SAR TEST REPORT

Applicant	MeiG Smart Technology Co., Ltd
FCC ID	2APJ4-MT579
Product	4G Mobile WiFi
Brand	MEIGLink
Model	MT579
Report No.	R2402A0143-S1
Issue Date	July 1, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **IEEE 1528-2013, ANSI C95.1: 1992, IEEE C95.1: 1991.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Table of Contents

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
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1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25°C
Relative humidity	Min. = 20%, Max. = 80%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)
	1g SAR Hotspot (Separation 10mm)
WCDMA Band II	1.144
WCDMA Band IV	0.916
WCDMA Band V	0.968
LTE FDD 2	1.120
LTE FDD 5	1.141
LTE FDD 7	1.403
LTE TDD 40	0.813
LTE TDD 41	0.674
LTE FDD 66 (LTE FDD 4)	1.245
Wi-Fi (2.4G)	0.396
Date of Testing: March 4, 2024 ~April 10, 2024 and June 22, 2024 Date of Sample Received: February 22, 2024	
Note: 1. The device is in compliance with SAR for Uncontrolled Environment /General Population exposure limits (1.6 W/kg) specified in ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013. 2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.	

Table 2: Highest Simultaneous Transmission SAR

Exposure Configuration	1g SAR Hotspot (Separation 10mm)
Highest Simultaneous Transmission SAR (W/kg)	1.576
Note: The detail for simultaneous transmission consideration is described in chapter 10.3.	

1) According to TCB workshop October, 2014 RF Exposure Procedures Update (Overlapping LTE Bands):
   a) Main Antenna SAR for LTE Band 4 (Frequency range 1710-1755 MHz) is covered by LTE Band 66 (Frequency range: 1710-1780 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.

The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits according to the FCC rule §2.1093, the ANSI C95.1: 1992/IEEE C95.1: 1991, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.

3 Description of Equipment Under Test

Client Information

Applicant	MeiG Smart Technology Co., Ltd
Applicant address	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen, China
Manufacturer	MeiG Smart Technology Co., Ltd
Manufacturer address	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen, China

General Technologies

EUT Stage	Identical Prototype
Model	MT579
Lab internal SN	R2402A0143/S01
Hardware Version	MT579_PCB_V1.00
Software Version	MT579-SA_4.0.2_EQ100
Antenna Type	Internal Antenna
Wi-Fi Hotspot	Wi-Fi 2.4G
Power Class	WCDMA Band II/IV/V: 3 LTE FDD 2/4/5/7/66: 3 LTE TDD 40/41: 3
Power Level	WCDMA Band II/IV/V: all up bits LTE FDD 2/4/5/7/66: max power LTE TDD 40/41: max power
EUT Accessory	
Battery 1	Manufacturer: Shenzhen Aerospace Electronic Co., Ltd. Model: MG584463
Battery 2	Manufacturer: Zhongshan Tianmao Battery Co.. Ltd Model: MG584463
Adapter	Manufacturer: Dongguan Sunun Power Co., Ltd Model: SA68-050100U
USB Cable	Manufacturer: Shenzhen Gaohangda Technology Co., LTD Model: /
Note: The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.	

Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)	Rx (MHz)
WCDMA	Band II	QPSK, 16QAM	HSDPA UE Category:14 HSUPA UE Category:6 HSPA+ Category:14	1850 ~ 1910	1930 ~ 1990
	Band IV			1710 ~ 1755	2110 ~ 2155
	Band V			824 ~ 849	869 ~ 894
LTE	FDD 2	QPSK, 16QAM	Category 4	1850 ~ 1910	1930 ~ 1990
	FDD 4			1710 ~ 1755	2110 ~ 2155
	FDD 5			824 ~ 849	869 ~ 894
	FDD 7			2500 ~ 2570	2620 ~ 2690
	TDD 40			2300 ~ 2400	2300 ~ 2400
	TDD 41			2496 ~ 2690	2496 ~ 2690
	FDD 66			1710 ~ 1780	2110 ~ 2180
	Does this device support Carrier Aggregation (CA) ☐Yes ☒No				
	Does this device support SV-LTE (1xRTT-LTE)? ☐Yes ☒No				
Wi-Fi	2.4G	DSSS, OFDM	802.11b/g/n HT20	2412 ~ 2462	2412 ~ 2462
		OFDM	802.11n HT40	2422 ~ 2452	2422 ~ 2452
	Does this device support MIMO ☒Yes(2TX, 2RX) ☐No				
Note: Radio equipment in band 40 is only allowed to operate from 2305 MHz to 2315 MHz for Subset 1; 2350 MHz to 2360 MHz for Subset 2 for the transmitter and receiver.					

4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528- 2013, ANSI C95.1: 1992, IEEE C95.1: 1991, the following FCC Published RF exposure KDB procedures:

Reference Standards

KDB 248227 D01 802.11Wi-Fi SAR v02r02
KDB 447498 D01 General RF Exposure Guidance v06
KDB 690783 D01 SAR Listings on Grants v01r03
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D07 UMPC Mini Tablet v01r02

5 Operational Conditions during Test

5.1 Test Positions

5.1.1 Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person’s face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

5.3 Test Configuration

5.3.1 WCDMA Test Configuration

5.3.1.1 3G SAR Test Reduction Procedure

The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations modes according to output power, exposure conditions and device operating capabilities. Maximum output power is verified by applying the applicable versions of 3GPP TS 34.121.

5.3.1.2 Body-worn Accessory SAR

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the EUT with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the EUT, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC

5.3.1.3 Release 5 HSDPA Test Configuration

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices” section of this document, for the highest SAR body-worn accessory exposure configuration in 12.2 kbps RMC. EUT with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 3: Subtests for WCDMA Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	0.0

3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI}= 8⇔A_{hs} = β_{hs}/β_c=30/15⇔β_{hs}=30/15*β_c

Note 2: CM=1 for β_c/β_d =12/15, β_{hs}/β_c=24/15.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to β_c=11/15 and β_d=15/15.

5.3.1.4 Release 6 HSUPA Test Configuration

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, for the highest body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in Table 2 and other applicable procedures described in the ‘WCDMA EUT’ and ‘Release 5 HSDPA Data Devices’ sections of this document

Table 4: Sub-Test 5 Setup for Release 6 HSUPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, ΔNACK and Δ_{CQI} = 8 ⇔ A_{hs} = β_{hs}/β_c = 30/15 ⇔β_{hs}= 30/15 *β_c.

Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c =24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.

Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

Table 5: HSUPA UE Category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCHTTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.
UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)

5.3.1.5 HSPA, HSPA+ Test Configuration

SAR test exclusion may apply to 3GPP Rel. 6 HSPA and Rel. 8 -HSDPA. When SAR measurement is required for HSPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PAG is required for equipment approval.
SAR test exclusion for HSPA and HSPA+ is determined according to the following:
1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.
2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.
3) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+:
a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121. Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.
b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.
c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements,

and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCI and AG index values.
4) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCI and AG index stability and output power conditions.

Table 6: HS-DSCH UE Category

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)
Category 2	5	3	7298	28800			
Category 3	5	2	7298	28800			
Category 4	5	2	7298	38400			
Category 5	5	1	7298	57600			
Category 6	5	1	7298	67200			
Category 7	10	1	14411	115200			
Category 8	10	1	14411	134400			
Category 9	15	1	20251	172800			
Category 10	15	1	27952	172800			
Category 11	5	2	3630	14400	QPSK		
Category 12	5	1	3630	28800			
Category 13	15	1	35280	259200	QPSK, 16QAM, 64QAM		
Category 14	15	1	42192	259200			
Category 15	15	1	23370	345600	QPSK, 16QAM		
Category 16	15	1	27952	345600			
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	–	
			23370	345600	–	QPSK, 16QAM	
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM	–	
			27952	345600	–	QPSK, 16QAM	
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM		
Category 20	15	1	42192	518400			
Category 21	15	1	23370	345600	-	-	QPSK, 16QAM
Category 22	15	1	27952	345600			
Category 23	15	1	35280	518400			QPSK, 16QAM, 64QAM
Category 24	15	1	42192	518400			

5.3.2 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to

3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest Channel Bandwidth Standalone SAR Test Requirements

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 for 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.

4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other Channel Bandwidth Standalone SAR Test Requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

5.3.3 Additional Requirements for TDD LTE Specification

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE Band supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table: Uplink-downlink configurations for uplink-downlink configurations and Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS) for Special subframe configurations.

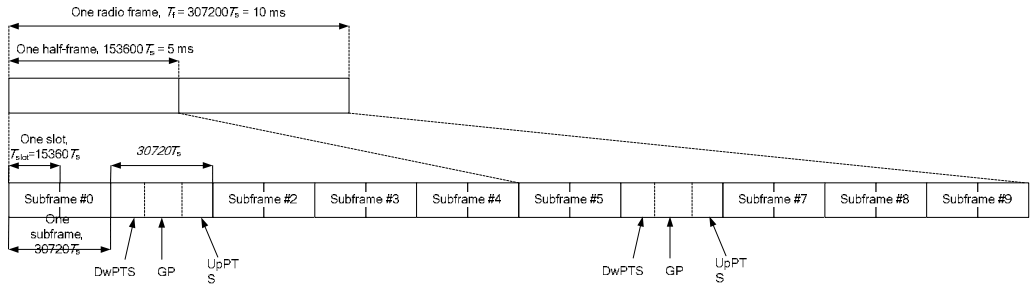


Figure 1: Frame structure type 2

Table 7: 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 8: 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

According to Figure 1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table: Uplink-downlink configurations:

Duty cycle = (30720Ts*Ups + Uplink Component*Specials)/(307200Ts)

About the uplink component of Special subframes, we can figure out by Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS):

Uplink Component = UpPTS

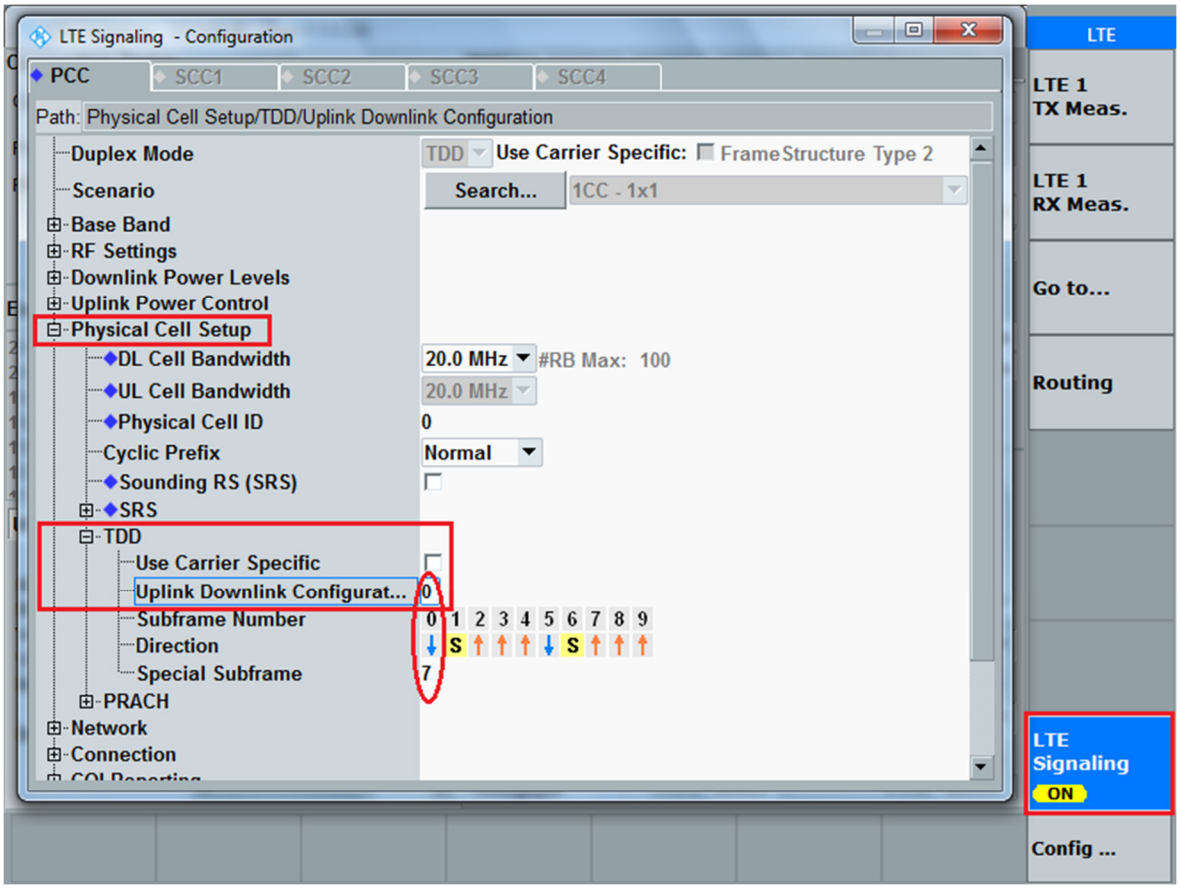
In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below. All these sets are ok when we test, or we can set as below.

Duty cycle = [(30720Ts*Ups) + UpPTS *Specials]/(307200Ts)

And we can get different Duty cycles under different configurations:

Uplink-downlink configuration	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0~4	configuration 5~9	configuration 0~4	configuration 5~9	configuration 0~3	configuration 4~7	configuration 0~3	configuration 4~7
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

SAR test Plan: For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type



5.3.4 Wi-Fi Test Configuration

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; These are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported* SAR for the *initial test position* is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported* SAR is ≤ 0.8 W/kg or all required test positions are tested.
    - ✧ For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
    - ✧ When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required test channels are considered.
    - ✧ The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

5.3.5 Proximity Sensor Power Reduction Description

Due to the operating configurations and exposure conditions required by the device, the proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of Main Antenna to ensure SAR compliance. It is also set an output power leveled to the lowest one to make sure that in any case of SAR sensor hardware failure, the SAR requirements can still be satisfied.

The following tables summarize the key power reduction information for proximity sensor. The test procedures be applied to determine proximity sensor triggering distances, and sensor coverage for normal and tilt positions. To ensure all production units are compliant, it is generally necessary to reduce the triggering distance determined from the triggering tests by 1 mm, or more if it is necessary, and use the smallest distance for movements to and from the phantom, minus 1 mm, as the sensor triggering distance for determining the SAR measurement distance.

Band	Test Position	Sensor Trigger Distance Range (DUT to Phantom)	Power Reduction Amount(dB)	Power Level
WCDMA B2	Back Side	0mm≤Distance≤24mm	4	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	4	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	4	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	4	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	4	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
WCDMA B4	Back Side	0mm≤Distance≤24mm	4.5	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	4.5	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	4.5	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	4.5	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	4.5	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
WCDMA B5	Back Side	0mm≤Distance≤24mm	3	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	3	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	3	Sensor on

		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	3	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	3	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
LTE B2	Back Side	0mm≤Distance≤24mm	6	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	6	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	6	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	6	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	6	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
LTE B5	Back Side	0mm≤Distance≤24mm	3	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	3	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	3	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	3	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	3	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
LTE B7	Back Side	0mm≤Distance≤24mm	3.5	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	3.5	Sensor on
		18mm<Distance	0	Sensor off
	Left Edge	0mm≤Distance≤12mm	3.5	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	3.5	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	3.5	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off
LTE B66	Back Side	0mm≤Distance≤24mm	6.5	Sensor on
		24mm<Distance	0	Sensor off
	Front Side	0mm≤Distance≤18mm	6.5	Sensor on
		18mm<Distance	0	Sensor off

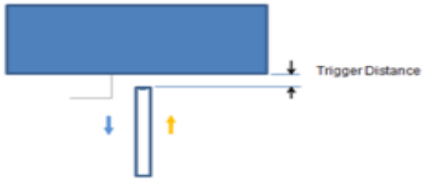
	Left Edge	0mm≤Distance≤12mm	6.5	Sensor on
		12mm<Distance	0	Sensor off
	Right Edge	0mm≤Distance≤10mm	6.5	Sensor on
		10mm<Distance	0	Sensor off
	Top Edge	0mm≤Distance≤18mm	6.5	Sensor on
		18mm<Distance	0	Sensor off
	Bottom Edge	/	0	Sensor off

Note: To ensure all production units are compliant, the smallest separation distance determined by the sensor triggering and sensor coverage for normal and tit positions for all usage conditions and applicable sides, minus 1 mm, must be used as the test separation distance for additional SAR testing of each higher power stage.

Proximity Sensor Coverage, Distance and Angle

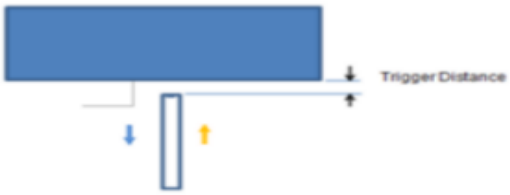
a) Procedures for determining proximity sensor triggering distances

The proximity sensor triggering distance measurement method are as below:



Picture: Proximity sensor triggering distances assessment (Right side)

Picture: Proximity sensor triggering distances assessment (Front/Back side)



Picture: Proximity sensor triggering distances assessment (Top/Bottom side)

Table: Summary of Trigger Distances for Main Antenna ：

Band	Trigger Distance-Back Side		Trigger Distance-Front Side		Trigger Distance-Left Edge	
	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom
WCDMA B2	24	24	18	18	12	12
WCDMA B4	24	24	18	18	12	12
WCDMA B5	24	24	18	18	12	12
LTE B2	24	24	18	18	12	12
LTE B5	24	24	18	18	12	12
LTE B7	24	24	18	18	12	12
LTE B66	24	24	18	18	12	12

Band	Trigger Distance-Right Edge		Trigger Distance-Top Edge	
	Moving toward Phantom	Moving away from Phantom	Moving toward Phantom	Moving away from Phantom
WCDMA B2	10	10	18	18
WCDMA B4	10	10	18	18
WCDMA B5	10	10	18	18
LTE B2	10	10	18	18
LTE B5	10	10	18	18
LTE B7	10	10	18	18
LTE B66	10	10	18	18

Conclusion: It can be ensured that the proximity sensor can be valid triggered for the body exposure condition.

Table: Power Reduction Status (Moving toward phantom)

Position	Ant	Band	Power Reduction Status(dBm)																																	
			1	4	6	11	12	14	16	18	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44		
Back Side	Main Antenna	WCDMA B2	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78		
Back Side	Main Antenna	WCDMA B4	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46		
Back Side	Main Antenna	WCDMA B5	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64		
Back Side	Main Antenna	LTE B2	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47		
Back Side	Main Antenna	LTE B5	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85		
Back Side	Main Antenna	LTE B7	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57		
Back Side	Main Antenna	LTE B66	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25		

Position	Ant	Band	Power Reduction Status(dBm)																																	
			1	4	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Front Side	Main Antenna	WCDMA B2	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78		
Front Side	Main Antenna	WCDMA B4	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46		
Front Side	Main Antenna	WCDMA B5	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64		
Front Side	Main Antenna	LTE B2	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47		
Front Side	Main Antenna	LTE B5	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85		
Front Side	Main Antenna	LTE B7	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57		
Front Side	Main Antenna	LTE B66	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25		

Position	Ant	Band	Power Reduction Status(dBm)																																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32		
Left Edge	Main Antenna	WCDMA B2	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78		
Left Edge	Main Antenna	WCDMA B4	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46		
Left Edge	Main Antenna	WCDMA B5	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64		
Left Edge	Main Antenna	LTE B2	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47		
Left Edge	Main Antenna	LTE B5	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85		
Left Edge	Main Antenna	LTE B7	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57		
Left Edge	Main Antenna	LTE B66	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25		

Position	Ant	Band	Power Reduction Status(dBm)																																	
			1	4	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Top Edge	Main Antenna	WCDMA B2	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78		
Top Edge	Main Antenna	WCDMA B4	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46		
Top Edge	Main Antenna	WCDMA B5	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64		
Top Edge	Main Antenna	LTE B2	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47		
Top Edge	Main Antenna	LTE B5	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85		
Top Edge	Main Antenna	LTE B7	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57		
Top Edge	Main Antenna	LTE B66	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25		

Table: Power Reduction Status (Moving away from phantom)

Position	Ant	Band	Power Reduction Status(dBm)																																	
			44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	18	16	14	12	11	6	4	1		
Back Side	Main Antenna	WCDMA B2	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45		
Back Side	Main Antenna	WCDMA B4	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39		
Back Side	Main Antenna	WCDMA B5	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35		
Back Side	Main Antenna	LTE B2	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80		
Back Side	Main Antenna	LTE B5	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11		
Back Side	Main Antenna	LTE B7	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00		
Back Side	Main Antenna	LTE B66	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50		

Position	Ant	Band	Power Reduction Status(dBm)																																	
			38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	6	4	1		
Front Side	Main Antenna	WCDMA B2	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45		
Front Side	Main Antenna	WCDMA B4	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39		
Front Side	Main Antenna	WCDMA B5	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35		
Front Side	Main Antenna	LTE B2	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80		
Front Side	Main Antenna	LTE B5	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11		
Front Side	Main Antenna	LTE B7	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00		
Front Side	Main Antenna	LTE B66	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50		

Position	Ant	Band	Power Reduction Status(dBm)																																	
			32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
Left Edge	Main Antenna	WCDMA B2	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45		
Left Edge	Main Antenna	WCDMA B4	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39		
Left Edge	Main Antenna	WCDMA B5	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35		
Left Edge	Main Antenna	LTE B2	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80		
Left Edge	Main Antenna	LTE B5	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11		
Left Edge	Main Antenna	LTE B7	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00		
Left Edge	Main Antenna	LTE B66	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50		

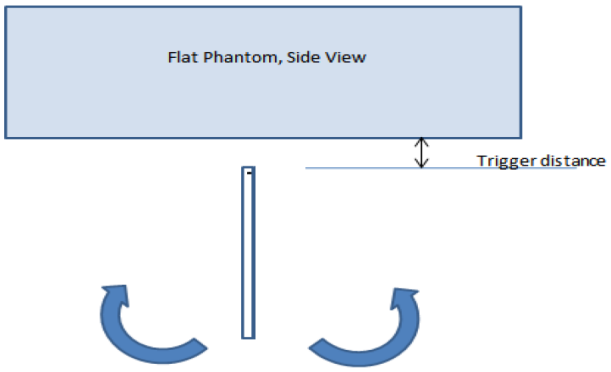
Position	Ant	Band	Power Reduction Status(dBm)																																	
			38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	6	4	1		
Top Edge	Main Antenna	WCDMA B2	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	23.78	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45	19.45		
Top Edge	Main Antenna	WCDMA B4	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	23.46	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39	18.39		
Top Edge	Main Antenna	WCDMA B5	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35		
Top Edge	Main Antenna	LTE B2	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	23.47	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80	17.80		
Top Edge	Main Antenna	LTE B5	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	22.85	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11	20.11		
Top Edge	Main Antenna	LTE B7	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	23.57	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00		
Top Edge	Main Antenna	LTE B66	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	23.25	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50		

1.2) Procedures for determining antenna and proximity sensor coverage

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom Edge and Top Edge parallel to the base of the flat phantom for each band.

The EUT was rotated about Bottom Edge and Top Edge for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.

The Proximity Sensor Triggering Tilt Angle Measurement Method are as below:



Proximity sensor coverage assessment

Table: Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering

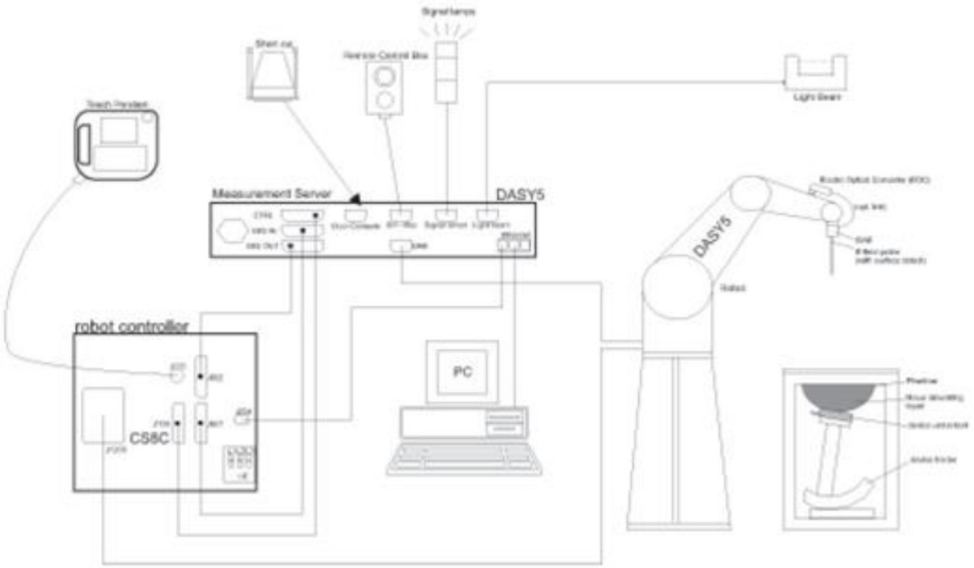
Band (MHz)	Position	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status										
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
WCDMA B2	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
LTE B5	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
LTE B66	Left Edge	12mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B5	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
LTE B66	Right Edge	10mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B2	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B4	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
WCDMA B5	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B2	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B5	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B7	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on
LTE B66	Top Edge	18mm	on	on	on	on	on	on	on	on	on	on	on

Conclusion: It can be ensured that the proximity sensor can be valid triggered for the DUT tilt coverage exposure condition.

6 SAR Measurements System Configuration

6.1 SAR Measurement Set-up

The DASY system for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure Scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

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

SAR=C∆T/∆t

Where: ∆t = Exposure time (30 seconds),

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

∆T = Temperature increase due to RF exposure.

Or

SAR=|E|^{2}σ/ρ

Where: σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

6.3 SAR Measurement Procedure

Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.
Area scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

	≤3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: ΔxArea, ΔyArea	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	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.	

Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤3GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\triangle x_{zoom} \triangle y_{zoom}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\triangle z_{zoom}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\triangle z_{zoom}(1)$: between 1st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\triangle z_{zoom}(n>1)$: between subsequent points	≤1.5•$\triangle z_{zoom}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm
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 *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4W/kg, ≤8mm, ≤7mm and ≤5mm zoom scan resolution may be applied, respectively, for 2GHz to 3GHz, 3GHz to 4GHz and 4GHz to 6GHz.				

Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Last Cal.	Cal. Due Date
Network Analyzer	Agilent	E5071B	MY42404014	2023-05-12	2024-05-11
				2024-05-07	2025-05-06
Dielectric Probe Kit	SPEAG	DAK-12	1171	2023-07-17	2024-07-16
Power Meter	Agilent	E4417A	GB41291714	2023-05-12	2024-05-11
				2024-05-07	2025-05-06
Power Sensor	Agilent	N8481H	MY50350004	2023-05-12	2024-05-11
				2024-05-07	2025-05-06
Power Sensor	Agilent	E9327A	US40441622	2023-05-12	2024-05-11
				2024-05-07	2025-05-06
Signal Generator	KEYSIGHT	N5182B-X07	MY51350303	2023-12-05	2024-12-04
Dual Directional Coupler	UCL	UCL-DDC056G-S	20010600118	/	/
Amplifier	R&S	SCU18F	101022	2023-09-01	2024-08-31
Wireless Communication Tester	Anritsu	MT8820C	6201342015	2023-12-05	2024-12-04
Wireless Communication Tester	Agilent	E5515C	MY48360988	2023-12-05	2024-12-04
Wireless Communication Tester	R&S	CMW 500	146734	2023-05-13	2024-05-12
				2024-05-07	2025-05-06
E-field Probe	SPEAG	EX3DV4	3677	2023-07-20	2024-07-19
DAE	SPEAG	DAE4	1317	2023-09-13	2024-09-12
Validation Kit 835MHz	SPEAG	D835V2	4d020	2023-09-15	2026-09-14
Validation Kit 1750MHz	SPEAG	D1750V2	1023	2022-06-21	2025-06-20
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	2023-09-12	2026-09-11
Validation Kit 2300MHz	SPEAG	D2300V2	1131	2022-09-09	2025-09-08
Validation Kit 2450MHz	SPEAG	D2450V2	786	2023-09-12	2026-09-11
Validation Kit 2600MHz	SPEAG	D2600V2	1025	2021-04-23	2024-04-22
				2024-05-08	2027-05-07
Software for Tissue	SPEAG	DAK 3.0.4.1	/	/	/
Temperature Probe	Auden	DTM3000	3905	2023-12-05	2024-12-04
Twin SAM Phantom	SPEAG	SAM1	1667	/	/
Twin SAM Phantom	SPEAG	SAM2	1666	/	/
Hygrothermograph	Anymetr	HTC - 1	TA2023A007	2023-05-13	2024-05-12
				2024-05-06	2025-05-05

TX90 XL	SPEAG	Staubli TX90 XL	/	/	/
Software for Test	SPEAG	DASY52	52.10.4.1527	/	/

8 Tissue Dielectric Parameter Measurements & System Check

8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during measurement must also be within 18℃ to 25℃ and within ± 2℃ of the temperature when the tissue parameters are characterized. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 24 hours of use; or earlier if the dielectric parameters can become out of tolerance.

Target values

Frequency (MHz)	ε_r	σ(s/m)
835	41.5	0.90
1750	40.1	1.37
1900	40.0	1.40
2300	39.5	1.67
2450	39.2	1.80
2600	39.0	1.96

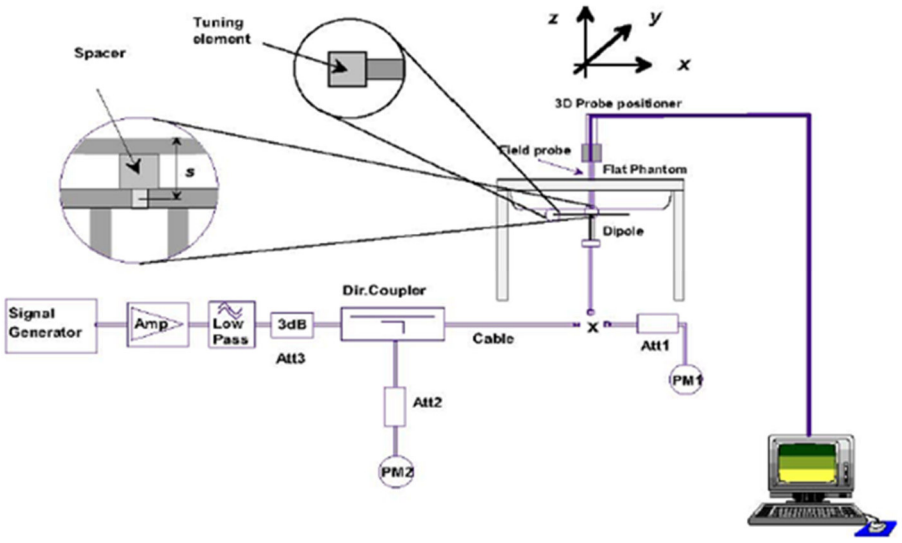
Measurements results

Frequency (MHz)	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
835	2024/4/10	21.5	41.4	0.88	41.5	0.90	-0.24	-2.22
	2024/6/22	21.5	41.3	0.87	41.5	0.90	-0.48	-3.33
1750	2024/4/2	21.5	40.2	1.34	40.1	1.37	0.25	-2.19
	2024/6/22	21.5	40.1	1.34	40.1	1.37	0.00	-2.19
1900	2024/4/3	21.5	40.1	1.41	40.0	1.40	0.25	0.71
	2024/6/22	21.5	40.2	1.43	40.0	1.40	0.50	2.14
2300	2024/3/4	21.5	40.0	1.65	39.5	1.67	1.27	-1.20
	2024/6/22	21.5	40.1	1.64	39.5	1.67	1.52	-1.80
2450	2024/3/8	21.5	38.6	1.81	39.2	1.80	-1.53	0.56
	2024/6/22	21.5	38.7	1.82	39.2	1.80	-1.28	1.11
2600	2024/4/7	21.5	38.2	2.01	39.0	1.96	-2.05	2.55
	2024/4/8	21.5	38.4	1.94	39.0	1.96	-1.54	-1.02
	2024/6/22	21.5	38.3	1.99	39.0	1.96	-1.79	1.53
Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm.								

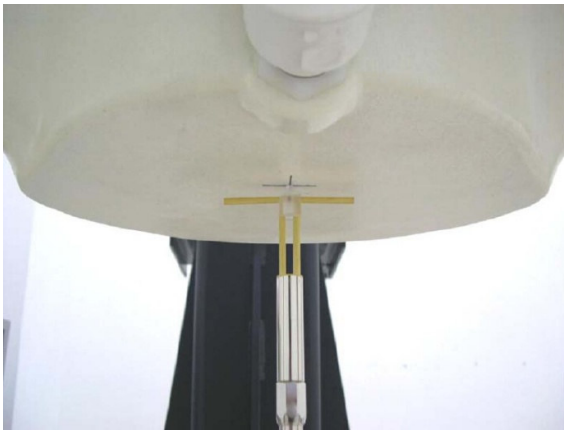
8.2 System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1 System Check setup



Picture 2 Setup Photo

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (＞20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole		Date of Measurement	Return Loss (dB)	Δ %	Impedance (Ω)			
					Real	ΔΩ	Imaginary	ΔΩ
Dipole D1750V2 SN: 1033	Head Liquid	3/23/2023	36.2	/	51.2	/	-0.98	/
		3/22/2024	35.4	-2.2	51.6	0.4	-1.28	-0.3
Dipole D2300V2 SN: 1131	Head Liquid	9/9/2022	26.1	/	45.8	/	2.3	/
		9/8/2023	26.4	1.1	45.5	-0.3	2.2	-0.1
Dipole D2600V2 SN: 1025	Head Liquid	4/23/2021	22.9	/	50.1	/	-7.19	/
		4/22/2022	22.4	-2.2	50.7	0.6	-7.23	-0.04
		4/21/2023	22.0	-1.8	50.9	0.2	-7.28	-0.05

System Check Results

Frequency (MHz)	Test Date	Temp ℃	250mW Measured SAR_{1g} (W/kg)	1W Normalized SAR_{1g} (W/kg)	1W Target SAR_{1g} (W/kg)	Δ % (Limit ±10%)	Plot No.
835	2024/4/10	21.5	2.44	9.76	9.75	0.10	1
	2024/6/22	21.5	2.46	9.84	9.75	0.92	2
1750	2024/4/2	21.5	8.95	35.80	36.80	-2.72	3
	2024/6/22	21.5	9.11	36.44	36.80	-0.98	4
1900	2024/4/3	21.5	9.88	39.52	40.40	-2.18	5
	2024/6/22	21.5	9.85	39.40	40.40	-2.48	6
2300	2024/3/4	21.5	12.36	49.44	50.10	-1.32	7
	2024/6/22	21.5	12.32	49.28	50.10	-1.64	8
2450	2024/3/8	21.5	13.70	54.80	52.60	4.18	9
	2024/6/22	21.5	13.52	54.08	52.60	2.81	10
2600	2024/4/7	21.5	13.90	55.60	56.10	-0.89	11
	2024/4/8	21.5	13.88	55.52	56.10	-1.03	12
	2024/6/22	21.5	13.94	55.76	56.10	-0.61	13
Note: Target Values used derive from the calibration certificate data storage and evaluation.							

8.3 SAR System Validation

Per FCC KDB 865664 D02v01, SAR system verification is required to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles are used with the required tissue-equivalent media for system validation, according to the procedures outlined in FCC KDB 865664 D01 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point must be validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.
A tabulated summary of the system validation status, measurement frequencies, SAR probes, calibrated signal type(s) and tissue dielectric parameters has been included.

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation		
								Sensitivity	Probe Linearity	Probe Isotropy
835	2023/07/20	3677	EX3DV4	835	Head	41.5	0.90	PASS	PASS	PASS
1750	2023/07/20	3677	EX3DV4	1750	Head	40.1	1.37	PASS	PASS	PASS
1900	2023/07/20	3677	EX3DV4	1900	Head	40.0	1.40	PASS	PASS	PASS
2300	2023/07/20	3677	EX3DV4	2300	Head	39.5	1.67	PASS	PASS	PASS
2450	2023/07/20	3677	EX3DV4	2450	Head	39.2	1.80	PASS	PASS	PASS
2600	2023/07/20	3677	EX3DV4	2600	Head	39.0	1.96	PASS	PASS	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664D01v01 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5dB), such as OFDM according to KDB 865664.

9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

9.1 WCDMA Mode

The following tests were completed according to the test requirements outlined in the 3GPP TS34.121 specification.

WCDMA Band II					
Full Power&Sensor off--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		9262/1852.4	9400/1880	9538/1907.6	
RMC	12.2k	23.52	23.78	23.45	24.50
HSDPA	Subtest 1	23.37	23.38	23.19	24.50
	Subtest 2	22.76	22.54	22.33	24.00
	Subtest 3	21.93	21.70	21.56	23.00
	Subtest 4	21.81	21.59	21.44	23.00
HSUPA	Subtest 1	22.60	22.46	22.33	24.00
	Subtest 2	21.57	21.42	21.31	23.00
	Subtest 3	21.74	21.63	21.50	23.00
	Subtest 4	21.20	21.03	20.90	22.50
	Subtest 5	23.64	23.45	23.34	24.50
HSPA+	16QAM	21.16	21.44	21.05	23.00
WCDMA Band II					
Sensor on--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		9262/1852.4	9400/1880	9538/1907.6	
RMC	12.2k	19.36	19.45	19.45	20.50
HSDPA	Subtest 1	19.52	19.17	18.87	20.50
	Subtest 2	18.46	18.21	18.02	20.00
	Subtest 3	17.63	17.39	17.23	19.00
	Subtest 4	17.50	17.26	17.13	19.00
HSUPA	Subtest 1	18.37	18.17	18.04	20.00
	Subtest 2	16.76	17.14	17.07	18.50
	Subtest 3	17.47	17.33	17.25	19.00
	Subtest 4	16.90	16.74	16.57	18.50
	Subtest 5	19.51	19.33	19.06	20.50
HSPA+	16QAM	17.02	16.60	16.57	18.00

WCDMA Band IV					
Full Power&Sensor off--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		1312/1712.4	1413/1732.6	1513/1752.6	
RMC	12.2k	23.35	23.46	23.78	24.50
HSDPA	Subtest 1	23.00	22.85	23.17	24.50
	Subtest 2	22.45	22.58	22.90	24.00
	Subtest 3	21.45	21.56	21.90	23.00
	Subtest 4	21.35	21.30	21.68	23.00
HSUPA	Subtest 1	22.03	22.12	22.54	23.50
	Subtest 2	20.93	21.04	21.68	22.50
	Subtest 3	21.21	21.24	21.68	22.50
	Subtest 4	20.67	20.62	21.02	22.00
	Subtest 5	23.03	23.12	23.56	24.50
HSPA+	16QAM	20.79	21.10	21.16	22.50
WCDMA Band IV					
Sensor on--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		1312/1712.4	1413/1732.6	1513/1752.6	
RMC	12.2k	18.48	18.39	18.82	20.00
HSDPA	Subtest 1	18.44	18.26	18.90	19.00
	Subtest 2	17.36	17.26	17.78	18.50
	Subtest 3	16.50	16.32	16.90	18.00
	Subtest 4	16.40	16.30	16.90	18.00
HSUPA	Subtest 1	17.46	17.24	17.98	19.00
	Subtest 2	15.88	15.70	16.40	17.50
	Subtest 3	16.64	16.28	16.74	18.00
	Subtest 4	15.88	15.96	16.30	17.50
	Subtest 5	18.56	18.48	18.78	20.00
HSPA+	16QAM	15.88	15.98	16.20	17.00

WCDMA Band V					
Full Power&Sensor off--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		4132/826.4	4183/836.6	4233/846.6	
RMC	12.2k	23.62	23.64	23.45	24.50
HSDPA	Subtest 1	23.13	23.02	22.82	24.00
	Subtest 2	22.14	22.12	21.91	23.50
	Subtest 3	21.29	21.28	21.11	23.00
	Subtest 4	21.14	21.17	21.00	22.50
HSUPA	Subtest 1	21.92	22.12	21.94	23.50
	Subtest 2	20.93	21.01	20.85	22.50
	Subtest 3	21.15	21.26	21.07	22.50
	Subtest 4	20.52	20.62	20.47	22.00
	Subtest 5	23.06	23.08	22.96	24.50
HSPA+	16QAM	20.80	20.88	20.59	22.00
WCDMA Band V					
Sensor on--Main Ant		Maximum Output Power (dBm)			
		Channel/Frequency(MHz)			Tune-up
		4132/826.4	4183/836.6	4233/846.6	
RMC	12.2k	20.31	20.35	20.36	21.50
HSDPA	Subtest 1	20.26	20.18	19.95	21.00
	Subtest 2	19.35	19.25	19.10	20.50
	Subtest 3	18.55	18.45	18.32	20.00
	Subtest 4	18.42	18.33	18.21	20.00
HSUPA	Subtest 1	18.97	18.95	18.78	20.00
	Subtest 2	20.80	20.75	20.61	21.50
	Subtest 3	21.01	21.03	20.85	21.50
	Subtest 4	20.47	20.36	20.21	21.50
	Subtest 5	20.90	21.05	20.78	21.50
HSPA+	16QAM	17.66	17.75	17.80	19.00

9.2 LTE Mode

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 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

LTE Band 2							
Full Power&Sensor off--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	22.85	23.31	22.61	24.50
		1	2	22.96	23.47	23.68	24.50
		1	5	23.31	22.95	22.69	24.50
		3	0	23.09	23.73	23.29	24.50
		3	2	23.22	23.42	23.28	24.50
		3	3	23.38	22.94	22.93	24.50
		6	0	22.21	22.44	22.37	23.50
	16QAM	1	0	22.34	23.23	22.42	23.50
		1	2	22.53	23.06	22.57	23.50
		1	5	22.13	22.47	22.31	23.50
		3	0	22.38	22.51	22.42	23.50
		3	2	22.62	22.72	22.58	23.50
		3	3	22.03	22.05	21.79	23.50
		6	0	21.50	21.26	21.46	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	22.97	23.47	22.63	24.50
		1	7	23.24	23.73	23.50	24.50
		1	14	23.35	22.89	22.81	24.50
		8	0	22.25	22.73	22.15	23.50
		8	4	22.32	22.60	22.64	23.50
		8	7	22.38	22.20	22.11	23.50
		15	0	22.21	22.44	22.05	23.50
	16QAM	1	0	22.42	23.21	22.36	23.50
		1	7	22.61	23.16	22.69	23.50
		1	14	21.95	22.45	22.19	23.50

		8	0	21.66	21.71	21.50	22.50
		8	4	21.80	21.74	21.68	22.50
		8	7	21.29	21.33	20.85	22.50
		15	0	21.62	21.30	21.48	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	22.89	23.19	22.57	24.50
		1	13	23.00	23.53	23.58	24.50
		1	24	23.09	22.95	22.65	24.50
		12	0	22.17	22.75	22.11	23.50
		12	6	22.10	22.40	22.66	23.50
		12	13	22.36	22.30	21.93	23.50
		25	0	22.23	22.22	21.97	23.50
	16QAM	1	0	22.18	23.11	22.26	23.50
		1	13	22.65	23.04	22.61	23.50
		1	24	22.01	22.25	21.87	23.50
		12	0	21.52	21.59	21.46	22.50
		12	6	21.58	21.58	21.48	22.50
		12	13	21.25	21.11	20.95	22.50
		25	0	21.48	21.32	21.50	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	23.07	23.19	22.51	24.50
		1	25	23.16	23.57	23.56	24.50
		1	49	23.09	22.75	22.55	24.50
		25	0	22.13	22.55	22.37	23.50
		25	13	22.34	22.62	22.64	23.50
		25	25	22.34	22.32	22.15	23.50
		50	0	22.45	22.22	22.17	23.50
	16QAM	1	0	22.30	23.11	22.46	23.50
		1	25	22.87	23.20	22.57	23.50
		1	49	22.11	22.33	21.99	23.50
		25	0	21.60	21.51	21.36	22.50
		25	13	21.50	21.66	21.68	22.50
		25	25	21.41	21.23	21.03	22.50
		50	0	21.62	21.26	21.36	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	22.79	23.41	22.65	24.50
		1	38	23.02	23.53	23.64	24.50
		1	74	23.21	22.89	22.79	24.50
		36	0	22.35	22.57	22.29	23.50
		36	18	22.32	22.68	22.58	23.50

		36	39	22.34	22.24	22.21	23.50
		75	0	22.39	22.58	22.21	23.50
	16QAM	1	0	22.34	23.09	22.42	23.50
		1	38	22.79	23.18	22.77	23.50
		1	74	22.21	22.37	22.23	23.50
		36	0	21.72	21.69	21.54	22.50
		36	18	21.80	21.66	21.68	22.50
		36	39	21.31	21.33	20.83	22.50
		75	0	21.44	21.34	21.40	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	22.87	23.47	22.59	24.50
		1	50	23.42	23.40	23.38	24.50
		1	99	23.23	22.93	22.69	24.50
		50	0	22.55	22.63	22.21	23.50
		50	25	22.22	22.54	22.58	23.50
		50	50	22.46	22.20	22.61	23.50
		100	0	22.29	22.40	22.15	23.50
	16QAM	1	0	22.34	23.05	22.38	23.50
		1	50	22.67	23.02	22.67	23.50
		1	99	22.05	22.45	22.07	23.50
		50	0	21.64	21.69	21.40	22.50
		50	25	21.64	21.68	21.64	22.50
		50	50	21.25	21.31	20.95	22.50
		100	0	21.56	21.38	21.48	22.50

LTE Band 2							
Sensor on--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	17.42	17.84	17.37	18.50
		1	2	17.94	18.10	17.70	18.50
		1	5	17.62	17.67	17.55	18.50
		3	0	17.74	17.87	17.61	18.50
		3	2	18.10	18.08	17.84	18.50
		3	3	18.07	17.61	17.25	18.50
		6	0	18.09	17.70	17.68	18.50
	16QAM	1	0	17.74	18.01	18.10	18.50
		1	2	18.39	17.91	18.01	18.50
		1	5	18.30	18.12	17.87	18.50
		3	0	17.78	17.79	17.49	18.50
		3	2	17.93	17.83	17.62	18.50
		3	3	17.77	18.01	17.50	18.50

		6	0	17.94	17.53	17.48	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	17.82	17.50	17.99	18.50
		1	7	18.00	17.76	17.60	18.50
		1	14	17.38	18.07	17.63	18.50
		8	0	17.92	17.55	17.63	18.50
		8	4	17.90	17.84	17.94	18.50
		8	7	17.73	17.63	17.73	18.50
		15	0	17.65	17.56	17.76	18.50
	16QAM	1	0	17.96	17.93	17.88	18.50
		1	7	18.07	17.49	18.09	18.50
		1	14	18.30	18.06	17.79	18.50
		8	0	17.94	17.77	17.67	18.50
		8	4	17.97	17.59	17.72	18.50
		8	7	17.81	17.89	17.46	18.50
		15	0	18.02	17.59	17.52	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	17.62	17.72	17.89	18.50
		1	13	17.92	17.72	17.92	18.50
		1	24	17.56	17.91	17.59	18.50
		12	0	17.78	17.77	17.73	18.50
		12	6	17.90	17.92	17.88	18.50
		12	13	17.99	17.77	17.65	18.50
		25	0	17.95	17.76	17.70	18.50
	16QAM	1	0	18.10	18.01	18.10	18.50
		1	13	18.19	17.73	17.95	18.50
		1	24	18.22	17.98	17.81	18.50
		12	0	18.00	17.67	17.63	18.50
		12	6	18.11	17.89	17.58	18.50
		12	13	17.89	17.79	17.54	18.50
		25	0	17.82	17.75	17.62	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	17.76	17.72	17.87	18.50
		1	25	17.84	17.66	17.90	18.50
		1	49	17.68	17.77	17.55	18.50
		25	0	17.90	17.63	17.59	18.50
		25	13	18.14	17.64	17.70	18.50
		25	25	17.81	17.79	17.45	18.50
		50	0	18.03	17.70	17.82	18.50
	16QAM	1	0	17.90	17.75	17.88	18.50

		1	25	18.41	17.73	17.89	18.50
		1	49	18.38	17.96	17.97	18.50
		25	0	17.70	17.89	17.47	18.50
		25	13	17.85	17.71	17.90	18.50
		25	25	17.87	17.93	17.60	18.50
		50	0	17.74	17.77	17.52	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	17.72	17.84	17.85	18.50
		1	38	18.10	17.96	17.66	18.50
		1	74	17.78	17.99	17.55	18.50
		36	0	17.92	17.77	17.51	18.50
		36	18	18.04	17.92	17.62	18.50
		36	39	17.77	17.71	17.51	18.50
		75	0	17.91	17.66	17.74	18.50
	16QAM	1	0	18.08	17.81	18.04	18.50
		1	38	18.25	17.89	18.05	18.50
		1	74	18.16	18.12	17.77	18.50
		36	0	17.74	17.71	17.75	18.50
		36	18	17.95	17.69	17.86	18.50
		36	39	17.89	17.81	17.74	18.50
		75	0	17.94	17.69	17.70	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	17.62	17.80	17.75	18.50
		1	50	18.05	17.78	17.76	18.50
		1	99	17.64	17.75	17.57	18.50
		50	0	17.92	17.81	17.63	18.50
		50	25	17.90	17.78	17.70	18.50
		50	50	17.85	17.79	17.72	18.50
		100	0	17.83	17.62	17.70	18.50
	16QAM	1	0	18.06	17.87	18.00	18.50
		1	50	18.23	17.83	17.99	18.50
		1	99	18.20	18.06	17.75	18.50
		50	0	17.84	17.77	17.61	18.50
		50	25	17.99	17.79	17.68	18.50
		50	50	17.85	17.75	17.62	18.50
		100	0	17.80	17.59	17.66	18.50

LTE Band 5							
Full Power&Sensor off--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	22.69	22.55	22.73	24.50
		1	2	22.97	22.99	22.77	24.50
		1	5	22.95	22.77	22.66	24.50
		3	0	22.85	22.84	22.60	24.50
		3	2	22.98	22.84	22.56	24.50
		3	3	22.74	23.06	22.58	24.50
		6	0	21.88	21.74	21.85	23.50
	16QAM	1	0	21.65	21.70	21.89	23.50
		1	2	22.14	21.91	22.22	23.50
		1	5	22.34	22.28	22.02	23.50
		3	0	21.76	21.59	21.86	23.50
		3	2	21.74	21.74	21.78	23.50
		3	3	21.95	21.69	21.63	23.50
		6	0	20.97	21.08	20.91	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	22.85	22.91	22.51	24.50
		1	7	22.95	22.85	22.65	24.50
		1	14	22.81	22.55	22.55	24.50
		8	0	21.97	21.84	21.76	23.50
		8	4	21.84	22.16	21.86	23.50
		8	7	21.96	22.06	21.52	23.50
		15	0	21.92	21.66	21.62	23.50
	16QAM	1	0	21.61	21.90	21.77	23.50
		1	7	22.02	21.89	22.16	23.50
		1	14	22.38	22.08	21.90	23.50
		8	0	20.74	20.73	20.98	22.50
		8	4	20.78	21.16	21.04	22.50
		8	7	20.83	20.83	20.77	22.50
		15	0	20.93	21.14	20.55	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	22.97	22.79	22.59	24.50
		1	13	22.85	22.95	22.75	24.50
		1	24	22.59	22.65	22.58	24.50
		12	0	21.87	21.80	21.68	23.50
		12	6	21.88	21.98	21.82	23.50
		12	13	21.94	22.16	21.56	23.50

		25	0	21.90	21.62	21.65	23.50
	16QAM	1	0	21.65	21.92	21.95	23.50
		1	13	22.10	22.01	21.94	23.50
		1	24	22.24	22.08	22.20	23.50
		12	0	21.04	20.91	20.78	22.50
		12	6	20.88	21.00	21.20	22.50
		12	13	20.93	20.73	20.57	22.50
		25	0	20.89	21.08	20.87	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	22.81	22.69	22.61	24.50
		1	25	22.85	22.93	22.81	24.50
		1	49	22.71	22.71	22.58	24.50
		25	0	21.95	21.76	21.58	23.50
		25	13	21.98	22.00	21.82	23.50
		25	25	21.80	22.02	21.64	23.50
		50	0	21.96	21.66	21.67	23.50
	16QAM	1	0	21.67	21.82	21.91	23.50
		1	25	22.00	21.99	22.06	23.50
		1	49	22.30	22.04	22.04	23.50
		25	0	20.90	20.79	20.82	22.50
		25	13	20.88	20.94	21.04	22.50
		25	25	20.89	20.73	20.61	22.50
		50	0	20.91	20.96	20.73	22.50

LTE Band 5							
Sensor on--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	19.86	19.75	19.66	21.50
		1	2	19.97	20.29	19.95	21.50
		1	5	19.68	19.90	19.62	21.50
		3	0	19.80	19.60	19.87	21.50
		3	2	20.04	19.65	19.87	21.50
		3	3	19.70	19.65	19.54	21.50
		6	0	19.98	19.76	19.95	21.50
	16QAM	1	0	19.92	19.81	20.03	21.50
		1	2	20.01	19.83	20.00	21.50
		1	5	20.27	20.03	19.80	21.50
		3	0	19.84	19.89	19.72	21.50
		3	2	20.09	20.10	19.94	21.50
		3	3	19.92	19.60	19.81	21.50
		6	0	19.89	19.79	20.08	21.50

Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	19.80	19.79	19.63	21.50
		1	7	20.13	20.09	19.97	21.50
		1	14	19.76	19.52	19.64	21.50
		8	0	19.82	19.70	19.91	21.50
		8	4	20.20	20.11	19.87	21.50
		8	7	19.88	19.51	19.90	21.50
		15	0	20.06	19.78	19.61	21.50
	16QAM	1	0	19.76	20.03	20.09	21.50
		1	7	19.99	19.99	19.92	21.50
		1	14	19.99	19.95	19.68	21.50
		8	0	19.96	19.93	19.66	21.50
		8	4	20.13	20.18	20.10	21.50
		8	7	19.82	19.90	20.09	21.50
		15	0	19.91	19.71	20.06	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20425/826.5	20525/836.5	20625/846.5	
5MHz	QPSK	1	0	19.86	19.83	19.52	21.50
		1	13	20.09	19.95	20.01	21.50
		1	24	19.68	19.68	19.54	21.50
		12	0	19.90	19.72	19.77	21.50
		12	6	20.26	19.91	19.85	21.50
		12	13	19.84	19.67	19.76	21.50
		25	0	19.96	19.78	19.81	21.50
	16QAM	1	0	20.00	19.83	19.81	21.50
		1	13	20.01	20.15	19.92	21.50
		1	24	19.99	20.17	19.80	21.50
		12	0	19.84	20.01	19.92	21.50
		12	6	20.11	20.06	19.92	21.50
		12	13	19.94	19.68	19.77	21.50
		25	0	20.03	19.73	20.02	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	19.74	19.71	19.56	21.50
		1	25	20.11	20.05	20.09	21.50
		1	49	19.80	19.58	19.56	21.50
		25	0	19.96	19.80	19.73	21.50
		25	13	20.08	19.97	19.93	21.50
		25	25	19.88	19.69	19.84	21.50
		50	0	19.94	19.84	19.71	21.50
	16QAM	1	0	19.90	19.95	19.93	21.50
		1	25	20.11	19.99	19.90	21.50

		1	49	19.99	20.05	19.84	21.50
		25	0	19.96	19.83	19.76	21.50
		25	13	20.09	19.98	19.96	21.50
		25	25	19.90	19.74	19.87	21.50
		50	0	19.91	19.81	19.94	21.50

LTE Band 7							
Full Power&Sensor off--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	23.24	23.18	23.18	24.50
		1	13	23.16	23.39	23.31	24.50
		1	24	23.26	23.57	23.55	24.50
		12	0	22.72	22.49	22.07	23.50
		12	6	22.36	22.23	22.29	23.50
		12	13	22.47	22.48	22.91	23.50
		25	0	22.37	22.49	22.30	23.50
	16QAM	1	0	22.47	22.06	22.71	23.50
		1	13	22.76	22.33	22.65	23.50
		1	24	22.53	22.84	22.68	23.50
		12	0	21.65	22.12	21.71	22.50
		12	6	21.59	21.63	21.63	22.50
		12	13	21.28	21.26	21.28	22.50
		25	0	21.56	21.51	21.55	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	23.16	23.08	23.06	24.50
		1	25	22.94	23.33	23.23	24.50
		1	49	23.04	23.69	23.53	24.50
		25	0	22.74	22.41	22.21	23.50
		25	13	22.32	22.05	22.45	23.50
		25	25	22.45	22.26	22.65	23.50
		50	0	22.29	22.65	22.24	23.50
	16QAM	1	0	22.39	22.08	22.41	23.50
		1	25	22.70	22.23	22.53	23.50
		1	49	22.71	23.00	22.78	23.50
		25	0	21.81	22.24	21.89	22.50
		25	13	21.77	21.61	21.43	22.50
		25	25	21.14	21.56	21.16	22.50
		50	0	21.36	21.53	21.61	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	23.36	23.28	23.28	24.50

		1	38	22.94	23.35	23.41	24.50
		1	74	23.14	23.47	23.41	24.50
		36	0	22.60	22.53	22.27	23.50
		36	18	22.54	22.17	22.39	23.50
		36	39	22.29	22.34	22.85	23.50
		75	0	22.37	22.65	22.48	23.50
	16QAM	1	0	22.47	22.20	22.53	23.50
		1	38	23.00	22.49	22.59	23.50
		1	74	22.47	22.72	22.76	23.50
		36	0	21.85	22.26	21.81	22.50
		36	18	21.81	21.69	21.61	22.50
		36	39	21.30	21.24	21.26	22.50
		75	0	21.62	21.57	21.53	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	23.20	23.24	23.20	24.50
		1	50	23.02	23.45	23.27	24.50
		1	99	23.18	23.57	23.47	24.50
		50	0	22.62	22.39	22.11	23.50
		50	25	22.38	22.11	22.37	23.50
		50	50	22.41	22.38	22.75	23.50
		100	0	22.37	22.49	22.38	23.50
	16QAM	1	0	22.55	22.02	22.55	23.50
		1	50	22.84	22.41	22.61	23.50
		1	99	22.55	22.78	22.58	23.50
		50	0	21.73	22.14	21.75	22.50
		50	25	21.63	21.59	21.47	22.50
		50	50	21.24	21.36	21.30	22.50
		100	0	21.44	21.59	21.51	22.50

LTE Band 7							
Sensor on--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				20775/2502.5	21100/2535	21425/2567.5	
5MHz	QPSK	1	0	20.10	20.13	19.91	21.00
		1	13	20.12	20.45	20.22	21.00
		1	24	19.97	20.06	19.89	21.00
		12	0	19.99	20.09	19.95	21.00
		12	6	19.83	19.94	20.14	21.00
		12	13	19.92	19.92	20.09	21.00
		25	0	19.84	20.14	19.99	21.00
	16QAM	1	0	20.28	20.29	20.11	21.00
		1	13	20.12	20.42	20.39	21.00

		1	24	20.50	20.52	20.32	21.00
		12	0	20.01	20.15	19.91	21.00
		12	6	20.08	20.32	20.08	21.00
		12	13	20.05	20.24	20.03	21.00
		25	0	19.93	20.14	20.03	21.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20800/2505	21100/2535	21400/2565	
10MHz	QPSK	1	0	20.16	19.95	19.91	21.00
		1	25	20.18	20.41	19.96	21.00
		1	49	19.85	20.20	19.81	21.00
		25	0	20.21	20.15	20.05	21.00
		25	13	20.13	19.98	20.00	21.00
		25	25	19.98	20.10	20.03	21.00
		50	0	19.70	20.12	19.85	21.00
	16QAM	1	0	20.42	20.29	19.85	21.00
		1	25	20.30	20.38	20.09	21.00
		1	49	20.46	20.68	20.16	21.00
		25	0	20.07	20.15	19.77	21.00
		25	13	20.00	20.20	20.32	21.00
		25	25	19.93	19.98	20.01	21.00
		50	0	19.73	20.10	19.97	21.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20825/2507.5	21100/2535	21375/2562.5	
15MHz	QPSK	1	0	19.94	19.95	19.77	21.00
		1	38	20.16	20.43	20.10	21.00
		1	74	20.19	20.06	19.85	21.00
		36	0	20.01	20.35	19.97	21.00
		36	18	19.93	19.90	20.18	21.00
		36	39	19.76	19.88	20.01	21.00
		75	0	19.84	20.22	19.99	21.00
	16QAM	1	0	20.20	20.21	20.11	21.00
		1	38	20.24	20.44	20.13	21.00
		1	74	20.34	20.66	20.28	21.00
		36	0	20.29	20.17	20.05	21.00
		36	18	19.94	20.16	20.14	21.00
		36	39	20.03	20.04	20.03	21.00
		75	0	19.77	20.12	19.99	21.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20850/2510	21100/2535	21350/2560	
20MHz	QPSK	1	0	20.02	20.03	19.75	21.00
		1	50	19.98	20.37	20.05	21.00
		1	99	20.01	20.00	20.10	21.00
		50	0	19.99	20.10	19.89	21.00

		50	25	19.93	20.00	20.08	21.00
		50	50	19.88	20.15	19.93	21.00
		100	0	19.80	20.10	19.97	21.00
	16QAM	1	0	20.24	20.25	19.95	21.00
		1	50	20.14	20.30	20.25	21.00
		1	99	20.34	20.48	20.16	21.00
		50	0	20.11	20.21	19.95	21.00
		50	25	20.00	20.24	20.10	21.00
		50	50	20.01	20.10	20.01	21.00
		100	0	19.81	20.08	20.01	21.00

LTE Band 40 Sub set 1							
Full Power&Sensor off&Sensor on—Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				38725/2307.5	38750/2310.0	38775/2312.5	
5MHz	QPSK	1	0	23.23	23.12	23.23	24.50
		1	13	23.36	23.23	23.36	24.50
		1	24	23.28	23.18	23.28	24.50
		12	0	22.26	22.15	22.23	23.50
		12	6	22.26	22.15	22.24	23.50
		12	13	22.28	22.20	22.33	23.50
		25	0	22.25	22.15	22.33	23.50
	16QAM	1	0	22.43	22.38	22.60	23.50
		1	13	22.52	22.56	22.79	23.50
		1	24	22.45	22.50	22.70	23.50
		12	0	21.16	21.14	21.21	22.50
		12	6	21.17	21.15	21.22	22.50
		12	13	21.18	21.25	21.25	22.50
		25	0	21.19	21.22	21.31	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				/	38750/2310.0	/	
10MHz	QPSK	1	0	/	23.16	/	24.50
		1	25	/	23.39	/	24.50
		1	49	/	23.31	/	24.50
		25	0	/	22.19	/	23.50
		25	13	/	22.19	/	23.50
		25	25	/	22.23	/	23.50
		50	0	/	22.20	/	23.50
	16QAM	1	0	/	22.46	/	23.50
		1	25	/	22.72	/	23.50
		1	49	/	22.65	/	23.50
		25	0	/	21.28	/	22.50

		25	13	/	21.28	/	22.50
		25	25	/	21.38	/	22.50
		50	0	/	21.27	/	22.50

LTE Band 40 Sub set 2							
Full Power&Sensor off&Sensor on—Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				39175/2352.5	39200/2355.0	39225/2357.5	
5MHz	QPSK	1	0	22.92	22.98	22.92	24.50
		1	13	23.00	23.00	22.90	24.50
		1	24	22.90	22.77	22.79	24.50
		12	0	22.08	22.01	21.96	23.50
		12	6	22.08	22.01	21.96	23.50
		12	13	22.04	21.96	21.86	23.50
		25	0	22.05	21.95	21.88	23.50
	16QAM	1	0	22.29	22.44	22.22	23.50
		1	13	22.42	22.44	22.21	23.50
		1	24	22.32	22.28	22.10	23.50
		12	0	21.04	20.90	20.78	22.50
		12	6	21.04	20.91	20.79	22.50
		12	13	21.01	20.80	20.73	22.50
		25	0	20.97	20.94	20.82	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				/	39200/2355.0	/	
10MHz	QPSK	1	0	/	23.02	/	24.50
		1	25	/	23.12	/	24.50
		1	49	/	22.74	/	24.50
		25	0	/	22.04	/	23.50
		25	13	/	22.04	/	23.50
		25	25	/	21.91	/	23.50
		50	0	/	21.96	/	23.50
	16QAM	1	0	/	22.40	/	23.50
		1	25	/	22.53	/	23.50
		1	49	/	22.16	/	23.50
		25	0	/	21.01	/	22.50
		25	13	/	21.02	/	22.50
		25	25	/	20.95	/	22.50
		50	0	/	20.93	/	22.50

LTE Band 41									
Full Power&Sensor off&Sensor on--Main Ant				Maximum Output Power (dBm)					Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)					
				39675/2498.5	40148/2545.8	40620/2593	41093/2640.3	41565/2687.5	
5MHz	QPSK	1	0	23.35	23.58	23.28	23.24	23.00	24.50
		1	13	23.79	23.80	23.37	23.40	23.04	24.50
		1	24	24.27	23.80	23.30	23.34	22.81	24.50
		12	0	22.79	22.85	22.30	22.39	22.03	23.50
		12	6	23.08	22.80	22.31	22.04	22.00	23.50
		12	13	23.06	22.65	22.38	22.39	21.91	23.50
		25	0	22.75	22.55	22.26	22.17	21.95	23.50
	16QAM	1	0	22.57	22.52	22.56	22.26	22.18	23.50
		1	13	23.12	23.04	22.75	22.26	22.21	23.50
		1	24	23.18	22.89	22.61	22.27	22.00	23.50
		12	0	21.97	21.53	21.31	21.47	21.01	22.50
		12	6	22.30	21.71	21.32	21.37	21.02	22.50
		12	13	22.29	21.84	21.34	21.56	20.93	22.50
		25	0	22.02	21.81	21.36	21.33	20.96	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)					Tune-up
				39700/2501	40160/2547	40620/2593	41080/2639	41540/2685	
10MHz	QPSK	1	0	23.39	23.40	23.21	23.48	23.14	24.50
		1	25	23.81	23.86	23.45	23.68	23.18	24.50
		1	49	24.23	23.78	23.24	23.38	22.81	24.50
		25	0	22.73	22.75	22.25	22.37	22.09	23.50
		25	13	23.04	22.80	22.26	22.00	22.10	23.50
		25	25	22.78	22.79	22.29	22.33	21.96	23.50
		50	0	22.83	22.77	22.29	22.09	22.04	23.50
	16QAM	1	0	22.57	22.58	22.26	22.28	22.03	23.50
		1	25	23.26	23.08	22.51	22.14	22.11	23.50
		1	49	23.16	22.99	22.30	22.19	21.75	23.50
		25	0	21.99	21.41	21.36	21.65	21.11	22.50
		25	13	22.20	21.53	21.37	21.45	21.11	22.50
		25	25	22.25	22.00	21.40	21.36	20.99	22.50
		50	0	22.30	21.69	21.34	21.39	21.07	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)					Tune-up
				39725/2503.5	40173/2548.3	40620/2593	41068/2637.8	41515/2682.5	
15MHz	QPSK	1	0	23.57	23.64	23.31	23.36	23.21	24.50
		1	38	23.87	23.72	23.42	23.42	23.31	24.50
		1	74	24.35	23.96	23.38	23.36	22.95	24.50
		36	0	22.85	22.71	22.33	22.29	22.23	23.50
		36	18	23.14	22.80	22.34	22.04	22.23	23.50
		36	39	22.98	22.73	22.37	22.35	22.11	23.50

		75	0	22.87	22.45	22.32	22.29	22.16	23.50
	16QAM	1	0	22.45	22.72	22.34	22.10	22.21	23.50
		1	38	23.28	23.06	22.46	22.32	22.35	23.50
		1	74	23.46	22.97	22.43	22.19	21.99	23.50
		36	0	21.73	21.61	21.42	21.41	21.25	22.50
		36	18	22.28	21.69	21.42	21.29	21.26	22.50
		36	39	22.43	21.72	21.46	21.54	21.16	22.50
		75	0	22.24	21.57	21.40	21.29	21.23	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)					Tune-up
				39750/2506	40185/2549.5	40620/2593	41055/2636.5	41490/2680	
20MHz	QPSK	1	0	23.47	23.54	23.20	23.30	23.16	24.50
		1	50	23.79	23.78	23.46	23.50	23.34	24.50
		1	99	24.01	23.84	23.38	23.42	22.89	24.50
		50	0	22.77	22.81	22.25	22.25	22.12	23.50
		50	25	22.92	22.64	22.26	22.14	22.12	23.50
		50	50	23.04	22.65	22.31	22.23	22.09	23.50
		100	0	22.85	22.57	22.29	22.17	22.11	23.50
	16QAM	1	0	22.45	22.56	22.16	22.16	21.83	23.50
		1	50	22.96	22.88	22.42	22.30	22.04	23.50
		1	99	23.10	22.81	22.35	22.27	21.59	23.50
		50	0	21.87	21.59	21.31	21.45	21.25	22.50
		50	25	22.08	21.71	21.31	21.25	21.25	22.50
		50	50	22.19	21.78	21.36	21.50	21.20	22.50
		100	0	21.98	21.69	21.37	21.33	21.16	22.50

LTE Band 66							
Full Power&Sensor off--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	23.00	22.79	22.78	24.50
		1	2	22.69	23.33	22.89	24.50
		1	5	22.87	22.65	23.24	24.50
		3	0	22.94	23.03	22.92	24.50
		3	2	22.60	23.22	23.46	24.50
		3	3	22.60	23.00	23.41	24.50
		6	0	21.97	22.22	22.14	23.50
	16QAM	1	0	22.67	22.15	22.75	23.50
		1	2	22.97	22.94	22.97	23.50
		1	5	22.01	22.32	22.11	23.50
		3	0	22.66	22.30	22.24	23.50
		3	2	22.61	22.36	22.15	23.50
		3	3	21.86	23.11	21.78	23.50
		6	0	21.06	21.44	21.18	22.50

Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				131987/1711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	23.00	22.85	22.80	24.50
		1	7	22.91	23.19	23.17	24.50
		1	14	22.77	22.91	23.30	24.50
		8	0	22.00	22.19	21.80	23.50
		8	4	21.74	22.28	22.58	23.50
		8	7	21.51	21.90	22.57	23.50
		15	0	22.05	22.22	22.36	23.50
	16QAM	1	0	22.57	22.47	22.63	23.50
		1	7	23.05	22.88	22.93	23.50
		1	14	21.83	22.44	22.07	23.50
		8	0	21.60	21.22	21.60	22.50
		8	4	21.47	21.60	21.35	22.50
		8	7	20.96	22.23	20.92	22.50
		15	0	21.14	21.36	21.06	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	23.04	22.67	22.76	24.50
		1	13	22.63	23.07	22.83	24.50
		1	24	22.67	22.63	23.16	24.50
		12	0	21.86	21.91	21.90	23.50
		12	6	21.86	22.30	22.28	23.50
		12	13	21.61	21.94	22.31	23.50
		25	0	21.73	22.18	22.24	23.50
	16QAM	1	0	22.47	22.37	22.53	23.50
		1	13	22.77	22.90	22.77	23.50
		1	24	21.87	22.42	22.09	23.50
		12	0	21.52	21.24	21.56	22.50
		12	6	21.53	21.28	21.41	22.50
		12	13	20.72	22.11	20.74	22.50
		25	0	21.00	21.20	21.00	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	22.86	23.05	22.90	24.50
		1	25	22.93	23.33	22.99	24.50
		1	49	22.91	22.81	23.14	24.50
		25	0	21.70	21.97	21.80	23.50
		25	13	21.72	22.24	22.56	23.50
		25	25	21.70	22.02	22.33	23.50
		50	0	21.77	22.30	22.24	23.50
	16QAM	1	0	22.45	22.21	22.77	23.50
		1	25	22.99	22.78	23.01	23.50

		1	49	21.79	22.34	22.29	23.50
		25	0	21.78	21.26	21.66	22.50
		25	13	21.55	21.40	21.53	22.50
		25	25	20.68	22.07	20.82	22.50
		50	0	21.18	21.38	21.20	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	22.92	22.75	22.72	24.50
		1	38	22.69	23.27	23.15	24.50
		1	74	22.87	22.69	23.24	24.50
		36	0	21.86	22.25	22.04	23.50
		36	18	21.78	22.26	22.38	23.50
		36	39	21.57	22.08	22.63	23.50
		75	0	21.77	22.26	22.16	23.50
	16QAM	1	0	22.51	22.27	22.89	23.50
		1	38	23.11	22.78	22.97	23.50
		1	74	21.89	22.46	22.15	23.50
		36	0	21.80	21.34	21.68	22.50
		36	18	21.49	21.48	21.49	22.50
		36	39	20.72	22.29	20.80	22.50
		75	0	21.14	21.30	21.08	22.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	22.96	22.87	22.70	24.50
		1	50	22.81	23.25	23.15	24.50
		1	99	23.10	22.81	23.10	24.50
		50	0	21.86	22.11	21.90	23.50
		50	25	21.76	22.24	22.42	23.50
		50	50	21.51	21.92	22.51	23.50
		100	0	21.89	22.28	22.26	23.50
	16QAM	1	0	22.53	22.31	22.73	23.50
		1	50	22.93	22.84	22.79	23.50
		1	99	21.81	22.42	22.07	23.50
		50	0	21.62	21.22	21.54	22.50
		50	25	21.55	21.48	21.37	22.50
		50	50	20.84	22.23	20.90	22.50
		100	0	21.20	21.40	21.04	22.50

LTE Band 66							
Sensor on--Main Ant				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				131979/1710.7	132322/1745	132665/1779.3	
1.4MHz	QPSK	1	0	17.06	17.23	17.09	18.50
		1	2	17.79	17.35	17.37	18.50
		1	5	16.71	17.88	17.45	18.50
		3	0	17.65	17.07	16.83	18.50
		3	2	17.86	17.16	17.61	18.50
		3	3	17.62	17.37	17.09	18.50
		6	0	16.88	17.64	17.60	18.50
	16QAM	1	0	17.42	17.48	17.66	18.50
		1	2	17.63	17.49	17.52	18.50
		1	5	17.33	17.83	17.69	18.50
		3	0	17.70	17.24	16.98	18.50
		3	2	17.27	17.48	17.50	18.50
		3	3	17.20	17.69	17.21	18.50
		6	0	16.76	17.42	17.50	18.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				131987/1711.5	132322/1745	132657/1778.5	
3MHz	QPSK	1	0	17.06	17.15	16.99	18.00
		1	7	17.81	17.47	17.29	18.00
		1	14	16.83	17.78	17.45	18.00
		8	0	17.63	17.11	16.95	18.00
		8	4	17.70	17.28	17.55	18.00
		8	7	17.56	17.47	17.17	18.00
		15	0	16.72	17.58	17.52	18.00
	16QAM	1	0	17.48	17.44	17.56	18.00
		1	7	17.47	17.53	17.60	18.00
		1	14	17.27	17.77	17.57	18.00
		8	0	17.82	17.32	17.04	18.00
		8	4	17.27	17.54	17.50	18.00
		8	7	17.10	17.57	17.33	18.00
		15	0	16.88	17.36	17.42	18.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				131997/1712.5	132322/1745	132647/1777.5	
5MHz	QPSK	1	0	17.10	16.81	17.07	18.00
		1	13	17.61	17.35	17.37	18.00
		1	24	17.09	17.60	17.21	18.00
		12	0	17.61	17.39	17.21	18.00
		12	6	17.44	17.50	17.35	18.00
		12	13	17.36	17.49	17.23	18.00
		25	0	17.14	17.42	17.48	18.00

	16QAM	1	0	17.64	17.52	17.38	18.00
		1	13	17.59	17.59	17.66	18.00
		1	24	17.17	17.55	17.65	18.00
		12	0	17.68	17.20	17.12	18.00
		12	6	17.45	17.50	17.42	18.00
		12	13	17.36	17.55	17.37	18.00
		25	0	17.02	17.36	17.66	18.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132022/1715	132322/1745	132622/1775	
10MHz	QPSK	1	0	17.10	16.91	17.05	18.00
		1	25	17.69	17.25	17.47	18.00
		1	49	16.97	17.70	17.19	18.00
		25	0	17.67	17.35	17.03	18.00
		25	13	17.28	17.50	17.55	18.00
		25	25	17.46	17.55	17.25	18.00
		50	0	17.02	17.32	17.42	18.00
	16QAM	1	0	17.50	17.68	17.36	18.00
		1	25	17.65	17.65	17.56	18.00
		1	49	17.33	17.51	17.55	18.00
		25	0	17.78	17.48	17.10	18.00
		25	13	17.45	17.34	17.34	18.00
		25	25	17.60	17.71	17.43	18.00
		50	0	17.06	17.24	17.54	18.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132047/1717.5	132322/1745	132597/1772.5	
15MHz	QPSK	1	0	17.02	17.03	17.15	18.00
		1	38	17.67	17.27	17.45	18.00
		1	74	16.91	17.68	17.19	18.00
		36	0	17.55	17.37	17.07	18.00
		36	18	17.26	17.26	17.31	18.00
		36	39	17.36	17.55	17.17	18.00
		75	0	17.18	17.42	17.44	18.00
	16QAM	1	0	17.52	17.46	17.40	18.00
		1	38	17.47	17.81	17.72	18.00
		1	74	17.31	17.67	17.41	18.00
		36	0	17.72	17.36	17.28	18.00
		36	18	17.47	17.58	17.46	18.00
		36	39	17.34	17.53	17.27	18.00
		75	0	16.96	17.48	17.52	18.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				132072/1720	132322/1745	132572/1770	
20MHz	QPSK	1	0	17.14	16.91	17.13	18.00
		1	50	17.20	17.50	17.30	18.00

		1	99	17.22	17.48	17.28	18.00
		50	0	17.40	17.44	17.05	18.00
		50	25	17.38	17.38	17.43	18.00
		50	50	17.36	17.40	17.21	18.00
		100	0	17.04	17.34	17.52	18.00
	16QAM	1	0	17.48	17.46	17.40	18.00
		1	50	17.53	17.67	17.56	18.00
		1	99	17.25	17.57	17.53	18.00
		50	0	17.58	17.26	17.10	18.00
		50	25	17.41	17.44	17.44	18.00
		50	50	17.44	17.53	17.31	18.00
		100	0	17.08	17.36	17.52	18.00

9.3 WLAN Mode

Wi-Fi 2.4G Full power Ant0 Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11b (1M)	1/2412	17.00	16.09
	6/2437	17.00	16.34
	11/2462	17.00	16.26
802.11g (6M)	1/2412	15.00	14.09
	6/2437	15.00	13.62
	11/2462	15.00	13.60
802.11n-HT20 (MCS0)	1/2412	15.00	14.04
	6/2437	15.00	13.59
	11/2462	15.00	13.70
802.11n-HT40 (MCS0)	3/2422	15.00	14.13
	6/2437	15.00	13.84
	9/2452	15.00	13.10
Note: Initial test configuration is 802.11b mode.			

Wi-Fi 2.4G Full power Ant1 Mode	Channel /Frequency(MHz)	Maximum Output Power (dBm)	
		Tune-up	Meas.
802.11b (1M)	1/2412	17.00	16.01
	6/2437	17.00	16.17
	11/2462	17.00	16.05
802.11g (6M)	1/2412	15.00	14.48
	6/2437	15.00	14.87
	11/2462	15.00	14.16
802.11n-HT20 (MCS0)	1/2412	15.00	14.62
	6/2437	15.00	14.87
	11/2462	15.00	14.09
802.11n-HT40 (MCS0)	3/2422	15.00	14.65
	6/2437	15.00	14.35
	9/2452	15.00	14.02
Note: Initial test configuration is 802.11b mode.			

Wi-Fi 2.4G(MIMO)	Channel /Frequency(MHz)	Maximum Output Power (dBm)			
Mode		Tune-up	Meas.	Ant 0	Ant 1
802.11g (6M)	1/2412	18.00	17.14	13.75	14.48
	6/2437	18.00	17.30	13.62	14.87
	11/2462	18.00	16.90	13.60	14.16
802.11n-HT20 (MCS0)	1/2412	18.00	17.15	13.60	14.62
	6/2437	18.00	17.29	13.59	14.87
	11/2462	18.00	16.91	13.70	14.09
802.11n-HT40 (MCS0)	3/2422	18.00	17.16	13.58	14.65
	6/2437	18.00	16.83	13.22	14.35
	9/2452	18.00	16.59	13.10	14.02
Note: Initial test configuration is 802.11g mode.					

10 Measured and Reported (Scaled) SAR Results

10.1 EUT Antenna Locations

The Detailed Antenna Locations Refer to *Antenna Locations.*

Overall (Length x Width): 100 mm x 60 mm Overall Diagonal: 116 mm						
Distance of the Antenna to the EUT Surface/Edge						
Antenna	Back Side	Front Side	Left Edge	Right Edge	Top Edge	Bottom Edge
Main-Antenna	＜25mm	＜25mm	＜25mm	＜25mm	＜25mm	＞25mm
Wi-Fi Antenna 0	＜25mm	＜25mm	＞25mm	＜25mm	＞25mm	＞25mm
Wi-Fi Antenna 1	＜25mm	＜25mm	＜25mm	＞25mm	＞25mm	＞25mm
Hotspot mode, Positions for SAR Tests						
Mode	Back Side	Front side	Left Edge	Right Edge	Top Edge	Bottom Edge
Main-Antenna	Yes	Yes	Yes	Yes	Yes	N/A
Wi-Fi Antenna 0	Yes	Yes	N/A	Yes	N/A	N/A
Wi-Fi Antenna 1	Yes	Yes	Yes	N/A	N/A	N/A

Note:
1. Per KDB 941225 D06, when the overall device length and width are ≥ 9cm*5cm, the test distance is 10mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.
2. Per FCC KDB 447498 D01,
for each exposure position, testing of other requised channels within the operating
mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:
a) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100MHz
b) ≤ 0.6 W/kg or 1.5 W/kg, for1-g or 10-g
respectively, when the transmission band is between 100 MHz and 200 MHz.
c) ≤ 0.4 W/kg or 1.0 Wkg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.

10.2 Measured SAR Results

Note:

1. The value with blue color is the maximum SAR Value of each test band.
2. For WCDMA, When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.
3. For LTE, QPSK with 100% RB allocation, SAR is required when and the highest reported SAR for 1 RB and 50% RB allocation in are≥ 50% limit(1g).

Band	Antenna	Test Position	Dist. (mm)	Mode	Power Reduction	RB	Offset	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g (W/Kg)	Power Drift (dB)	Scaling Factor	Report SAR1g (W/kg)	Plot No.
WCDMA II	Main	Back Side	10	RMC	Sensor on	N/A	N/A	9400/1880	20.50	19.45	0.754	0.026	1.27	0.960	/
			10	RMC	Sensor on	N/A	N/A	9262/1852.4	20.50	19.36	0.880	-0.031	1.30	1.144	14
			10	RMC	Sensor on	N/A	N/A	9538/1907.6	20.50	19.45	0.831	-0.100	1.27	1.058	/
		Front Side	10	RMC	Sensor on	N/A	N/A	9400/1880	20.50	19.45	0.596	0.012	1.27	0.759	/
		Left Edge	10	RMC	Sensor on	N/A	N/A	9400/1880	20.50	19.45	0.075	0.011	1.27	0.096	/
		Right Edge	10	RMC	Sensor off	N/A	N/A	9400/1880	24.50	23.78	0.396	0.024	1.18	0.467	/
		Top Edge	10	RMC	Sensor on	N/A	N/A	9400/1880	20.50	19.45	0.507	0.023	1.27	0.646	/
		Bottom Edge	10	RMC	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Back Side Battery2	10	RMC	Sensor on	N/A	N/A	9262/1852.4	20.50	19.36	0.826	-0.030	1.30	1.074	/
WCDMA IV	Main	Back Side	10	RMC	Sensor on	N/A	N/A	1413/1732.6	20.00	18.39	0.632	0.190	1.45	0.916	15
			10	RMC	Sensor on	N/A	N/A	1312/1712.4	20.00	18.48	0.588	0.012	1.42	0.834	/
			10	RMC	Sensor on	N/A	N/A	1513/1752.6	20.00	18.82	0.414	0.060	1.31	0.543	/
		Front Side	10	RMC	Sensor on	N/A	N/A	1413/1732.6	20.00	18.39	0.549	0.025	1.45	0.795	/
		Left Edge	10	RMC	Sensor on	N/A	N/A	1413/1732.6	20.00	18.39	0.045	0.040	1.45	0.065	/
		Right Edge	10	RMC	Sensor off	N/A	N/A	1413/1732.6	24.50	23.46	0.314	0.011	1.27	0.399	/
		Top Edge	10	RMC	Sensor on	N/A	N/A	1413/1732.6	20.00	18.39	0.430	-0.130	1.45	0.623	/
		Bottom Edge	10	RMC	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Back Side Battery2	10	RMC	Sensor on	N/A	N/A	1413/1732.6	20.00	18.39	0.610	0.090	1.45	0.884	/
WCDMA V	Main	Back Side	10	RMC	Sensor on	N/A	N/A	4183/836.6	21.50	20.35	0.743	0.110	1.30	0.968	16
			10	RMC	Sensor on	N/A	N/A	4132/826.4	21.50	20.31	0.652	0.021	1.32	0.858	/
			10	RMC	Sensor on	N/A	N/A	4233/846.6	21.50	20.36	0.568	0.039	1.30	0.738	/
		Front Side	10	RMC	Sensor on	N/A	N/A	4183/836.6	21.50	20.35	0.613	-0.042	1.30	0.799	/
		Left Edge	10	RMC	Sensor on	N/A	N/A	4183/836.6	21.50	20.35	0.325	0.049	1.30	0.424	/
		Right Edge	10	RMC	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	0.242	0.027	1.22	0.295	/
		Top Edge	10	RMC	Sensor on	N/A	N/A	4183/836.6	21.50	20.35	0.054	0.015	1.30	0.070	/
		Bottom Edge	10	RMC	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
LTE Band 2	Main	Back Side	10	QPSK	Sensor on	1	50	18700/1860	18.50	18.05	1.010	-0.020	1.11	1.120	17
			10	QPSK	Sensor on	1	0	18900/1880	18.50	17.80	0.623	-0.024	1.17	0.732	/

			10	QPSK	Sensor on	1	50	19100/1900	18.50	17.76	0.910	-0.010	1.19	1.079	/
			10	QPSK	Sensor on	50%	0	18700/1860	18.50	17.92	0.809	0.080	1.14	0.925	/
			10	QPSK	Sensor on	50%	0	18900/1880	18.50	17.81	0.582	-0.014	1.17	0.682	/
			10	QPSK	Sensor on	50%	50	19100/1900	18.50	17.72	0.529	0.037	1.20	0.633	/
			10	QPSK	Sensor on	100%	0	18700/1860	18.50	17.83	0.808	0.028	1.17	0.943	/
			10	QPSK	Sensor on	100%	0	18900/1880	18.50	17.62	0.677	0.060	1.22	0.829	/
			10	QPSK	Sensor on	100%	0	19100/1900	18.50	17.70	0.746	0.030	1.20	0.897	/
		Front Side	10	QPSK	Sensor on	1	50	18700/1860	18.50	18.05	0.965	0.012	1.11	1.070	/
			10	QPSK	Sensor on	1	0	18900/1880	18.50	17.80	0.761	0.069	1.17	0.894	/
			10	QPSK	Sensor on	1	50	19100/1900	18.50	17.76	0.703	-0.080	1.19	0.834	/
			10	QPSK	Sensor on	50%	0	18700/1860	18.50	17.92	0.748	0.040	1.14	0.855	/
			10	QPSK	Sensor on	50%	0	18900/1880	18.50	17.81	0.541	0.011	1.17	0.634	/
			10	QPSK	Sensor on	50%	50	19100/1900	18.50	17.72	0.522	0.053	1.20	0.625	/
		Left Edge	10	QPSK	Sensor on	1	50	18700/1860	18.50	18.05	0.063	0.016	1.11	0.070	/
			10	QPSK	Sensor on	50%	0	18700/1860	18.50	17.92	0.082	0.027	1.14	0.094	/
		Right Edge	10	QPSK	Sensor off	1	0	18900/1880	24.50	23.47	0.438	0.040	1.27	0.555	/
			10	QPSK	Sensor off	50%	0	18900/1880	23.50	22.63	0.539	0.010	1.22	0.659	/
		Top Edge	10	QPSK	Sensor on	1	50	18700/1860	18.50	18.05	0.632	0.019	1.11	0.701	/
			10	QPSK	Sensor on	50%	0	18700/1860	18.50	17.92	0.518	0.080	1.14	0.592	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Back Side Battery2	10	QPSK	Sensor on	1	50	18700/1860	18.50	18.05	0.839	0.093	1.11	0.931	/
LTE Band 5	Main	Back Side	10	QPSK	Sensor on	1	25	20450/829	21.50	20.11	0.672	0.024	1.38	0.925	/
			10	QPSK	Sensor on	1	25	20525/836.5	21.50	20.05	0.817	0.032	1.40	1.141	18
			10	QPSK	Sensor on	1	25	20600/844	21.50	20.09	0.647	0.070	1.38	0.895	/
			10	QPSK	Sensor on	50%	13	20450/829	21.50	20.08	0.689	0.029	1.39	0.955	/
			10	QPSK	Sensor on	50%	25	20525/836.5	21.50	19.97	0.755	-0.014	1.42	1.074	/
			10	QPSK	Sensor on	50%	25	20600/844	21.50	19.93	0.564	0.081	1.44	0.810	/
			10	QPSK	Sensor on	100%	0	20450/829	21.50	19.94	0.667	0.019	1.43	0.955	/
			10	QPSK	Sensor on	100%	0	20525/836.5	21.50	19.84	0.758	0.170	1.47	1.111	/
			10	QPSK	Sensor on	100%	0	20600/844	21.50	19.71	0.633	0.025	1.51	0.956	/
		Front Side	10	QPSK	Sensor on	1	25	20450/829	21.50	20.11	0.701	-0.058	1.38	0.965	/
			10	QPSK	Sensor on	1	25	20525/836.5	21.50	20.05	0.748	0.060	1.40	1.044	/
			10	QPSK	Sensor on	1	25	20600/844	21.50	20.09	0.739	0.080	1.38	1.022	/
			10	QPSK	Sensor on	50%	13	20450/829	21.50	20.08	0.703	0.058	1.39	0.975	/
			10	QPSK	Sensor on	50%	25	20525/836.5	21.50	19.97	0.713	0.087	1.42	1.014	/
			10	QPSK	Sensor on	50%	25	20600/844	21.50	19.93	0.637	0.013	1.44	0.914	/
		Left Edge	10	QPSK	Sensor on	1	25	20450/829	21.50	20.11	0.277	0.048	1.38	0.381	/
			10	QPSK	Sensor on	50%	13	20450/829	21.50	20.08	0.275	0.060	1.39	0.381	/
		Right Edge	10	QPSK	Sensor off	1	25	20525/836.5	24.50	22.93	0.314	0.090	1.44	0.451	/
			10	QPSK	Sensor off	50%	25	20525/836.5	23.50	22.02	0.218	-0.023	1.41	0.307	/
		Top Edge	10	QPSK	Sensor on	1	25	20450/829	21.50	20.11	0.069	0.044	1.38	0.095	/

			10	QPSK	Sensor on	50%	13	20450/829	21.50	20.08	0.056	0.160	1.39	0.078	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
LTE Band 7	Main	Back Side	10	QPSK	Sensor on	1	50	21100/2535	21.00	20.37	0.788	0.120	1.16	0.911	/
			10	QPSK	Sensor on	1	0	20850/2510	21.00	20.02	0.858	-0.033	1.25	1.075	/
			10	QPSK	Sensor on	1	99	21350/2560	21.00	20.10	0.573	0.065	1.23	0.705	/
			10	QPSK	Sensor on	50%	50	21100/2535	21.00	20.15	0.780	0.042	1.22	0.949	/
			10	QPSK	Sensor on	50%	0	20850/2510	21.00	19.99	0.658	0.029	1.26	0.830	/
			10	QPSK	Sensor on	50%	25	21350/2560	21.00	20.08	0.594	0.015	1.24	0.734	/
		Front Side	10	QPSK	Sensor on	1	50	21100/2535	21.00	20.37	0.625	0.070	1.16	0.723	/
			10	QPSK	Sensor on	1	0	20850/2510	21.00	20.02	0.971	0.078	1.25	1.217	/
			10	QPSK	Sensor on	1	99	21350/2560	21.00	20.10	0.985	0.012	1.23	1.212	/
			10	QPSK	Sensor on	50%	50	21100/2535	21.00	20.15	0.630	-0.057	1.22	0.766	/
			10	QPSK	Sensor on	50%	0	20850/2510	21.00	19.99	0.610	0.044	1.26	0.770	/
			10	QPSK	Sensor on	50%	25	21350/2560	21.00	20.08	0.594	0.049	1.24	0.734	/
		Left Edge	10	QPSK	Sensor on	1	99	21350/2560	21.00	20.10	0.123	0.025	1.23	0.151	/
			10	QPSK	Sensor on	50%	50	21100/2535	21.00	20.15	0.134	0.090	1.22	0.163	/
		Right Edge	10	QPSK	Sensor off	1	99	21100/2535	24.50	23.57	0.882	0.014	1.24	1.093	/
			10	QPSK	Sensor off	1	0	20850/2510	24.50	23.20	1.040	-0.099	1.35	1.403	19
			10	QPSK	Sensor off	1	99	21350/2560	24.50	23.47	0.788	0.012	1.27	0.999	/
			10	QPSK	Sensor off	50%	50	21350/2560	23.50	22.75	0.817	0.029	1.19	0.971	/
			10	QPSK	Sensor off	50%	0	20850/2510	23.50	22.62	0.516	0.070	1.22	0.632	/
			10	QPSK	Sensor off	50%	0	21100/2535	23.50	22.39	0.594	0.014	1.29	0.767	/
			10	QPSK	Sensor off	100%	0	21100/2535	23.50	22.49	0.792	-0.020	1.26	0.999	/
			10	QPSK	Sensor off	100%	0	20850/2510	23.50	22.37	0.513	0.028	1.30	0.665	/
			10	QPSK	Sensor off	100%	0	21350/2560	23.50	22.38	0.612	0.060	1.29	0.792	/
		Top Edge	10	QPSK	Sensor on	1	50	21100/2535	21.00	20.37	0.459	0.180	1.16	0.531	/
			10	QPSK	Sensor on	50%	50	21100/2535	21.00	20.15	0.408	0.040	1.22	0.496	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Right Edge Battery2	10	QPSK	Sensor off	1	0	20850/2510	24.50	23.20	0.701	0.032	1.35	0.946	/
LTE Band 40	Main	Back Side	10	QPSK	Sensor off	1	25	38750/2310.0	24.50	23.39	0.384	-0.012	1.29	0.496	/
			10	QPSK	Sensor off	50%	25	38750/2310.0	23.50	22.23	0.241	0.015	1.34	0.323	/
		Front Side	10	QPSK	Sensor off	1	25	38750/2310.0	24.50	23.39	0.346	0.016	1.29	0.447	/
			10	QPSK	Sensor off	50%	25	38750/2310.0	23.50	22.23	0.248	0.030	1.34	0.332	/
		Left Edge	10	QPSK	Sensor off	1	25	38750/2310.0	24.50	23.39	0.031	0.013	1.29	0.040	/
			10	QPSK	Sensor off	50%	25	38750/2310.0	23.50	22.23	0.024	0.020	1.34	0.032	/
		Right Edge	10	QPSK	Sensor off	1	25	38750/2310.0	24.50	23.39	0.245	0.026	1.29	0.316	/
			10	QPSK	Sensor off	50%	25	38750/2310.0	23.50	22.23	0.201	0.019	1.34	0.269	/
		Top Edge	10	QPSK	Sensor off	1	25	38750/2310.0	24.50	23.39	0.209	0.080	1.29	0.270	/
			10	QPSK	Sensor off	50%	25	38750/2310.0	23.50	22.23	0.162	-0.015	1.34	0.217	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A	/

			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA	N/A	/
		Back Side	10	QPSK	Sensor off	1	25	39200/2355.0	24.50	23.12	0.471	0.039	1.37	0.647	/
			10	QPSK	Sensor off	50%	0	39200/2355.0	23.50	22.04	0.387	0.016	1.40	0.542	/
		Back Side Battery2	10	QPSK	Sensor off	1	25	39200/2355.0	24.50	23.12	0.592	0.010	1.37	0.813	20
LTE Band 41	Main	Back Side	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.602	0.065	1.12	0.674	21
			10	QPSK	Sensor off	50%	50	39750/2506	23.50	23.04	0.526	-0.099	1.11	0.585	/
		Front Side	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.486	-0.041	1.12	0.544	/
			10	QPSK	Sensor off	50%	50	39750/2506	23.50	23.04	0.347	0.014	1.11	0.386	/
		Left Edge	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.082	-0.100	1.12	0.092	/
			10	QPSK	Sensor off	50%	50	39750/2506	23.50	23.04	0.067	0.011	1.11	0.074	/
		Right Edge	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.406	0.034	1.12	0.454	/
			10	QPSK	Sensor off	50%	50	39750/2506	23.50	23.04	0.316	0.020	1.11	0.351	/
		Top Edge	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.211	0.012	1.12	0.236	/
			10	QPSK	Sensor off	50%	50	39750/2506	23.50	23.04	0.218	-0.029	1.11	0.242	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Back Side Battery2	10	QPSK	Sensor off	1	99	39750/2506	24.50	24.01	0.565	0.032	1.12	0.632	/
LTE Band 66	Main	Back Side	10	QPSK	Sensor on	1	50	132322/1745	18.00	17.50	0.819	0.014	1.12	0.919	/
			10	QPSK	Sensor on	1	99	132072/1720	18.00	17.22	0.539	-0.022	1.20	0.645	/
			10	QPSK	Sensor on	1	50	132572/1770	18.00	17.30	1.060	0.039	1.17	1.245	22
			10	QPSK	Sensor on	50%	0	132322/1745	18.00	17.44	1.010	-0.045	1.14	1.149	/
			10	QPSK	Sensor on	50%	0	132072/1720	18.00	17.40	0.567	0.021	1.15	0.651	/
			10	QPSK	Sensor on	50%	25	132572/1770	18.00	17.43	0.983	0.050	1.14	1.121	/
			10	QPSK	Sensor on	100%	0	132572/1770	18.00	17.52	0.808	0.053	1.12	0.902	/
			10	QPSK	Sensor on	100%	0	132322/1745	18.00	17.34	0.794	0.021	1.16	0.924	/
			10	QPSK	Sensor on	100%	0	132072/1720	18.00	17.04	0.939	0.036	1.25	1.171	/
		Front Side	10	QPSK	Sensor on	1	50	132322/1745	18.00	17.50	0.244	0.017	1.12	0.274	/
			10	QPSK	Sensor on	50%	0	132322/1745	18.00	17.44	0.301	0.044	1.14	0.342	/
		Left Edge	10	QPSK	Sensor on	1	50	132322/1745	18.00	17.50	0.051	0.060	1.12	0.057	/
			10	QPSK	Sensor on	50%	0	132322/1745	18.00	17.44	0.055	0.070	1.14	0.063	/
		Right Edge	10	QPSK	Sensor off	1	50	132322/1745	24.50	23.25	0.455	0.068	1.33	0.607	/
			10	QPSK	Sensor off	50%	50	132572/1770	23.50	22.51	0.329	0.017	1.26	0.413	/
		Top Edge	10	QPSK	Sensor on	1	50	132322/1745	18.00	17.50	0.634	0.044	1.12	0.711	/
			10	QPSK	Sensor on	50%	0	132322/1745	18.00	17.44	0.682	-0.060	1.14	0.776	/
			10	QPSK	Sensor on	50%	0	132072/1720	18.00	17.40	0.308	0.013	1.15	0.354	/
			10	QPSK	Sensor on	50%	25	132572/1770	18.00	17.43	0.682	0.040	1.14	0.778	/
		Bottom Edge	10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
			10	QPSK	Sensor off	N/A	N/A	N/A	N/A	N/A	N/A	NA	N/A	N/A	/
		Back Side Battery2	10	QPSK	Sensor on	1	50	132572/1770	18.00	17.30	0.533	0.037	1.17	0.626	/

Band	Antenna	Test Position	Dist. (mm)	Mode	Duty Cycle	Power Reduction	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g (W/Kg)	Power Drift (dB)	Scaling Factor	Report SAR1g (W/kg)	Plot No.
Wi-Fi 2.4G	Ant 0	Back Side	10	11b	98.0%	Full Power	6/2437	17.00	16.34	0.279	-0.070	1.19	0.331	23
		Front Side	10	11b	98.0%	Full Power	6/2437	17.00	16.34	0.032	-0.029	1.19	0.038	/
		Left Edge	10	11b	98.0%	Full Power	6/2437	17.00	16.34	0.001	0.013	1.19	0.001	/
		Right Edge	10	11b	98.0%	Full Power	6/2437	17.00	16.34	0.068	0.012	1.19	0.081	/
		Top Edge	10	11b	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/
		Bottom Edge	10	11b	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/
		Back Side Battery2	10	11b	98.0%	Full Power	6/2437	17.00	16.34	0.269	0.110	1.19	0.320	/
	Ant 1	Back Side	10	11b	98.0%	Full Power	6/2437	17.00	16.17	0.131	0.030	1.48	0.194	/
		Front Side	10	11b	98.0%	Full Power	6/2437	17.00	16.17	0.236	0.029	1.48	0.350	/
		Left Edge	10	11b	98.0%	Full Power	6/2437	17.00	16.17	0.267	0.085	1.48	0.396	/
		Right Edge	10	11b	98.0%	Full Power	6/2437	17.00	16.17	0.001	0.032	1.48	0.001	/
		Top Edge	10	11b	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/
		Bottom Edge	10	11b	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/
	MIMO	Back Side	10	11g	98.0%	Full Power	6/2437	18.00	17.30	0.215	0.066	1.51	0.324	/
		Front Side	10	11g	98.0%	Full Power	6/2437	18.00	17.30	0.186	-0.026	1.51	0.280	/
		Left Edge	10	11g	98.0%	Full Power	6/2437	18.00	17.30	0.177	0.015	1.51	0.266	/
		Right Edge	10	11g	98.0%	Full Power	6/2437	18.00	17.30	0.047	0.040	1.51	0.071	/
		Top Edge	10	11g	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/
		Bottom Edge	10	11g	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	/

Additional SAR test at a conservative distance (triggering distance minus 1mm)

Band	Antenna	Dist. (mm)	Test Position	Mode	Power Reduction	RB	Offset	Ch./Freq. (MHz)	Tune-up (dBm)	Measured power (dBm)	Measured SAR1g (W/Kg)	Power Drift (dB)	Scaling Factor	Report SAR1g (W/kg)	Plot No.
WCDMA II	Main	23	Back Side	RMC 12.2K	Sensor off	N/A	N/A	9400/1880	24.50	23.78	0.605	0.072	1.18	0.714	/
		17	Front Side	RMC 12.2K	Sensor off	N/A	N/A	9400/1880	24.50	23.78	0.296	0.011	1.18	0.349	/
		11	Left Edge	RMC 12.2K	Sensor off	N/A	N/A	9400/1880	24.50	23.78	0.001	0.030	1.18	0.001	/
		17	Top Edge	RMC 12.2K	Sensor off	N/A	N/A	9400/1880	24.50	23.78	0.184	-0.010	1.18	0.217	/
WCDMA IV	Main	23	Back Side	RMC 12.2K	Sensor off	N/A	N/A	1413/1732.6	24.50	23.46	0.629	0.056	1.27	0.799	/
		17	Front Side	RMC 12.2K	Sensor off	N/A	N/A	1413/1732.6	24.50	23.46	0.298	0.023	1.27	0.379	/
		11	Left Edge	RMC 12.2K	Sensor off	N/A	N/A	1413/1732.6	24.50	23.46	0.045	0.080	1.27	0.057	/
		17	Top Edge	RMC 12.2K	Sensor off	N/A	N/A	1413/1732.6	24.50	23.46	0.230	0.014	1.27	0.292	/
WCDMA V	Main	23	Back Side	RMC 12.2K	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	1.020	0.030	1.22	1.243	/
		23	Back Side	RMC 12.2K	Sensor off	N/A	N/A	4132/826.4	24.50	23.62	0.823	0.030	1.22	1.008	/
		23	Back Side	RMC 12.2K	Sensor off	N/A	N/A	4233/846.6	24.50	23.45	0.687	0.043	1.27	0.875	/
		17	Front Side	RMC 12.2K	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	0.778	0.014	1.22	0.948	/
		17	Front Side	RMC 12.2K	Sensor off	N/A	N/A	4132/826.4	24.50	23.62	0.584	0.130	1.22	0.715	/
		17	Front Side	RMC 12.2K	Sensor off	N/A	N/A	4233/846.6	24.50	23.45	0.635	-0.110	1.27	0.809	/
		11	Left Edge	RMC 12.2K	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	0.265	0.038	1.22	0.323	/
		17	Top Edge	RMC 12.2K	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	0.001	-0.015	1.22	0.001	/
		23	Back Side Battery2	RMC 12.2K	Sensor off	N/A	N/A	4183/836.6	24.50	23.64	0.487	0.182	1.22	0.594	/
LTE Band 2	Main	23	Back Side	QPSK	Sensor off	1	0	18900/1880	24.50	23.47	0.544	0.020	1.27	0.690	/
		23	Back Side	QPSK	Sensor off	50%	0	18900/1880	23.50	22.63	0.624	-0.180	1.22	0.762	/
		17	Front Side	QPSK	Sensor off	1	0	18900/1880	24.50	23.47	0.369	0.041	1.27	0.468	/
		17	Front Side	QPSK	Sensor off	50%	0	18900/1880	23.50	22.63	0.270	0.036	1.22	0.330	/
		11	Left Edge	QPSK	Sensor off	1	0	18900/1880	24.50	23.47	0.001	0.029	1.27	0.001	/
		11	Left Edge	QPSK	Sensor off	50%	0	18900/1880	23.50	22.63	0.001	0.090	1.22	0.001	/
		17	Top Edge	QPSK	Sensor off	1	0	18900/1880	24.50	23.47	0.238	0.020	1.27	0.302	/
		17	Top Edge	QPSK	Sensor off	50%	0	18900/1880	23.50	22.63	0.172	0.018	1.22	0.210	/
LTE Band 5	Main	23	Back Side	QPSK	Sensor off	1	25	20525/836.5	24.50	22.93	0.808	0.013	1.44	1.160	/
		23	Back Side	QPSK	Sensor off	1	25	20450/829	24.50	22.85	0.777	0.029	1.46	1.136	/
		23	Back Side	QPSK	Sensor off	1	25	20600/844	24.50	22.81	0.766	0.020	1.48	1.130	/
		23	Back Side	QPSK	Sensor off	50%	25	20525/836.5	23.50	22.02	0.655	0.058	1.41	0.921	/
		23	Back Side	QPSK	Sensor off	50%	13	20450/829	23.50	21.98	0.629	-0.019	1.42	0.893	/
		23	Back Side	QPSK	Sensor off	50%	13	20600/844	23.50	21.82	0.605	0.060	1.47	0.891	/
		17	Front Side	QPSK	Sensor off	1	25	20525/836.5	24.50	22.93	0.727	0.058	1.44	1.044	/
		17	Front Side	QPSK	Sensor off	1	25	20450/829	24.50	22.85	0.752	0.032	1.46	1.100	/
		17	Front Side	QPSK	Sensor off	1	25	20600/844	24.50	22.81	0.832	-0.120	1.48	1.228	/
		17	Front Side	QPSK	Sensor off	50%	25	20525/836.5	23.50	22.02	0.685	0.019	1.41	0.963	/
		17	Front Side	QPSK	Sensor off	50%	13	20450/829	23.50	21.98	0.622	-0.100	1.42	0.883	/
		17	Front Side	QPSK	Sensor off	50%	13	20600/844	23.50	21.82	0.654	0.025	1.47	0.963	/

		11	Left Edge	QPSK	Sensor off	1	25	20525/836.5	24.50	22.93	0.269	0.042	1.44	0.386	/
		11	Left Edge	QPSK	Sensor off	50%	25	20525/836.5	23.50	22.02	0.245	0.035	1.41	0.344	/
		17	Top Edge	QPSK	Sensor off	1	25	20525/836.5	24.50	22.93	0.001	0.010	1.44	0.001	/
		17	Top Edge	QPSK	Sensor off	50%	25	20525/836.5	23.50	22.02	0.001	0.020	1.41	0.001	/
		17	Front Side Battery2	QPSK	Sensor off	1	25	20600/844	24.50	22.81	0.501	0.021	1.48	0.739	/
LTE Band 7	Main	23	Back Side	QPSK	Sensor off	1	99	21100/2535	24.50	23.57	0.524	0.053	1.24	0.649	/
		23	Back Side	QPSK	Sensor off	50%	50	21350/2560	23.50	22.75	0.358	0.042	1.19	0.425	/
		17	Front Side	QPSK	Sensor off	1	99	21100/2535	24.50	23.57	0.475	-0.016	1.24	0.588	/
		17	Front Side	QPSK	Sensor off	50%	50	21350/2560	23.50	22.75	0.272	0.080	1.19	0.323	/
		11	Left Edge	QPSK	Sensor off	1	99	21100/2535	24.50	23.57	0.175	0.025	1.24	0.217	/
		11	Left Edge	QPSK	Sensor off	50%	50	21350/2560	23.50	22.75	0.145	0.021	1.19	0.172	/
		17	Top Edge	QPSK	Sensor off	1	99	21100/2535	24.50	23.57	0.150	0.029	1.24	0.186	/
		17	Top Edge	QPSK	Sensor off	50%	50	21350/2560	23.50	22.75	0.077	0.012	1.19	0.092	/
LTE Band 66	Main	23	Back Side	QPSK	Sensor off	1	50	132322/1745	24.50	23.25	0.722	0.016	1.33	0.963	/
		23	Back Side	QPSK	Sensor off	1	99	132072/1720	24.50	23.10	0.574	0.158	1.38	0.792	/
		23	Back Side	QPSK	Sensor off	1	50	132572/1770	24.50	23.15	0.897	0.064	1.36	1.224	/
		23	Back Side	QPSK	Sensor off	50%	50	132572/1770	23.50	22.51	0.825	0.063	1.26	1.036	/
		23	Back Side	QPSK	Sensor off	50%	25	132322/1745	23.50	22.24	0.931	0.080	1.34	1.244	/
		23	Back Side	QPSK	Sensor off	50%	0	132072/1720	23.50	21.86	0.419	-0.022	1.46	0.611	/
		17	Front Side	QPSK	Sensor off	1	50	132322/1745	24.50	23.25	0.388	-0.040	1.33	0.517	/
		17	Front Side	QPSK	Sensor off	50%	50	132572/1770	23.50	22.51	0.353	0.025	1.26	0.443	/
		11	Left Edge	QPSK	Sensor off	1	50	132322/1745	24.50	23.25	0.050	0.048	1.33	0.067	/
		11	Left Edge	QPSK	Sensor off	50%	50	132572/1770	23.50	22.51	0.042	0.027	1.26	0.053	/
		17	Top Edge	QPSK	Sensor off	1	50	132322/1745	24.50	23.25	0.352	0.031	1.33	0.469	/
		17	Top Edge	QPSK	Sensor off	50%	50	132572/1770	23.50	22.51	0.301	0.020	1.26	0.378	/

10.3 Simultaneous Transmission Analysis

Simultaneous Transmission Configurations	Hotspot
Main Antenna + Wi-Fi 2.4GHz Antenna	Yes

General Note:

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

i) Scalar SAR summation < 1.6W/kg, simultaneously transmission SAR measurement is not necessary.

ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.

iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

The Maximum SAR_{1g} Value for Main-Antenna

Test Position \ SAR_{1g}(W/kg)		WCDMA Band II	WCDMA Band IV	WCDMA Band V	LTE Band 2	LTE Band 5	LTE Band 7	LTE Band 40	LTE Band 41	LTE Band 66	MAX. SAR_{1g}
Hotspot	Back Side	1.144	0.916	0.968	1.120	1.141	1.075	0.813	0.674	1.245	1.245
	Front Side	0.759	0.795	0.799	1.070	1.044	1.217	0.447	0.544	0.342	1.217
	Left Edge	0.096	0.065	0.424	0.094	0.381	0.163	0.040	0.092	0.063	0.424
	Right Edge	0.467	0.399	0.295	0.659	0.451	1.403	0.316	0.454	0.607	1.403
	Top Edge	0.646	0.623	0.070	0.701	0.095	0.531	0.270	0.242	0.778	0.778
	Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

About Main- Antenna and Wi-Fi 2.4G

Test Position \ SAR_{1g} (W/kg)		Main-Antenna	Wi-Fi 2.4G			MAX. ΣSAR_{1g}
			Ant 0	Ant 1	MIMO	
Hotspot	Back Side	1.245	**0.331**	0.162	0.258	1.576
	Front Side	1.217	0.038	**0.292**	0.223	1.509
	Left Edge	0.424	0.001	**0.330**	0.212	0.754
	Right Edge	1.403	**0.081**	0.001	0.056	1.484
	Top Edge	0.778	N/A	N/A	N/A	0.778
	Bottom Edge	N/A	N/A	N/A	N/A	N/A

Note:

1. The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}
3. MAX. ΣSAR_{1g} =1.576W/kg<1.6W/kg, so the Simultaneous transmission SAR with volume scan are not required for Main- Antenna and Wi-Fi 2.4G

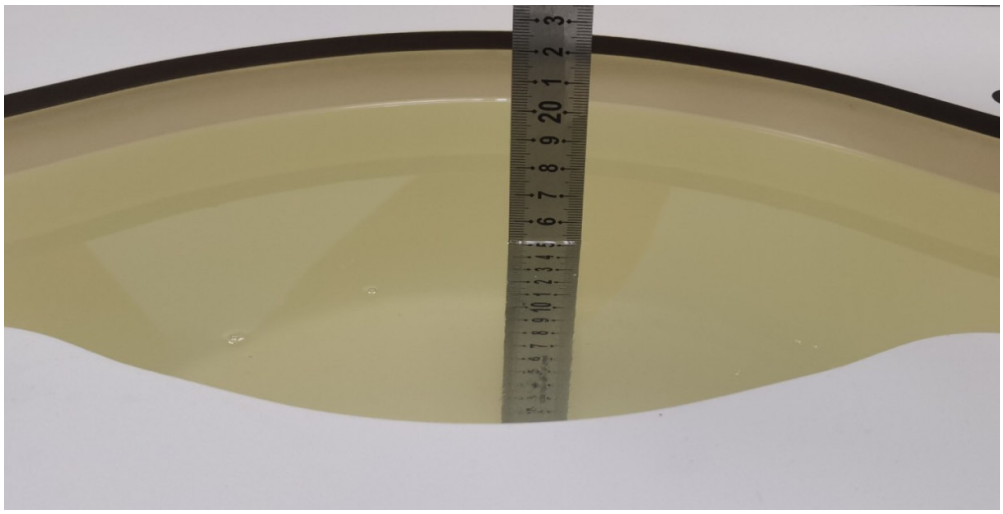
11 Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528- 2013 is not required in SAR reports submitted for equipment approval.

ANNEX A: Test Layout

Tissue Simulating Liquids

For the measurement of the field distribution inside the flat phantom with DASY, the phantom must be filled with around 25 liters of homogeneous tissue simulating liquid. For SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is ＞15 cm, which is shown as below.



Picture 3: Liquid depth in the flat Phantom

ANNEX B: System Check Results

Plot 1 System Performance Check at 835 MHz TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2

Date: 2024/4/10

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 0.88 S/m; ε_r = 41.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.66, 9.52, 8.51); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=15mm, Pin=250mW/Area Scan (4x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.58 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.241 V/m; Power Drift = -0.076 dB

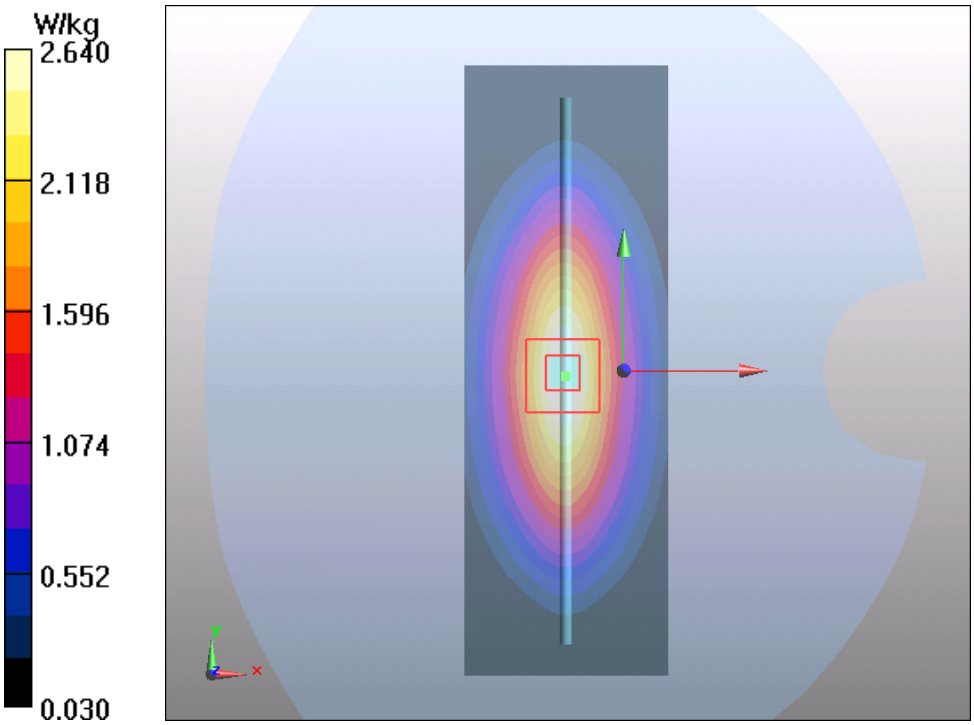
Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.44 W/kg; SAR(10 g) = 1.6 W/kg

Smallest distance from peaks to all points 3 dB below = 16.6 mm

Ratio of SAR at M2 to SAR at M1 = 68.1%

Maximum value of SAR (measured) = 2.64 W/kg



Plot 2 System Performance Check at 835 MHz TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2

Date: 2024/6/22

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ =0.87 S/m; ε_r = 41.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.66, 9.52, 8.51); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=15mm, Pin=250mW/Area Scan (4x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 2.59 W/kg

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 52.023 V/m; Power Drift = -0.06 dB

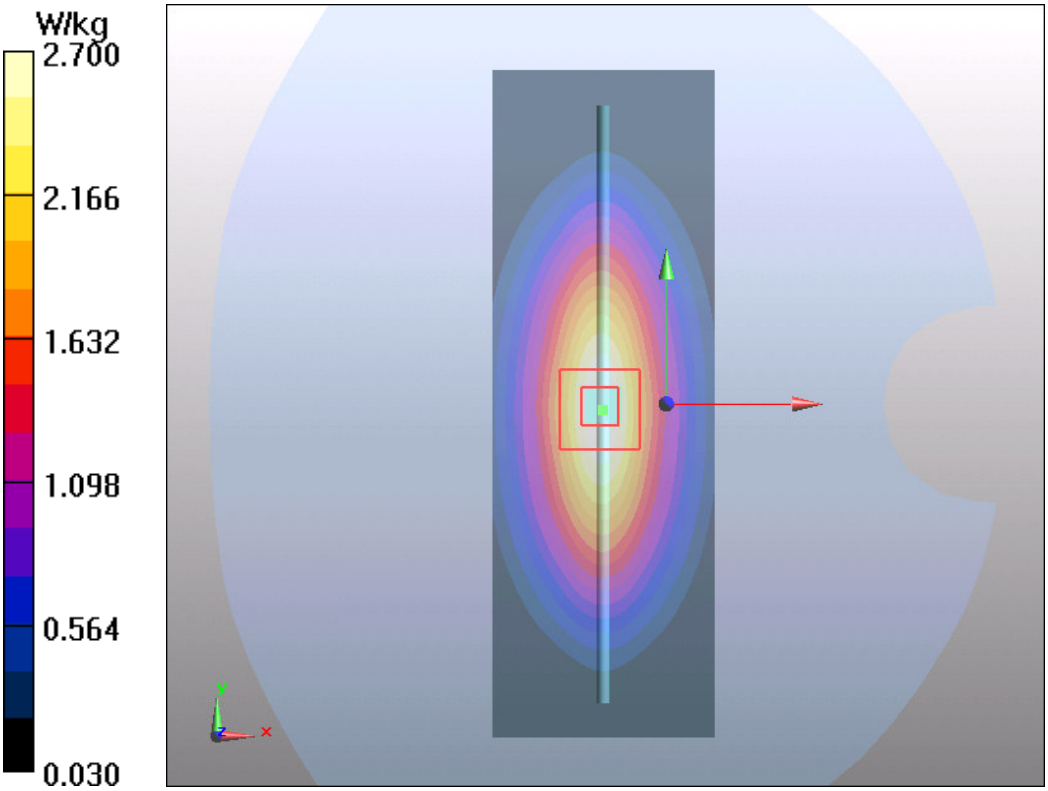
Peak SAR (extrapolated) = 3.25 W/kg

SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.65 W/kg

Smallest distance from peaks to all points 3 dB below = 15.7 mm

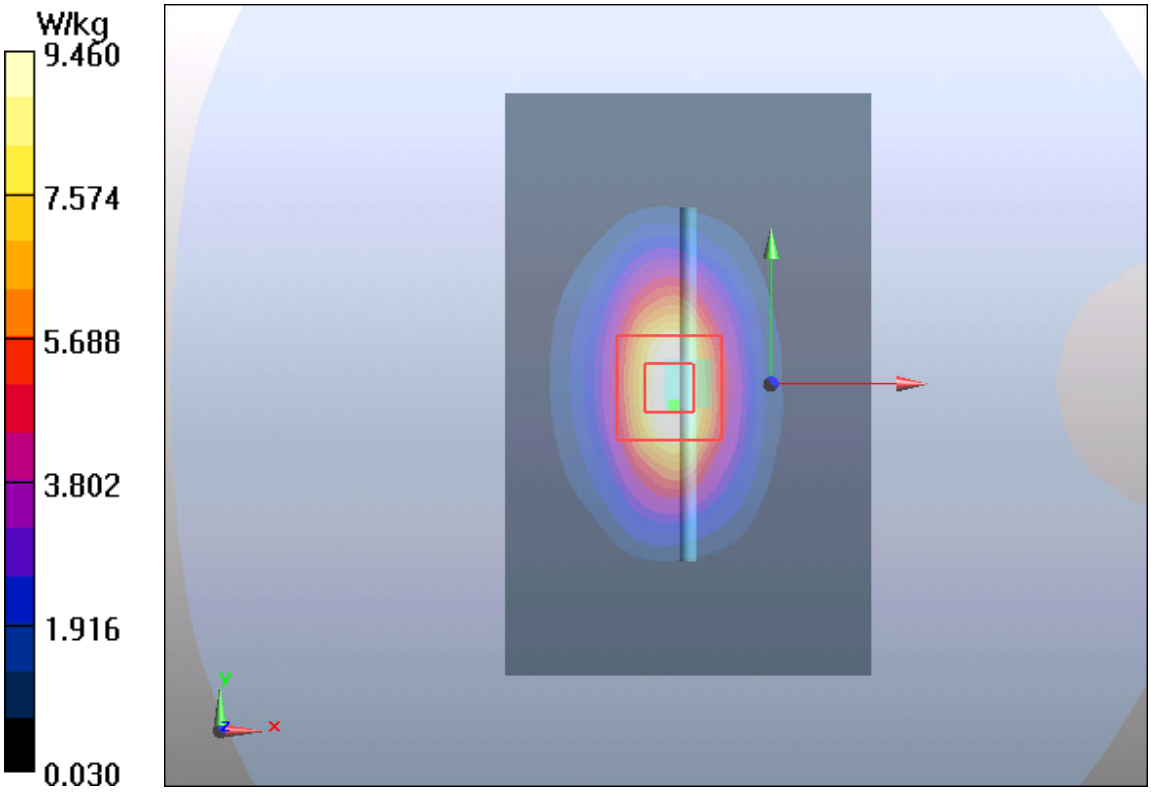
Ratio of SAR at M2 to SAR at M1 = 65.4%

Maximum value of SAR (measured) = 2.70 W/kg



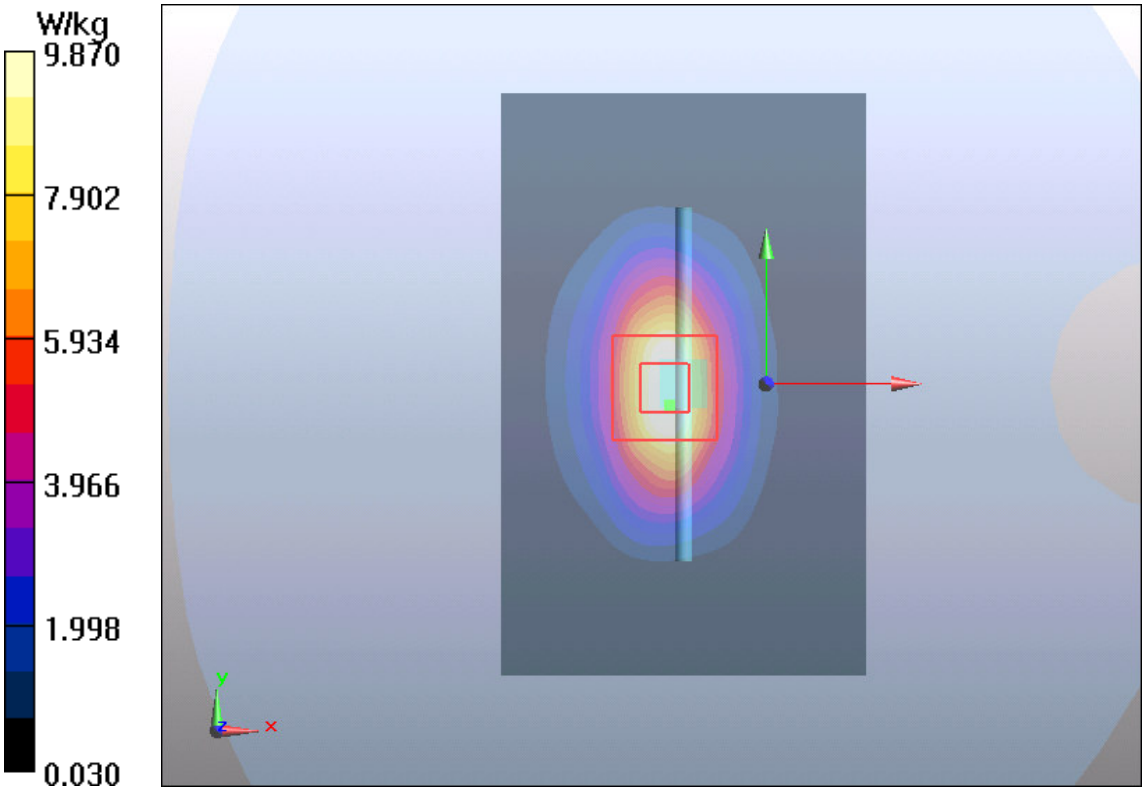
Plot 3 System Performance Check at 1750 MHz TSL
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2
Date: 2024/4/2
Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.34 S/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(7.80, 8.35, 7.88); Calibrated: 2023/7/20
Electronics: DAE4 SN1317; Calibrated: 2023/9/13
Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (5x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 9.18 W/kg
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 80.385 V/m; Power Drift = 0.075 dB
Peak SAR (extrapolated) = 15.5 W/kg
SAR(1 g) = 8.95 W/kg; SAR(10 g) = 4.8 W/kg
Smallest distance from peaks to all points 3 dB below = 10mm
Ratio of SAR at M2 to SAR at M1 = 53.5%
Maximum value of SAR (measured) = 9.46 W/kg



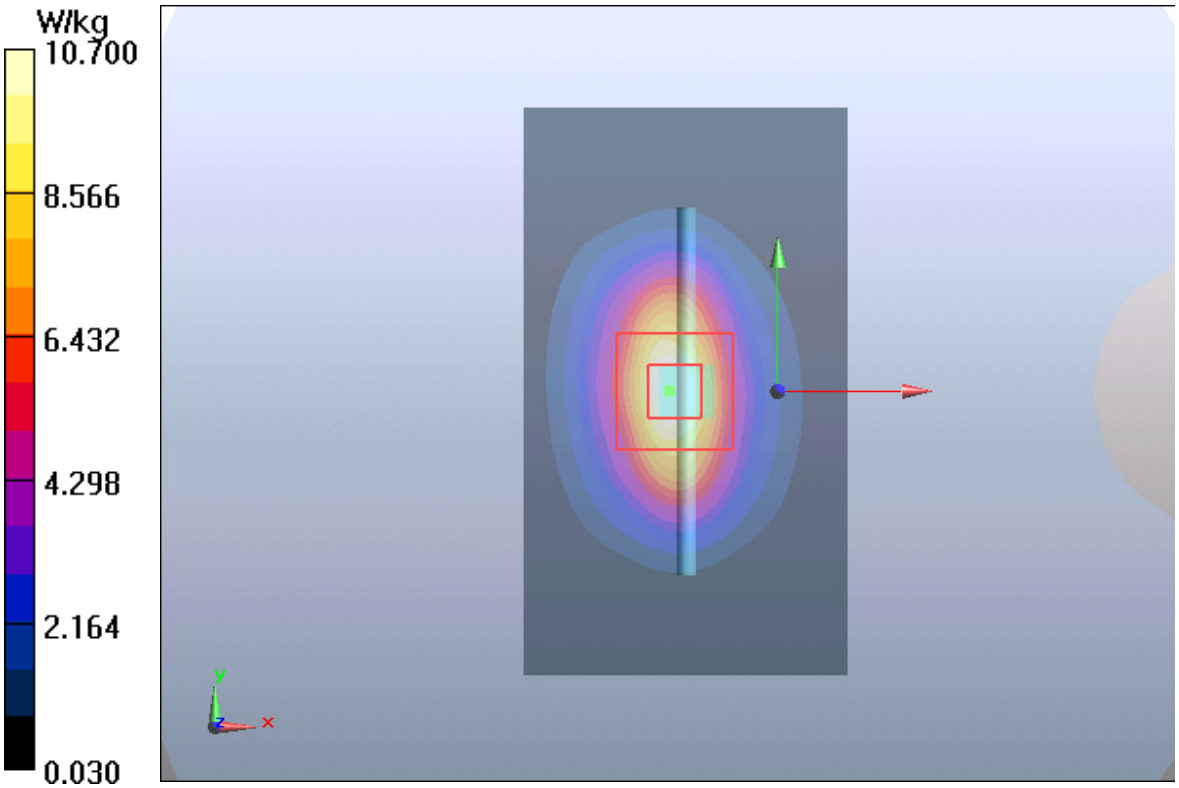
Plot 4 System Performance Check at 1750 MHz TSL
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2
Date: 2024/6/22
Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.34 S/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(7.80, 8.35, 7.88); Calibrated: 2023/7/20
Electronics: DAE4 SN1317; Calibrated: 2023/9/13
Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (5x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 9.77 W/kg
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 80.134 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 15.81 W/kg
SAR(1 g) = 9.11 W/kg; SAR(10 g) = 4.77 W/kg
Smallest distance from peaks to all points 3 dB below = 8.6mm
Ratio of SAR at M2 to SAR at M1 = 54.6%
Maximum value of SAR (measured) = 9.87 W/kg



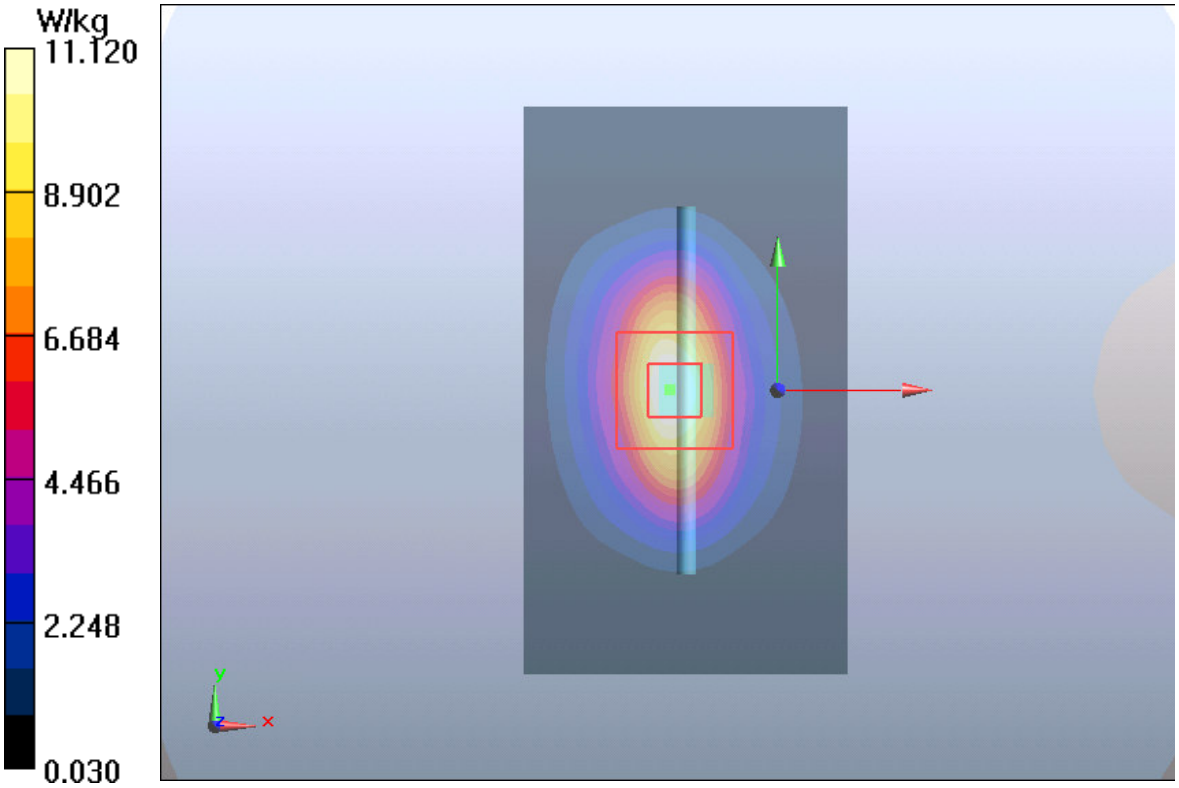
Plot 5 System Performance Check at 1900 MHz TSL
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2
Date: 2024/4/3
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.41 S/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(7.70, 8.25, 7.79); Calibrated: 2023/7/20
Electronics: DAE4 SN1317; Calibrated: 2023/9/13
Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.23 W/kg
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.857V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 17.84 W/kg
SAR(1 g) = 9.88 W/kg; SAR(10 g) = 4.9 W/kg
Smallest distance from peaks to all points 3 dB below = 11.4 mm
Ratio of SAR at M2 to SAR at M1 = 52.7%
Maximum value of SAR (measured) = 10.70 W/kg



Plot 6 System Performance Check at 1900 MHz TSL
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2
Date: 2024/6/22
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.43 S/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(7.70, 8.25, 7.79); Calibrated: 2023/7/20
Electronics: DAE4 SN1317; Calibrated: 2023/9/13
Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.43 W/kg
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.324 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 19.2 W/kg
SAR(1 g) = 9.85 W/kg; SAR(10 g) = 4.93 W/kg
Smallest distance from peaks to all points 3 dB below = 9.2mm
Ratio of SAR at M2 to SAR at M1 = 56.3%
Maximum value of SAR (measured) = 11.12 W/kg



Plot 7 System Performance Check at 2300 MHz TSL

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2

Date: 2024/3/4

Communication System: CW Frequency: 2300 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2300 MHz; σ = 1.65 S/m; ε_r = 40.0; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.45, 8.00, 7.60); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 13.10 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 85.188 V/m; Power Drift = 0.09 dB

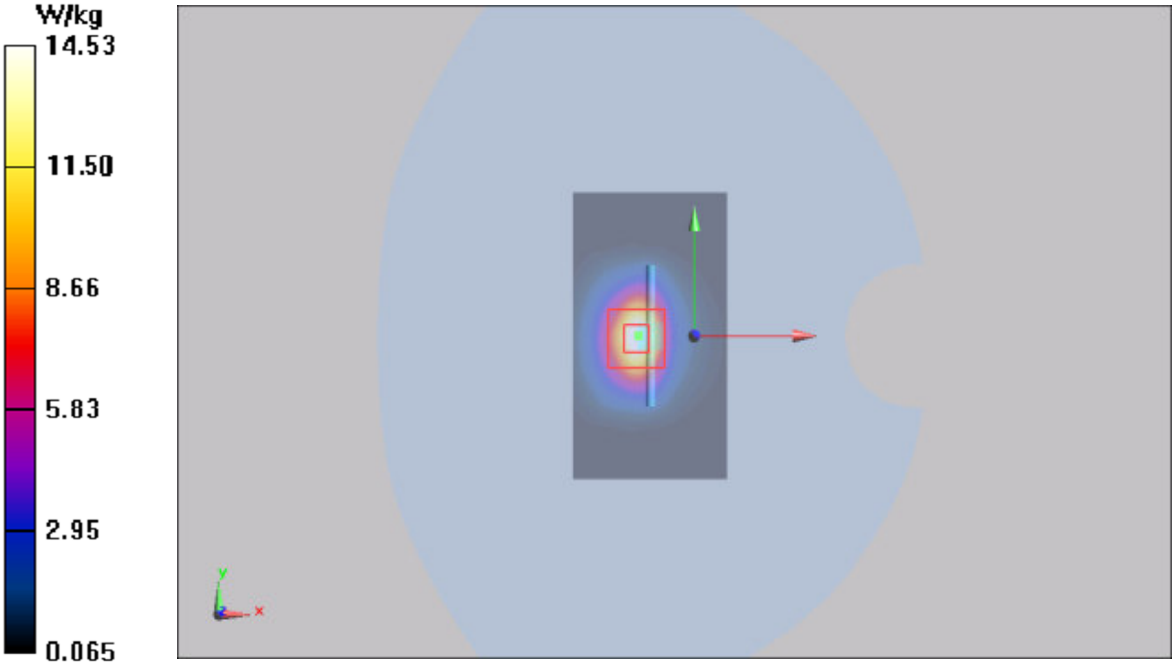
Peak SAR (extrapolated) = 26.4 W/kg

SAR(1 g) = 12.36 W/kg; SAR(10 g) = 5.90 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 51.8%

Maximum value of SAR (measured) = 14.53 W/kg



Plot 8 System Performance Check at 2300 MHz TSL

DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2

Date: 2024/6/22

Communication System: CW Frequency: 2300 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2300 MHz; σ = 1.64 S/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.45, 8.00, 7.60); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 12.96 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.215 V/m; Power Drift = 0.029 dB

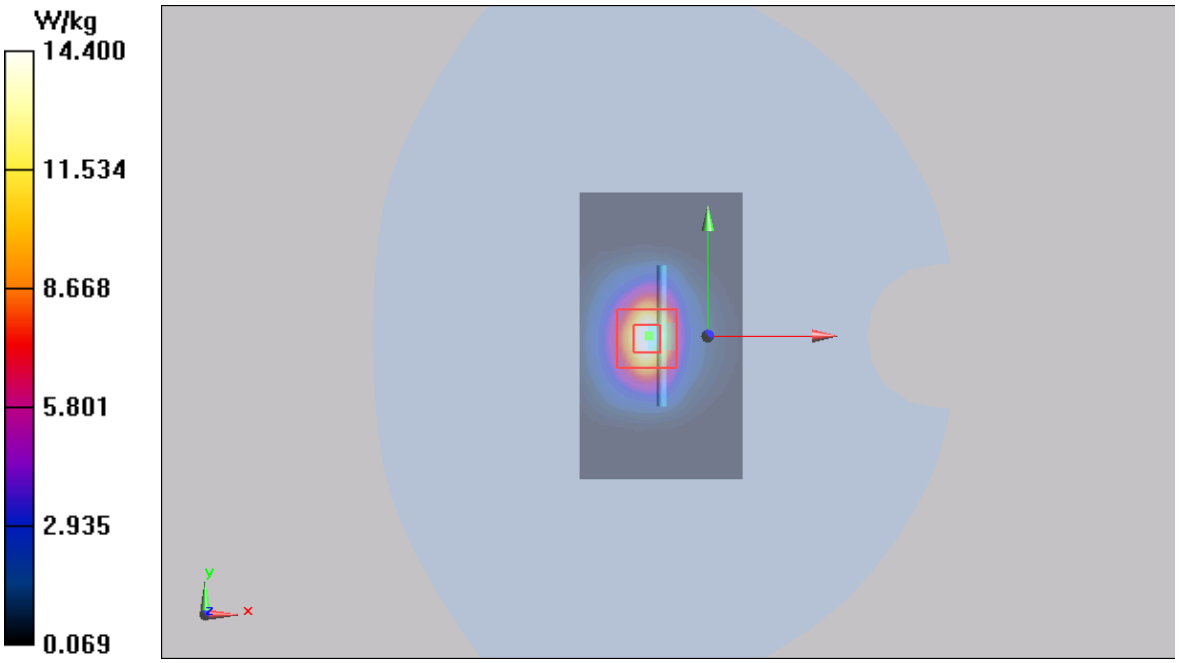
Peak SAR (extrapolated) = 24.83 W/kg

SAR(1 g) = 12.32 W/kg; SAR(10 g) = 5.89 W/kg

Smallest distance from peaks to all points 3 dB below = 9.8 mm

Ratio of SAR at M2 to SAR at M1 = 53.7%

Maximum value of SAR (measured) = 14.40W/kg



Plot 9 System Performance Check at 2450 MHz TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2

Date: 2024/3/8

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; σ = 1.81 S/m; ε_r = 38.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 14.26 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 88.834 V/m; Power Drift = 0.015 dB

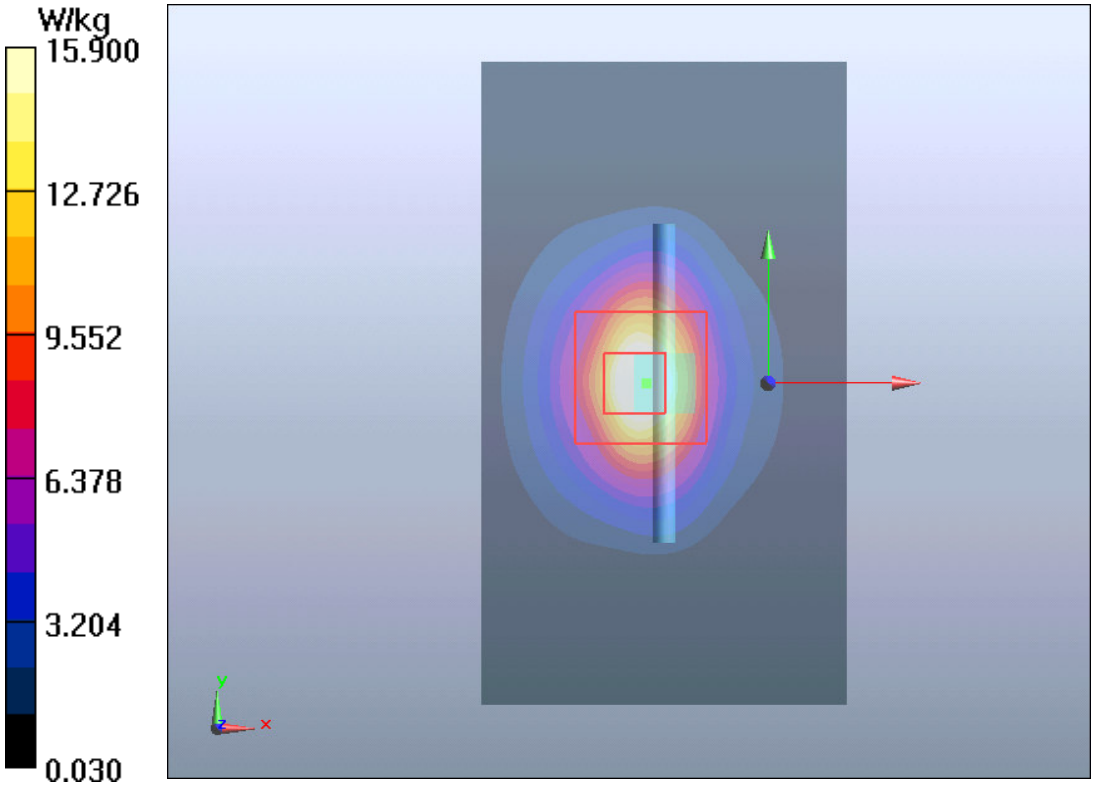
Peak SAR (extrapolated) = 30.10 W/kg

SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.22 W/kg

Smallest distance from peaks to all points 3 dB below = 8.9 mm

Ratio of SAR at M2 to SAR at M1 = 47%

Maximum value of SAR (measured) = 15.90 W/kg



Plot 10 System Performance Check at 2450 MHz TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2

Date: 2024/6/22

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; σ = 1.82 S/m; ε_r = 38.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 14.01 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 82.461V/m; Power Drift = 0.06 dB

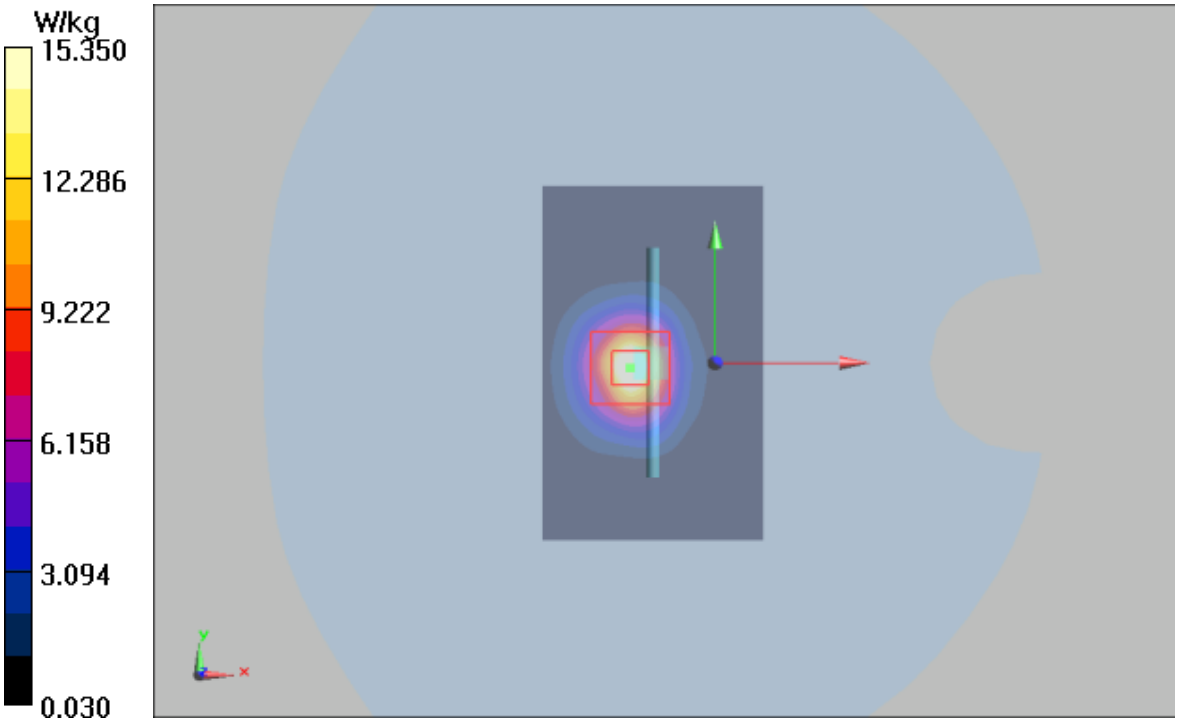
Peak SAR (extrapolated) = 28.46 W/kg

SAR(1 g) = 13.52 W/kg; SAR(10 g) = 6.17 W/kg

Smallest distance from peaks to all points 3 dB below = 9.2 mm

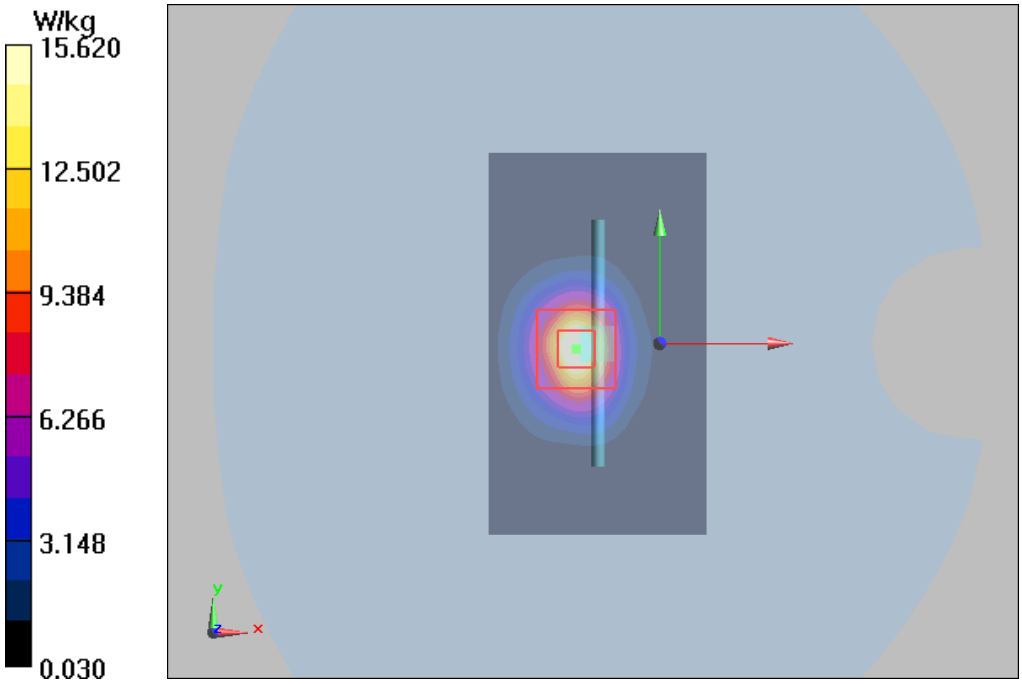
Ratio of SAR at M2 to SAR at M1 = 50.1%

Maximum value of SAR (measured) = 15.35 W/kg



Plot 11 System Performance Check at 2600 MHz TSL
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2
Date: 2024/4/7
Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.01 S/m; ε_r = 38.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Sensor-Surface: 1.4mm (Mechanical Surface Detection)
Probe: EX3DV4 - SN3677; ConvF(7.10, 7.59, 7.21); Calibrated: 2023/7/20
Electronics: DAE4 SN1317; Calibrated: 2023/9/13
Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666
Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid:dx=12mm, dy=12mm
Maximum value of SAR (measured) = 14.43 W/kg
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.998 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 31.85W/kg
SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.07 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 44.2%
Maximum value of SAR (measured) = 15.62 W/kg



Plot 12 System Performance Check at 2600 MHz TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2

Date: 2024/4/8

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2600 MHz; σ =1.94S/m; ε_r = 38.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.10, 7.59, 7.21); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid:dx=12mm, dy=12mm

Maximum value of SAR (measured) = 15.02 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 84.359 V/m; Power Drift = -0.015 dB

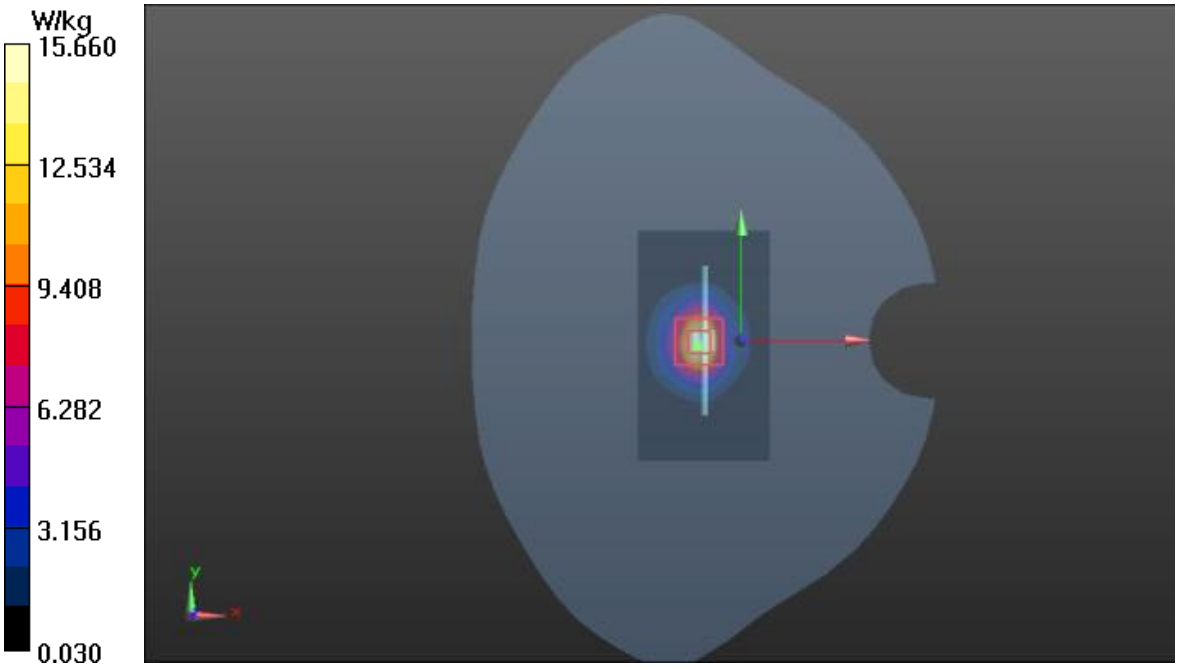
Peak SAR (extrapolated) = 30.62 W/kg

SAR(1 g) = 13.88 W/kg; SAR(10 g) = 6.09 W/kg

Smallest distance from peaks to all points 3 dB below = 10.3 mm

Ratio of SAR at M2 to SAR at M1 = 48.6%

Maximum value of SAR (measured) = 15.66 W/kg



Plot 13 System Performance Check at 2600 MHz TSL

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2

Date: 2024/6/22

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2600 MHz; σ = 1.99 S/m; ε_r = 38.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.10, 7.59, 7.21); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

d=10mm, Pin=250mW/Area Scan (4x7x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 14.20 W/kg

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.465 V/m; Power Drift = 0.146 dB

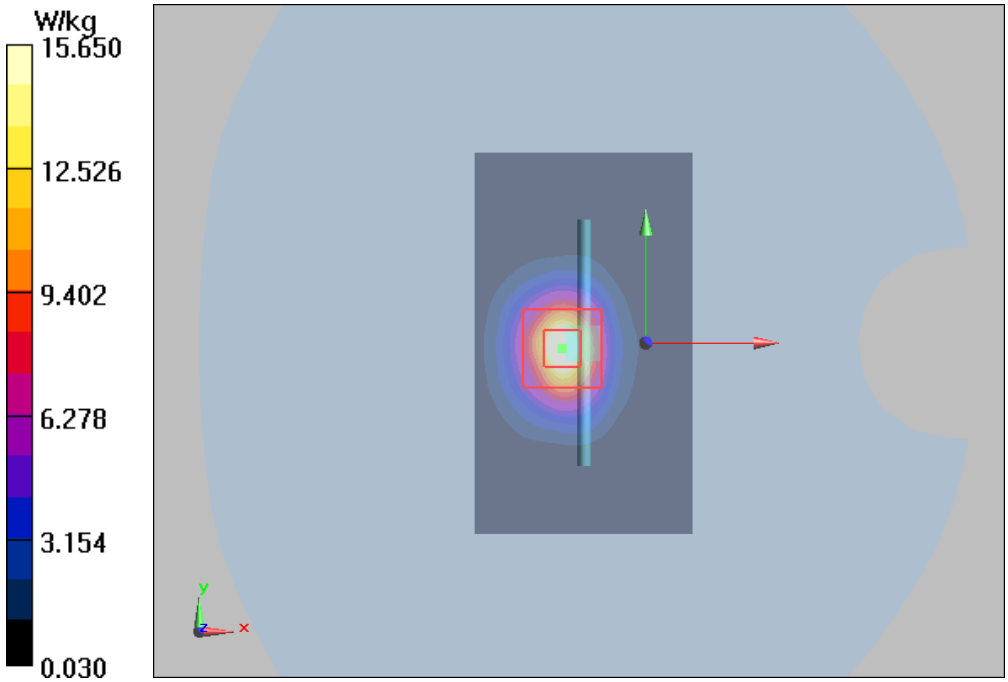
Peak SAR (extrapolated) = 31.85 W/kg

SAR(1 g) = 13.94 W/kg; SAR(10 g) = 6.11 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 47.1%

Maximum value of SAR (measured) = 15.650 W/kg



ANNEX C: Highest Graph Results

Plot 14 WCDMA B2 Back Side 10mm Low

Date: 2024/4/3

Communication System: UID 0, WCDMA (0); Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.384 S/m; ε_r = 39.118; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 8.25, 7.79); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

WCDMA B2 Back Side Low/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.881 W/kg

WCDMA B2 Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.701 V/m; Power Drift = -0.031 dB

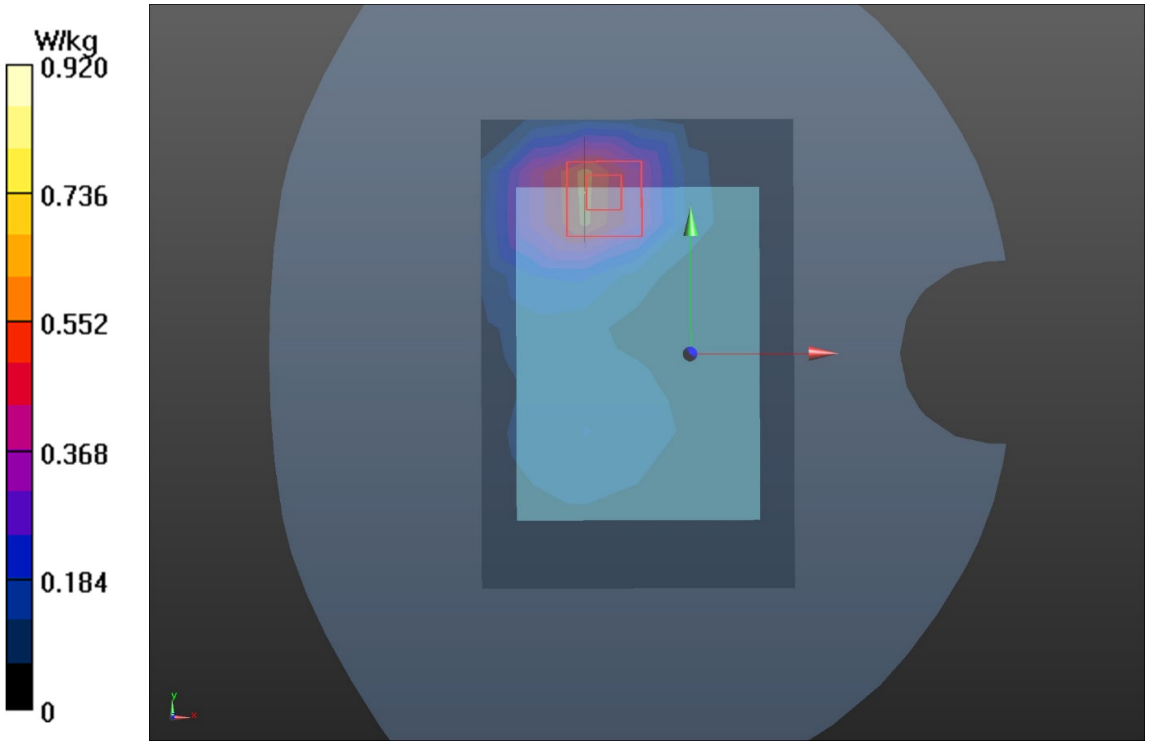
Peak SAR (extrapolated) = 2.30 W/kg

SAR(1 g) = 0.880 W/kg; SAR(10 g) = 0.327 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 56.7%

Maximum value of SAR (measured) = 0.920 W/kg



Plot 15 WCDMA B4 Back Side 10mm Mid

Date: 2024/4/2

Communication System: UID 0, WCDMA (0); Frequency: 1732.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1733 MHz; σ = 1.301 S/m; ε_r = 39.491; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.80, 8.35, 7.88); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

WCDMA B4 Back Side Mid/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.695 W/kg

WCDMA B4 Back Side Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.223 V/m; Power Drift = 0.19 dB

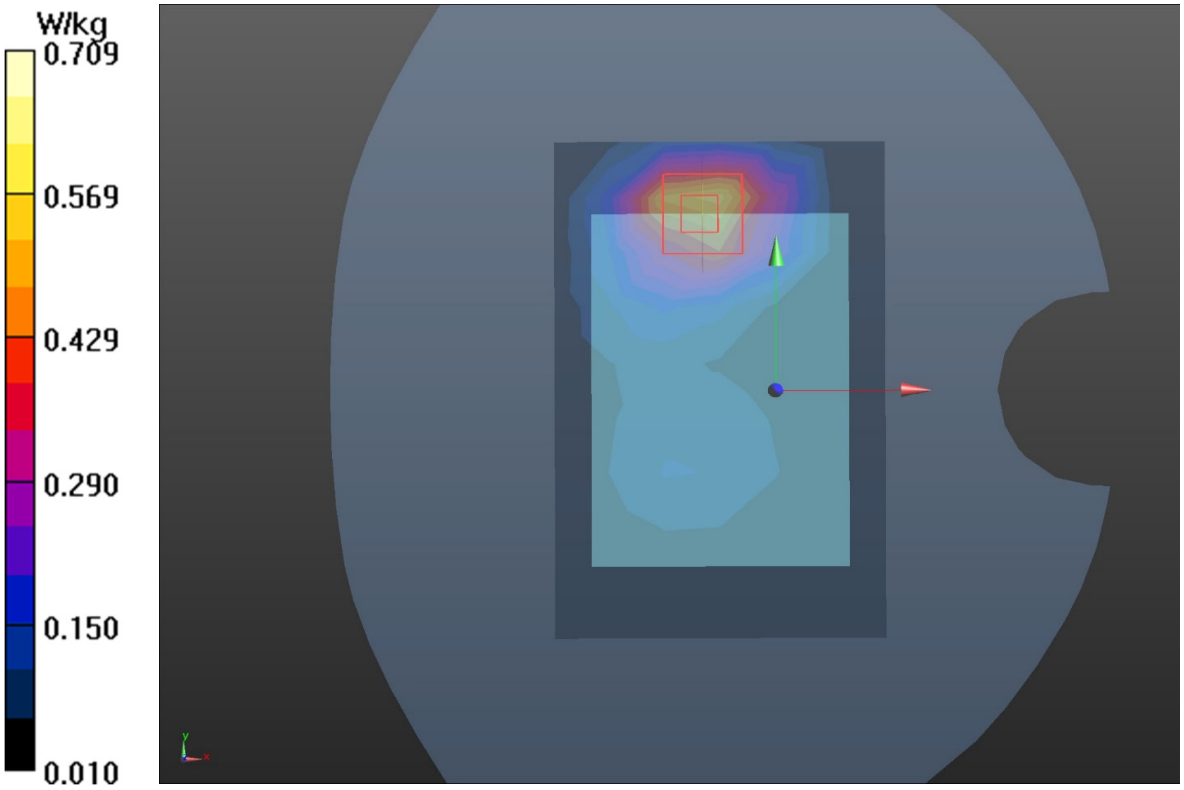
Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.632 W/kg; SAR(10 g) = 0.332 W/kg

Smallest distance from peaks to all points 3 dB below = 12.2 mm

Ratio of SAR at M2 to SAR at M1 = 56.2%

Maximum value of SAR (measured) = 0.709 W/kg



Plot 16 WCDMA B5 Back Side 10mm Mid

Date: 2024/4/10

Communication System: UID 0, WCDMA (0); Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.939 S/m; ε_r = 41.856; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.66, 9.52, 8.51); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

WCDMA B5 Back Side Mid/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.784 W/kg

WCDMA B5 Back Side Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.17 V/m; Power Drift = 0.11 dB

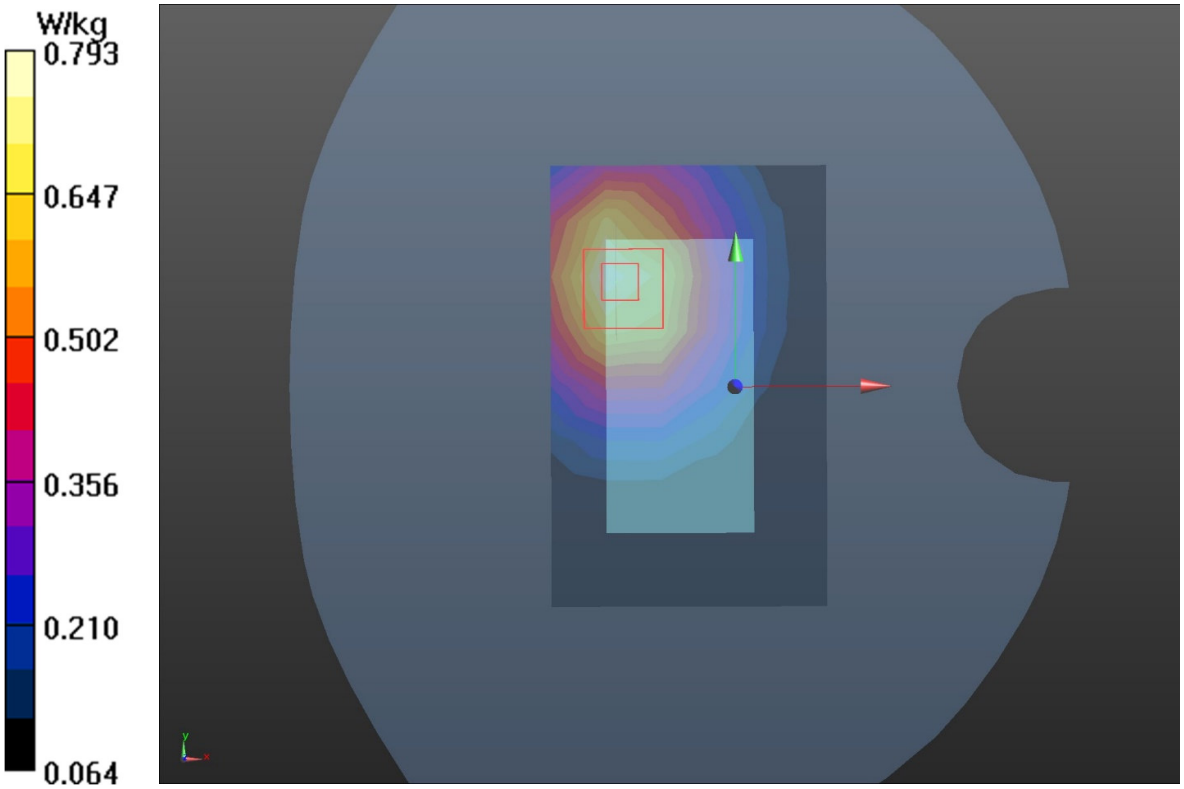
Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.743 W/kg; SAR(10 g) = 0.517 W/kg

Smallest distance from peaks to all points 3 dB below = 8.9mm

Ratio of SAR at M2 to SAR at M1 = 72.9%

Maximum value of SAR (measured) = 0.793 W/kg



Plot 17 LTE B2 1RB Back Side 10mm Low

Date: 2024/4/3

Communication System: UID 0, LTE (0); Frequency: 1860 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1860 MHz; σ = 1.39 S/m; ε_r = 39.098; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.70, 8.25, 7.79); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B2 1RB Back Side Low/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

LTE B2 1RB Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.986 V/m; Power Drift = -0.020 dB

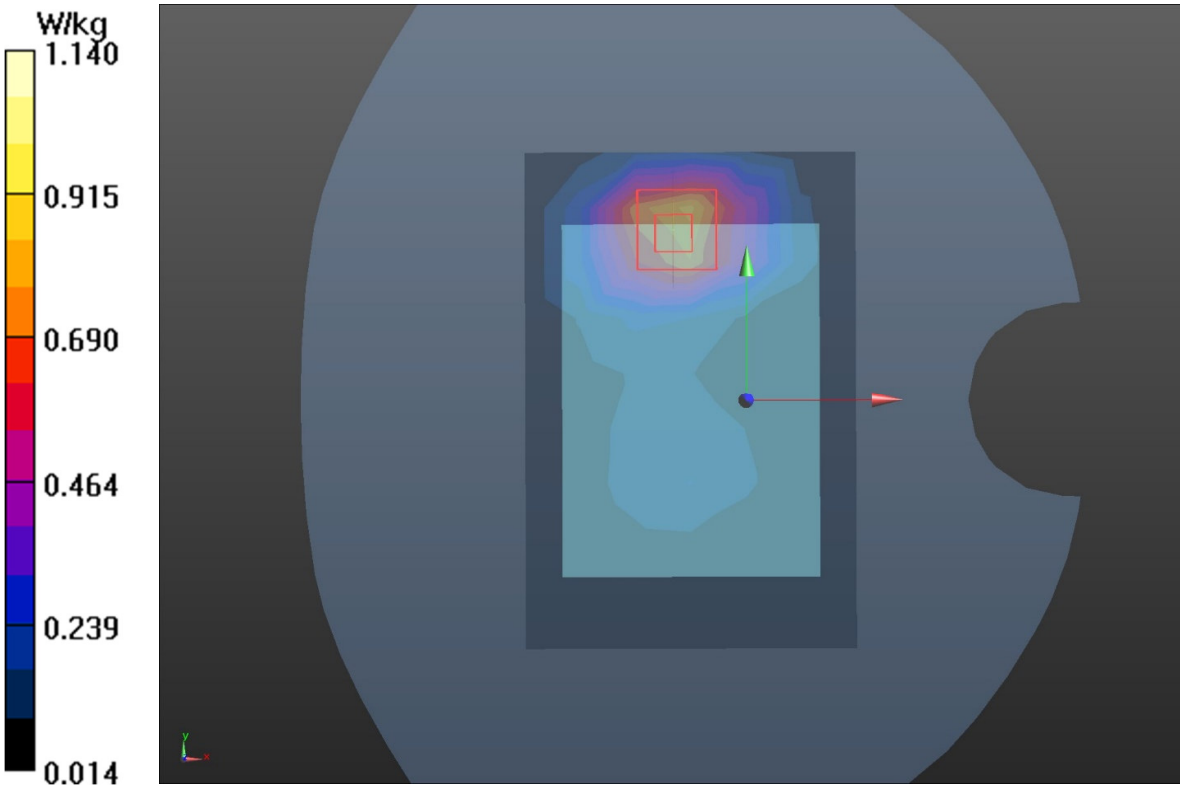
Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.528 W/kg

Smallest distance from peaks to all points 3 dB below = 11.6 mm

Ratio of SAR at M2 to SAR at M1 = 56.5%

Maximum value of SAR (measured) = 1.14 W/kg



Plot 18 LTE B5 1RB Back Side 10mm Mid

Date: 2024/4/10

Communication System: UID 0, LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.939 S/m; ε_r = 41.86; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(8.66, 9.52, 8.51); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B5 1RB Back Side Mid/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.825 W/kg

LTE B5 1RB Back Side Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.89 V/m; Power Drift = 0.032 dB

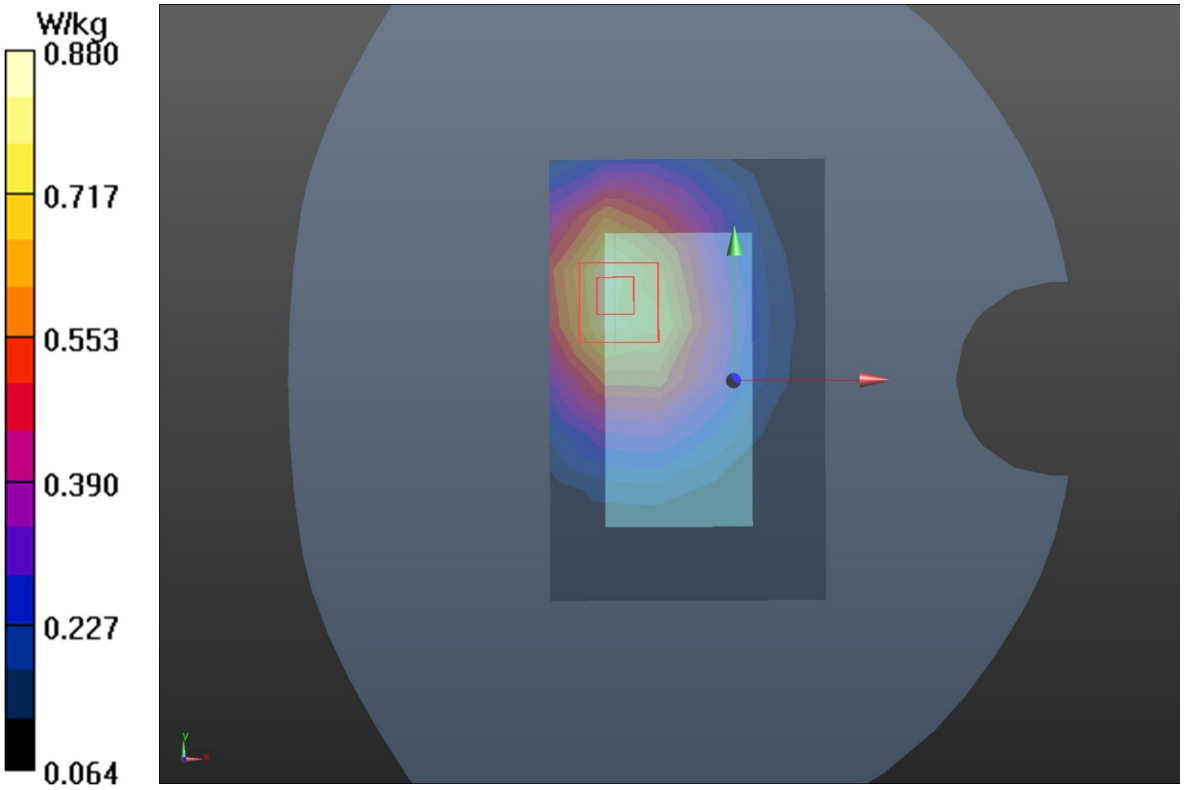
Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.817 W/kg; SAR(10 g) = 0.562 W/kg

Smallest distance from peaks to all points 3 dB below: = 10.1mm

Ratio of SAR at M2 to SAR at M1 = 71.6%

Maximum value of SAR (measured) = 0.880 W/kg



Plot 19 LTE B7 1RB Back Side 10mm Low

Date: 2024/4/7

Communication System: UID 0, LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2510 MHz; σ = 1.9 S/m; ε_r = 38.262; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.10, 7.59, 7.21); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B7 1RB Back Side Low/Area Scan (9x13x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 1.16 W/kg

LTE B7 1RB Back Side Low/Zoom Scan (5x5x5)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=7mm

Reference Value = 11.02 V/m; Power Drift = -0.099 dB

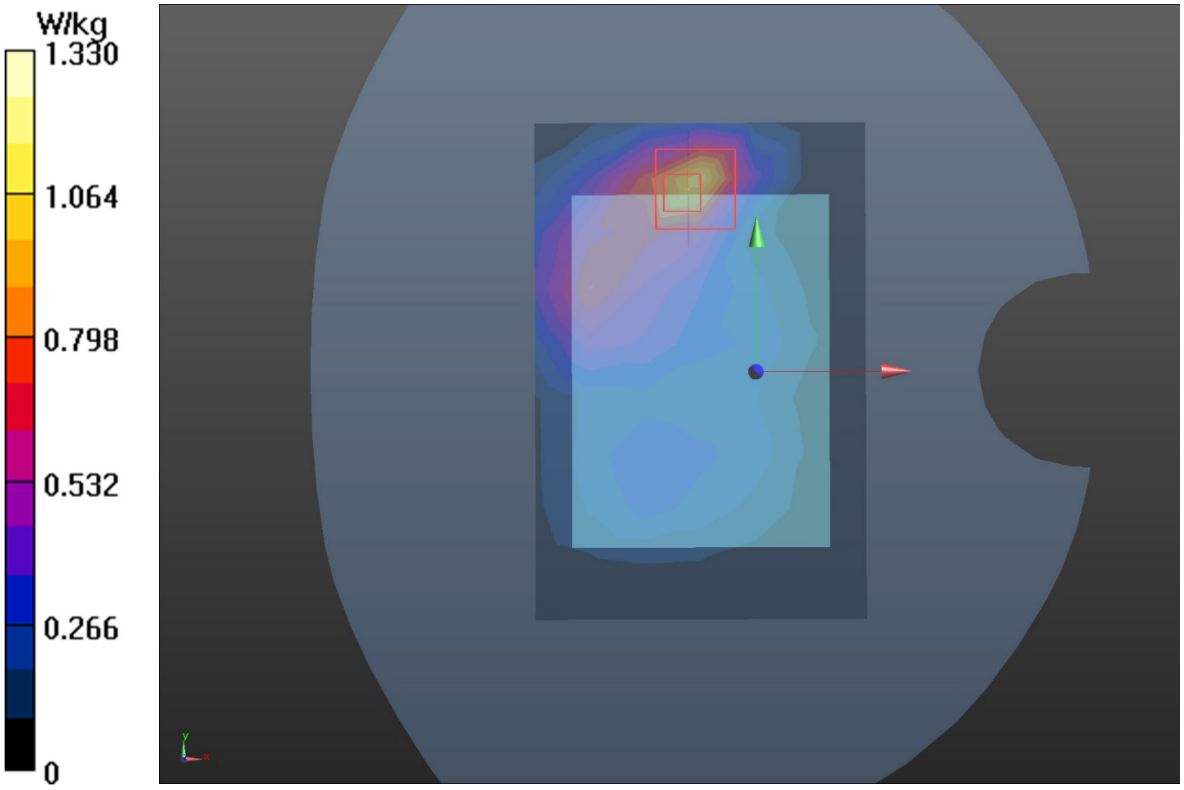
Peak SAR (extrapolated) = 4.38 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.583 W/kg

Smallest distance from peaks to all points 3 dB below = 9.6 mm

Ratio of SAR at M2 to SAR at M1 = 49.9%

Maximum value of SAR (measured) = 1.33 W/kg



Plot 20 LTE B40 1RB Back Side 10mm Mid (Battery 2)

Date: 2024/6/22

Communication System: UID 0, LTE (0); Frequency: 2355 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2355 MHz; σ = 1.729 S/m; ε_r = 38.817; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.45, 8.00, 7.60); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B40 1RB Back Side 10mm/Mid/Area Scan (9x13x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.596 W/kg

LTE B40 1RB Back Side 10mm/Mid/Zoom Scan (5x5x5)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=7mm

Reference Value = 11.67 V/m; Power Drift = 0.01 dB

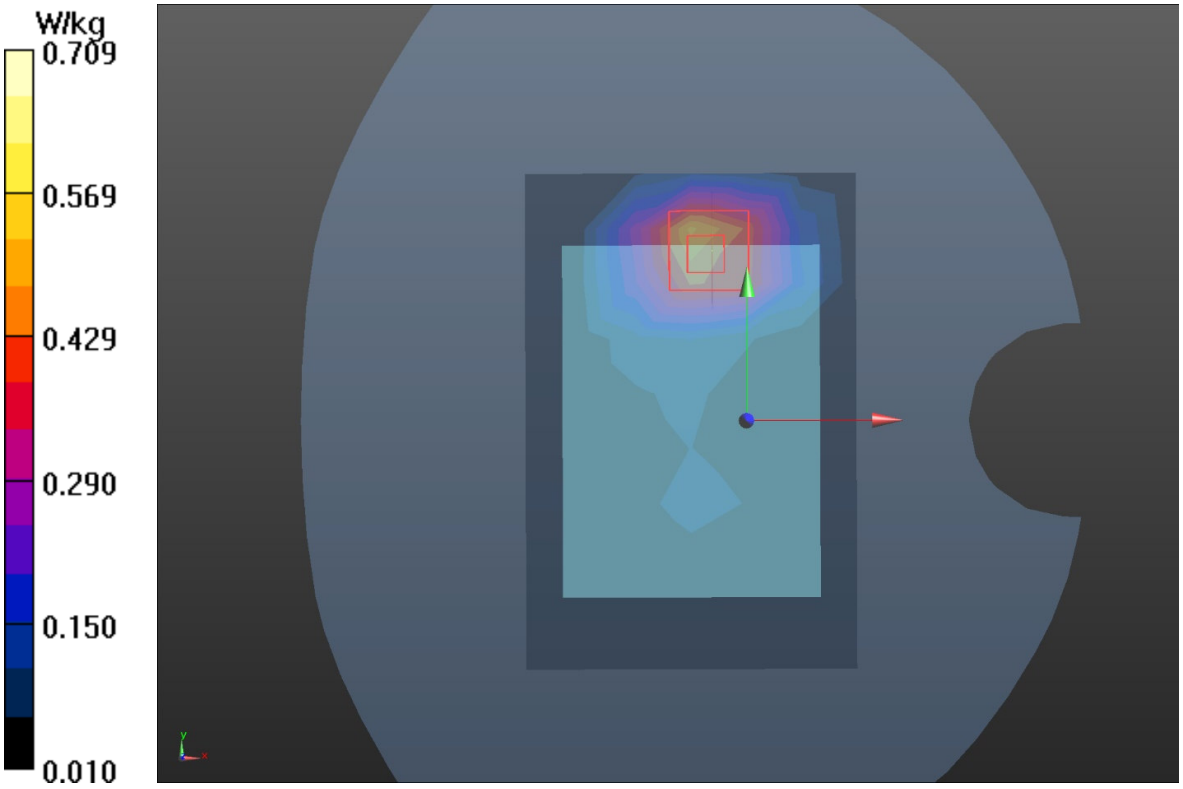
Peak SAR (extrapolated) = 0.853 W/kg

SAR(1 g) = 0.592 W/kg; SAR(10 g) = 0.334 W/kg

Smallest distance from peaks to all points 3 dB below = 14.9 mm

Ratio of SAR at M2 to SAR at M1 = 52.4%

Maximum value of SAR (measured) = 0.709 W/kg



Plot 21 LTE B41 1RB Back Side 10mm Low

Date: 2024/4/8

Communication System: UID 0, LTE (0); Frequency: 2506 MHz;Duty Cycle: 1:1.58

Medium parameters used: f = 2506 MHz; σ = 1.905 S/m; ε_r = 37.414; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.10, 7.59, 7.21); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B41 1RB Back Side Low/Area Scan (9x13x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.674 W/kg

LTE B41 1RB Back Side Low/Zoom Scan (5x5x5)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=7mm

Reference Value = 11.01 V/m; Power Drift = 0.065 dB

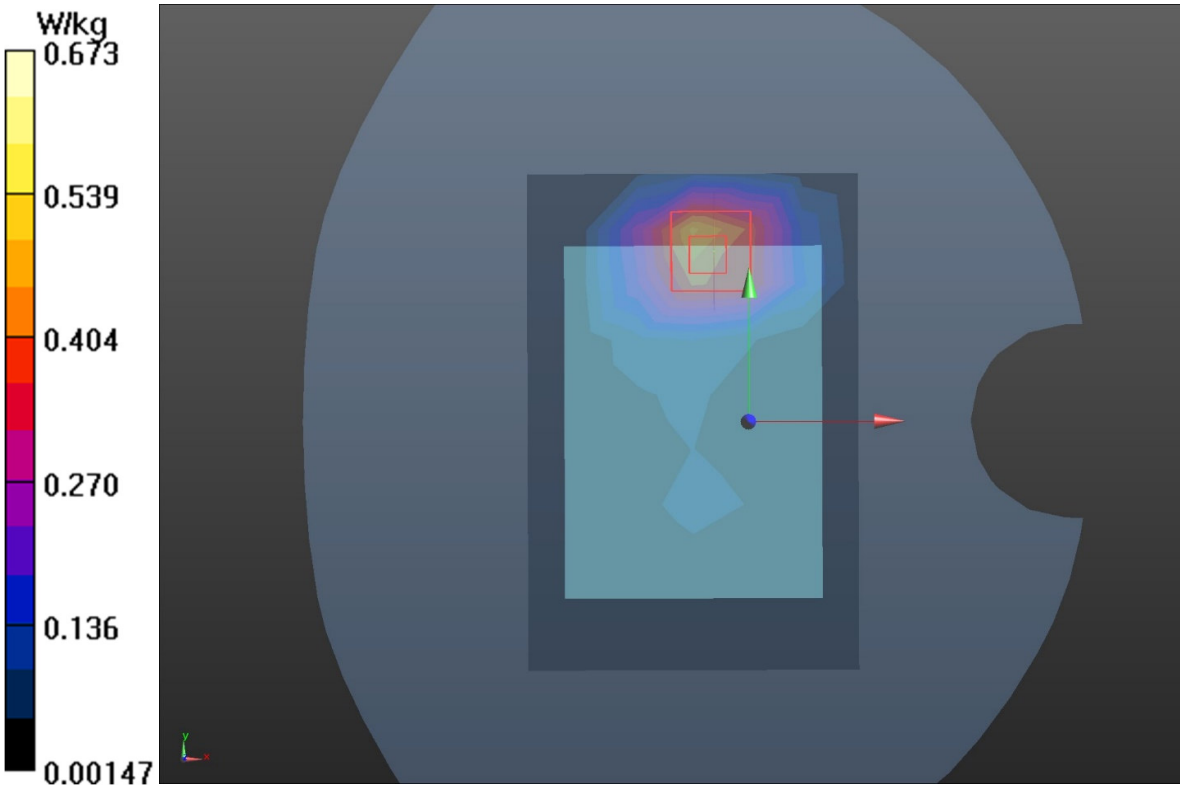
Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.602 W/kg; SAR(10 g) = 0.282 W/kg

Smallest distance from peaks to all points 3 dB below = 10.1 mm

Ratio of SAR at M2 to SAR at M1 = 51.3%

Maximum value of SAR (measured) = 0.673 W/kg



Plot 22 LTE B66 1RB Back Side 10mm High

Date: 2024/4/2

Communication System: UID 0, LTE (0); Frequency: 1770 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1770 MHz; σ = 1.329 S/m; ε_r = 39.321; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.80, 8.35, 7.88); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

LTE B66 1RB Back Side High/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.12 W/kg

LTE B66 1RB Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.297 V/m; Power Drift = 0.039 dB

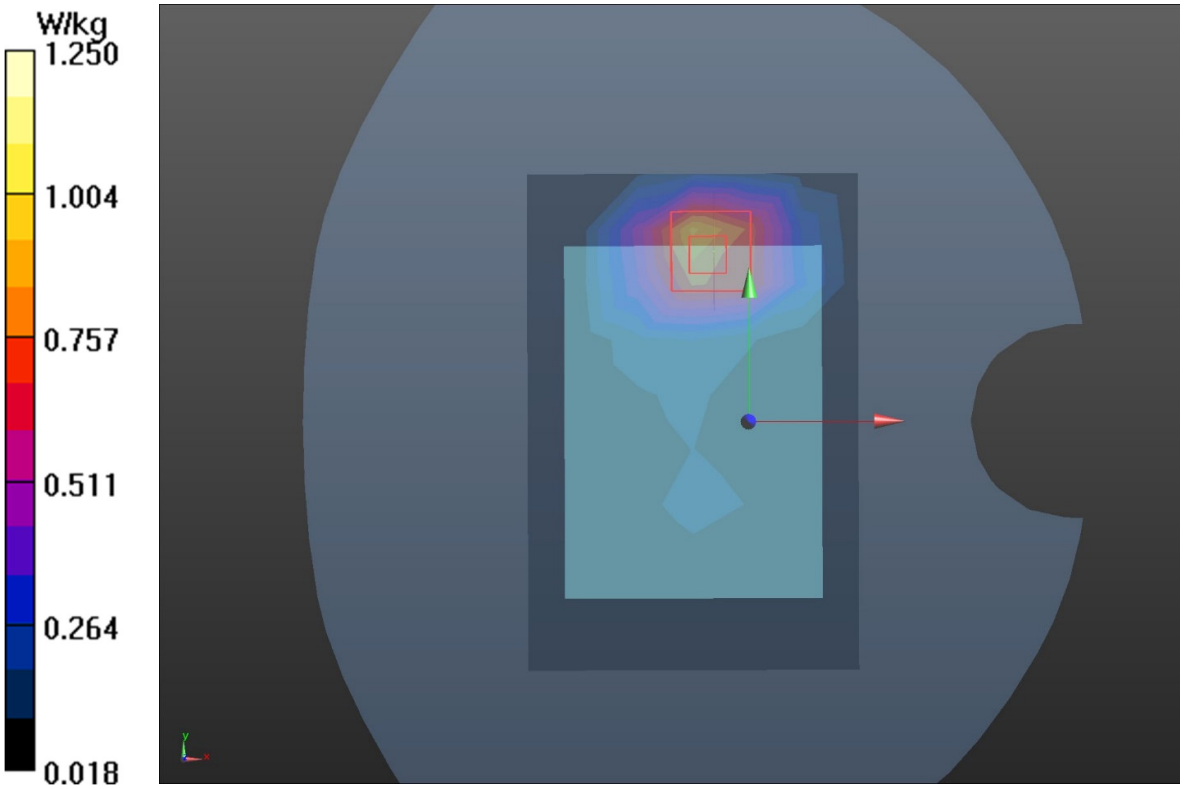
Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.587 W/kg

Smallest distance from peaks to all points 3 dB below = 11.2 mm

Ratio of SAR at M2 to SAR at M1 = 58.1%

Maximum value of SAR (measured) = 1.25 W/kg



Plot 23 802.11b Back Side 10mm Mid

Date: 2024/3/8

Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1.02

Medium parameters used: f = 2437 MHz; σ = 1.831 S/m; ε_r = 37.663; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3677; ConvF(7.18, 7.67, 7.29); Calibrated: 2023/7/20

Electronics: DAE4 SN1317; Calibrated: 2023/9/13

Phantom: SAM 1; Type: QD000P40CD; Serial: TP:1666

Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11b Back Side Mid/Area Scan (9x13x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.310 W/kg

802.11b Back Side Mid/Zoom Scan (5x5x5)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=7mm

Reference Value = 8.778 V/m; Power Drift = -0.07 dB

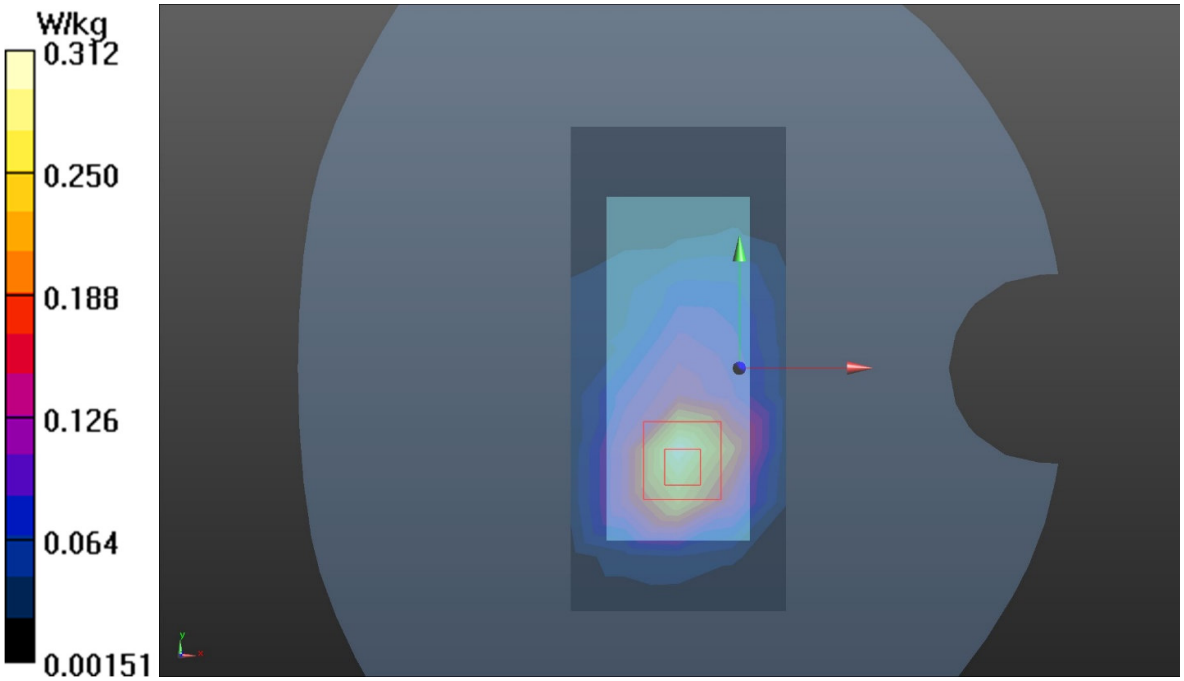
Peak SAR (extrapolated) = 0.605 W/kg

SAR(1 g) = 0.279 W/kg; SAR(10 g) = 0.145 W/kg

Smallest distance from peaks to all points 3 dB below = 12.5 mm

Ratio of SAR at M2 to SAR at M1 = 51.2%

Maximum value of SAR (measured) = 0.312 W/kg



ANNEX D: Probe Calibration Certificate (SN: 3677)

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

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

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

Accreditation No.: **SCS 0108**

Client	TA Shanghai City	Certificate No.	EX-3677_Jul23

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3677
Calibration procedure(s)	QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6, QA CAL-25.v8 Calibration procedure for dosimetric E-field probes
Calibration date	July 20, 2023

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
OCP DAK-3.5 (weighted)	SN: 1249	20-Oct-22 (OCP-DAK3.5-1249_Oct22)	Oct-23
OCP DAK-12	SN: 1016	20-Oct-22 (OCP-DAK12-1016_Oct22)	Oct-23
Reference 20 dB Attenuator	SN: CC2552 (20x)	30-Mar-23 (No. 217-03809)	Mar-24
DAE4	SN: 660	16-Mar-23 (No. DAE4-660_Mar23)	Mar-24
Reference Probe ES3DV2	SN: 3013	06-Jan-23 (No. ES3-3013_Jan23)	Jan-24

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-22)	In house check: Jun-24
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by	Joanna Lleshaj	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: July 20, 2023

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

Certificate No: EX-3677_Jul23 Page 1 of 22

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

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

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

Accreditation No.: SCS 0108

Glossary

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

EX3DV4 - SN:3677 July 20, 2023

Parameters of Probe: EX3DV4 - SN:3677

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc ($k = 2$)
Norm ($\mu V/(V/m)^2$) [A]	0.40	0.45	0.39	±10.1%
DCP (mV) [B]	101.0	102.0	102.5	±4.7%

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B $dB\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Max Unc[E] $k = 2$
0	CW	X	0.00	0.00	1.00	0.00	125.6	±1.9%	±4.7%
		Y	0.00	0.00	1.00		121.0		
		Z	0.00	0.00	1.00		122.5		
10352	Pulse Waveform (200Hz, 10%)	X	20.00	89.56	19.55	10.00	60.0	±2.7%	±9.6%
		Y	20.00	88.90	19.41		60.0		
		Z	20.00	87.18	18.16		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	20.00	91.43	19.38	6.99	80.0	±1.5%	±9.6%
		Y	20.00	89.58	18.35		80.0		
		Z	20.00	88.39	17.59		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	20.00	95.46	19.97	3.98	95.0	±1.3%	±9.6%
		Y	20.00	89.26	16.58		95.0		
		Z	20.00	91.18	17.61		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	20.00	99.05	20.33	2.22	120.0	±1.2%	±9.6%
		Y	20.00	83.90	12.80		120.0		
		Z	20.00	93.78	17.60		120.0		
10387	QPSK Waveform, 1 MHz	X	1.51	66.00	14.40	1.00	150.0	±3.5%	±9.6%
		Y	1.29	64.03	13.00		150.0		
		Z	1.42	66.25	14.23		150.0		
10388	QPSK Waveform, 10 MHz	X	2.03	67.08	15.21	0.00	150.0	±1.0%	±9.6%
		Y	1.77	65.25	14.04		150.0		
		Z	1.91	66.70	15.02		150.0		
10396	64-QAM Waveform, 100 kHz	X	2.64	69.26	18.29	3.01	150.0	±1.1%	±9.6%
		Y	2.33	66.49	16.64		150.0		
		Z	2.02	65.39	16.32		150.0		
10399	64-QAM Waveform, 40 MHz	X	3.37	66.69	15.51	0.00	150.0	±2.6%	±9.6%
		Y	3.33	66.54	15.28		150.0		
		Z	3.28	66.50	15.39		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	4.70	65.49	15.43	0.00	150.0	±4.5%	±9.6%
		Y	4.69	65.54	15.36		150.0		
		Z	4.55	65.38	15.33		150.0		

Note: For details on UID parameters see Appendix

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

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

EX3DV4 - SN:3677 July 20, 2023

Parameters of Probe: EX3DV4 - SN:3677

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms\,V^{-2}$	T2 $ms\,V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
x	36.2	270.59	35.62	12.53	0.00	5.08	0.93	0.23	1.01
y	35.7	269.30	35.97	8.51	0.37	5.07	0.00	0.44	1.01
z	30.7	227.00	34.93	10.81	0.00	5.06	0.00	0.25	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-66.7°
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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

EX3DV4 - SN:3677 July 20, 2023

Parameters of Probe: EX3DV4 - SN:3677

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k = 2$)
13	55.0	0.75	15.21	15.21	15.21	0.00	1.25	±13.3%
750	41.9	0.89	9.03	9.80	9.03	0.45	1.27	±12.0%
835	41.5	0.90	8.66	9.52	8.51	0.43	1.27	±12.0%
1750	40.1	1.37	7.80	8.35	7.88	0.29	1.27	±12.0%
1900	40.0	1.40	7.70	8.25	7.79	0.31	1.27	±12.0%
2000	40.0	1.40	7.55	8.11	7.69	0.32	1.27	±12.0%
2300	39.5	1.67	7.45	8.00	7.60	0.33	1.27	±12.0%
2450	39.2	1.80	7.18	7.67	7.29	0.32	1.27	±12.0%
2600	39.0	1.96	7.10	7.59	7.21	0.32	1.27	±12.0%
3300	38.2	2.71	6.95	7.41	7.04	0.35	1.27	±14.0%
3500	37.9	2.91	6.87	7.33	6.99	0.34	1.27	±14.0%
3700	37.7	3.12	6.80	7.27	6.93	0.33	1.27	±14.0%
3900	37.5	3.32	6.85	7.30	6.98	0.33	1.27	±14.0%
4100	37.2	3.53	6.65	7.07	6.82	0.34	1.27	±14.0%
4400	36.9	3.84	6.55	6.97	6.67	0.34	1.27	±14.0%
4600	36.7	4.04	6.50	6.92	6.63	0.35	1.27	±14.0%
4800	36.4	4.25	6.40	6.81	6.55	0.39	1.27	±14.0%
4950	36.3	4.40	6.00	6.39	6.14	0.44	1.36	±14.0%
5250	35.9	4.71	5.65	5.99	5.81	0.43	1.53	±14.0%
5600	35.5	5.07	4.92	5.23	5.04	0.41	1.75	±14.0%
5750	35.4	5.22	5.14	5.41	5.20	0.39	1.84	±14.0%

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

[F] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% are used, the calibration uncertainties are 11.1% for 0.7 - 3 GHz and 13.1% for 3 - 6 GHz.

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

EX3DV4 - SN:3677 July 20, 2023

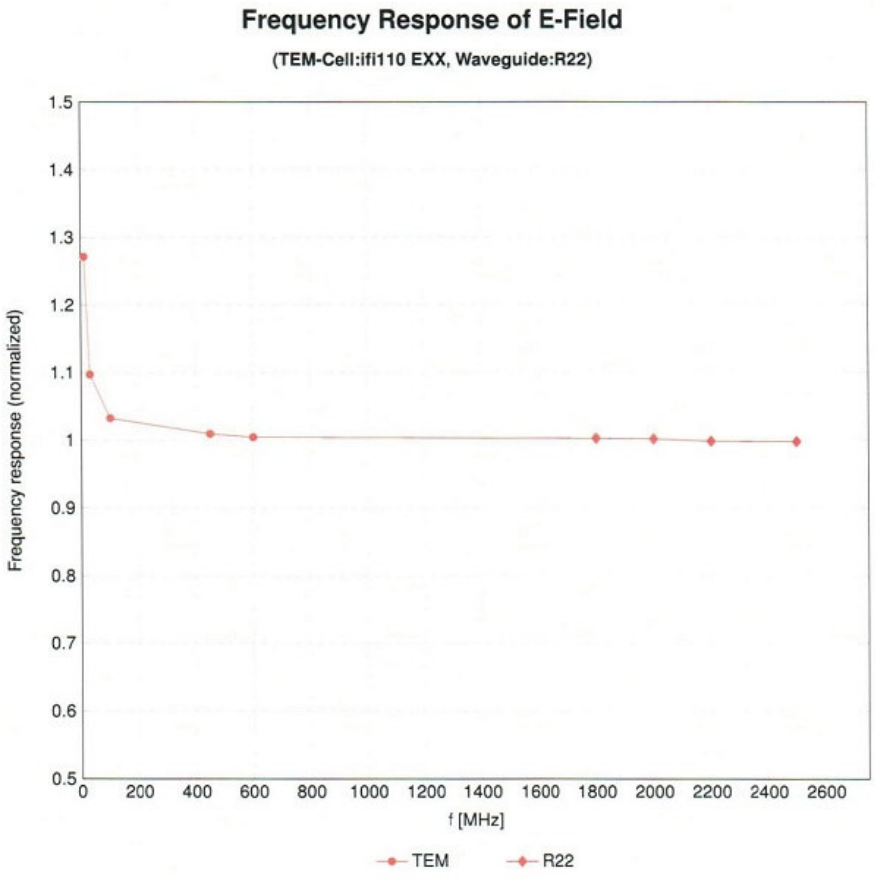
Parameters of Probe: EX3DV4 - SN:3677

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k = 2$)
6500	34.5	6.07	5.51	5.85	5.61	0.20	2.00	±18.6%

[C] Frequency validity at 6.5 GHz is −600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3–6 GHz; and below ±4% for frequencies between 6–10 GHz at any distance larger than half the probe tip diameter from the boundary.

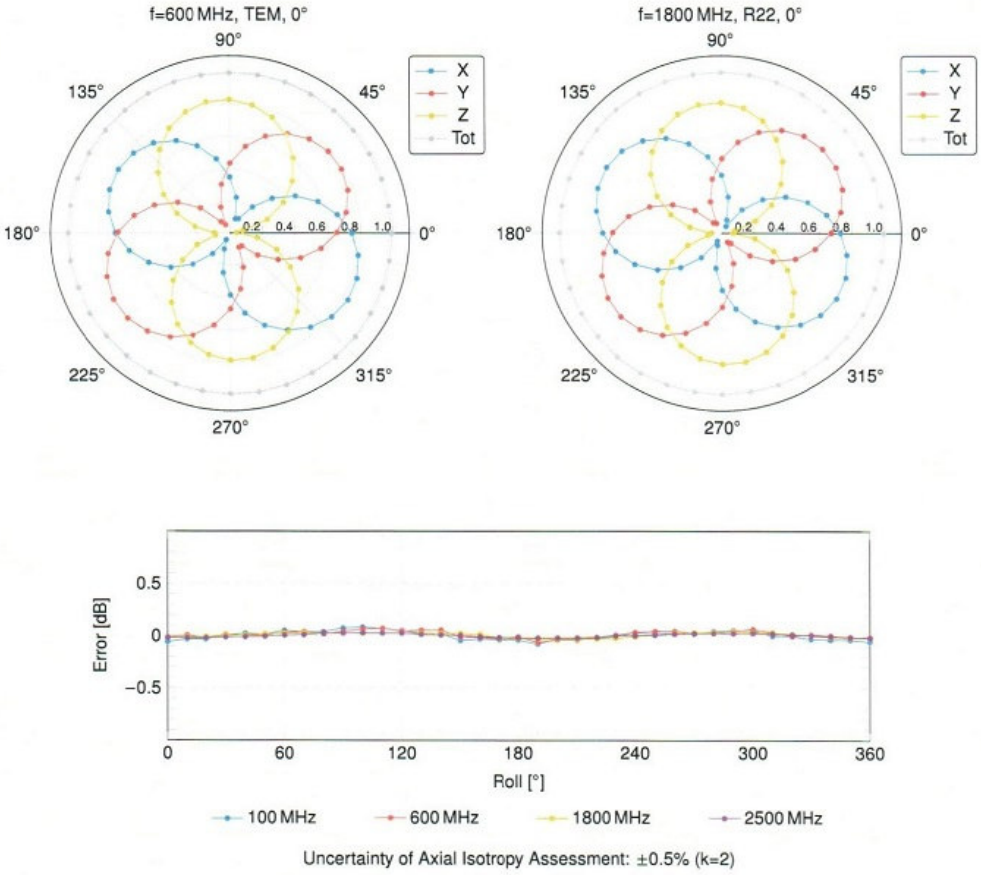
EX3DV4 - SN:3677 July 20, 2023



Uncertainty of Frequency Response of E-field: ±6.3% (k=2)

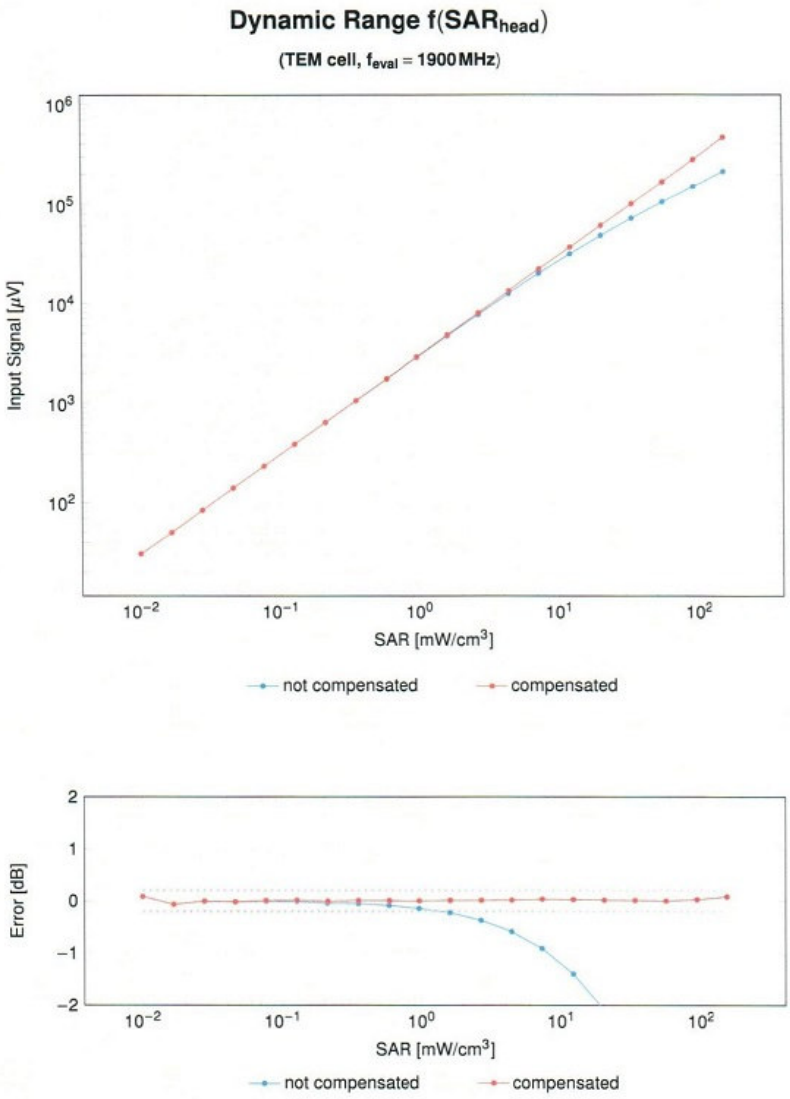
EX3DV4 - SN:3677 July 20, 2023

Receiving Pattern (ϕ), $\vartheta = 0°$



Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)

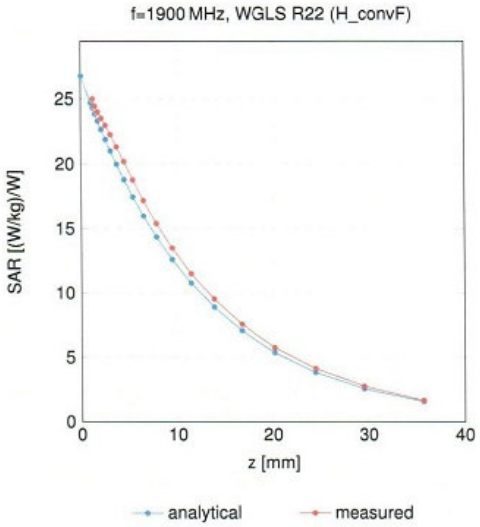
EX3DV4 - SN:3677 July 20, 2023



Uncertainty of Linearity Assessment: ±0.6% (k=2)

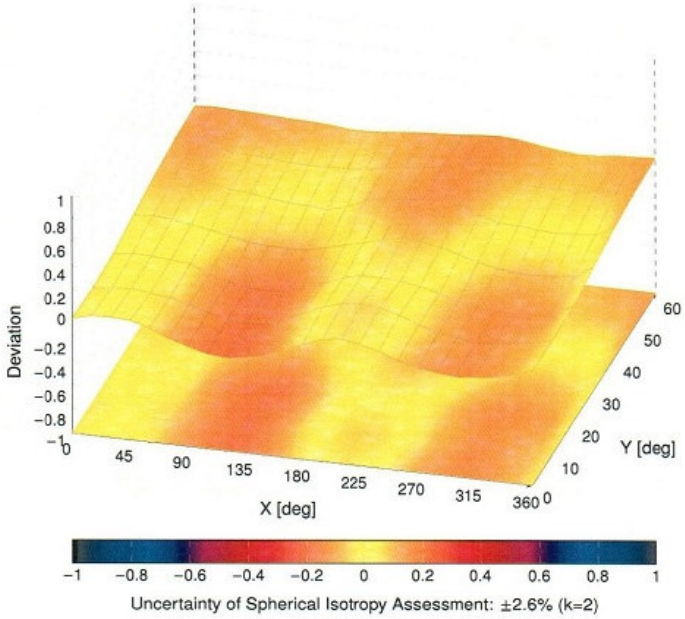
EX3DV4 - SN:3677 July 20, 2023

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, θ), f = 900 MHz



EX3DV4 - SN:3677 July 20, 2023

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k = 2$
0		CW	CW	0.00	±4.7
10010	CAB	SAR Validation (Square, 100 ms, 10 ms)	Test	10.00	±9.6
10011	CAC	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	±9.6
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	±9.6
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	±9.6
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	±9.6
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	±9.6
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	±9.6
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	±9.6
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	±9.6
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	±9.6
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	±9.6
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	±9.6
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	±9.6
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6
10062	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	±9.6
10063	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6
10064	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	±9.6
10065	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6
10066	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	±9.6
10067	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6
10068	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	±9.6
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	±9.6
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	±9.6
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	±9.6
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	±9.6
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	±9.6
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	±9.6
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	±9.6
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	±9.6
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	±9.6
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	±9.6
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	±9.6
10097	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6
10098	CAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6
10100	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	±9.6
10101	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10102	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10103	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6
10104	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	±9.6
10105	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6
10108	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	±9.6
10109	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10110	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6
10111	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	±9.6

EX3DV4 - SN:3677 July 20, 2023

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10112	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6
10113	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	±9.6
10114	CAD	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6
10115	CAD	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	±9.6
10116	CAD	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	±9.6
10117	CAD	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	±9.6
10118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	±9.6
10119	CAD	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	±9.6
10140	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10141	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6
10142	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10143	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6
10144	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6
10145	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	±9.6
10146	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	±9.6
10147	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6
10149	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10151	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6
10152	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10153	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6
10154	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6
10155	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10156	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	±9.6
10157	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10158	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6
10159	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6
10160	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	±9.6
10161	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10162	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	±9.6
10166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	±9.6
10167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.6
10168	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.6
10169	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	±9.6
10170	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10171	AAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	±9.6
10172	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	±9.6
10173	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10174	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10175	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6
10176	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10177	CAJ	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6
10178	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10179	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10180	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10181	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	±9.6
10182	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10183	AAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10184	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10185	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6
10186	AAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6
10188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10189	AAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10193	CAD	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	±9.6
10194	CAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	±9.6
10195	CAD	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	±9.6
10196	CAD	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	±9.6
10197	CAD	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	±9.6
10198	CAD	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	±9.6
10219	CAD	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	±9.6
10220	CAD	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6
10221	CAD	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6
10222	CAD	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	±9.6
10223	CAD	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	±9.6
10224	CAD	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±9.6

EX3DV4 - SN:3677 July 20, 2023

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k = 2$
10225	CAC	UMTS-FDD (HSPA+)	WCDMA	5.97	±9.6
10226	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6
10227	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6
10228	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6
10229	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10230	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10231	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	±9.6
10232	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10233	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10234	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6
10235	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10236	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10237	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6
10238	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10239	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10240	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6
10241	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6
10242	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6
10243	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	±9.6
10244	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10245	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6
10246	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6
10247	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6
10248	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6
10249	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6
10250	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6
10251	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6
10252	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	±9.6
10253	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	±9.6
10254	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	±9.6
10255	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	±9.6
10256	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	±9.6
10257	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	±9.6
10258	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	±9.6
10259	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	±9.6
10260	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	±9.6
10261	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	±9.6
10262	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	±9.6
10263	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	±9.6
10264	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	±9.6
10265	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10266	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	±9.6
10267	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	±9.6
10268	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10269	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	±9.6
10270	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	±9.6
10274	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	±9.6
10275	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	±9.6
10277	CAA	PHS (QPSK)	PHS	11.81	±9.6
10278	CAA	PHS (QPSK, BW 884 MHz, Rolloff 0.5)	PHS	11.81	±9.6
10279	CAA	PHS (QPSK, BW 884 MHz, Rolloff 0.38)	PHS	12.18	±9.6
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	±9.6
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	±9.6
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	±9.6
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±9.6
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	±9.6
10297	AAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	±9.6
10298	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	±9.6
10299	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	±9.6
10300	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10301	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC)	WiMAX	12.03	±9.6
10302	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	±9.6
10303	AAA	IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	12.52	±9.6
10304	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	11.86	±9.6
10305	AAA	IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	±9.6
10306	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	±9.6