TEST REPORT

No. I18D00014-SAR01

For

Client: IFLYTEK CO.,LTD.

Production: TD-LTE Wireless Data Terminal

Model Name: easytrans 800

FCC ID: 2AMI5-EASYTRANS-800

IC: 23795-EASYTRANS

Hardware Version: V 1.0

Software Version: V 1.0

Issued date: 2018-4-25

Note:

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

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

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Revision Version

Report Number	Revision	Date	Memo
I18D00014-SAR01	00	2018-4-25	Initial creation of test report
I18D00014-SAR01	01	2018-5-4	Second creation of test report

CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area,No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
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IC SAR Teat Site Registration Number:	10766A

1.2. Testing Environment

Normal Temperature:	18-25℃
Relative Humidity:	25-75%
Ambient noise & Reflection:	< 0.012 W/kg

1.3. Project Data

Project Leader:	Ning Kang
Testing Start Date:	2018-3-13
Testing End Date:	2018-4-2

1.4. Signature

Yan Hang
(Prepared this test report)

Fu Erliang
(Reviewed this test report)

Zheng Zhongbin
(Approved this test report)

2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **easytrans 800** are as follows .

Table 2.1: Max. Reported SAR (1g)

Band	Position/Distance	SAR 1g (W/Kg)
GSM 850	Body worn(10mm)	0.293
	Hotspot(10mm)	0.293
GSM 1900	Body worn(10mm)	0.184
	Hotspot(10mm)	0.184
WCDMA Band2	Body worn(10mm)	0.355
	Hotspot(10mm)	0.355
WCDMA Band4	Body worn(10mm)	0.541
	Hotspot(10mm)	**1.105**
WCDMA Band5	Body worn(10mm)	0.391
	Hotspot(10mm)	0.391
LTE Band7	Body worn(10mm)	0.292
	Hotspot(10mm)	0.292
LTE Band12	Body worn(10mm)	0.158
	Hotspot(10mm)	0.158
LTE Band13	Body worn(10mm)	0.380
	Hotspot(10mm)	0.380
LTE Band25	Body worn(10mm)	0.317
	Hotspot(10mm)	0.317
LTE Band26	Body worn(10mm)	0.265
	Hotspot(10mm)	0.265
	Hotspot(10mm)	0.077
LTE Band41	Body worn(10mm)	0.180
	Hotspot(10mm)	0.180
LTE Band66	Body worn(10mm)	0.283
	Hotspot(10mm)	0.733
CDMA BC0	Body worn(10mm)	0.410
	Hotspot(10mm)	0.410
CDMA BC1	Body worn(10mm)	0.223
	Hotspot(10mm)	0.223
2.4G Wi-Fi	Body worn(10mm)	0.195
	Hotspot(10mm)	0.195

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 C95.1-1999. RSS-102 issue 5: 2015

For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

The sample has three antennas. One is main antenna for GSM/WCDMA/LTE/CDMA, and the other is for WiFi/BT and Diversity Antenna. So simultaneous transmission is GSM/WCDMA/LTE/CDMA and WiFi/BT.

Table 2.3: Simultaneous SAR (1g)

Transmission SAR(W/Kg)								
Test Position		2G	3G	4G	CDMA	2.4G WIFI	BT	SUM
Body worn/ Hotspot10mm	Phantom Side	0.231	0.269	0.380	0.274	0.137	0.084	0.517
	Ground Side	0.293	0.391	0.367	0.410	0.195	0.084	0.605
Hotspot 10mm	Left Side	0.247	0.277	0.303	0.237	0.024	0.084	0.387
	Right Side	0.169	0.191	0.275	0.121	0.063	0.084	0.359
	Bottom Side	0.113	1.105	0.733	0.152	--	0.084	1.189
	Top Side	--	--	--	--	0.093	0.084	0.093

According to the above table, the maximum sum of reported SAR values for GSM/WCDMA/LTE and WiFi is **1.189 W/kg** (1g). The detail for simultaneous transmission consideration is described in chapter 14.

3. Client Information

3.1. Applicant Information

Company Name:	IFLYTEK CO.,LTD.
Address:	National Intelligent Speech High-tech Industrialization Base, No. 666, Wangjiang Road West, Hefei City, Anhui Province, China
Email:	mincheng@iflytek.com

3.2. Manufacturer Information

Company Name:	Shanghai Wind Communication Technologies Co.,Ltd.
Address:	The 12th Floor, East Wing, Guilin Technology Building, No.650, Caobao Road, Xuhui District, Shanghai, P. R. China
Email:	chenlu@wind-mobi.com

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

4.1. About EUT

Description:	TD-LTE Wireless Data Terminal
Model name:	easytrans 800
Operation Model(s):	GSM850/1900,WCDMA Band2/4/5 LTEBand2/4/5/7/12/13/17/25/26/41/66,CDMA BC0/BC1,WIFI2450,BT
Tx Frequency:	824.2-848.8MHz(GSM850) 1850.2-1909.8MHz(GSM1900) 1852.4-1907.6 MHz (WCDMA Band II) 1712.4-1752.6 MHz (WCDMA Band IV) 826.4-846.6MHz (WCDMA Band V) 1850 -1910 MHz (LTE Band 2) 1710 -1755 MHz (LTE Band 4) 824 -849 MHz (LTE Band 5) 2500 -2570 MHz (LTE Band 7) 698 -716 MHz (LTE Band 12) 777 -787 MHz (LTE Band 13) 704 -716 MHz (LTE Band 17) 1850 -1915 MHz (LTE Band 25) 814 - 849 MHz (LTE Band 26) 2535 -2655 MHz (LTE Band 41) 1710 -1780 MHz (LTE Band 66) 824.7 -848.31 MHz (CDMA BC0) 1851.25 -1908.75 MHz (CDMA BC1) 2412- 2462 MHz (Wi-Fi) 2400-2483.5 MHz (BT)
Test device Production information: GPRS/EGPRS Class Mode: GPRS/ EGPRS Multislot Class:	Production unit B 12
Device type:	Portable device
UE category:	3
Antenna type:	Inner antenna
Accessories/Body-worn configurations:	N/A
Dimensions: Hotspot Mode:	14.5cm×5.2 cmx1.2cm Support simultaneous transmission of hotspot and voice (or data)
FCC ID:	2AMI5-EASYTRANS-800
IC:	23795-EASYTRANS

4.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Receive Date
N14	864772030165202	V 1.0	V 1.0	2018-2-28

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

4.3. Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
N/A	N/A	N/A	N/A	N/A

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

5. TEST METHODOLOGY

5.1. Applicable Limit Regulations

ANSI C95.1–1999:IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

RSS-102 issue 5: 2015: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

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 Body Due to Wireless Communications Devices:
Experimental Techniques.
KDB648474 D04 Handset SAR v01r03:SAR Evaluation Considerations for Wireless Handsets.
KDB248227 D01 802 11 Wi-Fi SAR v02r02: SAR measurement procedures for 802.112abg transmitters.
KDB447498 D01 General RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.
KDB865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04:SAR Measurement Requirements for 100 MHz to 6 GHz
KDB865664 D02 RF Exposure Reporting v01r02:provides general reporting requirements as well as certain specific information required to support MPE and SAR compliance.
KDB941225 D01 3G SAR Procedures v03r01: 3G SAR Measurement Procedures.
KDB941225 D06 hotspot SAR v02r01:SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities.
NOTE: KDB is not in A2LA Scope List.

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
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
835	Body	0.97	0.92～1.02	55.2	52.4～58.0
1800	Head	1.40	1.33～1.47	40.0	38.0～42.0
1800	Body	1.52	1.44～1.60	53.3	50.6～56.0
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
1900	Body	1.52	1.44～1.60	53.3	50.6～56.0
2450	Head	1.80	1.71～1.89	39.2	37.2～41.2
2450	Body	1.95	1.85～2.05	52.7	50.1～55.3
2600	Head	1.96	1.86~2.06	39.0	37.1~40.9
2600	Body	2.16	2.05~2.27	52.5	59.9~55.1

7.2. Dielectric Performance

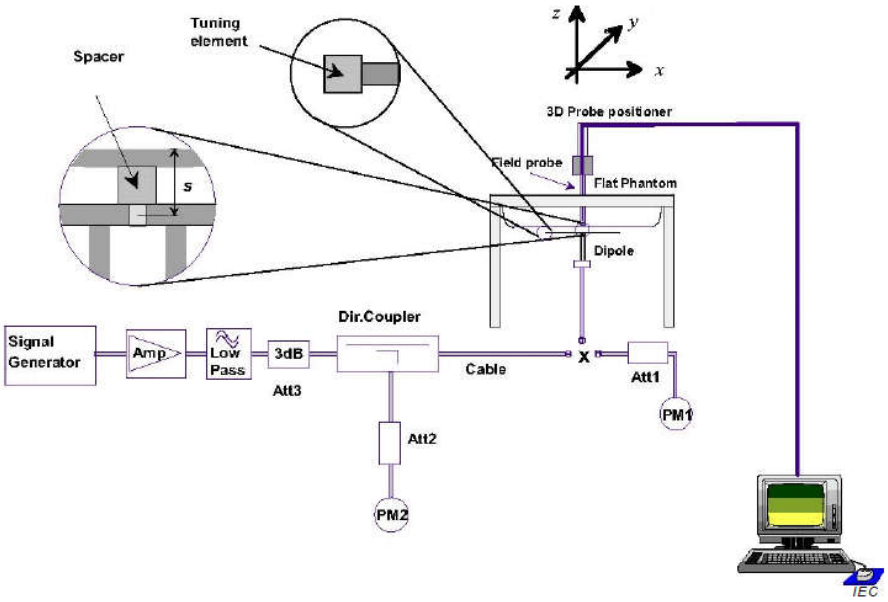
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Value						
Liquid Temperature: 22.5 ℃						
Type	**Frequency**	**Permittivity ε**	**Drift (%)**	**Conductivity σ**	**Drift (%)**	Test Date
Body	704 MHz	58.202	4.47%	0.971	1.15%	2018-3-15
Body	707.5 MHz	58.158	4.41%	0.974	1.46%	2018-3-15
Body	711 MHz	58.104	4.35%	0.977	1.77%	2018-3-15
Body	782 MHz	57.272	3.36%	1.002	3.73%	2018-3-15
Body	821.5 MHz	56.846	2.87%	0.985	1.55%	2018-4-2
Body	824.4 MHz	56.817	2.84%	0.988	1.86%	2018-4-2
Body	824.7 MHz	56.817	2.84%	0.988	1.86%	2018-4-2
Body	826.4 MHz	56.792	2.81%	0.99	2.06%	2018-4-2
Body	831.5 MHz	56.742	2.77%	0.995	2.58%	2018-4-2
Body	836.52 MHz	56.689	2.70%	0.999	2.99%	2018-4-2
Body	836.6 MHz	56.689	2.70%	0.999	2.99%	2018-4-2
Body	841.5 MHz	56.637	2.64%	1.004	2.45%	2018-4-2
Body	846.6 MHz	56.582	2.58%	1.01	2.86%	2018-4-2
Body	848.31 MHz	56.563	2.58%	1.011	3.16%	2018-4-2
Body	848.8 MHz	56.563	2.58%	1.011	3.16%	2018-4-2
Body	1712.4 MHz	55.244	3.20%	1.475	1.03%	2018-3-16
Body	1720 MHz	55.221	3.26%	1.483	0.20%	2018-3-16
Body	1732.6 MHz	55.192	3.22%	1.495	1.01%	2018-3-16
Body	1752.6 MHz	55.129	3.18%	1.516	1.74%	2018-3-16
Body	1755 MHz	55.122	3.17%	1.519	1.95%	2018-3-16
Body	1770 MHz	55.073	3.15%	1.534	2.27%	2018-3-16
Body	1850.2 MHz	55.045	3.02%	1.552	4.16%	2018-3-22
Body	1851.25 MHz	55.042	3.02%	1.552	2.11%	2018-3-22
Body	1852.4 MHz	55.033	3.00%	1.553	2.17%	2018-3-22
Body	1860 MHz	54.984	3.16%	1.561	2.70%	2018-3-22
Body	1880 MHz	54.893	2.99%	1.581	4.01%	2018-3-22
Body	1882.5 MHz	54.886	2.98%	1.583	4.14%	2018-3-22
Body	1905 MHz	54.865	2.94%	1.507	-0.86%	2018-3-22
Body	1907.6 MHz	54.858	2.92%	1.509	-0.72%	2018-3-22
Body	1908.75 MHz	54.862	2.93%	1.51	-0.66%	2018-3-22
Body	1909.8 MHz	54.857	2.92%	1.511	-0.59%	2018-3-22
Body	2462 MHz	52.834	0.20%	1.992	1.27%	2018-3-13
Body	2510 MHz	53.182	1.07%	1.975	-3.19%	2018-3-13
Body	2535 MHz	53.086	0.94%	2.005	-3.14%	2018-3-13
Body	2545 MHz	53.05	0.89%	2.023	-2.74%	2018-3-13
Body	2560 MHz	52.994	0.83%	2.039	-3.36%	2018-3-13
Body	2593 MHz	52.885	0.69%	2.075	-3.49%	2018-3-13
Body	2645 MHz	52.687	0.45%	2.136	-4.22%	2018-3-13

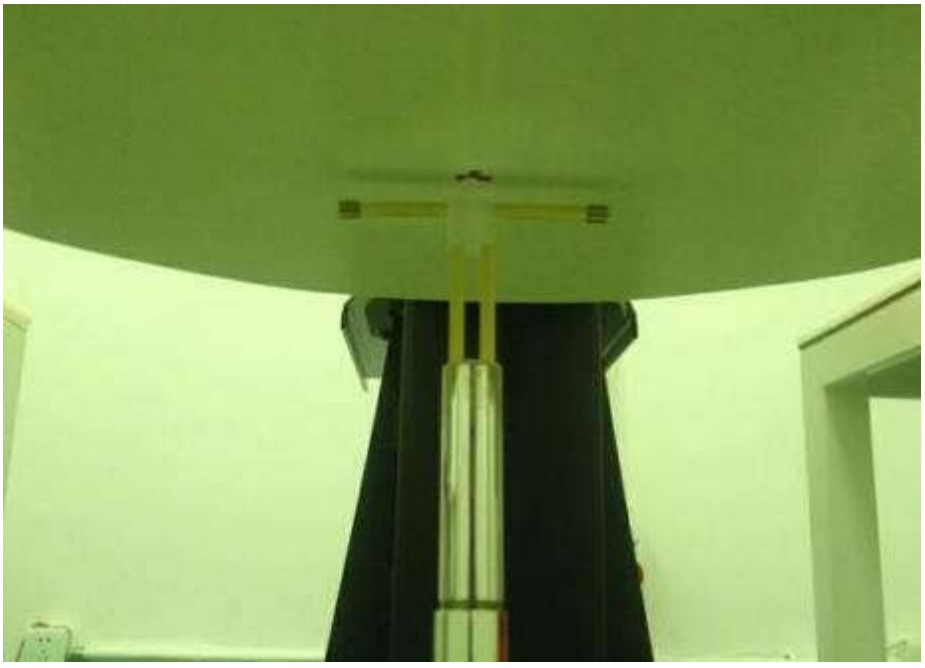
8. System verification

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

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.

Table 8.1: System Verification of Body

Verification Results							
Input power level: 1W							
Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation		Test date
	10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average	
750 MHz	5.71	8.6	5.84	8.48	2.28%	-1.40%	2018-3-15
835 MHz	6.29	9.57	6.48	9.64	3.02%	0.73%	2018-4-2
1750 MHz	20.2	37.6	19.64	35.84	-2.77%	-4.68%	2018-3-16
1900 MHz	21.5	40.6	21.12	41.6	-1.76%	2.46%	2018-3-22
2450 MHz	24.7	53.1	24.08	51.2	-2.51%	-3.58%	2018-3-13
2600 MHz	25.4	57.1	26.88	60.8	5.83%	6.48%	2018-3-13

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 11.1.

Step 1: The tests described in 11.2 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 Chapter 8),

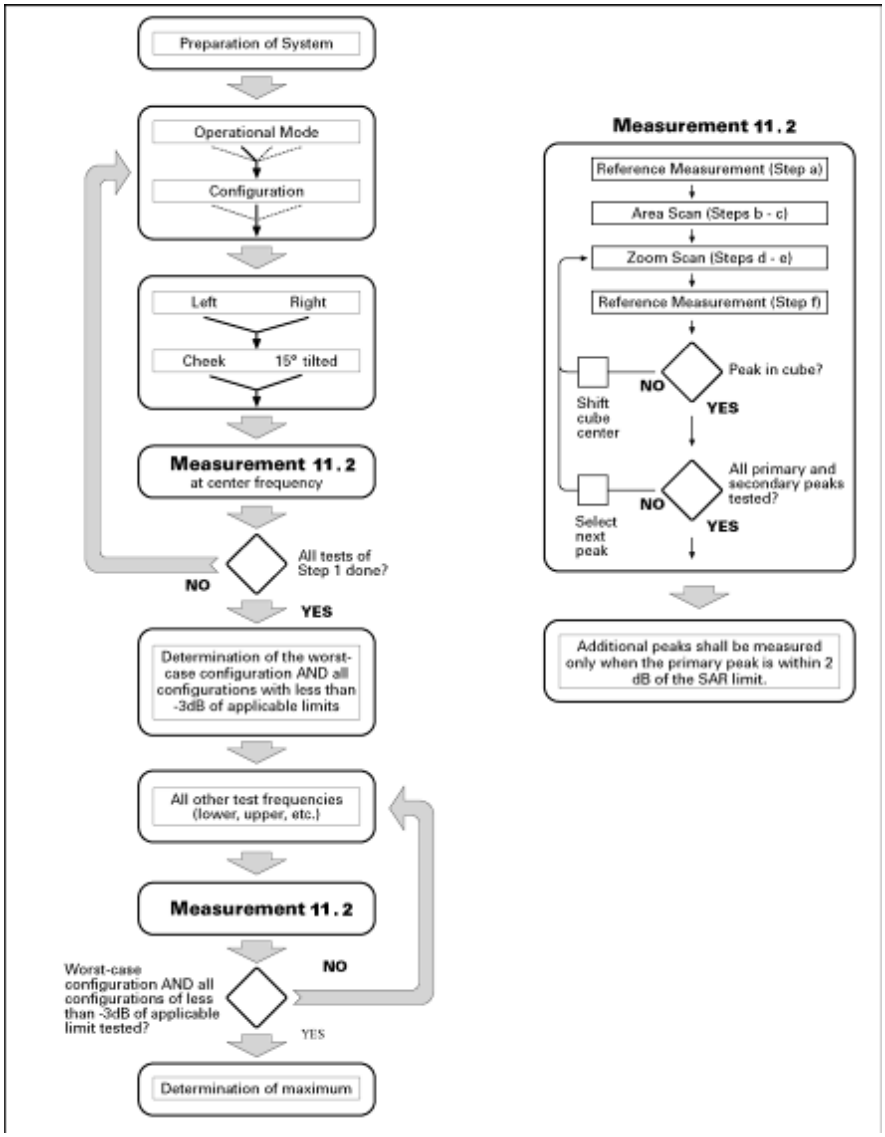
b) all configurations for each device position in a), e.g., antenna extended and retracted, and

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 11.2 at all other test frequencies, i.e., lowest and highest frequencies. In addition, for all other conditions (device position, configuration and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies shall be tested as well.

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



Picture 9.1Block diagram of the tests to be performed

9.2. General Measurement Procedure

The following procedure shall be performed for each of the test conditions (see Picture 11.1) described in 11.1:

a) Measure the local SAR at a test point within 8 mm or less in the normal direction from the inner surface of the phantom.

b) Measure the two-dimensional SAR distribution within the phantom (area scan procedure). The boundary of the measurement area shall not be closer than 20 mm from the phantom side walls. The distance between the measurement points should enable the detection of the location of local maximum with an accuracy of better than half the linear dimension of the tissue cube after interpolation. A maximum grip spacing of 20 mm for frequencies below 3 GHz and (60/f [GHz]) mm for frequencies of 3GHz and greater is recommended. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be 5 mm for frequencies below 3 GHz and $\delta \ln(2)/2$ mm for frequencies of 3 GHz and greater, where δ is the plane wave skin depth and ln(x) is the natural logarithm. The maximum variation of the sensor-phantom surface shall be ± 1 mm for frequencies below 3 GHz and

±0.5 mm for frequencies of 3 GHz and greater. At all measurement points the angle of the probe with respect to the line normal to the surface should be less than 5°. If this cannot be achieved for a measurement distance to the phantom inner surface shorter than the probe diameter, additional uncertainty evaluation is needed.

c) From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that are not within the zoom-scan volume; additional peaks shall be measured only when the primary peak is within 2 dB of the SAR limit. This is consistent with the 2 dB threshold already stated;

d) Measure the three-dimensional SAR distribution at the local maxima locations identified in step c). The horizontal grid step shall be (24/f[GHz]) mm or less but not more than 8 mm. The minimum zoom size of 30 mm by 30 mm and 30 mm for frequencies below 3 GHz. For higher frequencies, the minimum zoom size of 22 mm by 22 mm and 22 mm. The grip step in the vertical direction shall be (8-f[GHz]) mm or less but not more than 5 mm, if uniform spacing is used. If variable spacing is used in the vertical direction, the maximum spacing between the two closest measured points to the phantom shell shall be (12 / f[GHz]) mm or less but not more than 4 mm, and the spacing between father points shall increase by an incremental factor not exceeding 1.5. When variable spacing is used, extrapolation routines shall be tested with the same spacing as used in measurements. The maximum distance between the geometrical centre of the probe detectors and the inner surface of the phantom shall be 5 mm for frequencies below 3 GHz and $\delta \ln(2)/2$ mm for frequencies of 3 GHz and greater, where δ is the plane wave skin depth and ln(x) is the natural logarithm. Separate grids shall be centered on each of the local SAR maxima found in step c). Uncertainties due to field distortion between the media boundary and the dielectric enclosure of the probe should also be minimized, which is achieved is the distance between the phantom surface and physical tip of the probe is larger than probe tip diameter. Other methods may utilize correction procedures for these boundary effects that enable high precision measurements closer than half the probe diameter. For all measurement points, the angle of the probe with respect to the flat phantom surface shall be less than 5°. If this cannot be achieved an additional uncertainty evaluation is needed.

e) Use post processing(e.g. interpolation and extrapolation) procedures to determine the local SAR values at the spatial resolution needed for mass averaging.

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	MPR (dB)
1	2/15	15/15	64	2/15	4/15	1.5	1
2	12/15	15/15	64	12/15	24/25	2.0	1
3	15/15	8/15	64	15/8	30/15	2.0	1
4	15/15	4/15	64	15/4	30/15	2.0	1

For Release 6 HSUPA 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	2.0	1.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	12/15	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	1	3.0	2.0	15	92
4	2/15	15/15	64	2/15	4/15	4/15	56/75	4	1	2.0	1.0	17	71
5	15/15	15/15	64	15/15	24/15	30/15	134/15	4	1	2.0	1.0	21	81

9.4. SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Anritsu 8820. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the Anritsu 8820

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 ≤ 0.8W/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.

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 Section 13 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 v06, when the implementation is based the specific polynomial fit algorithm as presented at the 29th Bioelectromagnetics Society meeting (2007) and the estimated 1-g SAR 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 fo simultaneous transmission SAR test exclusion can be determined accurately by the SAR system or manually to discriminate between distinctive peaks and scattered noisy SAR distributions from area scans.

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

10.2 Fast SAR Algorithms

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

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

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

Both algorithms are implemented in DASY software.

11. Conducted Output Power

Manufacturing tolerance

Table 11.1: GSM Speech

GSM 850			
Channel	Channel 128	Channel 190	Channel 251
Maximum Target Value (dBm)	32.5	32.5	32.5
GSM1900			
Channel	Channel 512	Channel 661	Channel 810
Maximum Target Value (dBm)	30.5	30.5	30.5

Table 11.2: GPRS (GMSK Modulation)

GSM 850 GPRS				
Channel		**128**	**190**	**251**
1 Txslots	Maximum Target Value (dBm)	32.5	32.5	32.5
2 Txslots	Maximum Target Value (dBm)	30.5	30.5	30.5
3 Txslots	Maximum Target Value (dBm)	29.0	29.0	29.0
4 Txslots	Maximum Target Value (dBm)	27.5	27.5	27.5
GSM 1900 GPRS				
Channel		**512**	**661**	**810**
1 Txslots	Maximum Target Value (dBm)	29.5	29.5	29.5
2 Txslots	Maximum Target Value (dBm)	27.5	27.5	27.5
3 Txslots	Maximum Target Value (dBm)	26.0	26.0	26.0
4 Txslots	Maximum Target Value (dBm)	24.5	24.5	24.5

Table 11.3: EGPRS (8-PSK Modulation)

GSM 850 EGPRS				
Channel		**975**	**38**	**124**
1 Txslots	Maximum Target Value (dBm)	26.0	26.0	26.0
2 Txslots	Maximum Target Value (dBm)	25.0	25.0	25.0
3 Txslots	Maximum Target Value (dBm)	23.5	23.5	23.5
4 Txslots	Maximum Target Value (dBm)	22.5	22.5	22.5
GSM 1900 EGPRS				
Channel		**512**	**661**	**810**
1 Txslots	Maximum Target Value (dBm)	25.0	25.0	25.0
2 Txslots	Maximum Target Value (dBm)	24.0	24.0	24.0
3 Txslots	Maximum Target Value (dBm)	23.0	23.0	23.0
4 Txslots	Maximum Target Value (dBm)	21.5	21.5	21.5

Table 11.4: WCDMA

WCDMA Band II			
Channel	Channel 9262	Channel 9400	Channel 9538
Maximum Target Value (dBm)	22.5	22.5	22.5

WCDMA Band II **HSDPA**					MPR (dB)
Channel		9262	9400	9538	
1	Maximum Target Value (dBm)	22.0	22.0	22.0	1
2	Maximum Target Value (dBm)	22.0	22.0	22.0	1
3	Maximum Target Value (dBm)	22.0	22.0	22.0	1
4	Maximum Target Value (dBm)	22.0	22.0	22.0	1
WCDMA Band II **HSUPA**					MPR (dB)
Channel		9262	9400	9538	
1	Maximum Target Value (dBm)	21.5	21.5	21.5	1
2	Maximum Target Value (dBm)	21.5	21.5	21.5	1
3	Maximum Target Value (dBm)	21.5	21.5	21.5	1
4	Maximum Target Value (dBm)	21.5	21.5	21.5	1
5	Maximum Target Value (dBm)	21.5	21.5	21.5	1

Table 11.5: WCDMA

WCDMA Band IV			
Channel	1537	1638	1738
Maximum Target Value (dBm)	20.5	20.5	20.5

WCDMA Band IV **HSDPA**					MPR (dB)
Channel		1537	1638	1738	
1	Maximum Target Value (dBm)	20.0	20.0	20.0	1
2	Maximum Target Value (dBm)	20.0	20.0	20.0	1
3	Maximum Target Value (dBm)	20.0	20.0	20.0	1
4	Maximum Target Value (dBm)	20.0	20.0	20.0	1
WCDMA Band IV **HSUPA**					MPR (dB)
Channel		1537	1638	1738	
1	Maximum Target Value (dBm)	20.0	20.0	20.0	1
2	Maximum Target Value (dBm)	20.0	20.0	20.0	1
3	Maximum Target Value (dBm)	20.0	20.0	20.0	1
4	Maximum Target Value (dBm)	20.0	20.0	20.0	1
5	Maximum Target Value (dBm)	20.0	20.0	20.0	1

Table 11.6: WCDMA

WCDMA Band V			
Channel	4233	4182	4132
Maximum Target Value (dBm)	23.0	23.0	23.0

WCDMA Band V **HSDPA**					MPR (dB)
Channel		4233	4182	4132	
1	Maximum Target Value (dBm)	22.5	22.5	22.5	0
2	Maximum Target Value (dBm)	22	22	22	1
3	Maximum Target Value (dBm)	22	22	22	1
4	Maximum Target Value (dBm)	22	22	22	1
WCDMA Band V **HSUPA**					MPR (dB)
Channel		4233	4182	4132	
1	Maximum Target Value (dBm)	22.0	22.0	22.0	1
2	Maximum Target Value (dBm)	21.0	21.0	21.0	1
3	Maximum Target Value (dBm)	21.0	21.0	21.0	1
4	Maximum Target Value (dBm)	22.0	22.0	22.0	1
5	Maximum Target Value (dBm)	22.0	22.0	22.0	1

Table 11.7: LTE

LTE Band2			
RB Size	1	50%	100%
Maximum Target Value (dBm)	22.5	22.5	21.5
LTE Band4			
RB Size	1	50%	100%
Maximum Target Value (dBm)	22.5	22.0	21.5
LTE Band5			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.0	23.0	22.0
LTE Band7			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.0	22.0	22.0
LTE Band12			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.5	23.5	22.5
LTE Band13			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.5	23.0	22.5
LTE Band17			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.0	22.0	22.0
LTE Band18			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.5	22.5	22.5
LTE Band25			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.0	22.5	22.0

LTE Band26			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.5	23.5	22.5
LTE Band41			
RB Size	1	50%	100%
Maximum Target Value (dBm)	23.5	22.5	22.0
LTE Band66			
RB Size	1	50%	100%
Maximum Target Value (dBm)	22.5	22.5	21.0

Table 11.8: CDMA

CDMA BC0				
Mode		Channel		
		1013	**384**	**777**
1xRTT RC1 SO55	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO55	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO32(+ F-SCH)	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO32(+SCH)	Maximum Target Value (dBm)	23.5	23.5	23.5
1xEVDO RTAP 153.6Kbps	Maximum Target Value (dBm)	23.5	23.5	23.5
CDMA BC1				
Mode		Channel		
		25	**600**	**1175**
1xRTT RC1 SO55	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO55	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO32(+ F-SCH)	Maximum Target Value (dBm)	23.5	23.5	23.5
1xRTT RC3 SO32(+SCH)	Maximum Target Value (dBm)	23.5	23.5	23.5
1xEVDO RTAP 153.6Kbps	Maximum Target Value (dBm)	23.5	23.5	23.5

Table 11.9: WiFi

WiFi 802.11b 2.4G			
Channel	Channel 1	Channel 6	Channel 11
Maximum Target Value (dBm)	13.0	13.0	14.0
WiFi 802.11g 2.4G			
Channel	Channel 1	Channel 6	Channel 11
Maximum Target Value (dBm)	12.5	12.0	12.5
WiFi 802.11n 20M 2.4G			
Channel	Channel 1	Channel 6	Channel 11
Maximum Target Value (dBm)	11.5	11.0	11.5
WiFi 802.11n 40M 2.4G			
Channel	Channel 3	Channel 6	Channel 9
Maximum Target Value (dBm)	11.0	11.0	11.5

Table 11.10: Bluetooth

Bluetooth			
Channel	Channel 0	Channel 39	Channel 78
Maximum Target Value (dBm)	6.0	6.0	6.0

Table 11.11: Bluetooth 4.0

Bluetooth			
Channel	Channel 0	Channel 19	Channel 39
Maximum Target Value (dBm)	-2.0	-2.0	-2.0

11.1. GSM Measurement result

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

Table 11.12: The conducted power measurement results for GSM

GSM 850MHZ	Conducted Power (dBm)		
	Channel 128(824.2MHz)	**Channel 190(836.6MHz)**	**Channel 251(848.6MHz)**
	32.25	32.22	32.2
GSM 1900MHZ	**Conducted Power (dBm)**		
	Channel 512(1850.2MHz)	**Channel 661(1880MHz)**	**Channel 810(1909.8MHz)**
	30.14	30.48	30.3

Table 11.13: The conducted power measurement results for GPRS/EGPRS

GSM 850 GMSK	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	128	**190**	**251**		**128**	**190**	**251**
1 Txslot	32.13	32.1	32.15	-9.03dB	23.1	23.07	23.12
2 Txslots	30.45	30.41	30.41	-6.02dB	24.43	24.39	24.39
3 Txslots	28.66	28.69	28.72	-4.26dB	24.4	24.43	24.46
4 Txslots	27.42	27.33	27.32	-3.01dB	24.41	24.32	24.31
GSM 1900 GMSK	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	512	**661**	**810**		**512**	**661**	**810**
1 Txslot	29.11	29.1	29.16	-9.03dB	20.08	20.07	20.13
2 Txslots	27.48	27.47	27.49	-6.02dB	21.46	21.45	21.47
3 Txslots	25.74	25.7	25.69	-4.26dB	21.48	21.44	21.43
4 Txslots	24.38	24.41	24.47	-3.01dB	21.37	21.4	21.46

Table 11.14: The conducted power measurement results for E-GPRS

GSM 850 8-PSK	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	128	**190**	**251**		**128**	**190**	**251**
1 Txslot	25.92	25.94	25.98	-9.03dB	16.89	16.91	16.95
2 Txslots	24.91	24.95	24.96	-6.02dB	18.89	18.93	18.94
3 Txslots	23.34	23.32	23.4	-4.26dB	19.08	19.06	19.14
4 Txslots	22.43	22.34	22.45	-3.01dB	19.42	19.33	19.44
GSM 1900 8-PSK	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	512	**661**	**810**		**512**	**661**	**810**
1 Txslot	24.71	24.76	24.68	-9.03dB	15.68	15.73	15.65
2 Txslots	23.62	23.67	23.61	-6.02dB	17.6	17.65	17.59
3 Txslots	22.51	22.54	22.59	-4.26dB	18.25	18.28	18.33
4 Txslots	21.44	21.42	21.37	-3.01dB	18.43	18.41	18.36

NOTES:

1) Division Factors

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

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

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

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

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

According to the conducted power as above, the body measurements are performed with 3Txslots for 850MHz ; 3Txslots for1900MHz;

11.2. WCDMA Measurement result

Table 11.15: The conducted Power for WCDMA

Item	band	WCDMA BAND II result(dBm)		
	ARFCN	9662 (1852.4MHz)	9800 (1880.0MHz)	9938 (1907.6MHz)
WCDMA	\	22.44	22.11	22.22
HSDPA	1	21.52	21.38	21.48
	2	21.3	21.18	21.3
	3	21.17	21.28	21.01
	4	21.22	21.32	21.08
HSUPA	1	21.07	21.05	20.87
	2	21.12	21.09	20.97
	3	20.95	20.86	20.84
	4	20.92	20.74	20.75
	5	20.72	20.65	20.64
Item	band	WCDMA BAND IV result(dBm)		
	ARFCN	Channel 1537 (1712.4MHz)	Channel 1638 (1732.6MHz)	Channel 1738 (1752.6MHz)
WCDMA	\	20.28	20.38	20.2
HSDPA	1	19.67	19.75	19.55
	2	19.77	19.86	19.67
	3	19.72	19.81	19.62
	4	19.75	19.82	19.63
HSUPA	1	19.65	19.74	19.55
	2	19.87	19.95	19.78
	3	19.75	19.85	19.64
	4	19.78	19.88	19.69
	5	19.69	19.78	19.59

Item	band	WCDMA BAND V result(dBm)		
	ARFCN	Channel 4132 (826.4MHz)	Channel 4183 (836.6MHz)	Channel 4233 (846.6MHz)
WCDMA	\	22.88	22.6	22.44
HSDPA	1	22.16	21.87	21.7
	2	22.17	21.89	21.75
	3	21.96	21.87	21.73
	4	21.98	21.85	21.77
HSUPA	1	21.61	21.57	21.49
	2	21.66	21.61	21.53
	3	21.55	21.45	21.64
	4	21.51	21.48	21.68
	5	21.38	21.44	21.52

11.3. LTE Measurement result

Table 11.16: The conducted Power for LTE BAND 2/4/5/7/12/13/17/18/25/26/41/66

Band2						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18625 1852.5MHz	Channel 18900 1880MHz	Channel 19175 1907.5MHz
5MHz	QPSK	1	0	21.81	21.98	22.10
		1	13	22.01	21.90	21.98
		1	24	21.89	21.93	21.92
		12	0	20.91	21.90	21.20
		12	6	21.02	21.08	21.20
		12	13	21.05	21.07	21.10
		25	0	20.81	20.99	21.10
	16QAM	1	0	20.73	20.63	20.64
		1	13	20.69	20.69	20.81
		1	24	20.60	20.68	20.57
		12	0	19.98	19.74	20.09
		12	6	19.82	19.77	20.06
		12	13	19.84	19.89	19.89
		25	0	19.85	20.10	20.07
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18650 1855MHz	Channel 18900 1880MHz	Channel 19150 1905MHz
10MHz	QPSK	1	0	21.94	21.74	21.83
		1	25	22.16	22.04	22.29
		1	49	21.78	21.76	21.91
		25	0	21.06	21.12	21.28
		25	13	21.11	21.12	21.28
		25	25	21.09	21.05	21.12
		50	0	21.05	21.11	21.21
	16QAM	1	0	20.45	20.54	20.77
		1	25	21.09	20.69	20.77
		1	49	20.76	20.53	20.29
		25	0	19.88	20.20	20.28
		25	13	20.11	20.19	20.32
		25	25	20.08	20.17	20.16
		50	0	20.04	20.18	20.34
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		

				Channel 18675 1857.5MHz	Channel 18900 1880MHz	Channel 19125 1902.5MHz
15MHz	QPSK	1	0	22.06	21.93	22.16
		1	37	22.37	22.01	22.35
		1	74	21.96	21.75	21.93
		36	0	21.00	21.09	21.10
		36	19	21.11	21.02	21.12
		36	38	21.07	20.92	21.02
		75	0	21.09	21.02	21.09
	16QAM	1	0	20.23	20.64	20.74
		1	37	20.53	20.73	20.76
		1	74	20.16	20.57	20.71
		36	0	19.97	20.04	20.15
		36	19	19.98	20.05	20.17
		36	38	20.10	19.88	20.08
		75	0	20.11	20.16	20.24
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18700 1860MHz	Channel 18900 1880MHz	Channel 19100 1900MHz
20MHz	QPSK	1	0	21.89	21.89	21.99
		1	50	22.00	22.07	22.13
		1	99	21.84	21.75	21.97
		50	0	21.11	21.13	21.28
		50	25	21.09	21.09	21.17
		50	50	21.04	21.04	21.13
		100	0	21.05	21.13	21.14
	16QAM	1	0	20.63	20.77	20.81
		1	50	20.75	20.75	20.86
		1	99	20.52	20.57	20.69
		50	0	19.93	20.07	20.05
		50	25	20.03	20.13	20.04
		50	50	19.98	20.00	20.08
		100	0	20.03	20.08	20.02
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18615 1851.5MHz	Channel 18900 1880MHz	Channel 19185 1908.5MHz
3MHz	QPSK	1	0	21.80	21.84	22.09
		1	7	21.68	21.89	22.00
		1	14	21.86	21.99	21.94
		8	0	21.06	21.01	21.37

		8	4	21.01	21.04	21.16
		8	7	21.02	21.00	21.07
		15	0	20.96	21.00	21.12
	16QAM	1	0	20.36	20.42	20.41
		1	7	20.36	20.64	20.36
		1	14	20.37	20.54	20.45
		8	0	20.08	19.99	20.11
		8	4	20.03	20.02	20.16
		8	7	20.03	20.07	20.18
		15	0	19.93	20.04	20.10
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 18607 1850.7MHz	Channel 18900 1880MHz	Channel 19193 1909.3MHz
1.4MHz	QPSK	1	0	21.87	21.70	22.08
		1	3	22.11	21.95	22.06
		1	5	21.99	21.95	21.73
		3	0	21.94	21.97	22.05
		3	1	22.08	22.01	22.04
		3	3	21.93	21.91	22.07
		6	0	20.94	20.92	21.15
	16QAM	1	0	20.58	20.46	20.57
		1	3	20.29	20.58	20.54
		1	5	20.47	20.45	20.55
		3	0	20.80	20.86	20.95
		3	1	21.16	20.90	20.91
		3	3	21.19	21.00	20.88
		6	0	19.78	19.95	20.08

Band4						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19975 1712.5MHz	Channel 20175 1732.5MHz	Channel 20375 1752.5MHz
5MHz	QPSK	1	0	21.71	21.69	21.58
		1	13	21.8	21.72	21.52
		1	24	21.74	21.53	21.47
		12	0	20.8	20.77	20.68
		12	6	20.91	20.82	20.74
		12	13	20.85	20.79	20.73
		25	0	20.79	20.78	20.79
	16QAM	1	0	20.52	20.57	20.45

		1	13	20.6	20.21	20.55
		1	24	20.25	20.28	20.35
		12	0	19.71	19.7	19.59
		12	6	19.72	19.65	19.55
		12	13	19.61	19.73	19.55
		25	0	19.74	19.89	19.71
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20000 1715MHz	Channel 20175 1732.5MHz	Channel 20350 1750MHz
10MHz	QPSK	1	0	21.74	21.7	21.79
		1	25	21.98	21.84	22.06
		1	49	21.67	21.58	21.65
		25	0	20.94	20.86	21.02
		25	13	20.84	20.9	20.96
		25	25	20.72	20.89	20.79
		50	0	20.89	20.87	20.81
	16QAM	1	0	20.27	20.25	20.69
		1	25	20.57	20.44	21.25
		1	49	20.34	20.08	20.47
		25	0	19.83	19.87	20.03
		25	13	19.95	19.91	19.97
		25	25	19.84	19.89	19.8
		50	0	20.01	19.88	19.81
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20025 1717.5MHz	Channel 20175 1732.5MHz	Channel 20325 1747.5MHz
15MHz	QPSK	1	0	21.88	21.8	21.82
		1	38	21.96	21.72	21.87
		1	74	21.76	21.69	21.56
		36	0	20.95	20.88	20.97
		36	18	20.91	20.94	21.02
		36	39	20.89	20.92	20.83
		75	0	20.98	20.91	20.87
	16QAM	1	0	20.3	20.51	20.62
		1	38	20.83	20.99	21.13
		1	74	20.48	20.66	20.38
		36	0	19.83	19.8	19.87
		36	18	19.85	19.94	19.92
		36	39	19.7	19.84	19.73
		75	0	19.9	19.84	19.97
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		

				Channel 20050 1720MHz	Channel 20175 1732.5MHz	Channel 20300 1745MHz
20MHz	QPSK	1	0	21.77	21.98	21.89
		1	50	21.83	21.75	21.91
		1	99	21.66	21.57	21.75
		50	0	20.88	20.89	21.05
		50	25	20.96	20.92	20.94
		50	50	20.9	20.83	20.78
		100	0	20.95	20.82	20.86
	16QAM	1	0	20.73	20.52	20.56
		1	50	20.97	20.71	20.72
		1	99	20.1	19.94	20.05
		50	0	19.97	19.97	19.91
		50	25	19.94	19.78	20.02
		50	50	19.89	19.9	19.84
		100	0	19.97	19.79	19.83
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19965 1711.5MHz	Channel 20175 1732.5MHz	Channel 20385 1753.5MHz
3MHz	QPSK	1	0	21.86	21.76	21.44
		1	8	21.66	21.69	21.51
		1	14	21.61	20.82	21.45
		8	0	20.9	20.86	20.66
		8	4	20.89	20.75	20.7
		8	7	20.79	20.74	20.68
		15	0	20.85	20.76	20.67
	16QAM	1	0	20.95	20.61	20.67
		1	8	20.76	20.57	20.71
		1	15	20.48	20.27	20.53
		8	0	19.72	19.71	19.68
		8	4	19.71	19.66	19.82
		8	7	19.9	19.93	19.8
		15	0	19.92	19.81	19.75
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 19957 1710.7MHz	Channel 20175 1732.5MHz	Channel 20393 1754.3MHz
1.4MHz	QPSK	1	0	21.74	21.55	21.62
		1	2	21.82	21.58	21.78
		1	5	21.8	21.65	21.72
		3	0	21.95	21.67	21.74

		3	1	21.98	21.91	21.79
		3	2	21.84	21.72	21.68
		6	0	20.94	20.77	20.7
	16QAM	1	0	20.47	20.43	20.29
		1	2	20.67	20.5	20.56
		1	5	20.94	20.64	20.74
		3	0	20.79	20.86	20.65
		3	1	20.64	20.78	20.61
		3	2	20.66	20.92	20.69
		6	0	19.8	19.83	19.78

Band5						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20425 826.5MHz	Channel 20525 836.5MHz	Channel 20625 846.5MHz
5MHz	QPSK	1	0	22.66	22.47	22.56
		1	13	22.68	22.62	22.64
		1	24	22.64	22.74	22.53
		12	0	21.88	21.72	21.66
		12	6	21.92	21.81	21.83
		12	13	21.85	21.83	21.77
		25	0	21.66	21.70	21.79
	16QAM	1	0	21.44	21.21	21.21
		1	13	21.76	21.43	21.46
		1	24	21.25	21.20	21.36
		12	0	20.72	20.76	20.55
		12	6	20.66	20.78	20.69
		12	13	20.67	20.75	20.54
		25	0	20.88	20.81	20.64
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20450 829MHz	Channel 20525 836.5MHz	Channel 20600 844MHz
10MHz	QPSK	1	0	22.60	22.59	22.63
		1	25	22.81	22.68	22.85
		1	49	22.60	22.37	22.63
		25	0	21.90	21.82	21.77
		25	13	21.97	21.81	21.86
		25	25	21.83	21.79	21.81
		50	0	21.83	21.81	21.81

	16QAM	1	0	21.19	21.50	21.10
		1	25	21.52	21.67	21.47
		1	49	21.10	21.46	21.30
		25	0	20.93	20.91	20.81
		25	13	20.99	20.84	20.72
		25	25	20.92	20.74	20.76
		50	0	20.94	20.84	20.77
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20415 825.5MHz	Channel 20525 836.5MHz	Channel 20635 847.5MHz
3MHz	QPSK	1	0	22.49	22.58	22.56
		1	7	22.79	22.57	22.50
		1	14	22.43	22.60	22.43
		8	0	21.94	21.79	21.90
		8	4	21.93	21.79	21.80
		8	7	21.92	21.73	21.78
		15	0	21.88	21.75	21.79
	16QAM	1	0	21.60	21.28	21.51
		1	7	21.47	21.40	21.59
		1	14	21.40	21.34	21.25
		8	0	20.66	20.83	20.64
		8	4	20.94	20.88	20.70
		8	7	20.93	20.94	20.80
		15	0	20.86	20.77	20.78
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20407 824.7MHz	Channel 20525 836.5MHz	Channel 20643 848.3MHz
1.4MHz	QPSK	1	0	22.66	22.44	22.56
		1	2	22.61	22.56	22.76
		1	5	22.77	22.48	22.70
		3	0	22.77	22.60	22.72
		3	2	22.81	22.76	22.67
		3	3	22.92	22.63	22.67
		6	0	21.80	21.69	21.70
	16QAM	1	0	21.71	21.57	21.34
		1	2	21.67	21.48	21.46
		1	5	21.40	21.43	21.33
		3	0	21.81	21.64	21.68
		3	2	21.86	21.68	21.71
		3	3	21.70	21.67	21.49
		6	0	20.88	20.79	20.61

Band7						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20775 2502.5MHz	Channel 21100 2535MHz	Channel 21425 2567.5MHz
5MHz	QPSK	1	0	22.19	22.36	22.05
		1	13	22.27	22.37	22.01
		1	24	22.15	22.28	22.02
		12	0	21.47	21.45	21.67
		12	6	21.45	21.51	21.66
		12	13	21.34	21.49	21.68
		25	0	21.48	21.44	21.55
	16QAM	1	0	20.97	20.87	20.58
		1	13	21.55	21.47	21.13
		1	24	21.09	21.16	20.75
		12	0	20.46	20.50	20.57
		12	6	20.35	20.54	20.66
		12	13	20.36	20.40	20.68
		25	0	20.45	20.46	20.66
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20800 2505MHz	Channel 21100 2535MHz	Channel 21400 2565MHz
10MHz	QPSK	1	0	22.29	22.30	22.13
		1	25	22.32	22.35	22.31
		1	49	22.22	22.27	22.24
		25	0	21.50	21.46	21.57
		25	13	21.57	21.49	21.65
		25	25	21.47	21.58	21.52
		50	0	21.46	21.45	21.53
	16QAM	1	0	20.82	20.79	20.59
		1	25	20.87	21.01	21.10
		1	49	21.19	21.07	21.23
		25	0	20.60	20.50	20.63
		25	13	20.59	20.61	20.82
		25	25	20.76	20.62	20.59
		50	0	20.63	20.36	20.60
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20825 2507.5MHz	Channel 21100 2535MHz	Channel 21375 2562.5MHz

15MHz	QPSK	1	0	22.34	22.33	22.35
		1	38	22.39	22.39	22.35
		1	74	22.30	22.55	22.26
		36	0	21.56	21.44	21.66
		36	18	21.51	21.51	21.67
		36	39	21.38	21.42	21.50
		75	0	21.47	21.49	21.63
	16QAM	1	0	21.12	20.95	21.14
		1	38	21.65	21.67	21.55
		1	74	21.15	21.23	21.12
		36	0	20.41	20.38	21.00
		36	18	20.59	20.46	20.61
		36	39	20.46	20.45	20.59
		75	0	20.45	20.44	20.66
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 20850 2510MHz	Channel 21100 2535MHz	Channel 21350 2560MHz
20MHz	QPSK	1	0	22.33	22.38	22.28
		1	50	22.28	22.35	22.17
		1	99	22.03	22.29	22.08
		50	0	21.55	21.68	21.61
		50	25	21.41	21.49	21.60
		50	50	21.46	21.43	21.61
		100	0	21.41	21.46	21.63
	16QAM	1	0	21.06	20.94	21.04
		1	50	21.75	21.81	21.68
		1	99	21.03	21.14	21.16
		50	0	20.45	20.50	20.44
		50	25	20.51	20.59	20.73
		50	50	20.47	20.51	20.66
		100	0	20.40	20.46	20.66

Band12						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23035 701.5MHz	Channel 23095 707.5MHz	Channel 23155 713.5MHz
5MHz	QPSK	1	0	22.82	23.00	22.94
		1	12	22.96	23.09	23.01
		1	24	23.00	22.97	22.78
		12	0	21.97	22.15	22.02

		12	6	22.04	22.22	22.14
		12	13	22.02	22.10	22.09
		25	0	21.96	22.08	22.08
	16QAM	1	0	21.25	21.07	21.28
		1	12	21.35	21.25	21.35
		1	24	22.15	22.03	22.11
		12	0	20.98	20.97	21.14
		12	6	21.05	20.95	21.18
		12	13	21.03	21.11	21.05
		25	0	20.98	21.08	21.00
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23060 704MHz	Channel 23095 707.5MHz	Channel 23130 711MHz
10MHz	QPSK	1	0	23.03	23.11	23.08
		1	25	23.04	23.01	22.96
		1	49	22.96	22.73	22.77
		25	0	22.05	22.18	22.15
		25	13	22.04	22.11	22.14
		25	25	22.04	22.05	22.07
		50	0	22.06	22.08	22.07
	16QAM	1	0	21.58	21.26	21.43
		1	25	22.19	22.35	21.50
		1	49	22.21	22.17	22.11
		25	0	21.05	20.98	21.05
		25	13	21.05	21.02	21.15
		25	25	21.23	21.05	21.07
		50	0	21.17	21.08	21.08
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23025 700.5MHz	Channel 23095 707.5MHz	Channel 23165 714.5MHz
3MHz	QPSK	1	0	22.94	22.93	23.07
		1	7	22.92	22.98	22.96
		1	14	22.95	22.95	22.91
		8	0	22.01	22.15	22.13
		8	4	22.01	22.12	22.17
		8	7	22.03	22.08	22.14
		15	0	22.02	22.07	22.13
	16QAM	1	0	21.34	21.26	21.42
		1	7	21.30	21.56	21.42
		1	14	21.57	21.67	21.46
		8	0	21.02	21.26	21.12

		8	4	21.13	21.22	21.17
		8	7	21.14	21.17	21.31
		15	0	21.20	21.07	21.28
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23017 699.7MHz	Channel 23095 707.5MHz	Channel 23173 715.3MHz
1.4MHz	QPSK	1	0	22.95	22.92	22.67
		1	2	23.15	23.08	22.78
		1	5	23.00	22.83	22.75
		3	0	23.00	23.02	23.05
		3	2	23.00	23.19	22.95
		3	3	23.08	23.19	23.05
		6	0	22.08	22.10	22.05
	16QAM	1	0	21.76	21.91	21.90
		1	2	21.98	22.31	22.22
		1	5	21.21	22.24	21.94
		3	0	21.91	21.96	21.97
		3	2	22.20	22.02	21.96
		3	3	22.15	21.93	22.06
		6	0	21.11	21.09	20.86

Band13						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23205 779.5 MHz	Channel 23230 782 MHz	Channel 23255 784.5MHz
5MHz	QPSK	1	0	23.07	23.28	23.05
		1	12	23.28	23.23	23.17
		1	24	23.17	23.18	22.90
		12	0	22.37	22.38	22.30
		12	6	22.46	22.35	22.27
		12	13	22.28	22.29	22.17
		25	0	22.41	22.30	22.26
	16QAM	1	0	21.76	21.98	21.80
		1	12	22.57	22.38	22.50
		1	24	22.25	22.19	22.02
		12	0	21.12	21.40	21.23
		12	6	21.32	21.37	21.22
		12	13	21.22	21.41	21.18
		25	0	21.22	21.41	21.18
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		

				Channel 23230 782MHz	Channel 23230 782 MHz	Channel 23230 782 MHz
10MHz	QPSK	1	0	--	23.20	--
		1	25	--	23.13	--
		1	49	--	23.00	--
		25	0	--	22.41	--
		25	13	--	22.38	--
		25	25	--	22.28	--
		50	0	--	22.20	--
	16QAM	1	0	--	21.83	--
		1	25	--	22.49	--
		1	49	--	21.78	--
		25	0	--	21.31	--
		25	13	--	21.36	--
		25	25	--	21.38	--
		50	0	--	21.31	--

Band17						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23755 706.5 MHz	Channel 23790 710 MHz	Channel 23825 713.5MHz
5MHz	QPSK	1	0	22.81	22.77	22.67
		1	12	22.77	22.82	22.60
		1	24	22.35	22.52	22.28
		12	0	21.82	21.72	21.67
		12	6	21.90	21.70	21.71
		12	13	21.83	21.68	21.56
		25	0	21.84	21.76	21.64
	16QAM	1	0	21.91	21.78	21.83
		1	12	21.95	21.71	21.95
		1	24	21.43	21.14	21.25
		12	0	20.83	20.61	20.67
		12	6	20.81	20.56	20.63
		12	13	20.65	20.52	20.49
		25	0	20.83	20.83	20.65
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23780 709MHz	Channel 23790 710 MHz	Channel 23800 711 MHz
10MHz	QPSK	1	0	--	22.78	--

		1	25	--	22.85	--
		1	49	--	22.67	--
		25	0	--	21.95	--
		25	13	--	21.96	--
		25	25	--	21.82	--
		50	0	--	21.90	--
	16QAM	1	0	--	21.37	--
		1	25	--	21.42	--
		1	49	--	21.46	--
		25	0	--	20.96	--
		25	13	--	20.86	--
		25	25	--	20.82	--
		50	0	--	20.81	--

Band18						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23875 817.5MHz	Channel 23925 822.5MHz	Channel 23975 827.5MHz
5MHz	QPSK	1	0	22.98	22.92	22.96
		1	13	23.22	23.10	23.13
		1	24	23.09	23.01	23.04
		12	0	22.13	22.08	22.14
		12	6	22.13	22.16	22.09
		12	13	22.14	22.13	22.08
		25	0	22.15	22.11	22.03
	16QAM	1	0	21.45	21.47	21.62
		1	13	21.75	21.51	21.79
		1	24	21.41	21.64	21.69
		12	0	21.14	21.09	20.98
		12	6	21.24	21.16	21.02
		12	13	21.12	21.05	21.01
		25	0	21.21	21.11	21.03
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23900 820MHz	Channel 23925 822.5MHz	Channel 23950 825MHz
10MHz	QPSK	1	0	22.90	22.90	23.02
		1	25	23.25	23.21	23.27
		1	49	22.93	22.98	22.86
		25	0	22.23	22.22	22.14
		25	13	22.22	22.15	22.34

		25	25	22.14	22.22	22.13
		50	0	22.17	22.19	22.15
	16QAM	1	0	21.63	21.82	21.86
		1	25	21.73	21.70	21.86
		1	49	21.59	21.88	21.79
		25	0	21.11	21.07	21.16
		25	13	21.18	21.19	21.30
		25	25	21.07	21.17	20.96
		50	0	21.15	21.22	21.08

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 23925 822.5MHz	Channel 23925 822.5MHz	Channel 23925 822.5MHz
15MHz	QPSK	1	0	--	23.03	--
		1	38	--	23.13	--
		1	74	--	22.99	--
		36	0	--	22.07	--
		36	18	--	22.17	--
		36	39	--	22.11	--
		75	0	--	22.17	--
	16QAM	1	0	--	21.40	--
		1	38	--	21.65	--
		1	74	--	21.31	--
		36	0	--	21.09	--
		36	18	--	21.20	--
		36	39	--	21.04	--
		75	0	--	21.10	--

Band25						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26065 1852.5MHz	Channel 26365 1882.5MHz	Channel 26665 1912.5MHz
5MHz	QPSK	1	0	21.87	22.02	21.89
		1	13	22.01	22.04	22.05
		1	24	21.89	22.01	21.85
		12	0	21.13	21.10	21.40
		12	6	21.01	21.24	21.31
		12	13	21.03	21.17	21.31
		25	0	21.11	21.21	21.34
	16QAM	1	0	20.46	20.36	20.65

		1	13	20.62	20.61	20.74
		1	24	20.39	21.18	20.47
		12	0	20.13	20.21	20.44
		12	6	20.00	20.09	20.35
		12	13	19.94	19.94	20.04
		25	0	19.95	20.05	20.06
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26090 1855MHz	Channel 26365 1882.5MHz	Channel 26640 1910MHz
10MHz	QPSK	1	0	21.83	21.97	21.87
		1	25	22.31	22.20	22.05
		1	49	21.83	21.73	21.55
		25	0	21.10	21.29	21.47
		25	13	21.20	21.28	21.39
		25	25	21.04	21.14	21.13
		50	0	21.02	21.22	21.42
	16QAM	1	0	20.64	20.69	20.87
		1	25	20.91	20.82	20.98
		1	49	20.51	20.84	20.78
		25	0	20.12	20.03	20.23
		25	13	20.22	20.21	20.32
		25	25	20.05	20.17	20.16
		50	0	19.95	20.15	20.05
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26115 1857.5MHz	Channel 26365 1882.5MHz	Channel 26615 1907.5MHz
15MHz	QPSK	1	0	21.86	21.93	21.72
		1	38	22.43	22.27	22.41
		1	74	21.57	21.46	20.41
		36	0	21.20	21.26	21.30
		36	18	21.06	21.29	21.39
		36	39	21.08	21.10	21.39
		75	0	21.01	21.15	21.40
	16QAM	1	0	20.64	20.74	20.82
		1	38	21.24	21.34	21.53
		1	74	20.71	20.73	20.81
		36	0	20.05	20.17	20.39
		36	18	20.08	20.17	20.25
		36	39	20.04	20.04	20.25
		75	0	20.06	20.17	20.19
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		

				Channel 26140 1860MHz	Channel 26365 1882.5MHz	Channel 26590 1905MHz
20MHz	QPSK	1	0	22.04	22.29	22.16
		1	50	22.08	22.13	22.21
		1	99	21.49	21.12	21.28
		50	0	21.13	21.36	21.20
		50	25	21.06	21.13	21.20
		50	50	21.11	21.11	21.14
		100	0	20.99	21.14	21.38
	16QAM	1	0	20.73	20.77	20.61
		1	50	21.36	21.49	21.26
		1	99	20.62	20.37	20.42
		50	0	20.03	20.15	20.29
		50	25	20.04	20.12	20.39
		50	50	20.10	20.10	20.16
		100	0	20.06	20.12	20.36
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26055 1851.5MHz	Channel 26365 1882.5MHz	Channel 26675 1913.5MHz
3MHz	QPSK	1	0	22.11	22.14	22.15
		1	8	22.09	22.15	22.06
		1	14	22.17	22.05	21.99
		8	0	21.11	21.08	21.45
		8	4	21.03	21.22	21.38
		8	7	21.07	21.19	21.37
		15	0	21.01	21.19	21.24
	16QAM	1	0	20.27	20.47	20.64
		1	8	20.58	20.47	20.70
		1	15	20.50	20.49	20.69
		8	0	20.22	20.11	20.31
		8	4	20.13	20.12	20.48
		8	7	20.08	20.21	20.47
		15	0	20.00	20.18	20.42
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26047 1850.7MHz	Channel 26365 1882.5MHz	Channel 26683 1914.3MHz
1.4MHz	QPSK	1	0	21.78	21.96	21.62
		1	2	21.76	21.93	21.66
		1	5	21.95	22.04	22.05
		3	0	21.98	22.14	22.10

		3	1	22.04	22.18	22.85
		3	2	21.96	22.19	22.07
		6	0	21.04	21.25	21.31
	16QAM	1	0	20.74	20.73	20.63
		1	2	20.64	20.88	20.65
		1	5	20.32	20.16	20.44
		3	0	20.99	21.10	21.05
		3	1	20.98	21.05	21.09
		3	2	21.09	21.19	21.22
		6	0	20.00	20.10	20.35

Band26						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26715 816.5MHz	Channel 26865 831.5MHz	Channel 27015 846.5MHz
5MHz	QPSK	1	0	22.98	22.99	23.01
		1	13	23.13	22.97	23.03
		1	24	22.97	23.04	22.92
		12	0	22.24	22.10	22.21
		12	6	22.16	22.11	22.08
		12	13	22.11	22.15	22.03
		25	0	22.20	22.14	22.14
	16QAM	1	0	21.13	21.43	21.41
		1	13	22.30	22.19	22.12
		1	24	22.14	22.11	22.02
		12	0	21.00	20.92	21.09
		12	6	21.27	21.22	21.04
		12	13	21.10	21.06	20.89
		25	0	21.17	21.03	21.07
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26740 819MHz	Channel 26865 831.5MHz	Channel 26990 844MHz
10MHz	QPSK	1	0	23.06	22.90	22.94
		1	25	22.98	23.11	23.12
		1	49	22.87	22.82	22.98
		25	0	22.22	22.20	22.17
		25	13	22.10	22.18	22.15
		25	25	22.12	22.07	22.07
		50	0	22.14	22.13	22.20

	16QAM	1	0	21.88	21.84	21.69
		1	25	21.51	21.72	21.82
		1	49	21.89	21.65	21.77
		25	0	20.94	21.11	21.22
		25	13	21.26	21.02	21.16
		25	25	21.06	21.01	21.13
		50	0	21.18	21.14	21.18
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26765 821.5MHz	Channel 26865 831.5MHz	Channel 26965 841.5MHz
15MHz	QPSK	1	0	23.28	23.31	23.17
		1	38	23.26	23.29	23.11
		1	74	23.13	23.09	22.96
		36	0	22.13	22.25	22.11
		36	18	22.12	22.17	22.10
		36	39	22.09	22.05	22.12
		75	0	22.25	22.04	22.11
	16QAM	1	0	21.61	21.73	21.78
		1	38	21.70	21.55	21.64
		1	74	21.95	21.90	21.84
		36	0	21.03	21.13	20.93
		36	18	21.11	21.18	21.02
		36	39	21.05	21.07	21.00
		75	0	21.01	21.06	21.11
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26705 815.5MHz	Channel 26865 831.5MHz	Channel 27025 847.5MHz
3MHz	QPSK	1	0	23.02	22.90	23.10
		1	8	23.06	22.91	22.95
		1	14	23.10	22.92	23.05
		8	0	22.10	22.05	22.15
		8	4	22.09	22.11	22.11
		8	7	22.09	22.08	22.01
		15	0	22.16	22.06	22.10
	16QAM	1	0	21.28	21.42	21.44
		1	8	21.76	21.73	21.55
		1	15	21.73	21.77	21.52
		8	0	21.14	21.08	21.06
		8	4	21.13	21.05	21.16
		8	7	21.25	21.17	21.14
		15	0	21.23	21.06	21.21

Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 26697 814.7MHz	Channel 26865 831.5MHz	Channel 27033 848.3MHz
1.4MHz	QPSK	1	0	22.77	22.83	22.93
		1	2	23.03	23.08	22.97
		1	5	23.13	23.18	22.99
		3	0	22.11	22.07	22.13
		3	1	22.07	22.14	22.12
		3	2	22.09	22.08	22.01
		6	0	21.96	21.92	22.11
	16QAM	1	0	21.61	21.40	21.42
		1	2	21.60	21.48	21.71
		1	5	21.70	21.61	21.57
		3	0	22.04	22.19	22.09
		3	1	22.01	22.04	22.12
		3	2	22.16	22.14	22.10
		6	0	21.15	21.04	20.98

Band41						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 40065 2537.5MHz	Channel 40620 2593MHz	Channel 41215 2642.5MHz
5MHz	QPSK	1	0	22.4	22.57	22.46
		1	13	22.78	22.85	22.69
		1	24	22.89	22.94	22.85
		12	0	21.78	21.85	21.69
		12	6	21.67	21.83	21.89
		12	13	21.57	21.71	21.75
		25	0	21.60	21.74	21.81
	16QAM	1	0	21.41	21.36	21.49
		1	13	21.42	21.46	21.41
		1	24	21.33	21.48	21.55
		12	0	20.58	20.79	20.82
		12	6	20.79	20.76	20.89
		12	13	20.71	20.74	20.82
		25	0	20.82	20.88	20.85
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 40090	Channel 40620	Channel 41190

				2540MHz	2593MHz	2650MHz
10MHz	QPSK	1	0	22.42	22.62	22.59
		1	25	22.85	22.74	22.72
		1	49	22.78	22.64	22.83
		25	0	21.81	21.85	21.74
		25	13	21.92	21.84	21.72
		25	25	21.82	21.96	21.92
		50	0	21.79	21.92	21.85
	16QAM	1	0	21.37	21.47	21.44
		1	25	21.54	21.75	21.62
		1	49	21.20	21.50	21.33
		25	0	20.49	20.73	20.56
		25	13	20.95	21.01	20.92
		25	25	20.93	20.83	20.96
		50	0	20.92	20.98	20.97
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 40115 2542.5MHz	Channel 40620 2593MHz	Channel 41165 2647.5MHz
15MHz	QPSK	1	0	22.74	22.88	22.83
		1	38	22.91	22.85	22.78
		1	74	22.95	22.98	22.96
		36	0	21.69	21.80	21.77
		36	18	21.73	21.86	21.68
		36	39	21.83	21.88	21.75
		75	0	21.98	21.92	21.93
	16QAM	1	0	21.56	21.46	21.38
		1	38	21.41	21.51	21.55
		1	74	21.42	21.48	21.58
		36	0	20.65	20.82	20.79
		36	18	20.76	20.83	20.67
		36	39	20.83	20.94	20.91
		75	0	20.88	20.87	20.89
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 40140 2545MHz	Channel 40620 2593MHz	Channel 41140 2645MHz
20MHz	QPSK	1	0	22.82	22.94	22.79
		1	50	22.86	22.81	22.92
		1	99	22.72	22.61	22.69
		50	0	21.89	21.96	21.76
		50	25	21.73	21.91	21.75

		50	50	21.85	21.90	21.84
		100	0	21.68	21.94	21.85
	16QAM	1	0	21.24	21.49	21.37
		1	50	21.66	21.79	21.71
		1	99	21.31	21.46	21.44
		50	0	20.75	20.89	20.83
		50	25	21.01	21.05	21.11
		50	50	20.89	20.94	21.03
		100	0	21.11	21.07	21.15

Band66						
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 131997 1712.5MHz	Channel 132322 1745MHz	Channel 132647 1777.5MHz
5MHz	QPSK	1	0	22.05	21.92	22.06
		1	13	21.95	22.02	21.97
		1	24	21.74	21.81	21.89
		12	0	20.93	20.89	20.77
		12	6	20.88	20.84	20.71
		12	13	20.68	20.75	20.82
		25	0	20.76	20.82	20.87
	16QAM	1	0	21.06	20.91	21.18
		1	13	20.91	21.02	20.95
		1	24	20.63	20.75	20.76
		12	0	19.99	19.81	19.78
		12	6	19.81	19.79	19.78
		12	13	19.69	19.77	19.71
		25	0	19.73	19.78	19.85
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 132022 1715MHz	Channel 132322 1745MHz	Channel 132622 1775MHz
10MHz	QPSK	1	0	21.85	21.81	21.86
		1	25	21.71	21.78	21.77
		1	49	21.67	21.58	21.62
		25	0	20.83	20.84	20.76
		25	13	20.75	20.68	20.65
		25	25	20.69	20.72	20.81
		50	0	20.71	20.73	20.78
	16QAM	1	0	20.85	20.8	20.88
		1	25	20.69	20.79	20.75

		1	49	20.56	20.51	20.49
		25	0	19.89	19.76	19.77
		25	13	19.68	19.65	19.72
		25	25	19.71	19.74	19.69
		50	0	19.61	19.69	19.76
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 132047 1717.5MHz	Channel 132322 1745MHz	Channel 132597 1772.5MHz
15MHz	QPSK	1	0	22.03	22.16	22.08
		1	38	21.98	22.01	21.93
		1	74	21.72	21.63	21.72
		36	0	20.91	20.92	20.89
		36	18	20.79	20.89	20.76
		36	39	20.88	20.83	20.92
		75	0	20.84	20.85	20.94
	16QAM	1	0	20.99	21.15	21.1
		1	38	20.96	21.02	20.91
		1	74	20.61	20.56	20.59
		36	0	19.87	19.84	19.9
		36	18	19.72	19.86	19.83
		36	39	19.9	19.85	19.8
		75	0	19.74	19.81	19.92
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 132072 1720MHz	Channel 132322 1745MHz	Channel 132572 1770MHz
20MHz	QPSK	1	0	22.15	22.18	21.12
		1	50	21.92	21.86	21.78
		1	99	21.56	21.75	21.67
		50	0	20.93	20.96	20.92
		50	25	20.81	20.85	20.88
		50	50	20.78	20.74	20.73
		100	0	20.85	20.83	20.76
	16QAM	1	0	21.2	21.15	20.14
		1	50	20.91	20.93	20.66
		1	99	20.55	20.69	20.47
		50	0	20.02	19.73	19.62
		50	25	19.74	19.91	19.95
		50	50	19.7	19.76	19.65
		100	0	19.75	19.79	19.74
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		

				Channel 131987 1711.5MHz	Channel 132322 1745MHz	Channel 132657 1778.5MHz
3MHz	QPSK	1	0	21.98	22.01	21.94
		1	8	22.06	22.04	21.96
		1	14	21.89	21.92	21.86
		8	0	20.95	20.97	20.87
		8	4	20.81	20.85	20.89
		8	7	20.78	20.75	20.71
		15	0	20.84	20.82	20.76
	16QAM	1	0	21.03	20.97	20.96
		1	8	21.04	21.11	20.84
		1	15	20.88	20.85	20.66
		8	0	20.01	19.89	19.63
		8	4	19.74	19.92	19.96
		8	7	19.69	19.77	19.63
		15	0	19.74	19.78	19.74
Bandwidth	Mode	RB Size	RB Offset	Actual output power(dBm)		
				Channel 131979 1710.7MHz	Channel 132322 1745MHz	Channel 132665 1779.3MHz
1.4MHz	QPSK	1	0	21.92	22.11	22.08
		1	2	22.03	21.99	22.02
		1	5	21.93	21.86	21.85
		3	0	21.87	21.93	21.76
		3	1	21.88	21.85	21.68
		3	2	21.74	21.77	21.69
		6	0	20.83	20.81	20.72
	16QAM	1	0	20.85	21.1	21.1
		1	2	21.01	21.24	21.15
		1	5	20.94	20.82	20.77
		3	0	20.93	20.85	20.77
		3	1	20.81	20.82	20.67
		3	2	20.76	20.8	20.57
		6	0	19.74	19.74	19.7

11.4. CDMA Measurement result

General Note:

1. Per KDB 941225 D01v03r01, the data device SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps). If 1xRTT power is less than 1/4dB higher than Re v0, SAR tests with those settings are not necessary.
2. Per KDB 941225 D01 v03r01, Head SAR for RC1+SO55 is not required because the maximum average output power of RC1 is less than 1/4 dB higher than RC3+SO55.
3. Per KDB 941225 D01 v03r01 , in Hotspot mode EUT is tested as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps). If 1xRTT power is less than 1/4dB higher than Rev 0, SAR tests with those settings are not necessary.

Table 11.17: The conducted power for CDMA

Band	CDMA2000 BC0			CDMA2000 BC1		
Channel	1013	384	777	25	600	1175
Frequency (MHz)	824.7	836.52	848.31	1851.25	1880.00	1908.75
1xRTT RC1 SO55	23.31	23.32	23.36	23.10	23.12	23.08
1xRTT RC3 SO55	23.35	23.37	23.39	23.09	23.12	23.11
1xRTT RC3 SO32(+ F-SCH)	23.28	23.31	23.32	23.07	23.03	23.04
1xRTT RC3 SO32(+SCH)	23.24	23.25	23.27	22.98	22.95	22.91
1xEVDO RTAP 153.6Kbps	23.29	23.28	23.26	22.95	22.91	22.98

11.5. Wi-Fi and BT Measurement result

Table 11.18: The conducted power for Bluetooth

GFSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Highest Power (dBm)	5.765	5.375	5.429
π /4 DQPSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Highest Power (dBm)	4.322	4.879	4.971
8DPSK			
Channel	Ch0 (2402 MHz)	Ch39 (2441MHz)	CH78 (2480MHz)
Highest Power (dBm)	4.376	4.971	5.063

Table 11.19: The conducted power for Bluetooth4.0

GFSK			
Channel	Ch0 (2402 MHz)	Ch19 (2440MHz)	CH39 (2480MHz)
Highest Power (dBm)	-4.645	-3.767	-4.317

NOTE: According to KDB447498 D01 BT standalone SAR are not required, because

maximum average output power is less than 10mW.

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.

SAR head value of BT is 0.167 W/Kg. SAR body value of BT is 0.084 W/Kg.

According to RSS 102 issue5 section 2.5.1 Exemption Limits for Routine Evaluation – SAR Evaluation, BT standalone SAR are required, because tune up output power is greater than 4mW.

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

The default power measurement procedures are:

a) Power must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band.

b) Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

c) For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured.

During WLAN SAR testing EUT is configured with the WLAN continuous TX tool, and the transmission duty factor was monitored on the spectrum analyzer with zero-span setting，the duty cycle is 97.5%.

Duty Cycle 802.11b mode

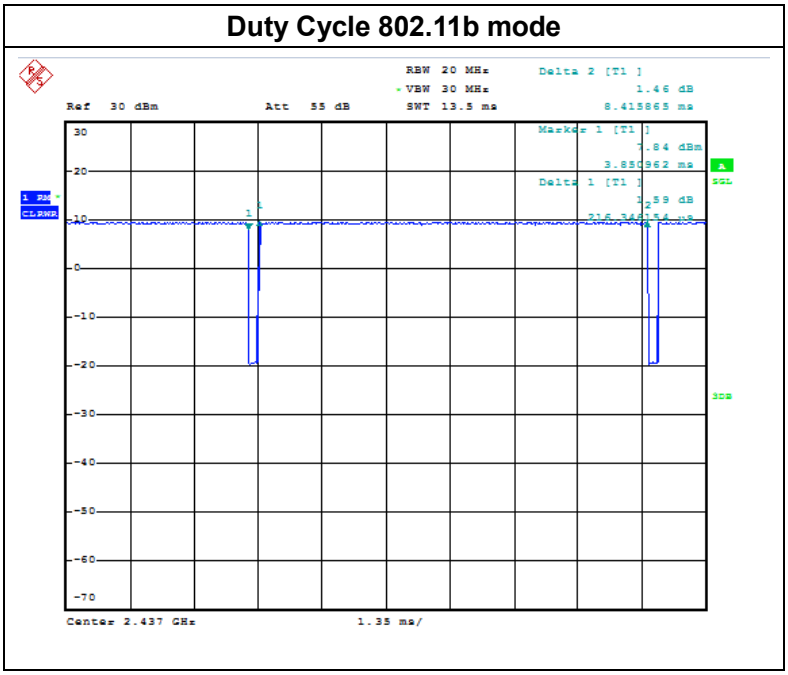


Table 11.20: The average conducted power for WiFi

Mode	Channel	Frequence	Average power(dBm)
802.11 b	1	2412 MHZ	12.98
	6	2437 MHZ	12.21
	11	2462 MHZ	13.58
802.11 g	1	2412 MHZ	12.07
	6	2437 MHZ	11.69
	11	2462 MHZ	12.19
802.11 n 20M	1	2412 MHZ	11.17
	6	2437 MHZ	10.49
	11	2462 MHZ	11.31
802.11 n 40M	3	2422 MHZ	10.71
	6	2437 MHZ	10.53
	9	2452 MHZ	11.33

2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.

a) When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.

b) When the highest *reported* SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

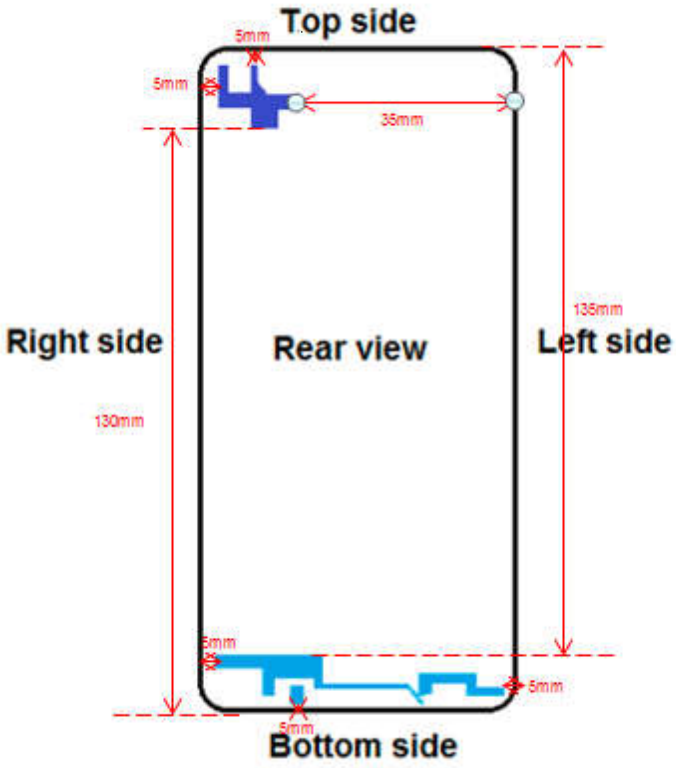
12. Simultaneous TX SAR Considerations

12.1. Introduction

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

For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters.

12.2. Transmit Antenna Separation Distances



Picture 12.1 Antenna Locations

12.3. 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

According to the KDB447498 appendix A, the SAR test exclusion threshold for 2450MHz at 5mm test separation distances is 10mW.

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

Based on the above equation, Bluetooth SAR was not required:

Evaluation=1.246＜3.0

Based on the above equation, WiFi SAR was required:

Evaluation=15.69>3.0

12.4. SAR Measurement Positions

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

SAR Measurement Positions						
Antenna Mode	Phantom	Ground	Left	Right	Top	Bottom
WWAN	Yes	Yes	Yes	Yes	No	Yes
WLAN	Yes	Yes	No	Yes	Yes	No

13. SAR Test Result

13.1. SAR results for Fast SAR

Table 13.1: Duty Cycle

Duty Cycle	
GPRS for GSM850/1900	1:2.77
CDMA BC0/BC1	1:1
WCDMA Band II/ IV/V and WiFi	1:1
LTE Band 7/12/13/25/26/41/6	1:1

Table 13.2: SAR Values (GSM 850 MHz Band - Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
836.6	190	GPRS (3)	Phantom	/	28.69	29.0	1.074	0.215	0.231	0.16
836.6	190	GPRS (3)	Ground	/	28.69	29.0	1.074	0.271	0.291	0.03
824.2	128	GPRS (3)	Ground	/	28.66	29.0	1.081	0.27	0.292	0.06
848.8	251	GPRS (3)	Ground	Fig.1	28.72	29.0	1.067	0.275	0.293	0.10
Hotspot										
836.6	190	GPRS (3)	Left	/	28.69	29.0	1.074	0.230	0.247	0.04
836.6	190	GPRS (3)	Right	/	28.69	29.0	1.074	0.157	0.169	0.11
836.6	190	GPRS (3)	Bottom	/	28.69	29.0	1.074	0.0439	0.047	0.10

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

Table 13.3: SAR Values (GSM 1900 MHz Band- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1880	661	GPRS (3)	Phantom	/	25.7	26.0	1.072	0.127	0.136	0.17
1880	661	GPRS (3)	Ground	/	25.7	26.0	1.072	0.129	0.138	0.03
1850.2	512	GPRS (3)	Ground	/	25.74	26.0	1.062	0.0872	0.093	0.14
1909.8	810	GPRS (3)	Ground	Fig.2	25.69	26.0	1.074	0.171	0.184	-0.13
Hotspot										
1880	661	GPRS (3)	Left	/	25.7	26.0	1.072	0.0763	0.082	0.02
1880	661	GPRS (3)	Right	/	25.7	26.0	1.072	0.0346	0.037	0.12
1880	661	GPRS (3)	Bottom	/	25.7	26.0	1.072	0.105	0.113	0.11

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

Table 13.4:SAR Values (WCDMA Band II- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1880	9400	12.2K RMC	Phantom	/	22.11	22.5	1.094	0.231	0.253	0.07
1880	9400	12.2K RMC	Ground	/	22.11	22.5	1.094	0.303	0.331	0.16
1852.4	9262	12.2K RMC	Ground	/	22.44	22.5	1.014	0.239	0.242	0.01
1907.6	9538	12.2K RMC	Ground	Fig.3	22.22	22.5	1.067	0.333	0.355	-0.06
Hotspot										
1880	9400	12.2K RMC	Left	/	22.11	22.5	1.094	0.162	0.177	0.06
1880	9400	12.2K RMC	Right	/	22.11	22.5	1.094	0.142	0.155	0.12
1880	9400	12.2K RMC	Bottom	/	22.11	22.5	1.094	0.154	0.168	0.10

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

Table 13.5:SAR Values (WCDMA Band IV- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1732.6	1638	12.2K RMC	Phantom	/	20.38	20.5	1.028	0.526	0.541	0.07
1732.6	1638	12.2K RMC	Ground	/	20.38	20.5	1.028	0.369	0.379	0.09
Hotspot										
1732.6	1638	12.2K RMC	Left	/	20.38	20.5	1.028	0.0975	0.100	0.04
1732.6	1638	12.2K RMC	Right	/	20.38	20.5	1.028	0.0256	0.026	-0.02
1732.6	1638	12.2K RMC	Bottom	/	20.38	20.5	1.028	0.808	0.831	0.03
1712.4	1537	12.2K RMC	Bottom	Fig.4	20.28	20.5	1.052	1.04	1.094	0.08
1752.6	1738	12.2K RMC	Bottom	/	20.2	20.5	1.072	0.496	0.532	0.01
Repeated										
1712.4	1537	12.2K RMC	Bottom	Fig.5	20.28	20.5	1.052	1.05	1.105	0.05

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

Table 13.6:SAR Values (WCDMA Band V- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
836.6	4182	12.2K RMC	Phantom	/	22.6	23.0	1.096	0.245	0.269	0.14
836.6	4182	12.2K RMC	Ground	/	22.6	23.0	1.096	0.331	0.363	0.01
826.4	4132	12.2K RMC	Ground	/	22.88	23.0	1.028	0.351	0.361	0.13
846.6	4233	12.2K RMC	Ground	Fig.6	22.44	23.0	1.138	0.344	0.391	0.07
Hotspot										
836.6	4182	12.2K RMC	Left	/	22.6	23.0	1.096	0.253	0.277	0.11
836.6	4182	12.2K RMC	Right	/	22.6	23.0	1.096	0.174	0.191	-0.02
836.6	4182	12.2K RMC	Bottom	/	22.6	23.0	1.096	0.0368	0.040	0.11

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

Table 13.7: SAR Values (LTE Band7-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Phantom		22.38	23.0	1.153	0.161	0.186	0.10
2535	21100		QPSK_20MHz 50RB_0offset	Toward Phantom	/	21.68	22.0	1.076	0.140	0.151	0.04
2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Ground	Fig.7	22.38	23.0	1.153	0.253	0.292	-0.09
2535	21100		QPSK_20MHz 50RB_0offset	Toward Ground	/	21.68	22.0	1.076	0.184	0.198	0.06
2510	20850	Band7	QPSK_20MHz 1RB_0 offset	Toward Ground	/	22.33	23.0	1.167	0.184	0.215	0.03
2510	20850		QPSK_20MHz 50RB_0offset	Toward Ground	/	21.55	22.0	1.109	0.141	0.156	0.03
2560	21350	Band7	QPSK_20MHz 1RB_0 offset	Toward Ground	/	22.28	23.0	1.18	0.237	0.280	0.11
2560	21350		QPSK_20MHz 50RB_0offset	Toward Ground	Fig.8	21.61	22.0	1.094	0.217	0.237	0.13
Hotspot											
2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Left	/	22.38	23.0	1.153	0.203	0.234	-0.12
2535	21100		QPSK_20MHz 50RB_0offset	Toward Left	/	21.68	22.0	1.076	0.175	0.188	0.03

2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Right	/	22.38	23.0	1.153	0.0629	0.073	-0.11
2535	21100		QPSK_20MHz 50RB_0offset	Toward Right	/	21.68	22.0	1.076	0.054	0.058	0.06
2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Bottom	/	22.38	23.0	1.153	0.115	0.133	-0.03
2535	21100		QPSK_20MHz 50RB_0offset	Toward Bottom	/	21.68	22.0	1.076	0.0946	0.102	0.16

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

Table 13.8: SAR Values (LTE Band12-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
707.5	23095	Band 12	QPSK_10MHz 1RB_0 offset	Toward Phantom	Fig.9	23.11	23.5	1.094	0.131	0.143	-0.13
707.5	23095		QPSK_10MHz 25RB_0offset	Toward Phantom	/	22.18	23.5	1.355	0.11	0.149	0.17
707.5	23095	Band 12	QPSK_10MHz 1RB_0 offset	Toward Ground	/	23.11	23.5	1.094	0.104	0.114	0.01
707.5	23095		QPSK_10MHz 25RB_0offset	Toward Ground	/	22.18	23.5	1.355	0.0891	0.121	0.08
704	23060	Band 12	QPSK_10MHz 1RB_0 offset	Toward Phantom	/	23.03	23.5	1.114	0.0871	0.097	0.05
704	23060		QPSK_10MHz 25RB_0offset	Toward Phantom	/	22.05	23.5	1.396	0.105	0.147	0.07
711	23130	Band 12	QPSK_10MHz 1RB_0 offset	Toward Phantom	/	23.08	23.5	1.102	0.122	0.134	0.15
711	23130		QPSK_10MHz 25RB_0offset	Toward Phantom	Fig.10	22.15	23.5	1.365	0.116	0.158	-0.11
Hotspot											
707.5	23095	Band 12	QPSK_10MHz 1RB_0 offset	Toward Left	/	23.11	23.5	1.094	0.0447	0.049	0.01
707.5	23095		QPSK_10MHz 25RB_0offset	Toward Left	/	22.18	23.5	1.355	0.0373	0.051	-0.03
707.5	23095	Band 12	QPSK_10MHz 1RB_0 offset	Toward Right	/	23.11	23.5	1.094	0.0835	0.091	0.07
707.5	23095		QPSK_10MHz 25RB_0offset	Toward Right	/	22.18	23.5	1.355	0.0701	0.095	0.11
707.5	23095	Band	QPSK_10MHz	Toward	/	23.11	23.5	1.094	0.0104	0.011	0.04

		12	1RB_0 offset	Bottom							
707.5	23095		QPSK_10MHz 25RB_0offset	Toward Bottom	/	22.18	23.5	1.355	0.009	0.012	0.11

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

Table 13.9: SAR Values (LTE Band13-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Phantom	Fig.11	23.2	23.5	1.072	0.318	0.341	0.07
782	23230		QPSK_10MHz 25RB_0offset	Toward Phantom	Fig.12	22.41	23.0	1.146	0.332	0.380	-0.02
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Ground	/	23.2	23.5	1.072	0.313	0.336	0.02
782	23230		QPSK_10MHz 25RB_0offset	Toward Ground	/	22.41	23.0	1.146	0.320	0.367	0.05
Hotspot											
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Left	/	23.2	23.5	1.072	0.239	0.256	0.08
782	23230		QPSK_10MHz 25RB_0offset	Toward Left	/	22.41	23.0	1.146	0.264	0.303	0.12
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Right	/	23.2	23.5	1.072	0.222	0.238	-0.05
782	23230		QPSK_10MHz 25RB_0offset	Toward Right	/	22.41	23.0	1.146	0.240	0.275	0.12
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Bottom	/	23.2	23.5	1.072	0.0197	0.021	0.06
782	23230		QPSK_10MHz 25RB_0offset	Toward Bottom	/	22.41	23.0	1.146	0.0196	0.022	0.07

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

Table 13.10: SAR Values (LTE Band 25-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Phantom	Fig.13	22.29	23.0	1.178	0.248	0.292	0.09
1882.5	26365		QPSK_20MHz 50RB_0offset	Toward Phantom	/	21.63	22.5	1.222	0.228	0.279	-0.08
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Ground	/	22.29	23.0	1.178	0.191	0.225	0.13
1882.5	26365		QPSK_20MHz 50RB_0offset	Toward Ground	/	21.63	22.5	1.222	0.165	0.202	-0.10
1860	26140	Band 25	QPSK_20MHz 1RB_0 offset	Toward Phantom	/	22.04	23.0	1.247	0.114	0.142	0.14
1860	26140		QPSK_20MHz 50RB_0offset	Toward Phantom	/	21.13	22.5	1.371	0.169	0.232	0.02
1905	26590	Band 25	QPSK_20MHz 1RB_0 offset	Toward Phantom	/	22.16	23.0	1.213	0.184	0.223	-0.15
1905	26590		QPSK_20MHz 50RB_0offset	Toward Phantom	Fig.14	21.2	22.5	1.349	0.235	0.317	-.012
Hotspot											
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Left	/	22.29	23.0	1.178	0.0922	0.109	0.04
1882.5	26365		QPSK_20MHz 50RB_0offset	Toward Left	/	21.63	22.5	1.222	0.0778	0.095	-0.01
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Right	/	22.29	23.0	1.178	0.0426	0.050	0.04
1882.5	26365		QPSK_20MHz 50RB_0offset	Toward Right	/	21.63	22.5	1.222	0.0425	0.052	0.06
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Bottom	/	22.29	23.0	1.178	0.124	0.146	0.06
1882.5	26365		QPSK_20MHz 50RB_0offset	Toward Bottom	/	21.63	22.5	1.222	0.102	0.125	0.14

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

Table 13.11: SAR Values (LTE Band 26-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Phantom	Fig.15	23.31	23.5.	1.045	0.251	0.262	0.06
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Phantom	Fig.16	22.25	23.5	1.334	0.199	0.265	-0.15
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Ground	/	23.31	23.5	1.045	0.249	0.260	0.05
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Ground	/	22.25	23.5.	1.334	0.195	0.260	0.12
821.5	26765	Band 26	QPSK_15MHz 1RB_0 offset	Toward Phantom	/	23.28	23.5.	1.052	0.182	0.191	0.16
821.5	26765		QPSK_15MHz 26RB_0offset	Toward Phantom	/	22.13	23.5.	1.371	0.193	0.265	0.13
841.5	26965	Band 26	QPSK_15MHz 1RB_0 offset	Toward Phantom	/	23.17	23.5.	1.079	0.234	0.252	0.02
841.5	26965		QPSK_15MHz 26RB_0offset	Toward Phantom	/	22.11	23.5.	1.377	0.192	0.264	0.13
Hotspot											
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Left	/	23.31	23.5.	1.045	0.198	0.207	-0.12
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Left	/	22.25	23.5.	1.334	0.130	0.173	0.15
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Right	/	23.31	23.5.	1.045	0.171	0.179	-0.03
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Right	/	22.25	23.5.	1.334	0.0922	0.123	0.14
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Bottom	/	23.31	23.5.	1.045	0.0253	0.026	0.13
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Bottom	/	22.25	23.5.	1.334	0.0246	0.033	-0.01

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

Table 13.12: SAR Values (LTE Band 41-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Phantom	Fig.17	22.94	23.5	1.138	0.153	0.174	0.12
2593	40620		QPSK_20MHz 50RB_0offset	Toward Phantom	/	21.96	22.5	1.132	0.136	0.154	-0.12
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Ground	/	22.94	23.5	1.138	0.138	0.157	0.14
2593	40620		QPSK_20MHz 50RB_0offset	Toward Ground	/	21.96	22.5	1.132	0.127	0.144	-0.14
2545	40140	Band 41	QPSK_20MHz 1RB_0 offset	Toward Phantom	/	22.82	23.5	1.169	0.142	0.166	-0.09
2545	40140		QPSK_20MHz 50RB_0offset	Toward Phantom	/	21.89	22.5	1.151	0.101	0.116	0.06
2645	41140	Band 41	QPSK_20MHz 1RB_0 offset	Toward Phantom	/	22.79	23.5	1.178	0.108	0.127	0.12
2645	41140		QPSK_20MHz 50RB_0offset	Toward Phantom	Fig.18	21.76	22.5	1.186	0.152	0.180	0.04
Hotspot											
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Left	/	22.94	23.5	1.138	0.144	0.164	0.12
2593	40620		QPSK_20MHz 50RB_0offset	Toward Left	/	21.96	22.5	1.132	0.129	0.146	-0.15
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Right	/	22.94	23.5	1.138	0.0441	0.050	0.03
2593	40620		QPSK_20MHz 50RB_0offset	Toward Right	/	21.96	22.5	1.132	0.0417	0.047	0.05
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Bottom	/	22.94	23.5	1.138	0.106	0.121	0.06
2593	40620		QPSK_20MHz 50RB_0offset	Toward Bottom	/	21.96	22.5	1.132	0.0965	0.109	0.01

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

Table 13.13: SAR Values (LTE Band 66-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
1745	132322	Band 66	QPSK_20MHz 1RB_0 offset	Toward Phantom	/	22.18	22.5	1.076	0.263	0.283	0.07
1745	132322		QPSK_20MHz 50RB_0offset	Toward Phantom	/	20.96	22.5	1.426	0.193	0.275	-0.12
1745	132322	Band 66	QPSK_20MHz 1RB_0 offset	Toward Ground	/	22.18	22.5	1.076	0.186	0.200	0.14
1745	132322		QPSK_20MHz 50RB_0offset	Toward Ground	/	20.96	22.5	1.426	0.135	0.193	0.13
Hotspot											
1745	132322	Band 66	QPSK_20MHz 1RB_0 offset	Toward Left	/	22.18	22.5	1.076	0.0105	0.011	0.07
1745	132322		QPSK_20MHz 50RB_0offset	Toward Left	/	20.96	22.5	1.426	0.0084	0.012	0.03
1745	132322	Band 66	QPSK_20MHz 1RB_0 offset	Toward Right	/	22.18	22.5	1.076	0.0303	0.033	-0.05
1745	132322		QPSK_20MHz 50RB_0offset	Toward Right	/	20.96	22.5	1.426	0.0248	0.035	0.11
1745	132322	Band 66	QPSK_20MHz 1RB_0 offset	Toward Bottom	/	22.18	22.5	1.076	0.363	0.391	-0.17
1745	132322		QPSK_20MHz 50RB_0offset	Toward Bottom	/	20.96	22.5	1.426	0.259	0.369	0.09
1720	132072	Band 66	QPSK_20MHz 1RB_0 offset	Toward Bottom	Fig.19	22.15	22.5	1.084	0.669	0.725	0.06
1720	132072		QPSK_20MHz 50RB_0offset	Toward Bottom	Fig.20	20.93	22.5	1.435	0.511	0.733	0.14
1770	132572	Band 66	QPSK_20MHz 1RB_0 offset	Toward Bottom	/	22.12	22.5	1.091	0.255	0.278	0.12
1770	132572		QPSK_20MHz 50RB_0offset	Toward Bottom	/	20.92	22.5	1.439	0.182	0.262	0.16

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

Table 13.14: SAR Values (CDMA BC0 1xEVDO RTAP 153.6Kbps - Body)

Frequency		Mode	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
836.52	384	CDMA BC0	Phantom	/	23.28	23.5	1.052	0.26	0.274	-0.08
836.52	384	CDMA BC0	Ground	Fig.21	23.28	23.5	1.052	0.39	0.410	-0.01
824.7	1013	CDMA BC0	Ground	/	23.29	23.5	1.05	0.385	0.404	-0.03
848.31	777	CDMA BC0	Ground	/	23.26	23.5	1.057	0.374	0.395	-0.13
Hotspot										
836.52	384	CDMA BC0	Left	/	23.28	23.5	1.052	0.225	0.237	-0.06
836.52	384	CDMA BC0	Right	/	23.28	23.5	1.052	0.115	0.121	-0.16
836.52	384	CDMA BC0	Bottom	/	23.28	23.5	1.052	0.0196	0.021	0.04

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

Table 13.15: SAR Values (CDMA BC1 1xEVDO RTAP 153.6Kbps - Body)

Frequency		Mode	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1880	600	CDMA BC1	Phantom	/	22.91	23.5	1.146	0.161	0.185	0.18
1880	600	CDMA BC1	Ground	Fig.22	22.91	23.5	1.146	0.195	0.223	0.12
1851.25	25	CDMA BC1	Ground	/	22.95	23.5	1.135	0.135	0.153	-0.16
1908.75	1175	CDMA BC1	Ground	/	22.98	23.5	1.127	0.194	0.219	0.11
Hotspot										
1880	600	CDMA BC1	Left	/	22.91	23.5	1.146	0.130	0.149	-0.07
1880	600	CDMA BC1	Right	/	22.91	23.5	1.146	0.0932	0.107	0.04
1880	600	CDMA BC1	Bottom	/	22.91	23.5	1.146	0.133	0.152	0.12

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

Table 13.16: SAR Values (Wi-Fi 802.11b - Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Duty Cycle factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
Body worn & Hotspot											
2462	11	Wi-Fi 2450	Phantom	/	13.58	14.0	1.102	1.026	0.122	0.137	0.05
2462	11	Wi-Fi 2450	Ground	Fig.23	13.58	14.0	1.102	1.026	0.172	0.195	0.11
Hotspot											
2462	11	Wi-Fi 2450	Left	/	13.58	14.0	1.102	1.026	0.0213	0.024	0.08
2462	11	Wi-Fi 2450	Right	/	13.58	14.0	1.102	1.026	0.0551	0.063	0.11
2462	11	Wi-Fi 2450	Top	/	13.58	14.0	1.102	1.026	0.083	0.093	0.12

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

13.2. SAR results for Standard procedure

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

Table 13.17: SAR Values (GSM 850 MHz Band - Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
848.8	251	GPRS (3)	Ground	Fig.1	28.72	29.0	1.067	0.275	0.293	0.10

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

Table 13.18: SAR Values (GSM 1900 MHz Band- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1909.8	810	GPRS (3)	Ground	Fig.2	25.69	26.0	1.074	0.171	0.184	-0.13

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

Table 13.19:SAR Values (WCDMA Band II- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1907.6	9538	12.2K RMC	Ground	Fig.3	22.22	22.5	1.067	0.333	0.355	-0.06

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

Table 13.20:SAR Values (WCDMA Band IV- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Hotspot										
1712.4	1537	12.2K RMC	Bottom	Fig.4	20.28	20.5	1.052	1.04	1.094	0.08
Repeated										
1712.4	1537	12.2K RMC	Bottom	Fig.5	20.28	20.5	1.052	1.05	1.105	0.05

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

Table 13.21:SAR Values (WCDMA Band V- Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
846.6	4233	12.2K RMC	Ground	Fig.6	22.44	23.0	1.138	0.344	0.391	0.07

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

Table 13.22: SAR Values (LTE Band7-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
2535	21100	Band7	QPSK_20MHz 1RB_0 offset	Toward Ground	Fig.7	22.38	23.0	1.153	0.253	0.292	-0.09
2560	21350		QPSK_20MHz 50RB_0offset	Toward Ground	Fig.8	21.61	22.0	1.094	0.217	0.237	0.13

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

Table 13.23: SAR Values (LTE Band12-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
707.5	23095	Band 12	QPSK_10MHz 1RB_0 offset	Toward Phantom	Fig.9	23.11	23.5	1.094	0.131	0.143	-0.13
711	23130		QPSK_10MHz 25RB_0offset	Toward Phantom	Fig.10	22.15	23.5	1.365	0.116	0.158	-0.11

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

Table 13.24: SAR Values (LTE Band13-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
782	23230	Band 13	QPSK_10MHz 1RB_0 offset	Toward Phantom	Fig.11	23.2	23.5	1.072	0.318	0.341	0.07
782	23230		QPSK_10MHz 25RB_0offset	Toward Phantom	Fig.12	22.41	23.0	1.146	0.332	0.380	-0.02

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

Table 13.25: SAR Values (LTE Band 25-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
1882.5	26365	Band 25	QPSK_20MHz 1RB_0 offset	Toward Phantom	Fig.13	22.29	23.0	1.178	0.248	0.292	0.09
1905	26590		QPSK_20MHz 50RB_0offset	Toward Phantom	Fig.14	21.2	22.5	1.349	0.235	0.317	-.012

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

Table 13.26: SAR Values (LTE Band 26-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
831.5	26865	Band 26	QPSK_15MHz 1RB_0 offset	Toward Phantom	Fig.15	23.31	23.5.	1.045	0.251	0.262	0.06
831.5	26865		QPSK_15MHz 26RB_0offset	Toward Phantom	Fig.16	22.25	23.5	1.334	0.199	0.265	-0.15

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

Table 13.27: SAR Values (LTE Band 41-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
Body worn & Hotspot											
2593	40620	Band 41	QPSK_20MHz 1RB_0 offset	Toward Phantom	Fig.17	22.94	23.5	1.138	0.153	0.174	0.12
2645	41140		QPSK_20MHz 50RB_0offset	Toward Phantom	Fig.18	21.76	22.5	1.186	0.152	0.180	0.04

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

Table 13.28: SAR Values (LTE Band 66-Body)

Frequency		Mode	Configuration	Test Position	Figure No.	Measured average power (dBm)	Maximum allowed Power (dBm)	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift(dB)
MHz	Ch.										
1720	132072	Band 66	QPSK_20MHz 1RB_0 offset	Toward Bottom	Fig.19	22.15	22.5	1.084	0.669	0.725	0.06
1720	132072		QPSK_20MHz 50RB_0offset	Toward Bottom	Fig.20	20.93	22.5	1.435	0.511	0.733	0.14

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

Table 13.29: SAR Values (CDMA BC0 1xEVDO RTAP 153.6Kbps - Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
836.52	384	CDMA BC0	Ground	Fig.21	23.28	23.5	1.052	0.39	0.410	-0.01

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

Table 13.30: SAR Values (CDMA BC1 1xEVDO RTAP 153.6Kbps - Body)

Frequency		Mode (number of timeslots)	Test Position	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.									
Body worn & Hotspot										
1880	600	CDMA BC1	Ground	Fig.22	22.91	23.5	1.146	0.195	0.223	0.12

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

Table 13.31: SAR Values (Wi-Fi 802.11b - Body)

Frequency		Mode (number of timeslots)	Test Positio n	Figure No.	Measured average power(dBm)	Maximum allowed Power (dBm	Scaling factor	Duty Cycle factor	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
MHz	Ch.										
Body worn & Hotspot											
2462	11	Wi-Fi 2450	Ground	Fig.23	13.58	14.0	1.102	1.026	0.172	0.195	0.11

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

14. Evaluation of Simultaneous

Table 14.1: Summary of Transmitters

Band/Mode	Frequency (GHz)	SAR test exclusion threshold(mW)	RF output power (mW)
Bluetooth	2.41	10	3.981
2.4GHz WLAN 802.11 b/g/n	2.45	10	25.12

Table14.2 Simultaneous transmission SAR

Standalone SAR for 2G(W/Kg)				
Test Position		GSM 850	GSM 1900	Highest SAR
Body worn/ Hotspot10mm	Phantom Side	0.231	0.136	0.231
	Ground Side	0.293	0.184	0.293
Hotspot 10mm	Left Side	0.247	0.082	0.247
	Right Side	0.169	0.037	0.169
	Bottom Side	0.047	0.113	0.113
	Top Side	--	--	--

Standalone SAR for 3G (W/Kg)					
Test Position		WCDMA Band II	WCDMA Band IV	WCDMA Band V	Highest SAR
Body worn/ Hotspot10mm	Phantom Side	0.253	0.541	0.269	0.269
	Ground Side	0.355	0.379	0.391	0.391
Hotspot 10mm	Left Side	0.177	0.100	0.277	0.277
	Right Side	0.155	0.026	0.191	0.191
	Bottom Side	0.168	1.094	0.040	1.094
	Top Side	--	--	--	--

Standalone SAR for 4G (W/Kg)									
Test Position		LTE Band 7	LTE Band 12	LTE Band 13	LTE Band 25	LTE Band 26	LTE Band 41	LTE Band 66	Highest SAR
Body worn/ Hotspot10mm	Phantom Side	0.186	0.158	0.380	0.317	0.265	0.180	0.283	0.380
	GroundSide	0.292	0.121	0.367	0.225	0.260	0.157	0.200	0.367
Hotspot 10mm	Left Side	0.234	0.051	0.303	0.109	0.207	0.164	0.012	0.303
	Right Side	0.073	0.095	0.275	0.052	0.179	0.050	0.035	0.275
	Bottom Side	0.133	0.012	0.022	0.146	0.033	0.121	0.733	0.733
	Top Side	--	--	--	--	--	--	--	--

Standalone SAR for CDMA(W/Kg)				
Test Position		CDMA BC0	CDMA BC1	Highest SAR
Body worn/ Hotspot10mm	Phantom Side	0.274	0.185	0.274
	Ground Side	0.410	0.223	0.410
Hotspot 10mm	Left Side	0.237	0.149	0.237
	Right Side	0.121	0.107	0.121
	Bottom Side	0.021	0.152	0.152
	Top Side	--	--	--

Transmission SAR(W/Kg)								
Test Position		2G	3G	4G	CDMA	2.4G WIFI	BT	SUM
Body worn/ Hotspot10mm	Phantom Side	0.231	0.269	0.380	0.274	0.137	0.084	0.517
	Ground Side	0.293	0.391	0.367	0.410	0.195	0.084	0.605
Hotspot 10mm	Left Side	0.247	0.277	0.303	0.237	0.024	0.084	0.387
	Right Side	0.169	0.191	0.275	0.121	0.063	0.084	0.359
	Bottom Side	0.113	1.105	0.733	0.152	--	0.084	1.189
	Top Side	--	--	--	--	0.093	0.084	0.093

According to the conducted power measurement result, we can draw the conclusion that: stand-alone SAR for WiFi should be performed. Then, simultaneous transmission SAR for WiFi/BT is considered with measurement results of GSM/WCDMA/LTE/CDMA and WiFi/BT. According to the above table, the sum of reported SAR values for GSM/WCDMA/LTE/CDMA and WiFi<1.6W/kg. So the simultaneous transmission SAR is not required for WiFi/BT transmitter.

15. SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.
The following procedures are applied to determine if repeated measurements are required.
1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

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

Frequency		Configuration	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio
MHz	Ch.					
1712.4	1537	12.2K RMC	Bottom	1.04	1.05	1.01

Note: According to the KDB 865664 D01repeated measurement is not required when the original highest measured SAR is < 0.8 W/kg.

16. Measurement Uncertainty

Measurement uncertainty for 750 MHz to 3 GHz averaged over 1 gram						
Uncertainty Component	Uncertainty	Prob.	Div.	$c_{i\ (1g)}$	Std. Unc. (1-g)	v_i or Veff
Measurement System						
Probe Calibration (k=1)	5.4	Normal	2	1	5.40	∞
Probe Isotropy	4.70	Rectangular	√3	0.7	1.90	∞
Modulation Response	2.40	Rectangular	√3	1	1.39	∞
Hemispherical Isotropy	2.60	Rectangular	√3	0.7	1.05	∞
Boundary Effect	1.00	Rectangular	√3	1	0.58	∞
Linearity	4.70	Rectangular	√3	1	2.71	∞
System Detection Limit	1.00	Rectangular	√3	1	0.58	∞
Readout Electronics	0.30	Normal	1	1	0.30	∞
Response Time	0.80	Rectangular	√3	1	0.46	∞
Integration Time	2.60	Rectangular	√3	1	1.50	∞
RF Ambient Noise	0.00	Rectangular	√3	1	0.00	∞
RF Ambient Reflections	0.00	Rectangular	√3	1	0.00	∞
Probe Positioner	0.40	Rectangular	√3	1	0.23	∞
Probe Positioning	2.90	Rectangular	√3	1	1.67	∞
Post-processing	1.00	Rectangular	√3	1	0.58	∞
Test sample Related						
Test sample Positioning	1.2	Normal	1	1	1.2	5
Device Holder Uncertainty	3.2	Normal	1	1	3.2	71
Power drift	5	Rectangular	√3	1	2.89	∞
Power Scaling	0	Rectangular	√3	1	0.00	∞
Phantom and Tissue Parameters						
Phantom Uncertainty	4	Rectangular	√3	1	2.31	∞
SAR correction	1.9	Rectangular	√3	1	1.10	∞
Liquid Conductivity (meas)	4.19	Rectangular	1	0.78	3.27	∞
Liquid Permittivity (meas)	4.4	Rectangular	1	0.26	1.14	∞
Temp. unc. - Conductivity	0.18	Rectangular	√3	0.78	0.08	∞
Temp. unc. - Permittivity	0.54	Rectangular	√3	0.23	0.07	∞
Combined Std. Uncertainty		RSS			9.39	
Expanded STD Uncertainty		k=2			18.77%	

System check uncertainty for 750 MHz to 3 GHz averaged over 1 gram						
Uncertainty Component	Uncertainty	Prob.	Div.	$c_{i\ (1g)}$	Std. Unc. (1-g)	v_i or Veff
Measurement System						
Probe Calibration (k=1)	5.40	Normal	1	1	5.40	∞
Probe Isotropy	4.70	Rectangular	√3	0.7	1.90	∞
Modulation Response	2.40	Rectangular	√3	1	1.39	∞
Hemispherical Isotropy	2.60	Rectangular	√3	0.7	1.05	∞
Boundary Effect	1.00	Rectangular	√3	1	0.58	∞
Linearity	4.70	Rectangular	√3	1	2.71	∞
System Detection Limit	1.00	Rectangular	√3	1	0.58	∞
Readout Electronics	0.30	Normal	1	1	0.30	∞
Response Time	0.80	Rectangular	√3	1	0.46	∞
Integration Time	2.60	Rectangular	√3	1	1.50	∞
RF Ambient Noise	0.00	Rectangular	√3	1	0.00	∞
RF Ambient Reflections	0.00	Rectangular	√3	1	0.00	∞
Probe Positioner	0.40	Rectangular	√3	1	0.23	∞
Probe Positioning	2.90	Rectangular	√3	1	1.67	∞
Post-processing	1.00	Rectangular	√3	1	0.58	∞
Field source						
Deviation of the experimental source from numerical source	5.5	Normal	1	1	5.5	∞
Source to liquid distance	2	Rectangular	√3	1	1.15	∞
Power drift	5	Rectangular	√3	1	2.89	∞
Phantom and Tissue Parameters						
Phantom Uncertainty	4	Rectangular	√3	1	2.31	∞
SAR correction	1.9	Rectangular	√3	1	1.10	∞
Liquid Conductivity (meas)	4.19	Normal	1	0.78	3.27	∞
Liquid Permittivity (meas)	4.4	Normal	1	0.26	1.14	∞
Temp. unc. - Conductivity	0.18	Rectangular	√3	0.78	0.08	∞
Temp. unc. - Permittivity	0.54	Rectangular	√3	0.23	0.07	∞
Combined Std. Uncertainty		RSS			10.39	
Expanded STD Uncertainty		k=2			20.79%	

17. Main Test Instrument

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5242A	MY51221755	Dec 25, 2017	1 year
02	Power meter	NRVD	102257	May 11, 2017	1 year
03	Power sensor	NRV-Z5	100241		
			100644		
04	Signal Generator	E4438C	MY49072044	May 11, 2017	1 Year
05	Amplifier	NTWPA-0086010F	12023024	No Calibration Requested	
06	Coupler	778D	MY4825551	May 11, 2017	1 year
07	BTS	E5515C	MY50266468	Dec 25, 2017	1 year
08	BTS	MT8820C	6201240338	May 11, 2017	1 year
09	E-field Probe	ES3DV3	3252	Aug 31, 2017	1 year
		EX3DV4	7350	Dec 2, 2017	1 year
10	DAE	SPEAG DAE4	1244	Dec 4,2017	1 year
11	Dipole Validation Kit	SPEAG D750V3	1144	Aug 03,2015	3 year
		SPEAG D835V2	4d112	Oct 22, 2015	3 year
		SPEAG D1750V2	1044	Nov. 3,2015	3 year
		SPEAG D1900V2	5d018	June 28,2017	1 year
		SPEAG D2450V2	858	Oct 30,2015	3 year
		SPEAG D2600V2	1031	Oct 30,2015	3 year

ANNEX A. GRAPH RESULTS

GPRS 850 3TX Ground Mode High

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used: f = 849 MHz; σ = 1.011 S/m; ε_r = 56.563; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: GSM 850MHz GPRS 3TS (0); Frequency: 848.8 MHz;
Duty Cycle: 1:2.77
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017
GPRS 850 3TX Ground Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.292 W/kg
GPRS 850 3TX Ground Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.10 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.336 W/kg
SAR(1 g) = 0.275 W/kg; SAR(10 g) = 0.208 W/kg
Maximum value of SAR (measured) = 0.290 W/kg

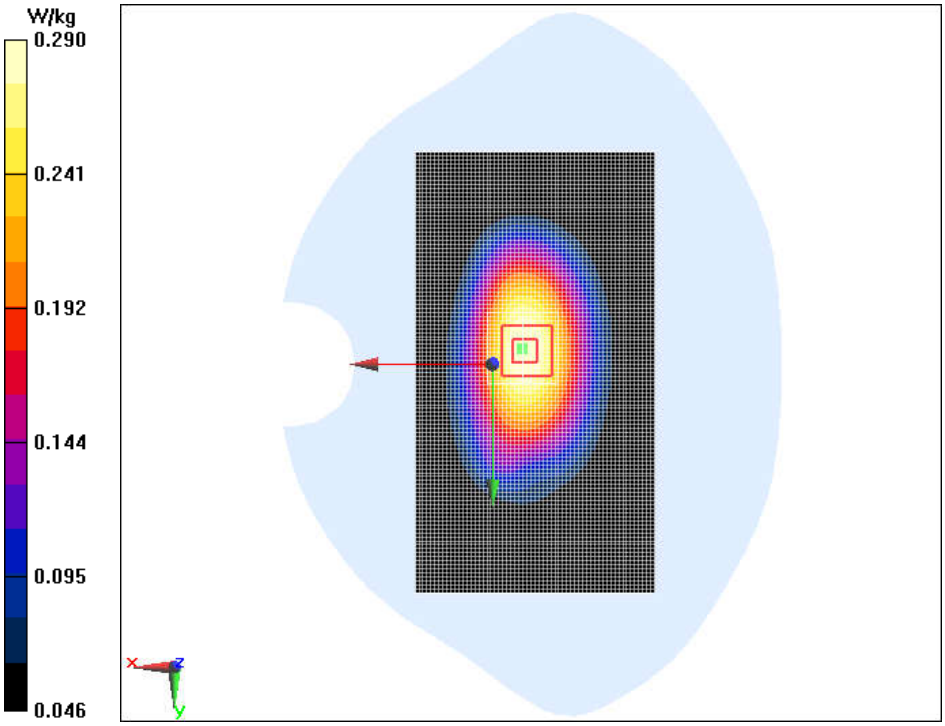


Fig.1 GPRS 850 3TX Ground Mode High

GPRS 1900 3TX Ground Mode High

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used: f = 1910 MHz; σ = 1.513 S/m; ε_r = 54.857; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: GSM 1900MHz GPRS 3TS (0); Frequency: 1909.8 MHz; Duty Cycle: 1:2.77
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017

GPRS 1900 3TX Ground Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.188 W/kg

GPRS 1900 3TX Ground Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.301 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.171 W/kg; SAR(10 g) = 0.107 W/kg
Maximum of SAR (measured) = 0.185 W/kg

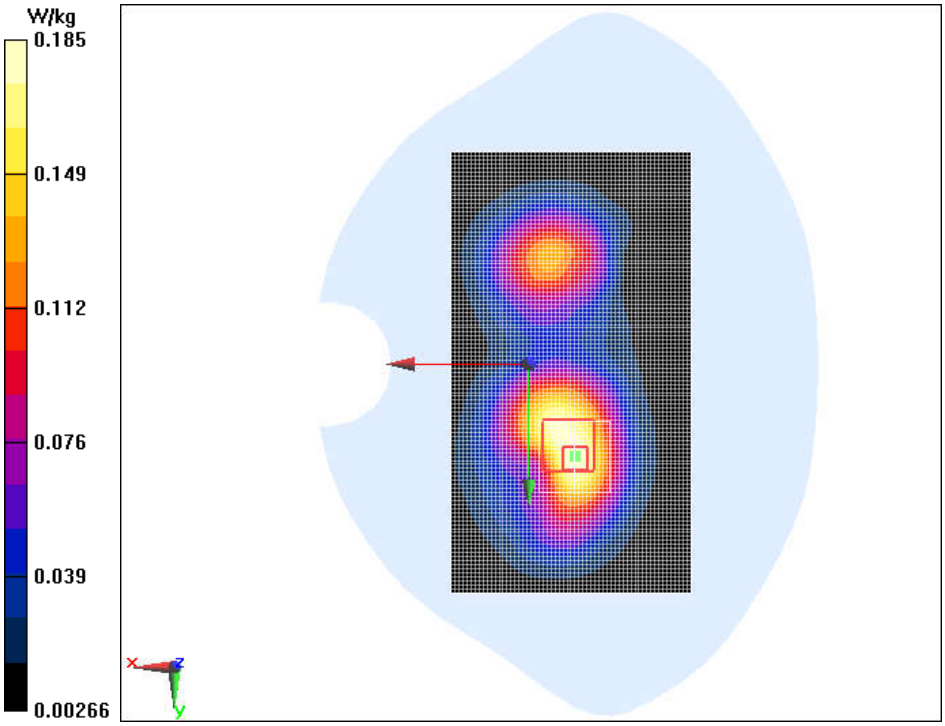


Fig.2 GPRS 1900 3TX Ground Mode High

WCDMA Band 2 Ground Mode High

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used: f = 1908 MHz; σ = 1.511 S/m; ε_r = 54.863; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: WCDMA Professional Band Ⅱ; Frequency: 1907.6 MHz;
Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017
WCDMA Band 2 Ground Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.383 W/kg
WCDMA Band 2 Ground Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.729 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.333 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 0.355 W/kg

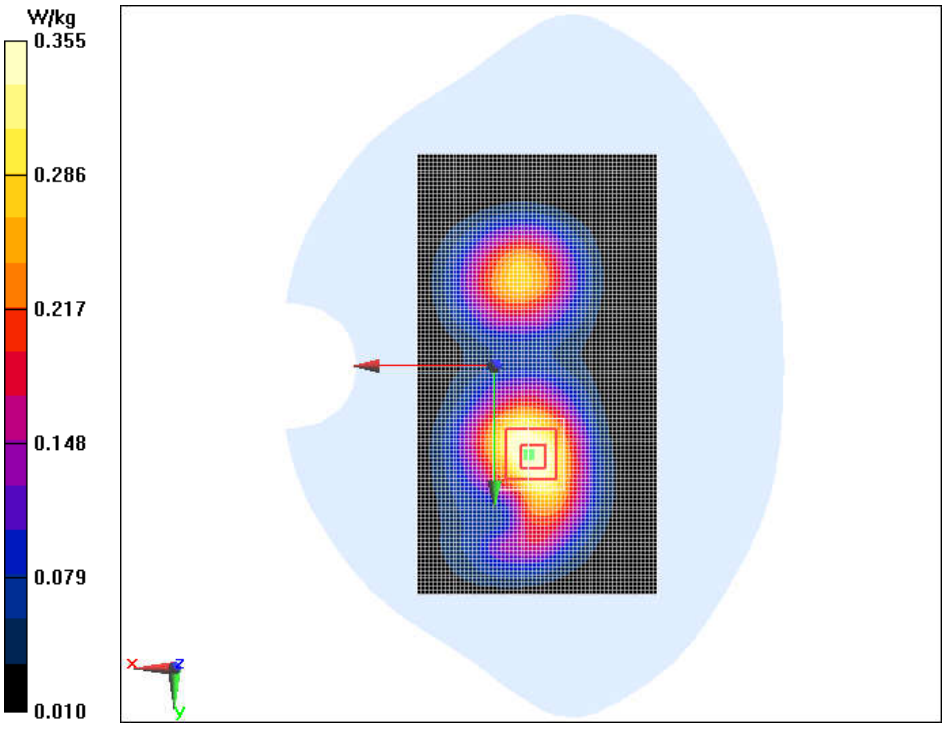


Fig.3 WCDMA Band 2 Ground Mode High

WCDMA Band 4 Bottom Mode Low

Date/Time: 2018/3/16
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.475 S/m; ε_r = 55.244; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: WCDMA Professional 1800MHz; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.95, 4.95, 4.95); Calibrated: 8/31/2017
WCDMA Band 4 Bottom Mode Low/Area Scan (51x71x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 1.26 W/kg
WCDMA Band 4 Bottom Mode Low/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.05 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.535 W/kg
Maximum value of SAR (measured) = 1.16 W/kg

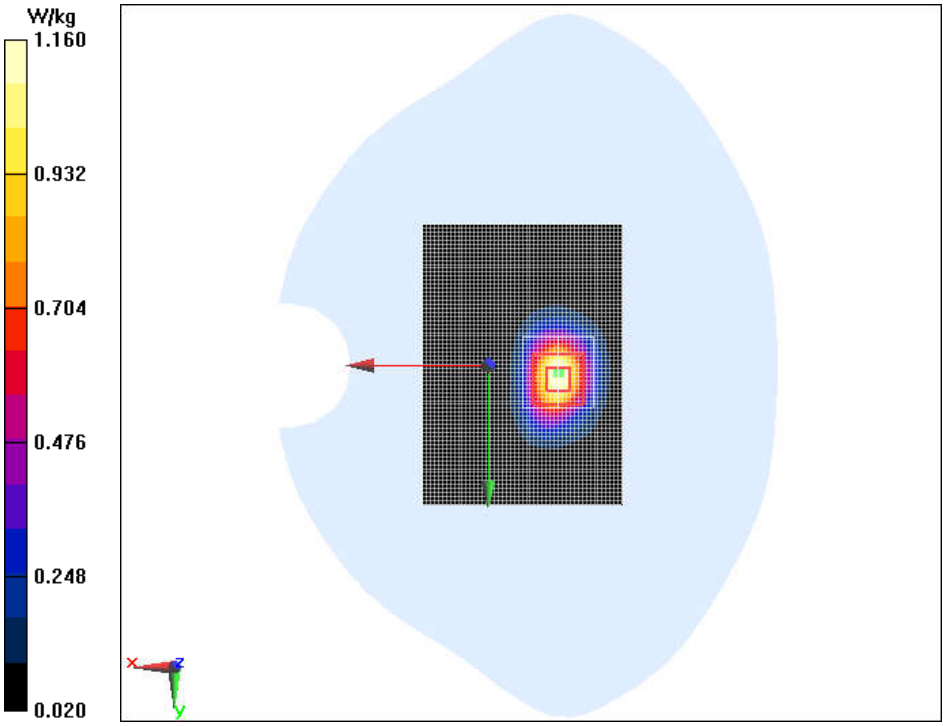


Fig.4 WCDMA Band 4 Bottom Mode Low

WCDMA Band 4 Bottom Mode Low repeated

Date/Time: 2018/3/16
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.475 S/m; ε_r = 55.244; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: WCDMA Professional 1800MHz; Frequency: 1712.4 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.95, 4.95, 4.95); Calibrated: 8/31/2017
WCDMA Band 4 Bottom Mode Low repeated/Area Scan (51x71x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 1.27 W/kg
WCDMA Band 4 Bottom Mode Low repeated/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.32 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.543 W/kg
Maximum value of SAR (measured) = 1.18 W/kg

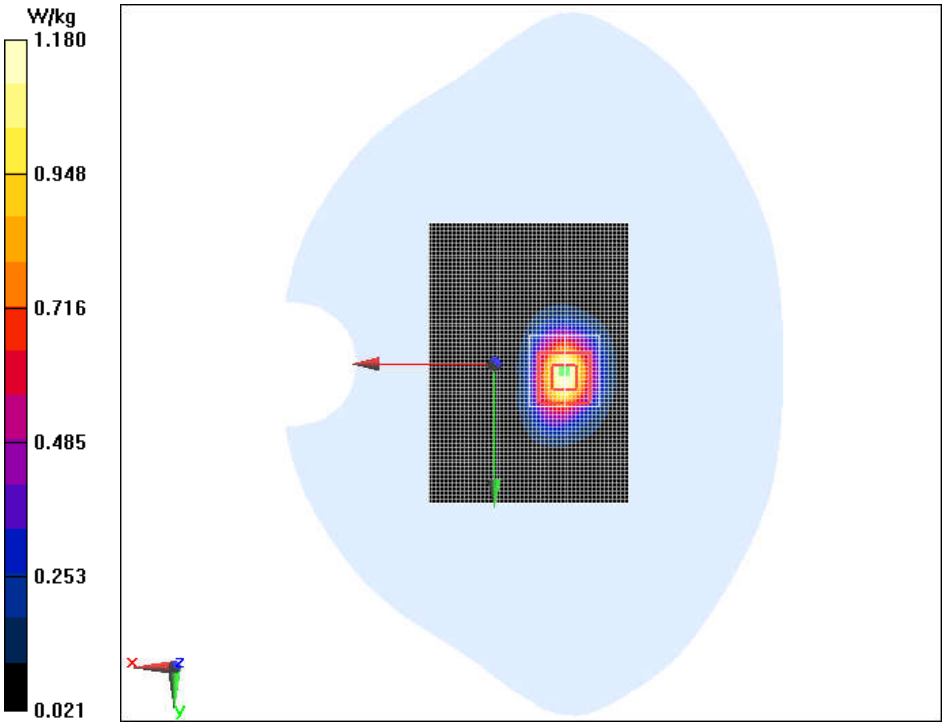


Fig.5 WCDMA Band 4 Bottom Mode Low repeated

WCDMA Band5 Ground Mode High

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used: f = 847 MHz; σ = 1.01 S/m; ε_r = 56.582; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: WCDMA Professional Band Ⅴ; Frequency: 846.6 MHz;
Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017
WCDMA Band5 Ground Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.378 W/kg
WCDMA Band5 Ground Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.30 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.420 W/kg
SAR(1 g) = 0.344 W/kg; SAR(10 g) = 0.260 W/kg
Maximum value of SAR (measured) = 0.362 W/kg

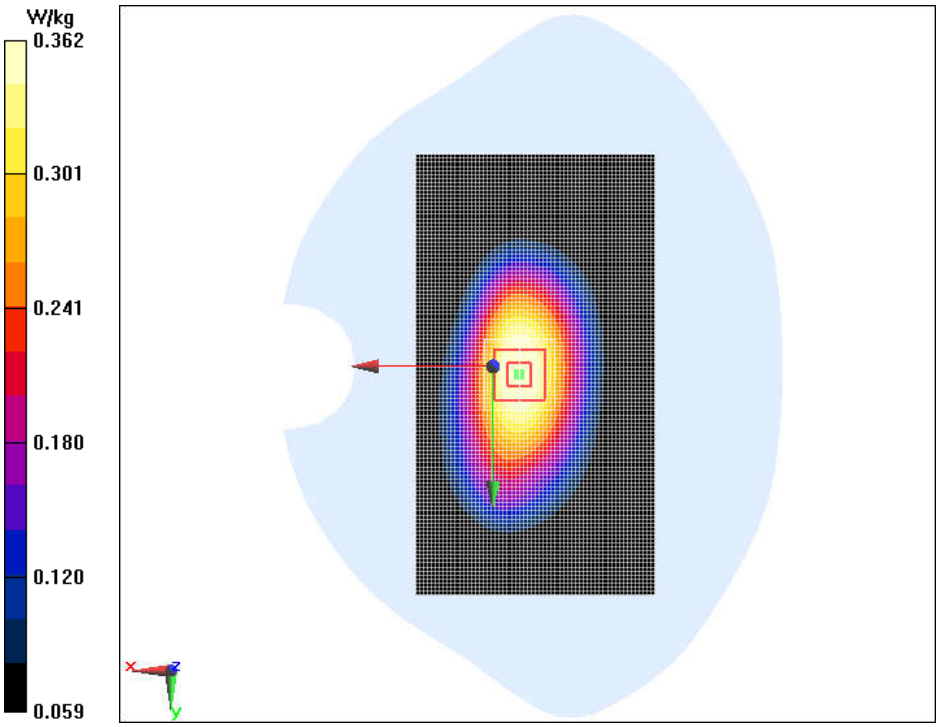


Fig.6 WCDMA Band5 Ground Mode High

LTE Band 7 20M 1RB 0 offset Ground Mode Middle

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2535 MHz; σ = 2.005 S/m; ε_r = 53.086; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 7 Professional 2600MHz; Frequency: 2535 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.42, 4.42, 4.42); Calibrated: 8/31/2017

LTE Band 7 20M 1RB 0 offset Ground Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.285 W/kg

LTE Band 7 20M 1RB 0 offset Ground Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.113 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.497 W/kg
SAR(1 g) = 0.253 W/kg; SAR(10 g) = 0.128 W/kg
Maximum value of SAR (measured) = 0.286 W/kg

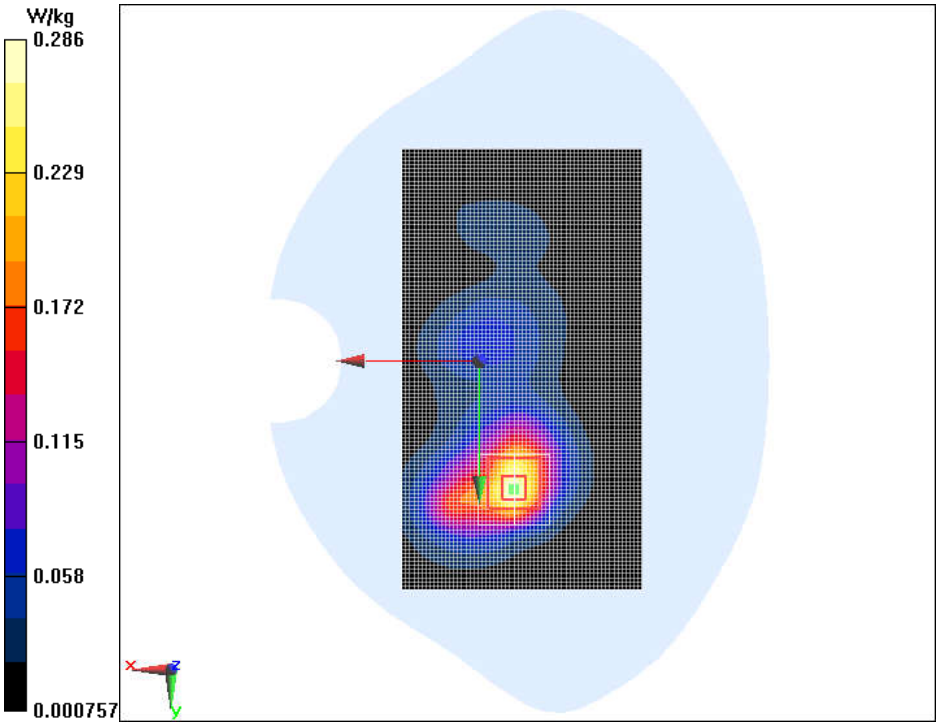


Fig.7 LTE Band 7 20M 1RB 0 offset Ground Mode Middle

LTE Band 7 20M 50RB 0 offset Ground Mode High

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2560 MHz; σ = 2.039 S/m; ε_r = 52.994; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 7 Professional 2600MHz; Frequency: 2560 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.22, 4.22, 4.22); Calibrated: 8/31/2017

LTE Band 7 20M 50RB 0 offset Ground Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.262 W/kg

LTE Band 7 20M 50RB 0 offset Ground Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.855 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.413 W/kg
SAR(1 g) = 0.217 W/kg; SAR(10 g) = 0.112 W/kg
Maximum value of SAR (measured) = 0.243 W/kg

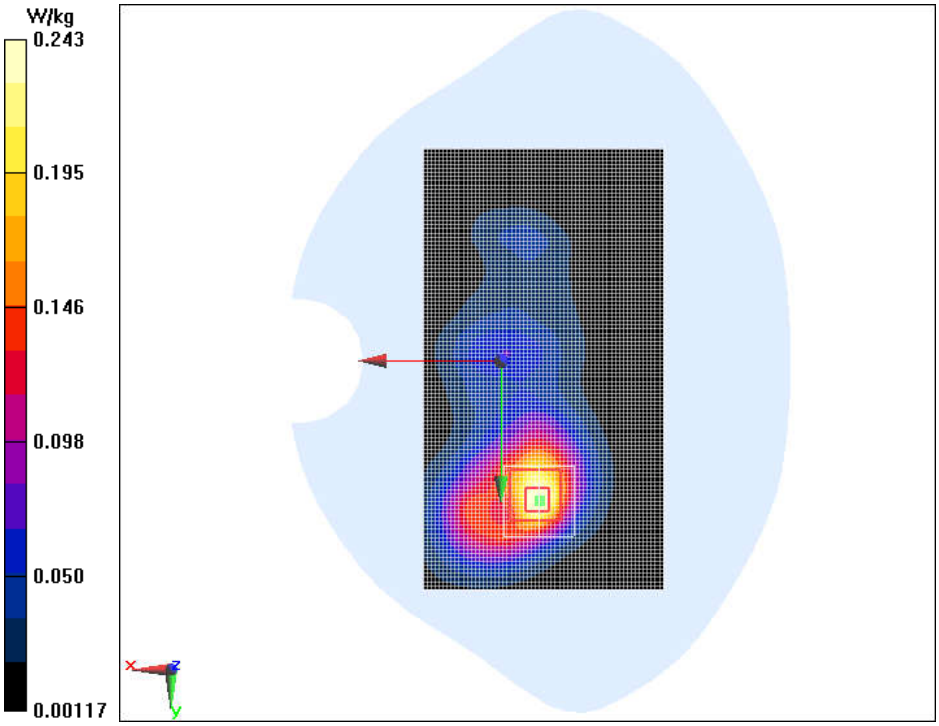


Fig.8 LTE Band 7 20M 50RB 0 offset Ground Mode High

LTE Band 12 10M 1RB 0offset Phantom Mode Middle

Date/Time: 2018/3/15
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.974 S/m; ε_r = 58.158; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 12 Professional 750MHz; Frequency: 707.5 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.34, 6.34, 6.34); Calibrated: 8/31/2017

LTE Band 12 10M 1RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.137 W/kg

LTE Band 12 10M 1RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.58 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.163 W/kg
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.101 W/kg
Maximum value of SAR (measured) = 0.136 W/kg

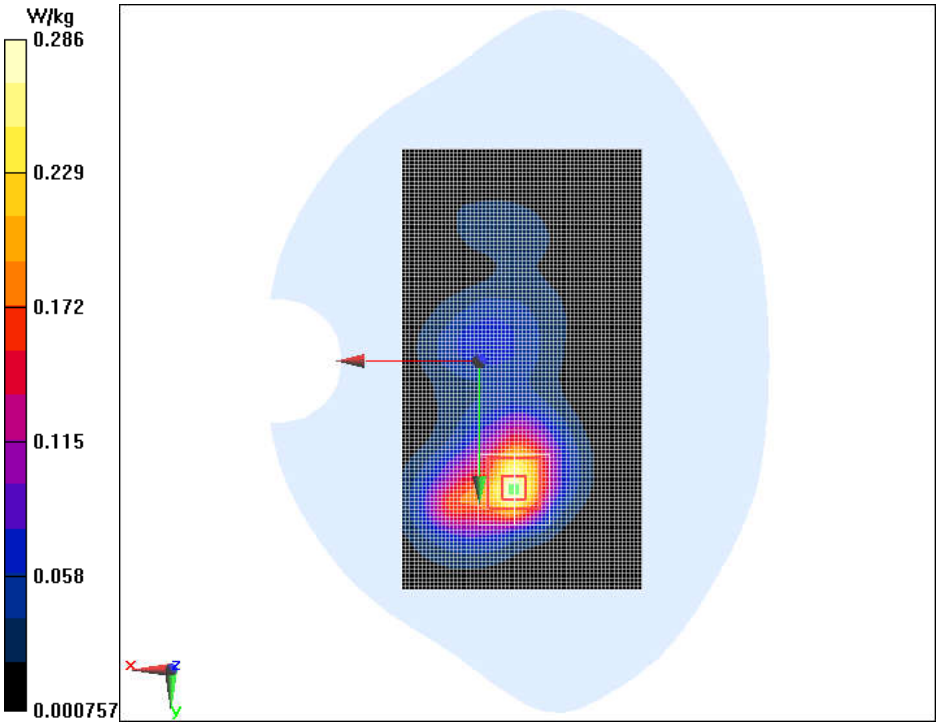


Fig.9 LTE Band 12 10M 1RB 0offset Phantom Mode Middle

LTE Band 12 10M 25RB 0offset Phantom Mode High

Date/Time: 2018/3/15
Electronics: DAE4 Sn1244
Medium parameters used: f = 711 MHz; σ = 0.977 S/m; ε_r = 58.104; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 12 Professional 750MHz; Frequency: 711 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.34, 6.34, 6.34); Calibrated: 8/31/2017
LTE Band 12 10M 25RB 0offset Phantom Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.124 W/kg
LTE Band 12 10M 25RB 0offset Phantom Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.05 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.144 W/kg
SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.089 W/kg
Maximum value of SAR (measured) = 0.122 W/kg

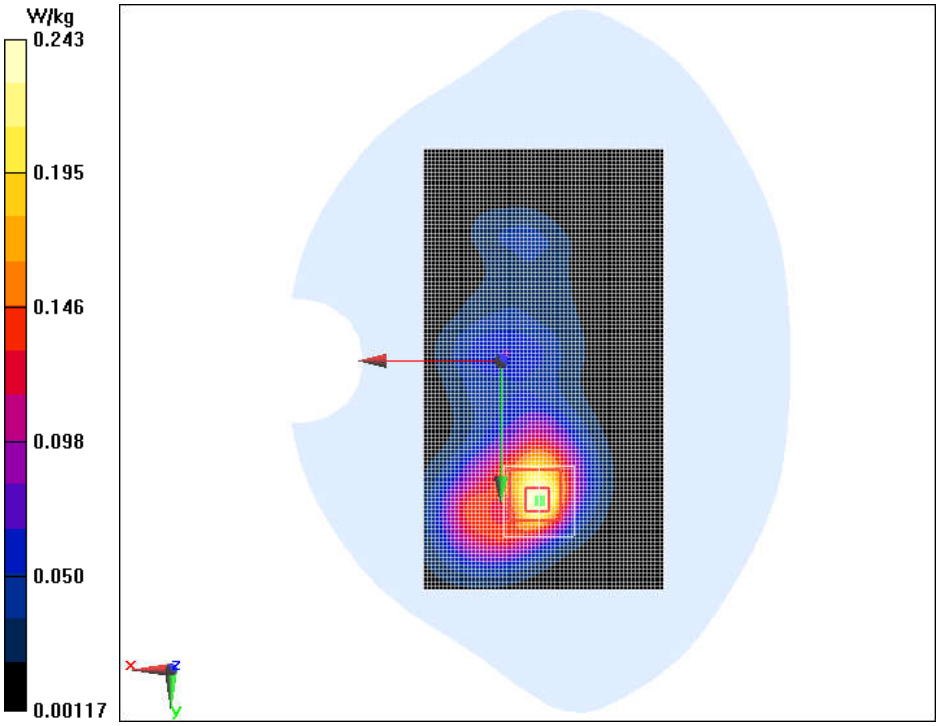


Fig.10 LTE Band 12 10M 25RB 0offset Phantom Mode High

LTE Band 13 10M 1RB 0offset Phantom Mode Middle

Date/Time: 2018/3/15
Electronics: DAE4 Sn1244
Medium parameters used: f = 782 MHz; σ = 1.002 S/m; ε_r = 57.272; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 13 Professional 750MHz; Frequency: 782 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.34, 6.34, 6.34); Calibrated: 8/31/2017
LTE Band 13 10M 1RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.334 W/kg
LTE Band 13 10M 1RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.43 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.318 W/kg; SAR(10 g) = 0.241 W/kg
Maximum value of SAR (measured) = 0.334 W/kg

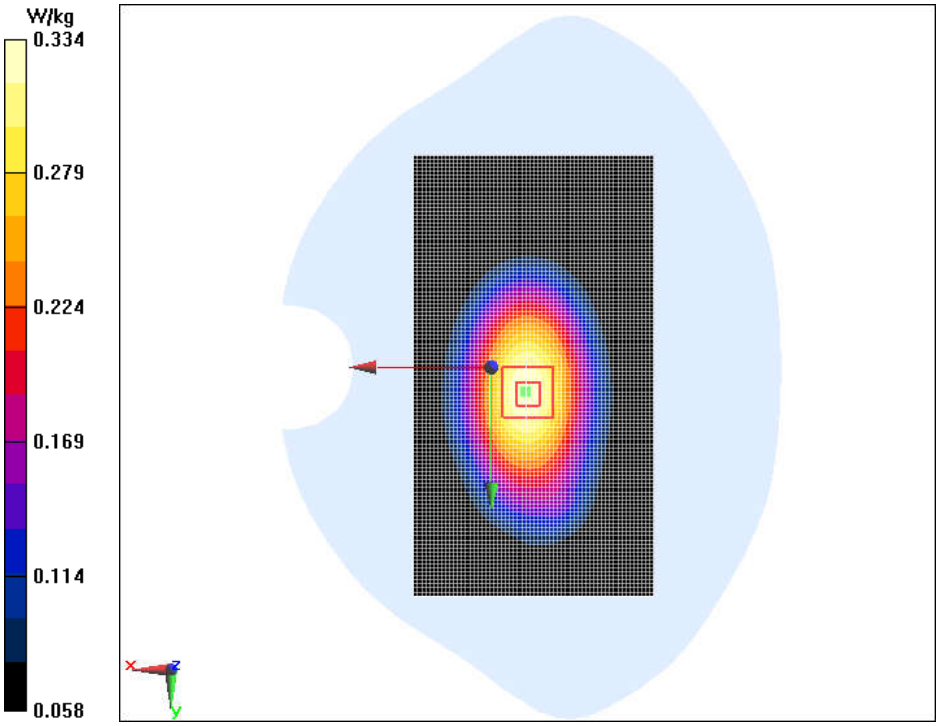


Fig.11 LTE Band 13 10M 1RB 0offset Phantom Mode Middle

LTE Band 13 10M 25RB 0offset Phantom Mode Middle

Date/Time: 2018/3/15
Electronics: DAE4 Sn1244
Medium parameters used: f = 782 MHz; σ = 1.002 S/m; ε_r = 57.272; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 13 Professional 750MHz; Frequency: 782 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.34, 6.34, 6.34); Calibrated: 8/31/2017
LTE Band 13 10M 25RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.342 W/kg
LTE Band 13 10M 25RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.78 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.332 W/kg; SAR(10 g) = 0.250 W/kg
Maximum value of SAR (measured) = 0.349 W/kg

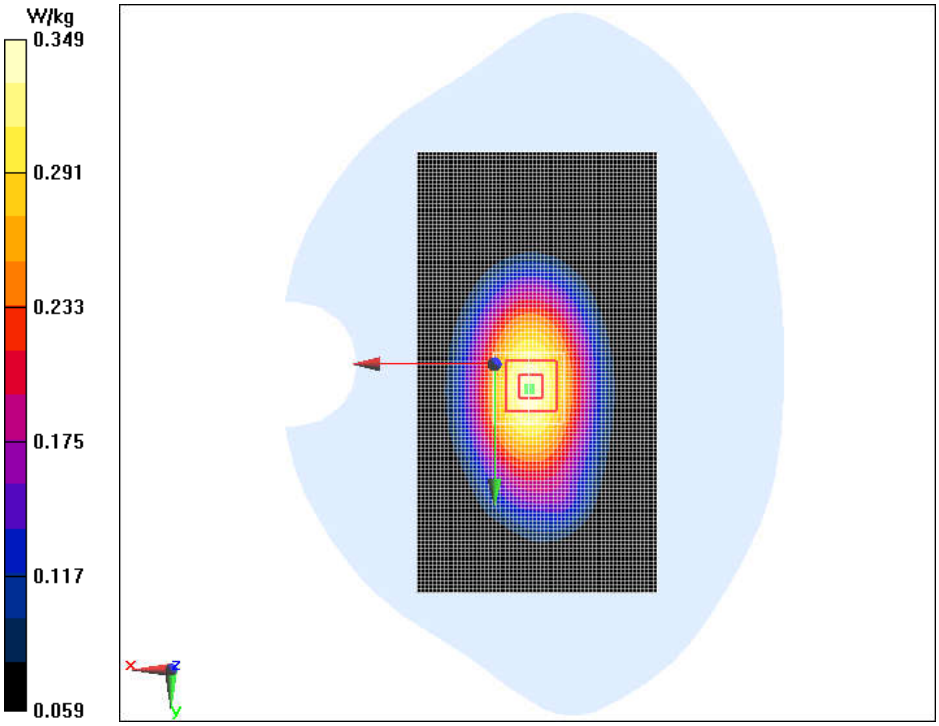


Fig.12 LTE Band 13 10M 25RB 0offset Phantom Mode Middle

LTE Band 25 20M 1RB 0offset Phantom Mode Middle

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 1882.5 MHz; σ = 1.583 S/m; ε_r = 54.886; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 25 Professional 1900MHz; Frequency: 1882.5 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017
LTE Band 25 20M 1RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.250 W/kg
LTE Band 25 20M 1RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.548 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.427 W/kg
SAR(1 g) = 0.248 W/kg; SAR(10 g) = 0.131 W/kg
Maximum of SAR (measured) = 0.278 W/kg

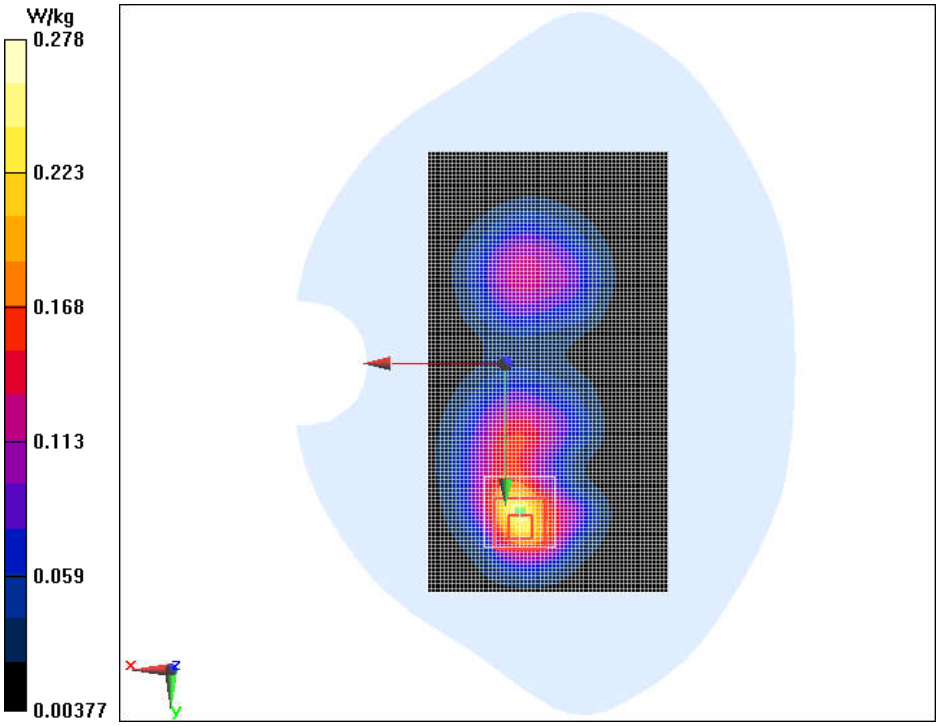


Fig.13 LTE Band 25 20M 1RB 0offset Phantom Mode Middle

LTE Band 25 20M 50RB 0offset Phantom Mode High

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used: f = 1905 MHz; σ = 1.507 S/m; ε_r = 54.865; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 25 Professional 1900MHz; Frequency: 1905 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017

LTE Band 25 20M 50RB 0offset Phantom Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.225 W/kg

LTE Band 25 20M 50RB 0offset Phantom Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.173 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.381 W/kg
SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.129 W/kg
Maximum value of SAR (measured) = 0.267 W/kg

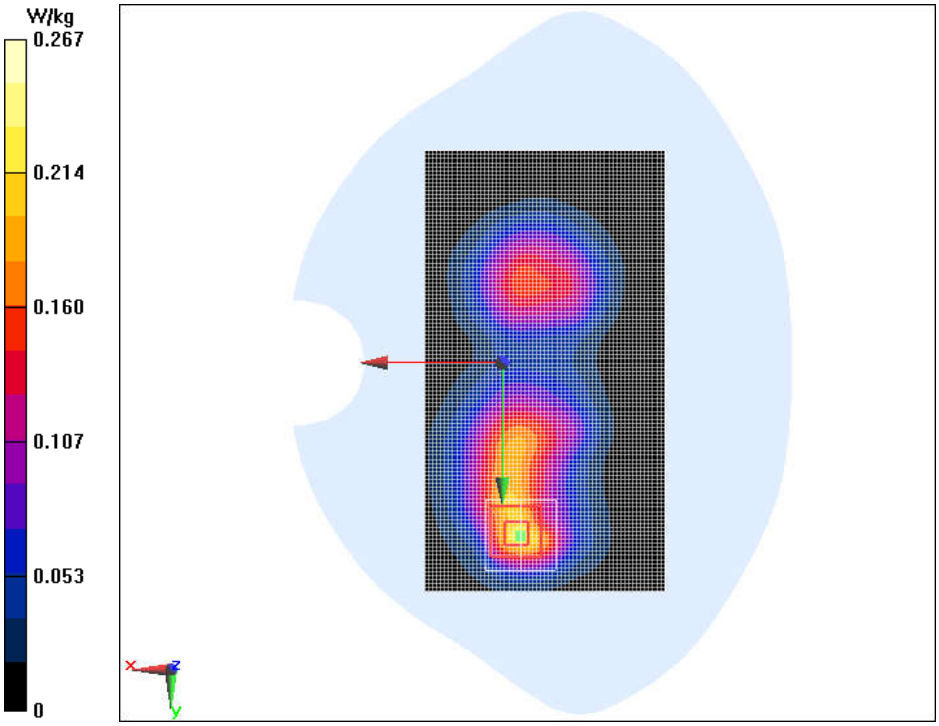


Fig.14 LTE Band 25 20M 50RB 0offset Phantom Mode High

LTE Band 26 15M 1RB 0offset Phantom Mode Middle

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.995 S/m; ε_r = 56.742; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 26 Professional 850MHz; Frequency: 831.5 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017

LTE Band 26 15M 1RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.264 W/kg

LTE Band 26 15M 1RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.19 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.313 W/kg
SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.188 W/kg
Maximum value of SAR (measured) = 0.263 W/kg

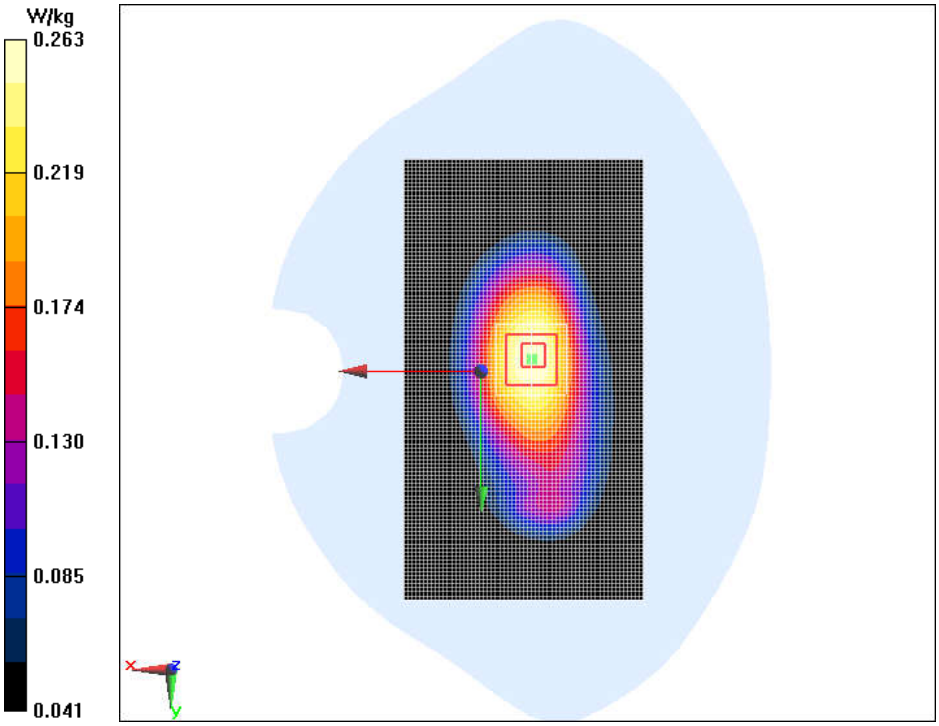


Fig.15 LTE Band 26 15M 1RB 0offset Phantom Mode Middle

LTE Band 26 15M 36RB 0offset Phantom Mode Middle

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.995 S/m; ε_r = 56.742; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 26 Professional 850MHz; Frequency: 831.5 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017

LTE Band 26 15M 36RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.218 W/kg

LTE Band 26 15M 36RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.39 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.248 W/kg
SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.148 W/kg
Maximum value of SAR (measured) = 0.211 W/kg

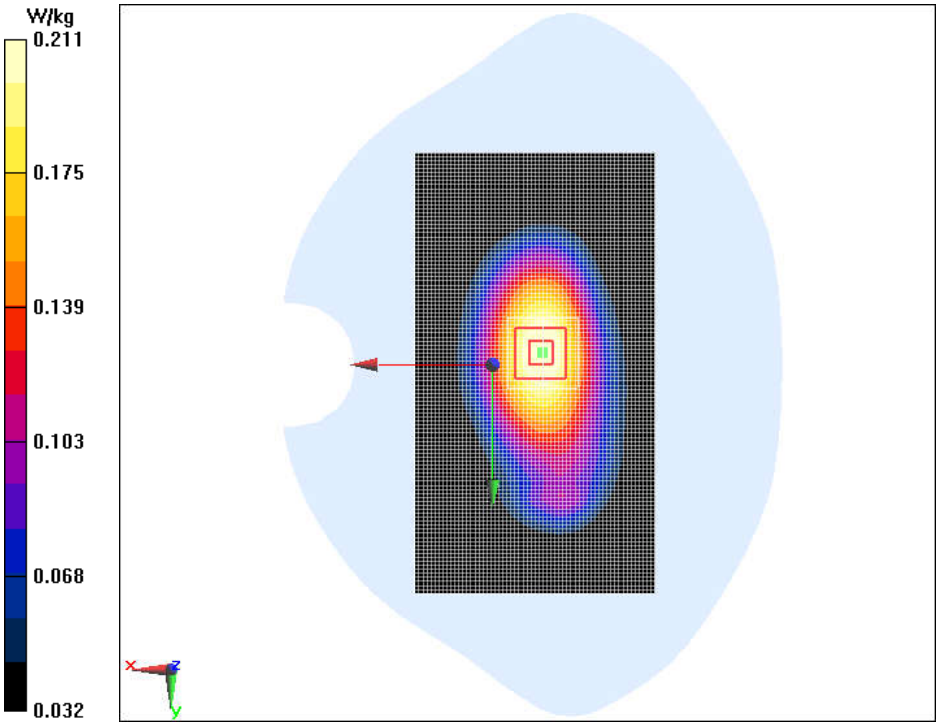


Fig.16 LTE Band 26 15M 36RB 0offset Phantom Mode Middle

LTE Band 41 20M 1RB 0offset Phantom Mode Middle

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2593 MHz; σ = 2.075 S/m; ε_r = 52.885; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 41 Professional 2600MHz; Frequency: 2593 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.22, 4.22, 4.22); Calibrated: 8/31/2017
LTE Band 41 20M 1RB 0offset Phantom Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.162 W/kg
LTE Band 41 20M 1RB 0offset Phantom Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.641 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.315 W/kg
SAR(1 g) = 0.153 W/kg; SAR(10 g) = 0.073 W/kg
Maximum value of SAR (measured) = 0.170 W/kg

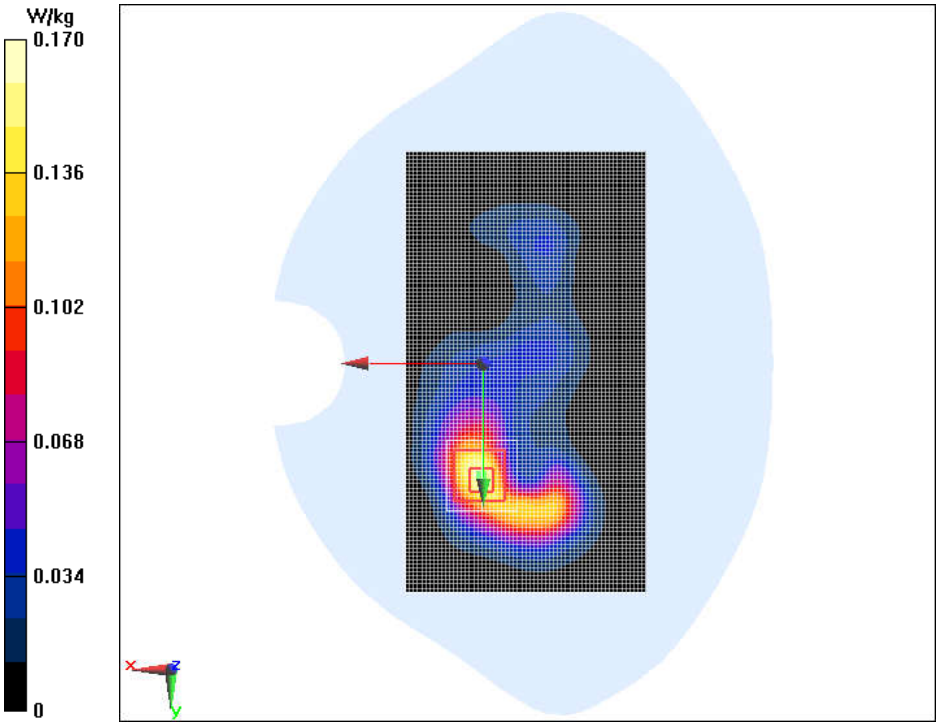


Fig.17 LTE Band 41 20M 1RB 0offset Phantom Mode Middle

LTE Band 41 20M 50RB 0offset Phantom Mode High

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2645 MHz; σ = 2.136 S/m; ε_r = 52.687; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 41 Professional nonstandard 2600MHz;
Frequency: 2645 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.22, 4.22, 4.22); Calibrated: 8/31/2017
LTE Band 41 20M 50RB 0offset Phantom Mode High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.186 W/kg
LTE Band 41 20M 50RB 0offset Phantom Mode High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.377 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.329 W/kg
SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.065 W/kg
Maximum value of SAR (measured) = 0.158 W/kg

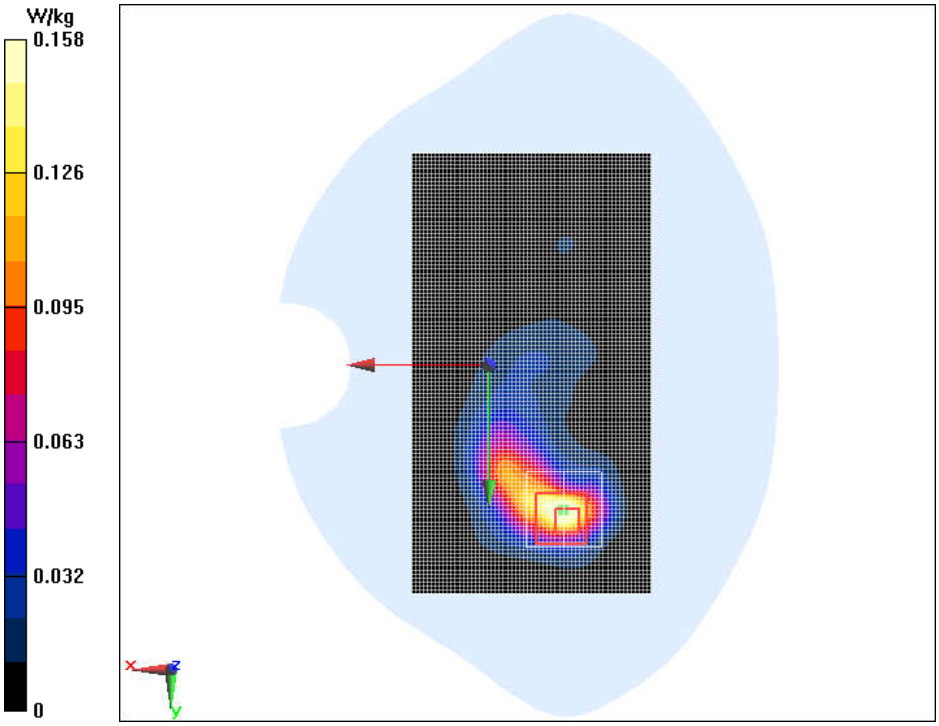


Fig.18 LTE Band 41 20M 50RB 0offset Phantom Mode High

LTE Band 66 20M 1RB 0offset Bottom Mode Low

Date/Time: 2018/3/16
Electronics: DAE4 Sn1244
Medium parameters used: f = 1720 MHz; σ = 1.483 S/m; ε_r = 55.221; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 66 Professional 1800MHz; Frequency: 1720 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.95, 4.95, 4.95); Calibrated: 8/31/2017
LTE Band 66 20M 1RB 0offset Bottom Mode Low/Area Scan (51x71x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.759 W/kg
LTE Band 66 20M 1RB 0offset Bottom Mode Low/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.02 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.669 W/kg; SAR(10 g) = 0.347 W/kg
Maximum value of SAR (measured) = 0.751 W/kg

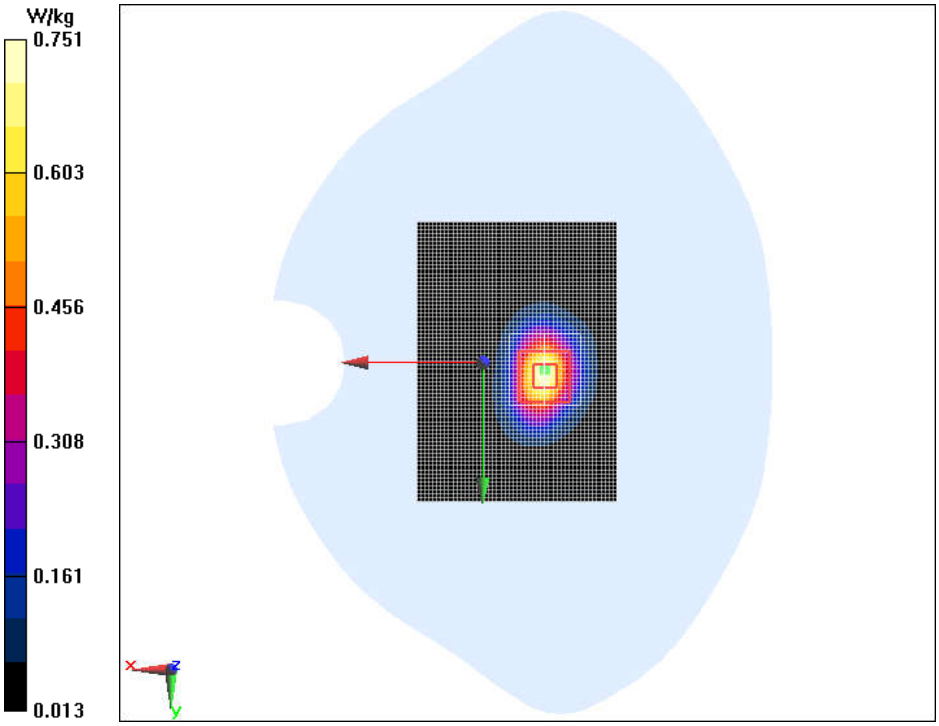


Fig.19 LTE Band 66 20M 1RB 0offset Bottom Mode Low

LTE Band 66 20M 50RB 0offset Bottom Mode Low

Date/Time: 2018/3/16
Electronics: DAE4 Sn1244
Medium parameters used: f = 1720 MHz; σ = 1.483 S/m; ε_r = 55.221; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: LTE Band 66 Professional 1800MHz; Frequency: 1720 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.95, 4.95, 4.95); Calibrated: 8/31/2017
LTE Band 66 20M 50RB 0offset Bottom Mode Low/Area Scan (51x71x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.602 W/kg
LTE Band 66 20M 50RB 0offset Bottom Mode Low/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.29 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.910 W/kg
SAR(1 g) = 0.511 W/kg; SAR(10 g) = 0.265 W/kg
Maximum value of SAR (measured) = 0.578 W/kg

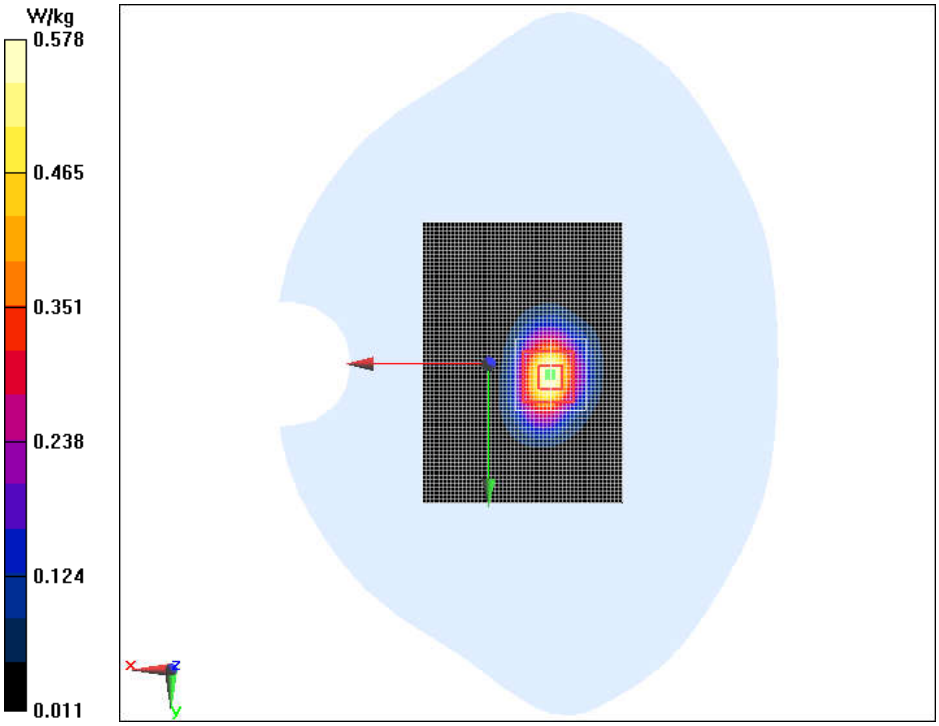


Fig.20 LTE Band 66 20M 50RB 0offset Bottom Mode Low

CDMA BC0 Ground Mode Middle

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used: f = 837 MHz; σ = 1.001 S/m; ε_r = 56.678; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CDMA 835MHz 850MHz; Frequency: 836.52 MHz;
Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017
CDMA BC0 Ground Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.419 W/kg
CDMA BC0 Ground Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.58 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.295 W/kg
Maximum value of SAR (measured) = 0.415 W/kg

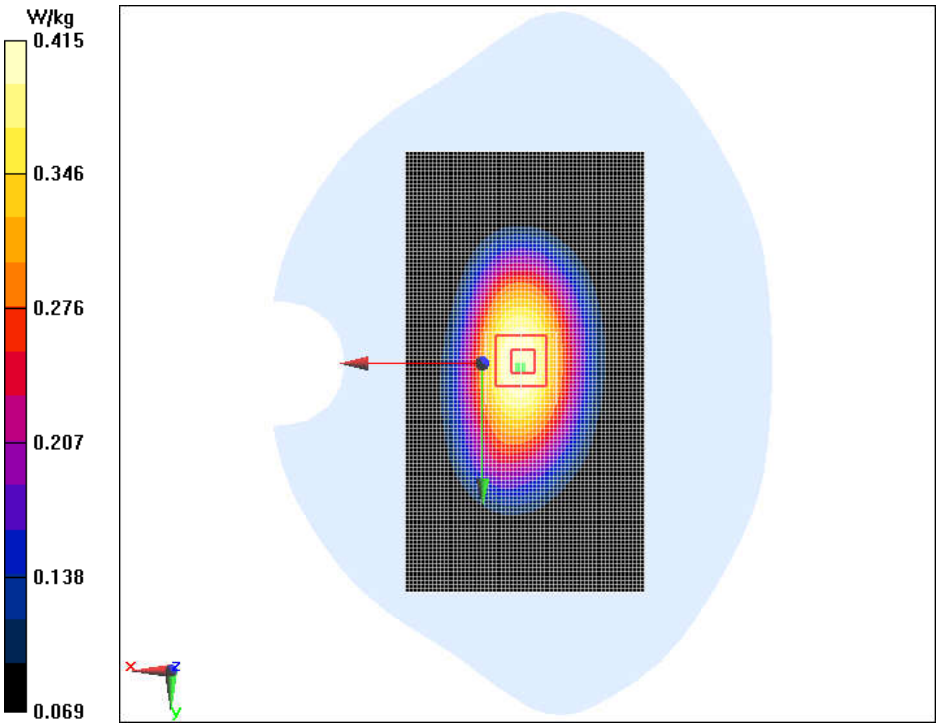


Fig.21 CDMA BC0 Ground Mode Middle

CDMA BC1 Ground Mode Middle

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used: f = 1880 MHz; σ = 1.581 S/m; ε_r = 54.893; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CDMA 1900MHz 1900MHz; Frequency: 1880 MHz;
Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017

CDMA BC1 Ground Mode Middle/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.220 W/kg

CDMA BC1 Ground Mode Middle/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.614 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.293 W/kg
SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.125 W/kg
Maximum value of SAR (measured) = 0.209 W/kg

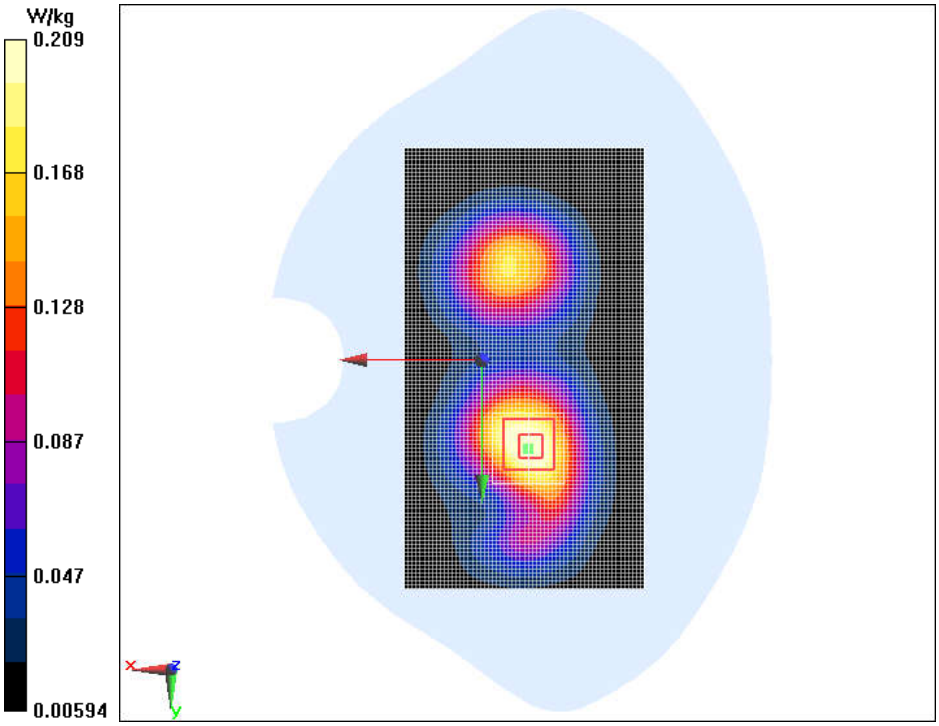


Fig.22 CDMA BC1 Ground Mode Middle

WIFI 2450 Ground Mod High

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2462 MHz; σ = 1.992 S/m; ε_r = 52.834; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: Wifi 2450 2450MHz; Frequency: 2462 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.42, 4.42, 4.42); Calibrated: 8/31/2017
WIFI 2450 Ground Mod High/Area Scan (61x111x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 0.187 W/kg
WIFI 2450 Ground Mod High/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.376 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.373 W/kg
SAR(1 g) = 0.172 W/kg; SAR(10 g) = 0.089 W/kg
Maximum value of SAR (measured) = 0.195 W/kg

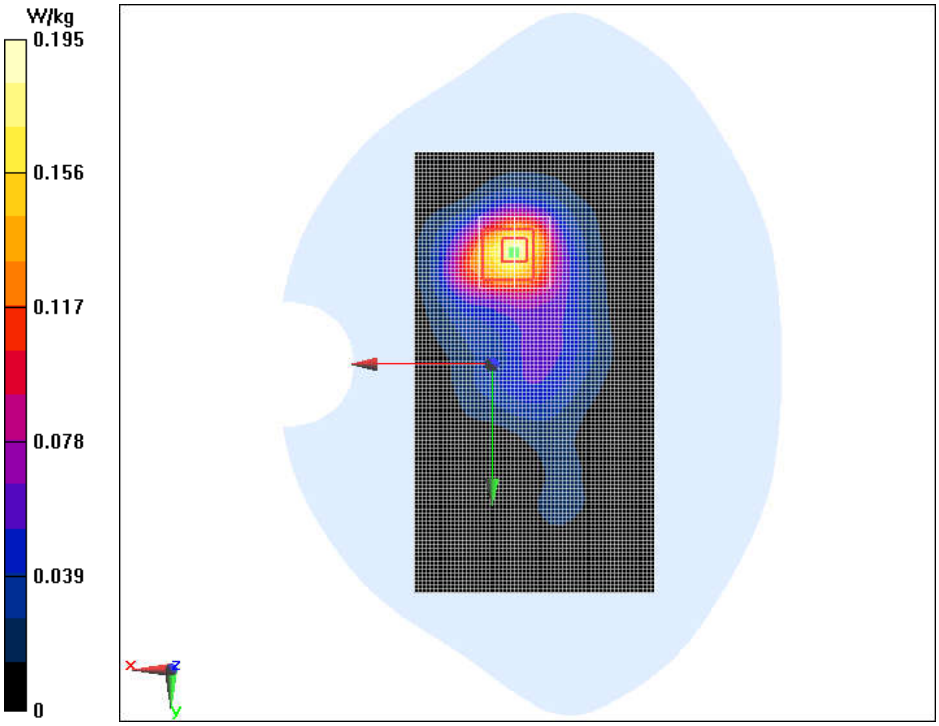
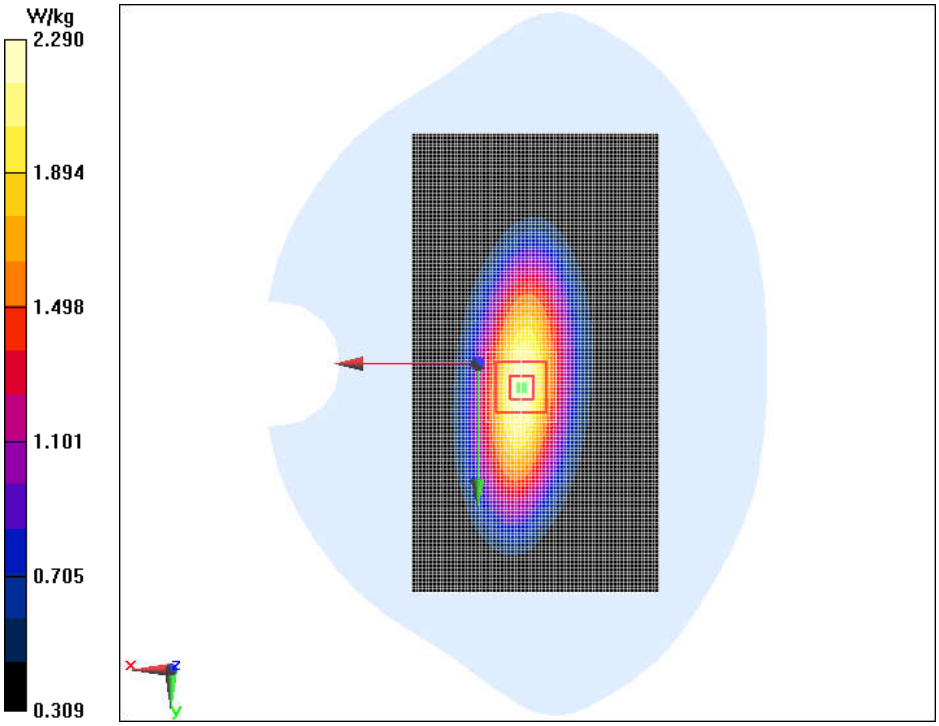


Fig.23 WIFI 2450 Ground Mod High

ANNEX B. SYSTEM VALIDATION RESULTS

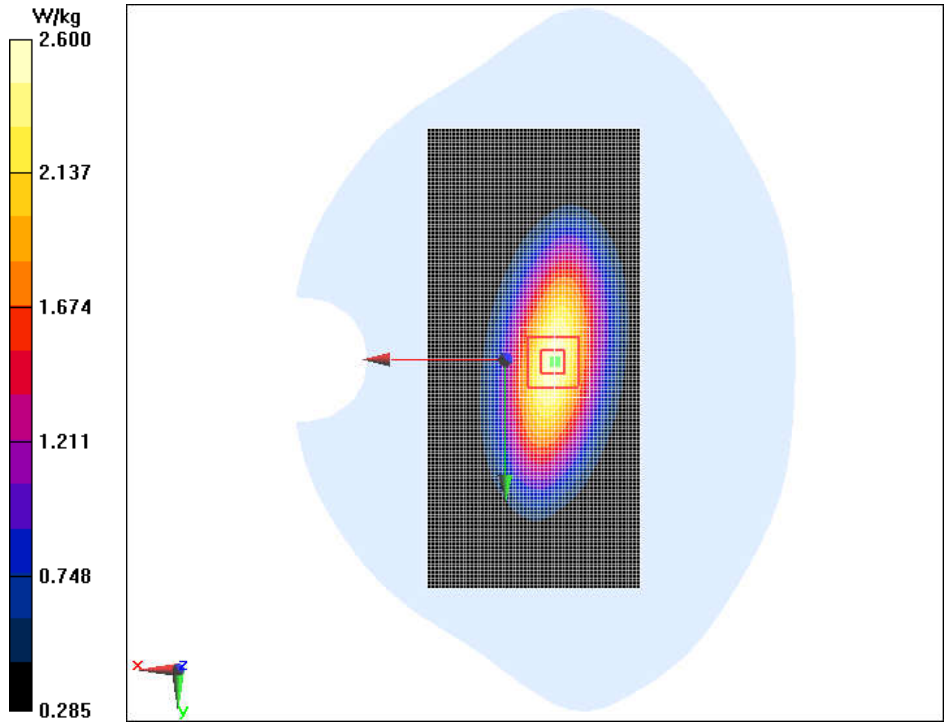
750MHz

Date/Time: 2018/3/15
Electronics: DAE4 Sn1244
Medium parameters used: f = 750 MHz; σ = 0.985 S/m; ε_r = 57.657; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 750MHz; Frequency: 750 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.34, 6.34, 6.34); Calibrated: 8/31/2017
System Validation/Area Scan (71x131x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 2.27 W/kg
System Validation/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.36 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 3.04 W/kg
SAR(1 g) = 2.12 W/kg; SAR(10 g) = 1.46 W/kg
Maximum value of SAR (measured) = 2.29 W/kg



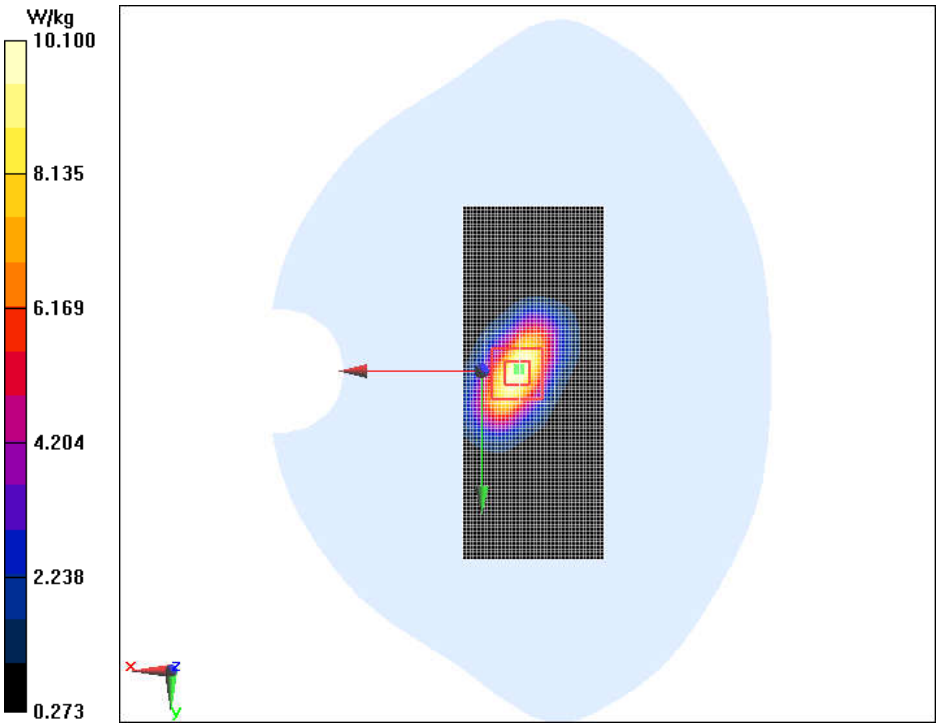
835MHz

Date/Time: 2018/4/2
Electronics: DAE4 Sn1244
Medium parameters used: f = 835 MHz; σ = 0.998 S/m; ε_r = 56.695; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 850MHz; Frequency: 835 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(6.14, 6.14, 6.14); Calibrated: 8/31/2017
System Validation/Area Scan (61x131x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 2.56 W/kg
System Validation/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.92 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 3.46 W/kg
SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.62 W/kg
Maximum value of SAR (measured) = 2.60 W/kg



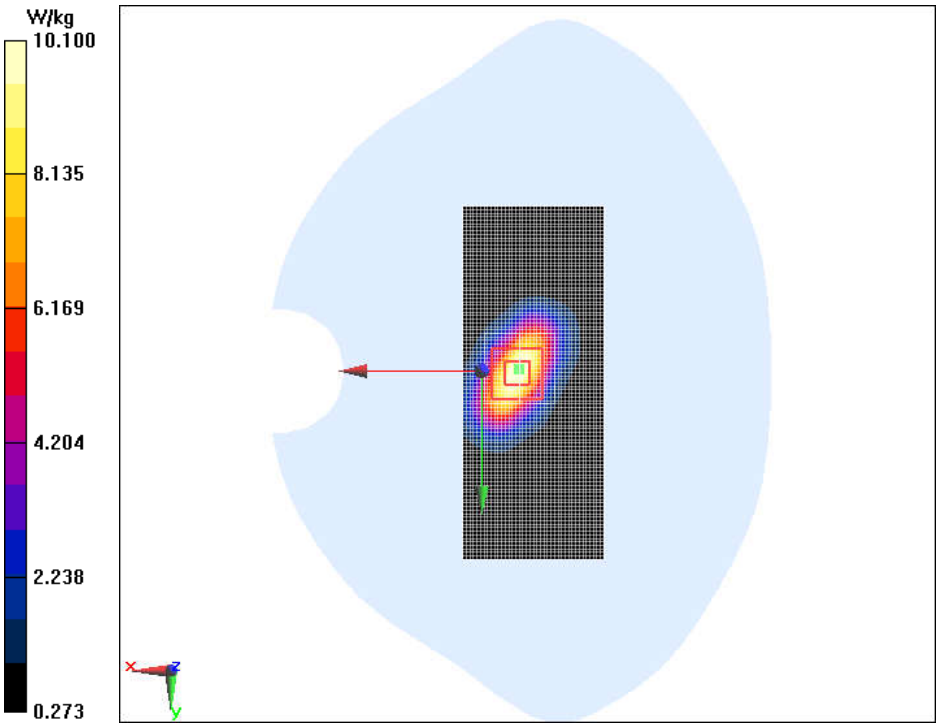
1750MHz

Date/Time: 2018/3/16
Electronics: DAE4 Sn1244
Medium parameters used: f = 1750 MHz; σ = 1.514 S/m; ε_r = 55.135; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 1800MHz; Frequency: 1750 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.95, 4.95, 4.95); Calibrated: 8/31/2017
System validation/Area Scan (41x101x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 10.7 W/kg
System validation/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.73 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 8.96 W/kg; SAR(10 g) = 4.91 W/kg
Maximum value of SAR (measured) = 10.1 W/kg



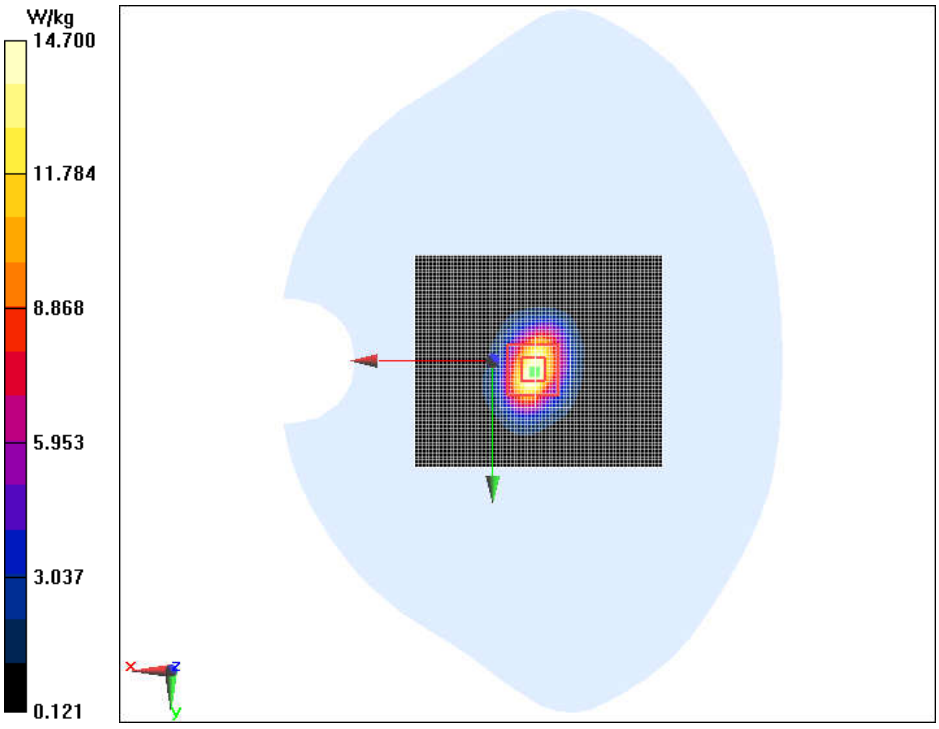
1900MHz

Date/Time: 2018/3/22
Electronics: DAE4 Sn1244
Medium parameters used: f = 1900 MHz; σ = 1.503 S/m; ε_r = 54.861; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 1900MHz; Frequency: 1900 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.69, 4.69, 4.69); Calibrated: 8/31/2017
System Validation/Area Scan (61x61x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 12.0 W/kg
System Validation/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.87 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 19.6 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.28 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



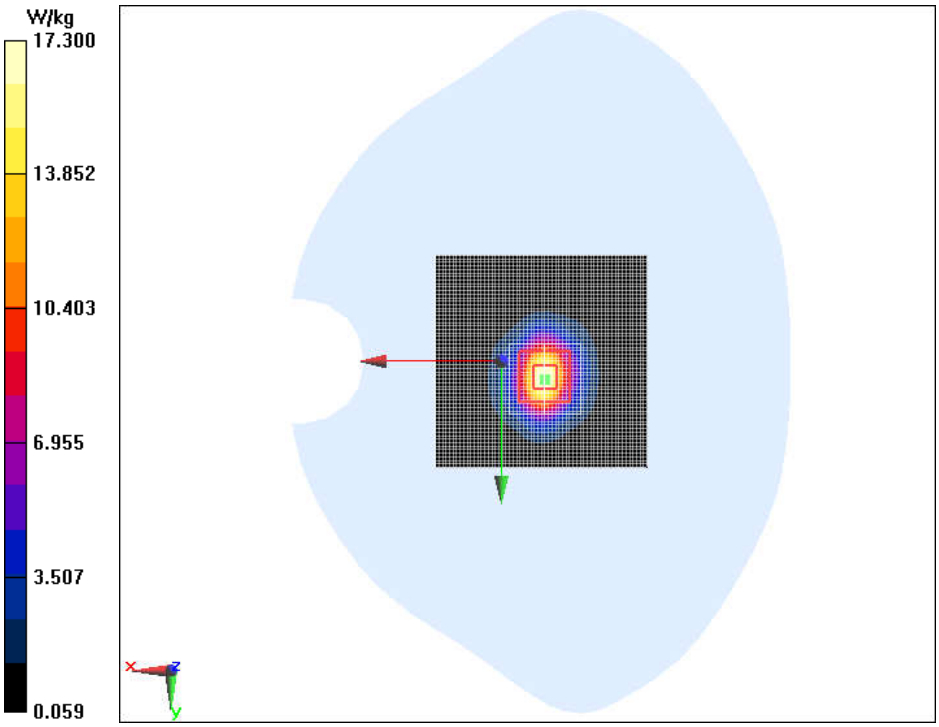
2450MHz

Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2450 MHz; σ = 1.978 S/m; ε_r = 52.879; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 2450MHz; Frequency: 2450 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.42, 4.42, 4.42); Calibrated: 8/31/2017
System Validation/Area Scan (71x61x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 16.1 W/kg
System Validation/Zoom Scan (7x7x7) (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.64 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 25.6 W/kg
SAR(1 g) = 12.8 W/kg; SAR(10 g) = 6.02 W/kg
Maximum value of SAR (measured) = 14.7 W/kg



2600MHz

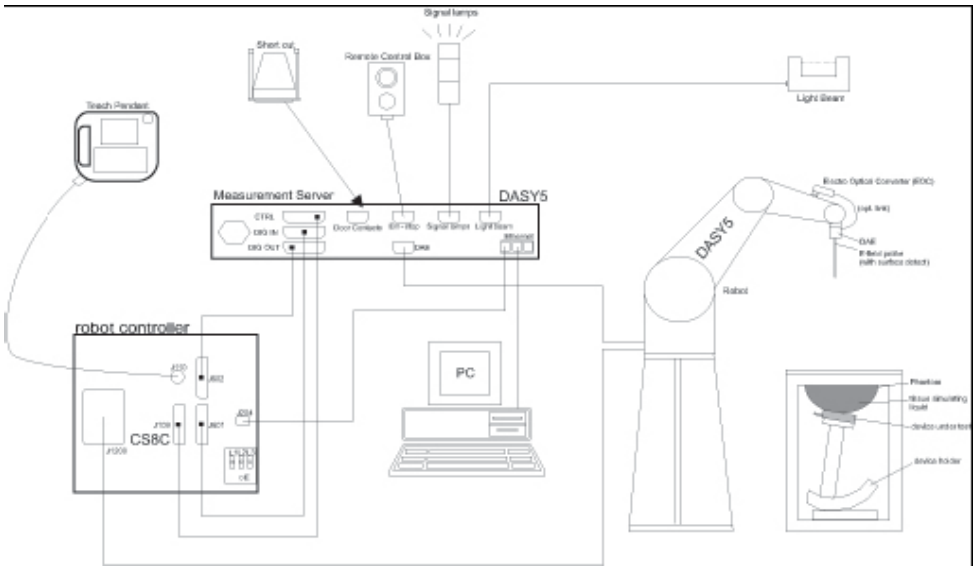
Date/Time: 2018/3/13
Electronics: DAE4 Sn1244
Medium parameters used: f = 2600 MHz; σ = 2.083 S/m; ε_r = 52.858; ρ = 1000 kg/m^3
Ambient Temperature:22.5°C Liquid Temperature:22.5°C
Communication System: CW 2600MHz; Frequency: 2600 MHz; Duty Cycle: 1:1
Probe: ES3DV3 - SN3252ConvF(4.22, 4.22, 4.22); Calibrated: 8/31/2017
System Validation /Area Scan (61x61x1):
Measurement grid: dx=10 mm, dy=10 mm
Maximum value of SAR (Measurement) = 18.2 W/kg
System Validation /Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.46 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 33.3 W/kg
SAR(1 g) = 15.2 W/kg; SAR(10 g) = 6.72 W/kg
Maximum value of SAR (measured) = 17.3 W/kg



ANNEX C. SAR Measurement Setup

C.1. Measurement Set-up

The 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 (Stäubli TX=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 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.