.3 (132665)	23.28	22.22	21.34
		1745 (132322)	23.33	22.31	21.40
		1710.7 (131979)	23.44	22.39	21.45
	6RB (0)	1779.3 (132665)	22.32	21.37	20.30
		1745 (132322)	22.30	21.42	20.37
		1710.7 (131979)	22.47	21.46	20.48
3MHz	1RB-High (14)	1778.5 (132657)	23.19	22.34	21.36
		1745 (132322)	23.19	22.50	21.41
		1711.5 (131987)	23.35	22.47	21.45
	1RB-Middle (7)	1778.5 (132657)	23.34	22.44	21.47
		1745 (132322)	23.33	22.48	21.46
		1711.5 (131987)	23.40	22.47	21.44
	1RB-Low (0)	1778.5 (132657)	23.21	22.47	21.36
		1745 (132322)	23.24	22.48	21.43
		1711.5 (131987)	23.33	22.46	21.48
	8RB-High (7)	1778.5 (132657)	22.21	21.27	20.26
		1745 (132322)	22.24	21.33	20.33
		1711.5 (131987)	22.36	21.46	20.43
	8RB-Middle (4)	1778.5 (132657)	22.26	21.31	20.30
		1745 (132322)	22.26	21.33	20.35
		1711.5 (131987)	22.42	21.46	20.47
	8RB-Low (0)	1778.5 (132657)	22.22	21.30	20.27
		1745 (132322)	22.28	21.33	20.32
		1711.5 (131987)	22.36	21.45	20.47
	15RB (0)	1778.5 (132657)	22.24	21.22	20.23
		1745 (132322)	22.26	21.25	20.24
		1711.5 (131987)	22.38	21.40	20.38

5MHz	1RB-High (24)	1777.5 (132647)	23.08	22.29	21.28
		1745 (132322)	23.13	22.34	21.36
		1712.5 (131997)	23.26	22.45	21.45
	1RB-Middle (12)	1777.5 (132647)	23.41	22.42	21.47
		1745 (132322)	23.39	22.43	21.40
		1712.5 (131997)	23.48	22.47	21.46
	1RB-Low (0)	1777.5 (132647)	23.08	22.40	21.27
		1745 (132322)	23.12	22.48	21.33
		1712.5 (131997)	23.24	22.50	21.48
	12RB-High (13)	1777.5 (132647)	22.22	21.19	20.24
		1745 (132322)	22.25	21.24	20.28
		1712.5 (131997)	22.37	21.36	20.43
	12RB-Middle (6)	1777.5 (132647)	22.30	21.27	20.28
		1745 (132322)	22.32	21.32	20.34
		1712.5 (131997)	22.42	21.44	20.46
	12RB-Low (0)	1777.5 (132647)	22.27	21.21	20.32
		1745 (132322)	22.28	21.28	20.30
		1712.5 (131997)	22.38	21.41	20.43
	25RB (0)	1777.5 (132647)	22.27	21.24	20.25
		1745 (132322)	22.27	21.28	20.27
		1712.5 (131997)	22.39	21.40	20.42
10MHz	1RB-High (49)	1775 (132622)	23.13	22.42	21.33
		1745 (132322)	23.19	22.48	21.41
		1715 (132022)	23.30	22.43	21.48
	1RB-Middle (24)	1775 (132622)	23.28	22.47	21.44
		1745 (132322)	23.30	22.47	21.49
		1715 (132022)	23.47	22.43	21.46
	1RB-Low (0)	1775 (132622)	23.14	22.46	21.32
		1745 (132322)	23.19	22.44	21.43
		1715 (132022)	23.30	22.47	21.43
	25RB-High (25)	1775 (132622)	22.26	21.25	20.27
		1745 (132322)	22.32	21.30	20.31
		1715 (132022)	22.42	21.45	20.46
	25RB-Middle (12)	1775 (132622)	22.27	21.27	20.28
		1745 (132322)	22.31	21.31	20.34
		1715 (132022)	22.43	21.43	20.45
	25RB-Low (0)	1775 (132622)	22.33	21.29	20.29
		1745 (132322)	22.32	21.34	20.33
		1715 (132022)	22.45	21.47	20.47
	50RB (0)	1775 (132622)	22.28	21.28	20.26
		1745 (132322)	22.32	21.30	20.31
		1715 (132022)	22.45	21.44	20.47

15MHz	1RB-High (74)	1772.5 (132597)	23.10	22.25	21.23
		1745 (132322)	23.15	22.44	21.30
		1717.5 (132047)	23.26	22.47	21.49
	1RB-Middle (37)	1772.5 (132597)	23.20	22.46	21.40
		1745 (132322)	23.23	22.47	21.39
		1717.5 (132047)	23.36	22.47	21.45
	1RB-Low (0)	1772.5 (132597)	23.09	22.44	21.28
		1745 (132322)	23.19	22.40	21.41
		1717.5 (132047)	23.31	22.49	21.49
	36RB-High (38)	1772.5 (132597)	22.25	21.21	20.25
		1745 (132322)	22.30	21.26	20.29
		1717.5 (132047)	22.41	21.41	20.45
	36RB-Middle (19)	1772.5 (132597)	22.26	21.24	20.28
		1745 (132322)	22.32	21.28	20.32
		1717.5 (132047)	22.43	21.43	20.47
	36RB-Low (0)	1772.5 (132597)	22.24	21.23	20.26
		1745 (132322)	22.33	21.32	20.37
		1717.5 (132047)	22.43	21.42	20.46
	75RB (0)	1772.5 (132597)	22.26	21.25	20.23
		1745 (132322)	22.31	21.30	20.32
		1717.5 (132047)	22.42	21.42	20.44
20MHz	1RB-High (99)	1770 (132572)	23.08	22.29	21.23
		1745 (132322)	23.14	22.40	21.30
		1720 (132072)	23.19	22.47	21.45
	1RB-Middle (50)	1770 (132572)	23.31	22.45	21.49
		1745 (132322)	23.37	22.43	21.46
		1720 (132072)	23.47	22.42	21.47
	1RB-Low (0)	1770 (132572)	23.13	22.31	21.31
		1745 (132322)	23.20	22.45	21.43
		1720 (132072)	23.25	22.43	21.44
	50RB-High (50)	1770 (132572)	22.21	21.21	20.24
		1745 (132322)	22.26	21.28	20.28
		1720 (132072)	22.46	21.47	20.49
	50RB-Middle (25)	1770 (132572)	22.30	21.30	20.31
		1745 (132322)	22.36	21.34	20.37
		1720 (132072)	22.44	21.47	20.49
	50RB-Low (0)	1770 (132572)	22.28	21.27	20.28
		1745 (132322)	22.38	21.40	20.39
		1720 (132072)	22.45	21.46	20.50
	100RB (0)	1770 (132572)	22.26	21.23	20.26
		1745 (132322)	22.31	21.31	20.31
		1720 (132072)	22.45	21.45	20.48

LTE B66-Power Level C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	21.29	21.63	21.52
		1745 (132322)	21.42	22.75	21.62
		1710.7 (131979)	21.44	22.69	21.66
	1RB-Middle (3)	1779.3 (132665)	21.45	21.71	21.61
		1745 (132322)	21.58	22.90	21.75
		1710.7 (131979)	21.57	22.82	21.71
	1RB-Low (0)	1779.3 (132665)	21.30	21.55	21.50
		1745 (132322)	21.42	22.74	21.60
		1710.7 (131979)	21.43	22.71	21.70
	3RB-High (3)	1779.3 (132665)	21.39	21.35	21.46
		1745 (132322)	21.52	22.49	21.57
		1710.7 (131979)	21.57	22.43	21.64
	3RB-Middle (1)	1779.3 (132665)	21.47	21.46	21.52
		1745 (132322)	21.59	22.56	21.67
		1710.7 (131979)	21.59	22.45	21.70
	3RB-Low (0)	1779.3 (132665)	21.40	21.42	21.45
		1745 (132322)	21.53	22.54	21.66
		1710.7 (131979)	21.51	22.41	21.63
	6RB (0)	1779.3 (132665)	21.39	21.52	20.38
		1745 (132322)	21.50	21.64	20.55
		1710.7 (131979)	21.53	21.62	20.54
3MHz	1RB-High (14)	1778.5 (132657)	21.35	21.58	21.53
		1745 (132322)	21.45	21.73	21.75
		1711.5 (131987)	21.47	21.82	21.72
	1RB-Middle (7)	1778.5 (132657)	21.51	21.85	21.72
		1745 (132322)	21.67	22.02	21.88
		1711.5 (131987)	21.65	21.88	21.93
	1RB-Low (0)	1778.5 (132657)	21.37	21.62	21.52
		1745 (132322)	21.50	21.81	21.72
		1711.5 (131987)	21.48	21.78	21.75
	8RB-High (7)	1778.5 (132657)	21.37	21.44	20.43
		1745 (132322)	21.48	21.58	20.56
		1711.5 (131987)	21.52	21.59	20.58
	8RB-Middle (4)	1778.5 (132657)	21.40	21.47	20.46
		1745 (132322)	21.54	21.61	20.63
		1711.5 (131987)	21.53	21.63	20.60
	8RB-Low (0)	1778.5 (132657)	21.38	21.50	20.47
		1745 (132322)	21.50	21.63	20.59
		1711.5 (131987)	21.53	21.60	20.60
	15RB (0)	1778.5 (132657)	21.38	21.40	20.39
		1745 (132322)	21.48	21.56	20.50
		1711.5 (131987)	21.50	21.54	20.52

5MHz	1RB-High (24)	1777.5 (132647)	21.23	21.47	21.42
		1745 (132322)	21.34	21.73	21.59
		1712.5 (131997)	21.37	21.75	21.58
	1RB-Middle (12)	1777.5 (132647)	21.51	21.87	21.67
		1745 (132322)	21.71	21.99	21.86
		1712.5 (131997)	21.68	22.01	21.87
	1RB-Low (0)	1777.5 (132647)	21.24	21.62	21.47
		1745 (132322)	21.38	21.72	21.57
		1712.5 (131997)	21.40	21.74	21.65
	12RB-High (13)	1777.5 (132647)	21.36	21.36	20.41
		1745 (132322)	21.47	21.51	20.53
		1712.5 (131997)	21.52	21.49	20.54
	12RB-Middle (6)	1777.5 (132647)	21.46	21.46	20.49
		1745 (132322)	21.57	21.58	20.60
		1712.5 (131997)	21.57	21.59	20.61
	12RB-Low (0)	1777.5 (132647)	21.42	21.40	20.45
		1745 (132322)	21.50	21.56	20.56
		1712.5 (131997)	21.49	21.48	20.53
	25RB (0)	1777.5 (132647)	21.41	21.43	20.43
		1745 (132322)	21.50	21.55	20.51
		1712.5 (131997)	21.50	21.55	20.53
10MHz	1RB-High (49)	1775 (132622)	21.31	21.59	21.54
		1745 (132322)	21.43	21.77	21.62
		1715 (132022)	21.39	21.79	21.61
	1RB-Middle (24)	1775 (132622)	21.46	21.80	21.62
		1745 (132322)	21.58	21.95	21.73
		1715 (132022)	21.57	21.97	21.84
	1RB-Low (0)	1775 (132622)	21.32	21.72	21.50
		1745 (132322)	21.44	21.83	21.71
		1715 (132022)	21.46	21.74	21.66
	25RB-High (25)	1775 (132622)	21.43	21.42	20.44
		1745 (132322)	21.52	21.58	20.55
		1715 (132022)	21.48	21.53	20.53
	25RB-Middle (12)	1775 (132622)	21.44	21.45	20.43
		1745 (132322)	21.53	21.58	20.58
		1715 (132022)	21.53	21.55	20.57
	25RB-Low (0)	1775 (132622)	21.44	21.47	20.45
		1745 (132322)	21.49	21.53	20.54
		1715 (132022)	21.54	21.56	20.58
	50RB (0)	1775 (132622)	21.44	21.44	20.43
		1745 (132322)	21.52	21.55	20.54
		1715 (132022)	21.52	21.56	20.55

15MHz	1RB-High (74)	1772.5 (132597)	21.26	21.61	21.44
		1745 (132322)	21.38	21.65	21.58
		1717.5 (132047)	21.37	21.81	21.66
	1RB-Middle (37)	1772.5 (132597)	21.38	21.75	21.52
		1745 (132322)	21.47	21.85	21.73
		1717.5 (132047)	21.47	21.83	21.64
	1RB-Low (0)	1772.5 (132597)	21.31	21.55	21.56
		1745 (132322)	21.41	21.78	21.66
		1717.5 (132047)	21.43	21.68	21.63
	36RB-High (38)	1772.5 (132597)	21.39	21.41	20.41
		1745 (132322)	21.49	21.52	20.51
		1717.5 (132047)	21.46	21.46	20.48
	36RB-Middle (19)	1772.5 (132597)	21.41	21.41	20.42
		1745 (132322)	21.52	21.54	20.54
		1717.5 (132047)	21.50	21.51	20.52
	36RB-Low (0)	1772.5 (132597)	21.40	21.41	20.41
		1745 (132322)	21.48	21.48	20.51
		1717.5 (132047)	21.52	21.51	20.52
	75RB (0)	1772.5 (132597)	21.40	21.40	20.39
		1745 (132322)	21.48	21.50	20.48
		1717.5 (132047)	21.45	21.47	20.49
20MHz	1RB-High (99)	1770 (132572)	21.31	21.64	21.46
		1745 (132322)	21.37	21.73	21.59
		1720 (132072)	21.42	21.84	21.69
	1RB-Middle (50)	1770 (132572)	21.49	21.81	21.68
		1745 (132322)	21.67	22.08	21.83
		1720 (132072)	21.60	21.97	21.85
	1RB-Low (0)	1770 (132572)	21.38	21.78	21.57
		1745 (132322)	21.42	21.85	21.67
		1720 (132072)	21.46	21.71	21.67
	50RB-High (50)	1770 (132572)	21.40	21.42	20.41
		1745 (132322)	21.53	21.59	20.56
		1720 (132072)	21.50	21.56	20.56
	50RB-Middle (25)	1770 (132572)	21.49	21.52	20.52
		1745 (132322)	21.60	21.63	20.60
		1720 (132072)	21.54	21.60	20.59
	50RB-Low (0)	1770 (132572)	21.46	21.54	20.52
		1745 (132322)	21.55	21.61	20.58
		1720 (132072)	21.55	21.58	20.59
	100RB (0)	1770 (132572)	21.45	21.45	20.46
		1745 (132322)	21.53	21.57	20.55
		1720 (132072)	21.52	21.55	20.55

LTE B71-Power Level A1/B1/C1					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	695.5 (133447)	23.86	23.23	22.10
		680.5 (133297)	23.89	23.28	22.14
		665.5 (133147)	23.88	23.20	22.16
	1RB-Middle (12)	695.5 (133447)	24.10	23.46	22.49
		680.5 (133297)	24.17	23.45	22.47
		665.5 (133147)	24.21	23.46	22.44
	1RB-Low (0)	695.5 (133447)	23.89	23.27	22.19
		680.5 (133297)	23.93	23.21	22.18
		665.5 (133147)	23.93	23.10	22.15
	12RB-High (13)	695.5 (133447)	23.01	22.10	21.09
		680.5 (133297)	23.03	22.07	21.10
		665.5 (133147)	23.10	22.18	21.18
	12RB-Middle (6)	695.5 (133447)	23.03	22.13	21.12
		680.5 (133297)	23.10	22.13	21.14
		665.5 (133147)	23.08	22.18	21.19
	12RB-Low (0)	695.5 (133447)	23.01	22.03	21.10
		680.5 (133297)	23.07	22.16	21.16
		665.5 (133147)	23.00	22.10	21.12
	25RB (0)	695.5 (133447)	23.02	22.11	21.08
		680.5 (133297)	23.06	22.15	21.14
		665.5 (133147)	23.08	22.19	21.15
10MHz	1RB-High (49)	693 (132422)	23.93	23.14	22.13
		680.5 (133297)	23.93	23.33	22.19
		668 (133172)	23.98	23.35	22.25
	1RB-Middle (24)	693 (132422)	24.08	23.43	22.42
		680.5 (133297)	24.09	23.40	22.40
		668 (133172)	24.15	23.43	22.42
	1RB-Low (0)	693 (132422)	23.99	23.27	22.25
		680.5 (133297)	24.00	23.48	22.36
		668 (133172)	24.00	23.35	22.32
	25RB-High (25)	693 (132422)	23.10	22.19	21.19
		680.5 (133297)	23.04	22.14	21.14
		668 (133172)	23.16	22.25	21.26
	25RB-Middle (12)	693 (132422)	23.06	22.16	21.09
		680.5 (133297)	23.08	22.17	21.17
		668 (133172)	23.09	22.18	21.19
	25RB-Low (0)	693 (132422)	23.04	22.12	21.12
		680.5 (133297)	23.15	22.24	21.26
		668 (133172)	23.06	22.14	21.15
	50RB (0)	693 (132422)	23.07	22.16	21.14
		680.5 (133297)	23.12	22.18	21.19
		668 (133172)	23.11	22.20	21.19

15MHz	1RB-High (74)	690.5 (133397)	23.86	23.18	22.14
		680.5 (133297)	23.86	23.20	22.16
		670.5 (133197)	23.93	23.26	22.30
	1RB-Middle (37)	690.5 (133397)	23.99	23.32	22.37
		680.5 (133297)	24.01	23.41	22.32
		670.5 (133197)	24.04	23.38	22.45
	1RB-Low (0)	690.5 (133397)	23.95	23.37	22.30
		680.5 (133297)	23.97	23.24	22.30
		670.5 (133197)	24.00	23.15	22.19
	36RB-High (38)	690.5 (133397)	23.02	22.08	21.07
		680.5 (133297)	23.01	22.07	21.08
		670.5 (133197)	23.11	22.12	21.18
	36RB-Middle (19)	690.5 (133397)	23.04	22.09	21.10
		680.5 (133297)	23.12	22.16	21.19
		670.5 (133197)	23.12	22.17	21.19
	36RB-Low (0)	690.5 (133397)	23.08	22.13	21.15
		680.5 (133297)	23.09	22.14	21.20
		670.5 (133197)	23.06	22.14	21.14
	75RB (0)	690.5 (133397)	23.04	22.11	21.10
		680.5 (133297)	23.05	22.12	21.13
		670.5 (133197)	23.06	22.13	21.13
20MHz	1RB-High (99)	688 (133372)	23.77	23.13	22.09
		683 (133322)	23.80	23.12	22.07
		673 (133222)	23.81	23.12	22.09
	1RB-Middle (50)	688 (133372)	24.12	23.33	22.33
		683 (133322)	24.08	23.41	22.42
		673 (133222)	24.10	23.45	22.35
	1RB-Low (0)	688 (133372)	23.95	23.21	22.17
		683 (133322)	23.95	23.31	22.18
		673 (133222)	23.90	23.12	22.13
	50RB-High (50)	688 (133372)	23.05	22.10	21.10
		683 (133322)	22.97	22.07	21.06
		673 (133222)	22.94	22.02	21.00
	50RB-Middle (25)	688 (133372)	23.06	22.15	21.15
		683 (133322)	23.05	22.14	21.12
		673 (133222)	23.07	22.16	21.13
	50RB-Low (0)	688 (133372)	23.15	22.21	21.21
		683 (133322)	23.13	22.22	21.22
		673 (133222)	22.98	22.04	21.05
	100RB (0)	688 (133372)	23.13	22.18	21.17
		683 (133322)	23.09	22.15	21.13
		673 (133222)	22.97	22.03	21.05

SAR test is not required since maximum output power when downlink carrier aggregation active is not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

The conducted power measurement results of LTE downlink 2CA are as below :

DL LTE CA Class	PCC								SCC			Power		
	PCC Band	PCC Band width (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Band width (MHz)	SCC DL Channel	Rel 8 LTETx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)	Tune-up
2A-2A	2	20	1	99	1	99	18700	700	2	5	1175	23.57	23.15	24
2C	2	20	1	99	1	99	18700	700	2	5	817	23.57	23.23	24
4A-4A	4	20	1	49	1	49	20050	2050	4	20	2300	23.47	23.22	23.5
5B	5	20	1	24	1	24	20450	2450	4	5	2522	23.75	23.27	24.5
66A-66A	66	20	1	50	1	50	132072	66536	66	20	67311	23.47	23.35	23.5
66B	66	10	1	50	1	50	132572	67036	66	5	67108	23.31	23.23	23.5
66C	66	20	1	50	1	50	132072	66536	66	10	66680	23.47	23.40	23.5

11.4 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 7.74dBm.
The maximum tune up of BT antenna is 8dBm.

The average conducted power for Wi-Fi 2.4G is as following-Normal power (Receiver off):

802.11b	
Channel\data rate	5.5Mbps
11(2462MHz)	18.79
6(2437(MHz)	18.96
1(2412MHz)	18.81
Tune up	19.00
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	18.34
6(2437(MHz)	18.46
1(2412MHz)	18.40
Tune up	19.00
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	18.26
6(2437(MHz)	18.29
1(2412MHz)	18.19
Tune up	18.50
802.11n-40MHz	
Channel\data rate	MCS0
9(2452MHz)	18.08
6(2437MHz)	18.18
3(2422MHz)	18.11
Tune up	18.50

The average conducted power for Wi-Fi 2.4G is as following-Low power (Receiver on, WIFI only):

802.11b	
Channel\data rate	5.5Mbps
11(2462MHz)	15.94
6(2437(MHz)	15.99
1(2412MHz)	15.97
Tune up	16.00
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	15.58
6(2437(MHz)	15.68
1(2412MHz)	15.61
Tune up	16.00
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	15.49
6(2437(MHz)	15.47
1(2412MHz)	15.48
Tune up	15.50
802.11n-40MHz	
Channel\data rate	MCS0
9(2452MHz)	14.35
6(2437MHz)	14.46
3(2422MHz)	14.41
Tune up	15.50

The average conducted power for Wi-Fi 2.4G is as following-Low power (Receiver on, WIFI+Cellular):

802.11b	
Channel\data rate	5.5Mbps
11(2462MHz)	13.34
6(2437(MHz)	13.47
1(2412MHz)	13.37
Tune up	13.50
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	12.54
6(2437(MHz)	12.52
1(2412MHz)	12.51
Tune up	13.00
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	12.41
6(2437(MHz)	12.49
1(2412MHz)	12.43
Tune up	12.50
802.11n-40MHz	
Channel\data rate	MCS0
9(2452MHz)	11.15
6(2437MHz)	11.19
3(2422MHz)	11.22
Tune up	12.50

The average conducted power for Wi-Fi 5G is as following-Normal power (Receiver off / Receiver on+WIFI only):

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	16.63
40(5200 MHz)	16.69
44(5220 MHz)	16.57
48(5240 MHz)	16.66
52(5260 MHz)	17.87
56(5280 MHz)	17.92
60(5300 MHz)	18.15
64(5320 MHz)	18.01
100(5500 MHz)	17.79
104(5520 MHz)	17.39
108(5540 MHz)	16.89
112(5560 MHz)	16.52
116(5580 MHz)	16.78
120(5600 MHz)	16.76
124(5620 MHz)	17.29
128(5640 MHz)	17.47
132(5660 MHz)	18.18
136(5680 MHz)	17.67
140(5700 MHz)	17.63
144(5720 MHz)	16.89
Tune up	18.50
149(5745 MHz)	16.98
153(5765 MHz)	16.97
157(5785 MHz)	17.17
161(5805 MHz)	17.38
165(5825 MHz)	17.89
Tune up	18.00

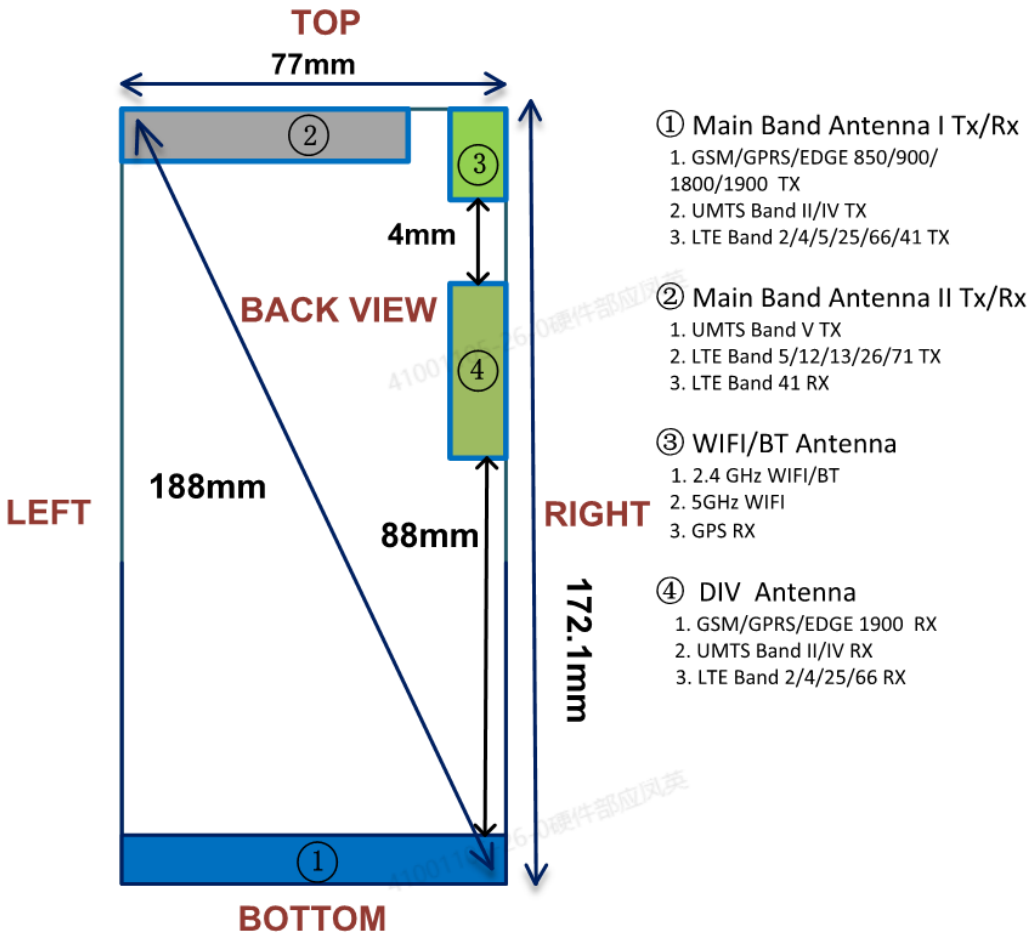
The average conducted power for Wi-Fi 5G is as following-Normal power (Receiver on, WIFI+Cellular):

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	14.35
40(5200 MHz)	14.24
44(5220 MHz)	14.25
48(5240 MHz)	14.35
52(5260 MHz)	15.16
56(5280 MHz)	15.35
60(5300 MHz)	15.48
64(5320 MHz)	15.28
100(5500 MHz)	15.07
104(5520 MHz)	14.61
108(5540 MHz)	14.06
112(5560 MHz)	14.11
116(5580 MHz)	14.05
120(5600 MHz)	14.01
124(5620 MHz)	14.70
128(5640 MHz)	14.82
132(5660 MHz)	15.49
136(5680 MHz)	15.22
140(5700 MHz)	15.26
144(5720 MHz)	14.56
Tune up	15.50
149(5745 MHz)	14.06
153(5765 MHz)	14.13
157(5785 MHz)	14.75
161(5805 MHz)	14.72
165(5825 MHz)	14.97
Tune up	15.00

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 Locations

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	Right	Top	Bottom
Main Anenna I	Yes	Yes	Yes	Yes	No	Yes
Main Anenna II	Yes	Yes	Yes	Yes	Yes	No
WiFi Antenna	Yes	Yes	Yes	No	Yes	No

12.4 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances≤ 50 mm are determined by:

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

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

Table 12.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	Position	SAR test exclusion threshold(mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.441	Head	9.60	8	6.31	Yes
		Body	19.20	8	6.31	Yes
2.4GHz WLAN	2.45	Head	9.58	19	79.43	No
		Body	19.17	19	79.43	No
5GHz WLAN	5.2	Head	6.58	18.5	70.79	No
		Body	13.16	18.5	70.79	No
	5.3	Head	6.52	18.5	70.79	No
		Body	13.03	18.5	70.79	No
	5.6	Head	6.34	18.5	70.79	No
		Body	12.68	18.5	70.79	No
	5.8	Head	6.23	18.5	70.79	No
		Body	12.46	18.5	70.79	No

13 Evaluation of Simultaneous

Table 13.1: The sum of SAR values for Main antenna + WiFi-2.4G (1g)

	Position	Main antenna	WiFi-2.4G	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.40	**1.50**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.94	0.64	**1.58**

Table 13.2: The sum of SAR values for Main antenna + WiFi-5G (1g)

	Position	Main antenna	WiFi-5G	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.35	**1.45**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.87	0.71	**1.58**

Table 13.3: The sum of SAR values for main antenna and BT (1g)

	Position	Main antenna	BT	Sum
Maximum reported SAR value for Head	Right head, Cheek (WCDMA850)	1.10	<0.01	**1.10**
Maximum reported SAR value for Body	Rear 10mm (WCDMA1900)	0.98	<0.01	**0.98**

Table 13.4: The sum of SAR values for Main antenna + WiFi-5G + BT (1g)

	Position	Main antenna	WiFi-5G	BT	Sum
Highest SAR value for Head	Right head, Cheek (WCDMA850)	1.10	0.35	<0.01	**1.45**
Highest SAR value for Body	Rear 10mm (LTE B25)	0.87	0.71	<0.01	**1.58**

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	WiFi-10mm	Sum (1g)	Distance (mm)	Ratio
Highest reported SAR value for Phablet	Rear 10mm	W1900	0.98	0.64	**1.62**	170.72	0.01

Table 13.6: The sum of reported SAR values for main antenna and WiFi5G (SPLSR)

	Position	Band	Main antenna	WiFi-15mm	Sum (1g)	Distance (mm)	Ratio
Highest reported SAR value for Phablet	Rear 10mm	WCDMA1900	0.98	0.71	**1.69**	187.64	0.01
	Rear 10mm	LTE B25	0.94	0.71	**1.65**	174.87	0.01

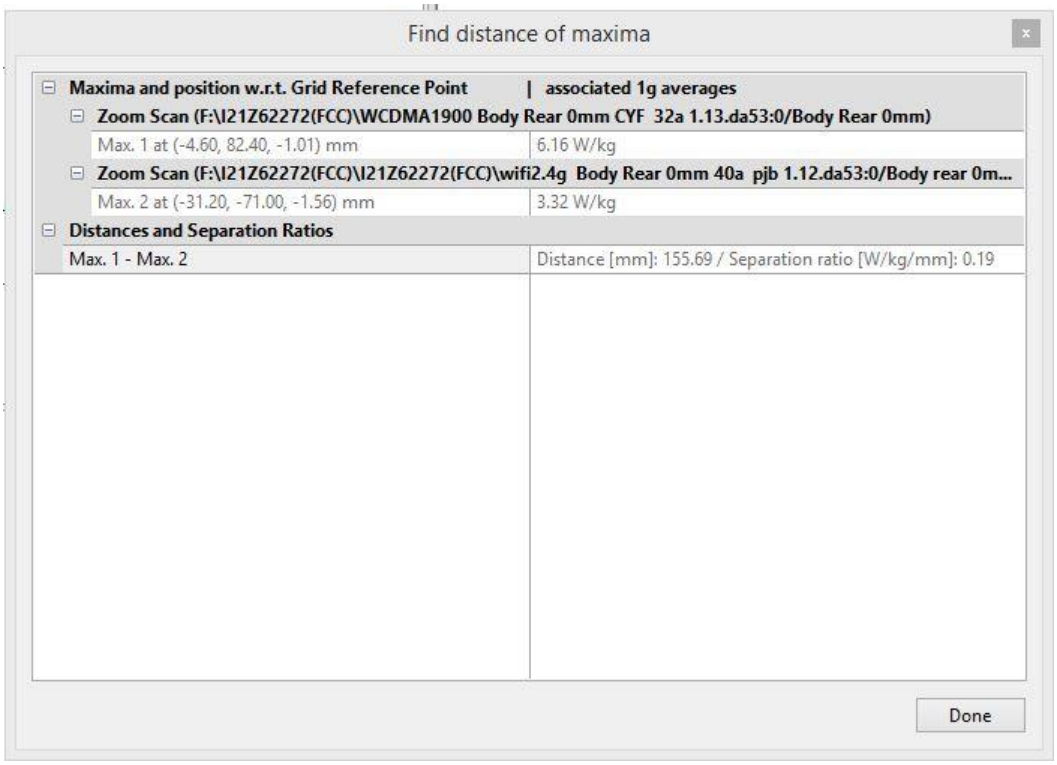
Table 13.7: The sum of reported SAR values for main antenna and WiFi2.4G extremity SAR (SPLSR)

	Position	Band	Main antenna	WiFi-10mm	Sum (1g)	Distance (mm)	Ratio
Highest reported SAR value for Phablet	Rear 0mm	W1900	3.24	1.42	**4.66**	155.69	0.06
	Rear 0mm	LTE B25	3.13	1.42	**4.55**	155.69	0.06
	Rear 0mm	LTE B66	2.77	1.42	**4.19**	156.68	0.05

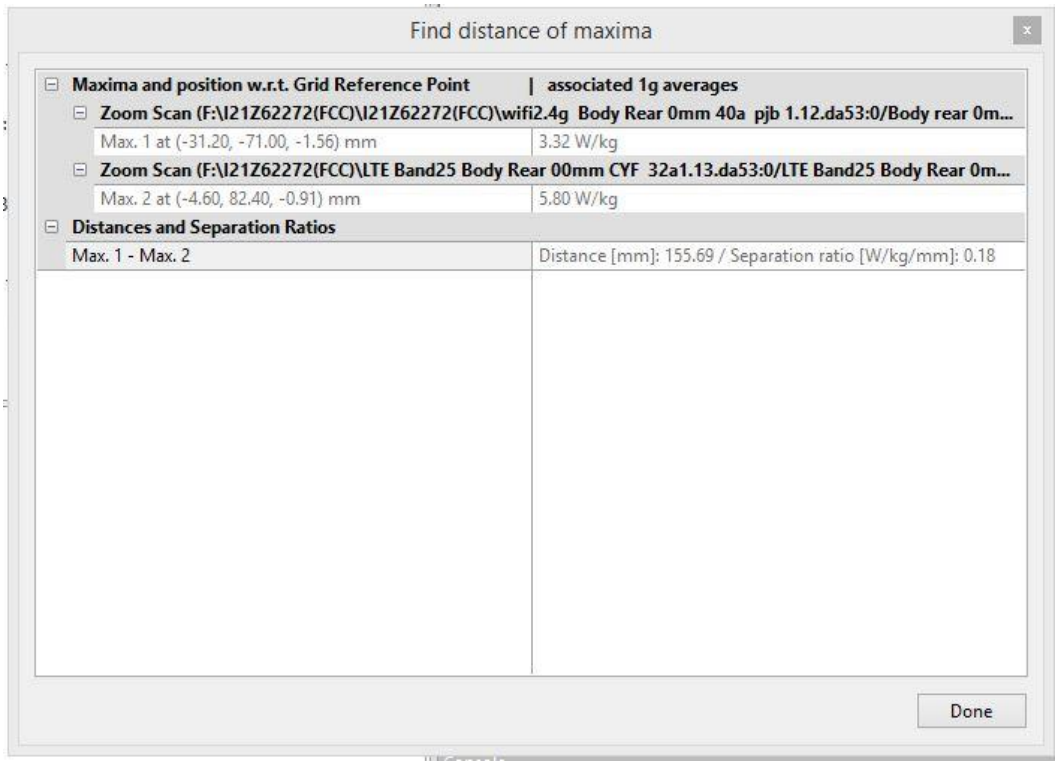
Table 13.8: The sum of reported SAR values for main antenna and WiFi5G extremity SAR (SPLSR)

	Position	Band	Main antenna	WiFi-15mm	Sum (1g)	Distance (mm)	Ratio
Highest reported SAR value for Phablet	Rear 0mm	W1900	3.24	0.98	**4.22**	164.73	0.05
	Rear 0mm	LTE B25	3.13	0.98	**4.11**	164.73	0.05
	Rear 0mm	LTE B66	2.77	0.98	**3.75**	165.69	0.04

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 (≤0.1 for 10-g SAR).



Picture 13.1 Distance evaluation for WCDMA1900 and WiFi 2.4G Body rear 0mm



Picture 13.2 Distance evaluation for LTE B25 and WiFi 2.4G 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 10/15 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
GPRS&EGPRS for GSM 850/1900	1:2
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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	Left	Cheek	/	26.55	27	0.191	**0.21**	0.211	**0.23**	0.05
190	836.6	Left	Tilt	/	26.55	27	0.135	**0.15**	0.142	**0.16**	0.01
251	848.8	Right	Cheek	/	26.38	27	0.451	**0.52**	0.782	**0.90**	0.07
190	836.6	Right	Cheek	Fig.1	26.55	27	0.505	**0.56**	0.858	**0.95**	0.06
128	824.2	Right	Cheek	/	26.33	27	0.373	**0.44**	0.628	**0.73**	-0.13
190	836.6	Right	Tilt	/	26.55	27	0.162	**0.18**	0.272	**0.30**	-0.01

Note: the head SAR of GSM850 is tested with GPRS (4Txslots) mode because of VoIP.

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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	GPRS (4)	Front	/	26.55	27	0.113	**0.13**	0.181	**0.20**	-0.04
251	848.8	GPRS (4)	Rear	Fig.2	26.38	27	0.19	**0.22**	0.316	**0.36**	0.01
190	836.6	GPRS (4)	Rear	/	26.55	27	0.186	**0.21**	0.307	**0.34**	0.04
128	824.2	GPRS (4)	Rear	/	26.33	27	0.174	**0.20**	0.286	**0.33**	0.05
190	836.6	GPRS (4)	Left	/	26.55	27	0.116	**0.13**	0.173	**0.19**	0.15
190	836.6	GPRS (4)	Right	/	26.55	27	0.066	**0.07**	0.098	**0.11**	-0.06
190	836.6	GPRS (4)	Top	/	26.55	27	0.135	**0.15**	0.251	**0.28**	0.12
251	848.8	EGPRS (4)	Rear	/	26.38	27	0.175	**0.20**	0.272	**0.31**	-0.13

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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
810	1909.8	Left	Cheek	/	23.7	24	0.028	**0.03**	0.034	**0.04**	0.10
661	1880	Left	Cheek	Fig.3	23.76	24	0.047	**0.05**	0.074	**0.08**	0.05
512	1850.2	Left	Cheek	/	23.67	24	0.031	**0.03**	0.042	**0.05**	-0.10
661	1880	Left	Tilt	/	23.76	24	0.025	**0.03**	0.039	**0.04**	-0.07
661	1880	Right	Cheek	/	23.76	24	0.038	**0.04**	0.057	**0.06**	0.08
661	1880	Right	Tilt	/	23.76	24	0.041	**0.04**	0.07	**0.07**	0.03

Note: the head SAR of GSM1900 is tested with GPRS (4Txslots) mode because of VoIP.

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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (4)	Front	/	23.76	24	0.092	**0.10**	0.147	**0.16**	0.14
810	1909.8	GPRS (4)	Rear	/	23.7	24	0.227	**0.24**	0.358	**0.38**	-0.13
661	1880	GPRS (4)	Rear	/	23.76	24	0.22	**0.23**	0.348	**0.37**	-0.10
512	1850.2	GPRS (4)	Rear	Fig.4	23.67	24	0.261	**0.28**	0.427	**0.46**	-0.01
512	1850.2	EGPRS (4)	Rear	/	23.66	24	0.254	**0.27**	0.418	**0.45**	0.12

Note: 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (4)	Front	/	23.19	24	0.102	**0.12**	0.171	**0.21**	-0.11
661	1880	GPRS (4)	Rear	/	23.19	24	0.162	**0.20**	0.266	**0.32**	0.08
661	1880	GPRS (4)	Left	/	23.19	24	0.034	**0.04**	0.055	**0.07**	-0.08
661	1880	GPRS (4)	Right	/	23.19	24	0.076	**0.09**	0.135	**0.16**	-0.15
810	1909.8	GPRS (4)	Bottom	/	23.56	24	0.196	**0.22**	0.368	**0.41**	0.13
661	1880	GPRS (4)	Bottom	/	23.19	24	0.209	**0.25**	0.392	**0.47**	0.06
512	1850.2	GPRS (4)	Bottom	Fig.5	23.08	24	0.235	**0.29**	0.417	**0.52**	0.07
512	1850.2	EGPRS (4)	Bottom	/	23.07	24	0.227	**0.28**	0.402	**0.50**	0.12

Note: 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 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
9538	1907.6	Left	Cheek	/	23.51	23.8	0.12	**0.13**	0.195	**0.21**	0.13
9400	1880	Left	Cheek	Fig.6	23.6	23.8	0.125	**0.13**	0.203	**0.21**	0.08
9262	1852.4	Left	Cheek	/	23.62	23.8	0.118	**0.12**	0.193	**0.20**	-0.03
9400	1880	Left	Tilt	/	23.6	23.8	0.087	**0.09**	0.146	**0.15**	0.03
9400	1880	Right	Cheek	/	23.6	23.8	0.104	**0.11**	0.17	**0.18**	-0.04
9400	1880	Right	Tilt	/	23.6	23.8	0.073	**0.08**	0.119	**0.12**	-0.02

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

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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	23.6	23.8	0.277	**0.29**	0.453	**0.47**	-0.08
9538	1907.6	Rear	/	23.51	23.8	0.456	**0.49**	0.751	**0.80**	0.10
9400	1880	Rear	Fig.7	23.6	23.8	0.472	**0.49**	0.77	**0.81**	-0.02
9262	1852.4	Rear	/	23.62	23.8	0.443	**0.46**	0.723	**0.75**	-0.09

Note: 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 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	22.33	22.5	0.26	**0.27**	0.435	**0.45**	0.04
9538	1907.6	Rear	/	22.16	22.5	0.551	**0.60**	0.892	**0.96**	-0.14
9400	1880	Rear	/	22.33	22.5	0.565	**0.59**	0.942	**0.98**	0.04
9262	1852.4	Rear	/	22.35	22.5	0.518	**0.54**	0.864	**0.89**	-0.03
9400	1880	Left	/	22.33	22.5	0.062	**0.06**	0.103	**0.11**	0.04
9400	1880	Right	/	22.33	22.5	0.127	**0.13**	0.237	**0.25**	0.05
9538	1907.6	Bottom	/	22.16	22.5	0.544	**0.59**	0.974	**1.05**	0.09
9400	1880	Bottom	Fig.8	22.33	22.5	0.589	**0.61**	1.04	**1.08**	0.04
9262	1852.4	Bottom	/	22.35	22.5	0.525	**0.53**	0.948	**0.98**	0.03

Note: 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 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
1513	1752.6	Left	Cheek	/	23.53	23.8	0.064	**0.07**	0.095	**0.10**	-0.15
1412	1732.4	Left	Cheek	Fig.9	23.61	23.8	0.07	**0.07**	0.109	**0.11**	-0.14
1312	1712.4	Left	Cheek	/	23.64	23.8	0.063	**0.07**	0.099	**0.10**	-0.04
1412	1732.4	Left	Tilt	/	23.61	23.8	0.032	**0.03**	0.049	**0.05**	-0.03
1412	1732.4	Right	Cheek	/	23.61	23.8	0.047	**0.05**	0.104	**0.11**	-0.13
1412	1732.4	Right	Tilt	/	23.61	23.8	0.053	**0.06**	0.105	**0.11**	0.11

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

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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Front	/	23.61	23.8	0.189	**0.20**	0.301	**0.31**	-0.05
1513	1752.6	Rear	/	23.53	23.8	0.346	**0.37**	0.545	**0.58**	0.15
1412	1732.4	Rear	Fig.10	23.61	23.8	0.35	**0.37**	0.561	**0.59**	-0.14
1312	1712.4	Rear	/	23.64	23.8	0.334	**0.35**	0.547	**0.57**	-0.09

Note: 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 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.4	Front	/	22.43	22.5	0.201	**0.20**	0.329	**0.33**	-0.12
1412	1732.4	Rear	/	22.43	22.5	0.384	**0.39**	0.636	**0.65**	-0.04
1412	1732.4	Left	/	22.43	22.5	0.052	**0.05**	0.078	**0.08**	-0.02
1412	1732.4	Right	/	22.43	22.5	0.076	**0.08**	0.13	**0.13**	0.04
1513	1752.6	Bottom	Fig.11	22.41	22.5	0.507	**0.52**	0.895	**0.91**	0.02
1412	1732.4	Bottom	/	22.43	22.5	0.501	**0.51**	0.887	**0.90**	-0.05
1312	1712.4	Bottom	/	22.48	22.5	0.494	**0.50**	0.873	**0.88**	-0.12

Note: 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 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
4233	846.6	Left	Cheek	/	23.02	23.5	0.263	**0.29**	0.402	**0.45**	-0.05
4183	836.6	Left	Cheek	/	22.95	23.5	0.306	**0.35**	0.422	**0.48**	0.09
4132	826.4	Left	Cheek	Fig.12	22.91	23.5	0.38	**0.44**	0.588	**0.67**	0.02
4183	836.6	Left	Tilt	/	22.95	23.5	0.336	**0.38**	0.516	**0.59**	-0.12
4183	836.6	Right	Cheek	/	22.95	23.5	0.301	**0.34**	0.421	**0.48**	0.06
4183	836.6	Right	Tilt	/	22.95	23.5	0.311	**0.35**	0.451	**0.51**	-0.08

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4183	836.6	Front	/	24.25	24.5	0.207	**0.22**	0.336	**0.36**	0.10
4233	846.6	Rear	/	24.31	24.5	0.228	**0.24**	0.369	**0.39**	-0.02
4183	836.6	Rear	/	24.25	24.5	0.263	**0.28**	0.425	**0.45**	0.01
4132	826.4	Rear	Fig.13	24.27	24.5	0.274	**0.29**	0.438	**0.46**	-0.19
4183	836.6	Left	/	24.25	24.5	0.087	**0.09**	0.13	**0.14**	0.05
4183	836.6	Right	/	24.25	24.5	0.228	**0.24**	0.334	**0.35**	0.02
4183	836.6	Top	/	24.25	24.5	0.229	**0.24**	0.421	**0.45**	-0.13

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 ℃ Liquid Temperature: 22.5 ℃												
Frequency		Mode	Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23060	704	1RB_Mid	Left	Cheek	/	23.97	24.5	0.328	**0.37**	0.561	**0.63**	0.13
23060	704	1RB_Mid	Left	Tilt	/	23.97	24.5	0.279	**0.32**	0.539	**0.61**	0.12
23060	704	1RB_Mid	Right	Cheek	Fig.14	23.97	24.5	0.355	**0.40**	0.614	**0.69**	0.01
23060	704	1RB_Mid	Right	Tilt	/	23.97	24.5	0.251	**0.28**	0.44	**0.50**	0.13
23060	704	25RB_Low	Left	Cheek	/	23.02	23.5	0.238	**0.27**	0.403	**0.45**	0.08
23060	704	25RB_Low	Left	Tilt	/	23.02	23.5	0.199	**0.22**	0.384	**0.43**	-0.01
23060	704	25RB_Low	Right	Cheek	/	23.02	23.5	0.23	**0.26**	0.376	**0.42**	-0.11
23060	704	25RB_Low	Right	Tilt	/	23.02	23.5	0.231	**0.26**	0.377	**0.42**	0.02

Note: 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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
23060	704	1RB-Mid Front	/	23.97	24.5	0.136	**0.15**	0.18	**0.20**	0.13
23060	704	1RB-Mid Rear	/	23.97	24.5	0.195	**0.22**	0.264	**0.30**	-0.01
23060	704	1RB-Mid Left	/	23.97	24.5	0.111	**0.13**	0.16	**0.18**	-0.03
23060	704	1RB-Mid Right	Fig.15	23.97	24.5	0.229	**0.26**	0.327	**0.37**	0.12
23060	704	1RB-Mid Top	/	23.97	24.5	0.134	**0.15**	0.244	**0.28**	0.13
23060	704	25RB-Low Front	/	23.02	23.5	0.101	**0.11**	0.134	**0.15**	-0.07
23060	704	25RB-Low Rear	/	23.02	23.5	0.145	**0.16**	0.196	**0.22**	0.06
23060	704	25RB-Low Left	/	23.02	23.5	0.082	**0.09**	0.118	**0.13**	0.09
23060	704	25RB-Low Right	/	23.02	23.5	0.169	**0.19**	0.242	**0.27**	-0.05
23060	704	25RB-Low Bottom	/	23.02	23.5	0.099	**0.11**	0.181	**0.20**	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 Band13 - 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23230	782	1RB-Mid	Left	Cheek	/	24	24.5	0.421	**0.47**	0.68	**0.76**	-0.10
23230	782	1RB-Mid	Left	Tilt	/	24	24.5	0.384	**0.43**	0.717	**0.80**	-0.05
23230	782	1RB-Mid	Right	Cheek	Fig.16	24	24.5	0.47	**0.53**	0.808	**0.91**	0.03
23230	782	1RB-Mid	Right	Tilt	/	24	24.5	0.348	**0.39**	0.585	**0.66**	0.13
23230	782	25RB-Low	Left	Cheek	/	23.04	23.5	0.344	**0.38**	0.558	**0.62**	0.04
23230	782	25RB-Low	Left	Tilt	/	23.04	23.5	0.308	**0.34**	0.576	**0.64**	-0.10
23230	782	25RB-Low	Right	Cheek	/	23.04	23.5	0.338	**0.38**	0.538	**0.60**	-0.04
23230	782	25RB-Low	Right	Tilt	/	23.04	23.5	0.269	**0.30**	0.449	**0.50**	0.04

Note1: The LTE mode is QPSK_10MHz.

Table 14.1-17: SAR Values (LTE Band13 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
23230	782	1RB-Mid Front	/	24	24.5	0.168	**0.19**	0.268	**0.30**	-0.14
23230	782	1RB-Mid Rear	/	24	24.5	0.232	**0.26**	0.374	**0.42**	-0.06
23230	782	1RB-Mid Left	/	24	24.5	0.134	**0.15**	0.196	**0.22**	0.10
23230	782	1RB-Mid Right	Fig.17	24	24.5	0.306	**0.34**	0.442	**0.50**	-0.01
23230	782	1RB-Mid Top	/	24	24.5	0.217	**0.24**	0.4	**0.45**	0.06
23230	782	25RB-Low Front	/	23.04	23.5	0.138	**0.15**	0.222	**0.25**	-0.01
23230	782	25RB-Low Rear	/	23.04	23.5	0.219	**0.24**	0.299	**0.33**	-0.07
23230	782	25RB-Low Left	/	23.04	23.5	0.11	**0.12**	0.16	**0.18**	-0.09
23230	782	25RB-Low Right	/	23.04	23.5	0.236	**0.26**	0.342	**0.38**	-0.01
23230	782	25RB-Low Top	/	23.04	23.5	0.17	**0.19**	0.314	**0.35**	-0.05

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-18: SAR Values (LTE 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26365	1882.5	1RB-Mid	Left	Cheek	Fig.18	23.57	23.8	0.125	**0.13**	0.192	**0.20**	-0.01
26365	1882.5	1RB-Mid	Left	Tilt	/	23.57	23.8	0.074	**0.08**	0.116	**0.12**	0.01
26365	1882.5	1RB-Mid	Right	Cheek	/	23.57	23.8	0.0857	**0.09**	0.138	**0.15**	0.05
26365	1882.5	1RB-Mid	Right	Tilt	/	23.57	23.8	0.077	**0.08**	0.117	**0.12**	-0.09
26365	1882.5	50RB-Low	Left	Cheek	/	22.57	23.8	0.079	**0.10**	0.12	**0.16**	-0.10
26365	1882.5	50RB-Low	Left	Tilt	/	22.57	23.8	0.058	**0.08**	0.09	**0.12**	-0.05
26365	1882.5	50RB-Low	Right	Cheek	/	22.57	23.8	0.064	**0.08**	0.095	**0.13**	-0.08
26365	1882.5	50RB-Low	Right	Tilt	/	22.57	23.8	0.058	**0.08**	0.088	**0.12**	-0.15

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-19: SAR Values (LTE Band25 – Body worn)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26365	1882.5	1RB-Mid Front	/	23.57	23.8	0.25	**0.26**	0.396	**0.42**	-0.05
26590	1905	1RB-Mid Rear	/	23.42	23.8	0.446	**0.49**	0.744	**0.81**	0.01
26365	1882.5	1RB-Mid Rear	Fig.19	23.57	23.8	0.472	**0.50**	0.774	**0.82**	-0.11
26140	1860	1RB-Mid Rear	/	23.55	23.8	0.452	**0.48**	0.729	**0.77**	-0.03
26365	1882.5	100RB Rear	/	22.39	22.8	0.382	**0.42**	0.617	**0.68**	0.02
26365	1882.5	50RB-Low Front	/	22.57	22.8	0.187	**0.20**	0.295	**0.31**	0.05
26365	1882.5	50RB-Low Rear	/	22.57	22.8	0.326	**0.34**	0.524	**0.55**	-0.12

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-20: SAR Values (LTE Band25 – Hotspot)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26365	1882.5	1RB-Mid Front	/	21.57	22	0.26	**0.29**	0.439	**0.48**	-0.14
26590	1905	1RB-Mid Rear	/	21.55	22	0.488	**0.54**	0.845	**0.94**	-0.03
26365	1882.5	1RB-Mid Rear	/	21.57	22	0.484	**0.53**	0.834	**0.92**	0.03
26140	1860	1RB-Mid Rear	/	21.54	22	0.465	**0.52**	0.799	**0.89**	-0.03
26590	1905	100RB Rear	/	21.57	22	0.457	**0.50**	0.789	**0.87**	0.15
26365	1882.5	1RB-Mid Left	/	21.57	22	0.063	**0.07**	0.108	**0.12**	0.05
26365	1882.5	1RB-Mid Right	/	21.57	22	0.109	**0.12**	0.199	**0.22**	0.08
26590	1905	1RB-Mid Bottom	Fig.20	21.55	22	0.578	**0.64**	1.02	**1.13**	-0.07
26365	1882.5	1RB-Mid Bottom	/	21.57	22	0.552	**0.61**	0.976	**1.08**	0.07
26140	1860	1RB-Mid Bottom	/	21.54	22	0.553	**0.61**	0.996	**1.11**	0.09
26590	1905	100RB Bottom	/	21.57	22	0.555	**0.61**	0.99	**1.09**	-0.05
26365	1882.5	50RB-Low Front	/	21.64	22	0.244	**0.27**	0.415	**0.45**	0.11
26590	1905	50RB-Low Rear	/	21.61	22	0.471	**0.52**	0.832	**0.91**	-0.07
26365	1882.5	50RB-Low Rear	/	21.64	22	0.45	**0.49**	0.776	**0.84**	-0.07
26140	1860	50RB-Low Rear	/	21.6	22	0.423	**0.46**	0.73	**0.80**	-0.08
26365	1882.5	50RB-Low Left	/	21.64	22	0.042	**0.05**	0.072	**0.08**	-0.10
26365	1882.5	50RB-Low Right	/	21.64	22	0.091	**0.10**	0.174	**0.19**	-0.06
26590	1905	50RB-Low Bottom	/	21.61	22	0.566	**0.62**	0.995	**1.09**	-0.08
26365	1882.5	50RB-Low Bottom	/	21.64	22	0.537	**0.58**	0.964	**1.05**	-0.01
26140	1860	50RB-Low Bottom	/	21.6	22	0.509	**0.56**	0.917	**1.01**	-0.10

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-21: SAR Values (LTE Band26 - 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
26965	841.5	1RB-Mid	Left	Cheek	/	22.91	23.5	0.292	**0.33**	0.507	**0.58**	-0.02
26965	841.5	1RB-Mid	Left	Tilt	/	22.91	23.5	0.348	**0.40**	0.71	**0.81**	0.12
26865	831.5	1RB-Mid	Left	Tilt	/	22.86	23.5	0.363	**0.42**	0.727	**0.84**	0.09
26775	822.5	1RB-Mid	Left	Tilt	Fig.21	22.79	23.5	0.374	**0.44**	0.75	**0.88**	0.02
26775	822.5	75RB	Left	Tilt	/	21.76	22.5	0.295	**0.35**	0.594	**0.70**	-0.07
26965	841.5	1RB-Mid	Right	Cheek	/	22.91	23.5	0.277	**0.32**	0.483	**0.55**	-0.11
26965	841.5	1RB-Mid	Right	Tilt	/	22.91	23.5	0.292	**0.33**	0.55	**0.63**	0.02
26965	841.5	36RB-Low	Left	Cheek	/	22	22.5	0.234	**0.26**	0.404	**0.45**	0.08
26965	841.5	36RB-Low	Left	Tilt	/	22	22.5	0.248	**0.28**	0.485	**0.54**	-0.07
26965	841.5	36RB-Low	Right	Cheek	/	22	22.5	0.225	**0.25**	0.388	**0.44**	-0.15
26965	841.5	36RB-Low	Right	Tilt	/	22	22.5	0.235	**0.26**	0.443	**0.50**	0.07

Note1: The LTE mode is QPSK_15MHz.

Table 14.1-22: SAR Values (LTE Band26 – Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
26865	831.5	1RB-Mid Front	/	23.75	24.5	0.209	**0.25**	0.342	**0.41**	0.03
26865	831.5	1RB-Mid Rear	Fig.22	23.75	24.5	0.295	**0.35**	0.469	**0.56**	-0.07
26865	831.5	1RB-Mid Left	/	23.75	24.5	0.103	**0.12**	0.152	**0.18**	0.11
26865	831.5	1RB-Mid Right	/	23.75	24.5	0.259	**0.31**	0.382	**0.45**	0.03
26865	831.5	1RB-Mid Top	/	23.75	24.5	0.238	**0.28**	0.432	**0.51**	0.15
26865	831.5	36RB-Low Front	/	22.9	23.5	0.165	**0.19**	0.263	**0.30**	-0.07
26865	831.5	36RB-Low Rear	/	22.9	23.5	0.228	**0.26**	0.369	**0.42**	-0.13
26865	831.5	36RB-Low Left	/	22.9	23.5	0.062	**0.07**	0.093	**0.11**	0.11
26865	831.5	36RB-Low Right	/	22.9	23.5	0.197	**0.23**	0.29	**0.33**	-0.12
26865	831.5	36RB-Low Top	/	22.9	23.5	0.179	**0.21**	0.326	**0.37**	0.08

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

Note2: The LTE mode is QPSK_15MHz.

Table 14.1-23: 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
41055	2636.5	1RB-Mid	Left	Cheek	/	23.2	24	0.108	**0.13**	0.189	**0.23**	-0.07
41055	2636.5	1RB-Mid	Left	Tilt	/	23.2	24	0.099	**0.12**	0.194	**0.23**	-0.07
41055	2636.5	1RB-Mid	Right	Cheek	Fig.23	23.2	24	0.163	**0.20**	0.305	**0.37**	0.06
41055	2636.5	1RB-Mid	Right	Tilt	/	23.2	24	0.076	**0.09**	0.151	**0.18**	0.07
41055	2636.5	50RB-High	Left	Cheek	/	22.22	24	0.08	**0.12**	0.138	**0.21**	0.03
41055	2636.5	50RB-High	Left	Tilt	/	22.22	24	0.077	**0.12**	0.146	**0.22**	0.13
41055	2636.5	50RB-High	Right	Cheek	/	22.22	24	0.127	**0.19**	0.239	**0.36**	-0.09
41055	2636.5	50RB-High	Right	Tilt	/	22.22	24	0.06	**0.09**	0.115	**0.17**	-0.02

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-24: 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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
41055	2636.5	1RB-Mid Front	/	23.2	24	0.227	**0.27**	0.444	**0.53**	0.13
41055	2636.5	1RB-Mid Rear	Fig.24	23.2	24	0.252	**0.30**	0.535	**0.64**	0.19
41055	2636.5	1RB-Mid Left	/	23.2	24	0.031	**0.04**	0.065	**0.08**	-0.14
41055	2636.5	1RB-Mid Right	/	23.2	24	0.259	**0.31**	0.532	**0.64**	-0.09
41055	2636.5	1RB-Mid Bottom	/	23.2	24	0.189	**0.23**	0.45	**0.54**	0.03
41055	2636.5	50RB-High Front	/	22.22	24	0.119	**0.18**	0.236	**0.36**	-0.03
41055	2636.5	50RB-High Rear	/	22.22	24	0.171	**0.26**	0.359	**0.54**	-0.06
41055	2636.5	50RB-High Left	/	22.22	24	0.022	**0.03**	0.048	**0.07**	0.12
41055	2636.5	50RB-High Right	/	22.22	24	0.192	**0.29**	0.394	**0.59**	-0.15
41055	2636.5	50RB-High Bottom	/	22.22	24	0.149	**0.22**	0.356	**0.54**	0.14

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 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
40185	2549.5	1RB-Mid	Left	Cheek	/	25.84	26	0.105	**0.11**	0.176	**0.18**	-0.10
40185	2549.5	1RB-Mid	Left	Tilt	/	25.84	26	0.096	**0.10**	0.178	**0.18**	-0.11
40185	2549.5	1RB-Mid	Right	Cheek	Fig.25	25.84	26	0.161	**0.17**	0.289	**0.30**	0.07
40185	2549.5	1RB-Mid	Right	Tilt	/	25.84	26	0.097	**0.10**	0.181	**0.19**	-0.11
40185	2549.5	50RB-High	Left	Cheek	/	24.85	26	0.082	**0.11**	0.137	**0.18**	0.13
40185	2549.5	50RB-High	Left	Tilt	/	24.85	26	0.07	**0.09**	0.132	**0.17**	0.01
40185	2549.5	50RB-High	Right	Cheek	/	24.85	26	0.136	**0.18**	0.243	**0.32**	0.06
40185	2549.5	50RB-High	Right	Tilt	/	24.85	26	0.073	**0.10**	0.135	**0.18**	-0.08

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-26: 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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
40185	2549.5	1RB-Mid Front	/	25.84	26	0.252	**0.26**	0.442	**0.46**	-0.03
40185	2549.5	1RB-Mid Rear	Fig.26	25.84	26	0.323	**0.34**	0.608	**0.63**	0.02
40185	2549.5	1RB-Mid Left	/	25.84	26	0.076	**0.08**	0.148	**0.15**	0.00
40185	2549.5	1RB-Mid Right	/	25.84	26	0.271	**0.28**	0.505	**0.52**	-0.05
40185	2549.5	1RB-Mid Bottom	/	25.84	26	0.274	**0.28**	0.543	**0.56**	-0.05
40185	2549.5	50RB-High Front	/	24.85	26	0.175	**0.23**	0.3	**0.39**	-0.01
40185	2549.5	50RB-High Rear	/	24.85	26	0.254	**0.33**	0.472	**0.62**	0.06
40185	2549.5	50RB-High Left	/	24.85	26	0.058	**0.08**	0.11	**0.14**	-0.14
40185	2549.5	50RB-High Right	/	24.85	26	0.212	**0.28**	0.398	**0.52**	-0.12
40185	2549.5	50RB-High Bottom	/	24.85	26	0.191	**0.25**	0.362	**0.47**	0.07

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-27: SAR Values (LTE Band66 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132072	1720	1RB-Mid	Left	Cheek	Fig.27	23.47	23.5	0.075	**0.08**	0.118	**0.12**	0.10
132072	1720	1RB-Mid	Left	Tilt	/	23.47	23.5	0.038	**0.04**	0.059	**0.06**	0.02
132072	1720	1RB-Mid	Right	Cheek	/	23.47	23.5	0.052	**0.05**	0.115	**0.12**	-0.13
132072	1720	1RB-Mid	Right	Tilt	/	23.47	23.5	0.06	**0.06**	0.114	**0.11**	-0.07
132072	1720	50RB-High	Left	Cheek	/	22.46	22.5	0.061	**0.06**	0.095	**0.10**	-0.12
132072	1720	50RB-High	Left	Tilt	/	22.46	22.5	0.032	**0.03**	0.049	**0.05**	0.07
132072	1720	50RB-High	Right	Cheek	/	22.46	22.5	0.048	**0.05**	0.107	**0.11**	0.04
132072	1720	50RB-High	Right	Tilt	/	22.46	22.5	0.049	**0.05**	0.094	**0.09**	-0.15

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-28: 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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132072	1720	1RB-Low Front	/	23.47	23.5	0.187	**0.19**	0.294	**0.30**	-0.05
132072	1720	1RB-Low Rear	Fig.28	23.47	23.5	0.349	**0.35**	0.558	**0.56**	0.03
132072	1720	50RB-High Front	/	22.46	22.5	0.157	**0.16**	0.245	**0.25**	-0.13
132072	1720	50RB-High Rear	/	22.46	22.5	0.284	**0.29**	0.453	**0.46**	-0.05

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-29: SAR Values (LTE Band66 - Hotspot)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132072	1720	1RB-Mid Front	/	21.65	22.5	0.205	**0.25**	0.336	**0.41**	0.03
132072	1720	1RB-Mid Rear	/	21.65	22.5	0.389	**0.47**	0.651	**0.79**	0.01
132072	1720	1RB-Mid Left	/	21.65	22.5	0.057	**0.07**	0.091	**0.11**	0.06
132072	1720	1RB-Mid Right	/	21.65	22.5	0.073	**0.09**	0.127	**0.15**	0.05
132072	1770	1RB-Mid Bottom	/	21.49	22.5	0.534	**0.67**	0.939	**1.18**	0.05
132072	1745	1RB-Mid Bottom	Fig.29	21.3	22.5	0.552	**0.73**	0.976	**1.29**	0.07
132072	1720	1RB-Mid Bottom	/	21.65	22.5	0.537	**0.65**	0.948	**1.15**	-0.07
132072	1745	100RB Bottom	/	21.53	22.5	0.545	**0.68**	0.954	**1.19**	-0.09
132072	1720	50RB-Low Front	/	21.62	22.5	0.197	**0.24**	0.322	**0.39**	0.06
132072	1720	50RB-Low Rear	/	21.62	22.5	0.378	**0.46**	0.641	**0.78**	0.14
132072	1720	50RB-Low Left	/	21.62	22.5	0.053	**0.06**	0.086	**0.11**	-0.09
132072	1720	50RB-Low Right	/	21.62	22.5	0.069	**0.08**	0.119	**0.15**	0.06
132072	1770	50RB-Low Bottom	/	21.49	22.5	0.521	**0.66**	0.91	**1.15**	0.01
132072	1745	50RB-Low Bottom	/	21.6	22.5	0.537	**0.66**	0.946	**1.16**	0.01
132072	1720	50RB-Low Bottom	/	21.62	22.5	0.521	**0.64**	0.921	**1.13**	-0.05

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

Note2: The LTE mode is QPSK_20MHz.

Table 14.1-30: SAR Values (LTE Band71 - 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(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
133372	688	1RB-Mid	Left	Cheek	/	24.12	24.5	0.356	**0.39**	0.627	**0.68**	0.11
133372	688	1RB-Mid	Left	Tilt	Fig.30	24.12	24.5	0.325	**0.35**	0.656	**0.72**	0.02
133372	688	1RB-Mid	Right	Cheek	/	24.12	24.5	0.347	**0.38**	0.587	**0.64**	0.11
133372	688	1RB-Mid	Right	Tilt	/	24.12	24.5	0.271	**0.30**	0.483	**0.53**	-0.14
133372	688	50RB-Low	Left	Cheek	/	23.15	23.5	0.299	**0.32**	0.531	**0.58**	-0.07
133372	688	50RB-Low	Left	Tilt	/	23.15	23.5	0.269	**0.29**	0.544	**0.59**	0.02
133372	688	50RB-Low	Right	Cheek	/	23.15	23.5	0.269	**0.29**	0.454	**0.49**	0.09
133372	688	50RB-Low	Right	Tilt	/	23.15	23.5	0.214	**0.23**	0.377	**0.41**	-0.10

Note1: The LTE mode is QPSK_20MHz.

Table 14.1-31: SAR Values (LTE Band71 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
133372	688	1RB-Mid Front	/	24.12	24.5	0.143	**0.16**	0.188	**0.21**	0.10
133372	688	1RB-Mid Rear	/	24.12	24.5	0.218	**0.24**	0.29	**0.32**	0.08
133372	688	1RB-Mid Left	/	24.12	24.5	0.149	**0.16**	0.212	**0.23**	-0.08
133372	688	1RB-Mid Right	Fig.31	24.12	24.5	0.302	**0.33**	0.43	**0.47**	0.02
133372	688	1RB-Mid Top	/	24.12	24.5	0.139	**0.15**	0.256	**0.28**	0.05
133372	688	50RB-Low Front	/	23.15	23.5	0.119	**0.13**	0.156	**0.17**	-0.15
133372	688	50RB-Low Rear	/	23.15	23.5	0.179	**0.19**	0.239	**0.26**	-0.13
133372	688	50RB-Low Left	/	23.15	23.5	0.116	**0.13**	0.166	**0.18**	0.02
133372	688	50RB-Low Right	/	23.15	23.5	0.244	**0.26**	0.346	**0.38**	-0.05
133372	688	50RB-Low Bottom	/	23.15	23.5	0.111	**0.12**	0.207	**0.22**	-0.13

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

Head Evaluation:

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz										
6	2437	Left	Cheek	Note1	15.99	16	0.194	**0.19**	0.358	**0.36**	-0.15
6	2437	Left	Tilt	Note1	15.99	16	0.218	**0.22**	0.467	**0.47**	-0.09
11	2462	Right	Cheek	Note1/ Fig.32	15.94	16	0.441	**0.45**	0.936	**0.95**	0.09
6	2437	Right	Cheek	Note1	15.99	16	0.406	**0.41**	0.859	**0.86**	0.15
1	2412	Right	Cheek	Note1	15.97	16	0.417	**0.42**	0.89	**0.90**	0.05
6	2437	Right	Tilt	Note1	15.99	16	0.355	**0.36**	0.807	**0.81**	0.12
6	2437	Left	Cheek	Note2	13.47	13.5	0.102	**0.10**	0.204	**0.21**	0.12
6	2437	Left	Tilt	Note2	13.47	13.5	0.101	**0.10**	0.176	**0.18**	-0.11
6	2437	Right	Cheek	Note2	13.47	13.5	0.188	**0.19**	0.4	**0.40**	0.02
6	2437	Right	Tilt	Note2	13.47	13.5	0.137	**0.14**	0.297	**0.30**	0.06

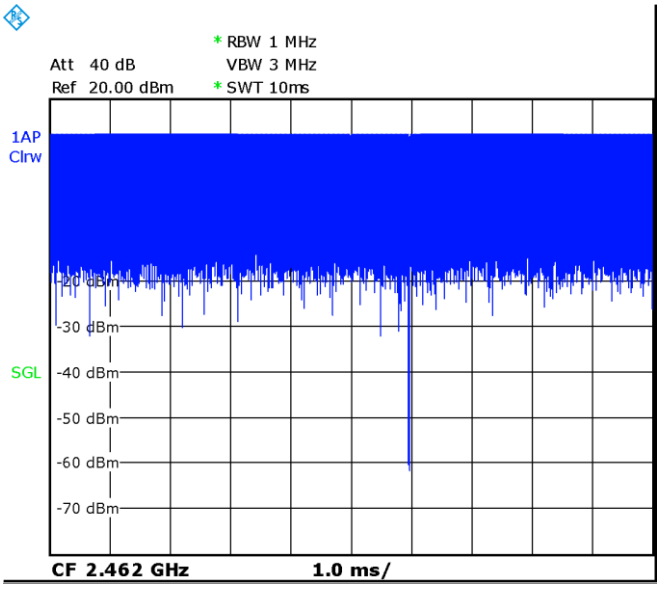
Note1: The results are used for Wifi transmit standalone.
Note2: The results are used for Wifi transmit with WWAN.

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

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

Ambient Temperature: 22.9 °C			Liquid Temperature: 22.5°C				
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
Ch.	MHz						
11	2462	Right	Cheek	100%	100%	**0.95**	**0.95**

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



Picture 14.2-1 Duty factor plot

Body Evaluation:

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

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W /kg)	Power Drift (dB)
Ch.	MHz									
6	2437	Front	/	18.96	19	0.269	**0.27**	0.531	**0.54**	-0.06
6	2437	Rear	Fig.33	18.96	19	0.312	**0.31**	0.637	**0.64**	-0.08
6	2437	Left	/	18.96	19	0.272	**0.27**	0.554	**0.56**	0.12
6	2437	Top	/	18.96	19	0.195	**0.20**	0.385	**0.39**	0.03

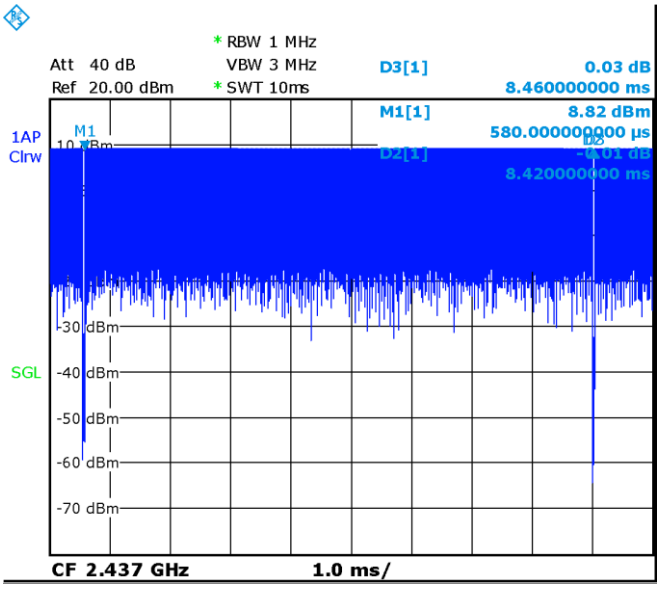
Note: The distance between the EUT and the phantom bottom is 10mm.

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

Table 14.3-4: 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	99.5%	100%	**0.64**	**0.64**

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



Picture 14.2-2 Duty factor plot

14.3 WLAN Evaluation For 5G

Table 14.3-1: OFDM mode specified maximum output power of WLAN antenna

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

Table 14.3-2: Maximum output power specified of WLAN antenna – Head (WIFI only) / Body(10mm/15mm)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	63.		56	56	56	45	35	
U-NII-2A	71		63	56	56	45	35	
U-NII-2C	71		63	56	56	45	35	
U-NII-3	63		63	56	56	45	35	
§ 15.247 (5.8 GHz)								

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

Table 14.3-3: Maximum output power specified of WLAN antenna–Head (WIFI+Cellular)

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	32		28	28	28	22	18	
U-NII-2A	35		32	28	28	22	18	
U-NII-2C	35		32	28	28	22	18	
U-NII-3	32		32	28	28	22	18	
§ 15.247 (5.8 GHz)								

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

Table 14.3-4: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – Head (WIFI only) / Body(10mm/15mm)

802.11 Mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 **46/47/45/46**	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 **61/62/65/63**	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 116/120/124/128/ 132/136/140/144 **60/55/49/45/48/47/ 54/56/66/58/58/49**	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	106/122 Lower power
U-NII-3	149/153/157/161/ 165 **41/43/43/44/45**	149/153/157/161/ 165 Lower power	151/159 Lower power	149/153/157/161 /165 Lower power	151/159 Lower power	155 Lower power

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

Table 14.3-5: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – Head (WIFI+Cellular)

802.11 Mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 **27/27/27/27**	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 **33/34/35/34**	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 116/120/124/128/ 132/136/140/144 **32/29/25/26/25/25/ 30/30/35/33/34/29**	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	106/122 Lower power
U-NII-3	149/153/157/161/ 165 **25/26/30/30/31**	149/153/157/161/ 165 Lower power	151/159 Lower power	149/153/157/161 /165 Lower power	151/159 Lower power	155 Lower power

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

Table 14.3-6: Reported SAR of initial test configuration for Head (WIFI only)

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **1.24/1.15**	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112/116/120/ 124/128/132/136/140/144 **1.37/1.39/1.18**	100/104/108/112/ 116/120/124/128/ 132/136/140/144	102/110/ 118/126/ 134/142	100/104/108/112/116/120/124/ 128/132/136/140/144	102/110/ 118/126/ 134/142	106/122
U-NII-3	149/153/157/161/165 **0.68**	149/153/157/161 /165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight. The green highlighted channels are next highest measured output channel in the initial test configuration.						

Table 14.3-7: Reported SAR of initial test configuration for Head (WIFI+Cellular)

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.35**	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112/116/120/ 124/128/132/136/140/144 **0.32**	100/104/108/112/ 116/120/124/128/ 132/136/140/144	102/110/ 118/126/ 134/142	100/104/108/112/116/120/124/ 128/132/136/140/144	102/110/ 118/126/ 134/142	106/122
U-NII-3	149/153/157/161/165 **0.18**	149/153/157/161 /165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 14.3-8: Reported SAR of initial test configuration for Body

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.70**	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112/116/120/ 124/128/132/136/140/144 **0.69**	100/104/108/112/ 116/120/124/128/ 132/136/140/144	102/110/ 118/126/ 134/142	100/104/108/112/116/120/124/ 128/132/136/140/144	102/110/ 118/126/ 134/142	106/122
U-NII-3	149/153/157/161/165 **0.41**	149/153/157/161 /165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 14.3-9: SAR Values (WLAN 5G - Head)

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
60	5300	Left	Cheek	/	18.15	18.5	0.124	**0.13**	0.386	**0.42**	-0.05
60	5300	Left	Tilt	/	18.15	18.5	0.148	**0.16**	0.472	**0.51**	-0.07
60	5300	Right	Cheek	/	18.15	18.5	0.291	**0.32**	1.08	**1.17**	0.04
64	5320	Right	Cheek	/	18.01	18.5	0.18	**0.20**	0.698	**0.78**	0.14
60	5300	Right	Tilt	/	18.15	18.5	0.313	**0.34**	1.14	**1.24**	0.03
64	5320	Right	Tilt	/	18.01	18.5	0.262	**0.29**	1.03	**1.15**	-0.17
132	5660	Left	Cheek	/	18.18	18.5	0.105	**0.11**	0.305	**0.33**	-0.18
132	5660	Left	Tilt	/	18.18	18.5	0.097	**0.10**	0.294	**0.32**	-0.18
132	5660	Right	Cheek	Fig.34	18.18	18.5	0.335	**0.36**	1.29	**1.39**	0.02
100	5500	Right	Cheek	/	17.79	18.5	0.295	**0.35**	1.16	**1.37**	-0.05
136	5680	Right	Cheek	/	17.67	18.5	0.249	**0.30**	0.978	**1.18**	-0.06
132	5660	Right	Tilt	/	18.1	18.5	0.302	**0.33**	1.15	**1.26**	0.14
100	5500	Right	Tilt	/	17.79	18.5	0.273	**0.32**	0.974	**1.15**	-0.06
165	5825	Left	Cheek	/	17.89	18	0.059	**0.06**	0.175	**0.18**	0.03
165	5825	Left	Tilt	/	17.89	18	0.066	**0.07**	0.198	**0.20**	0.13
165	5825	Right	Cheek	/	17.89	18	0.173	**0.18**	0.661	**0.68**	-0.20
165	5825	Right	Tilt	/	17.89	18	0.152	**0.16**	0.574	**0.59**	0.09

Table 14.3-10: SAR Values (WLAN 5G – Body)

Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
60	5300	Front	/	18.15	18.5	0.093	**0.10**	0.283	**0.31**	-0.01
60	5300	Rear	Fig.35	18.15	18.5	0.215	**0.23**	0.65	**0.70**	-0.05
60	5300	Left	/	18.15	18.5	0.226	**0.24**	0.631	**0.68**	-0.04
60	5300	Top	/	18.15	18.5	0.158	**0.17**	0.411	**0.45**	0.18
132	5660	Front	/	18.1	18.5	0.081	**0.09**	0.229	**0.25**	0.17
132	5660	Rear	/	18.1	18.5	0.205	**0.22**	0.625	**0.69**	0.17
132	5660	Left	/	18.1	18.5	0.21	**0.23**	0.622	**0.68**	-0.10
132	5660	Top	/	18.1	18.5	0.117	**0.13**	0.317	**0.35**	0.10
165	5825	Front	/	17.89	18	0.06	**0.06**	0.174	**0.18**	-0.13
165	5825	Rear	/	17.89	18	0.122	**0.13**	0.356	**0.37**	0.01
165	5825	Left	/	17.89	18	0.14	**0.14**	0.399	**0.41**	-0.16
165	5825	Top	/	17.89	18	0.089	**0.09**	0.246	**0.25**	0.03

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

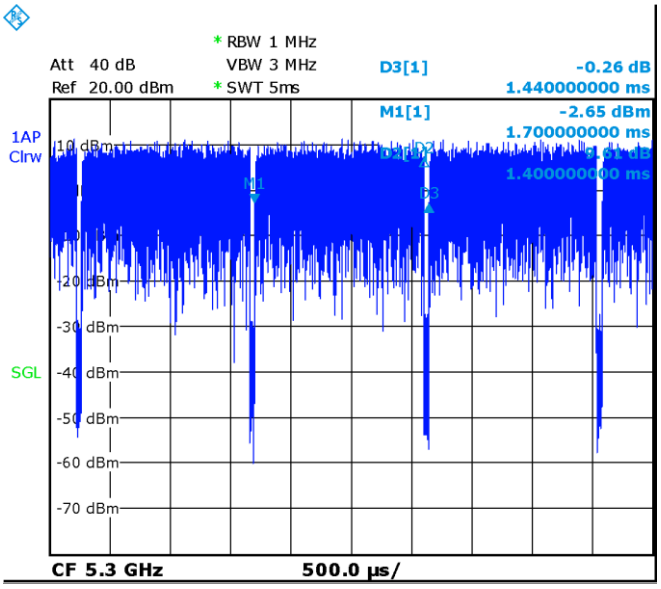
According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 14.3-11: SAR Values (WLAN 5G - Head) (Scaled Reported SAR)

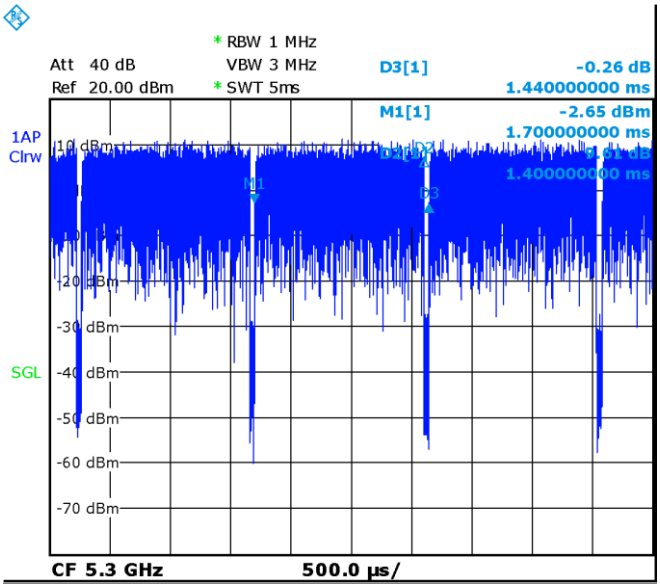
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
Ch.	MHz						
132	5660	Right	Cheek	98%	100%	**1.39**	**1.42**

Table 14.3-12: SAR Values (WLAN 5G - Body) (Scaled Reported SAR)

Frequency		Test Position	Distance (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
Ch.	MHz						
60	5300	Rear	10	98%	100%	**0.70**	**0.71**
60	5300	Rear	0	98%	100%	**0.96**	**0.98**



Picture 14.3-1 The plot of duty factor for CH60



Picture 14.3-2 The plot of duty factor for CH132

14.4 SAR results for For BT

Table 14.4-1: SAR Values (BT - 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(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz										
0	2402	Left	Cheek	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Left	Tilt	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	Cheek	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	Tilt	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/

Table 14.4-2: SAR Values (BT - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz									
0	2402	Front	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Rear	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Top	/	7.74	8	<0.01	<0.01	<0.01	<0.01	/

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

14.5 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: Scaled SAR for Bands with power reduction

Band	Frequency		Mode	Reported SAR(1g)(W/kg)	Max. tune-up Power (dBm)-Low power	Max. tune-up Power (dBm)-Normal power	Scaled SAR(1g) (W/kg)
	Ch.	MHz					
WCDMA1900	9538	1907.6	RMC Rear	**0.96**	22.5	23.8	**1.30**
WCDMA1900	9538	1907.6	RMC Bottom	**1.08**	22.5	23.8	**1.46**
WCDMA1700	1412	1732.4	RMC Rear	**0.65**	22.5	23.8	**0.87**
WCDMA1700	1412	1732.4	RMC Bottom	**0.91**	22.5	23.8	**1.23**
LTE B25	26590	1905	1RB-Mid Rear	**0.94**	22	23.8	**1.42**
LTE B25	26590	1905	1RB-Mid Bottom	**1.13**	22	23.8	**1.71**
LTE B66	132072	1720	1RB-Mid Rear	**0.79**	22.5	23.5	**1.00**
LTE B66	132072	1745	1RB-Mid Bottom	**1.29**	22.5	23.5	**1.62**

Table 14.5-2: SAR Values for phablet

Band	Frequency		Test Mode	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
	Ch.	MHz									
WCDMA1900	9538	1907.6	RMC Rear	/	23.51	23.8	3	**3.21**	6.13	**6.55**	0.12
WCDMA1900	9400	1880	RMC Rear	/	23.6	23.8	3.07	**3.21**	6.09	**6.38**	-0.11
WCDMA1900	9262	1852.4	RMC Rear	/	23.62	23.8	3.11	**3.24**	6.16	**6.42**	-0.02
WCDMA1900	9538	1907.6	RMC Bottom	/	23.51	23.8	2.68	**2.87**	5.31	**5.68**	-0.11
WCDMA1900	9400	1880	RMC Bottom	/	23.6	23.8	2.93	**3.07**	5.86	**6.14**	0.05
WCDMA1900	9262	1852.4	RMC Bottom	/	23.62	23.8	3.08	**3.21**	6.31	**6.58**	-0.03
WCDMA1700	1513	1752.6	RMC Bottom	/	23.53	23.8	3.2	**3.41**	6.81	**7.25**	-0.11
WCDMA1700	1412	1732.4	RMC Bottom	/	23.61	23.8	3.39	**3.54**	7.25	**7.57**	0.12
WCDMA1700	1312	1712.4	RMC Bottom	/	23.64	23.8	3.63	**3.77**	7.55	**7.83**	-0.07
LTE B25	26590	1905	1RB-Mid Rear	/	23.42	23.8	2.81	**3.07**	5.53	**6.04**	0.06
LTE B25	26365	1882.5	1RB-Mid Rear	/	23.57	23.8	2.97	**3.13**	5.8	**6.12**	0.03
LTE B25	26140	1860	1RB-Mid Rear	/	23.55	23.8	2.93	**3.10**	5.75	**6.09**	-0.11
LTE B25	26590	1905	1RB-Mid Bottom	/	23.42	23.8	2.69	**2.94**	5.27	**5.75**	-0.08
LTE B25	26365	1882.5	1RB-Mid Bottom	/	23.57	23.8	2.64	**2.78**	5.24	**5.52**	0.12
LTE B25	26140	1860	1RB-Mid Bottom	/	23.55	23.8	2.93	**3.10**	5.71	**6.05**	-0.07
LTE B66	132072	1770	1RB-Mid Bottom	/	23.31	23.5	3.47	**3.63**	7.06	**7.38**	-0.11
LTE B66	132072	1745	1RB-Mid Bottom	/	23.37	23.5	3.6	**3.71**	7.33	**7.55**	0.12
LTE B66	132072	1720	1RB-Mid Bottom	Fig.36	23.47	23.5	3.75	**3.78**	7.66	**7.71**	-0.04
WIFI2.4G	6	2437	Rear	/	18.96	19	1.41	**1.42**	3.32	**3.35**	0.19
WIFI5G	60	5300	Rear	/	18.15	18.5	0.883	**0.96**	3.93	**4.26**	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 GSM850 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
190	836.6	GPRS(4)	Right Cheek	0.858	0.842	1.02	/

Table 15.2: SAR Measurement Variability for Head WCDMA850 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
4132	826.4	RMC	Left Cheek	0.802	0.788	1.02	/
4132	826.4	RMC	Left Tilt	0.977	0.956	1.02	/
4132	826.4	RMC	Right Cheek	1.04	1.01	1.03	/
4132	826.4	RMC	Right Tilt	0.98	0.966	1.01	/

Table 15.3: SAR Measurement Variability for Body WCDMA1900 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
9400	1880	RMC	Rear 10mm	0.942	0.911	1.03	/
9400	1880	RMC	Bottom 10mm	1.04	1.02	1.02	/

Table 15.4: SAR Measurement Variability for Body WCDMA1700 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
1513	1752.6	RMC	Bottom 10mm	0.895	0.875	1.02	/

Table 15.5: SAR Measurement Variability for Head LTE B13 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
23230	782	1RB-Mid	Right Cheek	0.808	0.783	1.03	/

Table 15.6: SAR Measurement Variability for Body LTE B25 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
26590	1905	1RB-Mid	Rear 10mm	0.845	0.822	1.03	/
26590	1905	1RB-Mid	Bottom 10mm	1.02	0.989	1.03	/

Table 15.7: SAR Measurement Variability for Body LTE B66 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
132072	1745	1RB-Mid	Bottom 10mm	0.976	0.935	1.04	/

Table 15.8: SAR Measurement Variability for Head WIFI2.4G (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
11	2462	11b	Right Cheek	0.936	0.912	1.03	/

Table 15.9: SAR Measurement Variability for Head WIFI5G (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
132	5660	11a	Right Cheek	1.29	1.25	1.03	/
132	5660	11a	Right Tilt	1.15	1.11	1.04	/

16 Measurement Uncertainty

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

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

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

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	√3	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	2.0	R	√3	1	1	1.2	1.2	∞
4	Linearity	B	4.7	R	√3	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	√3	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	√3	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	√3	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	√3	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	√3	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	√3	1	1	0	0	∞
11	Probe positioned mech. restrictions	B	0.8	R	√3	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	√3	1	1	3.9	3.9	∞
13	Post-processing	B	4.0	R	√3	1	1	2.3	2.3	∞
Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	√3	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	√3	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	√3	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (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	$\sqrt{3}$	0.7	0.7	1.9	1.9	∞
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	∞
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	∞
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	∞
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	∞
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	∞
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	∞
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞

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

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

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

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

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5239A	MY55491241	May 31, 2021	One year
02	Power meter	NRP2	106276	May 11, 2021	One year
03	Power sensor	NRP6A	101369		
04	Signal Generator	E4438C	MY49071430	February 1, 2021	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	166370	June 25, 2021	One year
07	E-field Probe	SPEAG EX3DV4	7548	June 25, 2021	One year
08	DAE	SPEAG DAE4	1331	September 1, 2021	One year
09	Dipole Validation Kit	SPEAG D750V2	1017	July 12,,2021	One year
10	Dipole Validation Kit	SPEAG D835V2	4d069	July 21,,2021	One year
11	Dipole Validation Kit	SPEAG D1800V2	2d145	July 12,,2021	One year
12	Dipole Validation Kit	SPEAG D1900V2	5d101	July 15,2021	One year
13	Dipole Validation Kit	SPEAG D2450V2	853	July 26,2021	One year
14	Dipole Validation Kit	SPEAG D2600V2	1012	July 26,2021	One year
15	Dipole Validation Kit	SPEAG D5GHzV2	1262	January 18,2021	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH190 Right Cheek
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.6 MHz; σ = 0.871 S/m; ε_r = 45.073;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 836.6 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.29 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 39.82 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.858 W/kg; SAR(10 g) = 0.505 W/kg
Maximum value of SAR (measured) = 1.38 W/kg

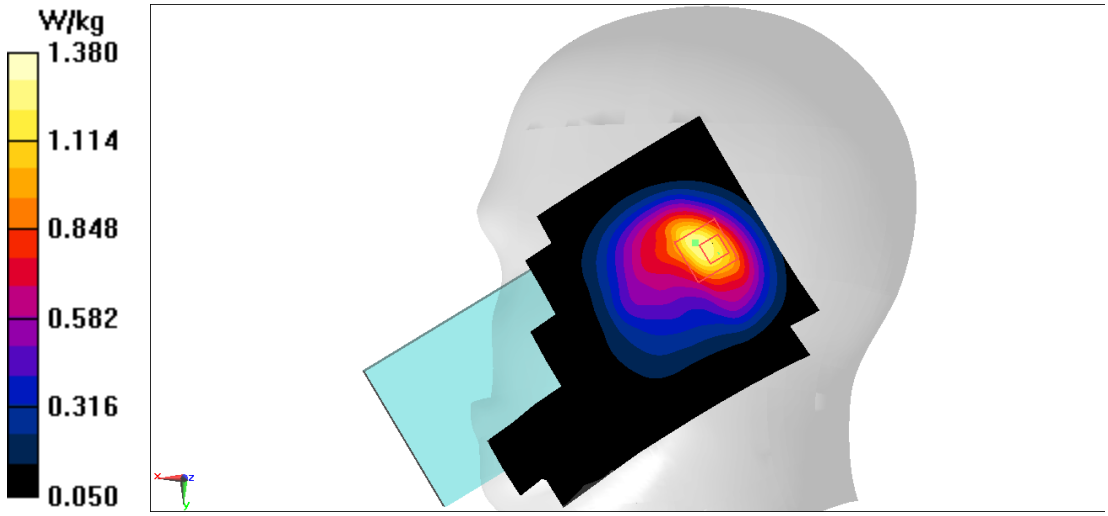


Fig A.1

GSM850_CH251 Rear 10mm
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 848.8 MHz; σ = 0.886 S/m; ε_r = 45.499;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.439 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.08 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.553 W/kg
SAR(1 g) = 0.316 W/kg; SAR(10 g) = 0.190 W/kg
Maximum value of SAR (measured) = 0.459 W/kg

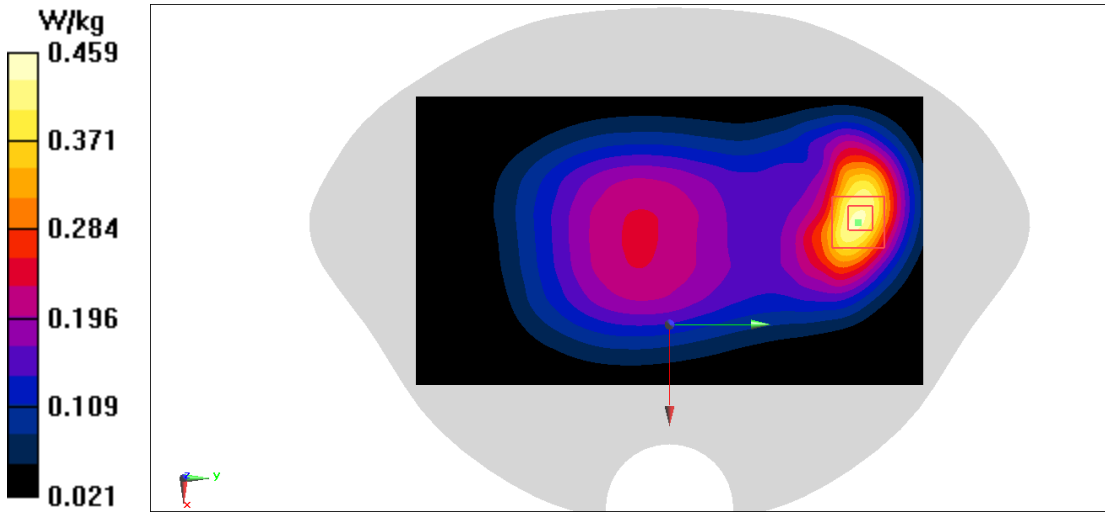


Fig A.2

PCS1900_CH661 Left Cheek
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.466 S/m; ε_r = 42.777;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0998 W/kg

Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.518 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.0967 W/kg

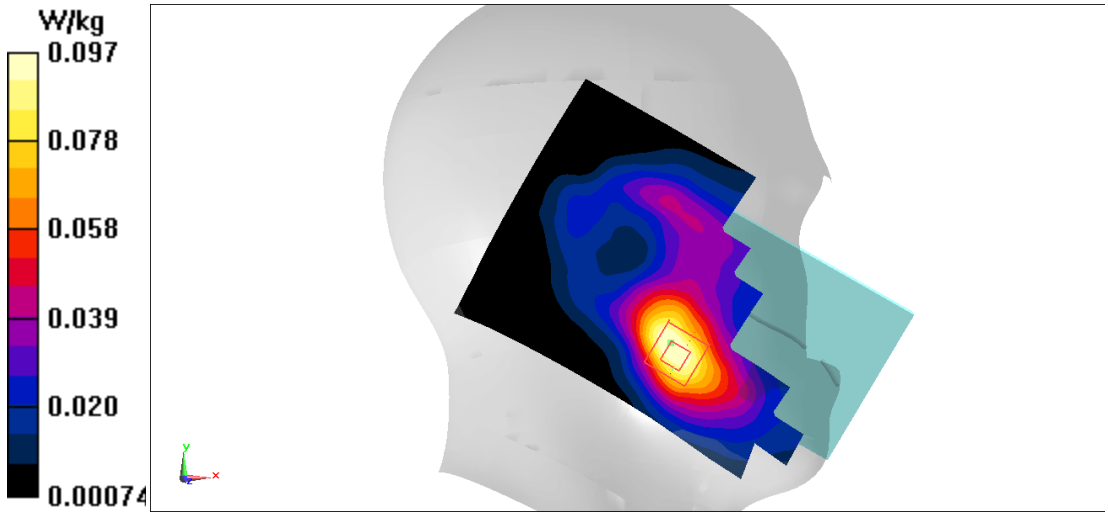


Fig A.3

PCS1900_CH512 Rear 15mm
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.493 S/m; ε_r = 42.856;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:4
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.606 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.600 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.690 W/kg
SAR(1 g) = 0.427 W/kg; SAR(10 g) = 0.262 W/kg

Maximum value of SAR (measured) = 0.591 W/kg

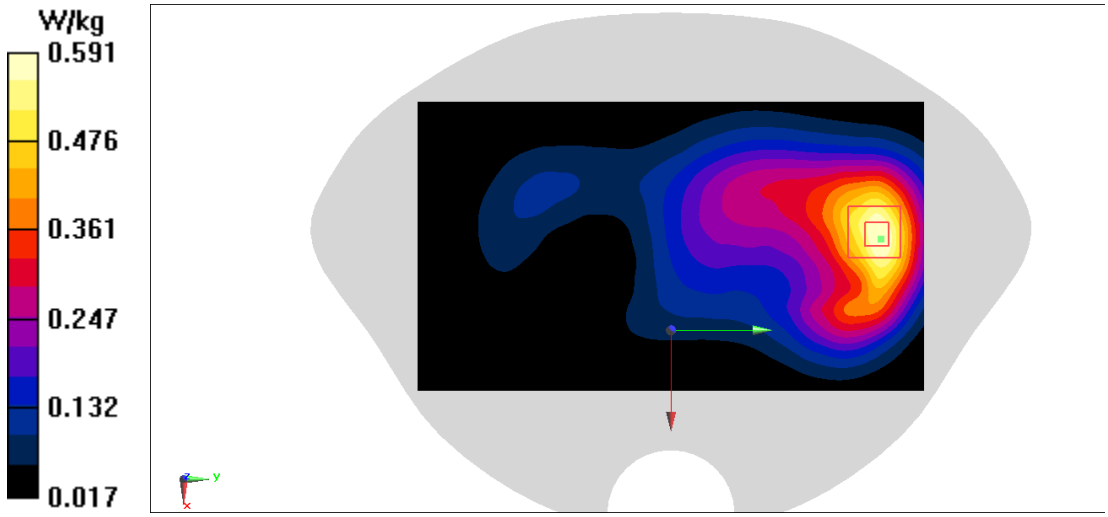


Fig A.4

PCS1900_CH512 Bottom 10mm
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.493 S/m; ε_r = 42.856;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:4
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.622 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.80 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.722 W/kg
SAR(1 g) = 0.417 W/kg; SAR(10 g) = 0.235 W/kg

Maximum value of SAR (measured) = 0.603 W/kg

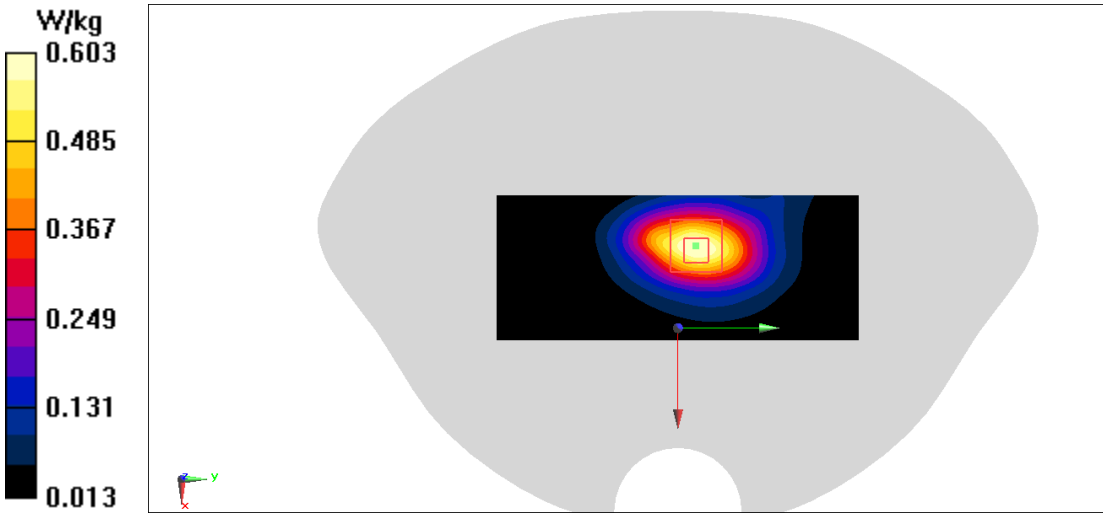


Fig A.5

WCDMA1900-BII_CH9400 Left Cheek
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.513 S/m; ε_r = 42.82;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.284 W/kg

Zoom Scan (6x9x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.585 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.320 W/kg
SAR(1 g) = 0.203 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.272 W/kg

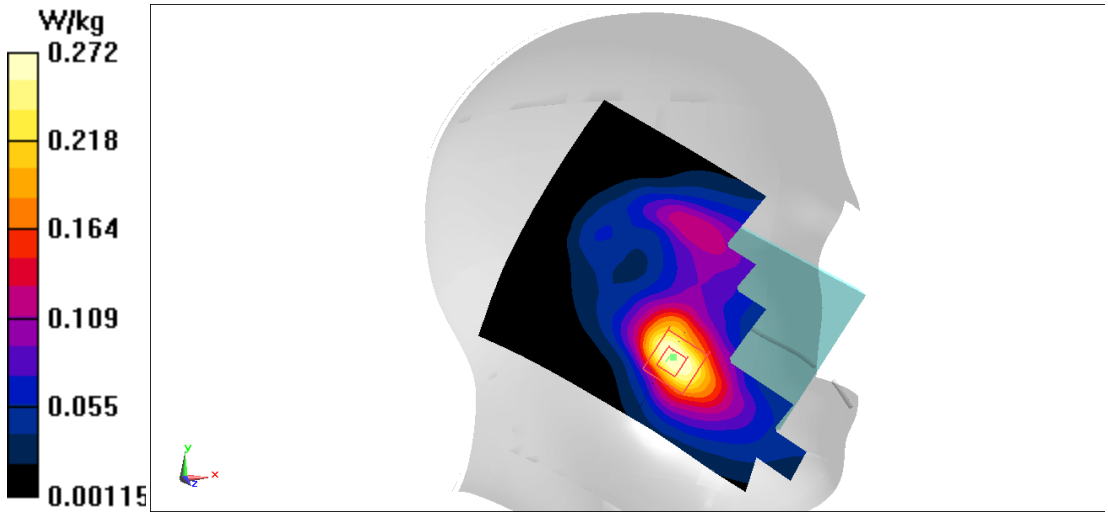


Fig A.6

WCDMA1900-BII_CH9400 Rear 15mm_Body worn
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1732.4 MHz; σ = 1.409 S/m; ε_r = 43.101;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1732.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.790 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.346 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.873 W/kg
SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.350 W/kg
Maximum value of SAR (measured) = 0.763 W/kg

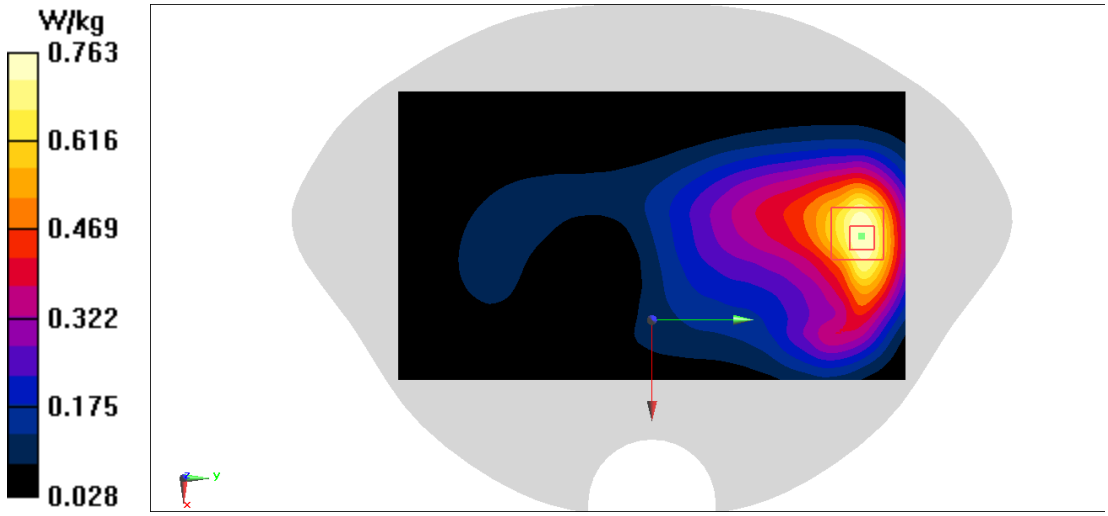


Fig A.7

WCDMA1900-BII_CH9400 Bottom 10mm_Hotspot
Date: 1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.513 S/m; ε_r = 42.82;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.51 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.15 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.81 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.589 W/kg
Maximum value of SAR (measured) = 1.52 W/kg

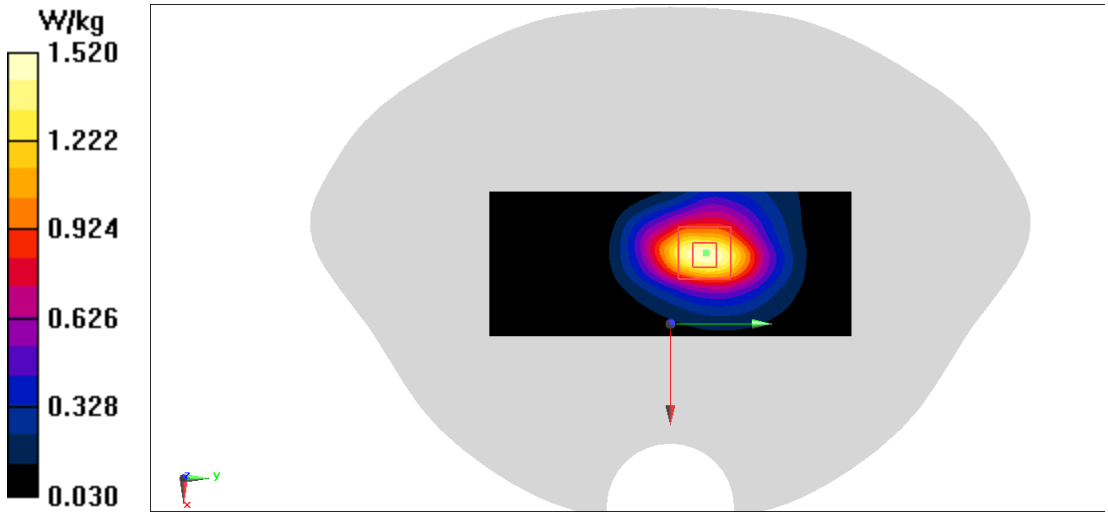


Fig A.8

WCDMA1700-BIV_CH1412 Left Cheek
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1732.4 MHz; σ = 1.409 S/m; ε_r = 43.101;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.149 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.109 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.166 W/kg
SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.143 W/kg

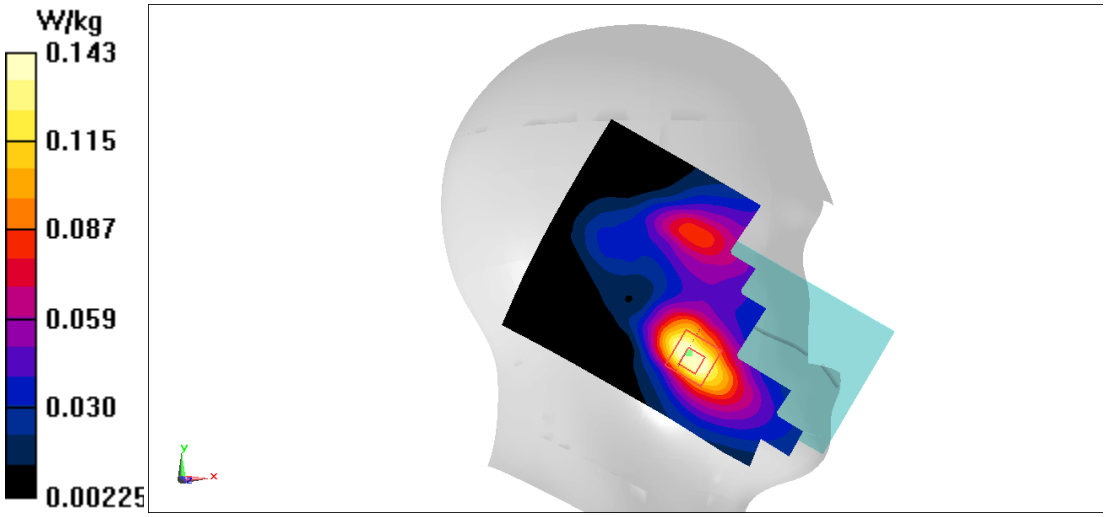


Fig A.9

WCDMA1700-BIV_CH1412 Rear 15mm_Body worn
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1732.4 MHz; σ = 1.409 S/m; ε_r = 43.101;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.790 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.346 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.873 W/kg
SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.350 W/kg
Maximum value of SAR (measured) = 0.763 W/kg

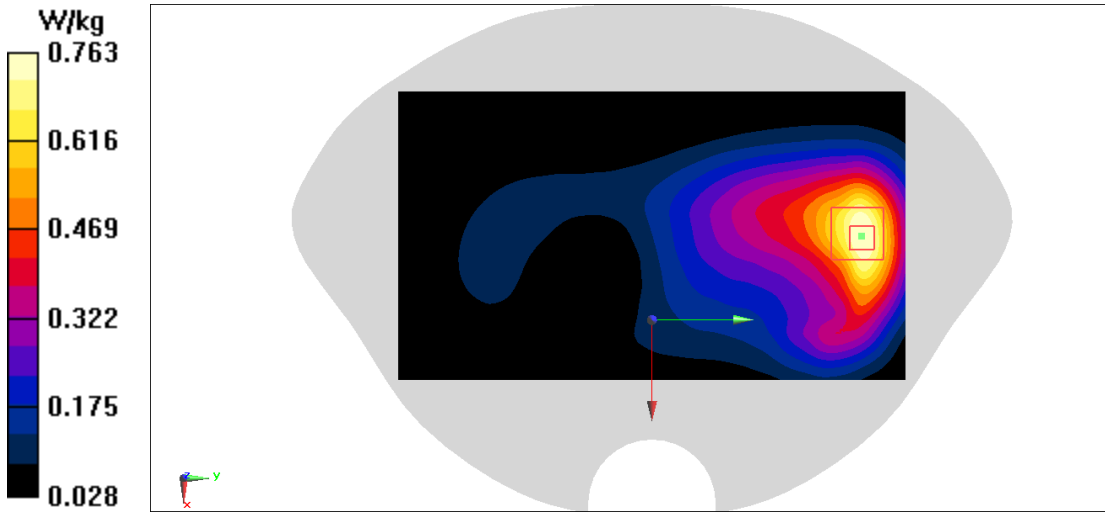


Fig A.10

WCDMA1700-BIV_CH1513 Bottom 10mm_Hotspot
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1752.6 MHz; σ = 1.425 S/m; ε_r = 43.067;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1752.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.57 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.895 W/kg; SAR(10 g) = 0.507 W/kg

Maximum value of SAR (measured) = 1.29 W/kg

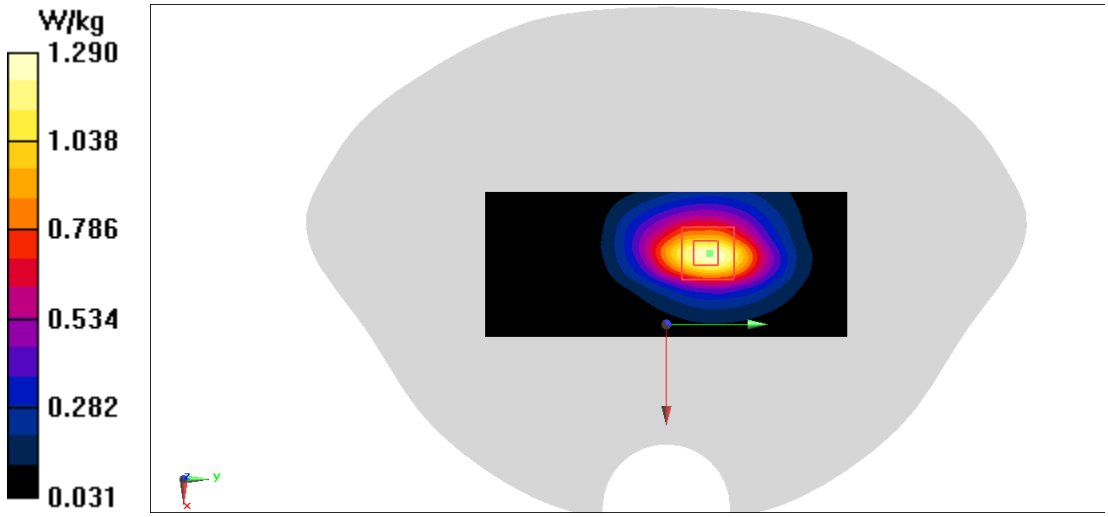


Fig A.11

WCDMA850-BV_CH4132 Left Cheek
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 826.4 MHz; σ = 0.85 S/m; ε_r = 44.832;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 826.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.801 W/kg

Zoom Scan (7x7x5)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.67 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.588 W/kg; SAR(10 g) = 0.380 W/kg

Maximum value of SAR (measured) = 1.02 W/kg

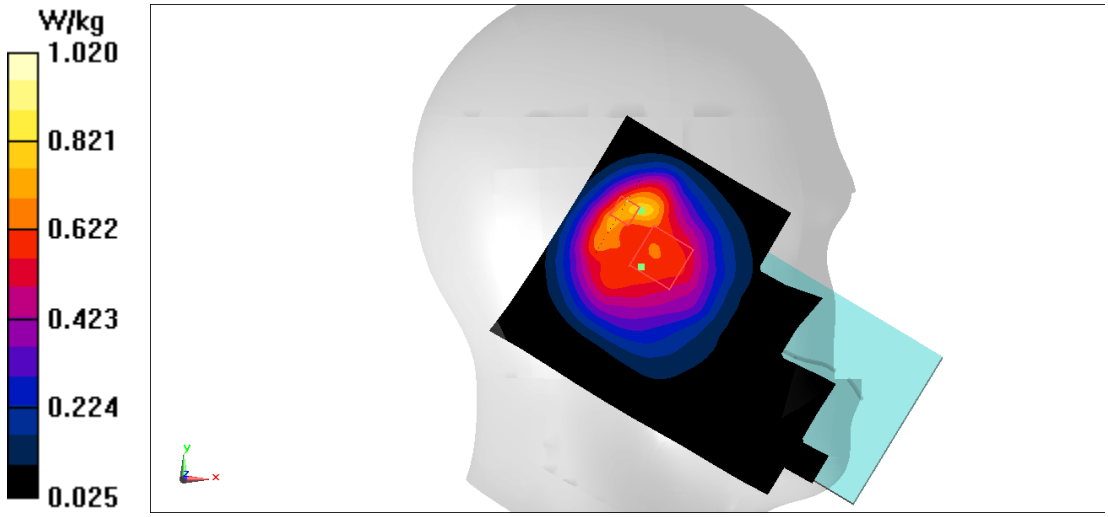


Fig A.12

WCDMA850-BV_CH4132 Rear 10mm
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 826.4 MHz; σ = 0.85 S/m; ε_r = 44.832;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 826.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
WCDMA850 Body Rear 10mm CYF 31a
Maximum value of SAR (interpolated) = 0.601 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.04 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.728 W/kg
SAR(1 g) = 0.438 W/kg; SAR(10 g) = 0.274 W/kg

Maximum value of SAR (measured) = 0.613 W/kg

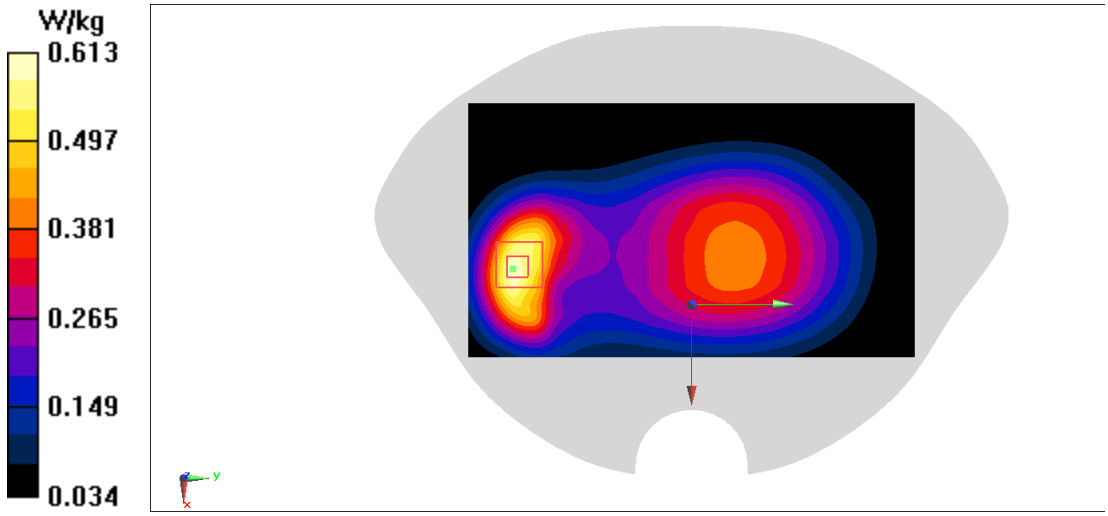


Fig A.13

LTE700-FDD12_CH23060 Left Cheek
Date: 1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.815 S/m; ε_r = 45.2;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.991 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.39 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.614 W/kg; SAR(10 g) = 0.355 W/kg

Maximum value of SAR (measured) = 0.942 W/kg

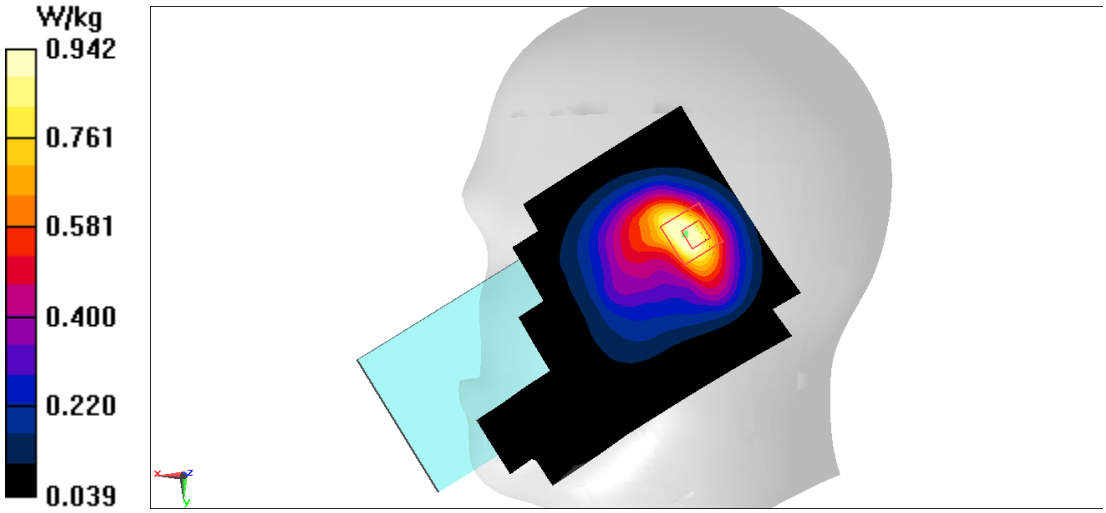


Fig A.14

LTE700-FDD12_CH23060 Right 10mm
Date: 1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.815 S/m; ε_r = 45.2;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.423 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.79 V/m; Power Drift =0.12 dB
Peak SAR (extrapolated) = 0.491 W/kg
SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.229 W/kg

Maximum value of SAR (measured) = 0.430 W/kg

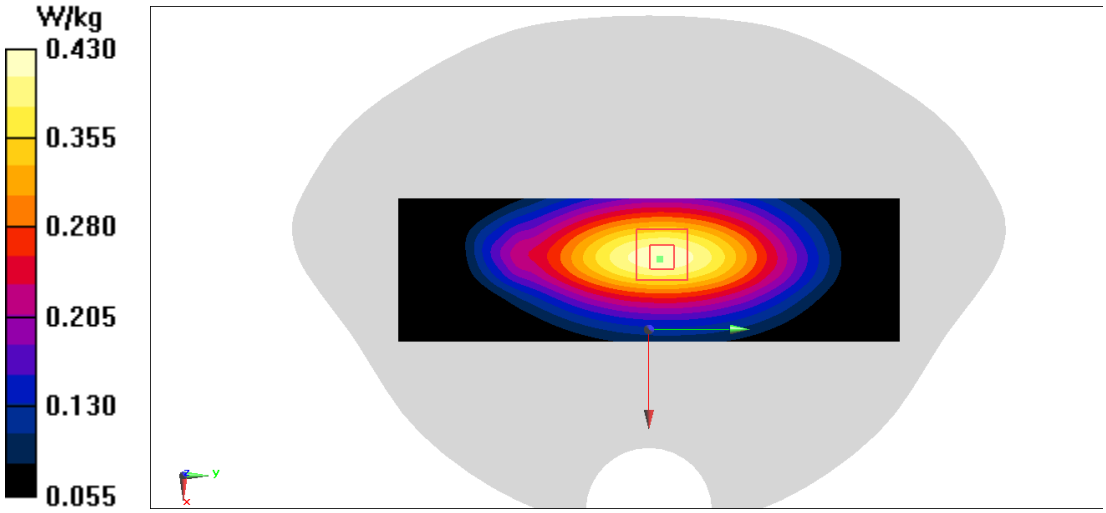


Fig A.15

LTE750-FDD13_CH23230 Right Cheek
Date:1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.835 S/m; ε_r = 44.957;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.14 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.41 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.808 W/kg; SAR(10 g) = 0.470 W/kg

Maximum value of SAR (measured) = 1.30 W/kg

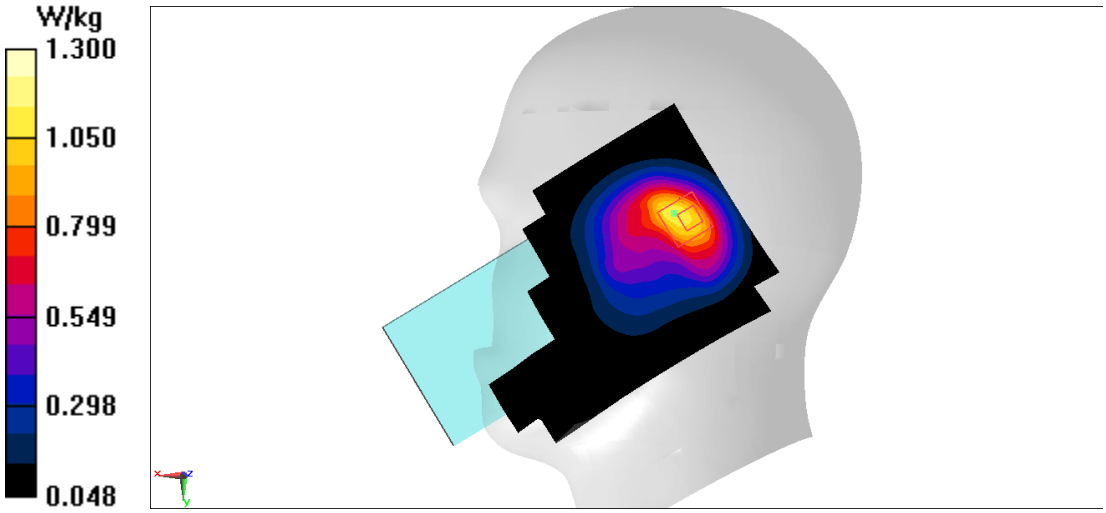


Fig A.16

LTE750-FDD13_CH23230 Right 10mm
Date:1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.835 S/m; ε_r = 44.957;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.576 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.92 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.668 W/kg
SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.306 W/kg
Maximum value of SAR (measured) = 0.582 W/kg

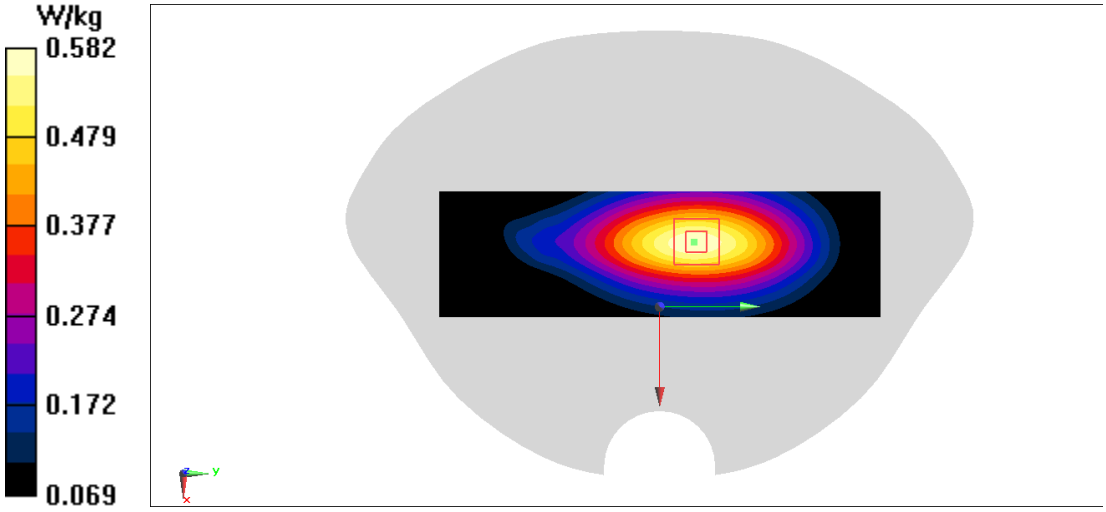


Fig A.17

LTE1900-FDD25_CH26365 Left Cheek
Date:1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1882.5 MHz; σ = 1.456 S/m; ε_r = 42.289; ρ= 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1882.5MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.255 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.221 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.272 W/kg
SAR(1 g) = 0.192 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.244 W/kg

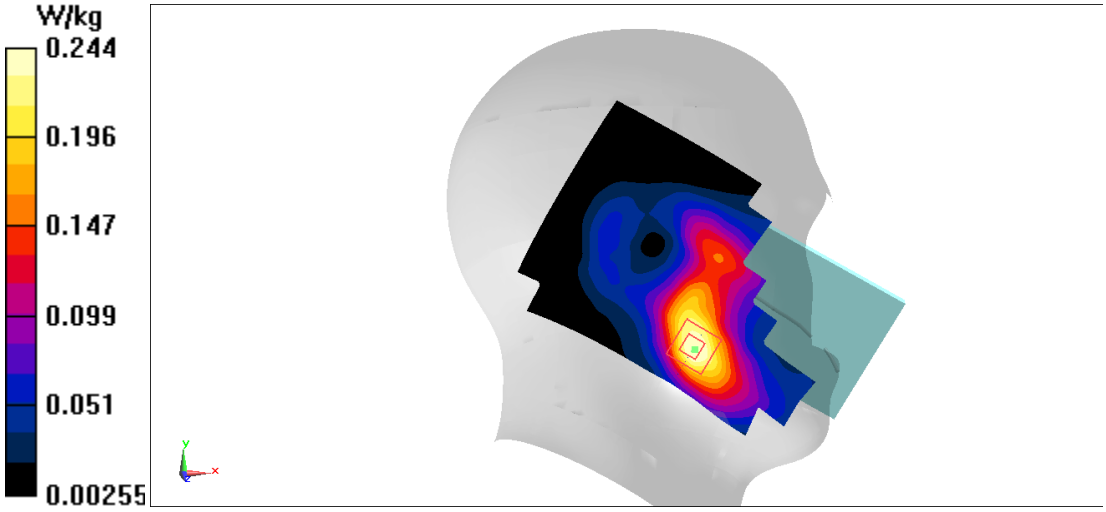


Fig A.18

LTE1900-FDD25_CH26365 Rear 15mm_Body worn
Date:1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1882.5 MHz; σ = 1.456 S/m; ε_r = 42.289; ρ= 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1882.5MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (71x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.08 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.74 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.774 W/kg; SAR(10 g) = 0.472 W/kg
Maximum value of SAR (measured) = 1.08 W/kg

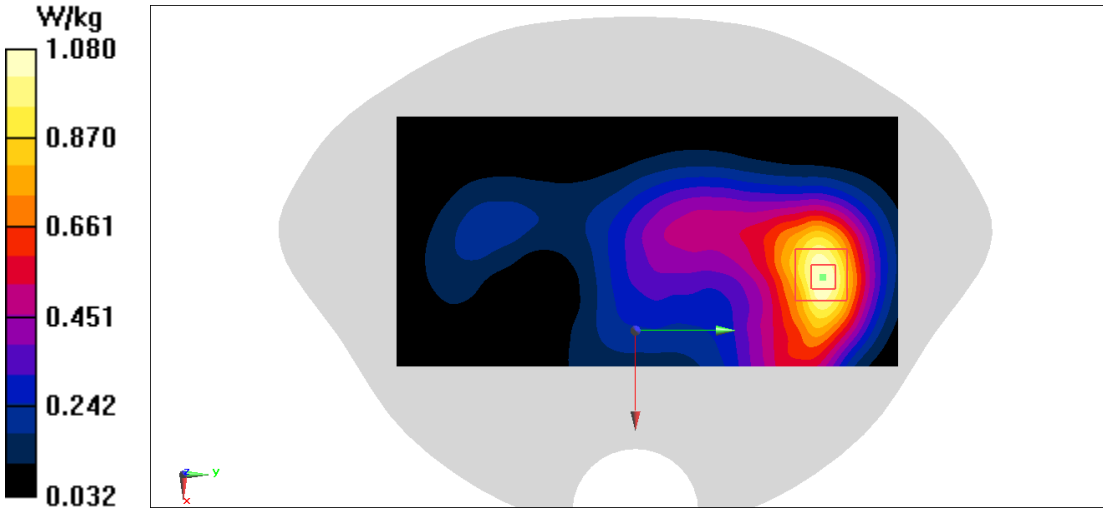


Fig A.19

LTE1900-FDD25_CH26590 Bottom 10mm_Hotspot
Date:1/16/2022
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1905 MHz; σ = 1.468 S/m; ε_r = 42.295;ρ= 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1905MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.24 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.77 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.578 W/kg
Maximum value of SAR (measured) = 1.48 W/kg

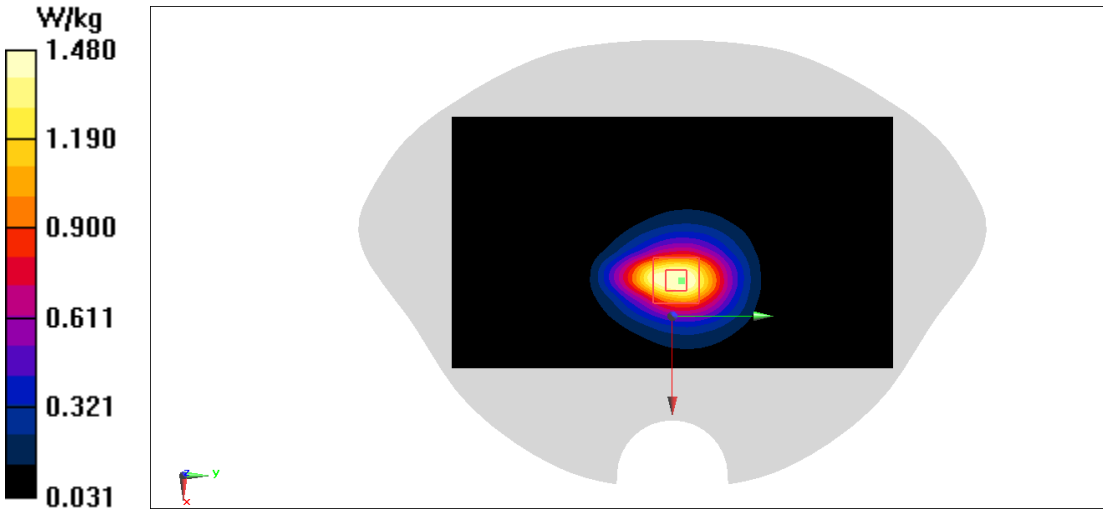


Fig A.20

LTE850-FDD26_CH26775 Left Tilt
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 822.5 MHz; σ = 0.857 S/m; ε_r = 44.895;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD26 822.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36, 10.36, 10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Zoom Scan (6x6x5)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.69 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 0.750 W/kg; SAR(10 g) = 0.374 W/kg
Maximum value of SAR (measured) = 1.26 W/kg

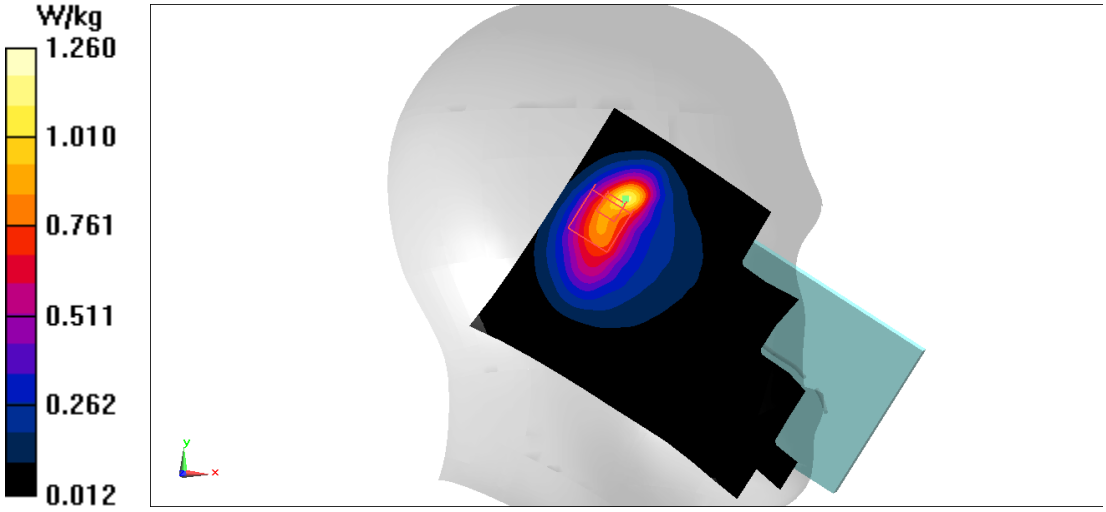


Fig A.21

LTE850-FDD26 _CH26865 Rear 10mm
Date: 1/14/2022
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 831.5 MHz; σ = 0.878 S/m; ε_r = 45.564;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD26 831.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36, 10.36, 10.36)

Area Scan (71x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.631 W/kg

Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.83 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.761 W/kg
SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.295 W/kg
Maximum value of SAR (measured) = 0.649 W/kg

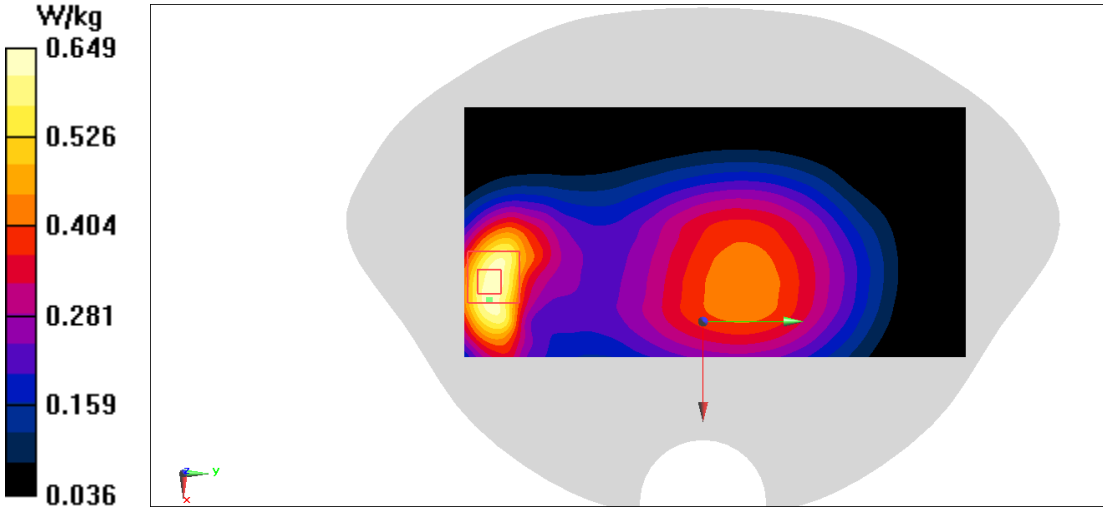


Fig A.22

LTE2500-TDD41 PC3_CH41055 Right Cheek
Date: 1/18/2022
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2636.5 MHz; σ = 2.07 S/m; ε_r = 40.643;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-TDD41 2636.5 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.529 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.864 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.555 W/kg
SAR(1 g) = 0.305 W/kg; SAR(10 g) = 0.163 W/kg

Maximum value of SAR (measured) = 0.456 W/kg

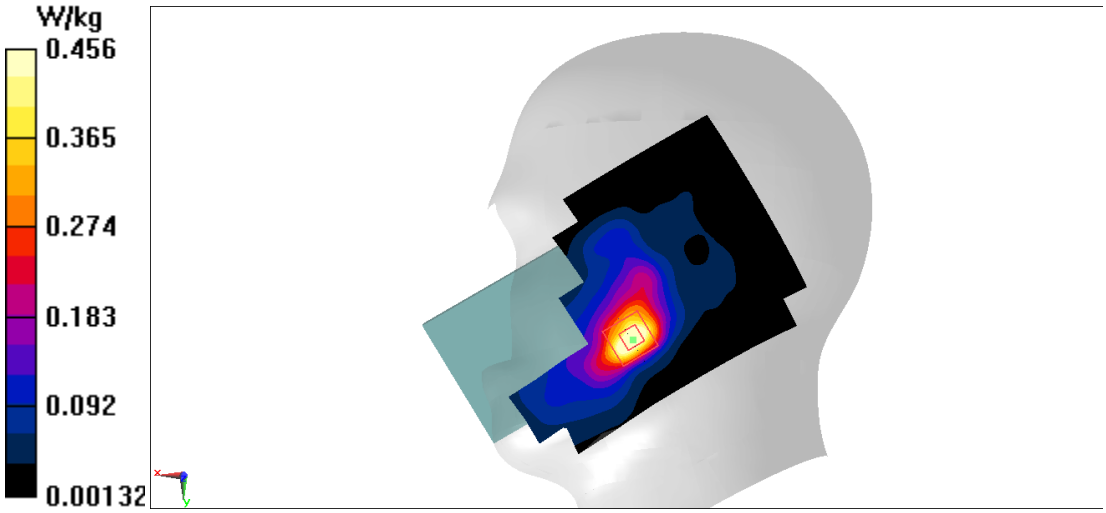


Fig A.23

LTE2500-TDD41 PC3_CH41055 Rear 10mm
Date: 1/18/2022
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2636.5 MHz; σ = 2.07 S/m; ε_r = 40.643;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-TDD41 2636.5 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.828 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.466 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.252 W/kg
Maximum value of SAR (measured) = 0.882 W/kg

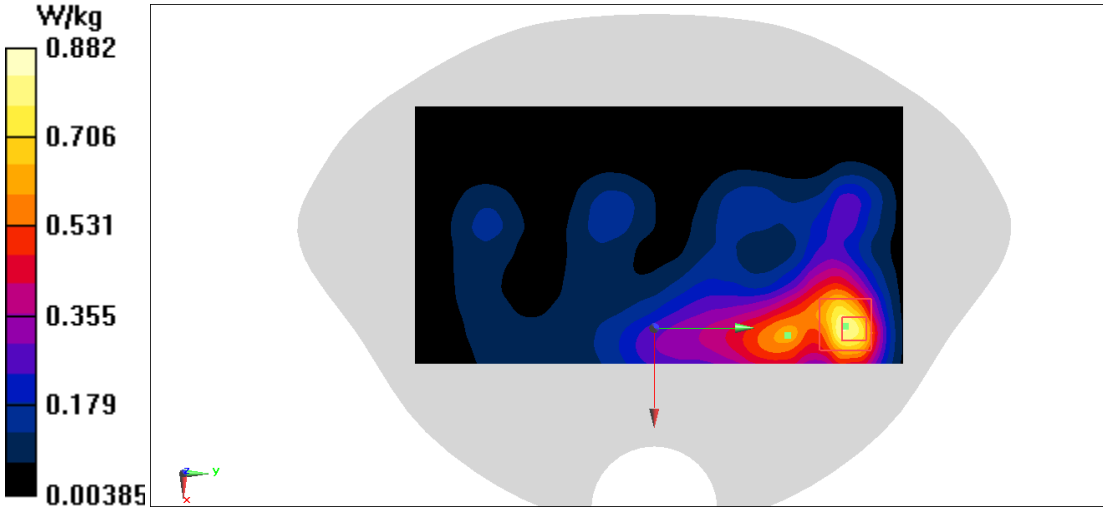


Fig A.24

LTE2500-TDD41 PC2_CH40185 Right Cheek
Date: 1/18/2022
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2550 MHz; σ = 2.059 S/m; ε_r = 41.336;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-TDD41 2549.5 MHz Duty Cycle: 1:2.37
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.469 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.448 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.289 W/kg; SAR(10 g) = 0.161 W/kg
Maximum value of SAR (measured) = 0.438 W/kg

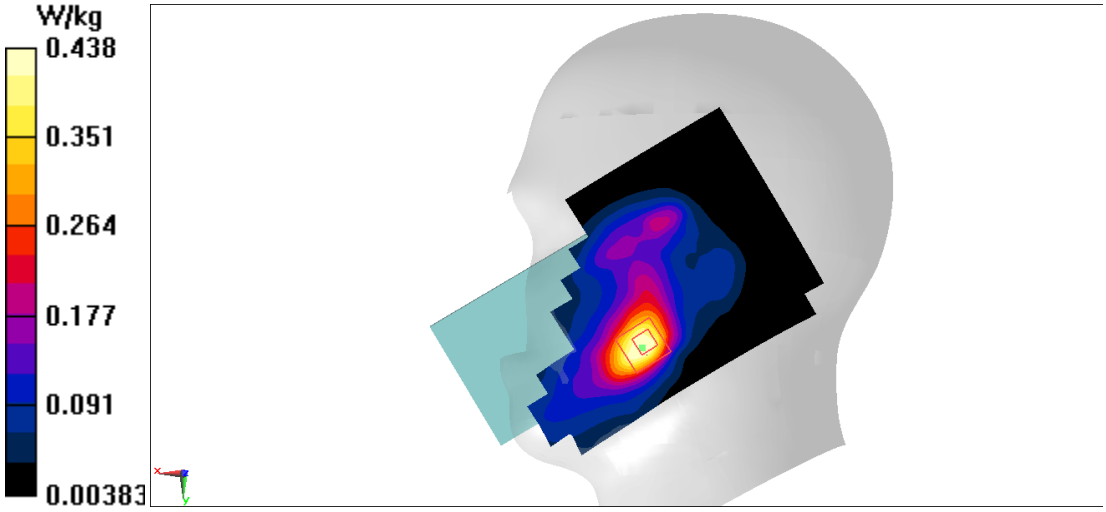


Fig A.25

LTE2500-TDD41 PC2_CH4015 Rear 10mm
Date: 1/18/2022
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2550 MHz; σ = 2.059 S/m; ε_r = 41.336;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-TDD41 2549.5 MHz Duty Cycle: 1:2.37
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (91x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.979 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.032 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.608 W/kg; SAR(10 g) = 0.323 W/kg
Maximum value of SAR (measured) = 0.942 W/kg

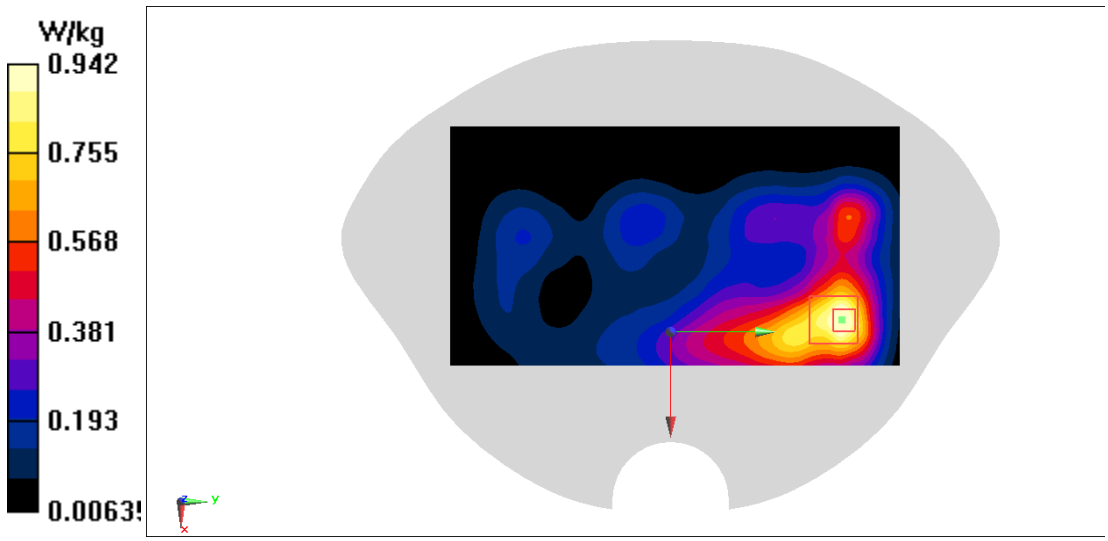


Fig A.26

LTE1700-FDD66_CH132072 Left Cheek
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1720 MHz; σ = 1.399 S/m; ε_r = 43.118;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.162 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.030 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.179 W/kg
SAR(1 g) = 0.118 W/kg; SAR(10 g) = 0.075 W/kg
Maximum value of SAR (measured) = 0.158 W/kg

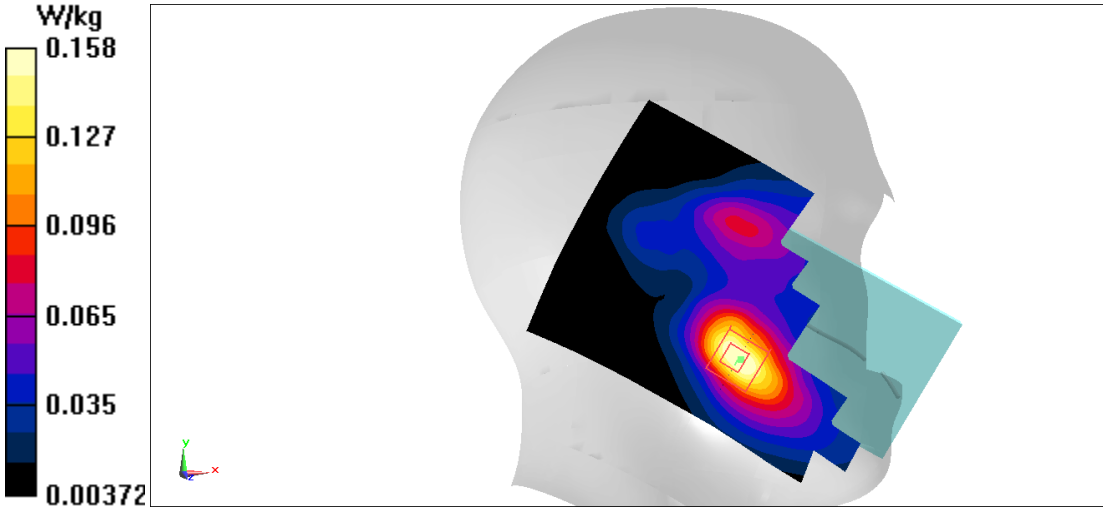


Fig A.27

LTE1700-FDD66_CH132072 Rear 15mm
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1720 MHz; σ = 1.399 S/m; ε_r = 43.118;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.772 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.942 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.869 W/kg
SAR(1 g) = 0.558 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.756 W/kg

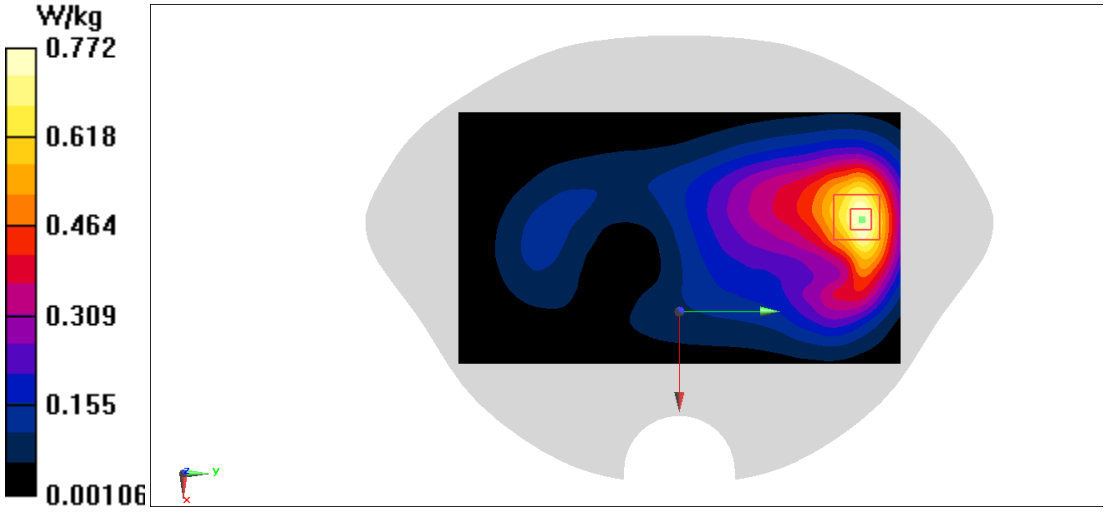


Fig A.28

LTE1700-FDD66_CH132072 Rear 10mm
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1745 MHz; σ = 1.419 S/m; ε_r = 43.08;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x101x1): 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 = 19.72 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 0.976 W/kg; SAR(10 g) = 0.552 W/kg
Maximum value of SAR (measured) = 1.40 W/kg

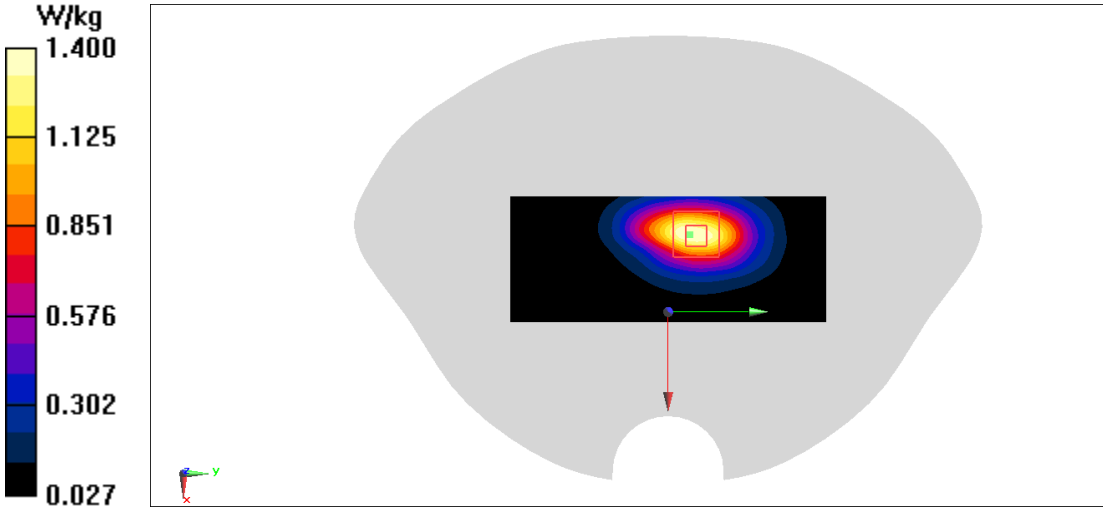


Fig A.29

LTE700-FDD71_CH133372 Left Cheek
Date: 1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 688 MHz; σ = 0.819 S/m; ε_r = 46.146;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD71 688 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

Zoom Scan (6x9x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.52 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.656 W/kg; SAR(10 g) = 0.325 W/kg
Maximum value of SAR (measured) = 1.35 W/kg

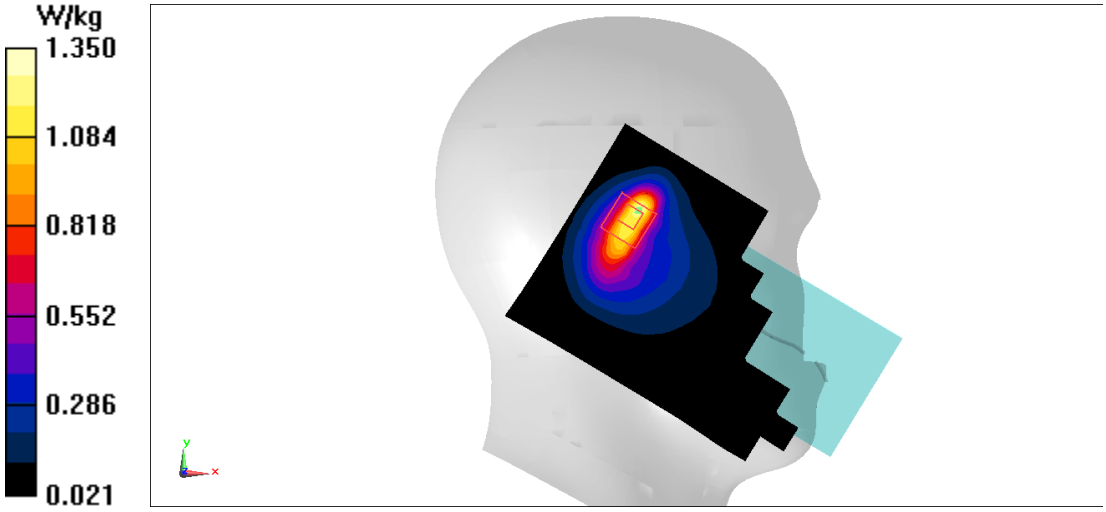


Fig A.30

LTE700-FDD71_CH133372 Right 10mm
Date: 1/13/2022
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 688 MHz; σ = 0.819 S/m; ε_r = 46.146;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD71 688 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.559 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.39 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.647 W/kg
SAR(1 g) = 0.430 W/kg; SAR(10 g) = 0.302 W/kg
Maximum value of SAR (measured) = 0.563 W/kg

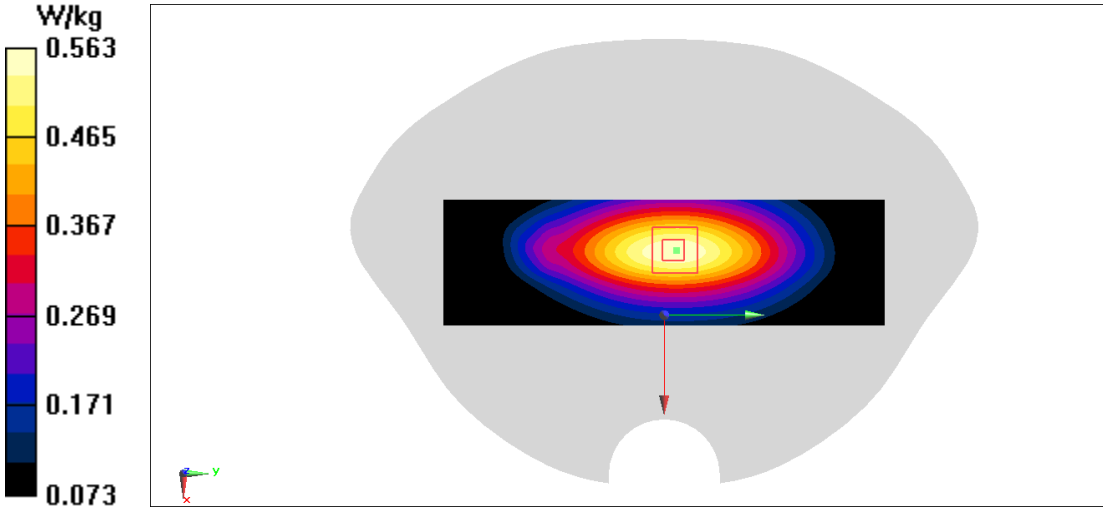


Fig A.31

WLAN2450_CH11 Right Cheek
Date: 1/17/2022
Electronics: DAE4 Sn1331
Medium: head 2450 MHz
Medium parameters used: f = 2462 MHz; σ = 1.974 S/m; ε_r = 41.572;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN2450 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.63 W/kg

Zoom Scan (8x7x5)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.63 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.92 W/kg
SAR(1 g) = 0.936 W/kg; SAR(10 g) = 0.441 W/kg
Maximum value of SAR (measured) = 1.51 W/kg

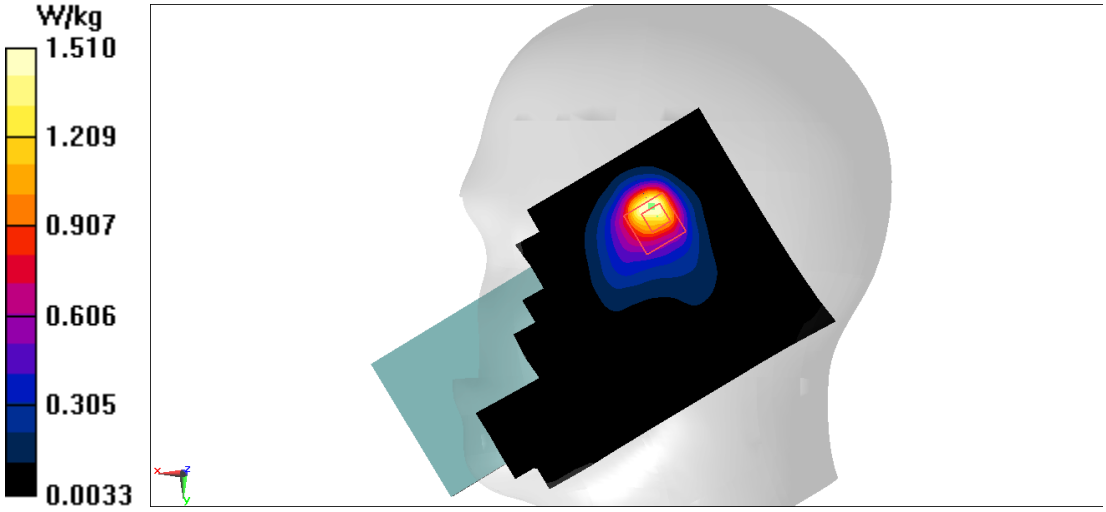


Fig A.32

WLAN2450_CH6 Rear 10mm
Date: 1/17/2022
Electronics: DAE4 Sn1331
Medium: head 2450 MHz
Medium parameters used: f = 2437 MHz; σ = 1.925 S/m; ε_r = 41.174;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN2450 2437 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.24 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.348 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.637 W/kg; SAR(10 g) = 0.312 W/kg
Maximum value of SAR (measured) = 1.08 W/kg

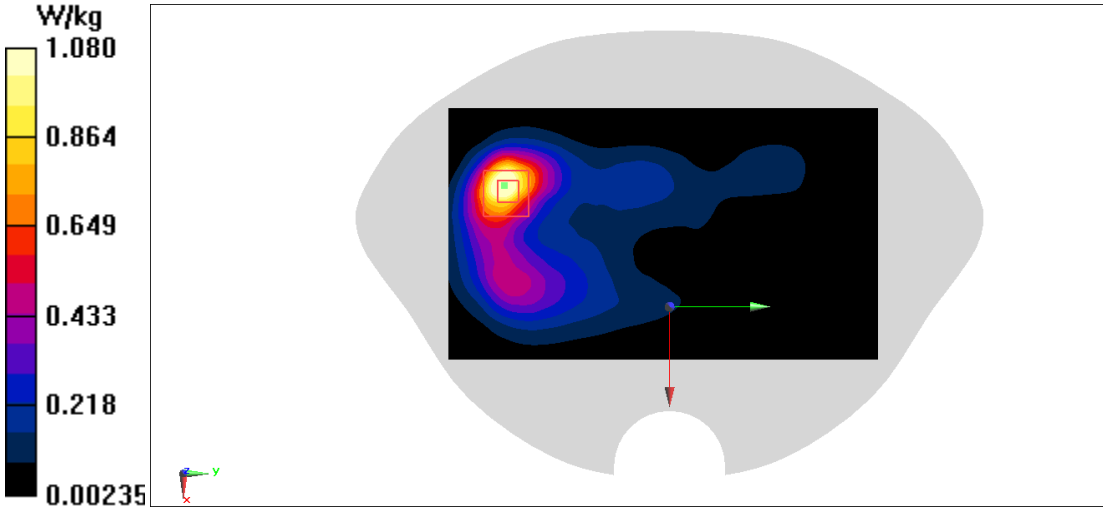


Fig A.33

WLAN5G_CH132 Right Cheek
Date: 1/11/2022
Electronics: DAE4 Sn1331
Medium: head 5 GHz
Medium parameters used: f = 5660 MHz; σ = 5.171 S/m; ε_r = 34.593;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN5G 5660 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.68, 4.68, 4.68)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.97 W/kg

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.241 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 6.51 W/kg
SAR(1 g) = 1.29 W/kg; SAR(10 g) = 0.335 W/kg
Maximum value of SAR (measured) = 3.31 W/kg

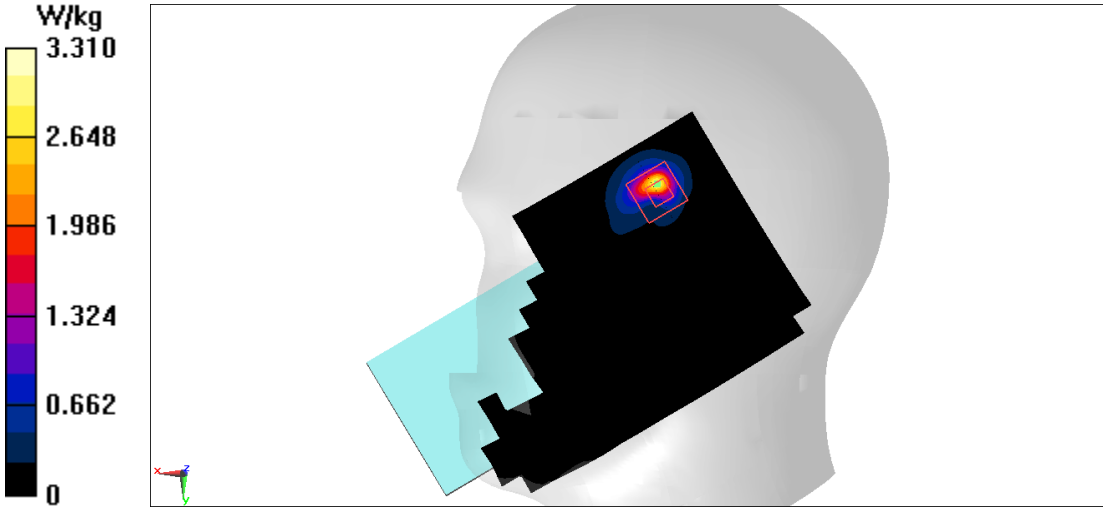


Fig A.34

WLAN5G_CH60 Rear 10mm
Date: 1/10/2022
Electronics: DAE4 Sn1331
Medium: head 5 GHz
Medium parameters used: f = 5300 MHz; σ = 4.789 S/m; ε_r = 35.288;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN5G 5560 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.68, 4.68, 4.68)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.56 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.066 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.37 W/kg
SAR(1 g) = 0.650 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 1.46 W/kg

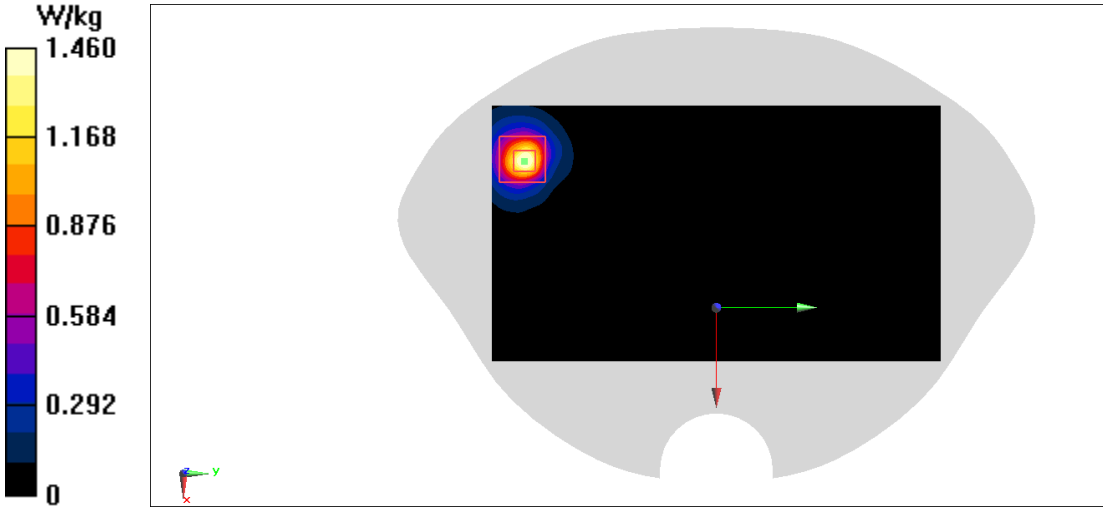


Fig A.35

LTE1700-FDD66_CH132072 Bottom 0mm_Extremity SAR
Date: 1/15/2022
Electronics: DAE4 Sn1331
Medium: head 1800 MHz
Medium parameters used: f = 1720 MHz; σ = 1.36 S/m; ε_r = 43.088;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 1770 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 16.4 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 59.56 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 16.0 W/kg
SAR(1 g) = 7.66 W/kg; SAR(10 g) = 3.75 W/kg
Maximum value of SAR (measured) = 12.9 W/kg

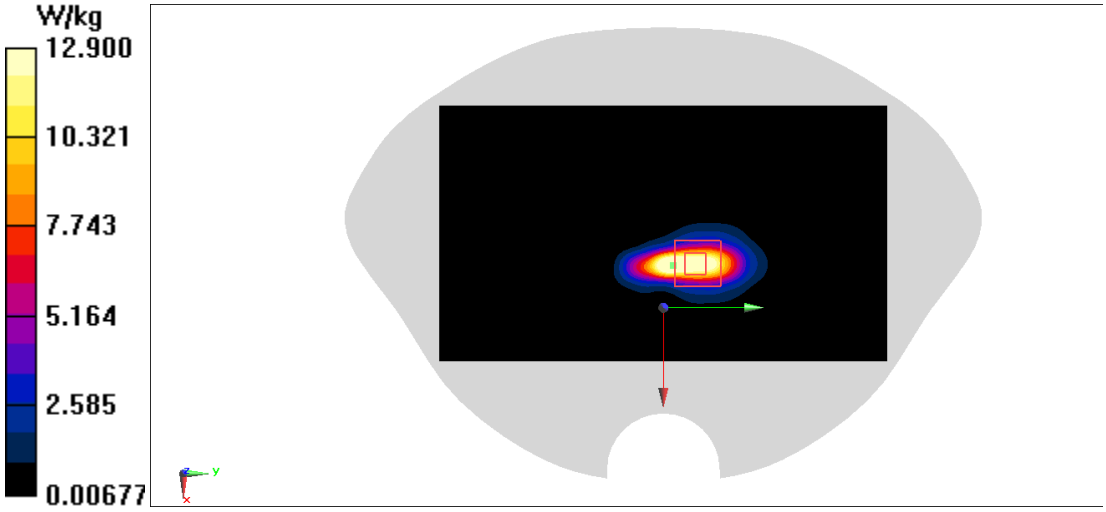
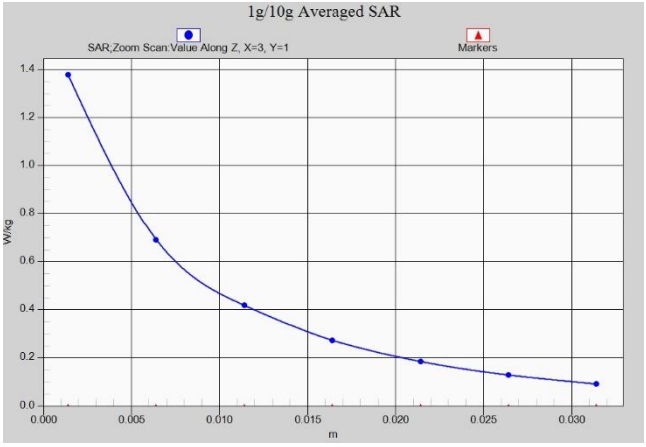
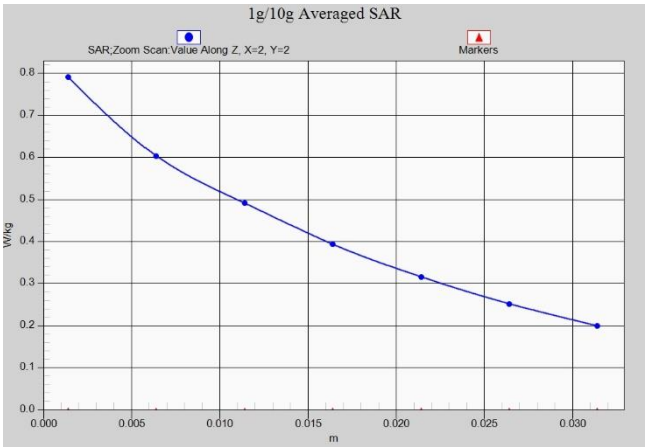


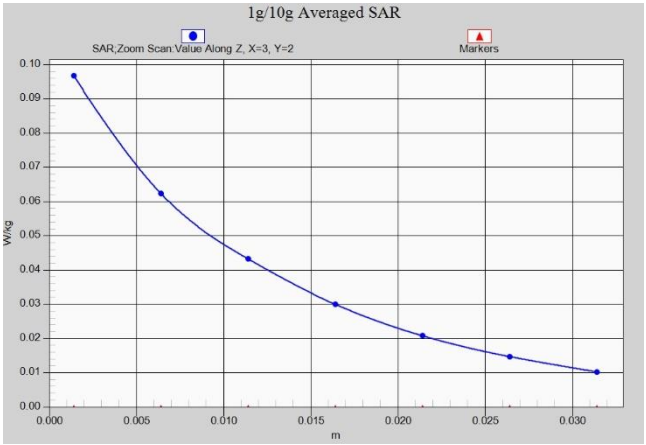
Fig A.36



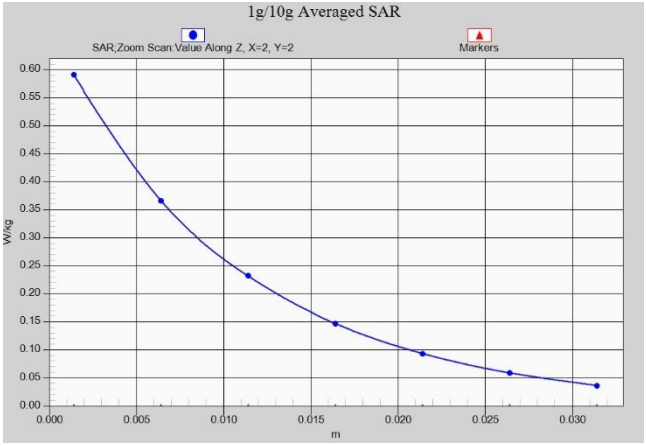
Z-Scan at power reference point (850 MHz)



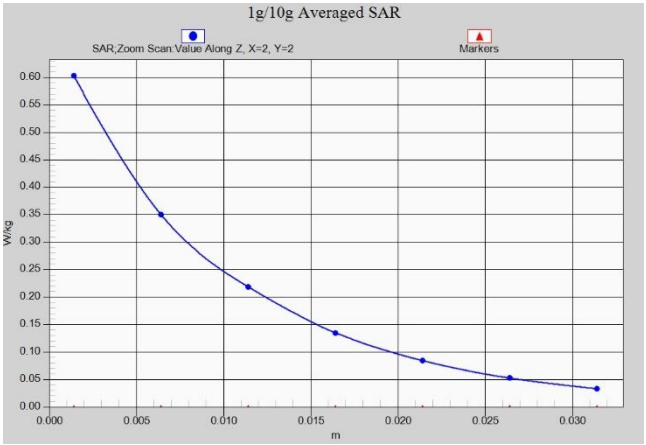
Z-Scan at power reference point (850 MHz)



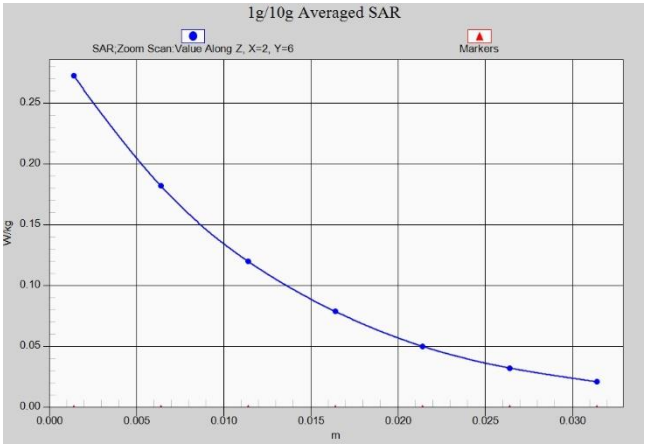
Z-Scan at power reference point (1900 MHz)



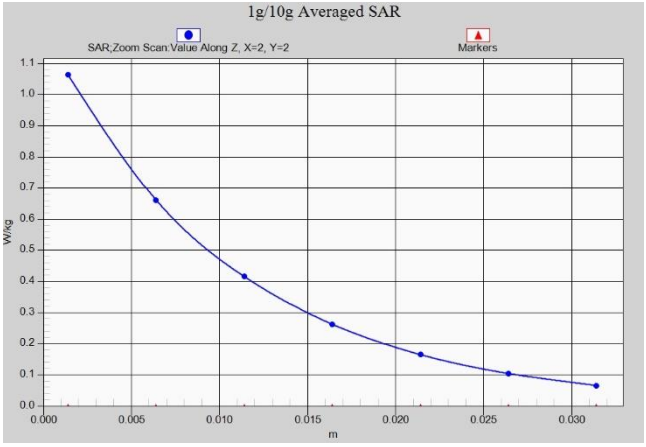
Z-Scan at power reference point (GSM1900)



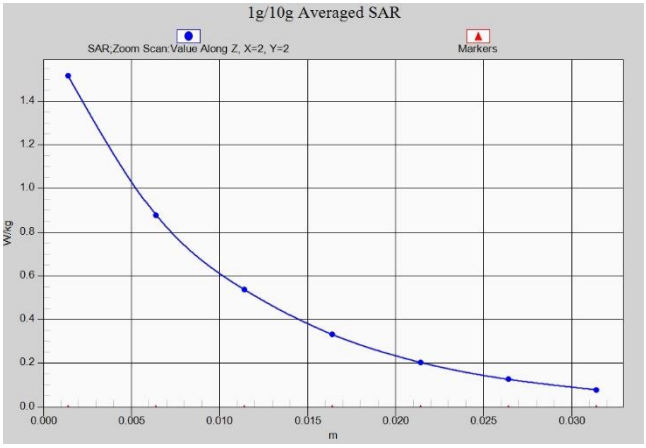
Z-Scan at power reference point (GSM1900)



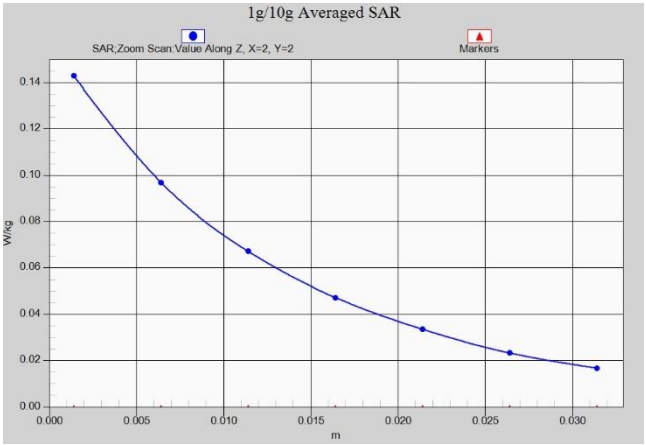
Z-Scan at power reference point (WCDMA1900)



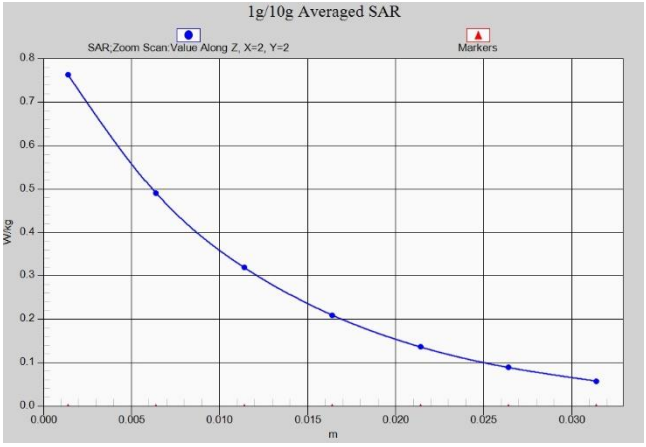
Z-Scan at power reference point (WCDMA1900)



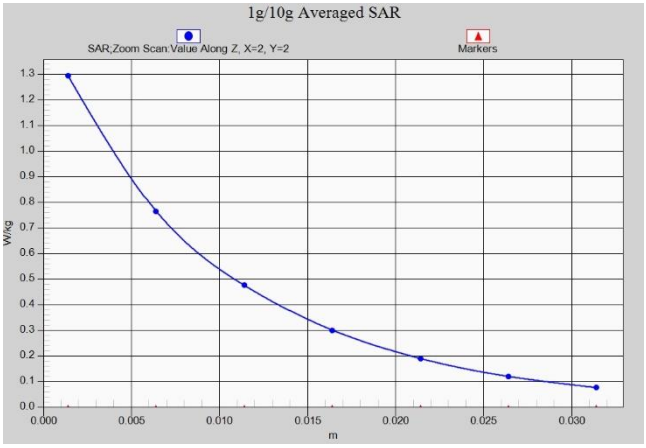
Z-Scan at power reference point (WCDMA1900)



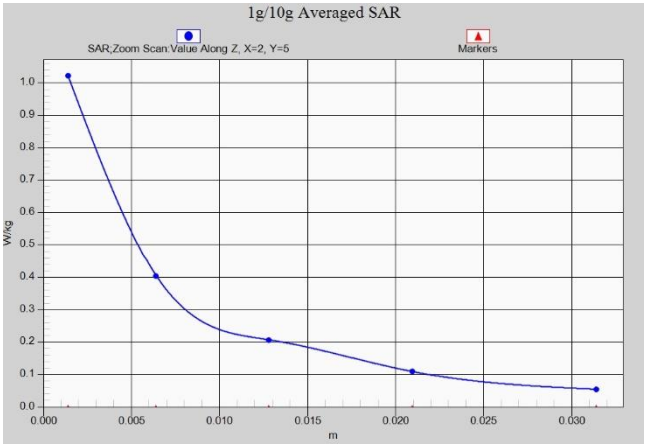
Z-Scan at power reference point (WCDMA1700)



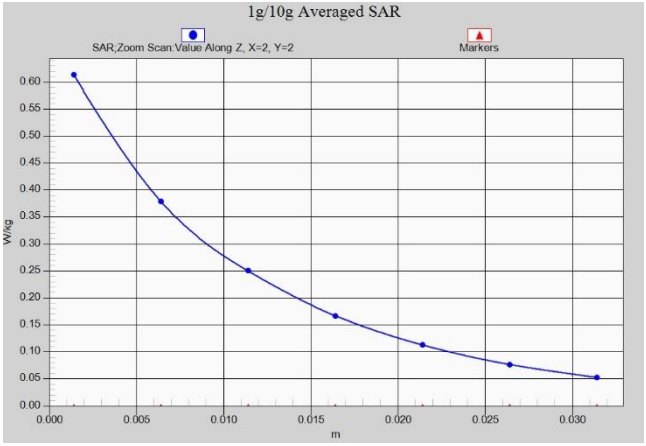
Z-Scan at power reference point (WCDMA1700)



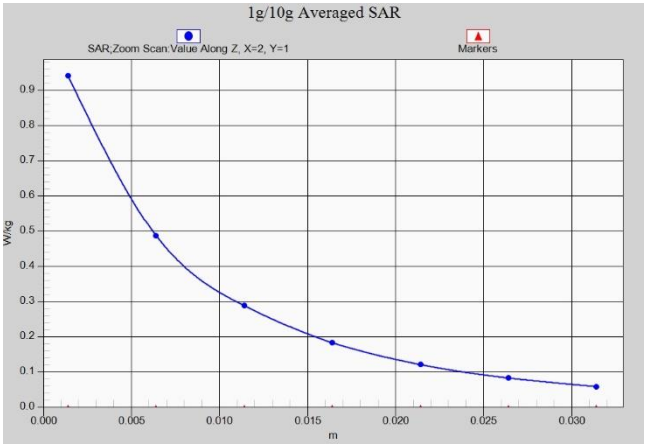
Z-Scan at power reference point (WCDMA1700)



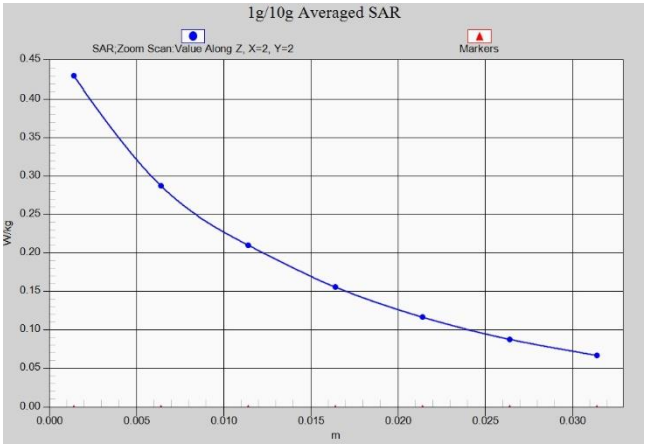
Z-Scan at power reference point (WCDMA850)



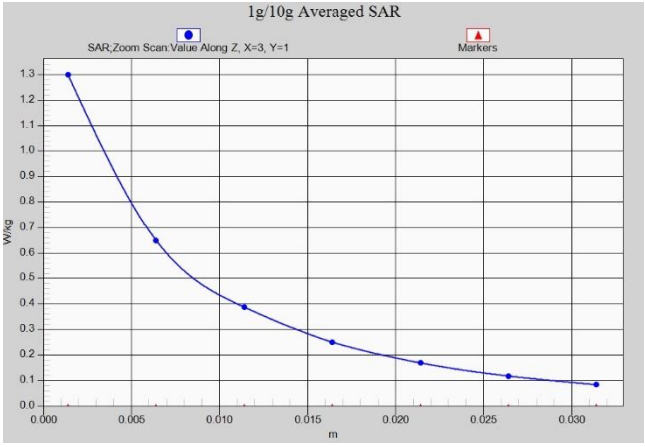
Z-Scan at power reference point (WCDMA850)



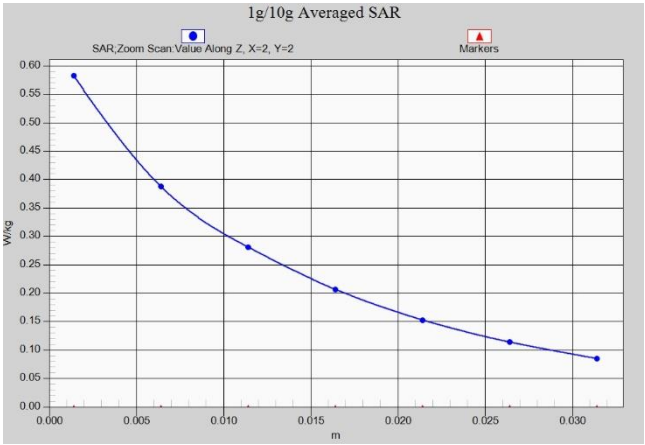
Z-Scan at power reference point (LTEB12)



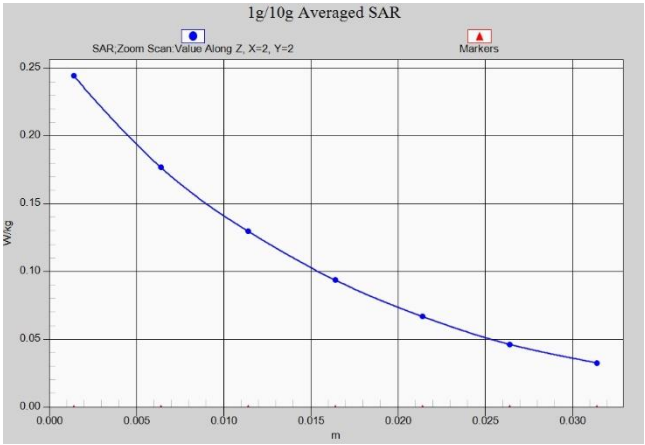
Z-Scan at power reference point (LTEB12)



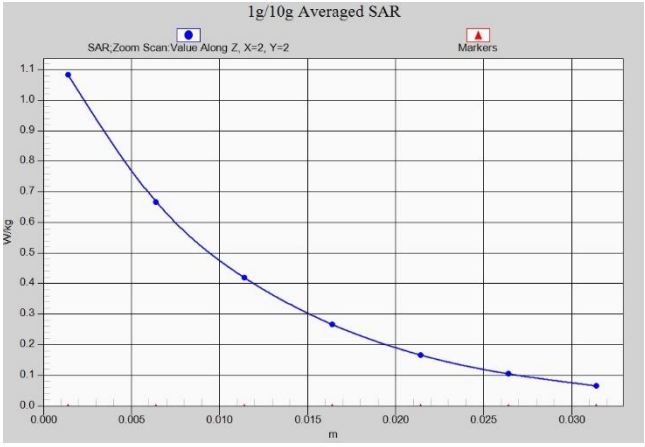
Z-Scan at power reference point (LTEB13)



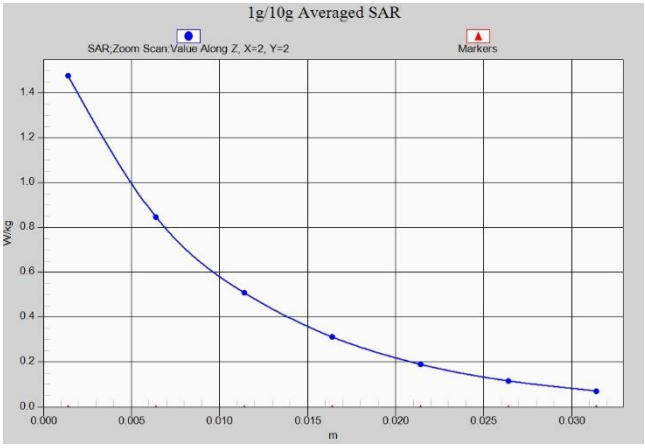
Z-Scan at power reference point (LTEB13)



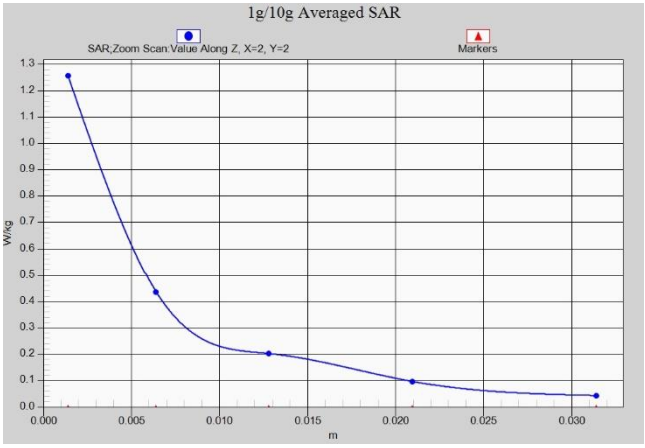
Z-Scan at power reference point (LTEB25)



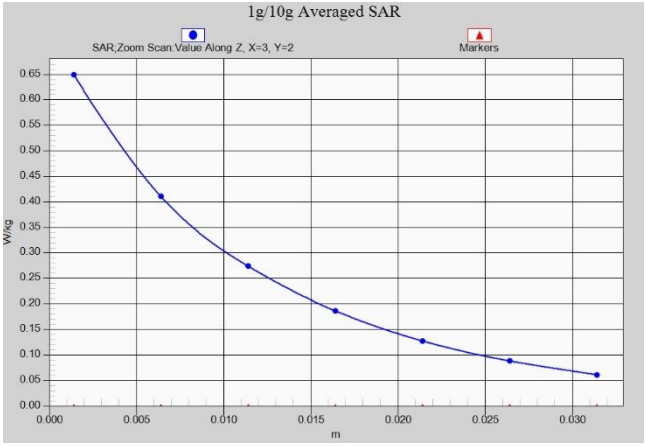
Z-Scan at power reference point (LTEB25)



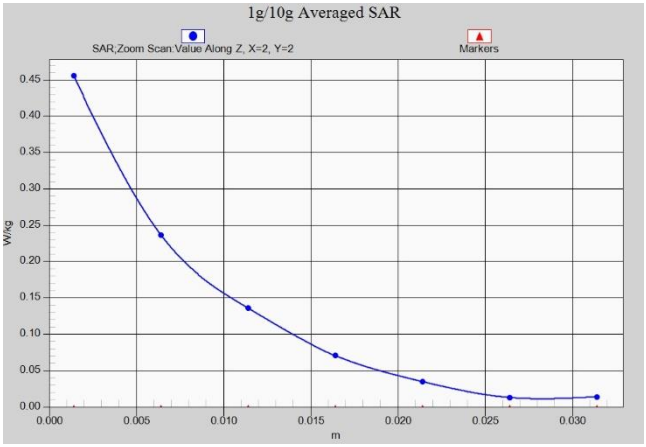
Z-Scan at power reference point (LTEB25)



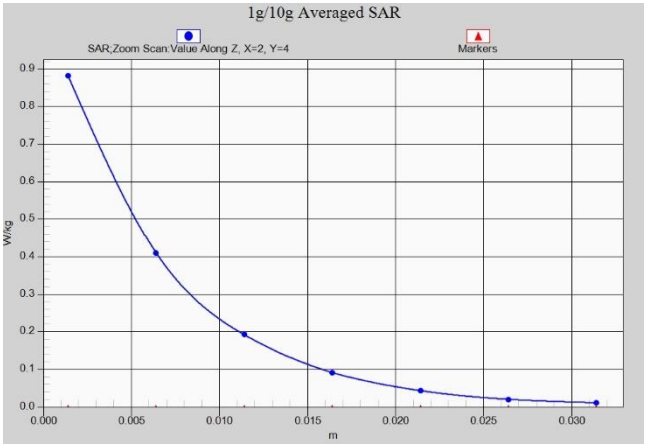
Z-Scan at power reference point (LTEB26)



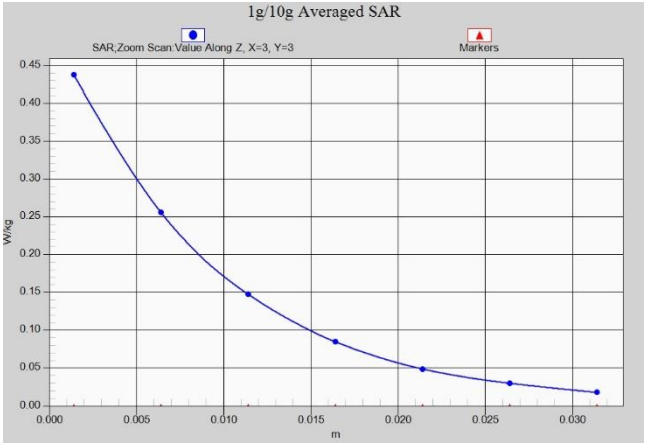
Z-Scan at power reference point (LTEB26)



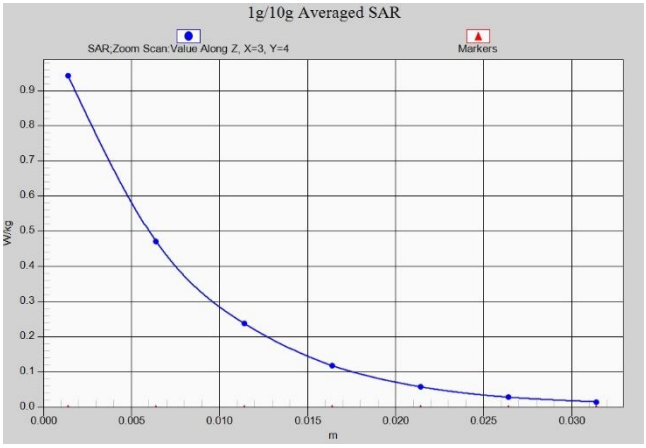
Z-Scan at power reference point (LTEB41 PC3)



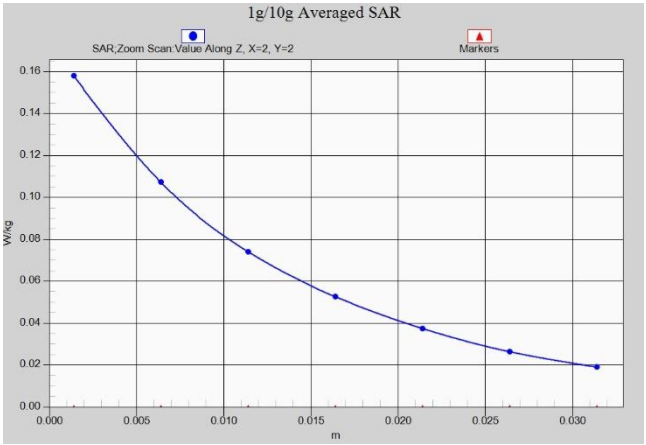
Z-Scan at power reference point (LTEB41 PC3)



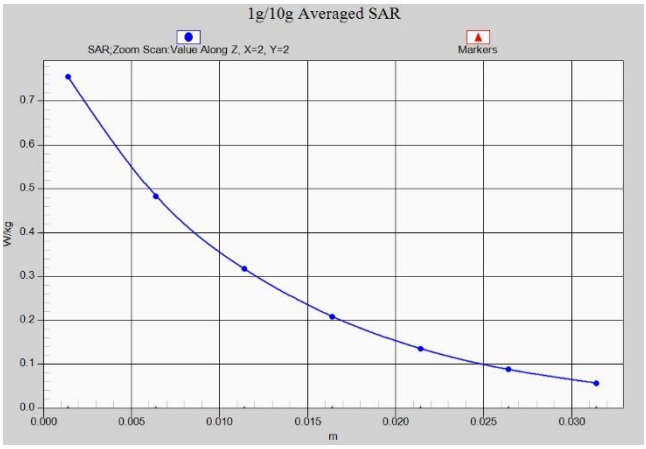
Z-Scan at power reference point (LTEB41 PC2)



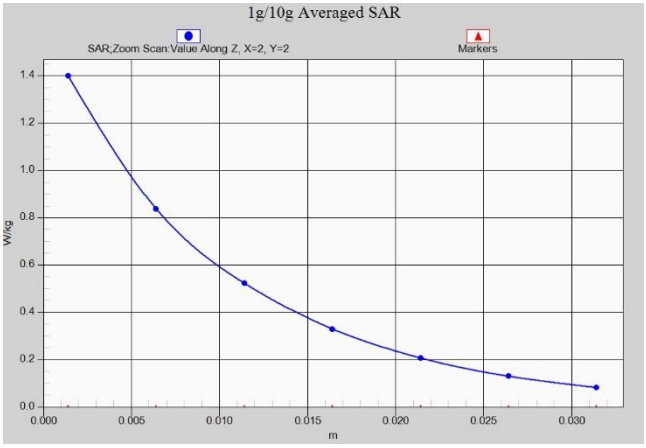
Z-Scan at power reference point (LTEB41 PC2)



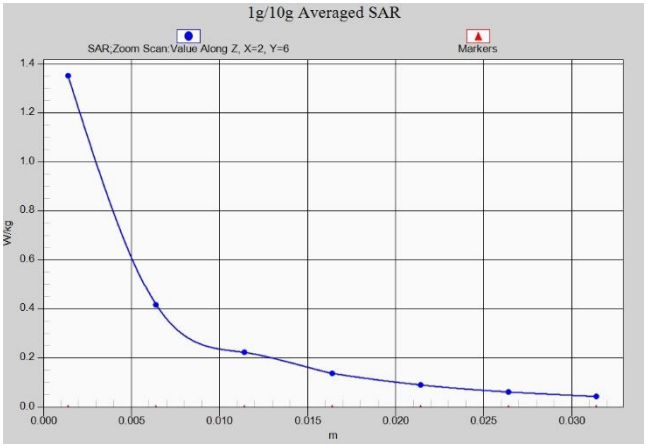
Z-Scan at power reference point (LTEB66)



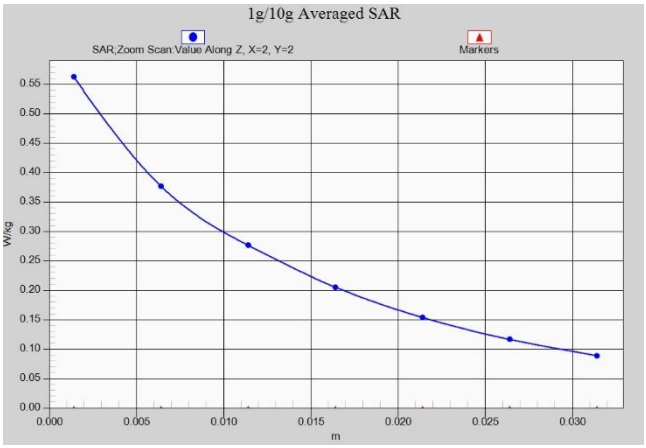
Z-Scan at power reference point (LTEB66)



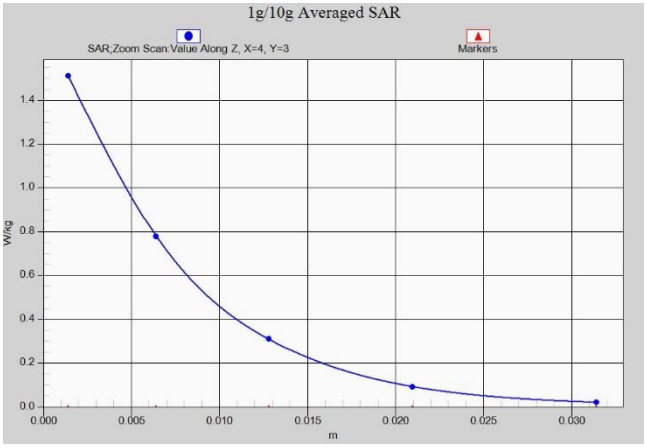
Z-Scan at power reference point (LTEB66)



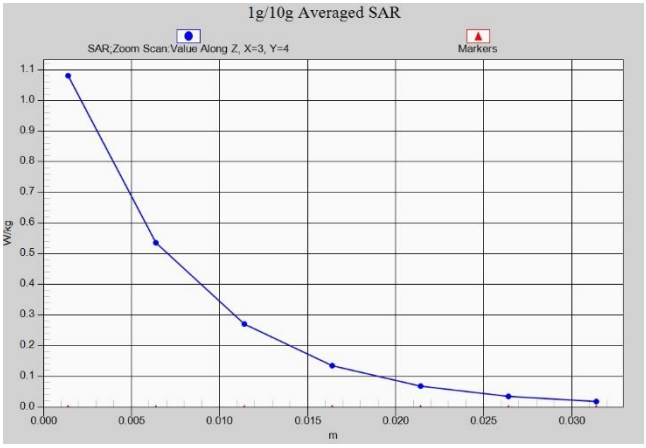
Z-Scan at power reference point (LTEB71)



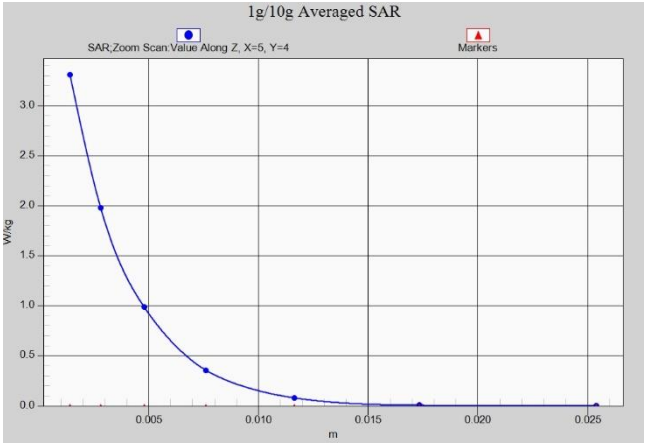
Z-Scan at power reference point (LTEB71)



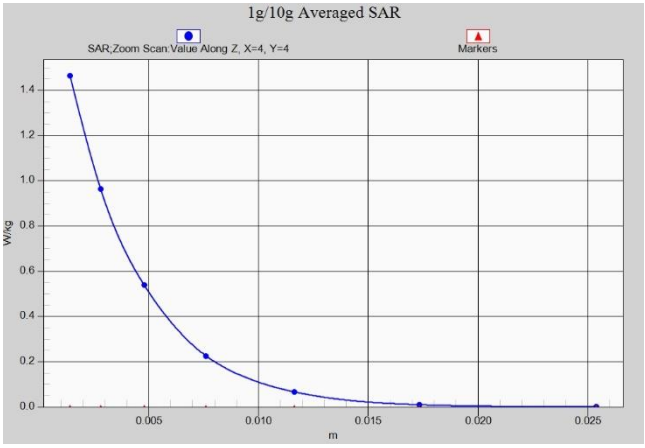
Z-Scan at power reference point (WIFI2.4G)



Z-Scan at power reference point (WIFI2.4G)



Z-Scan at power reference point (WIFI5G)



Z-Scan at power reference point (WIFI5G)

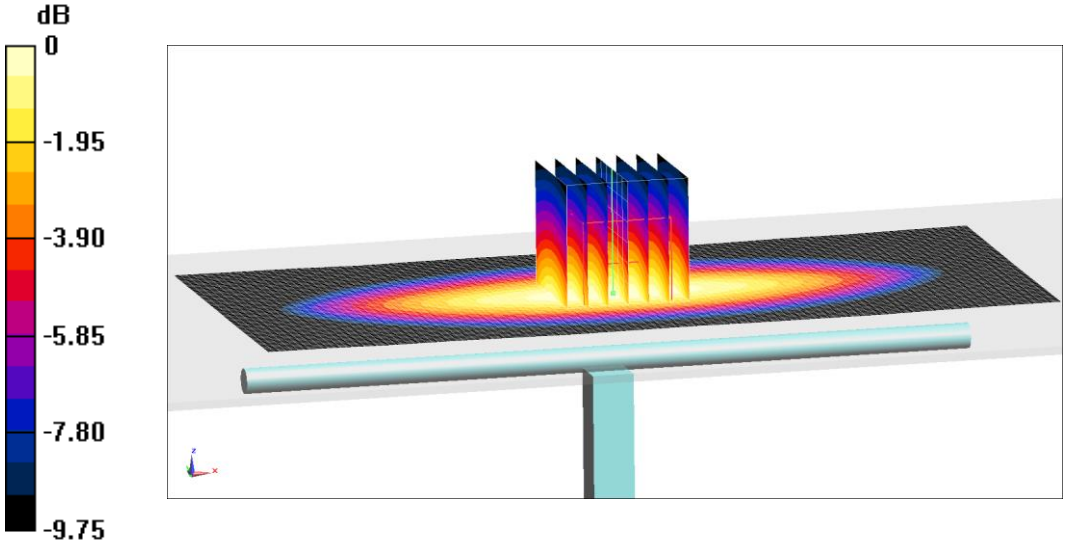
ANNEX B System Verification Results

750MHz

Date: 2022-1-13
Electronics: DAE4 Sn1331
Medium: Head 750MHz
Medium parameters used: f = 750MHz; σ =0.8348 mho/m; ε_r = 45.06; 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(10.36,10.36,10.36)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 60.48 V/m; Power Drift = 0.13
Fast SAR: SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (interpolated) = 2.8 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =60.48 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 3.37 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.42 W/kg
Maximum value of SAR (measured) = 3.12 W/kg



0 dB = 3.12 W/kg = 4.94 dB W/kg

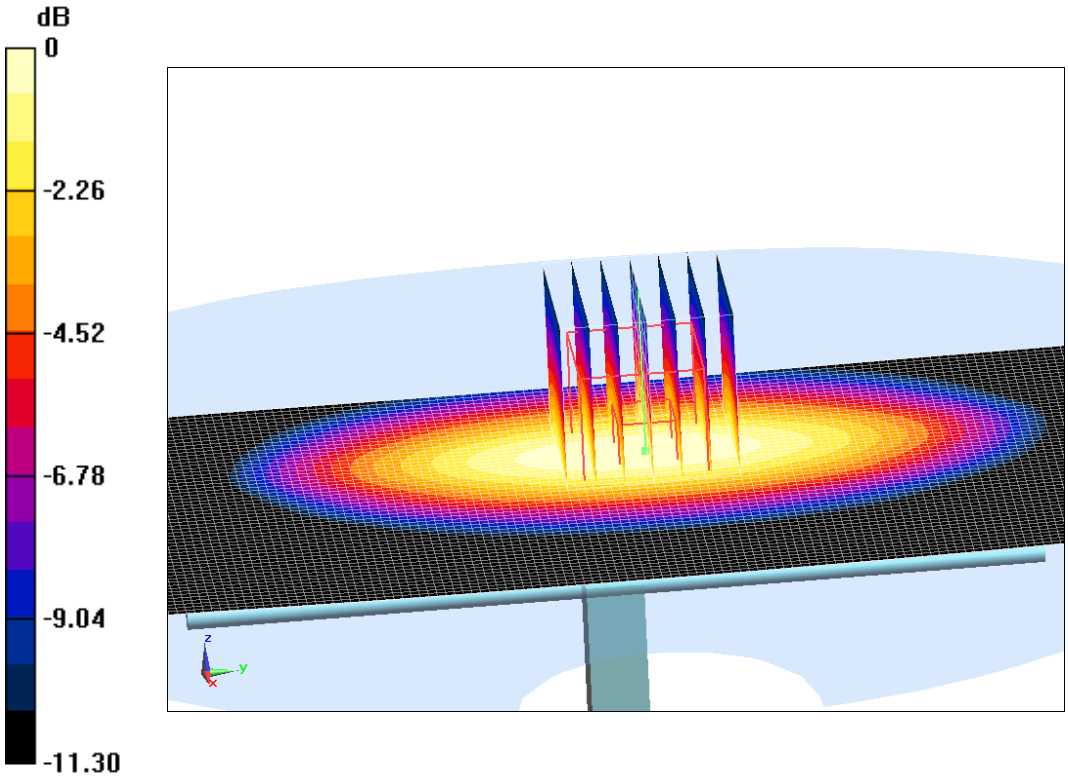
Fig.B.1 validation 750MHz 250mW

835MHz

Date: 2022-1-14
Electronics: DAE4 Sn1331
Medium: Head 835MHz
Medium parameters used: f = 835MHz; σ =0.8703 mho/m; ε_r = 44.84; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 22°C
Communication System: CW Frequency: 835MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36, 10.36, 10.36)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 64.44 V/m; Power Drift =-0.12
Fast SAR: SAR(1 g) = 2.4 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (interpolated) = 3.37 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =64.44 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 3.86 W/kg
SAR(1 g) = 2.35 W/kg; SAR(10 g) = 1.52 W/kg
Maximum value of SAR (measured) = 3.69 W/kg



0 dB = 3.69 W/kg = 5.67 dB W/kg

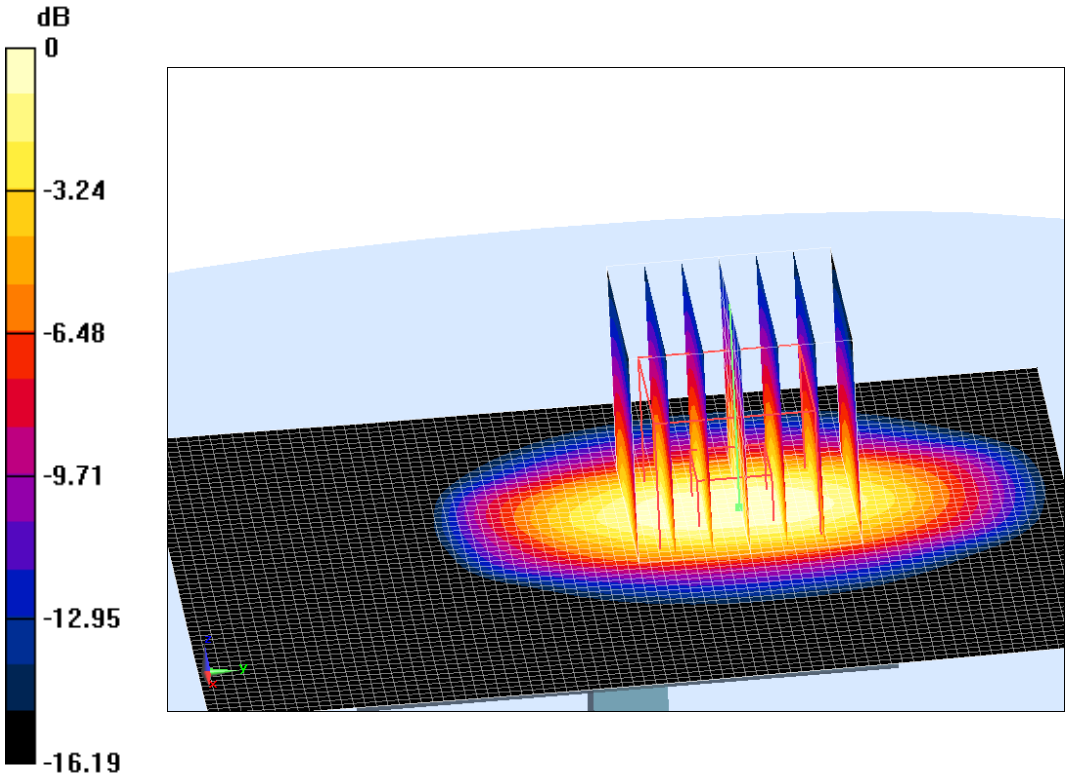
Fig.B.2 validation 835MHz 250mW

1800MHz

Date: 2022-1-15
Electronics: DAE4 Sn1331
Medium: Head 1800MHz
Medium parameters used: f = 1800MHz; σ =1.411 mho/m; ε_r = 42.83; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 22°C
Communication System: CW Frequency: 1800MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 108.34 V/m; Power Drift = 0.11
Fast SAR: SAR(1 g) = 9.67 W/kg; SAR(10 g) = 5.16 W/kg
Maximum value of SAR (interpolated) = 15.12 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =108.34 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 18.65 W/kg
SAR(1 g) = 9.75 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (measured) = 15.67 W/kg



0 dB = 15.67 W/kg = 11.95 dB W/kg

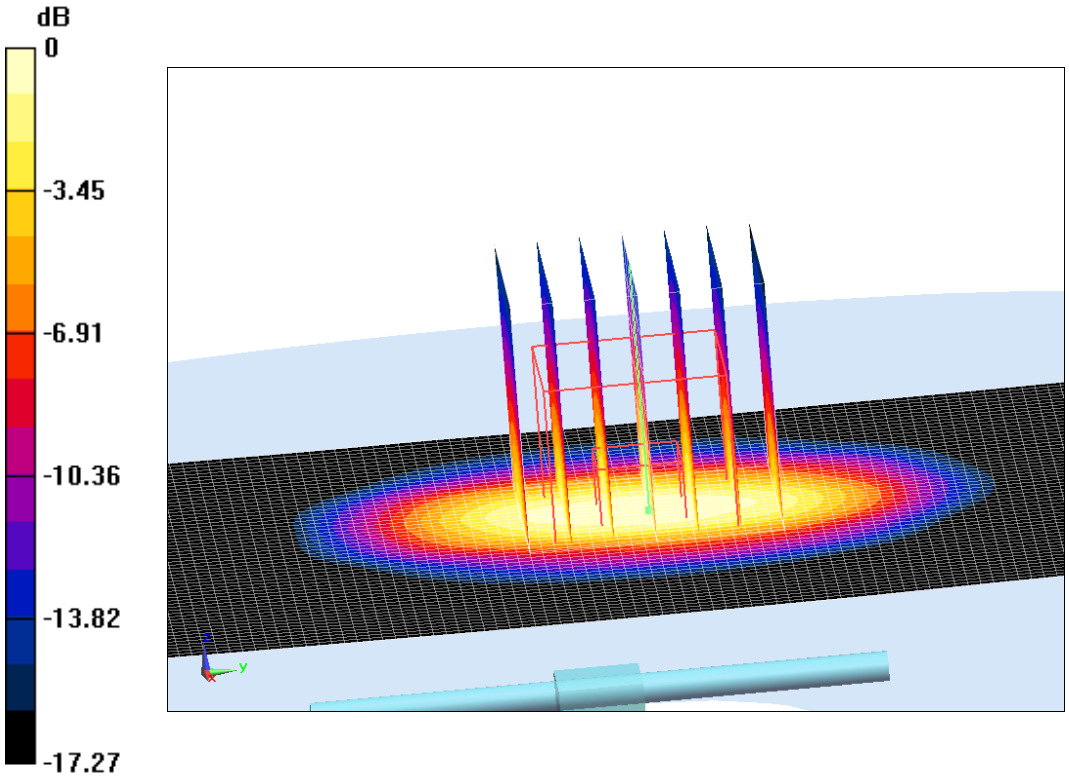
Fig.B.3 validation 1800MHz 250mW

1900MHz

Date: 2022-1-16
Electronics: DAE4 Sn1331
Medium: Head 1900MHz
Medium parameters used: f = 1900MHz; σ =1.474 mho/m; ε_r = 42.39; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 22°C
Communication System: CW Frequency: 1900MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 107.66 V/m; Power Drift = -0.12
Fast SAR: SAR(1 g) = 9.91 W/kg; SAR(10 g) = 5.17 W/kg
Maximum value of SAR (interpolated) = 15.56 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =107.66 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 18.26 W/kg
SAR(1 g) = 9.85 W/kg; SAR(10 g) = 5.2 W/kg
Maximum value of SAR (measured) = 15.51 W/kg



0 dB = 15.51 W/kg = 11.9 dB W/kg

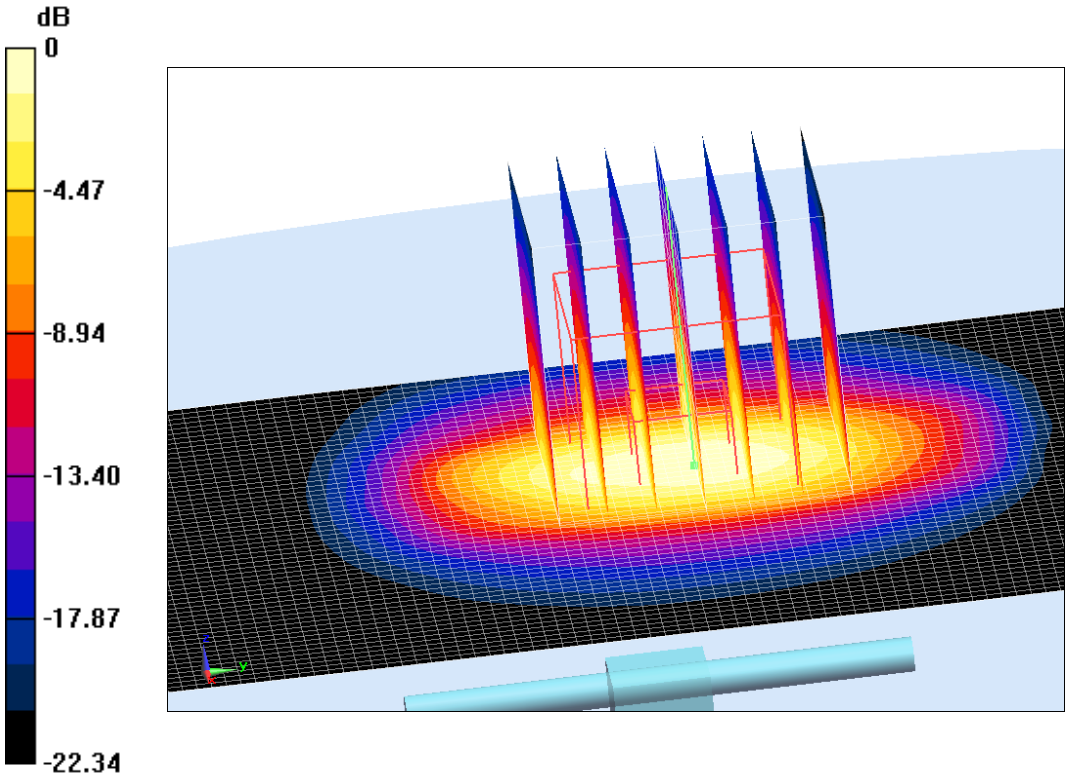
Fig.B.4 validation 1900MHz 250mW

2450MHz

Date: 2022-1-17
Electronics: DAE4 Sn1331
Medium: Head 2450MHz
Medium parameters used: f = 2450MHz; σ =1.895 mho/m; ε_r = 40.99; ρ = 1000 kg/m^3
Ambient Temperature: 22.2°C Liquid Temperature: 22°C
Communication System: CW Frequency: 2450MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 115.78 V/m; Power Drift = 0.08
Fast SAR: SAR(1 g) = 13.54 W/kg; SAR(10 g) = 6.31 W/kg
Maximum value of SAR (interpolated) = 22.14 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =117.78 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 25.85 W/kg
SAR(1 g) = 13.45 W/kg; SAR(10 g) = 6.27 W/kg
Maximum value of SAR (measured) = 21.56 W/kg



0 dB = 21.56 W/kg = 13.33 dB W/kg

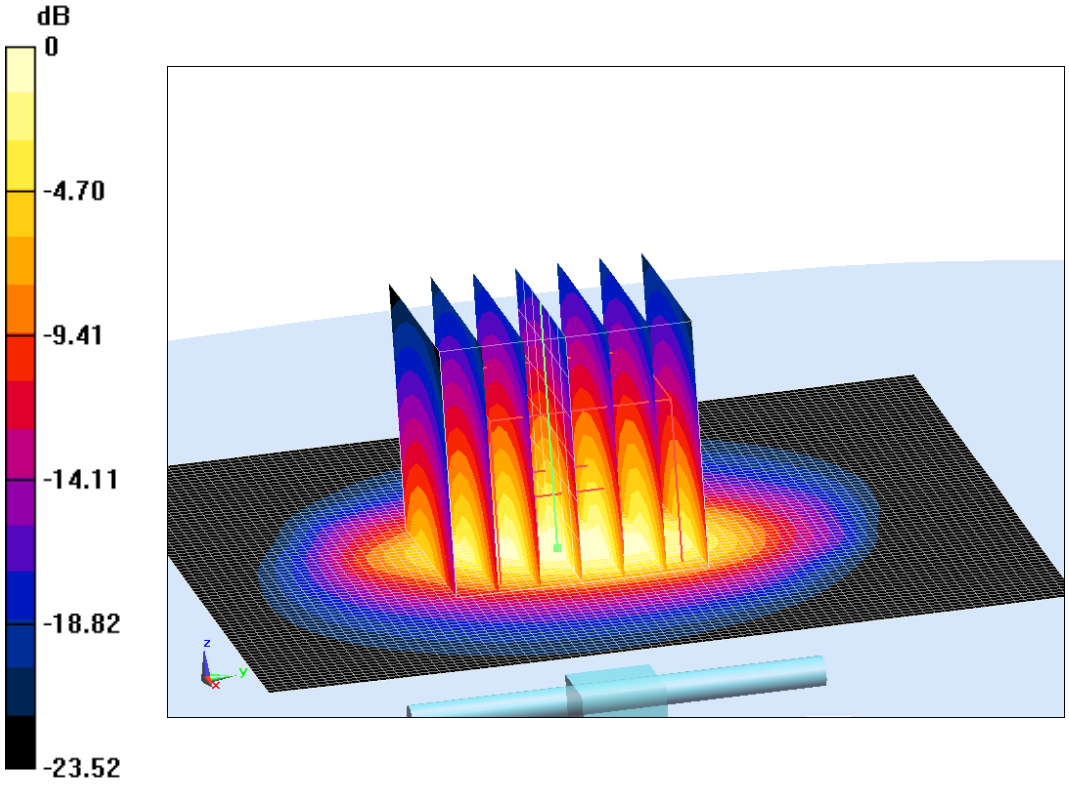
Fig.B.5 validation 2450MHz 250mW

2600MHz

Date: 2022-1-18
Electronics: DAE4 Sn1331
Medium: Head 2600MHz
Medium parameters used: f = 2600MHz; σ =2.109 mho/m; ε_r = 41.19; 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(7.11,7.11,7.11)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 121.36 V/m; Power Drift = 0.15
Fast SAR: SAR(1 g) = 14.58 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (interpolated) = 24.33 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =121.36 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 29.27 W/kg
SAR(1 g) = 14.52 W/kg; SAR(10 g) = 6.33 W/kg
Maximum value of SAR (measured) = 24.76 W/kg



0 dB = 24.76 W/kg = 13.94 dB W/kg

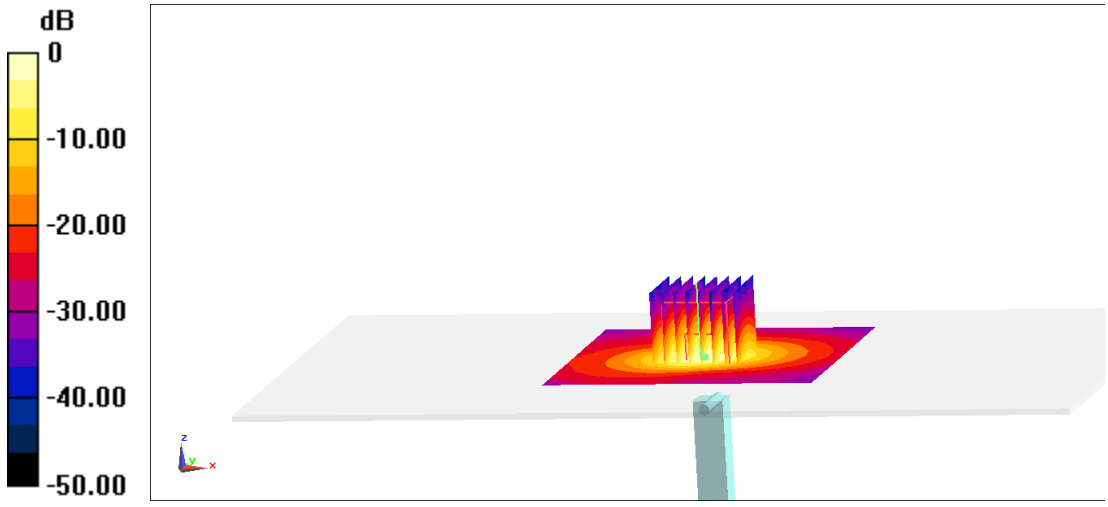
Fig.B.6 validation 2600MHz 250mW

5250 MHz

Date: 1/10/2022
Electronics: DAE4 Sn1331
Medium: Head 5250 MHz
Medium parameters used: f = 5250 MHz; σ =4.734 mho/m; ε_r = 35.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C
Communication System: CW Frequency: 5250 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(5.05,5.05,5.05)

Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 77.42 V/m; Power Drift =-0.08
Peak SAR (extrapolated) = 34.47 W/kg
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 10.77 W/kg



0 dB = 10.56 W/kg = 10.32 dBW/kg

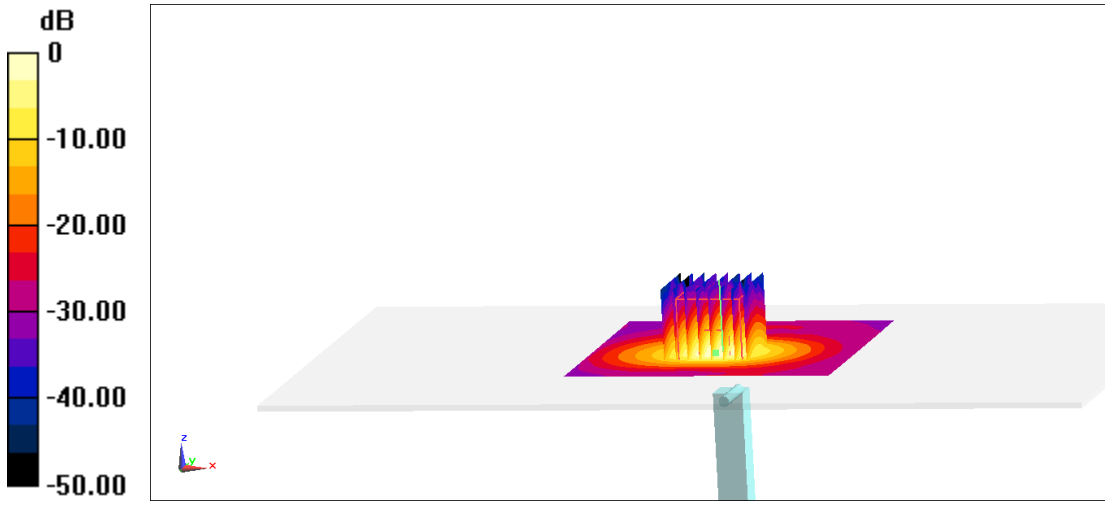
Fig.B.7 validation 5250 MHz 100mW

5600 MHz

Date: 1/11/2022
Electronics: DAE4 Sn1331
Medium: Head 5600 MHz
Medium parameters used: f = 5600 MHz; σ =5.11 mho/m; ε_r = 34.71; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.68,4.68,4.68)

Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.32 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 14.81 W/kg
SAR(1 g) = 8.2 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 10.96 W/kg



0 dB = 10.96 W/kg = 10.4 dBW/kg

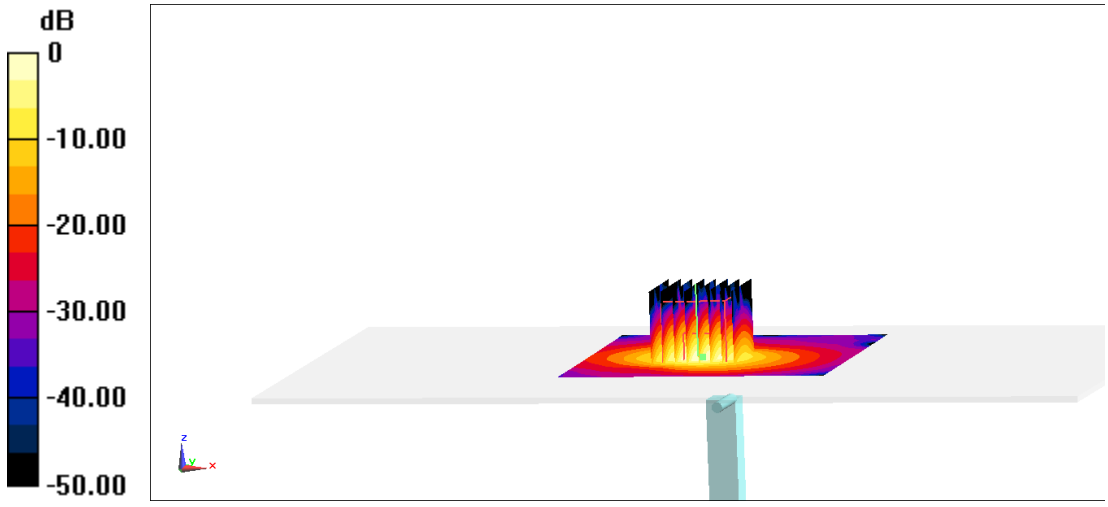
Fig.B.8 validation 5600 MHz 100mW

5750 MHz

Date: 1/12/2022
Electronics: DAE4 Sn1331
Medium: Head 5750 MHz
Medium parameters used: f = 5750 MHz; σ =5.268 mho/m; ε_r = 34.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C
Communication System: CW Frequency: 5750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.73,4.73,4.73)

Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.93 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 19.34 W/kg
SAR(1 g) = 8.15 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 11.48 W/kg



0 dB = 11.48 W/kg = 10.6 dBW/kg

Fig.B.9 validation 5750 MHz 100mW

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.

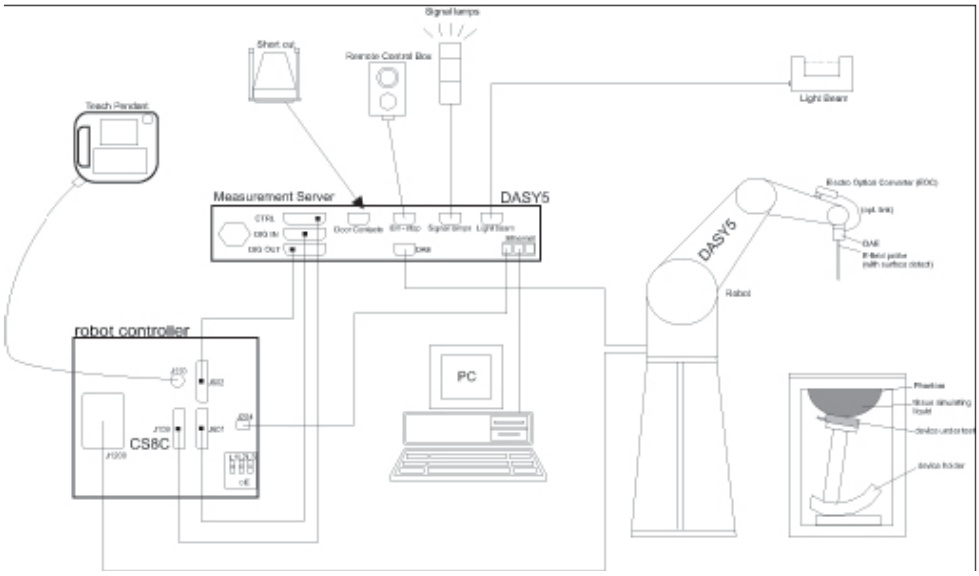
Table B.1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2022-1-13	750 MHz	Head	2.14	2.11	1.42
2022-1-14	835 MHz	Head	2.4	2.35	2.13
2022-1-15	1800 MHz	Head	9.67	9.75	-0.82
2022-1-16	1900 MHz	Head	9.91	9.85	0.61
2022-1-17	2450 MHz	Head	13.54	13.45	0.67
2022-1-18	2600 MHz	Head	14.58	14.52	0.41

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.1 SAR 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.

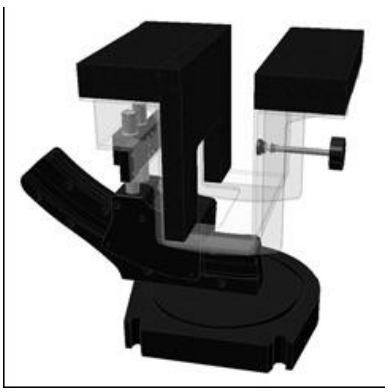
The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference 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