SAR TEST REPORT

No. I19Z62252-SEM03

For

TCL Communication Ltd.

LTE Mobile WiFi Router

Model name: MW43TM

With

Hardware Version: 03

Software Version: MW43_ZZ_02.00_01

FCC ID: 2ACCJB117

Issued Date: 2020-2-26

Note:

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I19Z62252-SEM03	Rev.0	2020-1-29	Initial creation of test report
I19Z62252-SEM03	Rev.1	2020-2-26	Update the information on section 17 of test report.

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1 Test Laboratory

1.1 Testing Location

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

1.2 Testing Environment

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

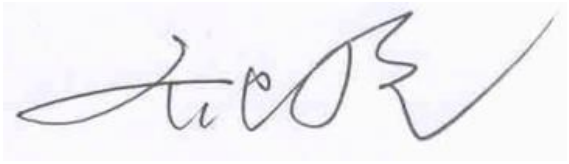
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	January 2, 2020
Testing End Date:	January 4, 2020

1.4 Signature

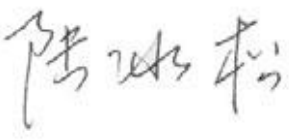
Lin Xiaojun

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2 Statement of Compliance

The maximum results of SAR found during testing for TCL Communication Ltd. LTE Mobile WiFi Router MW43TM are as follows:

Table 2.1: Highest Reported SAR (1g)

Exposure Configuration	Technology Band	Highest Reported SAR 1g(W/kg)
Hotspot	GSM 850	0.65
	PCS 1900	0.45
	UMTS FDD 2	0.73
	UMTS FDD 4	0.95
	UMTS FDD 5	0.59
	LTE Band 12	0.77
	LTE Band 25	0.76
	LTE Band 26	0.76
	LTE Band 41	**0.97**
	LTE Band 66	0.57
	LTE Band 71	0.57
	WLAN 2.4 GHz	0.63
	WLAN 5 GHz	0.77

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

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

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

The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report. The highest reported SAR value is obtained at the case of **(Table 2.1),** and the values are**: 0.97 W/kg(1g).**

Table 2.2: The sum of reported SAR values for main antenna and WiFi2.4G

	Position	Main antenna	WiFi	Sum
Highest reported SAR value for Body	Front 10mm	0.77	0.63	**1.40**

Table 2.2: The sum of reported SAR values for main antenna and WiFi5G

	Position	Main antenna	WiFi	Sum
Highest reported SAR value for Body	Front 10mm	0.77	0.77	**1.54**

According to the above tables, the highest sum of reported SAR values is **1.54 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 13.

3 Client Information

3.1 Applicant Information

Company Name:	TCL Communication Ltd.
Address/Post:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Contact Person:	Gong Zhizhou
Contact Email:	zhizhou.gong@tcl.com
Telephone:	0086-755-36611722
Fax:	0086-755-36612000-81722

3.2 Manufacturer Information

Company Name:	TCL Communication Ltd.
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Contact Person:	Gong Zhizhou
Contact Email:	zhizhou.gong@tcl.com
Telephone:	0086-755-36611722
Fax:	0086-755-36612000-81722

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

4.1 About EUT

Description:	LTE Mobile WiFi Router
Model name:	MW43TM
Operating mode(s):	GSM 850/900/1800/1900, UMTS FDD 1/2/4/5, Wi-Fi LTE Band 2/4/5/12/25/26/41/66/71
Tested Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	824–849 MHz (WCDMA 850 Band V)
	1710 – 1755 MHz (WCDMA 1700 Band IV)
	1850–1910 MHz (WCDMA1900 Band II)
	699.7 – 715.3 MHz (LTE Band 12)
	1850.7 – 1914.3 MHz (LTE Band 25)
	814.7 – 848.3 MHz (LTE Band 26)
	2498.5 – 2687.5 MHz (LTE Band 41)
	1710.7 – 1779.3 MHz (LTE Band 66)
	665.5 – 695.5 MHz (LTE Band 71)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	5.15 – 5.35 GHz 5.725 – 5.825 GHz(Wi-Fi 5G)
GPRS/EGPRS Multislot Class:	33
GPRS capability Class:	B
Test device Production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Hotspot mode:	Support

4.2 Internal Identification of EUT used during the test

EUT ID*	IMEI	HW	SW Version
EUT1	015659000005450	03	MW43_ZZ_02.00_01
EUT2	015659000005468	03	MW43_ZZ_02.00_01
EUT3	015659000005476	03	MW43_ZZ_02.00_01
EUT4	015659000005484	03	MW43_ZZ_02.00_01
EUT5	015659000005492	03	MW43_ZZ_02.00_01
EUT6	015659000005500	03	MW43_ZZ_02.00_01

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

Note: It is performed to test SAR with the EUT1~3 and conducted power with the EUT4~6.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	MW43TM	TLi043F1/CAB4300004C1	Shenzhen BYD Lithium Battery Company Limited

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

5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

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

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

5.2 Applicable Measurement Standards

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

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

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

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

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

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

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

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

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

6 Specific Absorption Rate (SAR)

6.1 Introduction

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

6.2 SAR Definition

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

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

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

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

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

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

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

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

7 Tissue Simulating Liquids

7.1 Targets for tissue simulating liquid

Table 7.1: Targets for tissue simulating liquid

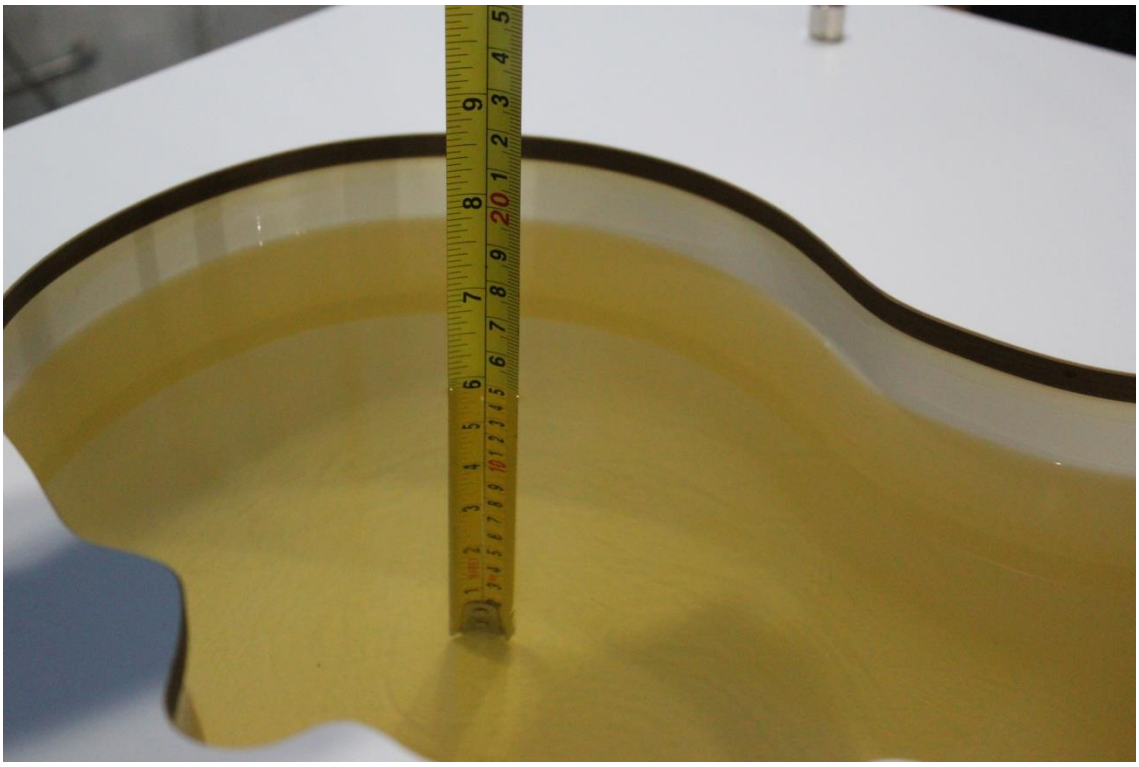
Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5% Range	Permittivity(ε)	± 5% Range
750	Head	0.89	0.85～0.93	41.94	39.8～44.0
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
1750	Head	1.37	1.30～1.44	40.08	38.1～42.1
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
2450	Head	1.80	1.71～1.89	39.2	37.2～41.2
2600	Head	1.96	1.86～2.06	39.01	37.1～41.0
5250	Head	4.71	4.47～4.95	35.93	34.1～37.7
5750	Head	5.22	4.96～5.48	35.36	33.6～37.1

7.2 Dielectric Performance

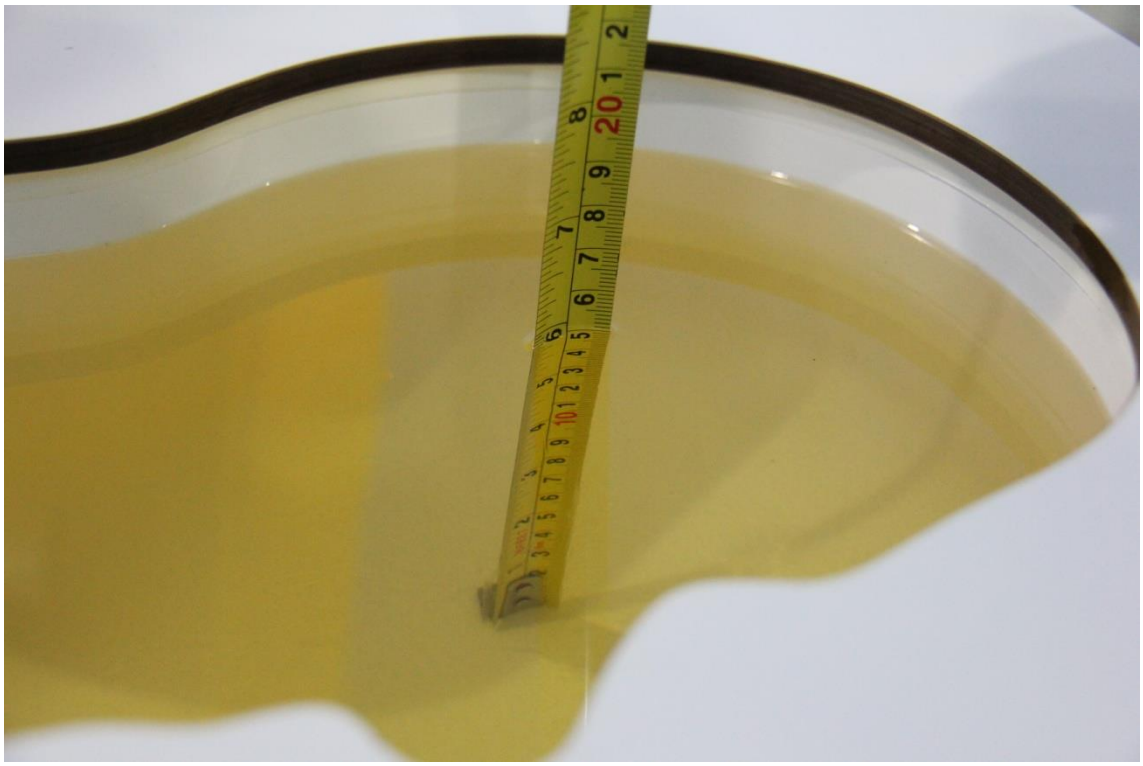
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2020-1-2	Head	750 MHz	42.71	1.84	0.895	0.56
2020-1-2	Head	835 MHz	41.49	-0.02	0.918	2.00
2020-1-3	Head	1750 MHz	39.86	-0.55	1.355	-1.09
2020-1-3	Head	1900 MHz	40.05	0.12	1.375	-1.79
2020-1-4	Head	2450 MHz	38.98	-0.56	1.817	0.94
2020-1-4	Head	2600 MHz	39.1	0.23	1.961	0.05
2020-1-4	Head	5250 MHz	36.47	1.50	4.743	0.70
	Head	5750 MHz	34.96	-1.13	5.183	-0.71

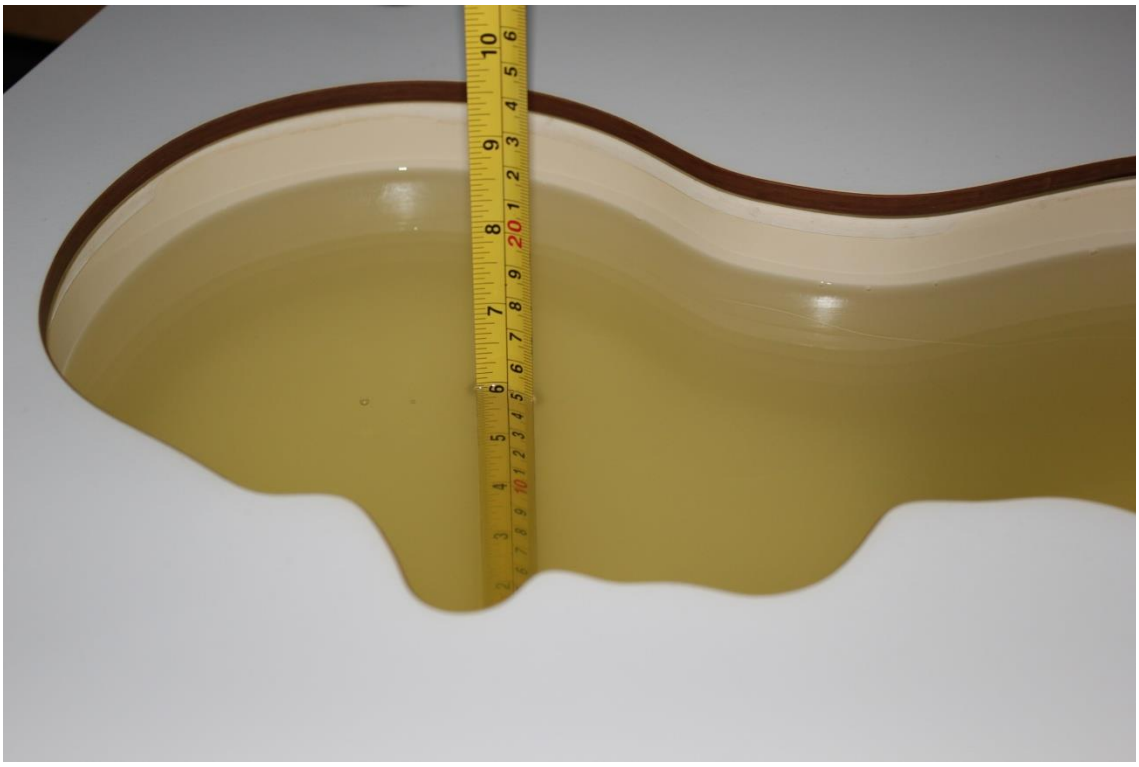
Note: The liquid temperature is 22.0℃



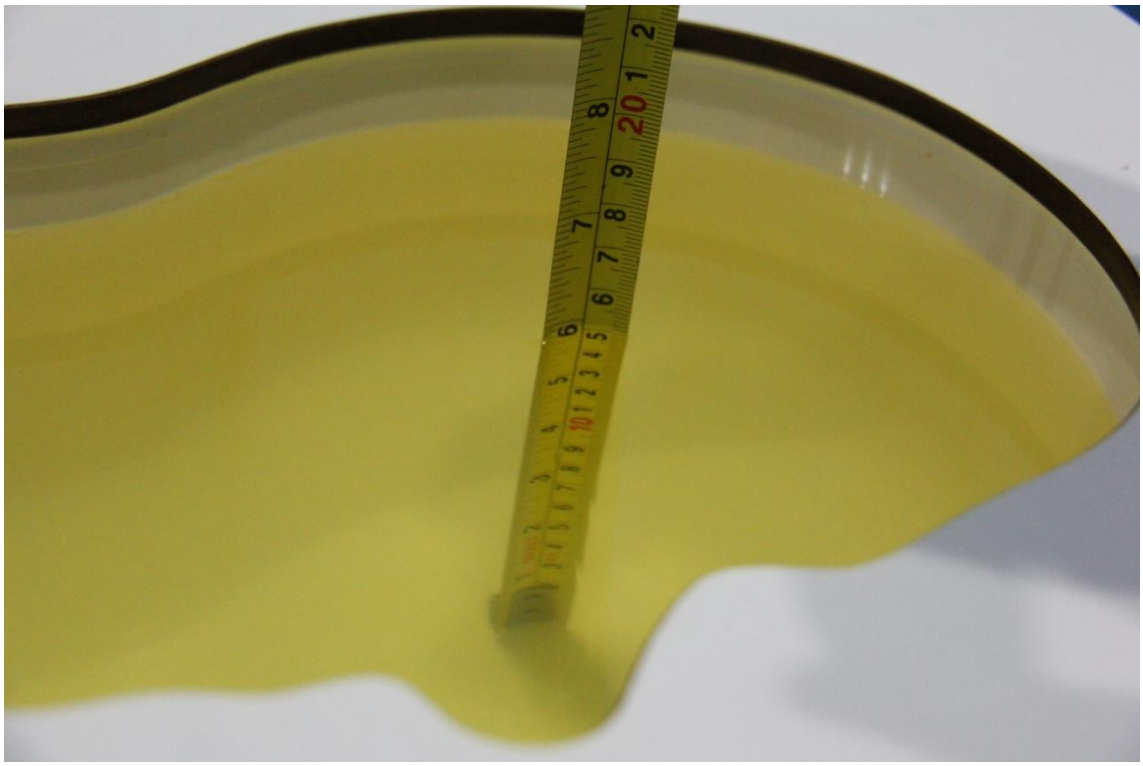
Picture 7-1 Liquid depth in the Head Phantom (750MHz)



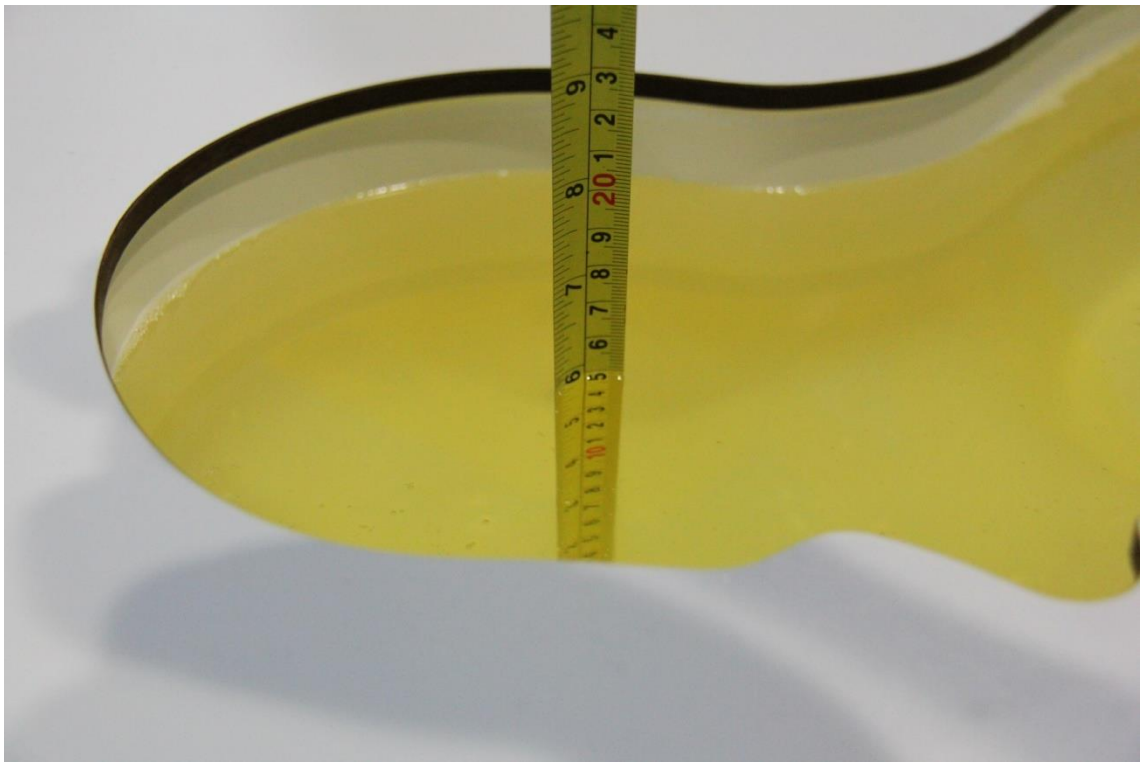
Picture 7-2 Liquid depth in the Head Phantom (835 MHz)



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

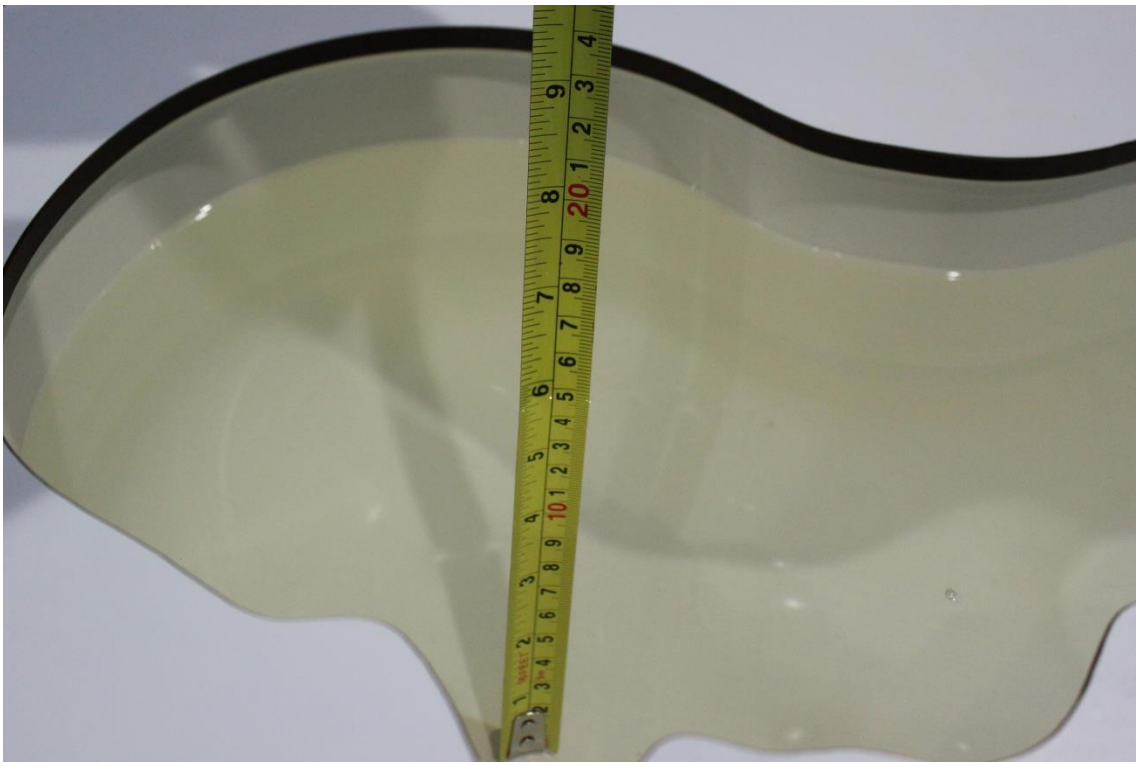


Picture 7-4 Liquid depth in the Head Phantom (1900 MHz)



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

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

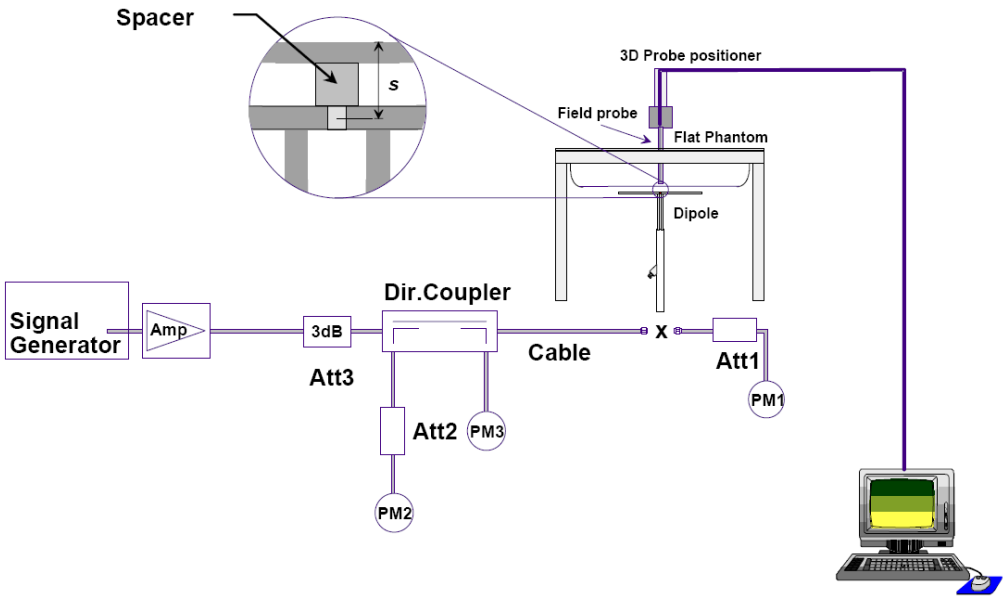


Picture 7-7 Liquid depth in the Head Phantom (5GHz)

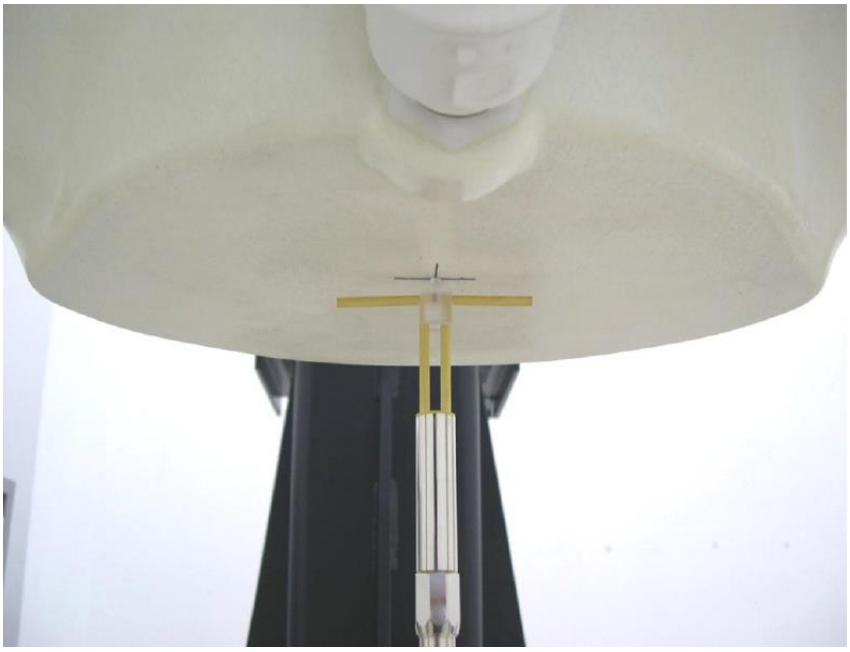
8 System verification

8.1 System Setup

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



Picture 8.1 System Setup for System Evaluation



Picture 8.2 Photo of Dipole Setup

8.2 System Verification

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

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

Table 8.1: System Verification of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2020-1-2	750 MHz	5.57	8.57	5.56	8.6	-0.18%	0.35%
2020-1-2	835 MHz	6.29	9.70	6.4	9.68	1.75%	-0.21%
2020-1-3	1750 MHz	19.3	36.6	19.52	35.96	1.14%	-1.75%
2020-1-3	1900 MHz	20.8	39.7	20.72	38.92	-0.38%	-1.96%
2020-1-4	2450 MHz	24.2	51.6	23.92	51.6	-1.16%	0.00%
2020-1-4	2600 MHz	25.1	55.8	25.12	56.44	0.08%	1.15%
2020-1-4	5250 MHz	23.2	80.4	23.3	79.1	0.52%	-1.59%
2020-1-4	5750 MHz	23.0	80.4	22.8	81.6	-1.04%	1.49%

9 Measurement Procedures

9.1 Tests to be performed

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

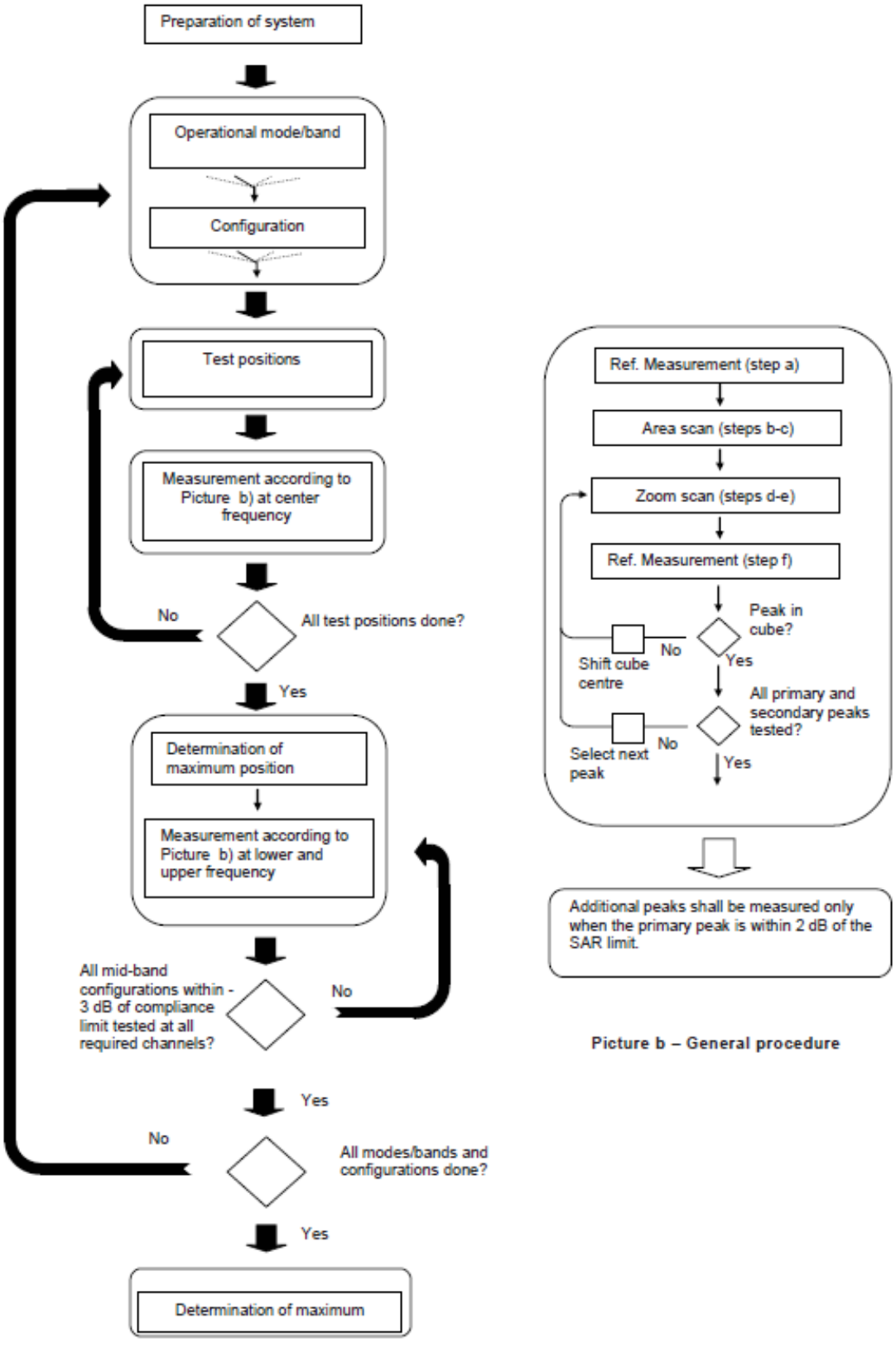
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

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

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

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

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



Picture a – Tests to be performed

Picture b – General procedure

Picture 9.1Block diagram of the tests to be performed

9.2 General Measurement Procedure

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

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

9.3 WCDMA Measurement Procedures for SAR

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

For Release 5 HSDPA Data Devices:

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

For Release 6 HSPA Data Devices

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

Rel.8 DC-HSDPA (Cat 24)

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

9.4 SAR Measurement for LTE

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

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

TDD test:

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

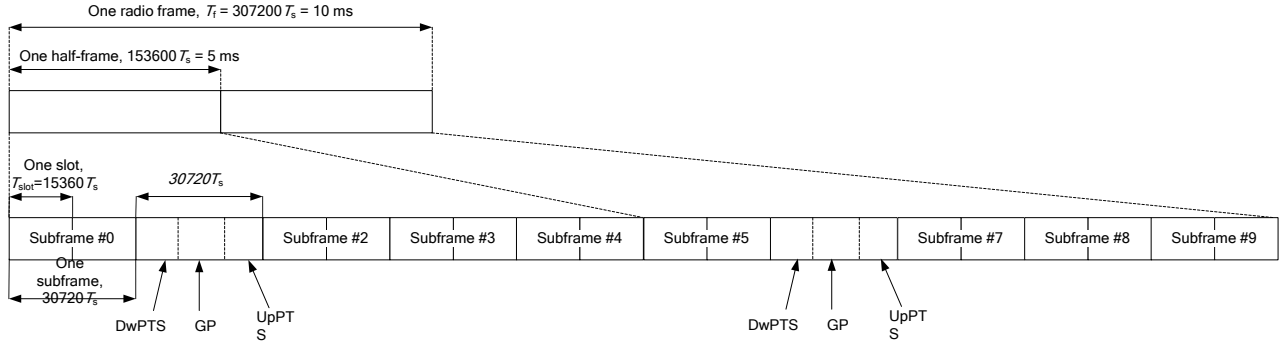


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

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

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

Table 9.2: Uplink-downlink configurations

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

Duty factor is calculated by:

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

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

= 0.633

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

9.5 Bluetooth & Wi-Fi Measurement Procedures for SAR

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

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

9.6 Power Drift

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

10 Area Scan Based 1-g SAR

10.1 Requirement of KDB

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

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

10.2 Fast SAR Algorithms

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

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

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

Both algorithms are implemented in DASY software.

11 Conducted Output Power

For Main antenna, there are two sets of tune-up power, Normal power and Low power, used for different use cases for GSM850/PCS1900/WCDMA850/WCDMA1700/WCDMA1900 and LTE Band25/41/66. Normal power status is applied for head test and body worn test of above bands. Low power status is applied for sensor test of above bands. For other bands, Normal power status is applied for both head and body test.

11.1 GSM Measurement result

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

Normal Power

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

GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	251	190	128			251	190	128
1 Txslot	32.06	32.03	32.09	33.50	-9.03	23.03	23.00	23.06
2 Txslots	29.59	29.49	29.53	30.50	-6.02	23.57	23.47	23.51
3Txslots	**28.50**	**28.42**	**28.43**	**29.00**	**-4.26**	**24.24**	**24.16**	**24.17**
4 Txslots	26.28	26.41	26.30	27.50	-3.01	23.27	23.40	23.29
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	251	190	128			251	190	128
1 Txslot	32.03	31.95	32.06	33.50	-9.03	23.00	22.92	23.03
2 Txslots	29.55	29.43	29.48	30.50	-6.02	23.53	23.41	23.46
3Txslots	**28.45**	**28.35**	**28.47**	**29.00**	**-4.26**	**24.19**	**24.09**	**24.21**
4 Txslots	26.14	26.35	26.34	27.50	-3.01	23.13	23.34	23.33
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	251	190	128			251	190	128
1 Txslot	26.11	26.30	26.30	27.50	-9.03	17.08	17.27	17.27
2 Txslots	23.00	23.08	23.18	24.50	-6.02	16.98	17.06	17.16
3Txslots	20.85	20.96	21.09	22.50	-4.26	16.59	16.70	16.83
4 Txslots	19.71	19.84	20.06	21.50	-3.01	16.70	16.83	17.05
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	810	661	512			810	661	512
1 Txslot	29.21	29.09	29.06	30.50	-9.03	20.18	20.06	20.03
2 Txslots	**27.37**	**27.60**	**27.59**	**28.00**	**-6.02**	**21.35**	**21.58**	**21.57**
3Txslots	25.36	25.38	25.64	26.50	-4.26	21.10	21.12	21.38
4 Txslots	23.47	23.42	23.45	24.50	-3.01	20.46	20.41	20.44
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	810	661	512			810	661	512

1 Txslot	29.14	29.15	29.07	30.50	-9.03	20.11	20.12	20.04
2 Txslots	**27.30**	**27.66**	**27.62**	**28.00**	**-6.02**	**21.28**	**21.64**	**21.60**
3Txslots	25.29	25.36	25.68	26.50	-4.26	21.03	21.10	21.42
4 Txslots	23.51	23.50	23.41	24.50	-3.01	20.50	20.49	20.40
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	810	661	512			810	661	512
1 Txslot	23.09	23.13	23.23	24.50	-9.03	14.06	14.10	14.20
2 Txslots	22.02	22.06	22.15	23.50	-6.02	16.00	16.04	16.13
3Txslots	19.92	19.97	20.06	21.50	-4.26	15.66	15.71	15.80
4 Txslots	19.25	19.35	19.29	20.50	-3.01	16.24	16.34	16.28

NOTES:

1) Division Factors

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

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

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

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

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

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

Low Power

GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	251	190	128			251	190	128
1 Txslot	29.40	29.68	29.69	30.50	-9.03	20.37	20.65	20.66
2 Txslots	26.41	26.59	26.64	27.50	-6.02	20.39	20.57	20.62
3Txslots	**25.45**	**25.56**	**25.42**	**26.50**	**-4.26**	**21.19**	**21.30**	**21.16**
4 Txslots	23.11	23.57	23.19	24.50	-3.01	20.10	20.56	20.18
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	251	190	128			251	190	128
1 Txslot	29.70	29.80	29.90	30.50	-9.03	20.67	20.77	20.87
2 Txslots	26.70	26.81	26.74	27.50	-6.02	20.68	20.79	20.72
3Txslots	**25.65**	**25.76**	**25.64**	**26.50**	**-4.26**	**21.39**	**21.50**	**21.38**
4 Txslots	23.79	23.63	23.63	24.50	-3.01	20.78	20.62	20.62
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	251	190	128			251	190	128
1 Txslot	26.57	26.70	26.90	27.50	-9.03	17.54	17.67	17.87
2 Txslots	23.40	23.58	23.66	24.50	-6.02	17.38	17.56	17.64
3Txslots	21.32	21.43	21.54	22.50	-4.26	17.06	17.17	17.28
4 Txslots	20.78	20.79	20.98	21.50	-3.01	17.77	17.78	17.97
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	810	661	512			810	661	512
1 Txslot	28.44	28.46	28.41	29.00	-9.03	19.41	19.43	19.38

2 Txslots	**25.53**	**25.55**	**25.54**	**26.00**	**-6.02**	**19.51**	**19.53**	**19.52**
3Txslots	23.20	23.14	23.65	24.00	-4.26	18.94	18.88	19.39
4 Txslots	21.83	22.50	22.52	23.00	-3.01	18.82	19.49	19.51
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	810	661	512			810	661	512
1 Txslot	28.44	28.46	28.40	29.00	-9.03	19.41	19.43	19.37
2 Txslots	**25.44**	**25.48**	**25.48**	**26.00**	**-6.02**	**19.42**	**19.46**	**19.46**
3Txslots	23.20	23.14	23.55	24.00	-4.26	18.94	18.88	19.29
4 Txslots	21.81	22.43	22.46	23.00	-3.01	18.80	19.42	19.45
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	810	661	512			810	661	512
1 Txslot	23.43	23.39	23.50	24.50	-9.03	14.40	14.36	14.47
2 Txslots	22.07	22.22	22.27	23.50	-6.02	16.05	16.20	16.25
3Txslots	20.00	20.29	20.20	21.50	-4.26	15.74	16.03	15.94
4 Txslots	19.37	19.33	19.59	20.50	-3.01	16.36	16.32	16.58

NOTES:

1) Division Factors

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

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

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

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

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

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

11.2 WCDMA Measurement result

Normal power

Table 11.2-1: The conducted Power for WCDMA

Item	band	FDDV result			
	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)	Tune up
WCDMA	\	22.86	22.84	22.72	23.50
HSUPA	1	21.17	21.05	21.16	22.50
	2	20.76	20.68	20.54	22.00
	3	19.97	19.89	19.81	21.50
	4	21.26	21.12	21.11	22.50
	5	21.67	21.58	21.62	22.50
DC-HSDPA	1	21.64	21.52	21.62	22.50
	2	21.62	21.54	21.61	22.50
	3	21.18	21.02	21.08	22.50

	4	21.12	21.05	21.10	22.50
Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	
WCDMA	\	22.83	22.84	22.75	23.50
HSUPA	1	20.95	20.93	20.94	22.50
	2	20.57	20.66	20.82	22.00
	3	20.33	20.29	20.48	21.50
	4	20.98	21.04	21.06	22.50
	5	21.47	21.55	21.52	22.50
DC-HSDPA	1	21.52	21.54	21.61	22.50
	2	21.59	21.52	21.60	22.50
	3	21.07	21.05	21.04	22.50
	4	21.06	21.03	21.05	22.50
Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	Tune up
WCDMA	\	22.83	22.84	22.98	23.50
HSUPA	1	21.39	21.12	21.25	22.50
	2	20.59	20.64	20.58	22.00
	3	20.51	20.48	20.21	21.50
	4	20.99	20.97	21.02	22.50
	5	21.89	21.64	21.62	22.50
DC-HSDPA	1	21.51	21.55	21.53	22.50
	2	21.53	21.57	21.64	22.50
	3	21.01	21.04	21.06	22.50
	4	20.98	21.01	21.07	22.50

Low power

Table 11.2-2: The conducted Power for WCDMA

Item	band	FDDV result			
	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)	Tune up
WCDMA	\	19.79	19.78	19.85	21.00
HSUPA	1	18.1	17.99	18.29	19.00
	2	17.69	17.62	17.67	19.00
	3	16.9	16.83	16.94	18.00
	4	18.19	18.06	18.24	19.00
	5	18.6	18.52	18.75	19.00
DC-HSDPA	1	18.79	18.72	18.76	19.00
	2	18.78	18.68	18.71	19.00
	3	18.24	18.21	18.22	19.00
	4	18.22	18.16	18.18	19.00
Item	band	FDDIV result			

	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	
WCDMA	\	17.71	17.78	17.73	19.00
HSUPA	1	16.27	16.38	16.55	18.00
	2	15.37	15.58	15.42	17.00
	3	15.35	15.45	15.37	17.00
	4	15.59	15.65	15.62	17.00
	5	16.62	16.57	16.41	18.00
DC-HSDPA	1	16.59	16.64	16.52	18.00
	2	16.58	16.56	16.49	18.00
	3	16.1	16.07	16.05	18.00
	4	16.11	16.09	16.04	18.00
Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	Tune up
WCDMA	\	20.71	20.85	20.75	22.00
HSUPA	1	19.3	19.16	18.91	20.00
	2	18.48	18.03	17.99	19.00
	3	18.04	18.33	18.46	19.00
	4	18.96	18.51	18.47	20.00
	5	19.51	19.54	19.55	20.00
DC-HSDPA	1	19.65	19.79	19.82	20.00
	2	19.59	19.62	19.81	20.00
	3	19.14	19.12	19.27	20.00
	4	19.09	19.10	19.26	20.00

11.3 LTE Measurement result

Table 13.3-1: Maximum Power Reduction (MPR) for LTE

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

Table 13.3-2: The tune up for LTE – Normal Power

Band	Tune up
LTE Band 12	23.5
LTE Band 25	23.5
LTE Band 26	23.5
LTE Band 41	25
LTE Band 66	23.5
LTE Band 71	23.5

Table 13.3-3: The tune up for LTE – Low Power

Band	Tune up
LTE Band 25	22
LTE Band 41	23
LTE Band 66	19

Normal power

Table 11.3-4: The conducted Power for LTE

Band 12				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	715.3	23.00	22.17
		707.5	23.00	22.12
		699.7	23.21	22.06
	1RB Middle (3)	715.3	23.04	21.95
		707.5	23.12	21.83
		699.7	23.36	22.01
	1RB Low (0)	715.3	22.79	21.61
		707.5	23.00	21.88
		699.7	22.97	22.10
	3RB High (3)	715.3	22.99	22.15
		707.5	22.94	21.55
		699.7	23.08	21.82
	3RB Middle (1)	715.3	23.21	22.05
		707.5	22.99	21.69
		699.7	23.06	21.91
	3RB Low (0)	715.3	23.03	22.22
		707.5	23.00	21.57
		699.7	23.11	22.04
	6RB (0)	715.3	21.95	21.09
		707.5	21.90	20.89
		699.7	22.11	20.72
3 MHz	1RB High (14)	714.5	23.27	22.12
		707.5	22.86	21.92
		700.5	22.86	22.07
	1RB Middle (7)	714.5	23.15	22.44
		707.5	23.20	22.02
		700.5	23.08	22.06
	1RB Low (0)	714.5	23.25	22.16
		707.5	23.03	22.06
		700.5	22.81	22.15
	8RB High (7)	714.5	21.98	21.12
		707.5	21.99	21.32
		700.5	22.19	20.91
	8RB Middle (4)	714.5	22.06	21.07
		707.5	21.99	21.33
		700.5	22.07	20.91
	8RB Low (0)	714.5	22.17	21.04
		707.5	21.99	21.31
		700.5	21.99	21.00
	15RB (0)	714.5	22.03	20.97
		707.5	21.96	21.20
		700.5	22.09	21.05

5 MHz	1RB High (24)	713.5	22.92	21.89
		707.5	22.69	21.74
		701.5	22.96	22.01
	1RB Middle (12)	713.5	23.17	21.58
		707.5	22.92	21.82
		701.5	22.81	21.64
	1RB Low (0)	713.5	22.99	21.41
		707.5	22.71	21.68
		701.5	22.68	21.13
	12RB High (13)	713.5	21.92	20.66
		707.5	21.94	20.74
		701.5	21.98	20.93
	12RB Middle (6)	713.5	22.02	20.94
		707.5	21.98	20.71
		701.5	22.13	21.09
	12RB Low (0)	713.5	21.96	21.02
		707.5	21.96	20.90
		701.5	21.99	21.10
	25RB (0)	713.5	21.94	21.03
		707.5	21.90	20.87
		701.5	22.06	20.86
10 MHz	1RB High (49)	711	22.74	21.96
		707.5	22.70	21.90
		704	23.27	21.86
	1RB Middle (24)	711	23.31	21.90
		707.5	23.02	22.15
		704	23.16	22.45
	1RB Low (0)	711	22.72	21.37
		707.5	22.76	22.00
		704	23.13	21.86
	25RB High (25)	711	21.89	20.82
		707.5	21.89	21.11
		704	21.93	20.87
	25RB Middle (12)	711	21.92	20.96
		707.5	21.89	20.93
		704	21.98	20.84
	25RB Low (0)	711	21.92	20.86
		707.5	21.88	20.90
		704	21.97	20.90
	50RB (0)	711	21.96	20.78
		707.5	21.89	20.74
		704	21.91	20.87

Band 25				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1914.3	22.91	21.91
		1882.5	22.49	21.83
		1850.7	22.61	21.51
	1RB Middle (3)	1914.3	22.77	21.95
		1882.5	22.49	21.78
		1850.7	22.64	21.83
	1RB Low (0)	1914.3	22.90	22.09
		1882.5	22.63	21.59
		1850.7	22.75	21.72
	3RB High (3)	1914.3	22.84	22.09
		1882.5	22.52	21.49
		1850.7	22.58	21.47
	3RB Middle (1)	1914.3	22.81	22.13
		1882.5	22.59	21.58
		1850.7	22.66	21.50
	3RB Low (0)	1914.3	22.66	21.84
		1882.5	22.66	21.55
		1850.7	22.64	21.60
	6RB (0)	1914.3	21.73	21.02
		1882.5	21.60	20.54
		1850.7	21.72	20.96
3 MHz	1RB High (14)	1913.5	22.71	21.86
		1882.5	22.65	21.79
		1851.5	22.70	21.83
	1RB Middle (7)	1913.5	22.80	21.81
		1882.5	22.60	21.95
		1851.5	22.72	21.95
	1RB Low (0)	1913.5	22.83	21.79
		1882.5	22.50	21.51
		1851.5	22.63	21.77
	8RB High (7)	1913.5	21.78	21.25
		1882.5	21.84	20.62
		1851.5	21.73	20.48
	8RB Middle (4)	1913.5	21.71	21.12
		1882.5	21.72	20.67
		1851.5	21.81	20.53
	8RB Low (0)	1913.5	21.77	21.12
		1882.5	21.73	21.02
		1851.5	21.75	20.44
	15RB (0)	1913.5	21.92	21.11
		1882.5	21.70	20.70
		1851.5	21.83	20.63

5 MHz	1RB High (24)	1912.5	22.91	21.45
		1882.5	22.37	21.83
		1852.5	22.55	21.67
	1RB Middle (12)	1912.5	23.10	21.96
		1882.5	22.52	21.97
		1852.5	22.34	21.32
	1RB Low (0)	1912.5	22.95	21.85
		1882.5	22.31	21.81
		1852.5	22.49	21.33
	12RB High (13)	1912.5	21.92	20.94
		1882.5	21.67	20.78
		1852.5	21.71	20.77
	12RB Middle (6)	1912.5	21.96	20.94
		1882.5	21.69	20.81
		1852.5	21.72	20.63
	12RB Low (0)	1912.5	21.82	21.01
		1882.5	21.70	20.75
		1852.5	21.68	20.79
	25RB (0)	1912.5	21.76	20.93
		1882.5	21.74	20.78
		1852.5	21.77	20.84
10 MHz	1RB High (49)	1910	22.92	22.09
		1882.5	22.87	21.73
		1855	22.64	21.91
	1RB Middle (24)	1910	23.07	21.90
		1882.5	23.02	22.33
		1855	22.86	21.54
	1RB Low (0)	1910	22.56	21.46
		1882.5	22.66	21.79
		1855	22.66	21.23
	25RB High (25)	1910	21.63	20.72
		1882.5	21.73	20.79
		1855	21.85	20.79
	25RB Middle (12)	1910	21.72	20.94
		1882.5	21.73	20.74
		1855	21.80	20.80
	25RB Low (0)	1910	21.66	20.89
		1882.5	21.71	20.67
		1855	21.82	20.84
	50RB (0)	1910	21.69	20.74
		1882.5	21.79	20.81
		1855	21.77	20.71
15 MHz	1RB High (74)	1907.5	23.01	21.94
		1882.5	22.69	21.78
		1857.5	22.80	22.47
	1RB Middle (37)	1907.5	22.83	22.39
		1882.5	22.47	21.75
		1857.5	22.70	21.70

	1RB Low (0)	1907.5	22.77	21.74
		1882.5	22.54	21.30
		1857.5	22.64	22.39
	36RB High (38)	1907.5	21.66	20.81
		1882.5	21.70	20.59
		1857.5	21.88	20.92
	36RB Middle (19)	1907.5	21.66	20.80
		1882.5	21.76	20.62
		1857.5	21.77	20.55
	36RB Low (0)	1907.5	21.64	20.72
		1882.5	21.80	20.78
		1857.5	21.75	20.64
	75RB (0)	1907.5	21.76	20.77
		1882.5	21.75	20.70
		1857.5	21.80	20.68
20 MHz	1RB High (99)	1905	22.90	21.67
		1882.5	22.60	21.40
		1860	22.45	21.79
	1RB Middle (50)	1905	22.77	22.00
		1882.5	22.72	21.71
		1860	22.79	22.28
	1RB Low (0)	1905	22.74	21.22
		1882.5	22.35	21.33
		1860	22.48	21.35
	50RB High (50)	1905	21.71	20.72
		1882.5	21.69	20.74
		1860	21.77	20.88
	50RB Middle (25)	1905	21.72	20.75
		1882.5	21.75	20.80
		1860	21.87	20.99
	50RB Low (0)	1905	21.73	20.73
		1882.5	21.73	20.61
		1860	21.84	20.82
	100RB (0)	1905	21.77	20.69
		1882.5	21.72	20.76
		1860	21.83	20.80

Band 26				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	848.3	22.74	21.86
		831.5	22.92	22.36
		814.7	22.66	21.93
	1RB Middle (3)	848.3	22.85	21.99
		831.5	23.03	22.29
		814.7	22.95	21.76
	1RB Low (0)	848.3	22.67	21.74
		831.5	22.94	22.27
		814.7	22.89	21.80
	3RB High (3)	848.3	22.91	22.05
		831.5	22.88	22.30
		814.7	22.89	21.68
	3RB Middle (1)	848.3	22.98	22.37
		831.5	22.92	22.24
		814.7	22.97	21.75
	3RB Low (0)	848.3	22.61	22.38
		831.5	22.85	22.01
		814.7	22.84	21.65
	6RB (0)	848.3	21.83	20.92
		831.5	21.95	21.28
		814.7	22.04	20.63
3 MHz	1RB High (14)	847.5	22.79	21.96
		831.5	23.21	22.08
		815.5	23.19	22.06
	1RB Middle (7)	847.5	23.02	22.08
		831.5	23.25	22.33
		815.5	23.18	22.44
	1RB Low (0)	847.5	23.17	21.79
		831.5	22.97	22.11
		815.5	23.04	22.10
	8RB High (7)	847.5	21.92	20.80
		831.5	22.01	21.12
		815.5	21.93	21.02
	8RB Middle (4)	847.5	21.91	21.14
		831.5	21.87	21.19
		815.5	21.95	20.95
	8RB Low (0)	847.5	21.73	21.19
		831.5	21.86	21.14
		815.5	21.95	21.05
	15RB (0)	847.5	21.86	20.87
		831.5	22.08	21.12
		815.5	21.98	20.92

5 MHz	1RB High (24)	846.5	22.63	21.69
		831.5	23.02	22.02
		816.5	22.70	21.62
	1RB Middle (12)	846.5	23.09	22.10
		831.5	23.05	22.12
		816.5	23.20	21.73
	1RB Low (0)	846.5	22.82	21.85
		831.5	22.90	21.94
		816.5	23.06	21.43
	12RB High (13)	846.5	21.87	20.78
		831.5	22.01	20.94
		816.5	21.95	21.22
	12RB Middle (6)	846.5	21.86	20.84
		831.5	22.09	21.17
		816.5	22.14	21.07
	12RB Low (0)	846.5	21.95	20.81
		831.5	22.06	21.14
		816.5	22.06	21.07
	25RB (0)	846.5	21.98	21.14
		831.5	22.04	21.01
		816.5	22.02	21.21
10 MHz	1RB High (49)	844	22.97	21.90
		831.5	22.69	21.84
		820	22.67	21.61
	1RB Middle (24)	844	23.22	22.18
		831.5	23.16	22.15
		820	23.26	22.19
	1RB Low (0)	844	22.85	21.53
		831.5	22.66	21.51
		820	22.77	22.01
	25RB High (25)	844	21.91	21.04
		831.5	21.79	20.78
		820	21.93	20.99
	25RB Middle (12)	844	21.96	21.17
		831.5	22.09	21.16
		820	21.99	21.30
	25RB Low (0)	844	21.83	21.08
		831.5	21.88	20.98
		820	22.02	21.21
	50RB (0)	844	21.94	21.02
		831.5	21.77	20.88
		820	22.02	21.10
15 MHz	1RB High (74)	841.5	22.93	21.99
		831.5	22.87	22.03
		822.5	22.91	21.75
	1RB Middle (37)	1907.5	22.98	22.03
		1882.5	23.07	22.49
		1857.5	22.99	22.37

	1RB Low (0)	1907.5	22.78	21.37
		1882.5	22.73	22.47
		1857.5	22.93	21.90
	36RB High (38)	1907.5	22.02	21.11
		1882.5	21.95	20.90
		1857.5	21.92	20.93
	36RB Middle (19)	1907.5	22.05	21.14
		1882.5	22.03	21.02
		1857.5	22.01	21.08
	36RB Low (0)	1907.5	21.96	21.04
		1882.5	21.95	20.95
		1857.5	22.04	21.04
	75RB (0)	1907.5	21.92	20.93
		1882.5	21.98	20.85
		1857.5	22.04	20.99

Band 41				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
5 MHz	1RB High (24)	2687.5	23.96	22.76
		2640.3	23.92	22.78
		2593	23.76	22.56
		2545.8	24.04	22.84
		2498.5	23.98	23.05
	1RB Middle (12)	2687.5	24.49	22.99
		2640.3	24.46	23.02
		2593	24.15	22.90
		2545.8	24.37	23.26
		2498.5	24.53	22.96
	1RB Low (0)	2687.5	23.79	22.61
		2640.3	23.96	22.79
		2593	23.81	22.54
		2545.8	24.03	23.07
		2498.5	24.31	22.79
	12RB High (13)	2687.5	23.12	22.06
		2640.3	23.25	22.35
		2593	23.27	22.45
		2545.8	23.19	22.22
		2498.5	23.42	22.38
	12RB Middle (6)	2687.5	23.02	22.12
		2640.3	23.17	22.38
		2593	23.25	22.43
		2545.8	23.29	22.21
		2498.5	23.43	22.48
	12RB Low (0)	2687.5	23.03	22.10
		2640.3	23.20	22.33
		2593	23.25	22.43
		2545.8	23.27	22.28
		2498.5	23.26	22.40
	25RB (0)	2687.5	23.04	22.08
		2640.3	23.18	22.30
		2593	23.26	22.29
		2545.8	23.18	22.25
		2498.5	23.37	22.35
10 MHz	1RB	2685	23.94	22.61

	High (49)	2639	24.03	23.90
		2593	24.08	23.58
		2547	23.98	22.55
		2501	24.13	23.96
	1RB Middle (24)	2685	24.13	22.29
		2639	24.37	23.67
		2593	24.38	23.68
		2547	24.18	22.59
		2501	24.39	23.69
	1RB Low (0)	2685	23.96	22.55
		2639	24.11	23.91
		2593	24.01	23.55
		2547	23.92	22.79
		2501	24.02	23.97
	25RB High (25)	2685	22.85	21.89
		2639	23.11	22.23
		2593	23.18	22.31
		2547	23.21	22.03
		2501	23.21	22.38
	25RB Middle (12)	2685	22.93	21.86
		2639	23.15	22.29
		2593	23.19	22.49
		2547	23.17	22.32
		2501	23.27	22.45
	25RB Low (0)	2685	22.96	21.81
		2639	23.06	22.17
		2593	23.13	22.27
		2547	23.10	22.15
		2501	23.25	22.29
	50RB (0)	2685	22.99	22.02
		2639	23.12	22.30
		2593	23.24	22.27
		2547	23.15	22.19
		2501	23.21	22.32
15 MHz	1RB High (74)	2682.5	23.94	22.79
		2637.8	24.36	23.09
		2593	24.21	23.96
		2548.3	24.05	22.69
		2503.5	24.22	23.08
	1RB Middle	2682.5	23.98	22.48
		2637.8	24.40	23.50

	(37)	2593	24.20	23.77
		2548.3	24.13	22.85
		2503.5	24.37	23.14
	1RB Low (0)	2682.5	23.92	22.65
		2637.8	24.43	23.39
		2593	24.16	23.64
		2548.3	24.25	22.98
		2503.5	24.00	23.11
	36RB High (38)	2682.5	23.05	22.09
		2637.8	23.28	22.22
		2593	23.19	22.22
		2548.3	23.29	22.21
		2503.5	23.22	22.20
	36RB Middle (19)	2682.5	23.10	22.12
		2637.8	23.27	22.35
		2593	23.29	22.23
		2548.3	23.27	22.28
		2503.5	23.22	22.24
	36RB Low (0)	2682.5	23.04	22.07
		2637.8	23.28	22.36
		2593	23.17	22.18
		2548.3	23.16	22.29
		2503.5	23.26	22.22
	75RB (0)	2682.5	23.09	22.14
		2637.8	23.23	22.38
		2593	23.16	22.43
		2548.3	23.12	22.35
		2503.5	23.20	22.27
20 MHz	1RB High (99)	2680	24.11	22.68
		2636.5	24.25	22.55
		2593	23.94	23.40
		2549.5	24.21	22.68
		2506	24.11	22.37
	1RB Middle (50)	2680	24.20	23.05
		2636.5	24.52	22.55
		2593	24.23	23.86
		2549.5	24.36	23.22
		2506	24.32	22.39
	1RB Low (0)	2680	24.20	22.66
		2636.5	24.25	22.57
		2593	23.86	23.58

		2549.5	24.34	22.81
		2506	23.95	22.06
	50RB High (50)	2680	23.05	22.08
		2636.5	23.28	22.32
		2593	23.29	22.26
		2549.5	23.20	22.21
		2506	23.23	22.21
	50RB Middle (25)	2680	23.05	22.07
		2636.5	23.27	22.36
		2593	23.37	22.33
		2549.5	23.22	22.24
		2506	23.23	22.27
	50RB Low (0)	2680	22.99	22.11
		2636.5	23.28	22.29
		2593	23.21	22.27
		2549.5	23.07	22.20
		2506	23.17	22.21
	100RB (0)	2680	23.01	22.05
		2636.5	23.31	22.22
		2593	23.20	22.32
		2549.5	23.14	22.16
		2506	23.15	22.10

Band 66				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1779.3	22.31	21.51
		1745	22.46	22.08
		1710.7	22.69	21.72
	1RB Middle (3)	1779.3	22.58	21.47
		1745	22.48	21.68
		1710.7	22.70	21.75
	1RB Low (0)	1779.3	22.57	21.48
		1745	22.39	21.44
		1710.7	22.66	21.68
	3RB High (3)	1779.3	22.63	21.49
		1745	22.50	21.36
		1710.7	22.68	21.71
	3RB Middle (1)	1779.3	22.59	21.54
		1745	22.52	21.39
		1710.7	22.67	21.56
	3RB Low (0)	1779.3	22.55	21.61
		1745	22.55	21.64
		1710.7	22.48	21.84
	6RB (0)	1779.3	21.70	20.55
		1745	21.48	20.39
		1710.7	21.74	20.81
3 MHz	1RB High (14)	1778.5	22.47	21.36
		1745	22.49	21.72
		1711.5	22.51	21.54
	1RB Middle (7)	1778.5	22.56	21.68
		1745	22.47	21.71
		1711.5	22.70	21.68
	1RB Low (0)	1778.5	22.77	21.51
		1745	22.47	21.68
		1711.5	22.56	21.80
	8RB High (7)	1778.5	21.62	20.55
		1745	21.65	20.60
		1711.5	21.66	20.50
	8RB Middle (4)	1778.5	21.59	20.76
		1745	21.64	20.61
		1711.5	21.73	20.74
	8RB Low (0)	1778.5	21.59	20.59
		1745	21.61	20.68
		1711.5	21.70	20.72
	15RB	1778.5	21.57	20.68

	(0)	1745	21.62	20.66
		1711.5	21.69	20.73
5 MHz	1RB High (24)	1777.5	22.56	21.76
		1745	22.40	21.76
		1712.5	22.54	21.57
	1RB Middle (12)	1777.5	22.57	21.89
		1745	22.61	21.84
		1712.5	22.66	21.68
	1RB Low (0)	1777.5	22.52	21.65
		1745	22.40	21.72
		1712.5	22.64	21.56
	12RB High (13)	1777.5	21.58	20.74
		1745	21.56	20.66
		1712.5	21.54	20.53
	12RB Middle (6)	1777.5	21.63	20.72
		1745	21.52	20.63
		1712.5	21.53	20.55
	12RB Low (0)	1777.5	21.62	20.81
		1745	21.45	20.69
		1712.5	21.56	20.70
	25RB (0)	1777.5	21.60	20.66
		1745	21.50	20.70
		1712.5	21.60	20.81
10 MHz	1RB High (49)	1775	22.52	21.63
		1745	22.58	21.20
		1715	22.61	21.63
	1RB Middle (24)	1775	23.13	22.24
		1745	22.80	21.71
		1715	22.65	21.55
	1RB Low (0)	1775	22.77	21.62
		1745	22.54	21.34
		1715	22.66	21.76
	25RB High (25)	1775	21.62	20.63
		1745	21.60	20.83
		1715	21.63	20.89
	25RB Middle (12)	1775	21.80	20.76
		1745	21.67	21.02
		1715	21.62	20.87
	25RB Low (0)	1775	21.73	20.60
		1745	21.52	20.92
		1715	21.69	20.74
	50RB (0)	1775	21.67	20.57
		1745	21.60	20.62
		1715	21.57	20.58
15 MHz	1RB High (74)	1772.5	22.85	21.60
		1745	22.56	21.55
		1717.5	22.56	22.38
	1RB	1772.5	22.86	22.27

	Middle (37)	1745	22.59	21.72
		1717.5	22.47	22.32
	1RB Low (0)	1772.5	22.77	21.58
		1745	22.60	21.28
		1717.5	22.57	22.42
	36RB High (38)	1772.5	21.63	20.49
		1745	21.67	20.68
		1717.5	21.65	20.61
	36RB Middle (19)	1772.5	21.79	20.78
		1745	21.65	20.65
		1717.5	21.53	20.57
	36RB Low (0)	1772.5	21.63	20.56
		1745	21.63	20.71
		1717.5	21.51	20.44
	75RB (0)	1772.5	21.62	20.58
		1745	21.59	20.61
		1717.5	21.48	20.63
20 MHz	1RB High (99)	1770	22.55	21.56
		1745	22.36	21.32
		1720	22.18	21.18
	1RB Middle (50)	1770	22.79	22.01
		1745	22.86	21.55
		1720	22.49	21.88
	1RB Low (0)	1770	22.67	21.26
		1745	22.33	21.36
		1720	22.26	21.19
	50RB High (50)	1770	21.65	20.72
		1745	21.58	20.65
		1720	21.67	20.68
	50RB Middle (25)	1770	21.63	20.70
		1745	21.65	20.72
		1720	21.51	20.74
	50RB Low (0)	1770	21.62	20.42
		1745	21.54	20.62
		1720	21.40	20.48
	100RB (0)	1770	21.67	20.63
		1745	21.52	20.61
		1720	21.58	20.60

Band 71					
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)	64QAM Actual output power (dBm)
5 MHz	1RB High (24)	695.5	22.05	21.15	22.05
		680.5	22.44	21.30	22.44
		665.5	22.49	21.30	22.49
	1RB Middle (12)	695.5	22.06	21.53	22.06
		680.5	22.13	21.52	22.13
		665.5	22.46	21.39	22.46
	1RB Low (0)	695.5	22.15	21.40	22.15
		680.5	22.20	21.42	22.20
		665.5	22.35	21.19	22.35
	12RB High (13)	695.5	21.38	20.24	21.38
		680.5	21.43	20.27	21.43
		665.5	21.40	20.58	21.40
	12RB Middle (6)	695.5	21.42	20.25	21.42
		680.5	21.46	20.30	21.46
		665.5	21.38	20.55	21.38
	12RB Low (0)	695.5	21.34	20.43	21.34
		680.5	21.49	20.28	21.49
		665.5	21.39	20.57	21.39
	25RB (0)	695.5	21.38	20.44	21.38
		680.5	21.41	20.46	21.41
		665.5	21.50	20.61	21.50
10 MHz	1RB High (49)	693	22.21	21.11	22.21
		680.5	22.30	21.60	22.30
		668	22.81	22.26	22.81
	1RB Middle (24)	693	22.72	21.53	22.72
		680.5	22.53	21.75	22.53
		668	22.87	21.90	22.87
	1RB Low (0)	693	22.30	21.01	22.30
		680.5	22.46	21.44	22.46
		668	22.66	21.24	22.66
	25RB High (25)	693	21.47	20.48	21.47
		680.5	21.45	20.58	21.45
		668	21.55	20.57	21.55
	25RB Middle (12)	693	21.44	20.46	21.44
		680.5	21.48	20.56	21.48
		668	21.46	20.49	21.46
	25RB Low (0)	693	21.41	20.28	21.41
		680.5	21.42	20.61	21.42
		668	21.46	20.45	21.46
	50RB (0)	693	21.46	20.39	21.46
		680.5	21.43	20.55	21.43
		668	21.45	20.42	21.45
15 MHz	1RB	690.5	22.36	21.15	22.36

	High (74)	680.5	22.29	22.00	22.29
		670.5	22.74	21.63	22.74
	1RB Middle (37)	690.5	22.47	21.60	22.47
		680.5	22.32	22.07	22.32
		670.5	22.72	21.56	22.72
	1RB Low (0)	690.5	22.22	20.94	22.22
		680.5	22.31	22.15	22.31
		670.5	22.69	21.05	22.69
	36RB High (38)	690.5	21.45	20.39	21.45
		680.5	21.37	20.41	21.37
		670.5	21.57	20.65	21.57
	36RB Middle (19)	690.5	21.43	20.45	21.43
		680.5	21.44	20.49	21.44
		670.5	21.52	20.73	21.52
	36RB Low (0)	690.5	21.29	20.30	21.29
		680.5	21.45	20.49	21.45
		670.5	21.39	20.53	21.39
	75RB (0)	690.5	21.37	20.26	21.37
		680.5	21.38	20.53	21.38
		670.5	21.36	20.54	21.36
20 MHz	1RB High (99)	688	22.11	21.20	22.11
		683	22.36	20.77	22.36
		673	22.40	21.33	22.40
	1RB Middle (50)	688	22.29	21.93	22.29
		683	22.72	21.87	22.72
		673	22.60	21.43	22.60
	1RB Low (0)	688	22.37	20.91	22.37
		683	22.32	20.91	22.32
		673	22.02	21.19	22.02
	50RB High (50)	688	21.37	20.60	21.37
		683	21.35	20.51	21.35
		673	21.52	20.60	21.52
	50RB Middle (25)	688	21.37	20.55	21.37
		683	21.43	20.62	21.43
		673	21.62	20.60	21.62
	50RB Low (0)	688	21.35	20.32	21.35
		683	21.40	20.59	21.40
		673	21.33	20.42	21.33
	100RB (0)	688	21.36	20.35	21.36
		683	21.35	20.35	21.35
		673	21.46	20.47	21.46

Low power

Table 11.3-5: The conducted Power for LTE

Band 25				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1914.3	20.47	19.61
		1882.5	20.75	19.56
		1850.7	20.54	19.34
	1RB Middle (3)	1914.3	20.48	19.73
		1882.5	20.83	19.58
		1850.7	20.60	19.30
	1RB Low (0)	1914.3	20.44	19.71
		1882.5	20.67	19.43
		1850.7	20.67	19.42
	3RB High (3)	1914.3	20.63	19.46
		1882.5	20.72	19.68
		1850.7	20.59	19.11
	3RB Middle (1)	1914.3	20.71	19.38
		1882.5	20.60	19.72
		1850.7	20.62	19.19
	3RB Low (0)	1914.3	20.61	19.36
		1882.5	20.57	19.73
		1850.7	20.54	19.20
	6RB (0)	1914.3	19.59	18.40
		1882.5	19.52	18.69
		1850.7	19.56	18.57
3 MHz	1RB High (14)	1913.5	20.77	19.63
		1882.5	20.65	19.55
		1851.5	20.54	19.47
	1RB Middle (7)	1913.5	21.00	20.24
		1882.5	20.91	19.60
		1851.5	20.83	19.45
	1RB Low (0)	1913.5	20.88	20.18
		1882.5	20.55	19.58
		1851.5	20.67	19.49
	8RB High (7)	1913.5	19.82	18.94
		1882.5	19.59	18.65
		1851.5	19.61	18.50
	8RB Middle (4)	1913.5	19.67	18.87
		1882.5	19.56	18.74
		1851.5	19.56	18.34
	8RB Low (0)	1913.5	19.59	18.87
		1882.5	19.53	18.80
		1851.5	19.53	18.31
	15RB	1913.5	19.57	18.72

	(0)	1882.5	19.63	18.65
		1851.5	19.60	18.61
5 MHz	1RB High (24)	1912.5	20.73	19.73
		1882.5	20.56	19.52
		1852.5	20.36	19.62
	1RB Middle (12)	1912.5	20.74	19.82
		1882.5	21.11	19.61
		1852.5	20.37	19.28
	1RB Low (0)	1912.5	20.52	19.59
		1882.5	20.41	19.57
		1852.5	20.25	19.06
	12RB High (13)	1912.5	19.63	18.56
		1882.5	19.63	18.70
		1852.5	19.64	18.57
	12RB Middle (6)	1912.5	19.61	18.57
		1882.5	19.58	18.62
		1852.5	19.69	18.77
	12RB Low (0)	1912.5	19.49	18.48
		1882.5	19.57	18.42
		1852.5	19.57	18.65
	25RB (0)	1912.5	19.56	18.64
		1882.5	19.55	18.70
		1852.5	19.62	18.66
10 MHz	1RB High (49)	1910	20.47	19.44
		1882.5	20.63	19.66
		1855	20.61	19.63
	1RB Middle (24)	1910	20.63	19.71
		1882.5	20.59	20.18
		1855	20.84	19.57
	1RB Low (0)	1910	20.69	19.40
		1882.5	20.79	19.48
		1855	20.76	19.02
	25RB High (25)	1910	19.45	18.76
		1882.5	19.80	18.61
		1855	19.70	18.67
	25RB Middle (12)	1910	19.56	18.82
		1882.5	19.59	18.79
		1855	19.71	18.70
	25RB Low (0)	1910	19.51	18.67
		1882.5	19.55	18.52
		1855	19.68	18.71
	50RB (0)	1910	19.48	18.47
		1882.5	19.61	18.61
		1855	19.60	18.57
15 MHz	1RB High (74)	1907.5	20.76	19.89
		1882.5	20.91	19.79
		1857.5	20.78	19.20
	1RB	1907.5	21.07	20.39

	Middle (37)	1882.5	20.67	19.97
		1857.5	21.00	19.36
	1RB Low (0)	1907.5	20.56	20.11
		1882.5	20.63	19.54
		1857.5	20.63	19.09
	36RB High (38)	1907.5	19.62	18.58
		1882.5	19.67	18.46
		1857.5	19.61	18.71
	36RB Middle (19)	1907.5	19.57	18.65
		1882.5	19.64	18.51
		1857.5	19.58	18.69
	36RB Low (0)	1907.5	19.57	18.66
		1882.5	19.61	18.45
		1857.5	19.61	18.61
	75RB (0)	1907.5	19.51	18.52
		1882.5	19.53	18.49
		1857.5	19.61	18.61
20 MHz	1RB High (99)	1905	21.16	20.09
		1882.5	20.54	19.47
		1860	20.29	19.73
	1RB Middle (50)	1905	20.98	20.34
		1882.5	20.71	20.32
		1860	20.76	20.01
	1RB Low (0)	1905	20.82	19.23
		1882.5	20.47	19.29
		1860	20.27	19.11
	50RB High (50)	1905	19.70	18.75
		1882.5	19.76	18.80
		1860	19.73	18.73
	50RB Middle (25)	1905	19.90	18.88
		1882.5	19.68	18.77
		1860	19.64	18.66
	50RB Low (0)	1905	19.70	18.80
		1882.5	19.64	18.60
		1860	19.70	18.61
	100RB (0)	1905	19.66	18.63
		1882.5	19.65	18.80
		1860	19.70	18.73

Band 41				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
5 MHz	1RB High (24)	2687.5	22.13	21.48
		2640.3	22.27	20.87
		2593	22.24	20.78
		2545.8	22.10	21.50
		2498.5	22.43	20.79
	1RB Middle (12)	2687.5	22.30	21.68
		2640.3	22.69	21.43
		2593	22.29	20.87
		2545.8	22.68	21.69
		2498.5	22.68	21.14
	1RB Low (0)	2687.5	22.22	21.60
		2640.3	22.33	20.87
		2593	22.16	20.87
		2545.8	22.17	21.39
		2498.5	22.39	20.87
	12RB High (13)	2687.5	21.37	20.41
		2640.3	21.31	20.21
		2593	21.26	20.16
		2545.8	21.27	20.49
		2498.5	21.28	20.16
	12RB Middle (6)	2687.5	21.45	20.50
		2640.3	21.32	20.39
		2593	21.34	20.01
		2545.8	21.31	20.42
		2498.5	21.35	20.22
	12RB Low (0)	2687.5	21.38	20.39
		2640.3	21.26	20.26
		2593	21.33	20.04
		2545.8	21.23	20.23
		2498.5	21.28	20.35
	25RB (0)	2687.5	21.24	20.31
		2640.3	21.30	20.28
		2593	21.34	20.20
		2545.8	21.27	20.30
		2498.5	21.40	20.38
10 MHz	1RB	2685	22.24	20.92

	High (49)	2639	22.34	20.26
		2593	22.38	20.03
		2547	22.33	20.65
		2501	22.29	20.43
	1RB Middle (24)	2685	22.41	20.80
		2639	22.48	20.31
		2593	22.46	21.97
		2547	22.54	20.59
		2501	22.46	20.48
	1RB Low (0)	2685	22.34	20.93
		2639	22.38	20.38
		2593	22.24	21.91
		2547	22.18	20.56
		2501	22.37	20.39
	25RB High (25)	2685	21.37	20.42
		2639	21.41	20.37
		2593	21.41	20.55
		2547	21.44	20.41
		2501	21.28	20.37
	25RB Middle (12)	2685	21.48	20.34
		2639	21.37	20.25
		2593	21.44	20.55
		2547	21.36	20.34
		2501	21.36	20.34
	25RB Low (0)	2685	21.44	20.36
		2639	21.38	20.16
		2593	21.35	20.32
		2547	21.30	20.16
		2501	21.33	20.41
	50RB (0)	2685	21.44	20.43
		2639	21.40	20.36
		2593	21.30	20.45
		2547	21.32	20.40
		2501	21.42	20.33
15 MHz	1RB High (74)	2682.5	22.21	20.72
		2637.8	22.22	21.64
		2593	22.27	22.00
		2548.3	22.27	20.69
		2503.5	22.11	21.55
	1RB Middle	2682.5	22.42	20.84
		2637.8	22.20	21.69

	(37)	2593	22.12	21.95
		2548.3	22.35	20.76
		2503.5	22.05	21.66
	1RB Low (0)	2682.5	22.40	20.90
		2637.8	22.37	21.81
		2593	22.41	20.06
		2548.3	22.29	20.75
		2503.5	22.11	21.56
	36RB High (38)	2682.5	21.43	20.36
		2637.8	21.35	20.29
		2593	21.39	20.28
		2548.3	21.28	20.49
		2503.5	21.22	20.16
	36RB Middle (19)	2682.5	21.38	20.54
		2637.8	21.35	20.35
		2593	21.30	20.20
		2548.3	21.34	20.57
		2503.5	21.19	20.15
	36RB Low (0)	2682.5	21.30	20.36
		2637.8	21.40	20.35
		2593	21.26	20.12
		2548.3	21.16	20.37
		2503.5	21.20	20.06
	75RB (0)	2682.5	21.34	20.43
		2637.8	21.48	20.49
		2593	21.28	20.28
		2548.3	21.31	20.36
		2503.5	21.14	20.21
20 MHz	1RB High (99)	2680	22.06	20.59
		2636.5	22.14	20.25
		2593	21.63	21.05
		2549.5	22.00	20.49
		2506	21.98	20.09
	1RB Middle (50)	2680	22.21	21.15
		2636.5	22.44	20.58
		2593	21.98	21.22
		2549.5	22.23	21.61
		2506	22.26	20.06
	1RB Low (0)	2680	21.98	20.56
		2636.5	21.95	20.09
		2593	21.62	20.96

		2549.5	22.06	20.55
		2506	22.00	20.03
	50RB High (50)	2680	20.98	19.99
		2636.5	21.08	20.12
		2593	21.06	20.03
		2549.5	21.15	20.27
		2506	21.01	19.95
	50RB Middle (25)	2680	21.12	20.13
		2636.5	21.16	20.24
		2593	21.14	20.19
		2549.5	21.15	20.28
		2506	21.08	20.03
	50RB Low (0)	2680	20.96	19.97
		2636.5	21.08	20.11
		2593	21.03	19.98
		2549.5	21.13	20.14
		2506	20.90	19.85
	100RB (0)	2680	20.97	20.00
		2636.5	21.10	20.14
		2593	21.06	19.97
		2549.5	21.08	20.12
		2506	20.91	19.76

Band 66				
Bandwidth (MHz)	RB allocation RB offset (Start RB)	Frequency (MHz)	QPSK Actual output power (dBm)	16QAM Actual output power (dBm)
1.4 MHz	1RB High (5)	1779.3	17.65	16.67
		1745	17.36	16.59
		1710.7	17.41	16.48
	1RB Middle (3)	1779.3	17.85	16.61
		1745	17.38	16.67
		1710.7	17.49	16.57
	1RB Low (0)	1779.3	17.71	16.66
		1745	17.46	16.55
		1710.7	17.57	16.23
	3RB High (3)	1779.3	17.77	16.61
		1745	17.55	16.23
		1710.7	17.67	16.68
	3RB Middle (1)	1779.3	17.78	16.63
		1745	17.57	16.27
		1710.7	17.58	16.70
	3RB Low (0)	1779.3	17.72	16.69
		1745	17.62	16.56
		1710.7	17.52	16.46
	6RB (0)	1779.3	16.60	15.99
		1745	16.55	15.35
		1710.7	16.46	15.60
3 MHz	1RB High (14)	1778.5	17.58	16.63
		1745	17.54	16.50
		1711.5	17.48	16.39
	1RB Middle (7)	1778.5	17.60	16.69
		1745	17.57	16.59
		1711.5	17.67	16.67
	1RB Low (0)	1778.5	17.60	16.67
		1745	17.49	16.53
		1711.5	17.52	16.53
	8RB High (7)	1778.5	16.64	15.88
		1745	16.52	15.52
		1711.5	16.55	15.65
	8RB Middle (4)	1778.5	16.68	16.01
		1745	16.58	15.51
		1711.5	16.52	15.72
	8RB Low (0)	1778.5	16.68	16.02
		1745	16.61	15.69
		1711.5	16.51	15.64
	15RB (0)	1778.5	16.68	15.74
		1745	16.56	15.60

		1711.5	16.50	15.55
5 MHz	1RB High (24)	1777.5	17.66	16.64
		1745	17.29	16.55
		1712.5	17.29	16.43
	1RB Middle (12)	1777.5	17.80	16.67
		1745	17.53	16.73
		1712.5	17.51	16.66
	1RB Low (0)	1777.5	17.66	16.47
		1745	17.39	16.67
		1712.5	17.49	16.56
	12RB High (13)	1777.5	16.69	15.56
		1745	16.44	15.54
		1712.5	16.47	15.41
	12RB Middle (6)	1777.5	16.66	15.70
		1745	16.44	15.60
		1712.5	16.45	15.55
	12RB Low (0)	1777.5	16.60	15.57
		1745	16.47	15.59
		1712.5	16.50	15.62
	25RB (0)	1777.5	16.66	15.74
		1745	16.53	15.66
		1712.5	16.53	15.55
10 MHz	1RB High (49)	1775	17.54	16.51
		1745	17.51	16.22
		1715	17.35	16.52
	1RB Middle (24)	1775	18.07	17.09
		1745	17.65	16.56
		1715	17.65	16.55
	1RB Low (0)	1775	17.63	16.28
		1745	17.64	16.26
		1715	17.47	16.63
	25RB High (25)	1775	16.68	15.78
		1745	16.47	15.41
		1715	16.38	15.52
	25RB Middle (12)	1775	16.74	15.86
		1745	16.61	15.50
		1715	16.44	15.58
	25RB Low (0)	1775	16.62	15.73
		1745	16.41	15.40
		1715	16.43	15.56
	50RB (0)	1775	16.70	15.71
		1745	16.44	15.43
		1715	16.40	15.48
15 MHz	1RB High (74)	1772.5	17.52	16.66
		1745	17.45	17.14
		1717.5	17.76	16.51
	1RB Middle	1772.5	17.69	16.73
		1745	17.52	17.28

	(37)	1717.5	17.70	17.08
	1RB Low (0)	1772.5	17.44	16.13
		1745	17.56	17.25
		1717.5	17.55	16.53
	36RB High (38)	1772.5	16.63	15.76
		1745	16.48	15.58
		1717.5	16.46	15.52
	36RB Middle (19)	1772.5	16.65	15.72
		1745	16.56	15.60
		1717.5	16.44	15.49
	36RB Low (0)	1772.5	16.60	15.68
		1745	16.56	15.49
		1717.5	16.37	15.42
	75RB (0)	1772.5	16.64	15.52
		1745	16.54	15.61
		1717.5	16.40	15.39
20 MHz	1RB High (99)	1770	17.51	16.33
		1745	17.29	16.28
		1720	17.40	16.36
	1RB Middle (50)	1770	17.53	16.77
		1745	17.61	16.68
		1720	17.36	16.90
	1RB Low (0)	1770	17.60	16.02
		1745	17.32	16.37
		1720	17.19	16.16
	50RB High (50)	1770	16.62	15.68
		1745	16.61	15.65
		1720	16.58	15.66
	50RB Middle (25)	1770	16.64	15.65
		1745	16.55	15.59
		1720	16.50	15.50
	50RB Low (0)	1770	16.45	15.42
		1745	16.55	15.59
		1720	16.45	15.38
	100RB (0)	1770	16.48	15.54
		1745	16.57	15.55
		1720	16.52	15.62

11.4 Wi-Fi Measurement result

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

802.11b(dBm)								
Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
11(2462MHz)	19.13	19.09	19.06	18.85				
6(2437MHz)	19.11							
1(2412MHz)	19.05							
Tune up	19.50	19.50	19.50	19.50				
802.11g(dBm)								
Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
11(2462MHz)	17.30							
6(2437MHz)	17.48	17.32	17.20	17.18	17.27	15.43	13.79	13.61
1(2412MHz)	17.21							
Tune up	17.50	17.50	17.50	17.50	17.50	17.00	15.00	15.00
802.11n(dBm)-20MHz								
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
11(2462MHz)	17.05							
6(2437MHz)	17.24	16.83	16.82	16.90	16.56	14.29	14.14	14.01
1(2412MHz)	16.95							
Tune up	17.50	17.50	17.50	17.50	17.50	15.00	15.00	15.00
802.11n(dBm)-40MHz								
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
9(2452MHz)	15.11	14.68	14.27	13.94	13.51	12.16	12.05	12.01
6(2437MHz)	15.00							
3(2422MHz)	14.64							
Tune up	15.50	15.50	15.50	15.50	15.50	14.00	14.00	14.00

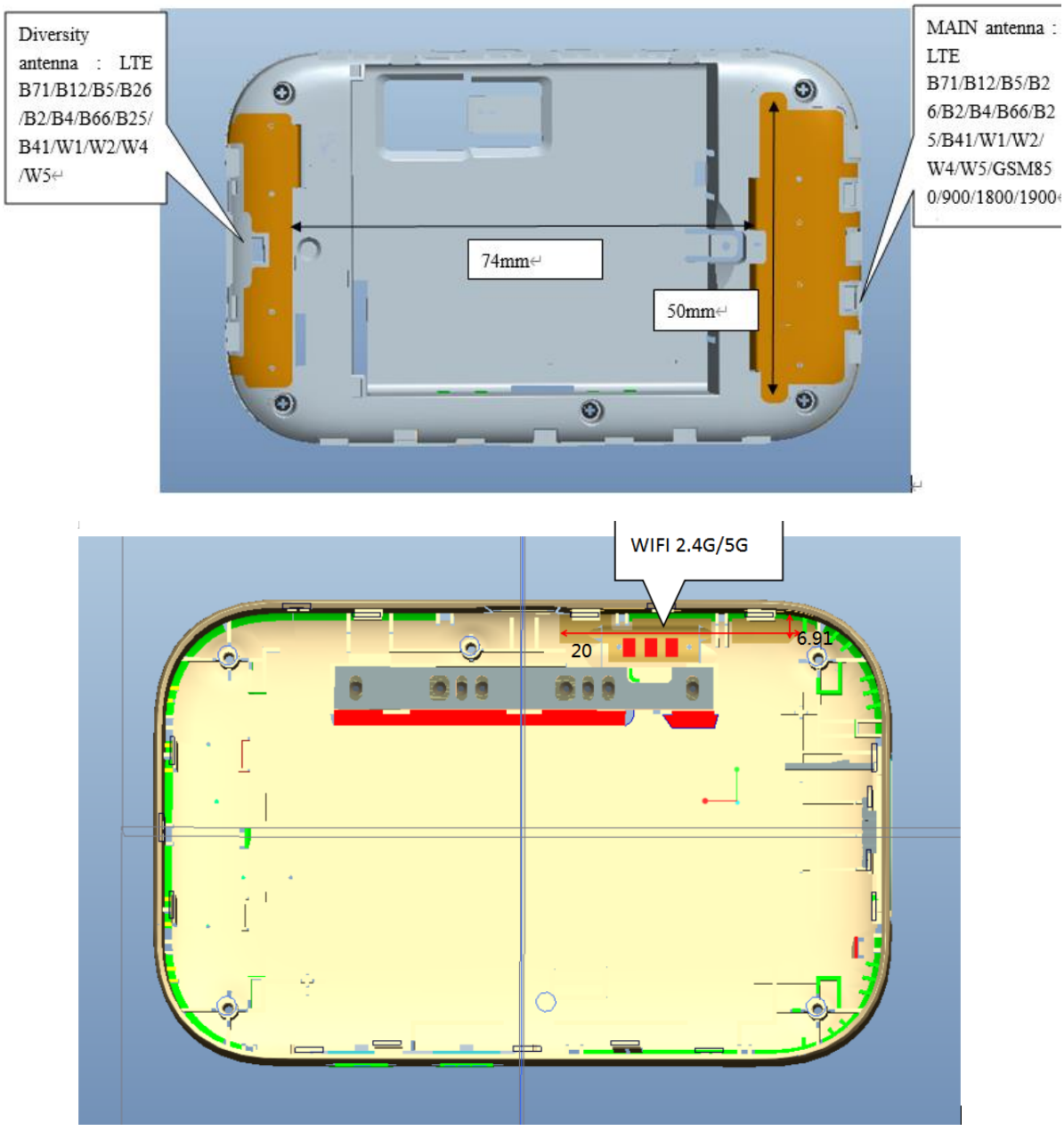
802.11n(dBm)-20MHz								
Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
36(5180 MHz)	15.68	15.28	15.27	12.94	12.57	11.27	11.15	10.96
40(5200 MHz)	15.45							
44(5220 MHz)	15.31							
48(5240 MHz)	**15.06**							
149(5745 MHz)	16.30	15.91	15.90	13.66	13.27	11.92	11.83	11.66
153(5765 MHz)	16.22							
157(5785 MHz)	15.85							
161(5805 MHz)	**15.60**							
165(5825 MHz)	14.46							
Tune up	16.50	16.50	16.50	14.00	14.00	12.50	12.50	12.50

12 Simultaneous TX SAR Considerations

12.1 Introduction

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

12.2 Transmit Antenna Separation Distances



Picture 12.1 Antenna Locations

12.3 SAR Measurement Positions

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

SAR measurement positions						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
Main antenna	Yes	Yes	Yes	Yes	Yes	No
WLAN	Yes	Yes	No	Yes	Yes	No

12.4 Standalone SAR Test Exclusion Considerations

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

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

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

Table 12.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	Position	SAR test exclusion threshold(mW)	RF output power		SAR test exclusion
				dBm	mW	
2.4GHz WLAN	2.45	Head	9.58	19.5	89.13	No
5G WLAN UNII-1	5.2	Body	13.16	16.5	44.67	No
5G WLAN UNII-3	5.8	Body	12.78	16.5	44.67	No

13 Evaluation of Simultaneous

Table 13.1: The sum of reported SAR values for main antenna and WiFi2.4G

	Position	Main antenna	WiFi	Sum
Highest reported SAR value for Body	Front 10mm	0.77	0.63	**1.40**

Table 13.1: The sum of reported SAR values for main antenna and WiFi5G

	Position	Main antenna	WiFi	Sum
Highest reported SAR value for Body	Front 10mm	0.77	0.77	**1.54**

Conclusion:

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

14 SAR Test Result

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

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

The calculated SAR is obtained by the following formula:

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

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

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

Table 14.1: Duty Cycle

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

14.1 SAR results for Fast SAR

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

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	GPRS 3)	Front	Note1	28.42	29.00	0.269	**0.31**	0.384	**0.44**	-0.06
190	836.6	GPRS 3)	Rear	Note2	28.42	29.00	0.298	**0.34**	0.415	**0.47**	-0.06
190	836.6	GPRS 3)	Left	/	28.42	29.00	0.231	**0.26**	0.336	**0.38**	0.10
190	836.6	GPRS 3)	Right	/	28.42	29.00	0.197	**0.23**	0.275	**0.31**	0.07
190	836.6	GPRS 3)	Top	Note1	28.42	29.00	0.029	**0.03**	0.053	**0.06**	0.00
251	848.8	GPRS 3)	Front	Fig.1	25.45	26.50	0.352	**0.45**	0.510	**0.65**	0.07
190	836.6	GPRS 3)	Front	/	25.56	26.50	0.348	**0.43**	0.501	**0.62**	-0.08
128	824.2	GPRS 3)	Front	/	25.42	26.50	0.325	**0.42**	0.456	**0.58**	0.05
190	836.6	GPRS 3)	Rear	/	25.56	26.50	0.263	**0.33**	0.396	**0.49**	-0.08
190	836.6	GPRS 3)	Top	/	25.56	26.50	0.022	**0.03**	0.038	**0.05**	-0.01
251	848.8	EGPRS (3)	Front	/	25.65	26.50	0.331	**0.40**	0.492	**0.60**	0.08

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

Note1: The distance between the EUT and the phantom bottom is 19mm.

Note2: The distance between the EUT and the phantom bottom is 17mm.

Table 14.1-2: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	Note1	27.60	28.00	0.139	**0.15**	0.226	**0.25**	0.12
661	1880	GPRS (2)	Rear	Note2	27.60	28.00	0.112	**0.12**	0.172	**0.19**	0.03
810	1909.8	GPRS (2)	Left	/	27.37	28.00	0.229	**0.26**	0.374	**0.43**	0.05
661	1880	GPRS (2)	Left	/	27.60	28.00	0.243	**0.27**	0.403	**0.44**	-0.12
512	1850.2	GPRS (2)	Left	Fig.2	27.59	28.00	0.248	**0.27**	0.408	**0.45**	-0.02
661	1880	GPRS (2)	Right	/	27.60	28.00	0.115	**0.13**	0.192	**0.21**	0.02
661	1880	GPRS (2)	Top	Note1	27.60	28.00	0.079	**0.09**	0.138	**0.15**	-0.10
661	1880	GPRS (2)	Front	/	25.55	26.00	0.197	**0.22**	0.332	**0.37**	0.01
661	1880	GPRS (2)	Rear	/	25.55	26.00	0.141	**0.16**	0.243	**0.27**	0.08
661	1880	GPRS (2)	Top	/	25.55	26.00	0.114	**0.13**	0.216	**0.24**	0.05
512	1850.2	EGPRS (2)	Left	/	27.62	28.00	0.221	**0.24**	0.372	**0.41**	0.05

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Table 14.1-3: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ℃				Liquid Temperature: 22.5℃						
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9800	1880	Front	Note1	22.84	23.50	0.217	**0.25**	0.363	**0.42**	-0.04
9800	1880	Rear	Note2	22.84	23.50	0.190	**0.22**	0.303	**0.35**	-0.02
9938	1907.6	Left	Fig.3	22.83	23.50	0.368	**0.43**	0.622	**0.73**	0.04
9800	1880	Left	/	22.84	23.50	0.354	**0.41**	0.602	**0.70**	-0.03
9662	1852.4	Left	/	22.98	23.50	0.338	**0.38**	0.569	**0.64**	-0.03
9800	1880	Right	/	22.84	23.50	0.192	**0.22**	0.333	**0.39**	-0.03
9800	1880	Top	Note1	22.84	23.50	0.143	**0.17**	0.257	**0.30**	-0.07
9800	1880	Front	/	20.85	22.00	0.307	**0.40**	0.528	**0.69**	-0.13
9800	1880	Rear	/	20.85	22.00	0.195	**0.25**	0.348	**0.45**	-0.13
9800	1880	Top	/	20.85	22.00	0.180	**0.23**	0.346	**0.45**	0.06

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Table 14.1-4: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ℃					Liquid Temperature: 22.5℃					
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1412	1732.5	Front	Note1	22.84	23.50	0.275	**0.32**	0.422	**0.49**	0.00
1412	1732.5	Rear	Note2	22.84	23.50	0.402	**0.47**	0.678	**0.79**	0.05
1412	1732.5	Left	/	22.84	23.50	0.368	**0.43**	0.582	**0.68**	0.06
1412	1732.5	Right	/	22.84	23.50	0.226	**0.26**	0.364	**0.42**	-0.09
1513	1752.6	Top	Note1	22.83	23.50	0.356	**0.42**	0.610	**0.71**	0.08
1412	1732.5	Top	Note1	22.84	23.50	0.413	**0.48**	0.706	**0.82**	-0.06
1312	1712.4	Top	Note1 Fig.4	22.75	23.50	0.468	**0.56**	0.798	**0.95**	0.04
1412	1732.5	Front	/	17.78	19.00	0.166	**0.22**	0.270	**0.36**	-0.01
1412	1732.5	Rear	/	17.78	19.00	0.240	**0.32**	0.429	**0.57**	-0.10
1412	1732.5	Top	/	17.78	19.00	0.203	**0.27**	0.365	**0.48**	-0.03

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Table 14.1-5: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4182	836.4	Front	Note1	22.84	23.50	0.240	**0.28**	0.338	**0.39**	0.06
4182	836.4	Rear	Note2	22.84	23.50	0.266	**0.31**	0.365	**0.42**	0.11
4182	836.4	Left	/	22.84	23.50	0.206	**0.24**	0.296	**0.34**	-0.08
4182	836.4	Right	/	22.84	23.50	0.176	**0.20**	0.242	**0.28**	0.12
4182	836.4	Top	Note1	22.84	23.50	0.026	**0.03**	0.047	**0.05**	0.07
4233	846.6	Front	Fig.5	19.79	21.00	0.314	**0.41**	0.449	**0.59**	-0.08
4182	836.4	Front	/	19.78	21.00	0.310	**0.41**	0.441	**0.58**	-0.07
4132	826.4	Front	/	19.85	21.00	0.290	**0.38**	0.401	**0.52**	0.07
4182	836.4	Rear	/	19.78	21.00	0.235	**0.31**	0.349	**0.46**	-0.07
4182	836.4	Top	/	19.78	21.00	0.020	**0.03**	0.033	**0.04**	0.03

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Table 14.1-6: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
23130	711	1RB_Mid	Front	Fig.6	23.31	23.50	0.522	**0.54**	0.737	**0.77**	0.00
23130	711	1RB_Mid	Rear	/	23.31	23.50	0.495	**0.52**	0.693	**0.72**	0.13
23130	711	1RB_Mid	Left	/	23.31	23.50	0.300	**0.31**	0.427	**0.45**	-0.05
23130	711	1RB_Mid	Right	/	23.31	23.50	0.268	**0.28**	0.374	**0.39**	-0.13
23130	711	1RB_Mid	Top	/	23.31	23.50	0.033	**0.03**	0.051	**0.05**	-0.12
23060	704	25RB_Mid	Front	/	21.98	22.50	0.443	**0.50**	0.621	**0.70**	-0.05
23060	704	25RB_Mid	Rear	/	21.98	22.50	0.433	**0.49**	0.604	**0.68**	-0.02
23060	704	25RB_Mid	Left	/	21.98	22.50	0.254	**0.29**	0.360	**0.41**	0.06
23060	704	25RB_Mid	Right	/	21.98	22.50	0.223	**0.25**	0.311	**0.35**	-0.08
23060	704	25RB_Mid	Top	/	21.98	22.50	0.054	**0.06**	0.083	**0.09**	-0.10

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-7: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26590	1905	1RB_High	Front	Note1	22.90	23.50	0.196	**0.23**	0.336	**0.39**	0.06
26590	1905	1RB_High	Rear	Note2	22.90	23.50	0.175	**0.20**	0.291	**0.33**	-0.06
26590	1905	1RB_High	Left	/	22.90	23.50	0.310	**0.36**	0.515	**0.59**	0.03
26590	1905	1RB_High	Right	/	22.90	23.50	0.173	**0.20**	0.304	**0.35**	0.04
26590	1905	1RB_High	Top	Note1	22.90	23.50	0.096	**0.11**	0.168	**0.19**	-0.02
26590	1905	1RB_High	Front	Fig.7	21.16	22.00	0.352	**0.43**	0.628	**0.76**	0.05
26590	1905	1RB_High	Rear	/	21.16	22.00	0.254	**0.31**	0.458	**0.56**	-0.09
26590	1905	1RB_High	Top	/	21.16	22.00	0.139	**0.17**	0.250	**0.30**	0.05
26140	1860	50RB_Mid	Front	Note1	21.87	22.50	0.134	**0.15**	0.226	**0.26**	-0.01
26140	1860	50RB_Mid	Rear	Note2	21.87	22.50	0.115	**0.13**	0.184	**0.21**	-0.10
26140	1860	50RB_Mid	Left	/	21.87	22.50	0.264	**0.31**	0.438	**0.51**	0.02
26140	1860	50RB_Mid	Right	/	21.87	22.50	0.148	**0.17**	0.262	**0.30**	0.07
26140	1860	50RB_Mid	Top	Note1	21.87	22.50	0.093	**0.11**	0.162	**0.19**	0.11
26590	1905	50RB_Mid	Front	/	19.90	21.00	0.268	**0.35**	0.476	**0.61**	0.11
26590	1905	50RB_Mid	Rear	/	19.90	21.00	0.208	**0.27**	0.373	**0.48**	0.00
26590	1905	50RB_Mid	Top	/	19.90	21.00	0.123	**0.16**	0.221	**0.28**	-0.09

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Note3: The LTE mode is QPSK_20MHz.

Table 14.1-8: SAR Values (LTE Band26 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26865	831.5	1RB_Mid	Front	Fig.8	23.07	23.50	0.483	**0.53**	0.684	**0.76**	0.10
26865	831.5	1RB_Mid	Rear	/	23.07	23.50	0.361	**0.40**	0.538	**0.59**	-0.01
26865	831.5	1RB_Mid	Left	/	23.07	23.50	0.234	**0.26**	0.345	**0.38**	-0.06
26865	831.5	1RB_Mid	Right	/	23.07	23.50	0.199	**0.22**	0.291	**0.32**	0.12
26865	831.5	1RB_Mid	Top	/	23.07	23.50	0.035	**0.04**	0.063	**0.07**	0.11
26965	841.5	36RB_Mid	Front	/	22.05	22.50	0.455	**0.50**	0.650	**0.72**	0.00
26965	841.5	36RB_Mid	Rear	/	22.05	22.50	0.384	**0.43**	0.576	**0.64**	-0.13
26965	841.5	36RB_Mid	Left	/	22.05	22.50	0.220	**0.24**	0.316	**0.35**	0.00
26965	841.5	36RB_Mid	Right	/	22.05	22.50	0.183	**0.20**	0.264	**0.29**	0.09
26965	841.5	36RB_Mid	Top	/	22.05	22.50	0.031	**0.03**	0.050	**0.06**	-0.13

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

Note2: The LTE mode is QPSK_15MHz.

Table 14.1-9: SAR Values (LTE Band41 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
41055	2636.5	1RB_Mid	Front	Note1	24.52	25.00	0.093	**0.10**	0.186	**0.21**	-0.06
41055	2636.5	1RB_Mid	Rear	Note2	24.52	25.00	0.121	**0.14**	0.261	**0.29**	-0.08
41055	2636.5	1RB_Mid	Left	/	24.52	25.00	0.102	**0.11**	0.229	**0.26**	0.12
41055	2636.5	1RB_Mid	Right	/	24.52	25.00	0.044	**0.05**	0.092	**0.10**	0.06
41055	2636.5	1RB_Mid	Top	Note1	24.52	25.00	0.192	**0.21**	0.428	**0.48**	-0.05
41055	2636.5	1RB_Mid	Front	/	22.44	23.00	0.154	**0.18**	0.325	**0.37**	-0.10
41055	2636.5	1RB_Mid	Rear	/	22.44	23.00	0.213	**0.24**	0.501	**0.57**	-0.02
41490	2680	1RB_Mid	Top	/	22.21	23.00	0.315	**0.38**	0.803	**0.96**	0.05
41055	2636.5	1RB_Mid	Top	Fig.9	22.44	23.00	0.355	**0.40**	0.856	**0.97**	-0.01
40620	2593	1RB_Mid	Top	/	21.98	23.00	0.287	**0.36**	0.761	**0.96**	0.05
40185	2549.5	1RB_Mid	Top	/	22.23	23.00	0.317	**0.38**	0.804	**0.96**	0.05
39750	2506	1RB_Mid	Top	/	22.26	23.00	0.263	**0.31**	0.754	**0.89**	0.08
40620	2593	50RB_Mid	Front	Note1	23.37	24.00	0.070	**0.08**	0.139	**0.16**	0.11
40620	2593	50RB_Mid	Rear	Note2	23.37	24.00	0.088	**0.10**	0.186	**0.22**	-0.07
40620	2593	50RB_Mid	Left	/	23.37	24.00	0.069	**0.08**	0.154	**0.18**	-0.09
40620	2593	50RB_Mid	Right	/	23.37	24.00	0.031	**0.04**	0.062	**0.07**	-0.09
40620	2593	50RB_Mid	Top	Note1	23.37	24.00	0.111	**0.13**	0.233	**0.27**	0.07
41055	2636.5	50RB_Mid	Front	/	21.16	22.00	0.123	**0.15**	0.258	**0.31**	0.01
41055	2636.5	50RB_Mid	Rear	/	21.16	22.00	0.166	**0.20**	0.391	**0.47**	-0.07
41490	2680	50RB_Mid	Top	/	21.12	22.00	0.215	**0.26**	0.592	**0.72**	0.07
41055	2636.5	50RB_Mid	Top	/	21.16	22.00	0.270	**0.33**	0.692	**0.84**	-0.01
40620	2593	50RB_Mid	Top	/	21.14	22.00	0.237	**0.29**	0.618	**0.75**	0.08
40185	2549.5	50RB_Mid	Top	/	21.15	22.00	0.259	**0.31**	0.639	**0.78**	0.08
39750	2506	50RB_Mid	Top	/	21.08	22.00	0.251	**0.31**	0.637	**0.79**	0.02
41055	2636.5	100RB	Top	/	21.10	22.00	0.207	**0.25**	0.581	**0.71**	-0.15

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

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note2: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Note3: The LTE mode is QPSK_20MHz.

Table 14.1-10: SAR Values (LTE Band66 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
132322	1745	1RB_ Mid	Front	Note2	22.86	23.50	0.225	**0.26**	0.345	**0.40**	0.12
132322	1745	1RB_ Mid	Rear	Note3	22.86	23.50	0.255	**0.30**	0.435	**0.50**	-0.07
132322	1745	1RB_ Mid	Left	Fig.10	22.86	23.50	0.297	**0.34**	0.489	**0.57**	0.10
132322	1745	1RB_ Mid	Right	/	22.86	23.50	0.187	**0.22**	0.309	**0.36**	0.06
132322	1745	1RB_ Mid	Top	Note3	22.86	23.50	0.258	**0.30**	0.442	**0.51**	-0.10
132322	1745	1RB_ Mid	Front	/	17.61	19.00	0.161	**0.22**	0.273	**0.38**	-0.07
132322	1745	1RB_ Mid	Rear	/	17.61	19.00	0.208	**0.29**	0.374	**0.52**	0.09
132322	1745	1RB_ Mid	Top	/	17.61	19.00	0.184	**0.25**	0.339	**0.47**	-0.13
132072	1720	50RB_High	Front	Note2	21.67	22.50	0.159	**0.19**	0.245	**0.30**	0.02
132072	1720	50RB_High	Rear	Note3	21.67	22.50	0.208	**0.25**	0.356	**0.43**	0.02
132072	1720	50RB_High	Left	/	21.67	22.50	0.224	**0.27**	0.368	**0.45**	-0.06
132072	1720	50RB_High	Right	/	21.67	22.50	0.144	**0.17**	0.238	**0.29**	-0.03
132072	1720	50RB_High	Top	Note3	21.67	22.50	0.201	**0.24**	0.345	**0.42**	-0.12
132572	1770	50RB_Mid	Front	/	16.64	18.00	0.130	**0.18**	0.220	**0.30**	0.10
132572	1770	50RB_Mid	Rear	/	16.64	18.00	0.170	**0.23**	0.311	**0.43**	0.13
132572	1770	50RB_Mid	Top	/	16.64	18.00	0.156	**0.21**	0.287	**0.39**	0.06

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

Note2: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Note3: The distance between the EUT and the phantom bottom is 17mm by sensor (See detail in annex I).

Note4: The LTE mode is QPSK_20MHz.

Table 14.1-11: SAR Values (LTE Band71 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
133322	683	1RB_Mid	Front	/	22.72	23.50	0.317	**0.38**	0.452	**0.54**	0.06
133322	683	1RB_Mid	Rear	Fig.11	22.72	23.50	0.334	**0.40**	0.480	**0.57**	0.09
133322	683	1RB_Mid	Left	/	22.72	23.50	0.193	**0.23**	0.275	**0.33**	-0.08
133322	683	1RB_Mid	Right	/	22.72	23.50	0.171	**0.20**	0.242	**0.29**	-0.12
133322	683	1RB_Mid	Top	/	22.72	23.50	0.048	**0.06**	0.060	**0.07**	0.02
133222	673	50RB_Mid	Front	/	21.62	22.50	0.278	**0.34**	0.395	**0.48**	-0.06
133222	673	50RB_Mid	Rear	/	21.62	22.50	0.288	**0.35**	0.419	**0.51**	0.06
133222	673	50RB_Mid	Left	/	21.62	22.50	0.149	**0.18**	0.212	**0.26**	-0.13
133222	673	50RB_Mid	Right	/	21.62	22.50	0.135	**0.17**	0.195	**0.24**	-0.02
133222	673	50RB_Mid	Top	/	21.62	22.50	0.033	**0.04**	0.047	**0.06**	0.09

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

14.2 SAR results for Standard procedure

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

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

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
251	848.8	GPRS 3)	Front	Fig.1	25.45	26.50	0.352	**0.45**	0.510	**0.65**	0.07

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

Table 14.1-2: SAR Values (GSM 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
512	1850.2	GPRS (2)	Left	Fig.2	27.59	28.00	0.248	**0.27**	0.408	**0.45**	-0.02

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

Table 14.1-3: SAR Values (WCDMA 1900 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9938	1907.6	Left	Fig.3	22.83	23.50	0.368	**0.43**	0.622	**0.73**	0.04

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

Table 14.1-4: SAR Values (WCDMA 1700 MHz Band - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
1312	1712.4	Top	Note1 Fig.4	22.75	23.50	0.468	**0.56**	0.798	**0.95**	0.04

Note1: The distance between the EUT and the phantom bottom is 19mm by sensor (See detail in annex I).

Table 14.1-5: SAR Values (WCDMA 850 MHz Band - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4233	846.6	Front	Fig.5	19.79	21.00	0.314	**0.41**	0.449	**0.59**	-0.08

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

Table 14.1-6: SAR Values (LTE Band12 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
23130	711	1RB_Mid	Front	Fig.6	23.31	23.50	0.522	**0.54**	0.737	**0.77**	0.00

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

Note2: The LTE mode is QPSK_10MHz.

Table 14.1-7: SAR Values (LTE Band25 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26590	1905	1RB_High	Front	Fig.7	21.16	22.00	0.352	**0.43**	0.628	**0.76**	0.05

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

Note3: The LTE mode is QPSK_20MHz.

Table 14.1-8: SAR Values (LTE Band26 - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
26865	831.5	1RB_Mid	Front	Fig.8	23.07	23.50	0.483	**0.53**	0.684	**0.76**	0.10

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

Note2: The LTE mode is QPSK_15MHz.

Table 14.1-9: SAR Values (LTE Band41 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
41055	2636.5	1RB_Mid	Top	Fig.9	22.44	23.00	0.355	**0.40**	0.856	**0.97**	-0.01

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

Note3: The LTE mode is QPSK_20MHz.

Table 14.1-10: SAR Values (LTE Band66 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
132322	1745	1RB_ Mid	Left	Fig.10	22.86	23.50	0.297	**0.34**	0.489	**0.57**	0.10

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

Note4: The LTE mode is QPSK_20MHz.

Table 14.1-11: SAR Values (LTE Band71 - Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Mode	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
133322	683	1RB_Mid	Rear	Fig.11	22.72	23.50	0.334	**0.40**	0.480	**0.57**	0.09

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

Note2: The LTE mode is QPSK_20MHz.

14.3 WLAN Evaluation for 2.4G

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

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

Ambient Temperature: 22.9 ºC		Liquid Temperature: 22.5ºC								
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.									
2462	11	Front	/	19.13	19.50	0.279	**0.30**	0.561	**0.61**	0.08
2462	11	Rear	/	19.13	19.50	0.125	**0.14**	0.231	**0.25**	0.14
2462	11	Right	/	19.13	19.50	0.028	**0.03**	0.043	**0.05**	0.06
2462	11	Top	/	19.13	19.50	0.092	**0.10**	0.117	**0.13**	0.07

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

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

Ambient Temperature: 22.9 ºC		Liquid Temperature: 22.5ºC								
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
MHz	Ch.									
2462	11	Front	Fig.12	19.13	19.50	0.272	**0.30**	0.579	**0.63**	0.08
2462	11	Rear	/	19.13	19.50	0.131	**0.14**	0.263	**0.29**	0.14

Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg.

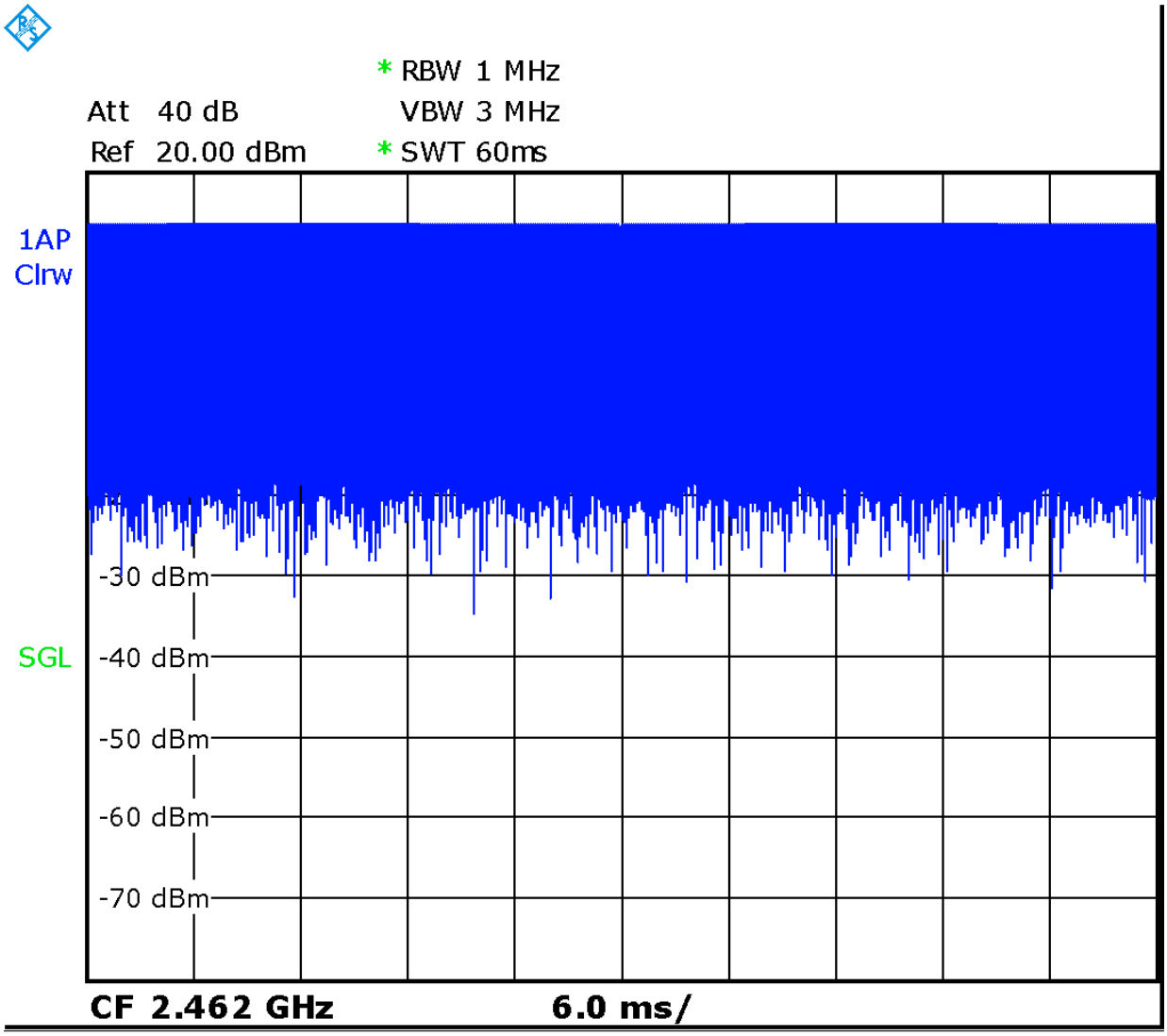
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.

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

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

Ambient Temperature: 22.9 ºC		Liquid Temperature: 22.5ºC				
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2462	11	Front	100%	100%	**0.63**	**0.63**

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



Picture 14.1 Duty factor plot

14.4 WLAN Evaluation For 5G

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

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

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

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	50		63	50	63	50	32	
U-NII-2A								
U-NII-2C								
U-NII-3	50		63	50	63	50	32	
§ 15.247 (5.8 GHz)								

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

Table 14.4-3: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations - Body

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 Lower power	36/40/44/48 **37/35/34/32**	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-3	149/153/157/161/165 Lower power	149/153/157/161/165 **43/42/38/36/28**	151/159 Lower power	149/153/157/161/165 Lower power	151/159 Lower power	155 Lower power

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

Table 14.4-7: Reported SAR of initial test configuration for Body – 10mm

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-3	149/153/157/161/165	149/153/157/161/165 0.77	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 14.4-10: SAR Values (WLAN 5G - Body)

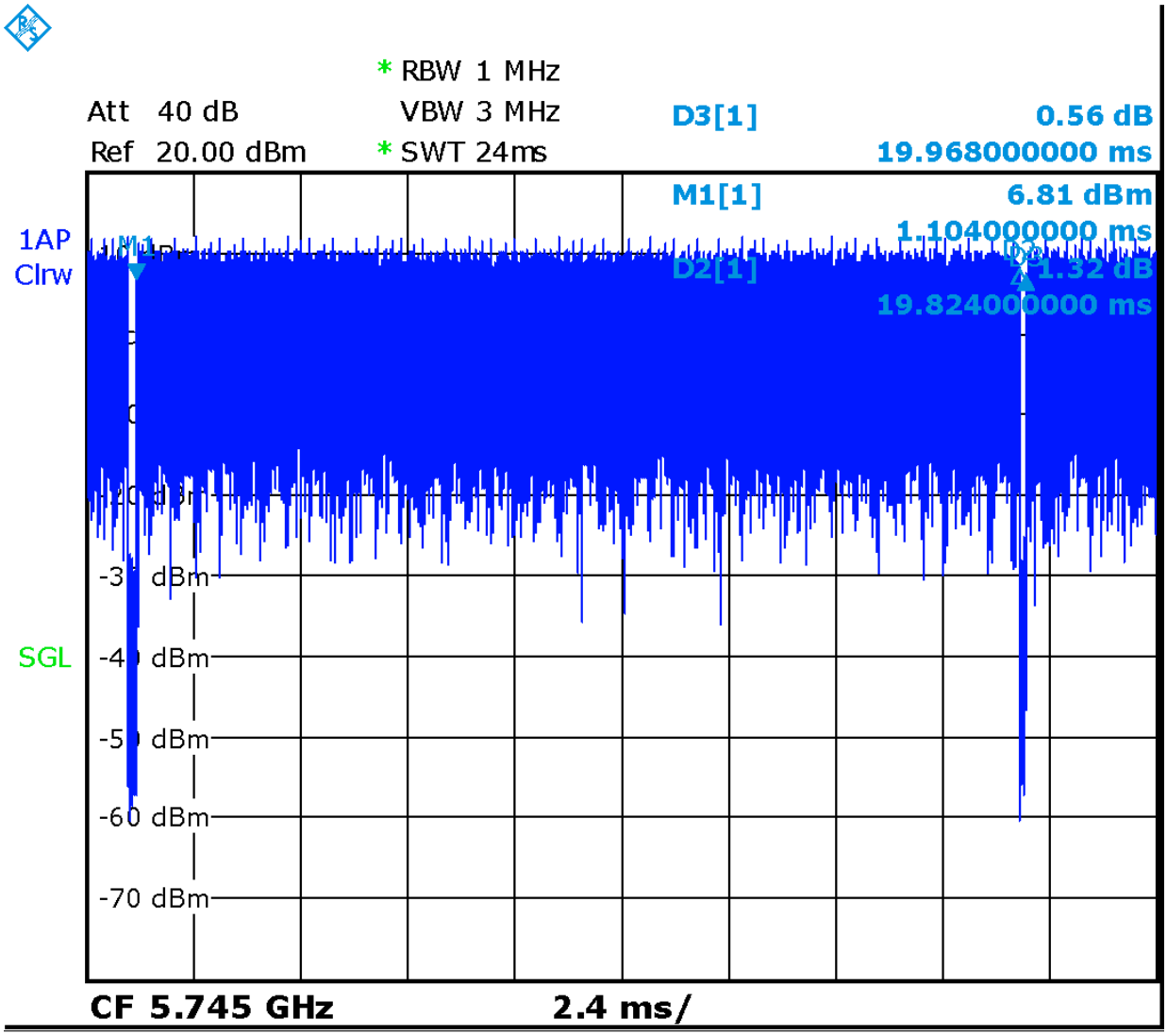
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
149	5745	Front	Fig.13	16.30	16.50	0.203	**0.21**	0.723	**0.76**	-0.12
149	5745	Rear	/	16.30	16.50	0.164	**0.17**	0.409	**0.43**	0.08
149	5745	Right	/	16.30	16.50	0.034	**0.04**	0.058	**0.06**	0.01
149	5745	Top	/	16.30	16.50	0.091	**0.10**	0.123	**0.13**	0.19

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

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

Table 14.4-13 SAR Values (WLAN 5G - Body) (Scaled Reported SAR)

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
Ch.	MHz						
149	5745	Front	10	99%	100%	**0.76**	**0.77**



Picture 14.4 The plot of duty factor for Head

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 LTE B41 (1g)

Frequency		Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
41055	2636.5	Top	10	0.856	0.819	1.05	/

16 Measurement Uncertainty

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

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

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

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

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

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

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

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

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

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

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

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

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 24, 2019	One year
02	Power meter	NRP2	106277	September 4, 2019	One year
03	Power sensor	NRP8S	104291		
04	Signal Generator	E4438C	MY49070393	January 4, 2019	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	E5515C	MY50263375	January 17, 2019	One year
07	BTS	CMW500	159889	January 11, 2019	One year
08	E-field Probe	SPEAG EX3DV4	3617	January 31, 2019	One year
09	DAE	SPEAG DAE4	771	January 11,2019	One year
10	Dipole Validation Kit	SPEAG D750V3	1017	July 18,2019	One year
11	Dipole Validation Kit	SPEAG D835V2	4d069	July 18,2019	One year
12	Dipole Validation Kit	SPEAG D1750V2	1003	July 16,2019	One year
13	Dipole Validation Kit	SPEAG D1900V2	5d101	July 17,2019	One year
14	Dipole Validation Kit	SPEAG D2450V2	853	July 17,2019	One year
15	Dipole Validation Kit	SPEAG D2600V2	1012	July 17,2019	One year
16	Dipole Validation Kit	SPEAG D5GHzV2	1060	July 22, 2019	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH251 Front
Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: body 835 MHz
Medium parameters used: f = 848.8; σ = 0.977 mho/m; εr = 54.99; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: GSM850 848.8 Duty Cycle: 1:2.67
Probe: EX3DV4 – SN3617 ConvF(9.75,9.75,9.75)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.715 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.98 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.769 W/kg
SAR(1 g) = 0.51 W/kg; SAR(10 g) = 0.352 W/kg
Maximum value of SAR (measured) = 0.668 W/kg

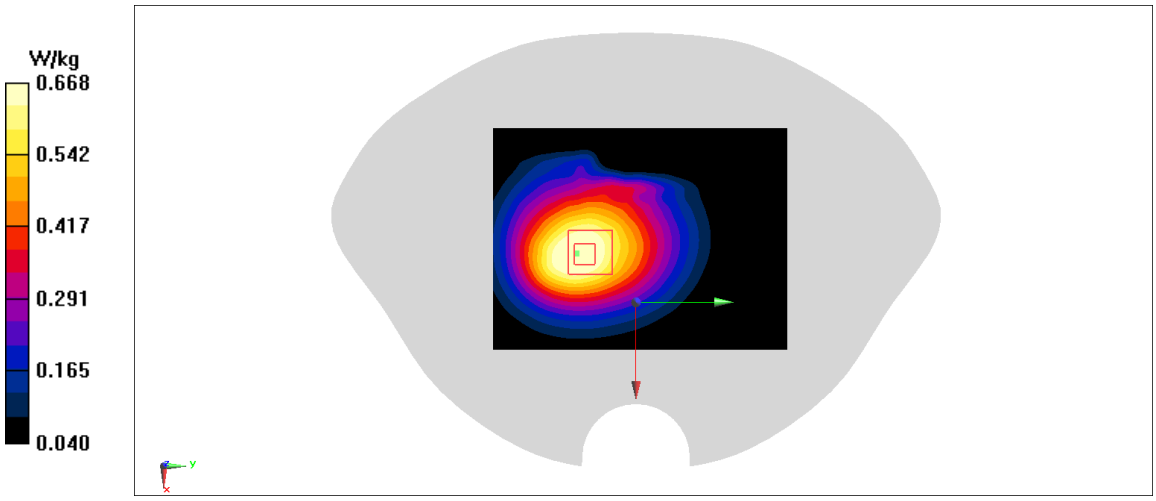


Fig A.1

PCS1900_CH512 Left
Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: body 1900 MHz
Medium parameters used: f = 1850.2; σ = 1.485 mho/m; εr = 53.49; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: PCS1900 1850.2 Duty Cycle: 1:4
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.588 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.88 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.718 W/kg
SAR(1 g) = 0.408 W/kg; SAR(10 g) = 0.248 W/kg
Maximum value of SAR (measured) = 0.596 W/kg

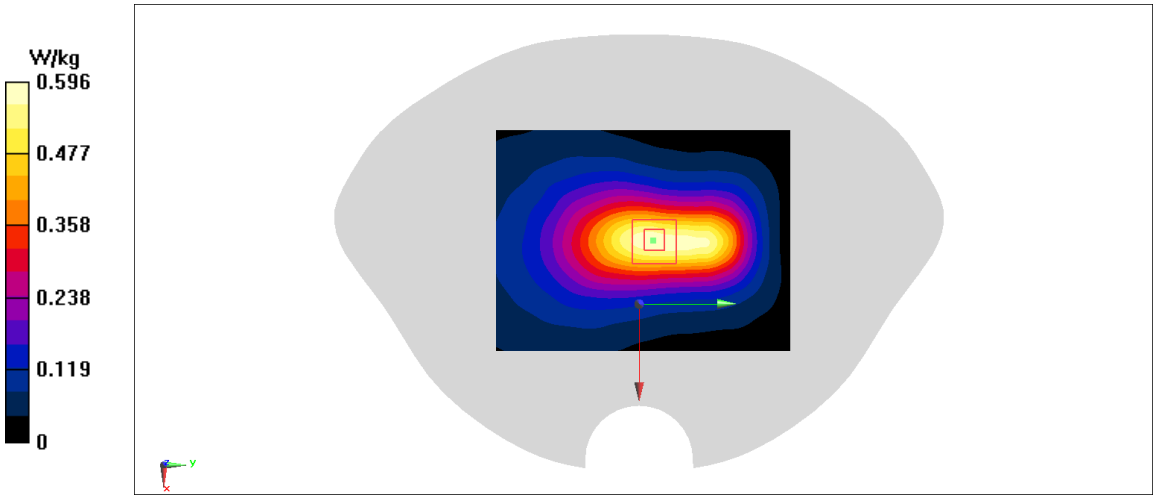


Fig A.2

WCDMA1900-BII_CH9538 Left
Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: body 1900 MHz
Medium parameters used: f = 1907.6; σ = 1.541 mho/m; εr = 53.42; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1907.6 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.93 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.71 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.622 W/kg; SAR(10 g) = 0.368 W/kg
Maximum value of SAR (measured) = 0.902 W/kg

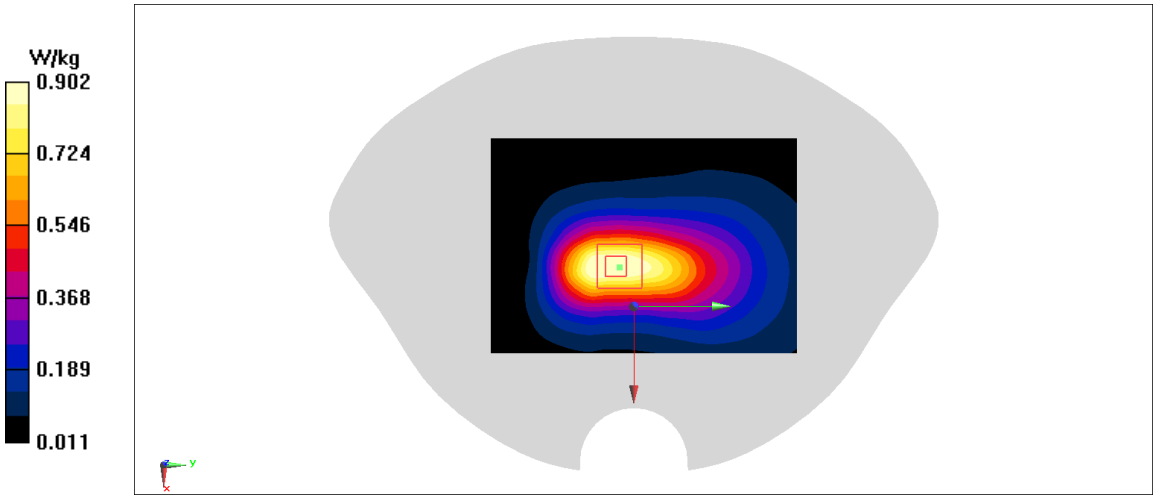


Fig A.3

WCDMA1700-BIV_CH1312 Top
Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: body 1750 MHz
Medium parameters used: f = 1712.4; σ = 1.459 mho/m; εr = 54.25; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA1700-BIV 1712.4 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.38,8.38,8.38)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.798 W/kg; SAR(10 g) = 0.468 W/kg
Maximum value of SAR (measured) = 1.13 W/kg

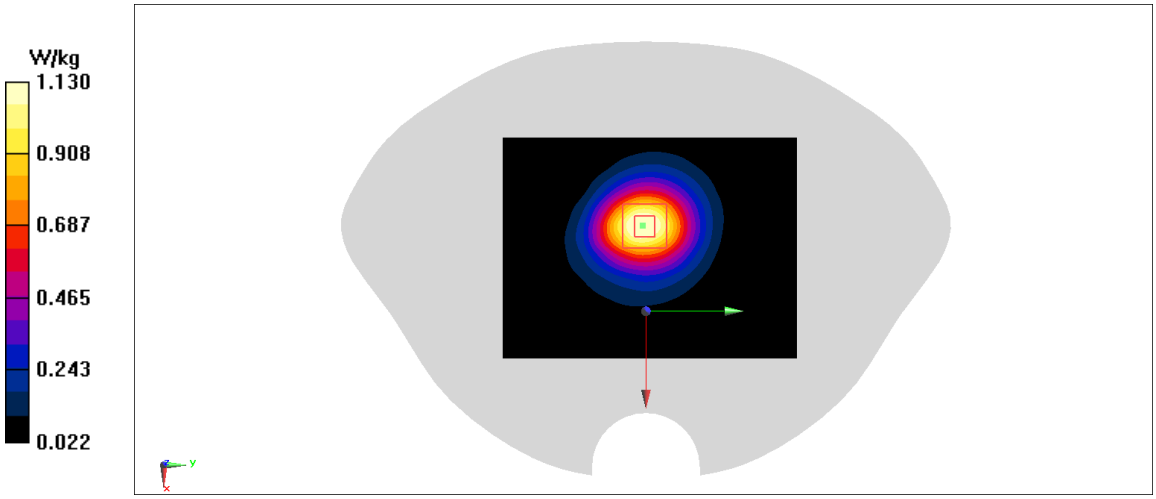


Fig A.4

WCDMA850-BV_CH4233 Front
Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: body 835 MHz
Medium parameters used: f = 846.6; σ = 0.975 mho/m; εr = 55; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WCDMA850-BV 846.6 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(9.75,9.75,9.75)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.625 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.85 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.673 W/kg
SAR(1 g) = 0.449 W/kg; SAR(10 g) = 0.314 W/kg
Maximum value of SAR (measured) = 0.589 W/kg

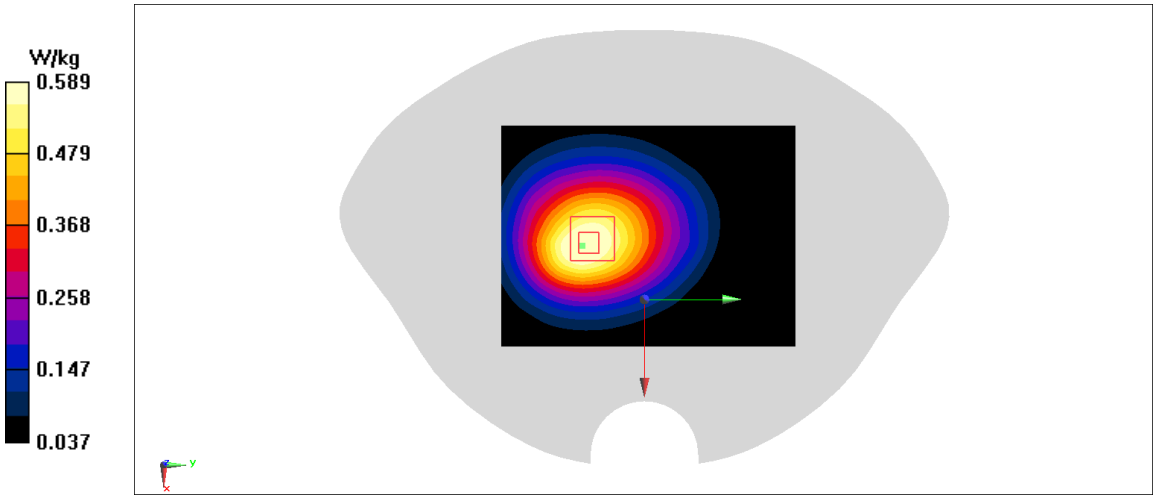


Fig A.5

LTE700-FDD12_CH23130 Front
Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: body 750 MHz
Medium parameters used: f = 711 MHz; σ = 0.92 mho/m; εr = 54.69; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(10.03,10.03,10.03)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.98 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.25 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.737 W/kg; SAR(10 g) = 0.522 W/kg
Maximum value of SAR (measured) = 0.942 W/kg

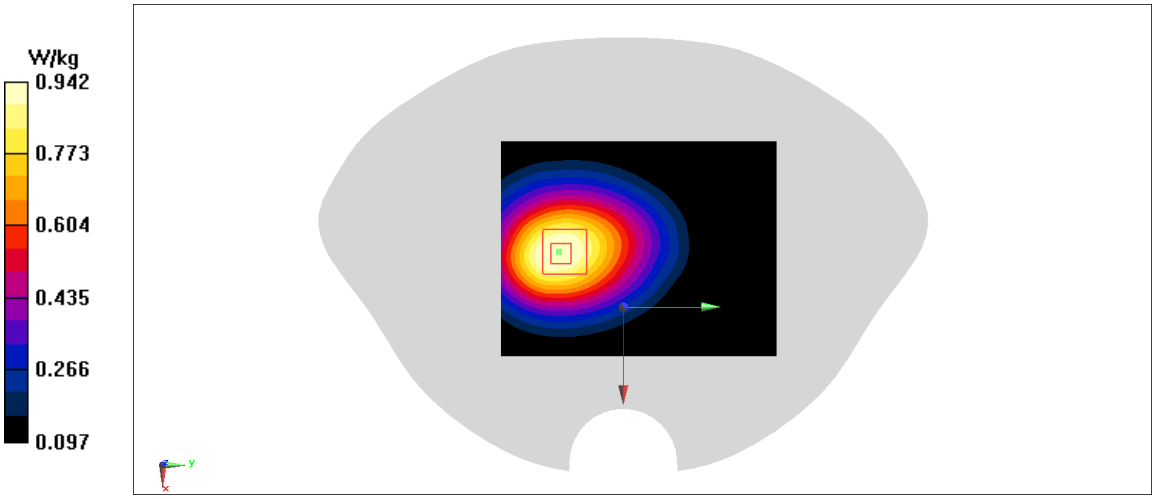


Fig A.6

LTE1900-FDD25_CH26590 Front
Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: body 1900 MHz
Medium parameters used: f = 1905 MHz; σ = 1.538 mho/m; εr = 53.42; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD25 1905 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.899 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.76 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.628 W/kg; SAR(10 g) = 0.352 W/kg
Maximum value of SAR (measured) = 0.91 W/kg

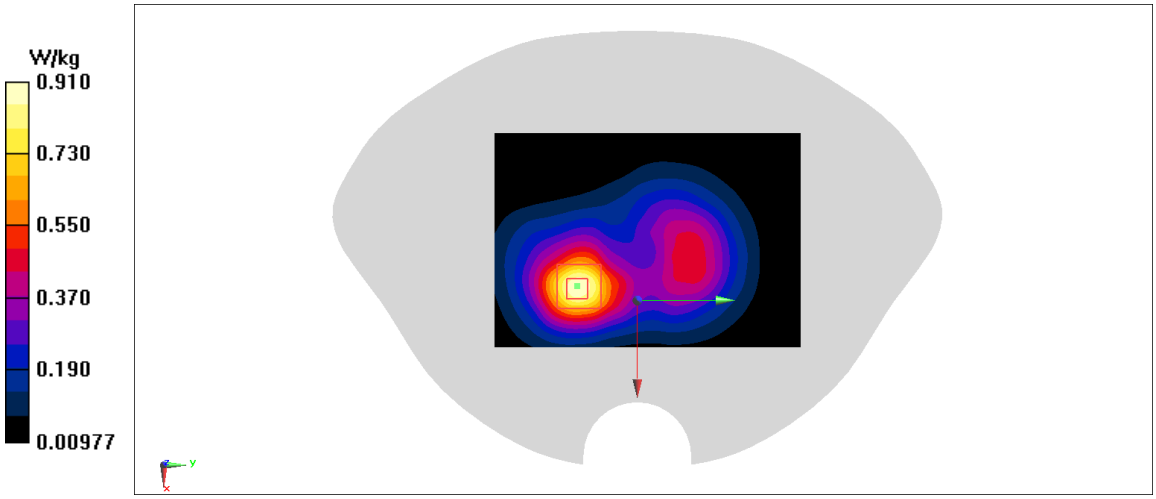


Fig A.7

LTE850-FDD26_CH26865 Front
Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: body 835 MHz
Medium parameters used: f = 831.5 MHz; σ = 0.961 mho/m; εr = 55.01; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE850-FDD26 831.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(9.75,9.75,9.75)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.862 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.4 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 0.988 W/kg
SAR(1 g) = 0.684 W/kg; SAR(10 g) = 0.483 W/kg
Maximum value of SAR (measured) = 0.884 W/kg

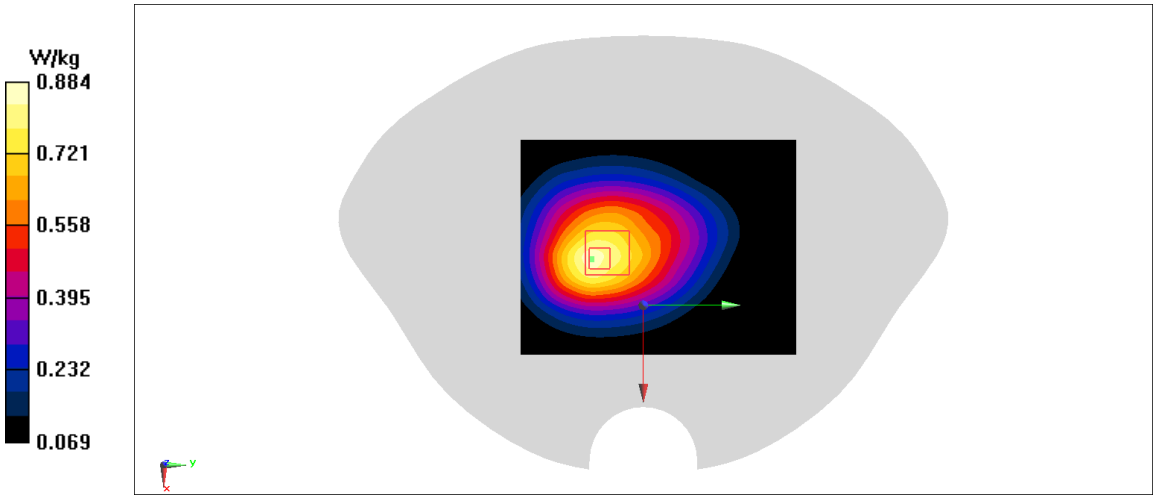


Fig A.8

LTE2600-TDD41_CH41055 Top
Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: body 2600 MHz
Medium parameters used: f = 2636.5; σ = 1.997 mho/m; εr = 39.07; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE2600-TDD41 2636.5 Duty Cycle: 1:1.58
Probe: EX3DV4 – SN3617 ConvF(7.19,7.19,7.19)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.648 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.38 W/kg
SAR(1 g) = 0.856 W/kg; SAR(10 g) = 0.355 W/kg
Maximum value of SAR (measured) = 1.56 W/kg

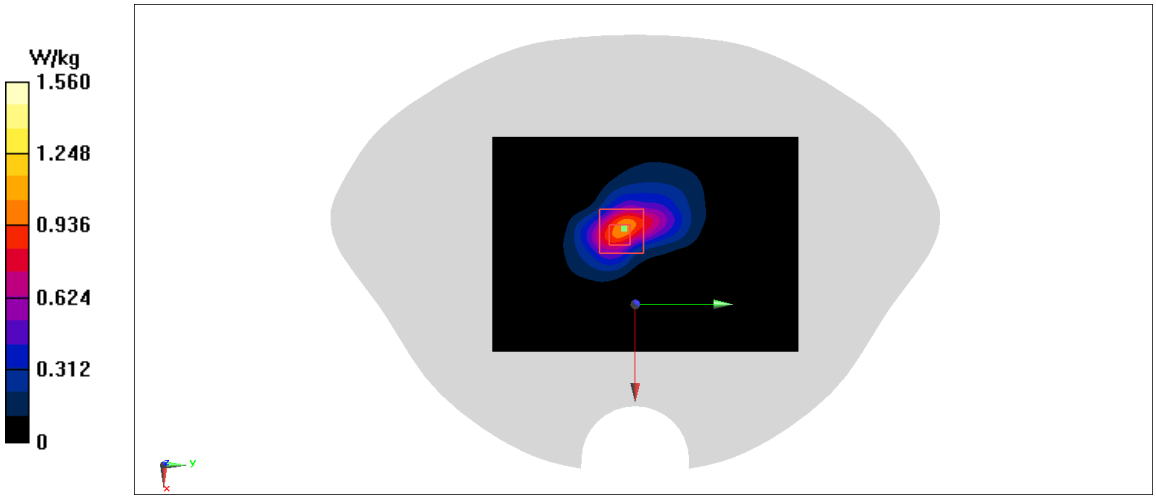


Fig A.9

LTE1700-FDD66_CH132322 Left
Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: body 1750 MHz
Medium parameters used: f = 2636.5; σ = 2.337 mho/m; εr = 53.14; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: LTE1700-FDD66 2636.5 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.38,8.38,8.38)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.669 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.72 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 0.807 W/kg
SAR(1 g) = 0.489 W/kg; SAR(10 g) = 0.297 W/kg
Maximum value of SAR (measured) = 0.688 W/kg

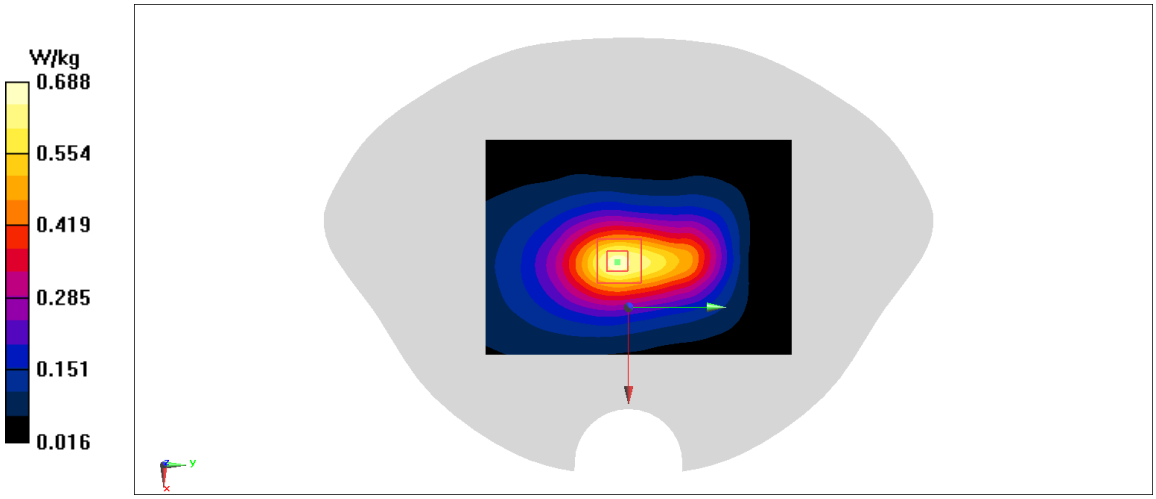


Fig A.10

LTE700-FDD71_CH133322 Rer
Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: body 750 MHz
Medium parameters used: f = 2636.5; σ = 2.749 mho/m; εr = 52.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD71 2636.5 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(10.03,10.03,10.03)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.665 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.02 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.734 W/kg
SAR(1 g) = 0.48 W/kg; SAR(10 g) = 0.334 W/kg
Maximum value of SAR (measured) = 0.619 W/kg

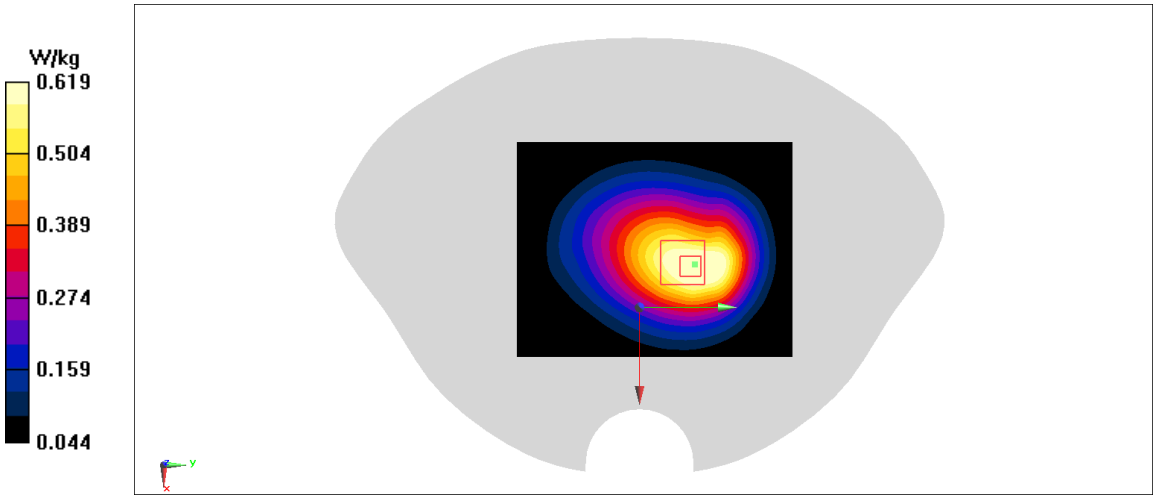


Fig A.11

WLAN2450_CH11 Front
Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: body 2450 MHz
Medium parameters used: f = 2462; σ = 1.944 mho/m; εr = 52.55; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WLAN2450 2462 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.62,7.62,7.62)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.921 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.03 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.05 W/kg
SAR(1 g) = 0.579 W/kg; SAR(10 g) = 0.272 W/kg
Maximum value of SAR (measured) = 0.913 W/kg

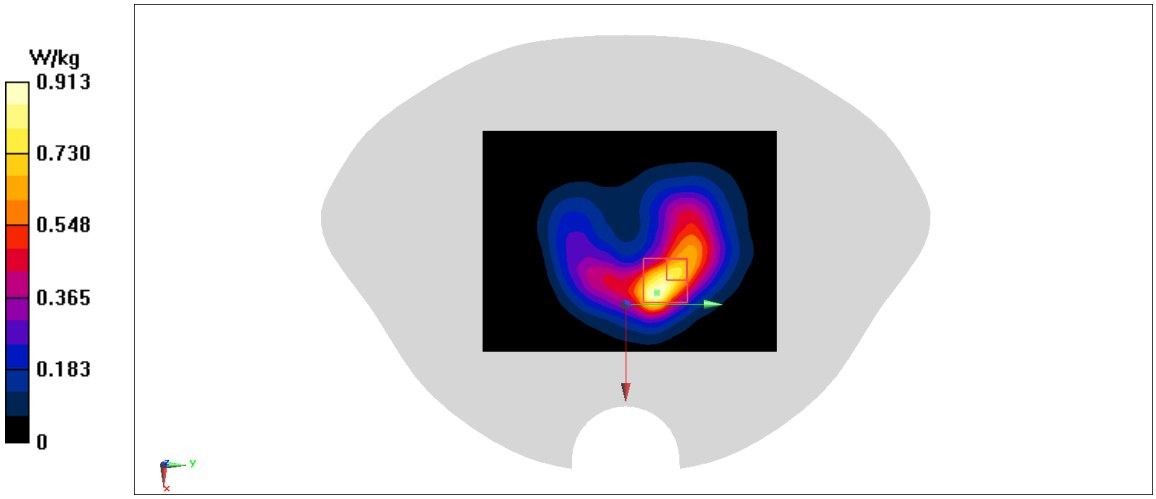


Fig A.12

WLAN5G_CH149 Front
Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: body 5750 MHz
Medium parameters used: f = 5745; σ = 5.173 mho/m; εr = 34.97; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: WLAN5G 5745 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(5.07,5.07,5.07)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.45 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.118 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 5.5 W/kg
SAR(1 g) = 0.723 W/kg; SAR(10 g) = 0.203 W/kg
Maximum value of SAR (measured) = 1.99 W/kg

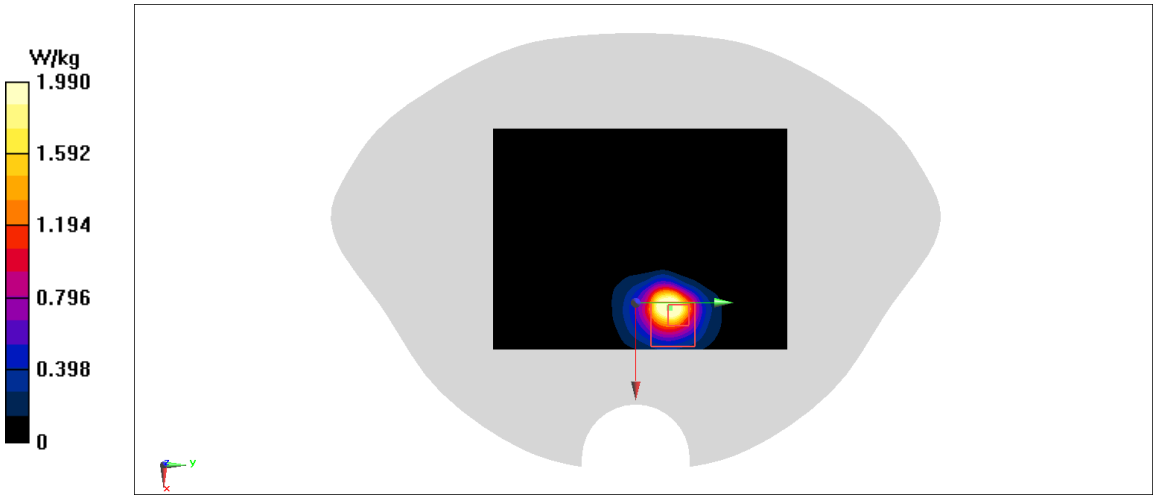


Fig A.13

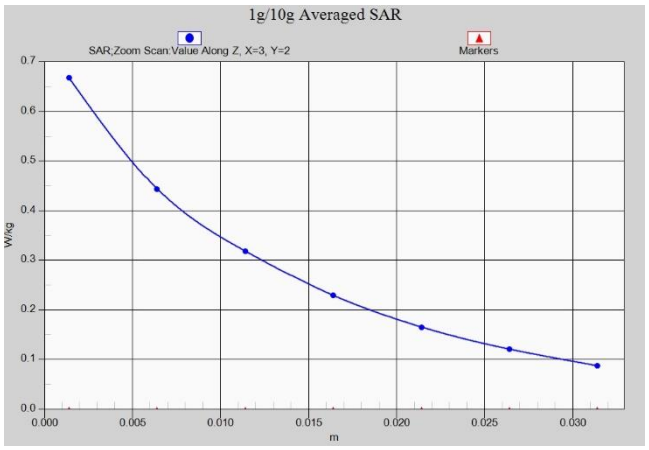


Fig. 1-1 Z-Scan at power reference point (GSM850)

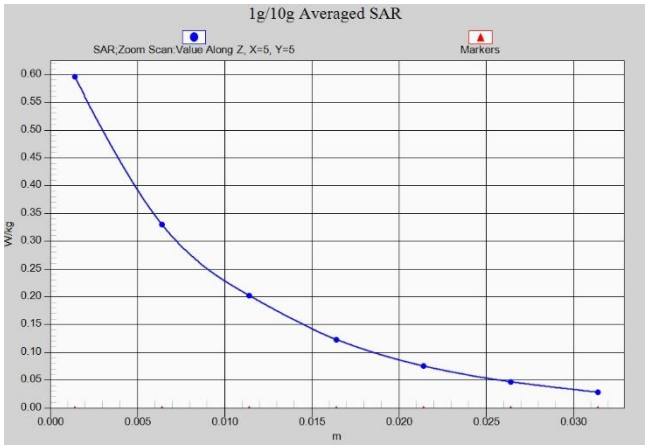


Fig. 1-2 Z-Scan at power reference point (PCS1900)

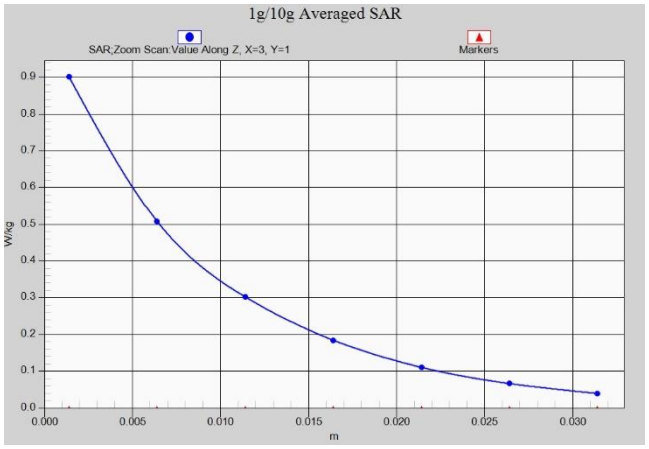


Fig. 1-3 Z-Scan at power reference point (WCDMA1900)

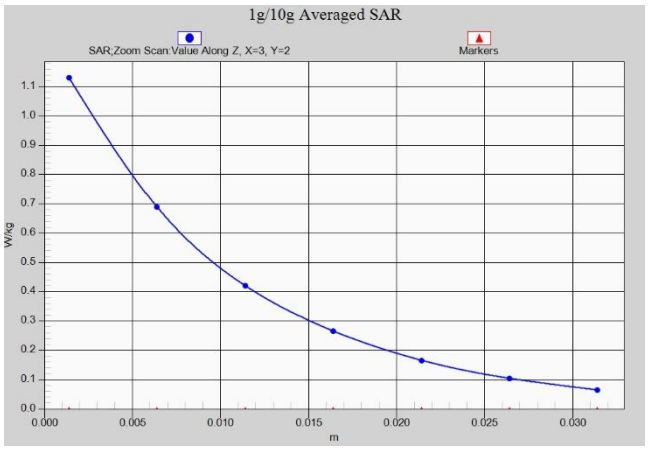


Fig. 1-4 Z-Scan at power reference point (WCDMA1700)

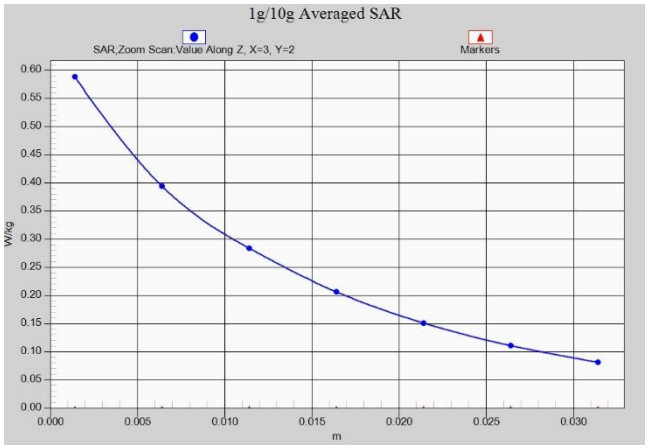


Fig. 1-5 Z-Scan at power reference point (WCDMA850)

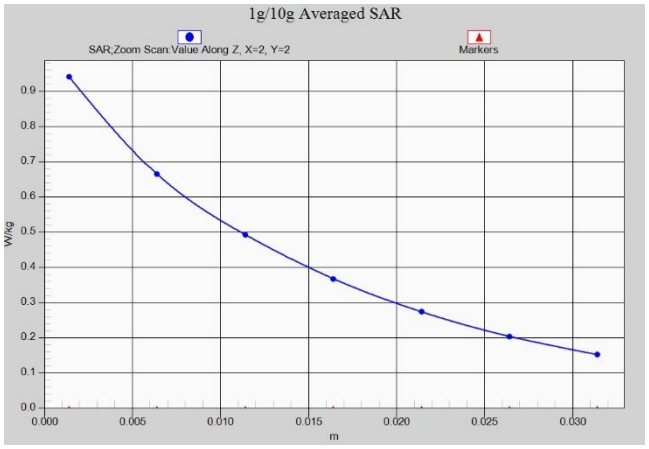


Fig. 1-6 Z-Scan at power reference point (LTE Band12)

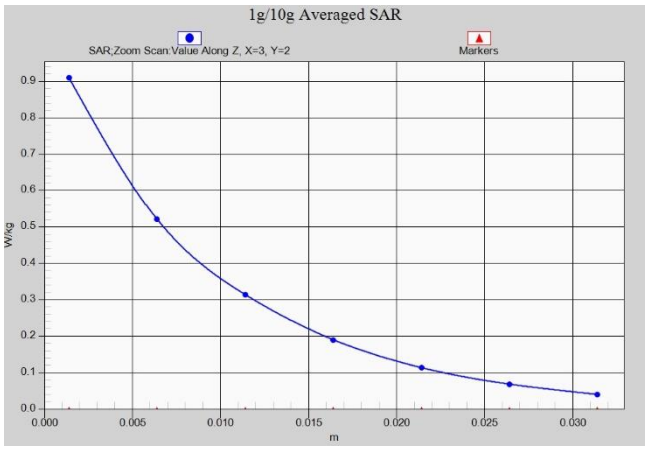


Fig. 1-7 Z-Scan at power reference point (LTE Band25)

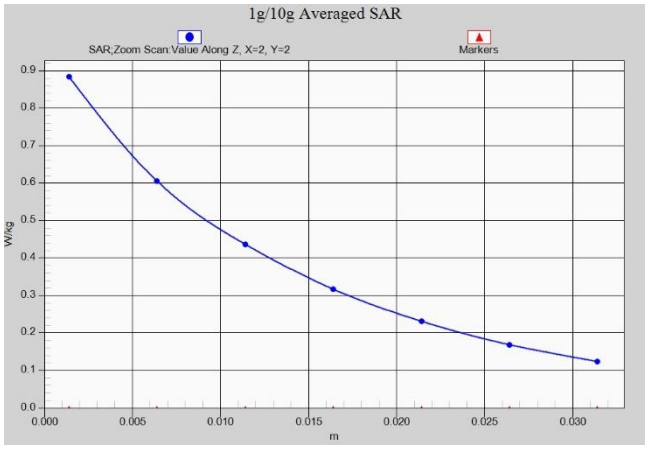


Fig. 1-8 Z-Scan at power reference point (LTE Band26)

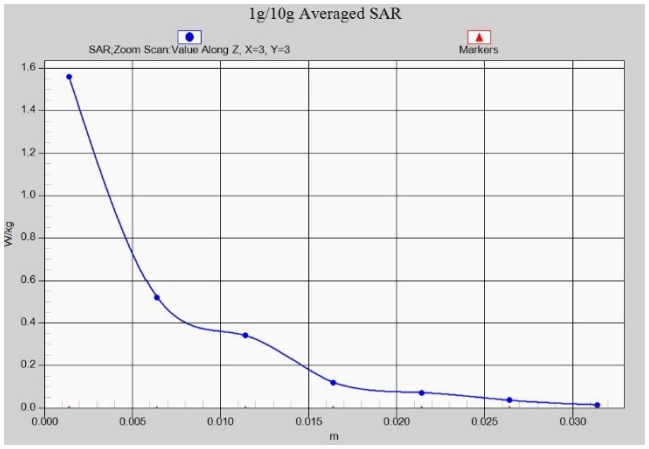


Fig. 1-9 Z-Scan at power reference point (LTE Band41)

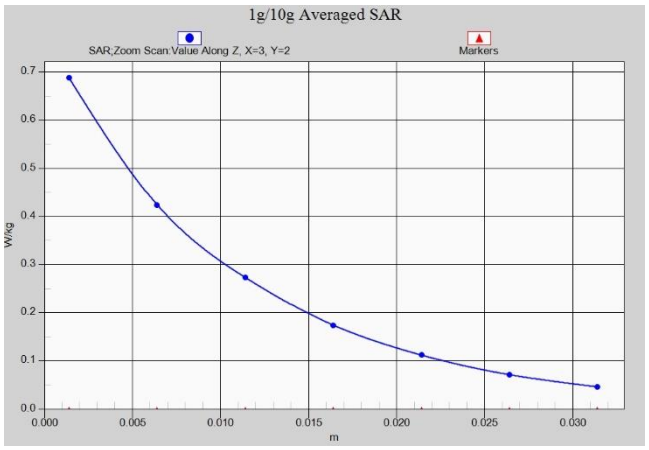


Fig. 1-10 Z-Scan at power reference point (LTE Band66)

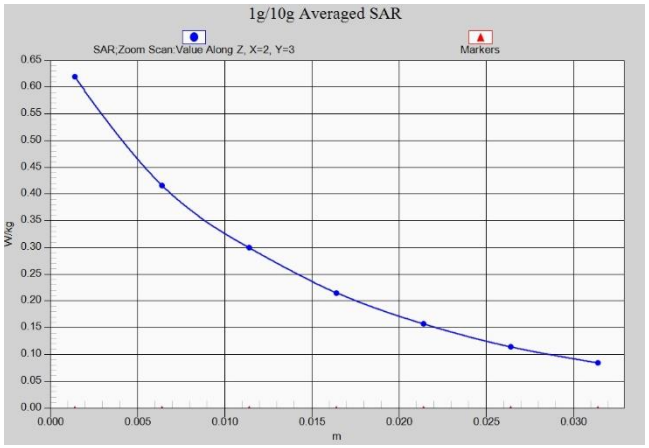


Fig. 1-11 Z-Scan at power reference point (LTE Band71)

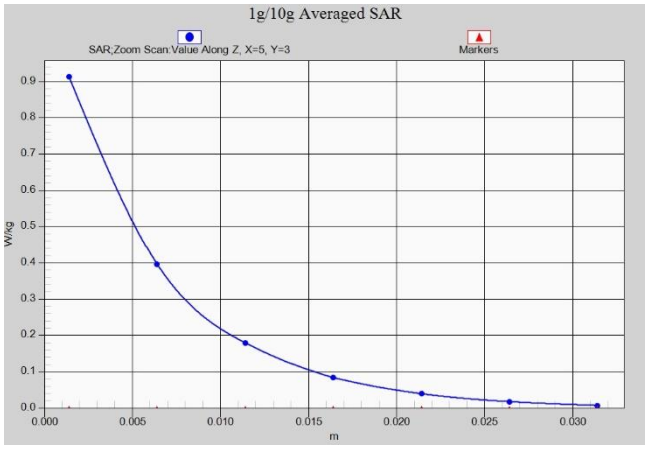


Fig. 1-12 Z-Scan at power reference point (2450 MHz)

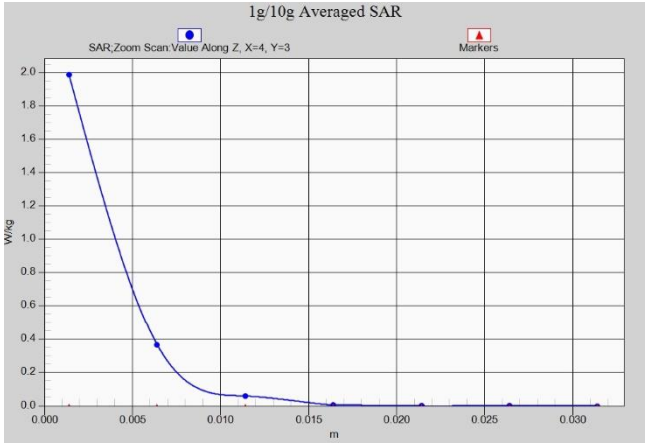


Fig. 1-13 Z-Scan at power reference point (5750 MHz)

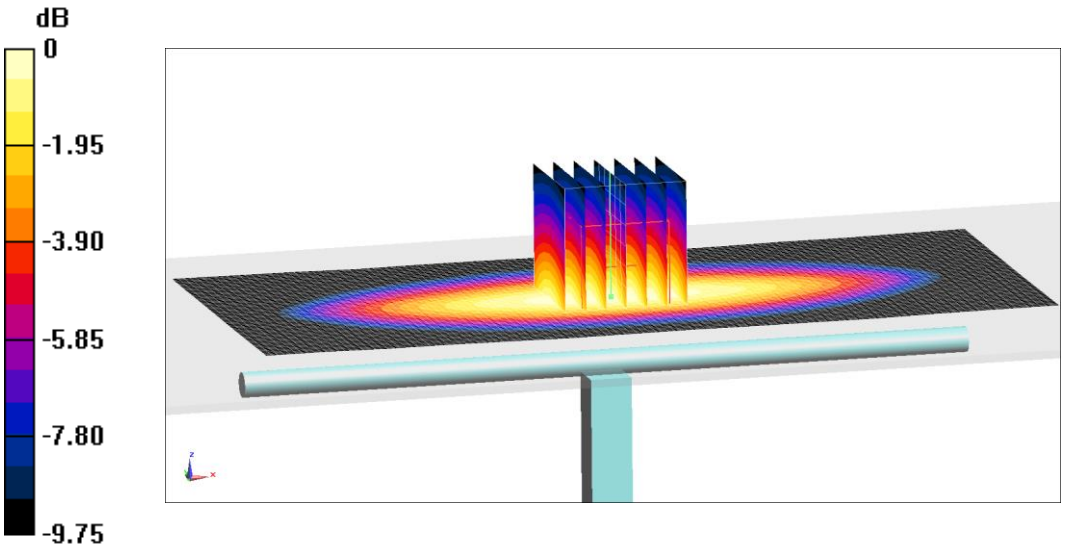
ANNEX B System Verification Results

750 MHz

Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ =0.895 mho/m; ε_r = 42.71; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(10.03,10.03,10.03)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 60.73 V/m; Power Drift = -0.03
Fast SAR: SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.37 W/kg
Maximum value of SAR (interpolated) = 2.8 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =60.73 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.21 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.39 W/kg
Maximum value of SAR (measured) = 2.88 W/kg



0 dB = 2.88 W/kg = 4.59 dB W/kg

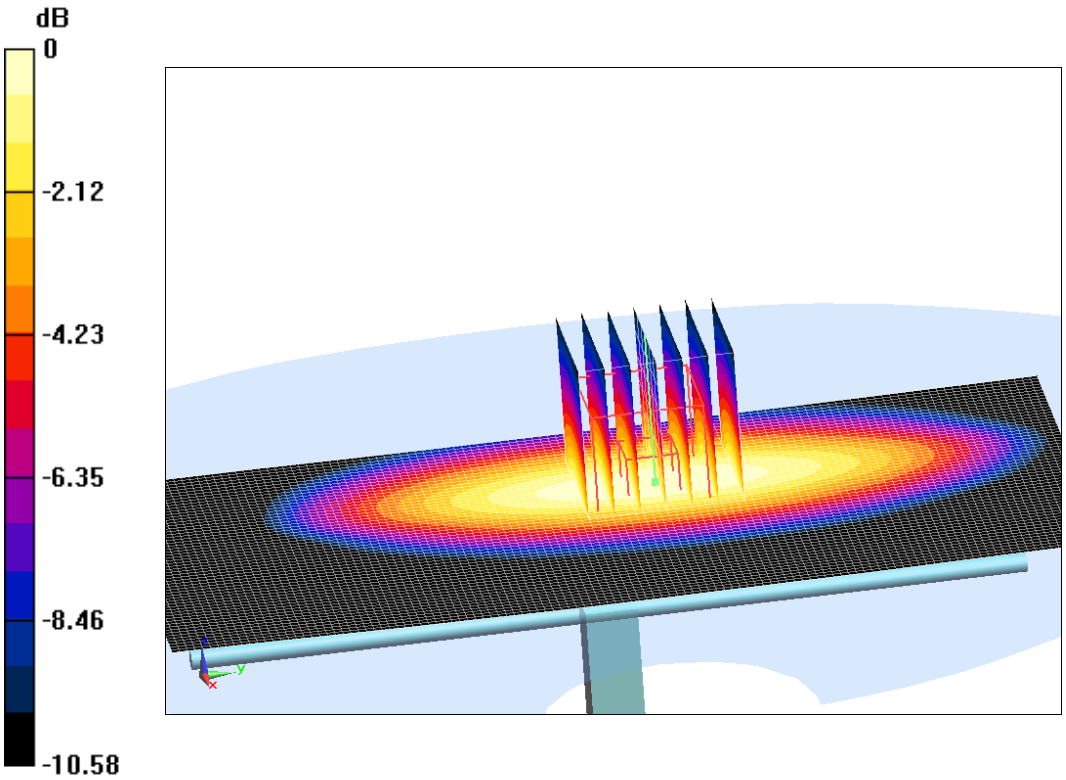
Fig.B.1 validation 750 MHz 250mW

835 MHz

Date: 1/2/2020
Electronics: DAE4 Sn771
Medium: Head 835 MHz
Medium parameters used: f = 835 MHz; σ =0.918 mho/m; ε_r = 41.49; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(9.75,9.75,9.75)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 63.98 V/m; Power Drift = -0.02
Fast SAR: SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (interpolated) = 3.06 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =63.98 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.63 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.6 W/kg
Maximum value of SAR (measured) = 3.19 W/kg



0 dB = 3.19 W/kg = 5.04 dB W/kg

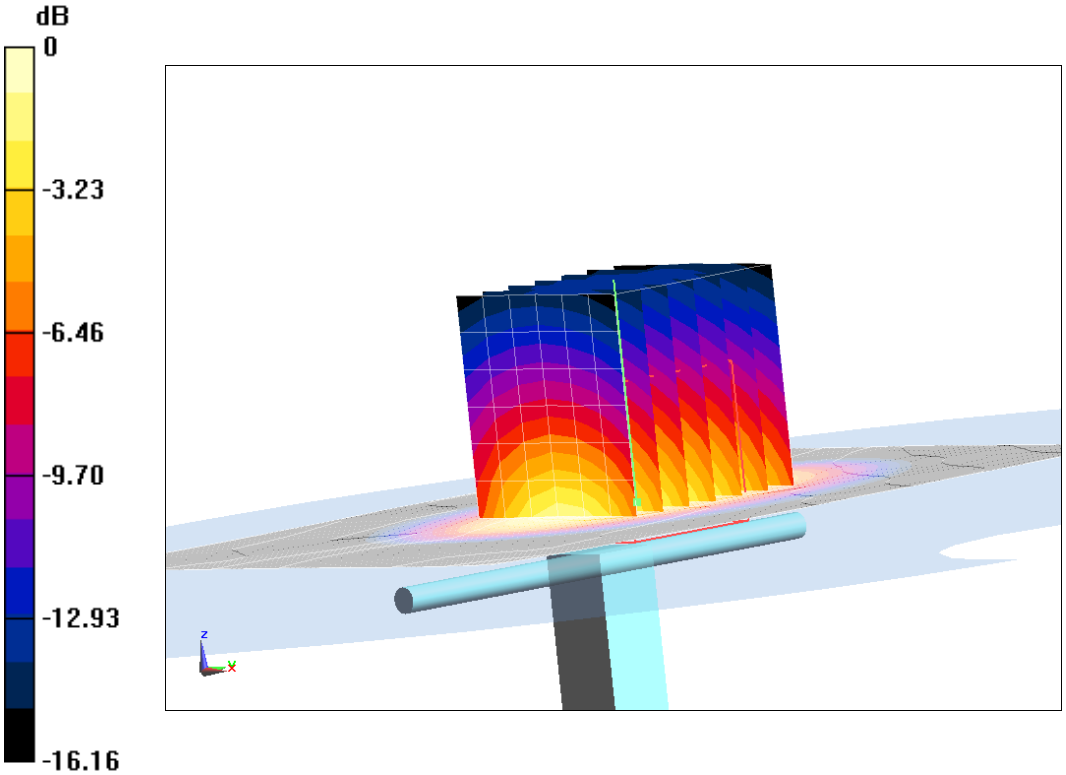
Fig.B.2 validation 835 MHz 250mW

1750 MHz

Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: Head 1750 MHz
Medium parameters used: f = 1750 MHz; σ =1.355 mho/m; ε_r = 39.86; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(8.38,8.38,8.38)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 106.01 V/m; Power Drift = 0.04
Fast SAR: SAR(1 g) = 9.03 W/kg; SAR(10 g) = 4.77 W/kg
Maximum value of SAR (interpolated) = 13.87 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =106.01 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 16.68 W/kg
SAR(1 g) = 8.99 W/kg; SAR(10 g) = 4.88 W/kg
Maximum value of SAR (measured) = 13.88 W/kg



0 dB = 13.88 W/kg = 11.42 dB W/kg

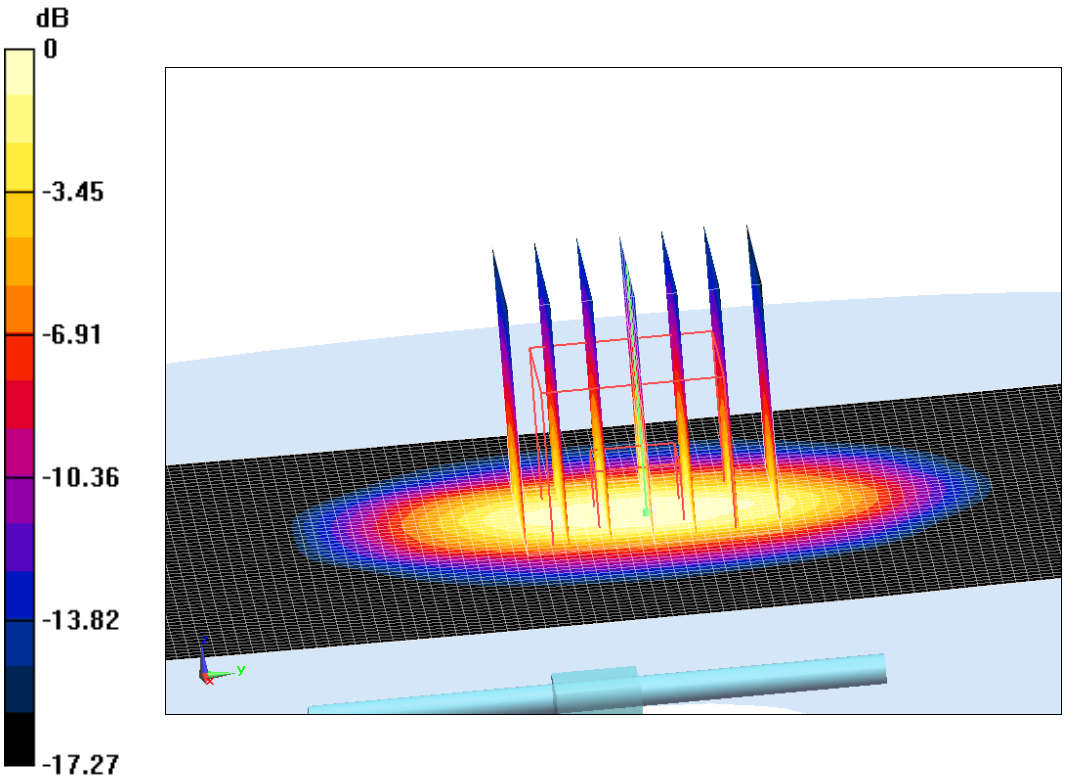
Fig.B.3 validation 1750 MHz 250mW

1900 MHz

Date: 1/3/2020
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ =1.375 mho/m; ε_r = 40.05; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(8.14,8.14,8.14)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 107.17 V/m; Power Drift = 0.05
Fast SAR: SAR(1 g) = 10.02 W/kg; SAR(10 g) = 5.23 W/kg
Maximum value of SAR (interpolated) = 15.31 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =107.17 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 17.53 W/kg
SAR(1 g) = 9.73 W/kg; SAR(10 g) = 5.18 W/kg
Maximum value of SAR (measured) = 15.19 W/kg



0 dB = 15.19 W/kg = 11.82 dB W/kg

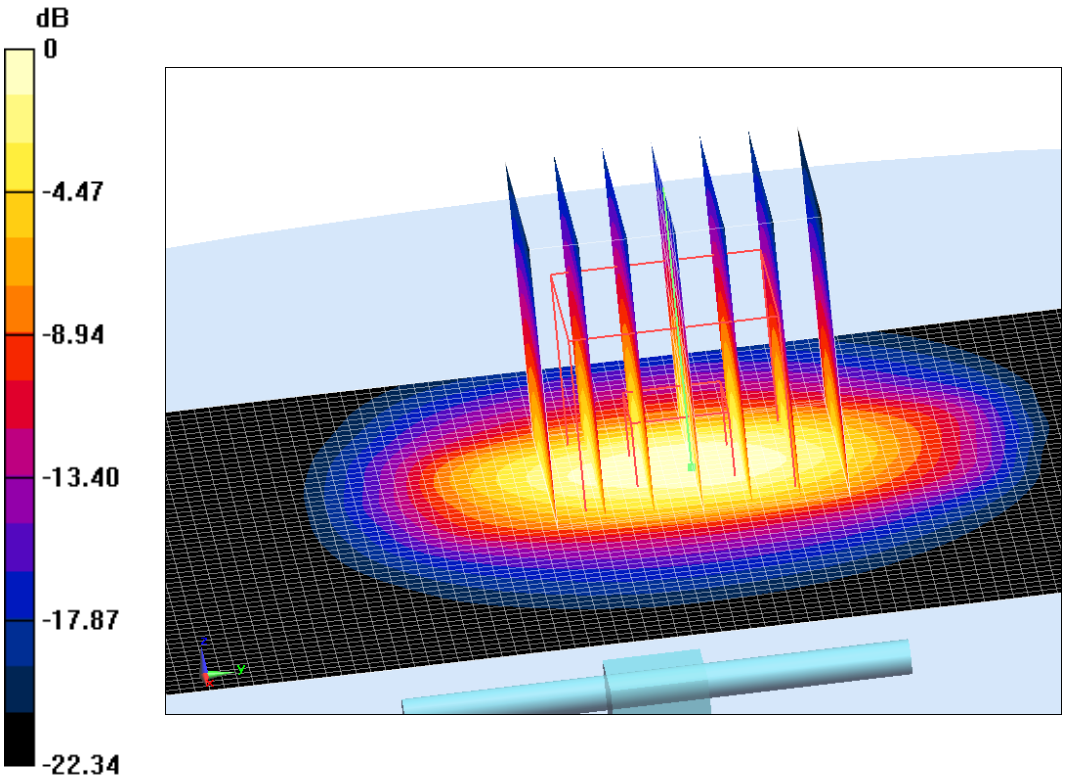
Fig.B.4 validation 1900 MHz 250mW

2450 MHz

Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ =1.817 mho/m; ε_r = 38.98; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(7.62,7.62,7.62)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 117.66 V/m; Power Drift = 0.03
Fast SAR: SAR(1 g) = 12.68 W/kg; SAR(10 g) = 6.16 W/kg
Maximum value of SAR (interpolated) = 21.9 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =117.66 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 25.29 W/kg
SAR(1 g) = 12.9 W/kg; SAR(10 g) = 5.98 W/kg
Maximum value of SAR (measured) = 21.41 W/kg



0 dB = 21.41 W/kg = 13.31 dB W/kg

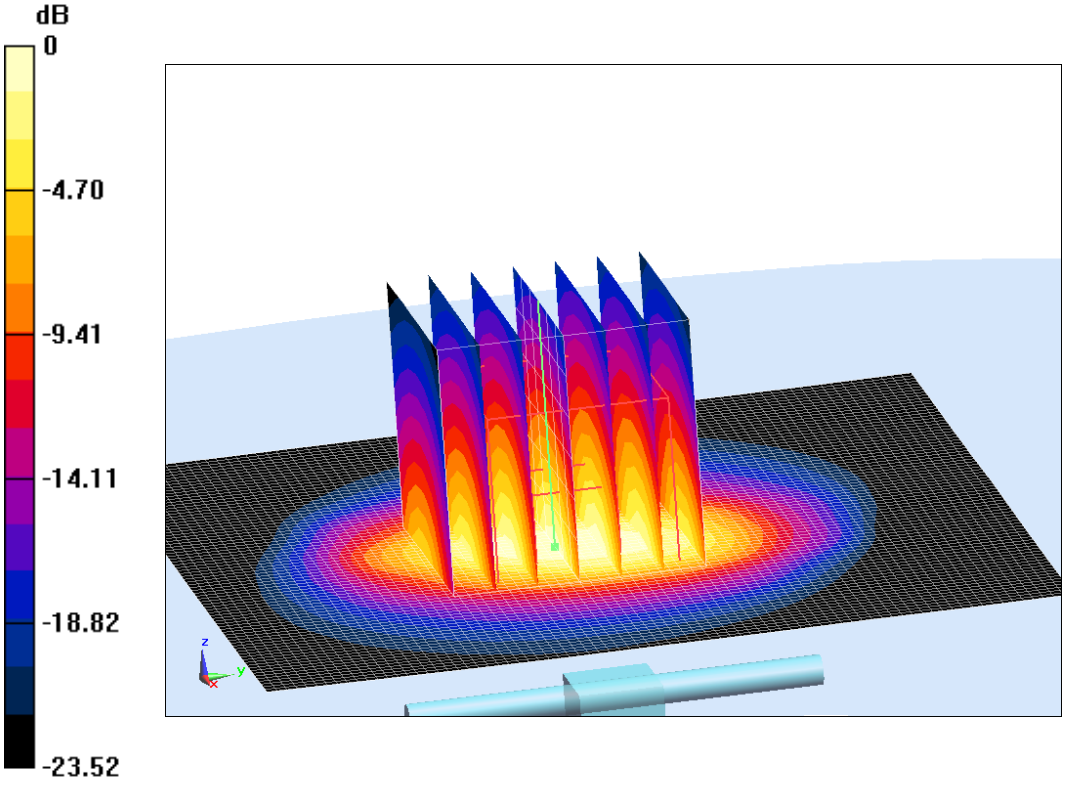
Fig.B.5 validation 2450 MHz 250mW

2600 MHz

Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.961 mho/m; ε_r = 39.1; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(7.19,7.19,7.19)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 119.35 V/m; Power Drift = 0.04
Fast SAR: SAR(1 g) = 13.95 W/kg; SAR(10 g) = 6.21 W/kg
Maximum value of SAR (interpolated) = 25.27 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =119.35 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 29.1 W/kg
SAR(1 g) = 14.11 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (measured) = 24.29 W/kg



0 dB = 24.29 W/kg = 13.85 dB W/kg

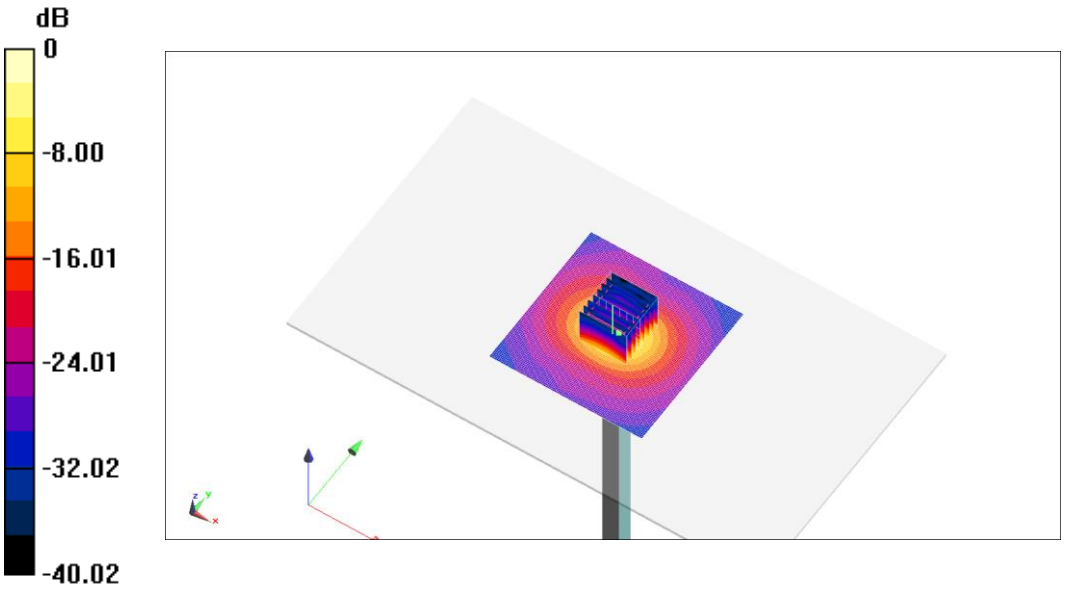
Fig.B.6 validation 2600 MHz 250mW

5250 MHz

Date: 1/4/2020
Electronics: DAE4 Sn771
Medium: Head 5250 MHz
Medium parameters used: f = 5250 MHz; σ =4.743 mho/m; ε_r = 36.47; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 5250 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617ConvF(5.39,5.39,5.39)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.3 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =73.58 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 27.19 W/kg
SAR(1 g) = 19.78 W/kg; SAR(10 g) = 5.83 W/kg
Maximum value of SAR (measured) = 17.8 W/kg



0 dB = 17.8 W/kg = 12.5 dB W/kg

Fig.B.7 validation 5250 MHz 100mW