TESTING
NVLAP LAB CODE 600118-0

SAR TEST REPORT

No. I21Z61482-SEM01

For

TCL Communication Ltd.

5G NR/ LTE/WCDMA/GSM Mobile Phone

Model Name: T781S，T781SPP

with

Hardware Version: 03

Software Version: 3D4Y

FCC ID: 2ACCJN056

Issued Date: 2021-11-11

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.

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Test Laboratory:

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I21Z61482-SEM01	Rev.0	2021-10-11	Initial creation of test report
I21Z61482-SEM01	Rev.1	2021-10-15	1. Revise the P_{max} value for GSM850 and 1900. 2. Revise the low/high frequency of 802.11n 40MHz on page84. 3. Revise the tune-up power for WLAN 2.4GHz on page 90 Table 13-1. 4. Revise the tune-up power for LTE Band 2-Ant3 on page 97 Table 15.1-12. 5. Revise the columns of measured 1g/10g and reported 1g/10g, which are reversed, on page107, 109 and 116~117. 6. Revise a typo on page261. 7. Remove 5GHz dipole calibration certificate, which is repeated.
I21Z61482-SEM01	Rev.2	2021-10-19	1. Add description for “5G NR + LTE + WLAN + BT Sim-Tx analysis” on chapter6 page 14~15.
I21Z61482-SEM01	Rev.3	2021-11-9	1. Revise the description for simultaneous transmission on section 13.1 page 90. 2. Revise the table for GSM/GPRS power on section 12.1. 3. Revise the table for P_{limit} on page13. 4. Revise the description for GSM measurement in section 12.1 on page32.
I21Z61482-SEM01	Rev.4	2021-11-11	1. Revise the table for GSM/GPRS power on section 12.1.

TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

Company Name:	CTTL(Shouxiang)
Address:	No. 51, Xueyuan Road, Haidian District, Beijing, P. R. China 100191.

1.2 Testing Environment

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

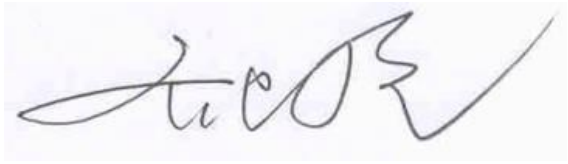
1.3 Project Data

Project Leader:	Qi Dianyuan
Test Engineer:	Yao Juming
Testing Start Date:	September 15, 2021
Testing End Date:	September 25, 2021

1.4 Signature

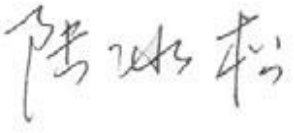
Yao Juming

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for TCL Communication Ltd. 5G NR/ LTE/WCDMA/GSM Mobile Phone T781S,T781SPP is as follows:

Table 2.1: Highest Reported SAR (1g)

Technology Band	Head (Separation Distance 0mm)	Hotspot (Separation Distance 10mm)	Body-Worn (Separation Distance 15mm)	Equipment Class
GSM850	**0.78**	**0.72**	/	PCE
GSM1900	**0.16**	**0.68**	/	
WCDMA1900	**0.86**	**0.51**	/	
WCDMA 850	**0.89**	**0.91**	/	
LTE Band2-ANT2	**1.03**	**0.60**	/	
LTE Band2-ANT3	**0.17**	**0.85**	/	
LTE Band5	**1.03**	**0.69**	/	
LTE Band7	**0.09**	**0.60**	/	
LTE Band12	**0.75**	**0.54**	/	
LTE Band13	**0.83**	**0.82**	/	
LTE Band48	**0.35**	**0.69**	/	
LTE Band66-ANT2	**1.19**	**1.07**	/	
LTE Band66-ANT3	**0.26**	**0.96**	/	
5G NR n2	**0.52**	**0.72**	/	
5G NR n5	**1.07**	**0.57**	/	
5G NR n66	**0.79**	**0.79**	/	
5G NR n77	**0.72**	**0.91**	/	
WLAN 2.4GHz	**0.89**	**0.16**	/	DTS
WLAN 5GHz	**0.97**	**0.32**	/	NII

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

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

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

The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report. The highest reported SAR value is obtained at the case of **(Table 2.1),** and the values are**: 1.19 W/kg(1g).**

Remark：

This device supports both LTE B4 and B66.Since the supported frequency span for LTE B4 falls completely within the supports frequency span for LTE B66, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE 66.

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

	Position	Main antenna	WiFi-2.4G	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.22	**1.41**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.15	**1.11**

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

	Position	Main antenna	WiFi-5G	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.27	**1.46**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.32	**1.28**

Table 2.4: The sum of SAR values for Main antenna +BT

	Position	Main antenna	BT	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	<0.01	**1.19**
Highest SAR value for Body	Left 10mm (5G NR n5)	1.07	<0.01	**1.07**

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

	Position	Main antenna	WiFi-5G	BT	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.27	<0.01	**1.46**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.32	<0.01	**1.28**

According to the above tables, the highest sum of reported SAR values is **1.46 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 14.

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.

3 Client Information

3.1 Applicant Information

Company Name:	TCL Communication Ltd.
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Telephone:	0086-755-36611722
Fax	0086-755-36612000-81722

3.2 Manufacturer Information

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

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

4.1 About EUT

Description:	5G NR/ LTE/WCDMA/GSM Mobile Phone
Model name:	T781S,T781SPP
Operating mode(s):	GSM850/900/1800/1900, WCDMA B1/B2/B5/B8 LTE Band2/3/4/5/7/12/13/20/28/46/48/66 5G NR n2/n5/n66/n77/n260/261 BT, Wi-Fi(2.4G), Wi-Fi(5G)
Tested Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	824 – 849 MHz (WCDMA 850 Band V)
	1710-1755 MHz (WCDMA1700 Band II)
	1850.7 – 1909.3 MHz (LTE Band 2)
	824.7 – 848.3 MHz (LTE Band 5)
	2500 – 2570 MHz (LTE Band 7)
	699.7 – 715.3 MHz (LTE Band 12)
	779.5 – 784.5 MHz (LTE Band 13)
	3550 – 3700 MHz (LTE Band 48)
	1710.7 –1779.3 MHz (LTE Band 66)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	2400 – 2483.5 MHz (Bluetooth)
	5180 – 5240 MHz (Wi-Fi 5.2G)
	5260 – 5320 MHz (Wi-Fi 5.3G)
	5500 – 5720 MHz (Wi-Fi 5.5G)
	5745 – 5825 MHz (Wi-Fi 5.8G)
	1850 – 1910 MHz(n2)
	824 – 849 MHz(n5)
	1710 – 1780 MHz (n66)
	3700– 3980 MHz (n77)
	37000– 40000 MHz (n260)
	27500– 28350 MHz (n261)
GPRS/EGPRS Multislot Class:	12
Test device production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Hotspot mode:	Support

4.2 Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
EUT1	016048000218363	03	3D4Y
EUT2	016048000215914	03	3D4Y
EUT3	016048000215963	03	3D4Y
EUT4	016048000215955	03	3D4Y
EUT5	016048000212234	03	3D4Y
EUT6	016048000212267	03	3D4Y
EUT7	016048000218041	03	3D4Y
EUT8	016048000212408	03	3D4Y

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

Note: It is performed to test SAR with the EUT1~4 and conducted power with the EUT5~8.

4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	TLp043F1	/	BYD

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

5 TEST METHODOLOGY

5.1 Applicable Limit Regulations

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

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

5.2 Applicable Measurement Standards

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

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

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

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

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

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

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

KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz.

KDB865664 D02 RF Exposure Reporting v01r02: RF Exposure Compliance Reporting and Documentation Considerations

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

TCB Workshop Nov 2019:RF Exposure Policy Updates (5G NR NSA Sub 6G SAR)

6 Smart Transmit feature for RF Exposure compliance

The FCC RF exposure limit is defined based on time-averaged RF exposure. The product implements Qualcomm Smart Transmit feature which controls the instantaneous transmitting power for WWAN transmitter to ensure the product in compliance with FCC RF exposure limit over a defined time window for SAR (transmit frequency ≤ 6GHz). To control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is compliant to the regulation requirement.

The purpose of the Part 1 test in this report is to demonstrate that the device meets the FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels. The parameters obtained from SAR characterization (referred to as SAR char, respectively) will be used as input for Smart Transmit. SAR char will be entered via the Embedded File System (EFS) to enable the Smart Transmit Feature.

WLAN/BT operations are not enabled with Smart Transmit.

Term	Description
P_{limit}	The time-averaged RF power which corresponds to SAR_design_target.
P_{max}	Maximum target power level
SAR_design_target:	The design target for SAR compliance. It should be less than regulatory power density limit to account for all device design related uncertainties.
SAR Char	P_{limit} for all the technologies/bands for all applicable DSI

Smart Transmit allows the device to transmit at higher power instantaneously, as high as P_{max}, when needed, but enforces power limiting to maintain time-averaged transmit power to P_{limit}. Below table shows P_{limit} EFS settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (Device State Index DSI).

<P_{limit} for supported technologies and bands (P_{limit} in EFS file)>

For FCC				
Band	**Extremity/Body worn scenario 0/15mm (dBm)**	**Hotspot scenario 10mm (dBm)**	**Head scenario 0mm (dBm)**	**P_{max}* (dBm)**
	DSI1	**DSI2**	**DSI3**	
GSM850 (1 Tx slots)**	32	32	32	32
GSM1900 (1 Tx slots)**	29	29	29	29
WCDMA II	20	20	20	24
WCDMA V	24	24	22.5	24
LTE Band 2-ANT2	20.5	20.5	20	24
LTE Band 2-ANT3	21.5	21.5	24	24
LTE Band 5	24	24	22.5	24
LTE Band 7	24	24	24	24
LTE Band 12	24	24	24	24
LTE Band 13	24	24	24	24
LTE Band 48**	24	24	21.5	24
LTE Band 66-ANT2	21	21	20	24
LTE Band 66-ANT3	24	24	24	24
FR1 N2	19.5	19.5	19.5	24
FR1 N5	24	24	23.5	24
FR1 N66	20	20	19	24
FR1 N77**	20.5	20.5	18.5	23

*P_{max} is used for RF tune up procedure. The maximum allowed output power is equal to P_{max} + 1dB uncertainty.

**All P_{limit} power levels entered in the Table correspond to average power levels after accounting for duty cycle in the case TDD modulation schemes (for e.g., GSM & LTE TDD & NR TDD).

The max allowed output power is the P_{limit} + 1dB device uncertainty, and if P_{limit} is higher than P_{max}, the device output power will be P_{max} instead.

5G NR + LTE + WLAN + BT Sim-Tx analysis:

In 5G NR + LTE + WLAN + BT simultaneous transmission, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN and BT radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

Smart Transmit current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses x%, then the exposure margin left for 5G NR is capped to (100-x)%. Thus, the compliance equation for LTE + 5G NR is

$$x\% * A + (100-x)\% * B \leqslant 1.0,$$

Where, A is normalized reported time-averaged SAR exposure ratio from LTE, and $A \leqslant 1.0$; B is normalized reported time-averaged exposure ratio from 5G NR (i.e., PD exposure for mmW NR or SAR exposure for sub6 NR), and $B \leqslant 1.0$.

Let C = normalized reported SAR exposure ratio from WLAN+BT, then for compliance,

$$x\% * A + (100-x)\% * B + C \leqslant 1.0 \quad (1)$$

$$x\% * A + (100-x)\% * B \leqslant x\% * \max(A, B) + (100-x)\% * \max(A, B) \leqslant \max(A, B)$$

$$x\% * A + (100-x)\% * B + C \leqslant \max(A, B) + C \leqslant 1.0 \quad (2)$$

if $A + C \leqslant 1.0$ and $B + C \leqslant 1.0$ can be proven, then "$x\% * A + (100-x)\% * B + C \leqslant 1.0$". Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1
Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN + BT < 1

Step 1: it's justified in Part 1 SAR report
Step 2: it's justified in section 12.1

During TER analysis, the reported time-averaged PD (assuming input.power.limit for at least one beam < NV setting Pmax) applies only to the worst-surface of the device. For other surfaces, worst-case PD needs to be calculated to assess TER for the corresponding surface. To determine worst-case PD for other surfaces, using simulation results

1.Calculate ratio of simulated PD for desired surface to simulated PD of worstsurface for a given beam

2. Repeat 1 to obtain ratios for all supported beams, and determine maximum ratio

3. Repeat 1~2 to obtain the corresponding worst-case PD for rest of surfaces (non worst-case surfaces) needed for TER analysis.

For example, if the back surface of device has highest PD and is determined as worst-surface, then,

- *Back_surface_worst-case_PD* = ***reported*** **time-averaged PD**
  where, ***reported*** **time-averaged PD** = *PD_design_target* + mmW device design related uncertainty

- *For other surfaces*
  - *front_surface_worst-case_PD = PD_ratio_front_to_back ** ***reported*** **timeaveraged PD**
    where, PD_ratio_front_to_back =*max* $\left\{\frac{simulated\ PD_{front(i)}}{simulated\ P\_back(i)}, beam\ i = 1,2 \dots N\right\}$,N= total N beams (all beams) supported by the mmW module being evaluated being evaluated.

  - *Follow similar approach to determine worst-case PD for bottom/top/left/right (if applicable).*

- *For body-worn and hotspot scenario, if SAR was measured at 15mm and 10mm, respectively, then the worst-case PD at 15mm and 10mm separation distance should be determined per surface as*
  - *15mm_worst-case_PD = PD_ratio_15mm_to_0mm ** ***reported*** **timeaveraged PD**
    Here, PD_ratio_15 mm _to_0mm =*max* $\left\{\frac{simulated\ Pd\ at\ 15\ mm\ (i)}{simulated\ PD\ at\ 0\ mm\ (i)}, beam\ i = 1,2 \dots N\right\}$, , N = total number of beams (**all** beams) supported by the mmW module being evaluated.

  - *10mm_worst-case_PD = PD_ratio_10mm_to_0mm ** ***reported*** **timeaveraged PD**
    Here, PD_ratio_15 mm _to_0mm =*max* $\left\{\frac{simulated\ Pd\ at\ 10\ mm\ (i)}{simulated\ PD\ at\ 0\ mm\ (i)}, beam\ i = 1,2 \dots N\right\}$, , N = total number of beams (**all** beams) supported by the mmW module being evaluated.

  - Note the validated model/simulation should be used in worst-case PD determination.

7 Specific Absorption Rate (SAR)

7.1 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.

7.2 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.

8 Tissue Simulating Liquids

8.1 Targets for tissue simulating liquid

Table 8.1: Targets for tissue simulating liquid

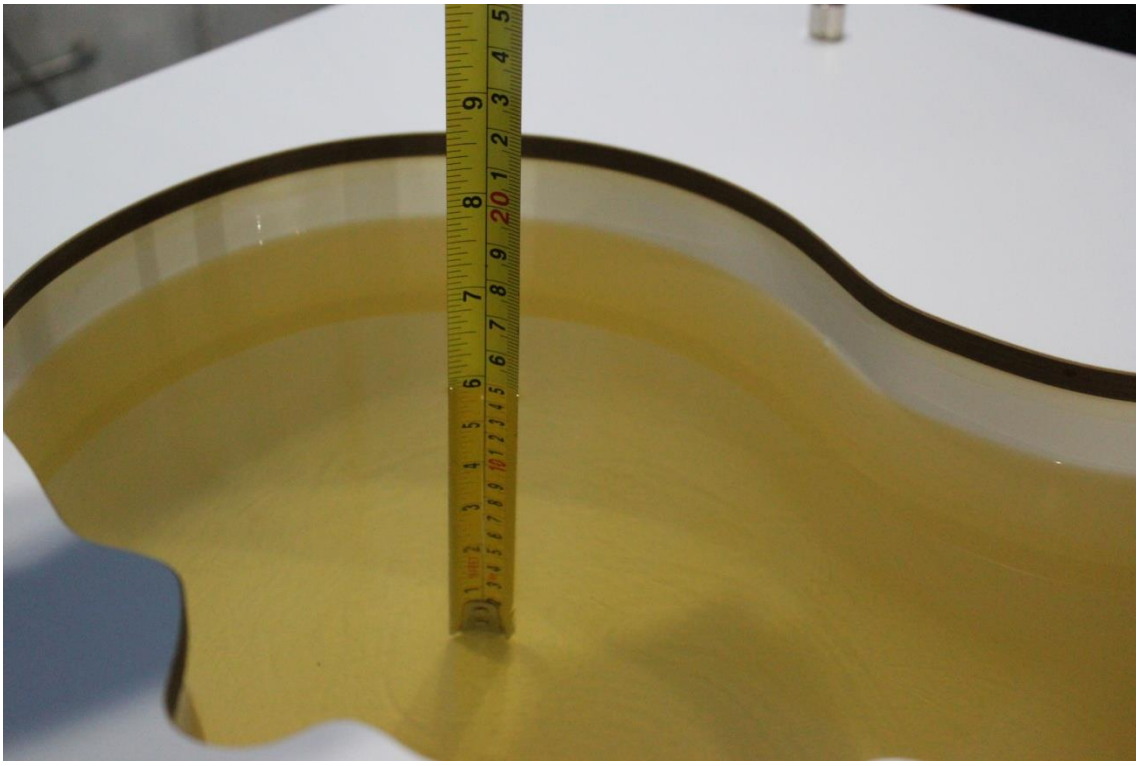
Frequency(MHz)	Liquid Type	Conductivity(σ)	± 5% Range	Permittivity(ε)	± 5% Range
750	Head	0.89	0.85～0.93	41.94	39.8～44.0
835	Head	0.90	0.86～0.95	41.5	39.4～43.6
1750	Head	1.37	1.30～1.44	40.08	38.1～42.1
1900	Head	1.40	1.33～1.47	40.0	38.0～42.0
2450	Head	1.67	1.59～1.75	39.47	37.5～41.4
2600	Head	1.96	1.86～2.06	39.01	37.1～41.0
3700	Head	3.12	2.96～3.28	37.70	35.82～39.59
3900	Head	3.32	3.15～3.49	37.47	35.6～39.34
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

8.2 Dielectric Performance

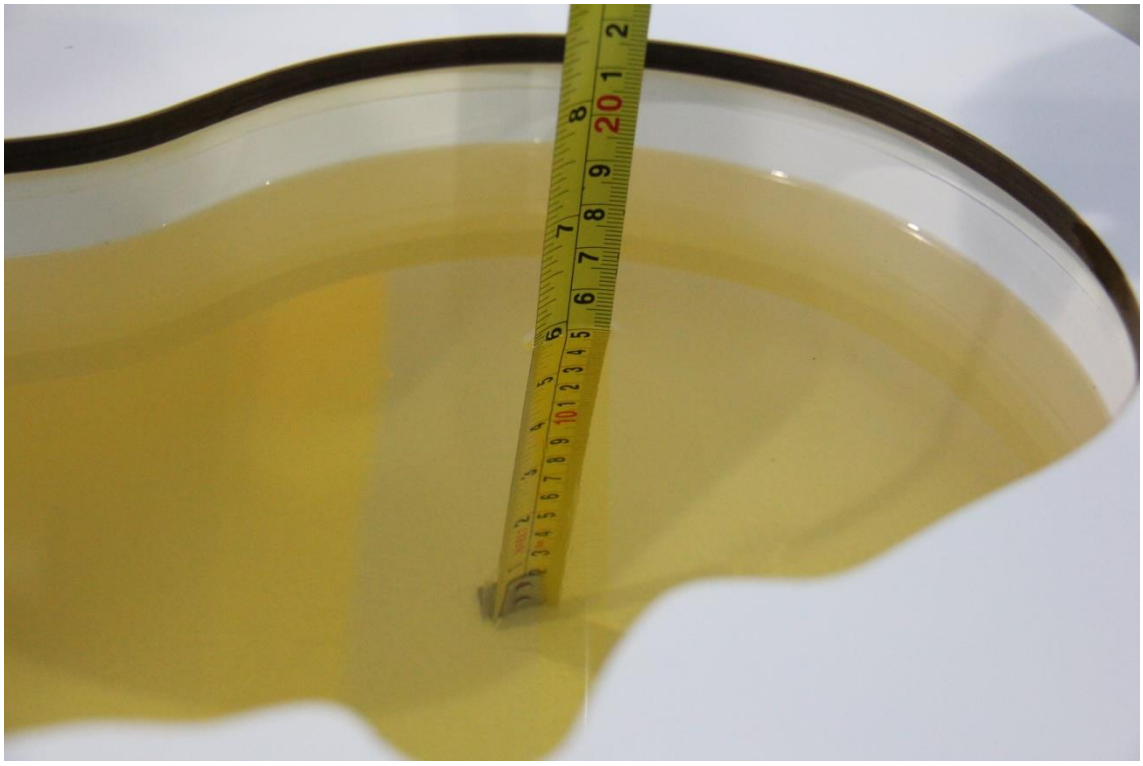
Table 8.2: Dielectric Performance of Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2021-9-15	Head	750 MHz	43.88	4.63	0.8281	-6.96
2021-9-16	Head	835 MHz	43.59	5.04	0.8613	-4.30
2021-9-17	Head	1750 MHz	41.45	3.42	1.331	-2.85
2021-9-18	Head	1900 MHz	41.27	3.18	1.421	1.50
2021-9-19	Head	2450 MHz	40.49	3.29	1.83	1.67
2021-9-20	Head	2600 MHz	40.16	2.95	1.96	0.00
2021-9-21	Head	3700 MHz	37.82	0.32	2.975	-4.65
2021-9-22	Head	3900 MHz	37.46	-0.03	3.162	-4.76
2021-9-23	Head	5250 MHz	34.7	-3.42	4.53	-3.82
2021-9-24	Head	5600 MHz	34.08	-4.08	4.899	-3.37
2021-9-25	Head	5750 MHz	33.82	-4.36	5.063	-3.01

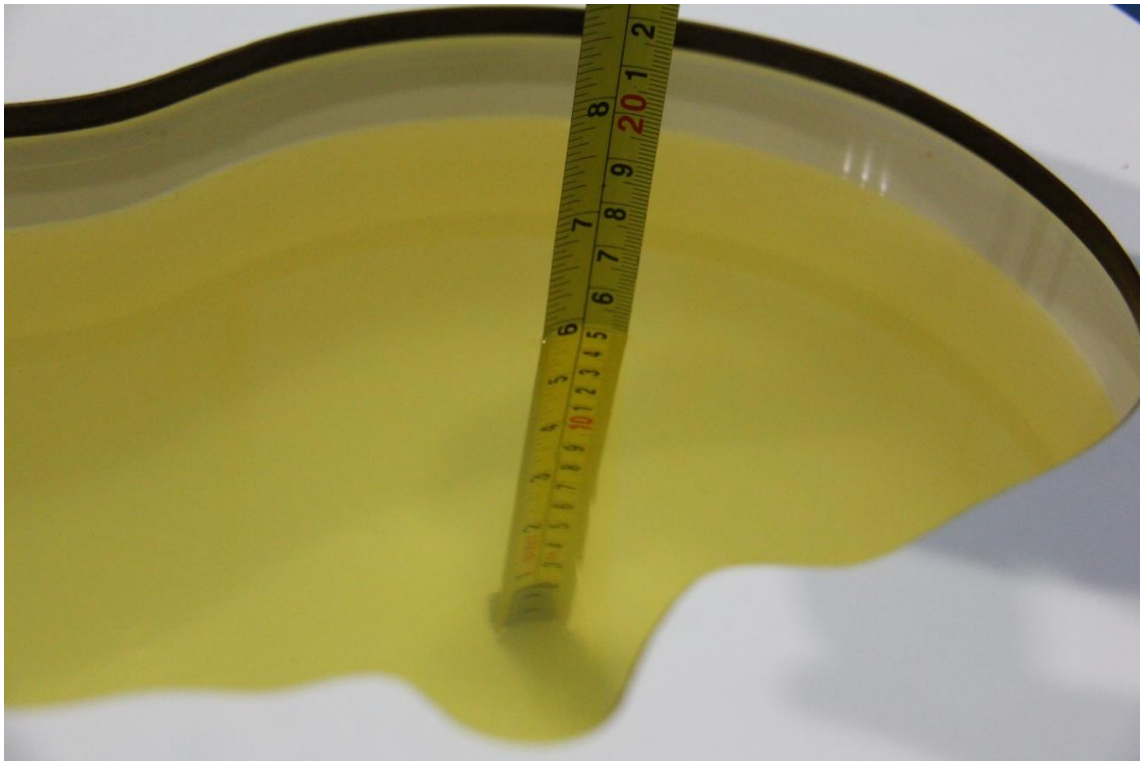
Note: The liquid temperature is 22.0°C



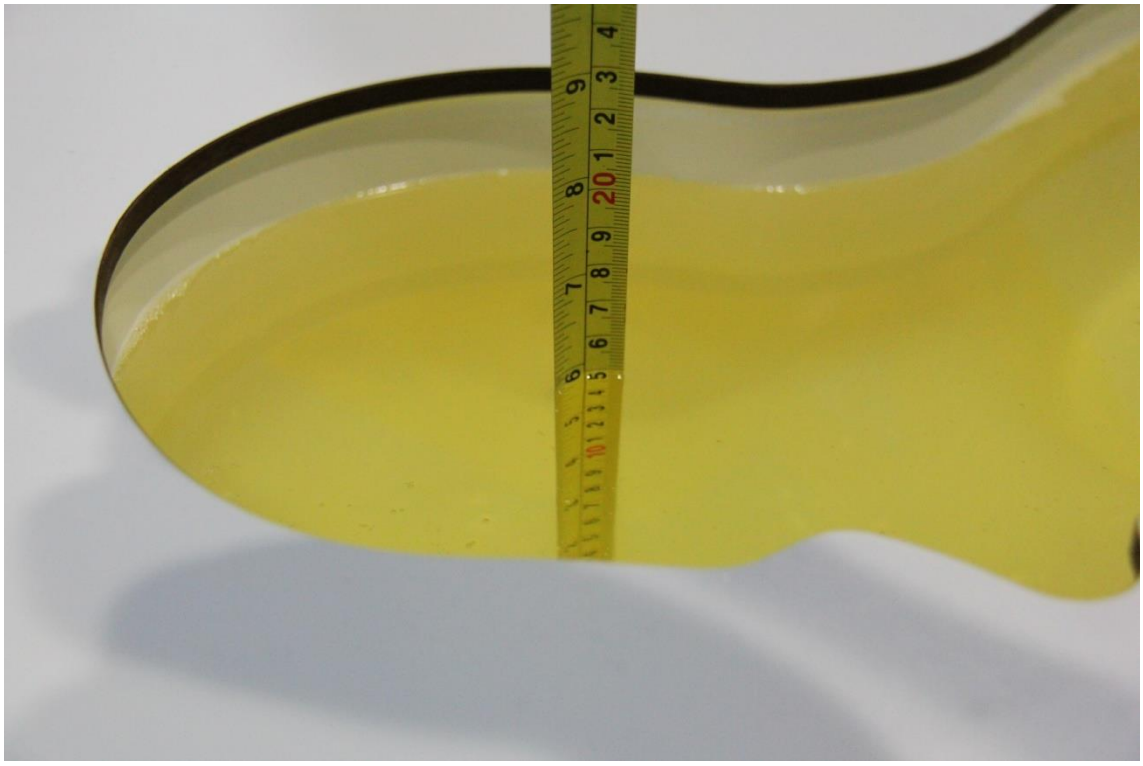
Picture 8-1 Liquid depth in the Head Phantom (750MHz)



Picture 8-2 Liquid depth in the Head Phantom (835 MHz)

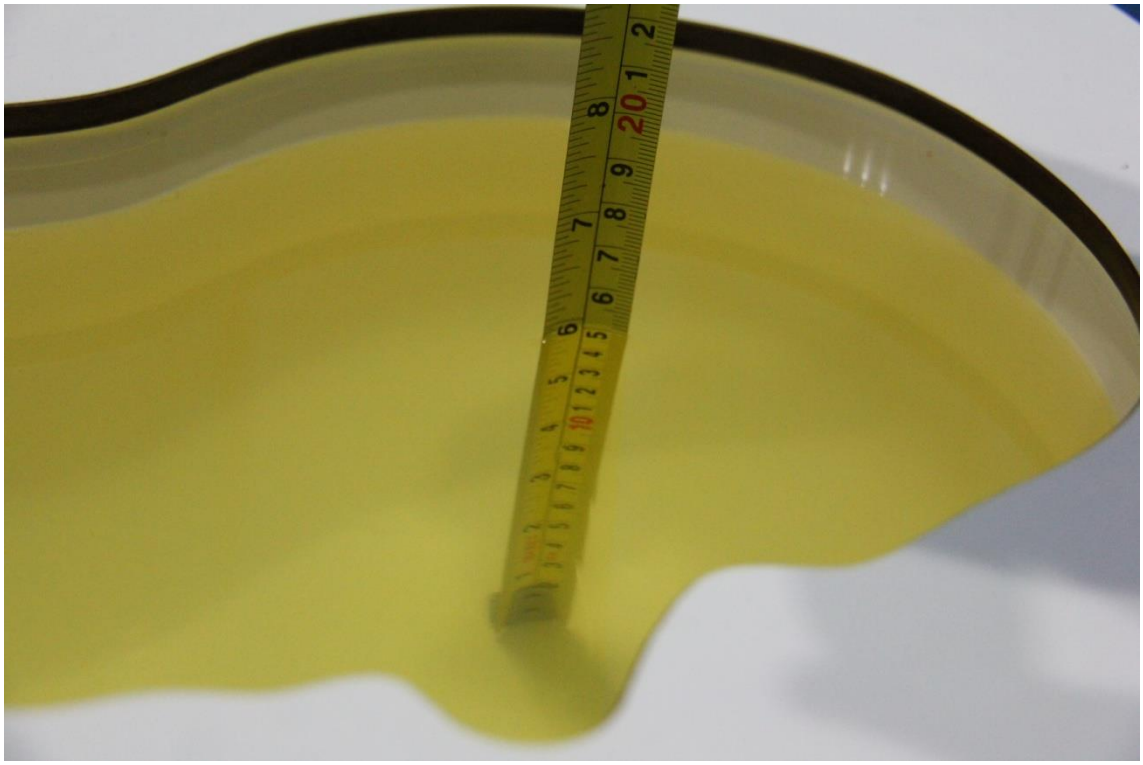


Picture 8-3 Liquid depth in the Head Phantom (1900 MHz)

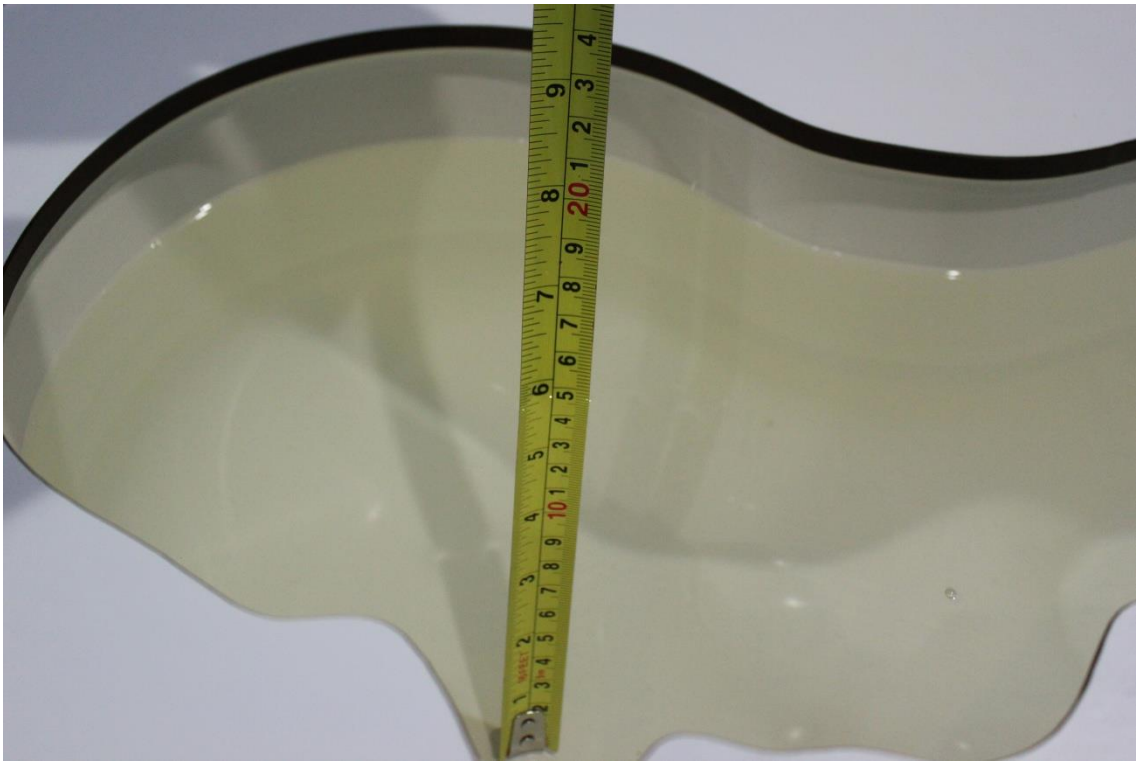


Picture 8-4 Liquid depth in the Head Phantom (2450MHz)

Picture 8-5 Liquid depth in the Head Phantom (2600 MHz)



Picture 8-6 Liquid depth in the Head Phantom (3700 MHz)

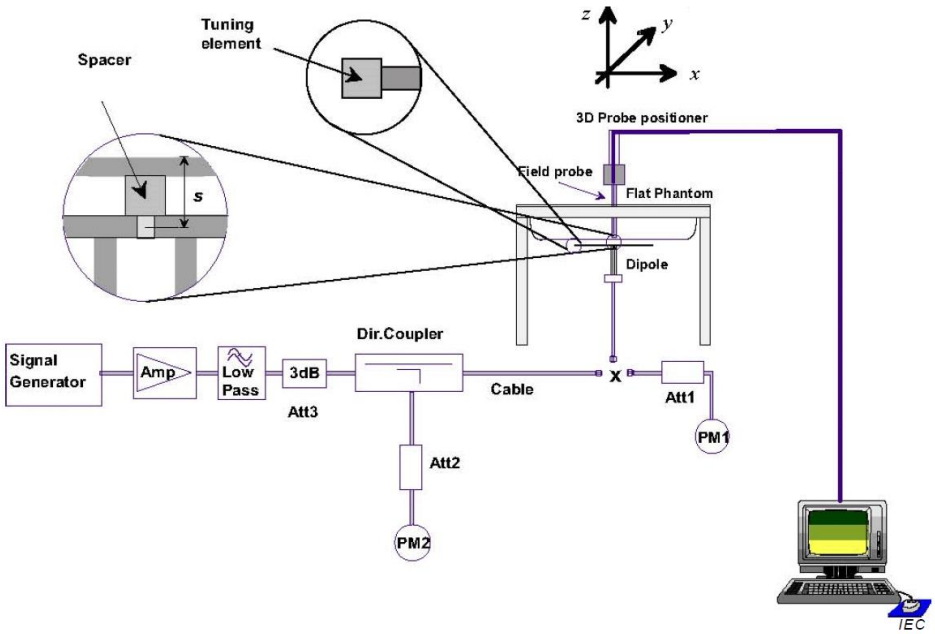


Picture 8-7 Liquid depth in the Head Phantom (5GHz)

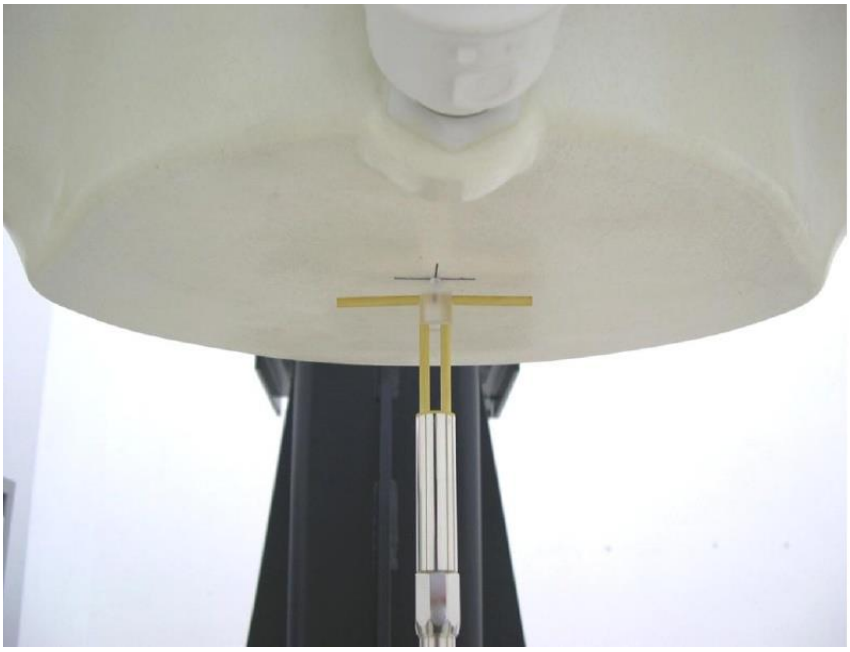
9 System verification

9.1 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 9-1 System Setup for System Evaluation



Picture 9-2 Photo of Dipole Setup

9.2 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 9.1: 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
2021-9-15	750 MHz	5.65	8.68	5.68	8.52	0.53%	-1.84%
2021-9-16	835 MHz	6.24	9.63	6.24	9.92	0.00%	3.01%
2021-9-17	1750 MHz	19.4	36.9	19.36	36.52	-0.21%	-1.03%
2021-9-18	1900 MHz	20.9	40.1	20.32	39.72	-2.78%	-0.95%
2021-9-19	2450 MHz	24.9	53.3	24.4	53.08	-2.01%	-0.41%
2021-9-20	2600 MHz	25.5	57.1	25.12	57.24	-1.49%	0.25%
2021-9-21	3700 MHz	24.3	67.1	23.1	63.8	-4.94%	-4.92%
2021-9-22	3900 MHz	24.1	69.3	23.5	67.5	-2.49%	-2.60%
2021-9-23	5250 MHz	22.8	79.4	21.9	78.1	-3.95%	-1.64%
2021-9-24	5600 MHz	23.4	82.7	22.8	81.5	-2.56%	-1.45%
2021-9-25	5750 MHz	22.3	78.8	22.8	80.5	2.24%	2.16%

10 Measurement Procedures

10.1 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.

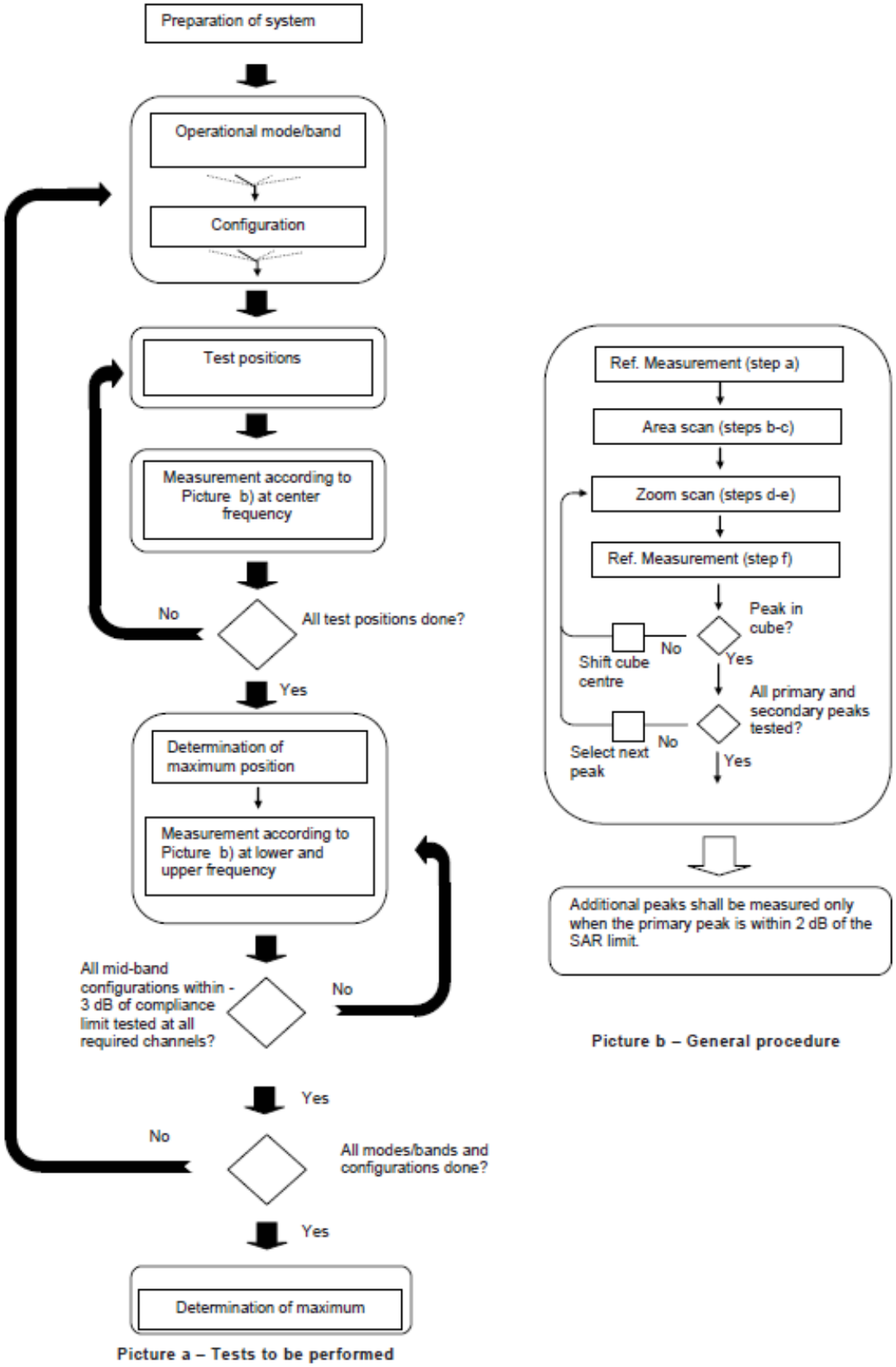
Step 1: The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band (f_c) for:

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 10-1 Block diagram of the tests to be performed

10.2 General Measurement Procedure

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

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

10.3 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.

10.4 SAR Measurement for LTE

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

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

TDD test:

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

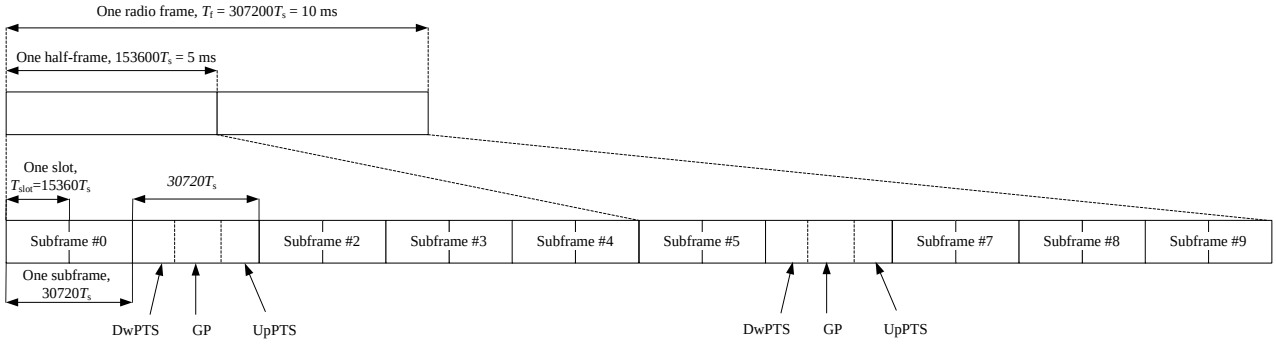


Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)

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

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

Table 9.2: Uplink-downlink configurations

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

Duty factor is calculated by:

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

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

= 0.633

10.5 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.

10.6 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%.

11 Area Scan Based 1-g SAR

11.1 Requirement of KDB

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

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

11.2 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.

12 Conducted Output Power

Table 12: Summary of Receiver detection mechanism

Antenna	Full Power	Body worn scenario 0/15mm	Hotspot scenario 10mm	Head scenario
Main Antenna	P-Max	P-Limit		
		DSI1	DSI2	DSI3

12.1 GSM Measurement result

During the process of testing, the EUT was controlled via Agilent Digital Radio Communication tester (E5515C) to ensure the maximum power transmission and proper modulation. This result contains conducted output power for the EUT.

Table 12.1-1: The conducted power measurement results–GSM850

Full power/DSI1/DSI2/DSI3

GSM 850 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.83	31.94	32.02	33.00	/	/	/	/
GSM 850 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.84	31.93	32.00	33.00	-9.03	22.81	22.90	22.97
2 Txslots	30.05	29.88	29.69	31.00	-6.02	24.03	23.86	23.67
3Txslots	27.75	27.54	27.88	28.50	-4.26	23.49	23.28	23.62
4 Txslots	26.40	26.85	26.47	27.50	-3.01	23.39	23.84	23.46
GSM 850 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	31.79	31.89	31.99	33.00	-9.03	22.76	22.86	22.96
2 Txslots	29.96	29.85	29.67	31.00	-6.02	23.94	23.83	23.65
3Txslots	27.65	27.46	27.84	28.50	-4.26	23.39	23.20	23.58
4 Txslots	26.31	26.77	26.42	27.50	-3.01	23.30	23.76	23.41
GSM 850 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	251	190	128			251	190	128
1 Txslot	25.75	25.72	25.88	27.00	-9.03	16.72	16.69	16.85
2 Txslots	24.17	24.18	24.28	25.00	-6.02	18.15	18.16	18.26
3Txslots	22.56	23.33	22.68	23.50	-4.26	18.30	19.07	18.42
4 Txslots	22.03	21.69	21.99	22.50	-3.01	19.02	18.68	18.98

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 12.1-2: The conducted power measurement results-GSM1900

Full power/DSI1/DSI2/DSI3

PCS1900 Speech (GMSK)	Measured timeslot-averaged output power (dBm)			Tune up	calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.98	29.17	29.34	30.00	/	/	/	/
PCS1900 GPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.90	29.10	29.22	30.00	-9.03	19.87	20.07	20.19
2 Txslots	26.12	26.21	26.25	27.00	-6.02	20.10	20.19	20.23
3 Txslots	23.94	24.02	24.30	25.00	-4.26	19.68	19.76	20.04
4 Txslots	22.72	22.67	22.75	23.50	-3.01	19.71	19.66	19.74
PCS1900 EGPRS (GMSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	28.90	29.09	29.18	30.00	-9.03	19.87	20.06	20.15
2 Txslots	26.11	26.21	26.22	27.00	-6.02	20.09	20.19	20.20
3Txslots	23.94	24.02	24.28	25.00	-4.26	19.68	19.76	20.02
4 Txslots	22.69	22.67	22.73	23.50	-3.01	19.68	19.66	19.72
PCS1900 EGPRS (8PSK)	Measured timeslot-averaged output power (dBm)				calculation	Source-based time-averaged output power (dBm)		
	810	661	512			810	661	512
1 Txslot	24.88	25.03	24.80	26.00	-9.03	15.85	16.00	15.77
2 Txslots	23.20	23.28	23.28	24.00	-6.02	17.18	17.26	17.26
3Txslots	21.53	21.63	21.86	22.50	-4.26	17.27	17.37	17.60
4 Txslots	20.45	20.77	20.65	21.00	-3.01	17.44	17.76	17.64

NOTES:

1) Division Factors

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

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

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

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

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

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

12.2 WCDMA Measurement result

Table 12.2-1 The conducted Power for WCDMA B2 –Full Power

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938	9400/9800	9262/9662	
	(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	24.18	24.30	24.34	25.00
HSUPA	22.42	22.51	22.56	23.50
	21.87	22.01	21.97	23.00
	22.38	22.50	21.95	23.00
	22.42	22.43	22.50	23.00
	22.35	22.49	22.43	23.50
HSPA+	21.72	21.98	21.74	23.00
DC-HSDPA	22.32	22.43	22.41	23.50
	22.41	22.44	22.30	23.50
	21.78	21.92	21.92	23.00
	21.76	21.94	21.92	23.00

Table 12.2-2 The conducted Power for WCDMA B2 –DSI1/DSI2/DSI3

WCDMA1900	FDDII result (dBm)			Tune up
	9538/9938	9400/9800	9262/9662	
	(1907.6MHz)	(1880MHz)	(1852.4MHz)	
	20.07	20.21	20.18	21.00
HSUPA	18.30	18.45	18.38	19.50
	17.85	17.87	17.72	19.00
	18.26	18.44	18.35	19.50
	18.25	18.35	18.34	19.50
	18.24	18.35	18.37	19.50
HSPA+	17.83	18.07	17.24	19.00
DC-HSDPA	18.30	18.39	18.43	19.50
	18.31	18.41	18.38	19.50
	17.80	17.93	17.93	19.00
	17.79	17.93	17.90	19.00

Table 12.2-3 The conducted Power for WCDMA B5- Full power/DSI1/DSI2

WCDMA850	FDDV result (dBm)			Tune up
	4233/4458	4183/4408	4132/4357	
	(846.6MHz)	(836.6MHz)	(826.4MHz)	
	24.40	24.46	24.45	25.00
HSUPA	22.66	22.67	22.72	23.50
	22.12	22.14	22.14	23.00
	22.67	22.70	22.72	23.00
	22.59	22.63	22.67	23.00
	22.59	22.68	22.60	23.50
HSPA+	22.19	22.10	22.08	23.00
DC-HSDPA	21.61	21.68	21.82	23.50
	21.75	21.67	21.67	23.50
	21.22	21.33	21.30	23.00
	21.19	21.14	21.29	23.00

Table 12.2-4 The conducted Power for WCDMA B5-DSI3

WCDMA850	FDDV result (dBm)			Tune up
	4233/4458	4183/4408	4132/4357	
	(846.6MHz)	(836.6MHz)	(826.4MHz)	
	22.83	22.91	22.97	23.50
HSUPA	21.02	21.00	21.05	22.00
	20.98	21.03	21.05	22.00
	20.98	21.02	21.01	22.00
	21.02	21.01	21.04	22.00
	20.98	21.02	21.03	22.00
HSPA+	20.49	20.48	20.48	21.50
DC-HSDPA	20.95	21.02	20.99	22.00
	20.96	21.03	21.05	22.00
	20.44	20.55	20.50	21.50
	20.55	20.53	20.52	21.50

12.3 LTE Measurement result

Maximum Target Power for Production Unit

Band	Tune up (dBm)			
	Full power (P-max)	DSI1 (Body worn 0/15mm scenario)	DSI2 (Hotspot 10mm scenario)	DSI3 (Head scenario)
LTE B2-ANT2	25	21.5	21.5	21
LTE B2-ANT3	25	22.5	22.5	25
LTE B5	25	25	25	23.5
LTE B7	25	25	25	25
LTE B12	25	25	25	25
LTE B13	25	25	25	25
LTE B48	25	25	25	22.5
LTE B66-ANT2	25	22	22	21
LTE B66-ANT3	25	25	25	25

Maximum Power Reduction (MPR) for LTE - Full Power

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

Maximum Power Reduction (MPR) for LTE – Low Power

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	0
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	0
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	0

LTE Band2 ANT2-Full Power					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1909.3 (19193)	24.12	23.33	23.30
		1880 (18900)	24.17	23.50	23.43
		1850.7 (18607)	24.15	23.47	23.42
	1RB-Middle (3)	1909.3 (19193)	24.14	23.47	23.30
		1880 (18900)	24.47	23.58	23.55
		1850.7 (18607)	24.50	23.54	23.47
	1RB-Low (0)	1909.3 (19193)	24.08	23.36	23.25
		1880 (18900)	24.29	23.57	23.50
		1850.7 (18607)	24.23	23.47	23.51
	3RB-High (3)	1909.3 (19193)	24.11	23.22	23.28
		1880 (18900)	24.22	23.26	23.26
		1850.7 (18607)	24.29	23.25	23.18
	3RB-Middle (1)	1909.3 (19193)	24.07	23.21	23.30
		1880 (18900)	24.32	23.04	23.51
		1850.7 (18607)	24.40	22.91	23.47
	3RB-Low (0)	1909.3 (19193)	24.13	23.14	23.23
		1880 (18900)	24.28	23.49	23.41
		1850.7 (18607)	24.26	23.25	23.30
	6RB (0)	1909.3 (19193)	23.27	22.30	22.20
		1880 (18900)	23.32	22.28	22.32
		1850.7 (18607)	23.29	22.34	22.17
3MHz	1RB-High (14)	1908.5 (19185)	24.26	23.54	23.17
		1880 (18900)	24.30	23.55	23.42
		1851.5 (18615)	24.26	23.41	23.43
	1RB-Middle (7)	1908.5 (19185)	24.08	23.71	23.41
		1880 (18900)	24.21	23.74	23.42
		1851.5 (18615)	24.21	23.61	23.34
	1RB-Low (0)	1908.5 (19185)	24.35	23.50	23.43
		1880 (18900)	24.40	23.76	23.55
		1851.5 (18615)	24.45	23.64	23.55
	8RB-High (7)	1908.5 (19185)	23.28	22.36	22.27
		1880 (18900)	23.38	22.56	22.31
		1851.5 (18615)	23.39	22.28	22.30
	8RB-Middle (4)	1908.5 (19185)	23.25	22.38	22.36
		1880 (18900)	23.47	22.54	22.51
		1851.5 (18615)	23.41	22.46	22.31
	8RB-Low (0)	1908.5 (19185)	23.30	22.44	22.46
		1880 (18900)	23.41	22.44	22.51
		1851.5 (18615)	23.41	22.46	22.46
	15RB (0)	1908.5 (19185)	23.29	22.37	22.41
		1880 (18900)	23.38	22.34	22.41
		1851.5 (18615)	23.31	22.33	22.28

5MHz	1RB-High (24)	1907.5 (19175)	24.21	23.37	23.29
		1880 (18900)	24.25	23.52	23.39
		1852.5 (18625)	24.38	23.53	23.45
	1RB-Middle (12)	1907.5 (19175)	24.15	23.48	23.20
		1880 (18900)	24.26	23.35	23.46
		1852.5 (18625)	24.23	23.88	23.15
	1RB-Low (0)	1907.5 (19175)	24.18	23.64	23.42
		1880 (18900)	24.44	23.72	23.59
		1852.5 (18625)	24.27	23.70	23.50
	12RB-High (13)	1907.5 (19175)	23.24	22.15	22.26
		1880 (18900)	23.42	22.43	22.41
		1852.5 (18625)	23.27	22.40	22.35
	12RB-Middle (6)	1907.5 (19175)	23.33	22.37	22.48
		1880 (18900)	23.35	22.38	22.37
		1852.5 (18625)	23.37	22.44	22.36
	12RB-Low (0)	1907.5 (19175)	23.34	22.40	22.29
		1880 (18900)	23.43	22.51	22.47
		1852.5 (18625)	23.50	22.52	22.49
	25RB (0)	1907.5 (19175)	23.28	22.32	22.34
		1880 (18900)	23.38	22.34	22.42
		1852.5 (18625)	23.39	22.39	22.30
10MHz	1RB-High (49)	1905 (19150)	24.12	23.80	23.36
		1880 (18900)	24.28	23.54	23.42
		1855 (18650)	24.22	23.46	23.41
	1RB-Middle (24)	1905 (19150)	24.16	23.49	23.33
		1880 (18900)	24.47	23.63	23.62
		1855 (18650)	24.36	23.39	23.50
	1RB-Low (0)	1905 (19150)	24.27	23.78	23.49
		1880 (18900)	24.42	23.72	23.45
		1855 (18650)	24.33	23.59	23.47
	25RB-High (25)	1905 (19150)	23.29	22.40	22.27
		1880 (18900)	23.42	22.40	22.47
		1855 (18650)	23.40	22.45	22.41
	25RB-Middle (12)	1905 (19150)	23.40	22.47	22.45
		1880 (18900)	23.44	22.42	22.49
		1855 (18650)	23.44	22.39	22.46
	25RB-Low (0)	1905 (19150)	23.36	22.40	22.36
		1880 (18900)	23.42	22.46	22.47
		1855 (18650)	23.39	22.46	22.32
	50RB (0)	1905 (19150)	23.37	22.36	22.39
		1880 (18900)	23.49	22.49	22.43
		1855 (18650)	23.34	22.40	22.36

15MHz	1RB-High (74)	1902.5 (19125)	24.15	23.60	23.48
		1880 (18900)	24.18	23.52	23.38
		1857.5 (18675)	24.15	23.64	23.37
	1RB-Middle (37)	1902.5 (19125)	24.17	23.35	23.37
		1880 (18900)	24.17	23.53	23.33
		1857.5 (18675)	24.12	23.45	23.35
	1RB-Low (0)	1902.5 (19125)	24.13	23.44	23.23
		1880 (18900)	24.24	23.66	23.47
		1857.5 (18675)	24.16	23.57	23.34
	36RB-High (38)	1902.5 (19125)	23.26	22.21	22.28
		1880 (18900)	23.36	22.29	22.35
		1857.5 (18675)	23.40	22.31	22.39
	36RB-Middle (19)	1902.5 (19125)	23.29	22.28	22.32
		1880 (18900)	23.29	22.22	22.39
		1857.5 (18675)	23.35	22.30	22.32
	36RB-Low (0)	1902.5 (19125)	23.13	22.26	22.21
		1880 (18900)	23.36	22.29	22.35
		1857.5 (18675)	23.33	22.26	22.32
	75RB (0)	1902.5 (19125)	23.26	22.24	22.23
		1880 (18900)	23.27	22.31	22.38
		1857.5 (18675)	23.35	22.30	22.36
20MHz	1RB-High (99)	1900 (19100)	24.00	23.41	23.37
		1880 (18900)	24.14	23.48	23.24
		1860 (18700)	24.14	23.57	23.43
	1RB-Middle (50)	1900 (19100)	24.08	23.42	23.35
		1880 (18900)	24.13	23.55	23.38
		1860 (18700)	24.15	23.40	23.24
	1RB-Low (0)	1900 (19100)	24.11	23.44	23.09
		1880 (18900)	24.15	23.64	23.41
		1860 (18700)	24.18	23.43	23.20
	50RB-High (50)	1900 (19100)	23.26	22.15	22.23
		1880 (18900)	23.31	22.33	22.39
		1860 (18700)	23.33	22.24	22.21
	50RB-Middle (25)	1900 (19100)	23.21	22.16	22.15
		1880 (18900)	23.22	22.22	22.20
		1860 (18700)	23.30	22.36	22.36
	50RB-Low (0)	1900 (19100)	23.20	22.14	22.09
		1880 (18900)	23.32	22.34	22.25
		1860 (18700)	23.28	22.12	22.29
	100RB (0)	1900 (19100)	23.17	22.17	22.23
		1880 (18900)	23.17	22.36	22.31
		1860 (18700)	23.31	22.32	22.24

LTE Band2 ANT2-DSI1/DSI2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1909.3 (19193)	20.57	20.73	20.82
		1880 (18900)	20.68	20.86	21.00
		1850.7 (18607)	20.73	21.03	20.92
	1RB-Middle (3)	1909.3 (19193)	20.93	20.87	20.59
		1880 (18900)	20.93	21.03	20.82
		1850.7 (18607)	20.91	21.18	20.97
	1RB-Low (0)	1909.3 (19193)	20.68	21.09	20.96
		1880 (18900)	20.77	20.97	20.83
		1850.7 (18607)	20.73	21.02	21.05
	3RB-High (3)	1909.3 (19193)	20.58	20.63	20.61
		1880 (18900)	20.67	20.82	20.94
		1850.7 (18607)	20.65	20.84	20.82
	3RB-Middle (1)	1909.3 (19193)	20.77	20.76	20.79
		1880 (18900)	20.86	20.86	20.98
		1850.7 (18607)	20.86	20.78	20.87
	3RB-Low (0)	1909.3 (19193)	20.62	20.70	20.80
		1880 (18900)	20.75	20.65	20.93
		1850.7 (18607)	20.73	21.00	20.85
	6RB (0)	1909.3 (19193)	20.65	20.65	20.65
		1880 (18900)	20.75	20.69	20.87
		1850.7 (18607)	20.76	20.78	20.71
3MHz	1RB-High (14)	1908.5 (19185)	20.70	20.82	20.88
		1880 (18900)	20.71	20.99	20.81
		1851.5 (18615)	20.49	20.84	20.88
	1RB-Middle (7)	1908.5 (19185)	20.58	21.09	20.48
		1880 (18900)	20.71	20.87	20.91
		1851.5 (18615)	20.63	21.09	20.89
	1RB-Low (0)	1908.5 (19185)	20.82	21.12	20.97
		1880 (18900)	20.85	21.05	21.07
		1851.5 (18615)	20.91	21.19	21.13
	8RB-High (7)	1908.5 (19185)	20.70	20.87	20.80
		1880 (18900)	20.76	20.85	20.92
		1851.5 (18615)	20.76	20.84	20.89
	8RB-Middle (4)	1908.5 (19185)	20.86	20.87	20.79
		1880 (18900)	20.94	20.85	20.82
		1851.5 (18615)	20.78	20.96	20.91
	8RB-Low (0)	1908.5 (19185)	20.79	20.87	20.86
		1880 (18900)	20.86	20.86	20.91
		1851.5 (18615)	20.86	20.94	21.00
	15RB (0)	1908.5 (19185)	20.68	20.73	20.76
		1880 (18900)	20.87	20.72	20.80
		1851.5 (18615)	20.88	20.80	20.77

5MHz	1RB-High (24)	1907.5 (19175)	20.80	20.93	20.88
		1880 (18900)	20.82	21.08	20.92
		1852.5 (18625)	20.71	21.06	20.71
	1RB-Middle (12)	1907.5 (19175)	20.56	21.21	20.94
		1880 (18900)	20.77	20.68	20.95
		1852.5 (18625)	20.67	21.06	20.59
	1RB-Low (0)	1907.5 (19175)	20.68	21.12	21.00
		1880 (18900)	20.89	21.14	21.08
		1852.5 (18625)	20.81	21.06	21.09
	12RB-High (13)	1907.5 (19175)	20.69	20.72	20.71
		1880 (18900)	20.74	20.94	20.89
		1852.5 (18625)	20.81	20.87	20.73
	12RB-Middle (6)	1907.5 (19175)	20.90	20.93	20.80
		1880 (18900)	21.00	21.00	20.85
		1852.5 (18625)	20.93	20.95	20.74
	12RB-Low (0)	1907.5 (19175)	20.84	20.83	20.81
		1880 (18900)	20.82	20.71	20.93
		1852.5 (18625)	20.86	20.98	20.84
	25RB (0)	1907.5 (19175)	20.73	20.76	20.75
		1880 (18900)	20.83	20.89	20.77
		1852.5 (18625)	20.84	20.85	20.84
10MHz	1RB-High (49)	1905 (19150)	20.65	20.94	20.69
		1880 (18900)	20.80	20.90	20.93
		1855 (18650)	20.76	21.01	20.72
	1RB-Middle (24)	1905 (19150)	20.88	21.07	20.88
		1880 (18900)	20.77	21.17	21.06
		1855 (18650)	20.84	20.95	21.03
	1RB-Low (0)	1905 (19150)	20.71	20.92	20.79
		1880 (18900)	20.95	21.31	20.92
		1855 (18650)	20.95	21.09	21.03
	25RB-High (25)	1905 (19150)	20.79	20.82	20.77
		1880 (18900)	20.87	20.92	20.89
		1855 (18650)	20.84	20.83	20.81
	25RB-Middle (12)	1905 (19150)	20.76	20.76	20.85
		1880 (18900)	20.91	20.84	20.83
		1855 (18650)	20.92	20.91	20.94
	25RB-Low (0)	1905 (19150)	20.71	20.81	20.80
		1880 (18900)	20.92	20.89	20.89
		1855 (18650)	20.92	20.90	21.00
	50RB (0)	1905 (19150)	20.75	20.82	20.79
		1880 (18900)	20.85	20.90	20.80
		1855 (18650)	20.91	20.93	20.77

15MHz	1RB-High (74)	1902.5 (19125)	20.52	20.81	20.96
		1880 (18900)	20.69	20.91	20.98
		1857.5 (18675)	20.67	20.94	21.23
	1RB-Middle (37)	1902.5 (19125)	20.66	20.92	20.49
		1880 (18900)	20.66	20.91	20.79
		1857.5 (18675)	20.72	20.94	20.79
	1RB-Low (0)	1902.5 (19125)	20.80	20.76	21.15
		1880 (18900)	20.75	20.97	21.02
		1857.5 (18675)	20.67	21.00	21.11
	36RB-High (38)	1902.5 (19125)	20.74	20.68	20.71
		1880 (18900)	20.84	20.78	20.83
		1857.5 (18675)	20.78	20.73	20.88
	36RB-Middle (19)	1902.5 (19125)	20.81	20.74	20.78
		1880 (18900)	20.79	20.70	20.76
		1857.5 (18675)	20.80	20.76	20.79
	36RB-Low (0)	1902.5 (19125)	20.71	20.64	20.65
		1880 (18900)	20.67	20.70	20.75
		1857.5 (18675)	20.83	20.79	20.75
	75RB (0)	1902.5 (19125)	20.74	20.72	20.75
		1880 (18900)	20.68	20.80	20.67
		1857.5 (18675)	20.78	20.77	20.78
20MHz	1RB-High (99)	1900 (19100)	20.64	20.89	20.66
		1880 (18900)	20.69	21.10	20.88
		1860 (18700)	20.68	20.92	20.95
	1RB-Middle (50)	1900 (19100)	20.56	21.00	20.85
		1880 (18900)	20.76	21.04	20.93
		1860 (18700)	20.65	21.08	20.80
	1RB-Low (0)	1900 (19100)	20.66	20.87	20.76
		1880 (18900)	20.72	21.39	21.01
		1860 (18700)	20.64	20.93	20.83
	50RB-High (50)	1900 (19100)	20.73	20.68	20.70
		1880 (18900)	20.81	20.88	20.84
		1860 (18700)	20.83	20.84	20.79
	50RB-Middle (25)	1900 (19100)	20.69	20.76	20.69
		1880 (18900)	20.85	20.83	20.78
		1860 (18700)	20.84	20.85	20.81
	50RB-Low (0)	1900 (19100)	20.72	20.70	20.73
		1880 (18900)	20.77	20.88	20.90
		1860 (18700)	20.78	20.76	20.74
	100RB (0)	1900 (19100)	20.72	20.81	20.66
		1880 (18900)	20.71	20.77	20.79
		1860 (18700)	20.91	20.79	20.81

LTE Band2 ANT2-DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1909.3 (19193)	20.00	20.46	20.55
		1880 (18900)	20.20	20.49	20.49
		1850.7 (18607)	20.17	20.50	20.51
	1RB-Middle (3)	1909.3 (19193)	20.42	20.52	20.42
		1880 (18900)	20.44	20.43	20.42
		1850.7 (18607)	20.45	20.45	20.27
	1RB-Low (0)	1909.3 (19193)	20.16	20.45	20.37
		1880 (18900)	20.25	20.55	20.38
		1850.7 (18607)	20.32	20.53	20.34
	3RB-High (3)	1909.3 (19193)	20.10	20.10	20.19
		1880 (18900)	20.25	20.34	20.35
		1850.7 (18607)	20.13	20.40	20.21
	3RB-Middle (1)	1909.3 (19193)	20.19	20.30	20.25
		1880 (18900)	20.27	20.08	20.08
		1850.7 (18607)	20.17	20.44	20.39
	3RB-Low (0)	1909.3 (19193)	20.17	20.19	20.31
		1880 (18900)	20.25	20.42	20.36
		1850.7 (18607)	20.24	20.32	20.29
	6RB (0)	1909.3 (19193)	20.16	20.23	20.12
		1880 (18900)	19.55	20.28	20.36
		1850.7 (18607)	20.30	20.22	20.16
3MHz	1RB-High (14)	1908.5 (19185)	20.36	20.40	20.34
		1880 (18900)	20.30	20.56	20.48
		1851.5 (18615)	20.28	20.46	20.49
	1RB-Middle (7)	1908.5 (19185)	20.07	20.62	20.68
		1880 (18900)	20.19	20.82	20.34
		1851.5 (18615)	20.12	20.65	20.02
	1RB-Low (0)	1908.5 (19185)	20.20	20.55	20.56
		1880 (18900)	20.37	20.55	20.43
		1851.5 (18615)	20.36	20.55	20.69
	8RB-High (7)	1908.5 (19185)	20.22	20.34	20.24
		1880 (18900)	20.33	20.43	20.34
		1851.5 (18615)	20.26	20.32	20.27
	8RB-Middle (4)	1908.5 (19185)	20.34	20.35	20.19
		1880 (18900)	20.43	20.45	20.36
		1851.5 (18615)	20.32	20.44	20.29
	8RB-Low (0)	1908.5 (19185)	20.26	20.45	20.30
		1880 (18900)	20.32	20.43	20.41
		1851.5 (18615)	20.43	20.40	20.50
	15RB (0)	1908.5 (19185)	20.26	20.31	20.28
		1880 (18900)	20.25	20.30	20.18
		1851.5 (18615)	20.39	20.27	20.24

5MHz	1RB-High (24)	1907.5 (19175)	20.24	20.47	20.55
		1880 (18900)	20.27	20.51	20.42
		1852.5 (18625)	20.14	20.63	20.57
	1RB-Middle (12)	1907.5 (19175)	20.12	20.37	20.39
		1880 (18900)	20.31	20.92	20.12
		1852.5 (18625)	20.27	20.45	20.48
	1RB-Low (0)	1907.5 (19175)	20.25	20.56	20.46
		1880 (18900)	20.47	20.67	20.60
		1852.5 (18625)	20.27	20.64	20.62
	12RB-High (13)	1907.5 (19175)	20.21	20.09	20.16
		1880 (18900)	20.29	20.36	20.21
		1852.5 (18625)	20.31	20.41	20.26
	12RB-Middle (6)	1907.5 (19175)	20.32	20.35	20.25
		1880 (18900)	20.46	20.42	20.40
		1852.5 (18625)	20.46	20.39	20.35
	12RB-Low (0)	1907.5 (19175)	20.33	20.18	20.33
		1880 (18900)	20.41	20.39	20.31
		1852.5 (18625)	20.38	20.40	20.49
	25RB (0)	1907.5 (19175)	20.28	20.28	20.30
		1880 (18900)	20.26	20.22	20.32
		1852.5 (18625)	20.40	20.40	20.41
10MHz	1RB-High (49)	1905 (19150)	20.15	20.36	20.28
		1880 (18900)	20.29	20.50	20.42
		1855 (18650)	20.27	20.62	20.28
	1RB-Middle (24)	1905 (19150)	20.29	20.50	20.52
		1880 (18900)	20.24	20.55	20.53
		1855 (18650)	20.22	20.52	20.57
	1RB-Low (0)	1905 (19150)	20.42	20.41	20.26
		1880 (18900)	20.39	20.65	20.43
		1855 (18650)	20.34	20.71	20.34
	25RB-High (25)	1905 (19150)	20.23	20.23	20.31
		1880 (18900)	20.37	20.30	20.30
		1855 (18650)	20.30	20.36	20.32
	25RB-Middle (12)	1905 (19150)	20.26	20.28	20.25
		1880 (18900)	20.31	20.37	20.37
		1855 (18650)	20.35	20.43	20.56
	25RB-Low (0)	1905 (19150)	20.22	20.33	20.30
		1880 (18900)	20.33	20.36	20.30
		1855 (18650)	20.42	20.44	20.43
	50RB (0)	1905 (19150)	20.27	20.23	20.21
		1880 (18900)	20.36	20.23	20.42
		1855 (18650)	20.35	20.43	20.37

15MHz	1RB-High (74)	1902.5 (19125)	20.13	20.23	20.18
		1880 (18900)	20.25	20.42	20.15
		1857.5 (18675)	20.21	20.54	20.31
	1RB-Middle (37)	1902.5 (19125)	20.18	20.31	20.26
		1880 (18900)	20.17	20.43	20.36
		1857.5 (18675)	20.16	20.39	20.34
	1RB-Low (0)	1902.5 (19125)	20.17	20.36	20.24
		1880 (18900)	20.18	20.50	20.35
		1857.5 (18675)	20.19	20.53	20.32
	36RB-High (38)	1902.5 (19125)	20.21	20.20	20.19
		1880 (18900)	20.31	20.22	20.29
		1857.5 (18675)	20.28	20.25	20.28
	36RB-Middle (19)	1902.5 (19125)	20.28	20.21	20.23
		1880 (18900)	20.23	20.14	20.20
		1857.5 (18675)	20.36	20.27	20.27
	36RB-Low (0)	1902.5 (19125)	20.19	20.13	20.13
		1880 (18900)	20.22	20.20	20.20
		1857.5 (18675)	20.30	20.29	20.21
	75RB (0)	1902.5 (19125)	20.19	20.21	20.21
		1880 (18900)	20.23	20.32	20.23
		1857.5 (18675)	20.29	20.27	20.28
20MHz	1RB-High (99)	1900 (19100)	20.19	20.36	20.09
		1880 (18900)	20.25	20.44	20.27
		1860 (18700)	20.23	20.51	20.41
	1RB-Middle (50)	1900 (19100)	20.15	20.34	20.25
		1880 (18900)	20.21	20.49	20.42
		1860 (18700)	20.18	20.52	20.22
	1RB-Low (0)	1900 (19100)	20.15	20.53	20.16
		1880 (18900)	20.20	20.66	20.51
		1860 (18700)	20.13	20.52	20.40
	50RB-High (50)	1900 (19100)	20.31	20.22	20.31
		1880 (18900)	20.33	20.34	20.21
		1860 (18700)	20.30	20.38	20.28
	50RB-Middle (25)	1900 (19100)	20.20	20.09	20.29
		1880 (18900)	20.21	20.37	20.31
		1860 (18700)	20.30	20.31	20.32
	50RB-Low (0)	1900 (19100)	20.19	20.23	20.18
		1880 (18900)	20.57	20.32	20.36
		1860 (18700)	20.29	20.24	20.26
	100RB (0)	1900 (19100)	20.25	20.13	20.27
		1880 (18900)	20.30	20.33	20.21
		1860 (18700)	20.33	20.27	20.38

LTE Band2 ANT3-DSI1/DSI2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1909.3 (19193)	21.45	21.85	21.73
		1880 (18900)	21.43	21.71	21.76
		1850.7 (18607)	21.45	21.79	21.68
	1RB-Middle (3)	1909.3 (19193)	21.79	21.74	21.82
		1880 (18900)	21.56	21.80	21.82
		1850.7 (18607)	21.75	21.97	21.63
	1RB-Low (0)	1909.3 (19193)	21.58	21.92	22.01
		1880 (18900)	21.56	21.79	21.75
		1850.7 (18607)	21.54	21.92	21.77
	3RB-High (3)	1909.3 (19193)	21.48	21.68	21.66
		1880 (18900)	21.51	21.61	21.67
		1850.7 (18607)	21.53	21.47	21.70
	3RB-Middle (1)	1909.3 (19193)	21.47	21.70	21.48
		1880 (18900)	21.61	21.73	21.67
		1850.7 (18607)	21.67	21.22	21.40
	3RB-Low (0)	1909.3 (19193)	21.60	21.63	21.66
		1880 (18900)	21.56	21.70	21.74
		1850.7 (18607)	21.63	21.68	21.78
	6RB (0)	1909.3 (19193)	21.55	21.67	21.52
		1880 (18900)	21.13	21.65	21.58
		1850.7 (18607)	21.53	21.66	21.52
3MHz	1RB-High (14)	1908.5 (19185)	21.53	21.90	21.81
		1880 (18900)	21.55	21.97	21.83
		1851.5 (18615)	21.60	21.89	21.75
	1RB-Middle (7)	1908.5 (19185)	21.56	21.71	21.64
		1880 (18900)	21.64	22.30	22.22
		1851.5 (18615)	21.56	22.05	21.76
	1RB-Low (0)	1908.5 (19185)	21.74	22.02	21.82
		1880 (18900)	21.71	22.09	21.88
		1851.5 (18615)	21.79	22.11	21.94
	8RB-High (7)	1908.5 (19185)	21.73	21.77	21.60
		1880 (18900)	21.70	21.70	21.65
		1851.5 (18615)	21.68	21.76	21.76
	8RB-Middle (4)	1908.5 (19185)	21.76	21.85	21.59
		1880 (18900)	21.77	21.80	21.72
		1851.5 (18615)	21.75	21.71	21.63
	8RB-Low (0)	1908.5 (19185)	21.75	21.85	21.70
		1880 (18900)	21.76	21.79	21.80
		1851.5 (18615)	21.80	21.81	21.85
	15RB (0)	1908.5 (19185)	21.70	21.77	21.65
		1880 (18900)	21.74	21.76	21.72
		1851.5 (18615)	21.78	21.72	21.63

5MHz	1RB-High (24)	1907.5 (19175)	21.73	22.02	21.76
		1880 (18900)	21.58	21.85	21.82
		1852.5 (18625)	21.59	21.96	21.89
	1RB-Middle (12)	1907.5 (19175)	21.56	22.07	21.78
		1880 (18900)	21.64	22.00	21.84
		1852.5 (18625)	21.63	21.99	21.54
	1RB-Low (0)	1907.5 (19175)	21.69	22.08	21.80
		1880 (18900)	21.56	21.95	21.83
		1852.5 (18625)	21.82	21.99	21.91
	12RB-High (13)	1907.5 (19175)	21.63	21.56	21.74
		1880 (18900)	21.66	21.74	21.64
		1852.5 (18625)	21.67	21.74	21.68
	12RB-Middle (6)	1907.5 (19175)	21.86	21.80	21.81
		1880 (18900)	21.89	21.78	21.82
		1852.5 (18625)	21.84	21.81	21.75
	12RB-Low (0)	1907.5 (19175)	21.74	21.76	21.86
		1880 (18900)	21.77	21.84	21.59
		1852.5 (18625)	21.79	21.87	21.69
	25RB (0)	1907.5 (19175)	21.67	21.75	21.88
		1880 (18900)	21.63	21.70	21.61
		1852.5 (18625)	21.78	21.78	21.72
10MHz	1RB-High (49)	1905 (19150)	21.61	22.04	21.72
		1880 (18900)	21.64	22.12	21.68
		1855 (18650)	21.74	22.00	21.89
	1RB-Middle (24)	1905 (19150)	21.63	21.98	21.86
		1880 (18900)	21.62	21.99	21.82
		1855 (18650)	21.61	21.95	21.89
	1RB-Low (0)	1905 (19150)	21.72	22.15	21.78
		1880 (18900)	21.61	22.25	21.85
		1855 (18650)	21.64	21.99	21.95
	25RB-High (25)	1905 (19150)	21.70	21.80	21.82
		1880 (18900)	21.69	21.75	21.74
		1855 (18650)	21.78	21.75	21.75
	25RB-Middle (12)	1905 (19150)	21.80	21.89	21.81
		1880 (18900)	21.73	21.79	21.77
		1855 (18650)	21.81	21.87	21.85
	25RB-Low (0)	1905 (19150)	21.78	21.79	21.76
		1880 (18900)	21.64	21.77	21.66
		1855 (18650)	21.77	21.82	21.81
	50RB (0)	1905 (19150)	21.73	21.69	21.74
		1880 (18900)	21.74	21.71	21.75
		1855 (18650)	21.77	21.77	21.66

15MHz	1RB-High (74)	1902.5 (19125)	21.66	21.85	21.60
		1880 (18900)	21.45	21.86	21.75
		1857.5 (18675)	21.57	21.88	21.97
	1RB-Middle (37)	1902.5 (19125)	21.59	21.82	21.71
		1880 (18900)	21.41	21.93	21.85
		1857.5 (18675)	21.58	21.92	21.71
	1RB-Low (0)	1902.5 (19125)	21.67	21.96	21.71
		1880 (18900)	21.44	22.01	22.01
		1857.5 (18675)	21.51	21.87	21.86
	36RB-High (38)	1902.5 (19125)	21.71	21.64	21.67
		1880 (18900)	21.73	21.68	21.64
		1857.5 (18675)	21.71	21.67	21.67
	36RB-Middle (19)	1902.5 (19125)	21.64	21.61	21.57
		1880 (18900)	21.56	21.61	21.57
		1857.5 (18675)	21.66	21.66	21.70
	36RB-Low (0)	1902.5 (19125)	21.60	21.60	21.64
		1880 (18900)	21.72	21.57	21.64
		1857.5 (18675)	21.62	21.67	21.75
	75RB (0)	1902.5 (19125)	21.60	21.68	21.62
		1880 (18900)	21.53	21.53	21.66
		1857.5 (18675)	21.75	21.73	21.71
20MHz	1RB-High (99)	1900 (19100)	21.49	21.77	21.64
		1880 (18900)	21.50	21.90	21.83
		1860 (18700)	21.49	22.05	21.90
	1RB-Middle (50)	1900 (19100)	21.47	21.84	21.84
		1880 (18900)	21.58	21.97	21.76
		1860 (18700)	21.56	21.78	21.76
	1RB-Low (0)	1900 (19100)	21.55	21.78	21.73
		1880 (18900)	21.60	22.01	21.98
		1860 (18700)	21.51	21.82	21.83
	50RB-High (50)	1900 (19100)	21.66	21.67	21.61
		1880 (18900)	21.63	21.66	21.73
		1860 (18700)	21.65	21.70	21.62
	50RB-Middle (25)	1900 (19100)	21.66	21.64	21.67
		1880 (18900)	21.72	21.64	21.61
		1860 (18700)	21.70	21.74	21.61
	50RB-Low (0)	1900 (19100)	21.60	21.61	21.68
		1880 (18900)	21.60	21.58	21.61
		1860 (18700)	21.63	21.69	21.73
	100RB (0)	1900 (19100)	21.64	21.72	21.69
		1880 (18900)	21.55	21.52	21.63
		1860 (18700)	21.61	21.63	21.71

LTE Band66 ANT3-Full Power/DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	23.80	23.17	23.19
		1745 (132322)	23.68	23.13	22.94
		1710.7 (131979)	23.85	23.26	23.07
	1RB-Middle (3)	1779.3 (132665)	24.06	23.11	23.09
		1745 (132322)	24.07	23.16	23.12
		1710.7 (131979)	24.08	23.22	23.09
	1RB-Low (0)	1779.3 (132665)	23.83	23.15	23.01
		1745 (132322)	23.80	23.12	23.13
		1710.7 (131979)	23.87	23.24	23.13
	3RB-High (3)	1779.3 (132665)	23.90	22.84	23.10
		1745 (132322)	23.88	22.99	22.94
		1710.7 (131979)	23.90	23.09	23.10
	3RB-Middle (1)	1779.3 (132665)	23.96	23.16	23.03
		1745 (132322)	23.91	23.04	23.03
		1710.7 (131979)	24.07	23.16	23.11
	3RB-Low (0)	1779.3 (132665)	23.86	23.00	23.11
		1745 (132322)	23.85	22.99	23.02
		1710.7 (131979)	23.95	22.93	23.05
	6RB (0)	1779.3 (132665)	23.00	21.95	21.93
		1745 (132322)	22.97	22.05	21.95
		1710.7 (131979)	22.99	22.09	22.02
3MHz	1RB-High (14)	1778.5 (132657)	23.99	23.28	23.12
		1745 (132322)	23.90	23.21	23.23
		1711.5 (131987)	24.00	23.26	23.09
	1RB-Middle (7)	1778.5 (132657)	23.85	23.25	23.18
		1745 (132322)	23.86	23.18	22.83
		1711.5 (131987)	24.00	23.18	23.37
	1RB-Low (0)	1778.5 (132657)	23.99	23.23	23.05
		1745 (132322)	23.99	23.24	23.08
		1711.5 (131987)	24.03	23.25	23.20
	8RB-High (7)	1778.5 (132657)	22.97	22.14	22.15
		1745 (132322)	23.00	22.08	22.05
		1711.5 (131987)	23.06	22.17	22.14
	8RB-Middle (4)	1778.5 (132657)	23.01	22.15	21.96
		1745 (132322)	22.98	22.02	22.00
		1711.5 (131987)	23.05	22.16	22.07
	8RB-Low (0)	1778.5 (132657)	23.08	22.14	22.07
		1745 (132322)	22.95	22.04	22.06
		1711.5 (131987)	23.02	22.11	22.14
	15RB (0)	1778.5 (132657)	23.03	21.96	22.01
		1745 (132322)	22.91	22.04	21.89
		1711.5 (131987)	23.07	22.10	22.12

LTE Band5-Full Power/DSI/DSI2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	23.89	23.42	22.18
		836.5 (20525)	23.91	23.14	22.15
		824.7 (20407)	23.94	23.19	22.26
	1RB-Middle (3)	848.3 (20643)	24.02	23.24	22.25
		836.5 (20525)	24.13	23.46	22.11
		824.7 (20407)	24.16	23.40	22.30
	1RB-Low (0)	848.3 (20643)	23.81	23.16	22.23
		836.5 (20525)	23.90	23.08	22.13
		824.7 (20407)	23.99	23.30	22.17
	3RB-High (3)	848.3 (20643)	24.04	23.05	22.20
		836.5 (20525)	23.98	23.07	22.12
		824.7 (20407)	24.06	23.11	22.25
	3RB-Middle (1)	848.3 (20643)	24.08	23.19	22.22
		836.5 (20525)	24.07	23.02	22.11
		824.7 (20407)	24.15	23.02	22.24
	3RB-Low (0)	848.3 (20643)	23.94	23.01	21.91
		836.5 (20525)	23.96	23.17	21.87
		824.7 (20407)	24.13	23.30	22.08
	6RB (0)	848.3 (20643)	23.06	22.22	21.12
		836.5 (20525)	22.95	21.95	21.03
		824.7 (20407)	23.10	22.11	21.12
3MHz	1RB-High (14)	847.5 (20635)	24.29	23.45	23.28
		836.5 (20525)	24.26	23.48	23.08
		825.5 (20415)	24.06	23.44	23.24
	1RB-Middle (7)	847.5 (20635)	24.11	23.28	22.96
		836.5 (20525)	24.05	23.44	23.03
		825.5 (20415)	24.15	23.45	23.06
	1RB-Low (0)	847.5 (20635)	24.00	23.47	23.19
		836.5 (20525)	24.04	23.47	23.16
		825.5 (20415)	24.27	23.45	23.34
	8RB-High (7)	847.5 (20635)	23.22	22.29	22.22
		836.5 (20525)	23.24	22.18	22.37
		825.5 (20415)	23.18	22.24	22.22
	8RB-Middle (4)	847.5 (20635)	23.26	22.25	22.27
		836.5 (20525)	23.16	22.21	22.09
		825.5 (20415)	23.32	22.32	22.25
	8RB-Low (0)	847.5 (20635)	23.26	22.31	22.35
		836.5 (20525)	23.11	22.16	22.20
		825.5 (20415)	23.29	22.26	22.41
	15RB (0)	847.5 (20635)	23.24	22.28	22.31
		836.5 (20525)	23.16	22.19	22.17
		825.5 (20415)	23.20	22.41	22.32

5MHz	1RB-High (24)	846.5 (20625)	24.21	23.43	23.14
		836.5 (20525)	24.06	23.47	23.33
		826.5 (20425)	24.03	23.45	23.18
	1RB-Middle (12)	846.5 (20625)	24.13	23.42	23.10
		836.5 (20525)	24.16	23.46	22.98
		826.5 (20425)	24.09	23.47	23.16
	1RB-Low (0)	846.5 (20625)	24.08	23.46	23.20
		836.5 (20525)	24.19	23.48	23.18
		826.5 (20425)	24.27	23.43	23.47
	12RB-High (13)	846.5 (20625)	23.21	22.18	22.33
		836.5 (20525)	23.19	22.24	22.10
		826.5 (20425)	23.19	22.34	22.22
	12RB-Middle (6)	846.5 (20625)	23.15	22.24	22.19
		836.5 (20525)	23.18	22.18	22.10
		826.5 (20425)	23.24	22.29	22.29
	12RB-Low (0)	846.5 (20625)	23.20	22.09	22.17
		836.5 (20525)	23.17	22.16	22.23
		826.5 (20425)	23.24	22.29	22.20
	25RB (0)	846.5 (20625)	23.18	22.21	22.17
		836.5 (20525)	23.14	22.15	22.27
		826.5 (20425)	23.23	22.32	22.28
10MHz	1RB-High (49)	844 (20600)	24.15	23.42	22.26
		836.5 (20525)	24.16	23.43	22.34
		829 (20450)	24.17	23.47	22.32
	1RB-Middle (24)	844 (20600)	24.13	23.33	22.29
		836.5 (20525)	24.04	23.32	22.33
		829 (20450)	23.95	23.29	22.40
	1RB-Low (0)	844 (20600)	24.06	23.50	22.36
		836.5 (20525)	24.15	23.42	22.19
		829 (20450)	24.07	23.45	22.30
	25RB-High (25)	844 (20600)	23.23	22.32	21.31
		836.5 (20525)	23.30	22.29	21.33
		829 (20450)	23.22	22.26	21.26
	25RB-Middle (12)	844 (20600)	23.27	22.16	21.21
		836.5 (20525)	23.31	22.26	21.35
		829 (20450)	23.32	22.27	21.24
	25RB-Low (0)	844 (20600)	23.13	22.12	21.27
		836.5 (20525)	23.23	22.26	21.37
		829 (20450)	23.20	22.23	21.38
	50RB (0)	844 (20600)	23.16	22.23	21.21
		836.5 (20525)	23.16	22.29	21.21
		829 (20450)	23.26	22.29	21.35

LTE Band5-DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	848.3 (20643)	22.49	22.78	22.69
		836.5 (20525)	22.59	22.81	22.75
		824.7 (20407)	22.50	22.71	22.84
	1RB-Middle (3)	848.3 (20643)	22.50	22.89	22.79
		836.5 (20525)	22.78	22.85	22.87
		824.7 (20407)	22.83	22.96	22.98
	1RB-Low (0)	848.3 (20643)	22.48	22.80	22.71
		836.5 (20525)	22.52	22.73	22.90
		824.7 (20407)	22.63	22.78	22.87
	3RB-High (3)	848.3 (20643)	22.60	22.76	22.63
		836.5 (20525)	22.59	22.81	22.73
		824.7 (20407)	22.64	22.80	22.75
	3RB-Middle (1)	848.3 (20643)	22.64	22.74	22.72
		836.5 (20525)	22.67	22.68	22.66
		824.7 (20407)	22.74	22.74	22.64
	3RB-Low (0)	848.3 (20643)	22.58	22.64	22.66
		836.5 (20525)	22.56	22.64	22.63
		824.7 (20407)	22.67	22.91	22.77
	6RB (0)	848.3 (20643)	22.67	22.19	22.00
		836.5 (20525)	22.59	22.21	21.98
		824.7 (20407)	21.82	22.28	22.21
3MHz	1RB-High (14)	847.5 (20635)	22.63	23.06	22.89
		836.5 (20525)	22.62	22.98	22.86
		825.5 (20415)	22.66	22.95	22.68
	1RB-Middle (7)	847.5 (20635)	22.64	23.04	22.67
		836.5 (20525)	22.61	23.02	22.84
		825.5 (20415)	22.58	23.26	22.55
	1RB-Low (0)	847.5 (20635)	22.68	23.00	22.82
		836.5 (20525)	22.69	23.13	22.74
		825.5 (20415)	22.80	23.12	22.90
	8RB-High (7)	847.5 (20635)	22.71	22.24	22.32
		836.5 (20525)	22.72	22.25	22.31
		825.5 (20415)	22.69	22.30	22.28
	8RB-Middle (4)	847.5 (20635)	22.76	22.26	22.24
		836.5 (20525)	22.69	22.26	22.05
		825.5 (20415)	22.80	22.33	22.20
	8RB-Low (0)	847.5 (20635)	22.71	22.31	22.29
		836.5 (20525)	22.65	22.08	22.26
		825.5 (20415)	22.75	22.30	22.38
	15RB (0)	847.5 (20635)	22.74	22.21	22.19
		836.5 (20525)	22.53	22.16	22.23
		825.5 (20415)	22.77	22.28	22.25

5MHz	1RB-High (24)	846.5 (20625)	22.78	23.02	22.76
		836.5 (20525)	22.75	23.01	22.94
		826.5 (20425)	22.49	22.83	22.74
	1RB-Middle (12)	846.5 (20625)	22.69	23.14	22.69
		836.5 (20525)	22.52	23.18	22.93
		826.5 (20425)	22.58	22.65	22.73
	1RB-Low (0)	846.5 (20625)	22.51	22.93	22.81
		836.5 (20525)	22.66	23.01	23.00
		826.5 (20425)	22.80	23.08	22.91
	12RB-High (13)	846.5 (20625)	22.77	22.19	22.24
		836.5 (20525)	22.71	22.26	22.28
		826.5 (20425)	22.67	22.12	22.28
	12RB-Middle (6)	846.5 (20625)	22.61	22.19	22.11
		836.5 (20525)	22.66	22.22	22.16
		826.5 (20425)	22.73	22.29	22.29
	12RB-Low (0)	846.5 (20625)	22.62	22.07	22.11
		836.5 (20525)	22.74	22.21	22.30
		826.5 (20425)	22.74	22.11	22.20
	25RB (0)	846.5 (20625)	22.68	22.09	22.19
		836.5 (20525)	22.65	22.16	22.15
		826.5 (20425)	22.73	22.31	22.21
10MHz	1RB-High (49)	844 (20600)	22.77	23.25	22.08
		836.5 (20525)	22.60	22.98	22.42
		829 (20450)	22.60	23.12	22.36
	1RB-Middle (24)	844 (20600)	22.78	22.82	22.35
		836.5 (20525)	22.59	22.99	22.40
		829 (20450)	22.59	22.95	22.36
	1RB-Low (0)	844 (20600)	22.85	23.16	22.21
		836.5 (20525)	22.66	23.13	22.15
		829 (20450)	22.71	23.32	22.40
	25RB-High (25)	844 (20600)	22.78	22.36	21.35
		836.5 (20525)	22.73	22.24	21.28
		829 (20450)	22.62	22.32	21.32
	25RB-Middle (12)	844 (20600)	22.79	22.29	21.26
		836.5 (20525)	22.75	22.35	21.38
		829 (20450)	22.77	22.38	21.35
	25RB-Low (0)	844 (20600)	22.69	22.28	21.24
		836.5 (20525)	22.70	22.34	21.36
		829 (20450)	22.74	22.29	21.41
	50RB (0)	844 (20600)	22.77	22.28	21.26
		836.5 (20525)	22.67	22.29	21.33
		829 (20450)	22.82	22.41	21.40

LTE Band7-Full Power/DSI1/DSI2/DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	2567.5 (21425)	24.15	23.24	23.18
		2535 (21100)	24.05	23.28	23.06
		2502.5 (20775)	23.65	23.23	23.15
	1RB-Middle (12)	2567.5 (21425)	24.10	23.13	22.91
		2535 (21100)	23.97	23.15	23.08
		2502.5 (20775)	23.63	23.16	23.16
	1RB-Low (0)	2567.5 (21425)	24.12	23.23	23.21
		2535 (21100)	23.95	23.16	23.11
		2502.5 (20775)	23.56	23.07	22.83
	12RB-High (13)	2567.5 (21425)	23.26	22.37	22.15
		2535 (21100)	23.14	22.30	22.22
		2502.5 (20775)	22.77	21.93	21.63
	12RB-Middle (6)	2567.5 (21425)	23.20	22.31	22.09
		2535 (21100)	23.15	22.22	21.97
		2502.5 (20775)	22.74	21.91	21.72
	12RB-Low (0)	2567.5 (21425)	23.18	22.26	22.13
		2535 (21100)	22.98	22.07	21.88
		2502.5 (20775)	22.65	21.80	21.61
	25RB (0)	2567.5 (21425)	23.21	22.21	21.99
		2535 (21100)	23.14	22.17	22.11
		2502.5 (20775)	22.70	21.79	21.52
10MHz	1RB-High (49)	2565 (21400)	24.31	23.14	23.08
		2535 (21100)	24.24	23.25	23.24
		2505 (20800)	23.90	23.28	23.27
	1RB-Middle (24)	2565 (21400)	24.20	23.11	23.08
		2535 (21100)	23.99	23.00	22.79
		2505 (20800)	23.68	23.05	22.99
	1RB-Low (0)	2565 (21400)	23.76	23.10	23.10
		2535 (21100)	23.49	23.02	22.96
		2505 (20800)	23.63	23.02	22.94
	25RB-High (25)	2565 (21400)	23.19	22.33	22.18
		2535 (21100)	23.25	22.23	22.23
		2505 (20800)	22.84	21.86	21.80
	25RB-Middle (12)	2565 (21400)	23.14	22.26	22.06
		2535 (21100)	23.28	22.24	22.10
		2505 (20800)	22.78	21.89	21.80
	25RB-Low (0)	2565 (21400)	23.13	22.25	22.12
		2535 (21100)	23.10	22.04	21.77
		2505 (20800)	22.74	21.81	21.54
	50RB (0)	2565 (21400)	23.14	22.19	22.11
		2535 (21100)	23.26	22.14	22.08
		2505 (20800)	22.78	21.80	21.53

15MHz	1RB-High (74)	2562.5 (21375)	24.01	23.37	23.37
		2535 (21100)	23.81	22.96	22.80
		2507.5 (20825)	23.69	23.00	22.78
	1RB-Middle (37)	2562.5 (21375)	23.99	23.32	23.08
		2535 (21100)	23.82	22.82	22.80
		2507.5 (20825)	23.55	22.90	22.90
	1RB-Low (0)	2562.5 (21375)	23.92	23.30	23.18
		2535 (21100)	23.70	22.72	22.51
		2507.5 (20825)	23.50	22.79	22.76
	36RB-High (38)	2562.5 (21375)	23.10	22.10	21.92
		2535 (21100)	23.01	22.05	22.00
		2507.5 (20825)	22.67	21.73	21.71
	36RB-Middle (19)	2562.5 (21375)	23.10	22.08	21.85
		2535 (21100)	23.00	22.00	21.84
		2507.5 (20825)	22.65	21.71	21.50
	36RB-Low (0)	2562.5 (21375)	23.00	22.04	21.96
		2535 (21100)	22.86	21.85	21.64
		2507.5 (20825)	22.53	21.59	21.29
	75RB (0)	2562.5 (21375)	23.10	22.12	21.83
		2535 (21100)	22.99	21.98	21.90
		2507.5 (20825)	22.68	21.70	21.68
20MHz	1RB-High (99)	2560 (21350)	23.93	23.61	22.80
		2535 (21100)	23.93	23.35	22.46
		2510 (20850)	23.56	23.23	22.42
	1RB-Middle (50)	2560 (21350)	23.87	23.53	22.73
		2535 (21100)	23.84	23.21	22.41
		2510 (20850)	23.46	23.09	22.28
	1RB-Low (0)	2560 (21350)	23.84	23.45	22.52
		2535 (21100)	23.62	23.11	22.29
		2510 (20850)	23.37	22.97	22.12
	50RB-High (50)	2560 (21350)	23.13	22.16	21.24
		2535 (21100)	23.16	22.02	21.08
		2510 (20850)	22.74	21.78	20.92
	50RB-Middle (25)	2560 (21350)	23.05	22.10	21.16
		2535 (21100)	23.03	22.00	21.08
		2510 (20850)	22.72	21.71	20.81
	50RB-Low (0)	2560 (21350)	23.05	22.09	21.21
		2535 (21100)	22.91	21.87	20.88
		2510 (20850)	22.61	21.66	20.80
	100RB (0)	2560 (21350)	23.09	22.07	21.23
		2535 (21100)	23.03	21.98	21.09
		2510 (20850)	22.71	21.74	20.81

LTE Band12-Full Power/DSI1/DSI2/DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	715.3 (23173)	23.84	23.12	23.20
		707.5 (23095)	23.95	23.13	23.31
		699.7 (23017)	24.00	23.32	23.17
	1RB-Middle (3)	715.3 (23173)	24.17	23.29	23.27
		707.5 (23095)	24.03	23.33	23.42
		699.7 (23017)	24.36	23.49	23.08
	1RB-Low (0)	715.3 (23173)	24.02	23.32	23.25
		707.5 (23095)	24.01	23.21	23.20
		699.7 (23017)	24.16	23.44	23.29
	3RB-High (3)	715.3 (23173)	23.95	22.90	23.19
		707.5 (23095)	24.04	22.94	23.21
		699.7 (23017)	24.07	23.08	23.22
	3RB-Middle (1)	715.3 (23173)	24.02	23.33	23.00
		707.5 (23095)	24.03	23.09	23.18
		699.7 (23017)	24.23	23.15	23.17
	3RB-Low (0)	715.3 (23173)	23.97	23.10	23.18
		707.5 (23095)	24.02	23.09	23.12
		699.7 (23017)	24.21	23.32	23.30
	6RB (0)	715.3 (23173)	23.01	22.06	22.04
		707.5 (23095)	22.25	22.05	22.04
		699.7 (23017)	23.20	22.20	22.13
3MHz	1RB-High (14)	714.5 (23165)	24.07	23.33	23.22
		707.5 (23095)	24.02	23.41	23.20
		700.5 (23025)	24.17	23.42	23.17
	1RB-Middle (7)	714.5 (23165)	23.95	23.47	23.27
		707.5 (23095)	24.03	23.35	23.03
		700.5 (23025)	24.14	23.45	23.19
	1RB-Low (0)	714.5 (23165)	24.03	23.43	23.26
		707.5 (23095)	24.16	23.36	23.33
		700.5 (23025)	24.32	23.45	23.33
	8RB-High (7)	714.5 (23165)	23.08	22.22	22.14
		707.5 (23095)	23.15	22.21	22.21
		700.5 (23025)	23.16	22.19	22.24
	8RB-Middle (4)	714.5 (23165)	23.17	22.19	22.09
		707.5 (23095)	23.30	22.25	22.19
		700.5 (23025)	23.24	22.25	22.20
	8RB-Low (0)	714.5 (23165)	23.07	22.05	22.12
		707.5 (23095)	23.15	22.20	22.24
		700.5 (23025)	23.32	22.26	22.43
	15RB (0)	714.5 (23165)	23.05	22.04	22.12
		707.5 (23095)	23.01	22.12	22.10
		700.5 (23025)	23.25	22.24	22.24

5MHz	1RB-High (24)	713.5 (23155)	24.02	23.40	23.18
		707.5 (23095)	24.00	23.36	23.16
		701.5 (23035)	24.11	23.38	23.35
	1RB-Middle (12)	713.5 (23155)	24.05	23.46	23.19
		707.5 (23095)	24.12	23.47	23.16
		701.5 (23035)	24.15	23.44	23.29
	1RB-Low (0)	713.5 (23155)	24.10	23.43	23.15
		707.5 (23095)	24.08	23.45	23.37
		701.5 (23035)	24.17	23.46	23.41
	12RB-High (13)	713.5 (23155)	22.33	22.17	22.18
		707.5 (23095)	23.12	22.15	22.13
		701.5 (23035)	23.20	22.24	22.22
	12RB-Middle (6)	713.5 (23155)	22.51	22.09	22.09
		707.5 (23095)	23.18	22.18	22.11
		701.5 (23035)	23.26	22.29	22.27
	12RB-Low (0)	713.5 (23155)	22.31	22.14	22.16
		707.5 (23095)	23.08	22.11	22.20
		701.5 (23035)	23.24	22.38	22.26
	25RB (0)	713.5 (23155)	22.33	22.08	22.08
		707.5 (23095)	23.10	22.05	22.08
		701.5 (23035)	23.30	22.22	22.23
10MHz	1RB-High (49)	711 (23130)	24.05	23.38	22.01
		707.5 (23095)	24.03	23.43	22.33
		704 (23060)	24.07	23.47	22.14
	1RB-Middle (24)	711 (23130)	24.11	23.35	22.53
		707.5 (23095)	24.09	23.33	22.60
		704 (23060)	24.11	23.39	22.34
	1RB-Low (0)	711 (23130)	24.12	23.45	22.47
		707.5 (23095)	24.12	23.46	22.47
		704 (23060)	24.16	23.46	22.51
	25RB-High (25)	711 (23130)	23.05	22.23	21.23
		707.5 (23095)	23.15	22.26	21.32
		704 (23060)	23.25	22.20	21.29
	25RB-Middle (12)	711 (23130)	23.10	22.27	21.23
		707.5 (23095)	23.09	22.22	21.23
		704 (23060)	23.24	22.36	21.28
	25RB-Low (0)	711 (23130)	23.20	22.21	21.25
		707.5 (23095)	23.22	22.23	21.25
		704 (23060)	23.27	22.31	21.29
	50RB (0)	711 (23130)	23.21	22.23	21.23
		707.5 (23095)	23.10	22.15	21.24
		704 (23060)	23.27	22.29	21.32

LTE Band13-Full Power/DSI1/DSI2/DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	784.5 (23255)	24.20	23.45	23.39
		782 (23230)	24.06	23.48	23.35
		779.5 (23205)	24.15	23.47	23.56
	1RB-Middle (12)	784.5 (23255)	24.21	23.46	23.56
		782 (23230)	24.15	23.47	23.27
		779.5 (23205)	24.21	23.50	23.30
	1RB-Low (0)	784.5 (23255)	24.27	23.42	23.48
		782 (23230)	24.13	23.47	23.38
		779.5 (23205)	24.12	23.41	23.35
	12RB-High (13)	784.5 (23255)	23.34	22.33	22.24
		782 (23230)	23.32	22.38	22.36
		779.5 (23205)	23.25	22.37	22.30
	12RB-Middle (6)	784.5 (23255)	23.32	22.31	22.20
		782 (23230)	23.26	22.27	22.27
		779.5 (23205)	23.39	22.41	22.26
	12RB-Low (0)	784.5 (23255)	23.27	22.31	22.31
		782 (23230)	23.23	22.34	22.27
		779.5 (23205)	23.19	22.33	22.36
	25RB (0)	784.5 (23255)	23.17	22.23	22.28
		782 (23230)	23.14	22.20	22.19
		779.5 (23205)	23.41	22.33	22.31
10MHz	1RB-High (49)	782 (23230)	24.20	23.49	22.32
	1RB-Middle (24)	782 (23230)	24.14	23.49	22.46
	1RB-Low (0)	782 (23230)	24.07	23.47	22.36
	25RB-High (25)	782 (23230)	23.33	22.29	21.36
	25RB-Middle (12)	782 (23230)	23.31	22.25	21.26
	25RB-Low (0)	782 (23230)	23.27	22.27	21.30
	50RB (0)	782 (23230)	23.35	22.34	21.23

LTE Band48-Full Power/DSI1/DSI2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	56715	23.37	22.42	22.23
		55990	23.58	22.67	22.41
		55265	23.45	22.53	22.28
	1RB-Middle (12)	56715	23.28	22.47	22.16
		55990	23.35	22.60	22.36
		55265	23.42	22.58	22.24
	1RB-Low (0)	56715	23.26	22.46	22.15
		55990	23.46	22.57	22.36
		55265	23.33	22.50	22.24
	12RB-High (13)	56715	22.37	21.35	21.28
		55990	22.13	21.52	21.52
		55265	22.43	21.43	21.43
	12RB-Middle (6)	56715	22.35	21.35	21.33
		55990	22.57	21.51	21.49
		55265	22.46	21.40	21.41
	12RB-Low (0)	56715	22.37	21.30	21.28
		55990	22.49	21.41	21.52
		55265	22.44	21.34	21.40
	25RB (0)	56715	22.35	21.33	21.28
		55990	22.49	21.48	21.45
		55265	22.42	21.44	21.35
10MHz	1RB-High (49)	56690	23.33	22.48	22.20
		55990	23.51	22.62	22.47
		55290	23.41	22.54	22.30
	1RB-Middle (24)	56690	23.24	22.42	22.15
		55990	23.43	22.62	22.39
		55290	23.36	22.46	22.28
	1RB-Low (0)	56690	23.33	22.44	22.21
		55990	23.48	22.60	22.40
		55290	23.40	22.58	22.29
	25RB-High (25)	56690	22.42	21.40	21.41
		55990	22.62	21.59	21.54
		55290	22.45	21.45	21.45
	25RB-Middle (12)	56690	22.39	21.43	21.41
		55990	22.52	21.46	21.50
		55290	22.52	21.52	21.45
	25RB-Low (0)	56690	22.29	21.32	21.27
		55990	22.49	21.50	21.43
		55290	22.46	21.44	21.44
	50RB (0)	56690	22.26	21.40	21.24
		55990	22.45	21.47	21.41
		55290	22.49	21.48	21.44

15MHz	1RB-High (74)	56665	23.17	22.34	20.86
		55990	23.39	22.52	21.05
		55315	23.24	22.40	20.90
	1RB-Middle (37)	56665	23.09	22.27	20.84
		55990	23.33	22.44	21.00
		55315	23.23	22.34	20.94
	1RB-Low (0)	56665	23.18	22.30	20.83
		55990	23.28	22.40	20.94
		55315	23.20	22.31	20.84
	36RB-High (38)	56665	22.32	21.29	20.29
		55990	22.51	21.47	20.48
		55315	22.38	21.38	20.35
	36RB-Middle (19)	56665	22.22	21.20	20.23
		55990	22.44	21.37	20.40
		55315	22.36	21.33	20.38
	36RB-Low (0)	56665	22.22	21.17	20.21
		55990	22.31	21.36	20.37
		55315	22.37	21.31	20.34
	75RB (0)	56665	22.22	21.28	20.24
		55990	22.39	21.45	20.40
		55315	22.34	21.41	20.43
20MHz	1RB-High (99)	56640	23.83	23.02	22.70
		55990	24.02	23.20	22.85
		55340	23.91	23.02	22.78
	1RB-Middle (50)	56640	23.82	22.98	22.66
		55990	23.92	23.09	22.76
		55340	23.93	23.00	22.77
	1RB-Low (0)	56640	23.83	22.98	22.74
		55990	23.91	23.03	22.77
		55340	23.91	23.05	22.82
	50RB-High (50)	56640	23.02	22.07	22.00
		55990	23.16	22.21	22.16
		55340	23.05	22.10	22.03
	50RB-Middle (25)	56640	22.99	22.03	21.98
		55990	23.04	22.07	22.02
		55340	23.05	22.11	22.04
	50RB-Low (0)	56640	22.93	21.97	21.92
		55990	22.54	22.07	22.03
		55340	23.03	22.05	21.97
	100RB (0)	56640	22.98	22.08	22.05
		55990	23.02	22.06	22.08
		55340	23.08	22.10	22.12

LTE Band48-DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
5MHz	1RB-High (24)	56715	21.20	21.33	21.06
		55990	21.27	21.46	21.19
		55265	21.32	21.05	21.13
	1RB-Middle (12)	56715	21.15	21.26	21.04
		55990	21.24	21.38	20.97
		55265	21.26	20.41	21.11
	1RB-Low (0)	56715	21.19	21.30	21.04
		55990	21.22	21.37	18.97
		55265	20.91	21.38	20.18
	12RB-High (13)	56715	21.27	21.20	21.20
		55990	21.41	21.32	21.31
		55265	20.41	21.32	21.30
	12RB-Middle (6)	56715	21.29	21.19	21.22
		55990	21.40	21.32	21.43
		55265	19.82	21.29	19.72
	12RB-Low (0)	56715	21.24	21.19	21.22
		55990	21.31	21.19	20.29
		55265	19.22	20.32	20.38
	25RB (0)	56715	21.21	21.29	21.21
		55990	21.26	21.26	21.22
		55265	21.41	20.37	19.21
10MHz	1RB-High (49)	56690	21.18	21.25	21.02
		55990	21.31	21.48	21.14
		55290	20.29	20.42	21.16
	1RB-Middle (24)	56690	21.14	21.26	20.04
		55990	21.21	21.35	21.05
		55290	21.26	20.47	20.69
	1RB-Low (0)	56690	21.16	20.80	21.02
		55990	21.25	21.37	21.12
		55290	20.40	21.43	18.99
	25RB-High (25)	56690	21.27	21.29	21.22
		55990	21.41	21.35	21.35
		55290	20.96	21.36	21.25
	25RB-Middle (12)	56690	21.28	21.22	20.15
		55990	21.31	21.31	21.20
		55290	19.19	21.36	20.34
	25RB-Low (0)	56690	21.17	21.14	21.13
		55990	21.28	21.31	21.22
		55290	20.45	20.47	19.69
	50RB (0)	56690	21.15	21.11	20.69
		55990	21.33	21.28	21.19
		55290	19.23	20.40	19.82

15MHz	1RB-High (74)	56665	20.97	21.16	20.79
		55990	21.06	21.28	20.88
		55315	20.54	20.26	20.40
	1RB-Middle (37)	56665	20.92	21.08	20.76
		55990	21.04	21.18	20.88
		55315	19.45	20.25	19.87
	1RB-Low (0)	56665	20.91	21.09	20.72
		55990	20.95	21.15	20.79
		55315	21.02	19.65	20.32
	36RB-High (38)	56665	21.08	21.11	21.11
		55990	21.24	21.24	21.21
		55315	21.23	21.20	20.26
	36RB-Middle (19)	56665	21.07	21.10	21.07
		55990	21.14	21.13	21.07
		55315	20.72	19.58	20.29
	36RB-Low (0)	56665	20.98	20.97	20.99
		55990	21.09	21.06	21.12
		55315	20.24	21.17	19.02
	75RB (0)	56665	21.09	21.14	21.17
		55990	21.09	21.15	21.11
		55315	19.66	20.77	21.22
20MHz	1RB-High (99)	56640	21.11	21.23	20.96
		55990	21.33	18.46	21.23
		55340	21.27	21.43	21.05
	1RB-Middle (50)	56640	21.06	21.23	20.94
		55990	21.27	21.36	21.13
		55340	21.28	21.42	21.13
	1RB-Low (0)	56640	21.18	21.28	20.98
		55990	21.20	21.38	21.03
		55340	21.23	21.49	21.13
	50RB-High (50)	56640	21.31	21.26	21.23
		55990	21.51	20.56	21.50
		55340	21.47	21.43	21.47
	50RB-Middle (25)	56640	21.28	21.29	21.26
		55990	21.34	21.37	21.32
		55340	21.42	21.47	21.49
	50RB-Low (0)	56640	21.25	21.25	21.15
		55990	21.31	21.37	21.29
		55340	21.33	20.51	21.35
	100RB (0)	56640	21.24	21.29	21.35
		55990	21.37	21.41	21.42
		55340	21.43	21.44	21.53

LTE Band66 ANT2-Full Power					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	24.18	23.42	23.33
		1745 (132322)	24.31	23.54	23.59
		1710.7 (131979)	24.13	23.45	23.62
	1RB-Middle (3)	1779.3 (132665)	24.27	23.59	23.53
		1745 (132322)	24.51	23.64	23.65
		1710.7 (131979)	24.57	23.47	23.42
	1RB-Low (0)	1779.3 (132665)	24.08	23.57	23.35
		1745 (132322)	24.26	23.61	23.42
		1710.7 (131979)	24.32	23.52	23.47
	3RB-High (3)	1779.3 (132665)	24.21	23.24	23.32
		1745 (132322)	24.26	23.33	23.29
		1710.7 (131979)	24.21	23.28	23.33
	3RB-Middle (1)	1779.3 (132665)	24.16	23.37	23.35
		1745 (132322)	24.34	23.31	23.28
		1710.7 (131979)	24.23	23.11	23.37
	3RB-Low (0)	1779.3 (132665)	24.20	23.23	23.39
		1745 (132322)	24.29	23.47	23.34
		1710.7 (131979)	24.22	23.29	23.39
	6RB (0)	1779.3 (132665)	23.21	22.18	22.32
		1745 (132322)	22.51	22.43	22.34
		1710.7 (131979)	23.27	22.35	22.26
3MHz	1RB-High (14)	1778.5 (132657)	24.26	23.74	23.46
		1745 (132322)	24.38	23.62	23.62
		1711.5 (131987)	24.25	23.49	23.55
	1RB-Middle (7)	1778.5 (132657)	24.13	23.70	23.36
		1745 (132322)	24.31	23.71	23.38
		1711.5 (131987)	24.15	23.55	23.26
	1RB-Low (0)	1778.5 (132657)	24.34	23.76	23.60
		1745 (132322)	24.34	23.52	23.43
		1711.5 (131987)	24.37	23.58	23.38
	8RB-High (7)	1778.5 (132657)	23.36	22.39	22.41
		1745 (132322)	23.47	22.34	22.45
		1711.5 (131987)	23.25	22.41	22.48
	8RB-Middle (4)	1778.5 (132657)	23.31	22.44	22.30
		1745 (132322)	23.35	22.53	22.46
		1711.5 (131987)	23.36	22.42	22.48
	8RB-Low (0)	1778.5 (132657)	23.35	22.40	22.39
		1745 (132322)	23.24	22.38	22.38
		1711.5 (131987)	23.32	22.39	22.35
	15RB (0)	1778.5 (132657)	23.31	22.43	22.30
		1745 (132322)	23.33	22.40	22.24
		1711.5 (131987)	23.34	22.26	22.34

5MHz	1RB-High (24)	1777.5 (132647)	24.27	23.49	23.55
		1745 (132322)	24.28	23.71	23.53
		1712.5 (131997)	24.11	23.58	23.62
	1RB-Middle (12)	1777.5 (132647)	24.16	23.36	23.43
		1745 (132322)	24.27	23.93	23.31
		1712.5 (131997)	24.05	23.59	23.25
	1RB-Low (0)	1777.5 (132647)	24.37	23.57	23.68
		1745 (132322)	24.35	23.63	23.67
		1712.5 (131997)	24.36	23.51	23.56
	12RB-High (13)	1777.5 (132647)	23.40	22.24	22.45
		1745 (132322)	23.47	22.47	22.37
		1712.5 (131997)	23.47	22.12	22.27
	12RB-Middle (6)	1777.5 (132647)	23.36	22.36	22.36
		1745 (132322)	23.40	22.50	22.37
		1712.5 (131997)	23.34	22.31	22.28
	12RB-Low (0)	1777.5 (132647)	23.37	22.25	22.42
		1745 (132322)	23.35	22.42	22.40
		1712.5 (131997)	23.25	22.43	22.34
	25RB (0)	1777.5 (132647)	23.37	22.36	22.34
		1745 (132322)	23.34	22.45	22.45
		1712.5 (131997)	23.40	22.38	22.28
10MHz	1RB-High (49)	1775 (132622)	24.28	23.59	23.49
		1745 (132322)	24.32	23.63	23.57
		1715 (132022)	24.24	23.67	23.41
	1RB-Middle (24)	1775 (132622)	24.36	23.38	23.46
		1745 (132322)	24.34	23.44	23.69
		1715 (132022)	24.17	23.50	23.49
	1RB-Low (0)	1775 (132622)	24.22	23.55	23.27
		1745 (132322)	24.24	23.61	23.43
		1715 (132022)	24.28	23.53	23.42
	25RB-High (25)	1775 (132622)	23.39	22.42	22.36
		1745 (132322)	23.48	22.48	22.42
		1715 (132022)	23.34	22.42	22.40
	25RB-Middle (12)	1775 (132622)	23.35	22.39	22.43
		1745 (132322)	23.30	22.42	22.42
		1715 (132022)	23.44	22.35	22.32
	25RB-Low (0)	1775 (132622)	23.31	22.38	22.36
		1745 (132322)	23.38	22.40	22.40
		1715 (132022)	23.37	22.29	22.44
	50RB (0)	1775 (132622)	23.38	22.37	22.35
		1745 (132322)	23.33	22.41	22.30
		1715 (132022)	23.38	22.41	22.28

15MHz	1RB-High (74)	1772.5 (132597)	24.14	23.49	23.38
		1745 (132322)	24.21	23.51	23.45
		1717.5 (132047)	24.08	23.28	23.32
	1RB-Middle (37)	1772.5 (132597)	24.12	23.52	23.32
		1745 (132322)	24.21	23.54	23.30
		1717.5 (132047)	24.18	23.40	23.33
	1RB-Low (0)	1772.5 (132597)	24.07	23.47	23.28
		1745 (132322)	24.11	23.30	23.25
		1717.5 (132047)	24.09	23.44	23.22
	36RB-High (38)	1772.5 (132597)	23.30	22.21	22.30
		1745 (132322)	23.33	22.38	22.39
		1717.5 (132047)	23.19	22.26	22.23
	36RB-Middle (19)	1772.5 (132597)	23.37	22.32	22.31
		1745 (132322)	23.26	22.29	22.33
		1717.5 (132047)	23.29	22.25	22.22
	36RB-Low (0)	1772.5 (132597)	23.24	22.22	22.20
		1745 (132322)	23.24	22.27	22.24
		1717.5 (132047)	23.18	22.16	22.09
	75RB (0)	1772.5 (132597)	23.34	22.23	22.30
		1745 (132322)	23.20	22.31	22.29
		1717.5 (132047)	23.18	22.34	22.31
20MHz	1RB-High (99)	1770 (132572)	24.16	23.50	22.40
		1745 (132322)	24.22	23.61	22.40
		1720 (132072)	24.13	23.34	22.46
	1RB-Middle (50)	1770 (132572)	24.19	23.38	22.36
		1745 (132322)	24.22	23.60	22.49
		1720 (132072)	24.08	23.51	22.37
	1RB-Low (0)	1770 (132572)	24.21	23.56	22.44
		1745 (132322)	24.23	23.64	22.59
		1720 (132072)	24.20	23.50	22.28
	50RB-High (50)	1770 (132572)	23.25	22.28	21.31
		1745 (132322)	23.31	22.36	21.35
		1720 (132072)	23.29	22.33	21.22
	50RB-Middle (25)	1770 (132572)	23.18	22.19	21.35
		1745 (132322)	23.26	22.24	21.39
		1720 (132072)	23.20	22.30	21.35
	50RB-Low (0)	1770 (132572)	23.23	22.16	21.33
		1745 (132322)	23.24	22.32	21.37
		1720 (132072)	23.18	22.28	21.20
	100RB (0)	1770 (132572)	23.15	22.26	21.23
		1745 (132322)	23.37	22.25	21.29
		1720 (132072)	23.24	22.29	21.27

LTE Band66 ANT2-DSI1/DSI2					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	21.29	21.58	21.80
		1745 (132322)	21.39	21.62	21.78
		1710.7 (131979)	21.34	21.61	21.67
	1RB-Middle (3)	1779.3 (132665)	21.66	21.57	21.83
		1745 (132322)	21.61	21.64	21.80
		1710.7 (131979)	21.24	21.69	21.26
	1RB-Low (0)	1779.3 (132665)	21.40	21.56	21.61
		1745 (132322)	21.39	21.66	21.65
		1710.7 (131979)	21.34	21.65	21.43
	3RB-High (3)	1779.3 (132665)	21.27	21.28	21.31
		1745 (132322)	21.39	21.34	21.37
		1710.7 (131979)	21.44	21.36	21.40
	3RB-Middle (1)	1779.3 (132665)	21.31	21.52	21.41
		1745 (132322)	21.31	21.44	21.51
		1710.7 (131979)	21.36	21.46	21.45
	3RB-Low (0)	1779.3 (132665)	21.28	21.43	21.37
		1745 (132322)	21.30	21.45	21.39
		1710.7 (131979)	21.37	21.39	21.47
	6RB (0)	1779.3 (132665)	21.29	21.34	21.24
		1745 (132322)	21.36	21.32	21.22
		1710.7 (131979)	21.40	21.30	21.35
3MHz	1RB-High (14)	1778.5 (132657)	21.34	21.70	21.59
		1745 (132322)	21.45	21.75	21.65
		1711.5 (131987)	21.52	21.55	21.63
	1RB-Middle (7)	1778.5 (132657)	21.22	21.83	21.48
		1745 (132322)	21.26	21.79	21.45
		1711.5 (131987)	21.26	21.78	21.57
	1RB-Low (0)	1778.5 (132657)	21.48	21.60	21.92
		1745 (132322)	21.47	21.58	21.58
		1711.5 (131987)	21.35	21.59	21.64
	8RB-High (7)	1778.5 (132657)	21.50	21.41	21.47
		1745 (132322)	21.35	21.47	21.51
		1711.5 (131987)	21.42	21.42	21.49
	8RB-Middle (4)	1778.5 (132657)	21.45	21.53	21.41
		1745 (132322)	21.47	21.62	21.45
		1711.5 (131987)	21.41	21.47	21.39
	8RB-Low (0)	1778.5 (132657)	21.46	21.48	21.45
		1745 (132322)	21.36	21.43	21.37
		1711.5 (131987)	21.42	21.53	21.59
	15RB (0)	1778.5 (132657)	21.46	21.51	21.48
		1745 (132322)	21.38	21.41	21.33
		1711.5 (131987)	21.45	21.49	21.38

5MHz	1RB-High (24)	1777.5 (132647)	21.49	21.57	21.67
		1745 (132322)	21.36	21.71	21.66
		1712.5 (131997)	21.42	21.64	21.73
	1RB-Middle (12)	1777.5 (132647)	21.28	21.56	21.54
		1745 (132322)	21.20	21.65	21.44
		1712.5 (131997)	21.28	21.70	21.50
	1RB-Low (0)	1777.5 (132647)	21.47	21.73	21.67
		1745 (132322)	21.53	21.63	21.72
		1712.5 (131997)	21.50	21.77	21.73
	12RB-High (13)	1777.5 (132647)	21.40	21.48	21.51
		1745 (132322)	21.38	21.53	21.34
		1712.5 (131997)	21.36	21.59	21.37
	12RB-Middle (6)	1777.5 (132647)	21.50	21.46	21.43
		1745 (132322)	21.52	21.46	21.46
		1712.5 (131997)	21.47	21.41	21.39
	12RB-Low (0)	1777.5 (132647)	21.42	21.47	21.34
		1745 (132322)	21.39	21.36	21.50
		1712.5 (131997)	21.41	21.45	21.46
	25RB (0)	1777.5 (132647)	21.40	21.42	21.46
		1745 (132322)	21.42	21.31	21.19
		1712.5 (131997)	21.44	21.49	21.37
10MHz	1RB-High (49)	1775 (132622)	21.29	21.62	21.34
		1745 (132322)	21.39	21.63	21.34
		1715 (132022)	21.32	21.64	21.46
	1RB-Middle (24)	1775 (132622)	21.33	21.63	21.66
		1745 (132322)	21.44	21.62	21.74
		1715 (132022)	21.30	21.59	21.65
	1RB-Low (0)	1775 (132622)	21.33	21.50	21.44
		1745 (132322)	21.37	21.46	21.48
		1715 (132022)	21.39	21.42	21.36
	25RB-High (25)	1775 (132622)	21.41	21.57	21.55
		1745 (132322)	21.44	21.58	21.42
		1715 (132022)	21.42	21.37	21.46
	25RB-Middle (12)	1775 (132622)	21.35	21.38	21.49
		1745 (132322)	21.40	21.48	21.45
		1715 (132022)	21.48	21.45	21.42
	25RB-Low (0)	1775 (132622)	21.43	21.41	21.39
		1745 (132322)	21.39	21.45	21.34
		1715 (132022)	21.45	21.38	21.35
	50RB (0)	1775 (132622)	21.30	21.38	21.47
		1745 (132322)	21.41	21.48	21.46
		1715 (132022)	21.37	21.43	21.36

15MHz	1RB-High (74)	1772.5 (132597)	21.21	21.49	21.36
		1745 (132322)	21.19	21.57	21.46
		1717.5 (132047)	21.17	21.51	21.28
	1RB-Middle (37)	1772.5 (132597)	21.16	21.43	21.37
		1745 (132322)	21.37	21.68	21.35
		1717.5 (132047)	21.12	21.51	21.35
	1RB-Low (0)	1772.5 (132597)	21.31	21.34	21.43
		1745 (132322)	21.23	21.38	21.31
		1717.5 (132047)	21.19	21.61	21.26
	36RB-High (38)	1772.5 (132597)	21.33	21.38	21.28
		1745 (132322)	21.30	21.38	21.34
		1717.5 (132047)	21.24	21.21	21.24
	36RB-Middle (19)	1772.5 (132597)	21.35	21.29	21.32
		1745 (132322)	21.20	21.28	21.27
		1717.5 (132047)	21.29	21.30	21.27
	36RB-Low (0)	1772.5 (132597)	21.24	21.22	21.17
		1745 (132322)	21.25	21.30	21.26
		1717.5 (132047)	21.16	21.33	21.21
	75RB (0)	1772.5 (132597)	21.27	21.33	21.31
		1745 (132322)	21.16	21.23	21.29
		1717.5 (132047)	21.26	21.22	21.32
20MHz	1RB-High (99)	1770 (132572)	21.18	21.52	21.50
		1745 (132322)	21.18	21.72	21.50
		1720 (132072)	21.17	21.40	21.46
	1RB-Middle (50)	1770 (132572)	21.21	21.58	21.47
		1745 (132322)	21.27	21.56	21.55
		1720 (132072)	21.21	21.57	21.24
	1RB-Low (0)	1770 (132572)	21.19	21.66	21.40
		1745 (132322)	21.19	21.61	21.57
		1720 (132072)	21.20	21.41	21.33
	50RB-High (50)	1770 (132572)	21.37	21.32	21.29
		1745 (132322)	21.40	21.40	21.43
		1720 (132072)	21.28	21.23	21.31
	50RB-Middle (25)	1770 (132572)	21.26	21.29	21.30
		1745 (132322)	21.25	21.28	21.36
		1720 (132072)	21.26	21.27	21.29
	50RB-Low (0)	1770 (132572)	21.24	21.23	21.32
		1745 (132322)	21.29	21.33	21.39
		1720 (132072)	21.15	21.27	21.20
	100RB (0)	1770 (132572)	21.17	21.29	21.38
		1745 (132322)	21.26	21.18	21.30
		1720 (132072)	21.22	21.25	21.35

LTE Band66 ANT2-DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	20.21	20.23	20.40
		1745 (132322)	20.32	20.37	20.26
		1710.7 (131979)	20.25	20.24	20.22
	1RB-Middle (3)	1779.3 (132665)	20.59	20.37	20.08
		1745 (132322)	20.39	20.46	20.07
		1710.7 (131979)	20.41	20.37	20.20
	1RB-Low (0)	1779.3 (132665)	20.35	20.34	20.41
		1745 (132322)	20.27	20.34	20.06
		1710.7 (131979)	20.27	20.42	20.43
	3RB-High (3)	1779.3 (132665)	20.23	20.13	20.07
		1745 (132322)	20.29	20.10	20.24
		1710.7 (131979)	20.26	19.98	20.07
	3RB-Middle (1)	1779.3 (132665)	20.28	20.14	20.27
		1745 (132322)	20.38	20.10	20.09
		1710.7 (131979)	20.25	20.11	20.11
	3RB-Low (0)	1779.3 (132665)	20.22	20.10	20.18
		1745 (132322)	20.31	20.11	20.12
		1710.7 (131979)	20.29	20.12	20.13
	6RB (0)	1779.3 (132665)	20.28	20.07	20.05
		1745 (132322)	20.36	20.01	20.17
		1710.7 (131979)	20.28	20.00	19.92
3MHz	1RB-High (14)	1778.5 (132657)	20.29	20.38	20.20
		1745 (132322)	20.40	20.45	20.22
		1711.5 (131987)	20.32	20.33	20.39
	1RB-Middle (7)	1778.5 (132657)	20.24	20.22	20.20
		1745 (132322)	20.22	20.30	20.25
		1711.5 (131987)	20.25	20.28	20.27
	1RB-Low (0)	1778.5 (132657)	20.35	20.37	20.32
		1745 (132322)	20.47	20.54	20.34
		1711.5 (131987)	20.45	20.27	20.30
	8RB-High (7)	1778.5 (132657)	20.40	20.13	20.13
		1745 (132322)	20.35	20.18	20.22
		1711.5 (131987)	20.42	20.13	20.18
	8RB-Middle (4)	1778.5 (132657)	20.42	20.28	20.14
		1745 (132322)	20.51	20.25	20.14
		1711.5 (131987)	20.47	20.23	20.21
	8RB-Low (0)	1778.5 (132657)	20.42	20.19	20.11
		1745 (132322)	20.33	20.14	20.11
		1711.5 (131987)	20.43	20.13	20.15
	15RB (0)	1778.5 (132657)	20.40	20.15	20.10
		1745 (132322)	20.40	20.18	20.05
		1711.5 (131987)	20.43	20.06	20.17

5MHz	1RB-High (24)	1777.5 (132647)	20.37	20.35	20.39
		1745 (132322)	20.45	20.47	20.34
		1712.5 (131997)	20.36	20.41	20.32
	1RB-Middle (12)	1777.5 (132647)	20.33	20.67	20.36
		1745 (132322)	20.32	20.51	20.22
		1712.5 (131997)	20.22	20.37	20.57
	1RB-Low (0)	1777.5 (132647)	20.40	20.31	20.38
		1745 (132322)	20.40	20.50	20.30
		1712.5 (131997)	20.45	20.43	20.42
	12RB-High (13)	1777.5 (132647)	20.46	20.15	20.08
		1745 (132322)	20.46	20.05	20.21
		1712.5 (131997)	20.53	19.99	20.19
	12RB-Middle (6)	1777.5 (132647)	20.45	20.27	20.11
		1745 (132322)	20.49	20.16	20.13
		1712.5 (131997)	20.43	20.08	20.06
	12RB-Low (0)	1777.5 (132647)	20.39	20.15	20.13
		1745 (132322)	20.35	20.10	20.15
		1712.5 (131997)	20.39	19.92	20.16
	25RB (0)	1777.5 (132647)	20.48	20.23	20.20
		1745 (132322)	20.43	20.08	20.00
		1712.5 (131997)	20.47	20.06	20.17
10MHz	1RB-High (49)	1775 (132622)	20.28	20.22	20.23
		1745 (132322)	20.11	20.45	20.12
		1715 (132022)	20.23	20.39	20.21
	1RB-Middle (24)	1775 (132622)	20.29	20.16	20.34
		1745 (132322)	20.29	20.22	20.29
		1715 (132022)	20.29	20.36	19.65
	1RB-Low (0)	1775 (132622)	20.33	20.16	20.15
		1745 (132322)	20.44	20.29	20.27
		1715 (132022)	20.44	20.27	20.28
	25RB-High (25)	1775 (132622)	20.49	20.15	20.15
		1745 (132322)	20.51	20.15	20.18
		1715 (132022)	20.38	20.14	20.16
	25RB-Middle (12)	1775 (132622)	20.40	20.11	20.17
		1745 (132322)	20.38	20.16	20.16
		1715 (132022)	20.51	20.20	20.18
	25RB-Low (0)	1775 (132622)	20.41	20.10	20.08
		1745 (132322)	20.48	20.18	20.15
		1715 (132022)	20.51	20.16	20.16
	50RB (0)	1775 (132622)	20.37	20.08	20.16
		1745 (132322)	20.39	20.15	20.15
		1715 (132022)	20.53	20.17	20.08

15MHz	1RB-High (74)	1772.5 (132597)	20.22	20.26	19.92
		1745 (132322)	20.15	20.32	20.06
		1717.5 (132047)	20.14	20.16	20.10
	1RB-Middle (37)	1772.5 (132597)	20.20	20.23	20.12
		1745 (132322)	20.22	20.39	20.06
		1717.5 (132047)	20.19	20.19	20.01
	1RB-Low (0)	1772.5 (132597)	20.27	20.22	20.03
		1745 (132322)	20.17	20.22	20.02
		1717.5 (132047)	20.09	20.14	19.99
	36RB-High (38)	1772.5 (132597)	20.34	20.00	19.97
		1745 (132322)	20.28	20.06	20.04
		1717.5 (132047)	20.25	19.90	19.89
	36RB-Middle (19)	1772.5 (132597)	20.34	20.04	19.99
		1745 (132322)	20.23	19.98	19.98
		1717.5 (132047)	20.24	19.98	20.00
	36RB-Low (0)	1772.5 (132597)	20.24	19.93	19.94
		1745 (132322)	20.17	20.03	19.93
		1717.5 (132047)	20.24	20.09	20.07
	75RB (0)	1772.5 (132597)	20.25	19.95	19.93
		1745 (132322)	20.20	19.94	20.06
		1717.5 (132047)	20.27	20.01	20.00
20MHz	1RB-High (99)	1770 (132572)	20.22	20.44	20.53
		1745 (132322)	20.25	20.57	20.36
		1720 (132072)	20.17	20.44	20.43
	1RB-Middle (50)	1770 (132572)	20.15	20.48	20.44
		1745 (132322)	20.20	20.54	20.47
		1720 (132072)	20.07	20.40	20.40
	1RB-Low (0)	1770 (132572)	20.18	20.53	20.37
		1745 (132322)	20.16	20.38	20.46
		1720 (132072)	20.09	20.37	20.41
	50RB-High (50)	1770 (132572)	20.30	20.33	20.34
		1745 (132322)	20.35	20.36	20.26
		1720 (132072)	20.24	20.19	20.25
	50RB-Middle (25)	1770 (132572)	20.22	20.23	20.35
		1745 (132322)	20.29	20.38	20.42
		1720 (132072)	20.20	20.31	20.33
	50RB-Low (0)	1770 (132572)	20.19	20.20	20.23
		1745 (132322)	20.24	20.36	20.36
		1720 (132072)	20.21	20.19	20.22
	100RB (0)	1770 (132572)	20.22	20.28	20.22
		1745 (132322)	20.32	20.29	20.26
		1720 (132072)	20.29	20.26	20.29

LTE Band66 ANT3-Full Power/DSI1/DSI2/DSI3					
BANDWIDTH	**Number of RBs**	**Frequency**	**QPSK**	**16QAM**	**64QAM**
1.4MHz	1RB-High (5)	1779.3 (132665)	23.80	23.17	23.19
		1745 (132322)	23.68	23.13	22.94
		1710.7 (131979)	23.85	23.26	23.07
	1RB-Middle (3)	1779.3 (132665)	24.06	23.11	23.09
		1745 (132322)	24.07	23.16	23.12
		1710.7 (131979)	24.08	23.22	23.09
	1RB-Low (0)	1779.3 (132665)	23.83	23.15	23.01
		1745 (132322)	23.80	23.12	23.13
		1710.7 (131979)	23.87	23.24	23.13
	3RB-High (3)	1779.3 (132665)	23.90	22.84	23.10
		1745 (132322)	23.88	22.99	22.94
		1710.7 (131979)	23.90	23.09	23.10
	3RB-Middle (1)	1779.3 (132665)	23.96	23.16	23.03
		1745 (132322)	23.91	23.04	23.03
		1710.7 (131979)	24.07	23.16	23.11
	3RB-Low (0)	1779.3 (132665)	23.86	23.00	23.11
		1745 (132322)	23.85	22.99	23.02
		1710.7 (131979)	23.95	22.93	23.05
	6RB (0)	1779.3 (132665)	23.00	21.95	21.93
		1745 (132322)	22.97	22.05	21.95
		1710.7 (131979)	22.99	22.09	22.02
3MHz	1RB-High (14)	1778.5 (132657)	23.99	23.28	23.12
		1745 (132322)	23.90	23.21	23.23
		1711.5 (131987)	24.00	23.26	23.09
	1RB-Middle (7)	1778.5 (132657)	23.85	23.25	23.18
		1745 (132322)	23.86	23.18	22.83
		1711.5 (131987)	24.00	23.18	23.37
	1RB-Low (0)	1778.5 (132657)	23.99	23.23	23.05
		1745 (132322)	23.99	23.24	23.08
		1711.5 (131987)	24.03	23.25	23.20
	8RB-High (7)	1778.5 (132657)	22.97	22.14	22.15
		1745 (132322)	23.00	22.08	22.05
		1711.5 (131987)	23.06	22.17	22.14
	8RB-Middle (4)	1778.5 (132657)	23.01	22.15	21.96
		1745 (132322)	22.98	22.02	22.00
		1711.5 (131987)	23.05	22.16	22.07
	8RB-Low (0)	1778.5 (132657)	23.08	22.14	22.07
		1745 (132322)	22.95	22.04	22.06
		1711.5 (131987)	23.02	22.11	22.14
	15RB (0)	1778.5 (132657)	23.03	21.96	22.01
		1745 (132322)	22.91	22.04	21.89
		1711.5 (131987)	23.07	22.10	22.12

5MHz	1RB-High (24)	1777.5 (132647)	24.00	23.35	23.17
		1745 (132322)	23.98	23.18	23.15
		1712.5 (131997)	24.03	23.29	23.20
	1RB-Middle (12)	1777.5 (132647)	23.88	23.43	23.12
		1745 (132322)	23.89	23.10	22.87
		1712.5 (131997)	23.99	23.42	23.12
	1RB-Low (0)	1777.5 (132647)	24.00	23.31	23.20
		1745 (132322)	23.87	23.20	23.09
		1712.5 (131997)	23.99	23.42	23.25
	12RB-High (13)	1777.5 (132647)	23.00	22.08	22.12
		1745 (132322)	23.00	22.05	22.11
		1712.5 (131997)	23.05	22.11	22.04
	12RB-Middle (6)	1777.5 (132647)	23.09	22.11	22.14
		1745 (132322)	23.09	22.06	22.02
		1712.5 (131997)	23.15	22.20	22.20
	12RB-Low (0)	1777.5 (132647)	23.01	21.95	22.18
		1745 (132322)	22.93	22.03	21.97
		1712.5 (131997)	23.08	22.11	22.09
	25RB (0)	1777.5 (132647)	23.05	22.11	22.06
		1745 (132322)	23.03	22.01	21.98
		1712.5 (131997)	23.09	22.04	22.12
10MHz	1RB-High (49)	1775 (132622)	23.91	23.50	23.11
		1745 (132322)	23.86	23.19	23.14
		1715 (132022)	23.98	23.33	23.17
	1RB-Middle (24)	1775 (132622)	23.85	23.29	23.11
		1745 (132322)	23.89	23.07	23.16
		1715 (132022)	23.95	23.18	23.20
	1RB-Low (0)	1775 (132622)	23.83	23.45	23.10
		1745 (132322)	23.83	23.44	23.06
		1715 (132022)	23.97	23.44	23.16
	25RB-High (25)	1775 (132622)	23.12	22.11	22.12
		1745 (132322)	22.97	22.02	22.02
		1715 (132022)	23.11	22.10	22.02
	25RB-Middle (12)	1775 (132622)	23.02	22.05	22.03
		1745 (132322)	23.01	22.09	22.05
		1715 (132022)	23.09	22.18	22.16
	25RB-Low (0)	1775 (132622)	22.98	22.01	22.09
		1745 (132322)	22.92	21.98	21.94
		1715 (132022)	23.07	22.16	22.05
	50RB (0)	1775 (132622)	22.98	22.12	22.04
		1745 (132322)	23.00	22.07	22.01
		1715 (132022)	23.08	22.15	22.06

15MHz	1RB-High (74)	1772.5 (132597)	23.89	23.44	23.23
		1745 (132322)	23.80	23.17	23.08
		1717.5 (132047)	23.80	23.20	23.08
	1RB-Middle (37)	1772.5 (132597)	23.79	23.23	23.23
		1745 (132322)	23.93	23.17	23.00
		1717.5 (132047)	23.86	23.16	23.10
	1RB-Low (0)	1772.5 (132597)	23.91	23.33	23.21
		1745 (132322)	23.78	23.20	23.12
		1717.5 (132047)	23.89	23.18	23.26
	36RB-High (38)	1772.5 (132597)	22.99	21.98	22.00
		1745 (132322)	22.85	21.98	21.91
		1717.5 (132047)	22.94	21.97	22.01
	36RB-Middle (19)	1772.5 (132597)	22.96	21.95	21.97
		1745 (132322)	22.99	21.90	21.93
		1717.5 (132047)	23.00	21.97	21.99
	36RB-Low (0)	1772.5 (132597)	22.91	21.81	21.82
		1745 (132322)	22.81	21.89	21.87
		1717.5 (132047)	23.01	21.99	21.89
	75RB (0)	1772.5 (132597)	22.86	21.87	21.91
		1745 (132322)	22.90	21.93	21.97
		1717.5 (132047)	22.93	21.91	22.04
20MHz	1RB-High (99)	1770 (132572)	23.55	22.97	22.97
		1745 (132322)	23.61	23.04	22.83
		1720 (132072)	23.64	23.00	23.02
	1RB-Middle (50)	1770 (132572)	23.63	23.17	23.10
		1745 (132322)	23.64	23.04	22.97
		1720 (132072)	23.58	23.19	23.03
	1RB-Low (0)	1770 (132572)	23.65	23.03	23.04
		1745 (132322)	23.68	23.15	23.00
		1720 (132072)	23.72	23.07	23.18
	50RB-High (50)	1770 (132572)	22.84	21.81	21.81
		1745 (132322)	22.78	21.75	21.66
		1720 (132072)	22.89	21.79	21.80
	50RB-Middle (25)	1770 (132572)	22.79	21.80	21.87
		1745 (132322)	22.75	21.78	21.75
		1720 (132072)	22.81	21.87	21.77
	50RB-Low (0)	1770 (132572)	22.77	21.79	21.66
		1745 (132322)	22.66	21.71	21.79
		1720 (132072)	22.81	21.89	21.86
	100RB (0)	1770 (132572)	22.71	21.75	21.80
		1745 (132322)	22.75	21.78	21.81
		1720 (132072)	22.83	21.88	21.82

Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive. SAR test is not required since maximum output power when downlink carrier aggregation active is not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.

The device supports Intra-band uplink LTE Carrier Aggregation (CA) CA_5B, CA_66B and CA_48C. The conducted power measurement results of LTE CA are provided as follow.
All other uplink communications are identical to the release 8 specifications. Other LTE Rel.10 or higher features are not supported, including Enhanced SC-FDMA or Uplink MIMO etc.

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

CA_5B-DSI1/DSI2								
PCC				SCC				/
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
5M	20425	1	24	3M	2464	1	0	23.96
10M	20450	1	49	5M	2522	1	0	23.66
10M	20450	1	49	10M	2549	1	0	23.25
5M	20625	1	24	3M	2586	1	0	23.91
10M	20600	1	49	5M	2528	1	0	23.74
10M	20600	1	49	10M	2501	1	0	23.27

CA_5B-DSI3								
PCC				SCC				/
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
5M	20425	25	0	3M	2464	1	0	22.74
10M	20450	1	49	5M	2522	1	0	22.86
10M	20450	1	49	10M	2549	1	0	22.77
5M	20625	1	24	3M	2586	1	0	15.33
10M	20600	1	49	5M	2528	1	0	15.21
10M	20600	1	49	10M	2501	1	0	14.7

CA_66B ANT2-DSI1/DSI2								
PCC				SCC				Power
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
5M	131997	1	24	5M	66509	1	0	21.3
10M	132022	1	49	5M	66558	1	0	21.15
15M	132047	1	74	5M	66604	1	0	21.14
10M	132022	1	49	10M	66585	1	0	21.09

CA_66B ANT2-DSI3								
PCC				SCC				Power
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
5M	131997	1	24	5M	66509	1	0	20.28
10M	132022	1	49	5M	66558	1	0	20.1
15M	132047	1	74	5M	66604	1	0	20.11
10M	132022	1	49	10M	66585	1	0	20.1

CA_66B ANT3-DSI1/DSI2/DSI3								
PCC				SCC				
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
5M	131997	1	24	5M	66509	1	0	23.29
10M	132022	1	49	5M	66558	1	0	23.04
15M	132047	1	74	5M	66604	1	0	23.15
10M	132022	1	49	10M	66585	1	0	23.11

CA_48C-DSI1/DSI2								
PCC				SCC				
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
20M	55340	1	99	5M	55457	1	0	23.62
20M	55340	1	99	10M	55484	1	0	23.65
20M	55340	1	99	15M	55511	1	0	23.59
20M	55340	1	99	20M	55538	1	0	23.64
20M	56640	1	0	5M	56523	1	24	23.68
20M	56640	1	0	10M	56496	1	49	23.49
20M	56640	1	99	20M	56442	1	0	15.17

CA_48C-DSI3								
PCC				SCC				
PCC Bandwidth	UL channel	UL RB	UL RB OFFSET	SCC Bandwidth	DL channel	UL RB	UL RB OFFSET	conducted power（dBm）
20M	55340	1	99	5M	55457	1	0	20.84
20M	55340	1	99	10M	55484	1	0	21.06
20M	55340	1	99	15M	55511	1	0	21.2
20M	55340	1	99	20M	55538	1	0	21.22
20M	56640	1	0	5M	56523	1	24	21.23
20M	56640	1	0	10M	56496	1	49	21.2
20M	56640	1	99	20M	56442	1	0	21

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

DL LTE CA Class	PCC								SCC1			SCC2			SCC3			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTETx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)	Tune-up
2A-2A-66B	2	20	1	0	1	0	18700	700	2	5	1175	66	20	67036	66	10	66680	24.18	23.89	25
2A-2A-66C	2	20	1	0	1	0	18700	700	2	5	1175	66	20	67036	66	15	67207	24.18	24.06	25
2A-4A-5B	2	20	1	0	1	0	18700	700	4	20	2175	5	5	2450	5	5	2522	24.18	23.85	25
2A-5A-66B	2	20	1	0	1	0	18700	700	5	10	2450	66	20	67036	66	10	66680	24.18	23.96	25
2A-5A-66C	2	20	1	0	1	0	18700	700	5	10	2450	66	20	67036	66	15	67207	24.18	23.95	25
2A-5B-66A	2	20	1	0	1	0	18700	700	5	5	2450	5	5	2522	66	20	66786	24.18	23.99	25
2A-13A-66B	2	20	1	0	1	0	18700	700	13	10	5230	66	20	67036	66	10	66680	24.18	23.98	25
2A-13A-66C	2	20	1	0	1	0	18700	700	13	10	5230	66	20	67036	66	15	67207	24.18	24.13	25
4A-4A-5B	4	20	1	0	1	0	20050	2050	4	20	2300	5	5	2450	5	5	2522	24.23	23.95	25
5A-5A-66B	5	10	1	49	1	49	20450	2450	5	5	2625	66	20	67036	66	10	66680	24.17	23.78	25
5A-5A-66C	5	10	1	49	1	49	20450	2450	5	5	2625	66	20	67036	66	15	67207	24.17	24.12	25
5B-66A-66A	5	10	1	49	1	49	20450	2450	5	5	2522	66	20	66536	66	5	67311	24.17	23.91	25
5B-66B	5	10	1	49	1	49	20450	2450	5	5	2522	66	20	67036	66	10	66680	24.17	24.14	25
5B-66C,	5	10	1	49	1	49	20450	2450	5	5	2522	66	20	67036	66	15	67207	24.17	24.07	25
2A-13A-48C	2	20	1	0	1	0	18700	700	13	10	5230	48	20	55340	48	5	55457	24.18	24.01	25
2A-48A-48C	2	20	1	0	1	0	18700	700	48	20	55990	48	20	55340	48	5	55457	24.18	23.95	25
4A-48D	4	20	1	0	1	0	20175	2175	48	20	55340	48	20	55538	48	5	55655	24.23	23.94	25
2A-48D	2	20	1	0	1	0	18700	700	48	20	55340	48	20	55538	48	5	55655	24.18	24.07	25
13A-48C-66A	13	10	1	49	1	49	23230	5230	48	20	55340	48	5	55457	66	20	66786	24.2	23.89	25
13A-48A-66B	13	10	1	49	1	49	23230	5230	48	20	55990	66	20	67036	66	10	66680	24.2	23.98	25
13A-48A-66C	13	10	1	49	1	49	23230	5230	48	20	55990	66	20	67036	66	15	67207	24.2	23.87	25
13A-48A-48C	13	10	1	49	1	49	23230	5230	48	20	55990	48	20	55340	48	5	55457	24.2	24.15	25
13A-48D	13	10	1	49	1	49	23230	5230	48	20	55340	48	20	55538	48	5	55655	24.2	23.99	25
48A-48A-66B	48	20	1	0	1	0	55340	55340	48	5	56715	66	20	67036	66	10	66680	24.02	23.91	25
48A-48A-66C	48	20	1	0	1	0	55340	55340	48	5	56715	66	20	67036	66	15	67207	24.02	23.75	25
48A-48C-66A	48	20	1	99	1	99	55990	55990	48	20	55340	48	5	55457	66	20	66786	24.02	23.93	25
48C-66A-66A	48	20	1	49	1	49	55340	55340	48	5	55457	66	20	66536	66	5	67311	23.93	23.8	25
48D-66A	48	20	1	49	1	49	55340	55340	48	20	55538	48	5	55655	66	20	66786	23.93	23.86	25
48C-66B	48	20	1	49	1	49	55340	55340	48	5	55457	66	20	67036	66	10	66680	23.93	23.56	25
48C-66C	48	20	1	49	1	49	55340	55340	48	5	55457	66	20	67036	66	15	67207	23.93	23.64	25
ANT3																				
2A-2A-66B	2	20	1	0	1	0	18700	700	2	5	1175	66	20	67036	66	10	66680	23.87	23.56	25
2A-2A-66C	2	20	1	0	1	0	18700	700	2	5	1175	66	20	67036	66	15	67207	23.87	23.48	25
2A-4A-5B	2	20	1	0	1	0	18700	700	4	20	2175	5	5	2450	5	5	2522	23.87	23.78	25
2A-5A-66B	2	20	1	0	1	0	18700	700	5	10	2450	66	20	67036	66	10	66680	23.87	23.51	25
2A-5A-66C	2	20	1	0	1	0	18700	700	5	10	2450	66	20	67036	66	15	67207	23.87	23.48	25
2A-5B-66A	2	20	1	0	1	0	18700	700	5	5	2450	5	5	2522	66	20	66786	23.87	23.71	25
2A-13A-66B	2	20	1	0	1	0	18700	700	13	10	5230	66	20	67036	66	10	66680	23.87	23.6	25
2A-13A-66C	2	20	1	0	1	0	18700	700	13	10	5230	66	20	67036	66	15	67207	23.87	23.74	25

DL LTE CA Class	PCC								SCC1			SCC2			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTETx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)	Tune-up
2A-2A-4A	2	20	1	0	1	0	18700	700	2	5	1175	4	20	2175	24.18	24.08	25
2A-2A-5A	2	20	1	0	1	0	18700	700	2	5	1175	5	10	2525	24.18	23.99	25
2A-2A-13A	2	20	1	0	1	0	18700	700	2	5	1175	13	10	5230	24.18	24.17	25
2A-2A-66A	2	20	1	0	1	0	18700	700	2	5	1175	66	20	66786	24.18	23.94	25
2A-4A-4A	2	20	1	0	1	0	18700	700	4	20	2050	4	20	2300	24.18	23.89	25
2A-4A-5A	2	20	1	0	1	0	18700	700	4	20	2175	5	5	2525	24.18	24.02	25
2A-4A-13A	2	20	1	0	1	0	18700	700	4	20	2175	13	10	5230	24.18	24.01	25
2A-5A-66A	2	20	1	0	1	0	18700	700	5	10	2525	66	20	66786	24.18	23.95	25
2A-5B	2	20	1	0	1	0	18700	700	5	5	2450	5	5	2522	24.18	24.11	25
2A-13A-66A	2	20	1	0	1	0	18700	700	13	10	5230	66	20	66786	24.18	24.09	25
2A-66A-66A	2	20	1	0	1	0	18700	700	66	20	66536	66	5	67311	24.18	24.12	25
2A-66B	2	20	1	0	1	0	18700	700	66	20	67036	66	10	66680	24.18	23.98	25
2A-66C	2	20	1	0	1	0	18700	700	66	20	67036	66	15	67207	24.18	23.89	25
4A-4A-5A	4	20	1	0	1	0	20050	2050	4	20	2300	5	10	2525	24.23	23.9	25
4A-4A-13A	4	20	1	0	1	0	20050	2050	4	20	2300	13	10	5230	24.23	24.09	25
4A-5B	4	20	1	0	1	0	20175	2175	5	5	2450	5	5	2522	24.23	24.15	25
5A-5A-66A	5	10	1	49	1	49	20450	2450	5	5	2625	66	20	66786	24.17	24.13	25
5A-66A-66A	5	10	1	49	1	49	20450	2450	66	20	66536	66	5	67311	24.17	23.83	25
5A-66B	5	10	1	49	1	49	20450	2450	66	20	67036	66	10	66680	24.17	23.97	25
5A-66C	5	10	1	49	1	49	20450	2450	66	20	67036	66	15	67207	24.17	24.04	25
5B-66A	5	10	1	49	1	49	20450	2450	5	5	2522	66	20	66786	24.17	23.78	25
13A-66A-66A	13	10	1	49	1	49	23230	5230	66	20	66536	66	5	67311	24.2	24.04	25
13A-66B	13	10	1	49	1	49	23230	5230	66	20	67036	66	10	66680	24.2	24.01	25
13A-66C	13	10	1	49	1	49	23230	5230	66	20	67036	66	15	67207	24.2	23.82	25
66A-66C	66	20	1	0	1	0	132322	66786	66	20	67036	66	15	67207	24.23	23.9	25
66A-66A-66A	66	20	1	0	1	0	132322	66786	66	20	66536	66	5	67311	24.23	24.07	25
2A-48A-48A	2	20	1	0	1	0	18700	700	48	20	55340	48	5	56715	24.18	24.18	25
2A-48C	2	20	1	0	1	0	18700	700	48	20	55340	48	5	55457	24.18	23.96	25
4A-48C	4	20	1	0	1	0	20175	2175	48	20	55340	48	5	55457	24.23	23.91	25
13A-48A-48A	13	10	1	49	1	49	23230	5230	48	20	55340	48	5	56715	24.2	23.87	25
13A-48A-66A	13	10	1	49	1	49	23230	5230	48	20	55990	66	20	66786	24.2	23.98	25
13A-48C	13	10	1	49	1	49	23230	5230	48	20	55340	48	5	55457	24.2	23.91	25
48A-48A-66A	48	20	1	0	1	0	55340	55340	48	5	56715	66	20	66786	24.02	23.78	25
48A-66A-66A	48	20	1	99	1	99	55990	55990	66	20	66536	66	5	67311	24.02	23.79	25
48A-66B	48	20	1	99	1	99	55990	55990	66	20	67036	66	10	66680	24.02	23.86	25
48A-66C	48	20	1	99	1	99	55990	55990	66	20	67036	66	15	67207	24.02	23.89	25
48C-66A	48	20	1	49	1	49	55340	55340	48	5	55457	66	20	66786	23.93	23.63	25
48D	48	20	1	49	1	49	55340	55340	48	20	55538	48	5	55655	23.93	23.54	25
ANT3																	25
2A-2A-4A	2	20	1	0	1	0	18700	700	2	5	1175	4	20	2175	23.87	23.86	25
2A-2A-5A	2	20	1	0	1	0	18700	700	2	5	1175	5	10	2525	23.87	23.75	25
2A-2A-13A	2	20	1	0	1	0	18700	700	2	5	1175	13	10	5230	23.87	23.65	25
2A-2A-66A	2	20	1	0	1	0	18700	700	2	5	1175	66	20	66786	23.87	23.61	25
2A-4A-4A	2	20	1	0	1	0	19100	1100	4	20	2050	4	20	2300	23.94	23.85	25
2A-4A-5A	2	20	1	0	1	0	19100	1100	4	20	2175	5	5	2525	23.94	23.67	25
2A-4A-13A	2	20	1	0	1	0	19100	1100	4	20	2175	13	10	5230	23.94	23.94	25
2A-5A-66A	2	20	1	0	1	0	19100	1100	5	10	2525	66	20	66786	23.94	23.62	25
2A-5B	2	20	1	0	1	0	19100	1100	5	5	2450	5	5	2522	23.94	23.93	25
2A-13A-66A	2	20	1	0	1	0	19100	1100	13	10	5230	66	20	66786	23.94	23.6	25
2A-66A-66A	2	20	1	0	1	0	19100	1100	66	20	66536	66	5	67311	23.94	23.76	25
2A-66B	2	20	1	0	1	0	19100	1100	66	20	67036	66	10	66680	23.94	23.88	25
2A-66C	2	20	1	0	1	0	19100	1100	66	20	67036	66	15	67207	23.94	23.57	25
66A-66A-66A	66	20	1	0	1	0	132322	66786	66	20	66536	66	5	67311	23.68	23.43	25
66A-66C	66	20	1	0	1	0	132322	66786	66	20	67036	66	15	67207	23.68	23.47	25

DL LTE CA Class	PCC								SCC			Power		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC DL RB size	PCC DL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Rel 8 LTETx Power(dBm)	Rel 10 DL LTE CA Tx Power(dBm)	Tune-up
13A-4A	13	10	1	49	1	49	23230	5230	4	20	2175	24.2	24.16	25
13A-66A	13	10	1	49	1	49	23230	5230	66	20	66786	24.2	24.09	25
13A-2A	13	10	1	49	1	49	23230	5230	2	20	900	24.2	24.12	25
13A-48A	13	10	1	49	1	49	23230	5230	48	20	55990	24.2	24.02	25
13A-46A	13	10	1	49	1	49	23230	5230	46	20	50690	24.2	24.19	25
4A-13A	4	20	1	0	1	0	20175	2175	13	10	5230	24.23	24.21	25
66A-13A	66	20	1	0	1	0	132072	66536	13	10	5230	24.23	24.22	25
2A-13A	2	20	1	0	1	0	18700	700	13	10	5230	24.18	23.83	25
48A-13A	48	20	1	99	1	99	55990	55990	13	10	5230	24.02	23.92	25
2A-2A	2	20	1	0	1	0	18700	700	2	5	1175	24.18	23.79	25
2A-5A	2	20	1	0	1	0	18700	700	5	5	2525	24.18	24.04	25
2A-4A	2	20	1	0	1	0	18700	700	4	20	2175	24.18	23.79	25
2A-66A	2	20	1	0	1	0	18700	700	66	20	66786	24.18	24.05	25
2A-48A	2	20	1	0	1	0	18700	700	48	20	55990	24.18	24.07	25
4A-5A	4	20	1	0	1	0	20175	2175	5	5	2525	24.23	24.02	25
4A-4A	4	20	1	0	1	0	20050	2050	4	20	2300	24.23	24.1	25
4A-48A	4	20	1	0	1	0	20175	2175	48	20	55990	24.23	24.2	25
5A_5A	5	10	1	49	1	49	20450	2450	5	5	2625	24.17	24.08	25
5B	5	10	1	49	1	49	20450	2450	5	5	2522	24.17	23.93	25
5A-66A	5	10	1	49	1	49	20450	2450	66	20	66786	24.17	24.07	25
66A-66A	66	20	1	0	1	0	132072	66536	66	5	67311	24.2	23.89	25
66B	66	20	1	0	1	0	132572	67036	66	10	66680	24.21	23.9	25
66C	66	20	1	0	1	0	132572	67036	66	15	67207	24.21	23.93	25
48A-66A	48	20	1	99	1	99	55990	55990	66	20	66786	24.02	23.68	25
48C	48	20	1	49	1	49	55340	55340	48	5	55457	23.93	23.54	25
2A-5A	2	20	1	0	1	0	18700	700	5	5	2525	24.18	23.81	25
2A-4A	2	20	1	0	1	0	18700	700	4	20	2175	24.18	24.12	25
2A-66A	2	20	1	0	1	0	18700	700	66	20	66786	24.18	24.15	25
2A-48A	2	20	1	0	1	0	18700	700	48	20	55990	24.18	24.18	25
4A-5A	4	20	1	0	1	0	20175	2175	5	5	2525	24.23	24.02	25
4A-4A	4	20	1	0	1	0	20050	2050	4	20	2300	24.23	23.96	25
4A-48A	4	20	1	0	1	0	20175	2175	48	20	55990	24.23	24.08	25
ANT3														
2A-2A	2	20	1	0	1	0	19100	1100	2	5	1175	23.94	23.73	25
2A-5A	2	20	1	0	1	0	19100	1100	5	5	2525	23.94	23.84	25
2A-4A	2	20	1	0	1	0	19100	1100	4	20	2175	23.94	23.87	25
2A-66A	2	20	1	0	1	0	19100	1100	66	20	66786	23.94	23.9	25
2A-46A	2	20	1	0	1	0	19100	1100	46	20	50690	23.94	23.61	25
2A-48A	2	20	1	0	1	0	19100	1100	48	20	55990	23.94	23.58	25
66A-66A	66	20	1	0	1	0	132072	66536	66	5	67311	23.72	23.63	25
66B	66	20	1	0	1	0	132572	67036	66	10	66680	23.65	23.32	25
66C	66	20	1	0	1	0	132572	67036	66	15	67207	23.65	23.54	25

12.4 5G NR Measurement result

Maximum Target Power for Production Unit

Band	Tune up (dBm)			
	Full power (P-max)	**DSI1 (Body worn 0/15mm scenario)**	**DSI2 (Hotspot 10mm scenario)**	**DSI3 (Head scenario)**
n2	25	20.5	20.5	20.5
n5	25	25	25	24.5
n66	25	21	21	20
n77	24	21.5	21.5	19.5

5G NR n2-Full Power/DSI1/DSI2									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		n	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1907.5	381500	381050	25	24.04
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1880	376000	375550	25	23.97
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1852.5	370500	370050	25	24.05
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1900	380000	378092	25	23.93
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1880	376000	374092	25	24.02
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1860	372000	370092	25	23.93
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12@6	1852.5	370500	370050	25	23.95
15	5	DFT-s-OFDM 16QAM	Inner_Full	12@6	1852.5	370500	370050	24	22.86
15	5	DFT-s-OFDM 64QAM	Inner_Full	12@6	1852.5	370500	370050	22.5	21.58
15	5	DFT-s-OFDM 256QAM	Inner_Full	12@6	1852.5	370500	370050	20.5	19.38
15	5	CP-OFDM QPSK	Inner_Full	12@6	1852.5	370500	370050	23.5	22.46
15	5	CP-OFDM 16QAM	Inner_Full	12@6	1852.5	370500	370050	23	21.92
15	5	CP-OFDM 64QAM	Inner_Full	12@6	1852.5	370500	370050	21.5	20.58
15	5	CP-OFDM 256QAM	Inner_Full	12@6	1852.5	370500	370050	18.5	17.52
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2@23	1852.5	370500	370050	24	22.90
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	1852.5	370500	370050	24	22.97
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1@23	1852.5	370500	370050	25	23.97
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	1852.5	370500	370050	25	24.01
15	5	DFT-s-OFDM QPSK	Outer_Full	25@0	1852.5	370500	370050	24	22.99
15	10	DFT-s-OFDM QPSK	Edge_Full_Left	25@12	1855	371000	370064	25	23.97
15	15	DFT-s-OFDM QPSK	Edge_Full_Left	36@18	1857.5	371500	370078	25	23.91

5G NR n2-DSI3									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		Frequency	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1907.5	381500	381050	20.5	19.99
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1880	376000	375550	20.5	20.19
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1852.5	370500	370050	20.5	20.04
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1900	380000	378092	20.5	19.92
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1880	376000	374092	20.5	20.02
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1860	372000	370092	20.5	19.96
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12@6	1880	376000	375550	20.5	20.07
15	5	DFT-s-OFDM 16QAM	Inner_Full	12@6	1880	376000	375550	20.5	20.07
15	5	DFT-s-OFDM 64QAM	Inner_Full	12@6	1880	376000	375550	20.5	20.11
15	5	DFT-s-OFDM 256QAM	Inner_Full	12@6	1880	376000	375550	20.5	20.10
15	5	CP-OFDM QPSK	Inner_Full	12@6	1880	376000	375550	20.5	20.00
15	5	CP-OFDM 16QAM	Inner_Full	12@6	1880	376000	375550	20.5	20.10
15	5	CP-OFDM 64QAM	Inner_Full	12@6	1880	376000	375550	20.5	20.10
15	5	CP-OFDM 256QAM	Inner_Full	12@6	1880	376000	375550	18.5	18.25
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2@23	1880	376000	375550	20.5	19.98
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	1880	376000	375550	20.5	20.09
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1@23	1880	376000	375550	20.5	19.95
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	1880	376000	375550	20.5	20.00
15	5	DFT-s-OFDM QPSK	Outer_Full	25@0	1880	376000	375550	20.5	20.07
15	10	DFT-s-OFDM QPSK	Inner_Full	25@12	1880	376000	370064	20.5	20.07
15	15	DFT-s-OFDM QPSK	Inner_Full	36@18	1880	376000	370078	20.5	20.04

5G NR n5-Full Power/DSI1/DSI2								
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	QRCT Test CH.	Tune up	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	846.5	168850	25	24.31
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	836.5	166850	25	24.34
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	826.5	164850	25	24.45
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	839	165892	25	24.34
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	836.5	165392	25	24.48
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	834	164892	25	24.43
15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	50@25	836.5	165392	25	24.39
15	20	DFT-s-OFDM 16QAM	Inner_Full	50@25	836.5	165392	24	23.40
15	20	DFT-s-OFDM 64QAM	Inner_Full	50@25	836.5	165392	22.5	22.00
15	20	DFT-s-OFDM 256QAM	Inner_Full	50@25	836.5	165392	20.5	19.87
15	20	CP-OFDM QPSK	Inner_Full	53@26	836.5	165392	23.5	22.86
15	20	CP-OFDM 16QAM	Inner_Full	53@26	836.5	165392	23	22.30
15	20	CP-OFDM 64QAM	Inner_Full	53@26	836.5	165392	21.5	20.77
15	20	CP-OFDM 256QAM	Inner_Full	53@26	836.5	165392	18.5	17.87
15	20	DFT-s-OFDM QPSK	Edge_Full_Right	2@104	836.5	165392	24	23.27
15	20	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	836.5	165392	24	23.58
15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1@104	836.5	165392	25	24.19
15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	165392	25	24.51
15	20	DFT-s-OFDM QPSK	Outer_Full	100@0	836.5	165392	24	23.45
15	10	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	166436	25	24.38
15	15	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	165932	25	24.52

5G NR n5-DSI3									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	846.5	169300	168850	24.5	23.94
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	836.5	167300	166850	24.5	24.02
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	826.5	165300	164850	24.5	24.07
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	839	167800	165892	24.5	23.95
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	836.5	167300	165392	24.5	24.12
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	834	166800	164892	24.5	24.06
15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	50@25	836.5	167300	165392	24.5	23.99
15	20	DFT-s-OFDM 16QAM	Inner_Full	50@25	836.5	167300	165392	23.5	23.43
15	20	DFT-s-OFDM 64QAM	Inner_Full	50@25	836.5	167300	165392	22	21.97
15	20	DFT-s-OFDM 256QAM	Inner_Full	50@25	836.5	167300	165392	20	19.95
15	20	CP-OFDM QPSK	Inner_Full	53@26	836.5	167300	165392	23	22.98
15	20	CP-OFDM 16QAM	Inner_Full	53@26	836.5	167300	165392	22.5	22.45
15	20	CP-OFDM 64QAM	Inner_Full	53@26	836.5	167300	165392	21	20.96
15	20	CP-OFDM 256QAM	Inner_Full	53@26	836.5	167300	165392	18	17.99
15	20	DFT-s-OFDM QPSK	Edge_Full_Right	2@104	836.5	167300	165392	23.5	23.38
15	20	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	836.5	167300	165392	23.5	23.47
15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1@104	836.5	167300	165392	24.5	23.95
15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	167300	165392	24.5	24.28
15	20	DFT-s-OFDM QPSK	Outer_Full	100@0	836.5	165300	165392	23.5	23.48
15	10	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	167300	166436	24.5	24.12
15	15	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	836.5	167300	165932	24.5	24.18

5G NR n66-Full Power								
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	QRCT Test Freq. (MHz)	Tune up	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1777.5	355500	25	23.61
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1745	349000	25	**23.67**
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1712.5	342500	25	23.38
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1770	354000	25	23.57
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1745	349000	25	23.57
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1720	344000	25	23.21
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12@6	1745	349000	25	23.56
15	5	DFT-s-OFDM 16QAM	Inner_Full	12@6	1745	349000	24	22.5
15	5	DFT-s-OFDM 64QAM	Inner_Full	12@6	1745	349000	22.5	21.18
15	5	DFT-s-OFDM 256QAM	Inner_Full	12@6	1745	349000	20.5	19.08
15	5	CP-OFDM QPSK	Inner_Full	12@6	1745	349000	23.5	22.08
15	5	CP-OFDM 16QAM	Inner_Full	12@6	1745	349000	23	21.55
15	5	CP-OFDM 64QAM	Inner_Full	12@6	1745	349000	21.5	20.19
15	5	CP-OFDM 256QAM	Inner_Full	12@6	1745	349000	18.5	17.13
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2@23	1745	349000	24	22.54
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	1745	349000	24	22.54
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1@23	1745	349000	25	23.66
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	1745	349000	25	23.59
15	5	DFT-s-OFDM QPSK	Outer_Full	25@0	1745	349000	24	22.65
15	10	DFT-s-OFDM QPSK	Inner_Full	25@12	1745	342064	25	23.61
15	15	DFT-s-OFDM QPSK	Inner_Full	36@18	1745	347578	25	23.51
15	30	DFT-s-OFDM QPSK	Inner_Full	80@40	1745	346120	25	23.61
15	40	DFT-s-OFDM QPSK	Inner_Full	108@54	1745	345112	25	23.51

5G NR n66-DSI1/DSI2							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	QRCT Test Freq. (MHz)	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1777.5	355500	19.15
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1745	349000	**19.66**
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1712.5	342500	19.47
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1770	354000	19.08
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1745	349000	19.30
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1720	344000	19.43
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12@6	1745	349000	19.47
15	5	DFT-s-OFDM 16QAM	Inner_Full	12@6	1745	349000	19.5
15	5	DFT-s-OFDM 64QAM	Inner_Full	12@6	1745	349000	19.49
15	5	DFT-s-OFDM 256QAM	Inner_Full	12@6	1745	349000	19.02
15	5	CP-OFDM QPSK	Inner_Full	12@6	1745	349000	19.39
15	5	CP-OFDM 16QAM	Inner_Full	12@6	1745	349000	19.46
15	5	CP-OFDM 64QAM	Inner_Full	12@6	1745	349000	19.42
15	5	CP-OFDM 256QAM	Inner_Full	12@6	1745	349000	17.09
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2@23	1745	349000	19.38
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	1745	349000	19.37
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1@23	1745	349000	19.38
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	1745	349000	19.5
15	5	DFT-s-OFDM QPSK	Outer_Full	25@0	1745	349000	19.37
15	10	DFT-s-OFDM QPSK	Inner_Full	25@12	1745	342064	19.34
15	15	DFT-s-OFDM QPSK	Inner_Full	36@18	1745	347578	19.22
15	30	DFT-s-OFDM QPSK	Inner_Full	80@40	1745	346120	19.32
15	40	DFT-s-OFDM QPSK	Inner_Full	108@54	1745	345112	19.2

5G NR n66-DSI3							
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	QRCT Test Freq. (MHz)	Power Results (dBm)
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1777.5	355500	18.02
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1745	349000	**18.69**
15	5	DFT-s-OFDM QPSK	Inner_Full	12@6	1712.5	342500	18.25
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1770	354000	18.10
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1745	349000	18.54
15	20	DFT-s-OFDM QPSK	Inner_Full	50@25	1720	344000	18.61
15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	12@6	1745	349000	18.56
15	5	DFT-s-OFDM 16QAM	Inner_Full	12@6	1745	349000	18.63
15	5	DFT-s-OFDM 64QAM	Inner_Full	12@6	1745	349000	18.6
15	5	DFT-s-OFDM 256QAM	Inner_Full	12@6	1745	349000	18.6
15	5	CP-OFDM QPSK	Inner_Full	12@6	1745	349000	18.51
15	5	CP-OFDM 16QAM	Inner_Full	12@6	1745	349000	18.59
15	5	CP-OFDM 64QAM	Inner_Full	12@6	1745	349000	18.49
15	5	CP-OFDM 256QAM	Inner_Full	12@6	1745	349000	17.16
15	5	DFT-s-OFDM QPSK	Edge_Full_Right	2@23	1745	349000	18.44
15	5	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	1745	349000	18.5
15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1@23	1745	349000	18.54
15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	1745	349000	18.63
15	5	DFT-s-OFDM QPSK	Outer_Full	25@0	1745	349000	18.55
15	10	DFT-s-OFDM QPSK	Inner_Full	25@12	1745	342064	18.55
15	15	DFT-s-OFDM QPSK	Inner_Full	36@18	1745	347578	18.47
15	30	DFT-s-OFDM QPSK	Inner_Full	80@40	1745	346120	18.5
15	40	DFT-s-OFDM QPSK	Inner_Full	108@54	1745	345112	18.46

5G NR n77-Full power									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3969.990	664666	664054	24.00	23.68
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3918.000	661200	660588	24.00	23.76
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3866.000	657733	657121	24.00	23.78
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3814.000	654267	653655	24.00	23.82
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	24.00	23.84
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3710.010	647334	646722	24.00	23.78
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3930.000	662000	658724	24.00	23.73
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3894.000	659600	656324	24.00	23.60
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3858.000	657200	653924	24.00	23.59
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3822.000	654800	651524	24.00	23.52
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3786.000	652400	649124	24.00	23.50
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3750.000	650000	646724	24.00	23.42
30	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	25@12	3762.000	650800	650188	24.00	23.83
30	20	DFT-s-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	24.00	23.81
30	20	DFT-s-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	24.00	23.75
30	20	DFT-s-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	22.50	22.31
30	20	CP-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	24.00	23.78
30	20	CP-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	24.00	23.79
30	20	CP-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	24.00	23.25
30	20	CP-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	20.50	20.22
30	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1@50	3762.000	650800	650188	24.00	23.25
30	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1@0	3762.000	650800	650188	24.00	23.24
30	20	DFT-s-OFDM QPSK	Edge_Full_Right	2@49	3762.000	650800	650188	24.00	23.21
30	20	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	3762.000	650800	650188	24.00	23.17
30	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1@49	3762.000	650800	650188	24.00	23.82
30	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3762.000	650800	650188	24.00	23.88
30	20	DFT-s-OFDM QPSK	Outer_Full	50@0	3762.000	650800	650188	24.00	23.75
30	40	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3768.000	651200	649928	24.00	23.98
30	50	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3771.000	651400	649824	24.00	23.78
30	60	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3774.000	651600	649656	24.00	23.63
30	80	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3780.000	652000	649396	24.00	23.60
30	90	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3783.000	652200	649260	24.00	23.63

5G NR n77-DSI1/DSI2									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3969.990	664666	664054	21.50	20.36
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3918.000	661200	660588	21.50	20.33
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3866.000	657733	657121	21.50	20.39
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3814.000	654267	653655	21.50	20.41
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	21.50	20.49
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3710.010	647334	646722	21.50	20.42
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3930.000	662000	658724	21.50	20.12
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3894.000	659600	656324	21.50	20.11
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3858.000	657200	653924	21.50	20.17
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3822.000	654800	651524	21.50	20.14
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3786.000	652400	649124	21.50	20.06
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3750.000	650000	646724	21.50	20
30	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	25@12	3762.000	650800	650188	21.50	20.32
30	20	DFT-s-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	20.44
30	20	DFT-s-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	20.43
30	20	DFT-s-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	20.41
30	20	CP-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	21.50	20.36
30	20	CP-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	20.28
30	20	CP-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	20.25
30	20	CP-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	21.50	19.38
30	20	DFT-s-OFDM QPSK	Edge_Full_Right	2@49	3762.000	650800	650188	21.50	20.37
30	20	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	3762.000	650800	650188	21.50	20.41
30	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1@49	3762.000	650800	650188	21.50	20.47
30	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3762.000	650800	650188	21.50	20.48
30	20	DFT-s-OFDM QPSK	Outer_Full	50@0	3762.000	650800	650188	21.50	20.34
30	40	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3768.000	651200	649928	21.50	20.79
30	50	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3771.000	651400	649824	21.50	20.57
30	60	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3774.000	651600	649656	21.50	20.5
30	80	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3780.000	652000	649396	21.50	20.39
30	90	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3783.000	652200	649260	21.50	20.45

5G NR n77-DSI3									
SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.	QRCT Test CH.	Tune up	Power Results (dBm)
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3969.990	664666	664054	19.50	18.56
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3918.000	661200	660588	19.50	18.53
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3866.000	657733	657121	19.50	18.59
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3814.000	654267	653655	19.50	18.61
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	19.50	18.63
30	20	DFT-s-OFDM QPSK	Inner_Full	25@12	3710.010	647334	646722	19.50	18.62
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3930.000	662000	658724	19.50	18.33
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3894.000	659600	656324	19.50	18.32
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3858.000	657200	653924	19.50	18.38
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3822.000	654800	651524	19.50	18.35
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3786.000	652400	649124	19.50	18.28
30	100	DFT-s-OFDM QPSK	Inner_Full	135@67	3750.000	650000	646724	19.50	18.2
30	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	25@12	3762.000	650800	650188	19.50	18.33
30	20	DFT-s-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.37
30	20	DFT-s-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.44
30	20	DFT-s-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.41
30	20	CP-OFDM QPSK	Inner_Full	25@12	3762.000	650800	650188	19.50	18.36
30	20	CP-OFDM 16QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.26
30	20	CP-OFDM 64QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.2
30	20	CP-OFDM 256QAM	Inner_Full	25@12	3762.000	650800	650188	19.50	18.38
30	20	DFT-s-OFDM QPSK	Edge_Full_Right	2@49	3762.000	650800	650188	19.50	18.32
30	20	DFT-s-OFDM QPSK	Edge_Full_Left	2@0	3762.000	650800	650188	19.50	18.33
30	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1@49	3762.000	650800	650188	19.50	18.36
30	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3762.000	650800	650188	19.50	18.66
30	20	DFT-s-OFDM QPSK	Outer_Full	50@0	3762.000	650800	650188	19.50	18.33
30	40	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3768.000	651200	649928	19.50	18.69
30	50	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3771.000	651400	649824	19.50	18.43
30	60	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3774.000	651600	649656	19.50	18.48
30	80	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3780.000	652000	649396	19.50	18.42
30	90	DFT-s-OFDM QPSK	Inner_1RB_Left	1@1	3783.000	652200	649260	19.50	18.41

12.5 Wi-Fi and BT Measurement result

The maximum output power of BT antenna is 11.66dBm.
The maximum tune up of BT antenna is 11.8dBm.

The average conducted power for Wi-Fi 2.4G (head transmit alone and body) is as following:

802.11b	
Channel\data rate	1Mbps
11(2462MHz)	19.52
6(2437(MHz)	19.15
1(2412MHz)	19.92
Tune up	20.00
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	17.22
6(2437(MHz)	16.36
1(2412MHz)	17.31
Tune up	18.00
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	16.35
6(2437(MHz)	16.59
1(2412MHz)	16.75
Tune up	18.00
802.11n-40MHz	
Channel\data rate	MCS0
9(2452MHz)	16.35
6(2437MHz)	16.59
3(2422MHz)	16.75
Tune up	17.00

The average conducted power for Wi-Fi 2.4G (head transmit with WWAN) is as following:

802.11b	
Channel\data rate	1Mbps
11(2462MHz)	17.00
6(2437(MHz)	16.44
1(2412MHz)	17.11
Tune up	17.50
802.11g	
Channel\data rate	6Mbps
11(2462MHz)	14.56
6(2437(MHz)	14.07
1(2412MHz)	14.68
Tune up	15.50
802.11n-20MHz	
Channel\data rate	MCS0
11(2462MHz)	13.79
6(2437(MHz)	14.14
1(2412MHz)	13.75
Tune up	15.50
802.11n-40MHz	
Channel\data rate	MCS0
9(2452MHz)	13.79
6(2437MHz)	14.14
3(2422MHz)	13.75
Tune up	14.50

The average conducted power for Wi-Fi 5G (body) is as following:

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	16.23
40(5200 MHz)	16.37
44(5220 MHz)	16.30
48(5240 MHz)	16.43
Tune up	17.50
52(5260 MHz)	16.50
56(5280 MHz)	16.43
60(5300 MHz)	16.66
64(5320 MHz)	17.19
100(5500 MHz)	17.62
104(5520 MHz)	17.70
108(5540 MHz)	17.56
112(5560 MHz)	17.17
116(5580 MHz)	17.10
120(5600 MHz)	17.15
124(5620 MHz)	17.40
128(5640 MHz)	17.80
132(5660 MHz)	17.72
136(5680 MHz)	17.50
140(5700 MHz)	16.75
144(5720 MHz)	16.50
149(5745 MHz)	16.30
153(5765 MHz)	16.55
157(5785 MHz)	17.09
161(5805 MHz)	17.55
165(5825 MHz)	17.90
Tune up	18.00

The average conducted power for Wi-Fi 5G (head transmit alone) is as following:

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	14.86
40(5200 MHz)	15.10
44(5220 MHz)	15.19
48(5240 MHz)	14.76
52(5260 MHz)	14.66
56(5280 MHz)	14.68
60(5300 MHz)	14.93
64(5320 MHz)	15.27
100(5500 MHz)	14.72
104(5520 MHz)	14.77
108(5540 MHz)	14.53
112(5560 MHz)	14.15
116(5580 MHz)	13.89
120(5600 MHz)	13.98
124(5620 MHz)	14.17
128(5640 MHz)	14.63
132(5660 MHz)	14.92
136(5680 MHz)	15.09
140(5700 MHz)	14.42
144(5720 MHz)	13.80
149(5745 MHz)	13.70
153(5765 MHz)	13.84
157(5785 MHz)	14.14
161(5805 MHz)	14.68
165(5825 MHz)	15.22
Tune up	15.50

The average conducted power for Wi-Fi 5G (head transmit with WWAN) is as following:

802.11a(dBm)	
Channel\data rate	6Mbps
36(5180 MHz)	12.03
40(5200 MHz)	12.21
44(5220 MHz)	12.33
48(5240 MHz)	12.02
Tune up	12.50
52(5260 MHz)	11.90
56(5280 MHz)	11.93
60(5300 MHz)	12.13
64(5320 MHz)	12.50
100(5500 MHz)	11.88
104(5520 MHz)	12.06
108(5540 MHz)	11.92
112(5560 MHz)	11.57
116(5580 MHz)	11.28
120(5600 MHz)	11.33
124(5620 MHz)	11.44
128(5640 MHz)	11.90
132(5660 MHz)	12.28
136(5680 MHz)	12.37
140(5700 MHz)	11.65
144(5720 MHz)	11.05
Tune up	13.00
149(5745 MHz)	10.88
153(5765 MHz)	11.12
157(5785 MHz)	11.47
161(5805 MHz)	11.95
165(5825 MHz)	12.47
Tune up	12.50

13 Simultaneous TX SAR Considerations

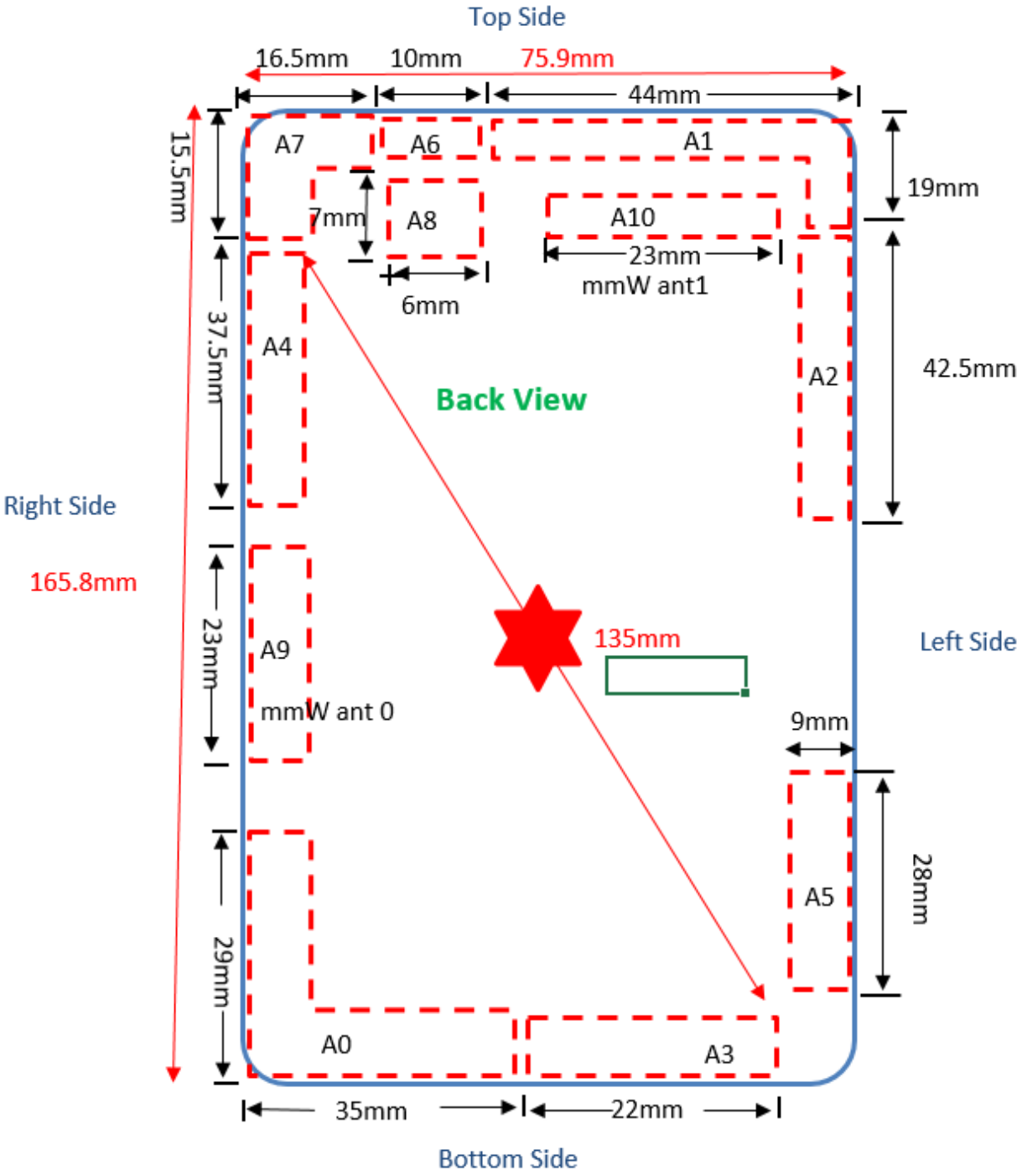
13.1 Introduction

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

For this device, the BT and Wi-Fi can transmit simultaneous with other transmitters. All conditions for simultaneous transmission is as below:

Cellular+WiFi2.4G		Cellular+WiFi5G		Cellular+BT		Cellular+BT+wifi5G		
2/3/4/5G	WiFi 2.4G	2/3/4/5G	WiFi 5G	2/3/4/5G	BT	2/3/4/5G	BT	WiFi 5G
GSM900	WiFi 2.4G	GSM900	WiFi 5G	GSM900	BT	GSM900	BT	WiFi 5G
GSM1800	WiFi 2.4G	GSM1800	WiFi 5G	GSM1800	BT	GSM1800	BT	WiFi 5G
G850	WiFi 2.4G	G850	WiFi 5G	G850	BT	G850	BT	WiFi 5G
G1900	WiFi 2.4G	G1900	WiFi 5G	G1900	BT	G1900	BT	WiFi 5G
UMTS B2	WiFi 2.4G	UMTS B2	WiFi 5G	UMTS B2	BT	UMTS B2	BT	WiFi 5G
UMTS B5	WiFi 2.4G	UMTS B5	WiFi 5G	UMTS B5	BT	UMTS B5	BT	WiFi 5G
UMTS B1	WiFi 2.4G	UMTS B1	WiFi 5G	UMTS B1	BT	UMTS B1	BT	WiFi 5G
UMTS B8	WiFi 2.4G	UMTS B8	WiFi 5G	UMTS B8	BT	UMTS B8	BT	WiFi 5G
LTE B2	WiFi 2.4G	LTE B2	WiFi 5G	LTE B2	BT	LTE B2	BT	WiFi 5G
LTE B3	WiFi 2.4G	LTE B3	WiFi 5G	LTE B3	BT	LTE B3	BT	WiFi 5G
LTE B4	WiFi 2.4G	LTE B4	WiFi 5G	LTE B4	BT	LTE B4	BT	WiFi 5G
LTE B5	WiFi 2.4G	LTE B5	WiFi 5G	LTE B5	BT	LTE B5	BT	WiFi 5G
LTE B7	WiFi 2.4G	LTE B7	WiFi 5G	LTE B7	BT	LTE B7	BT	WiFi 5G
LTE B12	WiFi 2.4G	LTE B12	WiFi 5G	LTE B12	BT	LTE B12	BT	WiFi 5G
LTE B13	WiFi 2.4G	LTE B13	WiFi 5G	LTE B13	BT	LTE B13	BT	WiFi 5G
LTE B20	WiFi 2.4G	LTE B20	WiFi 5G	LTE B20	BT	LTE B20	BT	WiFi 5G
LTE B28	WiFi 2.4G	LTE B28	WiFi 5G	LTE B28	BT	LTE B28	BT	WiFi 5G
LTE B48	WiFi 2.4G	LTE B48	WiFi 5G	LTE B48	BT	LTE B48	BT	WiFi 5G
LTE B66	WiFi 2.4G	LTE B66	WiFi 5G	LTE B66	BT	LTE B66	BT	WiFi 5G

13.2 Transmit Antenna Separation Distances



Picture 13-1 Antenna Locations

13.3 SAR Measurement Positions

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

SAR measurement positions						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
WWAN-A1	Yes	Yes	Yes	No	Yes	No
WWAN-A2	Yes	Yes	Yes	No	Yes	No
WWAN-A3	Yes	Yes	Yes	No	No	Yes
WWAN-A4	Yes	Yes	No	Yes	Yes	No
WIFI-A7	Yes	Yes	No	Yes	Yes	No

13.4 Standalone SAR Test Exclusion Considerations

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

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

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

Table 13-1: 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	11.8	15.14	No
		Body	19.20	11.8	15.14	No
2.4GHz WLAN	2.45	Head	9.58	20	100	No
		Body	19.17	20	100	No
5GHz WLAN	5.2	Head	6.58	17.5	56.23	No
		Body	13.16	17.5	56.23	No
	5.3	Head	6.52	18	63.1	No
		Body	13.03	18	63.1	No
	5.6	Head	6.34	18	63.1	No
		Body	12.68	18	63.1	No
	5.8	Head	6.23	18	63.1	No
		Body	12.46	18	63.1	No

14 Evaluation of Simultaneous

Table 14.1: The sum of SAR values for Main antenna + WiFi-2.4G

	Position	Main antenna	WiFi-2.4G	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.22	**1.41**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.15	**1.11**

Table 14.2: The sum of SAR values for Main antenna + WiFi-5G

	Position	Main antenna	WiFi-5G	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.27	**1.46**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.32	**1.28**

Table 14.3: The sum of SAR values for Main antenna +BT

	Position	Main antenna	BT	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	<0.01	**1.19**
Highest SAR value for Body	Left 10mm (5G NR n5)	1.07	<0.01	**1.07**

Table 14.4: The sum of SAR values for Main antenna + WiFi-5G + BT

	Position	Main antenna	WiFi-5G	BT	Sum
Highest SAR value for Head	Right head, Touch (LTE B66-ANT2)	1.19	0.27	<0.01	**1.46**
Highest SAR value for Body	Rear 10mm (LTE B66-ANT3)	0.96	0.32	<0.01	**1.28**

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.

15 SAR Test Result

It is determined by user manual for the distance between the EUT and the phantom bottom.
The distance is 10 mm and just applied to the condition of body worn accessory.
It is performed for all SAR measurements with area scan based 1-g SAR estimation (Fast SAR). A zoom scan measurement is added when the estimated 1-g SAR is the highest measured SAR in each exposure configuration, wireless mode and frequency band combination or more than 1.2W/kg.
The calculated SAR is obtained by the following formula:

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

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

Table 15.1: Duty Cycle

Mode	Duty Cycle
GSM 850/1900-Speech	1:8.3
GPRS 850/1900	1:4
WCDMA&LTE FDD&NR FDD	1:1
LTE TDD	1:1.58
NR TDD	1:2

15.1 SAR results for 2G/3G/4G

Table 15.1-1: SAR Values (GSM 850 MHz Band – Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
251	848.8	Left	Cheek	/	31.83	33.00	0.368	**0.48**	0.591	**0.77**	0.03
190	836.6	Left	Cheek	Fig.1	31.94	33.00	0.366	**0.47**	0.611	**0.78**	-0.04
128	824.2	Left	Cheek	/	32.02	33.00	0.312	**0.39**	0.515	**0.65**	0.1
190	836.6	Left	Tilt	/	31.94	33.00	0.312	**0.40**	0.571	**0.73**	-0.18
190	836.6	Right	Cheek	/	31.94	33.00	0.268	**0.34**	0.431	**0.55**	-0.03
190	14:30	Right	Tilt	/	31.94	33.00	0.284	**0.36**	0.488	**0.62**	0.15

Table 15.1-2: SAR Values (GSM 850 MHz Band - Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
190	836.6	GPRS (2)	Front	/	29.88	31.00	0.212	**0.27**	0.334	**0.43**	0.08
251	828.8	GPRS (2)	Rear	/	30.05	31.00	0.315	**0.39**	0.541	**0.67**	0.1
190	836.6	GPRS (2)	Rear	Fig.2	29.88	31.00	0.311	**0.40**	0.554	**0.72**	0.05
128	822.2	GPRS (2)	Rear	/	29.69	31.00	0.271	**0.37**	0.483	**0.65**	0.15
190	836.6	GPRS (2)	Left	/	29.88	31.00	0.213	**0.28**	0.293	**0.38**	0.11
251	828.8	GPRS (2)	Top	/	29.88	31.00	0.273	**0.35**	0.509	**0.66**	0.17
190	836.6	EGPRS (2)	Rear	/	29.85	31.00	0.281	**0.37**	0.523	**0.68**	0.12

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

Table 15.1-3: SAR Values (GSM 1900 MHz Band - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	Left	Cheek	/	28.98	30.00	0.057	**0.07**	0.087	**0.11**	0.08
661	1880	Left	Tilt	/	28.98	30.00	0.037	**0.05**	0.059	**0.07**	-0.1
661	1880	Right	Cheek	/	28.98	30.00	0.067	**0.08**	0.112	**0.14**	0.16
810	1909.8	Right	Cheek	/	29.17	30.00	0.069	**0.08**	0.113	**0.14**	0.15
512	1850.2	Right	Cheek	Fig.3	29.34	30.00	0.086	**0.10**	0.138	**0.16**	-0.08
661	1880	Right	Tilt	/	28.98	30.00	<0.01	<0.01	<0.01	<0.01	/

Table 15.1-4: SAR Values (GSM 1900 MHz Band-Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Mode (number of timeslots)	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
661	1880	GPRS (2)	Front	/	26.21	27.00	0.155	**0.19**	0.259	**0.31**	0.09
661	1880	GPRS (2)	Rear	/	26.21	27.00	0.250	**0.30**	0.422	**0.51**	-0.15
661	1880	GPRS (2)	Left	/	26.21	27.00	0.050	**0.06**	0.084	**0.10**	0.08
810	1909.8	GPRS (2)	Bottom	/	26.12	27.00	0.289	**0.35**	0.535	**0.66**	0.06
661	1880	GPRS (2)	Bottom	Fig.4	26.21	27.00	0.320	**0.38**	0.571	**0.68**	0.09
512	1850.2	GPRS (2)	Bottom	/	26.25	27.00	0.278	**0.33**	0.505	**0.60**	-0.09
661	1880	EGPRS (2)	Bottom		26.11	27.00	0.285	**0.35**	0.533	**0.65**	0.16

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

Table 15.1-5: SAR Values (WCDMA 1900 MHz Band-Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
9400	1880	Left	Cheek	/	20.21	21.00	0.170	**0.20**	0.313	**0.38**	0.11
9400	1880	Left	Tilt	/	20.21	21.00	0.081	**0.10**	0.146	**0.18**	-0.03
9538	1907.6	Right	Cheek	/	20.07	21.00	0.314	**0.39**	0.658	**0.82**	0.02
9400	1880	Right	Cheek	Fig.5	20.21	21.00	0.342	**0.41**	0.720	**0.86**	0.17
9262	1852.4	Right	Cheek	/	20.18	21.00	0.293	**0.35**	0.686	**0.83**	0.17
9400	1880	Right	Tilt	/	20.21	21.00	0.110	**0.13**	0.205	**0.25**	-0.08

Table 15.1-6: SAR Values (WCDMA 1900 MHz Band -Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
9400	1880	Front	/	20.21	21.00	0.062	**0.07**	0.092	**0.11**	-0.01
9538	1907.6	Rear	/	20.07	21.00	0.116	**0.14**	0.184	**0.23**	0.09
9400	1880	Rear	Fig.6	20.21	21.00	0.207	**0.25**	0.424	**0.51**	0.13
9262	1852.4	Rear	/	20.18	21.00	0.148	**0.18**	0.220	**0.27**	-0.14
9400	1880	Left	/	20.21	21.00	0.132	**0.16**	0.213	**0.26**	0.05
9400	1880	Top	/	20.21	21.00	0.028	**0.03**	0.038	**0.05**	-0.18

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

Table 15.1-7: SAR Values (WCDMA 850 MHz Band – Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
4183	836.6	Left	Cheek	/	22.91	23.50	0.261	**0.30**	0.468	**0.54**	-0.06
4183	836.6	Left	Tilt	/	22.91	23.50	0.264	**0.30**	0.510	**0.58**	-0.15
4183	836.6	Right	Cheek	/	22.91	23.50	0.314	**0.36**	0.572	**0.66**	-0.15
4183	836.6	Right	Cheek	/	22.91	23.50	0.340	**0.39**	0.652	**0.75**	-0.09
4233	846.6	Right	Cheek	/	22.83	23.50	0.389	**0.45**	0.756	**0.88**	-0.15
4132	826.4	Right	Tilt	Fig.7	22.97	23.50	0.414	**0.47**	0.786	**0.89**	0.05

Table 15.1-8: SAR Values (WCDMA 850 MHz Band – Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
4183	836.6	Front	/	24.46	25.00	0.226	**0.26**	0.371	**0.42**	0.18
4233	846.6	Rear	Fig.8	24.40	25.00	0.442	**0.51**	0.792	**0.91**	0.01
4183	836.6	Rear	/	24.46	25.00	0.368	**0.42**	0.644	**0.73**	0.1
4132	826.4	Rear	/	24.45	25.00	0.421	**0.48**	0.749	**0.85**	-0.15
4183	836.6	Left	/	24.46	25.00	0.231	**0.26**	0.330	**0.37**	-0.05
4183	836.6	Top	/	24.46	25.00	0.307	**0.35**	0.600	**0.68**	0.08

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

Table 15.1-9: SAR Values (LTE Band2 ANT2- Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
18900	1880	1RB-High	Left	Cheek	/	20.25	21.00	0.171	**0.20**	0.292	**0.35**	-0.16
18900	1880	1RB-High	Left	Tilt	/	20.25	21.00	0.081	**0.10**	0.136	**0.16**	-0.02
19100	1900	1RB-High	Right	Cheek	/	20.19	21.00	0.358	**0.43**	0.767	**0.92**	-0.17
18900	1880	1RB-High	Right	Cheek	/	20.25	21.00	0.391	**0.46**	0.835	**0.99**	0.06
18700	1860	1RB-High	Right	Cheek	/	20.23	21.00	0.403	**0.48**	0.841	**1.00**	-0.16
18900	1880	1RB-High	Right	Tilt	/	20.25	21.00	0.093	**0.11**	0.162	**0.19**	-0.18
18900	1880	50RB-Low	Left	Cheek	/	20.37	21.00	0.172	**0.20**	0.294	**0.34**	0.08
18900	1880	50RB-Low	Left	Tilt	/	20.37	21.00	0.093	**0.11**	0.156	**0.18**	-0.16
19100	1900	50RB-High	Right	Cheek	/	20.31	21.00	0.384	**0.45**	0.821	**0.96**	-0.17
18900	1880	50RB-Low	Right	Cheek	Fig.9	20.37	21.00	0.417	**0.48**	0.891	**1.03**	0.09
18700	1860	50RB-High	Right	Cheek	/	20.30	21.00	0.348	**0.41**	0.727	**0.85**	-0.15
18700	1860	100RB	Right	Cheek	/	20.33	21.00	0.378	**0.44**	0.820	**0.96**	-0.14
18900	1880	50RB-Low	Right	Tilt	/	20.37	21.00	0.107	**0.12**	0.189	**0.22**	0.11

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-10: SAR Values (LTE Band2 ANT2 – Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
18900	1880	1RB-Mid Front	/	20.76	21.50	0.080	**0.09**	0.144	**0.17**	-0.12
18900	1880	1RB-Mid Rear	/	20.76	21.50	0.169	**0.20**	0.344	**0.41**	0.05
18900	1880	1RB-Mid Left	/	20.76	21.50	0.233	**0.28**	0.476	**0.56**	0.15
18900	1880	1RB-Mid Top	/	20.76	21.50	0.039	**0.05**	0.070	**0.08**	0.10
18900	1880	50RB-Mid Front	/	20.85	21.50	0.098	**0.11**	0.204	**0.24**	-0.01
18900	1880	50RB-Mid Rear	/	20.85	21.50	0.180	**0.21**	0.361	**0.42**	0.14
18900	1880	50RB-Mid Left	Fig.10	20.85	21.50	0.251	**0.29**	0.520	**0.60**	-0.18
18900	1880	50RB-Mid Top	/	20.85	21.50	0.039	**0.05**	0.068	**0.08**	-0.06

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

Note2: The LTE mode is QPSK_20MHz.

Table 15.1-11: SAR Values (LTE Band2 ANT3- Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
19100	1900	1RB-Low	Left	Cheek	/	23.94	25.00	0.071	**0.09**	0.111	**0.14**	0.05
19100	1900	1RB-Low	Left	Tilt	/	23.94	25.00	0.063	**0.08**	0.103	**0.13**	0.04
19100	1900	1RB-Low	Right	Cheek	Fig.11	23.94	25.00	0.081	**0.10**	0.136	**0.17**	0.07
19100	1900	1RB-Low	Right	Tilt	/	23.94	25.00	0.048	**0.06**	0.083	**0.11**	-0.18
19100	1900	50RB-Mid	Left	Cheek	/	23.05	24.00	0.066	**0.08**	0.104	**0.13**	-0.03
19100	1900	50RB-Mid	Left	Tilt	/	23.05	24.00	0.065	**0.08**	0.110	**0.14**	-0.10
19100	1900	50RB-Mid	Right	Cheek	/	23.05	24.00	0.070	**0.09**	0.116	**0.14**	-0.17
19100	1900	50RB-Mid	Right	Tilt	/	23.05	24.00	0.037	**0.05**	0.067	**0.08**	-0.16

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-12: SAR Values (LTE Band2 ANT3 – Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
18900	1880	1RB-Low Front	/	21.60	22.00	0.252	**0.28**	0.327	**0.36**	0.01
18900	1880	1RB-Low Rear	/	21.60	22.00	0.390	**0.43**	0.532	**0.58**	0.04
18900	1880	1RB-Low Left	/	21.60	22.00	0.083	**0.09**	0.113	**0.12**	-0.04
18900	1880	1RB-Low Bottom	/	21.60	22.00	0.360	**0.39**	0.659	**0.72**	0.07
18900	1880	50RB-Mid Front	/	21.72	22.00	0.177	**0.19**	0.316	**0.34**	-0.06
18900	1880	50RB-Mid Rear	/	21.72	22.00	0.293	**0.31**	0.542	**0.58**	0.01
18900	1880	50RB-Mid Left	/	21.72	22.00	0.067	**0.07**	0.126	**0.13**	-0.02
19100	1900	50RB-Mid Bottom	/	21.66	22.50	0.362	**0.44**	0.689	**0.84**	-0.06
18900	1880	50RB-Mid Bottom	Fig.12	21.72	22.50	0.383	**0.46**	0.708	**0.85**	0.09
18700	1860	50RB-Mid Bottom	/	21.70	22.50	0.371	**0.45**	0.691	**0.83**	-0.13
18900	1880	100RB Bottom	/	21.55	22.50	0.338	**0.42**	0.656	**0.82**	-0.17

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

Note2: The LTE mode is QPSK_20MHz.

Table 15.1-13: SAR Values (LTE Band5- Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
20600	844	1RB-Low	Left	Cheek	/	22.85	23.50	0.361	**0.42**	0.650	**0.75**	0.14
20600	844	1RB-Low	Left	Tilt	/	22.85	23.50	0.360	**0.42**	0.697	**0.81**	-0.14
20525	836.5	1RB-Low	Left	Tilt	/	22.66	23.50	0.341	**0.41**	0.665	**0.81**	-0.11
20450	829	1RB-Low	Left	Tilt	/	22.71	23.50	0.337	**0.40**	0.668	**0.80**	0.10
20600	844	100RB	Left	Tilt	/	22.77	23.50	0.331	**0.39**	0.657	**0.78**	-0.13
20600	844	1RB-Low	Right	Cheek	/	22.85	23.50	0.434	**0.50**	0.760	**0.88**	-0.05
20525	836.5	1RB-Low	Right	Cheek	/	22.66	23.50	0.397	**0.48**	0.684	**0.83**	-0.18
20450	829	1RB-Low	Right	Cheek	/	22.71	23.50	0.387	**0.46**	0.666	**0.80**	0.13
20600	844	100RB	Right	Cheek	/	22.77	23.50	0.412	**0.49**	0.732	**0.87**	0.06
20600	844	1RB-Low	Right	Tilt	Fig.13	22.85	23.50	0.464	**0.54**	0.889	**1.03**	-0.09
20525	836.5	1RB-Low	Right	Tilt	/	22.66	23.50	0.434	**0.53**	0.839	**1.02**	0.11
20450	829	1RB-Low	Right	Tilt	/	22.71	23.50	0.436	**0.52**	0.842	**1.01**	-0.12
20600	844	100RB	Right	Tilt	/	22.77	23.50	0.442	**0.52**	0.854	**1.01**	0.15
20600	844	25RB-Mid	Left	Cheek	/	22.79	23.50	0.356	**0.42**	0.646	**0.76**	-0.12
20600	844	25RB-Mid	Left	Tilt	/	22.79	23.50	0.375	**0.44**	0.706	**0.83**	-0.04

20525	836.5	25RB-Mid	Left	Tilt	/	22.75	23.50	0.358	**0.43**	0.675	**0.80**	0.14
20450	829	25RB-Mid	Left	Tilt	/	22.77	23.50	0.358	**0.42**	0.682	**0.81**	0.08
20600	844	25RB-Mid	Right	Cheek	/	22.79	23.50	0.422	**0.50**	0.737	**0.87**	-0.05
20525	836.5	25RB-Mid	Right	Cheek	/	22.75	23.50	0.394	**0.47**	0.684	**0.81**	0.04
20450	829	25RB-Mid	Right	Cheek	/	22.77	23.50	0.376	**0.44**	0.649	**0.77**	-0.03
20600	844	25RB-Mid	Right	Tilt	/	22.79	23.50	0.420	**0.49**	0.863	**1.02**	0.14
20525	836.5	25RB-Mid	Right	Tilt	/	22.75	23.50	0.403	**0.48**	0.850	**1.01**	0.12
20450	829	25RB-Mid	Right	Tilt	/	22.77	23.50	0.385	**0.46**	0.828	**0.98**	0.01
20450	829	UL CA 5B	Right	Tilt	/	22.86	23.50	0.346	**0.40**	0.728	**0.84**	0.08

Note1: The LTE mode is QPSK_10MHz.

Table 15.1-14: SAR Values (LTE Band5 – Body)

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C						
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
20450	829	1RB-High Front	/	24.17	25.00	0.149	**0.18**	0.262	**0.32**	0.16
20450	829	1RB-High Rear	Fig.14	24.17	25.00	0.305	**0.37**	0.570	**0.69**	0.03
20450	829	1RB-High Left	/	24.17	25.00	0.127	**0.15**	0.198	**0.24**	0.12
20450	829	1RB-High Top	/	24.17	25.00	0.185	**0.22**	0.382	**0.46**	0.15
20450	829	25RB-Mid Front	/	23.32	24.00	0.109	**0.13**	0.188	**0.22**	0.08
20450	829	25RB-Mid Rear	/	23.32	24.00	0.273	**0.32**	0.506	**0.59**	-0.11
20450	829	25RB-Mid Left	/	23.32	24.00	0.109	**0.13**	0.172	**0.20**	-0.17
20450	829	25RB-Mid Top	/	23.32	24.00	0.102	**0.12**	0.229	**0.27**	0.03
20425	826.5	UL CA 5B Rear	/	23.96	25.00	0.256	**0.33**	0.502	**0.64**	0.13

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

Note2: The LTE mode is QPSK_10MHz.

Table 15.1-15: SAR Values (LTE Band7 - Head)

Ambient Temperature: 22.9 °C				Liquid Temperature: 22.5°C									
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
21100	2535	1RB-High	Left	Cheek	Fig.15	23.93	25.00	0.039	**0.05**	0.074	**0.09**	0.09
21100	2535	1RB-High	Left	Tilt	/	23.93	25.00	<0.01	<0.01	<0.01	<0.01	/
21100	2535	1RB-High	Right	Cheek	/	23.93	25.00	0.023	**0.03**	0.044	**0.06**	0.05
21100	2535	1RB-High	Right	Tilt	/	23.93	25.00	<0.01	<0.01	<0.01	<0.01	/
21100	2535	50RB-High	Left	Cheek	/	23.16	24.00	0.034	**0.04**	0.063	**0.08**	0.15
21100	2535	50RB-High	Left	Tilt	/	23.16	24.00	<0.01	<0.01	<0.01	<0.01	/

21100	2535	50RB-High	Right	Cheek	/	23.16	24.00	0.017	**0.02**	0.025	**0.03**	0.07
21100	2535	50RB-High	Right	Tilt	/	23.16	24.00	<0.01	<0.01	<0.01	<0.01	/

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-16: SAR Values (LTE Band7 – Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
21100	2535	1RB-High Front	/	23.93	25.00	0.100	**0.13**	0.213	**0.27**	-0.08
21100	2535	1RB-High Rear	/	23.93	25.00	0.167	**0.21**	0.356	**0.46**	-0.11
21100	2535	1RB-High Left	/	23.93	25.00	0.049	**0.06**	0.103	**0.13**	0.15
21100	2535	1RB-High Bottom	Fig.16	23.93	25.00	0.218	**0.28**	0.471	**0.60**	0.06
21100	2535	50RB-High Front	/	23.16	24.00	0.056	**0.07**	0.113	**0.14**	0.15
21100	2535	50RB-High Rear	/	23.16	24.00	0.072	**0.09**	0.148	**0.18**	-0.03
21100	2535	50RB-High Left	/	23.16	24.00	0.019	**0.02**	0.065	**0.08**	-0.15
21100	2535	50RB-High Bottom	/	23.16	24.00	0.100	**0.12**	0.202	**0.25**	-0.16

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

Note2: The LTE mode is QPSK_20MHz.

Table 15.1-17: SAR Values (LTE Band12 - Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23060	704	1RB-Low	Left	Cheek	/	24.16	25.00	0.156	**0.19**	0.284	**0.34**	-0.05
23060	704	1RB-Low	Left	Tilt	/	24.16	25.00	0.156	**0.19**	0.290	**0.35**	-0.05
23060	704	1RB-Low	Right	Cheek	/	24.16	25.00	0.278	**0.34**	0.512	**0.62**	0.18
23130	711	1RB-Low	Right	Tilt	/	24.12	25.00	0.314	**0.38**	0.607	**0.74**	0.14
23095	707.5	1RB-Low	Right	Tilt	Fig.17	24.12	25.00	0.316	**0.39**	0.610	**0.75**	-0.07
23060	704	1RB-Low	Right	Tilt	/	24.16	25.00	0.289	**0.35**	0.545	**0.66**	-0.18
23060	704	25RB-Low	Left	Cheek	/	23.27	24.00	0.154	**0.18**	0.287	**0.34**	-0.07
23060	704	25RB-Low	Left	Tilt	/	23.27	24.00	0.184	**0.22**	0.338	**0.40**	0.03
23060	704	25RB-Low	Right	Cheek	/	23.27	24.00	0.235	**0.28**	0.427	**0.51**	-0.12
23060	704	25RB-Low	Right	Tilt	/	23.27	24.00	0.268	**0.32**	0.509	**0.60**	0.17

Note1: The LTE mode is QPSK_10MHz.

Table 15.1-18: SAR Values (LTE Band12 – Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
23060	704	1RB-Low Front	/	24.16	25.00	0.155	**0.19**	0.261	**0.32**	0.13
23060	704	1RB-Low Rear	Fig.18	24.16	25.00	0.246	**0.30**	0.445	**0.54**	0.08
23060	704	1RB-Low Left	/	24.16	25.00	0.203	**0.25**	0.295	**0.36**	0.18
23060	704	1RB-Low Top	/	24.16	25.00	0.180	**0.22**	0.368	**0.45**	0.16
23060	704	25RB-Low Front	/	23.27	24.00	0.135	**0.16**	0.219	**0.26**	0.13
23060	704	25RB-Low Rear	/	23.27	24.00	0.207	**0.24**	0.362	**0.43**	-0.04
23060	704	25RB-Low Left	/	23.27	24.00	0.169	**0.20**	0.245	**0.29**	-0.14
23060	704	25RB-Low Top	/	23.27	24.00	0.149	**0.18**	0.306	**0.36**	0.11

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

Note2: The LTE mode is QPSK_10MHz.

Table 15.1-19: SAR Values (LTE Band13 - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
23230	782	1RB-High	Left	Cheek	Fig.19	24.20	25.00	0.388	**0.47**	0.693	**0.83**	-0.07
23230	782	1RB-High	Left	Cheek	/	24.20	25.00	0.282	**0.34**	0.530	**0.64**	-0.07
23230	782	1RB-High	Right	Cheek	/	24.20	25.00	0.390	**0.47**	0.669	**0.80**	-0.12
23230	782	1RB-High	Right	Tilt	/	24.20	25.00	0.369	**0.44**	0.676	**0.81**	-0.07
23230	782	25RB-High	Left	Cheek	/	23.33	24.00	0.318	**0.37**	0.557	**0.65**	-0.02
23230	782	25RB-High	Left	Tilt	/	23.33	24.00	0.250	**0.29**	0.463	**0.54**	-0.11
23230	782	25RB-High	Right	Cheek	/	23.33	24.00	0.340	**0.40**	0.601	**0.70**	-0.09
23230	782	25RB-High	Right	Tilt	/	23.33	24.00	0.324	**0.38**	0.608	**0.71**	0.14

Note1: The LTE mode is QPSK_10MHz.

Table 15.1-20: SAR Values (LTE Band13 – Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
23230	782	1RB-High Front	/	24.20	25.00	0.236	**0.28**	0.386	**0.46**	-0.03
23230	782	1RB-High Rear	Fig.20	24.20	25.00	0.373	**0.45**	0.686	**0.82**	0.09
23230	782	1RB-High Left	/	24.20	25.00	0.243	**0.29**	0.348	**0.42**	0.12
23230	782	1RB-High Top	/	24.20	25.00	0.299	**0.36**	0.582	**0.70**	0.04
23230	782	25RB-High Front	/	23.33	24.00	0.200	**0.23**	0.326	**0.38**	-0.05
23230	782	25RB-High Rear	/	23.33	24.00	0.383	**0.45**	0.685	**0.80**	0.02
23230	782	25RB-High Left	/	23.33	24.00	0.198	**0.23**	0.286	**0.33**	0.09
23230	782	25RB-High Top	/	23.33	24.00	0.218	**0.25**	0.434	**0.51**	0.06

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

Note2: The LTE mode is QPSK_10MHz.

Table 15.1-21: SAR Values (LTE Band48 - Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
55990	3625	1RB-High	Left	Cheek	/	21.33	22.50	0.022	**0.03**	0.044	**0.06**	-0.07
55990	3625	1RB-High	Left	Tilt	/	21.33	22.50	<0.01	<0.01	<0.01	<0.01	/
55990	3625	1RB-High	Right	Cheek	Fig.21	21.33	22.50	0.120	**0.16**	0.268	**0.35**	0.07
55990	3625	1RB-High	Right	Tilt	/	21.33	22.50	0.073	**0.10**	0.168	**0.22**	-0.06
55990	3625	50RB-High	Left	Cheek	/	21.51	22.50	0.017	**0.02**	0.036	**0.05**	-0.14
55990	3625	50RB-High	Left	Tilt	/	21.51	22.50	<0.01	<0.01	<0.01	<0.01	/
55990	3625	50RB-High	Right	Cheek	/	21.51	22.50	0.078	**0.10**	0.164	**0.21**	0.18
55990	3625	50RB-High	Right	Tilt	/	21.51	22.50	0.057	**0.07**	0.131	**0.16**	-0.03
55640	3690	UL CA 48C	Right	Cheek	/	21.22	22.50	0.103	**0.14**	0.246	**0.33**	-0.11

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-22: SAR Values (LTE Band48– Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
55990	3625	1RB-High Front	/	24.02	25.00	0.015	**0.02**	0.036	**0.05**	-0.16
55990	3625	1RB-High Rear	Fig.22	24.02	25.00	0.237	**0.30**	0.548	**0.69**	-0.14
55990	3625	1RB-High Right	/	24.02	25.00	0.013	**0.02**	0.041	**0.05**	0.03
55990	3625	1RB-High Top	/	24.02	25.00	0.016	**0.02**	0.064	**0.08**	-0.07
55990	3625	50RB-High Front	/	23.16	24.00	0.014	**0.02**	0.035	**0.04**	-0.08
55990	3625	50RB-High Rear	/	23.16	24.00	0.186	**0.23**	0.404	**0.49**	-0.06
55990	3625	50RB-High Right	/	23.16	24.00	0.009	**0.01**	0.029	**0.04**	0.16
55990	3625	50RB-High Top	/	23.16	24.00	0.013	**0.02**	0.045	**0.05**	0.08
55640	3690	UL CA 48C	/	23.68	25.00	0.185	**0.25**	0.488	**0.66**	0.06

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

Note2: The LTE mode is QPSK_20MHz.

Table 15.1-23: SAR Values (LTE Band66 ANT2- Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132322	1745	1RB-high	Left	Cheek	/	20.25	21.00	0.245	**0.29**	0.435	**0.52**	-0.02
132322	1745	1RB-high	Left	Tilt	/	20.25	21.00	0.121	**0.14**	0.198	**0.24**	0.08
132572	1770	1RB-High	Right	Cheek	/	20.22	21.00	0.449	**0.54**	0.956	**1.14**	0.16
132322	1745	1RB-High	Right	Cheek	/	20.25	21.00	0.427	**0.51**	0.897	**1.07**	-0.17
132072	1720	1RB-High	Right	Cheek	/	20.17	21.00	0.402	**0.49**	0.847	**1.03**	0.18
132322	1745	1RB-high	Right	Tilt	/	20.25	21.00	0.134	**0.16**	0.225	**0.27**	-0.05
132322	1745	50RB-High	Left	Cheek	/	20.57	21.00	0.189	**0.21**	0.312	**0.34**	-0.09
132322	1745	50RB-High	Left	Tilt	/	20.57	21.00	0.112	**0.12**	0.178	**0.20**	-0.03
132572	1770	50RB-High	Right	Cheek	/	20.30	21.00	0.474	**0.56**	0.992	**1.17**	-0.08
132322	1745	50RB-High	Right	Cheek	Fig.23	20.57	21.00	0.512	**0.57**	1.080	**1.19**	0.04
132072	1720	50RB-High	Right	Cheek	/	20.24	21.00	0.473	**0.56**	0.991	**1.18**	0.13
132572	1770	100RB	Right	Cheek	/	20.22	21.00	0.454	**0.54**	0.975	**1.17**	0.06
132322	1745	50RB-High	Right	Tilt	/	20.57	21.00	0.154	**0.17**	0.328	**0.36**	0.11
131997	1712.5	UL CA 66B	Right	Cheek	/	20.28	21.00	0.340	**0.40**	0.681	**0.80**	-0.20

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-24: SAR Values (LTE Band66 ANT2–Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132322	1745	1RB-Mid Front	/	21.27	22.00	0.137	**0.16**	0.248	**0.29**	-0.14
132322	1745	1RB-Mid Rear	/	21.27	22.00	0.341	**0.40**	0.682	**0.81**	0.13
132572	1770	1RB-Mid Left	/	21.21	22.00	0.435	**0.52**	0.878	**1.05**	0.08
132322	1745	1RB-Mid Left	/	21.27	22.00	0.421	**0.50**	0.853	**1.01**	-0.18
132072	1720	1RB-Mid Left	/	21.21	22.00	0.382	**0.46**	0.778	**0.93**	0.03
132322	1745	1RB-Mid Top	/	21.27	22.00	0.077	**0.09**	0.136	**0.16**	0.09
132322	1745	50RB-High Front	/	21.40	22.00	0.157	**0.18**	0.325	**0.37**	0.15
132322	1745	50RB-High Rear	/	21.40	22.00	0.386	**0.44**	0.776	**0.89**	-0.08
132572	1770	50RB-High Left	Fig.24	21.37	22.00	0.455	**0.53**	0.924	**1.07**	0.05
132322	1745	50RB-High Left	/	21.40	22.00	0.424	**0.49**	0.857	**0.98**	-0.07
132072	1720	50RB-High Left	/	21.28	22.00	0.393	**0.46**	0.794	**0.94**	-0.18
132572	1770	100RB Left	/	21.17	22.00	0.335	**0.41**	0.862	**1.04**	0.15
132322	1745	50RB-High Top	/	21.40	22.00	0.066	**0.08**	0.117	**0.13**	0.11
132022	1715	UL CA 66B Left	/	21.15	22.00	0.423	**0.51**	0.874	**1.06**	0.06

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

Note2: The LTE mode is QPSK_20MHz.

Table 15.1-25: SAR Values (LTE Band66 ANT3- Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C												
Frequency		Mode	Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz											
132072	1720	1RB-Mid	Left	Cheek	/	23.72	25.00	0.106	**0.14**	0.166	**0.22**	-0.18
132072	1720	1RB-Mid	Left	Tilt	/	23.72	25.00	0.077	**0.10**	0.124	**0.17**	0.07
132072	1720	1RB-Mid	Right	Cheek	Fig.25	23.72	25.00	0.117	**0.16**	0.191	**0.26**	0.04
132072	1720	1RB-Mid	Right	Tilt	/	23.72	25.00	0.049	**0.07**	0.079	**0.11**	-0.14
132072	1720	50RB-High	Left	Cheek	/	22.89	24.00	0.086	**0.11**	0.134	**0.17**	-0.11
132072	1720	50RB-High	Left	Tilt	/	22.89	24.00	0.060	**0.08**	0.099	**0.13**	-0.06
132072	1720	50RB-High	Right	Cheek	/	22.89	24.00	0.099	**0.13**	0.166	**0.21**	0.10
132072	1720	50RB-High	Right	Tilt	/	22.89	24.00	0.059	**0.08**	0.108	**0.14**	-0.05
131997	1712.5	UL CA 66B	Right	Cheek	/	20.28	21.00	0.340	**0.40**	0.681	**0.80**	-0.20

Note1: The LTE mode is QPSK_20MHz.

Table 15.1-26: SAR Values (LTE Band66 ANT3–Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Mode	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
132072	1720	1RB-Mid Front	/	23.72	25.00	0.256	**0.34**	0.366	**0.49**	-0.03
132572	1770	1RB-Mid Rear	Fig.26	23.65	25.00	0.448	**0.61**	0.701	**0.96**	0.03
132322	1745	1RB-Mid Rear	/	23.68	25.00	0.436	**0.59**	0.687	**0.93**	0.02
132072	1720	1RB-Mid Rear	/	23.72	25.00	0.340	**0.46**	0.513	**0.69**	0.18
132072	1720	1RB-Mid Left	/	23.72	25.00	0.061	**0.08**	0.095	**0.13**	0.15
132072	1720	1RB-Mid Bottom	/	23.72	25.00	0.291	**0.39**	0.466	**0.63**	-0.07
132072	1720	50RB-High Front	/	22.89	24.00	0.206	**0.27**	0.302	**0.39**	0.14
132072	1720	50RB-High Rear	/	22.89	24.00	0.279	**0.36**	0.423	**0.55**	-0.07
132072	1720	50RB-High Left	/	22.89	24.00	0.049	**0.06**	0.075	**0.10**	0.18
132072	1720	50RB-High Bottom	/	22.89	24.00	0.241	**0.31**	0.388	**0.50**	0.11
132572	1770	100RB Rear	/	22.71	24.00	0.365	**0.49**	0.572	**0.77**	-0.10
132572	1770	UL CA 66B Rear	/	23.72	25.00	0.423	**0.57**	0.685	**0.92**	-0.13

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

Note2: The LTE mode is QPSK_20MHz.

15.2 SAR results for 5G NR

Table 15.2-1: SAR Values (n2–Head)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
370050	1852.5	Left	Cheek	/	20.19	20.50	0.097	**0.10**	0.173	**0.19**	0.10
370050	1852.5	Left	Tilt	/	20.19	20.50	0.055	**0.06**	0.097	**0.10**	-0.10
370050	1852.5	Right	Cheek	Fig.27	20.19	20.50	0.235	**0.25**	0.480	**0.52**	0.04
370050	1852.5	Right	Tilt	/	20.19	20.50	0.087	**0.09**	0.163	**0.18**	-0.12

Table 15.2-2: SAR Values (n2–Body)

Ambient Temperature: 22.9 °C Liquid Temperature: 22.5°C										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
370050	1852.5	Front	/	20.19	20.50	0.117	**0.13**	0.221	**0.24**	0.09
370050	1852.5	Rear	/	20.19	20.50	0.270	**0.29**	0.535	**0.57**	-0.13
370050	1852.5	Left	Fig.28	20.19	20.50	0.331	**0.36**	0.671	**0.72**	0.09
370050	1852.5	Top	/	20.19	20.50	0.057	**0.06**	0.102	**0.11**	-0.06

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

Table 15.2-3: SAR Values (n5 –Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
165932	836.5	Left	Cheek		24.28	24.50	0.284	**0.30**	0.529	**0.56**	-0.17
165932	836.5	Left	Tilt	/	24.28	24.50	0.286	**0.30**	0.538	**0.57**	-0.07
165932	836.5	Right	Cheek	/	24.28	24.50	0.420	**0.44**	0.751	**0.79**	0.17
167800	839	Right	Tilt	Fig.29	24.19	24.50	0.511	**0.55**	0.992	**1.07**	0.08
165392	836.5	Right	Tilt	/	24.28	24.50	0.433	**0.46**	0.828	**0.87**	-0.09
166800	834	Right	Tilt	/	24.20	24.50	0.436	**0.47**	0.842	**0.90**	0.12

Table 15.2-4: SAR Values (n5–Body)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
165932	836.5	Front	/	24.52	25.00	0.155	**0.17**	0.263	**0.29**	-0.07
165932	836.5	Rear	Fig.30	24.52	25.00	0.279	**0.31**	0.506	**0.57**	-0.01
165932	836.5	Left	/	24.52	25.00	0.138	**0.15**	0.206	**0.23**	-0.17
165932	836.5	Top	/	24.52	25.00	0.197	**0.22**	0.399	**0.45**	-0.06

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

Table 15.2-5: SAR Values (n66–Head)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
329000	1725	Left	Cheek	/	18.69	20.00	0.110	**0.15**	0.188	**0.25**	0.16
329000	1725	Left	Tilt	/	18.69	20.00	0.075	**0.10**	0.135	**0.18**	0.04
329000	1725	Right	Cheek	Fig.31	18.69	20.00	0.286	**0.39**	0.587	**0.79**	0.12
329000	1725	Right	Tilt	/	18.69	20.00	0.100	**0.14**	0.188	**0.25**	-0.18

Table 15.2-6: SAR Values (n66–Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
342500	1712.5	Front	/	19.66	21.00	0.106	**0.14**	0.192	**0.26**	0.14
342500	1712.5	Rear	/	19.66	21.00	0.229	**0.31**	0.440	**0.60**	-0.09
342500	1712.5	Left	Fig.32	19.66	21.00	0.293	**0.40**	0.579	**0.79**	0.04
342500	1712.5	Top	/	19.66	21.00	0.053	**0.07**	0.090	**0.12**	-0.14

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

Table 15.2-7: SAR Values (n77–Head)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC											
Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
651200	3768	Left	Cheek	Fig.33	18.69	19.50	0.252	**0.30**	0.600	**0.72**	0.09
651200	3768	Left	Tilt	/	18.69	19.50	0.125	**0.15**	0.302	**0.36**	0.16
651200	3768	Right	Cheek	/	18.69	19.50	0.205	**0.25**	0.511	**0.62**	-0.03
651200	3768	Right	Tilt	/	18.69	19.50	0.049	**0.06**	0.117	**0.14**	-0.10

Table 15.2-8: SAR Values (n77 ANT4 –Body)

Ambient Temperature: 22.9 ºC Liquid Temperature: 22.5ºC										
Frequency		Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
651200	3768	Front	/	20.79	21.50	0.122	**0.14**	0.313	**0.37**	-0.13
651200	3768	Rear	/	20.79	21.50	0.246	**0.29**	0.584	**0.69**	0.13
664000	3960	Right	/	20.33	21.50	0.169	**0.22**	0.381	**0.50**	-0.06
660800	3912	Right	/	20.52	21.50	0.202	**0.25**	0.453	**0.57**	-0.11
657600	3864	Right	/	20.44	21.50	0.261	**0.33**	0.605	**0.77**	0.15
654400	3816	Right	/	20.41	21.50	0.278	**0.36**	0.616	**0.79**	0.09
651200	3768	Right	Fig.34	20.79	21.50	0.315	**0.37**	0.773	**0.91**	0.20
648000	3720	Right	/	20.75	21.50	0.304	**0.36**	0.755	**0.90**	-0.14
651200	3768	Top	/	20.79	21.50	0.067	**0.08**	0.148	**0.17**	0.11

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

15.3 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

Table 15.3-1: SAR Values (WLAN - Head)– 802.11b (Fast SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz										
1	2412	Left	Cheek	Note1	19.92	20.00	0.315	**0.32**	0.633	**0.64**	-0.05
6	2437	Left	Cheek	Note1	19.15	20.00	0.333	**0.40**	0.701	**0.85**	-0.07
11	2462	Left	Cheek	Note1	19.52	20.00	0.381	**0.43**	0.778	**0.87**	0.05
1	2412	Left	Tilt	Note1	19.92	20.00	0.323	**0.33**	0.656	**0.67**	-0.03
1	2412	Right	Cheek	Note1	19.92	20.00	0.128	**0.13**	0.253	**0.26**	0.15
1	2412	Right	Tilt	Note1	19.92	20.00	0.131	**0.13**	0.279	**0.28**	0.07
1	2412	Left	Cheek	Note2	17.11	17.50	0.235	**0.26**	0.459	**0.50**	0.03
1	2412	Left	Tilt	Note2	17.11	17.50	0.249	**0.27**	0.495	**0.54**	-0.11
1	2412	Right	Cheek	Note2	17.11	17.50	0.111	**0.12**	0.201	**0.22**	0.12
1	2412	Right	Tilt	Note2	17.11	17.50	0.076	**0.08**	0.142	**0.16**	-0.06

Note1: The results are used for Wifi transmit standalone.

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

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

Table 15.3-2: SAR Values (WLAN - Head)– 802.11b (Full SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃											
Frequency		Side	Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
1	2412	Left	Cheek	/	19.92	20.00	0.320	**0.33**	0.637	**0.65**	-0.05
6	2437	Left	Cheek	/	19.15	20.00	0.338	**0.41**	0.703	**0.85**	-0.07
11	2462	Left	Cheek	Fig.35	19.52	20.00	0.383	**0.43**	0.783	**0.87**	0.05
1	2412	Left	Tilt	/	19.92	20.00	0.322	**0.33**	0.654	**0.67**	-0.03

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.

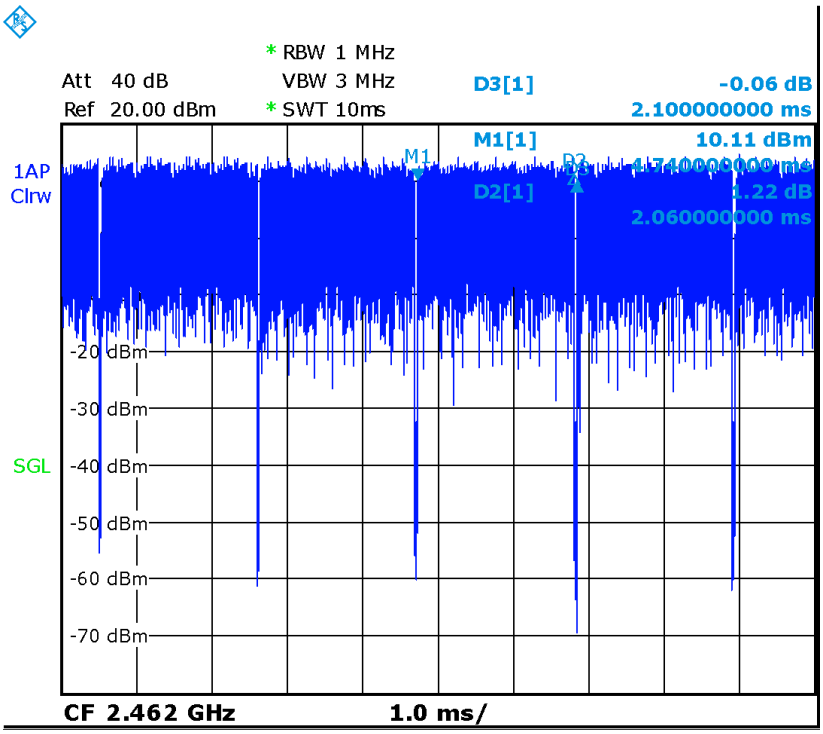
Note2: For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel until the reported SAR is ≤ 1.2 W/kg 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 15.3-3: SAR Values (WLAN - Head) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃							
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
Ch.	MHz						
11	2462	Left	Cheek	98.1%	100%	**0.87**	**0.89**
1	2412	Right	Cheek	98.1%	100%	**0.22**	**0.22**

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



Picture 15.3-1 Duty factor plot

Body Evaluation

Table 15.3-4: SAR Values (WLAN - Body)– 802.11b (Fast SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		**Test Position**	**Note**	**Conducted Power (dBm)**	**Max. tune-up Power (dBm)**	**Measured SAR(10g) (W/kg)**	**Reported SAR(10g)(W/kg)**	**Measured SAR(1g) (W/kg)**	**Reported SAR(1g)(W/kg)**	**Power Drift (dB)**
Ch.	MHz									
1	2412	Front	10mm	19.92	20.00	0.084	**0.09**	0.154	**0.16**	0.15
1	2412	Rear	10mm	19.92	20.00	0.086	**0.09**	0.151	**0.15**	-0.11
1	2412	Right	10mm	19.92	20.00	<0.01	<0.01	<0.01	<0.01	/
1	2412	Top	10mm	19.92	20.00	0.036	**0.04**	0.076	**0.08**	0.13

As shown above table, the initial test position for body is “Front 10mm”. So the body SAR of WLAN is presented as below:

Table 15.3-5: SAR Values (WLAN - Body)– 802.11b (Full SAR)

Ambient Temperature: 22.9 ℃ Liquid Temperature: 22.5℃										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz									
1	2412	Front 10mm	Fig.36	19.92	20.00	0.087	**0.09**	0.156	**0.16**	0.15

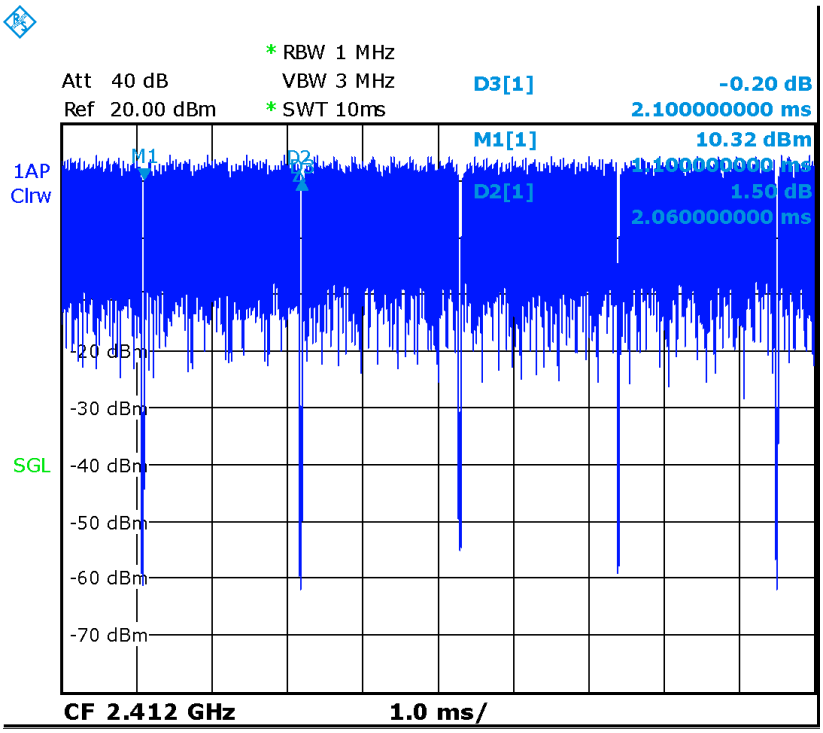
Note1: When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest estimated 1-g SAR conditions determined by area scans, on the highest maximum output power channel, until 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 15.3-6: SAR Values (WLAN - Body) – 802.11b (Scaled Reported SAR)

Ambient Temperature: 22.9 °C			Liquid Temperature: 22.5°C			
Frequency		Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g)(W/kg)	Scaled reported SAR (1g)(W/kg)
Ch.	MHz					
1	2412	Front 10mm	98.1%	100%	**0.16**	**0.16**
1	2412	Rear 10mm	98.1%	100%	**0.15**	**0.15**

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



Picture 15.3-2 Duty factor plot

15.4 WLAN Evaluation For 5G

Table 15.4-1: 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	X	
U-NII-2A	X	X	X	X	X	X	X	
U-NII-2C	X	X	X	X	X	X	X	
U-NII-3	X	X	X	X	X	X	X	
§ 15.247 (5.8 GHz)								
X: maximum(conducted) output power(mW), including tolerance, specified for production units								

Table 15.4-2: Maximum output power specified of WLAN antenna – Head – Transmit alone

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	35		25	25	25	25	20	
U-NII-2A	35		25	25	25	25	20	
U-NII-2C	35		25	25	25	25	20	
U-NII-3	35		25	25	25	25	25	
§ 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 15.4-3: Maximum output power specified of WLAN antenna –Head – Transmit with WWAN

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	18		13	13	13	13	10	
U-NII-2A	20		13	13	13	13	10	
U-NII-2C	20		13	13	13	13	10	
U-NII-3	18		13	13	13	13	13	
§ 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 15.4-4: Maximum output power specified of WLAN antenna – Body

802.11 mode	a	g	n		ac			
Ch. BW(MHz)	20	20	20	40	20	40	80	160
U-NII-1	56		33	40	40	40	32	
U-NII-2A	63		40	40	40	40	32	
U-NII-2C	63		45	40	45	40	32	
U-NII-3	63		45	40	45	40	40	
§ 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 15.4-5: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – Head – Transmit alone

802.11 Mode	a	n		ac		
BW(MHz)	20	20	40	20	40	80
U-NII-1	36/40/44/48 **31/32/33/30**	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 **29/29/31/34**	52/56/60/64 Lower power	54/62 Lower power	52/56/60/64 Lower power	54/62 Lower power	58 Lower power
U-NII-2C	100/104/108/112 116/120/124/128/ 132/136/140/144 **30/30/28/26/24/25/ 26/29/31/32/28/24**	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	106/122/ 138 Lower power
U-NII-3	149/153/157/161/ 165 **23/24/26/29/33**	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 15.4-6: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – Head – Transmit with WWAN

802.11 Mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48 **16/17/17/16**	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 **15/16/16/18**	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 **15/16/16/14/13/14/ 14/15/16/17/15/13**	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	106/122/ 138 Lower power
U-NII-3	149/153/157/161/ 165 **12/13/14/16/18**	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 15.4-7: Maximum output power measured of WLAN antenna, for the applicable OFDM configurations according to the default power measurement procedures for selection initial test configurations – Body

802.11 Mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48 **42/43/43/44**	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 **45/44/46/52**	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 **58/59/57/52/51/52/ 55/60/59/56/47/45**	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	100/104/108/112 116/120/124/128/ 132/136/140/144 Lower power	102/110/118/ 126/134/142 Lower power	106/122/ 138 Lower power
U-NII-3	149/153/157/161/ 165 **43/45/51/57/62**	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 15.4-8: Reported SAR of initial test configuration for Head transmit alone

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.69**	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 **0.86/0.95**	100/104/108/112/ 116/120/124/128/ 132/136/140/144	102/110/ 118/126/ 134/142	100/104/108/112 /116/120/124/12 8/132/136/140/1 44	102/110 /118/12 6/134/1 42	106/12 2/138
U-NII-3	149/153/157/161/165 **0.60**	149/153/157/161 /165	151/159	149/153/157/161 /165	151/159	155

Highest measured output power channel tested initially are in yellow highlight.
The green highlighted channels are next highest measured output channel in the initial test configuration.

Table 15.4-9: Reported SAR of initial test configuration for Head transmit with WWAN

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.36**	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 **0.52**	100/104/108/112/116/120/124/128/132/136/140/144	102/110/118/126/134/142	100/104/108/112/116/120/124/128/132/136/140/144	102/110/118/126/134/142	106/122/138
U-NII-3	149/153/157/161/165 **0.27**	149/153/157/161/165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 15.4-10: Reported SAR of initial test configuration for Body

802.11 mode	a	n		ac		
BW(MHz)	**20**	**20**	**40**	**20**	**40**	**80**
U-NII-1	36/40/44/48	36/40/44/48	38/46	36/40/44/48	38/46	42
U-NII-2A	52/56/60/64 **0.30**	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 **0.31**	100/104/108/112/116/120/124/128/132/136/140/144	102/110/118/126/134/142	100/104/108/112/116/120/124/128/132/136/140/144	102/110/118/126/134/142	106/122/138
U-NII-3	149/153/157/161/165 **0.24**	149/153/157/161/165	151/159	149/153/157/161/165	151/159	155
Highest measured output power channel tested initially are in yellow highlight.						

Table 15.4-11: SAR Values (WLAN 5G - Head)

Frequency		Side	Test Position	Figure No.	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
64	5320	Left	Cheek	Note1	15.27	15.50	0.155	**0.16**	0.540	**0.57**	0.18
64	5320	Left	Tilt	Note1	15.27	15.50	0.167	**0.18**	0.652	**0.69**	0.14
64	5320	Right	Cheek	Note1	15.27	15.50	0.074	**0.08**	0.273	**0.29**	-0.07
64	5320	Right	Tilt	Note1	15.27	15.50	0.093	**0.10**	0.345	**0.36**	0.09
136	5680	Left	Cheek	Note1/ Fig.37.	15.09	15.50	0.259	**0.28**	0.868	**0.95**	0.05
132	5660	Left	Cheek	Note1	15.92	15.50	0.219	**0.25**	0.749	**0.86**	0.02
136	5680	Left	Tilt	Note1	15.09	15.50	0.220	**0.24**	0.835	**0.92**	-0.02
132	5660	Left	Tilt	Note1	15.92	15.50	0.186	**0.21**	0.721	**0.82**	-0.07
136	5680	Right	Cheek	Note1	15.09	15.50	0.097	**0.11**	0.354	**0.39**	0.00
136	5680	Right	Tilt	Note1	15.09	15.50	0.108	**0.12**	0.399	**0.44**	0.08
165	5825	Left	Cheek	Note1	15.22	15.50	0.151	**0.16**	0.565	**0.60**	-0.05
165	5825	Left	Tilt	Note1	15.22	15.50	0.137	**0.15**	0.520	**0.55**	0.15
165	5825	Right	Cheek	Note1	15.22	15.50	0.055	**0.06**	0.192	**0.20**	-0.18
165	5825	Right	Tilt	Note1	15.22	15.50	0.057	**0.06**	0.197	**0.21**	-0.05
64	5320	Left	Cheek	Note2	12.50	13.00	0.083	**0.09**	0.288	**0.32**	-0.11
64	5320	Left	Tilt	Note2	12.50	13.00	0.089	**0.10**	0.325	**0.36**	0.18
64	5320	Right	Cheek	Note2	12.50	13.00	0.032	**0.04**	0.122	**0.14**	0.07
64	5320	Right	Tilt	Note2	12.50	13.00	0.046	**0.05**	0.173	**0.19**	-0.06
136	5680	Left	Cheek	Note2	12.37	13.00	0.131	**0.15**	0.446	**0.52**	0.08
136	5680	Left	Tilt	Note2	12.37	13.00	0.123	**0.14**	0.439	**0.51**	0.12
136	5680	Right	Cheek	Note2	12.37	13.00	0.060	**0.07**	0.227	**0.26**	0.08
136	5680	Right	Tilt	Note2	12.37	13.00	0.064	**0.07**	0.236	**0.27**	-0.01
165	5825	Left	Cheek	Note2	12.47	12.50	0.066	**0.07**	0.234	**0.24**	-0.14
165	5825	Left	Tilt	Note2	12.47	12.50	0.064	**0.06**	0.265	**0.27**	-0.01
165	5825	Right	Cheek	Note2	12.47	12.50	0.023	**0.02**	0.077	**0.08**	0.01
165	5825	Right	Tilt	Note2	12.47	12.50	0.016	**0.02**	0.084	**0.08**	0.05

Note1: The results are used for Wifi transmit standalone.

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

Table 15.4-12: SAR Values (WLAN 5G - Body)

Frequency		Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
64	5320	Front	Note2	17.19	18.00	0.048	**0.06**	0.151	**0.18**	-0.1
64	5320	Rear	Note2	17.19	18.00	0.090	**0.11**	0.245	**0.30**	0.15
64	5320	Right	Note2	17.19	18.00	0.074	**0.09**	0.213	**0.26**	0.1
64	5320	Top	Note2	17.19	18.00	0.087	**0.10**	0.241	**0.29**	0.04
128	5640	Front	Note2	17.80	18.00	0.084	**0.09**	0.248	**0.26**	-0.18
128	5640	Rear	Note2/ Fig.38	17.80	18.00	0.117	**0.12**	0.293	**0.31**	0.19
128	5640	Right	Note2	17.80	18.00	0.077	**0.08**	0.218	**0.23**	-0.11
128	5640	Top	Note2	17.80	18.00	0.085	**0.09**	0.248	**0.26**	-0.13
165	5825	Front	Note2	17.90	18.00	0.045	**0.05**	0.138	**0.14**	-0.17
165	5825	Rear	Note2	17.90	18.00	0.069	**0.07**	0.185	**0.19**	-0.06
165	5825	Right	Note2	17.90	18.00	0.076	**0.08**	0.236	**0.24**	-0.02
165	5825	Top	Note2	17.90	18.00	0.051	**0.05**	0.138	**0.14**	-0.07

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

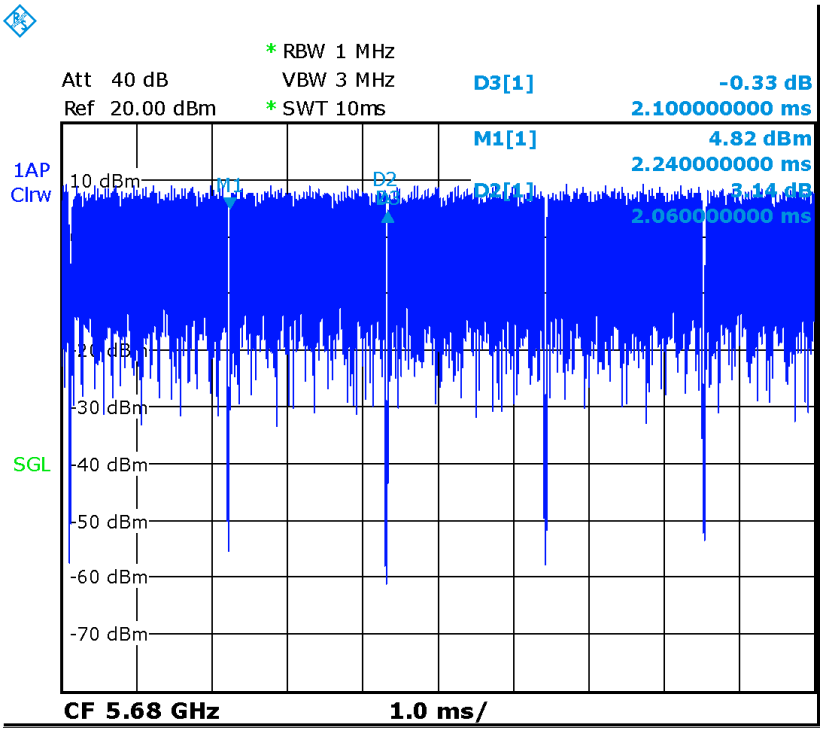
According to the KDB248227 D01, The reported SAR must be scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit. The scaled reported SAR is presented as below.

Table 15.4-13: SAR Values (WLAN 5G - Head) (Scaled Reported SAR)

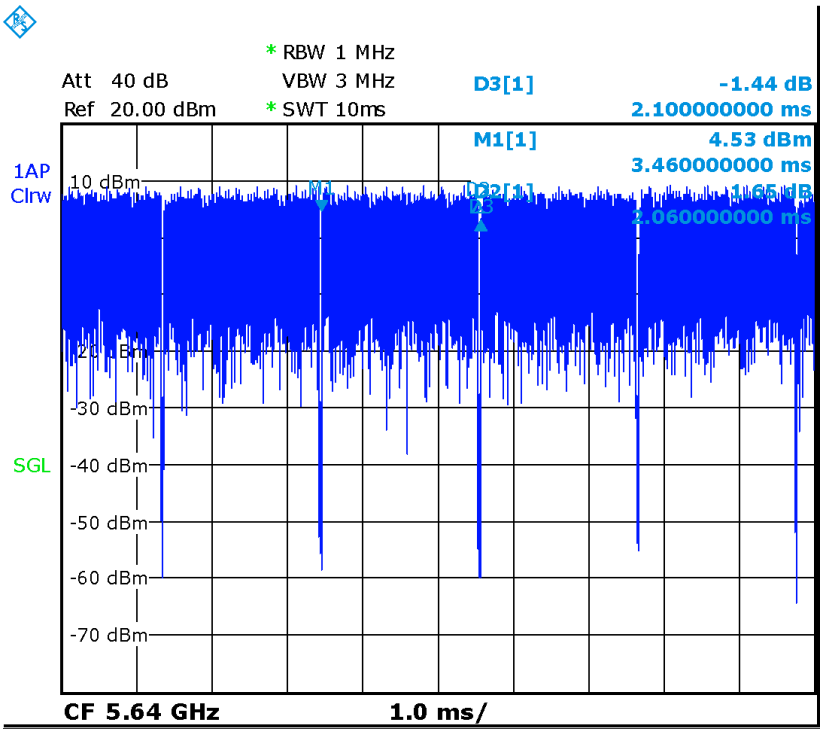
Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
Ch.	MHz						
136	5680	Left	Cheek	98.1%	100%	**0.95**	**0.97**
136	5680	Right	Cheek	98.1%	100%	**0.26**	**0.27**

Table 15.4-14 SAR Values (WLAN 5G - Body) (Scaled Reported SAR)

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
Ch.	MHz						
128	5640	Rear	10	98.1%	100%	**0.31**	**0.32**



Picture 15.4-1 The plot of duty factor for CH136



Picture 15.4-2 The plot of duty factor for CH128

15.5 SAR results for BT

Table 15.5-1: SAR Values (BT - Head)

Frequency		Side	Test Position	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz									
0	2402	Left	Cheek	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Left	Tilt	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	Cheek	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	Tilt	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/

Table 15.5-2: SAR Values (BT - Body)

Frequency		Test Position	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g)(W/kg)	Power Drift (dB)
Ch.	MHz								
0	2402	Front	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Rear	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Right	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/
0	2402	Top	11.66	11.8	<0.01	<0.01	<0.01	<0.01	/

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

16 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 16.1: SAR Measurement Variability for Head LTE B2-ANT2 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
18900	1880	50RB-Low	Right Cheek	0.891	0.868	1.03	/

Table 16.2: SAR Measurement Variability for Head LTE B5 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
20600	844	1RB-Low	Right Tilt	0.889	0.861	1.03	/

Table 16.3: SAR Measurement Variability for Head LTE B66-ANT2 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
132322	1745	50RB-High	Right Cheek	1.08	1.03	1.05	/

Table 16.4: SAR Measurement Variability for Body LTE B66-ANT2 (1g)

Frequency		Mode	Test Position	Spacing (mm)	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz							
132572	1770	50RB-High	Left	10	0.924	0.907	1.02	/

Table 16.5: SAR Measurement Variability for Head n5 (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
167800	839	/	Right Tilt	0.992	0.978	1.01	/

Table 16.6: SAR Measurement Variability for Head WIFI 5G (1g)

Frequency		Mode	Test Position	Original SAR (W/kg)	First Repeated SAR (W/kg)	The Ratio	Second Repeated SAR (W/kg)
Ch.	MHz						
136	5680	11a 6M	Left Cheek	0.868	0.835	1.04	/
136	5680	11a 6M	Left Tilt	0.835	0.822	1.02	/

17 Measurement Uncertainty

17.1 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	

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

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

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

17.3 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	

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

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

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

18 MAIN TEST INSTRUMENTS

Table 18.1: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 14, 2021	One year
02	Power meter	NRP2	106276	May 11, 2021	One year
03	Power sensor	NRP6A	101369		
04	Signal Generator	E4438C	MY49071430	February 1, 2021	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	159889	January 13, 2021	One year
07	E-field Probe	SPEAG EX3DV4	7548	June 25, 2021	One year
08	DAE	SPEAG DAE4	1331	September 1, 2021	One year
09	Dipole Validation Kit	SPEAG D750V3	1017	July 12,,2021	One year
10	Dipole Validation Kit	SPEAG D835V2	4d069	July 21,,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 D3700V2	1004	June 21,2021	One year
16	Dipole Validation Kit	SPEAG D3900V2	1024	June 21,2021	One year
17	Dipole Validation Kit	SPEAG D5GHzV2	1262	January 18,2021	One year

END OF REPORT BODY

ANNEX A Graph Results

GSM850_CH190 Left Cheek
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.6 MHz; σ = 0.903 S/m; ε_r = 45.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: GSM850 836.6 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.802 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.79 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.611 W/kg; SAR(10 g) = 0.336 W/kg

Maximum value of SAR (measured) = 0.991 W/kg

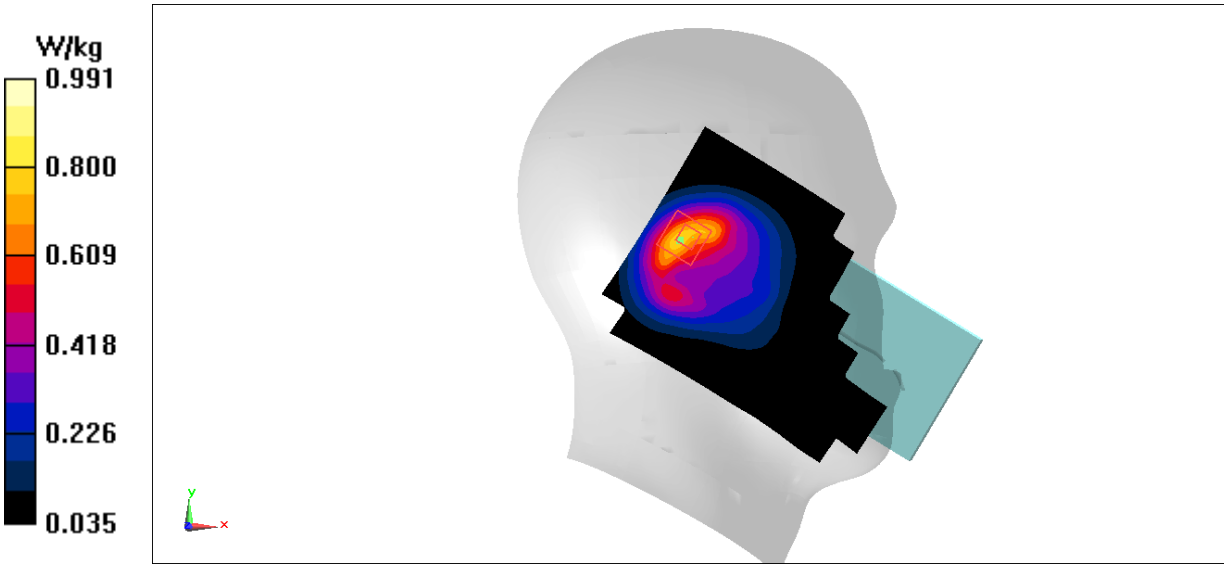


Fig A.1

GSM850_CH190 Rear 10mm
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.6 MHz; σ = 0.876 S/m; ε_r = 43.881; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: GSM850 836.6 MHz Duty Cycle: 1:4
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.732 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.85 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.554 W/kg; SAR(10 g) = 0.311 W/kg
Maximum value of SAR (measured) = 0.833 W/kg

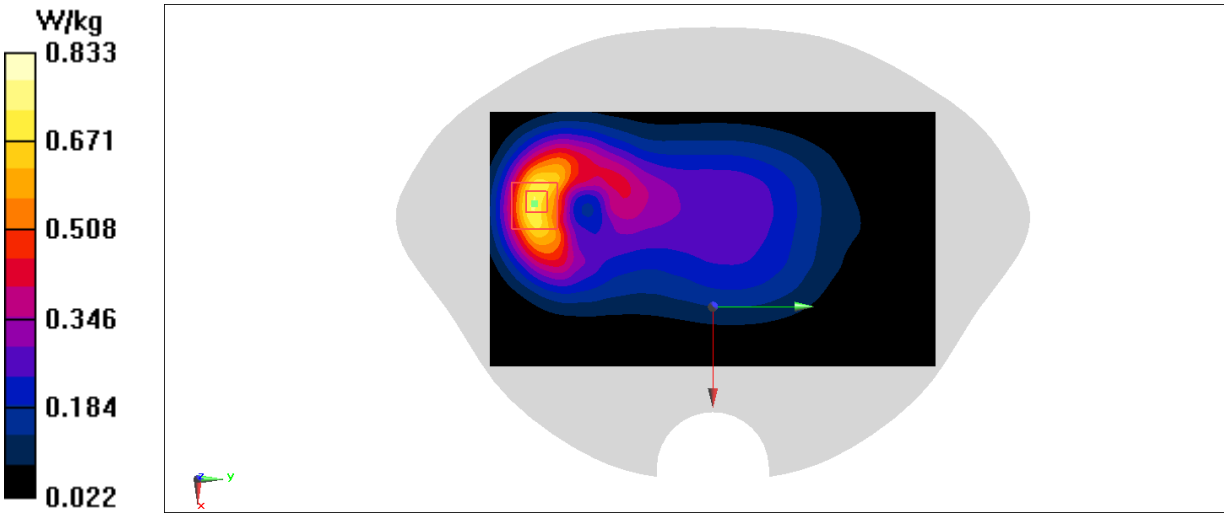


Fig A.2

PCS1900_CH512 Right Cheek
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.411 S/m; ε_r = 42.396;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: PCS1900 1850.2 MHz Duty Cycle: 1:8.3
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.191 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.356 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.207 W/kg
SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.086 W/kg

Maximum value of SAR (measured) = 0.180 W/kg

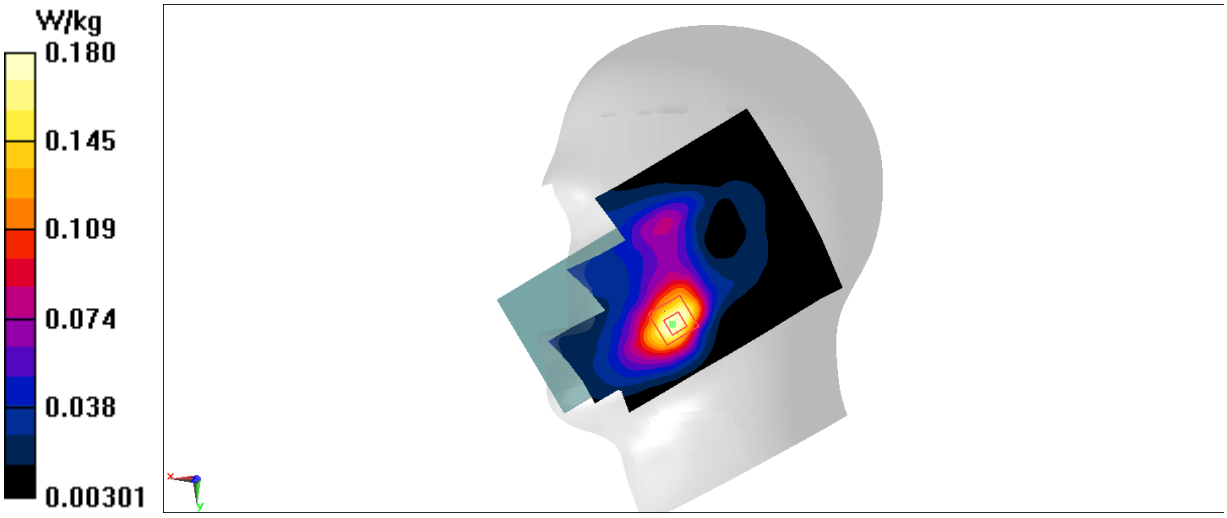


Fig A.3

PCS1900_CH661 Bottom 10mm
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.431 S/m; ε_r = 42.345;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: PCS1900 1880 MHz Duty Cycle: 1:4
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.851 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.40 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.571 W/kg; SAR(10 g) = 0.320 W/kg
Maximum value of SAR (measured) = 0.879 W/kg

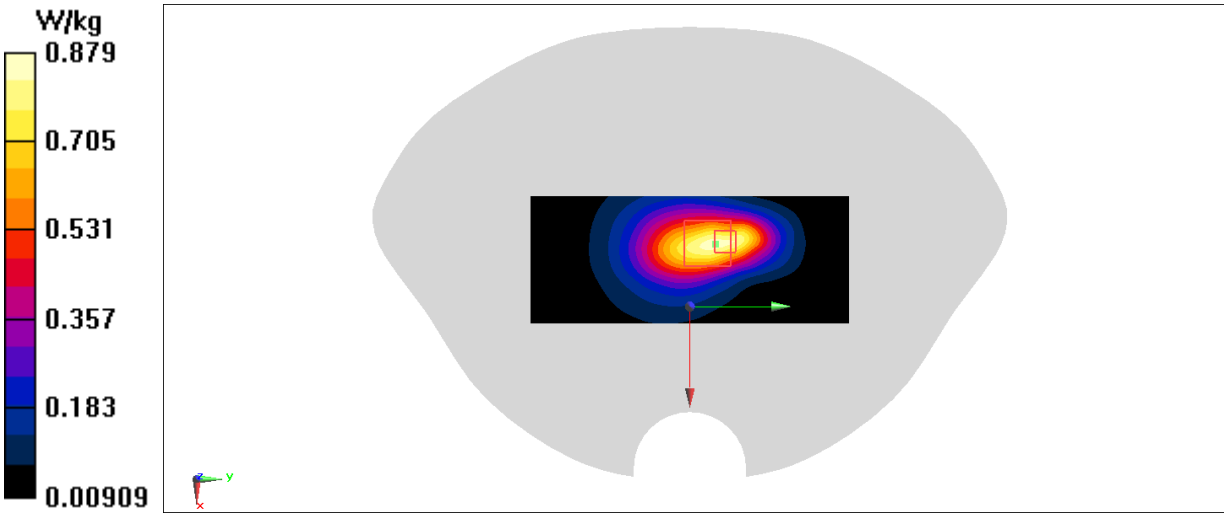


Fig A.4

WCDMA1900-BII_CH9400 Right Cheek
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WCDMA1900-BII 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (101x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.04 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.04 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.720 W/kg; SAR(10 g) = 0.342 W/kg
Maximum value of SAR (measured) = 1.20 W/kg

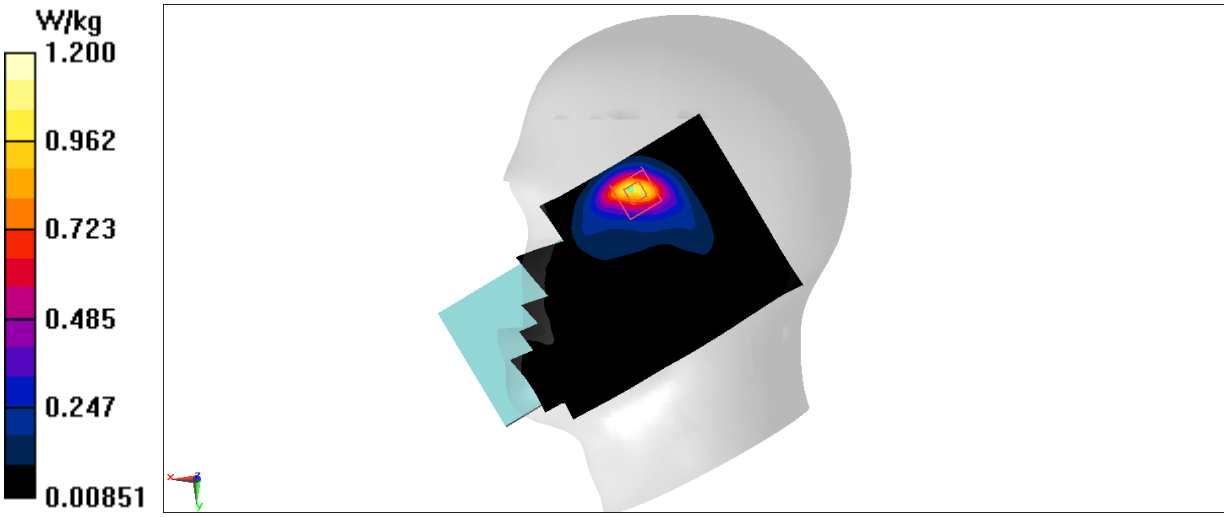


Fig A.5

WCDMA1900-BII_CH9400 Rear 10mm
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1852.4 MHz; σ = 1.427 mho/m; εr = 42.674; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WCDMA1900-BII 1852.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.619 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.812 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.833 W/kg
SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.207 W/kg
Maximum value of SAR (measured) = 0.679 W/kg

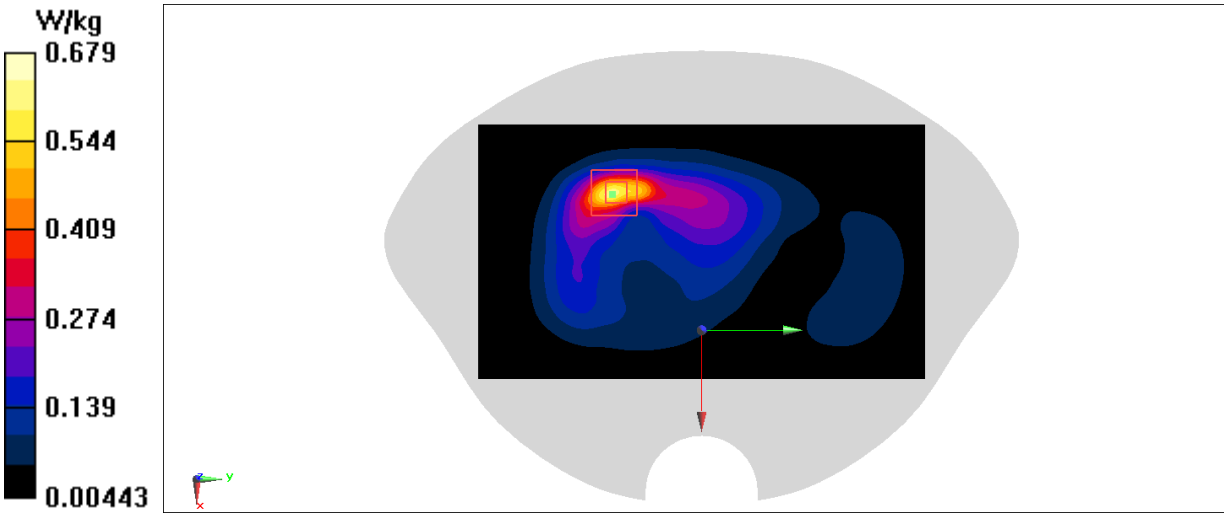


Fig A.6

WCDMA850-BV_CH4132 Right Tilt
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 826.4 MHz; σ = 0.858 S/m; ε_r = 43.616;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WCDMA850-BV 826.4 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

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

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.08 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 0.786 W/kg; SAR(10 g) = 0.414 W/kg

Maximum value of SAR (measured) = 1.37 W/kg

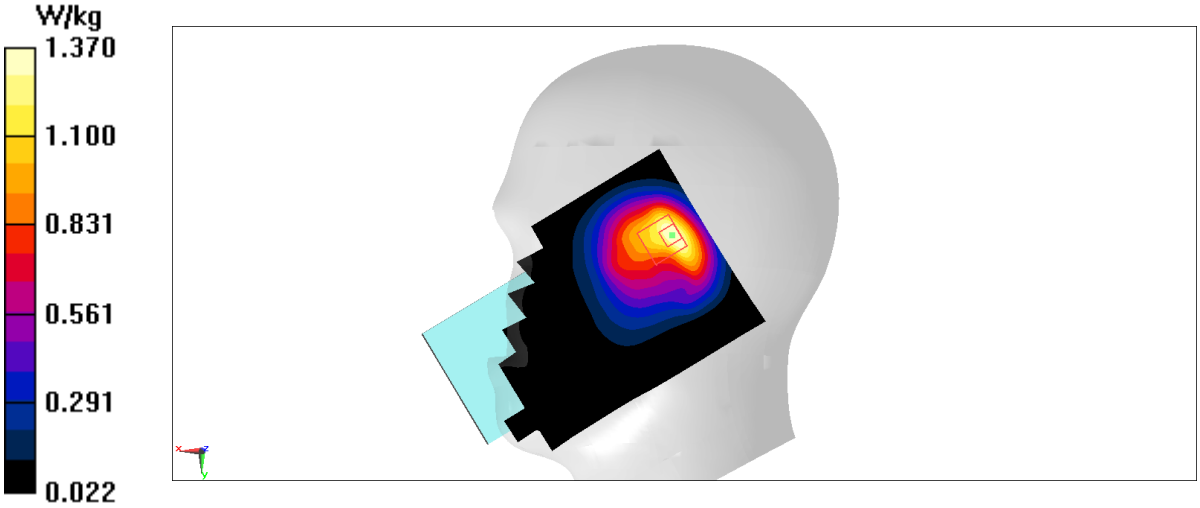


Fig A.7

WCDMA850-BV_CH4233 Rear 10mm
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 846.6 MHz; σ = 0.907 S/m; ε_r = 45.557;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WCDMA850-BV 846.6 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.20 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.792 W/kg; SAR(10 g) = 0.442 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

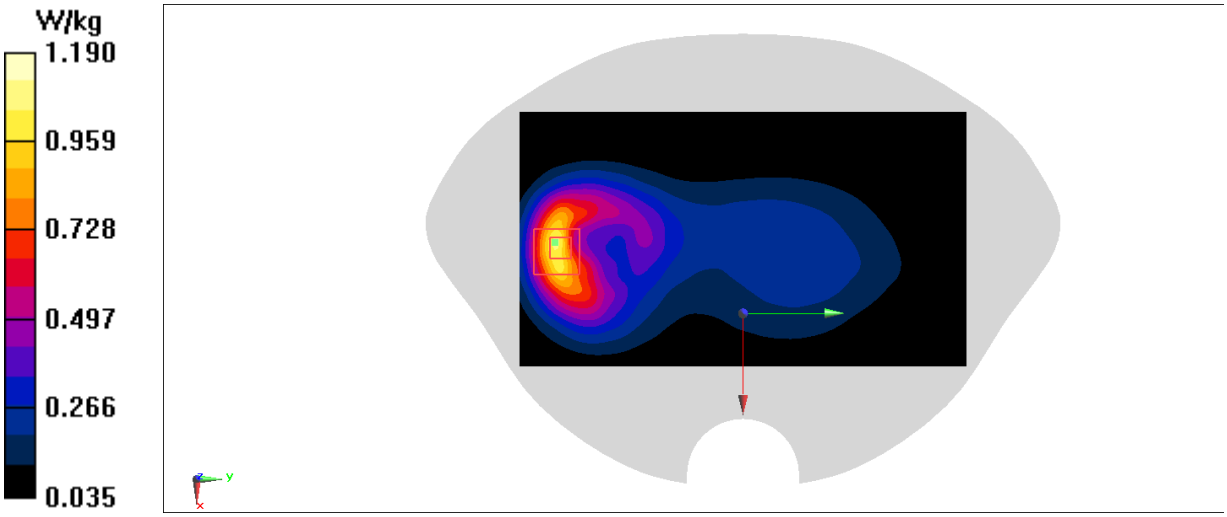


Fig A.8

LTE1900-FDD2 ANT2_CH18900 Right Cheek
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

Area Scan (101x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.29 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.256 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 0.891 W/kg; SAR(10 g) = 0.417 W/kg
Maximum value of SAR (measured) = 1.57 W/kg

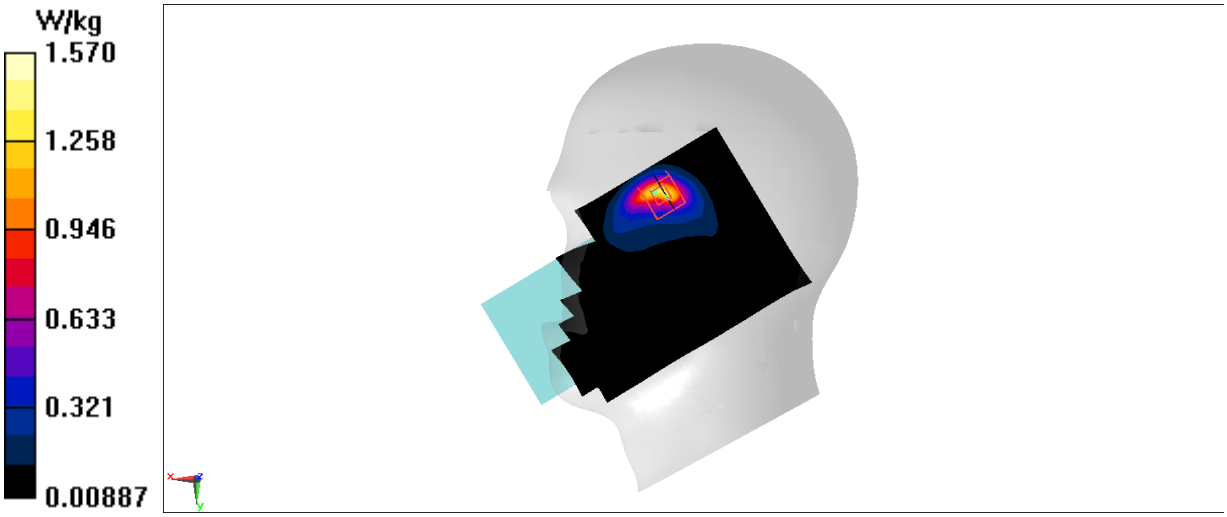


Fig A.9

LTE1900-FDD2 ANT2_CH18900 Left 10mm
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

Area Scan (71x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.749 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.84 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.520 W/kg; SAR(10 g) = 0.254 W/kg
Maximum value of SAR (measured) = 0.810 W/kg

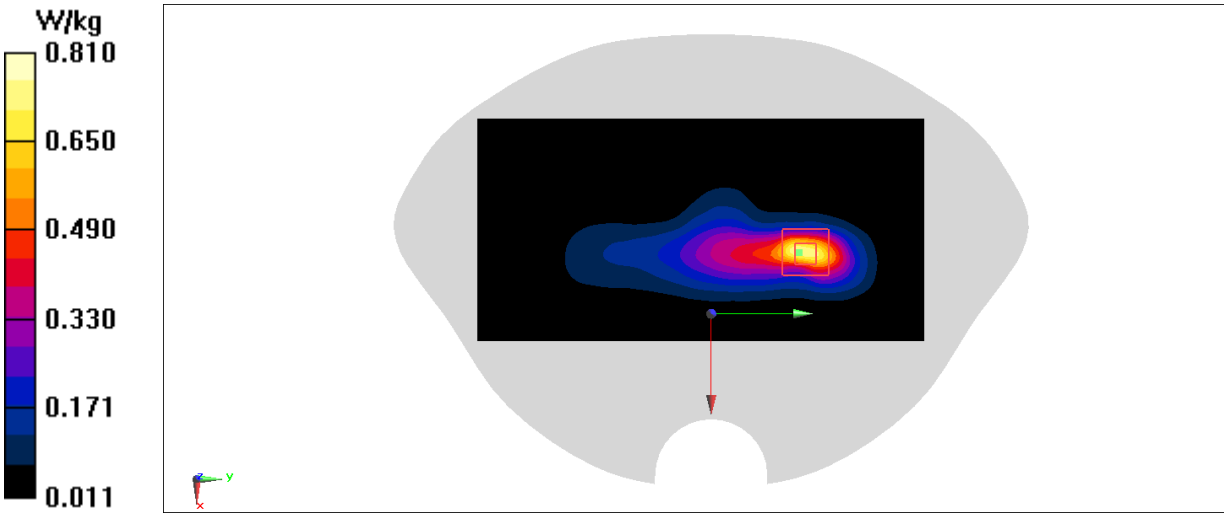


Fig A.10

LTE1900-FDD2 ANT3_CH19100 Right Cheek
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.49 S/m; ε_r = 39.17;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1900-FDD2 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.182 W/kg

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.689 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.214 W/kg
SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (measured) = 0.186 W/kg

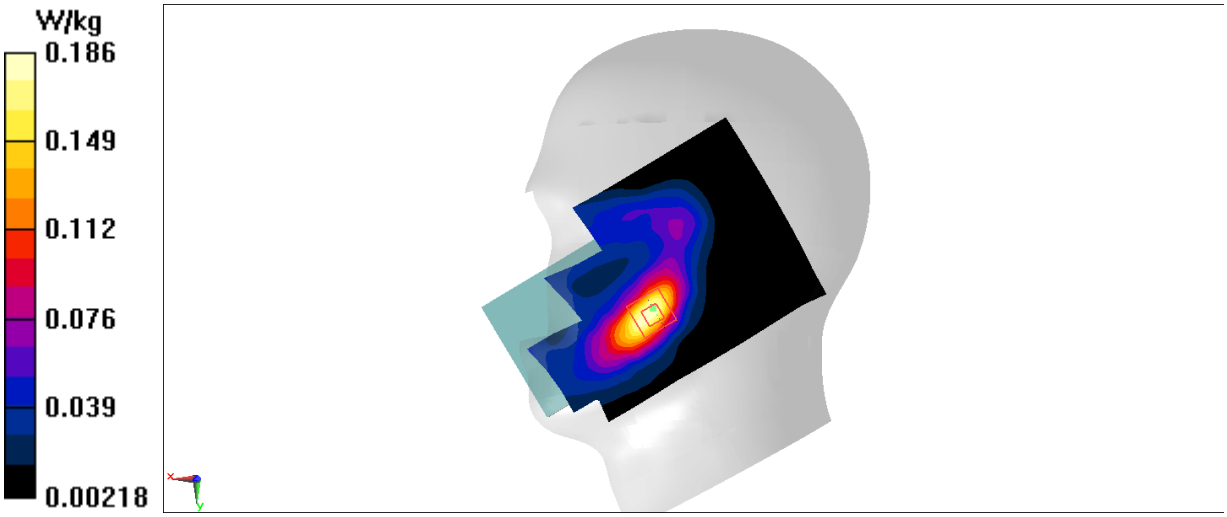


Fig A.11

LTE1900-FDD2 ANT3_CH19100 Left 10mm
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1900-FDD2 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88, 7.88, 7.88)

Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.08 W/kg

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.34 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.708 W/kg; SAR(10 g) = 0.383 W/kg
Maximum value of SAR (measured) = 1.08 W/kg

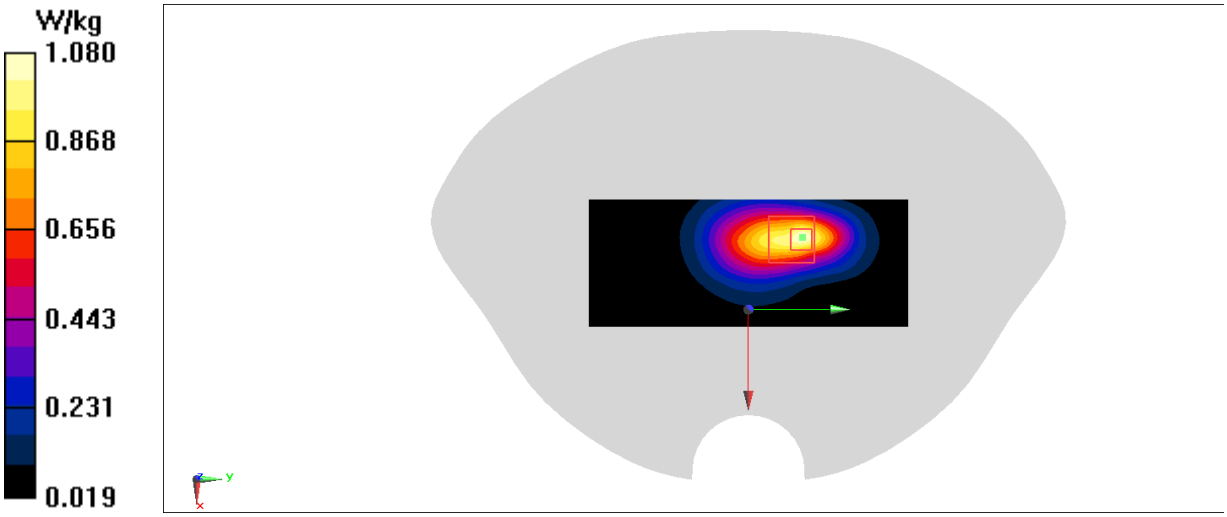


Fig A.12

LTE850-FDD5_CH20600 Right Tilt
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 844 MHz; σ = 0.912 S/m; ε_r = 41.903;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE850-FDD5 844 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.992 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.14 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 2.26 W/kg
SAR(1 g) = 0.889 W/kg; SAR(10 g) = 0.464 W/kg

Maximum value of SAR (measured) = 1.47 W/kg

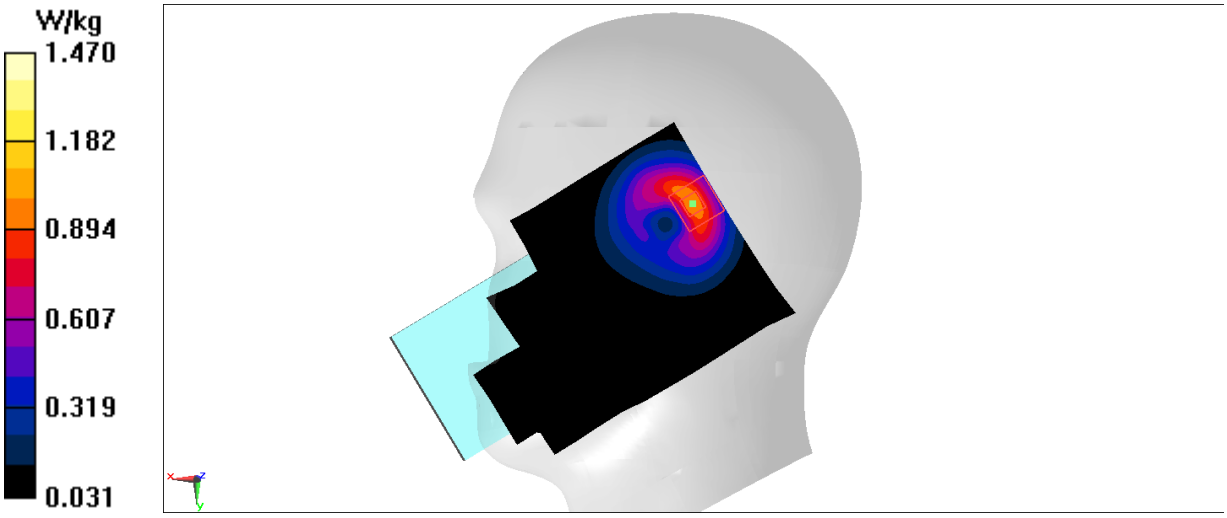


Fig A.13

LTE850-FDD5_CH20450 Rear 10mm
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 829 MHz; σ = 0.83 S/m; ε_r = 45.1; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE850-FDD5 829 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.796 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.06 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.570 W/kg; SAR(10 g) = 0.305 W/kg

Maximum value of SAR (measured) = 0.872 W/kg

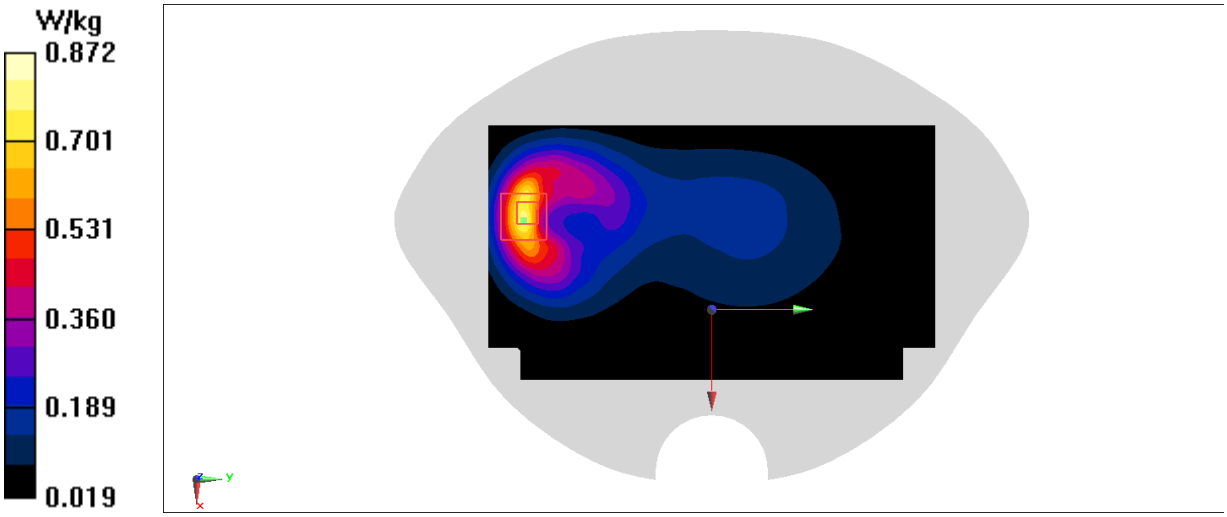


Fig A.14

LTE2500-FDD7_CH21100 Left Cheek
Date: 9/20/2021
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2535 MHz; σ = 1.985 S/m; ε_r = 41.456; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE2500-FDD7 2535 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.11, 7.11, 7.11)

Area Scan (81x141x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.108 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.7490 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.128 W/kg
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.039 W/kg
Maximum value of SAR (measured) = 0.108 W/kg

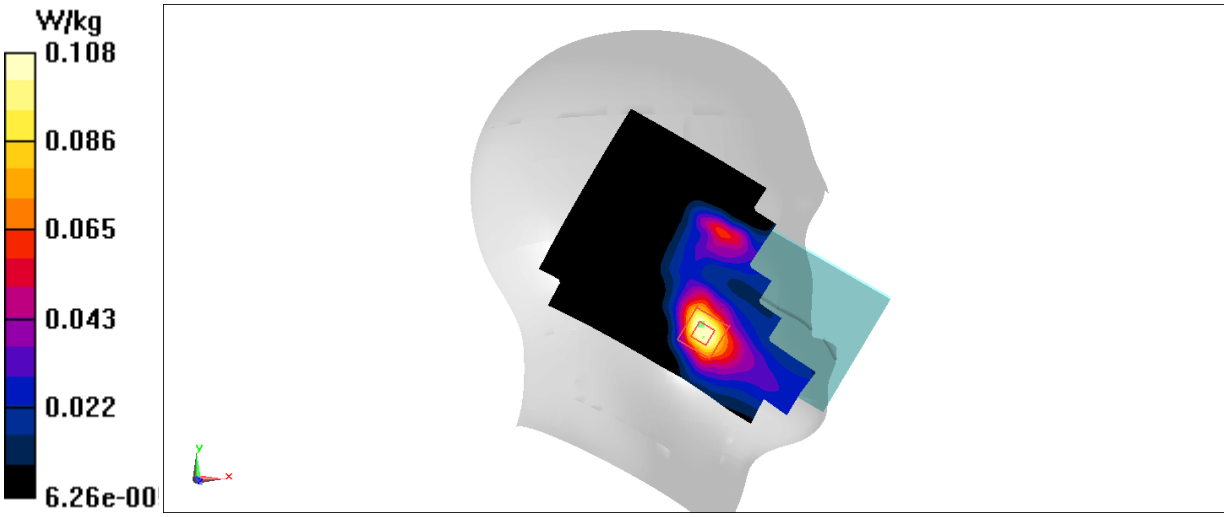


Fig A.15

LTE2500-FDD7_CH21100 Bottom 10mm
Date: 9/20/2021
Electronics: DAE4 Sn1331
Medium: head 2600 MHz
Medium parameters used: f = 2535 MHz; σ = 1.945 S/m; ε_r = 41.445; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE2500-FDD7 2535 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.11, 7.11, 7.11)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.813 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.584 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.471 W/kg; SAR(10 g) = 0.218 W/kg
Maximum value of SAR (measured) = 0.802 W/kg

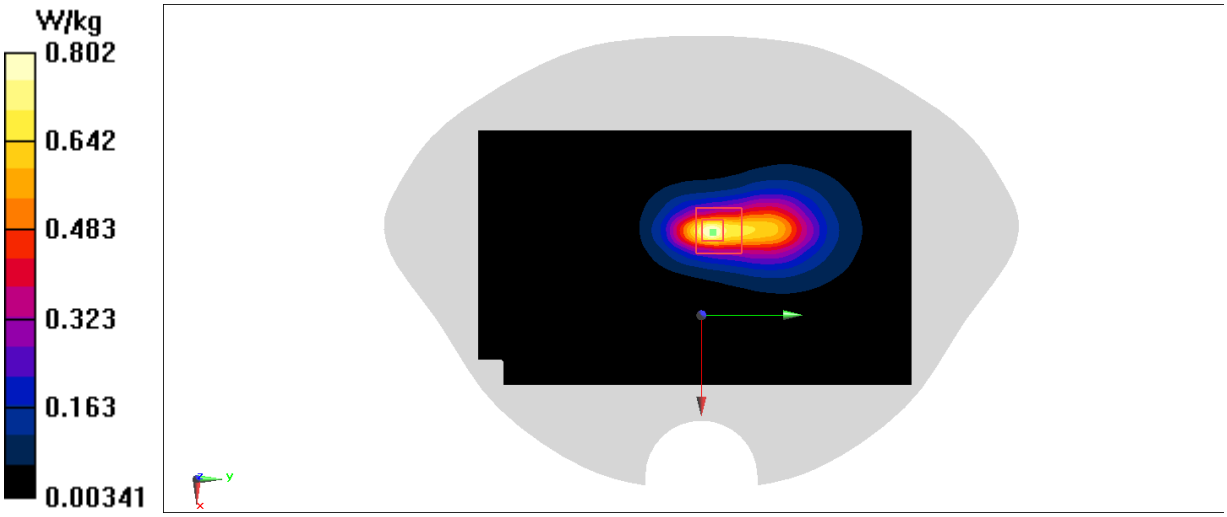


Fig A.16

LTE700-FDD12_CH23095 Right Tilt
Date: 9/15/2021
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 707.5 MHz; σ = 0.78 S/m; ε_r = 45.492;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE700-FDD12 707.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.00 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.21 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.610 W/kg; SAR(10 g) = 0.316 W/kg

Maximum value of SAR (measured) = 1.01 W/kg

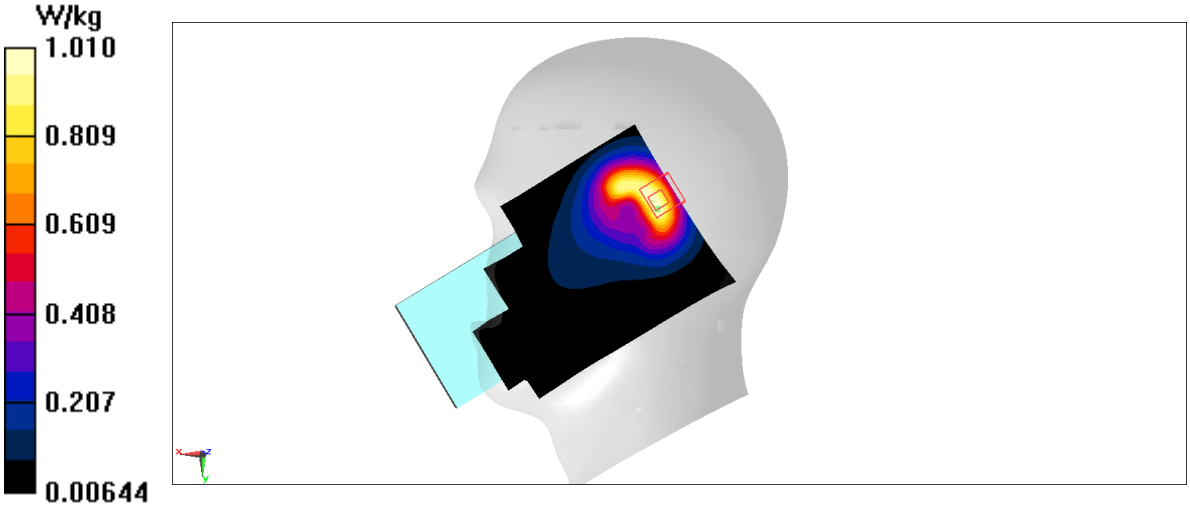


Fig A.17

LTE700-FDD12_CH23060 Rear 10mm
Date: 9/15/2021
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 704 MHz; σ = 0.778 S/m; ε_r = 45.506;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.644 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.09 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.868 W/kg
SAR(1 g) = 0.445 W/kg; SAR(10 g) = 0.246 W/kg
Maximum value of SAR (measured) = 0.689 W/kg

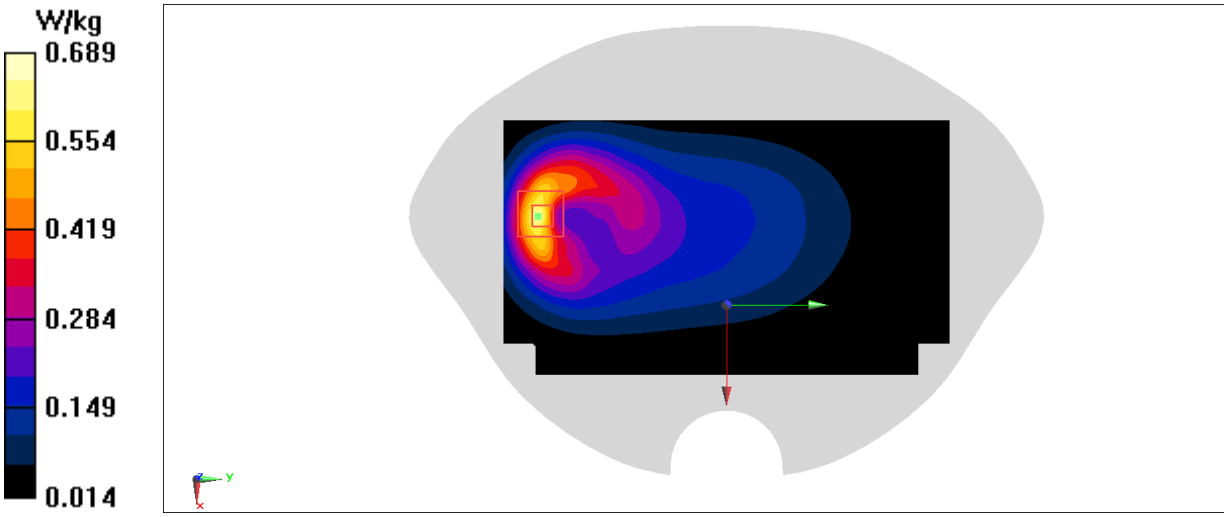


Fig A.18

LTE750-FDD13_CH23230 Left Cheek
Date: 9/15/2021
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.882 S/m; ε_r = 45.797; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.07 W/kg

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.44 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.693 W/kg; SAR(10 g) = 0.388 W/kg

Maximum value of SAR (measured) = 1.07 W/kg

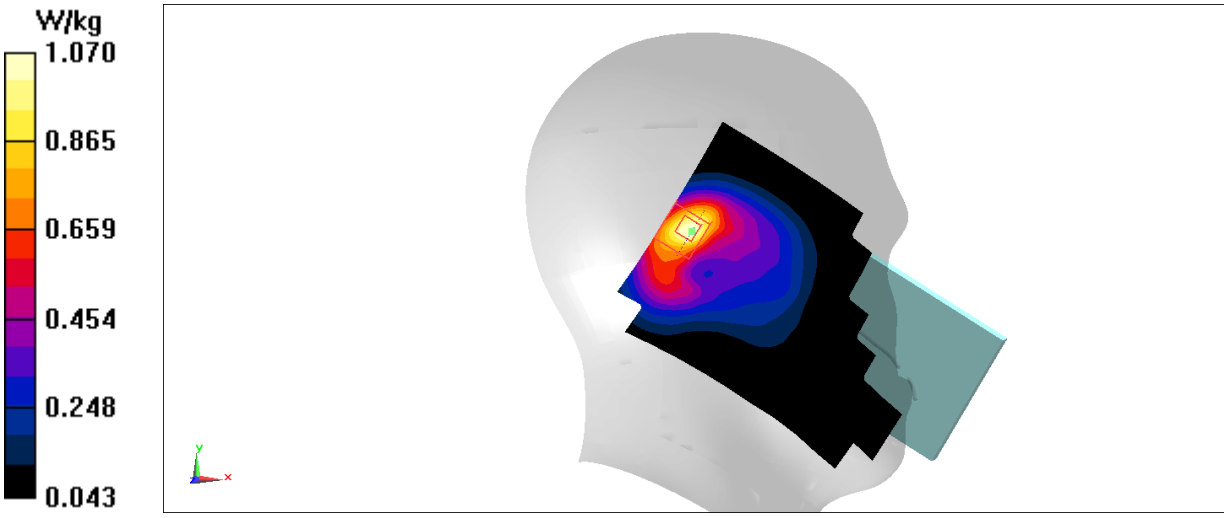


Fig A.19

LTE750-FDD13_CH23230 Rear 10mm
Date: 9/15/2021
Electronics: DAE4 Sn1331
Medium: head 750 MHz
Medium parameters used: f = 782 MHz; σ = 0.809 S/m; ε_r = 45.244; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE750-FDD13 782 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.969 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.15 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.373 W/kg

Maximum value of SAR (measured) = 1.07 W/kg

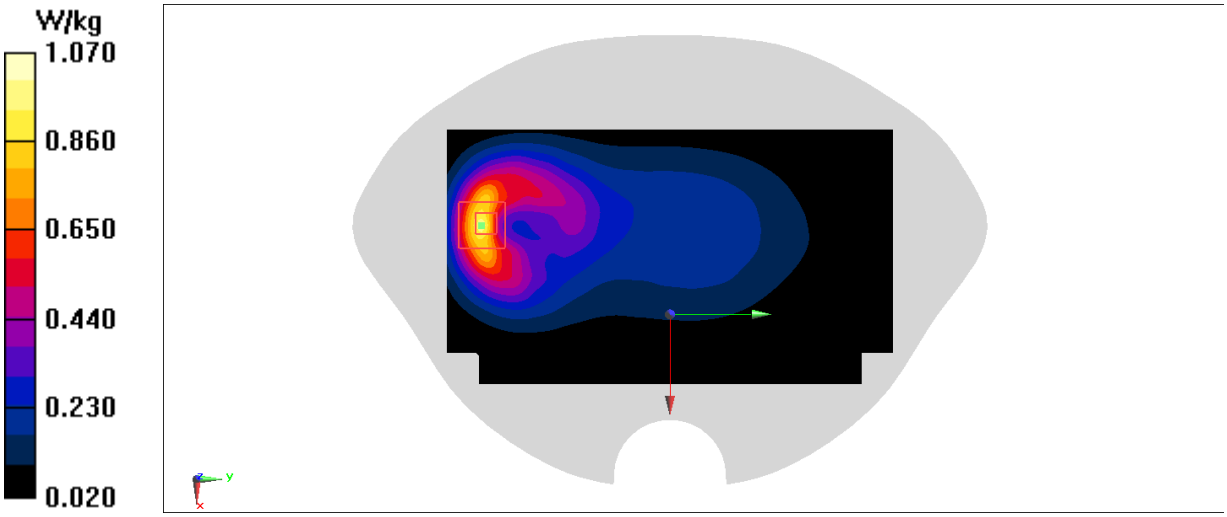


Fig A.20

LTE3700-TDD48_CH55990 Right Cheek
Date: 9/21/2021
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3625 MHz; σ = 2.891 S/m; ε_r = 37.968;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE3700-TDD48 3625 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42, 6.42)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.312 W/kg

Zoom Scan (9x10x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.242 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.752 W/kg
SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.120 W/kg
Maximum value of SAR (measured) = 0.533 W/kg

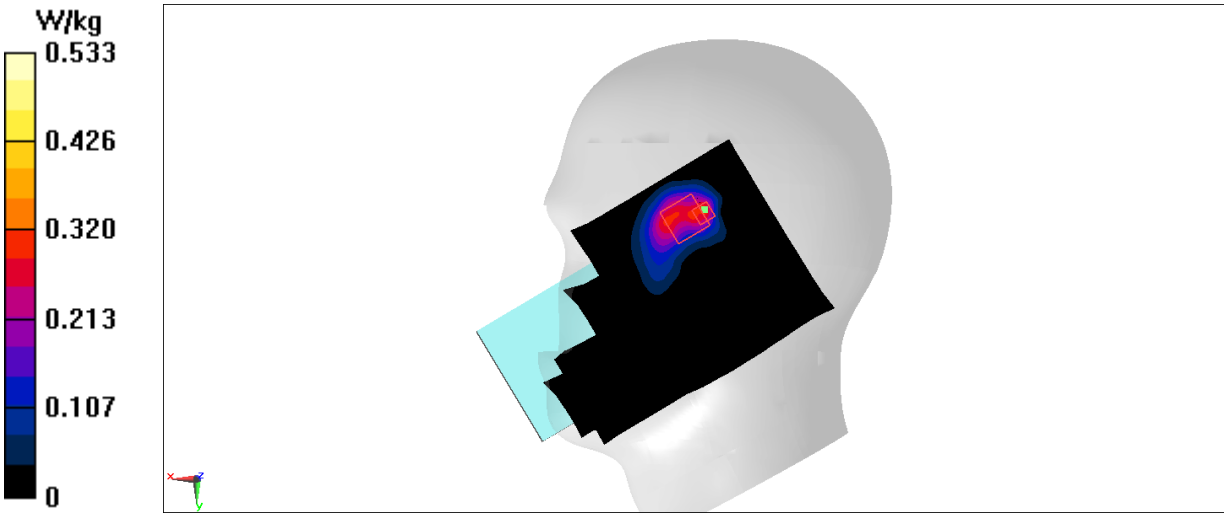


Fig A.21

LTE3700-TDD48_CH55990 Rear 10mm
Date: 9/21/2021
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3625 MHz; σ = 2.891 S/m; ε_r = 37.968;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE3700-TDD48 3625 MHz Duty Cycle: 1:1.58
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42, 6.42)

Area Scan (91x171x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 11.47 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 1.41 W/kg
SAR(1 g) = 0.548 W/kg; SAR(10 g) = 0.237 W/kg
Maximum value of SAR (measured) = 1.02 W/kg

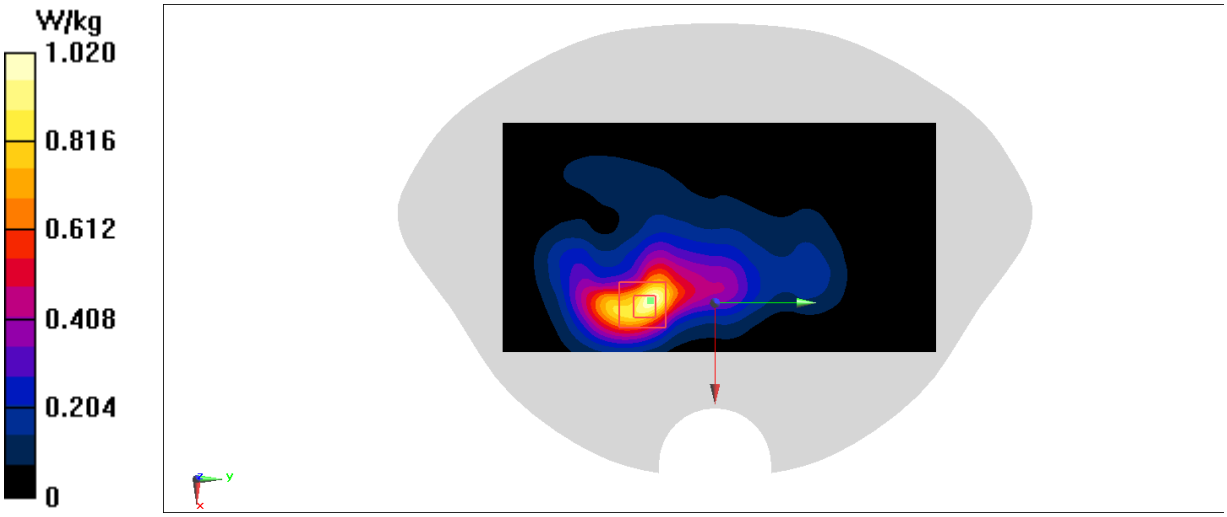


Fig A.22

LTE1700-FDD66 ANT2_CH132322 Right Cheek
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 1.328 S/m; ε_r = 41.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1700-FDD66 1745 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (101x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.58 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.43 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.40 W/kg
SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.512 W/kg
Maximum value of SAR (measured) = 1.89 W/kg

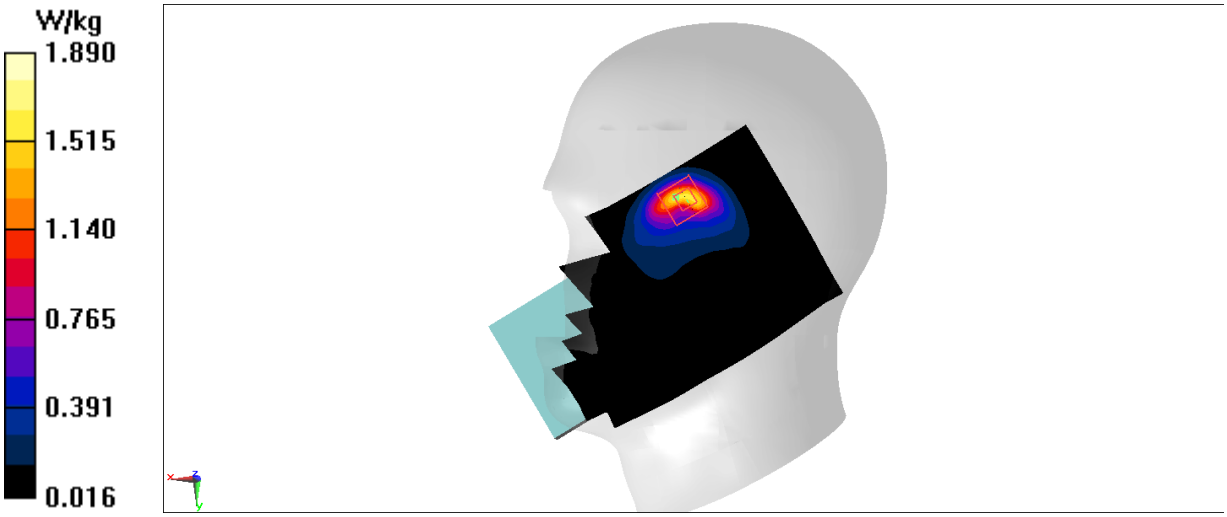


Fig A.23

LTE1700-FDD66 ANT2_CH132572 Left 10mm
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1770 MHz; σ = 1.407 S/m; ε_r = 39.416;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1700-FDD66 1770 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.46 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.59 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.81 W/kg
SAR(1 g) = 0.924 W/kg; SAR(10 g) = 0.455 W/kg
Maximum value of SAR (measured) = 1.47 W/kg

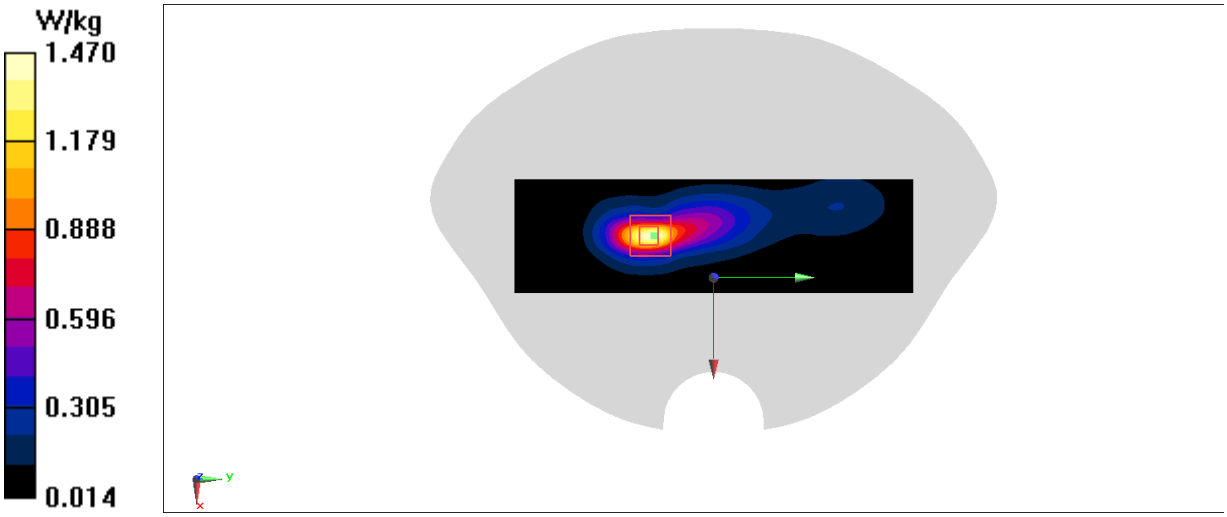


Fig A.24

LTE1700-FDD66 ANT3_CH132072 Right Cheek
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1720 MHz; σ = 1.373 S/m; ε_r = 39.517; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1700-FDD66 1720 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.251 W/kg

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.108 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.293 W/kg
SAR(1 g) = 0.191 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.255 W/kg

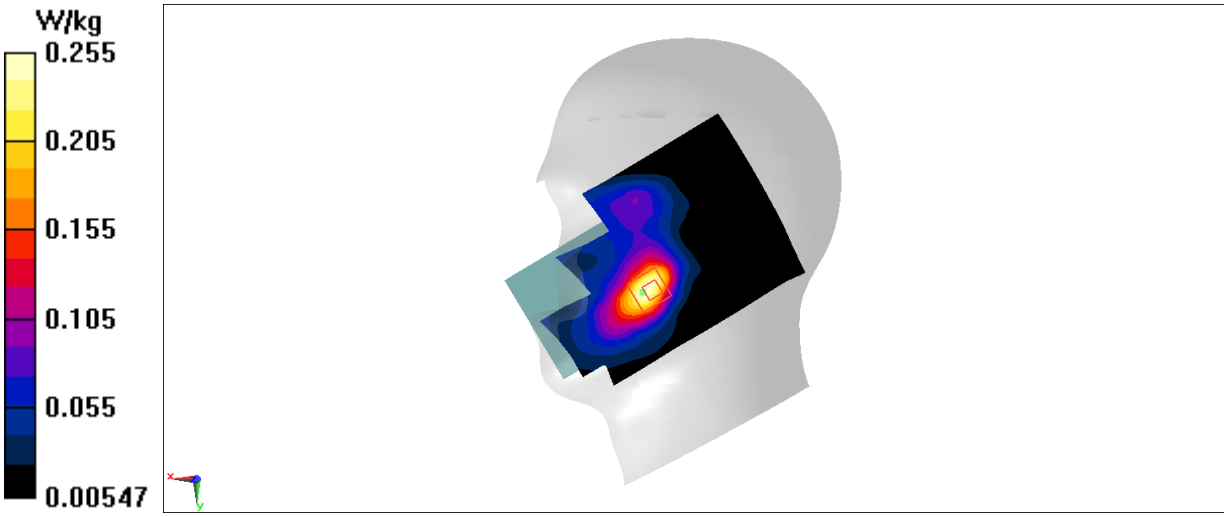


Fig A.25

LTE1700-FDD66 ANT3_CH132572 Rear 10mm
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1770 MHz; σ = 1.407 S/m; ε_r = 39.416;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: LTE1700-FDD66 1770 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (101x171x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Zoom Scan (9x9x5)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.826 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.701 W/kg; SAR(10 g) = 0.448 W/kg
Maximum value of SAR (measured) = 0.997 W/kg

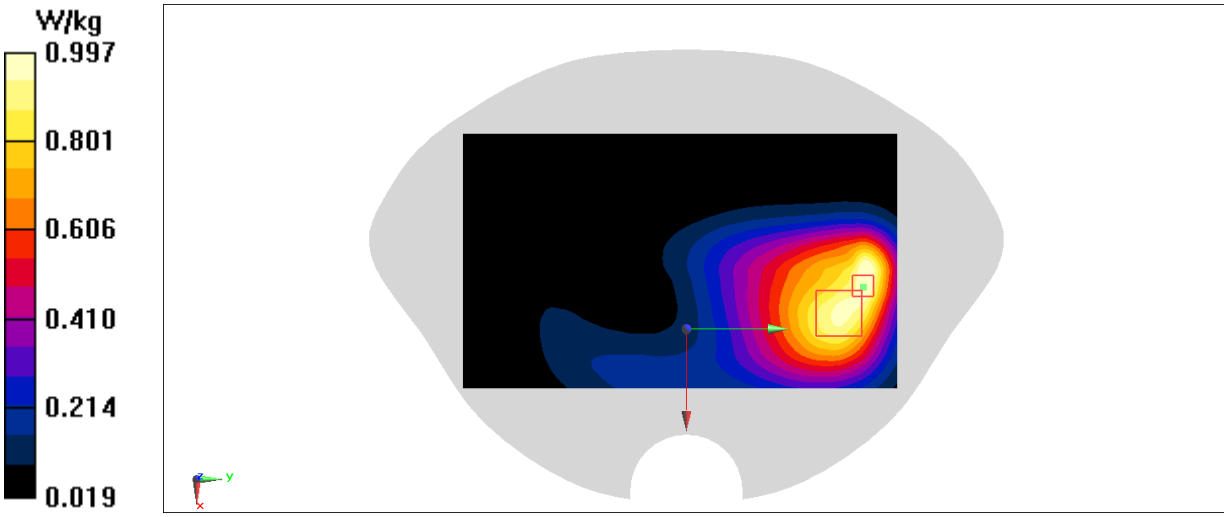


Fig A.26

5G NR-n2_CH370050 Right Cheek
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n2 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.720 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.313 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.999 W/kg
SAR(1 g) = 0.480 W/kg; SAR(10 g) = 0.235 W/kg
Maximum value of SAR (measured) = 0.787 W/kg

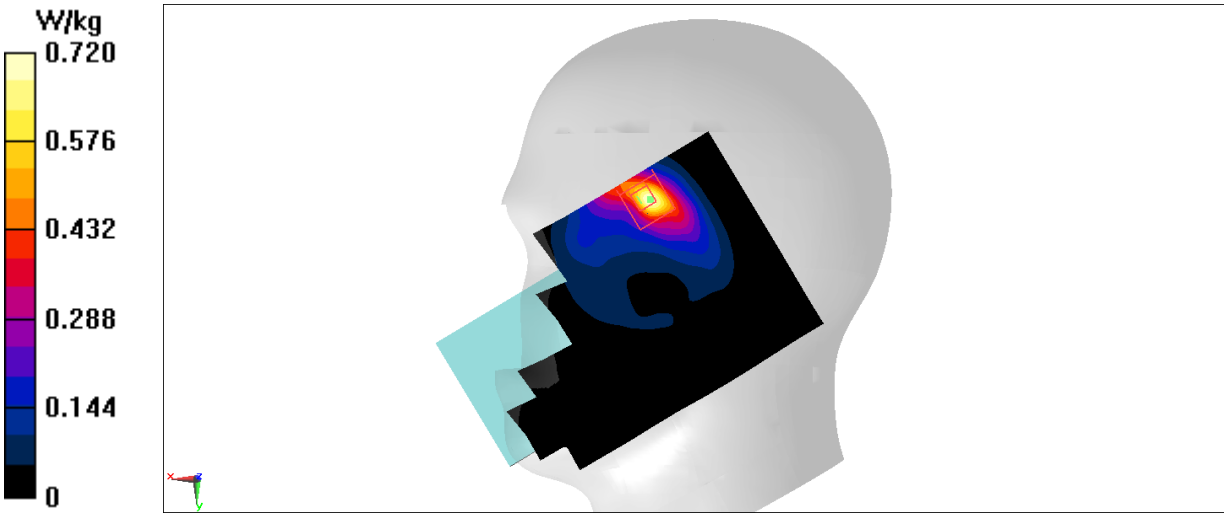


Fig A.27

5G NR-n2_CH370050 Left 10mm
Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.407 S/m; ε_r = 41.298; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n2 1880 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.44 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.671 W/kg; SAR(10 g) = 0.331 W/kg
Maximum value of SAR (measured) = 1.08 W/kg

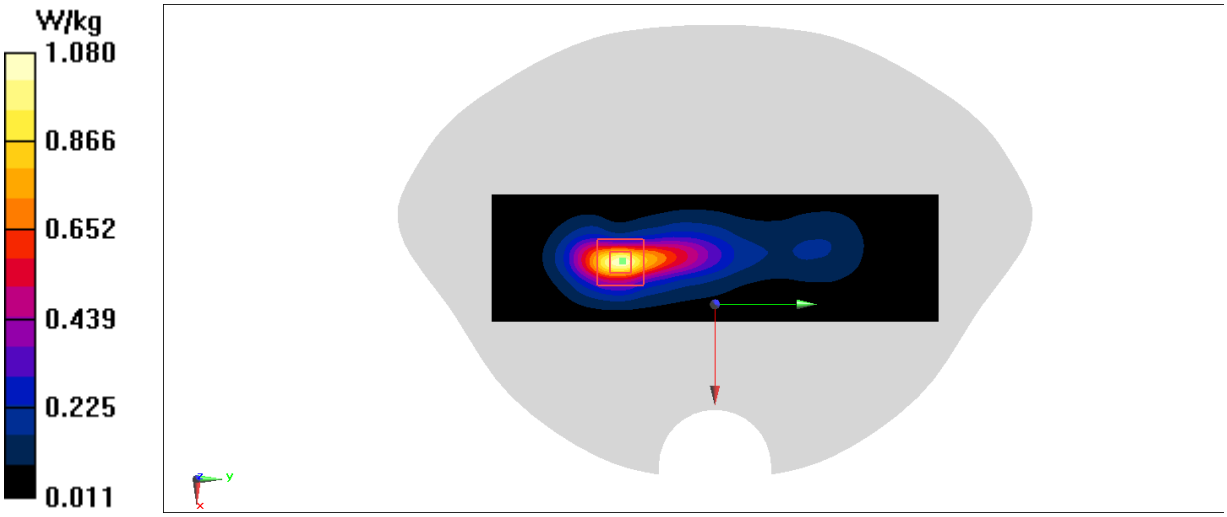


Fig A.28

5G NR-n5_CH164850 Right Tilt
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 839 MHz; σ = 0.91 S/m; ε_r = 41.924; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n5 839 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.44 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.37 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.84 W/kg
SAR(1 g) = 0.992 W/kg; SAR(10 g) = 0.511 W/kg
Maximum value of SAR (measured) = 1.91 W/kg

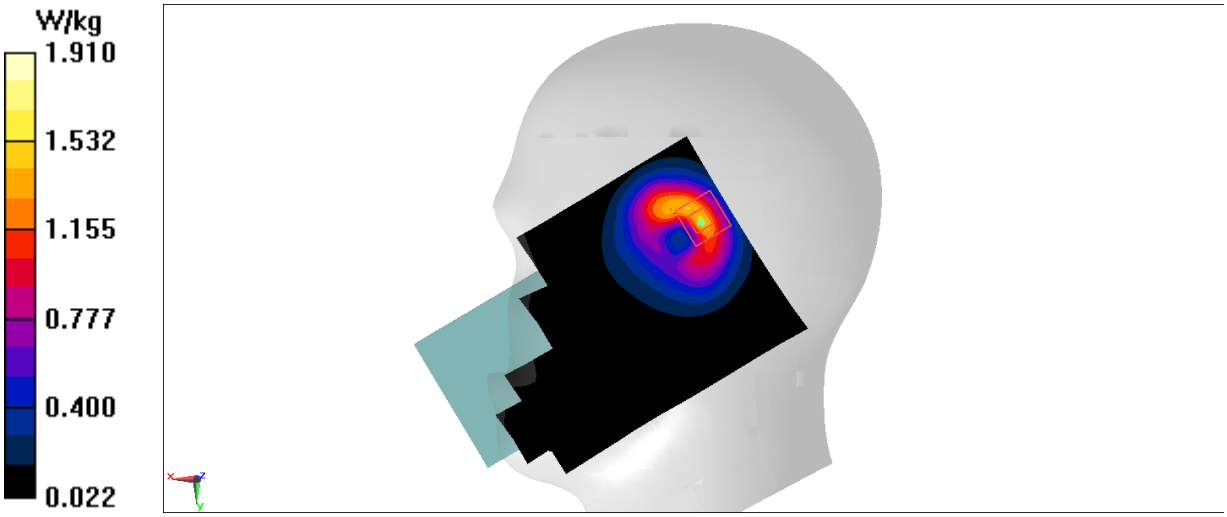


Fig A.29

5G NR-n5_CH165932 Rear 10mm
Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: head 835 MHz
Medium parameters used: f = 836.5 MHz; σ = 0.903 S/m; ε_r = 45.6; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n5 836.5 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.744 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.48 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.972 W/kg
SAR(1 g) = 0.506 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 0.788 W/kg

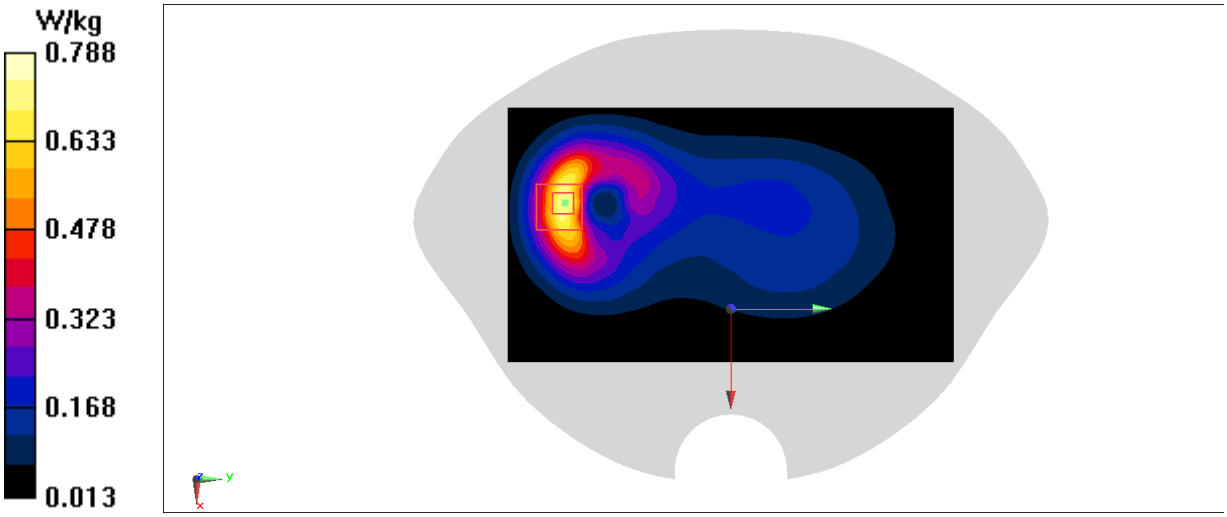


Fig A.30

5G NR-n66_CH349000 Right Cheek
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1745 MHz; σ = 1.328 S/m; ε_r = 41.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n66 1745MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (81x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.993 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.155 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.587 W/kg; SAR(10 g) = 0.286 W/kg
Maximum value of SAR (measured) = 0.994 W/kg

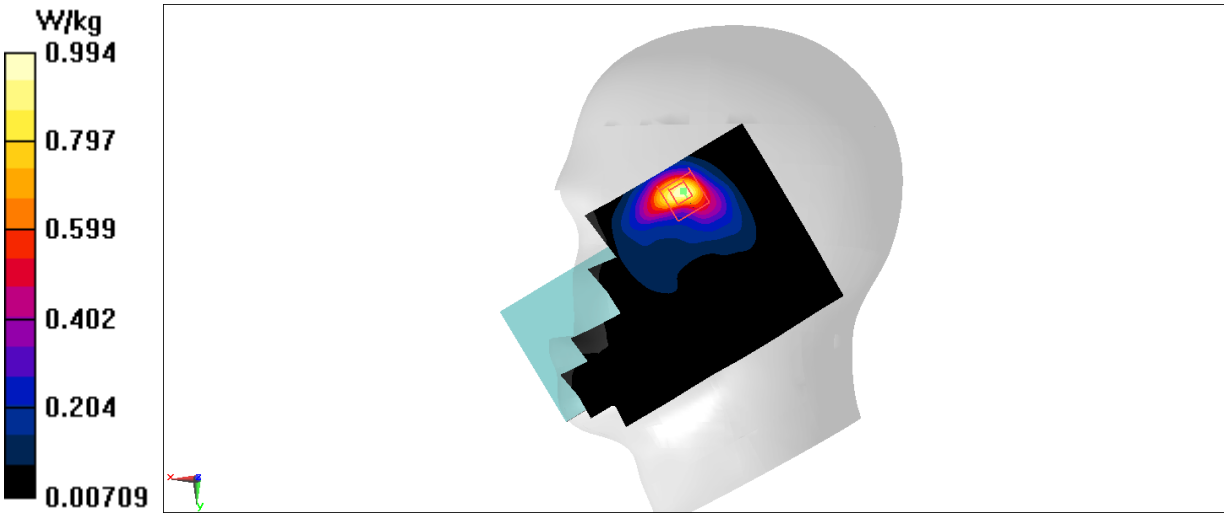


Fig A.31

5G NR-n66_CH348064 Left 10mm
Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: head 1750 MHz
Medium parameters used: f = 1712.5 MHz; σ = 1.311 S/m; ε_r = 41.526;ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n66 1712.5MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

Area Scan (41x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.914 W/kg

Zoom Scan (8x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.98 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.579 W/kg; SAR(10 g) = 0.293 W/kg

Maximum value of SAR (measured) = 0.896 W/kg

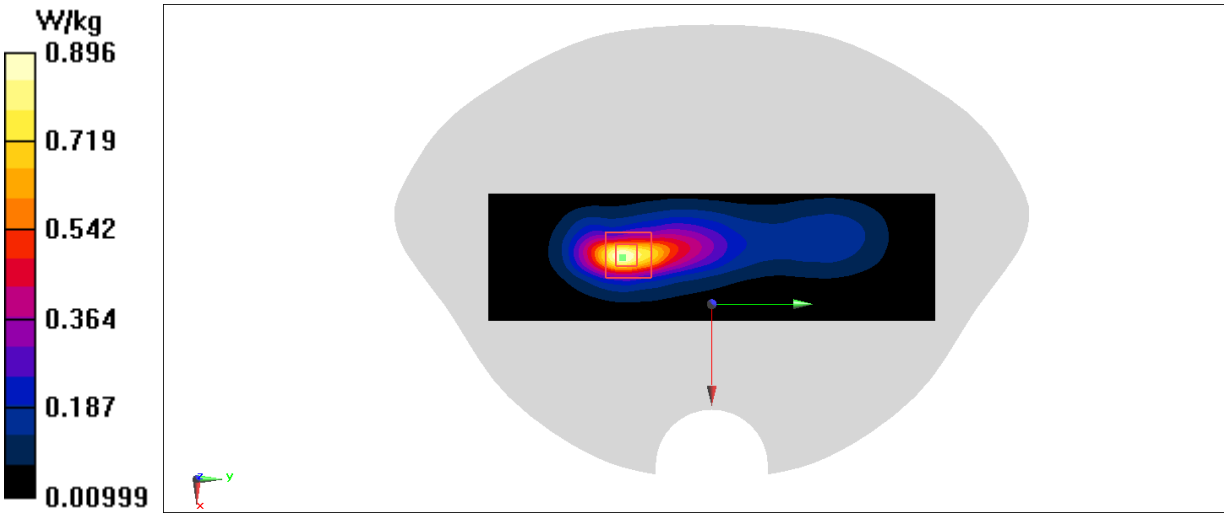


Fig A.32

5G NR-n77_CH651200 Left Cheek
Date: 9/21/2021
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3768 MHz; σ = 3.023 S/m; ε_r = 37.686; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n77 3768MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42,6.42)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.17 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.619 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.600 W/kg; SAR(10 g) = 0.252 W/kg

Maximum value of SAR (measured) = 1.10 W/kg

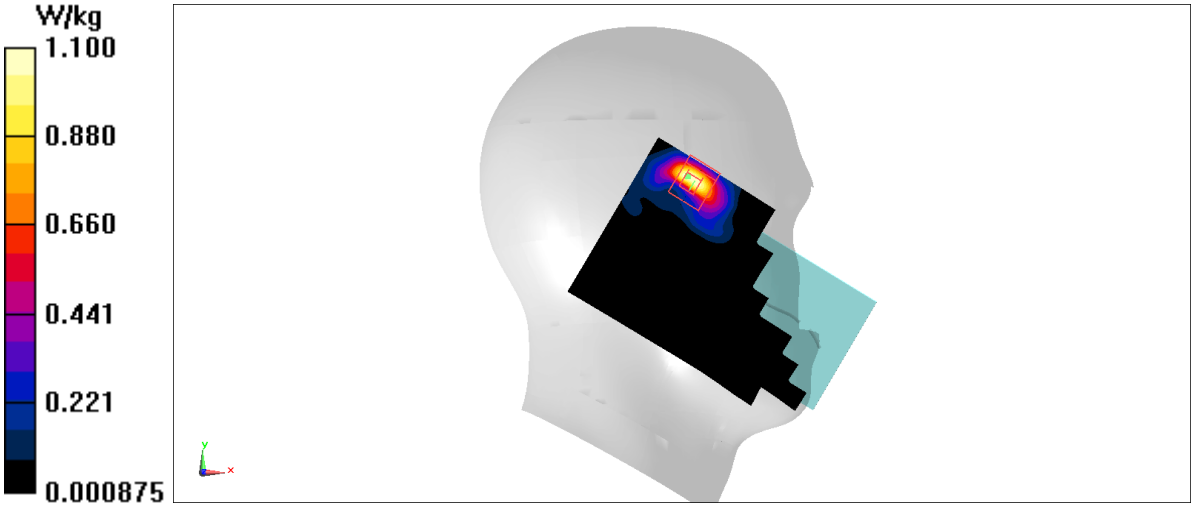


Fig A.33

5G NR-n77_CH651200 Right 10mm
Date: 9/21/2021
Electronics: DAE4 Sn1331
Medium: head 3700 MHz
Medium parameters used: f = 3768 MHz; σ = 3.023 S/m; ε_r = 37.686; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G NR-n77 3768MHz Duty Cycle: 1:2
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42,6.42)

Area Scan (61x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.50 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 11.09 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 2.14 W/kg
SAR(1 g) = 0.773 W/kg; SAR(10 g) = 0.315 W/kg
Maximum value of SAR (measured) = 1.51 W/kg

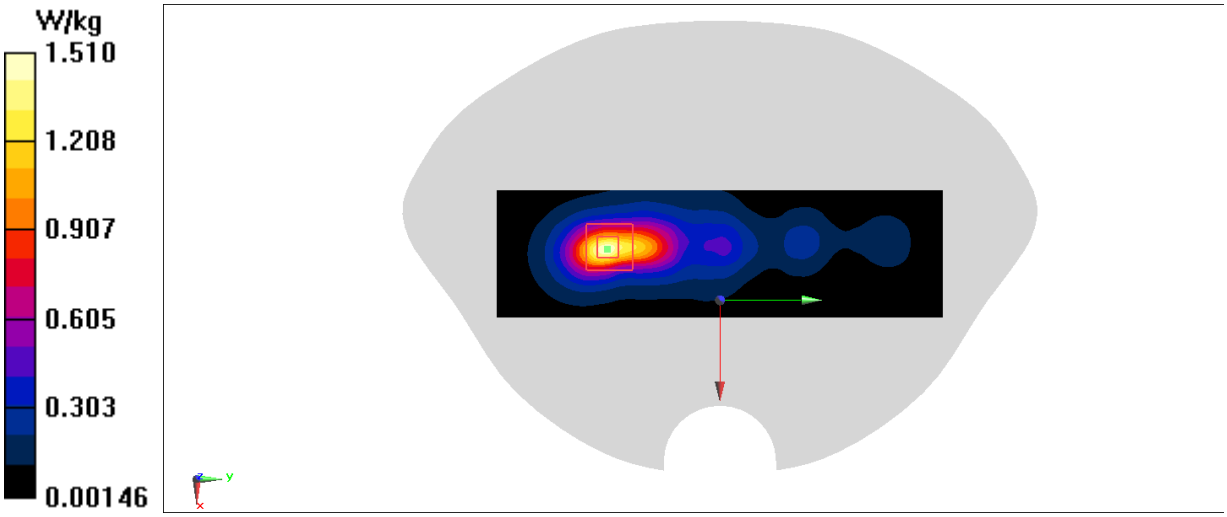


Fig A.34

WLAN2450_CH11 Left Cheek
Date: 9/19/2021
Electronics: DAE4 Sn1331
Medium: head 2450 MHz
Medium parameters used: f = 2462 MHz; σ = 1.875 S/m; ε_r = 41.568;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WLAN2450 2462 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (101x171x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.51 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 0.783 W/kg; SAR(10 g) = 0.383 W/kg
Maximum value of SAR (measured) = 1.36 W/kg

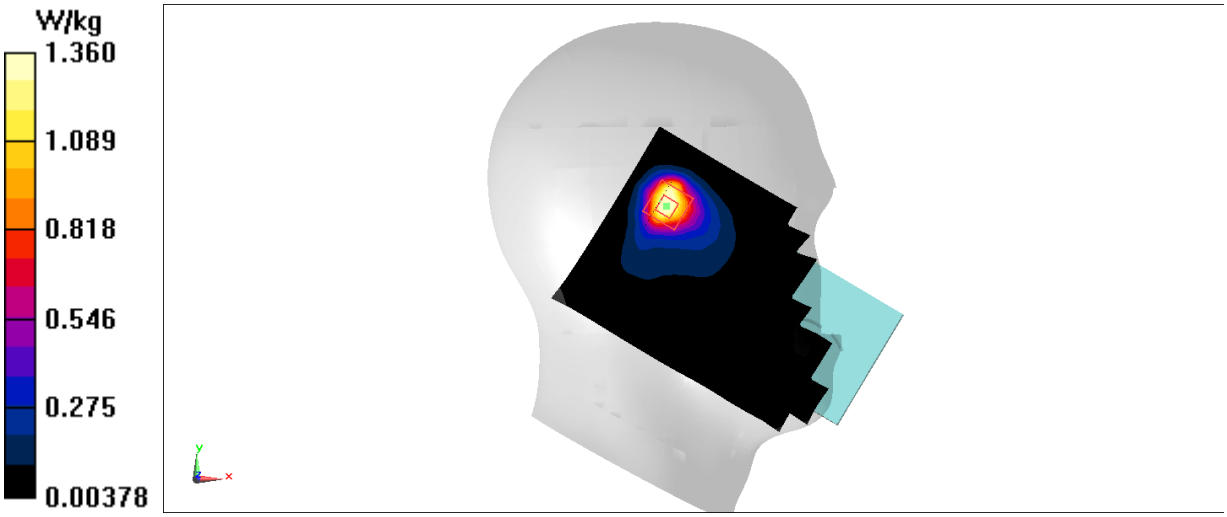


Fig A.35

WLAN2450_CH1 Front 10mm
Date: 9/19/2021
Electronics: DAE4 Sn1331
Medium: head 2450 MHz
Medium parameters used: f = 2412 MHz; σ = 1.81 S/m; ε_r = 40.037;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WLAN2450 2412 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.246 W/kg

Zoom Scan (7x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.909 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.296 W/kg
SAR(1 g) = 0.156 W/kg; SAR(10 g) = 0.087 W/kg
Maximum value of SAR (measured) = 0.238 W/kg

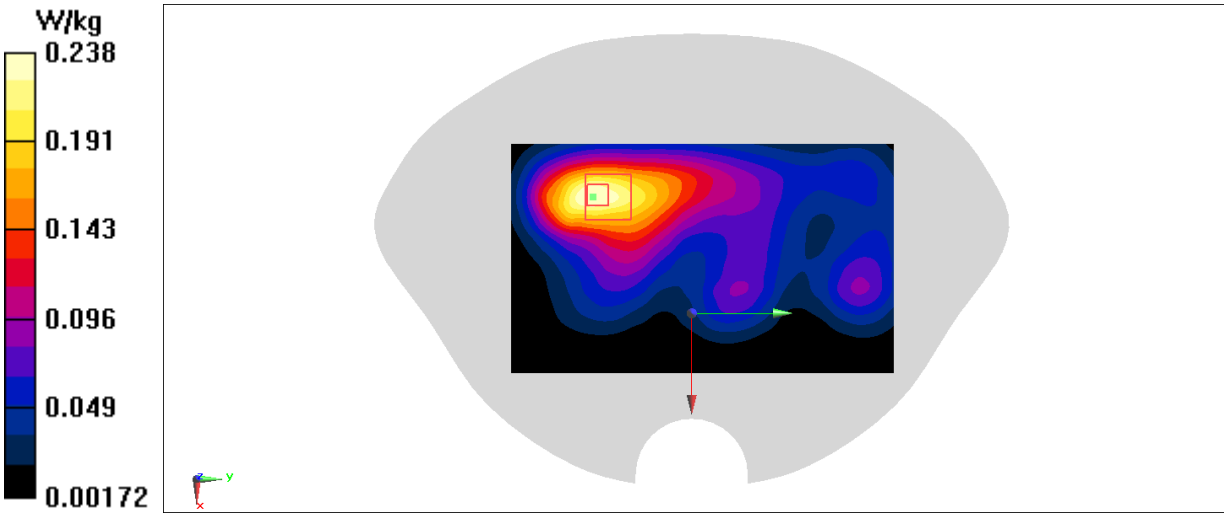


Fig A.36

WLAN5G_CH136 Left Cheek
Date: 9/24/2021
Electronics: DAE4 Sn1331
Medium: head 5GHz
Medium parameters used: f = 5680 MHz; σ = 5.047 S/m; ε_r = 34.172;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WLAN5G 5680 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.68,4.68,4.68)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.46 W/kg

Zoom Scan (9x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.882 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.26 W/kg
SAR(1 g) = 0.868 W/kg; SAR(10 g) = 0.259 W/kg
Maximum value of SAR (measured) = 2.37 W/kg

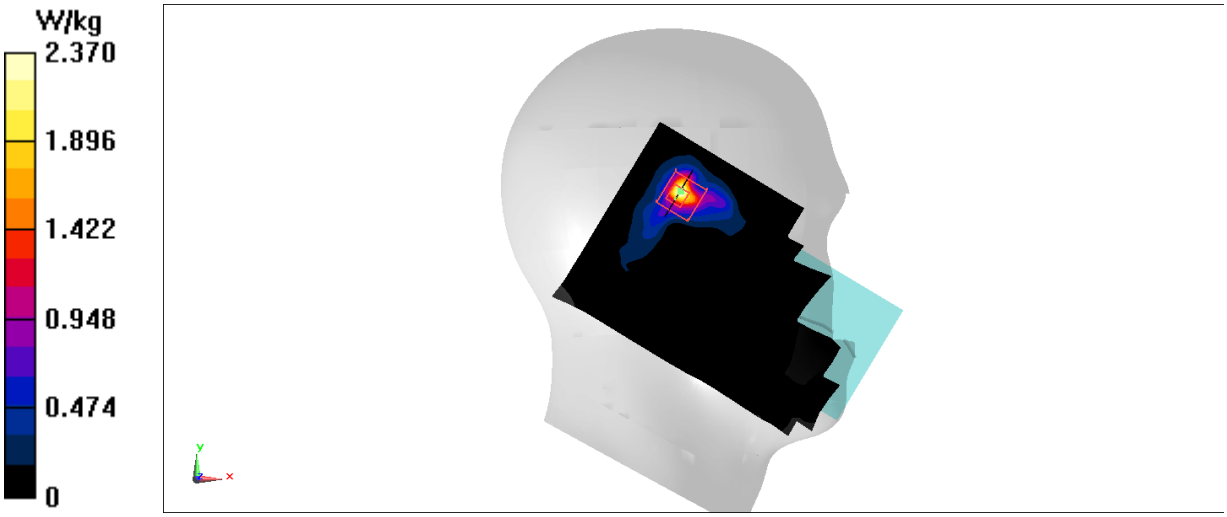


Fig A.37

WLAN5G_CH128 Rear 10mm
Date: 9/24/2021
Electronics: DAE4 Sn1331
Medium: head 5GHz
Medium parameters used: f = 5640 MHz; σ = 5.291 S/m; ε_r = 34.959;ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC, Liquid Temperature: 22.5ºC
Communication System: WLAN5G 5640 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(4.68,4.68,4.68)

Area Scan (121x211x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.633 W/kg

Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 3.840 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.293 W/kg; SAR(10 g) = 0.117 W/kg
Maximum value of SAR (measured) = 0.671 W/kg

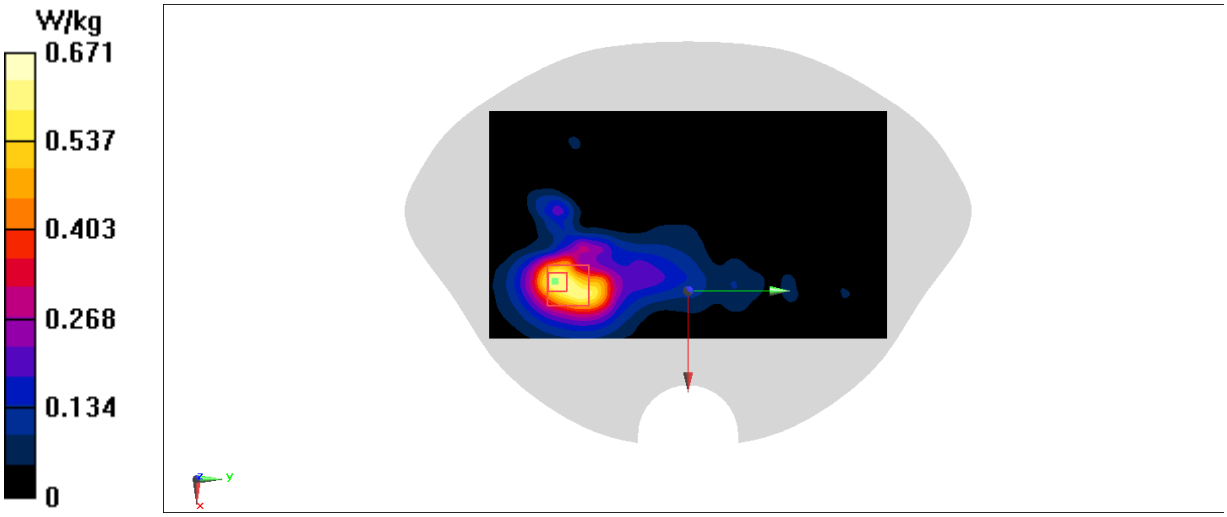
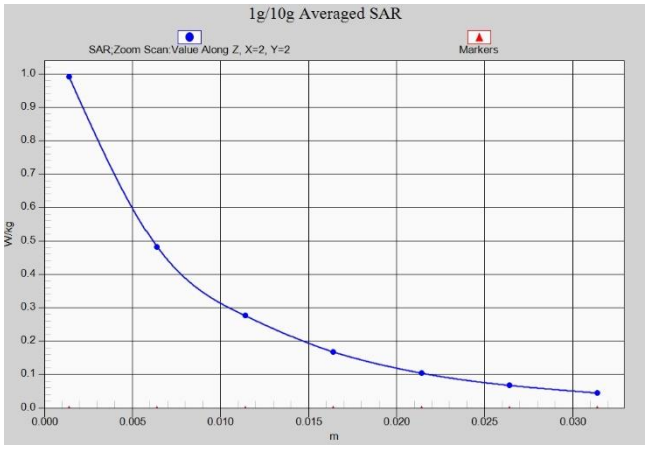
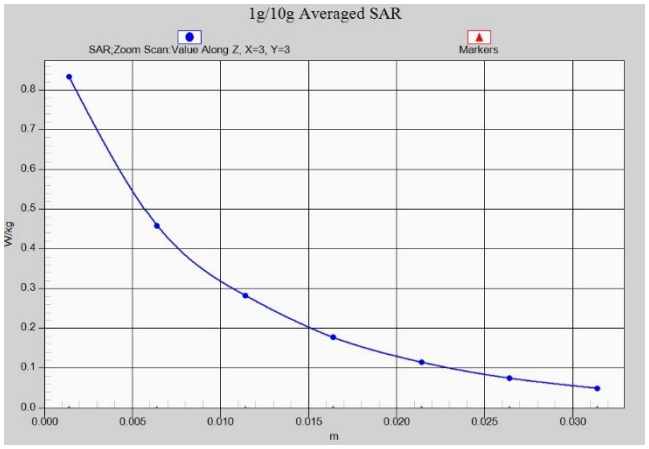


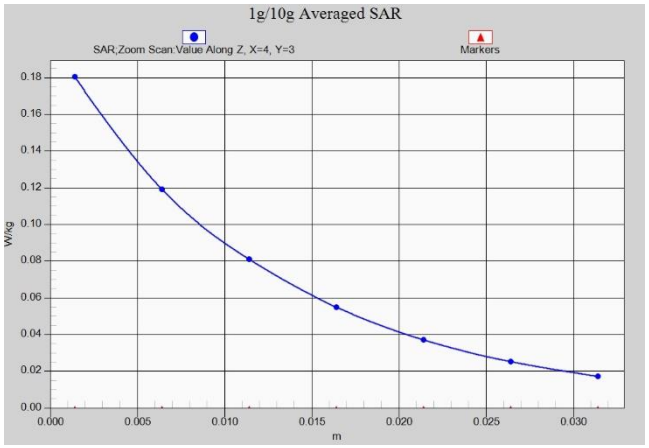
Fig A.38



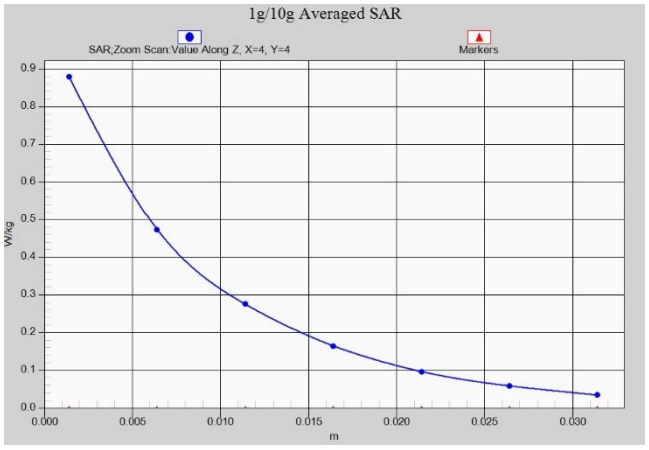
Z-Scan at power reference point (GSM850)



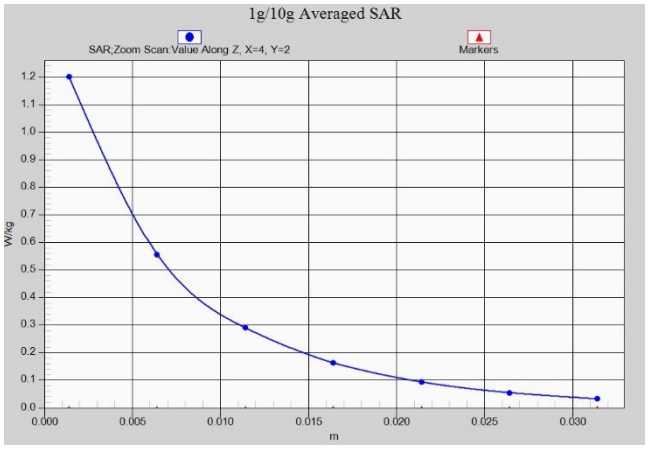
Z-Scan at power reference point (GSM850)



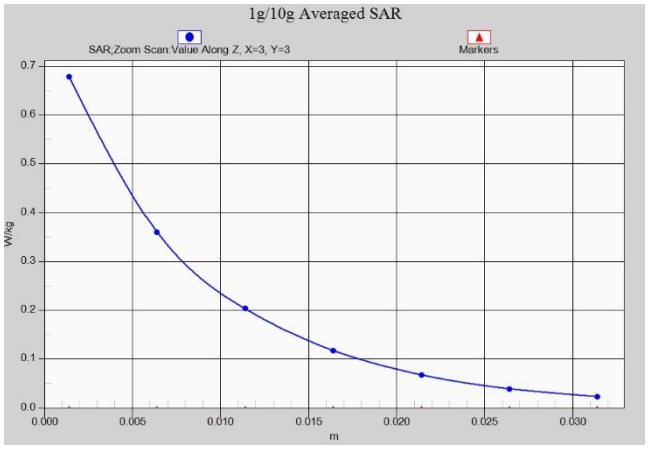
Z-Scan at power reference point (GSM1900)



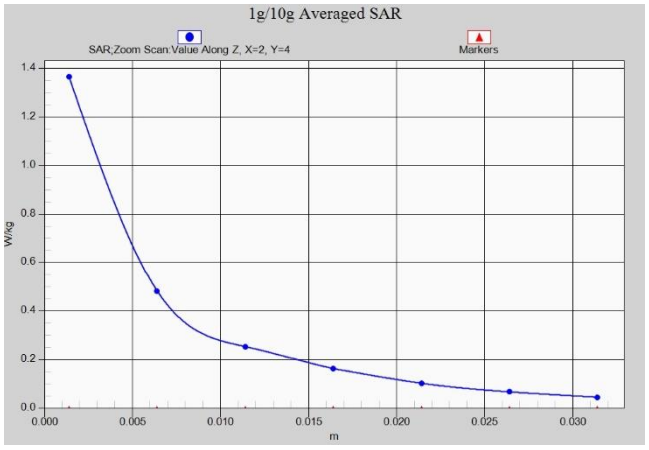
Z-Scan at power reference point (GSM1900)



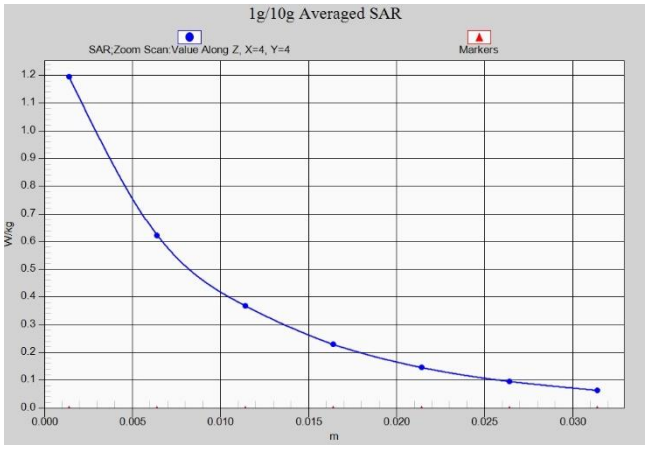
Z-Scan at power reference point (WCDMA1900)



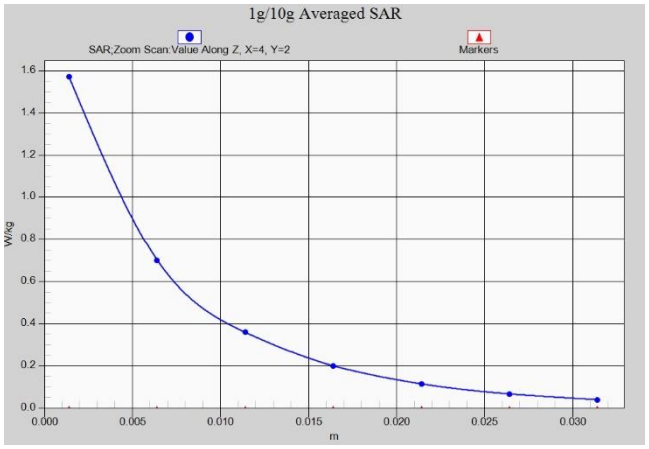
Z-Scan at power reference point (WCDMA1900)



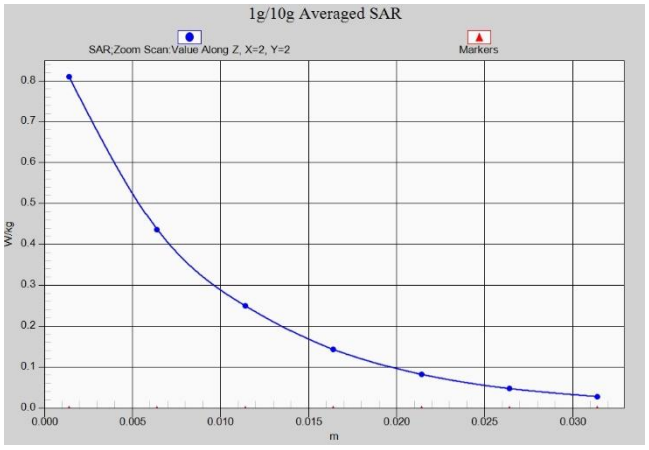
Z-Scan at power reference point (WCDMA850)



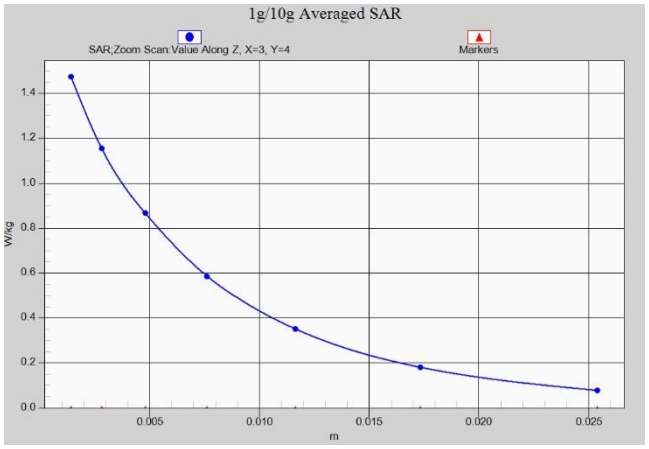
Z-Scan at power reference point (WCDMA850)



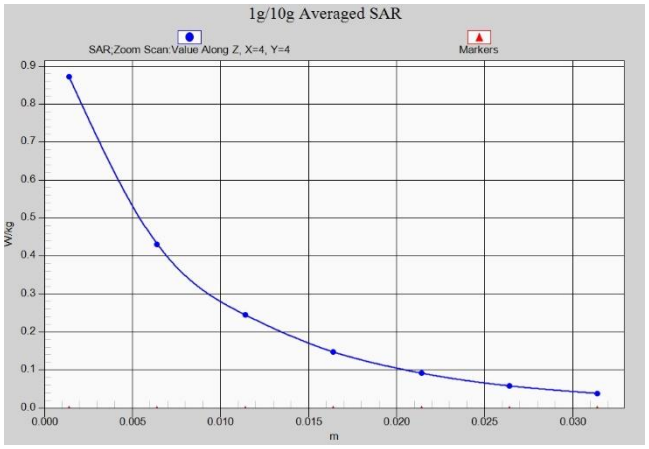
Z-Scan at power reference point (LTEB2)



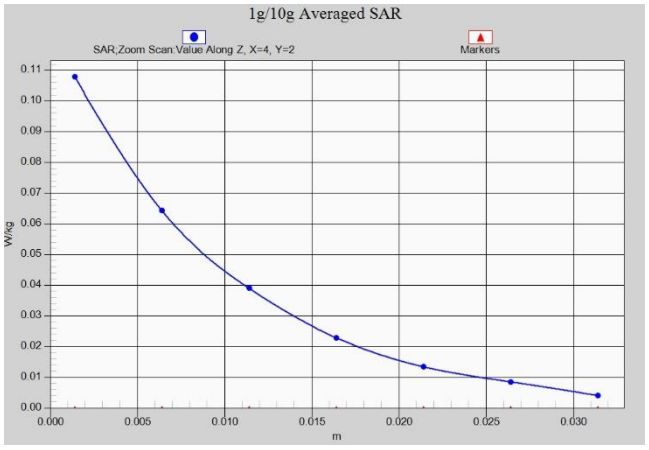
Z-Scan at power reference point (LTEB2)



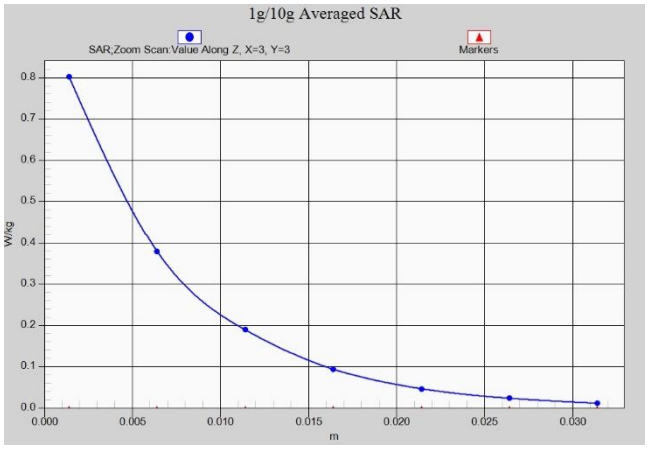
Z-Scan at power reference point (LTEB5)



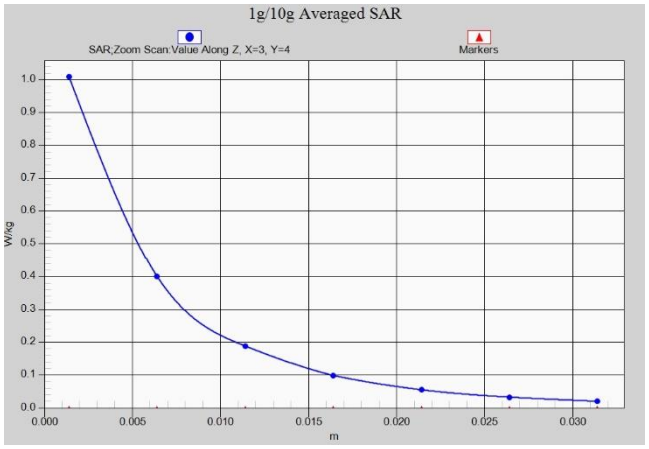
Z-Scan at power reference point (LTEB5)



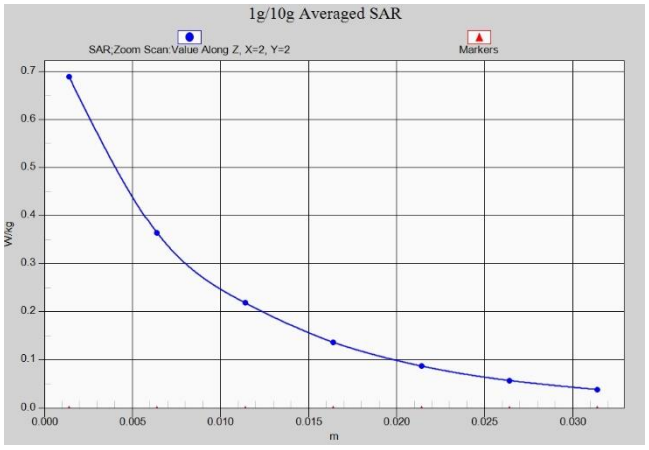
Z-Scan at power reference point (LTEB7)



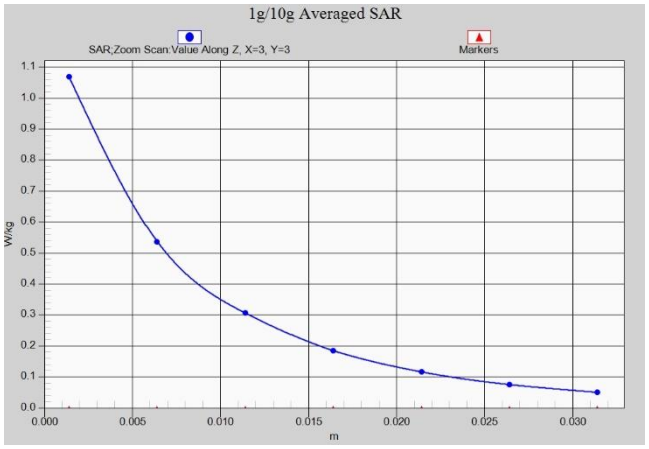
Z-Scan at power reference point (LTEB7)



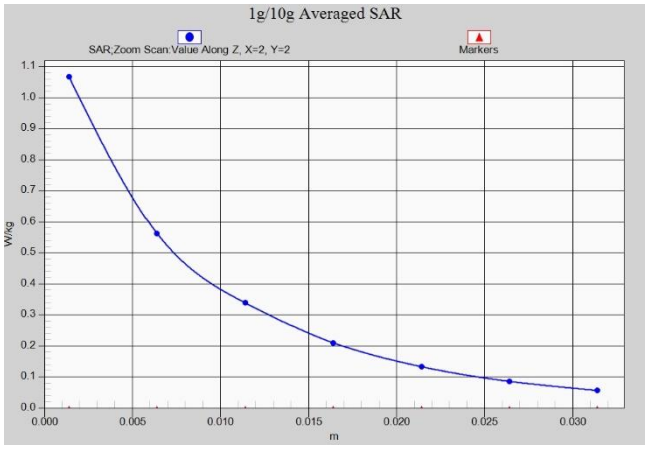
Z-Scan at power reference point (LTEB12)



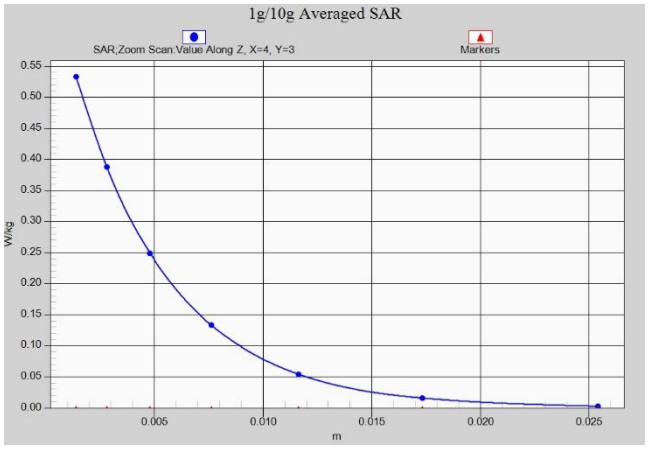
Z-Scan at power reference point (LTEB12)



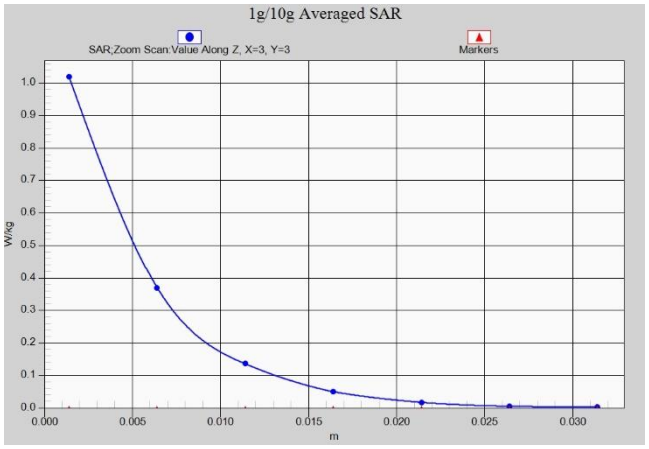
Z-Scan at power reference point (LTEB13)



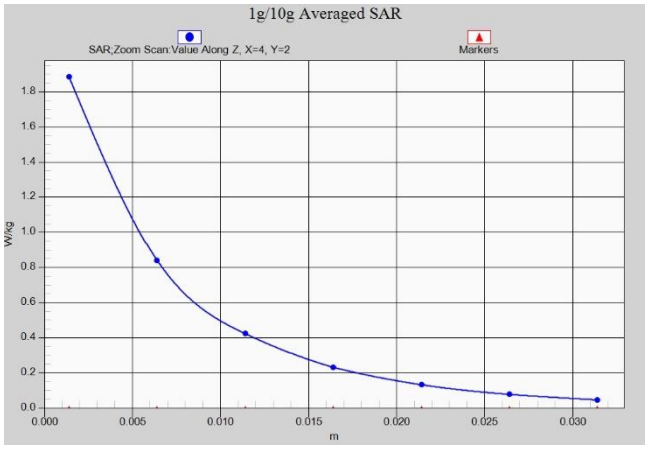
Z-Scan at power reference point (LTEB13)



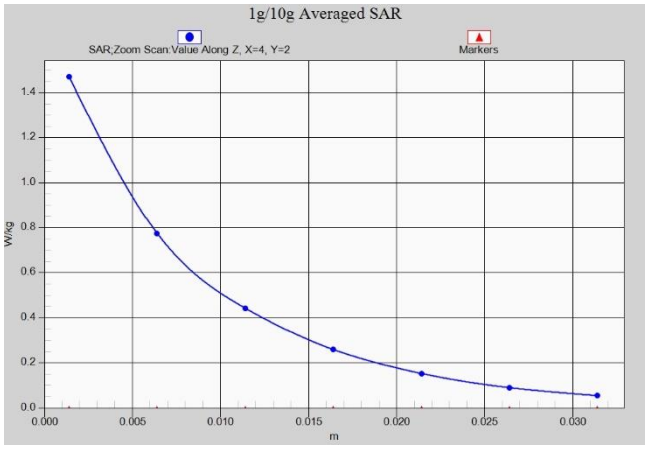
Z-Scan at power reference point (LTEB48)



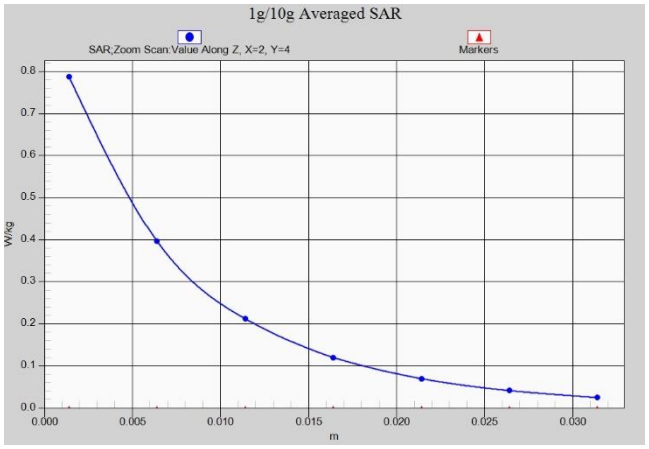
Z-Scan at power reference point (LTEB48)



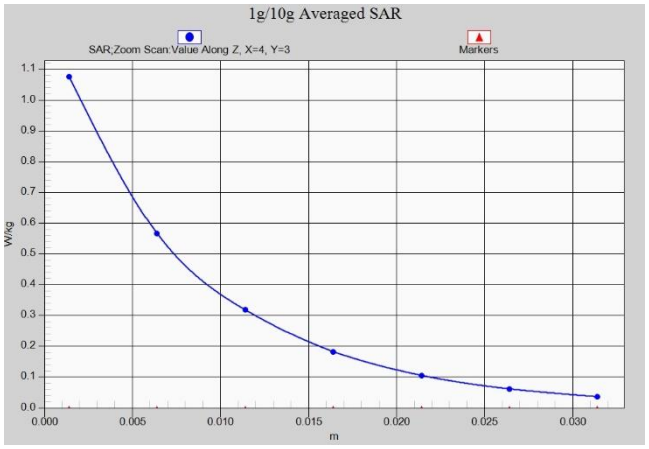
Z-Scan at power reference point (LTEB66)



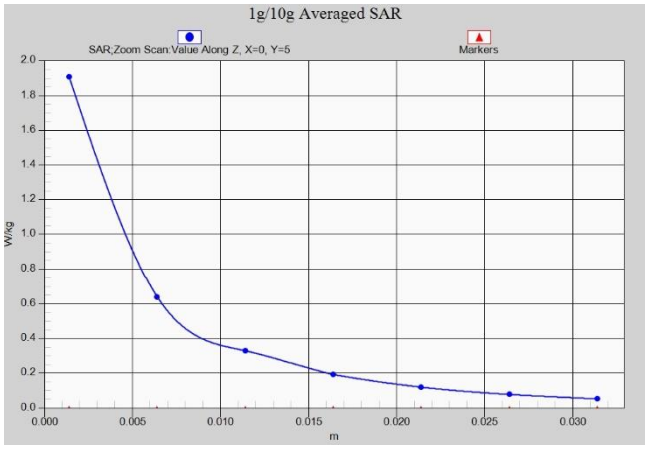
Z-Scan at power reference point (LTEB66)



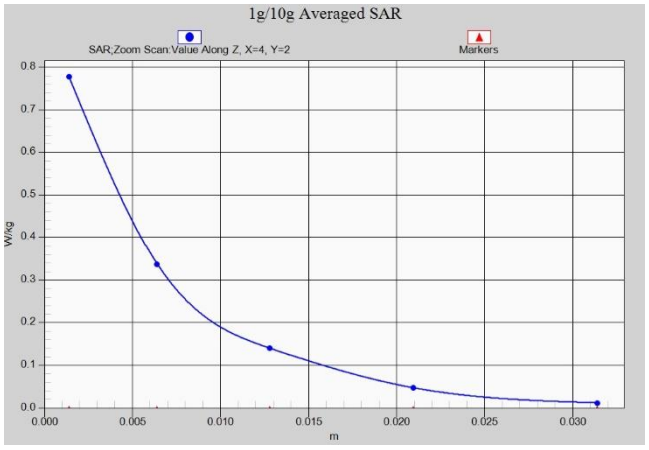
Z-Scan at power reference point (n2)



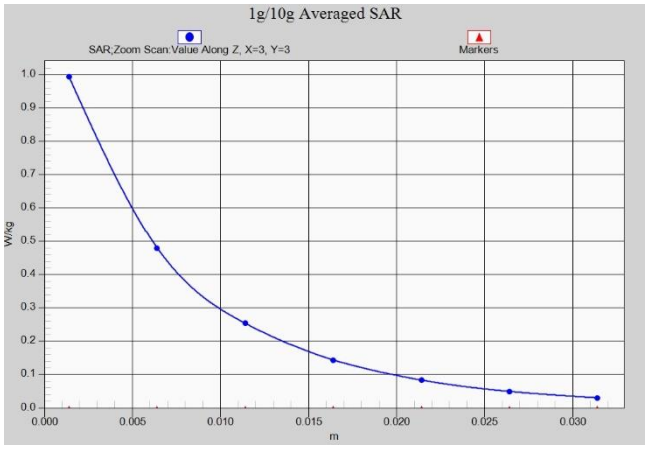
Z-Scan at power reference point (n2)



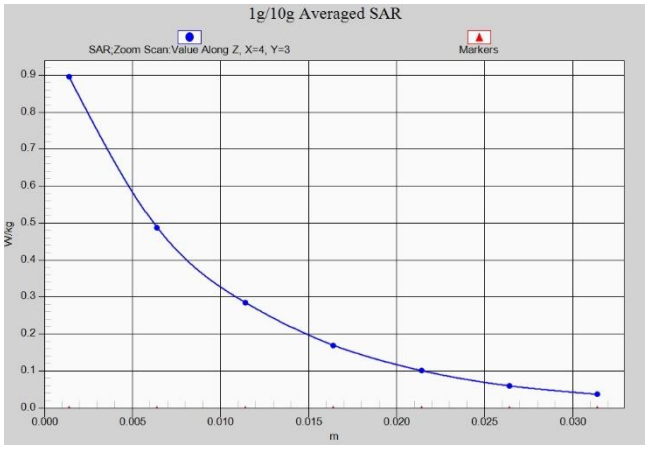
Z-Scan at power reference point (n5)



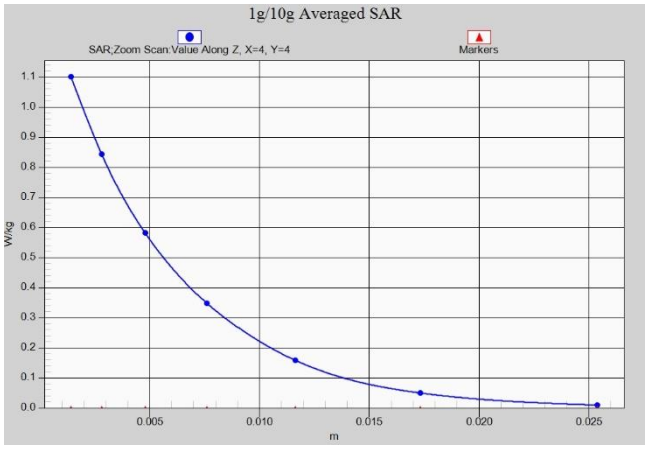
Z-Scan at power reference point (n5)



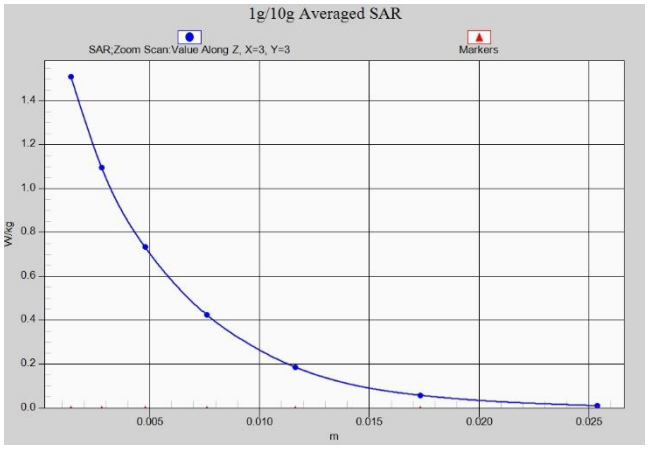
Z-Scan at power reference point (n66)



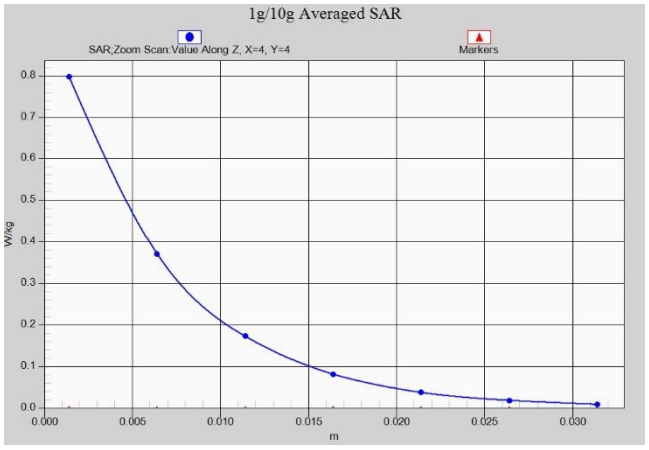
Z-Scan at power reference point (n66)



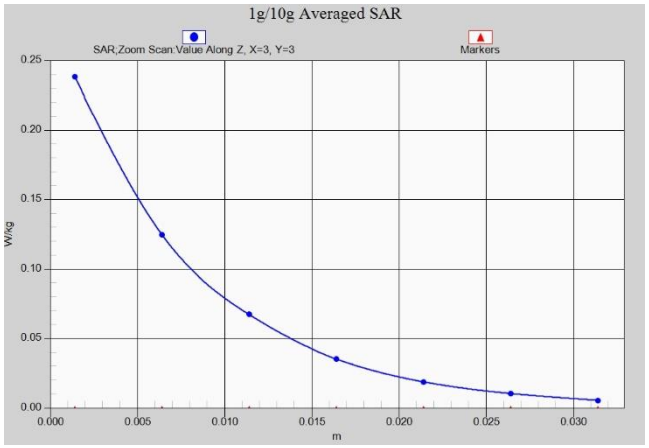
Z-Scan at power reference point (n77)



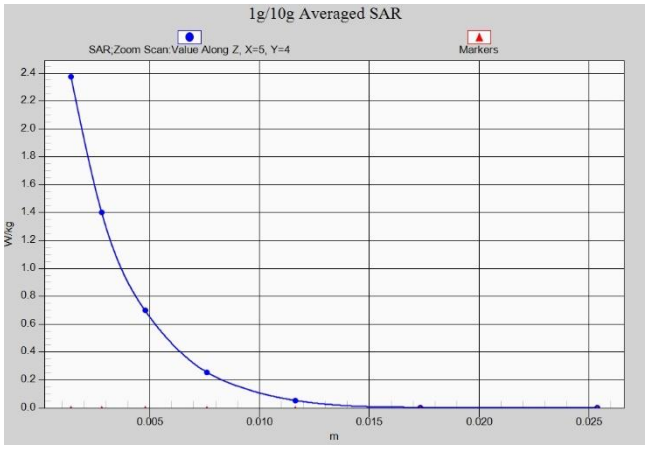
Z-Scan at power reference point (n77)



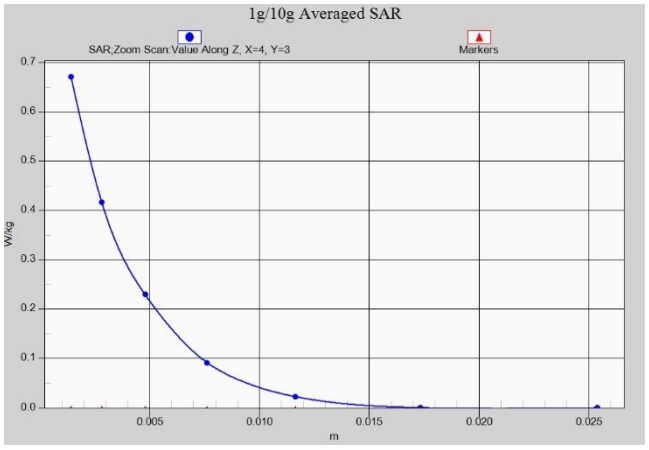
Z-Scan at power reference point (WIFI2.4G)



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



Z-Scan at power reference point (WIFI5G)



Z-Scan at power reference point (WIFI5G)

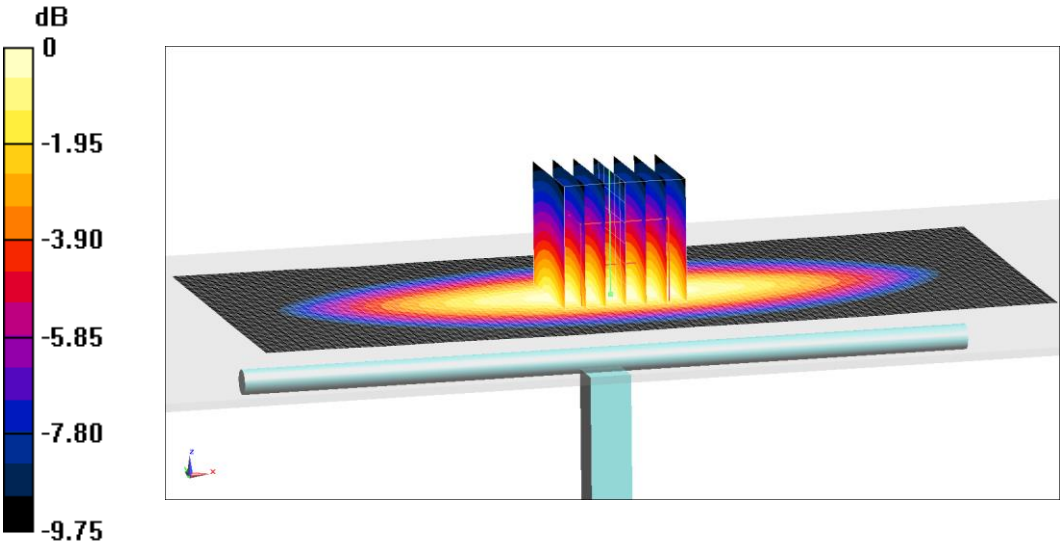
ANNEX B System Verification Results

750 MHz

Date: 9/15/2021
Electronics: DAE4 Sn1331
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ =0.8281 mho/m; ε_r = 43.88; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 60.43 V/m; Power Drift = 0.02
Fast SAR: SAR(1 g) = 2.08 W/kg; SAR(10 g) = 1.4 W/kg
Maximum value of SAR (interpolated) = 2.78 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =60.43 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.29 W/kg
SAR(1 g) = 2.13 W/kg; SAR(10 g) = 1.42 W/kg
Maximum value of SAR (measured) = 2.9 W/kg



0 dB = 2.9 W/kg = 4.62 dB W/kg

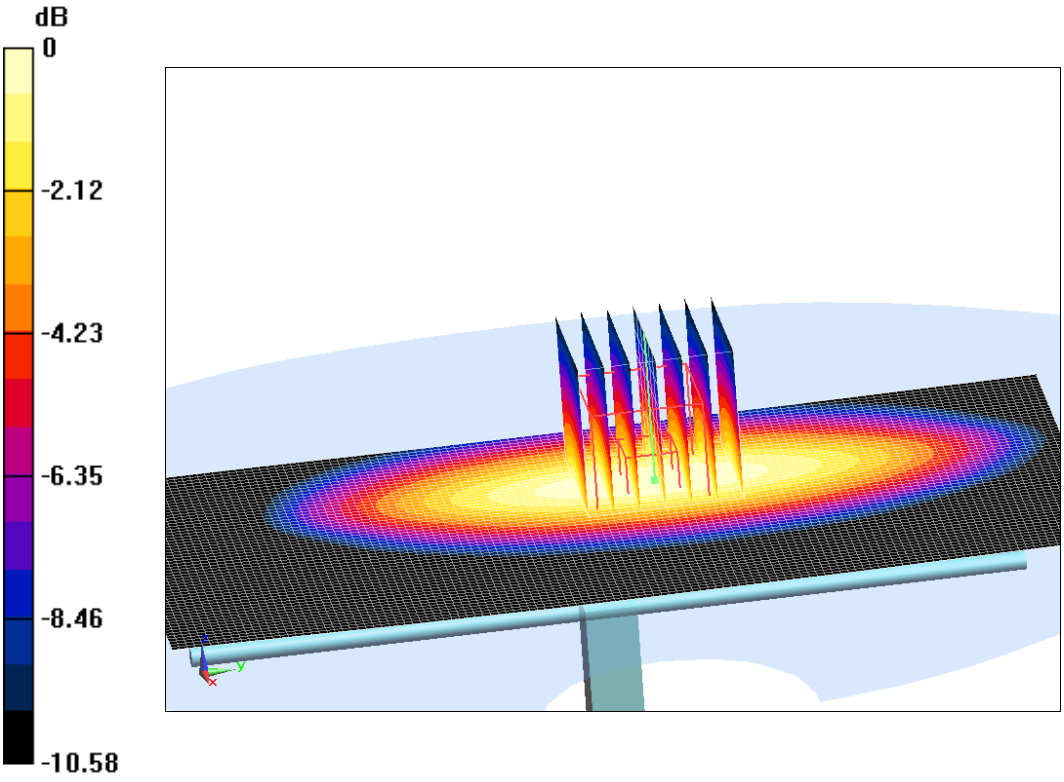
Fig.B.1 validation 750 MHz 250mW

835 MHz

Date: 9/16/2021
Electronics: DAE4 Sn1331
Medium: Head 835 MHz
Medium parameters used: f = 835 MHz; σ =0.8613 mho/m; ε_r = 43.59; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(10.36,10.36,10.36)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 63.55 V/m; Power Drift = -0.1
Fast SAR: SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.53 W/kg
Maximum value of SAR (interpolated) = 3.16 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =63.55 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 3.59 W/kg
SAR(1 g) = 2.48 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (measured) = 3.29 W/kg



0 dB = 3.29 W/kg = 5.17 dB W/kg

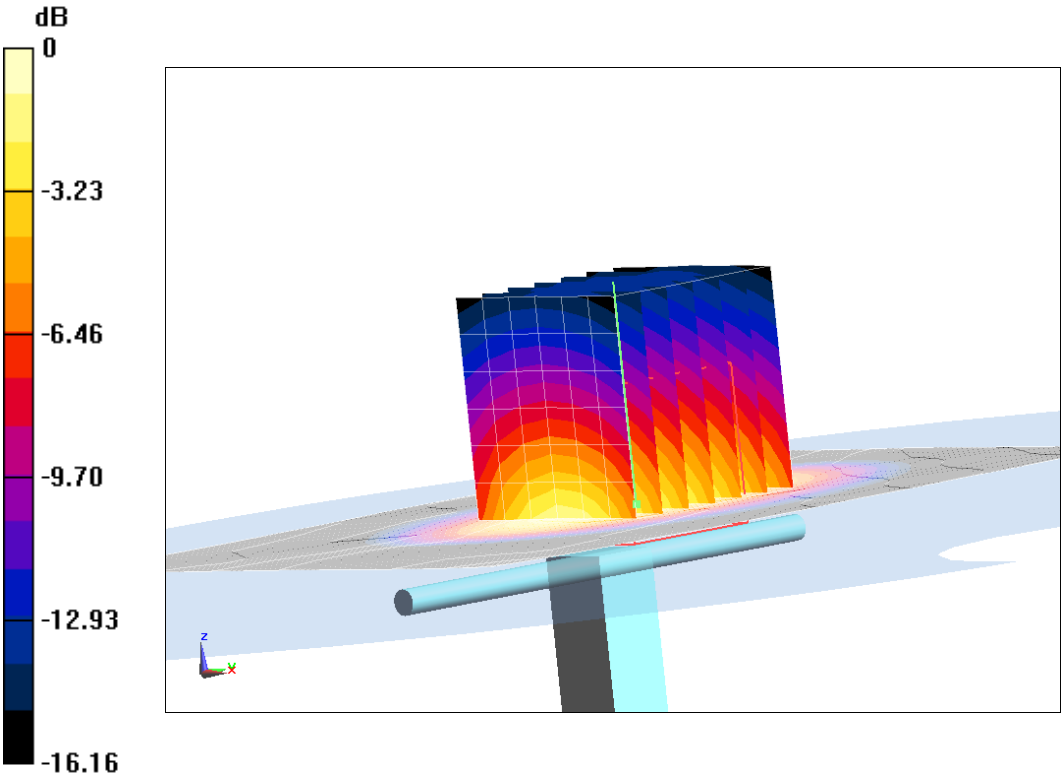
Fig.B.2 validation 835 MHz 250mW

1750 MHz

Date: 9/17/2021
Electronics: DAE4 Sn1331
Medium: Head 1750 MHz
Medium parameters used: f = 1750 MHz; σ =1.331 mho/m; ε_r = 41.45; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(8.14,8.14,8.14)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 106.74 V/m; Power Drift = -0.02
Fast SAR: SAR(1 g) = 9.21 W/kg; SAR(10 g) = 4.83 W/kg
Maximum value of SAR (interpolated) = 14.29 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =106.74 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.95 W/kg
SAR(1 g) = 9.13 W/kg; SAR(10 g) = 4.84 W/kg
Maximum value of SAR (measured) = 13.92 W/kg



0 dB = 13.92 W/kg = 11.44 dB W/kg

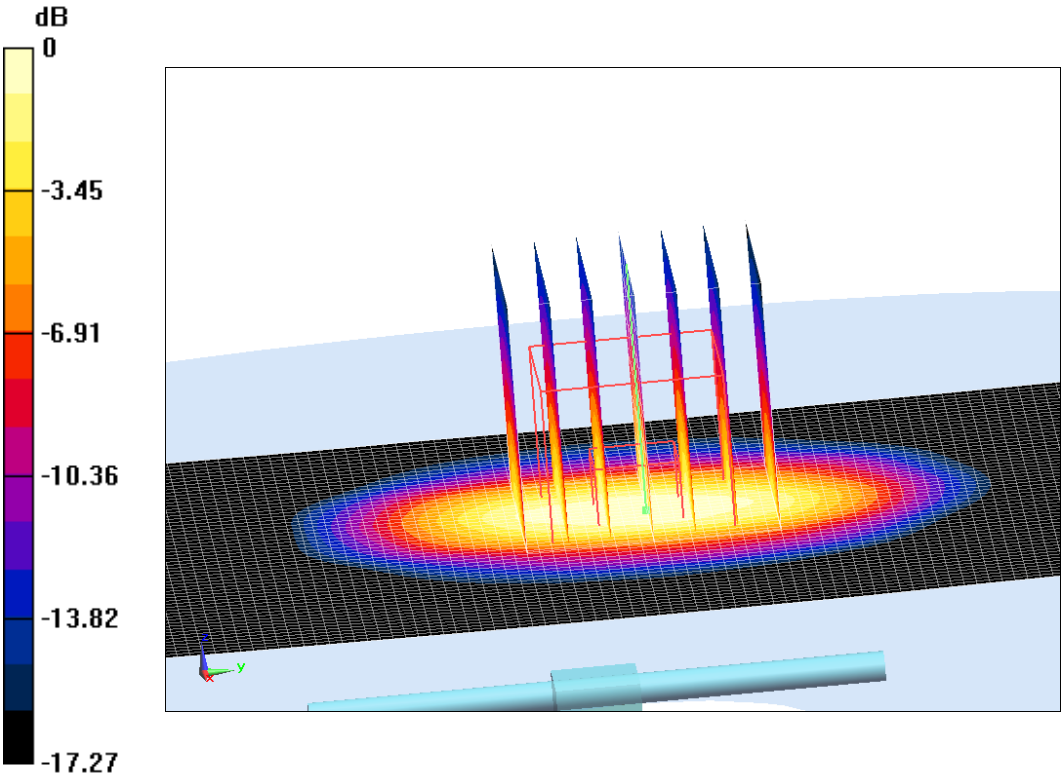
Fig.B.3 validation 1750 MHz 250mW

1900 MHz

Date: 9/18/2021
Electronics: DAE4 Sn1331
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ =1.421 mho/m; ε_r = 41.27; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.88,7.88,7.88)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 110.03 V/m; Power Drift = 0.06
Fast SAR: SAR(1 g) = 9.84 W/kg; SAR(10 g) = 5.12 W/kg
Maximum value of SAR (interpolated) = 15.25 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =110.03 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 18.49 W/kg
SAR(1 g) = 9.93 W/kg; SAR(10 g) = 5.08 W/kg
Maximum value of SAR (measured) = 15.28 W/kg



0 dB = 15.28 W/kg = 11.84 dB W/kg

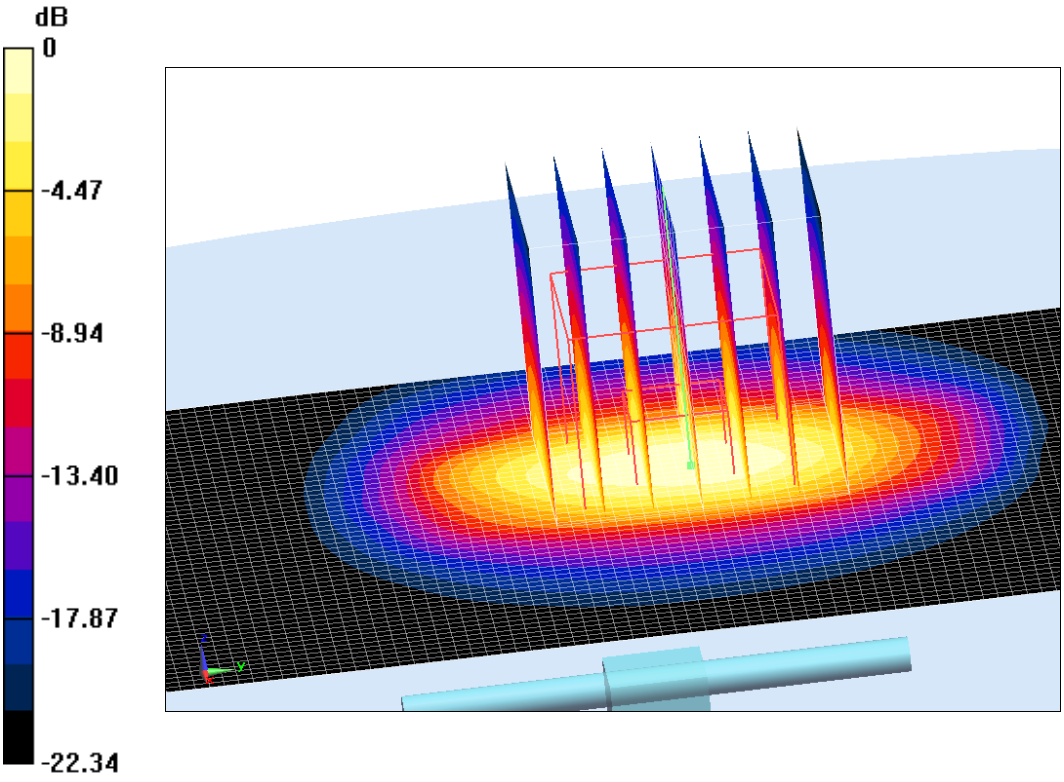
Fig.B.4 validation 1900 MHz 250mW

2450 MHz

Date: 9/19/2021
Electronics: DAE4 Sn1331
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; σ =1.83 mho/m; ε_r = 40.49; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.35,7.35,7.35)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 117.64 V/m; Power Drift = 0.01
Fast SAR: SAR(1 g) = 13.33 W/kg; SAR(10 g) = 6.03 W/kg
Maximum value of SAR (interpolated) = 21.72 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =117.64 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 25.72 W/kg
SAR(1 g) = 13.27 W/kg; SAR(10 g) = 6.1 W/kg
Maximum value of SAR (measured) = 21.74 W/kg



0 dB = 21.74 W/kg = 13.37 dB W/kg

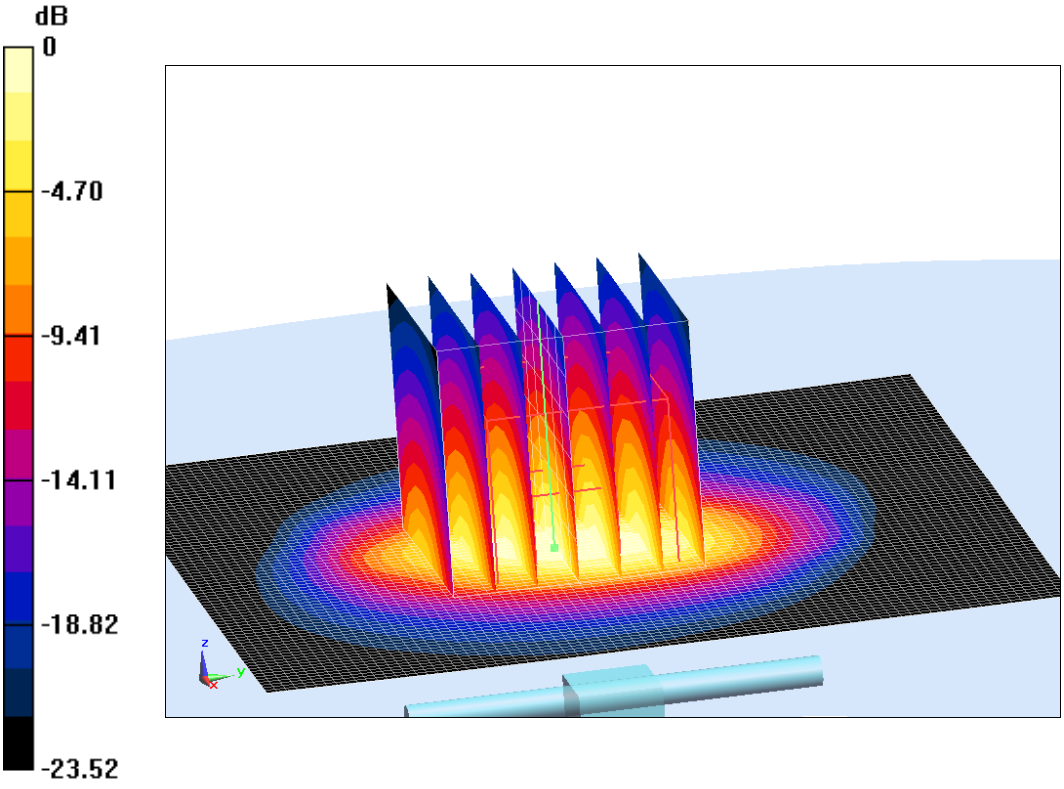
Fig.B.5 validation 2450 MHz 250mW

2600 MHz

Date: 9/20/2021
Electronics: DAE4 Sn1331
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.96 mho/m; ε_r = 40.16; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(7.11,7.11,7.11)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 121.77 V/m; Power Drift = 0.07
Fast SAR: SAR(1 g) = 14.14 W/kg; SAR(10 g) = 6.32 W/kg
Maximum value of SAR (interpolated) = 24.43 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =121.77 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 29.65 W/kg
SAR(1 g) = 14.31 W/kg; SAR(10 g) = 6.28 W/kg
Maximum value of SAR (measured) = 24.23 W/kg



0 dB = 24.23 W/kg = 13.84 dB W/kg

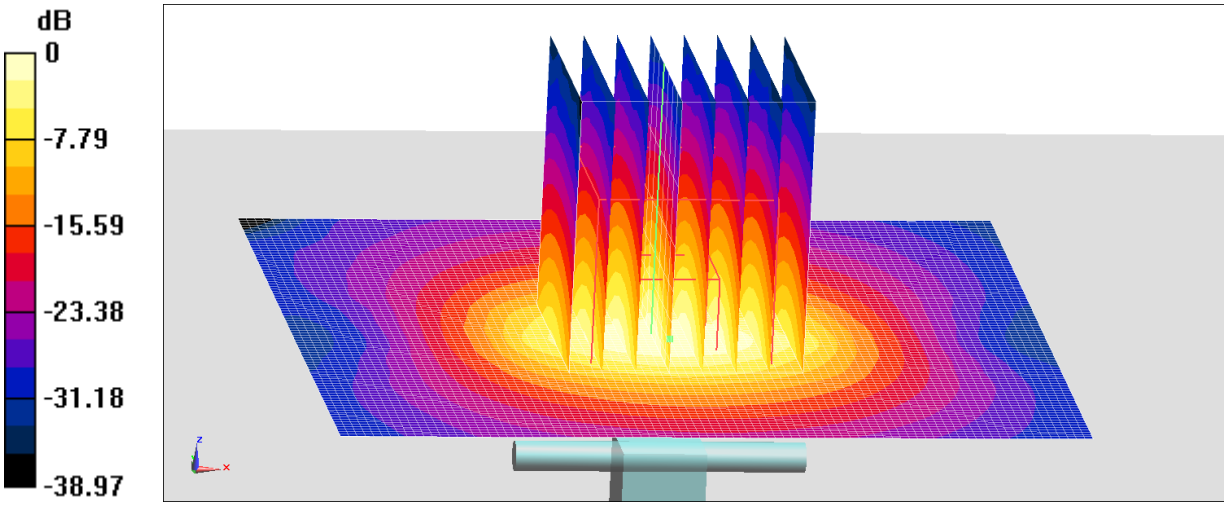
Fig.B.6 validation 2600 MHz 250mW

3700 MHz

Date: 9/21/2021
Electronics: DAE4 Sn1331
Medium: Head 3700 MHz
Medium parameters used: f = 3700 MHz; σ =2.975 mho/m; ε_r = 37.82; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 3700 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(6.42,6.42,6.42)

System Performance Check/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.0 W/kg

System Performance Check/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.57 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 13.25 W/kg
SAR(1 g) = 6.38 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 7.32 W/kg



0 dB = 7.32 W/kg = 8.65 dBW/kg

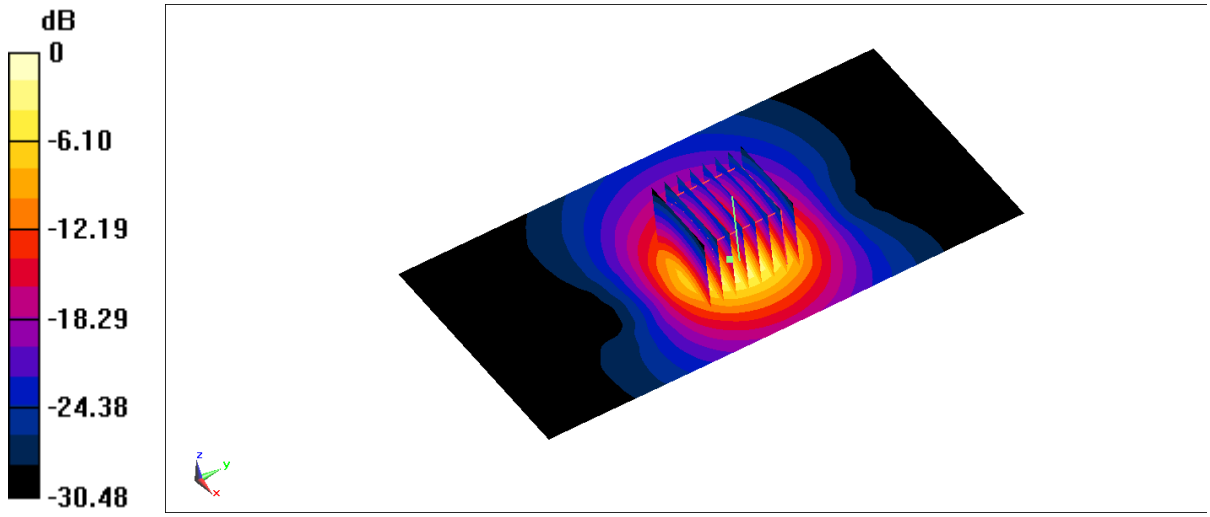
Fig.B.7 validation 3700 MHz 100mW

3900 MHz

Date: 9/22/2021
Electronics: DAE4 Sn1331
Medium: Head 3700 MHz
Medium parameters used: f = 3900 MHz; σ =3.162 mho/m; ε_r = 37.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.9ºC Liquid Temperature: 22.5ºC
Communication System: CW Frequency: 3900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN7548 ConvF(6.27,6.27,6.27)

System Performance Check/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.07 W/kg

System Performance Check/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 60.15 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 6.75 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 8.05 W/kg



0 dB = 8.05 W/kg = 9.06 dBW/kg

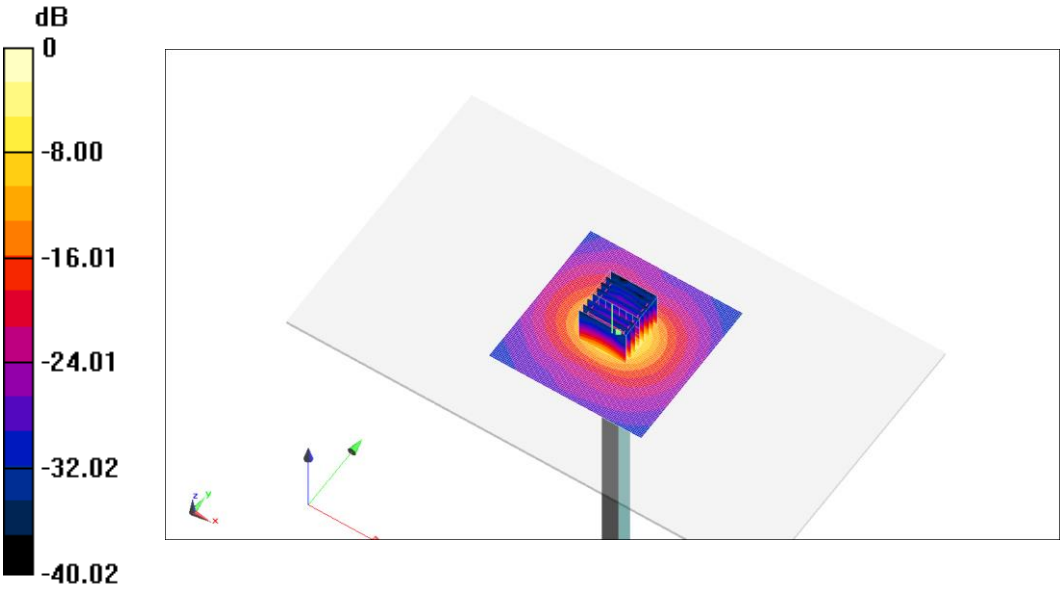
Fig.B.8 validation 3900 MHz 100mW

5250 MHz

Date: 9/23/2021
Electronics: DAE4 Sn1331
Medium: Head 5250 MHz
Medium parameters used: f = 5250 MHz; σ =4.53 mho/m; ε_r = 34.7; 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 – SN7548 ConvF(5.05,5.05,5.05)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.52 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =78.88 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 28.08 W/kg
SAR(1 g) = 7.81 W/kg; SAR(10 g) = 2.19 W/kg
Maximum value of SAR (measured) = 7.96 W/kg



0 dB = 7.96 W/kg = 9.01 dB W/kg

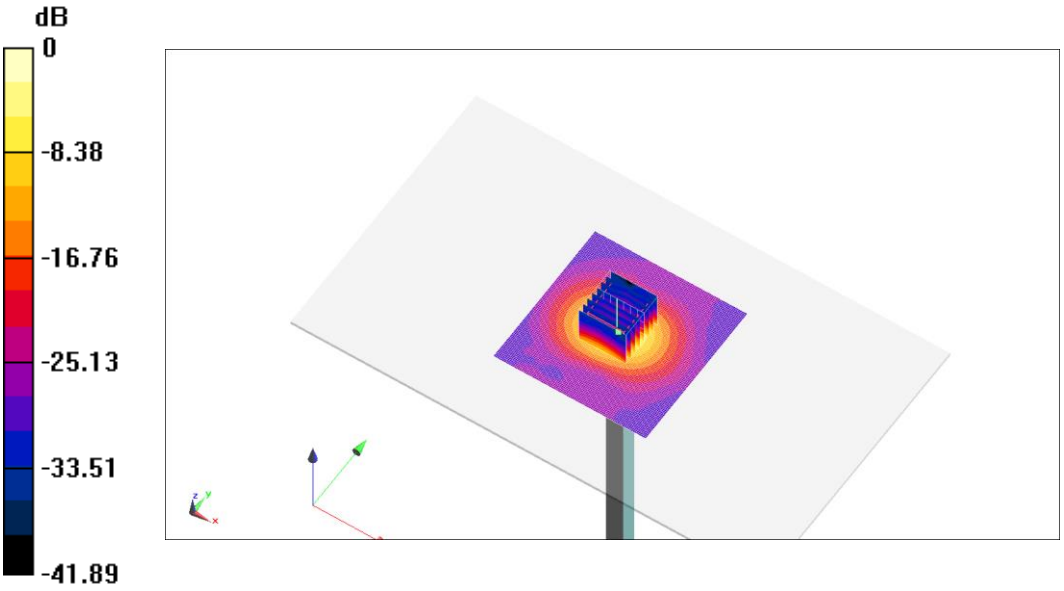
Fig.B.9 validation 5250 MHz 100mW

5600 MHz

Date: 9/24/2021
Electronics: DAE4 Sn1331
Medium: Head 5600 MHz
Medium parameters used: f = 5600 MHz; σ =4.899 mho/m; ε_r = 34.08; 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 – SN7548 ConvF(4.68,4.68,4.68)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.29 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =77.93 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 31.75 W/kg
SAR(1 g) = 8.15 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 8.36 W/kg



0 dB = 8.36 W/kg = 9.22 dB W/kg

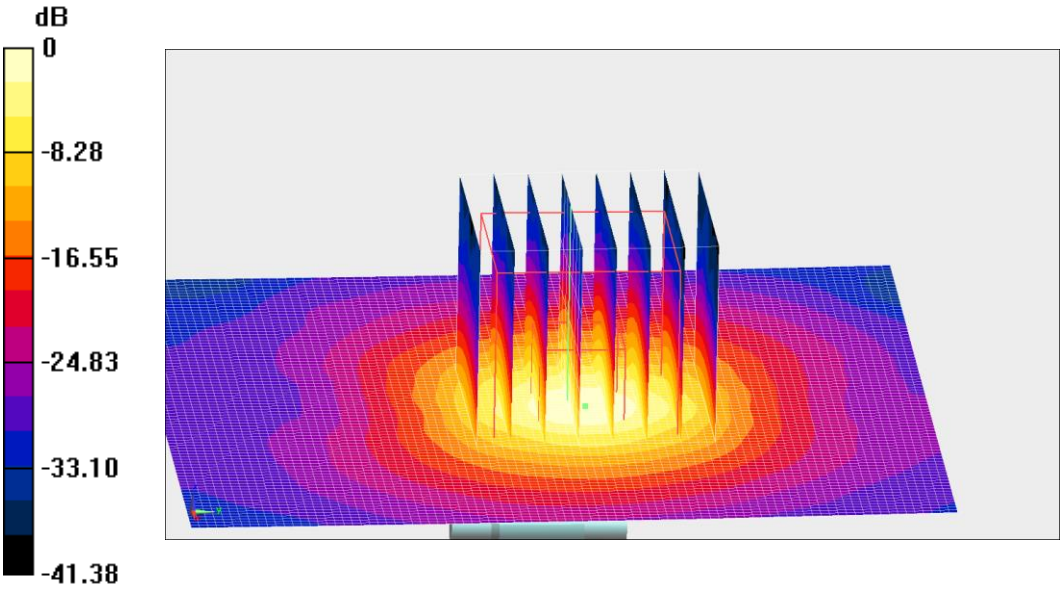
Fig.B.10 validation 5600 MHz 100mW

5750 MHz

Date: 9/25/2021
Electronics: DAE4 Sn1331
Medium: Head 5750 MHz
Medium parameters used: f = 5750 MHz; σ =5.063 mho/m; ε_r = 33.82; 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 – SN7548 ConvF(4.73,4.73,4.73)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.87 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value =75.32 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 32.2 W/kg
SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 8.11 W/kg



0 dB = 8.11 W/kg = 9.09 dB W/kg

Fig.B.11 validation 5750 MHz 100mW