TESTING
NVLAP LAB CODE 600118-0

SAR TEST REPORT

No. I22Z60036-SEM01

For

HMD Global Oy

Smart Phone

Model name: N150DL

With

Hardware Version: V1.0

Software Version: 02US_0_020

FCC ID: 2AJOTTA-1500

Issued Date: 2022-3-21

Note:

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

Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I22Z60036-SEM01	Rev.0	2022-3-10	Initial creation of test report
I22Z60036-SEM01	Rev.1	2022-3-21	The format of table 3 has been updated.

TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

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

1.2 Testing Environment

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

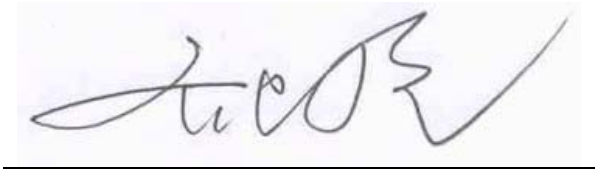
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	February 20, 2022
Testing End Date:	March 3, 2022

1.4 Signature

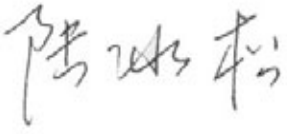
Lin Xiaojun

(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 Specific Absorption Rate (SAR) found during testing for HMD Global Oy Smart Phone N150DL are as follows:

Table 2.1: Highest Reported SAR (1g)

Mode		Highest Reported SAR (1g)			
		1g SAR Head	1g SAR Hotspot 10mm	1g SAR Body-worn 15mm	10g extremity SAR 0mm
GSM	GSM 850	0.40	0.78	0.78	/
	PCS 1900	0.23	0.88	0.43	/
WCDMA	UMTS FDD 2	0.46	1.21	0.74	3.00
	UMTS FDD 4	0.23	1.04	0.42	2.96
	UMTS FDD 5	0.48	0.51	0.51	/
LTE	LTE Band 2	0.47	1.11	0.49	2.44
	LTE Band 5	0.47	0.44	0.44	/
	LTE Band 7	0.07	1.09	0.56	2.04
	LTE Band 12	0.37	0.50	0.50	/
	LTE Band 13	0.44	0.42	0.42	/
	LTE Band 41PC3	0.04	1.07	0.69	3.23
	LTE Band 41PC2	0.04	1.31	0.63	3.40
	LTE Band 66	0.16	1.09	0.54	3.25
	LTE Band 71	0.34	0.37	0.37	/
WLAN 2.4 GHz		1.16	1.31	0.03	2.12
WLAN 5GHz		1.13	0.70	0.36	2.27

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 for hotspot and 15mm for body worn 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**: 1.31W/kg(1g).**

Table 2.2: The sum of reported SAR values for Main antenna and WLAN+BT

	Position	Cellular antenna	WiFi	BT	Sum	Limited
Highest reported SAR value for Head	Left Tilt (WCDMA1900+WIFI2.4G)	0.38	1.16	<0.01	**1.54**	**1.6**
Maximum reported SAR value for Body	Front 10mm (WCDMA1900+WIFI2.4G)	0.72	0.78	<0.01	**1.50**	
	Rear 10mm (WCDMA850+WIFI2.4G)	0.78	0.72	<0.01	**1.50**	
	Bottom 10mm (LTE Band41PC2)	1.31	/	<0.01	**1.31**	
	Rear 15mm (WCDMA1900+WIFI5G)	0.72	0.36	<0.01	**1.08**	
	Rear 15mm (WCDMA1900+WIFI2.4G)	0.74	0.03	<0.01	**0.77**	
Maximum reported SAR value for Limb	Top 0mm (WIFI5G)	/	2.27	/	**2.27**	**4.0**
	Bottom 0mm (LTE Band41PC2)	3.40	/	/	**3.40**	

Note：WiFi2.4G/5G&BT antenna is located at the top of the device, the distance from the bottom is greater than 25mm, so the test is exempt.

Note1: we have evaluated and chose the highest value of body 10mm and 15mm in the above table.

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.

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

3 Client Information

3.1 Applicant Information

Company Name:	HMD Global Oy
Address/Post:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Contact Person:	Reza Serafat
E-mail:	reza.serafat@hmdglobal.com
Telephone:	+491735287964
Fax:	/

3.2 Manufacturer Information

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Address/Post:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Contact Person:	Reza Serafat
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Telephone:	+491735287964
Fax:	/

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

4.1 About EUT

Description:	Smart Phone
Model name:	N150DL
Operating mode(s):	GSM850/1900,WCDMA850/1700/1900,BT,Wi-Fi(2.4G/5G), LTE Band2/4/5/7/12/13/17/41/66/71
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)
	1850 – 1910 MHz(LTE Band 2)
	824 – 849 MHz (LTE Band 5)
	2502.5 – 2567.5 MHz(LTE Band 7)
	699 – 716 MHz (LTE Band 12)
	779.5 –784.5 MHz (LTE Band 13)
	2496 – 2690 MHz (LTE Band 41)
	1710 – 1780 MHz (LTE Band 66)
	665.5 – 695.5 MHz (LTE Band 71)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	5150-5825 MHz (Wi-Fi 5G)
GPRS/EGPRS Multislot Class:	12
GPRS capability Class:	B
Test device Production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Hotspot mode:	Support

4.2Internal Identification of EUT used during the test

EUT ID*	IMEI	HW	SW Version
EUT1	351116900017194	V1.0	02US_0_020
EUT2	351116900017459	V1.0	02US_0_020
EUT3	351116900019190	V1.0	02US_0_020
EUT4	351116900016972	V1.0	02US_0_020
EUT5	351116900015958	V1.0	02US_0_020
EUT6	351116900003871	V1.0	02US_0_020
EUT7	351116900012278	V1.0	02US_0_020
EUT8	351116900017483	V1.0	02US_0_020

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

Note: It is performed to test SAR with the EUT1-5 and conducted power with the EUT6-8.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	TN-BP5000N1	/	Guangdong Fenghua new energy co.,ltd.

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

5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

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

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

5.2 Applicable Measurement Standards

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

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

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

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

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

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

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

KDB865664 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

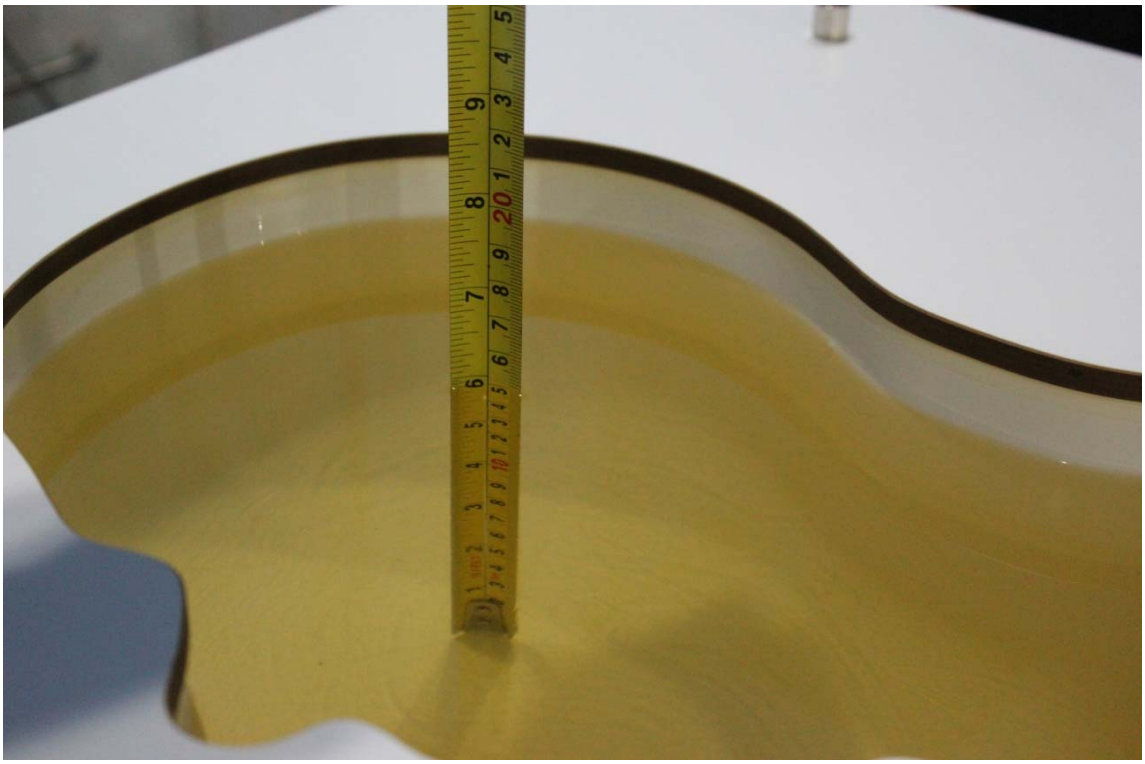
Frequency(MHz)	Liquid Type	Conductivity(σ)	±10% Range	Permittivity(ε)	± 10% Range
750	Head	0.89	0.80～0.98	41.94	37.75～46.13
835	Head	0.90	0.81～0.99	41.5	37.35～45.65
1750	Head	1.40	1.26～1.54	40.0	36～44
1900	Head	1.40	1.26～1.54	40.0	36～44
2450	Head	1.80	1.62～1.98	39.2	35.28～43.12
2600	Head	1.96	1.76～2.16	39.01	35.11～42.91
5250	Head	4.71	4.47～4.95	35.93	34.13～37.73
5600	Head	5.07	4.82～5.32	35.53	33.8～37.3
5750	Head	5.22	4.96～5.48	35.36	33.59～37.13

7.2 Dielectric Performance

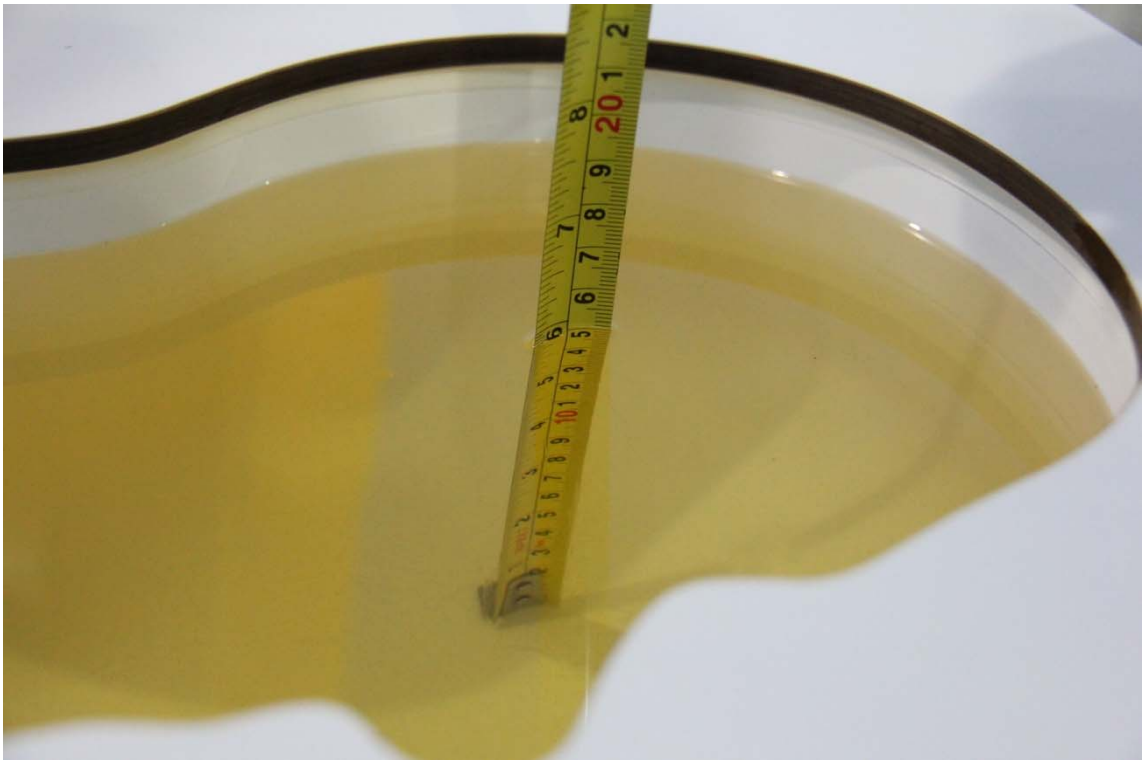
Table 7.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2022/2/20	Head	750 MHz	42.07	0.31	0.897	0.79
2022/2/21	Head	835 MHz	41.45	-0.12	0.884	-1.78
2022/2/22	Head	1750 MHz	39.44	-1.60	1.374	0.29
2022/2/23	Head	1900 MHz	39.33	-1.68	1.382	-1.29
2022/2/24	Head	1900 MHz	40.02	0.05	1.41	0.71
2022/2/26	Head	2600 MHz	38.46	-1.41	1.956	-0.20
2022/2/27	Head	2600 MHz	38.63	-0.97	1.942	-0.92
2022/2/28	Head	2450 MHz	39.32	0.31	1.815	0.83
2022/3/1	Head	5250 MHz	35.89	-0.11	4.626	-1.78
2022/3/2	Head	5600 MHz	34.97	-1.58	5.085	0.30
2022/3/3	Head	5750 MHz	34.77	-1.67	5.154	-1.26

Note: The liquid temperature is 23.0°C

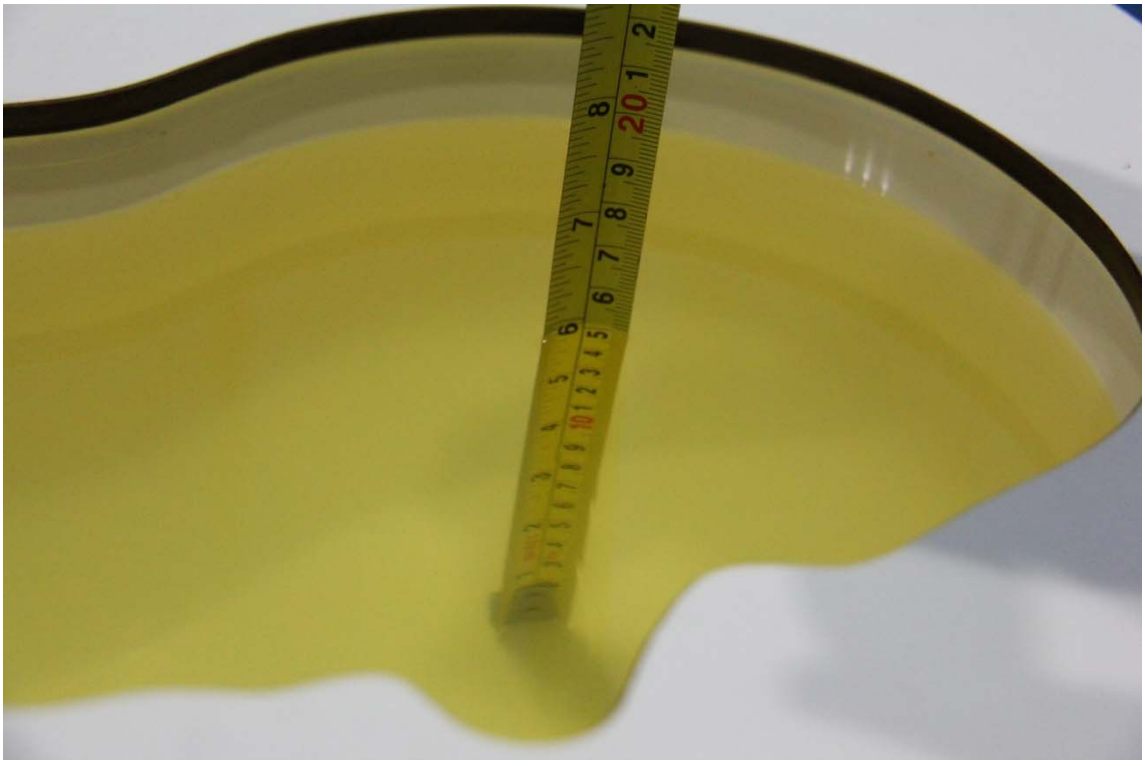


Picture 7-1 Liquid depth in the Head Phantom (750MHz)

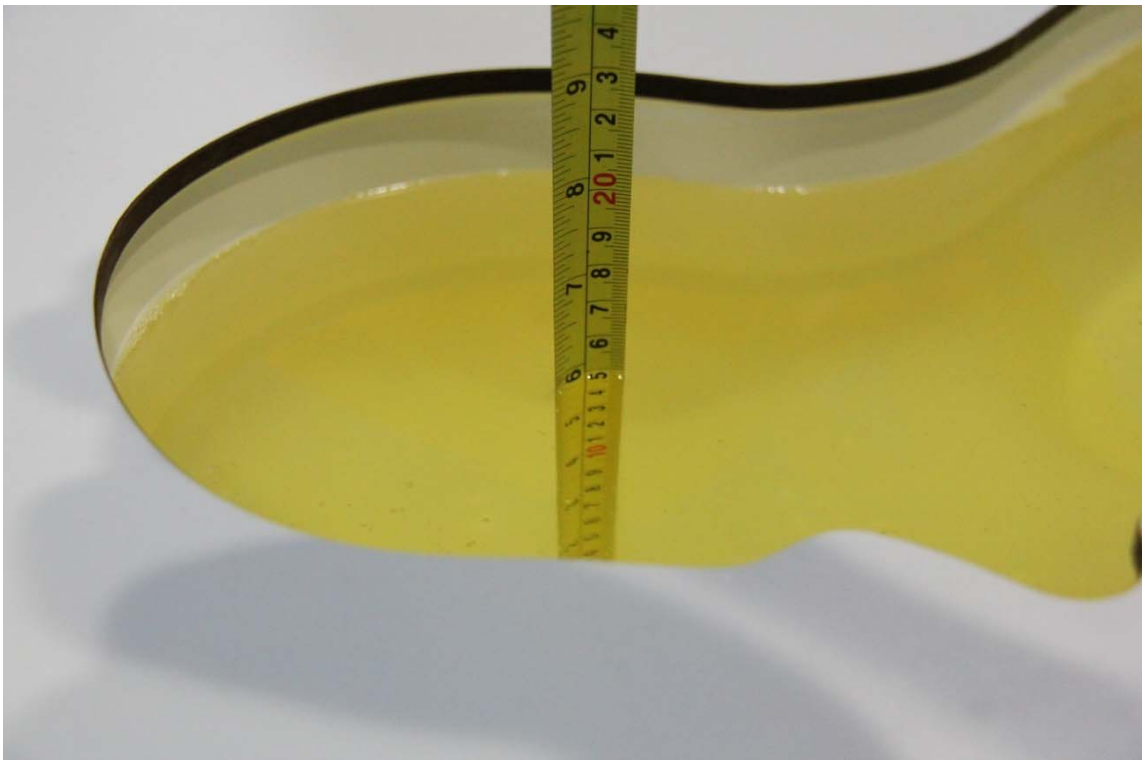


Picture 7-2 Liquid depth in the Head Phantom (835 MHz)

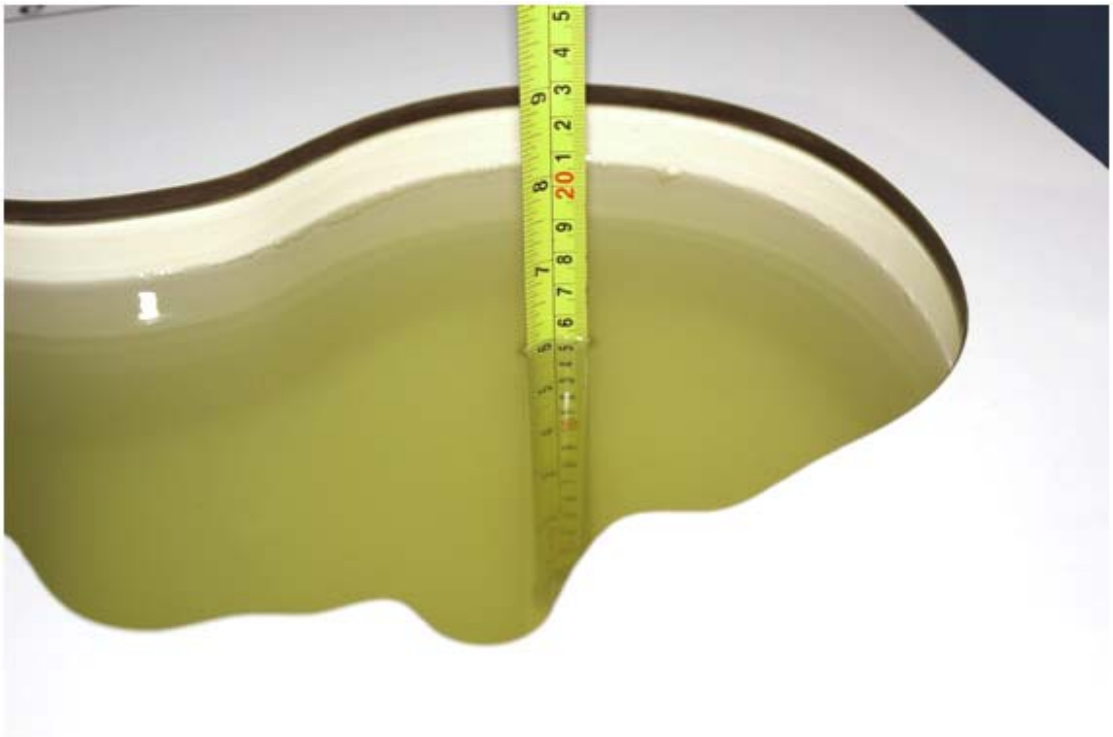
Picture 7-3 Liquid depth in the Head Phantom (1750 MHz)



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



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



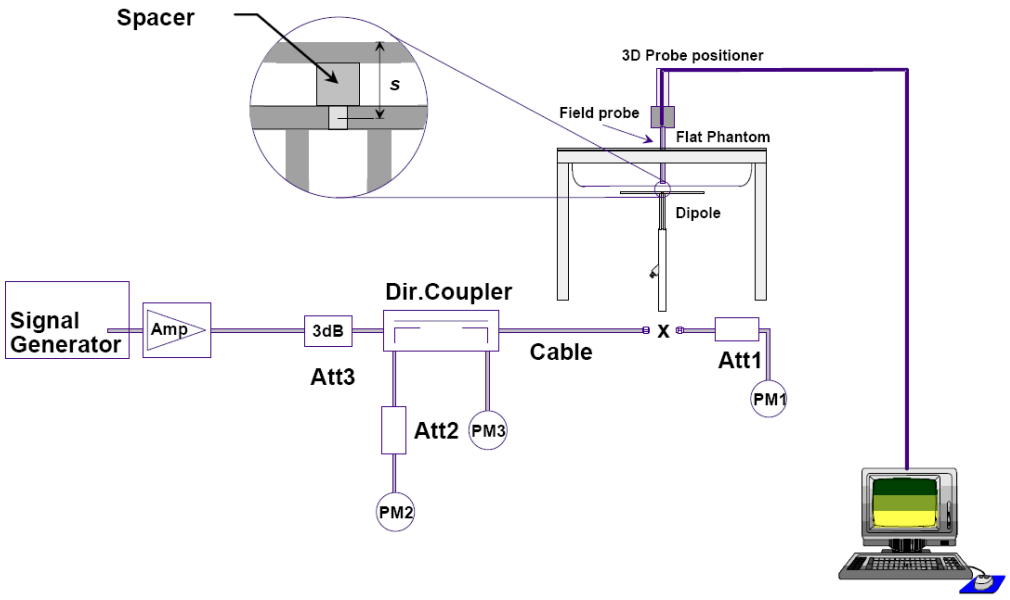
Picture 7-6 Liquid depth in the Head Phantom (2600 MHz)

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

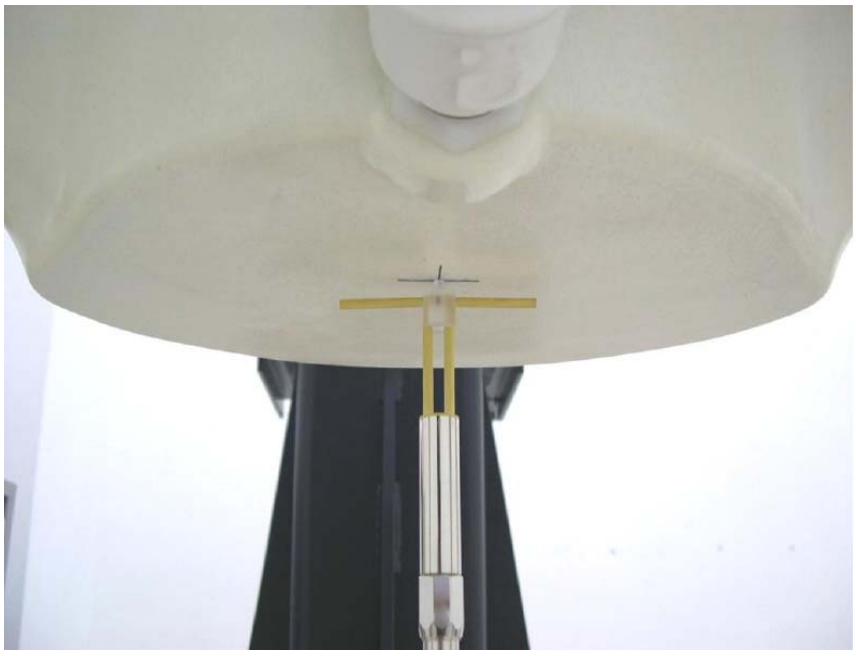
8 System verification

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
2022/2/20	750 MHz	5.65	8.68	5.6	8.44	1.27%	-0.35%
2022/2/21	835 MHz	6.24	9.63	6.2	9.68	-0.80%	0.83%
2022/2/22	1750 MHz	19.4	36.9	19.04	36	-0.31%	-1.37%
2022/2/23	1900 MHz	20.9	40.1	20.96	39.68	1.75%	0.20%
2022/2/24	1900 MHz	20.9	40.1	20.4	39.04	-0.97%	-1.41%
2022/2/26	2600 MHz	25.5	57.1	25.72	57.2	1.66%	0.35%
2022/2/27	2600 MHz	25.5	57.1	25.4	56.32	0.40%	-1.19%
2022/2/28	2450 MHz	24.9	53.3	24.88	52.24	-0.08%	-1.99%
2022/3/1	5250 MHz	22.7	79.5	22.7	81.1	-0.09%	2.04%
2022/3/2	5600 MHz	23.7	83.8	23.5	82.2	-0.76%	-1.96%
2022/3/3	5750 MHz	22.7	81	23.1	80.6	1.67%	-0.49%

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.

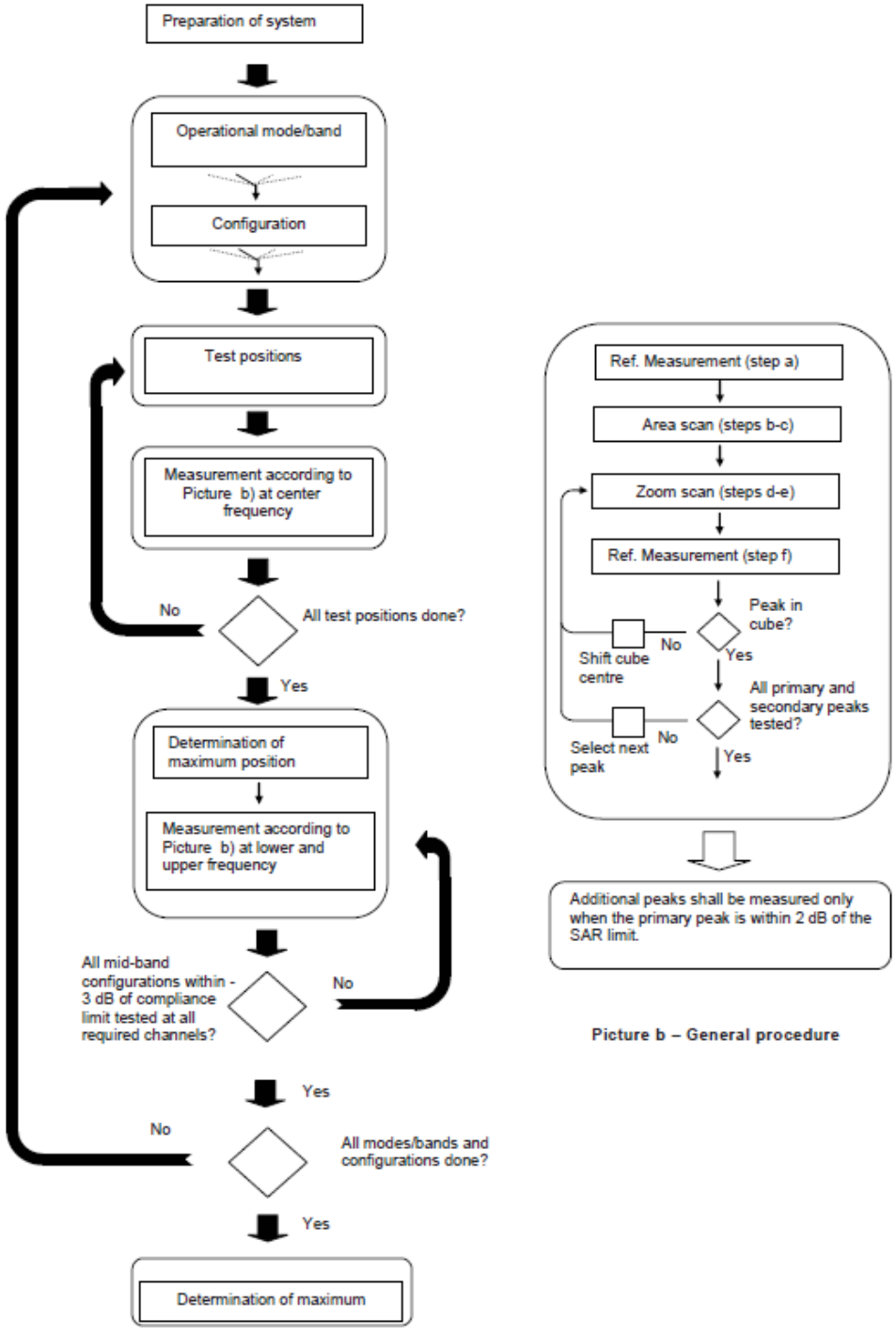
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

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 9.1Block diagram of the tests to be performed

9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the

higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

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

9.3 WCDMA Measurement Procedures for SAR

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

For Release 5 HSDPA Data Devices:

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

For Release 6 HSPA Data Devices

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

Rel.8 DC-HSDPA (Cat 24)

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

9.4 SAR Measurement for LTE

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

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

TDD test:

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

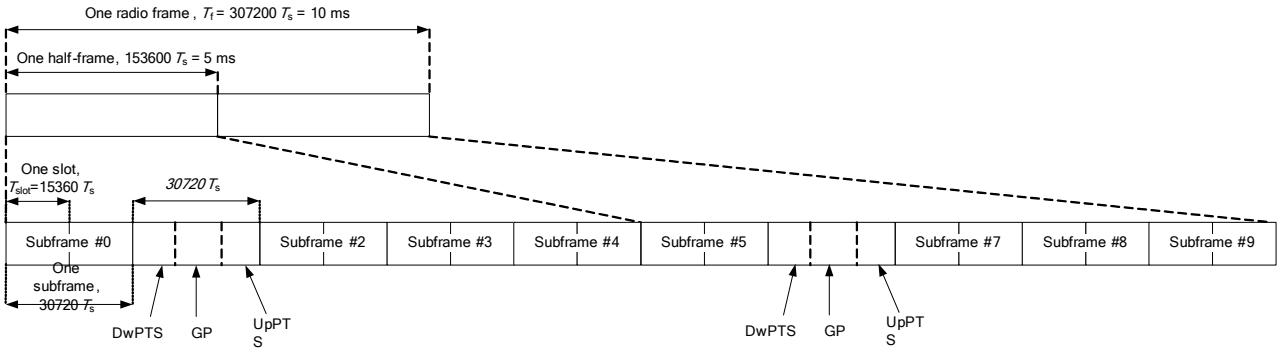


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

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, DASY5 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in section14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

10 Area Scan Based 1-g SAR

10.1 Requirement of KDB

According to the KDB447498 D01 v06, 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

Table1: Summery of Receiver detection mechanism

Antenna	Receiver ON/Hotspot OFF&ON (Head scenario)	Receiver OFF +Hotspot ON (Body scenario)	Receiver OFF +Hotspot OFF (Body scenario)
Standalone	DSI0	DSI1	DSI2

11.1 GSM Measurement result

Table 11.1-1: The conducted power measurement results for GSM, GPRS and EGPRS-DSI0/1/2

GSM 850	Measured Power (dBm)			Tune up	calculation	Averaged Power (dBm)		
Speech (GMSK)	251	190	128			251	190	128
1 Txslot	32.13	31.95	32.25	33.50	/	/	/	/
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	251	190	128			251	190	128
1 Txslot	31.96	31.74	32.04	33.50	-9.03	22.93	22.71	23.01
2 Txslots	**30.93**	**30.81**	**30.66**	**31.50**	**-6.02**	**24.91**	**24.79**	**24.64**
3Txslots	29.04	28.91	28.76	29.50	-4.26	24.78	24.65	24.50
4 Txslots	27.09	26.92	27.28	27.50	-3.01	24.08	23.91	24.27
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	251	190	128			251	190	128
1 Txslot	31.86	31.66	31.98	33.50	-9.03	22.83	22.63	22.95
2 Txslots	**30.83**	**30.73**	**30.59**	**31.50**	**-6.02**	**24.81**	**24.71**	**24.57**
3Txslots	28.94	28.84	28.70	29.50	-4.26	24.68	24.58	24.44
4 Txslots	27.01	26.86	27.21	27.50	-3.01	24.00	23.85	24.20
GSM 850	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	251	190	128			251	190	128
1 Txslot	25.80	25.92	26.01	27.50	-9.03	16.77	16.89	16.98
2 Txslots	23.79	23.86	23.93	25.50	-6.02	17.77	17.84	17.91
3Txslots	21.67	21.71	21.78	23.50	-4.26	17.41	17.45	17.52
4 Txslots	20.95	20.54	20.61	21.50	-3.01	17.94	17.53	17.60

NOTES:

1) Division Factors

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

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

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

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

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

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

Table 11.1-2: The conducted power measurement results for GSM, GPRS and EGPRS

DSI0

PCS1900	Measured Power (dBm)			Tune up	calculation	Averaged Power (dBm)		
Speech (GMSK)	810	661	512			810	661	512
1 Txslot	28.78	28.63	28.74	30.50	/	/	/	/
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	810	661	512			810	661	512
1 Txslot	28.61	28.56	28.56	30.50	-9.03	19.58	19.53	19.53
2 Txslots	27.35	27.48	27.03	28.50	-6.02	21.33	21.46	21.01
3Txslots	26.34	25.99	25.93	27.00	-4.26	22.08	21.73	21.67
4 Txslots	**25.87**	**25.61**	**25.58**	**26.50**	**-3.01**	**22.86**	**22.60**	**22.57**
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (GMSK)	810	661	512			810	661	512
1 Txslot	28.74	28.57	28.62	30.50	-9.03	19.71	19.54	19.59
2 Txslots	27.49	27.60	27.10	28.50	-6.02	21.47	21.58	21.08
3Txslots	26.48	26.12	26.00	27.00	-4.26	22.22	21.86	21.74
4 Txslots	**26.00**	**25.73**	**25.66**	26.50	**-3.01**	**22.99**	**22.72**	**22.65**
PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
EGPRS (8PSK)	810	661	512			810	661	512
1 Txslot	25.56	24.93	24.60	26.50	-9.03	16.53	15.90	15.57
2 Txslots	24.13	23.38	23.03	24.50	-6.02	18.11	17.36	17.01
3Txslots	22.42	22.26	21.88	22.50	-4.26	18.16	18.00	17.62
4 Txslots	21.30	21.12	20.73	21.50	-3.01	18.29	18.11	17.72

NOTES:

1) Division Factors

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

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

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

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

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

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

Table 11.1-3: The conducted power measurement results for GSM, GPRS and EGPRS

DSI1

PCS1900 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	26.83	27.12	27.04	28.00	-9.03	17.80	18.09	18.01
2 Txslots	25.72	25.66	25.77	26.50	-6.02	19.70	19.64	19.75
3Txslots	24.63	24.49	24.64	25.50	-4.26	20.37	20.23	20.38
4 Txslots	**24.08**	**24.06**	**23.98**	**25.00**	**-3.01**	**21.07**	**21.05**	**20.97**
PCS1900 EGPRS (GMSK)	Measured Power (dBm)				calculation			
	810	661	512			810	661	512
1 Txslot	26.77	27.09	27.01	28.00	-9.03	17.74	18.06	17.98
2 Txslots	25.66	25.62	25.74	26.50	-6.02	19.64	19.60	19.72
3Txslots	24.56	24.45	24.62	25.50	-4.26	20.30	20.19	20.36
4 Txslots	**24.01**	**24.02**	**23.95**	**25.00**	**-3.01**	**21.00**	**21.01**	**20.94**
PCS1900 EGPRS (8PSK)	Measured Power (dBm)				calculation			
	810	661	512			810	661	512
1 Txslot	23.59	23.68	23.75	24.50	-9.03	14.56	14.65	14.72
2 Txslots	21.57	21.84	21.69	22.50	-6.02	15.55	15.82	15.67
3Txslots	21.17	20.61	21.40	22.00	-4.26	16.91	16.35	17.14
4 Txslots	19.40	19.39	19.51	20.50	-3.01	16.39	16.38	16.50

NOTES:

1) Division Factors

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

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

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

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

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

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

Table 11.1-4: The conducted power measurement results for GSM, GPRS and EGPRS

DSI2

PCS1900	Measured Power (dBm)				calculation	Averaged Power (dBm)		
GPRS (GMSK)	810	661	512			810	661	512
1 Txslot	26.89	27.18	27.07	28.00	-9.03	17.86	18.15	18.04
2 Txslots	25.77	25.71	25.79	26.50	-6.02	19.75	19.69	19.77
3Txslots	24.66	24.53	24.66	25.50	-4.26	20.40	20.27	20.40
4 Txslots	**24.09**	**24.08**	**23.99**	**25.00**	**-3.01**	**21.08**	**21.07**	**20.98**
PCS1900	Measured Power (dBm)				calculation			
EGPRS (GMSK)	810	661	512			810	661	512
1 Txslot	26.78	27.10	27.01	28.00	-9.03	17.75	18.07	17.98
2 Txslots	25.66	25.63	25.73	26.50	-6.02	19.64	19.61	19.71
3Txslots	24.56	24.45	24.60	25.50	-4.26	20.30	20.19	20.34
4 Txslots	**24.00**	**24.01**	**23.92**	**25.00**	**-3.01**	**20.99**	**21.00**	**20.91**
PCS1900	Measured Power (dBm)				calculation			
EGPRS (8PSK)	810	661	512			810	661	512
1 Txslot	24.30	24.29	24.41	24.50	-9.03	15.27	15.26	15.38
2 Txslots	22.21	22.20	22.27	22.50	-6.02	16.19	16.18	16.25
3Txslots	21.07	21.35	21.10	22.00	-4.26	16.81	17.09	16.84
4 Txslots	19.77	19.75	19.73	20.50	-3.01	16.76	16.74	16.72

NOTES:

1) Division Factors

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

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

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

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

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

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

11.2 WCDMA Measurement result

Table 11.2-1: The conducted Power for WCDMA DSI0/1/2

Item	band	FDDV result			
	ARFCN	4233 (846.6MHz)	4182 (836.4MHz)	4132 (826.4MHz)	Tune up
WCDMA	\	23.58	23.59	23.51	25.00
HSUPA	1	22.59	22.52	22.55	23.00
	2	20.68	20.59	20.60	21.00
	3	21.67	21.59	21.57	22.00
	4	20.7	20.64	20.57	21.50
	5	22.65	22.54	22.64	23.00
DC-HSDPA	1	22.44	22.46	22.47	23.00
	2	22.45	22.47	22.52	23.00
	3	21.94	22.01	22.03	22.50
	4	21.95	21.98	21.99	22.50

Table 11.2-2: The conducted Power for WCDMA DSI0

Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	
WCDMA	\	24.18	24.27	24.20	25.00
HSUPA	1	22.4	22.48	22.49	23.00
	2	20.36	20.46	20.44	21.00
	3	21.35	21.44	21.36	22.00
	4	20.35	20.40	20.45	21.50
	5	22.36	22.48	22.39	23.00
DC-HSDPA	1	22.45	22.35	22.35	23.00
	2	22.46	22.33	22.32	23.00
	3	21.94	21.83	21.85	22.50
	4	21.9	21.85	21.83	22.50
Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	
WCDMA	\	24.33	24.29	24.31	25.00
HSUPA	1	22.5	22.48	22.53	23.00
	2	20.37	20.32	20.42	21.00
	3	21.45	21.50	21.36	22.00
	4	20.38	20.42	20.32	21.50
	5	22.37	22.40	22.37	23.00
DC-HSDPA	1	21.39	21.41	21.42	23.00
	2	21.42	21.46	21.51	23.00
	3	20.98	20.97	20.99	22.50
	4	20.94	20.92	20.98	22.50

Table 11.2-3: The conducted Power for WCDMA DSI1

Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	
WCDMA	\	20.23	20.31	20.16	21.00
HSUPA	1	19.21	19.30	19.25	20.00
	2	17.19	17.21	17.20	18.00
	3	18.27	18.25	18.15	19.00
	4	17.18	17.22	17.22	18.00
	5	19.23	19.23	19.16	20.00
DC-HSDPA	1	19.21	19.16	19.15	20.00
	2	19.23	19.15	19.18	20.00
	3	18.75	18.66	18.65	19.50
	4	18.72	18.64	18.63	19.50
Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	
WCDMA	\	21.23	21.22	21.26	22.00
HSUPA	1	19.96	19.84	19.83	21.00
	2	18.12	18.09	18.02	19.00
	3	19.08	19.00	19.03	20.00
	4	18.17	18.09	17.97	19.00
	5	19.96	19.85	19.86	21.00
DC-HSDPA	1	20.01	20.06	20.05	21.00
	2	20.02	20.05	20.02	21.00
	3	19.51	19.58	19.55	20.50
	4	19.52	19.54	19.54	20.50

Table 11.2-4: The conducted Power for WCDMA DSI2

Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	
WCDMA	\	21.21	21.26	21.14	22.00
HSUPA	1	20.15	20.17	20.22	21.00
	2	18.22	18.25	18.16	19.00
	3	19.21	19.18	19.23	20.00
	4	18.24	18.26	18.13	19.00
	5	20.12	20.19	20.23	21.00
DC-HSDPA	1	20.22	20.16	20.15	21.00
	2	20.25	20.17	20.14	21.00
	3	19.76	19.70	19.68	20.50
	4	19.75	19.71	19.66	20.50
Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	
WCDMA	\	22.23	22.21	22.25	23.00
HSUPA	1	21.38	21.29	21.26	22.00
	2	19.37	19.29	19.33	20.00
	3	20.36	20.32	20.23	21.00
	4	19.36	19.25	19.31	20.00
	5	21.34	21.27	21.28	22.00
DC-HSDPA	1	21.24	21.25	21.22	22.50
	2	21.15	21.30	21.25	22.50
	3	20.72	20.75	20.72	22.00
	4	20.71	20.75	20.73	21.50

11.3 LTE Measurement result

Table 11.3-1: Maximum Power Reduction (MPR) for LTE-Normal Power

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

Table 11.3-2: Maximum Power Reduction (MPR) for LTE- Low Power

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

Table 11.3-3: The tune up for LTE

Mode/Band	DSI0	DSI1	DSI2
FDD Band 2	**25**	**22**	**23**
FDD Band 5	25	25	25
FDD Band 7	23	18	19
FDD Band 12	25	25	25
FDD Band 13	25	25	25
TDD Band 41(PC3)	24	21	24
TDD Band 41(PC2)	25	22	25
FDD Band 66	24.5	21.5	22.5
FDD Band 71	25	25	25

DSI0

Band 2					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	64QAM
1.4 MHz	1RB_High	1909.3	23.80	22.92	21.93
		1880	23.82	22.83	21.78
		1850.7	23.67	22.86	21.88
	1RB_Middle	1909.3	23.90	22.91	21.97
		1880	23.62	22.85	21.88
		1850.7	23.79	22.84	21.88
	1RB_Low	1909.3	23.81	22.90	21.81
		1880	23.58	22.96	21.90
		1850.7	23.69	22.90	21.85
	3RB_High	1909.3	23.87	22.80	21.70
		1880	23.94	22.67	21.80
		1850.7	23.84	22.85	21.91
	3RB_Middle	1909.3	23.94	22.95	21.74
		1880	23.62	22.68	21.98
		1850.7	23.92	22.85	21.71
	3RB_Low	1909.3	23.84	22.78	21.70
		1880	23.70	22.86	21.80
		1850.7	23.78	22.78	21.94
	6RB	1909.3	22.81	21.97	21.66
		1880	22.75	21.99	20.67
		1850.7	22.75	21.90	20.79
3 MHz	1RB_High	1908.5	23.79	22.96	21.80
		1880	23.87	23.25	21.84
		1851.5	23.62	22.88	21.88
	1RB_Middle	1908.5	23.98	22.92	21.90
		1880	23.74	22.89	21.79
		1851.5	23.94	22.95	21.97
	1RB_Low	1908.5	23.93	22.85	21.84
		1880	23.59	22.82	21.84
		1851.5	23.64	22.99	21.94
	8RB_High	1908.5	22.81	21.83	21.81
		1880	22.73	21.71	21.79
		1851.5	22.82	21.86	21.50
	8RB_Middle	1908.5	22.83	21.78	21.91
		1880	22.80	21.81	21.79
		1851.5	22.71	21.84	20.87
	8RB_Low	1908.5	22.74	21.86	21.81
		1880	22.84	21.83	21.81
		1851.5	22.82	21.85	20.92

	15RB	1908.5	22.80	21.91	21.88
		1880	22.79	21.76	21.73
		1851.5	22.78	21.76	20.84
5 MHz	1RB_High	1907.5	23.81	23.07	22.22
		1880	23.79	23.18	22.20
		1852.5	23.76	23.10	22.30
	1RB_Middle	1907.5	23.79	22.96	22.01
		1880	23.54	22.88	22.24
		1852.5	23.82	22.97	22.14
	1RB_Low	1907.5	23.88	23.16	22.31
		1880	23.72	23.01	22.39
		1852.5	23.84	23.06	22.37
	12RB_High	1907.5	22.73	21.87	21.13
		1880	22.66	21.71	21.11
		1852.5	22.83	21.82	21.17
	12RB_Middle	1907.5	22.88	21.84	21.22
		1880	22.73	21.81	21.17
		1852.5	22.85	21.91	21.22
	12RB_Low	1907.5	22.88	21.92	21.28
		1880	22.77	21.75	21.12
		1852.5	22.85	21.93	21.21
	25RB	1907.5	22.87	21.93	21.34
		1880	22.78	21.75	21.13
		1852.5	22.80	21.87	21.29
10MHz	1RB_High	1905	23.69	22.19	22.24
		1880	23.77	22.30	22.32
		1855	23.74	22.37	22.34
	1RB_Middle	1905	23.79	22.41	22.48
		1880	23.73	22.59	22.23
		1855	23.96	22.55	21.27
	1RB_Low	1905	23.88	22.75	22.69
		1880	23.88	22.53	22.09
		1855	23.77	22.46	21.46
	25RB_High	1905	22.79	21.36	21.28
		1880	22.73	21.08	21.16
		1855	22.76	21.14	20.18
	25RB_Middle	1905	22.97	21.39	21.39
		1880	22.75	21.10	21.20
		1855	22.74	21.22	20.19
	25RB_Low	1905	22.92	21.36	21.34
		1880	22.61	21.07	21.05
		1855	22.89	21.27	20.23
	50RB	1905	22.96	21.29	21.26
		1880	22.73	21.17	21.18
		1855	22.82	21.19	20.15
15MHz	1RB_High	1902.5	23.82	22.48	21.55

		1880	23.72	22.62	21.49
		1857.5	23.67	22.56	21.49
	1RB_Middle	1902.5	23.90	22.56	21.48
		1880	23.61	22.51	21.50
		1857.5	23.80	22.32	21.53
	1RB_Low	1902.5	23.73	22.57	21.44
		1880	23.95	22.39	21.46
		1857.5	23.73	22.61	21.50
	36RB_High	1902.5	22.99	21.41	20.48
		1880	22.74	21.21	20.26
		1857.5	22.78	21.27	20.25
	36RB_Middle	1902.5	22.90	21.47	20.38
		1880	22.85	21.31	20.36
		1857.5	22.84	21.30	20.29
	36RB_Low	1902.5	22.77	21.29	20.36
		1880	22.64	21.13	20.25
		1857.5	22.74	21.14	20.18
	75RB	1902.5	22.76	21.40	20.34
		1880	22.73	21.19	20.19
		1857.5	22.75	21.21	20.28
20MHz	1RB_High	1900	23.53	22.58	21.45
		1880	23.41	22.38	21.24
		1860	23.75	22.24	21.54
	1RB_Middle	1900	23.91	22.82	21.78
		1880	23.75	22.65	21.49
		1860	23.97	22.92	21.69
	1RB_Low	1900	23.86	22.92	21.63
		1880	24.00	22.76	21.32
		1860	23.88	22.54	21.38
	50RB_High	1900	22.98	21.74	20.38
		1880	22.85	21.54	20.31
		1860	22.89	21.70	20.41
	50RB_Middle	1900	23.06	21.80	20.44
		1880	23.06	21.89	20.41
		1860	23.03	21.65	20.59
	50RB_Low	1900	23.07	21.71	20.35
		1880	22.92	21.58	20.38
		1860	23.09	21.56	20.52
	100RB	1900	23.13	21.70	20.40
		1880	22.98	21.74	20.39
		1860	22.89	21.49	20.46

DSI1

Band 2					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	64QAM
1.4 MHz	1RB_High	1909.3	21.12	20.50	19.1
		1880	21.17	20.45	19.36
		1850.7	21.15	20.46	19.22
	1RB_Middle	1909.3	21.28	20.42	19.39
		1880	21.20	20.48	19.23
		1850.7	21.26	20.50	19.36
	1RB_Low	1909.3	21.08	20.47	19.22
		1880	21.23	20.49	19.3
		1850.7	21.19	20.34	19.27
	3RB_High	1909.3	21.24	20.36	19.24
		1880	21.13	20.10	19.23
		1850.7	21.15	20.23	19.3
	3RB_Middle	1909.3	21.13	20.29	19.3
		1880	21.11	20.21	19.25
		1850.7	21.36	20.18	19.27
	3RB_Low	1909.3	21.09	20.13	19.24
		1880	21.10	20.15	19.18
		1850.7	21.17	20.20	19.21
	6RB	1909.3	20.16	19.12	18.14
		1880	20.14	19.15	18.11
		1850.7	20.16	19.17	18.25
3 MHz	1RB_High	1908.5	21.06	20.41	20.39
		1880	21.13	20.35	20.21
		1851.5	21.11	20.37	20.31
	1RB_Middle	1908.5	21.27	20.49	20.36
		1880	21.18	20.40	20.29
		1851.5	21.27	20.51	20.61
	1RB_Low	1908.5	21.26	20.51	20.52
		1880	21.27	20.35	20.39
		1851.5	21.29	20.55	20.39
	8RB_High	1908.5	20.15	19.26	19.12
		1880	20.11	19.17	19.03
		1851.5	20.17	19.29	19.23
	8RB_Middle	1908.5	20.19	19.34	19.19
		1880	20.13	19.20	19.16
		1851.5	20.27	19.30	19.23
	8RB_Low	1908.5	20.27	19.21	19.19
		1880	20.20	19.29	19.23
		1851.5	20.20	19.32	19.14

	15RB	1908.5	20.24	19.26	19.14
		1880	20.11	19.15	19.14
		1851.5	20.25	19.24	19.19
5 MHz	1RB_High	1907.5	21.16	20.46	20.32
		1880	21.12	20.48	19.26
		1852.5	21.28	20.47	19.21
	1RB_Middle	1907.5	21.23	20.58	20.23
		1880	21.16	20.47	19.15
		1852.5	21.28	20.52	19.55
	1RB_Low	1907.5	21.22	20.62	20.64
		1880	21.28	20.48	19.45
		1852.5	21.30	20.57	19.59
	12RB_High	1907.5	20.25	19.22	19.2
		1880	20.13	19.15	18.17
		1852.5	20.16	19.20	18.27
	12RB_Middle	1907.5	20.27	19.23	19.25
		1880	20.19	19.22	18.19
		1852.5	20.33	19.28	18.27
	12RB_Low	1907.5	20.32	19.31	19.18
		1880	20.17	19.22	18.17
		1852.5	20.29	19.32	18.25
	25RB	1907.5	20.34	19.27	19.34
		1880	20.22	19.25	18.19
		1852.5	20.26	19.31	18.24
10MHz	1RB_High	1905	21.30	20.64	20.47
		1880	21.18	20.66	19.48
		1855	21.22	20.63	19.55
	1RB_Middle	1905	21.28	20.64	20.35
		1880	21.27	20.56	19.28
		1855	21.15	20.64	19.27
	1RB_Low	1905	21.15	20.67	20.48
		1880	21.22	20.55	19.69
		1855	21.17	20.59	19.56
	25RB_High	1905	20.11	19.27	19.15
		1880	20.17	19.19	18.04
		1855	20.17	19.08	18.23
	25RB_Middle	1905	20.33	19.21	19.2
		1880	20.23	19.13	18.16
		1855	20.19	19.08	18.19
	25RB_Low	1905	20.29	19.26	19.23
		1880	20.07	19.08	18.01
		1855	20.34	19.28	18.28
	50RB	1905	20.30	19.16	19.26
		1880	20.18	19.21	18.14
		1855	20.24	19.18	18.2
15MHz	1RB_High	1902.5	21.28	20.63	20.6

		1880	21.12	20.51	20.52
		1857.5	21.25	20.72	20.63
	1RB_Middle	1902.5	21.24	20.65	20.42
		1880	21.25	20.59	20.48
		1857.5	21.11	20.46	20.31
	1RB_Low	1902.5	21.20	20.70	20.68
		1880	21.27	20.65	20.54
		1857.5	21.34	20.75	20.57
	36RB_High	1902.5	20.44	19.25	19.45
		1880	20.08	19.22	19.21
		1857.5	20.29	19.19	19.19
	36RB_Middle	1902.5	20.37	19.38	19.29
		1880	20.23	19.22	19.22
		1857.5	20.28	19.20	19.22
	36RB_Low	1902.5	20.26	19.26	19.27
		1880	20.15	19.14	19.12
		1857.5	20.17	19.07	19.19
	75RB	1902.5	20.36	19.38	19.28
		1880	20.23	19.31	19.2
		1857.5	20.21	19.23	19.21
20MHz	1RB_High	1900	20.98	20.30	20.16
		1880	20.74	20.09	19.92
		1860	21.02	20.32	20.12
	1RB_Middle	1900	21.20	20.61	20.7
		1880	21.29	20.53	20.48
		1860	21.37	20.51	20.57
	1RB_Low	1900	21.31	20.41	20.46
		1880	21.18	20.55	20.37
		1860	21.29	20.61	20.38
	50RB_High	1900	20.27	19.11	19.34
		1880	20.06	19.08	19.02
		1860	20.17	19.11	19.17
	50RB_Middle	1900	20.30	19.24	19.38
		1880	20.25	19.24	19.2
		1860	20.29	19.16	19.2
	50RB_Low	1900	20.28	19.25	19.27
		1880	20.10	19.12	19.05
		1860	20.23	19.21	19.14
	100RB	1900	20.20	19.27	19.2
		1880	20.22	19.13	19.08
		1860	20.28	19.13	19.22

DSI2

Band 2					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	64QAM
1.4 MHz	1RB_High	1909.3	21.77	21.03	21.08
		1880	21.68	21.10	20.13
		1850.7	22.00	21.32	20.13
	1RB_Middle	1909.3	21.87	21.20	21.34
		1880	21.79	21.34	20.21
		1850.7	21.87	21.42	20.13
	1RB_Low	1909.3	21.88	21.28	21.04
		1880	21.97	21.48	20.2
		1850.7	21.83	21.34	20.39
	3RB_High	1909.3	22.11	20.90	21.09
		1880	21.87	20.95	20.07
		1850.7	21.99	20.88	20.1
	3RB_Middle	1909.3	21.87	21.01	21.09
		1880	21.82	20.97	20.13
		1850.7	21.95	21.03	20.17
	3RB_Low	1909.3	21.76	20.94	21.08
		1880	21.93	20.92	19.99
		1850.7	21.91	21.03	20.31
	6RB	1909.3	20.83	20.01	19.96
		1880	20.90	20.08	19.04
		1850.7	20.90	20.02	19
3 MHz	1RB_High	1908.5	22.00	21.09	21.39
		1880	21.95	21.30	20.05
		1851.5	21.75	21.24	20.34
	1RB_Middle	1908.5	22.05	21.40	21.2
		1880	22.19	21.33	20.15
		1851.5	21.96	21.31	20.21
	1RB_Low	1908.5	21.92	21.40	21.22
		1880	21.86	21.32	20.12
		1851.5	21.92	21.45	20.21
	8RB_High	1908.5	20.89	20.09	19.93
		1880	20.76	20.03	19.04
		1851.5	20.88	20.06	19.09
	8RB_Middle	1908.5	20.94	20.12	19.96
		1880	20.87	20.00	19.05
		1851.5	20.86	20.12	19.08
	8RB_Low	1908.5	20.93	20.05	19.96
		1880	20.86	20.02	19.02
		1851.5	20.88	20.19	19.04

	15RB	1908.5	20.91	20.08	19.89
		1880	20.86	20.09	19.09
		1851.5	20.90	20.08	19.03
5 MHz	1RB_High	1907.5	21.89	21.37	21.24
		1880	21.88	21.32	21.18
		1852.5	21.97	21.30	21.22
	1RB_Middle	1907.5	21.86	21.25	21.16
		1880	22.21	21.24	21.14
		1852.5	21.85	21.33	21.19
	1RB_Low	1907.5	21.98	21.37	21.28
		1880	21.91	21.52	21.19
		1852.5	22.03	21.34	21.34
	12RB_High	1907.5	20.90	20.06	19.92
		1880	20.86	20.09	19.71
		1852.5	20.93	20.05	19.89
	12RB_Middle	1907.5	20.90	20.13	19.94
		1880	20.89	20.05	19.87
		1852.5	20.92	20.12	19.94
	12RB_Low	1907.5	20.96	20.10	19.99
		1880	20.88	20.06	19.74
		1852.5	21.04	20.12	19.94
	25RB	1907.5	20.86	20.11	19.83
		1880	20.83	20.04	19.93
		1852.5	20.94	20.14	19.97
10MHz	1RB_High	1905	21.99	21.42	20.9
		1880	21.97	21.32	20.91
		1855	22.04	21.60	20.05
	1RB_Middle	1905	21.91	21.52	20.84
		1880	21.82	21.35	19.83
		1855	21.77	21.13	19.84
	1RB_Low	1905	22.07	21.59	20.98
		1880	21.98	21.32	19.92
		1855	22.05	21.67	20.07
	25RB_High	1905	20.89	20.16	19.84
		1880	20.92	19.89	18.78
		1855	20.85	19.93	18.76
	25RB_Middle	1905	20.94	20.16	19.71
		1880	20.81	19.88	18.7
		1855	20.84	20.02	18.74
	25RB_Low	1905	20.97	20.22	19.79
		1880	20.76	19.85	18.59
		1855	20.95	19.97	18.72
	50RB	1905	20.92	20.16	19.83
		1880	20.86	20.03	18.71
		1855	20.94	20.07	19.06
15MHz	1RB_High	1902.5	21.95	21.60	20.98

		1880	21.97	21.46	20.91
		1857.5	22.06	21.39	20.93
	1RB_Middle	1902.5	21.93	21.46	20.84
		1880	21.83	21.27	20.69
		1857.5	21.80	21.36	20.65
	1RB_Low	1902.5	22.06	21.44	20.96
		1880	22.00	21.41	20.95
		1857.5	22.21	21.40	20.91
	36RB_High	1902.5	21.07	20.22	19.74
		1880	20.82	19.98	19.46
		1857.5	20.82	19.98	19.59
	36RB_Middle	1902.5	20.99	20.09	19.66
		1880	20.92	20.09	19.57
		1857.5	20.94	19.99	19.58
	36RB_Low	1902.5	20.87	19.96	19.55
		1880	20.84	19.92	19.51
		1857.5	20.79	19.89	19.47
	75RB	1902.5	20.96	20.06	19.75
		1880	20.89	19.97	19.59
		1857.5	20.86	20.04	19.62
20MHz	1RB_High	1900	22.09	21.05	20.92
		1880	21.84	20.98	20.89
		1860	21.89	21.30	20.25
	1RB_Middle	1900	22.18	21.55	20.86
		1880	22.08	21.38	20.36
		1860	22.11	21.81	20.36
	1RB_Low	1900	22.17	21.52	20.87
		1880	22.28	21.57	20.24
		1860	22.03	21.40	20.33
	50RB_High	1900	21.18	20.27	20.08
		1880	21.08	19.99	19.09
		1860	21.09	20.04	19.01
	50RB_Middle	1900	21.24	20.34	19.13
		1880	21.13	20.15	19.23
		1860	21.17	20.11	19.14
	50RB_Low	1900	21.28	20.27	19.32
		1880	21.08	20.12	19.09
		1860	21.13	20.09	19.11
	100RB	1900	21.19	20.18	19.23
		1880	21.12	20.05	19.12
		1860	21.06	20.09	19.02

DSI0/1/2

Band 5					
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)
1.4 MHz	1RB	848.3	23.85	23.40	22.83

	High (5)	836.5	23.91	23.14	21.78
		824.7	23.76	23.08	21.75
	1RB Middle (3)	848.3	23.88	23.39	22.89
		836.5	23.97	23.53	21.93
		824.7	23.88	23.25	21.81
	1RB Low (0)	848.3	24.13	23.30	22.90
		836.5	23.97	23.10	21.91
		824.7	23.81	23.32	21.84
	3RB High (3)	848.3	24.09	22.97	22.73
		836.5	24.03	22.98	21.80
		824.7	23.86	22.81	21.70
	3RB Middle (1)	848.3	24.06	23.04	22.77
		836.5	24.06	23.00	21.93
		824.7	23.93	22.95	21.76
	3RB Low (0)	848.3	23.96	23.02	22.78
		836.5	24.16	22.93	21.86
		824.7	23.96	22.97	21.76
	6RB (0)	848.3	23.02	22.26	21.82
		836.5	23.02	22.07	21.03
		824.7	23.09	22.17	21.05
3 MHz	1RB High (14)	847.5	24.04	23.31	22.01
		836.5	23.87	23.23	21.94
		825.5	23.82	23.04	21.81
	1RB Middle (7)	847.5	24.06	23.55	22.73
		836.5	24.06	23.42	21.94
		825.5	24.08	23.13	21.77
	1RB Low (0)	847.5	23.72	23.19	22.87
		836.5	23.98	23.16	21.68
		825.5	23.84	23.64	21.78
	8RB High (7)	847.5	23.03	22.07	21.78
		836.5	22.79	22.01	20.78
		825.5	22.84	21.90	20.81
	8RB Middle (4)	847.5	23.16	22.18	21.81
		836.5	22.87	22.08	20.80
		825.5	23.12	22.03	20.73
	8RB Low (0)	847.5	23.00	21.98	21.70
		836.5	22.94	21.94	20.74
		825.5	23.05	22.21	20.71
	15RB (0)	847.5	23.00	21.96	21.70
		836.5	23.22	22.10	20.70
		825.5	22.84	21.95	20.75
5 MHz	1RB High (24)	846.5	24.00	23.34	22.89
		836.5	23.96	23.24	22.90
		826.5	24.02	23.47	22.79
	1RB Middle (12)	846.5	24.12	23.13	22.84
		836.5	23.91	23.27	22.86
		826.5	23.92	23.18	22.70
	1RB	846.5	24.10	23.36	22.99

	Low (0)	836.5	23.94	23.18	22.79
		826.5	23.92	23.18	22.74
	12RB High (13)	846.5	23.07	22.13	21.82
		836.5	22.85	22.09	21.82
		826.5	22.83	22.08	21.57
	12RB Middle (6)	846.5	22.96	22.17	21.86
		836.5	23.09	22.09	21.71
		826.5	22.89	21.98	21.72
	12RB Low (0)	846.5	23.21	22.32	21.73
		836.5	22.90	21.96	21.66
		826.5	22.96	22.05	21.93
	25RB (0)	846.5	23.12	22.11	21.87
		836.5	23.26	22.01	21.75
		826.5	23.31	22.08	21.79
10 MHz	1RB High (49)	844.0	24.14	23.46	21.90
		836.5	24.01	23.33	21.74
		829.0	23.85	23.23	21.72
	1RB Middle (24)	844.0	23.91	23.09	21.61
		836.5	23.74	22.84	21.42
		829.0	23.69	22.90	21.54
	1RB Low (0)	844.0	24.17	23.26	21.73
		836.5	23.96	23.37	21.81
		829.0	23.81	23.07	21.68
	25RB High (25)	844.0	22.91	21.89	20.94
		836.5	22.84	21.85	20.86
		829.0	22.88	21.99	21.01
	25RB Middle (12)	844.0	22.89	21.83	20.82
		836.5	22.79	21.80	20.82
		829.0	22.77	21.78	20.81
	25RB Low (0)	844.0	22.82	21.80	20.81
		836.5	22.81	21.91	20.91
		829.0	22.85	21.77	20.85
	50RB (0)	844.0	22.94	21.87	20.90
		836.5	22.83	21.83	20.86
		829.0	22.87	21.89	20.90

Band7 DSI0

BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	64QAM
	1RB-High (24)	2567.5 (21425)	22.23	21.94	20.91
		2535 (21100)	22.33	21.68	20.95
		2502.5 (20775)	21.98	21.90	20.80
	1RB-Middle (12)	2567.5 (21425)	22.37	21.85	20.64
		2535 (21100)	22.15	21.82	20.83
		2502.5 (20775)	22.50	21.63	20.95
	1RB-Low (0)	2567.5 (21425)	22.14	21.50	20.70
		2535 (21100)	22.31	21.99	20.95

5MHz		2502.5 (20775)	22.35	21.81	20.92
	12RB-High (13)	2567.5 (21425)	21.30	20.80	19.93
		2535 (21100)	21.34	20.67	19.73
		2502.5 (20775)	21.03	20.73	19.27
	12RB-Middle (6)	2567.5 (21425)	21.15	20.57	19.66
		2535 (21100)	21.33	20.55	19.64
		2502.5 (20775)	21.57	20.77	19.81
	12RB-Low (0)	2567.5 (21425)	21.28	20.51	19.61
		2535 (21100)	21.40	20.66	19.74
		2502.5 (20775)	21.11	20.48	19.72
	25RB (0)	2567.5 (21425)	21.12	20.51	19.63
		2535 (21100)	21.41	20.54	19.58
		2502.5 (20775)	21.58	20.81	19.31
10MHz	1RB-High (49)	2565 (21400)	21.57	21.63	20.62
		2535 (21100)	22.55	21.34	20.45
		2505 (20800)	22.67	21.56	20.94
	1RB-Middle (24)	2565 (21400)	21.63	21.31	20.56
		2535 (21100)	22.33	21.03	20.78
		2505 (20800)	22.50	21.46	20.62
	1RB-Low (0)	2565 (21400)	21.48	21.90	20.87
		2535 (21100)	22.76	21.56	20.89
		2505 (20800)	22.72	21.84	20.87
	25RB-High (25)	2565 (21400)	21.41	20.14	19.51
		2535 (21100)	21.48	20.20	19.44
		2505 (20800)	21.48	19.97	19.83
	25RB-Middle (12)	2565 (21400)	21.55	20.07	19.52
		2535 (21100)	21.67	20.21	19.52
		2505 (20800)	21.49	20.10	19.46
	25RB-Low (0)	2565 (21400)	21.69	20.28	19.70
		2535 (21100)	21.73	20.28	19.74
		2505 (20800)	21.79	20.45	19.89
	50RB (0)	2565 (21400)	21.47	20.11	19.46
		2535 (21100)	21.53	20.12	19.56
		2505 (20800)	21.22	20.10	19.22
	1RB-High (74)	2562.5 (21375)	22.40	21.90	20.92
		2535 (21100)	22.70	21.85	20.87
		2507.5 (20825)	22.55	21.81	20.87
	1RB-Middle (37)	2562.5 (21375)	22.54	21.95	20.95
		2535 (21100)	22.39	21.83	20.71
		2507.5 (20825)	22.76	21.97	20.97
	1RB-Low (0)	2562.5 (21375)	22.55	21.91	20.95
		2535 (21100)	22.52	21.91	20.92
		2507.5 (20825)	22.47	21.80	20.86

15MHz	36RB-High (38)	2562.5 (21375)	21.56	20.61	19.78
		2535 (21100)	21.84	20.71	19.95
		2507.5 (20825)	21.63	20.63	19.76
	36RB-Middle (19)	2562.5 (21375)	21.69	20.62	19.88
		2535 (21100)	21.54	20.66	19.87
		2507.5 (20825)	21.66	20.65	19.90
	36RB-Low (0)	2562.5 (21375)	21.62	20.64	19.83
		2535 (21100)	21.58	20.56	19.75
		2507.5 (20825)	21.57	20.56	19.78
	75RB (0)	2562.5 (21375)	21.69	20.82	19.84
		2535 (21100)	21.71	20.71	19.82
		2507.5 (20825)	21.57	20.53	19.79
20MHz	1RB-High (99)	2560 (21350)	22.18	21.45	20.47
		2535 (21100)	22.28	21.23	20.75
		2510 (20850)	22.03	21.40	20.94
	1RB-Middle (50)	2560 (21350)	22.53	21.66	20.55
		2535 (21100)	22.37	21.61	20.79
		2510 (20850)	22.48	21.87	20.50
	1RB-Low (0)	2560 (21350)	22.35	21.76	20.79
		2535 (21100)	22.59	21.80	20.67
		2510 (20850)	22.24	21.71	20.57
	50RB-High (50)	2560 (21350)	21.26	20.30	19.27
		2535 (21100)	21.30	20.39	19.40
		2510 (20850)	21.31	20.33	19.24
	50RB-Middle (25)	2560 (21350)	21.40	20.44	19.40
		2535 (21100)	21.37	20.43	19.35
		2510 (20850)	21.37	20.41	19.41
	50RB-Low (0)	2560 (21350)	21.42	20.48	19.45
		2535 (21100)	21.32	20.37	19.39
		2510 (20850)	21.34	20.36	19.35
	100RB (0)	2560 (21350)	21.43	20.39	19.39
		2535 (21100)	21.56	20.41	19.44
		2510 (20850)	21.30	20.29	19.32

Band7 DSI1

BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	64QAM
	1RB-High (24)	2567.5 (21425)	17.42	16.85	15.86
		2535 (21100)	17.41	16.78	15.79
		2502.5 (20775)	17.23	16.59	15.81
	1RB-Middle (12)	2567.5 (21425)	17.38	16.69	15.85
		2535 (21100)	17.52	16.76	15.83

5MHz		2502.5 (20775)	17.26	16.62	15.67
	1RB-Low (0)	2567.5 (21425)	17.54	16.84	15.93
		2535 (21100)	17.37	16.70	15.98
		2502.5 (20775)	17.35	16.65	15.11
	12RB-High (13)	2567.5 (21425)	16.37	15.41	14.83
		2535 (21100)	16.41	15.47	14.74
		2502.5 (20775)	16.36	15.34	14.54
	12RB-Middle (6)	2567.5 (21425)	16.44	15.53	14.82
		2535 (21100)	16.49	15.51	14.89
		2502.5 (20775)	16.27	15.26	14.66
	12RB-Low (0)	2567.5 (21425)	16.42	15.46	14.84
		2535 (21100)	16.49	15.50	14.82
		2502.5 (20775)	16.37	15.48	14.67
	25RB (0)	2567.5 (21425)	16.48	15.54	14.93
		2535 (21100)	16.44	15.44	14.86
		2502.5 (20775)	16.34	15.35	13.81
10MHz	1RB-High (49)	2565 (21400)	17.57	16.79	15.94
		2535 (21100)	17.74	16.84	15.91
		2505 (20800)	17.21	16.93	15.82
	1RB-Middle (24)	2565 (21400)	17.48	16.63	15.91
		2535 (21100)	17.29	16.76	15.54
		2505 (20800)	17.40	16.52	15.63
	1RB-Low (0)	2565 (21400)	17.76	16.93	15.o3
		2535 (21100)	17.63	16.94	15.94
		2505 (20800)	17.37	16.94	15.68
	25RB-High (25)	2565 (21400)	16.40	15.49	14.84
		2535 (21100)	16.42	15.31	14.47
		2505 (20800)	16.18	15.28	14.23
	25RB-Middle (12)	2565 (21400)	16.41	15.46	14.85
		2535 (21100)	16.39	15.38	14.41
		2505 (20800)	16.25	15.35	14.28
	25RB-Low (0)	2565 (21400)	16.50	15.48	14.91
		2535 (21100)	16.48	15.47	14.49
		2505 (20800)	16.48	15.37	14.48
	50RB (0)	2565 (21400)	16.51	15.39	13.98
		2535 (21100)	16.49	15.48	13.98
		2505 (20800)	16.33	15.33	13.86
	1RB-High (74)	2562.5 (21375)	17.43	16.66	16.43
		2535 (21100)	17.25	16.81	15.61
		2507.5 (20825)	17.45	16.69	15.59
	1RB-Middle (37)	2562.5 (21375)	17.28	16.88	15.91
		2535 (21100)	17.44	16.75	15.79
		2507.5 (20825)	17.41	16.76	15.65

15MHz	1RB-Low (0)	2562.5 (21375)	17.51	16.78	15.96
		2535 (21100)	17.39	16.91	15.74
		2507.5 (20825)	17.27	16.73	15.78
	36RB-High (38)	2562.5 (21375)	16.34	15.41	14.95
		2535 (21100)	16.50	15.47	14.37
		2507.5 (20825)	16.31	15.41	14.45
	36RB-Middle (19)	2562.5 (21375)	16.42	15.40	14.95
		2535 (21100)	16.45	15.42	14.5
		2507.5 (20825)	16.36	15.46	14.47
	36RB-Low (0)	2562.5 (21375)	16.49	15.56	14.91
		2535 (21100)	16.41	15.39	14.34
		2507.5 (20825)	16.31	15.29	14.39
	75RB (0)	2562.5 (21375)	16.38	15.45	13.98
		2535 (21100)	16.46	15.33	13.87
		2507.5 (20825)	16.37	15.35	13.83
20MHz	1RB-High (99)	2560 (21350)	17.13	16.73	16.55
		2535 (21100)	17.52	16.93	15.56
		2510 (20850)	17.30	16.77	15.76
	1RB-Middle (50)	2560 (21350)	17.64	16.80	15.85
		2535 (21100)	17.52	16.83	15.74
		2510 (20850)	17.44	16.80	15.59
	1RB-Low (0)	2560 (21350)	17.55	16.74	15.91
		2535 (21100)	17.27	16.73	15.72
		2510 (20850)	17.35	16.68	15.61
	50RB-High (50)	2560 (21350)	16.38	15.38	14.38
		2535 (21100)	16.35	15.41	14.01
		2510 (20850)	16.31	15.32	14.05
	50RB-Middle (25)	2560 (21350)	16.44	15.47	14.27
		2535 (21100)	16.40	15.44	14.08
		2510 (20850)	16.33	15.34	14.09
	50RB-Low (0)	2560 (21350)	16.40	15.47	14.29
		2535 (21100)	16.36	15.42	14.02
		2510 (20850)	16.32	15.20	14.18
	100RB (0)	2560 (21350)	16.35	15.49	13.95
		2535 (21100)	16.44	15.39	13.91
		2510 (20850)	16.24	15.36	13.85

Band7 DSI2

BANDWIDTH	Number of RBs	Frequency	QPSK	16QAM	64QAM
5MHz	1RB-High (24)	2567.5 (21425)	18.15	17.74	16.96
		2535 (21100)	18.10	17.79	16.79
		2502.5 (20775)	18.20	17.66	16.81
	1RB-Middle (12)	2567.5 (21425)	18.28	17.72	16.55
		2535 (21100)	18.23	17.67	16.85
		2502.5 (20775)	18.17	17.62	16.08
	1RB-Low (0)	2567.5 (21425)	18.30	17.91	16.84
		2535 (21100)	18.39	17.55	16.74
		2502.5 (20775)	18.17	17.74	16.21
	12RB-High (13)	2567.5 (21425)	17.21	16.45	15.92
		2535 (21100)	17.24	16.45	15.93
		2502.5 (20775)	17.14	16.33	15.84
	12RB-Middle (6)	2567.5 (21425)	17.28	16.40	15.96
		2535 (21100)	17.23	16.46	15.99
		2502.5 (20775)	17.16	16.38	15.71
	12RB-Low (0)	2567.5 (21425)	17.31	16.42	15.91
		2535 (21100)	17.25	16.47	15.84
		2502.5 (20775)	17.25	16.38	15.15
	25RB (0)	2567.5 (21425)	17.33	16.45	14.96
		2535 (21100)	17.20	16.51	14.91
		2502.5 (20775)	17.22	16.31	14.84
10MHz	1RB-High (49)	2565 (21400)	18.32	17.66	16.86
		2535 (21100)	18.41	17.87	16.95
		2505 (20800)	18.12	17.86	16.91
	1RB-Middle (24)	2565 (21400)	18.11	17.68	16.94
		2535 (21100)	18.21	17.71	16.67
		2505 (20800)	18.21	17.69	16.82
	1RB-Low (0)	2565 (21400)	18.55	17.85	16.94
		2535 (21100)	18.57	17.83	16.97
		2505 (20800)	18.30	17.94	16.95
	25RB-High (25)	2565 (21400)	17.15	16.35	15.59
		2535 (21100)	17.17	16.47	15.48
		2505 (20800)	17.11	16.15	15.39
	25RB-Middle (12)	2565 (21400)	17.22	16.44	15.64
		2535 (21100)	17.24	16.54	15.66
		2505 (20800)	17.17	16.24	15.45
	25RB-Low (0)	2565 (21400)	17.30	16.50	15.62
		2535 (21100)	17.27	16.56	15.63
		2505 (20800)	17.28	16.35	15.58

	50RB (0)	2565 (21400)	17.28	16.48	15.01
		2535 (21100)	17.26	16.45	15.01
		2505 (20800)	17.13	16.30	15.03
15MHz	1RB-High (74)	2562.5 (21375)	18.08	17.65	16.98
		2535 (21100)	18.19	17.67	16.76
		2507.5 (20825)	18.23	17.73	16.81
	1RB-Middle (37)	2562.5 (21375)	18.24	17.68	16.95
		2535 (21100)	18.31	17.87	16.76
		2507.5 (20825)	18.34	17.80	16.54
	1RB-Low (0)	2562.5 (21375)	18.30	17.97	16.86
		2535 (21100)	18.29	17.86	16.43
		2507.5 (20825)	18.11	17.74	16.03
	36RB-High (38)	2562.5 (21375)	17.20	16.40	15.66
		2535 (21100)	17.35	16.43	14.73
		2507.5 (20825)	17.24	16.42	14.63
	36RB-Middle (19)	2562.5 (21375)	17.26	16.46	15.71
		2535 (21100)	17.32	16.38	14.67
		2507.5 (20825)	17.27	16.45	14.77
	36RB-Low (0)	2562.5 (21375)	17.27	16.45	15.81
		2535 (21100)	17.29	16.34	14.72
		2507.5 (20825)	17.21	16.37	14.67
	75RB (0)	2562.5 (21375)	17.27	16.42	15.57
		2535 (21100)	17.23	16.42	15.43
		2507.5 (20825)	17.14	16.33	15.43
20MHz	1RB-High (99)	2560 (21350)	18.22	17.92	16.66
		2535 (21100)	18.43	17.80	16.95
		2510 (20850)	18.16	17.73	16.82
	1RB-Middle (50)	2560 (21350)	18.43	17.99	16.89
		2535 (21100)	18.45	17.86	16.74
		2510 (20850)	18.39	17.85	15.93
	1RB-Low (0)	2560 (21350)	18.44	17.94	16.93
		2535 (21100)	18.51	17.75	16.85
		2510 (20850)	18.20	17.89	16.67
	50RB-High (50)	2560 (21350)	17.34	16.38	15.56
		2535 (21100)	17.29	16.42	15.48
		2510 (20850)	17.38	16.23	15.51
	50RB-Middle (25)	2560 (21350)	17.41	16.54	15.61
		2535 (21100)	17.43	16.43	15.56
		2510 (20850)	17.40	16.24	15.43
	50RB-Low (0)	2560 (21350)	17.51	16.43	15.61
		2535 (21100)	17.30	16.30	15.5
		2510 (20850)	17.25	16.30	15.44
		2560 (21350)	17.40	16.41	15.62

		2535 (21100)	17.43	16.38	15.6
		2510 (20850)	17.30	16.32	14.46

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Band 12					
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)
1.4 MHz	1RB High (5)	715.3	24.18	23.35	22.09
		707.5	23.91	23.32	22.03
		699.7	24.28	22.99	22.08
	1RB Middle (3)	715.3	23.85	23.68	22.06
		707.5	23.85	23.09	22.05
		699.7	23.86	23.17	22.17
	1RB Low (0)	715.3	24.13	23.05	22.14
		707.5	23.86	23.08	21.97
		699.7	24.25	23.57	22.08
	3RB High (3)	715.3	24.27	22.90	22.67
		707.5	23.91	22.92	22.18
		699.7	24.31	22.83	22.00
	3RB Middle (1)	715.3	24.17	22.92	22.76
		707.5	23.98	23.05	21.94
		699.7	23.84	22.86	22.00
	3RB Low (0)	715.3	24.21	22.81	22.10
		707.5	23.85	23.05	22.00
		699.7	24.36	23.02	22.09
	6RB (0)	715.3	23.09	21.89	21.97
		707.5	22.87	21.92	20.87
		699.7	22.87	21.83	20.77
3 MHz	1RB High (14)	714.5	23.80	23.64	22.96
		707.5	23.93	23.25	22.83
		700.5	23.87	23.20	22.84
	1RB Middle (7)	714.5	23.90	23.14	22.89
		707.5	23.98	23.90	22.80
		700.5	23.99	23.29	22.86
	1RB Low (0)	714.5	24.01	23.35	22.87
		707.5	23.84	23.29	22.98
		700.5	23.92	23.20	22.87
	8RB High (7)	714.5	22.91	21.98	21.65
		707.5	22.94	21.94	21.65
		700.5	22.83	22.08	21.75
	8RB Middle (4)	714.5	23.03	22.06	21.71
		707.5	22.98	21.99	21.68
		700.5	23.05	22.06	21.74
	8RB	714.5	23.04	22.07	21.70

	Low (0)	707.5	22.88	21.94	21.58
		700.5	23.02	22.04	21.70
	15RB (0)	714.5	23.03	22.03	21.70
		707.5	22.87	21.96	21.64
		700.5	23.04	22.04	21.64
5 MHz	1RB High (24)	713.5	24.07	23.12	22.05
		707.5	23.88	23.29	22.00
		701.5	24.14	23.31	22.31
	1RB Middle (12)	713.5	23.90	23.46	22.05
		707.5	24.00	23.12	22.17
		701.5	23.95	23.27	22.20
	1RB Low (0)	713.5	24.16	23.27	22.22
		707.5	23.93	23.13	22.07
		701.5	24.28	23.28	22.17
	12RB High (13)	713.5	23.06	21.97	21.02
		707.5	22.94	21.91	21.09
		701.5	22.96	21.96	21.05
	12RB Middle (6)	713.5	23.10	22.05	21.08
		707.5	22.99	22.02	21.00
		701.5	22.91	22.01	21.03
	12RB Low (0)	713.5	23.09	22.02	21.08
		707.5	22.94	21.93	20.99
		701.5	23.03	22.01	21.05
	25RB (0)	713.5	23.00	22.06	21.08
		707.5	22.98	21.97	20.96
		701.5	22.93	21.95	20.94
10 MHz	1RB High (49)	711	24.63	23.61	22.59
		707.5	24.80	23.85	22.54
		704	24.58	23.75	22.72
	1RB Middle (24)	711	24.36	23.47	22.46
		707.5	24.27	23.44	22.46
		704	24.38	23.62	22.53
	1RB Low (0)	711	24.61	23.94	22.58
		707.5	24.79	23.91	22.49
		704	24.68	23.91	22.62
	25RB High (25)	711	23.31	22.48	21.37
		707.5	23.36	22.33	21.34
		704	23.32	22.35	21.28
	25RB Middle (12)	711	23.47	22.43	21.44
		707.5	23.46	22.44	21.35
		704	23.38	22.41	21.36
	25RB Low (0)	711	23.45	22.50	21.38
		707.5	23.58	22.54	21.44
		704	23.55	22.46	21.27
	50RB (0)	711	23.59	22.47	21.35
		707.5	23.49	22.48	21.38
		704	23.39	22.40	21.32

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Band 13					
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)	784.5	24.03	23.16	22.84
		782	24.00	23.41	22.25
		779.5	24.21	23.32	22.17
	1RB Middle (12)	784.5	24.11	23.37	22.84
		782	24.08	23.33	22.28
		779.5	23.97	23.19	21.98
	1RB Low (0)	784.5	23.98	23.49	22.85
		782	23.83	23.40	22.49
		779.5	23.91	23.63	22.37
	12RB High (13)	784.5	23.19	22.17	22.18
		782	23.13	22.09	21.11
		779.5	23.26	22.06	21.21
	12RB Middle (6)	784.5	23.23	22.10	21.18
		782	23.19	22.13	21.18
		779.5	23.10	22.15	20.99
	12RB Low (0)	784.5	23.15	22.02	21.19
		782	23.06	22.11	21.20
		779.5	23.12	22.17	21.14
	25RB (0)	784.5	23.19	22.17	21.01
		782	23.07	22.13	21.05
		779.5	23.18	22.04	20.95
10 MHz	1RB High (49)	782	24.22	23.53	22.38
	1RB Middle (24)	782	24.07	23.23	22.31
	1RB Low (0)	782	24.16	23.38	22.41
	25RB High (25)	782	23.19	22.22	21.19
	25RB Middle (12)	782	23.19	22.30	21.28
	25RB Low (0)	782	23.27	22.30	21.28
	50RB (0)	782	23.53	22.24	21.53

DSI0

Band 41-PC3					
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)	2687.5	23.38	22.46	21.94
		2640.3	23.26	22.46	21.82
		2593	23.32	22.40	21.91
		2545.8	23.40	22.54	21.86
		2498.5	23.16	22.03	21.88
	1RB Middle (12)	2687.5	23.35	22.64	21.89
		2640.3	23.26	22.69	21.82
		2593	23.48	22.82	21.97
		2545.8	23.49	22.82	21.83
		2498.5	23.51	22.86	21.81
	1RB Low (0)	2687.5	23.26	22.56	21.95
		2640.3	23.34	22.51	21.82
		2593	23.56	22.65	21.91
		2545.8	23.35	22.61	21.90
		2498.5	23.33	22.47	21.90
	12RB High (13)	2687.5	22.31	21.34	20.98
		2640.3	22.37	21.35	20.95
		2593	22.34	21.44	20.89
		2545.8	22.34	21.32	20.89
		2498.5	22.14	21.11	20.67
	12RB Middle (6)	2687.5	22.27	21.26	20.92
		2640.3	22.31	21.36	20.93
		2593	22.33	21.22	20.90
		2545.8	22.38	21.34	20.94
		2498.5	22.14	21.18	20.70
	12RB Low (0)	2687.5	22.35	21.24	20.83
		2640.3	22.33	21.37	20.96
		2593	22.40	21.35	20.99
		2545.8	22.38	21.43	20.90
		2498.5	22.30	21.28	20.80
	25RB (0)	2687.5	22.38	21.42	20.83
		2640.3	22.31	21.36	20.77
		2593	22.56	21.43	20.81
		2545.8	22.35	21.46	20.97
		2498.5	22.29	21.33	20.81
10 MHz	1RB High (49)	2685	23.37	22.62	21.77
		2639	23.63	22.48	21.96

		2593	23.44	22.44	21.84
		2547	23.81	22.55	21.88
		2501	23.20	22.29	21.30
	1RB Middle (24)	2685	23.32	22.39	21.81
		2639	23.24	22.37	21.86
		2593	23.63	22.55	21.79
		2547	23.43	22.43	21.66
		2501	23.16	22.35	21.53
	1RB Low (0)	2685	23.39	22.71	21.94
		2639	23.53	22.57	21.84
		2593	23.52	22.67	21.94
		2547	23.57	22.63	21.89
		2501	23.28	22.59	21.77
	25RB High (25)	2685	22.26	21.36	20.68
		2639	22.39	21.46	20.94
		2593	22.30	21.33	20.94
		2547	22.51	21.43	20.80
		2501	22.24	21.23	20.67
	25RB Middle (12)	2685	22.34	21.36	20.88
		2639	22.33	21.41	20.87
		2593	22.56	21.41	20.84
		2547	22.43	21.45	20.97
		2501	22.31	21.34	20.78
	25RB Low (0)	2685	22.31	21.35	20.92
		2639	22.50	21.51	20.97
		2593	22.49	21.34	20.73
		2547	22.47	21.49	20.97
		2501	22.35	21.41	20.83
	50RB (0)	2685	22.36	21.46	20.88
		2639	22.31	21.39	20.86
		2593	22.49	21.62	20.99
		2547	22.32	21.39	20.85
		2501	22.15	21.21	20.73
15 MHz	1RB High (74)	2682.5	23.67	22.73	21.87
		2637.8	23.77	22.80	21.95
		2593	23.65	22.70	21.85
		2548.3	23.77	22.81	21.73
		2503.5	23.68	22.68	21.71
	1RB Middle (37)	2682.5	23.61	22.62	21.75
		2637.8	23.57	22.59	21.87
		2593	23.61	22.70	21.89

		2548.3	23.71	22.66	21.71
		2503.5	23.45	22.59	21.55
	1RB Low (0)	2682.5	23.47	22.40	21.51
		2637.8	23.49	22.48	21.63
		2593	23.82	22.98	21.83
		2548.3	23.80	22.87	21.94
		2503.5	23.42	22.70	21.79
	36RB High (38)	2682.5	22.49	21.68	20.85
		2637.8	22.76	21.64	20.95
		2593	22.59	21.47	20.67
		2548.3	22.80	21.82	20.91
		2503.5	22.49	21.53	20.74
	36RB Middle (19)	2682.5	22.63	21.71	20.87
		2637.8	22.63	21.76	20.66
		2593	22.68	21.58	20.77
		2548.3	22.79	21.90	20.85
		2503.5	22.51	21.55	20.77
	36RB Low (0)	2682.5	22.46	21.50	20.67
		2637.8	22.50	21.59	20.61
		2593	22.60	21.54	20.83
		2548.3	22.75	21.88	20.89
		2503.5	22.50	21.44	20.63
	75RB (0)	2682.5	22.49	21.50	20.65
		2637.8	22.35	21.32	20.71
		2593	22.73	21.77	20.80
		2548.3	22.60	21.57	20.88
		2503.5	22.44	21.43	20.66
20 MHz	1RB High (99)	2680	23.49	22.45	21.77
		2636.5	23.67	22.70	21.84
		2593	23.44	22.55	21.82
		2549.5	23.66	22.78	21.78
		2506	23.65	22.55	21.56
	1RB Middle (50)	2680	23.51	22.40	21.64
		2636.5	23.46	22.63	21.97
		2593	23.57	22.66	21.96
		2549.5	23.68	22.72	21.76
		2506	23.36	22.60	21.67
	1RB Low (0)	2680	23.49	22.41	21.60
		2636.5	23.13	22.41	21.54
		2593	23.66	22.80	21.93
		2549.5	23.57	22.63	21.80
		2506	23.26	22.76	21.57

	50RB High (50)	2680	22.48	21.55	20.86
		2636.5	22.59	21.51	20.72
		2593	22.47	21.47	20.78
		2549.5	22.64	21.75	20.91
		2506	22.30	21.36	20.70
	50RB Middle (25)	2680	22.44	21.55	20.86
		2636.5	22.43	21.47	20.79
		2593	22.56	21.57	20.98
		2549.5	22.60	21.71	20.96
		2506	22.40	21.46	20.70
	50RB Low (0)	2680	22.49	21.53	20.82
		2636.5	22.35	21.42	20.81
		2593	22.67	21.65	20.92
		2549.5	22.65	21.78	20.84
		2506	22.39	21.50	20.75
	100RB (0)	2680	22.54	21.55	20.96
		2636.5	22.23	21.28	20.81
		2593	22.65	21.73	20.80
		2549.5	22.56	21.60	20.96
		2506	22.37	21.41	20.94

DSI1

Band 41-PC3					
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)	2687.5	19.97	18.85	17.90
		2640.3	19.90	18.92	17.77
		2593	19.54	18.42	17.57
		2545.8	19.76	18.66	17.57
		2498.5	19.36	18.32	17.45
	1RB Middle (12)	2687.5	19.79	19.20	17.87
		2640.3	19.78	19.46	17.85
		2593	19.48	19.01	17.68
		2545.8	19.29	19.15	17.61
		2498.5	19.28	18.99	17.41
	1RB Low (0)	2687.5	20.04	18.98	17.80
		2640.3	19.99	19.10	17.90
		2593	19.77	18.64	17.70
		2545.8	19.74	18.71	17.80
		2498.5	19.66	18.80	17.55
	12RB	2687.5	18.78	17.81	17.32

	High (13)	2640.3	18.87	17.84	17.31
		2593	18.59	17.60	17.11
		2545.8	18.71	17.70	17.25
		2498.5	18.50	17.33	16.82
	12RB Middle (6)	2687.5	18.82	17.81	17.29
		2640.3	18.91	17.90	17.35
		2593	18.65	17.65	17.07
		2545.8	18.72	17.73	17.20
		2498.5	18.46	17.46	16.70
	12RB Low (0)	2687.5	18.82	17.78	17.25
		2640.3	19.00	17.92	17.39
		2593	18.67	17.53	17.15
		2545.8	18.66	17.73	17.16
		2498.5	18.55	17.59	16.93
	25RB (0)	2687.5	18.80	17.91	17.22
		2640.3	18.86	17.98	17.27
		2593	18.66	17.67	17.06
		2545.8	18.70	17.82	17.08
		2498.5	18.40	17.67	16.92
10 MHz	1RB High (49)	2685	19.96	18.89	17.78
		2639	20.18	18.91	17.90
		2593	19.61	18.49	17.57
		2547	20.02	18.57	17.82
		2501	19.63	18.33	17.35
	1RB Middle (24)	2685	19.89	18.69	17.98
		2639	20.09	18.87	17.99
		2593	19.71	18.58	17.68
		2547	19.75	18.79	17.62
		2501	19.34	18.51	17.23
	1RB Low (0)	2685	19.86	18.90	17.98
		2639	20.22	18.78	17.86
		2593	20.01	18.67	17.75
		2547	19.86	18.75	17.78
		2501	19.61	18.65	17.48
	25RB High (25)	2685	18.76	17.74	17.27
		2639	18.93	17.85	17.30
		2593	18.52	17.52	16.92
		2547	18.74	17.80	17.13
		2501	18.24	17.37	16.70
	25RB Middle (12)	2685	18.86	17.81	17.25
		2639	18.93	17.93	17.37

		2593	18.67	17.72	17.11
		2547	18.70	17.82	17.11
		2501	18.47	17.52	16.91
	25RB Low (0)	2685	18.94	17.91	17.31
		2639	18.88	17.99	17.41
		2593	18.66	17.63	17.04
		2547	18.71	17.79	17.06
		2501	18.53	17.61	16.89
	50RB (0)	2685	18.88	17.94	17.36
		2639	18.90	17.93	17.21
		2593	18.67	17.70	17.11
		2547	18.78	17.82	17.09
		2501	18.45	17.49	16.77
15 MHz	1RB High (74)	2682.5	19.99	18.81	17.92
		2637.8	20.19	18.78	17.98
		2593	19.91	18.85	17.67
		2548.3	20.23	18.84	17.96
		2503.5	20.07	18.63	17.75
	1RB Middle (37)	2682.5	19.86	18.75	17.69
		2637.8	20.11	18.75	17.84
		2593	20.05	18.97	17.93
		2548.3	20.20	18.87	17.87
		2503.5	19.91	18.73	17.64
	1RB Low (0)	2682.5	19.71	18.71	17.62
		2637.8	19.86	18.60	17.52
		2593	20.22	19.25	17.94
		2548.3	20.34	19.08	17.85
		2503.5	19.98	18.89	17.84
	36RB High (38)	2682.5	18.89	18.03	17.21
		2637.8	18.98	18.02	17.28
		2593	18.99	17.85	17.22
		2548.3	19.06	18.33	17.41
		2503.5	18.85	18.09	17.17
	36RB Middle (19)	2682.5	18.95	18.08	17.16
		2637.8	19.01	18.05	17.22
		2593	19.12	18.02	17.39
		2548.3	19.16	18.36	17.30
		2503.5	18.90	18.07	17.00
	36RB Low (0)	2682.5	18.76	17.88	17.11
		2637.8	18.79	17.98	17.14
		2593	19.13	18.04	17.37

		2548.3	19.15	18.35	17.43
		2503.5	18.74	17.96	16.97
	75RB (0)	2682.5	18.79	17.87	17.12
		2637.8	18.93	17.98	17.33
		2593	19.07	18.20	17.52
		2548.3	19.14	18.16	17.50
		2503.5	18.78	17.79	17.14
20 MHz	1RB High (99)	2680	19.88	18.83	17.87
		2636.5	20.09	18.84	17.79
		2593	19.82	18.71	17.46
		2549.5	20.17	18.63	17.68
		2506	19.99	18.47	17.52
	1RB Middle (50)	2680	19.95	19.04	17.93
		2636.5	20.18	18.98	17.99
		2593	20.09	19.10	17.99
		2549.5	20.34	19.07	17.83
		2506	20.08	18.83	17.67
	1RB Low (0)	2680	19.79	18.79	17.54
		2636.5	19.69	18.45	17.36
		2593	20.13	18.99	17.70
		2549.5	20.16	18.84	17.62
		2506	19.79	18.66	17.48
	50RB High (50)	2680	18.96	17.95	17.17
		2636.5	18.95	18.05	17.27
		2593	18.95	17.98	17.14
		2549.5	19.08	18.19	17.34
		2506	18.80	17.87	17.05
	50RB Middle (25)	2680	18.96	17.95	17.25
		2636.5	18.95	18.09	17.34
		2593	19.09	18.11	17.40
		2549.5	19.10	18.20	17.34
		2506	18.92	17.96	17.06
	50RB Low (0)	2680	18.97	17.86	17.20
		2636.5	18.87	18.03	17.17
		2593	19.03	18.05	17.40
		2549.5	19.14	18.28	17.38
		2506	18.90	17.93	17.02
	100RB (0)	2680	19.04	18.06	17.33
		2636.5	18.93	17.88	17.31
		2593	19.09	18.09	17.43
		2549.5	19.11	18.00	17.42

		2506	18.83	17.84	17.16

DSI2

Band 41-PC3					
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)	2687.5	22.50	21.96	20.90
		2640.3	22.94	21.76	20.91
		2593	22.37	21.44	20.07
		2545.8	22.51	21.51	20.09
		2498.5	22.32	21.32	20.01
	1RB Middle (12)	2687.5	23.14	21.94	20.98
		2640.3	22.91	21.86	20.95
		2593	22.72	21.95	20.91
		2545.8	22.50	21.72	20.65
		2498.5	22.26	21.60	20.93
	1RB Low (0)	2687.5	22.50	21.64	20.91
		2640.3	22.78	21.76	20.87
		2593	22.53	21.52	20.09
		2545.8	22.62	21.57	20.20
		2498.5	22.47	21.67	20.05
	12RB High (13)	2687.5	21.49	20.58	20.56
		2640.3	21.85	20.64	20.78
		2593	21.51	20.37	19.68
		2545.8	21.59	20.41	19.61
		2498.5	21.31	20.13	19.24
	12RB Middle (6)	2687.5	21.67	20.51	20.62
		2640.3	21.77	20.62	20.83
		2593	21.49	20.43	19.57
		2545.8	21.59	20.45	19.68
		2498.5	21.31	20.19	19.35
	12RB Low (0)	2687.5	21.54	20.48	20.74
		2640.3	21.86	20.64	20.88
		2593	21.48	20.34	19.69
		2545.8	21.59	20.48	19.70
		2498.5	21.46	20.29	19.50
	25RB (0)	2687.5	21.63	20.77	20.54
		2640.3	21.79	20.66	20.74
		2593	21.53	20.51	19.58
		2545.8	21.61	20.55	19.74
		2498.5	21.45	20.31	19.38

10 MHz	1RB High (49)	2685	22.74	21.97	21.58
		2639	23.04	21.94	21.67
		2593	22.55	21.57	21.20
		2547	22.71	21.66	21.51
		2501	22.46	21.42	21.11
	1RB Middle (24)	2685	22.77	21.84	21.51
		2639	22.71	21.86	21.54
		2593	22.52	21.58	21.33
		2547	22.57	21.63	21.40
		2501	22.18	21.35	20.87
	1RB Low (0)	2685	22.86	21.90	21.61
		2639	22.73	21.87	21.45
		2593	22.72	21.82	21.43
		2547	22.77	21.88	21.61
		2501	22.43	21.59	21.16
	25RB High (25)	2685	21.93	20.87	20.92
		2639	21.82	20.87	20.85
		2593	21.47	20.38	20.29
		2547	21.70	20.69	20.79
		2501	21.22	20.22	20.20
	25RB Middle (12)	2685	21.83	20.78	20.78
		2639	21.85	20.88	20.90
		2593	21.62	20.56	20.57
		2547	21.71	20.69	20.74
		2501	21.43	20.43	20.48
	25RB Low (0)	2685	21.80	20.76	20.80
		2639	21.81	20.85	20.80
		2593	21.52	20.51	20.56
		2547	21.62	20.67	20.62
		2501	21.49	20.56	20.46
	50RB (0)	2685	21.99	20.93	20.81
		2639	21.77	20.85	20.80
		2593	21.65	20.63	20.58
		2547	21.69	20.70	20.65
		2501	21.28	20.32	20.26
15 MHz	1RB High (74)	2682.5	22.93	22.01	21.95
		2637.8	23.03	21.98	21.67
		2593	22.86	22.11	21.64
		2548.3	23.10	22.08	21.94
		2503.5	22.86	21.86	21.69
	1RB	2682.5	22.69	21.89	21.59

	Middle (37)	2637.8	22.90	21.96	21.68
		2593	23.00	22.17	21.83
		2548.3	23.04	21.96	21.83
		2503.5	22.73	21.73	21.67
	1RB Low (0)	2682.5	22.66	21.76	21.45
		2637.8	22.54	21.68	21.32
		2593	23.04	22.22	21.98
		2548.3	23.14	22.13	21.80
		2503.5	22.73	21.89	21.91
	36RB High (38)	2682.5	21.66	20.78	20.78
		2637.8	21.91	20.92	20.95
		2593	21.94	20.89	20.94
		2548.3	22.05	21.14	21.19
		2503.5	21.78	20.95	20.73
	36RB Middle (19)	2682.5	21.81	20.82	20.79
		2637.8	21.92	20.96	20.99
		2593	22.12	20.93	20.98
		2548.3	22.06	21.05	21.04
		2503.5	21.77	20.91	20.67
	36RB Low (0)	2682.5	21.73	20.55	20.65
		2637.8	21.74	20.81	20.84
		2593	22.06	20.98	21.06
		2548.3	22.10	21.21	21.07
		2503.5	21.64	20.73	20.71
	75RB (0)	2682.5	21.73	20.89	20.66
		2637.8	21.75	20.80	20.88
		2593	22.10	21.07	20.85
		2548.3	22.07	20.99	20.98
		2503.5	21.73	20.69	20.78
20 MHz	1RB High (99)	2680	22.83	21.83	21.70
		2636.5	23.01	21.92	21.62
		2593	22.72	21.87	21.85
		2549.5	23.04	22.07	21.75
		2506	22.78	21.74	21.37
	1RB Middle (50)	2680	22.98	21.88	21.88
		2636.5	23.03	22.06	21.68
		2593	23.06	22.17	21.90
		2549.5	23.13	22.20	21.44
		2506	22.80	21.94	21.77
	1RB Low (0)	2680	22.83	21.69	21.37
		2636.5	22.47	21.56	21.28
		2593	22.87	22.03	21.88

		2549.5	22.94	22.08	21.65
		2506	22.65	21.72	21.62
	50RB High (50)	2680	21.90	20.96	20.82
		2636.5	21.92	20.98	20.86
		2593	21.92	20.88	20.84
		2549.5	22.08	21.09	20.93
		2506	21.60	20.79	20.70
	50RB Middle (25)	2680	21.97	20.93	20.96
		2636.5	21.91	20.98	20.91
		2593	22.00	21.07	20.90
		2549.5	22.06	21.08	20.90
		2506	21.79	20.88	20.79
	50RB Low (0)	2680	21.91	20.91	20.82
		2636.5	21.80	20.97	20.78
		2593	22.00	21.03	20.80
		2549.5	21.99	21.10	20.84
		2506	21.75	20.86	20.77
	100RB (0)	2680	21.99	20.77	20.81
		2636.5	21.78	20.87	20.98
		2593	22.01	21.14	20.81
		2549.5	21.97	21.09	20.91
		2506	21.80	20.80	20.90

DSI0

Band 41-PC2					
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)	2687.5	24.26	23.80	22.85
		2640.3	24.37	23.87	22.41
		2593	24.45	23.62	22.35
		2545.8	24.52	23.91	22.23
		2498.5	24.21	23.33	22.36
	1RB Middle (12)	2687.5	24.57	23.95	22.75
		2640.3	24.63	24.04	22.47
		2593	24.30	23.87	22.64
		2545.8	24.48	23.96	22.71
		2498.5	24.46	23.96	22.73
	1RB Low (0)	2687.5	24.46	23.76	22.81
		2640.3	24.70	23.96	22.85
		2593	24.54	23.83	22.28

		2545.8	24.56	23.85	22.37
		2498.5	24.59	23.95	22.57
	12RB High (13)	2687.5	23.31	22.35	21.81
		2640.3	23.32	22.42	21.42
		2593	23.42	22.47	21.55
		2545.8	23.23	22.37	21.49
		2498.5	23.09	22.16	21.20
	12RB Middle (6)	2687.5	23.30	22.28	21.37
		2640.3	23.25	22.61	21.30
		2593	23.36	22.36	21.49
		2545.8	23.13	22.28	21.57
		2498.5	23.13	22.30	21.23
	12RB Low (0)	2687.5	23.31	22.42	21.22
		2640.3	23.43	22.50	21.48
		2593	23.44	22.54	21.58
		2545.8	23.60	22.63	21.53
		2498.5	23.43	22.03	21.22
	25RB (0)	2687.5	23.41	22.34	21.41
		2640.3	23.36	22.38	21.54
		2593	23.40	22.48	21.62
		2545.8	23.44	22.47	21.58
		2498.5	23.07	22.45	21.63
10 MHz	1RB High (49)	2685	24.35	23.55	23.11
		2639	24.53	23.85	23.63
		2593	24.33	23.64	23.60
		2547	24.52	23.79	23.78
		2501	24.13	23.53	23.77
	1RB Middle (24)	2685	24.43	23.51	23.29
		2639	24.23	23.52	23.42
		2593	24.52	23.59	23.72
		2547	24.50	23.61	23.59
		2501	24.04	23.33	23.72
	1RB Low (0)	2685	24.53	23.84	23.55
		2639	24.55	23.93	23.62
		2593	24.66	23.88	23.75
		2547	24.43	23.85	23.80
		2501	24.66	23.97	23.61
	25RB High (25)	2685	23.31	22.34	22.31
		2639	23.34	22.34	22.37
		2593	23.31	22.36	22.18
		2547	23.47	22.39	22.35

		2501	23.21	22.19	22.29
	25RB Middle (12)	2685	23.30	22.25	22.23
		2639	23.31	22.37	22.36
		2593	23.40	22.39	22.34
		2547	23.41	22.61	22.42
		2501	23.32	22.30	22.30
	25RB Low (0)	2685	23.34	22.39	22.35
		2639	23.51	22.49	22.49
		2593	23.57	22.46	22.46
		2547	23.50	22.44	22.38
		2501	23.60	22.56	21.96
	50RB (0)	2685	23.40	22.43	21.96
		2639	23.34	22.45	21.94
		2593	23.42	22.53	21.97
		2547	23.38	22.44	21.93
		2501	23.22	22.31	21.77
15 MHz	1RB High (74)	2682.5	24.37	23.88	22.90
		2637.8	24.71	23.97	22.98
		2593	24.53	23.68	22.84
		2548.3	24.64	23.93	22.80
		2503.5	24.49	23.73	22.86
	1RB Middle (37)	2682.5	24.60	23.72	22.87
		2637.8	24.75	23.72	22.65
		2593	24.59	23.80	22.85
		2548.3	24.49	23.86	22.79
		2503.5	24.25	23.47	22.90
	1RB Low (0)	2682.5	24.43	23.85	22.54
		2637.8	24.69	23.97	22.62
		2593	24.86	23.97	22.90
		2548.3	24.99	23.90	22.86
		2503.5	24.75	23.95	22.95
	36RB High (38)	2682.5	23.53	22.52	21.73
		2637.8	23.64	22.66	21.83
		2593	23.53	22.60	21.66
		2548.3	23.62	22.67	21.81
		2503.5	23.39	22.49	21.61
	36RB Middle (19)	2682.5	23.59	22.61	21.77
		2637.8	23.59	22.62	21.67
		2593	23.60	22.62	21.86
		2548.3	23.69	22.69	21.92
		2503.5	23.51	22.52	21.63
	36RB	2682.5	23.46	22.47	21.58

	Low (0)	2637.8	23.56	22.58	21.69
		2593	23.67	22.69	21.79
		2548.3	23.78	22.77	21.90
		2503.5	23.61	22.70	21.54
	75RB (0)	2682.5	23.43	22.55	21.60
		2637.8	23.56	22.61	21.77
		2593	23.65	22.65	21.80
		2548.3	23.70	22.78	21.85
		2503.5	23.51	22.56	21.80
20 MHz	1RB High (99)	2680	24.34	23.72	22.79
		2636.5	24.59	23.84	22.77
		2593	24.40	23.60	22.58
		2549.5	24.62	23.90	22.89
		2506	24.41	23.65	22.85
	1RB Middle (50)	2680	24.37	23.67	22.68
		2636.5	24.38	23.74	22.76
		2593	24.55	23.78	22.85
		2549.5	24.54	23.85	22.79
		2506	24.25	23.57	22.8
	1RB Low (0)	2680	24.30	23.81	22.66
		2636.5	24.30	23.78	22.37
		2593	24.79	23.85	22.89
		2549.5	24.88	23.93	22.88
		2506	24.32	23.63	22.89
	50RB High (50)	2680	23.46	22.60	21.65
		2636.5	23.49	22.55	21.64
		2593	23.41	22.53	21.53
		2549.5	23.65	22.67	21.76
		2506	23.39	22.41	21.49
	50RB Middle (25)	2680	23.44	22.52	21.58
		2636.5	23.34	22.49	21.6
		2593	23.56	22.66	21.74
		2549.5	23.53	22.63	21.73
		2506	23.38	22.47	21.55
	50RB Low (0)	2680	23.45	22.52	21.63
		2636.5	23.42	22.50	21.51
		2593	23.65	22.76	21.75
		2549.5	23.69	22.80	21.79
		2506	23.51	22.51	21.59
	100RB (0)	2680	23.46	22.61	21.65
		2636.5	23.42	22.56	21.59

		2593	23.64	22.68	21.86
		2549.5	23.63	22.64	21.83
		2506	23.45	22.53	21.69

DSI1

Band 41-PC2					
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)	2687.5	20.79	20.03	18.95
		2640.3	21.01	19.98	18.93
		2593	20.61	19.83	18.78
		2545.8	20.85	19.88	18.86
		2498.5	20.47	19.63	18.51
	1RB Middle (12)	2687.5	20.96	20.29	18.90
		2640.3	20.99	20.43	18.95
		2593	20.88	20.06	18.60
		2545.8	20.97	20.31	18.90
		2498.5	20.77	20.16	18.96
	1RB Low (0)	2687.5	21.05	20.16	19.91
		2640.3	20.88	20.06	19.15
		2593	20.91	20.09	18.96
		2545.8	20.62	19.89	18.86
		2498.5	20.64	19.90	18.88
	12RB High (13)	2687.5	19.85	18.94	17.80
		2640.3	19.91	18.99	17.90
		2593	19.64	18.68	17.70
		2545.8	19.70	18.87	17.86
		2498.5	19.37	18.48	17.36
	12RB Middle (6)	2687.5	19.79	18.85	17.90
		2640.3	19.87	18.87	17.90
		2593	19.60	18.51	17.86
		2545.8	19.75	18.94	17.93
		2498.5	19.48	18.54	17.67
	12RB Low (0)	2687.5	19.80	18.98	17.90
		2640.3	19.89	19.25	17.90
		2593	19.72	18.75	17.78
		2545.8	19.76	18.93	17.82
		2498.5	19.66	18.81	17.71
	25RB (0)	2687.5	19.84	18.87	17.89
		2640.3	19.95	18.90	17.97
		2593	19.64	18.75	17.68

		2545.8	19.67	18.64	17.81
		2498.5	19.51	18.49	17.50
10 MHz	1RB High (49)	2685	21.01	20.17	19.85
		2639	21.08	20.27	19.00
		2593	20.71	19.83	18.70
		2547	20.69	20.14	18.53
		2501	20.56	19.73	18.52
	1RB Middle (24)	2685	21.00	20.00	19.64
		2639	21.06	20.16	18.80
		2593	20.99	19.98	18.84
		2547	20.98	20.02	18.87
		2501	20.74	19.58	18.54
	1RB Low (0)	2685	20.99	20.19	19.81
		2639	20.85	20.05	18.83
		2593	21.08	20.21	18.74
		2547	20.69	19.95	18.99
		2501	20.48	19.76	18.77
	25RB High (25)	2685	19.83	18.84	17.90
		2639	19.94	18.94	17.97
		2593	19.50	18.65	17.76
		2547	19.74	18.70	17.90
		2501	19.31	18.21	17.51
	25RB Middle (12)	2685	19.82	18.92	17.90
		2639	19.92	19.00	17.84
		2593	19.69	18.70	17.73
		2547	19.72	18.91	17.96
		2501	19.52	18.63	17.52
	25RB Low (0)	2685	19.91	18.96	17.90
		2639	19.95	19.00	17.98
		2593	19.68	18.82	17.73
		2547	19.79	18.60	17.82
		2501	19.67	18.56	17.55
	50RB (0)	2685	19.97	18.97	17.90
		2639	19.91	18.98	17.89
		2593	19.65	18.74	17.74
		2547	19.70	18.80	17.83
		2501	19.35	18.43	17.47
15 MHz	1RB High (74)	2682.5	20.90	20.22	19.86
		2637.8	21.07	20.12	19.15
		2593	21.02	20.13	19.07
		2548.3	21.12	20.26	19.18

		2503.5	20.91	19.97	19.08
	1RB Middle (37)	2682.5	20.98	20.00	19.64
		2637.8	21.02	20.10	19.14
		2593	21.15	20.30	19.11
		2548.3	21.11	20.27	19.28
		2503.5	20.90	19.89	19.04
	1RB Low (0)	2682.5	20.92	19.75	19.50
		2637.8	20.50	19.63	18.92
		2593	21.42	20.15	19.34
		2548.3	21.18	20.33	19.47
		2503.5	20.82	20.20	19.16
	36RB High (38)	2682.5	19.92	18.93	19.03
		2637.8	19.99	18.93	17.96
		2593	19.99	19.11	17.96
		2548.3	20.13	19.13	18.07
		2503.5	19.94	18.96	17.85
	36RB Middle (19)	2682.5	20.00	19.04	19.07
		2637.8	20.10	19.08	17.93
		2593	20.20	19.08	18.23
		2548.3	20.21	19.24	18.21
		2503.5	19.87	19.06	18.04
	36RB Low (0)	2682.5	19.84	18.78	18.87
		2637.8	19.93	18.95	17.86
		2593	20.17	19.21	18.20
		2548.3	20.21	19.25	18.27
		2503.5	19.71	18.82	17.82
	75RB (0)	2682.5	19.90	18.92	19.02
		2637.8	19.95	19.00	18.01
		2593	20.20	19.19	18.13
		2548.3	20.15	19.24	18.22
		2503.5	19.85	18.95	17.94
20 MHz	1RB High (99)	2680	20.91	20.18	19.86
		2636.5	20.99	20.03	19.89
		2593	20.92	20.07	19.63
		2549.5	20.94	20.12	19.74
		2506	20.81	19.92	19.45
	1RB Middle (50)	2680	21.04	20.18	19.76
		2636.5	21.12	20.28	19.93
		2593	20.93	20.45	20.02
		2549.5	20.87	20.32	20.02
		2506	20.94	20.08	19.75
	1RB	2680	20.85	19.74	19.53

	Low (0)	2636.5	20.60	19.67	19.4
		2593	21.30	20.34	19.89
		2549.5	21.36	20.08	19.74
		2506	20.62	19.97	19.53
	50RB High (50)	2680	19.99	19.00	18.94
		2636.5	19.99	18.99	19.03
		2593	19.97	19.07	18.96
		2549.5	20.14	19.14	19.1
		2506	19.82	18.84	18.75
	50RB Middle (25)	2680	20.06	19.14	19.02
		2636.5	20.02	19.17	18.99
		2593	20.08	19.16	19.12
		2549.5	20.18	19.25	19.08
		2506	19.87	19.06	18.94
	50RB Low (0)	2680	19.93	19.03	18.94
		2636.5	19.92	18.98	18.85
		2593	20.12	19.26	19.2
		2549.5	20.19	19.17	19.17
		2506	19.86	18.91	18.86
	100RB (0)	2680	20.03	19.10	19.1
		2636.5	20.01	19.04	19.02
		2593	20.12	19.15	19.08
		2549.5	20.18	19.13	19.16
		2506	19.92	18.95	18.96

DSI2

Band 41-PC3					
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)	2687.5	23.70	22.97	22.90
		2640.3	23.92	23.21	22.91
		2593	23.32	22.59	22.69
		2545.8	23.71	22.96	22.81
		2498.5	23.40	22.72	22.25
	1RB Middle (12)	2687.5	23.89	22.88	22.69
		2640.3	23.98	23.26	22.77
		2593	23.45	23.70	22.31
		2545.8	23.77	22.91	22.75
		2498.5	23.65	22.89	22.43

	1RB Low (0)	2687.5	23.82	23.04	22.95
		2640.3	23.95	23.10	22.89
		2593	23.68	23.43	22.64
		2545.8	23.66	22.98	22.63
		2498.5	23.71	23.04	22.89
	12RB High (13)	2687.5	22.77	21.81	21.85
		2640.3	22.80	21.89	21.93
		2593	22.60	21.54	21.68
		2545.8	22.62	21.70	21.74
		2498.5	22.32	21.40	21.41
	12RB Middle (6)	2687.5	22.54	21.67	21.69
		2640.3	22.78	21.92	21.79
		2593	22.40	21.46	21.48
		2545.8	22.63	21.61	21.71
		2498.5	22.32	21.46	21.53
	12RB Low (0)	2687.5	22.70	21.80	21.64
		2640.3	22.98	22.00	21.90
		2593	22.74	21.66	21.58
		2545.8	22.64	21.69	21.75
		2498.5	22.49	21.60	21.49
	25RB (0)	2687.5	22.84	21.82	21.82
		2640.3	22.89	21.86	21.79
		2593	22.54	21.56	21.69
		2545.8	22.67	21.68	21.61
		2498.5	22.47	21.48	21.43
10 MHz	1RB High (49)	2685	24.19	22.97	22.67
		2639	24.02	23.33	22.99
		2593	23.36	22.49	22.51
		2547	23.76	22.87	21.77
		2501	23.48	22.90	21.57
	1RB Middle (24)	2685	23.92	22.80	22.85
		2639	23.90	23.04	22.89
		2593	23.49	22.67	22.63
		2547	23.72	22.97	21.79
		2501	23.24	22.52	21.39
	1RB Low (0)	2685	23.65	23.46	22.86
		2639	23.63	23.28	22.82
		2593	23.84	22.84	22.70
		2547	23.74	23.05	21.79
		2501	23.57	22.90	21.36
	25RB	2685	22.67	21.67	21.70

	High (25)	2639	22.80	21.83	21.86
		2593	22.39	21.60	21.49
		2547	22.67	21.79	20.86
		2501	22.26	21.22	20.45
	25RB Middle (12)	2685	22.92	21.70	21.50
		2639	22.88	21.90	21.88
		2593	22.52	21.62	21.62
		2547	22.68	21.71	20.85
		2501	22.45	21.47	20.55
	25RB Low (0)	2685	22.61	21.66	21.88
		2639	23.04	21.90	21.91
		2593	22.79	21.67	21.48
		2547	22.68	21.66	20.74
		2501	22.55	21.47	20.61
	50RB (0)	2685	22.82	21.98	21.75
		2639	22.88	21.86	21.94
		2593	22.57	21.54	21.70
		2547	22.63	21.75	20.71
		2501	22.30	21.36	20.43
15 MHz	1RB High (74)	2682.5	23.73	22.99	22.81
		2637.8	23.96	23.29	22.91
		2593	23.71	22.91	22.90
		2548.3	24.04	23.26	22.90
		2503.5	23.86	23.23	22.85
	1RB Middle (37)	2682.5	24.13	22.89	22.89
		2637.8	23.88	23.11	22.93
		2593	23.77	23.08	22.79
		2548.3	23.92	23.08	22.91
		2503.5	23.68	22.92	22.89
	1RB Low (0)	2682.5	23.63	22.97	22.79
		2637.8	23.60	22.97	22.68
		2593	24.26	23.27	22.87
		2548.3	24.18	23.42	22.91
		2503.5	23.93	23.18	22.98
	36RB High (38)	2682.5	22.74	21.85	21.87
		2637.8	22.90	21.89	21.97
		2593	22.78	21.92	21.89
		2548.3	23.09	22.05	21.87
		2503.5	22.79	21.87	21.96
	36RB Middle (19)	2682.5	22.85	21.83	21.90
		2637.8	22.93	21.95	22.00
		2593	22.97	22.00	21.96

		2548.3	23.08	22.13	21.91
		2503.5	22.80	21.89	21.88
	36RB Low (0)	2682.5	22.64	21.70	21.71
		2637.8	22.77	21.89	21.77
		2593	23.04	22.07	21.89
		2548.3	23.10	22.16	21.84
		2503.5	22.67	21.74	21.74
	75RB (0)	2682.5	22.68	21.86	21.64
		2637.8	22.88	21.86	21.94
		2593	23.01	22.07	21.85
		2548.3	23.07	22.13	21.95
		2503.5	22.78	21.82	21.68
20 MHz	1RB High (99)	2680	23.61	22.87	22.91
		2636.5	23.89	23.24	22.8
		2593	23.56	22.84	22.77
		2549.5	23.88	23.17	22.77
		2506	23.67	23.02	22.87
	1RB Middle (50)	2680	23.78	22.97	22.96
		2636.5	23.90	23.26	22.91
		2593	24.02	23.07	22.85
		2549.5	23.95	23.18	22.84
		2506	23.66	23.00	22.94
	1RB Low (0)	2680	23.59	22.95	22.58
		2636.5	23.83	23.09	22.51
		2593	23.95	23.07	22.96
		2549.5	23.87	23.08	22.79
		2506	23.68	23.15	22.71
	50RB High (50)	2680	22.71	21.92	21.84
		2636.5	22.86	21.92	21.77
		2593	22.77	21.90	21.71
		2549.5	23.02	22.08	21.89
		2506	22.68	21.79	21.56
	50RB Middle (25)	2680	22.90	21.85	21.72
		2636.5	22.77	21.91	21.67
		2593	22.96	22.07	21.8
		2549.5	22.96	22.14	21.92
		2506	22.76	21.88	21.65
	50RB Low (0)	2680	22.80	21.88	21.65
		2636.5	22.95	21.90	21.68
		2593	23.12	21.97	21.79
		2549.5	23.04	22.13	21.9

		2506	22.76	21.86	21.64
	100RB (0)	2680	22.86	21.98	21.9
		2636.5	22.93	21.87	21.51
		2593	22.97	21.96	21.95
		2549.5	22.99	22.03	21.91
		2506	22.79	21.87	21.67

DSI0

Band 66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	23.72	23.08	22.43
		1745 (132322)	23.67	22.90	22.24
		1710.7 (131979)	23.64	22.90	22.33
	1RB-Middle (3)	1779.3 (132665)	23.76	23.00	22.40
		1745 (132322)	23.77	23.12	22.24
		1710.7 (131979)	23.87	23.12	22.36
	1RB-Low (0)	1779.3 (132665)	23.81	23.00	22.37
		1745 (132322)	23.71	23.03	22.40
		1710.7 (131979)	23.67	23.04	22.38
	3RB-High (3)	1779.3 (132665)	23.97	22.65	22.30
		1745 (132322)	23.92	22.74	22.40
		1710.7 (131979)	23.95	22.68	22.45
	3RB-Middle (1)	1779.3 (132665)	23.81	22.85	22.28
		1745 (132322)	23.76	22.81	22.54
		1710.7 (131979)	23.82	22.80	22.29
	3RB-Low (0)	1779.3 (132665)	23.89	22.80	22.32
		1745 (132322)	23.77	22.75	22.28
		1710.7 (131979)	23.76	22.66	22.22
	6RB (0)	1779.3 (132665)	22.81	22.11	21.23
		1745 (132322)	22.83	21.85	21.26
		1710.7 (131979)	22.70	21.85	21.18
3MHz	1RB-High (14)	1778.5 (132657)	23.69	22.95	22.34
		1745 (132322)	23.59	23.02	21.51
		1711.5 (131987)	23.60	22.98	21.41
	1RB-Middle (7)	1778.5 (132657)	24.20	23.00	22.47
		1745 (132322)	24.13	23.36	21.67
		1711.5 (131987)	23.64	22.98	21.45
	1RB-Low (0)	1778.5 (132657)	23.80	22.99	22.25
		1745 (132322)	23.69	22.97	21.41
		1711.5 (131987)	23.57	22.98	21.50
	8RB-High	1778.5 (132657)	22.87	21.81	21.31

	(7)	1745 (132322)	22.71	21.73	20.22
		1711.5 (131987)	22.66	21.84	20.32
	8RB-Middle (4)	1778.5 (132657)	22.81	21.81	21.30
		1745 (132322)	22.74	21.90	20.40
		1711.5 (131987)	22.90	21.87	20.39
	8RB-Low (0)	1778.5 (132657)	22.72	21.82	21.33
		1745 (132322)	22.81	21.86	20.30
		1711.5 (131987)	22.66	21.83	20.34
	15RB (0)	1778.5 (132657)	22.82	21.75	21.24
		1745 (132322)	22.71	21.81	20.25
		1711.5 (131987)	22.87	21.96	20.28
5MHz	1RB-High (24)	1777.5 (132647)	23.84	23.21	21.61
		1745 (132322)	23.66	22.97	21.50
		1712.5 (131997)	23.76	23.00	21.43
	1RB-Middle (12)	1777.5 (132647)	23.68	23.04	21.52
		1745 (132322)	23.74	23.10	21.48
		1712.5 (131997)	23.77	22.88	21.34
	1RB-Low (0)	1777.5 (132647)	23.84	23.20	21.60
		1745 (132322)	23.90	22.97	21.44
		1712.5 (131997)	23.82	22.96	21.38
	12RB-High (13)	1777.5 (132647)	22.83	21.69	20.29
		1745 (132322)	22.76	21.70	20.22
		1712.5 (131997)	22.78	21.74	20.27
	12RB-Middle (6)	1777.5 (132647)	22.76	21.82	20.37
		1745 (132322)	22.98	21.74	20.36
		1712.5 (131997)	22.83	21.83	20.36
	12RB-Low (0)	1777.5 (132647)	22.85	21.79	20.35
		1745 (132322)	23.00	21.76	20.38
		1712.5 (131997)	22.86	21.87	20.33
	25RB (0)	1777.5 (132647)	22.79	21.76	20.37
		1745 (132322)	22.90	21.76	20.26
		1712.5 (131997)	22.95	21.85	20.33
10MHz	1RB-High (49)	1775 (132622)	24.37	23.01	22.36
		1745 (132322)	24.16	23.39	21.88
		1715 (132022)	24.14	23.39	21.84
	1RB-Middle (24)	1775 (132622)	23.71	22.88	22.38
		1745 (132322)	23.86	22.92	21.42
		1715 (132022)	23.68	23.01	21.34
	1RB-Low (0)	1775 (132622)	23.10	22.36	21.75
		1745 (132322)	23.12	22.40	20.91
		1715 (132022)	23.14	22.37	20.88
	25RB-High (25)	1775 (132622)	22.77	22.01	21.42
		1745 (132322)	22.86	21.93	20.42

		1715 (132022)	22.90	21.96	20.46
	25RB-Middle (12)	1775 (132622)	22.85	21.77	21.32
		1745 (132322)	22.92	21.82	20.33
		1715 (132022)	22.83	21.82	20.20
	25RB-Low (0)	1775 (132622)	22.79	21.77	21.28
		1745 (132322)	22.70	21.78	20.21
		1715 (132022)	22.70	21.72	20.23
	50RB (0)	1775 (132622)	22.89	21.78	21.28
		1745 (132322)	22.86	21.66	20.29
		1715 (132022)	22.72	21.74	20.23
15MHz	1RB-High (74)	1772.5 (132597)	23.96	23.20	22.75
		1745 (132322)	23.86	23.24	22.36
		1717.5 (132047)	24.00	23.09	21.56
	1RB-Middle (37)	1772.5 (132597)	23.98	23.10	22.45
		1745 (132322)	23.77	23.24	22.42
		1717.5 (132047)	23.93	23.14	21.48
	1RB-Low (0)	1772.5 (132597)	24.30	23.38	22.93
		1745 (132322)	23.95	23.37	22.67
		1717.5 (132047)	24.02	23.39	21.59
	36RB-High (38)	1772.5 (132597)	23.02	22.01	21.47
		1745 (132322)	22.77	21.74	21.22
		1717.5 (132047)	22.92	21.77	20.28
	36RB-Middle (19)	1772.5 (132597)	22.89	21.88	21.38
		1745 (132322)	22.84	21.74	21.37
		1717.5 (132047)	22.97	21.92	20.43
	36RB-Low (0)	1772.5 (132597)	22.96	21.97	21.47
		1745 (132322)	22.89	21.90	21.38
		1717.5 (132047)	22.95	21.84	20.45
	75RB (0)	1772.5 (132597)	22.91	21.92	21.30
		1745 (132322)	22.89	21.77	21.43
		1717.5 (132047)	22.89	21.86	20.42
20MHz	1RB-High (99)	1770 (132572)	24.16	23.27	21.94
		1745 (132322)	24.10	23.24	21.78
		1720 (132072)	24.48	23.47	21.83
	1RB-Middle (50)	1770 (132572)	23.75	22.80	21.57
		1745 (132322)	23.74	22.97	21.56
		1720 (132072)	23.98	23.01	21.56
	1RB-Low (0)	1770 (132572)	23.58	22.91	21.45
		1745 (132322)	23.50	22.82	21.23
		1720 (132072)	23.33	22.52	21.34
	50RB-High (50)	1770 (132572)	22.89	21.89	20.39
		1745 (132322)	22.82	21.75	20.29
		1720 (132072)	22.94	21.98	20.40

	50RB-Middle (25)	1770 (132572)	22.97	21.83	20.37
		1745 (132322)	22.92	21.81	20.33
		1720 (132072)	23.11	21.97	20.52
	50RB-Low (0)	1770 (132572)	22.87	21.74	20.32
		1745 (132322)	22.75	21.80	20.25
		1720 (132072)	22.75	21.81	20.33
	100RB (0)	1770 (132572)	22.88	21.87	20.40
		1745 (132322)	22.88	21.84	20.38
		1720 (132072)	22.97	21.91	20.57

DSI1

Band 66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	20.55	19.89	18.9
		1745 (132322)	20.56	19.86	18.76
		1710.7 (131979)	20.55	19.88	18.67
	1RB-Middle (3)	1779.3 (132665)	20.63	19.95	19.77
		1745 (132322)	20.67	19.98	18.77
		1710.7 (131979)	20.69	19.94	18.83
	1RB-Low (0)	1779.3 (132665)	20.59	19.88	19.79
		1745 (132322)	20.68	19.91	18.83
		1710.7 (131979)	20.53	19.88	18.7
	3RB-High (3)	1779.3 (132665)	20.57	19.65	18.92
		1745 (132322)	20.61	19.54	18.65
		1710.7 (131979)	20.53	19.63	18.73
	3RB-Middle (1)	1779.3 (132665)	20.59	19.62	18.85
		1745 (132322)	20.62	19.68	18.66
		1710.7 (131979)	20.68	19.64	18.78
	3RB-Low (0)	1779.3 (132665)	20.61	19.60	18.99
		1745 (132322)	20.68	19.72	18.72
		1710.7 (131979)	20.64	19.61	18.73
	6RB (0)	1779.3 (132665)	19.61	18.69	18.63
		1745 (132322)	19.57	18.70	17.54
		1710.7 (131979)	19.57	18.62	17.56
3MHz	1RB-High (14)	1778.5 (132657)	20.55	19.91	18.85
		1745 (132322)	20.63	19.81	18.87
		1711.5 (131987)	20.57	19.88	18.66
	1RB-Middle (7)	1778.5 (132657)	20.67	20.01	18.9
		1745 (132322)	20.56	19.81	18.77
		1711.5 (131987)	20.64	19.87	18.8
	1RB-Low (0)	1778.5 (132657)	20.66	19.90	18.85
		1745 (132322)	20.77	19.97	18.9

		1711.5 (131987)	20.68	19.85	18.92
	8RB-High (7)	1778.5 (132657)	19.57	18.74	18.64
		1745 (132322)	19.58	18.70	17.68
		1711.5 (131987)	19.66	18.65	17.61
	8RB-Middle (4)	1778.5 (132657)	19.67	18.78	18.73
		1745 (132322)	19.62	18.71	17.7
		1711.5 (131987)	19.61	18.73	17.64
	8RB-Low (0)	1778.5 (132657)	19.67	18.67	18.68
		1745 (132322)	19.66	18.77	17.7
		1711.5 (131987)	19.68	18.71	17.73
	15RB (0)	1778.5 (132657)	19.62	18.69	18.71
		1745 (132322)	19.58	18.64	17.62
		1711.5 (131987)	19.57	18.65	17.69
5MHz	1RB-High (24)	1777.5 (132647)	20.69	19.96	18.86
		1745 (132322)	20.69	20.06	18.72
		1712.5 (131997)	20.67	19.87	18.87
	1RB-Middle (12)	1777.5 (132647)	20.61	19.88	18.95
		1745 (132322)	20.63	19.84	18.72
		1712.5 (131997)	20.59	19.76	18.64
	1RB-Low (0)	1777.5 (132647)	20.84	20.03	18.9
		1745 (132322)	20.77	20.03	18.94
		1712.5 (131997)	20.74	19.98	18.87
	12RB-High (13)	1777.5 (132647)	19.64	18.67	18.66
		1745 (132322)	19.61	18.73	17.67
		1712.5 (131997)	19.54	18.58	17.69
	12RB-Middle (6)	1777.5 (132647)	19.64	18.66	18.61
		1745 (132322)	19.63	18.65	17.7
		1712.5 (131997)	19.66	18.72	17.62
	12RB-Low (0)	1777.5 (132647)	19.61	18.66	18.56
		1745 (132322)	19.72	18.72	17.8
		1712.5 (131997)	19.68	18.66	17.74
	25RB (0)	1777.5 (132647)	19.56	18.66	18.68
		1745 (132322)	19.67	18.68	17.62
		1712.5 (131997)	19.62	18.67	17.62
10MHz	1RB-High (49)	1775 (132622)	21.01	20.34	19.9
		1745 (132322)	21.03	20.34	19.4
		1715 (132022)	21.12	20.34	19.3
	1RB-Middle (24)	1775 (132622)	20.51	19.88	19.76
		1745 (132322)	20.73	19.81	18.89
		1715 (132022)	20.64	19.95	18.89
	1RB-Low (0)	1775 (132622)	19.96	19.32	19.07
		1745 (132322)	20.12	19.57	18.4
		1715 (132022)	20.02	19.33	18.15

	25RB-High (25)	1775 (132622)	19.73	18.59	18.71
		1745 (132322)	19.71	18.86	17.78
		1715 (132022)	19.69	18.74	17.76
	25RB-Middle (12)	1775 (132622)	19.81	18.61	18.77
		1745 (132322)	19.69	18.74	17.65
		1715 (132022)	19.68	18.73	17.75
	25RB-Low (0)	1775 (132622)	19.72	18.63	18.59
		1745 (132322)	19.62	18.68	17.58
		1715 (132022)	19.58	18.60	17.54
	50RB (0)	1775 (132622)	19.65	18.66	18.62
		1745 (132322)	19.66	18.71	17.64
		1715 (132022)	19.71	18.73	17.7
15MHz	1RB-High (74)	1772.5 (132597)	21.05	20.10	19.04
		1745 (132322)	20.87	20.19	19.07
		1717.5 (132047)	20.90	20.27	19.18
	1RB-Middle (37)	1772.5 (132597)	20.91	20.08	19.06
		1745 (132322)	20.77	19.99	18.93
		1717.5 (132047)	20.85	20.10	19.04
	1RB-Low (0)	1772.5 (132597)	20.91	20.31	19.25
		1745 (132322)	20.96	20.12	19.26
		1717.5 (132047)	21.09	20.32	19.38
	36RB-High (38)	1772.5 (132597)	19.89	18.84	18.75
		1745 (132322)	19.75	18.76	17.66
		1717.5 (132047)	19.84	18.85	17.83
	36RB-Middle (19)	1772.5 (132597)	19.87	18.93	18.94
		1745 (132322)	19.78	18.82	17.79
		1717.5 (132047)	19.87	18.89	17.97
	36RB-Low (0)	1772.5 (132597)	19.92	19.00	18.91
		1745 (132322)	19.80	18.78	17.79
		1717.5 (132047)	20.02	18.85	17.84
	75RB (0)	1772.5 (132597)	19.97	18.86	18.83
		1745 (132322)	19.83	18.75	17.79
		1717.5 (132047)	19.91	18.86	17.91
20MHz	1RB-High (99)	1770 (132572)	21.19	20.47	19.4
		1745 (132322)	21.11	20.27	19.19
		1720 (132072)	21.15	20.33	19.36
	1RB-Middle (50)	1770 (132572)	20.74	20.03	19.12
		1745 (132322)	20.82	19.99	18.99
		1720 (132072)	20.90	20.19	18.98
	1RB-Low (0)	1770 (132572)	20.69	19.96	18.79
		1745 (132322)	20.49	19.71	18.76
		1720 (132072)	20.62	19.99	18.87
	50RB-High	1770 (132572)	20.00	18.92	17.82

	(50)	1745 (132322)	19.71	18.74	17.67
		1720 (132072)	19.92	18.86	17.8
	50RB-Middle (25)	1770 (132572)	19.84	18.86	17.83
		1745 (132322)	19.82	18.85	17.76
		1720 (132072)	19.89	18.92	17.87
	50RB-Low (0)	1770 (132572)	19.82	18.79	17.83
		1745 (132322)	19.70	18.72	17.67
		1720 (132072)	19.76	18.78	17.82
	100RB (0)	1770 (132572)	19.84	18.80	17.84
		1745 (132322)	19.76	18.67	17.81
		1720 (132072)	19.85	18.86	17.91

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Band 66					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	21.54	20.92	20.01
		1745 (132322)	21.59	20.91	19.92
		1710.7 (131979)	21.49	20.98	18.8
	1RB-Middle (3)	1779.3 (132665)	21.61	21.03	19.89
		1745 (132322)	21.61	20.96	19.82
		1710.7 (131979)	21.79	21.00	18.86
	1RB-Low (0)	1779.3 (132665)	21.67	20.81	19.8
		1745 (132322)	21.60	20.93	19.81
		1710.7 (131979)	21.56	20.75	18.77
	3RB-High (3)	1779.3 (132665)	21.59	20.62	19.83
		1745 (132322)	21.74	20.54	19.86
		1710.7 (131979)	21.59	20.58	18.77
	3RB-Middle (1)	1779.3 (132665)	21.61	20.64	19.7
		1745 (132322)	21.67	20.65	19.78
		1710.7 (131979)	21.71	20.58	18.84
	3RB-Low (0)	1779.3 (132665)	21.62	20.55	19.88
		1745 (132322)	21.59	20.70	19.85
		1710.7 (131979)	21.57	20.52	18.76
	6RB (0)	1779.3 (132665)	20.61	19.70	18.69
		1745 (132322)	20.59	19.59	18.66
		1710.7 (131979)	20.63	19.67	17.76
3MHz	1RB-High (14)	1778.5 (132657)	21.52	20.84	19.76
		1745 (132322)	21.67	20.92	18.95
		1711.5 (131987)	21.53	20.98	18.76
	1RB-Middle (7)	1778.5 (132657)	21.55	20.94	19.95
		1745 (132322)	21.49	20.75	18.87
		1711.5 (131987)	21.58	20.94	18.89

	1RB-Low (0)	1778.5 (132657)	21.73	20.89	20.11
		1745 (132322)	21.71	21.15	18.91
		1711.5 (131987)	21.60	20.89	18.98
	8RB-High (7)	1778.5 (132657)	20.67	19.72	18.8
		1745 (132322)	20.61	19.62	17.81
		1711.5 (131987)	20.61	19.61	17.79
	8RB-Middle (4)	1778.5 (132657)	20.67	19.67	18.81
		1745 (132322)	20.63	19.65	17.82
		1711.5 (131987)	20.66	19.65	17.82
	8RB-Low (0)	1778.5 (132657)	20.61	19.67	18.8
		1745 (132322)	20.67	19.70	17.84
		1711.5 (131987)	20.69	19.65	17.79
	15RB (0)	1778.5 (132657)	20.62	19.61	18.74
		1745 (132322)	20.53	19.59	17.77
		1711.5 (131987)	20.62	19.60	17.79
5MHz	1RB-High (24)	1777.5 (132647)	21.64	21.03	19.99
		1745 (132322)	21.65	20.99	18.98
		1712.5 (131997)	21.64	21.01	18.99
	1RB-Middle (12)	1777.5 (132647)	21.53	20.79	19.81
		1745 (132322)	21.49	20.91	18.75
		1712.5 (131997)	21.55	20.82	18.85
	1RB-Low (0)	1777.5 (132647)	21.76	21.09	20.07
		1745 (132322)	21.74	21.07	19.04
		1712.5 (131997)	21.71	21.08	19.01
	12RB-High (13)	1777.5 (132647)	20.60	19.69	18.7
		1745 (132322)	20.66	19.66	17.73
		1712.5 (131997)	20.58	19.64	17.72
	12RB-Middle (6)	1777.5 (132647)	20.54	19.67	18.72
		1745 (132322)	20.66	19.68	17.74
		1712.5 (131997)	20.62	19.69	17.77
	12RB-Low (0)	1777.5 (132647)	20.67	19.63	18.7
		1745 (132322)	20.74	19.77	17.89
		1712.5 (131997)	20.65	19.72	17.78
	25RB (0)	1777.5 (132647)	20.64	19.69	18.69
		1745 (132322)	20.64	19.62	17.71
		1712.5 (131997)	20.56	19.62	17.69
10MHz	1RB-High (49)	1775 (132622)	22.01	21.33	20.3
		1745 (132322)	22.07	21.35	20.32
		1715 (132022)	22.07	21.34	19.48
	1RB-Middle (24)	1775 (132622)	21.45	20.90	19.82
		1745 (132322)	21.54	20.92	19.78
		1715 (132022)	21.58	20.83	19.02
	1RB-Low (0)	1775 (132622)	21.01	20.28	19.37

		1745 (132322)	21.22	20.35	19.31
		1715 (132022)	21.21	20.33	18.18
	25RB-High (25)	1775 (132622)	20.63	19.75	18.91
		1745 (132322)	20.78	19.76	18.89
		1715 (132022)	20.72	19.79	17.89
	25RB-Middle (12)	1775 (132622)	20.67	19.72	18.78
		1745 (132322)	20.68	19.67	18.78
		1715 (132022)	20.70	19.79	17.86
	25RB-Low (0)	1775 (132622)	20.60	19.65	18.75
		1745 (132322)	20.64	19.61	18.73
		1715 (132022)	20.52	19.59	17.67
	50RB (0)	1775 (132622)	20.63	19.67	18.8
		1745 (132322)	20.67	19.64	18.75
		1715 (132022)	20.77	19.74	17.82
15MHz	1RB-High (74)	1772.5 (132597)	21.96	21.27	19.95
		1745 (132322)	21.89	21.21	19.05
		1717.5 (132047)	21.85	21.26	19.17
	1RB-Middle (37)	1772.5 (132597)	21.86	21.15	20.11
		1745 (132322)	21.69	21.12	19.02
		1717.5 (132047)	21.83	21.17	19.17
	1RB-Low (0)	1772.5 (132597)	21.87	21.25	20.15
		1745 (132322)	22.02	21.14	19.16
		1717.5 (132047)	22.06	21.40	19.32
	36RB-High (38)	1772.5 (132597)	20.85	19.78	18.9
		1745 (132322)	20.66	19.64	17.75
		1717.5 (132047)	20.79	19.75	17.94
	36RB-Middle (19)	1772.5 (132597)	21.05	19.87	19.08
		1745 (132322)	20.79	19.77	17.9
		1717.5 (132047)	20.94	19.90	18.08
	36RB-Low (0)	1772.5 (132597)	20.85	19.90	19.03
		1745 (132322)	20.83	19.69	17.9
		1717.5 (132047)	20.90	19.96	18.04
	75RB (0)	1772.5 (132597)	20.80	19.91	18.87
		1745 (132322)	20.76	19.72	17.89
		1717.5 (132047)	20.89	19.94	18.01
20MHz	1RB-High (99)	1770 (132572)	21.80	21.39	20.5
		1745 (132322)	22.11	21.41	20.38
		1720 (132072)	22.13	21.39	19.4
	1RB-Middle (50)	1770 (132572)	20.75	21.09	20.13
		1745 (132322)	21.81	21.09	20.09
		1720 (132072)	21.77	21.17	19.11
	1RB-Low (0)	1770 (132572)	20.75	20.88	19.74
		1745 (132322)	21.50	20.82	19.7

		1720 (132072)	21.73	20.96	18.88
	50RB-High (50)	1770 (132572)	20.78	19.81	19.06
		1745 (132322)	20.68	19.72	18.81
		1720 (132072)	20.89	19.88	17.94
	50RB-Middle (25)	1770 (132572)	20.72	19.84	18.91
		1745 (132322)	20.77	19.82	18.89
		1720 (132072)	20.86	19.95	17.98
	50RB-Low (0)	1770 (132572)	20.68	19.74	18.8
		1745 (132322)	20.66	19.62	18.71
		1720 (132072)	20.85	19.74	17.88
	100RB (0)	1770 (132572)	20.82	19.86	18.96
		1745 (132322)	20.70	19.75	18.85
		1720 (132072)	20.80	19.79	17.96

DSI0/1/2

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	24.17	23.42	22.81
		680.5	24.26	23.59	22.38
		665.5	24.16	23.45	22.20
	1RB Middle (12)	695.5	24.27	23.44	22.95
		680.5	24.13	23.48	22.64
		665.5	23.83	23.36	22.24
	1RB Low (0)	695.5	24.34	23.58	23.41
		680.5	24.40	23.44	22.36
		665.5	24.05	23.17	22.08
	12RB High (13)	695.5	23.23	22.17	22.15
		680.5	23.30	22.36	21.40
		665.5	23.04	21.97	21.09
	12RB Middle (6)	695.5	23.38	22.35	22.29
		680.5	23.27	22.33	21.27
		665.5	23.07	22.03	21.11
	12RB Low (0)	695.5	23.38	22.34	22.27
		680.5	23.25	22.21	21.33
		665.5	22.96	22.02	21.01
	25RB (0)	695.5	23.33	22.30	21.94
		680.5	23.31	22.27	21.28
		665.5	23.06	22.10	21.08
10 MHz	1RB High (49)	693	24.35	23.81	22.70
		680.5	24.69	23.77	22.84
		668	24.60	23.67	22.63
	1RB Middle (24)	693	24.14	23.65	22.55
		680.5	24.41	23.56	22.53
		668	24.22	23.22	22.10

	1RB Low (0)	693	23.44	22.71	21.40
		680.5	23.27	22.55	21.51
		668	23.13	22.53	21.15
	25RB High (25)	693	23.29	22.31	21.29
		680.5	23.42	22.40	21.39
		668	23.12	22.16	21.14
	25RB Middle (12)	693	23.33	22.30	21.35
		680.5	23.31	22.31	21.29
		668	23.06	22.10	21.06
	25RB Low (0)	693	23.21	22.13	21.15
		680.5	23.04	21.94	21.12
		668	22.90	21.80	20.85
	50RB (0)	693	23.34	22.33	21.29
		680.5	23.24	22.18	21.25
		668	23.01	21.96	21.05
15 MHz	1RB High (74)	690.5	23.76	23.36	21.83
		680.5	23.74	23.06	21.96
		670.5	23.68	23.06	21.93
	1RB Middle (37)	690.5	23.88	23.22	21.91
		680.5	23.69	23.11	21.97
		670.5	23.64	23.08	21.77
	1RB Low (0)	690.5	23.55	23.02	21.78
		680.5	23.39	22.64	21.50
		670.5	23.34	22.66	21.59
	36RB High (38)	690.5	22.90	21.85	20.85
		680.5	22.86	21.84	20.81
		670.5	22.63	21.71	20.73
	36RB Middle (19)	690.5	23.10	22.05	21.03
		680.5	22.88	21.83	20.85
		670.5	22.76	21.70	20.74
	36RB Low (0)	690.5	22.81	21.82	20.86
		680.5	22.67	21.66	20.56
		670.5	22.50	21.53	20.53
	75RB (0)	690.5	22.82	21.76	20.73
		680.5	22.69	21.68	20.64
		670.5	22.54	21.57	20.45
20 MHz	1RB High (99)	688	23.71	23.05	21.9
		683	23.80	23.01	21.85
		673	23.78	22.96	21.87
	1RB Middle (50)	688	23.95	23.18	21.84
		683	24.12	23.07	21.84
		673	23.53	22.77	21.88
	1RB Low (0)	688	23.07	22.19	20.92
		683	23.04	22.07	21.96
		673	23.09	22.08	20.73
	50RB High (50)	688	22.98	21.92	21.03
		683	22.97	21.95	21
		673	22.66	21.64	20.7

	50RB Middle (25)	688	22.96	22.00	21.01
		683	22.87	21.96	20.9
		673	22.70	21.68	20.59
	50RB Low (0)	688	22.53	21.58	20.49
		683	22.44	21.53	20.47
		673	22.24	21.32	20.21
	100RB (0)	688	22.80	21.72	20.74
		683	22.76	21.82	20.81
		673	22.50	21.47	20.49

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

DSI0											
DL LTE CA Class	PCC					SCC				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
5A_5A	10M	20450	2450	1	0	10M	2600	1	0	25	23.9
2A_5A	20M	19100	1100	1	0	10M	2450	1	0	25	23.59
2A_12A	20M	19100	1100	1	0	10M	5130	1	49	25	23.64
2A_13A	20M	19100	1100	1	0	10M	5330	1	49	25	23.6
2A_71A	20M	19100	1100	1	0	20M	68786	1	50	25	23.59
66A_5A	20M	132572	67036	1	99	10M	2450	1	0	24.5	23.91
66A_12A	20M	132572	67036	1	99	10M	5130	1	49	24.5	23.86
66A_13A	20M	132572	67036	1	99	10M	5330	1	49	24.5	23.89
66A_71A	20M	132572	67036	1	99	20M	68786	1	50	24.5	23.89
5A_41PC3A	10M	20450	2450	1	0	20M	39750	1	0	25	23.61
5A_41PC2A	10M	20450	2450	1	0	20M	39750	1	0	25	23.1
2A+66A	20M	19100	1100	1	0	20M	67036	1	99	25	23.65
2A+2A	20M	18700	700	1	50	20M	1100	1	50	25	23.77
66A+66A	20M	132072	66536	1	99	20M	67036	1	99	24.5	23.95
2C	20M	18700	700	1	0	20M	898	1	0	25	23.65
66B	15M	132047	66511	1	0	15M	66604	1	0	24.5	23.79
66C	20M	132572	67036	1	99	20M	67234	1	99	24.5	23.89
41PC3A+41PC3A	20M	39750	39750	1	99	20M	41490	1	99	24	23.42
41PC2A+41PC2A	20M	39750	39750	1	99	20M	41490	1	99	25	24.16
41PC3 C	20M	39750	39750	1	0	20M	39948	1	0	24	22.96
41PC2 C	20M	39750	39750	1	0	20M	39948	1	0	25	24.08
5B	10M	20450	2450	1	0	10M	2549	1	0	25	23.54
DSI1											
DL LTE CA Class	PCC					SCC				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
2A+66A	20M	19100	1100	1	0	20M	67036	1	99	22	21.06
2A+2A	20M	18700	700	1	50	20M	1100	1	50	22	21.09
66A+66A	20M	132072	66536	1	99	20M	67036	1	99	21.5	20.9
2C	20M	18700	700	1	50	20M	898	1	0	22	21.07
66B	15M	132047	66511	1	74	15M	66604	1	0	21.5	20.68
66C	20M	132572	67036	1	99	20M	67234	1	99	21.5	20.96
41PC3A+41PC3A	20M	39750	39750	1	99	20M	41490	1	99	21	19.84
41PC2A+41PC2A	20M	39750	39750	1	50	20M	41490	1	50	22	20.7
41PC3 C	20M	39750	39750	1	0	20M	39948	1	0	21	19.84
41PC2 C	20M	39750	39750	1	50	20M	39948	1	50	22	20.65
DSI2											
DL LTE CA Class	PCC					SCC				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
2A+66A	20M	19100	1100	1	50	20M	67036	1	99	23	21.97
2A+2A	20M	18700	700	1	50	20M	1100	1	50	23	21.85
66A+66A	20M	132072	66536	1	99	20M	67036	1	99	22.5	21.87
2C	20M	18700	700	1	50	20M	898	1	0	23	21.85
66B	15M	132047	66511	1	74	15M	66604	1	0	22.5	21.56
66C	20M	132572	67036	1	99	20M	67234	1	99	22.5	20.52
41PC3A+41PC3A	20M	39750	39750	1	50	20M	41490	1	50	24	22.51
41PC2A+41PC2A	20M	39750	39750	1	0	20M	41490	1	0	25	23.4
41PC3 C	20M	39750	39750	1	50	20M	39948	1	50	24	22.57
41PC2 C	20M	39750	39750	1	0	20M	39948	1	0	25	23.4

LTE Carrier Aggregation Conducted Power (Uplink) are as below:

DSI0											
LTE CA Class	SCC1					SCC2				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
41PC3 C	20M	39750	39750	1	0	20M	39948	1	0	24	23.01
41PC2 C	20M	39750	39750	1	0	20M	39948	1	0	25	24.2
DSI1 HOT ON											
LTE CA Class	SCC1					SCC2				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
41PC3 C	20M	39750	39750	1	0	20M	39948	1	0	21	19.81
41PC2 C	20M	39750	39750	1	50	20M	39948	1	50	22	20.65
DSI2 HOT OFF											
LTE CA Class	SCC1					SCC2				Power	
	PCC Bandwidth	UL channel	DL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	RB	RB OFFSET	tune up	conducted power（dBm）
41PC3 C	20M	39750	39750	1	50	20M	39948	1	50	24	22.54
41PC2 C	20M	39750	39750	1	0	20M	39948	1	0	25	23.45

11.4 Wi-Fi and BT Measurement result

The maximum output power of BT is 12.28dBm.
The maximum tune up of BT is 13dBm.

The conducted output power for WLAN 2.4 GHz（receiver on）power is as following

802.11b	Channel\data rate	1Mbps
WLAN2450	11(2462MHz)	13.87
	6(2437(MHz)	13.90
	1(2412MHz)	13.85
	tuneup	15.00
802.11g	Channel\data rate	6Mbps
WLAN2450	11(2462MHz)	13.78
	6(2437(MHz)	13.68
	1(2412MHz)	13.78
	tuneup	14.00
802.11n-20MHz	Channel\data rate	MCS0
WLAN2450	11(2462MHz)	13.78
	6(2437(MHz)	13.63
	1(2412MHz)	13.79
	tuneup	14.00

The conducted output power for WLAN 2.4 GHz（receiver off）power is as following

802.11b	Channel\data rate	1Mbps
WLAN2450	11(2462MHz)	18.37
	6(2437(MHz)	18.49
	1(2412MHz)	18.39
	tuneup	20.00
802.11g	Channel\data rate	6Mbps
WLAN2450	11(2462MHz)	17.48
	6(2437(MHz)	17.42
	1(2412MHz)	17.88
	tuneup	19.00
802.11n-20MHz	Channel\data rate	MCS0
WLAN2450	11(2462MHz)	17.33
	6(2437(MHz)	17.32
	1(2412MHz)	17.74
	tuneup	19.00

The conducted output power for WLAN 5GHz（receiver on) power is as following

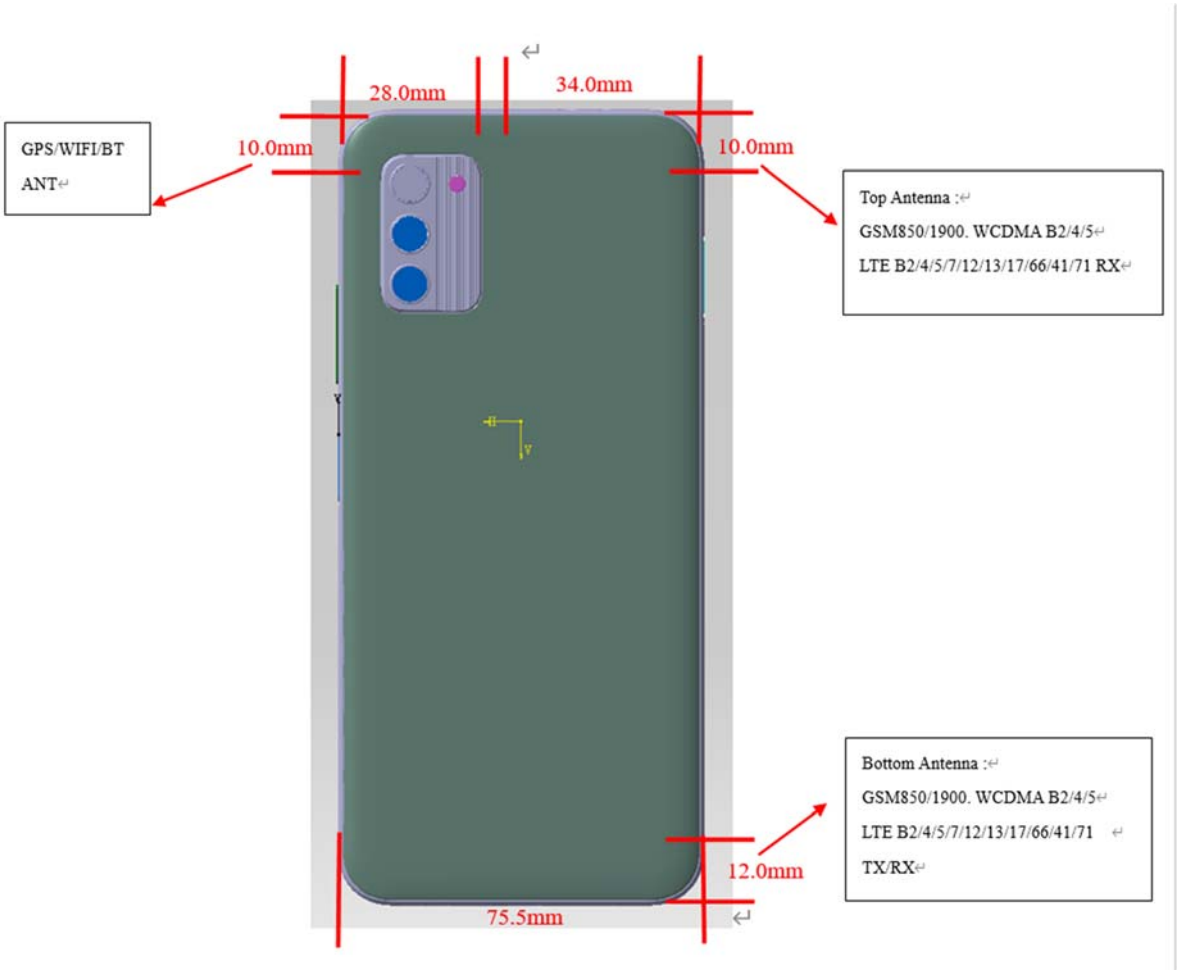
802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	16.12
40(5200 MHz)	15.87
44(5220 MHz)	15.81
48(5240 MHz)	16.11
52(5260 MHz)	16.54
56(5280 MHz)	16.86
60(5300 MHz)	16.63
64(5320 MHz)	15.76
100(5500 MHz)	16.28
104(5520 MHz)	15.73
108(5540 MHz)	15.71
112(5560 MHz)	15.75
116(5580 MHz)	16.04
120(5600 MHz)	16.33
124(5620 MHz)	16.70
128(5640 MHz)	16.56
132(5660 MHz)	16.15
136(5680 MHz)	15.92
140(5700 MHz)	15.72
144(5720 MHz)	15.78
149(5745 MHz)	16.31
153(5765 MHz)	16.97
157(5785 MHz)	17.54
161(5805 MHz)	17.57
165(5825 MHz)	17.25
tuneup	17.70

The conducted output power for WLAN 5GHz（receiver off）power is as following

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	17.55
40(5200 MHz)	17.14
44(5220 MHz)	17.21
48(5240 MHz)	17.40
52(5260 MHz)	17.50
56(5280 MHz)	17.20
60(5300 MHz)	17.40
64(5320 MHz)	17.22
100(5500 MHz)	17.78
104(5520 MHz)	17.00
108(5540 MHz)	16.87
112(5560 MHz)	16.86
116(5580 MHz)	17.95
120(5600 MHz)	17.94
124(5620 MHz)	17.52
128(5640 MHz)	18.03
132(5660 MHz)	18.11
136(5680 MHz)	17.90
140(5700 MHz)	17.43
144(5720 MHz)	17.20
149(5745 MHz)	17.23
153(5765 MHz)	17.34
157(5785 MHz)	18.01
161(5805 MHz)	18.21
165(5825 MHz)	18.13
tuneup	18.50

12 Simultaneous TX SAR Considerations

12.1 Transmit Antenna Separation Distances



Picture 12.1 Antenna Locations

12.2 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
WIFI/BT ANT	Yes	Yes	No	Yes	Yes	No
Bottom ANT	Yes	Yes	Yes	Yes	No	Yes

12.3 Standalone SAR Test Exclusion Considerations

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

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

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

Table 12.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	Position	SAR test exclusion threshold(mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.441	Head	9.60	13	20	No
		Body	19.20	13	20	No
2.4GHz WLAN	2.45	Head	9.58	15	31.6	No
		Body	19.17	18.5	70.79	No

13 Evaluation of Simultaneous

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

	Position	Cellular antenna	WiFi	BT	Sum
Highest reported SAR value for Head	Left Tilt (WCDMA1900+WIFI2.4G)	0.38	1.16	<0.01	**1.54**
Maximum reported SAR value for Body	Front 10mm (WCDMA1900+WIFI2.4G)	0.72	0.78	<0.01	**1.50**
	Rear 10mm (WCDMA850+WIFI2.4G)	0.78	0.72	<0.01	**1.50**
	Bottom 10mm (LTE Band41PC2)	1.31	/	<0.01	**1.31**
	Rear 15mm (WCDMA1900+WIFI5G)	0.72	0.36	<0.01	**1.08**
	Rear 15mm (WCDMA1900+WIFI2.4G)	0.74	0.03	<0.01	**0.77**

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
where x = 7.5 for 1-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

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	1:4
GPRS&EGPRS for GSM850/GSM1900	1:2
LTE B41 PC3	1:1.58
LTE B41 PC2	1:2.309
WCDMA&LTE FDD	1:1

14.1 SAR results for Fast SAR

RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
Head	GSM850	190	836.6	GPRS（2tx）	Left Cheek	0mm	\	30.81	31.50	0.276	0.32	0.203	0.24	-0.09
Head	GSM850	190	836.6	GPRS（2tx）	Left Tilt	0mm	\	30.81	31.50	0.176	0.21	0.140	0.16	0.16
Head	GSM850	190	836.6	GPRS（2tx）	Right Cheek	0mm	\	30.81	31.50	0.284	0.33	0.220	0.26	-0.05
Head	GSM850	128	824.2	GPRS（2tx）	Right Cheek	0mm	\	30.66	31.50	0.286	0.35	0.219	0.27	-0.10
Head	GSM850	251	848.8	GPRS（2tx）	Right Cheek	0mm	Fig.A1	30.93	31.50	0.348	0.40	0.269	0.31	0.02
Head	GSM850	190	836.6	GPRS（2tx）	Right Tilt	0mm	\	30.81	31.50	0.172	0.20	0.137	0.16	-0.14
Head	GSM850	251	848.8	EGPRS（2tx）	Right Cheek	0mm	\	30.83	31.50	0.301	0.35	0.241	0.28	0.14
Body	GSM850	190	836.6	GPRS（2tx）	Front	10mm	\	30.81	31.50	0.548	0.64	0.345	0.40	-0.10
Body	GSM850	251	848.8	GPRS（2tx）	Rear	10mm	Fig.A2	30.93	31.50	0.686	0.78	0.386	0.44	0.19
Body	GSM850	190	836.6	GPRS（2tx）	Rear	10mm	\	30.81	31.50	0.649	0.76	0.409	0.48	-0.02
Body	GSM850	128	824.2	GPRS（2tx）	Rear	10mm	\	30.66	31.50	0.583	0.71	0.342	0.41	0.18
Body	GSM850	190	836.6	GPRS（2tx）	Left Edge	10mm	\	30.81	31.50	0.325	0.38	0.189	0.22	-0.17
Body	GSM850	190	836.6	GPRS（2tx）	Right Edge	10mm	\	30.81	31.50	0.578	0.68	0.332	0.39	0.08
Body	GSM850	190	836.6	GPRS（2tx）	Bottom Edge	10mm	\	30.81	31.50	0.103	0.12	0.053	0.06	-0.12
Body	GSM850	251	848.8	EGPRS（2tx）	Rear	10mm	\	30.83	31.50	0.670	0.78	0.371	0.43	-0.13
Head	GSM1900	661	1880	GPRS(4TX)	Left Cheek	0mm	\	25.61	26.50	0.181	0.22	0.119	0.15	0.01
Head	GSM1900	810	1909.8	GPRS(4TX)	Left Cheek	0mm	Fig.A3	25.87	26.50	0.196	0.23	0.123	0.14	0.03
Head	GSM1900	512	1850.2	GPRS(4TX)	Left Cheek	0mm	\	25.58	26.50	0.182	0.22	0.122	0.15	0.08
Head	GSM1900	661	1880	GPRS(4TX)	Left Tilt	0mm	\	25.61	26.50	0.177	0.22	0.102	0.13	0.07
Head	GSM1900	661	1880	GPRS(4TX)	Right Cheek	0mm	\	25.61	26.50	0.164	0.20	0.104	0.13	0.02
Head	GSM1900	661	1880	GPRS(4TX)	Right Tilt	0mm	\	25.61	26.50	0.136	0.17	0.081	0.10	-0.06
Head	GSM1900	810	1909.8	EGPRS(4TX)	Left Cheek	0mm	\	26.00	26.50	0.186	0.21	0.117	0.13	0.12
Body	GSM1900	661	1880	GPRS(4TX)	Front	10mm	\	24.06	25.00	0.405	0.50	0.226	0.28	-0.19
Body	GSM1900	661	1880	GPRS(4TX)	Rear	10mm	\	24.06	25.00	0.435	0.54	0.237	0.29	0.19
Body	GSM1900	661	1880	GPRS(4TX)	Left Edge	10mm	\	24.06	25.00	0.155	0.19	0.088	0.11	-0.04
Body	GSM1900	661	1880	GPRS(4TX)	Right Edge	10mm	\	24.06	25.00	0.098	0.12	0.055	0.07	-0.08
Body	GSM1900	810	1909.8	GPRS(4TX)	Bottom Edge	10mm	\	24.08	25.00	0.650	0.80	0.337	0.42	0.17
Body	GSM1900	661	1880	GPRS(4TX)	Bottom Edge	10mm	Fig.A4	24.06	25.00	0.710	0.88	0.368	0.46	-0.12
Body	GSM1900	512	1850.2	GPRS(4TX)	Bottom Edge	10mm	\	23.98	25.00	0.661	0.84	0.347	0.44	0.04
Body	GSM1900	661	1880	EGPRS(4TX)	Bottom Edge	10mm	\	24.02	25.00	0.689	0.86	0.353	0.44	-0.19
Body	GSM1900	661	1880	GPRS(4TX)	Front	15mm	\	24.08	25.00	0.343	0.42	0.197	0.24	0.07
Body	GSM1900	661	1880	GPRS(4TX)	Rear	15mm	Fig.A5	24.08	25.00	0.348	0.43	0.198	0.24	0.05
Body	GSM1900	810	1909.8	GPRS(4TX)	Rear	15mm	\	24.09	25.00	0.335	0.41	0.190	0.23	0.18
Body	GSM1900	512	1850.2	GPRS(4TX)	Rear	15mm	\	23.99	25.00	0.332	0.42	0.187	0.24	-0.11
Body	GSM1900	661	1880	EGPRS(4TX)	Rear	15mm	\	24.01	25.00	0.334	0.42	0.190	0.24	-0.03
Head	WCDMA1900	9400	1880	RMC	Left Cheek	0mm	Fig.A6	24.32	25.00	0.396	0.46	0.254	0.30	-0.04
Head	WCDMA1900	9262	1852.4	RMC	Left Cheek	0mm	\	24.33	25.00	0.344	0.40	0.222	0.26	0.08
Head	WCDMA1900	9538	1907.6	RMC	Left Cheek	0mm	\	24.31	25.00	0.389	0.46	0.244	0.29	0.19
Head	WCDMA1900	9400	1880	RMC	Left Tilt	0mm	\	24.32	25.00	0.328	0.38	0.204	0.24	0.17
Head	WCDMA1900	9400	1880	RMC	Right Cheek	0mm	\	24.32	25.00	0.356	0.42	0.218	0.26	-0.06
Head	WCDMA1900	9400	1880	RMC	Right Tilt	0mm	\	24.32	25.00	0.296	0.35	0.174	0.20	-0.16
Body	WCDMA1900	9400	1880	RMC	Front	10mm	\	21.22	22.00	0.598	0.72	0.349	0.42	-0.19
Body	WCDMA1900	9400	1880	RMC	Rear	10mm	\	21.22	22.00	0.609	0.73	0.354	0.42	-0.15
Body	WCDMA1900	9400	1880	RMC	Left Edge	10mm	\	21.22	22.00	0.228	0.27	0.134	0.16	0.08
Body	WCDMA1900	9400	1880	RMC	Right Edge	10mm	\	21.22	22.00	0.129	0.15	0.076	0.09	0.14
Body	WCDMA1900	9538	1907.6	RMC	Bottom Edge	10mm	\	21.23	22.00	0.942	1.12	0.508	0.61	0.05
Body	WCDMA1900	9400	1880	RMC	Bottom Edge	10mm	\	21.22	22.00	0.993	1.19	0.545	0.65	-0.19
Body	WCDMA1900	9262	1852.4	RMC	Bottom Edge	10mm	Fig.A7	21.26	22.00	1.020	1.21	0.550	0.65	-0.17
Body	WCDMA1900	9400	1880	RMC	Front	15mm	Fig.A8	22.21	23.00	0.620	0.74	0.362	0.43	0.08
Body	WCDMA1900	9538	1907.6	RMC	Front	15mm	\	22.23	23.00	0.610	0.73	0.355	0.42	0.03
Body	WCDMA1900	9262	1852.4	RMC	Front	15mm	\	22.25	23.00	0.600	0.71	0.355	0.42	0.16
Body	WCDMA1900	9400	1880	RMC	Rear	15mm	\	22.21	23.00	0.604	0.72	0.351	0.42	0.12
Head	WCDMA1700	1412	1732.4	RMC	Left Cheek	0mm	\	24.27	25.00	0.112	0.13	0.076	0.09	0.15
Head	WCDMA1700	1412	1732.4	RMC	Left Tilt	0mm	\	24.27	25.00	0.072	0.09	0.049	0.06	-0.09
Head	WCDMA1700	1412	1732.4	RMC	Right Cheek	0mm	\	24.27	25.00	0.152	0.18	0.100	0.12	-0.19
Head	WCDMA1700	1312	1712.4	RMC	Right Cheek	0mm	\	24.18	25.00	0.133	0.16	0.088	0.11	-0.15
Head	WCDMA1700	1513	1752.6	RMC	Right Cheek	0mm	Fig.A9	24.20	25.00	0.188	0.23	0.123	0.15	0.12
Head	WCDMA1700	1412	1732.4	RMC	Right Tilt	0mm	\	24.27	25.00	0.068	0.08	0.046	0.05	-0.15
Body	WCDMA1700	1412	1732.5	RMC	Front	10mm	\	20.31	21.00	0.394	0.46	0.234	0.27	0.05
Body	WCDMA1700	1513	1752.6	RMC	Rear	10mm	\	20.23	21.00	0.549	0.66	0.308	0.37	0.09
Body	WCDMA1700	1412	1732.5	RMC	Rear	10mm	\	20.31	21.00	0.570	0.67	0.319	0.37	-0.08
Body	WCDMA1700	1312	1712.4	RMC	Rear	10mm	\	20.16	21.00	0.507	0.62	0.291	0.35	-0.12
Body	WCDMA1700	1412	1732.5	RMC	Left Edge	10mm	\	20.31	21.00	0.042	0.05	0.027	0.03	0.08
Body	WCDMA1700	1412	1732.5	RMC	Right Edge	10mm	\	20.31	21.00	0.108	0.13	0.065	0.08	0.19
Body	WCDMA1700	1513	1752.6	RMC	Bottom Edge	10mm	\	20.23	21.00	0.828	0.99	0.460	0.55	0.19
Body	WCDMA1700	1412	1732.5	RMC	Bottom Edge	10mm	Fig.A10	20.31	21.00	0.890	1.04	0.491	0.58	0.04
Body	WCDMA1700	1312	1712.4	RMC	Bottom Edge	10mm	\	20.16	21.00	0.765	0.93	0.428	0.52	0.11
Body	WCDMA1700	1412	1732.5	RMC	Front	15mm	\	21.26	22.00	0.252	0.30	0.203	0.24	-0.14
Body	WCDMA1700	1513	1752.6	RMC	Rear	15mm	\	21.21	22.00	0.343	0.41	0.266	0.32	0.02
Body	WCDMA1700	1412	1732.5	RMC	Rear	15mm	\	21.26	22.00	0.340	0.40	0.268	0.32	0.01
Body	WCDMA1700	1312	1712.4	RMC	Rear	15mm	Fig.A11	21.14	22.00	0.347	0.42	0.269	0.33	0.10
Head	WCDMA 850	4183	836.6	RMC	Left Cheek	0mm	\	23.59	25.00	0.332	0.46	0.249	0.34	0.16
Head	WCDMA 850	4183	836.6	RMC	Left Tilt	0mm	\	23.59	25.00	0.201	0.28	0.158	0.22	-0.10
Head	WCDMA 850	4183	836.6	RMC	Right Cheek	0mm	Fig.A12	23.59	25.00	0.346	0.48	0.266	0.37	0.06
Head	WCDMA 850	4132	826.4	RMC	Right Tilt	0mm	\	23.58	25.00	0.310	0.43	0.237	0.33	0.11
Head	WCDMA 850	4233	846.6	RMC	Right Tilt	0mm	\	23.51	25.00	0.326	0.46	0.241	0.34	-0.05
Head	WCDMA 850	4183	836.6	RMC	Right Tilt	0mm	\	23.59	25.00	0.220	0.30	0.173	0.24	0.04
Body	WCDMA 850	4183	836.6	RMC	Front	10mm	\	23.59	25.00	0.282	0.39	0.183	0.25	-0.13
Body	WCDMA 850	4233	846.6	RMC	Rear	10mm	\	23.51	25.00	0.350	0.49	0.230	0.32	0.06
Body	WCDMA 850	4183	836.6	RMC	Rear	10mm	Fig.A13	23.59	25.00	0.366	0.51	0.238	0.33	-0.14
Body	WCDMA 850	4132	826.4	RMC	Rear	10mm	\	23.58	25.00	0.355	0.49	0.232	0.32	-0.15
Body	WCDMA 850	4183	836.6	RMC	Left Edge	10mm	\	23.59	25.00	0.234	0.32	0.139	0.19	0.06
Body	WCDMA 850	4183	836.6	RMC	Right Edge	10mm	\	23.59	25.00	0.288	0.40	0.171	0.24	-0.12
Body	WCDMA 850	4183	836.6	RMC	Bottom Edge	10mm	\	23.59	25.00	0.066	0.09	0.031	0.04	0.16

RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
Head	LTE Band2	18900	1880	1RB-Low	Left Cheek	0mm	Fig.A14	24.00	25	0.373	0.47	0.238	0.30	0.05
Head	LTE Band2	18900	1880	1RB-Low	Left Tilt	0mm	\	24.00	25	0.306	0.38	0.191	0.24	0.12
Head	LTE Band2	18900	1880	1RB-Low	Right Cheek	0mm	\	24.00	25	0.325	0.41	0.206	0.26	0.02
Head	LTE Band2	18900	1880	1RB-Low	Right Tilt	0mm	\	24.00	25	0.288	0.36	0.177	0.22	0.15
Head	LTE Band2	18700	1860	50RB-Low	Left Cheek	0mm	\	23.09	24.00	0.291	0.36	0.187	0.23	-0.06
Head	LTE Band2	18700	1860	50RB-Low	Left Tilt	0mm	\	23.09	24.00	0.278	0.34	0.172	0.21	-0.12
Head	LTE Band2	18700	1860	50RB-Low	Right Cheek	0mm	\	23.09	24.00	0.278	0.34	0.176	0.22	0.07
Head	LTE Band2	18700	1860	50RB-Low	Right Tilt	0mm	\	23.09	24.00	0.267	0.33	0.160	0.20	-0.16
Body	LTE Band2	18700	1860	1RB-Middle	Front	10mm	\	21.37	22	0.554	0.64	0.328	0.38	-0.01
Body	LTE Band2	18700	1860	1RB-Middle	Rear	10mm	\	21.37	22	0.579	0.67	0.333	0.38	-0.06
Body	LTE Band2	18700	1860	1RB-Middle	Left Edge	10mm	\	21.37	22	0.203	0.23	0.119	0.14	-0.16
Body	LTE Band2	18700	1860	1RB-Middle	Right Edge	10mm	\	21.37	22	0.119	0.14	0.072	0.08	0.19
Body	LTE Band2	18900	1880	1RB-Middle	Bottom Edge	10mm	\	21.29	22	0.928	1.09	0.502	0.59	0.17
Body	LTE Band2	18700	1860	1RB-Middle	Bottom Edge	10mm	Fig.A15	21.20	22	0.923	1.11	0.501	0.60	-0.13
Body	LTE Band2	19100	1900	1RB-Middle	Bottom Edge	10mm	\	21.37	22	0.902	1.04	0.491	0.57	0.11
Body	LTE Band2	19100	1900	50RB-Middle	Front	10mm	\	20.30	21.00	0.447	0.53	0.258	0.30	-0.01
Body	LTE Band2	19100	1900	50RB-Middle	Rear	10mm	\	20.30	21.00	0.456	0.54	0.264	0.31	-0.03
Body	LTE Band2	19100	1900	50RB-Middle	Left Edge	10mm	\	20.30	21.00	0.153	0.18	0.091	0.11	0.15
Body	LTE Band2	19100	1900	50RB-Middle	Right Edge	10mm	\	20.30	21.00	0.106	0.12	0.063	0.07	-0.18
Body	LTE Band2	18700	1860	50RB-Middle	Bottom Edge	10mm	\	20.29	21.00	0.810	0.95	0.430	0.51	-0.13
Body	LTE Band2	18900	1880	50RB-Middle	Bottom Edge	10mm	\	20.25	21.00	0.784	0.93	0.423	0.50	-0.12
Body	LTE Band2	19100	1900	50RB-Middle	Bottom Edge	10mm	\	20.30	21.00	0.779	0.92	0.422	0.50	-0.16
Body	LTE Band2	18900	1880	100RB	Bottom Edge	10mm	\	20.22	21	0.795	0.95	0.418	0.50	-0.14
Body	LTE Band2	18900	1880	1RB-Low	Front	15mm	\	22.22	23	0.373	0.45	0.218	0.26	-0.04
Body	LTE Band2	18900	1880	1RB-Low	Rear	15mm	Fig.A16	22.22	23	0.406	0.49	0.233	0.28	0.05
Body	LTE Band2	19100	1900	50RB-Low	Front	15mm	\	21.28	22.00	0.311	0.37	0.182	0.21	-0.14
Body	LTE Band2	19100	1900	50RB-Low	Rear	15mm	\	21.28	22.00	0.314	0.37	0.182	0.21	0.07
Head	LTE Band5	20600	844	1RB-Low	Left Cheek	0mm	Fig.A17	24.17	25	0.390	0.47	0.285	0.35	-0.02
Head	LTE Band5	20600	844	1RB-Low	Left Tilt	0mm	\	24.17	25	0.230	0.28	0.182	0.22	-0.04
Head	LTE Band5	20600	844	1RB-Low	Right Cheek	0mm	\	24.17	25	0.376	0.45	0.293	0.36	0.03
Head	LTE Band5	20600	844	1RB-Low	Right Tilt	0mm	\	24.17	25	0.259	0.31	0.207	0.25	0.11
Head	LTE Band5	20600	844	25RB-High	Left Cheek	0mm	\	22.91	24.00	0.310	0.40	0.228	0.29	0.12
Head	LTE Band5	20600	844	25RB-High	Left Tilt	0mm	\	22.91	24.00	0.177	0.23	0.140	0.18	0.09
Head	LTE Band5	20600	844	25RB-High	Right Cheek	0mm	\	22.91	24.00	0.303	0.39	0.236	0.30	0.10
Head	LTE Band5	20600	844	25RB-High	Right Tilt	0mm	\	22.91	24.00	0.196	0.25	0.157	0.20	-0.11
Body	LTE Band5	20600	844	1RB-Low	Front	10mm	\	24.17	25	0.267	0.32	0.204	0.25	-0.15
Body	LTE Band5	20600	844	1RB-Low	Rear	10mm	\	24.17	25	0.338	0.41	0.229	0.28	-0.14
Body	LTE Band5	20600	844	1RB-Low	Left Edge	10mm	\	24.17	25	0.278	0.34	0.193	0.23	0.02
Body	LTE Band5	20600	844	1RB-Low	Right Edge	10mm	Fig.A18	24.17	25	0.364	0.44	0.253	0.31	0.14
Body	LTE Band5	20600	844	1RB-Low	Bottom Edge	10mm	\	24.17	25	0.054	0.07	0.031	0.04	-0.14
Body	LTE Band5	20600	844	25RB-High	Front	10mm	\	22.91	24.00	0.186	0.24	0.121	0.16	0.00
Body	LTE Band5	20600	844	25RB-High	Rear	10mm	\	22.91	24.00	0.257	0.33	0.172	0.22	-0.13
Body	LTE Band5	20600	844	25RB-High	Left Edge	10mm	\	22.91	24.00	0.236	0.30	0.163	0.21	-0.08
Body	LTE Band5	20600	844	25RB-High	Right Edge	10mm	\	22.91	24.00	0.275	0.35	0.191	0.25	0.14
Body	LTE Band5	20600	844	25RB-High	Bottom Edge	10mm	\	22.91	24.00	0.044	0.06	0.027	0.03	0.17
Head	LTE Band7	21100	2535	1RB-Low	Left Cheek	0mm	\	22.59	23.00	0.051	0.06	0.023	0.03	-0.19
Head	LTE Band7	21100	2535	1RB-Low	Left Tilt	0mm	\	22.59	23.00	0.021	0.02	0.015	0.02	-0.13
Head	LTE Band7	21100	2535	1RB-Low	Right Cheek	0mm	Fig.A19	22.59	23.00	0.061	0.07	0.034	0.04	-0.14
Head	LTE Band7	21100	2535	1RB-Low	Right Tilt	0mm	\	22.59	23.00	0.031	0.03	0.020	0.02	-0.11
Head	LTE Band7	21350	2560	50RB-Low	Left Cheek	0mm	\	21.42	22.00	0.040	0.05	0.020	0.02	-0.19
Head	LTE Band7	21350	2560	50RB-Low	Left Tilt	0mm	\	21.42	22.00	0.022	0.02	0.014	0.02	0.09
Head	LTE Band7	21350	2560	50RB-Low	Right Cheek	0mm	\	21.42	22.00	0.055	0.06	0.033	0.04	0.14
Head	LTE Band7	21350	2560	50RB-Low	Right Tilt	0mm	\	21.42	22.00	0.020	0.02	0.014	0.02	0.16
Body	LTE Band7	21350	2560	1RB-Middle	Front	10mm	\	17.64	18	0.490	0.53	0.223	0.24	0.09
Body	LTE Band7	21100	2535	1RB-Middle	Rear	10mm	\	17.52	18	0.576	0.64	0.265	0.30	-0.06
Body	LTE Band7	21350	2560	1RB-Middle	Rear	10mm	\	17.64	18	0.586	0.64	0.270	0.29	-0.15
Body	LTE Band7	20850	2510	1RB-Middle	Rear	10mm	\	17.44	18	0.635	0.72	0.296	0.34	-0.15
Body	LTE Band7	21350	2560	1RB-Middle	Left Edge	10mm	\	17.64	18	0.066	0.07	0.036	0.04	0.06
Body	LTE Band7	21350	2560	1RB-Middle	Right Edge	10mm	\	17.64	18	0.046	0.05	0.025	0.03	-0.11
Body	LTE Band7	21100	2535	1RB-Middle	Bottom Edge	10mm	\	17.52	18	0.948	1.06	0.411	0.46	-0.02
Body	LTE Band7	21350	2560	1RB-Middle	Bottom Edge	10mm	\	17.64	18	0.885	0.96	0.400	0.44	0.08
Body	LTE Band7	20850	2510	1RB-Middle	Bottom Edge	10mm	Fig.A20	17.44	18	0.961	1.09	0.431	0.49	-0.03
Body	LTE Band7	21350	2560	50RB-Middle	Front	10mm	\	16.44	17.00	0.385	0.44	0.180	0.21	0.09
Body	LTE Band7	21350	2560	50RB-Middle	Rear	10mm	\	16.44	17.00	0.481	0.55	0.217	0.25	0.01
Body	LTE Band7	21350	2560	50RB-Middle	Left Edge	10mm	\	16.44	17.00	0.058	0.07	0.033	0.04	-0.01
Body	LTE Band7	21350	2560	50RB-Middle	Right Edge	10mm	\	16.44	17.00	0.039	0.04	0.022	0.02	-0.08
Body	LTE Band7	21350	2560	50RB-Middle	Bottom Edge	10mm	\	16.44	17.00	0.767	0.87	0.329	0.37	0.14
Body	LTE Band7	20850	2510	50RB-Middle	Bottom Edge	10mm	\	16.33	17.00	0.744	0.87	0.339	0.40	0.05
Body	LTE Band7	21100	2535	50RB-Middle	Bottom Edge	10mm	\	16.40	17.00	0.721	0.83	0.329	0.38	-0.18
Body	LTE Band7	21100	2535	100RB	Bottom Edge	10mm	\	16.44	17.00	0.645	0.73	0.284	0.32	0.01
Body	LTE Band7	21100	2535	1RB-Low	Front	15mm	\	18.51	19.00	0.391	0.44	0.249	0.28	0.01
Body	LTE Band7	21100	2535	1RB-Low	Rear	15mm	Fig.A21	18.51	19.00	0.498	0.56	0.249	0.28	0.12
Body	LTE Band7	21350	2560	50RB-Low	Front	15mm	\	17.51	18.00	0.370	0.41	0.221	0.25	0.07
Body	LTE Band7	21350	2560	50RB-Low	Rear	15mm	\	17.51	18.00	0.454	0.51	0.210	0.24	0.05
Head	LTE Band12	23095	707.5	1RB-High	Left Cheek	0mm	Fig.A22	24.80	25	0.350	0.37	0.258	0.27	-0.05
Head	LTE Band12	23095	707.5	1RB-High	Left Tilt	0mm	\	24.80	25	0.209	0.22	0.165	0.17	-0.04
Head	LTE Band12	23095	707.5	1RB-High	Right Cheek	0mm	\	24.80	25	0.294	0.31	0.232	0.24	0.17
Head	LTE Band12	23095	707.5	1RB-High	Right Tilt	0mm	\	24.80	25	0.221	0.23	0.177	0.19	0.18
Head	LTE Band12	23095	707.5	25RB-Low	Left Cheek	0mm	\	23.58	24.00	0.290	0.32	0.216	0.24	0.02
Head	LTE Band12	23095	707.5	25RB-Low	Left Tilt	0mm	\	23.58	24.00	0.168	0.18	0.133	0.15	0.10
Head	LTE Band12	23095	707.5	25RB-Low	Right Cheek	0mm	\	23.58	24.00	0.278	0.31	0.217	0.24	-0.03
Head	LTE Band12	23095	707.5	25RB-Low	Right Tilt	0mm	\	23.58	24.00	0.177	0.19	0.142	0.16	-0.14
Body	LTE Band12	23095	707.5	1RB-High	Front	10mm	\	24.80	25	0.312	0.33	0.242	0.25	-0.18
Body	LTE Band12	23095	707.5	1RB-High	Rear	10mm	\	24.80	25	0.453	0.47	0.342	0.36	0.02
Body	LTE Band12	23095	707.5	1RB-High	Left Edge	10mm	\	24.80	25	0.333	0.35	0.236	0.25	-0.01
Body	LTE Band12	23095	707.5	1RB-High	Right Edge	10mm	Fig.A23	24.80	25	0.473	0.50	0.333	0.35	-0.14
Body	LTE Band12	23095	707.5	1RB-High	Bottom Edge	10mm	\	24.80	25	0.071	0.07	0.043	0.04	0.15
Body	LTE Band12	23095	707.5	50RB-Middle	Front	10mm	\	23.58	24.00	0.262	0.29	0.202	0.22	0.11
Body	LTE Band12	23095	707.5	50RB-Middle	Rear	10mm	\	23.58	24.00	0.376	0.41	0.286	0.32	0.09
Body	LTE Band12	23095	707.5	50RB-Middle	Left Edge	10mm	\	23.58	24.00	0.308	0.34	0.216	0.24	0.17
Body	LTE Band12	23095	707.5	50RB-Middle	Right Edge	10mm	\	23.58	24.00	0.349	0.38	0.247	0.27	0.08
Body	LTE Band12	23095	707.5	50RB-Middle	Bottom Edge	10mm	\	23.58	24.00	0.052	0.06	0.030	0.03	-0.01
Head	LTE Band13	23230	782	1RB-High	Left Cheek	0mm	Fig.A24	24.22	25.00	0.371	0.44	0.267	0.32	0.08
Head	LTE Band13	23230	782	1RB-High	Left Tilt	0mm	\	24.22	25.00	0.187	0.22	0.149	0.18	0.03
Head	LTE Band13	23230	782	1RB-High	Right Cheek	0mm	\	24.22	25.00	0.360	0.43	0.265	0.32	0.04
Head	LTE Band13	23230	782	1RB-High	Right Tilt	0mm	\	24.22	25.00	0.178	0.21	0.146	0.17	0.08
Head	LTE Band13	23230	782	25RB-Low	Left Cheek	0mm	\	23.27	24.00	0.324	0.38	0.233	0.28	0.02
Head	LTE Band13	23230	782	25RB-Low	Left Tilt	0mm	\	23.27	24.00	0.166	0.20	0.132	0.16	0.07
Head	LTE Band13	23230	782	25RB-Low	Right Cheek	0mm	\	23.27	24.00	0.275	0.33	0.216	0.26	-0.13
Head	LTE Band13	23230	782	25RB-Low	Right Tilt	0mm	\	23.27	24.00	0.171	0.20	0.137	0.16	0.15
Body	LTE Band13	23230	782	1RB-High	Front	10mm	\	24.22	25.00	0.261	0.31	0.168	0.20	-0.01
Body	LTE Band13	23230	782	1RB-High	Rear	10mm	Fig.A25	24.22	25.00	0.353	0.42	0.221	0.26	0.05
Body	LTE Band13	23230	782	1RB-High	Left Edge	10mm	\	24.22	25.00	0.220	0.26	0.147	0.18	0.07
Body	LTE Band13	23230	782	1RB-High	Right Edge	10mm	\	24.22	25.00	0.283	0.34	0.192	0.23	0.06
Body	LTE Band13	23230	782	1RB-High	Bottom Edge	10mm	\	24.22	25.00	0.059	0.07	0.032	0.04	0.08
Body	LTE Band13	23230	782	25RB-Low	Front	10mm	\	23.27	24.00	0.192	0.23	0.141	0.17	0.02
Body	LTE Band13	23230	782	25RB-Low	Rear	10mm	\	23.27	24.00	0.262	0.31	0.168	0.20	0.00
Body	LTE Band13	23230	782	25RB-Low	Left Edge	10mm	\	23.27	24.00	0.209	0.25	0.140	0.17	0.02
Body	LTE Band13	23230	782	25RB-Low	Right Edge	10mm	\	23.27	24.00	0.260	0.31	0.174	0.21	-0.08
Body	LTE Band13	23230	782	25RB-Low	Bottom Edge	10mm	\	23.27	24.00	0.044	0.05	0.023	0.03	0.07

RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
Head	LTE Band41 pc3	40185	2549.5	1RB-Middle	Left Cheek	0mm	\	23.68	24.00	0.024	0.03	0.011	0.01	-0.08
Head	LTE Band41 pc3	40185	2549.5	1RB-Middle	Left Tilt	0mm	\	23.68	24.00	0.015	0.02	0.011	0.01	-0.15
Head	LTE Band41 pc3	40185	2549.5	1RB-Middle	Right Cheek	0mm	Fig.A26	23.68	24.00	0.033	0.04	0.021	0.02	0.07
Head	LTE Band41 pc3	40185	2549.5	1RB-Middle	Right Tilt	0mm	\	23.68	24.00	0.023	0.02	0.013	0.01	-0.09
Head	LTE Band41 pc3	40620	2593	50RB-Low	Left Cheek	0mm	\	22.67	23.00	0.025	0.03	0.021	0.02	-0.13
Head	LTE Band41 pc3	40620	2593	50RB-Low	Left Tilt	0mm	\	22.67	23.00	0.017	0.02	0.013	0.01	-0.01
Head	LTE Band41 pc3	40620	2593	50RB-Low	Right Cheek	0mm	\	22.67	23.00	0.030	0.03	0.018	0.02	0.17
Head	LTE Band41 pc3	40620	2593	50RB-Low	Right Tilt	0mm	\	22.67	23.00	0.012	0.01	0.010	0.01	0.02
Head	LTE Band41 pc3	39750	2560	1RB-Middle	Right Cheek	0mm	ULCA	23.01	24.00	0.027	0.03	0.017	0.02	-0.10
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Front	10mm	\	20.34	21.00	0.454	0.53	0.225	0.26	0.17
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Rear	10mm	\	20.34	21.00	0.501	0.58	0.273	0.32	0.05
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Left Edge	10mm	\	20.34	21.00	0.070	0.08	0.041	0.05	0.01
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Right Edge	10mm	\	20.34	21.00	0.051	0.06	0.029	0.03	-0.12
Body	LTE Band41 pc3	41490	2680	1RB-Middle	Bottom Edge	10mm	\	19.95	21.00	0.813	1.04	0.400	0.51	0.14
Body	LTE Band41 pc3	39750	2506	1RB-Middle	Bottom Edge	10mm	\	20.08	21.00	0.843	1.04	0.390	0.48	0.16
Body	LTE Band41 pc3	40620	2593	1RB-Middle	Bottom Edge	10mm	\	20.09	21.00	0.828	1.02	0.411	0.51	0.02
Body	LTE Band41 pc3	41055	2636.5	1RB-Middle	Bottom Edge	10mm	\	20.18	21.00	0.815	0.98	0.371	0.45	-0.04
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Bottom Edge	10mm	Fig.A27	20.34	21.00	0.920	1.07	0.422	0.49	-0.15
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Front	10mm	\	19.14	20.00	0.336	0.41	0.166	0.20	-0.04
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Rear	10mm	\	19.14	20.00	0.415	0.51	0.200	0.24	0.13
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Left Edge	10mm	\	19.14	20.00	0.048	0.06	0.029	0.04	-0.19
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Right Edge	10mm	\	19.14	20.00	0.034	0.04	0.020	0.02	0.00
Body	LTE Band41 pc3	41490	2680	50RB-Low	Bottom Edge	10mm	\	18.87	20.00	0.634	0.82	0.302	0.39	-0.14
Body	LTE Band41 pc3	41055	2636.5	50RB-Low	Bottom Edge	10mm	\	18.87	20.00	0.601	0.78	0.294	0.38	-0.09
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Bottom Edge	10mm	\	19.14	20.00	0.647	0.79	0.311	0.38	-0.04
Body	LTE Band41 pc3	40620	2593	50RB-Low	Bottom Edge	10mm	\	19.03	20.00	0.681	0.85	0.317	0.40	-0.03
Body	LTE Band41 pc3	39750	2506	50RB-Low	Bottom Edge	10mm	\	18.90	20.00	0.706	0.91	0.326	0.42	-0.14
Body	LTE Band41 pc3	39750	2560	1RB-Middle	Bottom Edge	10mm	ULCA	19.81	21.00	0.794	1.04	0.301	0.40	0.11
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Front	15mm	\	23.13	24.00	0.460	0.56	0.239	0.29	0.06
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Rear	15mm	Fig.A28	23.13	24.00	0.565	0.69	0.296	0.36	0.04
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Front	15mm	\	22.08	23.00	0.344	0.42	0.183	0.23	-0.12
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Rear	15mm	\	22.08	23.00	0.428	0.53	0.224	0.28	0.16
Body	LTE Band41 pc3	39750	2560	1RB-Middle	Rear	15mm	ULCA	22.54	24.00	0.460	0.64	0.261	0.37	0.11
Head	LTE Band41 pc2	40185	2549.5	1RB-Low	Left Cheek	0mm	\	24.88	25.00	0.026	0.03	0.013	0.01	0.06
Head	LTE Band41 pc2	40185	2549.5	1RB-Low	Left Tilt	0mm	\	24.88	25.00	0.016	0.02	0.011	0.01	-0.07
Head	LTE Band41 pc2	40185	2549.5	1RB-Low	Right Cheek	0mm	Fig.A29	24.88	25.00	0.038	0.04	0.021	0.02	-0.07
Head	LTE Band41 pc2	40185	2549.5	1RB-Low	Right Tilt	0mm	\	24.88	25.00	0.022	0.02	0.013	0.01	0.19
Head	LTE Band41 pc2	40185	2549.5	50RB-Low	Left Cheek	0mm	\	23.69	24.00	0.026	0.03	0.017	0.02	-0.12
Head	LTE Band41 pc2	40185	2549.5	50RB-Low	Left Tilt	0mm	\	23.69	24.00	0.015	0.02	0.012	0.01	-0.13
Head	LTE Band41 pc2	40185	2549.5	50RB-Low	Right Cheek	0mm	\	23.69	24.00	0.032	0.03	0.018	0.02	0.08
Head	LTE Band41 pc2	40185	2549.5	50RB-Low	Right Tilt	0mm	\	23.69	24.00	0.016	0.02	0.014	0.02	-0.07
Head	LTE Band41 pc2	39750	2560	1RB-Low	Right Cheek	0mm	ULCA	24.2	25.00	0.029	0.03	0.019	0.02	0.09
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Front	10mm	\	21.36	22.00	0.432	0.50	0.216	0.25	0.05
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Rear	10mm	\	21.36	22.00	0.510	0.59	0.240	0.28	-0.06
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Left Edge	10mm	\	21.36	22.00	0.068	0.08	0.040	0.05	-0.07
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Right Edge	10mm	\	21.36	22.00	0.045	0.05	0.026	0.03	0.06
Body	LTE Band41 pc2	40620	2593	1RB-Low	Bottom Edge	10mm	\	21.30	22.00	0.870	1.02	0.399	0.47	-0.01
Body	LTE Band41 pc2	39750	2506	1RB-Low	Bottom Edge	10mm	Fig.A30	20.62	22.00	0.951	1.31	0.435	0.60	0.16
Body	LTE Band41 pc2	41490	2680	1RB-Low	Bottom Edge	10mm	\	20.85	22.00	0.704	0.92	0.330	0.43	-0.19
Body	LTE Band41 pc2	41055	2636.5	1RB-Low	Bottom Edge	10mm	\	20.60	22.00	0.940	1.30	0.412	0.57	-0.16
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Bottom Edge	10mm	\	21.36	22.00	0.931	1.08	0.420	0.49	-0.17
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Front	10mm	\	20.19	21.00	0.403	0.49	0.194	0.23	0.01
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Rear	10mm	\	20.19	21.00	0.445	0.54	0.209	0.25	-0.13
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Left Edge	10mm	\	20.19	21.00	0.055	0.07	0.032	0.04	-0.19
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Right Edge	10mm	\	20.19	21.00	0.037	0.04	0.021	0.03	-0.17
Body	LTE Band41 pc2	41055	2636.5	50RB-Low	Bottom Edge	10mm	\	19.92	21.00	0.679	0.87	0.310	0.40	-0.18
Body	LTE Band41 pc2	40620	2593	50RB-Low	Bottom Edge	10mm	\	20.12	21.00	0.679	0.83	0.310	0.38	0.05
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Bottom Edge	10mm	\	20.19	21.00	0.679	0.82	0.310	0.37	0.00
Body	LTE Band41 pc2	39750	2506	50RB-Low	Bottom Edge	10mm	\	19.86	21.00	0.704	0.92	0.335	0.44	0.10
Body	LTE Band41 pc2	41490	2680	50RB-Low	Bottom Edge	10mm	\	19.93	21.00	0.543	0.70	0.264	0.34	0.02
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Bottom Edge	10mm	\	20.18	21.00	0.740	0.89	0.333	0.40	0.14
Body	LTE Band41 pc2	39750	2506	100RB	Bottom Edge	10mm	\	20.62	22.00	0.929	1.28	0.427	0.59	-0.10
Body	LTE Band41 pc2	39750	2560	1RB-Low	Bottom Edge	10mm	ULCA	20.65	22.00	0.935	1.28	0.401	0.55	0.11
Body	LTE Band41 pc2	40620	2593	1RB-Middle	Front	15mm	\	24.02	25.00	0.410	0.51	0.219	0.27	-0.16
Body	LTE Band41 pc2	40620	2593	1RB-Middle	Rear	15mm	Fig.A31	24.02	25.00	0.502	0.63	0.261	0.33	-0.17
Body	LTE Band41 pc2	40620	2593	50RB-Low	Front	15mm	\	23.12	24.00	0.301	0.37	0.161	0.20	-0.18
Body	LTE Band41 pc2	40620	2593	50RB-Low	Rear	15mm	\	23.12	24.00	0.359	0.44	0.190	0.23	-0.02
Head	LTE Band66	132072	1720	1RB-High	Left Cheek	0mm	\	24.48	24.5	0.129	0.13	0.086	0.09	0.00
Head	LTE Band66	132072	1720	1RB-High	Left Tilt	0mm	\	24.48	24.5	0.066	0.07	0.044	0.04	0.09
Head	LTE Band66	132072	1720	1RB-High	Right Cheek	0mm	Fig.A32	24.48	24.5	0.155	0.16	0.102	0.10	0.08
Head	LTE Band66	132072	1720	1RB-High	Right Tilt	0mm	\	24.48	24.5	0.081	0.08	0.053	0.05	-0.05
Head	LTE Band66	132072	1720	50RB-Middle	Left Cheek	0mm	\	23.11	23.50	0.081	0.09	0.055	0.06	-0.09
Head	LTE Band66	132072	1720	50RB-Middle	Left Tilt	0mm	\	23.11	23.50	0.044	0.05	0.030	0.03	0.08
Head	LTE Band66	132072	1720	50RB-Middle	Right Cheek	0mm	\	23.11	23.50	0.100	0.11	0.066	0.07	-0.07
Head	LTE Band66	132072	1720	50RB-Middle	Right Tilt	0mm	\	23.11	23.50	0.047	0.05	0.030	0.03	0.02
Body	LTE Band66	132572	1770	1RB-High	Front	10mm	\	21.19	21.5	0.445	0.48	0.264	0.28	-0.19
Body	LTE Band66	132322	1745	1RB-High	Rear	10mm	\	21.11	21.5	0.656	0.72	0.359	0.39	-0.03
Body	LTE Band66	132572	1770	1RB-High	Rear	10mm	\	21.19	21.5	0.496	0.53	0.274	0.29	0.01
Body	LTE Band66	132072	1720	1RB-High	Rear	10mm	\	21.15	21.5	0.483	0.52	0.272	0.30	0.01
Body	LTE Band66	132572	1770	1RB-High	Left Edge	10mm	\	21.19	21.5	0.062	0.07	0.037	0.04	-0.18
Body	LTE Band66	132572	1770	1RB-High	Right Edge	10mm	\	21.19	21.5	0.115	0.12	0.071	0.08	-0.06
Body	LTE Band66	132572	1770	1RB-High	Bottom Edge	10mm	\	21.19	21.5	0.966	1.04	0.527	0.57	-0.17
Body	LTE Band66	132322	1745	1RB-High	Bottom Edge	10mm	Fig.A33	21.11	21.5	0.996	1.09	0.547	0.60	-0.13
Body	LTE Band66	132072	1720	1RB-High	Bottom Edge	10mm	\	21.15	21.5	0.940	1.02	0.526	0.57	0.02
Body	LTE Band66	132572	1770	50RB-High	Front	10mm	\	20.00	20.50	0.353	0.40	0.210	0.24	0.11
Body	LTE Band66	132572	1770	50RB-High	Rear	10mm	\	20.00	20.50	0.484	0.54	0.269	0.30	-0.18
Body	LTE Band66	132322	1745	50RB-High	Rear	10mm	\	19.71	20.50	0.493	0.59	0.276	0.33	0.18
Body	LTE Band66	132072	1720	50RB-High	Rear	10mm	\	19.92	20.50	0.495	0.57	0.278	0.32	-0.08
Body	LTE Band66	132572	1770	50RB-High	Left Edge	10mm	\	20.00	20.50	0.064	0.07	0.039	0.04	0.04
Body	LTE Band66	132572	1770	50RB-High	Right Edge	10mm	\	20.00	20.50	0.097	0.11	0.059	0.07	-0.06
Body	LTE Band66	132572	1770	50RB-High	Bottom Edge	10mm	\	20.00	20.50	0.732	0.82	0.406	0.46	0.10
Body	LTE Band66	132322	1745	50RB-High	Bottom Edge	10mm	\	19.71	20.50	0.762	0.91	0.423	0.51	0.14
Body	LTE Band66	132072	1720	50RB-High	Bottom Edge	10mm	\	19.92	20.50	0.798	0.91	0.444	0.51	0.00
Body	LTE Band66	132072	1720	50RB-High	Bottom Edge	10mm	\	19.85	20.50	0.737	0.86	0.414	0.48	-0.17
Body	LTE Band66	132072	1720	100RB	Bottom Edge	10mm	\	19.85	20.50	0.762	0.89	0.413	0.48	-0.13
Body	LTE Band66	132072	1720	100RB	Rear	10mm	\	19.85	20.50	0.406	0.47	0.223	0.26	-0.04
Body	LTE Band66	132072	1720	1RB-High	Front	15mm	\	22.13	22.5	0.368	0.40	0.235	0.26	0.11
Body	LTE Band66	132072	1720	1RB-High	Rear	15mm	Fig.A34	22.13	22.5	0.498	0.54	0.304	0.33	0.17
Body	LTE Band66	132072	1720	50RB-High	Front	15mm	\	20.89	21.50	0.295	0.34	0.188	0.22	-0.12
Body	LTE Band66	132072	1720	50RB-High	Rear	15mm	\	20.89	21.50	0.397	0.46	0.244	0.28	-0.11
Head	LTE Band71	133322	683	1RB-Middle	Left Cheek	0mm	Fig.A35	24.12	25.00	0.281	0.34	0.212	0.26	0.16
Head	LTE Band71	133322	683	1RB-Middle	Left Tilt	0mm	\	24.12	25.00	0.158	0.19	0.128	0.16	0.09
Head	LTE Band71	133322	683	1RB-Middle	Right Cheek	0mm	\	24.12	25.00	0.254	0.31	0.203	0.25	-0.17
Head	LTE Band71	133322	683	1RB-Middle	Right Tilt	0mm	\	24.12	25.00	0.128	0.16	0.105	0.13	0.09
Head	LTE Band71	133372	688	50RB-High	Left Cheek	0mm	\	22.98	24.00	0.200	0.25	0.152	0.19	0.00
Head	LTE Band71	133372	688	50RB-High	Left Tilt	0mm	\	22.98	24.00	0.120	0.15	0.096	0.12	-0.11
Head	LTE Band71	133372	688	50RB-High	Right Cheek	0mm	\	22.98	24.00	0.156	0.20	0.125	0.16	0.13
Head	LTE Band71	133372	688	50RB-High	Right Tilt	0mm	\	22.98	24.00	0.103	0.13	0.085	0.11	0.16
Body	LTE Band71	133322	683	1RB-Middle	Front	10mm	\	24.12	25.00	0.219	0.27	0.151	0.18	-0.06
Body	LTE Band71	133322	683	1RB-Middle	Rear	10mm	Fig.A36	24.12	25.00	0.303	0.37	0.212	0.26	0.19
Body	LTE Band71	133322	683	1RB-Middle	Left Edge	10mm	\	24.12	25.00	0.210	0.26	0.137	0.17	-0.18
Body	LTE Band71	133322	683	1RB-Middle	Right Edge	10mm	\	24.12	25.00	0.291	0.36	0.186	0.23	-0.06
Body	LTE Band71	133322	683	1RB-Middle	Bottom Edge	10mm	\	24.12	25.00	0.058	0.07	0.030	0.04	0.01
Body	LTE Band71	133372	688	50RB-High	Front	10mm	\	22.98	24.00	0.186	0.24	0.129	0.16	0.04
Body	LTE Band71	133372	688	50RB-High	Rear	10mm	\	22.98	24.00	0.243	0.31	0.170	0.22	0.18
Body	LTE Band71	133372	688	50RB-High	Left Edge	10mm	\	22.98	24.00	0.185	0.23	0.118	0.15	0.17
Body	LTE Band71	133372	688	50RB-High	Right Edge	10mm	\	22.98	24.00	0.248	0.31	0.159	0.20	-0.10
Body	LTE Band71	133372	688	50RB-High	Bottom Edge	10mm	\	22.98	24.00	0.054	0.07	0.027	0.03	-0.01

RF Exposure Conditions	Frequency Band	Channel Number	Mode/RB	Test Position	Distance	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
Head	BT	78	BR/EDR	Left Cheek	0mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Head	BT	78	BR/EDR	Left Tilt	0mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Head	BT	78	BR/EDR	Right Cheek	0mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Head	BT	78	BR/EDR	Right Tilt	0mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	BR/EDR	Front	10mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	BR/EDR	Rear	10mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	BR/EDR	Right Edge	10mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	BR/EDR	Top Edge	10mm	12.28	13.00	<0.01	<0.01	<0.01	<0.01	/

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.

RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Tune up (dBm)	EUT Measured Power (dBm)	Test Position	Measured SAR 10g (W/kg)	Measured SAR 1g (W/kg)	Calculated SAR 10g (W/kg)	Calculated SAR 1g (W/kg)	Power Drift	Figure No./Note
Head	GSM850	251	848.8	31.50	30.93	GPRS (2tx) Right Cheek	0.269	0.348	0.31	0.40	0.02	Fig.A1
Body	GSM850	251	848.8	31.50	30.93	GPRS (2tx) Rear 10mm	0.386	0.686	0.44	0.78	0.19	Fig.A2
Head	GSM1900	810	1909.8	26.50	25.87	GPRS(4TX) Left Cheek	0.123	0.196	0.14	0.23	0.03	Fig.A3
Body	GSM1900	661	1880	25.00	24.06	GPRS(4TX) Bottom Edge 10mm	0.368	0.710	0.46	0.88	-0.12	Fig.A4
Body	GSM1900	661	1880	25.00	24.08	GPRS(4TX) Rear 15mm	0.198	0.348	0.24	0.43	0.05	Fig.A5
Head	WCDMA1900	9400	1880	25.00	24.32	Left Cheek	0.254	0.396	0.30	0.46	-0.04	Fig.A6
Body	WCDMA1900	9262	1852.4	22.00	21.26	Bottom Edge 10mm	0.550	1.020	0.65	1.21	-0.17	Fig.A7
Body	WCDMA1900	9400	1880	23.00	22.21	Front 15mm	0.362	0.620	0.43	0.74	0.08	Fig.A8
Head	WCDMA1700	1513	1752.6	25.00	24.20	Right Cheek	0.123	0.188	0.15	0.23	0.12	Fig.A9
Body	WCDMA1700	1412	1732.5	21.00	20.31	Bottom Edge 10mm	0.491	0.890	0.58	1.04	0.04	Fig.A10
Body	WCDMA1700	1312	1712.4	21.14	22.00	Rear 15mm	0.269	0.347	0.330	0.42	0.10	Fig.A11
Head	WCDMA 850	4183	836.6	25.00	23.59	Right Cheek	0.266	0.346	0.37	0.48	0.06	Fig.A12
Body	WCDMA 850	4183	836.6	25.00	23.59	Rear 10mm	0.238	0.366	0.33	0.51	-0.14	Fig.A13
Head	LTE Band2	18900	1880	25	24.00	1RB-Low Left Cheek	0.238	0.373	0.30	0.47	0.05	Fig.A14
Body	LTE Band2	18700	1860	22	21.20	1RB-Middle Bottom Edge 10mm	0.501	0.923	0.60	1.11	-0.13	Fig.A15
Body	LTE Band2	18900	1880	23	22.22	1RB-Low Rear 15mm	0.233	0.406	0.28	0.49	0.05	Fig.A16
Head	LTE Band5	20600	844	25	24.17	1RB-Low Left Cheek	0.285	0.390	0.35	0.47	-0.02	Fig.A17
Body	LTE Band5	20600	844	25	24.17	1RB-Low Right Edge 10mm	0.253	0.364	0.31	0.44	0.14	Fig.A18
Head	LTE Band7	21100	2535	23.00	22.59	1RB-Low Right Cheek	0.034	0.061	0.04	0.07	-0.14	Fig.A19
Body	LTE Band7	20850	2510	18	17.44	1RB-Middle Bottom Edge 10mm	0.431	0.961	0.49	1.09	-0.03	Fig.A20
Body	LTE Band7	21100	2535	19.00	18.51	1RB-Low Rear 15mm	0.249	0.498	0.28	0.56	0.12	Fig.A21
Head	LTE Band12	23095	707.5	25	24.80	1RB-High Left Cheek	0.258	0.350	0.27	0.37	-0.05	Fig.A22
Body	LTE Band12	23095	707.5	25	24.80	1RB-High Right Edge 10mm	0.333	0.473	0.35	0.50	-0.14	Fig.A23
Head	LTE Band13	23230	782	25.00	24.22	1RB-High Left Cheek	0.267	0.371	0.32	0.44	0.08	Fig.A24
Body	LTE Band13	23230	782	25.00	24.22	1RB-High Rear 10mm	0.221	0.353	0.26	0.42	0.05	Fig.A25
Head	LTE Band41 pc3	40185	2549.5	24.00	23.68	1RB-Middle Right Cheek	0.021	0.033	0.02	0.04	0.07	Fig.A26
Body	LTE Band41 pc3	40185	2549.5	21.00	20.34	1RB-Middle Bottom Edge 10mm	0.422	0.920	0.49	1.07	-0.15	Fig.A27
Body	LTE Band41 pc3	40185	2549.5	24.00	23.13	1RB-Middle Rear 15mm	0.296	0.565	0.36	0.69	0.04	Fig.A28
Head	LTE Band41 pc2	40185	2549.5	25.00	24.88	1RB-Low Right Cheek	0.021	0.038	0.02	0.04	-0.07	Fig.A29
Body	LTE Band41 pc2	39750	2506	22.00	20.62	1RB-Low Bottom Edge 10mm	0.435	0.951	0.60	1.31	0.16	Fig.A30
Body	LTE Band41 pc2	40620	2593	25.00	24.02	1RB-Middle Rear 15mm	0.261	0.502	0.33	0.63	-0.17	Fig.A31
Head	LTE Band66	132072	1720	24.5	24.48	1RB-High Right Cheek	0.102	0.155	0.10	0.16	0.08	Fig.A32
Body	LTE Band66	132322	1745	21.5	21.11	1RB-High Bottom Edge 10mm 10mm	0.547	0.996	0.60	1.09	-0.13	Fig.A33
Body	LTE Band66	132072	1720	22.5	22.13	1RB-High Rear 15mm	0.304	0.498	0.33	0.54	0.17	Fig.A34
Head	LTE Band71	133322	683	25.00	24.12	1RB-Middle Left Cheek	0.212	0.281	0.26	0.34	0.16	Fig.A35
Body	LTE Band71	133322	683	25.00	24.12	1RB-Middle Rear 10mm	0.212	0.303	0.26	0.37	0.19	Fig.A36

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.

Head Evaluation WLAN 2.4 GHz

Table 14.3-1: SAR Values (WLAN - Head)– 802.11b (Fast SAR)

Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Power Drift (dB)
MHz	Ch.										
2437	6	Left	Cheek	/	13.90	15.00	0.662	**0.85**	0.248	**0.32**	0.09
2437	6	Left	Tilt	/	13.90	15.00	0.876	**1.13**	0.326	**0.42**	0.05
2437	6	Right	Cheek	/	13.90	15.00	0.172	**0.22**	0.079	**0.10**	0.13
2437	6	Right	Tilt	/	13.90	15.00	0.239	**0.31**	0.106	**0.14**	0.11

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

Table 14.3-2: SAR Values (WLAN - Head)– 802.11b (Full SAR)

Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Power Drift (dB)
MHz	Ch.										
2437	6	Left	Tilt	Fig.36	13.90	15.00	0.888	**1.14**	0.357	**0.46**	0.19
2437	6	Left	Cheek	/	13.90	15.00	0.659	**0.85**	0.271	**0.35**	0.11
2437	6	Right	Tilt	/	13.90	15.00	0.237	**0.31**	0.101	**0.13**	-0.13
2462	11	Left	Tilt	/	13.87	15.00	0.589	**0.76**	0.240	**0.31**	0.18
2462	11	Left	Cheek	/	13.87	15.00	0.590	**0.77**	0.260	**0.34**	0.09

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 14.3-3: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.						
2437	6	Left	Tilt	98%	100%	**1.14**	**1.16**

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

Body Evaluation WLAN 2.4 GHz

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

Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Power Drift (dB)
MHz	Ch.									
2437	6	Front	/	18.49	20.00	0.553	0.78	0.259	0.37	0.04
2437	6	Rear	/	18.49	20.00	0.511	0.72	0.253	0.36	0.01
2437	6	Right Edge	/	18.49	20.00	0.220	0.31	0.118	0.17	0.09
2437	6	Top Edge	/	18.49	20.00	0.879	1.24	0.432	0.61	0.04
2437	6	Rear 15mm	/	18.49	20.00	0.020	0.03	0.106	0.15	-0.02
2437	6	Top 0mm	/	18.49	20.00	4.900	6.94	1.500	2.12	0.05

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

As shown above table, the initial test position for body is "Top Edge ". So the body SAR of WLAN is presented as below:

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

Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
MHz	Ch.									
2437	6	Top Edge	Fig.37	18.49	20.00	0.910	1.29	0.469	0.66	0.19
2437	6	Front	/	18.49	20.00	0.530	0.75	0.248	0.35	0.01
2412	1	Top Edge	/	18.39	20.00	0.804	1.16	0.403	0.58	-0.05

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.

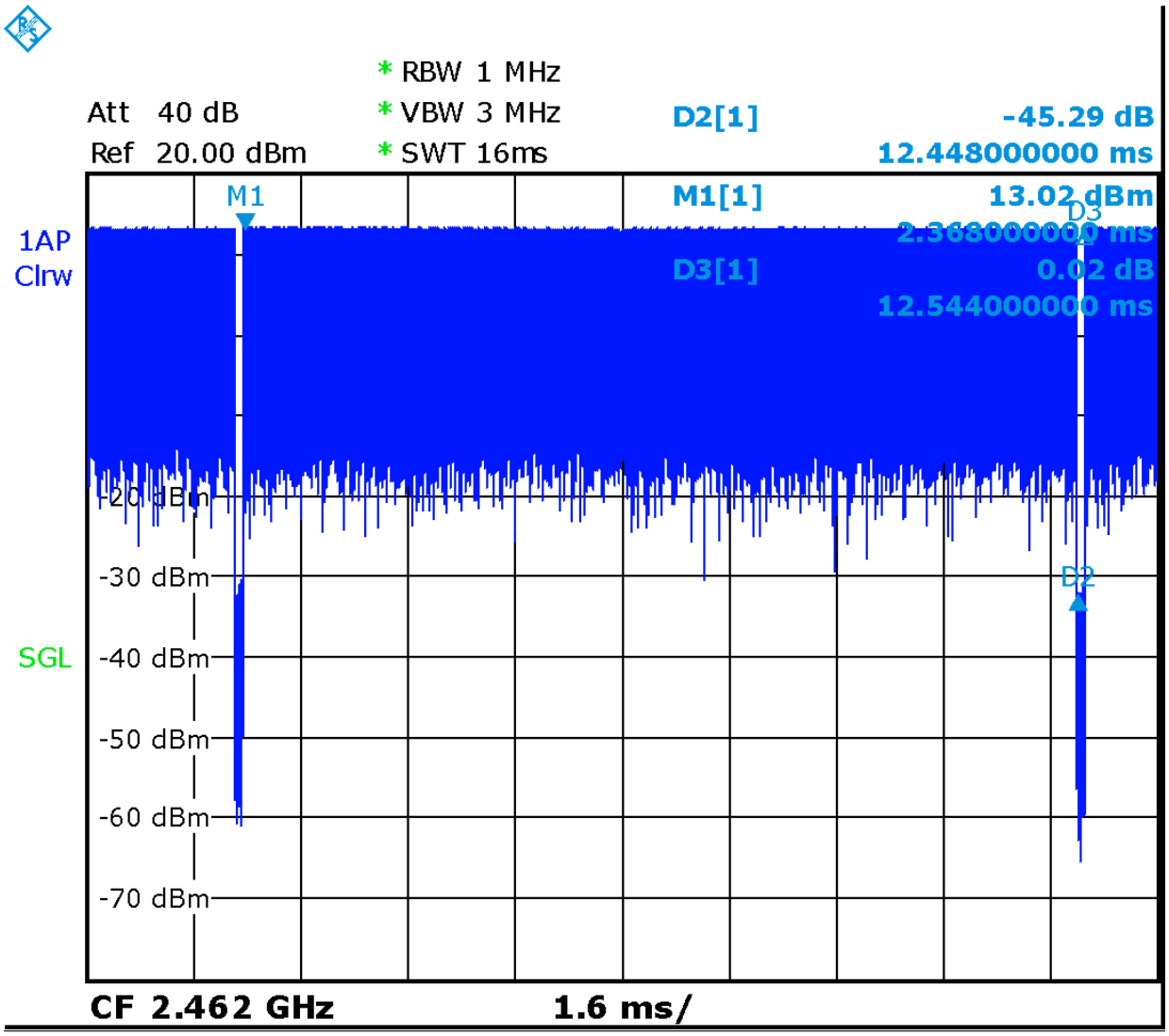
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg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

Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
MHz	Ch.					
2437	6	Top Edge	98%	100%	1.29	1.31

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



Picture 14.1 Duty factor WIFI 2.4G

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	X		X	X	X	X	X	
U-NII-2C	X		X	X	X	X	X	
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 – receiver off

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	71		71	40	50	25	22	
U-NII-2A	71		71	40	50	25	22	
U-NII-2C	71		71	40	50	25	22	
U-NII-3	71		71	40	50	25	22	
§ 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 specified of WLAN antenna – receiver on

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	56		56	32	40	20	18	
U-NII-2A	56		56	32	40	20	18	
U-NII-2C	56		56	32	40	20	18	
U-NII-3	56		56	32	40	20	18	
§ 15.247 (5.8 GHz)								

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

Table 14.4-4: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – receiver off

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 116/120/124/128 132/136/140/144 **65**	100/104/108/112 116/132/136/140 Lower power	102/110/134 Lower power	100/104/108/112 116/132/136/140 Lower power	102/110/134 Lower power	106/122/138 Lower power
U-NII-3	149/153/157/161/165 **66**	149/153/157/161/165 Lower power	151/159 Lower power	149/153/157/161/165 Lower power	151/159 Lower power	155 Lower power

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

Table 14.4-5: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations-receiver on

802.11 mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 **41/39/38/55**	36/40/44/48 Lower power	38/46 Lower power	36/40/44/48 Lower power	38/46 Lower power	42 Lower power
U-NII-2A	52/56/60/64 **45/49/46/38**	52/56/60/64 Lower power	54/62 Lower	52/56/60/64 Lower power	54/62 Lower	58 Lower

			power		power	power
U-NII-2C	100/104/108/112 116/120/124/128 132/136/140/144 **42/37/37/38/40/43/47/45 /41/39/37/38**	100/104/108/112 116/132/136/140 Lower power	102/110 /134 Lower power	100/104/108/112 116/132/136/140 Lower power	102/110 /134 Lower power	106/122 /138 Lower power
U-NII-3	149/153/157/161/165 **43/50/56/57/53**	149/153/157/ 161/165 Lower power	151/159 Lower power	149/153/157/ 161/165 Lower power	151/159 Lower power	155 Lower power

- The **bold numbers** is the maximum output measured power (mW).
- Channels with measured maximum power within 0.25dB are considered to have the same measured output.

  Channels selected for initial test configuration are highlighted in yellow.

Table 14.4-6: Reported SAR of initial test configuration for Head

802.11 mode	**a**	**n**		**ac**		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48 UNII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **1.07**	52/56/60/64	54/62	52/56/60/64	54/62	58
U-NII-2C	100/104/108/112/ 116/120/124/128/ 132/136/140/144 **0.67**	100/104/108/112 116/132/136/140	102/110/118/ 126/134	100/104/108/112 116/132/136/140	102/110 /134	106/122/138
U-NII-3	149/153/157/161 /165 **1.13**	149/153/157/161 /165	151/159	149/153/157/161 /165	151/159	155

Highest measured output power channel tested initially are in yellow highlight.

The tune up of UNII-1 is less than UNII-2A. SAR is measured for UNII-2A band first. Adjusted SAR of UNII-2A band is ≤ 1.2 W/kg. SAR is not required for UNII-1 band.

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

802.11 mode	**a**	**n**		**ac**		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48 UNII-2A exclusion applied	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64	52/56/60/64	54/62	52/56/60/64	54/62	58

	0.65					
U-NII-2C	100/104/108/112/116/120/124/128/132/136/140/144 **0.55**	100/104/108/112 116/132/136/140	102/110/118/126/134	100/104/108/112 116/132/136/140	102/110/134	106/122/138
U-NII-3	149/153/157/161/165 **0.70**	149/153/157/161/165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight. The tune up of UNII-1 is less than UNII-2A. SAR is measured for UNII-2A band first. Adjusted SAR of UNII-2A band is ≤ 1.2 W/kg. SAR is not required for UNII-1 band.						

Table 14.4-10: SAR Values (WLAN – Head)

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
MHz	Ch.										
5280	56	Right	Cheek	/	16.86	17.70	0.245	0.30	0.082	0.10	0.05
5280	56	Right	Tilt	/	16.86	17.70	0.300	0.36	0.100	0.12	0.19
5280	56	Left	Cheek	/	16.86	17.70	0.564	0.68	0.174	0.21	-0.18
5280	56	Left	Tilt	/	16.86	17.70	0.879	1.07	0.253	0.31	0.06
5280	60	Left	Tilt	/	16.63	17.70	0.750	0.96	0.231	0.30	0.09
5260	52	Left	Tilt	/	16.54	17.70	0.603	0.79	0.201	0.26	-0.08
5620	124	Right	Cheek	/	16.70	17.70	0.187	0.23	0.065	0.08	0.16
5620	124	Right	Tilt	/	16.70	17.70	0.242	0.30	0.080	0.10	-0.19
5620	124	Left	Cheek	/	16.70	17.70	0.413	0.52	0.145	0.18	-0.13
5620	124	Left	Tilt	/	16.70	17.70	0.534	0.67	0.183	0.23	0.07
5805	161	Right	Cheek	/	17.57	17.70	0.242	0.25	0.077	0.08	-0.04
5805	161	Right	Tilt	/	17.57	17.70	0.341	0.35	0.103	0.11	-0.19
5805	161	Left	Cheek	/	17.57	17.70	0.797	0.82	0.208	0.21	0.15
5805	157	Left	Cheek	/	17.52	17.70	0.750	0.78	0.175	0.18	-0.11
5805	161	Left	Tilt	Fig.38	17.57	17.70	1.080	1.11	0.308	0.32	-0.10
5805	157	Left	Tilt	/	17.52	17.70	0.794	0.83	0.281	0.29	0.09
2825	165	Left	Tilt	/	17.25	17.70	0.701	0.78	0.266	0.30	-0.14

Table 14.4-11: SAR Values (WLAN – Body)

Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Power Drift (dB)
MHz	Ch.									
5260	52	Front	/	17.50	18.50	0.144	0.18	0.058	0.07	0.14
5260	52	Rear	/	17.50	18.50	0.263	0.33	0.119	0.15	0.18
5260	52	Right	/	17.50	18.50	0.369	0.46	0.139	0.18	-0.12
5260	52	Top	/	17.50	18.50	0.514	0.65	0.240	0.30	-0.12

5660	132	Front	/	18.11	18.50	0.141	0.15	0.053	0.06	-0.04
5660	132	Rear	/	18.11	18.50	0.368	0.40	0.134	0.15	-0.09
5660	132	Right		18.11	18.50	0.114	0.12	0.028	0.03	-0.07
5660	132	Top	/	18.11	18.50	0.500	0.55	0.172	0.19	-0.10
5805	161	Front	/	18.21	18.50	0.157	0.17	0.055	0.06	0.06
5805	161	Rear	/	18.21	18.50	0.440	0.47	0.162	0.17	-0.09
5805	161	Right	/	18.21	18.50	0.095	0.10	0.031	0.03	0.16
5805	161	Top	Fig.38	18.21	18.50	0.640	0.68	0.215	0.23	0.15
5805	161	Rear	15mm	18.21	18.50	0.341	0.36	0.133	0.14	0.04
5260	52	Top	0mm	17.50	18.50	7.167	9.02	1.805	2.27	0.08

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

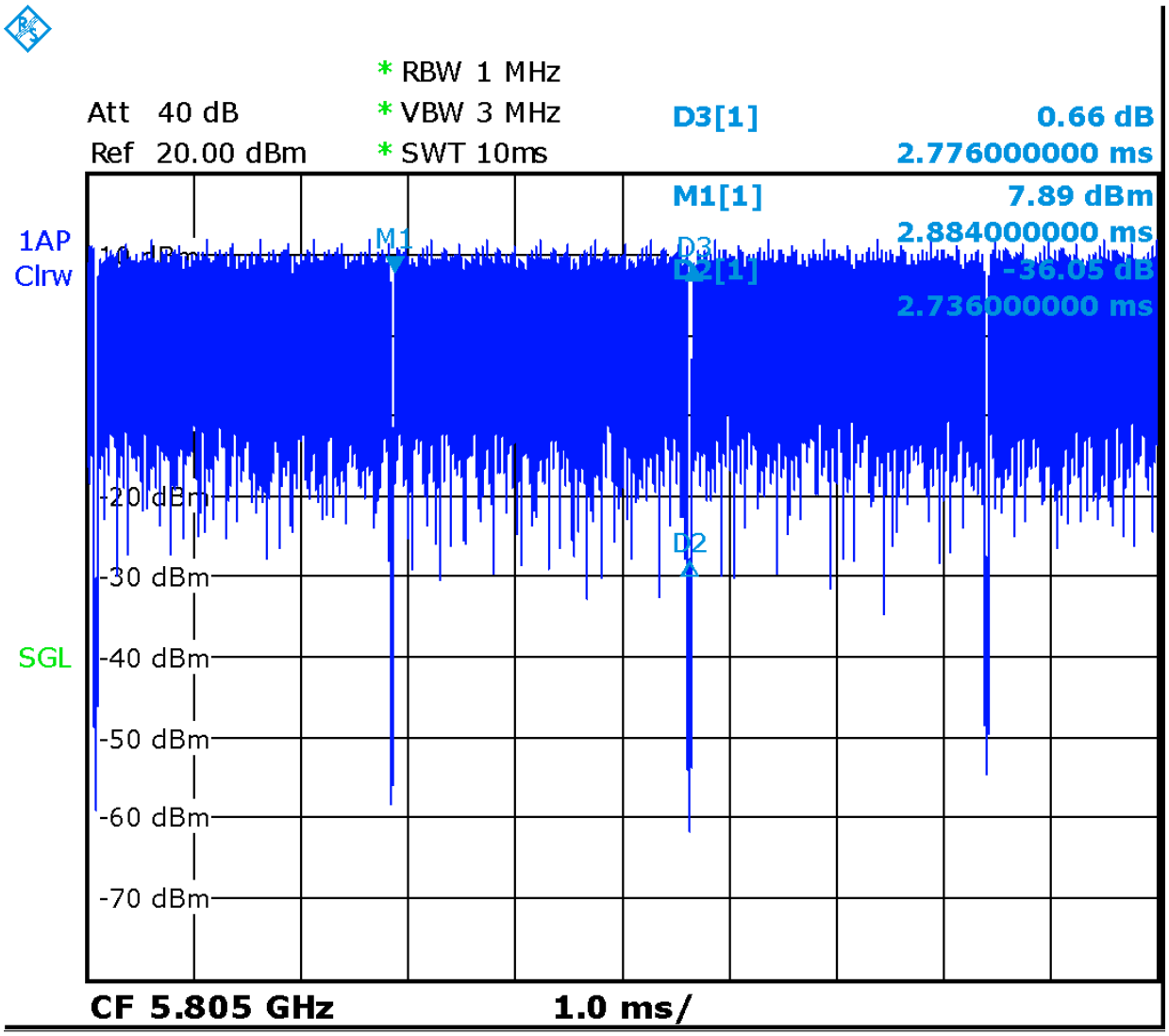
According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 14.4-14: SAR Values (WLAN - Head)

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5805	161	Left	Tilt	98%	100%	**1.11**	**1.13**

Table 14.4-15: SAR Values (WLAN – Body)

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
5805	161	Top Edge	10	98%	100%	**0.69**	**0.70**



Picture 14.3 The plot of duty factor

14.5 SAR Evaluation for Phablet

According to the KDB648474 D04, for smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode 10-g extremity SAR.
3. The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions

For the device of this project, the overall diagonal dimension is 175.5 mm (> 16.0 cm), so this device is a phone as “phablet”.

Table 14.4-1: 10g extremity SAR determination

Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
WCDMA1900	9538	1907.6	RMC	Bottom Edge	10mm	21.23	23.00	0.942	1.42	0.508	0.76	0.02
WCDMA1900	9400	1880	RMC	Bottom Edge	10mm	21.22	23.00	0.993	1.50	0.545	0.82	0.17
WCDMA1900	9262	1852.4	RMC	Bottom Edge	10mm	21.26	23.00	1.020	1.52	0.550	0.82	-0.08
WCDMA1700	1513	1752.6	RMC	Bottom Edge	10mm	20.23	22.00	0.828	1.24	0.460	0.69	-0.16
WCDMA1700	1412	1732.5	RMC	Bottom Edge	10mm	20.31	22.00	0.890	1.31	0.491	0.72	-0.06
LTE Band2	18900	1880	1RB-Middle	Bottom Edge	10mm	21.29	23	0.928	1.38	0.502	0.74	0.14
LTE Band2	18700	1860	1RB-Middle	Bottom Edge	10mm	21.20	23	0.923	1.40	0.501	0.76	-0.15
LTE Band2	19100	1900	1RB-Middle	Bottom Edge	10mm	21.37	23	0.902	1.31	0.491	0.72	-0.09
LTE Band2	18700	1860	50RB-Middle	Bottom Edge	10mm	20.29	22.00	0.810	1.20	0.430	0.64	0.09
LTE Band7	21100	2535	1RB-Middle	Bottom Edge	10mm	17.52	19.00	0.948	1.33	0.411	0.58	-0.08
LTE Band7	21350	2560	1RB-Middle	Bottom Edge	10mm	17.64	19.00	0.885	1.21	0.400	0.55	0.01
LTE Band7	20850	2510	1RB-Middle	Bottom Edge	10mm	17.44	19.00	0.961	1.38	0.431	0.62	-0.02
LTE Band41 pc3	41490	2680	1RB-Middle	Bottom Edge	10mm	19.95	24.00	0.813	2.07	0.400	1.02	-0.07
LTE Band41 pc3	39750	2506	1RB-Middle	Bottom Edge	10mm	20.08	24.00	0.843	2.08	0.390	0.96	0.05
LTE Band41 pc3	40620	2593	1RB-Middle	Bottom Edge	10mm	20.09	24.00	0.828	2.04	0.411	1.01	0.01
LTE Band41 pc3	41055	2636.5	1RB-Middle	Bottom Edge	10mm	20.18	24.00	0.815	1.96	0.371	0.89	-0.12
LTE Band41 pc3	40185	2549.5	1RB-Middle	Bottom Edge	10mm	20.34	24.00	0.920	2.14	0.422	0.98	0.09
LTE Band41 pc3	41490	2680	50RB-Low	Bottom Edge	10mm	18.87	23.00	0.634	1.64	0.302	0.78	-0.12
LTE Band41 pc3	41055	2636.5	50RB-Low	Bottom Edge	10mm	18.87	23.00	0.601	1.56	0.294	0.76	0.05
LTE Band41 pc3	40185	2549.5	50RB-Low	Bottom Edge	10mm	19.14	23.00	0.647	1.57	0.311	0.76	-0.14
LTE Band41 pc3	40620	2593	50RB-Low	Bottom Edge	10mm	19.03	23.00	0.681	1.70	0.317	0.79	-0.18
LTE Band41 pc3	39750	2506	50RB-Low	Bottom Edge	10mm	18.90	23.00	0.706	1.81	0.326	0.84	-0.04
LTE Band41 pc2	40620	2593	1RB-Low	Bottom Edge	10mm	21.30	25.00	0.870	2.04	0.399	0.94	0.05
LTE Band41 pc2	39750	2506	1RB-Low	Bottom Edge	10mm	20.62	25.00	0.951	2.61	0.435	1.19	0.08
LTE Band41 pc2	41490	2680	1RB-Low	Bottom Edge	10mm	20.85	25.00	0.704	1.83	0.330	0.86	0.00
LTE Band41 pc2	41055	2636.5	1RB-Low	Bottom Edge	10mm	20.60	25.00	0.940	2.59	0.412	1.13	-0.06
LTE Band41 pc2	40185	2549.5	1RB-Low	Bottom Edge	10mm	21.36	25.00	0.931	2.15	0.420	0.97	0.08
LTE Band41 pc2	41055	2636.5	50RB-Low	Bottom Edge	10mm	19.92	24.00	0.679	1.74	0.310	0.79	-0.16
LTE Band41 pc2	40620	2593	50RB-Low	Bottom Edge	10mm	20.12	24.00	0.679	1.66	0.310	0.76	-0.06
LTE Band41 pc2	40185	2549.5	50RB-Low	Bottom Edge	10mm	20.19	24.00	0.679	1.63	0.310	0.75	-0.05
LTE Band41 pc2	39750	2506	50RB-Low	Bottom Edge	10mm	19.86	24.00	0.704	1.83	0.335	0.87	-0.07
LTE Band41 pc2	41490	2680	50RB-Low	Bottom Edge	10mm	19.93	24.00	0.543	1.39	0.264	0.67	-0.15
LTE Band41 pc2	40185	2549.5	50RB-Low	Bottom Edge	10mm	20.18	24.00	0.740	1.78	0.333	0.80	-0.03
LTE Band41 pc2	39750	2506	100RB	Bottom Edge	10mm	20.62	24.00	0.929	2.02	0.427	0.93	0.09
LTE Band66	132572	1770	1RB-High	Bottom Edge	10mm	21.19	22.5	0.966	1.31	0.527	0.71	0.11
LTE Band66	132322	1745	1RB-High	Bottom Edge	10mm	21.11	22.5	0.996	1.37	0.547	0.75	-0.03
LTE Band66	132072	1720	1RB-High	Bottom Edge	10mm	21.15	22.5	0.940	1.28	0.526	0.72	-0.13

Table 14.4-2: SAR Values for 10g extremity SAR

RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
Body	WCDMA1900	9262	1852.4	RMC	Bottom Edge	0mm	22.25	23.00	4.680	5.56	2.010	2.39	0.06
Body	WCDMA1900	9538	1907.6	RMC	Bottom Edge	0mm	21.23	23.00	4.248	6.39	1.856	2.79	0.05
Body	WCDMA1900	9400	1880	RMC	Bottom Edge	0mm	21.22	23.00	4.478	6.75	1.990	3.00	-0.19
Body	WCDMA1700	1412	1732.5	RMC	Bottom Edge	0mm	21.26	22.00	5.690	6.75	2.500	2.96	-0.16
Body	WCDMA1700	1513	1752.6	RMC	Bottom Edge	0mm	21.21	22.00	5.300	6.36	2.330	2.79	0.17
Body	LTE Band2	18900	1880	1RB-Low	Bottom Edge	0mm	22.22	23	4.52	5.41	2.04	2.44	-0.06
Body	LTE Band2	18700	1860	1RB-Low	Bottom Edge	0mm	22.22	23	4.495	5.38	1.984	2.37	0.16
Body	LTE Band2	19100	1900	1RB-Low	Bottom Edge	0mm	22.22	23	4.395	5.26	1.997	2.39	-0.17
Body	LTE Band2	18700	1860	50RB-Low	Bottom Edge	0mm	21.28	22.00	3.946	4.66	1.745	2.06	-0.13
Body	LTE Band2	18900	1880	50RB-Low	Bottom Edge	0mm	21.28	22.00	3.821	4.51	1.719	2.03	-0.05
Body	LTE Band2	19100	1900	50RB-Low	Bottom Edge	0mm	21.28	22.00	3.796	4.48	1.713	2.02	-0.01
Body	LTE Band2	18900	1880	100RB	Bottom Edge	0mm	21.12	22.00	3.872	4.74	1.850	2.27	-0.13
Body	LTE Band7	21350	2560	1RB-Low	Bottom Edge	0mm	18.44	19.00	4.090	4.65	1.773	2.02	-0.02
Body	LTE Band7	20850	2510	1RB-Low	Bottom Edge	0mm	18.20	19.00	4.040	4.86	1.509	1.81	-0.07
Body	LTE Band7	21100	2535	1RB-Low	Bottom Edge	0mm	18.51	19.00	4.380	4.90	1.820	2.04	0.05
Body	LTE Band41 pc3	41490	2680	1RB-Middle	Bottom Edge	0mm	22.98	24.00	5.541	7.01	2.379	3.01	0.14
Body	LTE Band41 pc3	39750	2506	1RB-Middle	Bottom Edge	0mm	22.80	24.00	5.745	7.57	2.320	3.06	0.16
Body	LTE Band41 pc3	40620	2593	1RB-Middle	Bottom Edge	0mm	23.06	24.00	5.640	7.00	2.444	3.04	0.02
Body	LTE Band41 pc3	41055	2636.5	1RB-Middle	Bottom Edge	0mm	23.03	24.00	5.554	6.94	2.204	2.76	-0.04
Body	LTE Band41 pc3	40185	2549.5	1RB-Middle	Bottom Edge	0mm	23.13	24.00	6.271	7.66	2.501	3.06	-0.14
Body	LTE Band41 pc3	40185	2549.5	50RB-Low	Bottom Edge	0mm	22.94	23.00	6.040	6.12	2.390	2.42	0.01
Body	LTE Band41 pc3	41490	2680	50RB-Low	Bottom Edge	0mm	21.90	23.00	6.043	2.39	2.390	3.08	-0.14
Body	LTE Band41 pc3	41055	2636.5	50RB-Low	Bottom Edge	0mm	21.92	23.00	5.726	2.33	2.327	2.98	-0.09
Body	LTE Band41 pc3	40620	2593	50RB-Low	Bottom Edge	0mm	21.92	23.00	6.483	2.51	2.507	3.21	-0.03
Body	LTE Band41 pc3	39750	2506	50RB-Low	Bottom Edge	0mm	21.60	23.00	6.500	2.58	2.340	3.23	-0.14
Body	LTE Band41 pc2	39750	2506	1RB-Low	Bottom Edge	0mm	24.02	25.00	7.020	8.80	2.620	3.28	0.17
Body	LTE Band41 pc2	40620	2593	1RB-Low	Bottom Edge	0mm	24.02	25.00	6.426	8.05	2.404	3.01	-0.01
Body	LTE Band41 pc2	41490	2680	1RB-Low	Bottom Edge	0mm	23.78	25.00	5.200	6.89	1.990	2.64	-0.19
Body	LTE Band41 pc2	41055	2636.5	1RB-Low	Bottom Edge	0mm	23.90	25.00	6.939	8.94	2.481	3.20	-0.16
Body	LTE Band41 pc2	40185	2549.5	1RB-Low	Bottom Edge	0mm	23.95	25.00	6.872	8.75	2.530	3.22	-0.17
Body	LTE Band41 pc2	41055	2636.5	50RB-Low	Bottom Edge	0mm	23.90	24.00	5.014	5.13	1.867	1.91	-0.18
Body	LTE Band41 pc2	40620	2593	50RB-Low	Bottom Edge	0mm	23.12	24.00	5.014	6.14	1.867	2.29	0.05
Body	LTE Band41 pc2	40185	2549.5	50RB-Low	Bottom Edge	0mm	23.04	24.00	5.014	6.25	1.867	2.33	0.00
Body	LTE Band41 pc2	39750	2506	50RB-Low	Bottom Edge	0mm	22.76	24.00	5.200	6.92	2.019	2.69	0.10
Body	LTE Band41 pc2	41490	2680	50RB-Low	Bottom Edge	0mm	22.80	24.00	4.011	5.29	1.589	2.10	0.02
Body	LTE Band41 pc2	41055	2636.5	50RB-Low	Bottom Edge	0mm	22.95	24.00	5.460	6.95	2.006	2.55	0.14
Body	LTE Band41 pc2	39750	2506	100RB	Bottom Edge	0mm	22.79	24.00	6.858	9.06	2.572	3.40	-0.10
Body	LTE Band66	132572	1770	1RB-High	Bottom Edge	0mm	21.80	22.5	4.876	5.73	2.195	2.58	-0.17
Body	LTE Band66	132322	1745	1RB-High	Bottom Edge	0mm	22.11	22.5	5.030	5.50	2.280	2.49	-0.13
Body	LTE Band66	132072	1720	1RB-High	Bottom Edge	0mm	22.13	22.5	4.748	5.17	2.191	2.39	0.02

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 (1g)

Frequency		Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz					
9538	1907.6	Bottom Edge	0.942	0.912	1.03	/
9400	1880	Bottom Edge	0.993	0.962	1.03	/
9262	1852.4	Bottom Edge	1.020	0.996	1.02	/
1513	1752.6	Bottom Edge	0.828	0.808	1.02	/
1412	1732.5	Bottom Edge	0.890	0.859	1.04	/
18900	1880	Bottom Edge	0.928	0.898	1.03	/
18700	1860	Bottom Edge	0.923	0.903	1.02	/
19100	1900	Bottom Edge	0.902	0.869	1.04	/
18700	1860	Bottom Edge	0.810	0.778	1.04	/
21100	2535	Bottom Edge	0.948	0.925	1.02	/
21350	2560	Bottom Edge	0.885	0.856	1.03	/
20850	2510	Bottom Edge	0.961	0.929	1.03	/
41490	2680	Bottom Edge	0.813	0.785	1.04	/
39750	2506	Bottom Edge	0.843	0.809	1.04	/
40620	2593	Bottom Edge	0.828	0.793	1.04	/
41055	2636.5	Bottom Edge	0.815	0.790	1.03	/
40185	2549.5	Bottom Edge	0.920	0.889	1.03	/
40620	2593	Bottom Edge	0.870	0.843	1.03	/
39750	2506	Bottom Edge	0.951	0.931	1.02	/
41055	2636.5	Bottom Edge	0.940	0.916	1.03	/

40185	2549.5	Bottom Edge	0.931	0.902	1.03	/
39750	2506	Bottom Edge	0.929	0.910	1.02	/
132572	1770	Bottom Edge	0.966	0.935	1.03	/
132322	1745	Bottom Edge	0.996	0.972	1.02	/
132072	1720	Bottom Edge	0.940	0.905	1.04	/
6	2437	Left Tilt	0.876	0.844	1.04	/
1	2412	Left Tilt	0.850	0.821	1.04	/
6	2437	Top Edge	0.879	0.851	1.03	/
1	2412	Top Edge	0.804	0.769	1.05	/
11	2462	Top Edge	0.803	0.781	1.03	/
56	5280	Left Tilt	0.879	0.854	1.03	/
161	5805	Left Tilt	1.080	1.055	1.02	/

16 Measurement Uncertainty

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

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

16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						19.1	18.9	

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

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
Measurement system										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	∞
2	Isotropy	B	4.7	R	$\sqrt{3}$	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	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
Test sample related										
14	Test sample	A	3.3	N	1	1	1	3.3	3.3	71

	positioning									
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						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	B	0	R	$\sqrt{3}$	1	1	0	0	∞

	conditions-reflection									
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	∞
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	∞
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	∞
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	∞
Test sample related										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
Phantom and set-up										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	∞
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	∞
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	∞
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.5	13.4	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						27.0	26.8	

17 MAIN TEST INSTRUMENTS

Table 17.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5239A	MY55491241	May 31, 2021	One year
02	Power meter	NRP2	106276	May 11, 2021	One year
03	Power sensor	NRP6A	101369		
04	Signal Generator	E4438C	MY49070393	May 14, 2021	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	166370	June 25, 2021	One year
07	E-field Probe	SPEAG EX3DV4	7464	January 26,2022	One year
08	DAE	SPEAG DAE4	549	January 07, 2022	One year
09	Dipole Validation Kit	SPEAG D750V3	1017	July 12,,2021	One year
10	Dipole Validation Kit	SPEAG D835V2	4d069	July 12,,2021	One year
11	Dipole Validation Kit	SPEAG D1750V2	1003	July 12, 2021	One year
12	Dipole Validation Kit	SPEAG D1900V2	5d101	July 15,2021	One year
13	Dipole Validation Kit	SPEAG D2450V2	853	July 26,2021	One year
14	Dipole Validation Kit	SPEAG D2600V2	1012	July 26,2021	One year
15	Dipole Validation Kit	SPEAG D5GHzV2	1060	June 22,2021	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH251 GPRS（2tx） Right Cheek
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 848.8; σ = 0.897 mho/m; εr = 41.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 Duty Cycle: 1:4
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.405 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.985 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.348 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) =0.364 W/kg

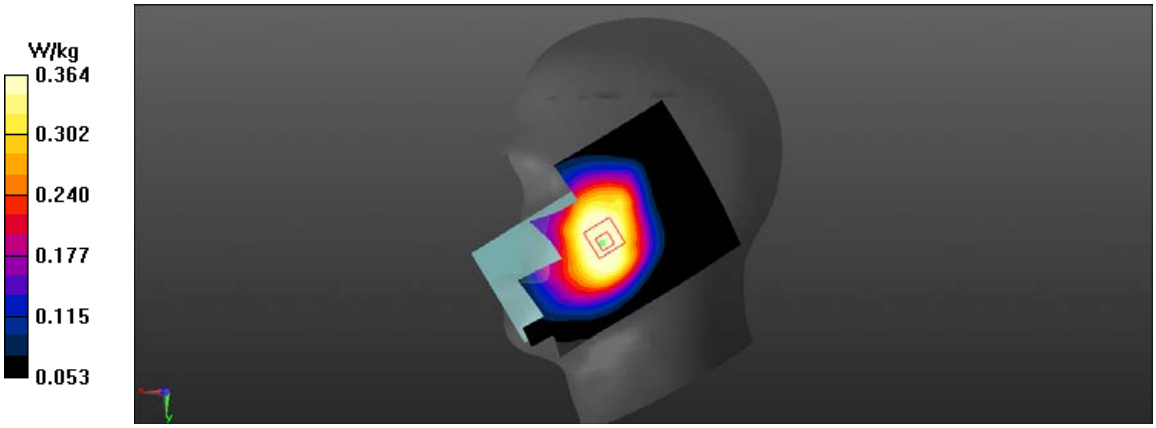


Fig A.1

GSM850_CH251 GPRS（2tx）Rear 10mm
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 848.8; σ = 0.897 mho/m; εr = 41.43; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: GSM850 848.8 Duty Cycle: 1:4
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.718 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.33 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.765 W/kg
SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.386 W/kg
Maximum value of SAR (measured) = 0.699 W/kg

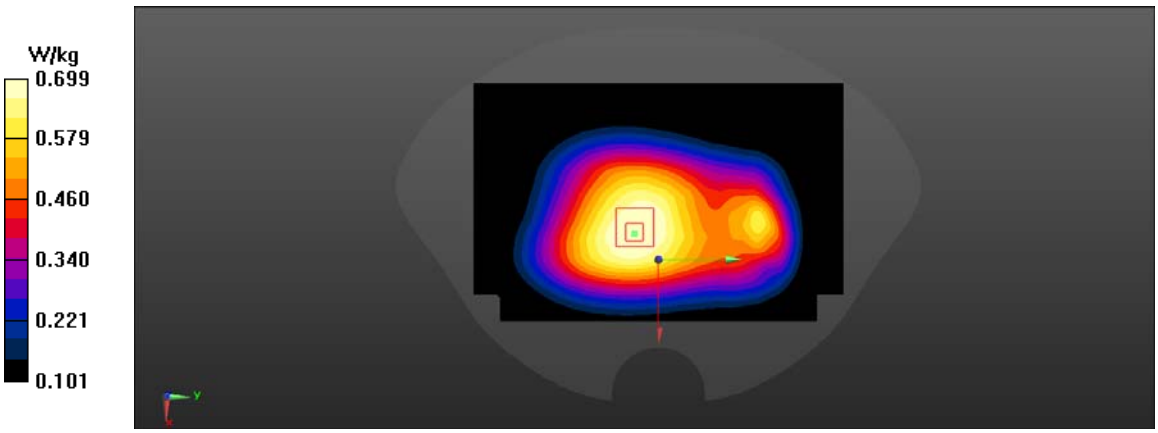


Fig A.2

PCS1900_CH810 GPRS(4TX) Left Cheek
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1909.8; σ = 1.392 mho/m; εr = 39.32; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1909.8 Duty Cycle: 1:2
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.28 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.545 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.323 W/kg
SAR(1 g) = 0.196 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (measured) = 0.273 W/kg

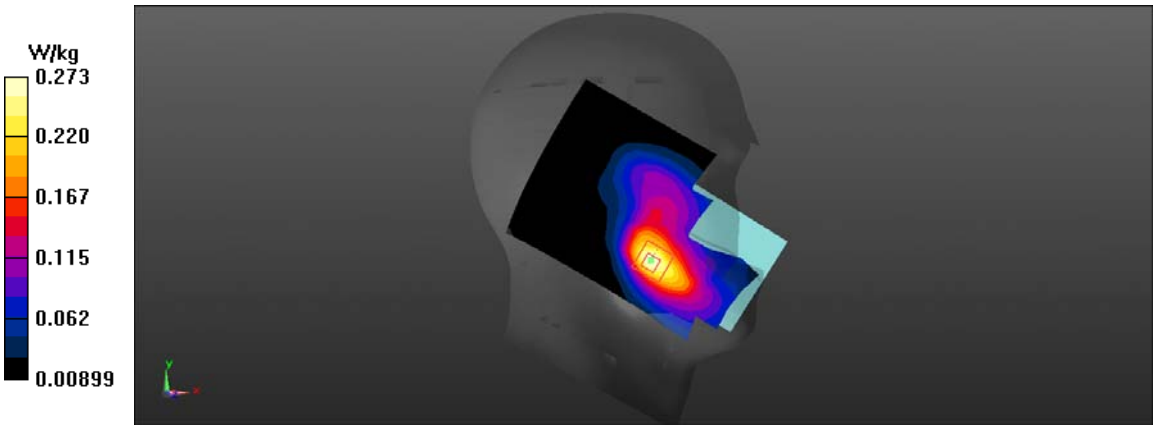


Fig A.3

PCS1900_CH661 GPRS(4TX) Bottom Edge 10mm
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1880 Duty Cycle: 1:2
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.33 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.03 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 0.71 W/kg; SAR(10 g) = 0.368 W/kg
Maximum value of SAR (measured) = 1.34 W/kg

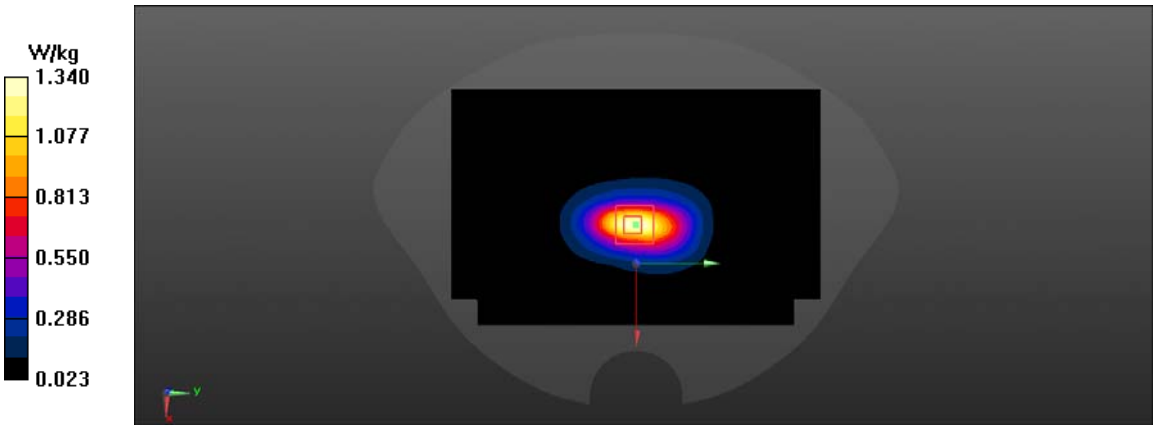


Fig A.4

PCS1900_CH661 GPRS(4TX) Rear 15mm
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: PCS1900 1880 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.378 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.954 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.457 W/kg
SAR(1 g) = 0.348 W/kg; SAR(10 g) = 0.198 W/kg
Maximum value of SAR (measured) = 0.373 W/kg

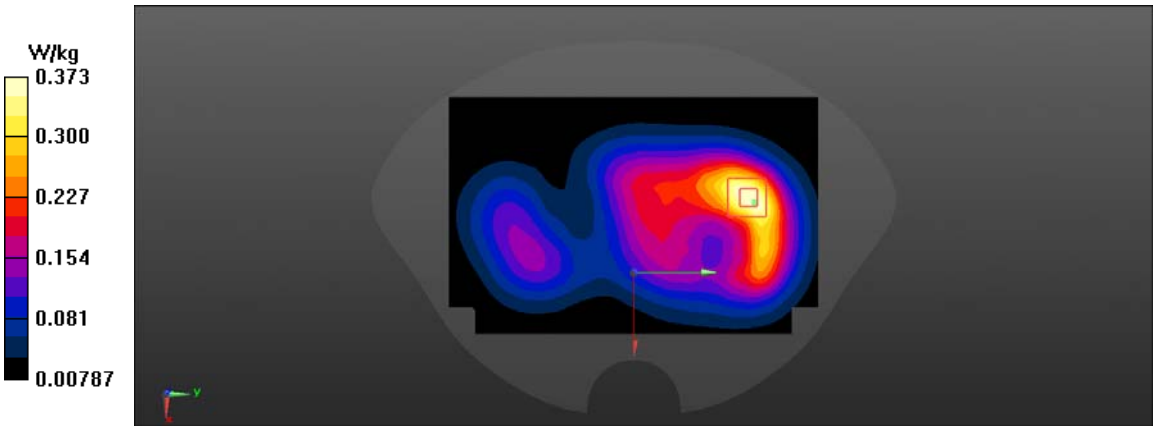


Fig A.5

WCDMA1900-BII_CH9400 Left Cheek
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1880 Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.581 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.771 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.642 W/kg
SAR(1 g) = 0.396 W/kg; SAR(10 g) = 0.254 W/kg
Maximum value of SAR (measured) = 0.543 W/kg

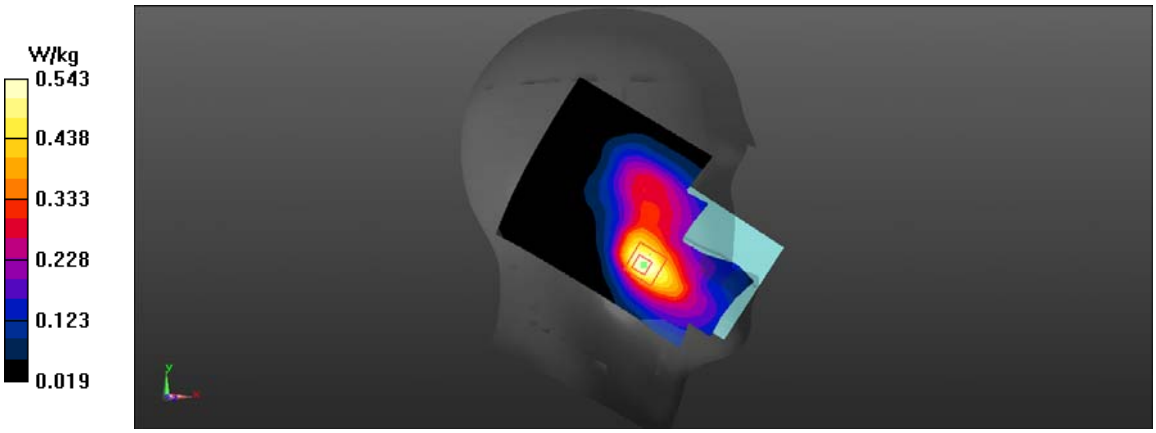


Fig A.6

WCDMA1900-BII_CH9262 Bottom Edge 10mm
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1852.4; σ = 1.336 mho/m; εr = 39.39; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1852.4 Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.67 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.55 W/kg
Maximum value of SAR (measured) = 1.52 W/kg

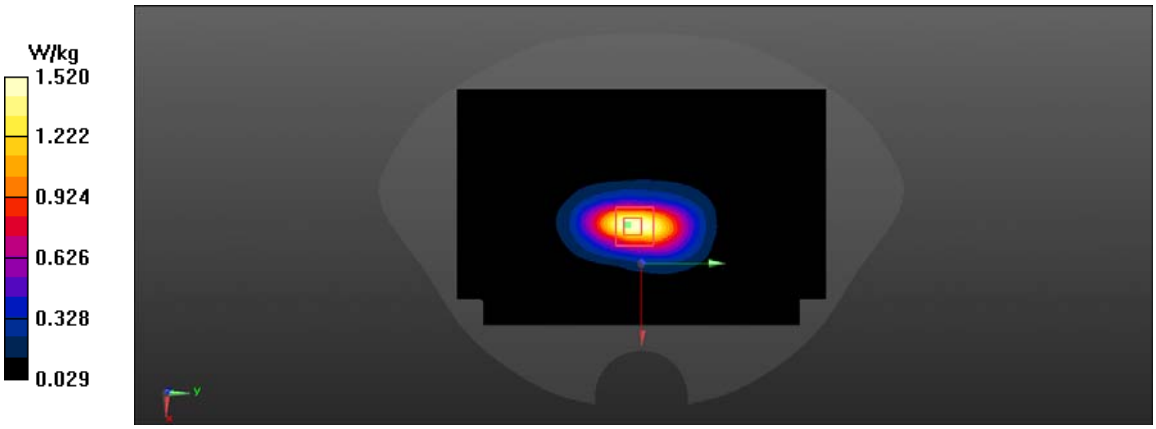


Fig A.7

WCDMA1900-BII_CH9400 Front 15mm
Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1900-BII 1880 Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.777 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.045 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.915 W/kg
SAR(1 g) = 0.62 W/kg; SAR(10 g) = 0.362 W/kg
Maximum value of SAR (measured) = 0.756 W/kg

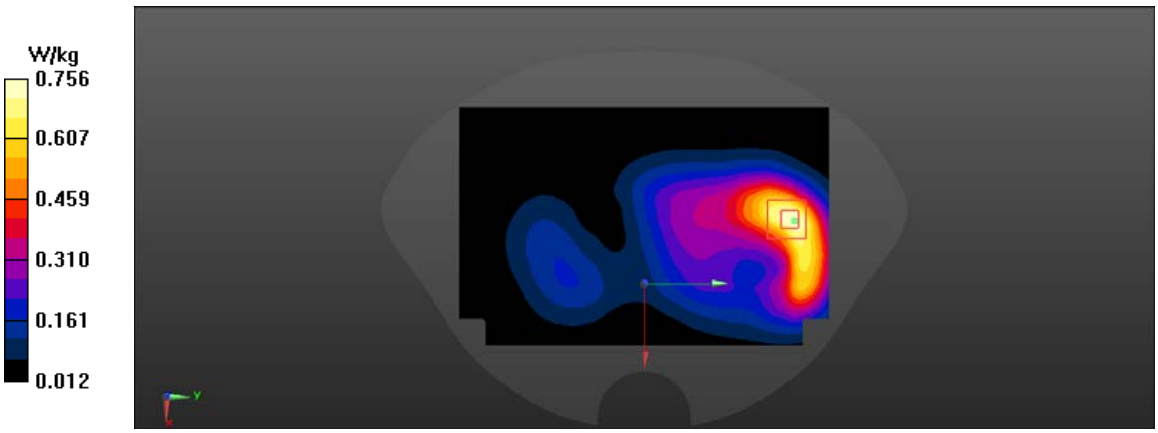


Fig A.8

WCDMA1700-BIV_CH1513 Right Cheek
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1752.6; σ = 1.377 mho/m; εr = 39.44; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1752.6 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.267 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.522 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.277 W/kg
SAR(1 g) = 0.188 W/kg; SAR(10 g) = 0.123 W/kg
Maximum value of SAR (measured) = 0.202 W/kg

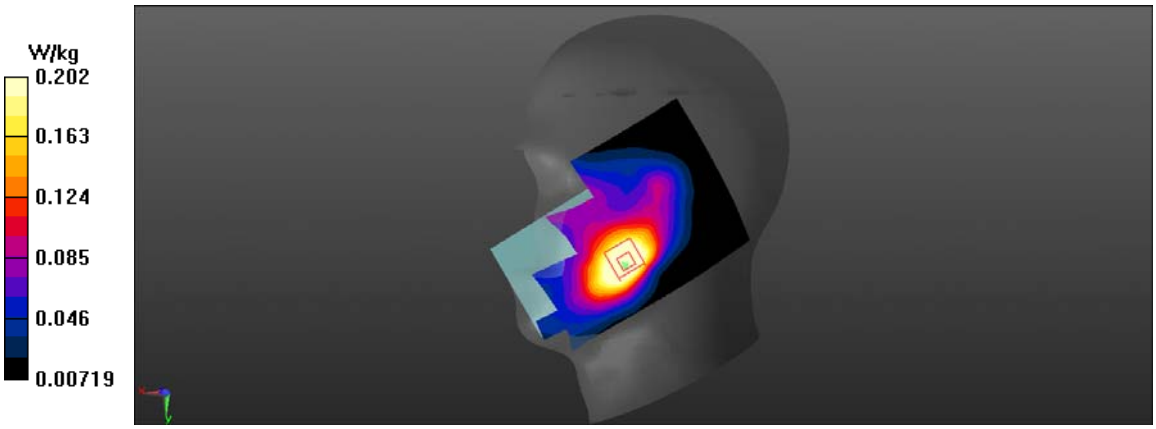


Fig A.9

WCDMA1700-BIV_CH1412 Bottom Edge 10mm
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1732.5; σ = 1.357 mho/m; εr = 39.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1732.5 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.87 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.89 W/kg; SAR(10 g) = 0.491 W/kg
Maximum value of SAR (measured) = 1.30 W/kg

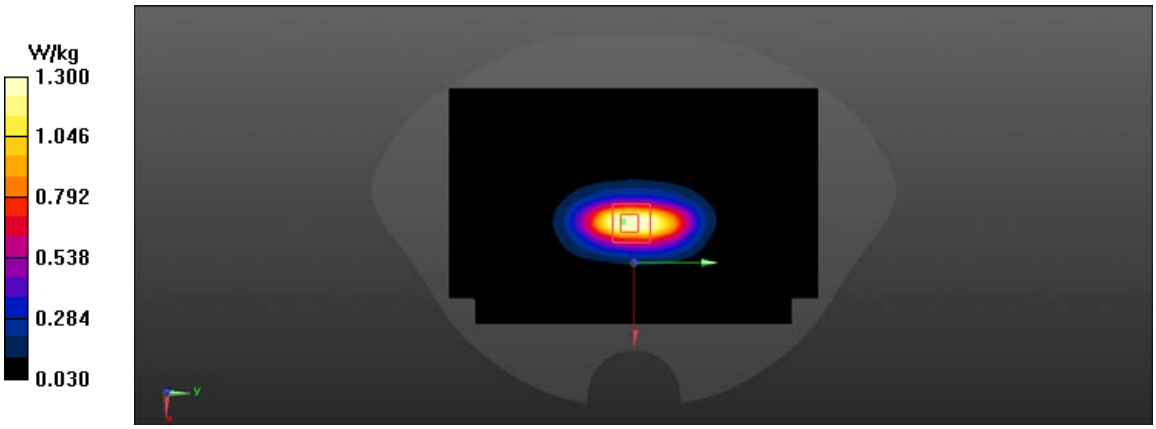


Fig A.10

WCDMA1700-BIV_CH1312 Rear 15mm
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1712.4; σ = 1.383 mho/m; εr = 38.936; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA1700-BIV 1712.4 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.34 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.761 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.347 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) = 0.762 W/kg

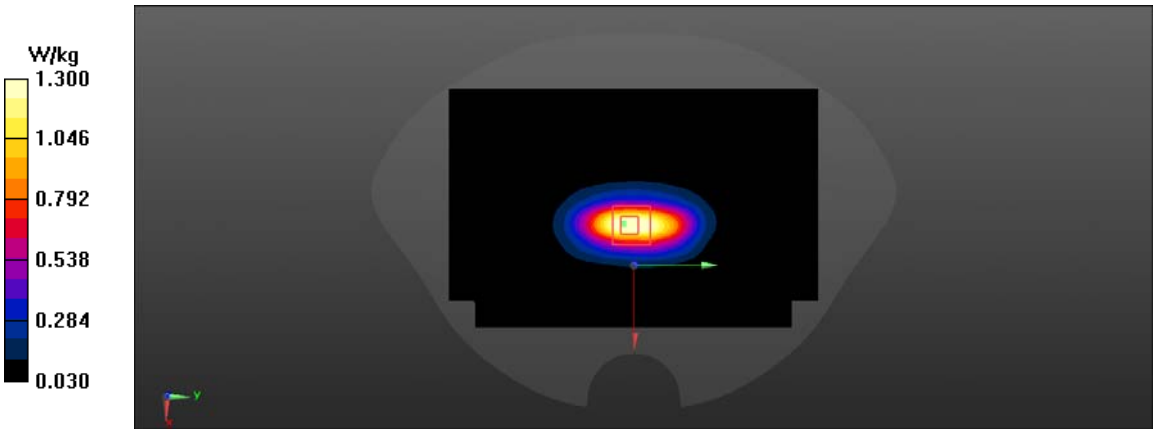


Fig A.11

WCDMA850-BV_CH4183 Right Cheek
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 836.6; σ = 0.886 mho/m; εr = 41.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 836.6 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.414 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.216 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.43 W/kg
SAR(1 g) = 0.346 W/kg; SAR(10 g) = 0.266 W/kg
Maximum value of SAR (measured) = 0.362 W/kg

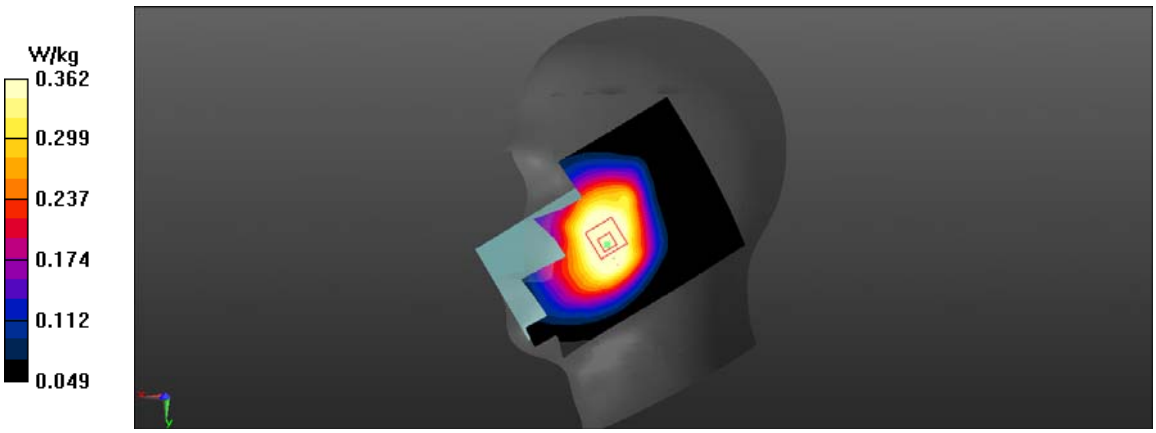


Fig A.12

WCDMA850-BV_CH4183 Rear 10mm
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 836.6; σ = 0.886 mho/m; εr = 41.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WCDMA850-BV 836.6 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.519 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.54 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.583 W/kg
SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.238 W/kg
Maximum value of SAR (measured) = 0.499 W/kg

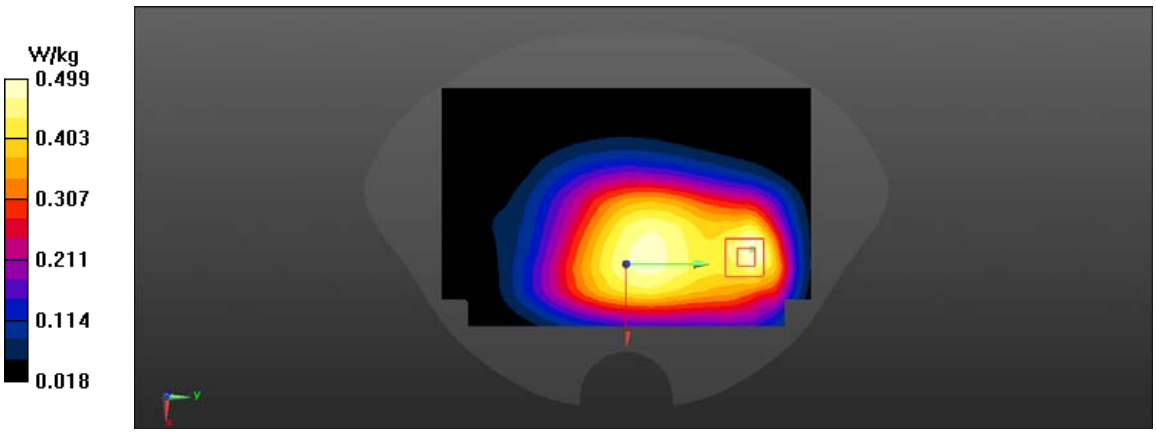


Fig A.13

LTE1900-FDD2_CH18900 1RB-Low Left Cheek
Date: 2/24/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD2 1880 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.547 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.646 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.606 W/kg
SAR(1 g) = 0.373 W/kg; SAR(10 g) = 0.238 W/kg
Maximum value of SAR (measured) = 0.543 W/kg

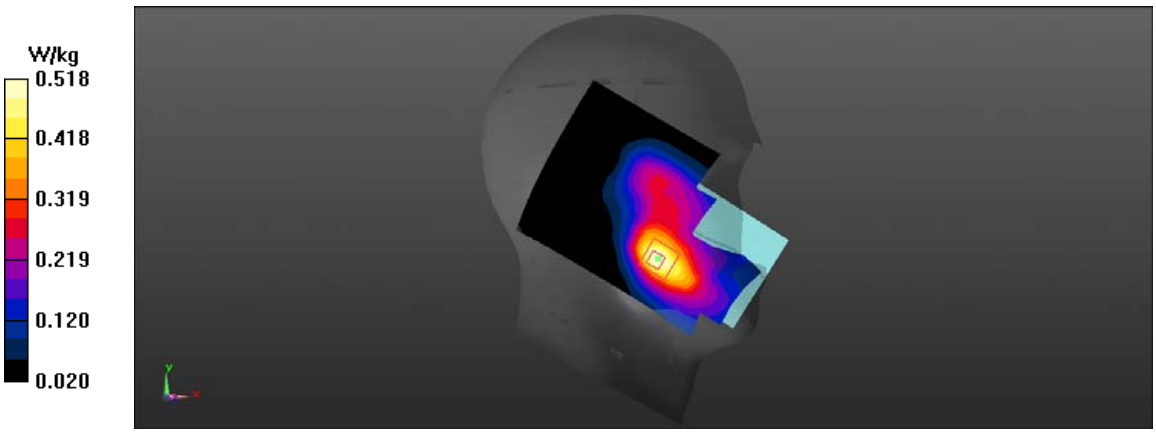


Fig A.14

LTE1900-FDD2_CH18700 1RB-Middle Bottom Edge 10mm
Date: 2/24/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1860 MHz; σ = 1.344 mho/m; εr = 39.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD2 1860 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.67 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.86 W/kg
SAR(1 g) = 0.923 W/kg; SAR(10 g) = 0.501 W/kg
Maximum value of SAR (measured) =1.52 W/kg

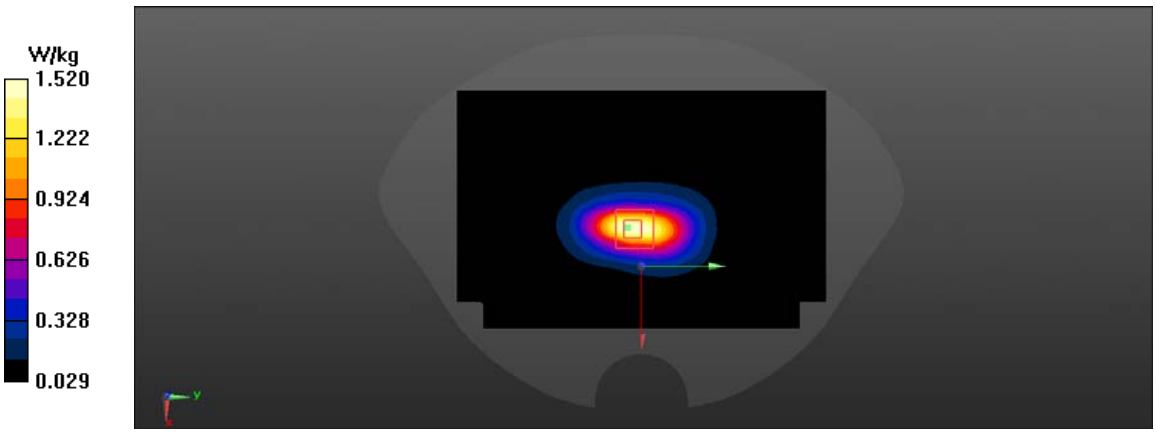


Fig A.15

LTE1900-FDD2_CH18900 1RB-Low Rear 15mm
Date: 2/24/2022
Electronics: DAE4 Sn549
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.363 mho/m; εr = 39.35; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1900-FDD2 1880 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.18,8.18,8.18)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.529 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.67 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.604 W/kg
SAR(1 g) = 0.406 W/kg; SAR(10 g) = 0.233 W/kg
Maximum value of SAR (measured) = 0.756 W/kg

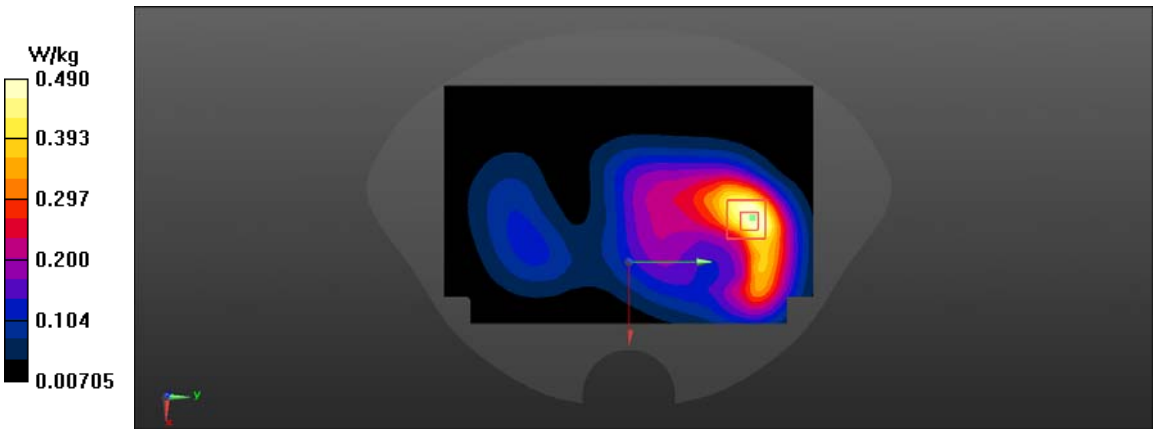


Fig A.16

LTE850-FDD5_CH20600 1RB-Low Left Cheek
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 844 MHz; σ = 0.893 mho/m; εr = 41.44; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD5 844 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.473 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.532 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.511 W/kg
SAR(1 g) = 0.39 W/kg; SAR(10 g) = 0.285 W/kg
Maximum value of SAR (measured) = 0.470 W/kg

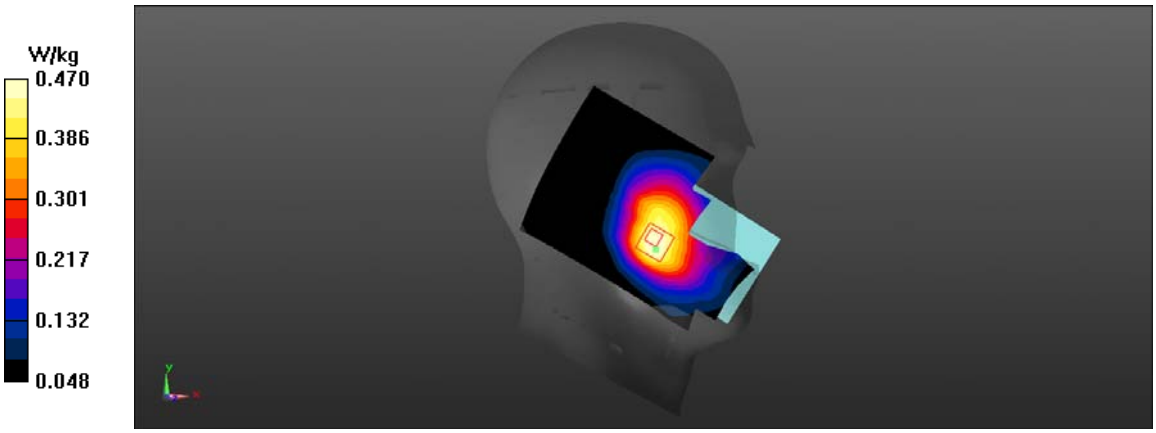


Fig A.17

LTE850-FDD5_CH20600 1RB-Low Right Edge 10mm
Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: head 835 MHz
Medium parameters used: f = 844 MHz; σ = 0.893 mho/m; εr = 41.44; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE850-FDD5 844 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(9.96,9.96,9.96)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.47 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.21 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.526 W/kg
SAR(1 g) = 0.364 W/kg; SAR(10 g) = 0.253 W/kg
Maximum value of SAR (measured) = 0.470 W/kg

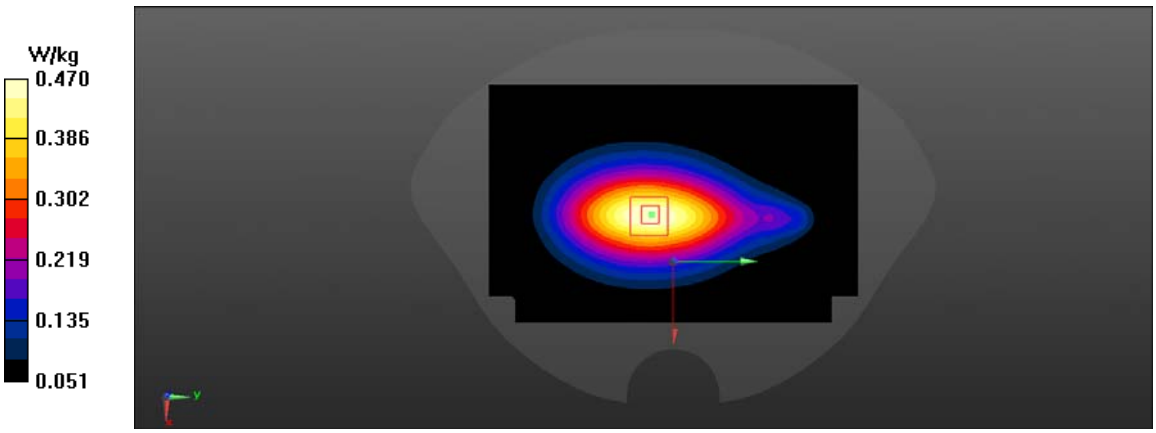


Fig A.18

LTE2500-FDD7_CH21100 1RB-Low Right Cheek
Date: 2/26/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2535 MHz; σ = 1.894 mho/m; εr = 38.54; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2535 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0908 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.466 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.109 W/kg
SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.034 W/kg
Maximum value of SAR (measured) = 0.0659 W/kg

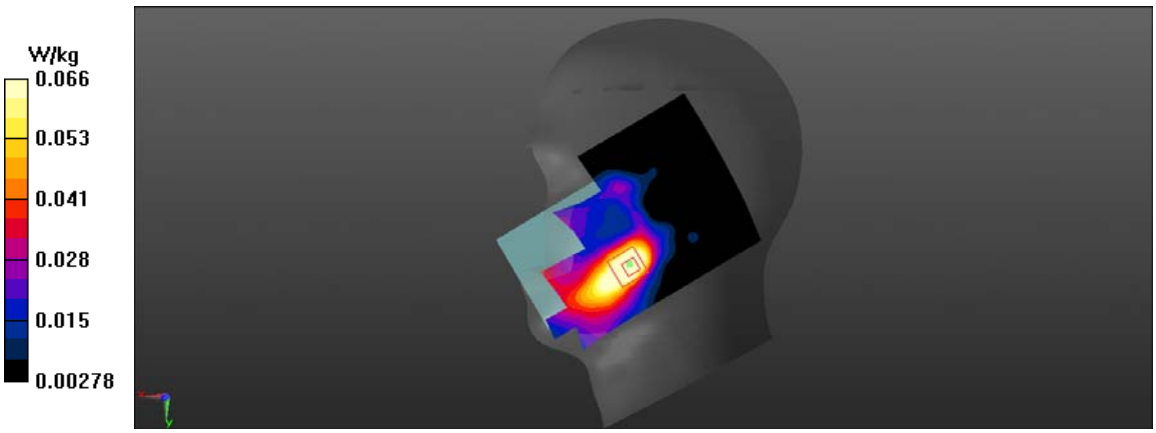


Fig A.19

LTE2500-FDD7_CH20850 1RB-Middle Bottom Edge 10mm
Date: 2/26/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2510 MHz; σ = 1.87 mho/m; εr = 38.57; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2510 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.59 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.36 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 2.04 W/kg
SAR(1 g) = 0.961 W/kg; SAR(10 g) = 0.431 W/kg
Maximum value of SAR (measured) = 1.58 W/kg

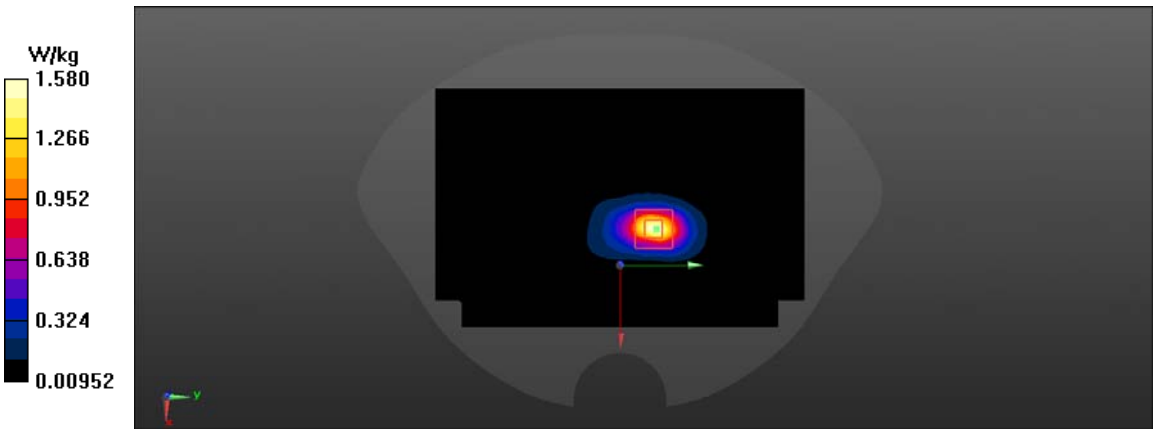


Fig A.20

LTE2500-FDD7_CH21100 1RB-Low Rear 15mm
Date: 2/26/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2535 MHz; σ = 1.894 mho/m; εr = 38.54; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2500-FDD7 2535 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.635 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.077 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.498 W/kg; SAR(10 g) = 0.249 W/kg
Maximum value of SAR (measured) = 0.592 W/kg

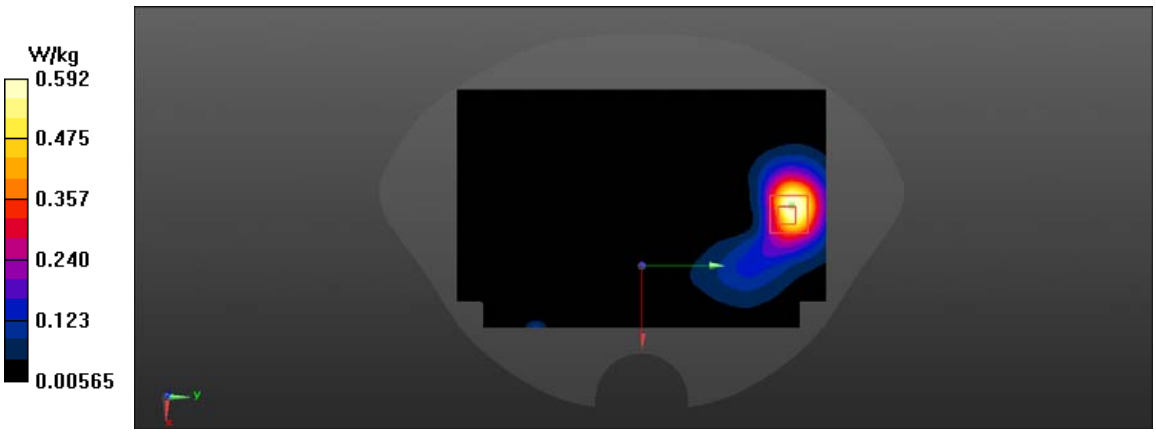


Fig A.21

LTE700-FDD12_CH23095 1RB-High Left Cheek
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 707.5 MHz; σ = 0.857 mho/m; εr = 42.12; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.423 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.765 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.469 W/kg
SAR(1 g) = 0.35 W/kg; SAR(10 g) = 0.258 W/kg
Maximum value of SAR (measured) = 0.425 W/kg

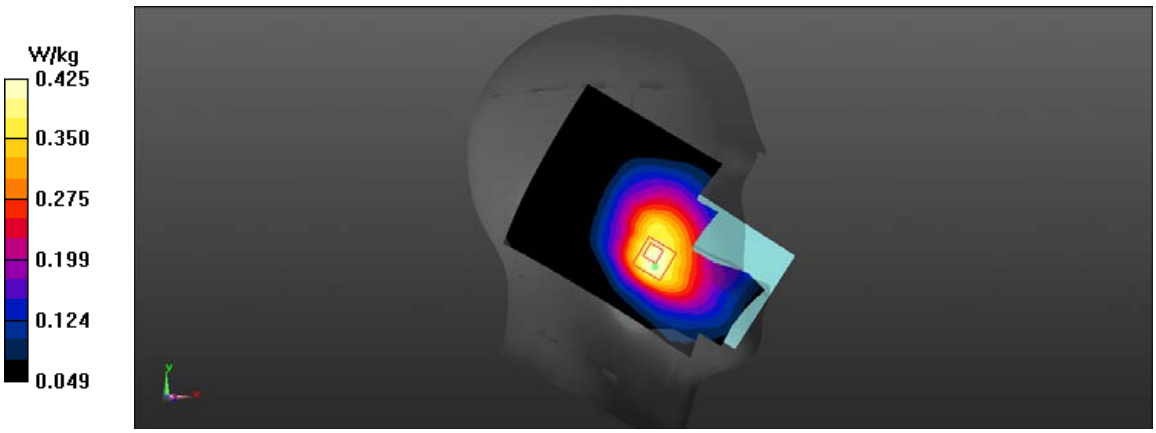


Fig A.22

LTE700-FDD12_CH23095 1RB-High Right Edge 10mm
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 707.5 MHz; σ = 0.857 mho/m; εr = 42.12; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD12 707.5 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.613 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.94 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.678 W/kg
SAR(1 g) = 0.473 W/kg; SAR(10 g) = 0.333 W/kg
Maximum value of SAR (measured) = 0.606 W/kg

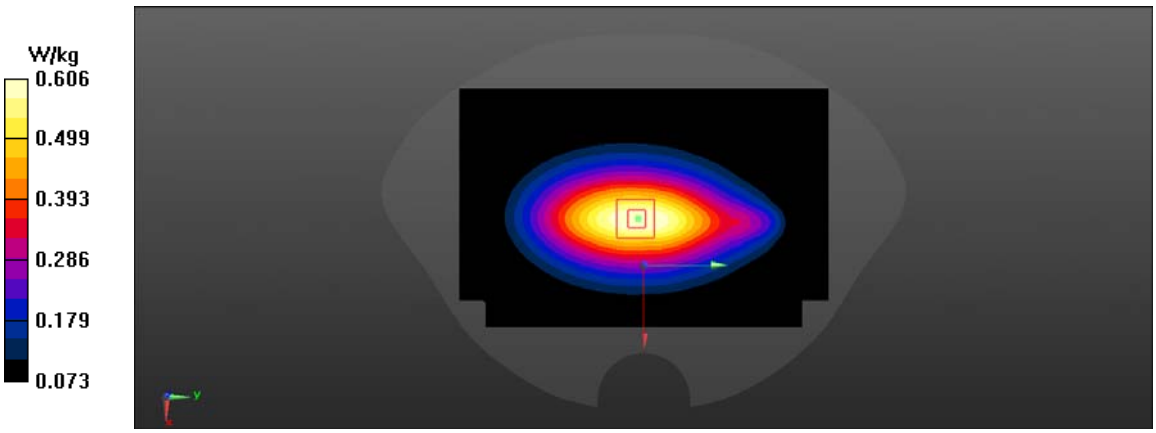


Fig A.23

LTE750-FDD13_CH23230 1RB-High Left Cheek
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.927 mho/m; εr = 42.03; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.449 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.656 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.513 W/kg
SAR(1 g) = 0.371 W/kg; SAR(10 g) = 0.267 W/kg
Maximum value of SAR (measured) = 0.461 W/kg

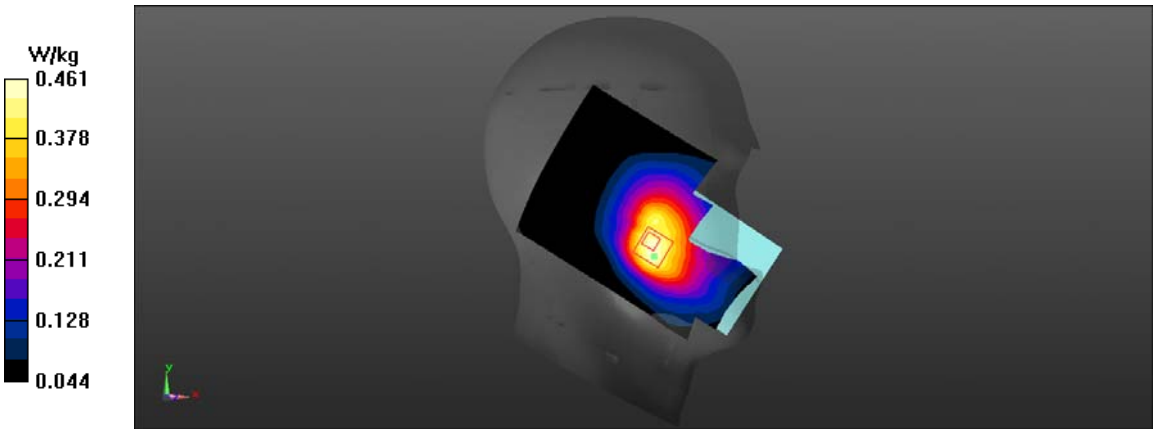


Fig A.24

LTE750-FDD13_CH23230 1RB-High Rear 10mm
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.927 mho/m; εr = 42.03; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.509 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.53 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.353 W/kg; SAR(10 g) = 0.221 W/kg
Maximum value of SAR (measured) = 0.490 W/kg

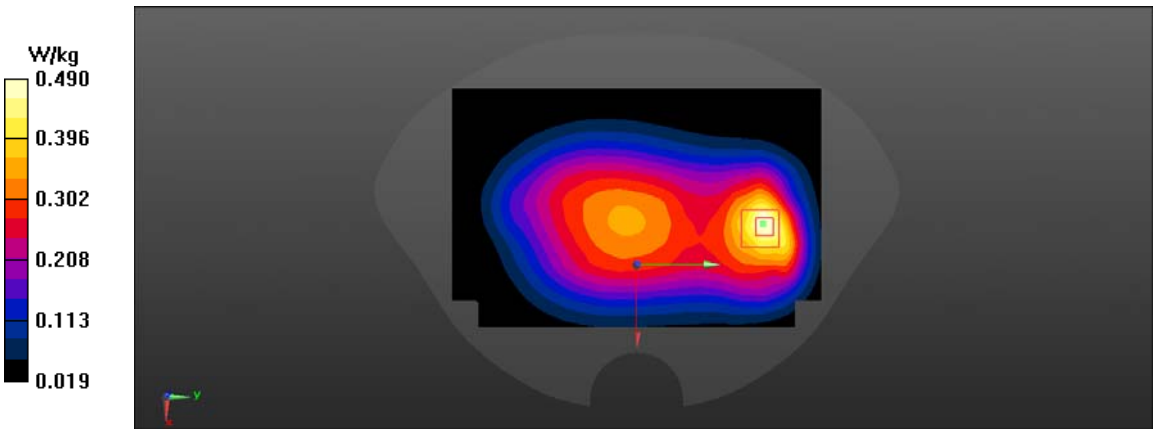


Fig A.25

LTE2600-TDD41PC3_CH40185 1RB-Middle Right Cheek
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f =2549.5 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0562 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.009 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.063 W/kg
SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.021 W/kg
Maximum value of SAR (measured) = 0.0356 W/kg

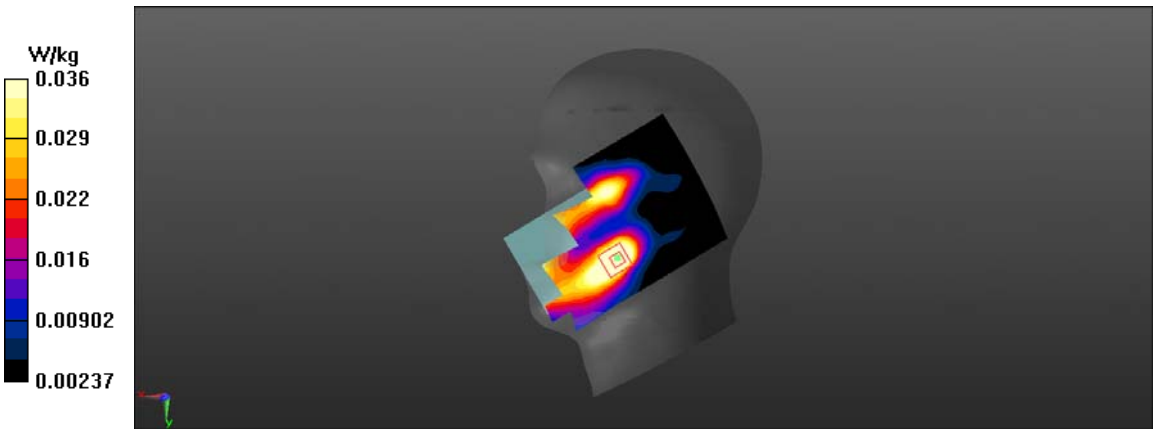


Fig A.26

LTE2600-TDD41_CH40185 1RB-Middle Bottom Edge 10mm
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2549.5 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.5 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.42 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.89 W/kg
SAR(1 g) = 0.92 W/kg; SAR(10 g) = 0.422 W/kg
Maximum value of SAR (measured) = 1.52 W/kg

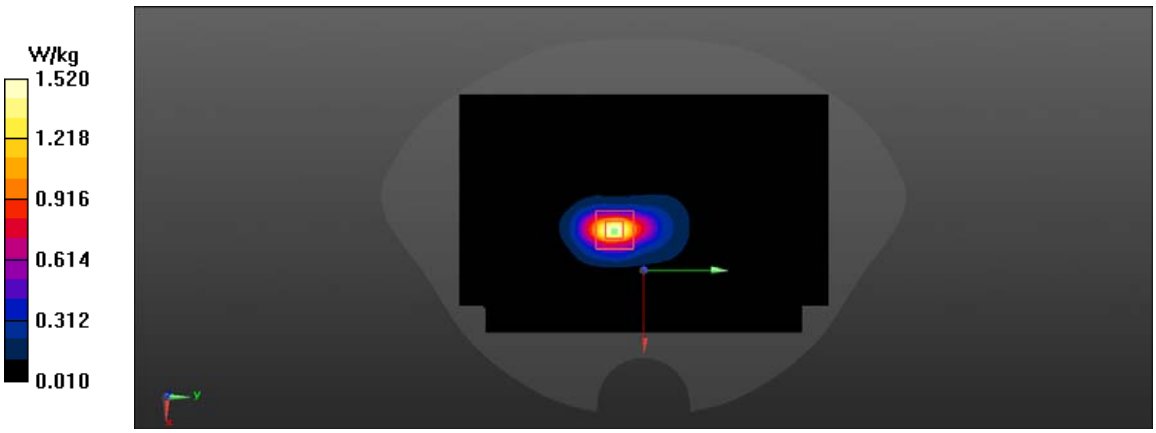


Fig A.27

LTE2600-TDD41PC3_CH40185 1RB-Middle Rear 15mm
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2549.5 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.914 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.336 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.565 W/kg; SAR(10 g) = 0.296 W/kg
Maximum value of SAR (measured) = 0.871W/kg

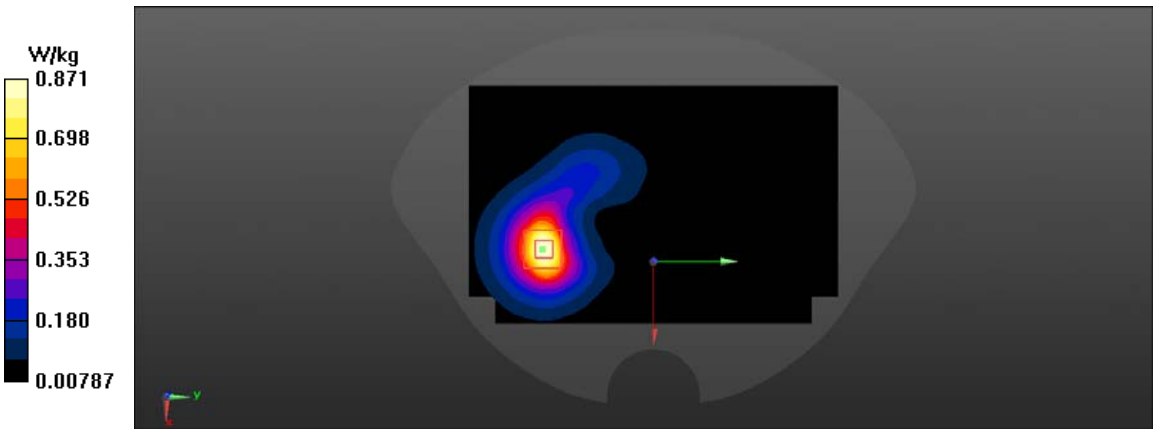


Fig A.28

LTE2600-TDD41PC2_CH40185 1RB-Low Right Cheek
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2549.5 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0562 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.069 W/kg
SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.021 W/kg
Maximum value of SAR (measured) = 0.0419 W/kg

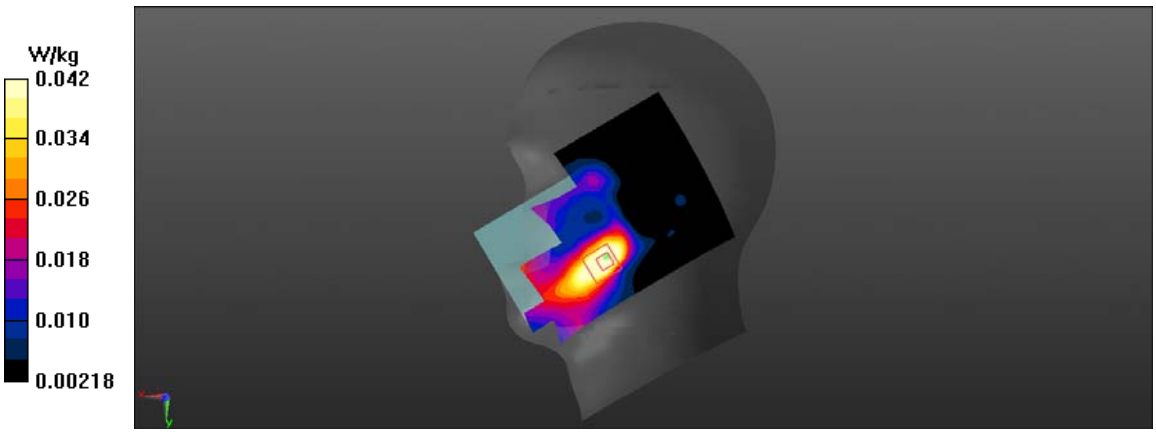


Fig A.29

LTE2600-TDD41PC2_CH39750 1RB-Low Bottom Edge 10mm
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2506 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.54 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.89 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 1.94 W/kg
SAR(1 g) = 0.951 W/kg; SAR(10 g) = 0.435 W/kg
Maximum value of SAR (measured) = 1.56 W/kg

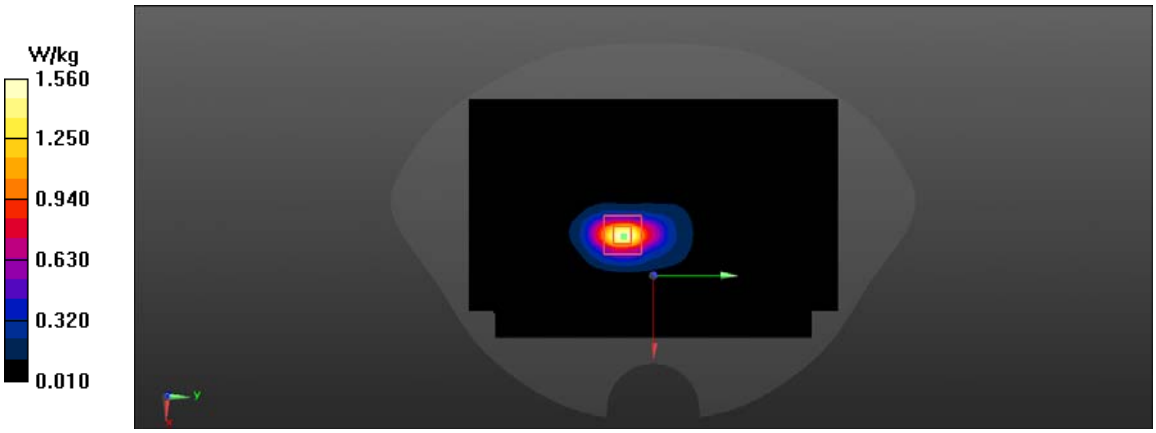


Fig A.30

LTE2600-TDD41_CH40620 1RB-Middle Rear 15mm
Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: head 2600 MHz
Medium parameters used: f = 2593 MHz; σ = 0.229 mho/m; εr = 40.64; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE2600-TDD41 782 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7464 ConvF(7.64,7.64,7.64)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.793 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.433 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.942 W/kg
SAR(1 g) = 0.502 W/kg; SAR(10 g) = 0.261 W/kg
Maximum value of SAR (measured) = 0.773 W/kg

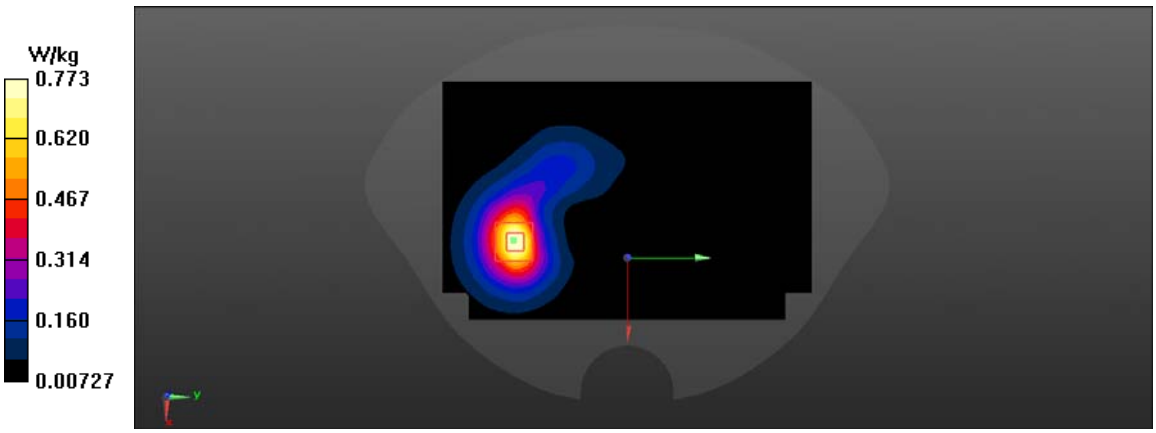


Fig A.31

LTE1700-FDD66_CH132072 1RB-High Right Cheek
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1720 MHz; σ = 0.454 mho/m; εr = 40.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 782 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.217 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.544 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.155 W/kg; SAR(10 g) = 0.102 W/kg
Maximum value of SAR (measured) = 0.166 W/kg

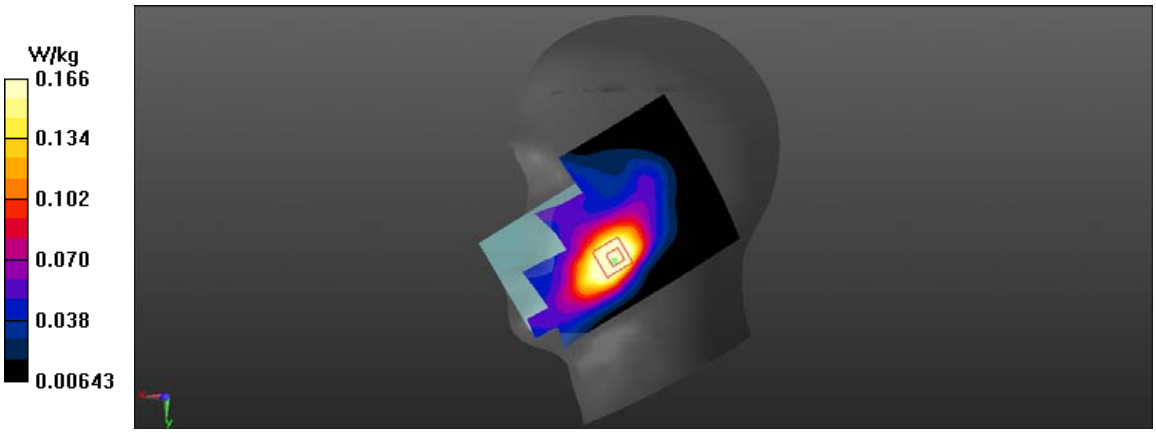


Fig A.32

LTE1700-FDD66_CH132322 1RB-High Bottom Edge 10mm
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 0.454 mho/m; εr = 40.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 782 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.5 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.47 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.79 W/kg
SAR(1 g) = 0.996 W/kg; SAR(10 g) = 0.547 W/kg
Maximum value of SAR (measured) = 1.50 W/kg

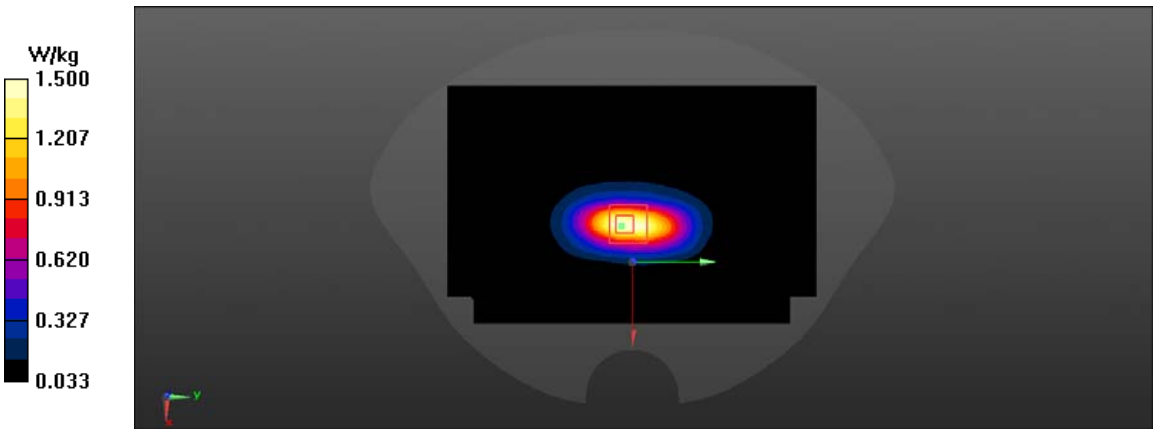


Fig A.33

LTE1700-FDD66_CH132072 1RB-High Rear 15mm
Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: head 1750 MHz
Medium parameters used: f = 1720 MHz; σ = 0.454 mho/m; εr = 40.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 782 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(8.52,8.52,8.52)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.695 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.143 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.801 W/kg
SAR(1 g) = 0.498 W/kg; SAR(10 g) = 0.304 W/kg
Maximum value of SAR (measured) = 0.687 W/kg

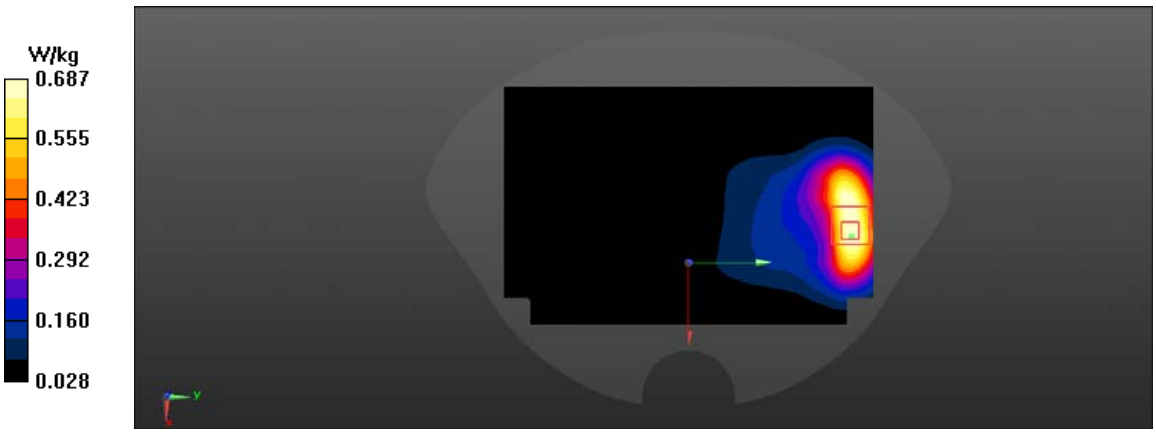


Fig A.34

LTE700-FDD71_CH133322 1RB-Middle Left Cheek
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.927 mho/m; εr = 42.03; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD71 782 MHz Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.344 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.619 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.366 W/kg
SAR(1 g) = 0.281 W/kg; SAR(10 g) = 0.212 W/kg
Maximum value of SAR (measured) = 0.340 W/kg

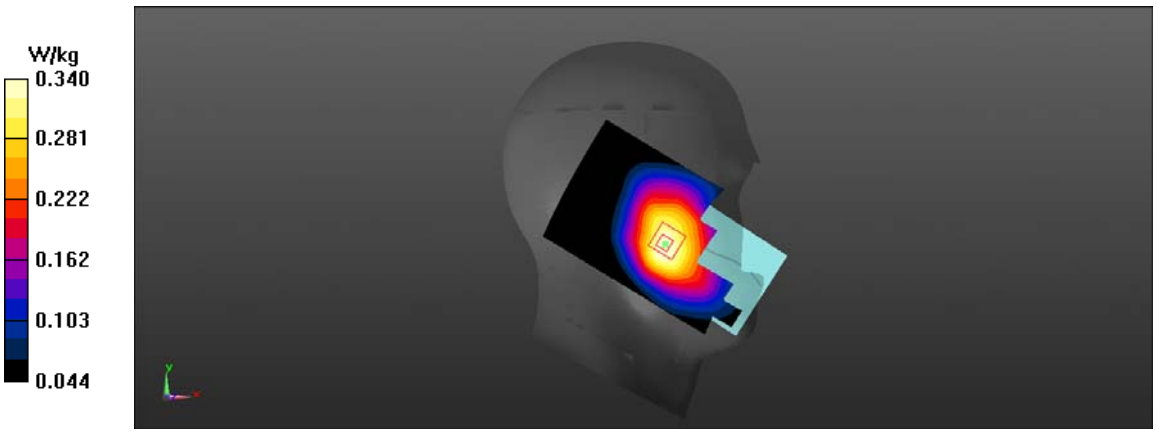


Fig A.35

LTE700-FDD71_CH133322 1RB-Middle Rear 10mm
Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.927 mho/m; εr = 42.03; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE700-FDD71 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.495 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.8 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.528 W/kg
SAR(1 g) = 0.303 W/kg; SAR(10 g) = 0.212 W/kg
Maximum value of SAR (measured) = 0.484 W/kg

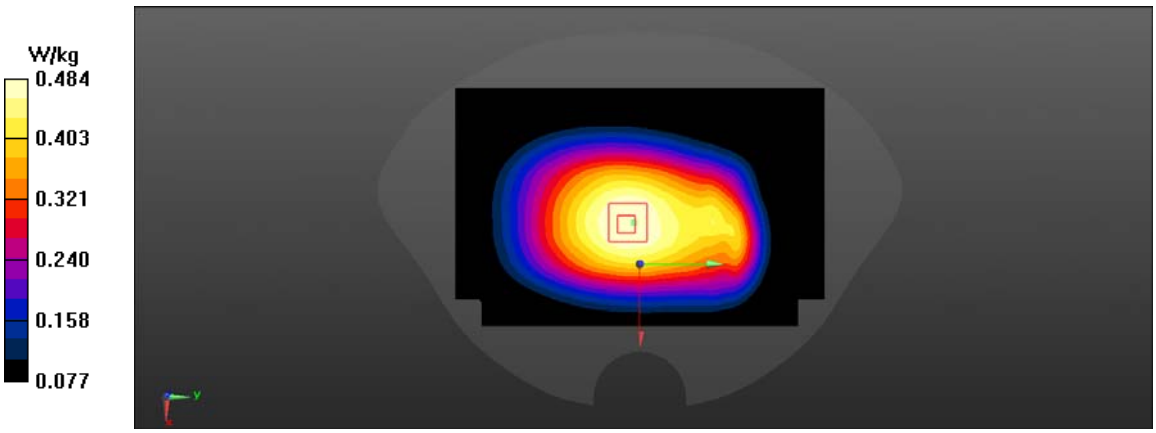


Fig A.36

WLAN2450_CH6 Left Cheek
Date: 2/28/2022
Electronics: DAE4 Sn549
Medium: head 2450 MHz
Medium parameters used: f = 2437; σ = 1.803 mho/m; εr = 39.34; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN2450 2437 Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(7.77,7.77,7.77)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.43 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.336 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 2.38 W/kg
SAR(1 g) = 0.888 W/kg; SAR(10 g) = 0.357 W/kg
Maximum value of SAR (measured) = 1.72W/kg

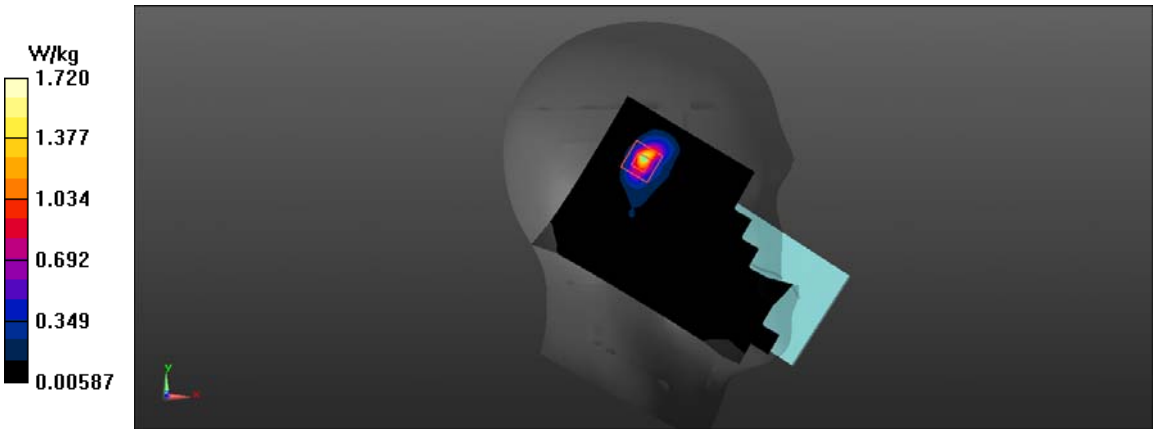


Fig A.37

WLAN2450_CH1 Top Edge 10mm
Date: 2/28/2022
Electronics: DAE4 Sn549
Medium: head 2450 MHz
Medium parameters used: f = 2412; σ = 1.766 mho/m; εr = 38.92; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN2450 2412 Duty Cycle:
Probe: EX3DV4 – SN7464 ConvF(7.77,7.77,7.77)

Area Scan (71x121x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.61 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.22 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 2.13 W/kg
SAR(1 g) = 0.910 W/kg; SAR(10 g) = 0.469 W/kg
Maximum value of SAR (measured) =1.71 W/kg

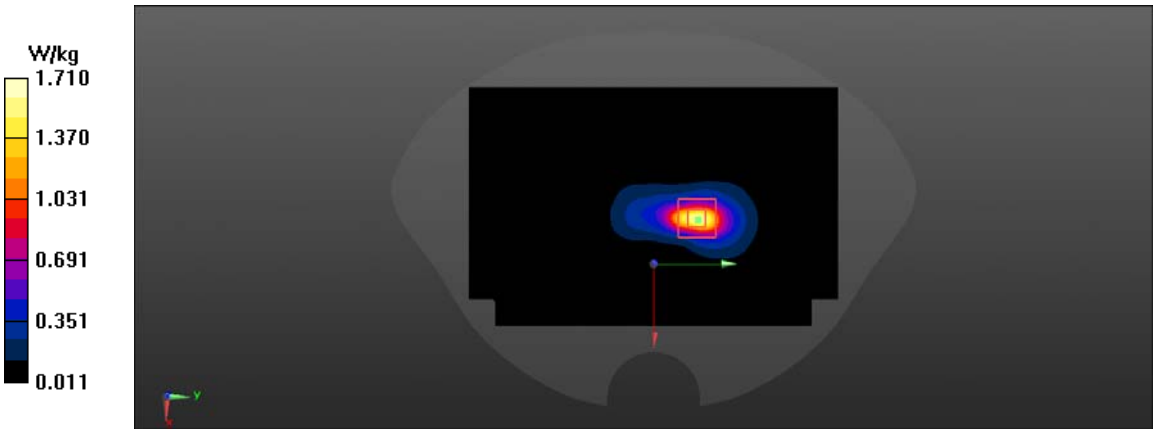


Fig A.38

WLAN_CH161 Left Cheek
Date: 2/28/2022
Electronics: DAE4 Sn549
Medium: head 5G
Medium parameters used: f = 5805; σ = 5.135 mho/m; εr =33.202; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN 5805 Duty Cycle:1:1
Probe: EX3DV4 – SN7464 ConvF(4.85,4.85,4.85)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.01 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 5.14 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 2.68 W/kg

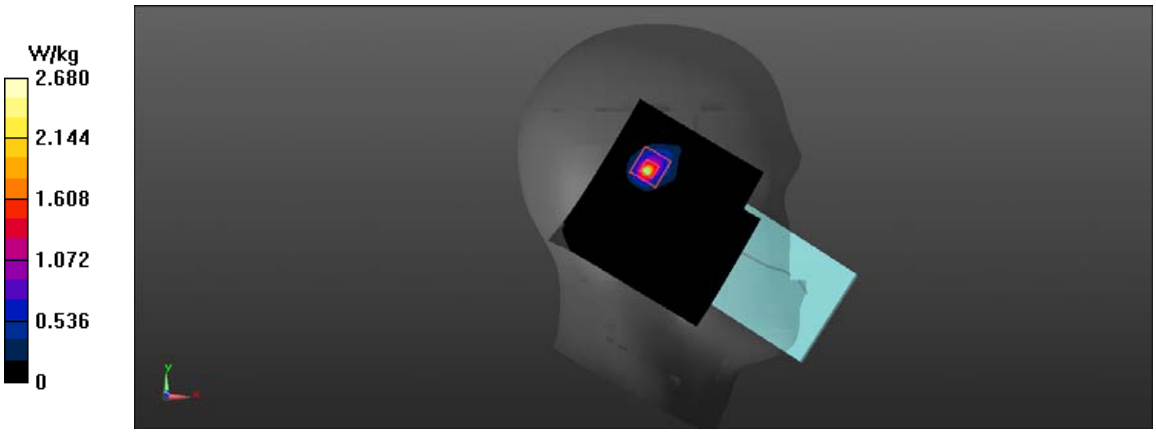


Fig A.39

WLAN_CH161 Top Edge 10mm
Date: 2/28/2022
Electronics: DAE4 Sn549
Medium: head 5G
Medium parameters used: f = 5805; σ = 4.369 mho/m; εr =33.641 ; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: WLAN 5805 Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(4.85,4.85,4.85)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 6.196 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 2.36 W/kg
SAR(1 g) = 0.640 W/kg; SAR(10 g) = 0.215 W/kg
Maximum value of SAR (measured) = 1.46 W/kg

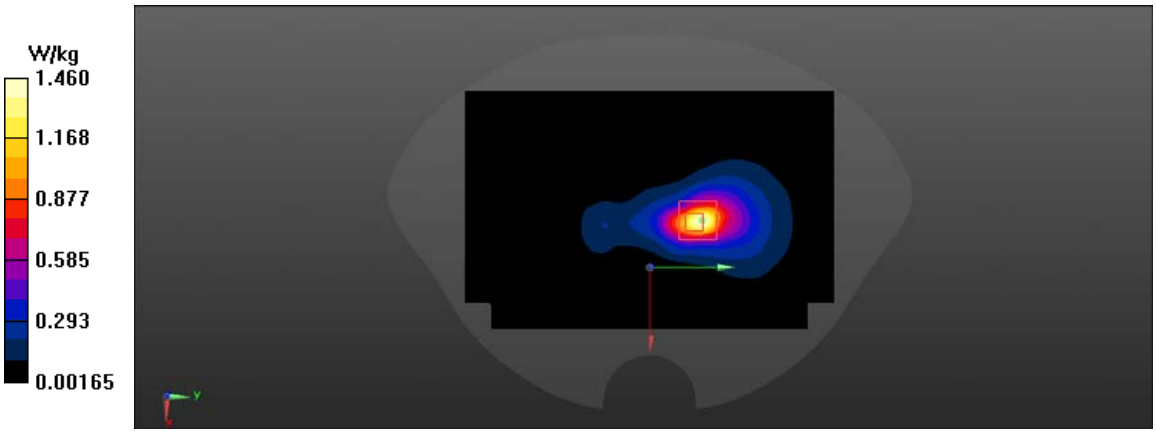


Fig A.40

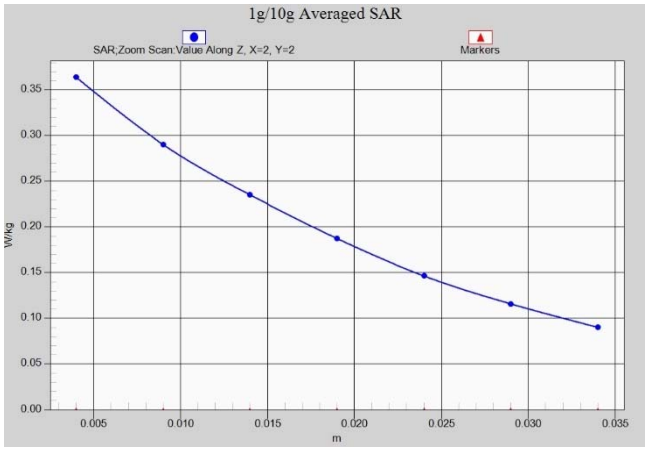


Fig. 1-1 Z-Scan at power reference point (850 MHz)

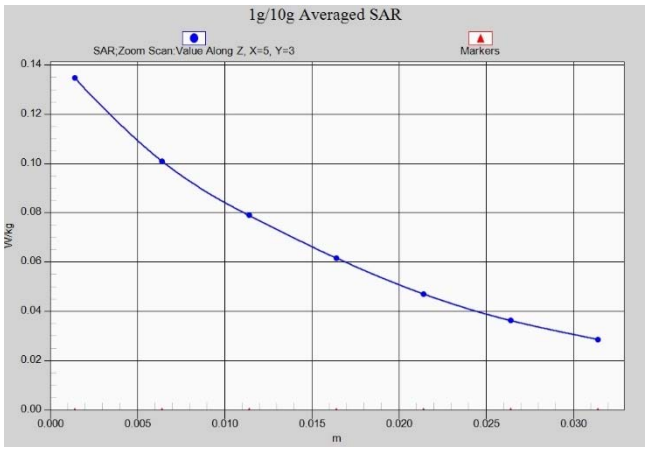


Fig. 1-2 Z-Scan at power reference point (850 MHz)

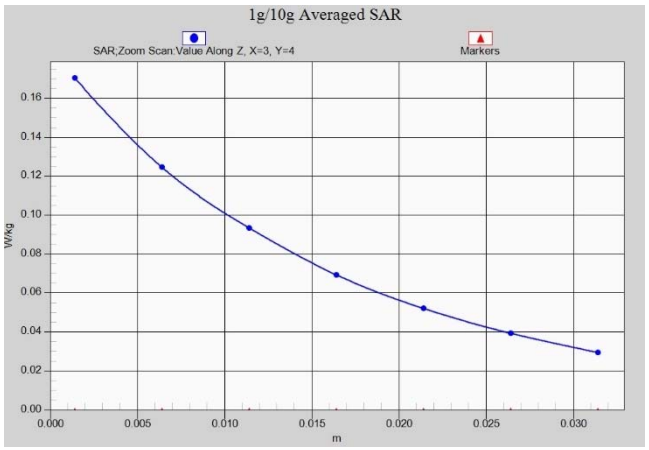


Fig. 1-3 Z-Scan at power reference point (1900 MHz)

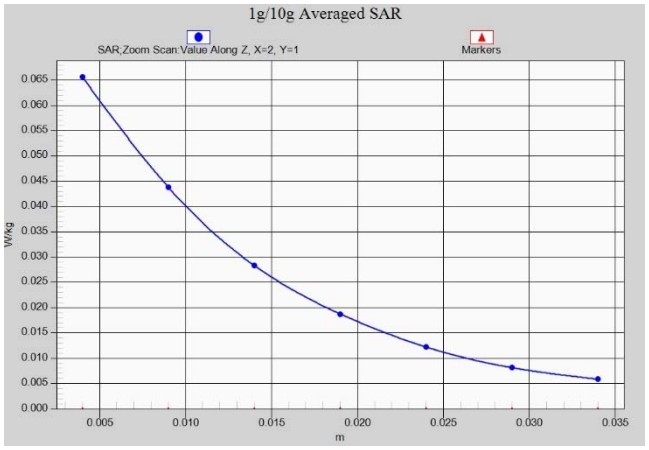


Fig. 1-4 Z-Scan at power reference point (1900 MHz)

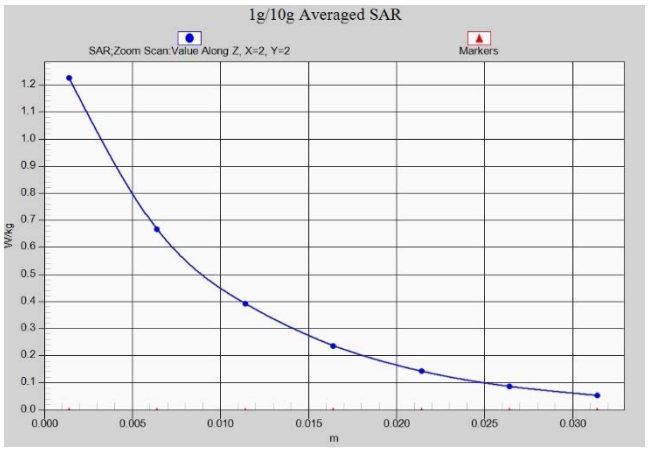


Fig. 1-5 Z-Scan at power reference point (1900 MHz)

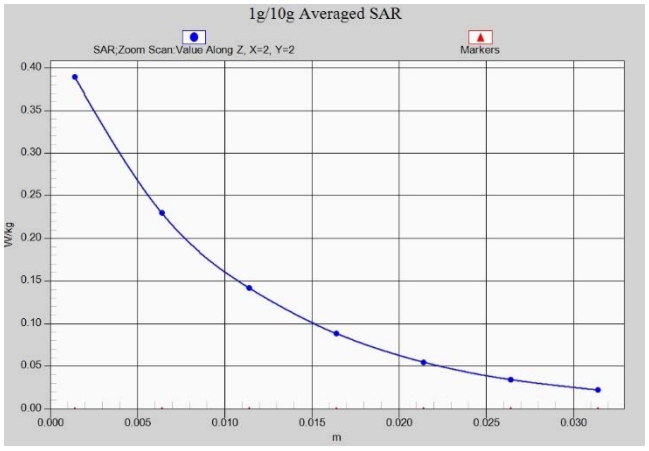


Fig. 1-6 Z-Scan at power reference point (WCDMA1900)

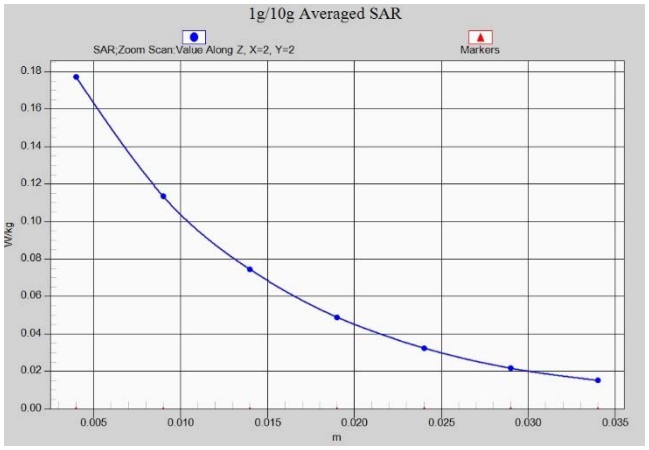


Fig. 1-7 Z-Scan at power reference point (WCDMA1900)

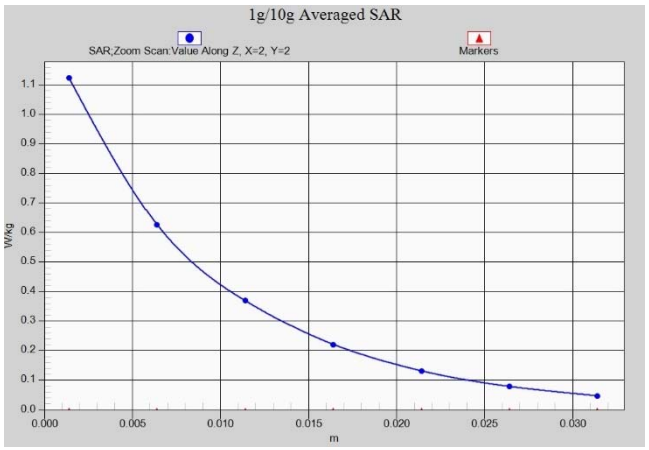


Fig. 1-8 Z-Scan at power reference point (WCDMA1900)

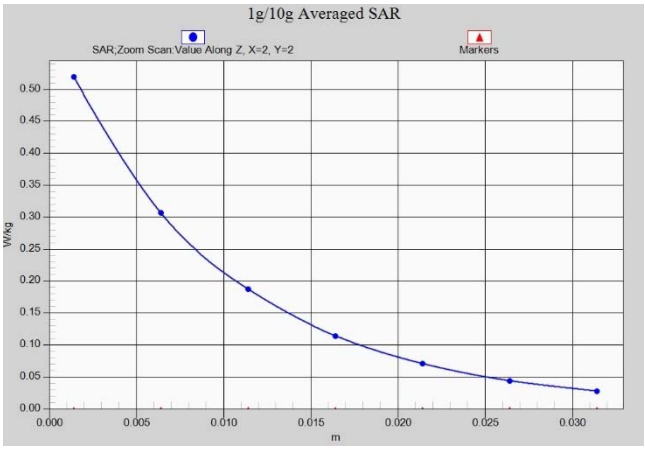


Fig. 1-9 Z-Scan at power reference point (WCDMA1700)

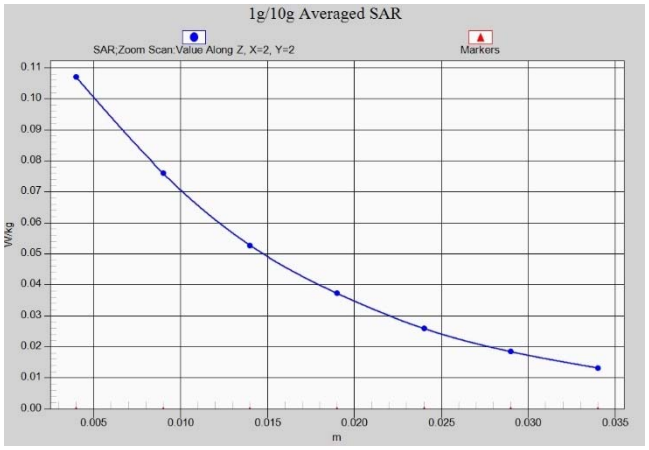


Fig. 1-10 Z-Scan at power reference point (WCDMA1700)

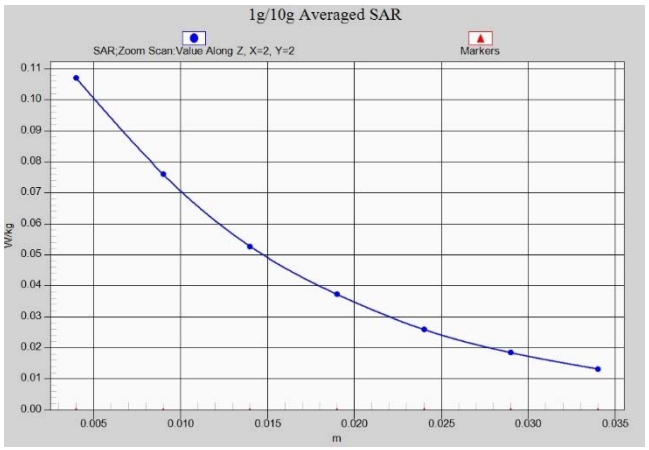


Fig. 1-11 Z-Scan at power reference point (WCDMA1700)

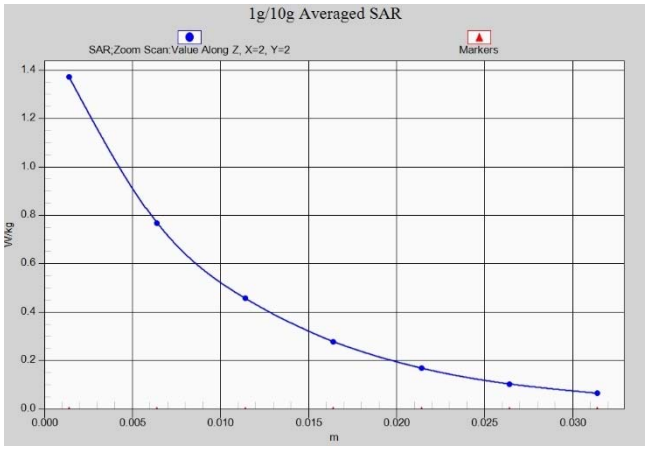


Fig. 1-12 Z-Scan at power reference point (WCDMA850)

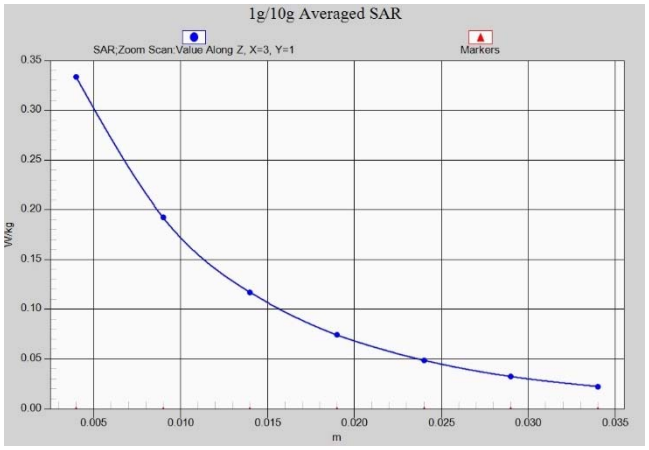


Fig. 1-13 Z-Scan at power reference point (WCDMA850)

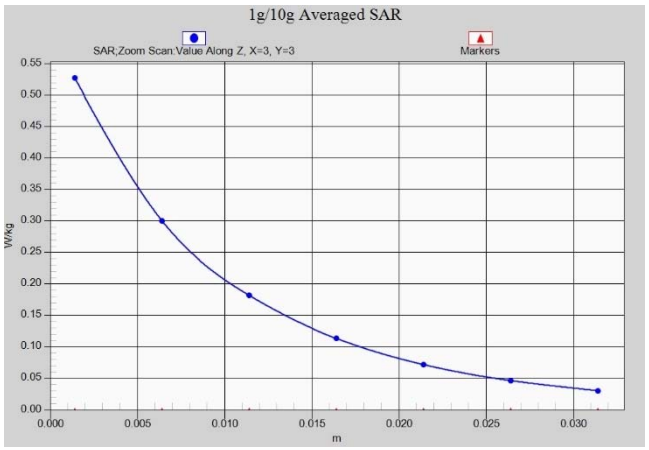


Fig. 1-14 Z-Scan at power reference point (LTE Band2)

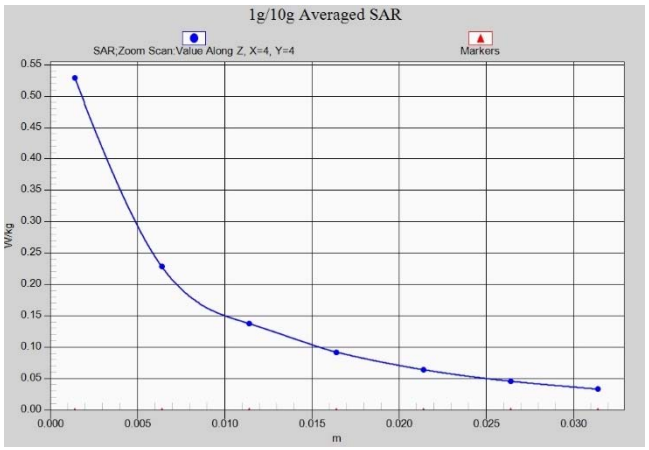


Fig. 1-15 Z-Scan at power reference point (LTE Band2)

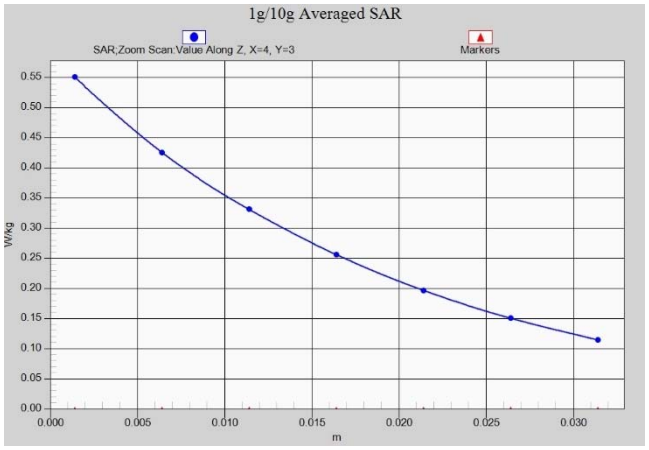


Fig. 1-16 Z-Scan at power reference point (LTE Band2)

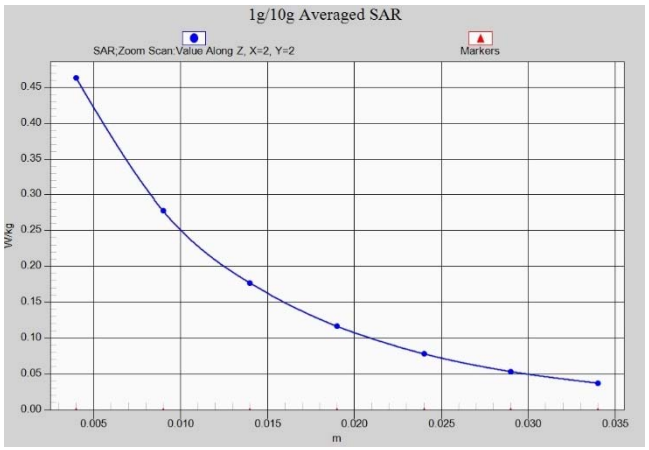


Fig. 1-17 Z-Scan at power reference point (LTE Band5)

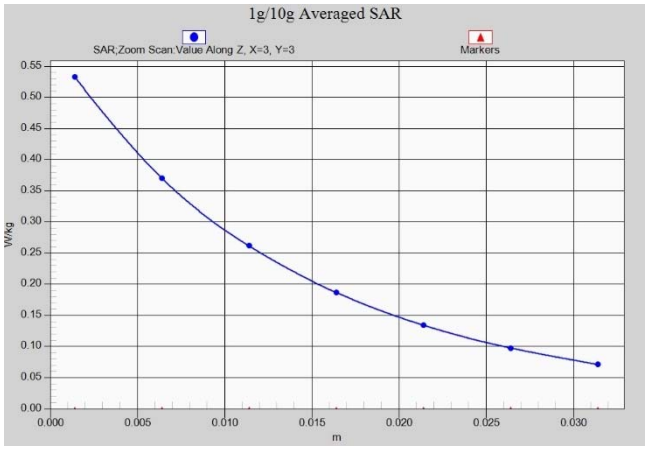


Fig. 1-18 Z-Scan at power reference point (LTE Band5)

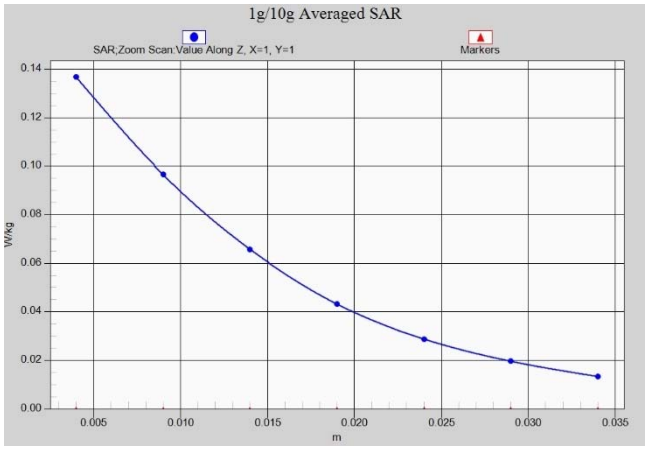


Fig. 1-19 Z-Scan at power reference point (LTE Band7)

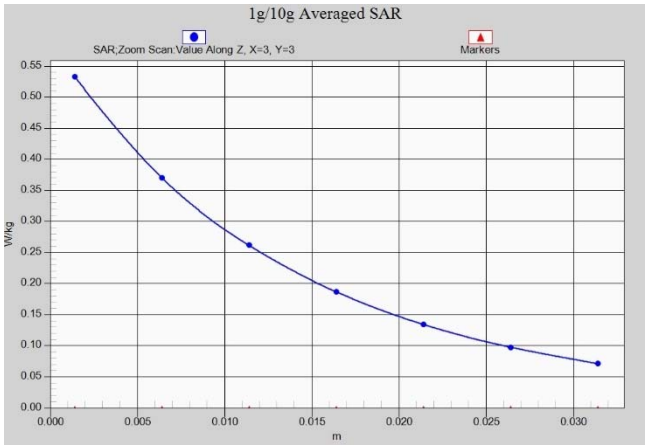


Fig. 1-20 Z-Scan at power reference point (LTE Band7)

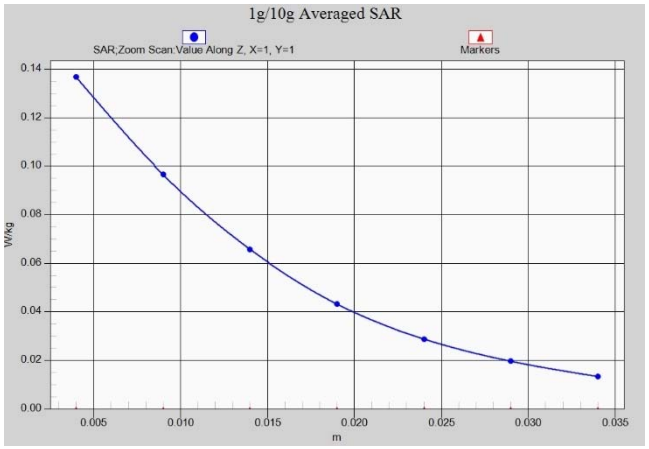


Fig. 1-21 Z-Scan at power reference point (LTE Band7)

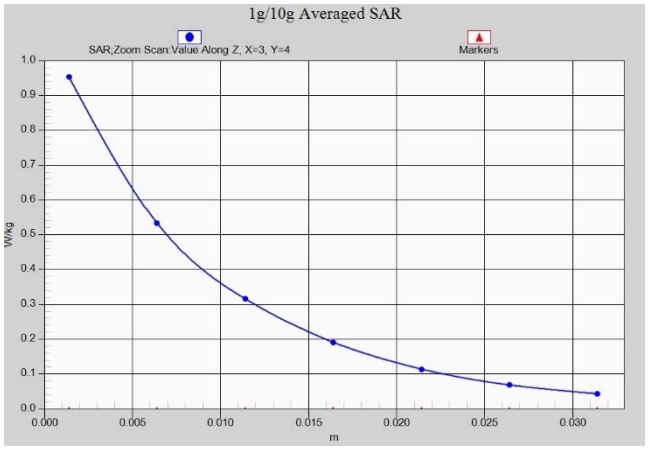


Fig. 1-22 Z-Scan at power reference point (LTE Band12)

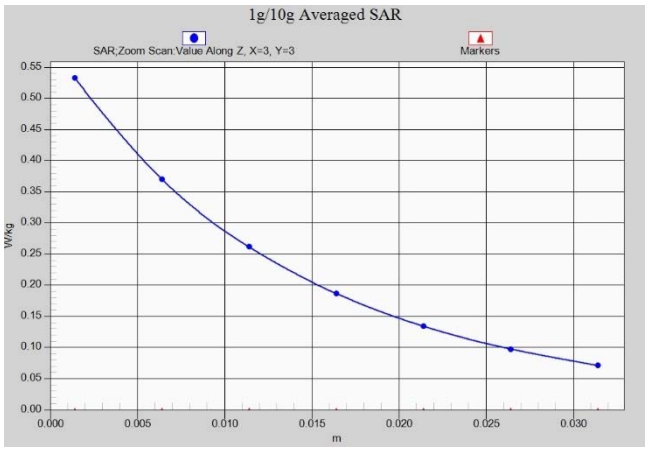


Fig. 1-23 Z-Scan at power reference point (LTE Band12)

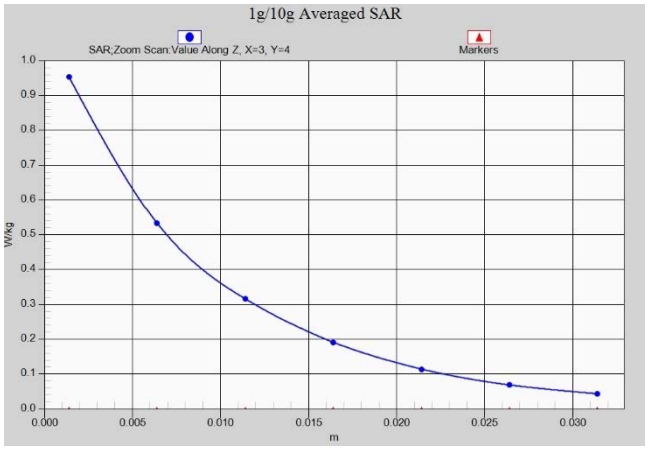


Fig. 1-24 Z-Scan at power reference point (LTE Band13)

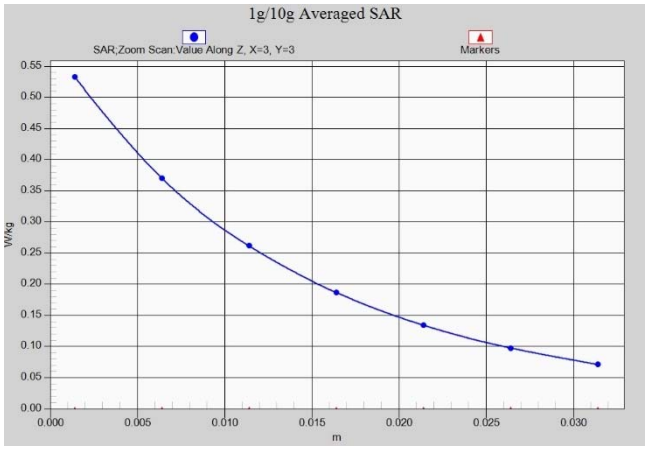


Fig. 1-25 Z-Scan at power reference point (LTE Band13)

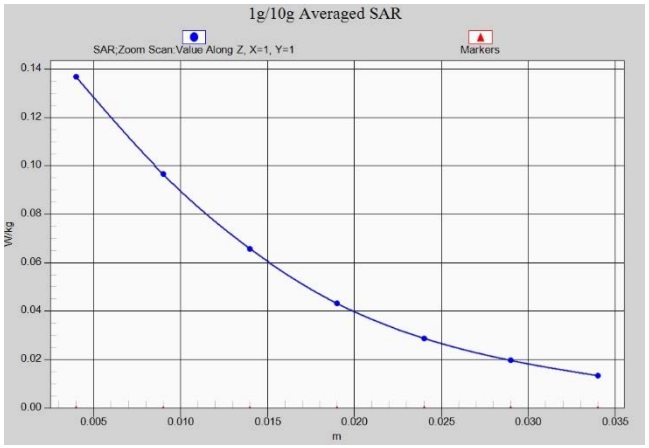


Fig. 1-26 Z-Scan at power reference point (LTE Band41PC3)

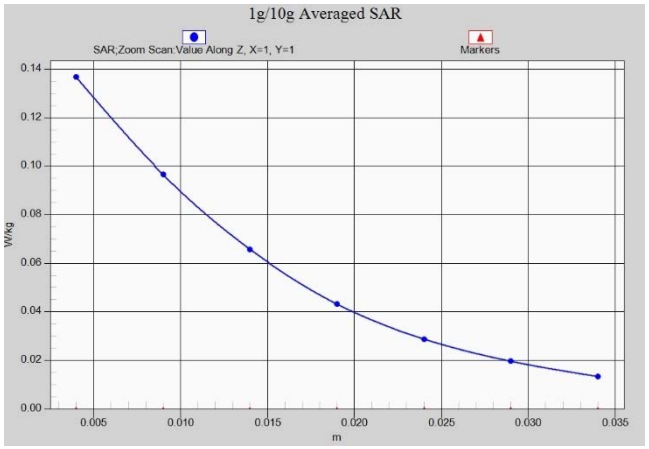


Fig. 1-27 Z-Scan at power reference point (LTE Band41PC3)

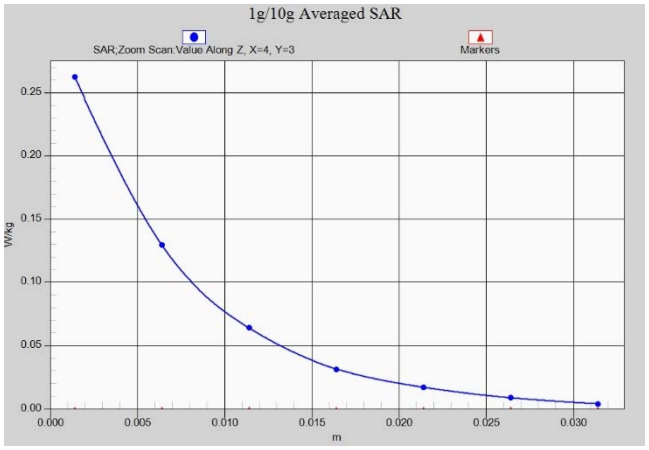


Fig. 1-28 Z-Scan at power reference point (LTE Band41PC3)

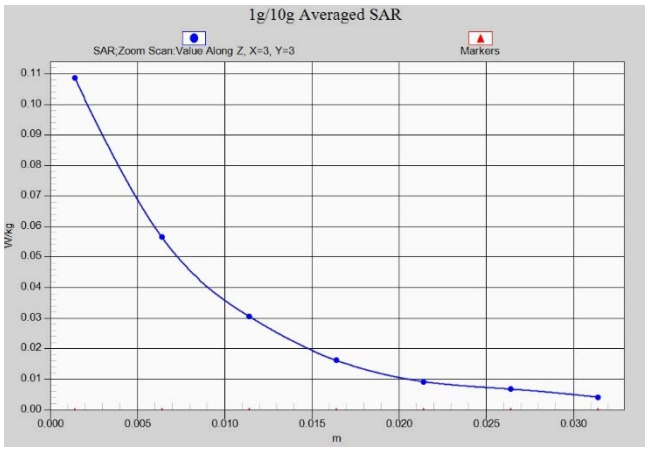


Fig. 1-29 Z-Scan at power reference point (LTE Band41PC2)

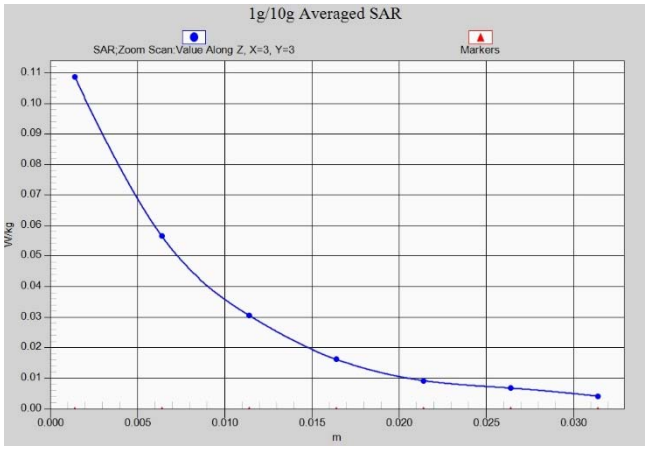


Fig. 1-30 Z-Scan at power reference point (LTE Band41PC2)

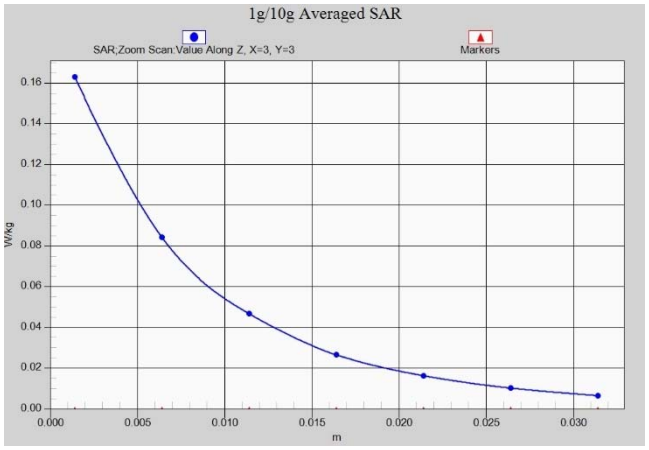


Fig. 1-31 Z-Scan at power reference point (LTE Band41PC2)

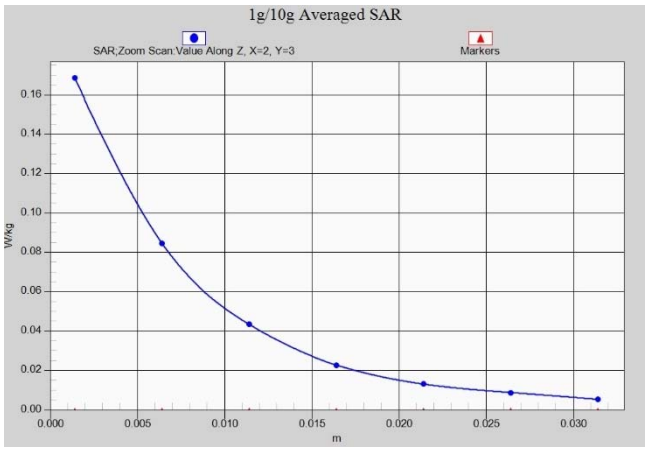


Fig. 1-32 Z-Scan at power reference point (LTE Band66)

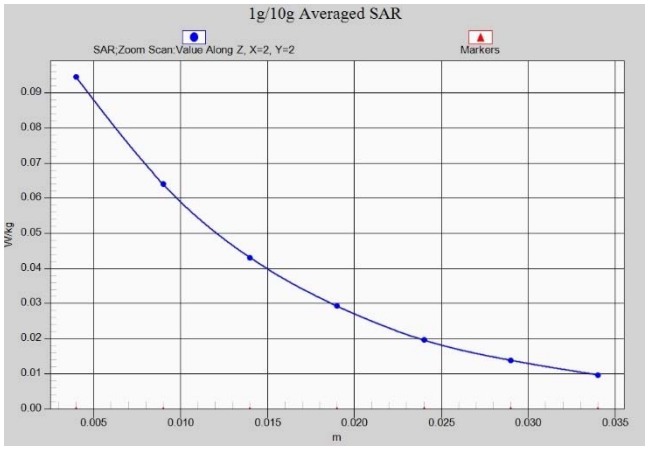


Fig. 1-33 Z-Scan at power reference point (LTE Band66)

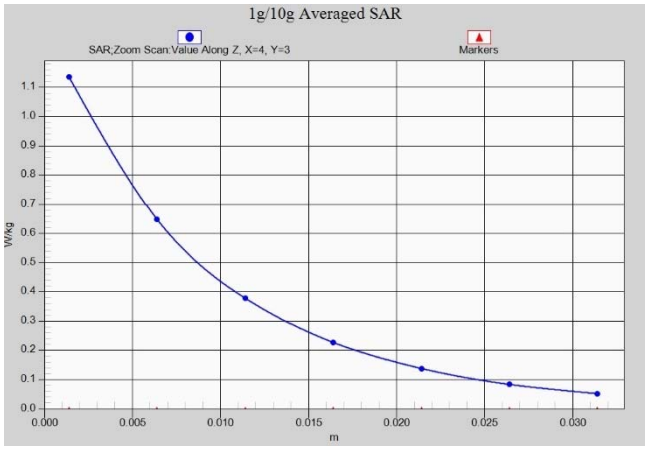


Fig. 1-34 Z-Scan at power reference point (LTE Band66)

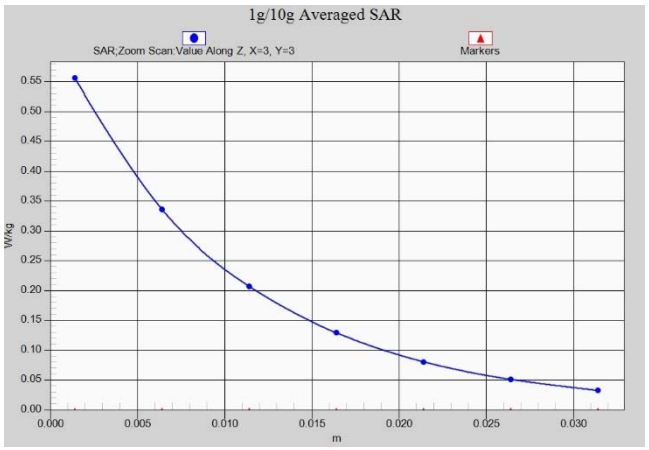


Fig. 1-35 Z-Scan at power reference point (LTE Band71)

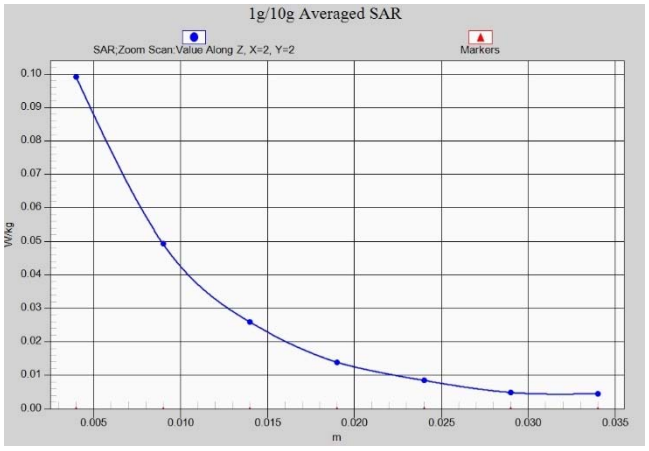


Fig. 1-36 Z-Scan at power reference point (LTE Band71)

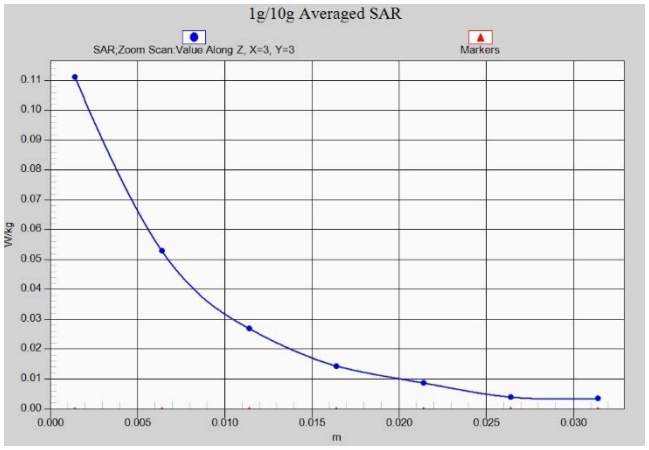


Fig. 1-37 Z-Scan at power reference point (wifi2450)

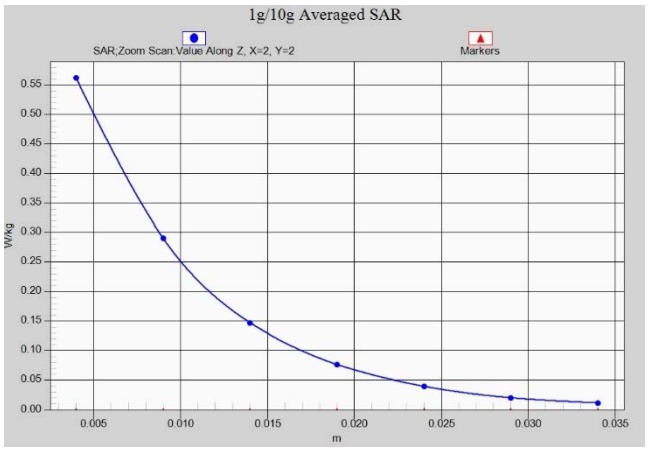


Fig. 1-38 Z-Scan at power reference point (wifi2450)

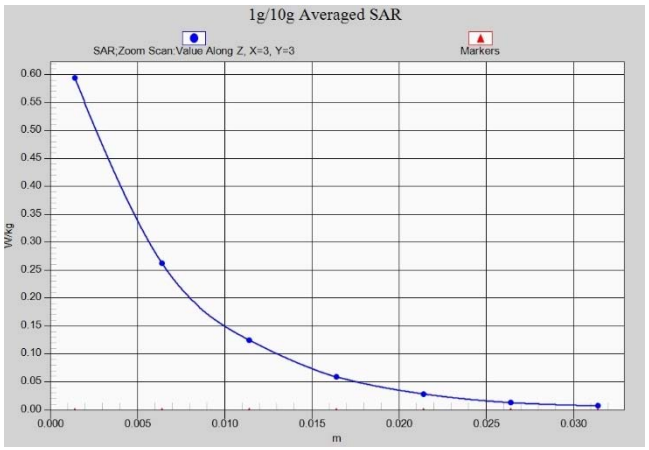


Fig. 1-39 Z-Scan at power reference point (wifi5G)

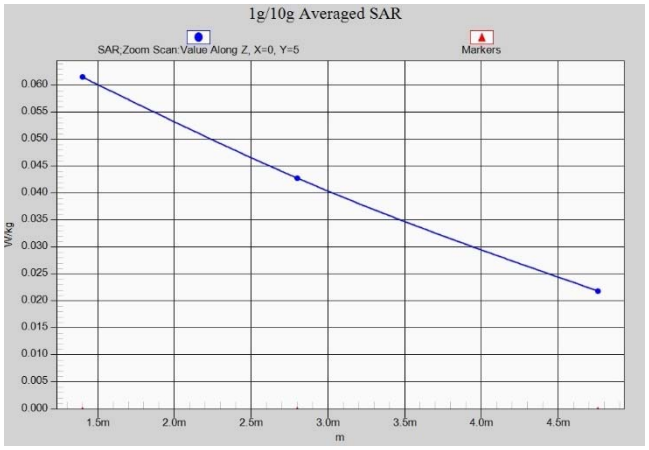


Fig. 1-40 Z-Scan at power reference point (wifi5G)

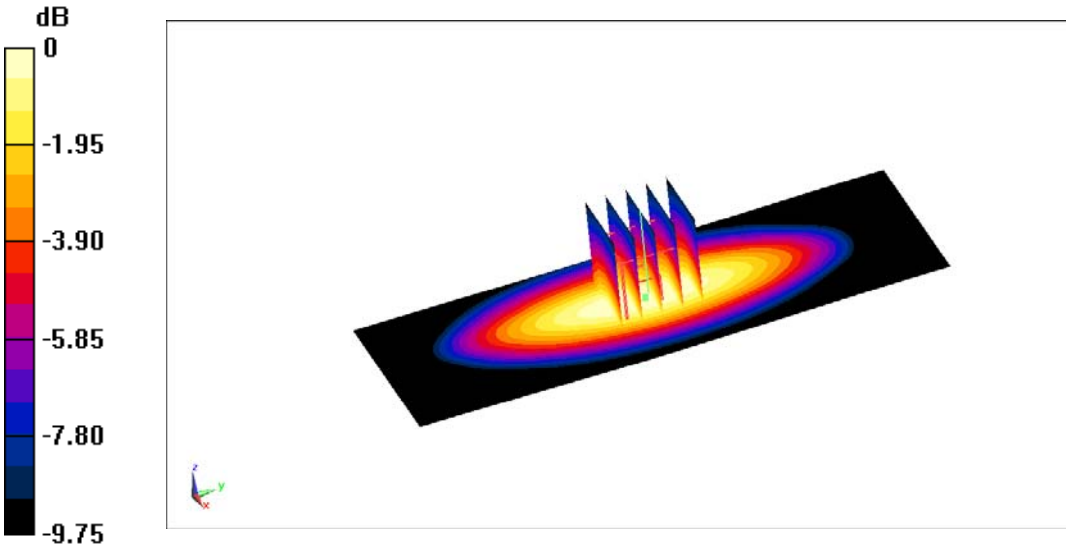
ANNEX B System Verification Results

750 MHz

Date: 2/20/2022
Electronics: DAE4 Sn549
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ =0.897 mho/m; ε_r = 42.07; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(10.26,10.26,10.26)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 58.99 V/m; Power Drift = -0.1
Fast SAR: SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.4 W/kg
Maximum value of SAR (interpolated) = 2.81 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =58.99 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 3.3 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.4 W/kg
Maximum value of SAR (measured) = 2.92 W/kg



0 dB = 2.92 W/kg = 4.65 dB W/kg

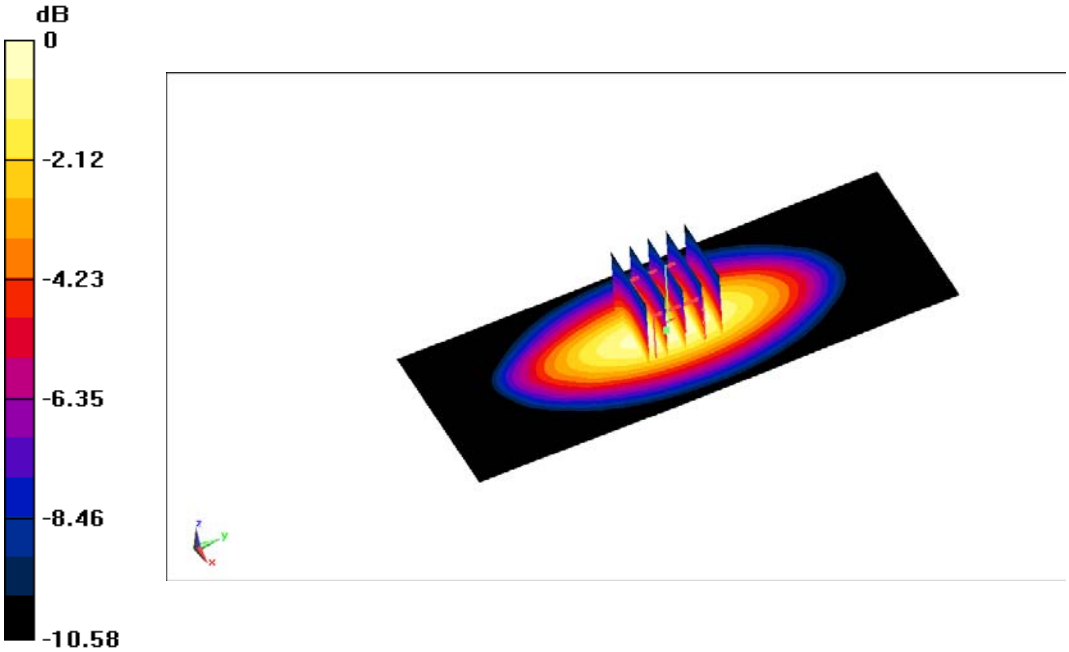
Fig.B.1 validation 750 MHz 250mW

835 MHz

Date: 2/21/2022
Electronics: DAE4 Sn549
Medium: Head 835 MHz
Medium parameters used: f = 835 MHz; σ =0.884 mho/m; ε_r = 41.45; 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 – SN7464 ConvF(9.96,9.96,9.96)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 63.45 V/m; Power Drift = -0.05
Fast SAR: SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (interpolated) = 3.2 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =63.45 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 3.7 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.55 W/kg
Maximum value of SAR (measured) = 3.21 W/kg



0 dB = 3.21 W/kg = 5.07 dB W/kg

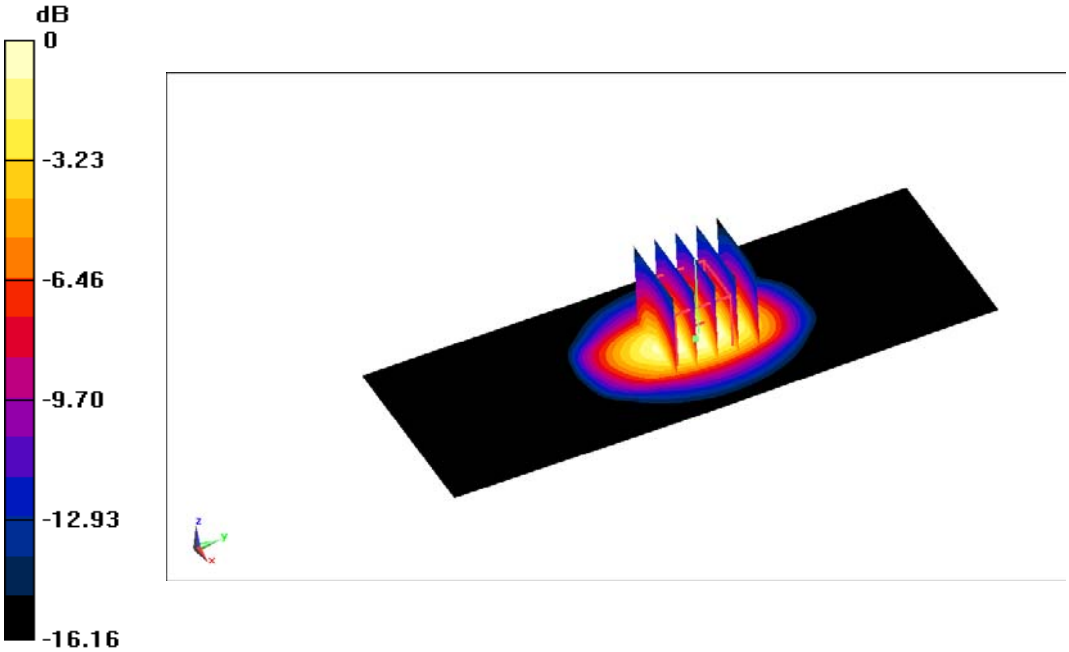
Fig.B.2 validation 835 MHz 250mW

1750 MHz

Date: 2/22/2022
Electronics: DAE4 Sn549
Medium: Head 1750 MHz
Medium parameters used: f = 1750 MHz; σ =1.374 mho/m; ε_r = 39.44; 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 – SN7464 ConvF(8.52,8.52,8.52)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 105.19 V/m; Power Drift = -0.04
Fast SAR: SAR(1 g) = 9.3 W/kg; SAR(10 g) = 4.73 W/kg
Maximum value of SAR (interpolated) = 14.12 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =105.19 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 16.67 W/kg
SAR(1 g) = 9 W/kg; SAR(10 g) = 4.76 W/kg
Maximum value of SAR (measured) = 14.22 W/kg



0 dB = 14.22 W/kg = 11.53 dB W/kg

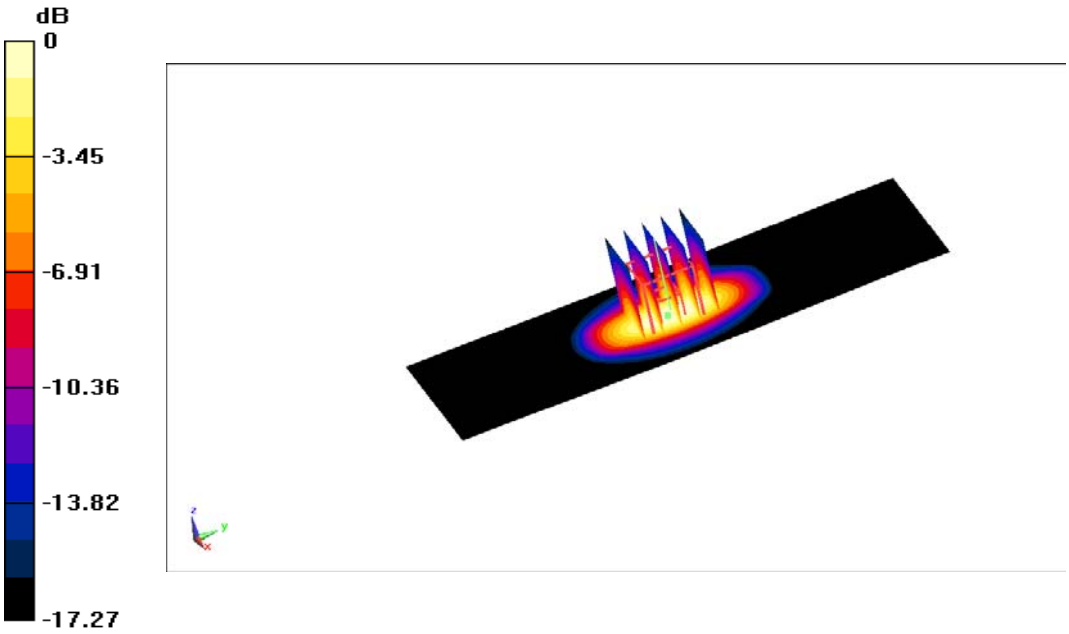
Fig.B.3 validation 1750 MHz 250mW

1900 MHz

Date: 2/23/2022
Electronics: DAE4 Sn549
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ =1.382 mho/m; ε_r = 39.33; 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 – SN7464 ConvF(8.18,8.18,8.18)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 110.67 V/m; Power Drift = 0.06
Fast SAR: SAR(1 g) = 9.95 W/kg; SAR(10 g) = 5.14 W/kg
Maximum value of SAR (interpolated) = 15.41 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =110.67 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 18.05 W/kg
SAR(1 g) = 9.92 W/kg; SAR(10 g) = 5.24 W/kg
Maximum value of SAR (measured) = 14.91 W/kg



0 dB = 14.91 W/kg = 11.73 dB W/kg

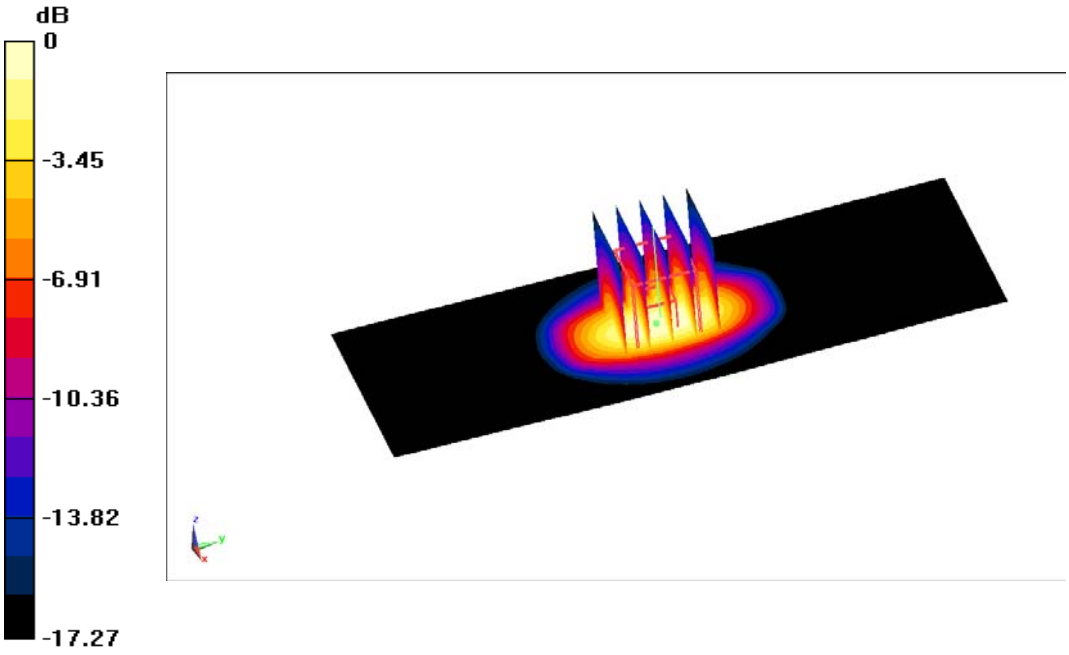
Fig.B.4 validation 1900 MHz 250mW

1900 MHz

Date: 2/24/2022
Electronics: DAE4 Sn549
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ =1.41 mho/m; ε_r = 40.02; 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 – SN7464 ConvF(8.18,8.18,8.18)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 108.26 V/m; Power Drift = -0.05
Fast SAR: SAR(1 g) = 9.73 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (interpolated) = 15.43 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =108.26 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 18.01 W/kg
SAR(1 g) = 9.76 W/kg; SAR(10 g) = 5.1 W/kg
Maximum value of SAR (measured) = 15.23 W/kg



0 dB = 15.23 W/kg = 11.83 dB W/kg

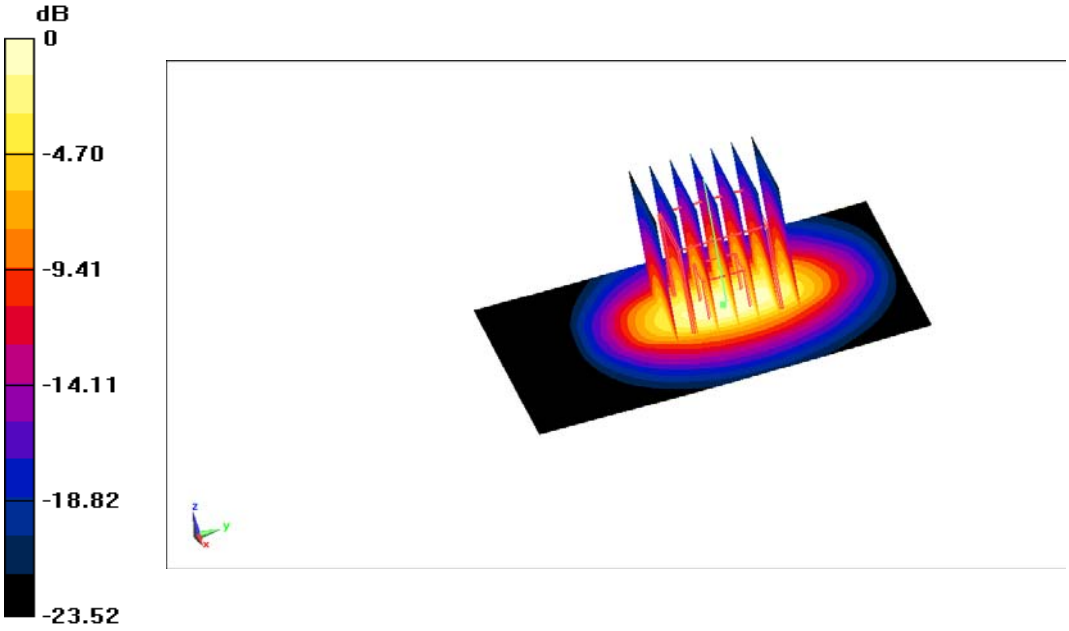
Fig.B.5 validation 1900 MHz 250mW

2600 MHz

Date: 2/26/2022
Electronics: DAE4 Sn549
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.956 mho/m; ε_r = 38.46; 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 – SN7464 ConvF(7.64,7.64,7.64)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 123.28 V/m; Power Drift = -0.08
Fast SAR: SAR(1 g) = 14.25 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (interpolated) = 24.67 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =123.28 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 29.18 W/kg
SAR(1 g) = 14.3 W/kg; SAR(10 g) = 6.43 W/kg
Maximum value of SAR (measured) = 24.35 W/kg



0 dB = 24.35 W/kg = 13.86 dB W/kg

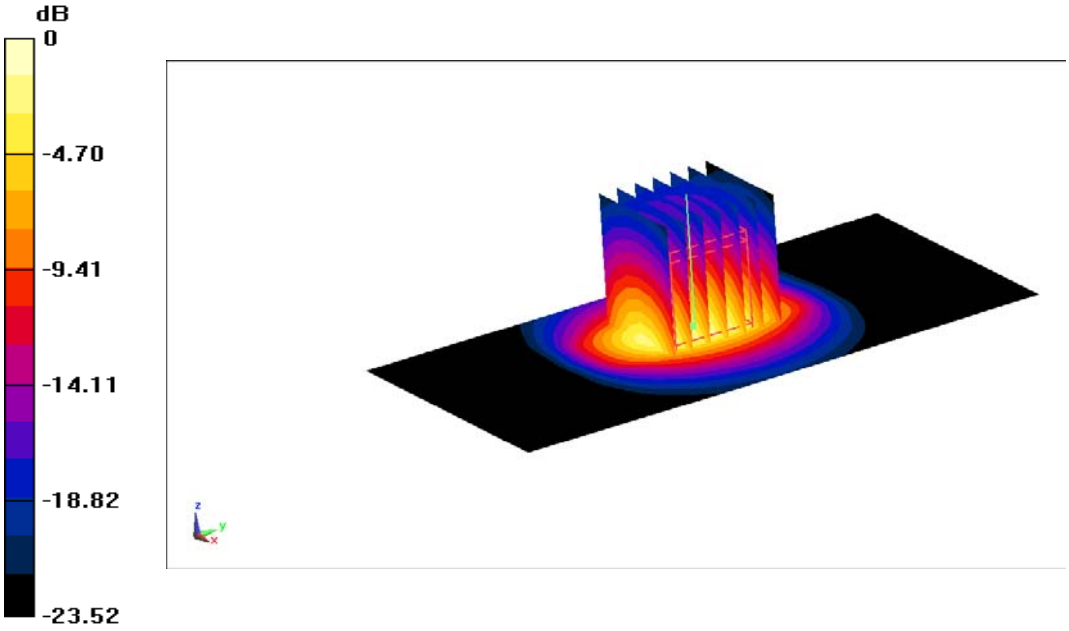
Fig.B.6 validation 2600 MHz 250mW

2600 MHz

Date: 2/27/2022
Electronics: DAE4 Sn549
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.942 mho/m; ε_r = 38.63; 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 – SN7464 ConvF(7.64,7.64,7.64)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 118.93 V/m; Power Drift = 0.06
Fast SAR: SAR(1 g) = 14.11 W/kg; SAR(10 g) = 6.21 W/kg
Maximum value of SAR (interpolated) = 24.35 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =118.93 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 28.99 W/kg
SAR(1 g) = 14.08 W/kg; SAR(10 g) = 6.35 W/kg
Maximum value of SAR (measured) = 24.82 W/kg



0 dB = 24.82 W/kg = 13.95 dB W/kg

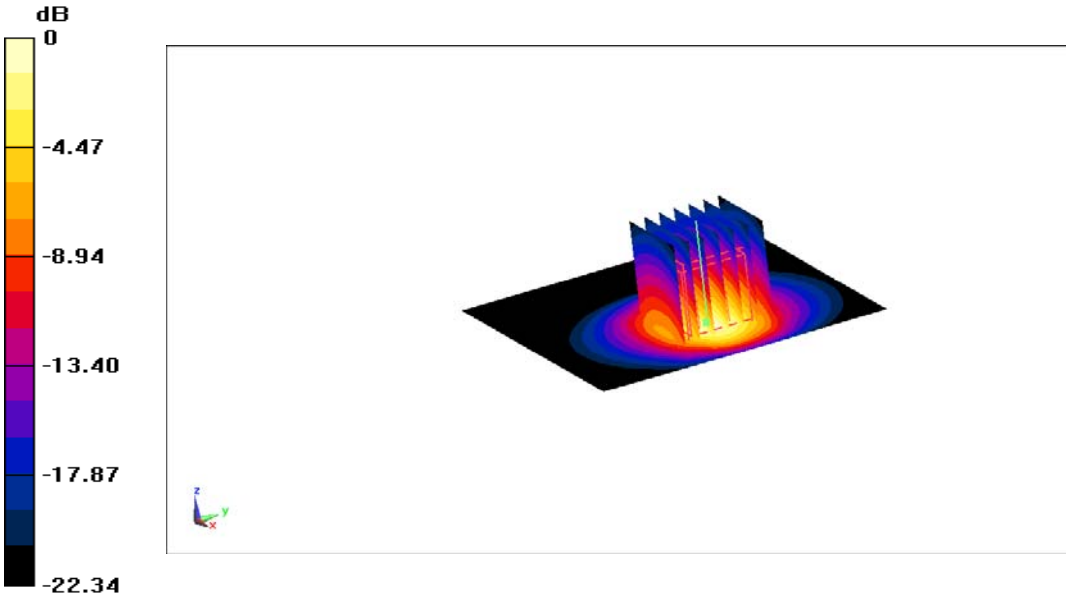
Fig.B.7 validation 2600 MHz 250mW

2450 MHz

Date: 2/28/2022
Electronics: DAE4 Sn549
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ =1.815 mho/m; ε_r = 39.32; 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 – SN7464 ConvF(7.77,7.77,7.77)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Reference Value = 117.26 V/m; Power Drift = -0.1
Fast SAR: SAR(1 g) = 12.89 W/kg; SAR(10 g) = 6.21 W/kg
Maximum value of SAR (interpolated) = 21.73 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =117.26 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 26.53 W/kg
SAR(1 g) = 13.06 W/kg; SAR(10 g) = 6.22 W/kg
Maximum value of SAR (measured) = 22.19 W/kg



0 dB = 22.19 W/kg = 13.46 dB W/kg

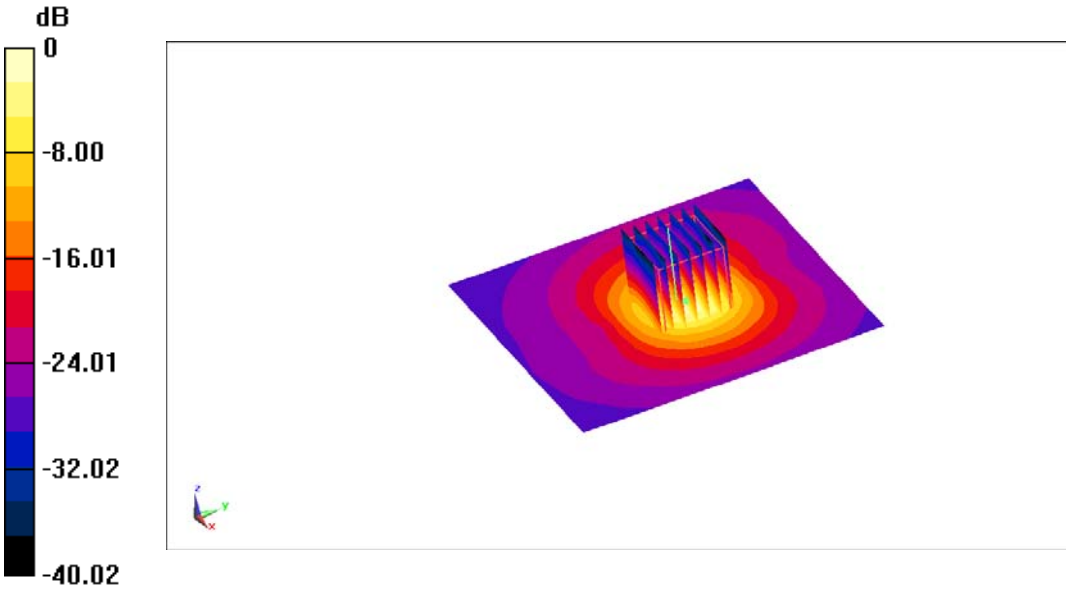
Fig.B.8 validation 2450 MHz 250mW

5250 MHz

Date: 3/1/2022
Electronics: DAE4 Sn549
Medium: Head 5250 MHz
Medium parameters used: f = 5250 MHz; σ =4.626 mho/m; ε_r = 35.89; 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 – SN7464 ConvF(5.43,5.43,5.43)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 79.46 V/m; Power Drift = -0.05
Maximum value of SAR (interpolated) = 18.4 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =79.46 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 28.57 W/kg
SAR(1 g) = 20.28 W/kg; SAR(10 g) = 5.67 W/kg
Maximum value of SAR (measured) = 18.11 W/kg



0 dB = 18.11 W/kg = 12.58 dB W/kg

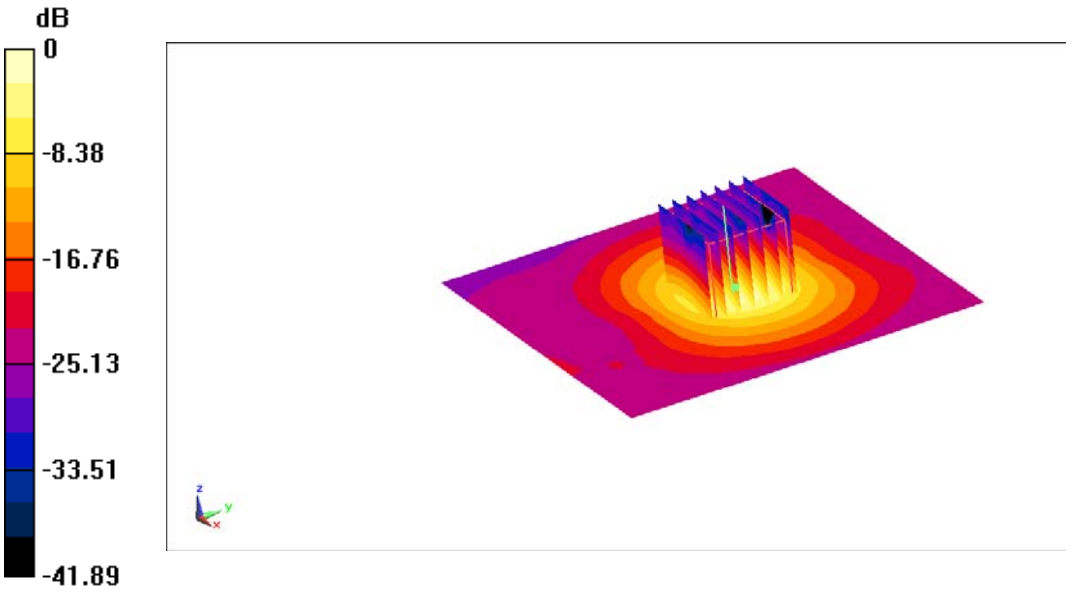
Fig.B.9 validation 5250 MHz 100mW

5600 MHz

Date: 3/2/2022
Electronics: DAE4 Sn549
Medium: Head 5600 MHz
Medium parameters used: f = 5600 MHz; σ =5.085 mho/m; ε_r = 34.97; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 5600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(4.91,4.91,4.91)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 78.21 V/m; Power Drift = -0.04
Maximum value of SAR (interpolated) = 20.09 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =78.21 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 31.35 W/kg
SAR(1 g) = 20.54 W/kg; SAR(10 g) = 5.88 W/kg
Maximum value of SAR (measured) = 20.37 W/kg



0 dB = 20.37 W/kg = 13.09 dB W/kg

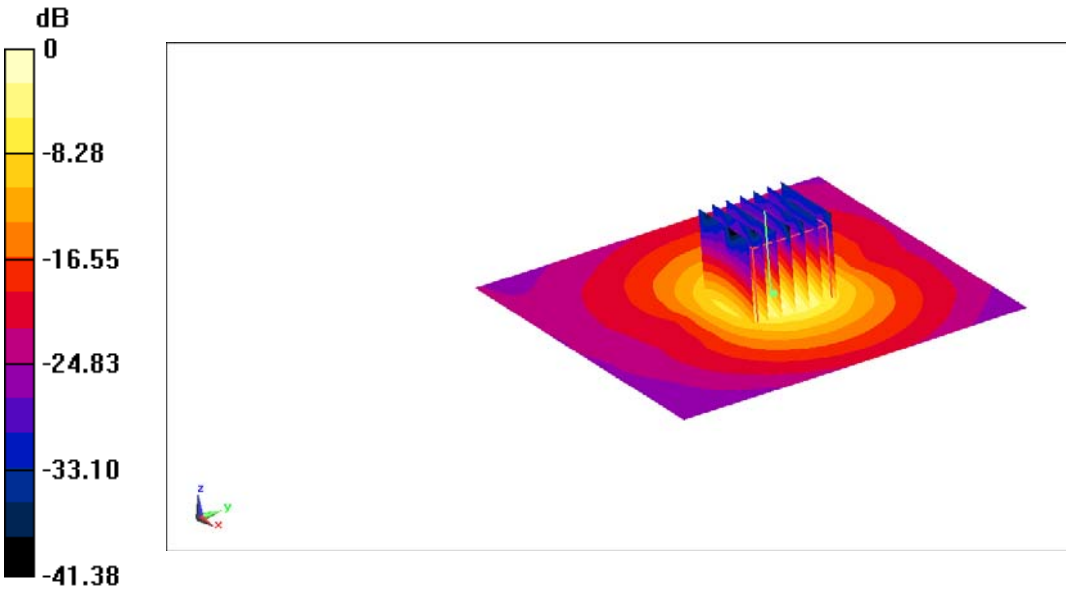
Fig.B.10 validation 5600 MHz 100mW

5750 MHz

Date: 3/3/2022
Electronics: DAE4 Sn549
Medium: Head 5750 MHz
Medium parameters used: f = 5750 MHz; σ =5.154 mho/m; ε_r = 34.77; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 5750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7464 ConvF(4.85,4.85,4.85)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 76.92 V/m; Power Drift = 0.06
Maximum value of SAR (interpolated) = 20.15 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =76.92 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 31.83 W/kg
SAR(1 g) = 20.15 W/kg; SAR(10 g) = 5.77 W/kg
Maximum value of SAR (measured) = 19.52 W/kg



0 dB = 19.52 W/kg = 12.9 dB W/kg

Fig.B.11 validation 5750 MHz 100mW

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

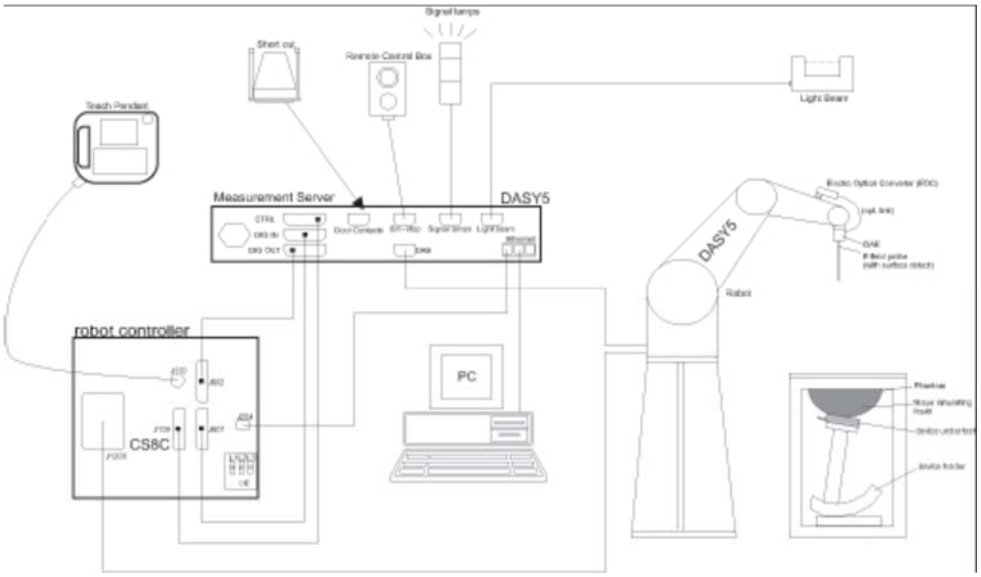
Table B.1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2022/2/20	750 MHz	Head	2.08	2.11	1.44%
2022/2/21	835 MHz	Head	2.41	2.42	0.41%
2022/2/22	1750 MHz	Head	9.3	9.11	-2.04%
2022/2/23	1900 MHz	Head	9.95	9.92	-0.30%
2022/2/24	1900 MHz	Head	9.73	9.76	0.31%
2022/2/26	2600 MHz	Head	14.25	14.3	0.35%
2022/2/27	2600 MHz	Head	14.11	14.08	-0.21%
2022/2/28	2450 MHz	Head	12.89	13.06	1.32%

ANNEX C SAR Measurement Setup

C.1 Measurement Set-up

The Dasy5 or DASY6 system for performing compliance tests is illustrated above graphically. This system consists of the following items:



Picture C.1SAR Lab Test Measurement Set-up

- A standard high precision 6-axis robot (StäubliTX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY5 or DASY6 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as
- warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

C.2 Dasy5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY5 or DASY6 software reads the reflection durning a software approach and looks for the maximum using 2nd ord curve fitting. The approach is stopped at reaching the maximum.

Probe Specifications:

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

Picture C.2Near-field Probe

Picture C.3E-field Probe

C.3 E-field Probe Calibration

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

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

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

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

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

Where:

Δt = Exposure time (30 seconds),

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

ΔT = Temperature increase due to RF exposure.

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

C.4 Other Test Equipment

C.4.1 Data Acquisition Electronics(DAE)

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

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

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

PictureC.4: DAE

C.4.2 Robot

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

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

Picture C.5 DASY 5

C.4.3 Measurement Server

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

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

Picture C.6 Server for DASY 5

C.4.4 Device Holder for Phantom

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

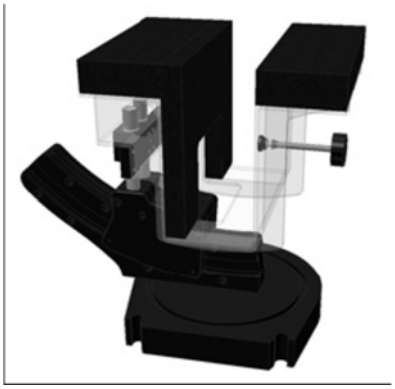
The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference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

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

<Laptop Extension Kit>

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

Picture C7-1: Device Holder



Picture C.7-2: Laptop Extension Kit

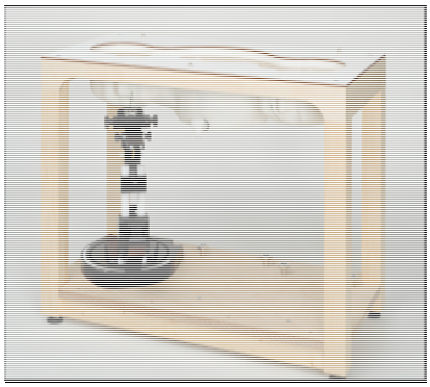
C.4.5 Phantom

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a table. The shape of the shell is based on data from an anatomical study designed to

Represent the 90th percentile of the population. The phantom enables the dissymmetric evaluation of SAR for both left and right handed handset usage, as well as body-worn usage using the flat phantom region. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. The shell phantom has a 2mm shell thickness (except the ear region where shell thickness increases to 6 mm).

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

Available: Special

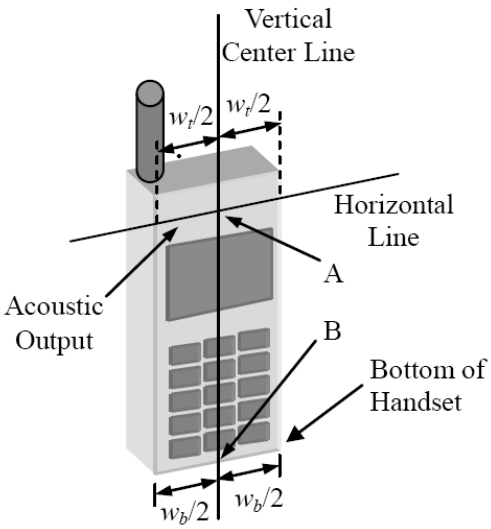


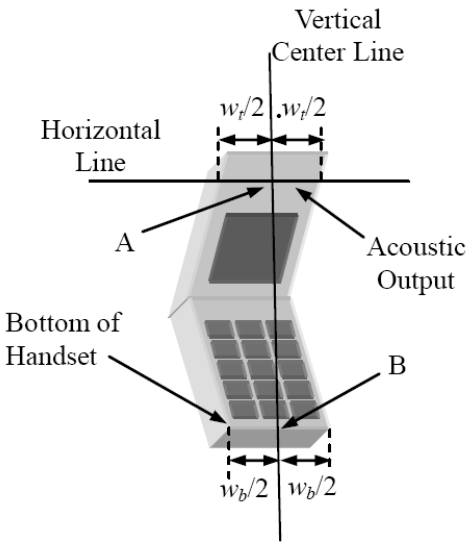
Picture C.8: SAM Twin Phantom

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

D.1 General considerations

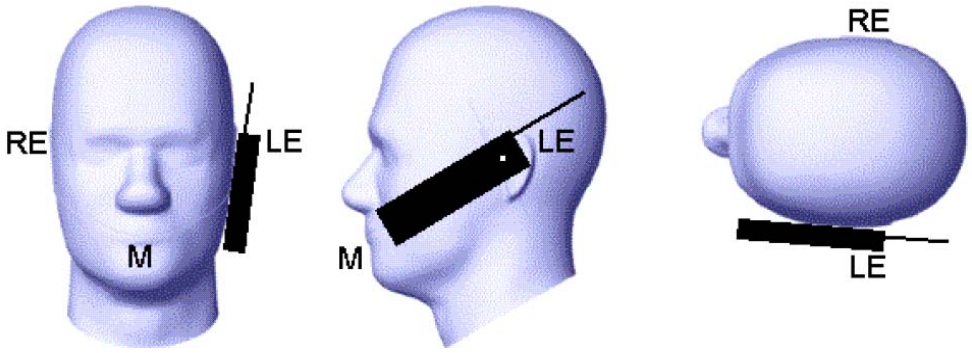
This standard specifies two handset test positions against the head phantom – the “cheek” position and the “tilt” position.



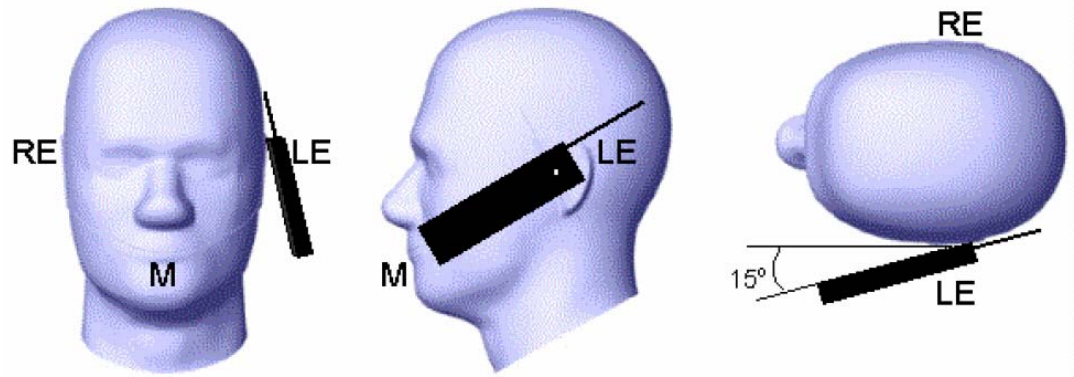


W_t	Width of the handset at the level of the acoustic
W_b	Width of the bottom of the handset
A	Midpoint of the width W_t of the handset at the level of the acoustic output
B	Midpoint of the width W_b of the bottom of the handset

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



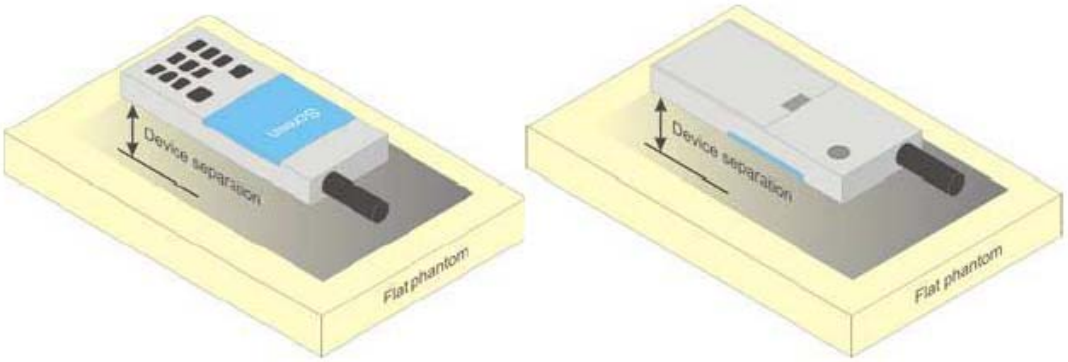
Picture D.2 Cheek position of the wireless device on the left side of SAM



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

D.2 Body-worn device

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

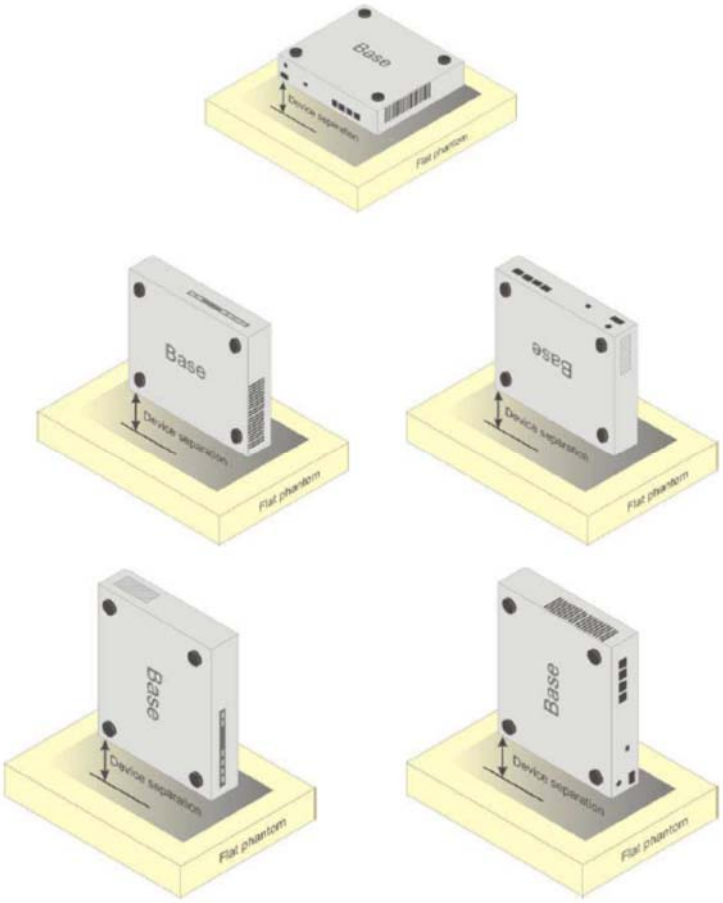


Picture D.4Test positions for body-worn devices

D.3 Desktop device

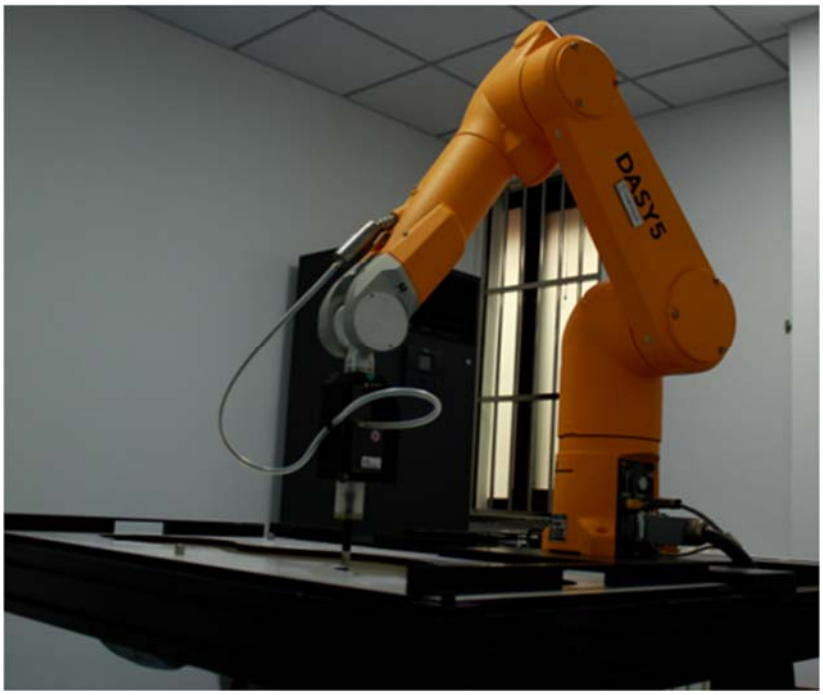
A typical example of a desktop device is a wireless enabled desktop computer placed on a table or desk when used.

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



Picture D.5 Test positions for desktop devices

D.4 DUT Setup Photos



Picture D.6

ANNEX E Equivalent Media Recipes

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

TableE.1: Composition of the Tissue Equivalent Matter

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

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

ANNEX F System Validation

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

Table F.1: System Validation for 7464

Probe SN.	Liquid name	Validation date	Frequency point	Status (OK or Not)
7464	Head 750MHz	February 19，2021	750 MHz	OK
7464	Head 835MHz	February 19，2021	835 MHz	OK
7464	Head 1450MHz	February 20，2021	1450 MHz	OK
7464	Head 1640MHz	February 20，2021	1640 MHz	OK
7464	Head 1750MHz	February 21，2021	1750 MHz	OK
7464	Head 1900MHz	February 21，2021	1900 MHz	OK
7464	Head 2000MHz	February 22，2021	2000 MHz	OK
7464	Head 2300MHz	February 22，2021	2300 MHz	OK
7464	Head 2450MHz	February 22，2021	2450 MHz	OK
7464	Head 2600MHz	February 23，2021	2600 MHz	OK
7464	Head 3300MHz	February 23，2021	3300 MHz	OK
7464	Head 3500MHz	February 23，2021	3500 MHz	OK
7464	Head 3700MHz	February 24，2021	3700 MHz	OK
7464	Head 3835MHz	February 24，2021	3835 MHz	OK
7464	Head 4100MHz	February 25，2021	4100MHz	OK
7464	Head 4200MHz	February 25，2021	4200MHz	OK
7464	Head 4400MHz	February 25，2021	4400MHz	OK
7464	Head 4600MHz	February 26，2021	4600MHz	OK
7464	Head 4800MHz	February 26，2021	4800MHz	OK
7464	Head 4950MHz	February 26，2021	4950MHz	OK
7464	Head 5250MHz	February 27，2021	5250MHz	OK
7464	Head 5600MHz	February 27，2021	5600 MHz	OK
7464	Head 5750MHz	February 27，2021	5750 MHz	OK

ANNEX G Probe Calibration Certificate

Probe 7464 Calibration Certificate

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client CTTL-BJ (Auden) **Certificate No: EX3-7464_Jan22**

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:7464

Calibration procedure(s): QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v6, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes

Calibration date: January 26, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-22
DAE4	SN: 660	13-Oct-21 (No. DAE4-660_Oct21)	Oct-22
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ES3-3013_Dec21)	Dec-22
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: January 28, 2022

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: EX3-7464_Jan22 Page 1 of 23

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7464

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m)²)[A]	0.46	0.44	0.45	± 10.1 %
DCP (mV)[B]	100.5	101.1	99.2	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	129.8	± 2.7 %	± 4.7 %
		Y	0.00	0.00	1.00		143.1		
		Z	0.00	0.00	1.00		149.5		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	20.00	93.08	21.80	10.00	60.0	± 3.7 %	± 9.6 %
		Y	20.00	91.15	21.40		60.0		
		Z	20.00	93.95	22.82		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	20.00	94.89	21.67	6.99	80.0	± 2.0 %	± 9.6 %
		Y	20.00	91.07	20.01		80.0		
		Z	20.00	94.48	22.03		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	20.00	100.94	23.29	3.98	95.0	± 1.1 %	± 9.6 %
		Y	20.00	91.64	18.69		95.0		
		Z	20.00	98.54	22.66		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	20.00	111.81	26.93	2.22	120.0	± 1.2 %	± 9.6 %
		Y	20.00	91.67	17.31		120.0		
		Z	20.00	106.21	24.89		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	1.95	67.66	16.42	1.00	150.0	± 2.3 %	± 9.6 %
		Y	1.71	65.07	14.73		150.0		
		Z	1.98	67.42	16.43		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	2.73	71.10	17.33	0.00	150.0	± 0.9 %	± 9.6 %
		Y	2.26	67.69	15.37		150.0		
		Z	2.79	71.26	17.38		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	3.50	72.58	19.72	3.01	150.0	± 0.7 %	± 9.6 %
		Y	3.46	71.32	18.87		150.0		
		Z	3.75	73.23	20.03		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	3.79	68.38	16.54	0.00	150.0	± 2.0 %	± 9.6 %
		Y	3.52	66.93	15.61		150.0		
		Z	3.82	68.42	16.57		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.98	65.65	15.65	0.00	150.0	± 3.8 %	± 9.6 %
		Y	4.98	65.46	15.42		150.0		
		Z	5.02	65.62	15.64		150.0		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7464

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	61.5	458.49	35.65	15.95	0.16	5.10	0.72	0.47	1.01
Y	63.7	481.59	36.30	14.98	0.81	5.06	0.73	0.58	1.01
Z	68.2	509.89	35.77	20.70	0.43	5.10	0.63	0.55	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-150.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3-4 mm for an *Area Scan* job.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7464

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
64	54.2	0.75	13.80	13.80	13.80	0.00	1.00	± 13.3 %
150	52.3	0.76	11.94	11.94	11.94	0.00	1.00	± 13.3 %
300	45.3	0.87	11.78	11.78	11.78	0.09	1.00	± 13.3 %
450	43.5	0.87	11.02	11.02	11.02	0.16	1.30	± 13.3 %
750	41.9	0.89	10.26	10.26	10.26	0.56	0.81	± 12.0 %
835	41.5	0.90	9.96	9.96	9.96	0.41	0.91	± 12.0 %
900	41.5	0.97	9.72	9.72	9.72	0.52	0.80	± 12.0 %
1450	40.5	1.20	8.86	8.86	8.86	0.43	0.80	± 12.0 %
1640	40.2	1.31	8.64	8.64	8.64	0.33	0.86	± 12.0 %
1750	40.1	1.37	8.52	8.52	8.52	0.39	0.86	± 12.0 %
1810	40.0	1.40	8.20	8.20	8.20	0.37	0.86	± 12.0 %
1900	40.0	1.40	8.18	8.18	8.18	0.35	0.86	± 12.0 %
2000	40.0	1.40	8.20	8.20	8.20	0.34	0.86	± 12.0 %
2100	39.8	1.49	8.38	8.38	8.38	0.32	0.86	± 12.0 %
2300	39.5	1.67	8.36	8.36	8.36	0.32	0.90	± 12.0 %
2450	39.2	1.80	7.77	7.77	7.77	0.36	0.90	± 12.0 %
2600	39.0	1.96	7.64	7.64	7.64	0.40	0.90	± 12.0 %
3300	38.2	2.71	7.27	7.27	7.27	0.30	1.35	± 13.1 %
3500	37.9	2.91	7.20	7.20	7.20	0.30	1.35	± 13.1 %
3700	37.7	3.12	6.78	6.78	6.78	0.30	1.35	± 13.1 %
3900	37.5	3.32	6.76	6.76	6.76	0.40	1.60	± 13.1 %
4100	37.2	3.53	6.71	6.71	6.71	0.40	1.60	± 13.1 %
4200	37.1	3.63	6.60	6.60	6.60	0.40	1.70	± 13.1 %
4400	36.9	3.84	6.53	6.53	6.53	0.40	1.70	± 13.1 %
4600	36.7	4.04	6.40	6.40	6.40	0.40	1.70	± 13.1 %
4800	36.4	4.25	6.35	6.35	6.35	0.40	1.80	± 13.1 %
4950	36.3	4.40	6.00	6.00	6.00	0.40	1.80	± 13.1 %
5200	36.0	4.66	5.60	5.60	5.60	0.40	1.80	± 13.1 %
5250	35.9	4.71	5.43	5.43	5.43	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.32	5.32	5.32	0.40	1.80	± 13.1 %
5500	35.6	4.96	5.11	5.11	5.11	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.91	4.91	4.91	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5800	35.3	5.27	5.00	5.00	5.00	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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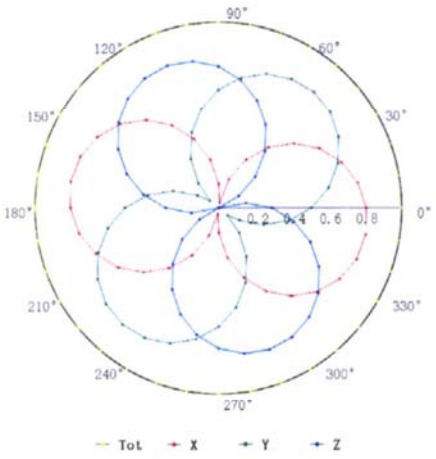
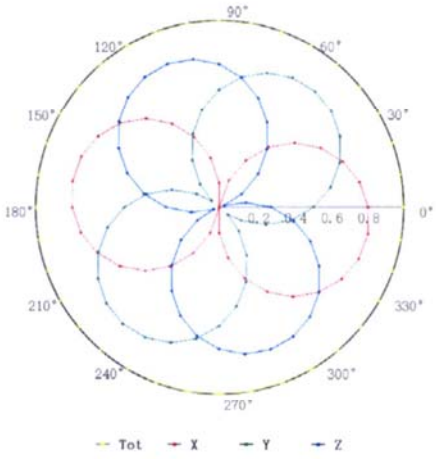
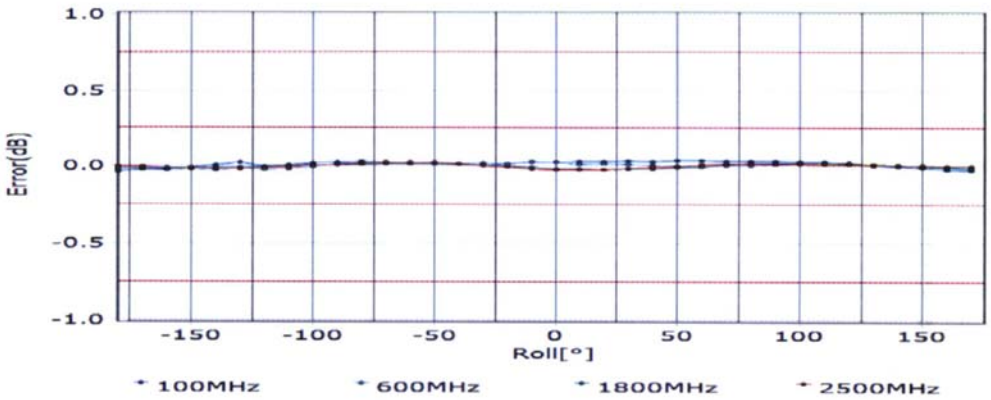
Receiving Pattern (Φ), θ=0°

f=600 MHz, TEM



f=1800 MHz, R22





Uncertainty of Axial Isotropy Assessment: ±1.2% (*k*=2)

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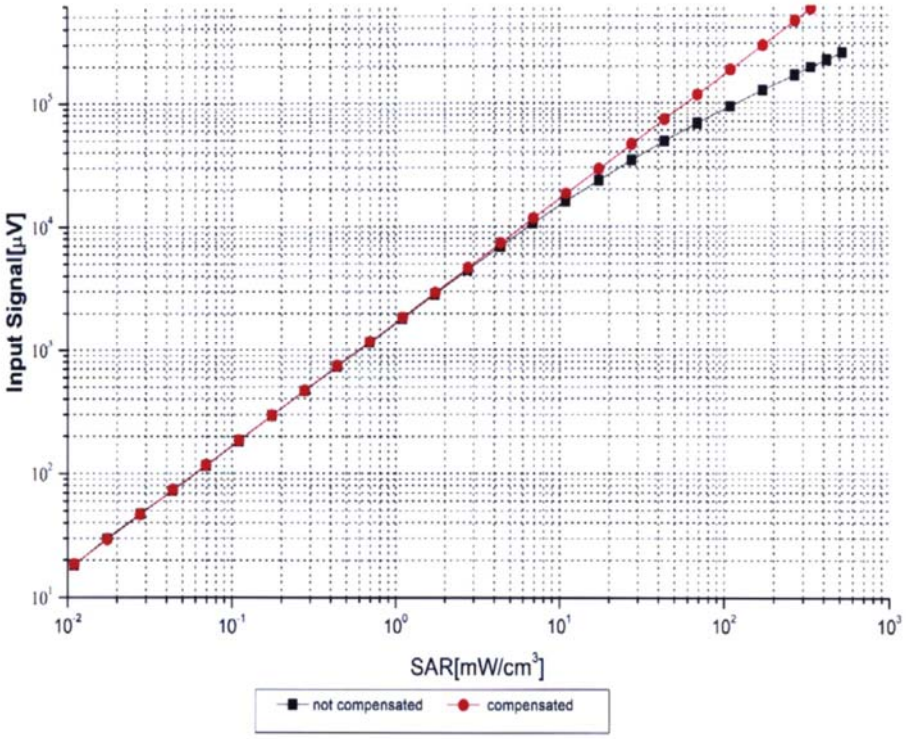
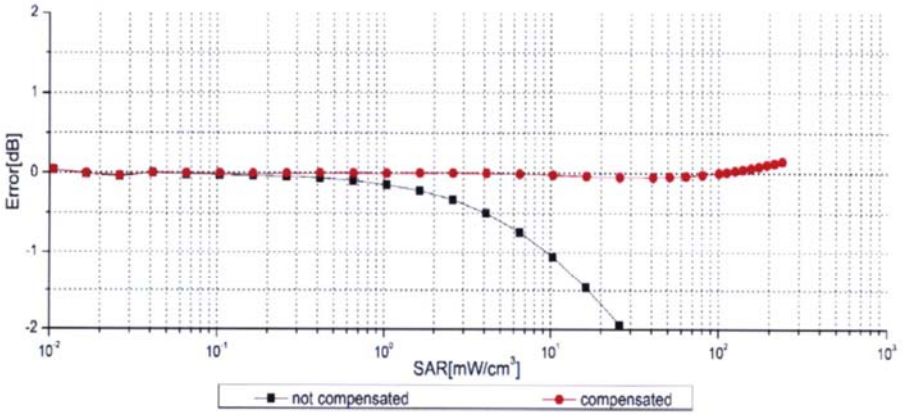
Dynamic Range f(SAR_{head})
(TEM cell, f = 900 MHz)





Uncertainty of Linearity Assessment: ±0.9% (*k*=2)

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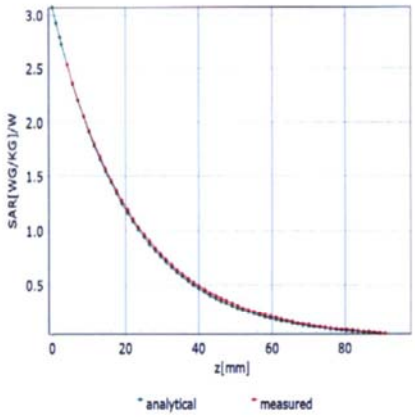
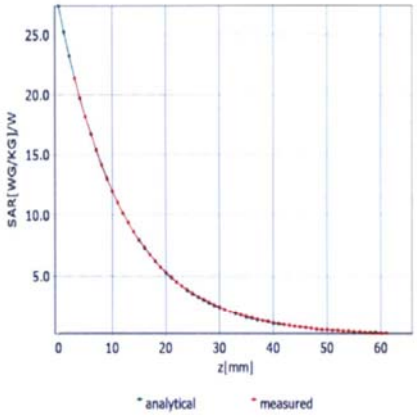
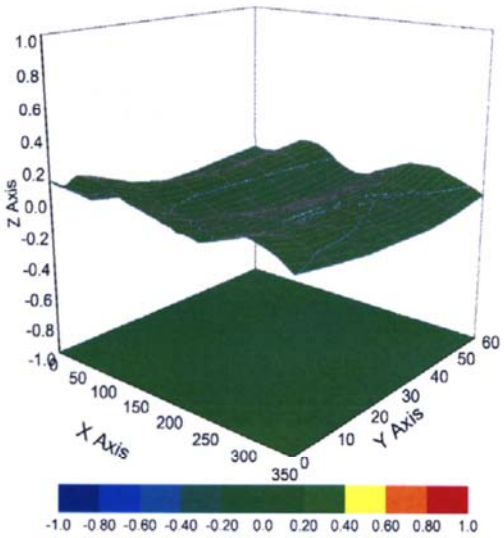
Conversion Factor Assessment

f=750 MHz,WGLS R9(H_convF) **f=1750 MHz,WGLS R22(H_convF)**





Deviation from Isotropy in Liquid



Uncertainty of Spherical Isotropy Assessment: ±3.2% (*k*=2)