SAR MEASUREMENT REPORT

FCC ID:	WIYSLM500QA
Applicant:	CASTLES TECHNOLOGY CO., LTD.
Product:	Smart module
Model No.:	SLM500
Trademark:	CASTLES TECHNOLOGY
FCC Rule Part(s):	FCC 47 CFR Part 2.1093
Result:	Complies
Received Date:	2023-11-27
Test Date:	2023-11-30 ~ 2023-12-07

Reviewed By: Sunny Sun

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in IEEE1528, KDB 447498 and KDB 865664. Test results reported herein relate only to the item(s) tested.

Revision History

Report No.	Version	Description	Issue Date	Note
2311RSU065-U1	V01	Initial Report	2024-01-17	Valid

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1. General Information

1.1. Applicant

CASTLES TECHNOLOGY CO., LTD.

6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI CITY 231632, TAIWAN (R.O.C.)

1.2. Manufacturer

CASTLES TECHNOLOGY CO., LTD.

6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI CITY 231632, TAIWAN (R.O.C.)

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: 3261				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Smart module
Model No.	SLM500
Serial No.	182232500342
Trademark	CASTLES TECHNOLOGY
3GPP Specification	GSM 850/1900 WCDMA Band 2/4/5 LTE Band 2/4/5/7/12/13/17/25/26/66
Wi-Fi Specification	802.11 a/b/g/n
Bluetooth Specification	Dual Mode
Antenna Information	Refer to section 1.7
EUT Type	Portable Device
Exposure Category	General Population/Uncontrolled Exposure
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Host Information

Product Name	POS Terminal
Model No.	S1L2
Trademark	CASTLES TECHNOLOGY
NFC Specification	13.56MHz
Accessory	
Adapter	Model No.: AD0181-1201000UC Input Power: 100-240V~50-60Hz 0.5A Max Output Power: 12.0V⎓1.0A, 12.0W

1.6. Radio Specification under Test

GSM Specification	
Frequency Range	GSM850: 824 ~ 849 MHz PCS1900: 1850 ~ 1910 MHz
Type of Modulation	GSM / GPRS: GMSK EDGE: 8PSK
GPRS Multi-slot	GPRS Multi-slot Class 33
EGPRS Multi-slot	EGPRS Multi-slot Class 33
UTRA Specification	
Frequency Range	WCDMA Band 2: 1850 ~ 1910 MHz WCDMA Band 4: 1710 ~ 1755 MHz WCDMA Band 5: 824 ~ 849 MHz
Type of Modulation	BPSK, QPSK, 16QAM
E-UTRA Specification	
Frequency Range	LTE Band 2: 1850 ~ 1910 MHz LTE Band 4: 1710 ~ 1755 MHz LTE Band 5: 824 ~ 849MHz LTE Band 7: 2500~ 2570MHz LTE Band 12: 699~ 716MHz LTE Band 13: 777~ 787MHz LTE Band 17: 704~ 716MHz LTE Band 25: 1850~ 1915MHz LTE Band 26: 814~ 849MHz LTE Band 66: 1710~ 1780MHz
Type of Modulation	QPSK, 16QAM
Wi-Fi Specification	
Frequency Range	For 2.4GHz Wi-Fi 802.11b/g/n-HT20: 2412 ~ 2462 MHz 802.11n-HT40: 2422 ~ 2452 MHz For 5GHz Wi-Fi 802.11a/n-HT20: 5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz 802.11n-HT40: 5190 ~ 5230 MHz, 5270 ~ 5310 MHz, 5510 ~ 5670 MHz, 5755 ~ 5795 MHz

Channel Number	For 2.4GHz Wi-Fi 802.11b/g/n-HT20: 11 802.11n-HT40: 7 For 5GHz Wi-Fi 802.11a/n-HT20: 24 802.11n-HT40: 11
Type of Modulation	802.11b: DSSS 802.11a/g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11Mbps 802.11a/g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Bluetooth Specification	
Frequency Range	2402MHz~ 2480MHz
Channel Number	For BR/EDR: 79 For BT-LE: 40
Channel Spacing	For BR/EDR: 1MHz For BT-LE: 2MHz
Type of Modulation	For BR/EDR: 1Mbps (GFSK), 2Mbps (Pi/4 DQPSK), 3Mbps (8DPSK) For BT-LE: 1Mbps (GFSK)
NFC Specification	
Frequency Range	13.56MHz
Channel Number	1
Type of Modulation	ASK
Antenna Type	Loop Antenna

1.7. Antennas Details

Operating Condition	WWAN MAIN Antenna	GSM/WCDMA/LTE (1Tx,1Rx)
	WWAN AUX Antenna	Rx Only
	Wi-Fi/BT Antenna	802.11b/g/n for 2.4GHz Wi-Fi (1Tx, 1Rx) 802.11a/n for 5GHz Wi-Fi (1Tx, 1Rx) Bluetooth (1Tx, 1Rx)
Antenna Type	WWAN Antenna	PIFA
	Wi-Fi/BT Antenna	Dipole
Simultaneously Transmitting Scenarios	WWAN transmit simultaneously with Wi-Fi, WWAN transmit simultaneously with Bluetooth, Wi-Fi and Bluetooth share the same antenna path and cannot transmit simultaneously.	

2. Summary of Test Result

2.1. Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radiofrequency radiation exposure evaluation: portable devices
2	IEEE 1528-2013	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
3	IEEE C95.1-2005	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
4	KDB 447498 D01 v06	General RF Exposure Guidance
5	KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	KDB 865664 D02 v01r02	RF Exposure Reporting
7	KDB 941225 D01 v03r01	3G SAR Measurement Procedures
8	KDB 941225 D05 v02r05	SAR Evaluation Considerations for LTE Devices
9	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitter

2.2. Environment Condition

Ambient Temperature	20.5°C~24.0°C
Temperature of Simulant	20.0°C~23.5°C
Relative Humidity	38%RH ~55%RH

2.3. RF Exposure Limits

Human Exposure	Basic restrictions for electric, magnetic and electromagnetic fields. (Unit in mW/g or W/kg)
Spatial Peak SAR[1] (Head and Body)	1.60
Spatial Average SAR[2] (Whole Body)	0.08
Spatial Peak SAR[3] (Arms and Legs)	4.00

Notes:

1. The Spatial Peak value of the SAR averaged over any 1gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

2. The Spatial Average value of the SAR averaged over the whole body.

3. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over appropriate averaging time.

2.4. Test Result Summary

Worst SAR List

Highest Reported SAR	Extremity 10g SAR (W/kg)
GSM850	0.47
PCS1900	0.63
WCDMA Band 2	0.85
WCDMA Band 4	0.99
WCDMA Band 5	0.82
LTE Band 7	2.05
LTE Band 12	0.76
LTE Band 13	1.14
LTE Band 25	0.80
LTE Band 26	1.15
LTE Band 66	1.05
DTS Band Wi-Fi	0.64
U-NII-2A Band Wi-Fi	0.45
U-NII-2C Band Wi-Fi	0.35
U-NII-3 Band Wi-Fi	0.64
Bluetooth	0.21

Highest Simultaneous SAR

Highest Simultaneous SAR	Extremity 10g SAR (W/kg)
WWAN + Wi-Fi	2.07
WWAN + BT	2.06

3. Specific Absorption Rate (SAR)

3.1. Introduction

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

3.2. Definition

The SAR in the tissue-equivalent liquid can be determined by the rate of temperature increase or by E-field measurements, according to Formulas (1) or (2):

$$SAR = \frac{\sigma E^2}{\rho} \quad (1)$$

$$SAR = c_h \left. \frac{dT}{dt} \right|_{t=0} \quad (2)$$

where

SAR is the specific absorption rate in W/kg;

E is the rms value of the electric field strength in the tissue medium in V/m;

σ is the electrical conductivity of the tissue medium in S/m;

ρ is the mass density of the tissue medium in kg/m^3;

c_h is the specific heat capacity of the tissue medium in J/(kg K);

$\left. \frac{dT}{dt} \right|_{t=0}$ is the initial time derivative of temperature in the tissue medium in K/s.

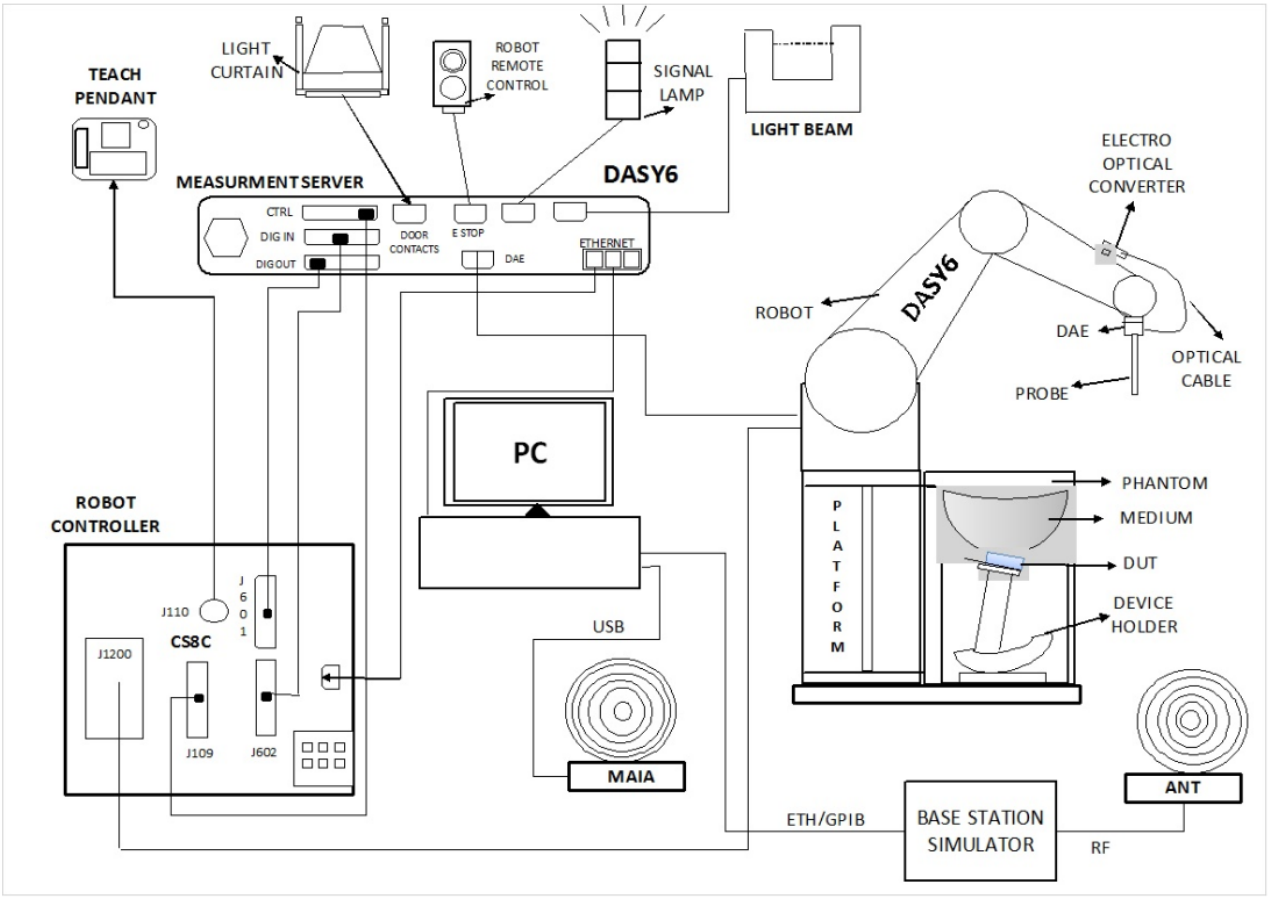
4. DASY6 Measurement System

4.1. Introduction

DASY6 is the latest generation of the Dosimetric Assessment System optimized for specific absorption rate (SAR) measurements, SAR compliance. DASY6 builds on the power of our industry - leading dosimetric and near-field evaluation system, DASY52. Running on a significantly more robust platform and a more powerful measurement server, DASY6 offers much faster scanning with no sacrifice of measurement precision. All hardware and software are fully compatible with DASY52. The new system seamlessly integrates two software solutions, the novel cDASY V6.6 - optimized for SAR compliance testing to significantly reduce SAR assessment costs - and the widely used DASY V5.2 for generalized near-field evaluations with maximized flexibility.

4.2. DASY6 Measurement System Diagram

The DASY6 system in cDASY6/DASY5 V5.2 SAR Configuration is shown below:



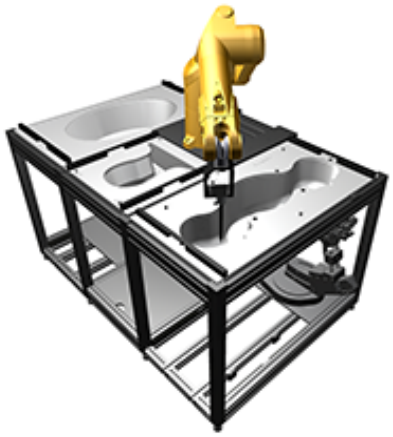
The System consist of the following components:

DASY6 Measurement Server, Data Acquisition Electronics (DAE), Probes, Light-Beam Unit, Phantoms, Media, Device Holder for SAM-Twin Phantom, Laptop Extension Kit to Mounting Device, Robot System Platform & Pedestal, Verification of the Parameters with the Dielectric Assessment Kit (DAK), Modulation and Interference Analyzer (MAIA), Omni-Directional Ultra-Wideband Antenna (ANT), cDASY6 software, DASY5 NEO software and SEMCAD data evaluation software.

4.3. System Components Details

DASY6 Platforms MP6E-TX60L

MP6E-TX60L platform is a compact cost-effective platform based on TX60L. It consists of:



- a stable non-metalic platform for the TX60L robot
- a frame for two standard-size phantoms (1.0 × 0.5 m)
- a frame for one half-size phantom (0.5 × 0.5 m)

It includes two easily moveable trolleys for the phone and tablet/computer positioner and two platforms for positioning dipoles and other antennas.

Material	The beams consist of a composite of wood and epoxy (permittivity of 3.3 and loss tangent of <0.07)
Size	The footprint of the platform is 1590 mm × 1060 mm.

Robots -TX60L

The MRT DASY6 system uses the high-precision industrial robots TX60L from Staubli SA (France). The TX robot family - the successor of the well-known RX robot family - continues to offer the features important for DASY6 applications:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance-free as all gears are direct drive, no belt drives)
- Jerk-free straight movements (brushless synchron motors, no stepper motors)
- Low extremely low frequency (ELF) interference (motor control fields are shielded by the closed metallic construction)

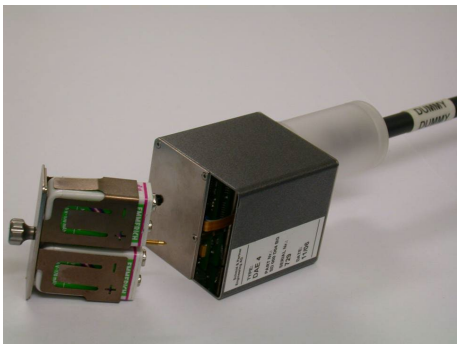
The robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is provided on CDs delivered with the robot. Paper manuals are available directly from Staubli upon request.

DASY6 Measurement Server

The DASY6 measurement server is based on a PC/104 CPU board with a 400MHz intel ULV Celeron, 128MB chip-disk and 128MB RAM. The necessary circuits for communication with the DAE4 electronics box, as well as the 16-bit AD converter system for optical detection and digital I/O interface are contained on the DASY6 I/O board, which is directly connected to the PC/104 bus of the CPU board.
The measurement server performs all real-time data evaluations of field measurements and surface detection, controls robot movements, and handles safety operations.

Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.



Probes

E-Field Probe(EX3DV4)

The SAR measurement is conducted with the dosimetric probe manufactured by SPEAG. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN 62209-1, IEC 62209, etc.) under ISO 17025.

Construction:

Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Frequency: 4 MHz ~ 10 GHz Linearity: ±0.2 dB (30 MHz ~ 10 GHz)

Directivity:

±0.1 dB in TSL (rotation around probe axis)

±0.3 dB in TSL (rotation normal to probe axis)

Dynamic Range: 10 µW/g to 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)

Dimensions:

Overall length: 337 mm (Tip: 20 mm)

Tip diameter: 2.5 mm (Body: 12 mm)

Typical distance from probe tip to dipole centers: 1 mm

Applications:

High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better than 30%.

MSTV1 (Mother Scan Teaching V1) Electronics & TP6V2 (Teaching Probe 6V2) Probe

MSTV1 (Mother Scan Teaching V1) electronics together with the TP6V2 (Teaching Probe 6V2) probe is used for mother scan of DASY6 system. This probe uses a 3D Renishaw LP2 sensor which ensures accurate detection of any shape and a measurement repeatability of 8 µm.

Light-Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm, as well as the probe length and the horizontal probe offset, are measured. The software then corrects all movements within the measurement jobs, such that the robot coordinates are valid for the probe tip.

The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

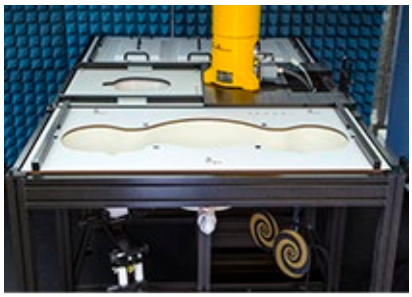
Phantoms

SAM-Twin Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body-mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

SAM-Twin V5.0 and higher has the same shell geometry and is manufactured from the same material as SAM-Twin V4.0, but with the top structure reinforced.

Material	Vinyl ester, fiberglass reinforced (VE-GF) The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based).
Liquid Compatibility	Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx. 25 liters
Support	DASY6: standard-size platform slot DASY52 stand-alone: SPEAG standard phantom table

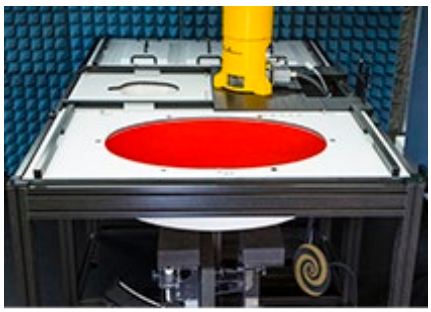


ELI phantom

The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

ELI V5.0 and higher has the same shell geometry and is manufactured from the same material as ELI V4.0, but has reinforced top structure. ELI V6.0, released in August 2014, has the same shell geometry as ELI V4.0 but offers increased longterm stability.

Material	Vinyl ester, fiberglass reinforced (VE-GF)
Liquid Compatibility	The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	2.0 ± 0.2 mm (bottom plate)
Dimensions	Major axis: 600 mm Minor axis: 400 mm
Filling Volume	approx. 30 liters
Support	DASY6: standard-size platform slot DASY52 stand-alone: SPEAG standard phantom table



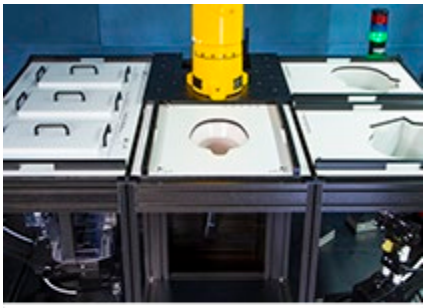
SAM Face Down Phantom

The SAM Face Down Phantom V10 allows assessment of the exposure of the face and in particular the eyes for handheld devices operated in front of the face. e.g., video phones, cameras, organizers, etc. It is manufactured from high precision injection molded polypropylene. The Mounting Device for Transmitters including extensions kit can be used to position the device.

Material	Epoxy based
Liquid Compatibility	The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	2 ± 0.2 mm (6 mm at ear point)
Head Shape	Standard compatible SAM head.

SAM Head Stand Phantom

The SAM Head Stand Phantom V10 allows assessment of the exposure of the top-head or around-the-head wireless accessories, e.g., head-belts, etc. It is manufactured from high precision injection molded polypropylene. The Mounting Device for Transmitters including extensions kit can be used to position the device.



Material	Epoxy based
Liquid Compatibility	The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	2 ± 0.2 mm (6 mm at ear point)
Head Shape	Standard compatible SAM head.

Wrist Phantom

The Wrist Phantom V10 is shape-compatible with the CTIA approved OTA GFPC-V1 and optimized for SAR evaluation of watches and other wireless hand accessories.

Material	Epoxy based
Liquid Compatibility	The phantom shell is compatible with SPEAG tissue simulating liquids (sugar and oil based). Use of other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	Shell Thickness
Wrist Shape	Design compatible with CTIA forearm.

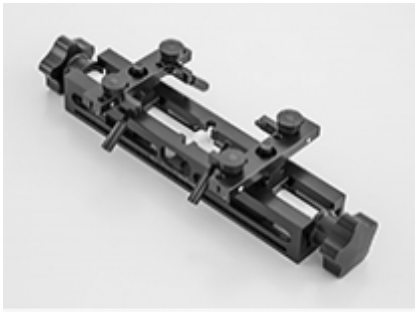
Device Holder for SAM-Twin Phantom

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

MD4HHTV5 - Mounting Device for Hand-Held Transmitters

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat).

Material: Polyoxymethylene (POM)



MDA4WTV5 - Mounting Device Adaptor for Ultra Wide Transmitters

An upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.

Material: Polyoxymethylene (POM)

MDA4SPV6 - Mounting Device Adaptor for Smart Phones

The solid low-density MDA4SPV6 adaptor assuring no impact on the DUT radiation performance and is conform with any DUT design and shape.

Material: ROHACELL

MD4LAPV5 - Mounting Device for Laptops and other Body-Worn Transmitters

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device (Body-Worn) enables testing of transmitter devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at a flat phantom section.

Material: Polyoxymethylene (POM), PET-G, Foam

MDA4LAP - Mounting Device Adaptor for Laptops

A simple but effective and easy-to-use extension for the Mounting Device; facilitates testing of larger devices (e.g., laptops, cameras, etc.) according to IEC 62209-2; lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM as well as ELI and other Flat Phantoms.

Material: Polyoxymethylene (POM), PET-G, Foam

Modulation and Interference Analyzer(MAIA)

MAIA is a hardware interface used to evaluate the modulation and audio interference characteristics of RF signals in the frequency range 698 - 6000 MHz. DASY6 evaluates the time-domain and frequency domain properties of the uplink signal transmitted by the DUT during SAR measurement with MAIA. MAIA uses USB powered active electronics to identify the modulation of the DUT. It can be operated over the air interface using the built-in ultra-broadband planar log spiral antenna (698 - 6000 MHz) or in conducted mode using the coaxial SMA 50 Ohm connector (300 - 6000 MHz).

To prevent damage in conducted mode due to high peak power, an external RF attenuator may be mounted. The LED on the MAIA hardware also indicates whether it is connected.

DAK-3.5 (200MHz – 20GHz)

This precision dielectric measurement system is designed to cover the 200MHz – 20GHz frequency range with a single open-ended coaxial dielectric probe. The system uses advanced algorithms and novel hardware to measure the dielectric properties of liquids, solids, and semi-solids over a broad range of parameters. The measurement method is fast and non-destructive to the material under test.

Evaluation of reference liquids over a broad frequency range for specific absorption rate (SAR) measurements, in accordance with IEC 62209, IEEE 1528, and several federal regulations.

Evaluating Software: DAK software version 2.0

MRT simulating liquid

Product	Test Frequency (MHz)	Main Ingredients
HSL450	400 – 500	Water, Sucrose, NaCl
MSL450	400 – 500	Water, Sucrose, NaCl

Speag Broad-Band simulating liquid

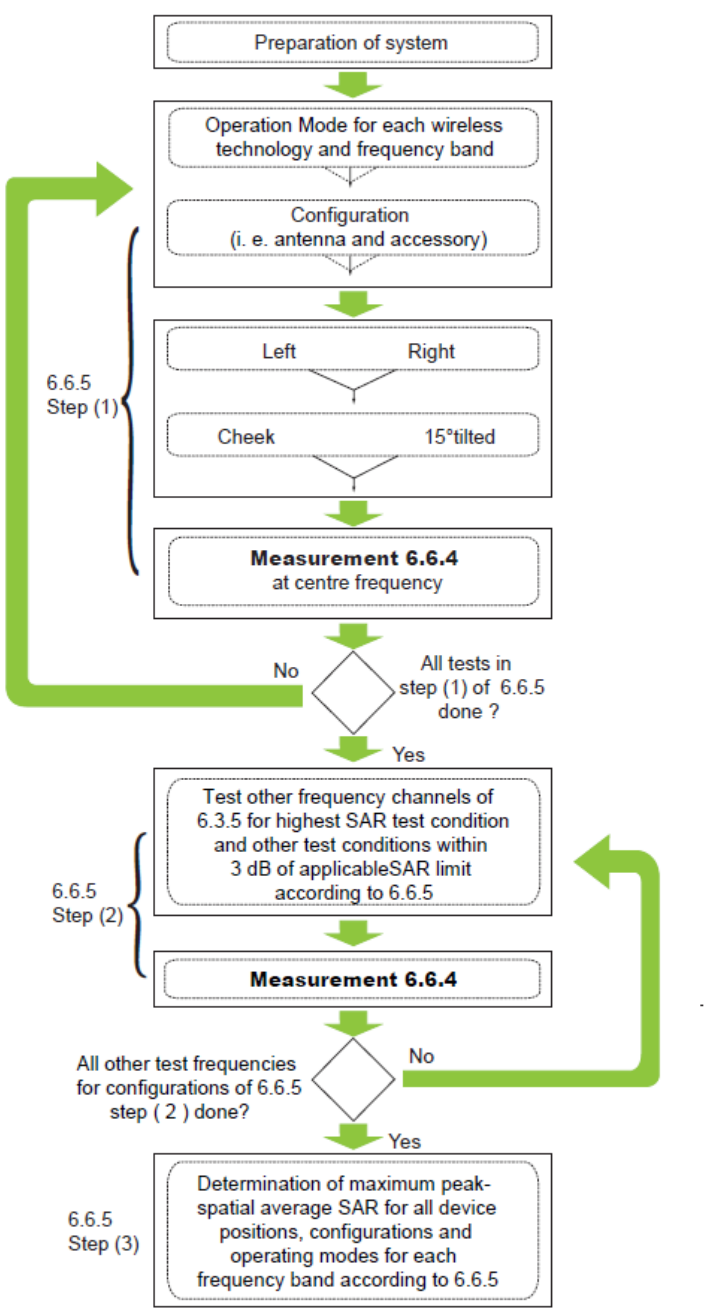
Product	Test Frequency (MHz)	Main Ingredients
HBBL600-10000V6	600 – 10000	Water, Oil
MBBL600-6000V6	600 – 6000	Water, Oil

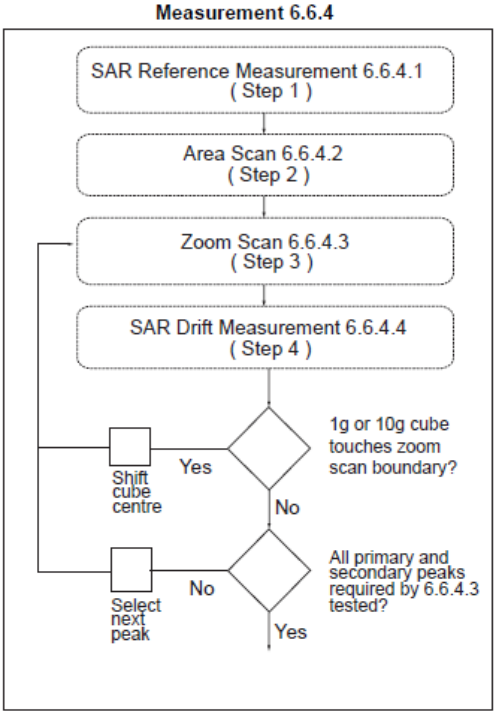
5. The SAR Measurement Procedure

5.1. Measurement Process Diagram

General Procedure

For IEEE1528-2013 Head SAR





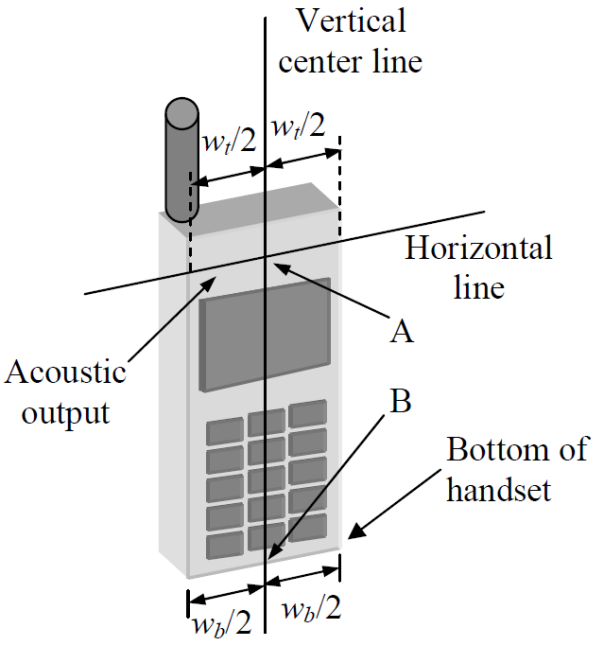
For Body SAR

SAR scan procedures described in section 2.7 of KDB 865664 D01 v01r04 should be applied to body SAR test.

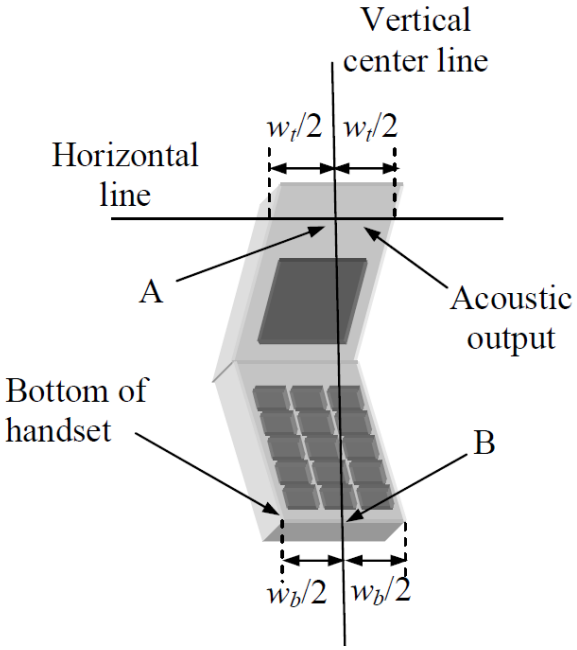
5.2. Test Position Definition

■ Head SAR Test Position

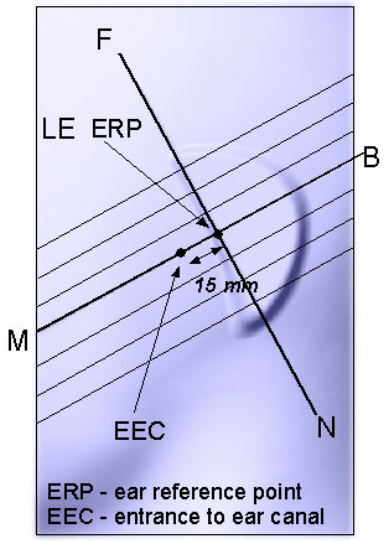
Define two imaginary lines on the handset–the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset–the midpoint of the width wt of the handset at the level of the acoustic output [point A in Fixed case and Clamshell case], and the midpoint of the width w_b at the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output [see Fixed case]. The horizontal line is also tangential to the face of the handset at point A. The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset [see Clamshell case], especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets, the vertical centerline passes through point A but not the tip edge of the phone.

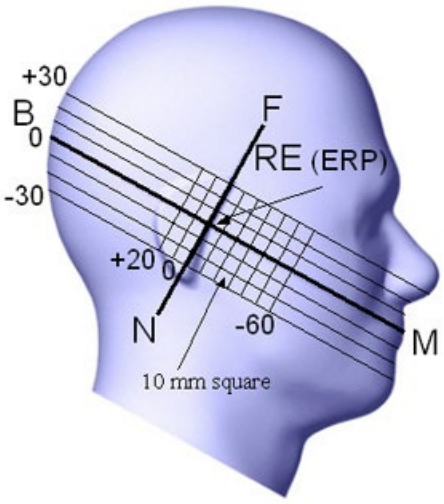


Fixed case



Clamshell case





Key

B	Direction of B-M line back endpoint
F	Direction of N-F line front endpoint
N	Direction of N-F line neck endpoint
M	Mouth reference point
LE	Left ear reference point (ERP)

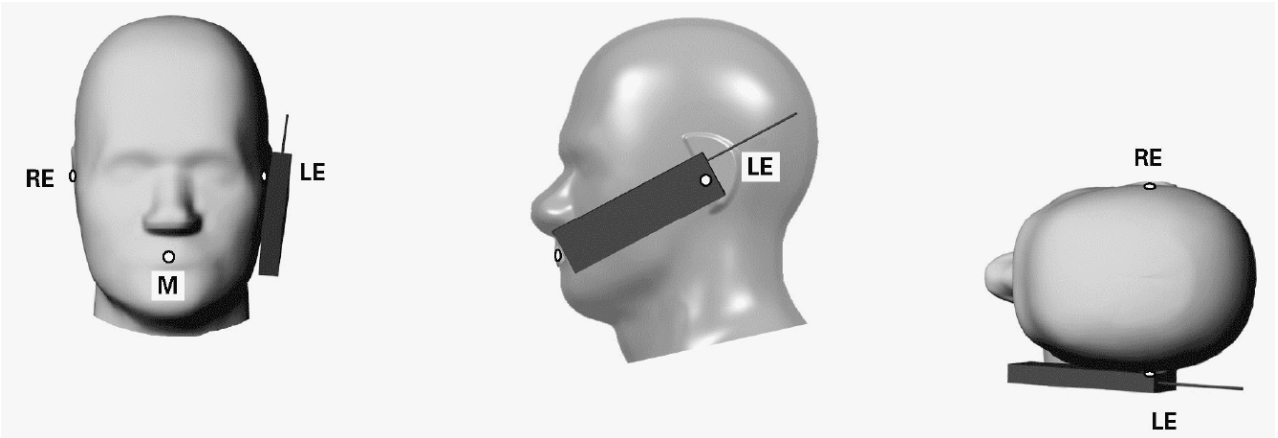
Key

B	Line B-M back endpoint
M	Line B-M front endpoint
N	Line N-F neck endpoint
F	Line N-F front endpoint
RE	Right ear reference point (ERP)

Cheek Position

The cheek position has the following characteristics, based on the geometrical lines described above:

- The N-F line (see above) is in the plane defined by the handset vertical centerline and horizontal line
- Handset touches the pinna
- The handset vertical centerline is aligned with the Reference Plane.



Key

M	Mouth reference point
LE	Left ear reference point
RE	Right ear reference point

Tilt Position

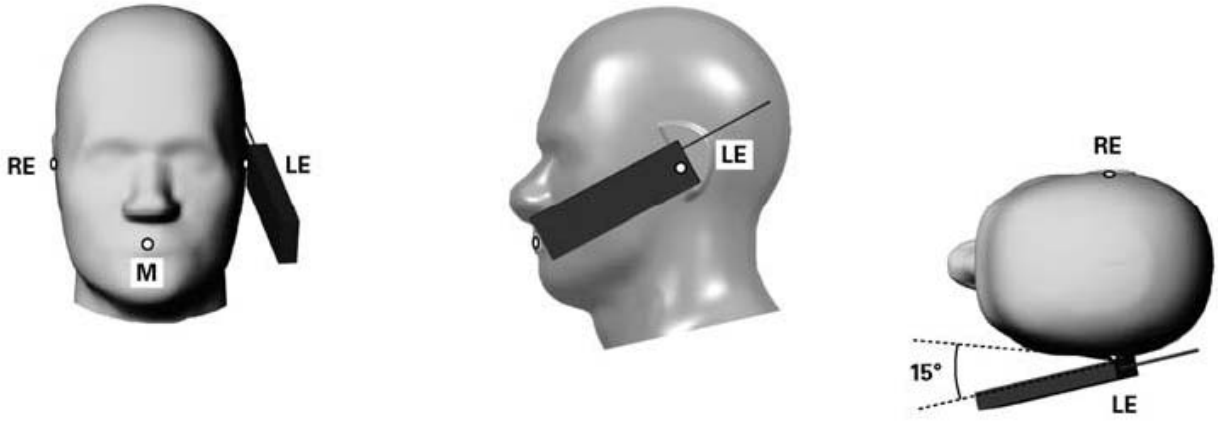
The tilt position is established as follows:

-Repeat the steps to place the device in the cheek position.

-While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.

-Rotate the handset around the horizontal line by 15°.

-While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset shall be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point on the handset is in contact with the phantom, e.g., the antenna with the back of the head.



Key

M	Mouth reference point
LE	Left ear reference point
RE	Right ear reference point

■ Body SAR Test Position

For body-worn accessory, hotspot mode and other exposure conditions to human body should be conducted pursuant to the test position requirements of SAR KDBs for certain product.

5.3. Test Procedure

Step 1 Setup a Connection

First, engineer should record the conducted power before the test. Then establish a call in handset at the maximum power level with a base station simulator via air interface, or make the EUT establish transmission by itself in testing band. Place the EUT to certain test position.

Step 2 Power Reference Measurements

To measure the local E-field value at a fixed location which value will be taken as a reference value for calculating a possible power drift.

Step 3 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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal 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 KDB 865664 D01v01r04

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	½·δ·ln(2) mm ± 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: Δx_{Area}, Δy_{Area}	≤ 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.	
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.		

Step 4 Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose 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 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 v01r04

<table>
<tr><th colspan="3"></th><th>≤ 3 GHz</th><th>> 3 GHz</th></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 - 3 GHz: ≤ 5 mm*</td><td>3 - 4 GHz: ≤ 5 mm*
4 - 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 - 4 GHz: ≤ 4 mm
4 - 5 GHz: ≤ 3 mm
5 - 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 - 4 GHz: ≤ 3 mm
4 - 5 GHz: ≤ 2.5 mm
5 - 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3-4 GHz: ≥ 28 mm
4-5 GHz: ≥ 25 mm
5-6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

Step 5 Power Drift Measurements

Repetition of the E-field measurement at the fixed location mentioned in Step 1 to make sure the two results differ by less than ± 0.2 dB.

Step 6 Test Data

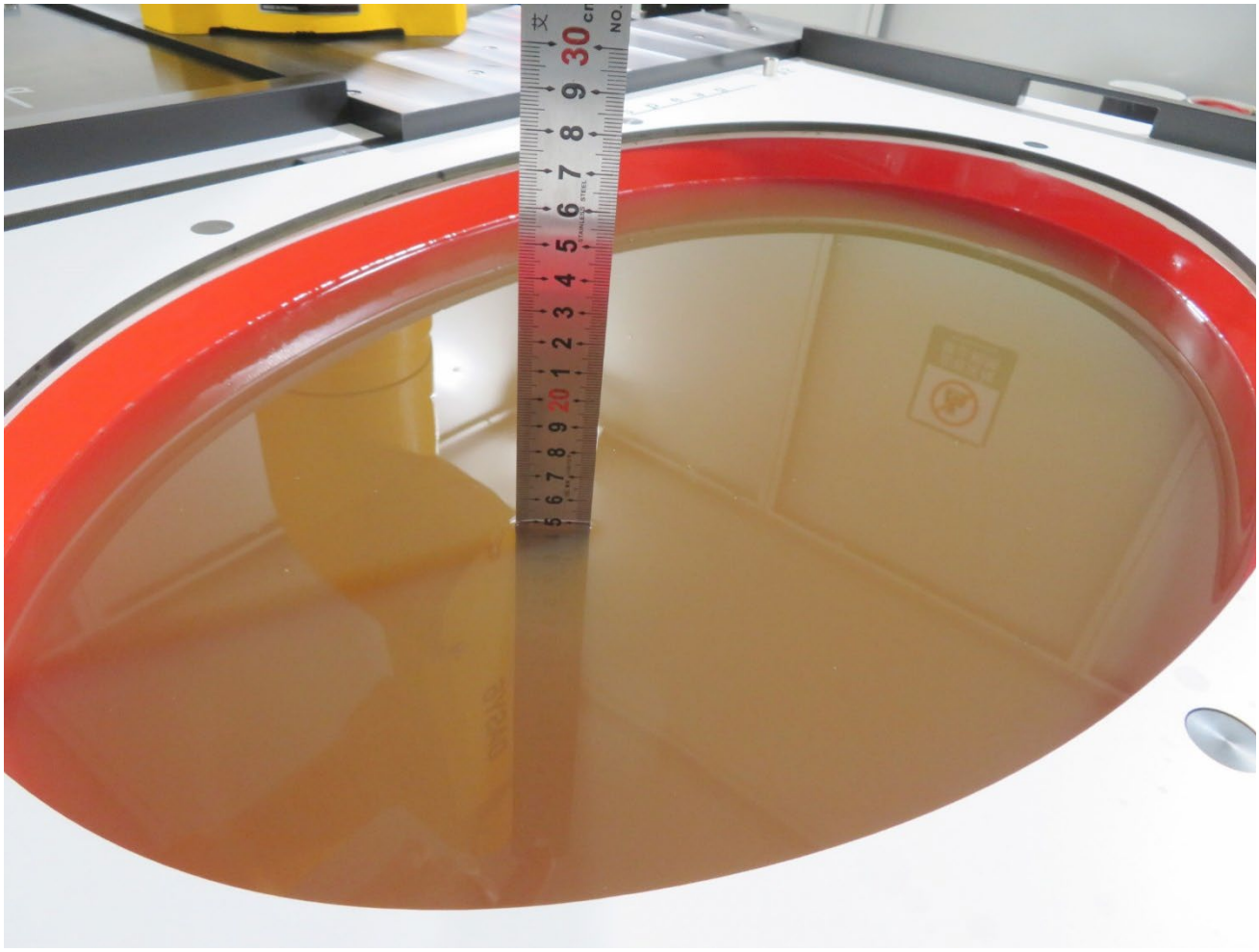
After the test, SAR test data should be exported by SEMCAD.

6. System Verificaiton

6.1. SAR Tissue Check

- Refer to KDB 865664 D01 v01r04, the depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm with ≤ ± 0.5 cm variation for SAR measurements ≤ 3 GHz and ≥ 10.0 cm with ≤ ± 0.5 cm variation for measurements > 3 GHz.

15cm Depth Head Tissue for ELI Phantom



■ Dielectric properties of the head tissue-equivalent liquid

Frequency MHz	Relative Permittivity ε_r	Conductivity (σ) S/m
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1 450	40.5	1.20
1 500	*40.4*	*1.23*
1 640	*40.2*	*1.31*
1 750	*40.1*	*1.37*
1 800	40.0	1.40
1 900	40.0	1.40
2 000	40.0	1.40
2 100	*39.8*	*1.49*
2 300	*39.5*	*1.67*
2 450	39.2	1.80
2 600	*39.0*	*1.96*
3 000	38.5	2.40
3 500	*37.9*	*2.91*
4 000	*37.4*	*3.43*
4 500	*36.8*	*3.94*
5 000	*36.2*	*4.45*
5 200	*36.0*	*4.66*
5 400	*35.8*	*4.86*
5 600	*35.5*	*5.07*
5 800	*35.3*	*5.27*
6 000	*35.1*	*5.48*

Note: For convenience, permittivity and conductivity values are linearly interpolated for frequencies that are not a part of the original data from Drossos et al. [2]. They are shown in italics in Table 2. The italicized values are linearly interpolated (below 5 800 MHz) or extrapolated (above 5 800 MHz) from the non-italicized values that are immediately above and below these values.

■ Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using DASY6 Dielectric Assessment Kit and keysight PNA-L Network Analyzer N5234B.

Freq. (MHz)	Perm.	Cond.	Target Perm.	Target Cond.	Deviation Perm. %	Deviation Cond. %	Tissue Temperature	Test Date
750	43.09	0.89	41.94	0.89	2.74	0.00	22.5°C	2023.11.30
850	42.82	0.92	41.50	0.92	3.18	0.00	22.5°C	2023.12.01
1750	41.19	1.36	40.08	1.37	2.77	-0.73	22.5°C	2023.12.04
1900	40.89	1.41	40.00	1.40	2.23	0.71	22.5°C	2023.12.02
2450	40.13	1.84	39.20	1.80	2.37	2.22	22.5°C	2023.12.05
2600	39.85	1.97	39.01	1.96	2.15	0.51	22.5°C	2023.12.03
5250	35.13	4.62	35.93	4.71	-2.23	-1.91	22.5°C	2023.12.06
5600	34.49	5.02	35.53	5.07	-2.93	-0.99	22.5°C	2023.12.07
5750	34.21	5.19	35.36	5.22	-3.25	-0.57	22.5°C	2023.12.07

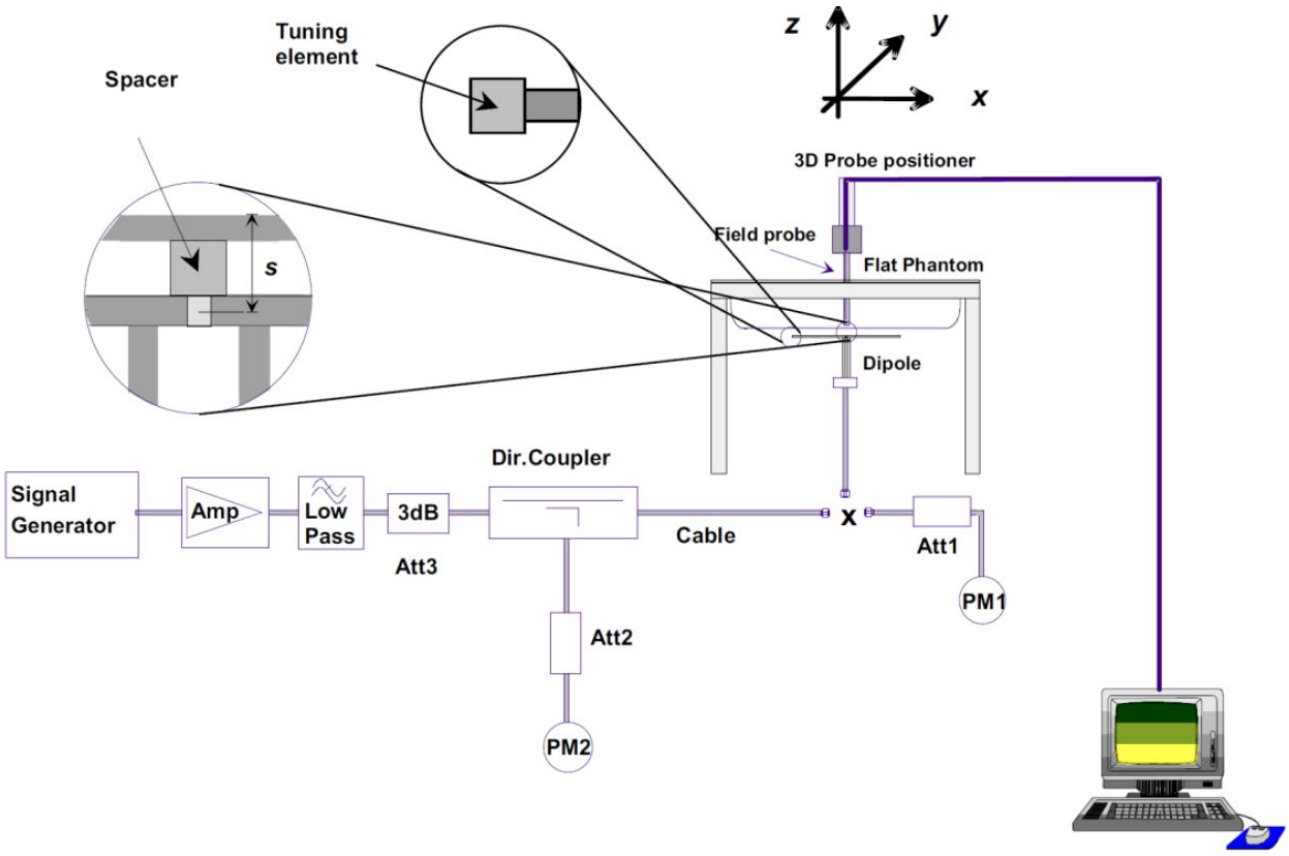
Note: The ±5% deviation of tissue parameter is recommended.

6.2. SAR System Check

■ Purpose

The purpose of the system check is to verify that the system operates within its specifications at the device test frequencies. System check verifies the measurement repeatability of a SAR system before compliance testing and is not a validation of all system specifications. The latter is not required for testing a device but is mandatory before the system is deployed.

■ System Performance Check Setup Diagram



■ System Check Procedure

The system check procedure is a complete 1g and 10g peak spatial-average SAR measurement using a source having a previously determined system check target value. The measured 1g and 10g SAR are normalized to the target input power of the specific source and compared to their respective target values. A description of the different measurement tasks to be performed is given below, together with the information that can be deduced from their results:

a. The Power Reference Measurement and Power Drift Measurement are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the amplifier output power. If it is too high (above ±0.1 dB), the

system check should be repeated; some amplifiers have very high drift during warm-up. A stable amplifier gives drift results in the DASY6 system below ±0.02 dB.

b. The second step is optional. For probes with integrated optical surface detection sensor this step must be conducted, otherwise the step can be skipped. The Surface Check tests the optical surface detection system of the DASY6 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ±0.1 mm). In that case it is better to abort the system check and stir the liquid.

c. The Area Scan measures the SAR above the dipole on a plane parallel to the surface. It is used to locate the approximate location of the peak SAR. The proposed scan uses large grid spacing for faster measurement; due to the symmetric field, the peak detection is reliable. If a finer graphic is desired, the grid spacing can be reduced. Grid spacing and orientation have no influence on the SAR result.

d. The Zoom Scan measures the field in a volume around the peak SAR value assessed in the previous Area Scan.

If the system check gives reasonable results, the SAR peak, 1 g and 10 g spatial average SAR values normalized to 1 W dipole input power give reference data for comparisons. The next sections analyze the expected uncertainties of these values, as well as additional checks for further information or troubleshooting.

■ Result of System Performance Check

Freq. (MHz)	1g SAR (W/kg)	10g SAR (W/kg)	Target 1g SAR (W/kg)	Target 10g SAR (W/kg)	Deviation 1g SAR (%)	Deviation 10g SAR (%)	Tissue Temp.	Test Date
750	8.44	5.60	8.56	5.58	-1.40	0.36	22.5°C	2023.11.30
850	10.00	6.56	10.10	6.52	-0.99	0.61	22.5°C	2023.12.01
1750	36.72	19.64	37.10	19.30	-1.02	1.76	22.5°C	2023.12.04
1900	40.80	21.28	39.80	20.20	2.51	5.35	22.5°C	2023.12.02
2450	51.60	24.20	53.40	24.20	-3.37	0.00	22.5°C	2023.12.05
2600	56.80	25.76	57.20	25.00	-0.70	3.04	22.5°C	2023.12.03
5250	78.90	22.60	76.90	21.80	2.60	3.67	22.5°C	2023.12.06
5600	82.50	23.50	79.90	22.60	3.25	3.98	22.5°C	2023.12.07
5750	75.30	21.40	76.90	21.50	-2.08	-0.47	22.5°C	2023.12.07

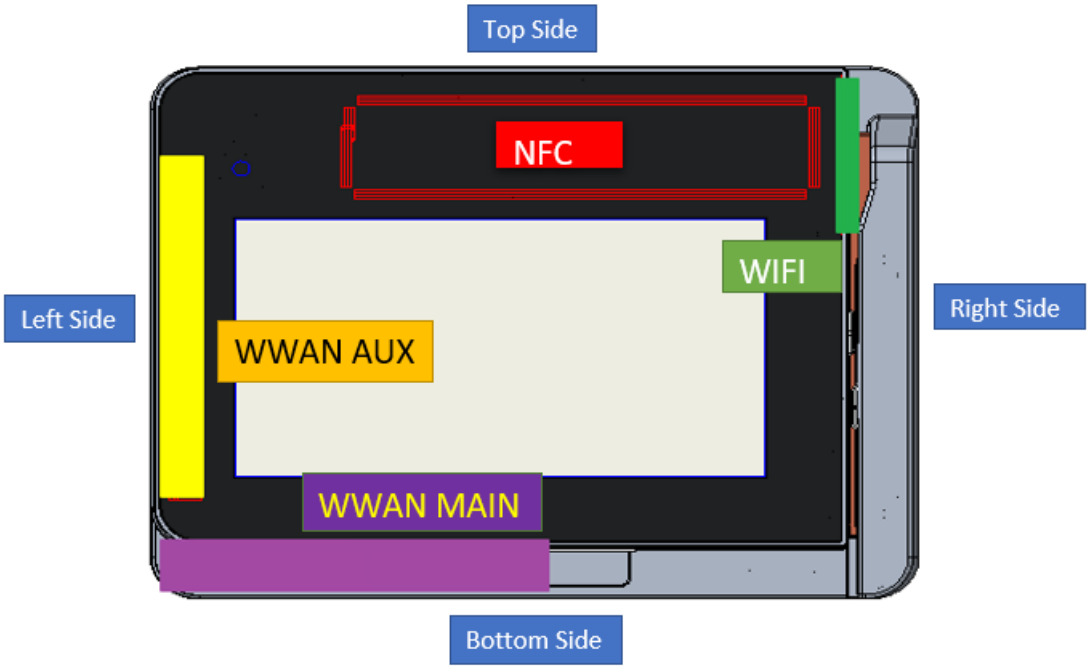
Notes:

1. The ±10% deviation of system check result is required.
2. System check value listed above has been harmonized to 1W.

7. Analysis and Results

7.1. Antenna Location

Front View



7.2. Conducted Power

■ GSM 850

Test Mode		CH.	Freq. (MHz)	Burst Average Power (dBm)	Max. Tune-up Power (dBm	Frame Average Power
GPRS	1 slot	128	824.2	31.22	31.5	22.19
		190	836.6	31.63	32.0	22.60
		251	848.8	31.29	31.5	22.26
	2 slot	128	824.2	29.29	29.5	23.27
		190	836.6	29.70	30.0	23.68
		251	848.8	29.82	30.0	23.80
	3 slot	128	824.2	26.53	27.0	22.27
		190	836.6	26.88	27.0	22.62
		251	848.8	27.04	27.5	22.78
	4 slot	128	824.2	25.97	26.5	22.96
		190	836.6	26.35	26.5	23.34
		251	848.8	26.47	27.0	23.46
EGPRS(GMSK)	1 slot	128	824.2	25.22	25.5	16.19
		190	836.6	25.41	26.0	16.38
		251	848.8	25.50	26.0	16.47
	2 slot	128	824.2	24.50	25.0	18.48
		190	836.6	24.69	25.0	18.67
		251	848.8	24.82	25.0	18.80
	3 slot	128	824.2	21.79	22.0	17.53
		190	836.6	22.11	22.5	17.85
		251	848.8	22.26	22.5	18.00
	4 slot	128	824.2	21.07	21.5	18.06
		190	836.6	21.40	22.0	18.39
		251	848.8	21.31	21.5	18.30

■ PCS 1900

Test Mode		CH.	Freq. (MHz)	Burst Average Power (dBm)	Max. Tune-up Power (dBm	Frame Average Power
GPRS	1 slot	512	1850.2	28.13	28.5	19.10
		661	1880	28.23	28.5	19.20
		810	1909.8	28.02	28.5	18.99
	2 slot	512	1850.2	26.24	26.5	20.22
		661	1880	26.43	27.0	20.41
		810	1909.8	26.11	26.5	20.09
	3 slot	512	1850.2	25.77	26.0	21.51
		661	1880	25.42	26.0	21.16
		810	1909.8	24.96	25.5	20.70
	4 slot	512	1850.2	24.70	25.0	21.69
		661	1880	24.17	24.5	21.16
		810	1909.8	23.64	24.0	20.63
EGPRS(GMSK)	1 slot	512	1850.2	24.92	25.5	15.89
		661	1880	24.56	25.0	15.53
		810	1909.8	24.44	25.0	15.41
	2 slot	512	1850.2	24.82	25.0	18.80
		661	1880	24.47	25.0	18.45
		810	1909.8	24.32	24.5	18.30
	3 slot	512	1850.2	22.46	23.0	18.20
		661	1880	21.98	22.5	17.72
		810	1909.8	21.74	22.0	17.48
	4 slot	512	1850.2	20.32	20.5	17.31
		661	1880	19.72	20.0	16.71
		810	1909.8	19.72	20.0	16.71

■ WCDMA Band 2

Test Mode		CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm
12.2kbps RMC		9262	1852.4	20.26	20.5
		9400	1880	20.31	20.5
		9538	1907.6	20.36	20.5
HSDPA	SUB-TEST 1	9262	1852.4	18.71	19.0
		9400	1880	18.76	19.0
		9538	1907.6	18.74	19.0
	SUB-TEST 2	9262	1852.4	18.74	19.0
		9400	1880	18.81	19.0
		9538	1907.6	18.78	19.0
	SUB-TEST 3	9262	1852.4	18.32	18.5
		9400	1880	18.39	19.0
		9538	1907.6	18.26	18.5
	SUB-TEST 4	9262	1852.4	18.31	18.5
		9400	1880	18.38	18.5
		9538	1907.6	18.25	18.5
HSUPA	SUB-TEST 1	9262	1852.4	18.65	19.0
		9400	1880	18.28	18.5
		9538	1907.6	18.14	18.5
	SUB-TEST 2	9262	1852.4	17.79	18.0
		9400	1880	17.77	18.0
		9538	1907.6	17.75	18.0
	SUB-TEST 3	9262	1852.4	17.58	18.0
		9400	1880	17.47	18.0
		9538	1907.6	17.32	17.5
	SUB-TEST 4	9262	1852.4	17.64	18.0
		9400	1880	18.04	18.5
		9538	1907.6	17.81	18.0
	SUB-TEST 5	9262	1852.4	18.86	19.0
		9400	1880	18.94	19.5
		9538	1907.6	18.81	19.0

■ WCDMA Band 4

Test Mode		CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm
12.2kbps RMC		1312	1712.4	21.29	21.5
		1413	1732.6	21.37	21.5
		1513	1752.6	21.35	21.5
HSDPA	SUB-TEST 1	1312	1712.4	19.78	20.0
		1413	1732.6	19.90	20.5
		1513	1752.6	19.77	20.0
	SUB-TEST 2	1312	1712.4	19.71	20.0
		1413	1732.6	19.86	20.0
		1513	1752.6	19.85	20.0
	SUB-TEST 3	1312	1712.4	19.18	19.5
		1413	1732.6	19.34	19.5
		1513	1752.6	19.21	19.5
	SUB-TEST 4	1312	1712.4	19.19	19.5
		1413	1732.6	19.36	19.5
		1513	1752.6	19.22	19.5
HSUPA	SUB-TEST 1	1312	1712.4	19.77	20.0
		1413	1732.6	19.23	19.5
		1513	1752.6	19.71	20.0
	SUB-TEST 2	1312	1712.4	18.53	19.0
		1413	1732.6	18.82	19.0
		1513	1752.6	18.30	18.5
	SUB-TEST 3	1312	1712.4	18.53	19.0
		1413	1732.6	17.93	18.5
		1513	1752.6	18.62	19.0
	SUB-TEST 4	1312	1712.4	19.35	19.5
		1413	1732.6	19.42	20.0
		1513	1752.6	18.89	19.5
	SUB-TEST 5	1312	1712.4	19.67	20.0
		1413	1732.6	19.74	20.0
		1513	1752.6	19.63	20.0

■ WCDMA Band 5

Test Mode		CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm
12.2kbps RMC		4132	826.4	22.63	23.0
		4183	836.6	22.63	23.0
		4233	846.6	22.63	23.0
HSDPA	SUB-TEST 1	4132	826.4	20.80	21.0
		4183	836.6	20.87	21.0
		4233	846.6	20.88	21.0
	SUB-TEST 2	4132	826.4	20.86	21.0
		4183	836.6	20.86	21.0
		4233	846.6	20.87	21.0
	SUB-TEST 3	4132	826.4	20.33	20.5
		4183	836.6	20.44	21.0
		4233	846.6	20.35	20.5
	SUB-TEST 4	4132	826.4	20.42	21.0
		4183	836.6	20.43	21.0
		4233	846.6	20.44	21.0
HSUPA	SUB-TEST 1	4132	826.4	20.27	20.5
		4183	836.6	20.37	20.5
		4233	846.6	20.89	21.5
	SUB-TEST 2	4132	826.4	19.92	20.5
		4183	836.6	19.60	20.0
		4233	846.6	19.97	20.5
	SUB-TEST 3	4132	826.4	19.38	19.5
		4183	836.6	19.08	19.5
		4233	846.6	19.64	20.0
	SUB-TEST 4	4132	826.4	19.65	20.0
		4183	836.6	20.27	20.5
		4233	846.6	20.11	20.5
	SUB-TEST 5	4132	826.4	20.94	21.5
		4183	836.6	21.14	21.5
		4233	846.6	20.97	21.5

■ LTE Band 2

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
20	1	0	18700	1860	20.45	21.0	19.93	20.5
			18900	1880	20.36	20.5	19.67	20.0
			19100	1900	20.40	21.0	20.49	21.0
		49	18700	1860	20.44	21.0	19.96	20.5
			18900	1880	20.68	21.0	19.82	20.0
			19100	1900	20.51	21.0	20.64	21.0
		99	18700	1860	20.10	20.5	19.80	20.0
			18900	1880	20.73	21.0	20.01	20.5
			19100	1900	20.53	21.0	20.71	21.0
	50	0	18700	1860	19.59	20.0	18.66	19.0
			18900	1880	19.62	20.0	18.70	19.0
			19100	1900	19.55	20.0	18.47	19.0
		24	18700	1860	19.71	20.0	18.47	19.0
			18900	1880	19.72	20.0	18.89	19.0
			19100	1900	19.55	20.0	18.61	19.0
		50	18700	1860	19.55	20.0	18.34	18.5
			18900	1880	19.61	20.0	18.74	19.0
			19100	1900	19.71	20.0	18.71	19.0
	100	0	18700	1860	19.61	20.0	18.60	19.0
			18900	1880	19.52	20.0	18.50	19.0
			19100	1900	19.54	20.0	18.61	19.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	18675	1857.5	20.61	21.0	20.11	20.5
			18900	1880	20.52	21.0	19.88	20.0
			19125	1902.5	20.37	20.5	20.46	21.0
		37	18675	1857.5	20.62	21.0	20.02	20.5
			18900	1880	20.70	21.0	19.88	20.0
			19125	1902.5	20.63	21.0	20.56	21.0
		74	18675	1857.5	20.49	21.0	19.65	20.0
			18900	1880	20.74	21.0	19.76	20.0
			19125	1902.5	20.60	21.0	20.62	21.0
	36	0	18675	1857.5	19.65	20.0	18.72	19.0
			18900	1880	19.68	20.0	18.65	19.0
			19125	1902.5	19.64	20.0	18.49	19.0
		19	18675	1857.5	19.74	20.0	18.62	19.0
			18900	1880	19.81	20.0	19.00	19.5
			19125	1902.5	19.62	20.0	18.58	19.0
		39	18675	1857.5	19.57	20.0	18.44	19.0
			18900	1880	19.99	20.5	18.97	19.5
			19125	1902.5	19.75	20.0	18.79	19.0
	75	0	18675	1857.5	19.67	20.0	18.62	19.0
			18900	1880	19.79	20.0	18.75	19.0
			19125	1902.5	19.73	20.0	18.62	19.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	18650	1855	20.65	21.0	19.71	20.0
			18900	1880	20.63	21.0	20.29	20.5
			19150	1905	20.53	21.0	20.20	20.5
		24	18650	1855	20.67	21.0	20.19	20.5
			18900	1880	20.81	21.0	20.36	20.5
			19150	1905	20.65	21.0	20.06	20.5
		49	18650	1855	20.33	20.5	20.35	20.5
			18900	1880	20.84	21.0	20.64	21.0
			19150	1905	20.82	21.0	20.13	20.5
	25	0	18650	1855	19.66	20.0	18.77	19.0
			18900	1880	19.88	20.0	18.50	19.0
			19150	1905	19.85	20.0	18.81	19.0
		12	18650	1855	19.54	20.0	18.61	19.0
			18900	1880	19.70	20.0	18.59	19.0
			19150	1905	20.09	20.5	18.93	19.5
		25	18650	1855	19.55	20.0	18.61	19.0
			18900	1880	19.84	20.0	18.80	19.0
			19150	1905	19.96	20.5	19.04	19.5
	50	0	18650	1855	19.66	20.0	18.59	19.0
			18900	1880	19.82	20.0	18.94	19.5
			19150	1905	19.73	20.0	18.66	19.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	18625	1852.5	20.78	21.0	19.83	20.0
			18900	1880	20.78	21.0	20.06	20.5
			19175	1907.5	20.83	21.0	20.49	21.0
		12	18625	1852.5	20.85	21.0	19.79	20.0
			18900	1880	20.83	21.0	20.15	20.5
			19175	1907.5	20.71	21.0	20.54	21.0
		24	18625	1852.5	20.59	21.0	19.64	20.0
			18900	1880	20.85	21.0	20.40	21.0
			19175	1907.5	20.82	21.0	20.23	20.5
	12	0	18625	1852.5	19.85	20.0	18.88	19.0
			18900	1880	19.72	20.0	18.70	19.0
			19175	1907.5	19.96	20.5	19.05	19.5
		6	18625	1852.5	19.96	20.5	18.76	19.0
			18900	1880	19.83	20.0	18.68	19.0
			19175	1907.5	20.07	20.5	19.08	19.5
		13	18625	1852.5	19.78	20.0	18.95	19.5
			18900	1880	19.89	20.5	18.75	19.0
			19175	1907.5	19.91	20.5	19.00	19.5
	25	0	18625	1852.5	19.83	20.0	18.90	19.5
			18900	1880	19.83	20.0	18.70	19.0
			19175	1907.5	19.99	20.5	19.06	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	18615	1851.5	20.69	21.0	20.59	21.0
			18900	1880	20.83	21.0	20.29	20.5
			19185	1908.5	20.77	21.0	20.70	21.0
		7	18615	1851.5	20.82	21.0	20.65	21.0
			18900	1880	20.76	21.0	20.13	20.5
			19185	1908.5	20.79	21.0	20.43	21.0
		14	18615	1851.5	20.79	21.0	20.47	21.0
			18900	1880	20.83	21.0	20.36	20.5
			19185	1908.5	20.71	21.0	20.44	21.0
	8	0	18615	1851.5	19.85	20.0	18.88	19.0
			18900	1880	20.03	20.5	19.10	19.5
			19185	1908.5	20.12	20.5	19.20	19.5
		4	18615	1851.5	19.87	20.0	18.84	19.0
			18900	1880	19.98	20.5	18.96	19.5
			19185	1908.5	20.16	20.5	19.19	19.5
		7	18615	1851.5	19.85	20.0	18.70	19.0
			18900	1880	20.07	20.5	19.17	19.5
			19185	1908.5	20.10	20.5	19.08	19.5
	15	0	18615	1851.5	19.89	20.5	18.97	19.5
			18900	1880	20.05	20.5	18.96	19.5
			19185	1908.5	20.09	20.5	18.97	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	18607	1850.7	20.84	21.0	20.40	21.0
			18900	1880	20.83	21.0	20.33	20.5
			19193	1909.3	20.83	21.0	20.01	20.5
		2	18607	1850.7	20.81	21.0	20.52	21.0
			18900	1880	20.85	21.0	20.50	21.0
			19193	1909.3	20.79	21.0	20.14	20.5
		5	18607	1850.7	20.69	21.0	20.46	21.0
			18900	1880	20.81	21.0	20.34	20.5
			19193	1909.3	20.77	21.0	20.32	20.5
	3	0	18607	1850.7	20.78	21.0	19.75	20.0
			18900	1880	20.80	21.0	20.14	20.5
			19193	1909.3	20.76	21.0	20.42	21.0
		1	18607	1850.7	20.82	21.0	19.76	20.0
			18900	1880	20.82	21.0	20.27	20.5
			19193	1909.3	20.82	21.0	20.26	20.5
		3	18607	1850.7	20.69	21.0	19.72	20.0
			18900	1880	20.76	21.0	20.19	20.5
			19193	1909.3	20.80	21.0	20.34	20.5
	6	0	18607	1850.7	19.95	20.5	18.96	19.5
			18900	1880	20.07	20.5	19.12	19.5
			19193	1909.3	20.28	20.5	19.30	19.5

■ LTE Band 4

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
20	1	0	20050	1720	21.64	22.0	21.14	21.5
			20175	1732.5	21.56	22.0	20.65	21.0
			20300	1745	21.62	22.0	21.58	22.0
		49	20050	1720	21.69	22.0	21.47	22.0
			20175	1732.5	21.67	22.0	20.88	21.0
			20300	1745	21.57	22.0	21.65	22.0
		99	20050	1720	21.66	22.0	21.50	22.0
			20175	1732.5	21.69	22.0	21.11	21.5
			20300	1745	21.65	22.0	21.50	22.0
	50	0	20050	1720	20.62	21.0	19.70	20.0
			20175	1732.5	20.50	21.0	19.61	20.0
			20300	1745	20.66	21.0	19.91	20.5
		24	20050	1720	20.74	21.0	19.65	20.0
			20175	1732.5	20.49	21.0	19.56	20.0
			20300	1745	20.72	21.0	19.61	20.0
		50	20050	1720	20.47	21.0	19.39	20.0
			20175	1732.5	20.57	21.0	19.69	20.0
			20300	1745	20.56	21.0	19.58	20.0
	100	0	20050	1720	20.55	21.0	19.74	20.0
			20175	1732.5	20.44	21.0	19.54	20.0
			20300	1745	20.70	21.0	19.73	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	20025	1717.5	21.49	22.0	20.49	21.0
			20175	1732.5	21.51	22.0	21.64	22.0
			20325	1747.5	21.67	22.0	21.05	21.5
		37	20025	1717.5	21.21	21.5	20.39	21.0
			20175	1732.5	21.40	22.0	21.44	22.0
			20325	1747.5	21.66	22.0	20.75	21.0
		74	20025	1717.5	21.31	21.5	20.41	21.0
			20175	1732.5	21.61	22.0	21.37	21.5
			20325	1747.5	21.44	22.0	20.74	21.0
	36	0	20025	1717.5	20.71	21.0	19.58	20.0
			20175	1732.5	20.43	21.0	19.42	20.0
			20325	1747.5	20.63	21.0	19.78	20.0
		19	20025	1717.5	20.49	21.0	19.41	20.0
			20175	1732.5	20.69	21.0	19.25	19.5
			20325	1747.5	20.42	21.0	19.40	20.0
		39	20025	1717.5	20.51	21.0	19.26	19.5
			20175	1732.5	20.56	21.0	19.38	19.5
			20325	1747.5	20.59	21.0	19.41	20.0
	75	0	20025	1717.5	20.61	21.0	19.61	20.0
			20175	1732.5	20.47	21.0	19.40	20.0
			20325	1747.5	20.64	21.0	19.70	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	20000	1715	21.68	22.0	21.51	22.0
			20175	1732.5	21.65	22.0	21.16	21.5
			20350	1750	21.61	22.0	21.05	21.5
		24	20000	1715	21.66	22.0	21.59	22.0
			20175	1732.5	21.66	22.0	21.16	21.5
			20350	1750	21.68	22.0	21.46	22.0
		49	20000	1715	21.51	22.0	21.33	21.5
			20175	1732.5	21.69	22.0	21.18	21.5
			20350	1750	21.69	22.0	21.58	22.0
	25	0	20000	1715	20.62	21.0	19.78	20.0
			20175	1732.5	20.48	21.0	19.52	20.0
			20350	1750	20.57	21.0	19.73	20.0
		12	20000	1715	20.50	21.0	19.63	20.0
			20175	1732.5	20.61	21.0	19.76	20.0
			20350	1750	20.37	20.5	19.58	20.0
		25	20000	1715	20.57	21.0	19.70	20.0
			20175	1732.5	20.44	21.0	19.64	20.0
			20350	1750	20.43	21.0	19.50	20.0
	50	0	20000	1715	20.68	21.0	19.90	20.5
			20175	1732.5	20.40	21.0	19.55	20.0
			20350	1750	20.58	21.0	19.63	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	19975	1712.5	21.63	22.0	20.63	21.0
			20175	1732.5	21.53	22.0	20.87	21.0
			20375	1752.5	21.56	22.0	20.64	21.0
		12	19975	1712.5	21.67	22.0	20.46	21.0
			20175	1732.5	21.69	22.0	20.89	21.0
			20375	1752.5	21.37	21.5	20.94	21.5
		24	19975	1712.5	21.31	21.5	20.46	21.0
			20175	1732.5	21.61	22.0	20.64	21.0
			20375	1752.5	21.18	21.5	21.23	21.5
	12	0	19975	1712.5	20.71	21.0	19.39	20.0
			20175	1732.5	20.35	20.5	19.30	19.5
			20375	1752.5	20.54	21.0	19.42	20.0
		6	19975	1712.5	20.57	21.0	19.59	20.0
			20175	1732.5	20.30	20.5	19.43	20.0
			20375	1752.5	20.46	21.0	19.27	19.5
		13	19975	1712.5	20.47	21.0	19.43	20.0
			20175	1732.5	20.44	21.0	19.39	20.0
			20375	1752.5	20.58	21.0	19.47	20.0
	25	0	19975	1712.5	20.54	21.0	19.58	20.0
			20175	1732.5	20.46	21.0	19.42	20.0
			20375	1752.5	20.55	21.0	19.63	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	19965	1711.5	21.55	22.0	21.29	21.5
			20175	1732.5	21.68	22.0	20.09	20.5
			20385	1753.5	21.34	21.5	20.88	21.0
		7	19965	1711.5	21.45	22.0	21.11	21.5
			20175	1732.5	21.46	22.0	20.55	21.0
			20385	1753.5	21.50	22.0	20.62	21.0
		14	19965	1711.5	21.42	22.0	21.02	21.5
			20175	1732.5	21.62	22.0	20.70	21.0
			20385	1753.5	21.50	22.0	20.48	21.0
	8	0	19965	1711.5	20.63	21.0	19.33	19.5
			20175	1732.5	20.45	21.0	19.32	19.5
			20385	1753.5	20.36	20.5	19.43	20.0
		4	19965	1711.5	20.53	21.0	19.48	20.0
			20175	1732.5	20.47	21.0	19.17	19.5
			20385	1753.5	20.43	21.0	19.70	20.0
		7	19965	1711.5	20.61	21.0	19.50	20.0
			20175	1732.5	20.54	21.0	19.30	19.5
			20385	1753.5	20.41	21.0	19.65	20.0
	15	0	19965	1711.5	20.48	21.0	19.46	20.0
			20175	1732.5	20.48	21.0	19.40	20.0
			20385	1753.5	20.41	21.0	19.41	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	19957	1710.7	21.54	22.0	20.32	20.5
			20175	1732.5	21.57	22.0	20.40	21.0
			20393	1754.3	21.52	22.0	20.28	20.5
		2	19957	1710.7	21.48	22.0	20.12	20.5
			20175	1732.5	21.68	22.0	20.72	21.0
			20393	1754.3	21.44	22.0	20.20	20.5
		5	19957	1710.7	21.49	22.0	20.29	20.5
			20175	1732.5	21.61	22.0	20.70	21.0
			20393	1754.3	21.54	22.0	20.31	20.5
	3	0	19957	1710.7	21.67	22.0	20.66	21.0
			20175	1732.5	21.49	22.0	20.58	21.0
			20393	1754.3	21.53	22.0	20.40	21.0
		1	19957	1710.7	21.50	22.0	20.65	21.0
			20175	1732.5	21.66	22.0	20.63	21.0
			20393	1754.3	21.40	22.0	20.68	21.0
		3	19957	1710.7	21.69	22.0	20.56	21.0
			20175	1732.5	21.53	22.0	20.33	20.5
			20393	1754.3	21.45	22.0	20.67	21.0
	6	0	19957	1710.7	20.82	21.0	19.63	20.0
			20175	1732.5	20.48	21.0	19.53	20.0
			20393	1754.3	20.49	21.0	19.33	19.5

■ LTE Band 5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	20450	829	21.72	22.0	20.73	21.0
			20525	836.5	21.93	22.5	21.72	22.0
			20600	844	22.10	22.5	21.36	21.5
		24	20450	829	21.77	22.0	20.97	21.5
			20525	836.5	22.30	22.5	21.81	22.0
			20600	844	22.16	22.5	21.41	22.0
		49	20450	829	22.01	22.5	21.12	21.5
			20525	836.5	22.32	22.5	22.02	22.5
			20600	844	22.61	23.0	21.68	22.0
	25	0	20450	829	20.96	21.5	19.95	20.5
			20525	836.5	21.11	21.5	19.99	20.5
			20600	844	21.33	21.5	20.27	20.5
		12	20450	829	21.00	21.5	19.92	20.5
			20525	836.5	21.00	21.5	20.24	20.5
			20600	844	21.51	22.0	20.21	20.5
		25	20450	829	21.09	21.5	20.09	20.5
			20525	836.5	21.24	21.5	20.22	20.5
			20600	844	21.50	22.0	20.45	21.0
	50	0	20450	829	20.96	21.5	20.18	20.5
			20525	836.5	21.10	21.5	20.34	20.5
			20600	844	21.31	21.5	20.36	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	20425	826.5	21.73	22.0	21.61	22.0
			20525	836.5	22.15	22.5	21.10	21.5
			20625	846.5	22.40	23.0	22.13	22.5
		12	20425	826.5	21.81	22.0	21.70	22.0
			20525	836.5	22.26	22.5	21.02	21.5
			20625	846.5	22.38	22.5	22.27	22.5
		24	20425	826.5	21.82	22.0	22.01	22.5
			20525	836.5	22.10	22.5	21.32	21.5
			20625	846.5	22.21	22.5	22.21	22.5
	12	0	20425	826.5	20.90	21.5	19.84	20.0
			20525	836.5	21.00	21.5	20.39	21.0
			20625	846.5	21.57	22.0	20.08	20.5
		6	20425	826.5	21.06	21.5	20.06	20.5
			20525	836.5	21.25	21.5	20.40	21.0
			20625	846.5	21.62	22.0	20.16	20.5
		13	20425	826.5	20.95	21.5	20.02	20.5
			20525	836.5	21.11	21.5	20.08	20.5
			20625	846.5	21.58	22.0	20.52	21.0
	25	0	20425	826.5	20.89	21.5	20.03	20.5
			20525	836.5	21.08	21.5	20.27	20.5
			20625	846.5	21.50	22.0	20.58	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	20415	825.5	21.63	22.0	21.73	22.0
			20525	836.5	22.09	22.5	21.47	22.0
			20635	847.5	22.45	23.0	22.20	22.5
		7	20415	825.5	21.78	22.0	21.65	22.0
			20525	836.5	22.08	22.5	21.69	22.0
			20635	847.5	22.59	23.0	22.06	22.5
		14	20415	825.5	21.88	22.0	21.45	22.0
			20525	836.5	22.28	22.5	21.59	22.0
			20635	847.5	22.51	23.0	22.10	22.5
	8	0	20415	825.5	20.91	21.5	19.73	20.0
			20525	836.5	21.12	21.5	20.09	20.5
			20635	847.5	21.49	22.0	20.67	21.0
		4	20415	825.5	21.02	21.5	19.95	20.5
			20525	836.5	20.98	21.5	20.08	20.5
			20635	847.5	21.35	21.5	20.68	21.0
		7	20415	825.5	20.86	21.0	20.06	20.5
			20525	836.5	21.03	21.5	20.00	20.5
			20635	847.5	21.47	22.0	20.92	21.5
	15	0	20415	825.5	20.83	21.0	20.02	20.5
			20525	836.5	21.09	21.5	20.01	20.5
			20635	847.5	21.59	22.0	20.71	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	20407	824.7	21.76	22.0	21.50	22.0
			20525	836.5	22.17	22.5	21.42	22.0
			20643	848.3	22.29	22.5	21.39	22.0
		2	20407	824.7	21.97	22.5	21.38	21.5
			20525	836.5	22.12	22.5	21.37	21.5
			20643	848.3	22.44	23.0	21.57	22.0
		5	20407	824.7	21.86	22.0	21.21	21.5
			20525	836.5	22.26	22.5	21.11	21.5
			20643	848.3	22.63	23.0	21.79	22.0
	3	0	20407	824.7	22.05	22.5	20.49	21.0
			20525	836.5	22.09	22.5	20.78	21.0
			20643	848.3	22.59	23.0	21.55	22.0
		1	20407	824.7	22.19	22.5	20.52	21.0
			20525	836.5	22.12	22.5	21.16	21.5
			20643	848.3	22.69	23.0	21.41	22.0
		3	20407	824.7	22.06	22.5	20.55	21.0
			20525	836.5	22.00	22.5	21.14	21.5
			20643	848.3	22.51	23.0	21.45	22.0
	6	0	20407	824.7	20.89	21.5	19.51	20.0
			20525	836.5	21.11	21.5	20.15	20.5
			20643	848.3	21.66	22.0	20.23	20.5

■ LTE Band 7

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
20	1	0	20850	2510	20.83	21.0	20.73	21.0
			21100	2535	20.82	21.0	20.13	20.5
			21350	2560	20.80	21.0	20.84	21.0
		49	20850	2510	20.85	21.0	20.75	21.0
			21100	2535	20.77	21.0	20.23	20.5
			21350	2560	20.83	21.0	20.60	21.0
		99	20850	2510	20.62	21.0	20.68	21.0
			21100	2535	20.61	21.0	20.05	20.5
			21350	2560	20.77	21.0	20.60	21.0
	50	0	20850	2510	20.38	20.5	19.37	19.5
			21100	2535	20.17	20.5	19.17	19.5
			21350	2560	20.26	20.5	19.14	19.5
		24	20850	2510	20.17	20.5	19.40	20.0
			21100	2535	19.91	20.5	19.08	19.5
			21350	2560	20.11	20.5	19.14	19.5
		50	20850	2510	20.14	20.5	19.33	19.5
			21100	2535	19.98	20.5	18.86	19.0
			21350	2560	20.12	20.5	19.13	19.5
	100	0	20850	2510	20.33	20.5	19.35	19.5
			21100	2535	20.19	20.5	19.06	19.5
			21350	2560	20.09	20.5	19.00	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	20825	2507.5	20.80	21.0	20.38	20.5
			21100	2535	20.83	21.0	20.68	21.0
			21375	2562.5	20.83	21.0	20.34	20.5
		37	20825	2507.5	20.85	21.0	20.19	20.5
			21100	2535	20.78	21.0	20.62	21.0
			21375	2562.5	20.83	21.0	20.23	20.5
		74	20825	2507.5	20.52	21.0	20.30	20.5
			21100	2535	20.54	21.0	20.52	21.0
			21375	2562.5	20.69	21.0	19.90	20.5
	36	0	20825	2507.5	20.31	20.5	19.32	19.5
			21100	2535	20.11	20.5	19.05	19.5
			21375	2562.5	20.25	20.5	19.28	19.5
		19	20825	2507.5	20.42	21.0	19.09	19.5
			21100	2535	20.13	20.5	18.98	19.5
			21375	2562.5	20.32	20.5	19.09	19.5
		39	20825	2507.5	20.27	20.5	19.23	19.5
			21100	2535	20.08	20.5	18.89	19.5
			21375	2562.5	20.25	20.5	19.19	19.5
	75	0	20825	2507.5	20.16	20.5	19.42	20.0
			21100	2535	20.14	20.5	19.07	19.5
			21375	2562.5	20.16	20.5	19.04	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	20800	2505	20.76	21.0	20.49	21.0
			21100	2535	20.83	21.0	20.26	20.5
			21400	2565	20.82	21.0	20.37	20.5
		24	20800	2505	20.66	21.0	20.12	20.5
			21100	2535	20.80	21.0	20.23	20.5
			21400	2565	20.77	21.0	20.16	20.5
		49	20800	2505	20.81	21.0	20.12	20.5
			21100	2535	20.76	21.0	20.25	20.5
			21400	2565	20.76	21.0	19.93	20.5
	25	0	20800	2505	20.32	20.5	19.03	19.5
			21100	2535	20.16	20.5	18.83	19.0
			21400	2565	20.16	20.5	19.18	19.5
		12	20800	2505	20.32	20.5	19.16	19.5
			21100	2535	20.07	20.5	18.76	19.0
			21400	2565	20.12	20.5	18.96	19.5
		25	20800	2505	20.27	20.5	19.25	19.5
			21100	2535	20.08	20.5	18.80	19.0
			21400	2565	20.09	20.5	18.93	19.5
	50	0	20800	2505	20.21	20.5	19.53	20.0
			21100	2535	20.14	20.5	19.10	19.5
			21400	2565	20.16	20.5	19.13	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	20775	2502.5	20.74	21.0	20.44	21.0
			21100	2535	20.85	21.0	20.43	21.0
			21425	2567.5	20.84	21.0	19.97	20.5
		12	20775	2502.5	20.54	21.0	20.24	20.5
			21100	2535	20.83	21.0	20.58	21.0
			21425	2567.5	20.80	21.0	20.00	20.5
		24	20775	2502.5	20.67	21.0	20.19	20.5
			21100	2535	20.79	21.0	20.44	21.0
			21425	2567.5	20.78	21.0	19.87	20.0
	12	0	20775	2502.5	20.16	20.5	19.48	20.0
			21100	2535	20.12	20.5	19.04	19.5
			21425	2567.5	20.08	20.5	19.34	19.5
		6	20775	2502.5	20.05	20.5	19.32	19.5
			21100	2535	20.01	20.5	18.93	19.5
			21425	2567.5	20.28	20.5	19.18	19.5
		13	20775	2502.5	20.25	20.5	19.20	19.5
			21100	2535	19.98	20.5	19.13	19.5
			21425	2567.5	20.14	20.5	18.88	19.0
	25	0	20775	2502.5	20.28	20.5	19.37	19.5
			21100	2535	20.06	20.5	19.06	19.5
			21425	2567.5	20.21	20.5	19.07	19.5

■ LTE Band 12

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	23060	704	21.85	22.0	21.75	22.0
			23095	707.5	22.01	22.5	21.32	21.5
			23130	711	21.89	22.5	21.73	22.0
		24	23060	704	21.72	22.0	21.61	22.0
			23095	707.5	22.09	22.5	21.37	21.5
			23130	711	21.98	22.5	21.40	22.0
		49	23060	704	21.89	22.5	21.17	21.5
			23095	707.5	21.95	22.5	21.37	21.5
			23130	711	21.90	22.5	21.34	21.5
	25	0	23060	704	20.73	21.0	19.88	20.0
			23095	707.5	20.96	21.5	19.98	20.5
			23130	711	20.91	21.5	19.94	20.5
		12	23060	704	20.70	21.0	19.84	20.0
			23095	707.5	20.87	21.0	19.93	20.5
			23130	711	20.91	21.5	19.84	20.0
		25	23060	704	20.84	21.0	19.87	20.0
			23095	707.5	20.83	21.0	19.69	20.0
			23130	711	20.89	21.5	20.05	20.5
	50	0	23060	704	20.77	21.0	19.90	20.5
			23095	707.5	20.87	21.0	19.88	20.0
			23130	711	20.90	21.5	19.94	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	23060	704	21.85	22.0	21.75	22.0
			23095	707.5	22.01	22.5	21.32	21.5
			23130	711	21.89	22.5	21.73	22.0
		24	23060	704	21.72	22.0	21.61	22.0
			23095	707.5	22.09	22.5	21.37	21.5
			23130	711	21.98	22.5	21.40	22.0
		49	23060	704	21.89	22.5	21.17	21.5
			23095	707.5	21.95	22.5	21.37	21.5
			23130	711	21.90	22.5	21.34	21.5
	25	0	23060	704	20.73	21.0	19.88	20.0
			23095	707.5	20.96	21.5	19.98	20.5
			23130	711	20.91	21.5	19.94	20.5
		12	23060	704	20.70	21.0	19.84	20.0
			23095	707.5	20.87	21.0	19.93	20.5
			23130	711	20.91	21.5	19.84	20.0
		25	23060	704	20.84	21.0	19.87	20.0
			23095	707.5	20.83	21.0	19.69	20.0
			23130	711	20.89	21.5	20.05	20.5
	50	0	23060	704	20.77	21.0	19.90	20.5
			23095	707.5	20.87	21.0	19.88	20.0
			23130	711	20.90	21.5	19.94	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	23035	701.5	21.65	22.0	21.24	21.5
			23095	707.5	22.10	22.5	21.24	21.5
			23155	713.5	21.97	22.5	21.69	22.0
		12	23035	701.5	21.90	22.5	21.29	21.5
			23095	707.5	21.97	22.5	21.21	21.5
			23155	713.5	21.83	22.0	21.73	22.0
		24	23035	701.5	21.87	22.0	21.64	22.0
			23095	707.5	21.88	22.0	21.23	21.5
			23155	713.5	21.82	22.0	21.46	22.0
	12	0	23035	701.5	20.84	21.0	19.77	20.0
			23095	707.5	20.88	21.0	19.88	20.0
			23155	713.5	20.88	21.0	19.83	20.0
		6	23035	701.5	20.83	21.0	19.95	20.5
			23095	707.5	21.05	21.5	19.54	20.0
			23155	713.5	20.74	21.0	19.95	20.5
		13	23035	701.5	20.90	21.5	19.94	20.5
			23095	707.5	20.84	21.0	19.57	20.0
			23155	713.5	20.87	21.0	19.76	20.0
	25	0	23035	701.5	20.86	21.0	19.78	20.0
			23095	707.5	20.83	21.0	19.89	20.5
			23155	713.5	20.85	21.0	19.81	20.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	23025	700.5	21.69	22.0	21.29	21.5
			23095	707.5	22.18	22.5	21.31	21.5
			23165	714.5	21.96	22.5	21.38	21.5
		7	23025	700.5	21.76	22.0	21.35	21.5
			23095	707.5	21.89	22.0	21.45	22.0
			23165	714.5	22.03	22.5	21.42	22.0
		14	23025	700.5	22.04	22.5	21.24	21.5
			23095	707.5	21.97	22.5	21.31	21.5
			23165	714.5	21.93	22.5	21.29	21.5
	8	0	23025	700.5	20.92	21.5	19.76	20.0
			23095	707.5	20.98	21.5	19.79	20.0
			23165	714.5	20.90	21.5	19.89	20.5
		4	23025	700.5	20.98	21.5	19.62	20.0
			23095	707.5	20.95	21.5	20.07	20.5
			23165	714.5	21.01	21.5	19.76	20.0
		7	23025	700.5	20.94	21.5	19.81	20.0
			23095	707.5	20.92	21.5	19.98	20.5
			23165	714.5	20.97	21.5	20.02	20.5
	15	0	23025	700.5	20.81	21.0	19.81	20.0
			23095	707.5	21.01	21.5	20.14	20.5
			23165	714.5	20.93	21.5	20.03	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	23017	699.7	22.04	22.5	21.17	21.5
			23095	707.5	21.90	22.5	20.97	21.5
			23173	715.3	21.76	22.0	20.64	21.0
		2	23017	699.7	21.89	22.5	21.27	21.5
			23095	707.5	21.82	22.0	21.01	21.5
			23173	715.3	21.66	22.0	20.69	21.0
		5	23017	699.7	22.11	22.5	21.14	21.5
			23095	707.5	22.03	22.5	21.39	22.0
			23173	715.3	21.68	22.0	20.55	21.0
	3	0	23017	699.7	21.97	22.5	20.55	21.0
			23095	707.5	21.98	22.5	20.71	21.0
			23173	715.3	21.98	22.5	20.68	21.0
		1	23017	699.7	22.00	22.5	20.61	21.0
			23095	707.5	21.84	22.0	20.90	21.5
			23173	715.3	21.92	22.5	20.96	21.5
		3	23017	699.7	22.06	22.5	20.88	21.0
			23095	707.5	21.99	22.5	20.94	21.5
			23173	715.3	21.90	22.5	20.92	21.5
	6	0	23017	699.7	20.97	21.5	19.53	20.0
			23095	707.5	20.89	21.5	19.61	20.0
			23173	715.3	21.00	21.5	19.88	20.0

■ LTE Band 13

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	23230	782	22.10	22.5	22.07	22.5
		24	23230	782	22.40	23.0	22.26	22.5
		49	23230	782	22.36	22.5	22.17	22.5
	25	0	23230	782	21.27	21.5	20.13	20.5
		12	23230	782	21.09	21.5	20.05	20.5
		25	23230	782	21.29	21.5	20.34	20.5
	50	0	23230	782	21.18	21.5	20.11	20.5
5	1	0	23205	779.5	22.20	22.5	21.05	21.5
			23230	782	22.17	22.5	22.04	22.5
			23255	784.5	22.21	22.5	21.26	21.5
		12	23205	779.5	22.12	22.5	21.20	21.5
			23230	782	22.05	22.5	22.13	22.5
			23255	784.5	22.42	23.0	21.36	21.5
		24	23205	779.5	22.29	22.5	21.56	22.0
			23230	782	22.20	22.5	21.87	22.0
			23255	784.5	22.32	22.5	21.36	21.5
	12	0	23205	779.5	21.37	21.5	20.35	20.5
			23230	782	21.27	21.5	20.27	20.5
			23255	784.5	21.31	21.5	20.14	20.5
		6	23205	779.5	21.48	22.0	20.49	21.0
			23230	782	21.36	21.5	20.42	21.0
			23255	784.5	21.13	21.5	20.20	20.5
		13	23205	779.5	21.32	21.5	20.51	21.0
			23230	782	21.34	21.5	20.62	21.0
			23255	784.5	21.34	21.5	20.26	20.5
	25	0	23205	779.5	21.24	21.5	20.49	21.0
			23230	782	21.31	21.5	20.24	20.5
			23255	784.5	21.23	21.5	20.10	20.5

■ LTE Band 17

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	23780	709	21.49	22.0	20.48	21.0
			23790	710	21.62	22.0	21.13	21.5
			23800	711	21.48	22.0	20.68	21.0
		24	23780	709	21.35	21.5	20.63	21.0
			23790	710	21.62	22.0	20.98	21.5
			23800	711	21.16	21.5	20.33	20.5
		49	23780	709	21.34	21.5	20.40	21.0
			23790	710	21.58	22.0	21.19	21.5
			23800	711	21.15	21.5	20.28	20.5
	25	0	23780	709	20.55	21.0	19.44	20.0
			23790	710	20.53	21.0	19.41	20.0
			23800	711	20.57	21.0	19.27	19.5
		12	23780	709	20.31	20.5	19.45	20.0
			23790	710	20.46	21.0	19.29	19.5
			23800	711	20.72	21.0	19.32	19.5
		25	23780	709	20.43	21.0	19.32	19.5
			23790	710	20.46	21.0	19.33	19.5
			23800	711	20.47	21.0	19.17	19.5
	50	0	23780	709	20.55	21.0	19.54	20.0
			23790	710	20.48	21.0	19.42	20.0
			23800	711	20.38	20.5	19.32	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	23755	706.5	21.44	22.0	20.80	21.0
			23790	710	21.76	22.0	20.90	21.5
			23825	713.5	21.14	21.5	20.80	21.0
		12	23755	706.5	21.38	21.5	20.73	21.0
			23790	710	21.58	22.0	20.79	21.0
			23825	713.5	21.09	21.5	20.82	21.0
		24	23755	706.5	21.08	21.5	20.76	21.0
			23790	710	21.72	22.0	21.01	21.5
			23825	713.5	21.02	21.5	21.14	21.5
	12	0	23755	706.5	20.55	21.0	19.28	19.5
			23790	710	20.53	21.0	19.37	19.5
			23825	713.5	20.51	21.0	19.26	19.5
		6	23755	706.5	20.66	21.0	19.23	19.5
			23790	710	20.63	21.0	19.26	19.5
			23825	713.5	20.62	21.0	19.27	19.5
		13	23755	706.5	20.40	21.0	19.35	19.5
			23790	710	20.41	21.0	19.34	19.5
			23825	713.5	20.48	21.0	19.06	19.5
	25	0	23755	706.5	20.56	21.0	19.57	20.0
			23790	710	20.40	21.0	19.46	20.0
			23825	713.5	20.37	20.5	19.33	19.5

■ LTE Band 25

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
20	1	0	26140	1860	20.66	21.0	20.24	20.5
			26365	1882.5	20.94	21.5	20.03	20.5
			26590	1905	20.95	21.5	20.26	20.5
		49	26140	1860	20.58	21.0	20.01	20.5
			26365	1882.5	21.18	21.5	20.13	20.5
			26590	1905	21.01	21.5	20.34	20.5
		99	26140	1860	20.64	21.0	20.03	20.5
			26365	1882.5	21.06	21.5	20.26	20.5
			26590	1905	21.22	21.5	20.74	21.0
	50	0	26140	1860	19.92	20.5	18.99	19.5
			26365	1882.5	20.08	20.5	19.18	19.5
			26590	1905	20.11	20.5	19.06	19.5
		24	26140	1860	20.08	20.5	19.09	19.5
			26365	1882.5	19.95	20.5	19.25	19.5
			26590	1905	19.97	20.5	18.95	19.5
		50	26140	1860	19.85	20.0	18.80	19.0
			26365	1882.5	20.05	20.5	19.27	19.5
			26590	1905	20.15	20.5	19.21	19.5
	100	0	26140	1860	19.96	20.5	19.07	19.5
			26365	1882.5	20.05	20.5	19.12	19.5
			26590	1905	20.11	20.5	19.12	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	26115	1857.5	20.76	21.0	20.66	21.0
			26365	1882.5	20.85	21.0	20.17	20.5
			26615	1907.5	21.03	21.5	20.13	20.5
		37	26115	1857.5	20.69	21.0	20.13	20.5
			26365	1882.5	20.76	21.0	20.34	20.5
			26615	1907.5	21.10	21.5	20.12	20.5
		74	26115	1857.5	20.81	21.0	19.79	20.0
			26365	1882.5	20.95	21.5	20.24	20.5
			26615	1907.5	20.92	21.5	20.35	20.5
	36	0	26115	1857.5	19.95	20.5	18.97	19.5
			26365	1882.5	20.04	20.5	19.30	19.5
			26615	1907.5	20.16	20.5	19.25	19.5
		19	26115	1857.5	20.11	20.5	19.13	19.5
			26365	1882.5	20.00	20.5	19.43	20.0
			26615	1907.5	20.14	20.5	19.24	19.5
		39	26115	1857.5	19.93	20.5	19.02	19.5
			26365	1882.5	20.10	20.5	19.26	19.5
			26615	1907.5	20.15	20.5	19.23	19.5
	75	0	26115	1857.5	19.94	20.5	19.01	19.5
			26365	1882.5	20.11	20.5	19.08	19.5
			26615	1907.5	20.16	20.5	19.16	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	26090	1855	20.87	21.0	20.79	21.0
			26365	1882.5	21.00	21.5	20.56	21.0
			26640	1910	20.95	21.5	19.97	20.5
		24	26090	1855	20.79	21.0	20.80	21.0
			26365	1882.5	20.92	21.5	20.43	21.0
			26640	1910	20.98	21.5	20.40	21.0
		49	26090	1855	20.62	21.0	20.91	21.5
			26365	1882.5	21.01	21.5	20.65	21.0
			26640	1910	20.94	21.5	21.08	21.5
	25	0	26090	1855	20.00	20.5	18.79	19.0
			26365	1882.5	20.17	20.5	19.21	19.5
			26640	1910	20.07	20.5	18.92	19.5
		12	26090	1855	19.79	20.0	18.85	19.0
			26365	1882.5	20.06	20.5	19.21	19.5
			26640	1910	19.90	20.5	18.95	19.5
		25	26090	1855	19.90	20.5	18.75	19.0
			26365	1882.5	20.19	20.5	19.26	19.5
			26640	1910	20.12	20.5	19.30	19.5
	50	0	26090	1855	20.00	20.5	18.82	19.0
			26365	1882.5	20.19	20.5	19.30	19.5
			26640	1910	20.18	20.5	19.22	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	26065	1852.5	21.06	21.5	20.36	20.5
			26365	1882.5	21.06	21.5	20.32	20.5
			26665	1912.5	21.10	21.5	21.07	21.5
		12	26065	1852.5	21.02	21.5	20.04	20.5
			26365	1882.5	21.29	21.5	20.17	20.5
			26665	1912.5	20.99	21.5	20.86	21.0
		24	26065	1852.5	20.76	21.0	20.09	20.5
			26365	1882.5	21.21	21.5	19.88	20.0
			26665	1912.5	20.91	21.5	20.89	21.5
	12	0	26065	1852.5	20.02	20.5	18.96	19.5
			26365	1882.5	20.07	20.5	19.00	19.5
			26665	1912.5	20.20	20.5	19.17	19.5
		6	26065	1852.5	20.11	20.5	18.97	19.5
			26365	1882.5	20.02	20.5	19.28	19.5
			26665	1912.5	20.10	20.5	19.24	19.5
		13	26065	1852.5	19.97	20.5	18.90	19.5
			26365	1882.5	20.14	20.5	19.22	19.5
			26665	1912.5	20.16	20.5	19.03	19.5
	25	0	26065	1852.5	19.96	20.5	18.91	19.5
			26365	1882.5	20.02	20.5	18.96	19.5
			26665	1912.5	20.19	20.5	19.27	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	26055	1851.5	20.91	21.5	20.55	21.0
			26365	1882.5	21.02	21.5	20.41	21.0
			26675	1913.5	21.11	21.5	20.94	21.5
		7	26055	1851.5	20.98	21.5	20.21	20.5
			26365	1882.5	21.11	21.5	20.45	21.0
			26675	1913.5	21.10	21.5	20.76	21.0
		14	26055	1851.5	20.92	21.5	20.23	20.5
			26365	1882.5	21.04	21.5	20.64	21.0
			26675	1913.5	21.14	21.5	20.45	21.0
	8	0	26055	1851.5	19.95	20.5	18.88	19.0
			26365	1882.5	20.20	20.5	18.89	19.5
			26675	1913.5	20.20	20.5	18.92	19.5
		4	26055	1851.5	20.03	20.5	19.07	19.5
			26365	1882.5	20.30	20.5	18.74	19.0
			26675	1913.5	20.39	20.5	18.91	19.5
		7	26055	1851.5	19.91	20.5	19.01	19.5
			26365	1882.5	20.10	20.5	18.80	19.0
			26675	1913.5	20.18	20.5	19.25	19.5
	15	0	26055	1851.5	20.00	20.5	19.12	19.5
			26365	1882.5	20.09	20.5	18.93	19.5
			26675	1913.5	20.12	20.5	19.04	19.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	26047	1850.7	20.91	21.5	20.31	20.5
			26365	1882.5	21.31	21.5	20.36	20.5
			26683	1914.3	21.09	21.5	20.73	21.0
		2	26047	1850.7	21.08	21.5	20.22	20.5
			26365	1882.5	21.46	22.0	20.10	20.5
			26683	1914.3	21.11	21.5	20.76	21.0
		5	26047	1850.7	21.03	21.5	20.28	20.5
			26365	1882.5	21.31	21.5	20.14	20.5
			26683	1914.3	21.08	21.5	20.71	21.0
	3	0	26047	1850.7	20.88	21.0	19.86	20.0
			26365	1882.5	21.22	21.5	20.22	20.5
			26683	1914.3	21.18	21.5	19.97	20.5
		1	26047	1850.7	21.10	21.5	19.81	20.0
			26365	1882.5	21.25	21.5	20.10	20.5
			26683	1914.3	21.33	21.5	19.78	20.0
		3	26047	1850.7	20.99	21.5	19.95	20.5
			26365	1882.5	21.13	21.5	20.26	20.5
			26683	1914.3	21.14	21.5	19.83	20.0
	6	0	26047	1850.7	20.02	20.5	18.61	19.0
			26365	1882.5	20.33	20.5	19.27	19.5
			26683	1914.3	20.12	20.5	18.86	19.0

■ LTE Band 26 (814 ~ 824MHz)

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	26740	819	22.05	22.5	21.70	22.0
		24	26740	819	22.14	22.5	21.82	22.0
		49	26740	819	22.12	22.5	21.75	22.0
	25	0	26740	819	21.07	21.5	20.21	20.5
		12	26740	819	21.11	21.5	19.96	20.5
		25	26740	819	21.00	21.5	20.04	20.5
	50	0	26740	819	21.13	21.5	20.04	20.5
5	1	0	26715	816.5	22.03	22.5	21.26	21.5
			26740	819	22.16	22.5	21.36	21.5
			26765	821.5	22.05	22.5	21.73	22.0
		12	26715	816.5	21.86	22.0	21.40	22.0
			26740	819	22.31	22.5	21.31	21.5
			26765	821.5	21.83	22.0	21.83	22.0
		24	26715	816.5	21.80	22.0	21.70	22.0
			26740	819	22.26	22.5	21.22	21.5
			26765	821.5	21.92	22.5	21.83	22.0
	12	0	26715	816.5	21.10	21.5	20.07	20.5
			26740	819	21.04	21.5	19.89	20.5
			26765	821.5	21.09	21.5	20.08	20.5
		6	26715	816.5	21.21	21.5	20.12	20.5
			26740	819	21.05	21.5	19.80	20.0
			26765	821.5	20.92	21.5	19.84	20.0
		13	26715	816.5	21.07	21.5	20.04	20.5
			26740	819	20.98	21.5	19.83	20.0
			26765	821.5	21.06	21.5	19.75	20.0
	25	0	26715	816.5	21.11	21.5	20.05	20.5
			26740	819	21.11	21.5	20.07	20.5
			26765	821.5	21.05	21.5	20.03	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	26705	815.5	21.90	22.5	21.87	22.0
			26740	819	22.17	22.5	21.29	21.5
			26775	822.5	22.09	22.5	21.48	22.0
		7	26705	815.5	21.72	22.0	21.81	22.0
			26740	819	22.12	22.5	21.26	21.5
			26775	822.5	22.02	22.5	21.69	22.0
		14	26705	815.5	21.86	22.0	21.84	22.0
			26740	819	22.12	22.5	21.46	22.0
			26775	822.5	22.16	22.5	21.63	22.0
	8	0	26705	815.5	21.10	21.5	20.11	20.5
			26740	819	21.17	21.5	20.03	20.5
			26775	822.5	21.17	21.5	20.14	20.5
		4	26705	815.5	21.00	21.5	20.19	20.5
			26740	819	21.18	21.5	19.86	20.0
			26775	822.5	21.32	21.5	20.18	20.5
		7	26705	815.5	21.11	21.5	20.44	21.0
			26740	819	21.06	21.5	19.94	20.5
			26775	822.5	21.07	21.5	20.41	21.0
	15	0	26705	815.5	21.04	21.5	20.24	20.5
			26740	819	21.07	21.5	20.00	20.5
			26775	822.5	21.03	21.5	20.13	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	26697	814.7	21.99	22.5	21.29	21.5
			26740	819	22.35	22.5	21.36	21.5
			26783	823.3	22.12	22.5	21.37	21.5
		2	26697	814.7	22.02	22.5	21.37	21.5
			26740	819	22.57	23.0	21.19	21.5
			26783	823.3	22.32	22.5	21.50	22.0
		5	26697	814.7	21.89	22.5	21.53	22.0
			26740	819	22.40	23.0	21.31	21.5
			26783	823.3	22.17	22.5	21.55	22.0
	3	0	26697	814.7	22.19	22.5	20.99	21.5
			26740	819	22.20	22.5	21.30	21.5
			26783	823.3	22.30	22.5	21.00	21.5
		1	26697	814.7	22.39	23.0	20.95	21.5
			26740	819	22.39	23.0	20.97	21.5
			26783	823.3	22.42	23.0	21.13	21.5
		3	26697	814.7	22.39	23.0	21.28	21.5
			26740	819	22.24	22.5	20.95	21.5
			26783	823.3	22.24	22.5	20.87	21.0
	6	0	26697	814.7	21.09	21.5	19.98	20.5
			26740	819	21.19	21.5	20.12	20.5
			26783	823.3	21.23	21.5	19.87	20.0

■ LTE Band 26 (824 ~ 849MHz)

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	26865	831.5	22.06	22.5	21.78	22.0
			26915	836.5	22.20	22.5	21.27	21.5
			26965	841.5	22.36	22.5	22.12	22.5
		37	26865	831.5	22.17	22.5	21.71	22.0
			26915	836.5	22.52	23.0	21.41	22.0
			26965	841.5	22.46	23.0	22.34	22.5
		74	26865	831.5	22.32	22.5	21.94	22.5
			26915	836.5	22.66	23.0	21.70	22.0
			26965	841.5	22.36	22.5	22.60	23.0
	36	0	26865	831.5	21.02	21.5	20.39	21.0
			26915	836.5	21.24	21.5	20.51	21.0
			26965	841.5	21.46	22.0	20.55	21.0
		19	26865	831.5	21.31	21.5	20.23	20.5
			26915	836.5	21.26	21.5	20.61	21.0
			26965	841.5	21.61	22.0	20.77	21.0
		39	26865	831.5	21.31	21.5	20.39	21.0
			26915	836.5	21.35	21.5	20.64	21.0
			26965	841.5	21.63	22.0	20.80	21.0
	75	0	26865	831.5	21.14	21.5	20.20	20.5
			26915	836.5	21.44	22.0	20.51	21.0
			26965	841.5	21.49	22.0	20.60	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	26840	829	21.97	22.5	21.30	21.5
			26915	836.5	22.30	22.5	21.35	21.5
			26990	844	22.34	22.5	21.60	22.0
		24	26840	829	22.16	22.5	21.50	22.0
			26915	836.5	22.53	23.0	21.41	22.0
			26990	844	22.38	22.5	21.93	22.5
		49	26840	829	22.49	23.0	21.79	22.0
			26915	836.5	22.70	23.0	21.63	22.0
			26990	844	22.70	23.0	22.45	23.0
	25	0	26840	829	21.04	21.5	20.18	20.5
			26915	836.5	21.28	21.5	20.43	21.0
			26990	844	21.64	22.0	20.72	21.0
		12	26840	829	21.06	21.5	20.18	20.5
			26915	836.5	21.33	21.5	20.31	20.5
			26990	844	21.77	22.0	20.71	21.0
		25	26840	829	21.13	21.5	20.26	20.5
			26915	836.5	21.26	21.5	20.23	20.5
			26990	844	21.70	22.0	20.69	21.0
	50	0	26840	829	21.02	21.5	20.05	20.5
			26915	836.5	21.37	21.5	20.49	21.0
			26990	844	21.53	22.0	20.61	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	86815	826.5	21.84	22.0	21.29	21.5
			26815	836.5	22.40	23.0	21.60	22.0
			27015	846.5	22.26	22.5	21.70	22.0
		12	86815	826.5	21.79	22.0	21.34	21.5
			26815	836.5	22.50	23.0	21.63	22.0
			27015	846.5	22.31	22.5	21.73	22.0
		24	86815	826.5	22.08	22.5	21.54	22.0
			26815	836.5	22.52	23.0	21.73	22.0
			27015	846.5	22.32	22.5	21.55	22.0
	12	0	86815	826.5	21.03	21.5	20.06	20.5
			26815	836.5	21.41	22.0	20.58	21.0
			27015	846.5	21.69	22.0	20.70	21.0
		6	86815	826.5	20.98	21.5	19.97	20.5
			26815	836.5	21.19	21.5	20.25	20.5
			27015	846.5	21.47	22.0	20.70	21.0
		13	86815	826.5	21.07	21.5	20.14	20.5
			26815	836.5	21.32	21.5	20.17	20.5
			27015	846.5	21.60	22.0	20.53	21.0
	25	0	86815	826.5	21.01	21.5	20.15	20.5
			26815	836.5	21.41	22.0	20.47	21.0
			27015	846.5	21.63	22.0	20.72	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	26805	825.5	22.04	22.5	21.92	22.5
			26815	836.5	22.73	23.0	21.74	22.0
			27025	847.5	22.68	23.0	21.78	22.0
		7	26805	825.5	22.12	22.5	21.88	22.0
			26815	836.5	22.73	23.0	21.50	22.0
			27025	847.5	22.61	23.0	21.72	22.0
		14	26805	825.5	22.21	22.5	21.86	22.0
			26815	836.5	22.34	22.5	21.56	22.0
			27025	847.5	22.60	23.0	21.62	22.0
	8	0	26805	825.5	21.21	21.5	20.03	20.5
			26815	836.5	21.38	21.5	20.26	20.5
			27025	847.5	21.78	22.0	20.76	21.0
		4	26805	825.5	21.03	21.5	20.22	20.5
			26815	836.5	21.23	21.5	20.54	21.0
			27025	847.5	21.54	22.0	20.57	21.0
		7	26805	825.5	21.15	21.5	20.25	20.5
			26815	836.5	21.20	21.5	20.49	21.0
			27025	847.5	21.54	22.0	20.37	20.5
	15	0	26805	825.5	21.12	21.5	20.32	20.5
			26815	836.5	21.35	21.5	20.28	20.5
			27025	847.5	21.66	22.0	20.60	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	26797	824.7	22.12	22.5	21.70	22.0
			26815	836.5	22.37	22.5	21.58	22.0
			27033	848.3	22.72	23.0	22.19	22.5
		2	26797	824.7	22.13	22.5	21.83	22.0
			26815	836.5	22.25	22.5	21.63	22.0
			27033	848.3	22.50	23.0	22.39	23.0
		5	26797	824.7	22.15	22.5	21.72	22.0
			26815	836.5	22.48	23.0	21.57	22.0
			27033	848.3	22.63	23.0	22.21	22.5
	3	0	26797	824.7	22.11	22.5	21.02	21.5
			26815	836.5	22.43	23.0	21.00	21.5
			27033	848.3	22.78	23.0	21.91	22.5
		1	26797	824.7	22.02	22.5	21.15	21.5
			26815	836.5	22.38	22.5	20.94	21.5
			27033	848.3	22.82	23.0	21.70	22.0
		3	26797	824.7	22.08	22.5	21.05	21.5
			26815	836.5	22.32	22.5	21.26	21.5
			27033	848.3	22.51	23.0	21.77	22.0
	6	0	26797	824.7	21.09	21.5	19.91	20.5
			26815	836.5	21.20	21.5	20.53	21.0
			27033	848.3	21.74	22.0	20.80	21.0

■ LTE Band 66

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
20	1	0	132072	1720	22.29	22.5	22.08	22.5
			132322	1745	22.26	22.5	21.46	22.0
			132572	1770	22.13	22.5	21.46	22.0
		49	132072	1720	22.27	22.5	22.16	22.5
			132322	1745	22.21	22.5	21.52	22.0
			132572	1770	21.99	22.5	21.72	22.0
		99	132072	1720	22.07	22.5	22.00	22.5
			132322	1745	22.24	22.5	21.57	22.0
			132572	1770	21.94	22.5	21.72	22.0
	50	0	132072	1720	21.25	21.5	20.22	20.5
			132322	1745	21.41	22.0	20.65	21.0
			132572	1770	21.24	21.5	20.32	20.5
		24	132072	1720	21.38	21.5	20.08	20.5
			132322	1745	21.56	22.0	20.65	21.0
			132572	1770	21.41	22.0	20.40	21.0
		50	132072	1720	21.21	21.5	20.31	20.5
			132322	1745	21.33	21.5	20.46	21.0
			132572	1770	21.22	21.5	20.31	20.5
	100	0	132072	1720	21.29	21.5	20.39	21.0
			132322	1745	21.46	22.0	20.46	21.0
			132572	1770	21.20	21.5	20.26	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
15	1	0	132047	1717.5	22.08	22.5	21.66	22.0
			132322	1745	22.15	22.5	21.81	22.0
			132597	1772.5	22.03	22.5	21.30	21.5
		37	132047	1717.5	22.23	22.5	21.74	22.0
			132322	1745	22.20	22.5	21.90	22.5
			132597	1772.5	21.95	22.5	21.44	22.0
		74	132047	1717.5	22.15	22.5	21.77	22.0
			132322	1745	22.14	22.5	21.74	22.0
			132597	1772.5	22.13	22.5	21.82	22.0
	36	0	132047	1717.5	21.27	21.5	20.32	20.5
			132322	1745	21.42	22.0	20.41	21.0
			132597	1772.5	21.28	21.5	20.47	21.0
		19	132047	1717.5	21.42	22.0	20.04	20.5
			132322	1745	21.33	21.5	20.35	20.5
			132597	1772.5	21.32	21.5	20.53	21.0
		39	132047	1717.5	21.18	21.5	20.05	20.5
			132322	1745	21.30	21.5	20.30	20.5
			132597	1772.5	21.23	21.5	20.47	21.0
	75	0	132047	1717.5	21.27	21.5	20.35	20.5
			132322	1745	21.37	21.5	20.46	21.0
			132597	1772.5	21.28	21.5	20.40	21.0

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
10	1	0	132022	1715	21.87	22.0	21.38	21.5
			132322	1745	22.23	22.5	21.76	22.0
			132622	1775	21.90	22.5	21.59	22.0
		24	132022	1715	22.02	22.5	21.17	21.5
			132322	1745	22.30	22.5	21.55	22.0
			132622	1775	22.11	22.5	21.75	22.0
		49	132022	1715	21.98	22.5	21.35	21.5
			132322	1745	22.21	22.5	21.58	22.0
			132622	1775	21.99	22.5	22.00	22.5
	25	0	132022	1715	21.17	21.5	20.27	20.5
			132322	1745	21.35	21.5	20.39	21.0
			132622	1775	21.22	21.5	20.23	20.5
		12	132022	1715	21.08	21.5	20.33	20.5
			132322	1745	21.29	21.5	20.43	21.0
			132622	1775	21.12	21.5	20.08	20.5
		25	132022	1715	21.12	21.5	20.12	20.5
			132322	1745	21.31	21.5	20.37	20.5
			132622	1775	21.17	21.5	20.11	20.5
	50	0	132022	1715	21.13	21.5	20.14	20.5
			132322	1745	21.34	21.5	20.55	21.0
			132622	1775	21.17	21.5	20.18	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
5	1	0	131997	1712.5	21.97	22.5	21.76	22.0
			132322	1745	22.12	22.5	21.64	22.0
			132647	1777.5	22.06	22.5	21.45	22.0
		12	131997	1712.5	22.16	22.5	21.68	22.0
			132322	1745	22.01	22.5	21.58	22.0
			132647	1777.5	21.73	22.0	21.68	22.0
		24	131997	1712.5	22.04	22.5	21.90	22.5
			132322	1745	22.12	22.5	21.59	22.0
			132647	1777.5	21.80	22.0	21.71	22.0
	12	0	131997	1712.5	21.14	21.5	20.17	20.5
			132322	1745	21.29	21.5	20.38	20.5
			132647	1777.5	21.31	21.5	20.26	20.5
		6	131997	1712.5	21.26	21.5	19.90	20.5
			132322	1745	21.05	21.5	20.35	20.5
			132647	1777.5	21.37	21.5	20.22	20.5
		13	131997	1712.5	21.28	21.5	20.03	20.5
			132322	1745	21.19	21.5	20.37	20.5
			132647	1777.5	21.15	21.5	20.13	20.5
	25	0	131997	1712.5	21.18	21.5	20.11	20.5
			132322	1745	21.36	21.5	20.34	20.5
			132647	1777.5	21.25	21.5	20.37	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
3	1	0	131987	1711.5	22.08	22.5	21.31	21.5
			132322	1745	22.20	22.5	21.78	22.0
			132657	1778.5	22.27	22.5	21.47	22.0
		7	131987	1711.5	21.98	22.5	21.37	21.5
			132322	1745	22.24	22.5	21.86	22.0
			132657	1778.5	22.19	22.5	21.62	22.0
		14	131987	1711.5	22.25	22.5	21.23	21.5
			132322	1745	22.21	22.5	22.18	22.5
			132657	1778.5	22.11	22.5	21.85	22.0
	8	0	131987	1711.5	21.29	21.5	20.00	20.5
			132322	1745	21.35	21.5	20.34	20.5
			132657	1778.5	21.30	21.5	20.34	20.5
		4	131987	1711.5	21.21	21.5	20.12	20.5
			132322	1745	21.27	21.5	20.45	21.0
			132657	1778.5	21.39	21.5	20.27	20.5
		7	131987	1711.5	21.28	21.5	19.90	20.5
			132322	1745	21.27	21.5	20.37	20.5
			132657	1778.5	21.16	21.5	20.49	21.0
	15	0	131987	1711.5	21.15	21.5	20.14	20.5
			132322	1745	21.29	21.5	20.24	20.5
			132657	1778.5	21.20	21.5	20.16	20.5

BW (MHz)	RB Size	RB Offset	CH.	Freq. (MHz)	QPSK		16-QAM	
					Average Power (dBm)	Max. Tune-up Power (dBm)	Average Power (dBm)	Max. Tune-up Power (dBm)
1.4	1	0	131979	1710.7	22.00	22.5	21.39	22.0
			132322	1745	22.25	22.5	21.38	21.5
			132665	1779.3	22.14	22.5	21.69	22.0
		2	131979	1710.7	22.15	22.5	21.73	22.0
			132322	1745	22.26	22.5	21.36	21.5
			132665	1779.3	21.92	22.5	21.74	22.0
		5	131979	1710.7	22.03	22.5	21.78	22.0
			132322	1745	22.24	22.5	21.31	21.5
			132665	1779.3	22.10	22.5	21.69	22.0
	3	0	131979	1710.7	22.27	22.5	21.12	21.5
			132322	1745	22.20	22.5	21.21	21.5
			132665	1779.3	22.13	22.5	21.39	22.0
		1	131979	1710.7	22.26	22.5	21.26	21.5
			132322	1745	22.28	22.5	21.32	21.5
			132665	1779.3	22.01	22.5	21.12	21.5
		3	131979	1710.7	22.20	22.5	21.21	21.5
			132322	1745	22.24	22.5	21.13	21.5
			132665	1779.3	22.05	22.5	21.01	21.5
	6	0	131979	1710.7	21.33	21.5	20.41	21.0
			132322	1745	21.31	21.5	20.16	20.5
			132665	1779.3	21.22	21.5	19.80	20.0

■ DTS

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
b	1	2412	14.53	15.0	97.75
	6	2437	14.36	14.5	
	11	2462	14.52	15.0	
g	1	2412	9.20	9.5	87.52
	6	2437	8.88	9.0	
	11	2462	8.76	9.0	
n-HT20	1	2412	9.08	9.5	86.78
	6	2437	8.95	9.5	
	11	2462	8.77	9.0	
n-HT40	3	2422	9.25	9.5	86.66
	6	2437	9.48	10.0	
	9	2452	9.77	10.0	

■ U-NII-1

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
a	36	5180	13.35	13.5	87.34
	40	5200	13.77	14.0	
	48	5240	13.72	14.0	
n-HT20	36	5180	13.34	13.5	87.17
	40	5200	13.41	14.0	
	48	5240	13.51	14.0	
n-HT40	38	5190	10.57	11.0	70.94
	46	5230	13.15	13.5	

■ U-NII-2A

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
a	52	5260	14.48	15.0	87.34
	60	5300	13.37	13.5	
	64	5320	13.80	14.0	
n-HT20	52	5260	14.19	14.5	87.17
	60	5300	13.03	13.5	
	64	5320	13.43	14.0	
n-HT40	54	5270	13.33	13.5	70.94
	62	5310	9.95	10.5	

■ U-NII-2C

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
a	100	5500	14.42	15.0	87.34
	116	5580	14.52	15.0	
	120	5600	14.81	15.0	
	140	5700	10.71	11.0	
n-HT20	100	5500	14.42	15.0	87.17
	116	5580	14.46	15.0	
	120	5600	14.87	15.0	
	140	5700	10.72	11.0	
n-HT40	102	5510	10.88	11.0	70.94
	110	5550	14.81	15.0	
	118	5590	14.64	15.0	
	134	5670	12.68	13.0	

■ U-NII-3

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
a	149	5745	13.30	13.5	87.34
	157	5785	13.03	13.5	
	165	5825	12.64	13.0	
n-HT20	149	5745	13.78	14.0	87.17
	157	5785	12.99	13.5	
	165	5825	12.50	13.0	
n-HT40	151	5755	13.57	14.0	70.94
	159	5795	13.01	13.5	

■ Bluetooth

Mode	CH.	Freq. (MHz)	Average Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
DH5	0	2402	12.45	13.0	76.98
	39	2441	12.51	13.0	
	78	2480	11.83	12.0	
2DH5	0	2402	12.33	12.5	76.65
	39	2441	12.78	13.0	
	78	2480	11.95	12.5	
3DH5	0	2402	10.29	10.5	76.58
	39	2441	12.55	13.0	
	78	2480	11.68	12.0	
BLE-1Mbps	0	2402	3.17	3.5	64.00
	19	2440	3.17	3.5	
	39	2480	2.33	2.5	

■ NFC

Freq. (MHz)	Maximum Level (dBμV/m)	Peak Power (dBm)	Max. Tune-up Power (dBm)	Duty Cycle %
13.56	72.96	-22.24	-22.0	100.00

Notes:

1. NFC field strength comes from RF report (report No: 2310TW8705-U2).
2. Peak Power (dBm) = Maximum Level (dBμV/m) - 95.2.

7.3. SAR Exclusion Analysis

Per FCC KDB 447498 D01v06, the SAR exclusion threshold for frequencies below 100 MHz, the following may be considered for SAR test exclusion:

1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz is multiplied by [1 + log(100/f(MHz))]

2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½

Mode	Exposure Condition	Freq. (MHz)	Ant-to-user distance (mm)	Thresholds (mW)	Tune-up Power		SAR Test (Y/N)
					dBm	mW	
NFC	Body	13.56	0	1107.4	-22.0	0.006	N

Note: 10-g Extremity SAR Test Exclusion Power Thresholds are 2.5 times higher than the 1-g SAR Test Exclusion Thresholds

7.4. SAR Test Results

General note:

1. For LTE mode, start with the largest channel bandwidth then measure SAR for QPSK with 1 and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle, and lower edge of each required test channel.
2. 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 5.2.1 and 5.2.2 are ≤ 2.0 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 3.625 W/kg, the remaining required test channels must also be tested.
3. For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, 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 > 3.625 W/kg.
4. For the other channel bandwidths used by the device in a frequency band, SAR is required only 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 > 3.625 W/kg.
5. According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands if:

   a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band

   b) The channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band.

   • LTE Band 2 (1850-1910 MHz) is covered by LTE Band 25 (1850-1915 MHz)

   • LTE Band 4 (1710-1755 MHz) is covered by LTE Band 66 (1710-1780 MHz)

   • LTE Band 5 (824-849 MHz) is covered by LTE Band 26 (814-849MHz)

   • LTE Band 17 (704-716 MHz) is covered by LTE Band 12 (699-716MHz)
6. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 3 W/kg, 802.11g/n OFDM SAR is not required, per KDB248227 D01 v02r02 section 5.2.2 b).
7. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following, per KDB248227 D01 v02r02 section 5.3.1:

   a) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 3 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, each band is tested independently for SAR.

b) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 3 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, each band is tested independently for SAR.

8. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n, per KDB248227 D01 v02r02 section 5.3.2.
9. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 3 W/kg, SAR is not required for that subsequent test configuration, per KDB248227 D01 v02r02 section 5.3.4 b).
10. When SAR measurement is required for a subsequent test configuration, SAR should first be measured for the channel with highest measured output power in the subsequent test configuration; SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 3.0 W/kg or until all required channels are tested. For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration, per KDB248227 D01 v02r02 section 5.3.4 c).
11. Per KDB 447498 D01 v06 section 4.4.3 a), testing of other required 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 ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.

Test Site	WZ-SR3
Test Engineer	Bella Chen

■ GSM

Test Mode	CH.	Freq. (MHz)	Test Position	Dist. (mm)	Cond. Power (dBm)	Max. Tune-up Power (dBm)	Scaling Factor	Meas. SAR-10g (W/kg)	Reported SAR-10g (W/kg)	SAR Plot #
GPR850 (2Slot)	251	848.8	Front	0	29.82	30.0	1.04	0.45	**0.47**	1
			Back	0	29.82	30.0	1.04	0.23	0.24	
			Left	0	29.82	30.0	1.04	0.07	0.07	
			Right	0	29.82	30.0	1.04	0.03	0.03	
			Top	0	29.82	30.0	1.04	0.01	0.01	
			Bottom	0	29.82	30.0	1.04	0.35	0.36	
GPR1900 (4Slot)	512	1850.2	Front	0	24.70	25.0	1.07	0.59	**0.63**	2
			Back	0	24.70	25.0	1.07	0.21	0.23	
			Left	0	24.70	25.0	1.07	0.48	0.51	
			Right	0	24.70	25.0	1.07	0.01	0.01	
			Top	0	24.70	25.0	1.07	0.02	0.02	
			Bottom	0	24.70	25.0	1.07	0.33	0.35	

■ WCDMA

Test Band	Test Mode	CH.	Freq. (MHz)	Test Position	Dist. (mm)	Cond. Power (dBm)	Max. Tune-up Power (dBm)	Scaling Factor	Meas. SAR-10g (W/kg)	Reported SAR-10g (W/kg)	SAR Plot#
Band 2	12.2kbps RMC	9538	1907.6	Front	0	20.36	20.5	1.03	0.78	0.81	
				Back	0	20.36	20.5	1.03	0.31	0.32	
				Left	0	20.36	20.5	1.03	0.82	**0.85**	3
				Right	0	20.36	20.5	1.03	0.02	0.02	
				Top	0	20.36	20.5	1.03	0.03	0.03	
				Bottom	0	20.36	20.5	1.03	0.46	0.48	
Band 4	12.2kbps RMC	1413	1732.6	Front	0	21.37	21.5	1.03	0.96	**0.99**	4
				Back	0	21.37	21.5	1.03	0.48	0.49	
				Left	0	21.37	21.5	1.03	0.62	0.64	
				Right	0	21.37	21.5	1.03	0.02	0.02	
				Top	0	21.37	21.5	1.03	0.04	0.04	
				Bottom	0	21.37	21.5	1.03	0.89	0.92	
Band 5	12.2kbps RMC	4183	836.6	Front	0	22.63	23.0	1.09	0.75	**0.82**	5
				Back	0	22.63	23.0	1.09	0.37	0.40	
				Left	0	22.63	23.0	1.09	0.19	0.21	
				Right	0	22.63	23.0	1.09	0.07	0.08	
				Top	0	22.63	23.0	1.09	0.03	0.03	
				Bottom	0	22.63	23.0	1.09	0.71	0.77	

■ LTE

Test Band	Test Mode	BW (MHz)	RB Set	CH.	Freq. (MHz)	Test Position	Dist. (mm)	Cond. Power (dBm)	Max. Tune-up Power (dBm)	Scaling Factor	Meas. SAR-10g (W/kg)	Reported SAR-10g (W/kg)	SAR Plot #
Band 7	QPSK	20	1RB_OS49	20850	2510	Front	0	20.85	21.0	1.04	0.79	0.82	
						Back	0	20.85	21.0	1.04	0.28	0.29	
						Left	0	20.85	21.0	1.04	0.44	0.46	
						Right	0	20.85	21.0	1.04	0.02	0.02	
						Top	0	20.85	21.0	1.04	0.04	0.04	
						Bottom	0	20.85	21.0	1.04	1.55	1.60	
				21100	2535	Bottom	0	20.77	21.0	1.05	1.72	1.81	
				21350	2560	Bottom	0	20.83	21.0	1.04	1.97	**2.05**	6
			50RB_OS0	20850	2510	Front	0	20.38	20.5	1.03	0.57	0.59	
						Back	0	20.38	20.5	1.03	0.23	0.24	
						Left	0	20.38	20.5	1.03	0.30	0.31	
						Right	0	20.38	20.5	1.03	0.01	0.01	
						Top	0	20.38	20.5	1.03	0.04	0.04	
						Bottom	0	20.38	20.5	1.03	1.27	1.31	
			100RB_OS0	20850	2510	Bottom	0	20.33	20.5	1.04	1.18	1.23	
Band 12	QPSK	10	1RB_OS24	23095	707.5	Front	0	22.09	22.5	1.10	0.59	0.65	
						Back	0	22.09	22.5	1.10	0.24	0.26	
						Left	0	22.09	22.5	1.10	0.11	0.12	
						Right	0	22.09	22.5	1.10	0.02	0.02	
						Top	0	22.09	22.5	1.10	0.03	0.03	
						Bottom	0	22.09	22.5	1.10	0.53	0.58	
			25RB_OS0	23095	707.5	Front	0	20.96	21.5	1.13	0.67	**0.76**	7
						Back	0	20.96	21.5	1.13	0.26	0.29	
						Left	0	20.96	21.5	1.13	0.13	0.15	
						Right	0	20.96	21.5	1.13	0.02	0.02	
						Top	0	20.96	21.5	1.13	0.04	0.05	
						Bottom	0	20.96	21.5	1.13	0.51	0.58	

<Continue>

Band 13	QPSK	10	1RB_OS24	23230	782	Front	0	22.40	23.0	1.15	0.99	**1.14**	8
						Back	0	22.40	23.0	1.15	0.38	0.44	
						Left	0	22.40	23.0	1.15	0.25	0.29	
						Right	0	22.40	23.0	1.15	0.04	0.05	
						Top	0	22.40	23.0	1.15	0.07	0.08	
						Bottom	0	22.40	23.0	1.15	0.87	1.00	
			25RB_OS25	23230	782	Front	0	21.29	21.5	1.05	0.79	0.83	
						Back	0	21.29	21.5	1.05	0.32	0.34	
						Left	0	21.29	21.5	1.05	0.19	0.20	
						Right	0	21.29	21.5	1.05	0.04	0.04	
						Top	0	21.29	21.5	1.05	0.06	0.06	
						Bottom	0	21.29	21.5	1.05	0.71	0.75	
Band 25	QPSK	20	1RB_OS49	26365	1882.5	Front	0	21.18	21.5	1.08	0.74	**0.80**	9
						Back	0	21.18	21.5	1.08	0.28	0.30	
						Left	0	21.18	21.5	1.08	0.65	0.70	
						Right	0	21.18	21.5	1.08	0.02	0.02	
						Top	0	21.18	21.5	1.08	0.03	0.03	
						Bottom	0	21.18	21.5	1.08	0.47	0.51	
			50RB_OS50	26590	1905	Front	0	20.15	20.5	1.08	0.57	0.62	
						Back	0	20.15	20.5	1.08	0.22	0.24	
						Left	0	20.15	20.5	1.08	0.50	0.54	
						Right	0	20.15	20.5	1.08	0.01	0.01	
						Top	0	20.15	20.5	1.08	0.02	0.02	
						Bottom	0	20.15	20.5	1.08	0.35	0.38	
Band 26 (814 - 824MHz)	QPSK	10	1RB_OS24	26740	819	Front	0	22.14	22.5	1.09	1.05	1.14	
						Back	0	22.14	22.5	1.09	0.48	0.52	
						Left	0	22.14	22.5	1.09	0.23	0.25	
						Right	0	22.14	22.5	1.09	0.06	0.07	
						Top	0	22.14	22.5	1.09	0.05	0.05	
						Bottom	0	22.14	22.5	1.09	0.93	1.01	
			25RB_OS12	26740	819	Front	0	21.11	21.5	1.09	1.05	**1.15**	10
						Back	0	21.11	21.5	1.09	0.47	0.51	
						Left	0	21.11	21.5	1.09	0.22	0.24	
						Right	0	21.11	21.5	1.09	0.06	0.07	
						Top	0	21.11	21.5	1.09	0.05	0.05	
						Bottom	0	21.11	21.5	1.09	0.88	0.96	

<Continue>

Band 26 (824 - 849MHz)	QPSK	15	1RB_OS74	26915	836.5	Front	0	22.66	23.0	1.08	0.77	0.83	
						Back	0	22.66	23.0	1.08	0.49	0.53	
						Left	0	22.66	23.0	1.08	0.18	0.19	
						Right	0	22.66	23.0	1.08	0.06	0.06	
						Top	0	22.66	23.0	1.08	0.03	0.03	
						Bottom	0	22.66	23.0	1.08	0.87	0.94	
			36RB_OS39	26965	841.5	Front	0	21.63	22.0	1.09	0.91	**0.99**	11
						Back	0	21.63	22.0	1.09	0.42	0.46	
						Left	0	21.63	22.0	1.09	0.16	0.17	
						Right	0	21.63	22.0	1.09	0.06	0.07	
						Top	0	21.63	22.0	1.09	0.03	0.03	
						Bottom	0	21.63	22.0	1.09	0.88	0.96	
Band 66	QPSK	20	1RB_OS0	132072	1720	Front	0	22.29	22.5	1.05	1.00	**1.05**	12
						Back	0	22.29	22.5	1.05	0.56	0.59	
						Left	0	22.29	22.5	1.05	0.65	0.68	
						Right	0	22.29	22.5	1.05	0.02	0.02	
						Top	0	22.29	22.5	1.05	0.04	0.04	
						Bottom	0	22.29	22.5	1.05	0.86	0.90	
			50RB_OS24	132322	1745	Front	0	21.56	22.0	1.11	0.80	0.88	
						Back	0	21.56	22.0	1.11	0.36	0.40	
						Left	0	21.56	22.0	1.11	0.59	0.65	
						Right	0	21.56	22.0	1.11	0.02	0.02	
						Top	0	21.56	22.0	1.11	0.02	0.02	
						Bottom	0	21.56	22.0	1.11	0.74	0.82	

■ WIFI

Test Band	Test Mode	CH.	Freq. (MHz)	Test Position	Dist. (mm)	Cond. Power (dBm)	Max. Tune-up Power (dBm)	Scaling Factor	Duty Cycle (%)	Duty Cycle Factor	Meas. SAR-10g (W/kg)	Reported SAR-10g (W/kg)	SAR Plot #
DTS	b	1	2412	Front	0	14.53	15.0	1.11	97.75	1.02	0.10	0.11	
				Back	0	14.53	15.0	1.11	97.75	1.02	0.56	**0.64**	13
				Left	0	14.53	15.0	1.11	97.75	1.02	0.01	0.01	
				Right	0	14.53	15.0	1.11	97.75	1.02	0.21	0.24	
				Top	0	14.53	15.0	1.11	97.75	1.02	0.12	0.14	
				Bottom	0	14.53	15.0	1.11	97.75	1.02	0.01	0.01	
		6	2437	Back	0	14.36	14.5	1.03	97.75	1.02	0.42	0.44	
		11	2462	Back	0	14.52	15.0	1.12	97.75	1.02	0.49	0.56	
U-NII-2A	a	52	5260	Front	0	14.48	15.0	1.13	87.34	1.14	0.23	0.30	
				Back	0	14.48	15.0	1.13	87.34	1.14	0.28	0.36	
				Left	0	14.48	15.0	1.13	87.34	1.14	0.01	0.01	
				Right	0	14.48	15.0	1.13	87.34	1.14	0.30	0.39	
				Top	0	14.48	15.0	1.13	87.34	1.14	0.35	**0.45**	14
				Bottom	0	14.48	15.0	1.13	87.34	1.14	0.01	0.01	
U-NII-2C	n-HT40	110	5550	Front	0	14.81	15.0	1.04	70.94	1.41	0.08	0.12	
				Back	0	14.81	15.0	1.04	70.94	1.41	0.15	0.22	
				Left	0	14.81	15.0	1.04	70.94	1.41	0.01	0.01	
				Right	0	14.81	15.0	1.04	70.94	1.41	0.13	0.19	
				Top	0	14.81	15.0	1.04	70.94	1.41	0.24	**0.35**	15
				Bottom	0	14.81	15.0	1.04	70.94	1.41	0.01	0.01	
U-NII-3	n-HT40	151	5755	Front	0	13.57	14.0	1.10	70.94	1.41	0.14	0.22	
				Back	0	13.57	14.0	1.10	70.94	1.41	0.25	0.39	
				Left	0	13.57	14.0	1.10	70.94	1.41	0.01	0.02	
				Right	0	13.57	14.0	1.10	70.94	1.41	0.18	0.28	
				Top	0	13.57	14.0	1.10	70.94	1.41	0.41	**0.64**	16
				Bottom	0	13.57	14.0	1.10	70.94	1.41	0.01	0.02	

■ Bluetooth

Test Mode	CH.	Freq. (MHz)	Test Position	Dist. (mm)	Cond. Power (dBm)	Max. Tune-up Power (dBm)	Scaling Factor	Duty Cycle (%)	Duty Cycle Factor	Meas. SAR-10g (W/kg)	Reported SAR-10g (W/kg)	SAR Plot #
2DH5	39	2441	Front	0	12.78	13.0	1.05	76.65	1.30	0.03	0.04	
			Back	0	12.78	13.0	1.05	76.65	1.30	0.15	**0.21**	17
			Left	0	12.78	13.0	1.05	76.65	1.30	0.01	0.01	
			Right	0	12.78	13.0	1.05	76.65	1.30	0.06	0.08	
			Top	0	12.78	13.0	1.05	76.65	1.30	0.03	0.04	
			Bottom	0	12.78	13.0	1.05	76.65	1.30	0.01	0.01	

7.5. Estimated SAR Calculation

Per FCC KDB 447498 D01v06 section 4.3.2 b) 1), when an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value was estimated according to the following formula to result in substantially conservative SAR values of ≤0.4W/kg for test separation distance ≤50mm to determine the simultaneous transmission SAR test exclusion criteria:

$$Estimated\ SAR = \frac{\sqrt{f(GHz)}}{7.5} * \frac{(Max\ Power\ of\ channel, mW)}{Min.\ Separation, mm}$$, for 1-g SAR

$$Estimated\ SAR = \frac{\sqrt{f(GHz)}}{18.75} * \frac{(Max\ Power\ of\ channel, mW)}{Min.\ Separation, mm}$$, for 10-g SAR

When the test separation distance is > 50 mm, estimated 1g-SAR 0.4W/kg/10g-SAR 1.0W/kg is used for simultaneous evaluation.

Exposure Condition	Test Mode	Freq. (MHz)	Test Position	Ant-to-user Distance (mm)	Tune-up Power (dBm)	Tune-up Power (mW)	Estimated SAR (W/kg)
Extremity	NFC	13.56	Front	0	-22.0	0.006	< 0.01
			Back	0	-22.0	0.006	< 0.01
			Left	0	-22.0	0.006	< 0.01
			Right	0	-22.0	0.006	< 0.01
			Top	0	-22.0	0.006	< 0.01
			Bottom	0	-22.0	0.006	< 0.01

8. Simultaneous Transmission Analysis

Test Position	Standalone SAR(W/kg)				Summed SAR(W/kg)					
	1	2	3	4	1+2+4	Dist. (mm)	SPLSR	1+3+4	Dist. (mm)	SPLSR
	WWAN	Wi-Fi	BT	NFC						
Front	1.15	0.30	0.04	< 0.01	1.45	--	--	1.19	--	--
Back	0.59	0.64	0.21	< 0.01	1.23	--	--	0.80	--	--
Left	0.85	0.02	0.01	< 0.01	0.87	--	--	0.86	--	--
Right	0.08	0.39	0.08	< 0.01	0.47	--	--	0.16	--	--
Top	0.08	0.64	0.04	< 0.01	0.72	--	--	0.12	--	--
Bottom	2.05	0.02	0.01	< 0.01	2.07	--	--	2.06	--	--

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06.

9. Measuring Instrument

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Stäubli Robot TX60L	Stäubli	TX60L	MRTSUE06412	N/A	N/A
Robot Controller	Stäubli	CS8C	MRTSUE06412	N/A	N/A
ELI Phantom Shell	Speag	V8	MRTSUE06420	N/A	N/A
DAK	Speag	DAK-3.5	MRTSUE06435	N/A	N/A
Dipole Validation Kits	Speag	D750V3	MRTSUE06426	3 years	2024/05/16
Dipole Validation Kits	Speag	D850V2	MRTSUE06427	3 years	2024/06/14
Dipole Validation Kits	Speag	D1750V2	MRTSUE06428	3 years	2024/05/16
Dipole Validation Kits	Speag	D1900V2	MRTSUE06429	3 years	2024/05/19
Dipole Validation Kits	Speag	D2450V2	MRTSUE06430	3 years	2024/05/18
Dipole Validation Kits	Speag	D2600V2	MRTSUE06431	3 years	2024/05/18
Dipole Validation Kits	Speag	D5GHzV2	MRTSUE06434	3 years	2025/03/27
Data Acquisition Electronic	Speag	DAE4(SN 1552)	MRTSUE06414	1 year	2024/05/16
E-Field Probe	Speag	EX3DV4(SN 3820)	/	1 year	2024/06/22
Network Analyzer	Keysight	N5234B	MRTSUE06454	1 year	2024/05/23
Directional Coupler	Agilent	778D	MRTSUE06083	1 year	2024/03/16
Directional Coupler	Agilent	87301DOPT 292	MRTSUE06082	1 year	2024/03/06
Signal Generator	Keysight	N5183B	MRTSUE06197	1 year	2024/06/29
Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2024/05/23
Thermohygrometer	Testo	622	MRTSUE06361	1 year	2024/04/20

Software	Version	Function
DASY NEO	52.10.4.1535	SAR Test Software

10. Measurement Uncertainty

DASY6 Uncertainty Budget, according to IEEE 1528 (0.3 - 3 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(vi) veff
Measurement System								
Probe Calibration	±6.0 %	N	1	1	1	±6.0 %	±6.0 %	∞
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Modulation Response	±2.4 %	R	$\sqrt{3}$	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.02 %	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Probe Positioning	±0.4 %	R	$\sqrt{3}$	1	1	±0.2 %	±0.2 %	∞
Max. SAR Eval.	±2.0 %	R	$\sqrt{3}$	1	1	±1.2 %	±1.2 %	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6%	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Power Scaling	±0%	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.1%	R	$\sqrt{3}$	1	1	±3.5 %	±3.5 %	∞
SAR correction	±1.9%	N	1	1	0.84	±1.9 %	±1.6 %	∞
Liquid Cond. (mea.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0 %	±1.8 %	∞
Liquid Perm. (mea.)^{DAK}	±2.5%	N	1	0.23	0.26	±0.6 %	±0.7 %	∞
Temp. unc. – Conductivity	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. – Permittivity	±0.4%	R	$\sqrt{3}$	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±11.3%	±11.2%	459
Expanded STD Uncertainty						**±22.6%**	**±22.4%**	

DASY6 Uncertainty Budget, according to IEEE 1528 (3 - 6 GHz range)								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (10g)	Std. Unc. (10g)	(vi) veff
Measurement System								
Probe Calibration	±6.55 %	N	1	1	1	±6.55 %	±6.55 %	∞
Axial Isotropy	±4.7 %	R	$\sqrt{3}$	0.7	0.7	±1.9 %	±1.9 %	∞
Hemispherical Isotropy	±9.6 %	R	$\sqrt{3}$	0.7	0.7	±3.9 %	±3.9 %	∞
Boundary Effects	±2.0 %	R	$\sqrt{3}$	1	1	±1.2 %	±1.2 %	∞
Linearity	±4.7 %	R	$\sqrt{3}$	1	1	±2.7 %	±2.7 %	∞
System Detection Limits	±1.0 %	R	$\sqrt{3}$	1	1	±0.6 %	±0.6 %	∞
Modulation Response	±2.4 %	R	$\sqrt{3}$	1	1	±1.4 %	±1.4 %	∞
Readout Electronics	±0.3 %	N	1	1	1	±0.3 %	±0.3 %	∞
Response Time	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Integration Time	±2.6 %	R	$\sqrt{3}$	1	1	±1.5 %	±1.5 %	∞
RF Ambient Noise	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
RF Ambient Reflections	±3.0 %	R	$\sqrt{3}$	1	1	±1.7 %	±1.7 %	∞
Probe Positioner	±0.04 %	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Probe Positioning	±0.8 %	R	$\sqrt{3}$	1	1	±0.5 %	±0.5 %	∞
Max. SAR Eval.	±4.0 %	R	$\sqrt{3}$	1	1	±2.3 %	±2.3 %	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9 %	±2.9 %	145
Device Holder	±3.6%	N	1	1	1	±3.6 %	±3.6 %	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9 %	±2.9 %	∞
Power Scaling	±0%	R	$\sqrt{3}$	1	1	±0.0 %	±0.0 %	∞
Phantom and Setup								
Phantom Uncertainty	±6.6%	R	$\sqrt{3}$	1	1	±3.8 %	±3.8 %	∞
SAR correction	±1.9%	N	1	1	0.84	±1.9 %	±1.6 %	∞
Liquid Cond. (mea.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0 %	±1.8 %	∞
Liquid Perm. (mea.)^{DAK}	±2.5%	N	1	0.23	0.26	±0.6 %	±0.7 %	∞
Temp. unc. – Conductivity	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5 %	±1.4 %	∞
Temp. unc. – Permittivity	±0.4%	R	$\sqrt{3}$	0.23	0.26	±0.1 %	±0.1 %	∞
Combined Std. Uncertainty						±11.9%	±11.8%	569
Expanded STD Uncertainty						**±23.8%**	**±23.6%**	

Annex A - System Check Result

Test Date: 2023/11/30

SystemPerformanceCheck-SAM2-D750HSL

DUT: Dipole 750 MHz D750V3; Type: D750V3

Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: f = 750 MHz; σ = 0.89 S/m; ε_r = 43.09; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.45, 9.45, 9.45) @ 750 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Area Scan (5x15x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.76 W/kg

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 55.29 V/m; Power Drift = 0.02 dB

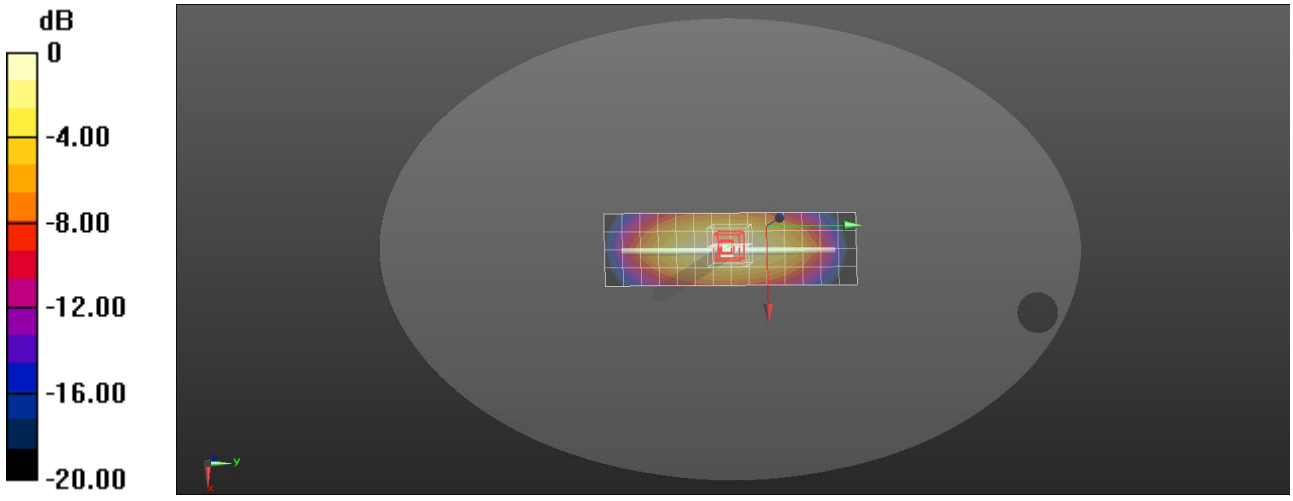
Peak SAR (extrapolated) = 3.14 W/kg

SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.4 W/kg

Smallest distance from peaks to all points 3 dB below = 21.5 mm

Ratio of SAR at M2 to SAR at M1 = 66.8%

Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Test Date: 2023/12/01

SystemPerformanceCheck-SAM2-D850HSL

DUT: Dipole 850 MHz D850V2; Type: D850V2

Communication System: CW; Frequency: 850 MHz; Duty Cycle: 1:1

Medium parameters used: f = 850 MHz; σ = 0.92 S/m; ε_r = 42.82; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.23, 9.23, 9.23) @ 850 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 3.14 W/kg

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 59.38 V/m; Power Drift = 0.01 dB

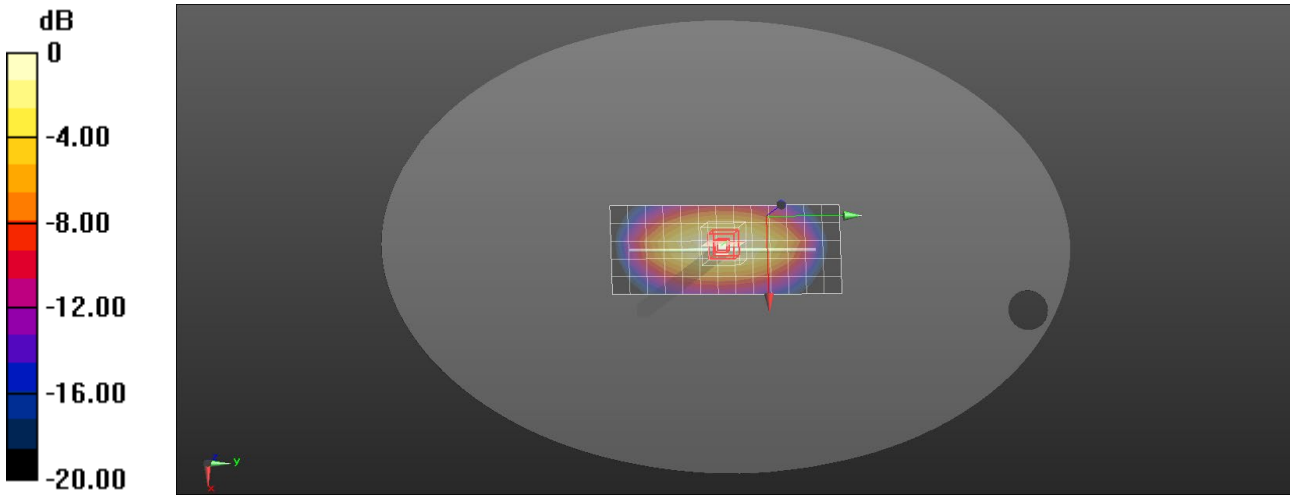
Peak SAR (extrapolated) = 3.80 W/kg

SAR(1 g) = 2.5 W/kg; SAR(10 g) = 1.64 W/kg

Smallest distance from peaks to all points 3 dB below = 16.7 mm

Ratio of SAR at M2 to SAR at M1 = 65.6%

Maximum value of SAR (measured) = 3.37 W/kg



0 dB = 3.37 W/kg = 5.28 dBW/kg

Test Date: 2023/12/04

SystemPerformanceCheck-SAM2-D1750HSL

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: f = 1750 MHz; σ = 1.36 S/m; ε_r = 41.19; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.88, 7.88, 7.88) @ 1750 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe) 2/Area Scan (6x7x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 9.92 W/kg

Configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe) 2/Zoom Scan (7x7x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 97.62 V/m; Power Drift = -0.03 dB

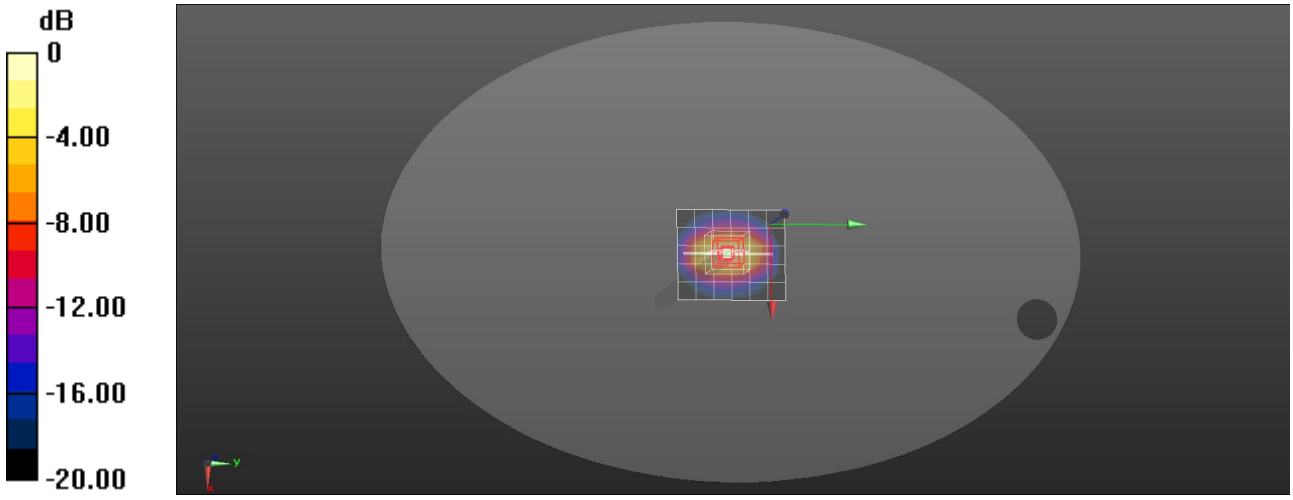
Peak SAR (extrapolated) = 16.3 W/kg

SAR(1 g) = 9.18 W/kg; SAR(10 g) = 4.91 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%

Maximum value of SAR (measured) = 13.9 W/kg



0 dB = 13.9 W/kg = 11.43 dBW/kg

Test Date: 2023/12/02

SystemPerformanceCheck-SAM2-D1900HSL

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; σ = 1.41 S/m; ε_r = 40.89; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.55, 7.55, 7.55) @ 1900 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 12.9 W/kg

configuration/d=15mm, Pin=250mW, dist=1.4mm (EX-Probe)/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 102.2 V/m; Power Drift = 0.01 dB

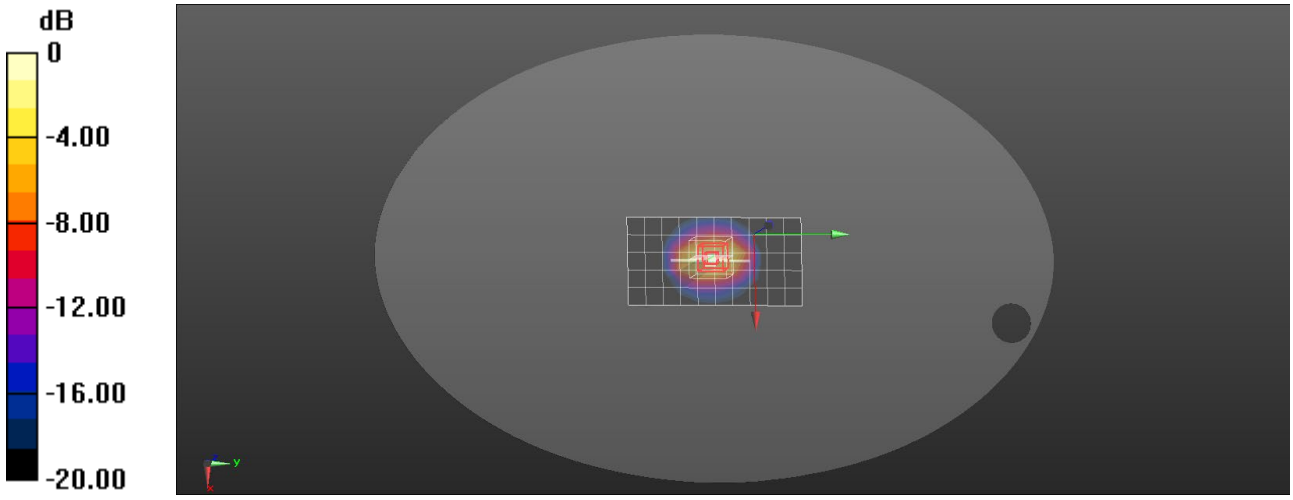
Peak SAR (extrapolated) = 18.4 W/kg

SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.32 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 54.7%

Maximum value of SAR (measured) = 15.4 W/kg



0 dB = 15.4 W/kg = 11.88 dBW/kg

Test Date: 2023/12/05

SystemPerformanceCheck-SAM2-D2450HSL

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2

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

Medium parameters used: f = 2450 MHz; σ = 1.84 S/m; ε_r = 40.13; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.37, 7.37, 7.37) @ 2450 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe)/Area Scan (7x9x1): Measurement grid: dx=12mm, dy=12mm; Maximum value of SAR (measured) = 17.9 W/kg

configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm; Reference Value = 80.10 V/m; Power Drift = -0.14 dB

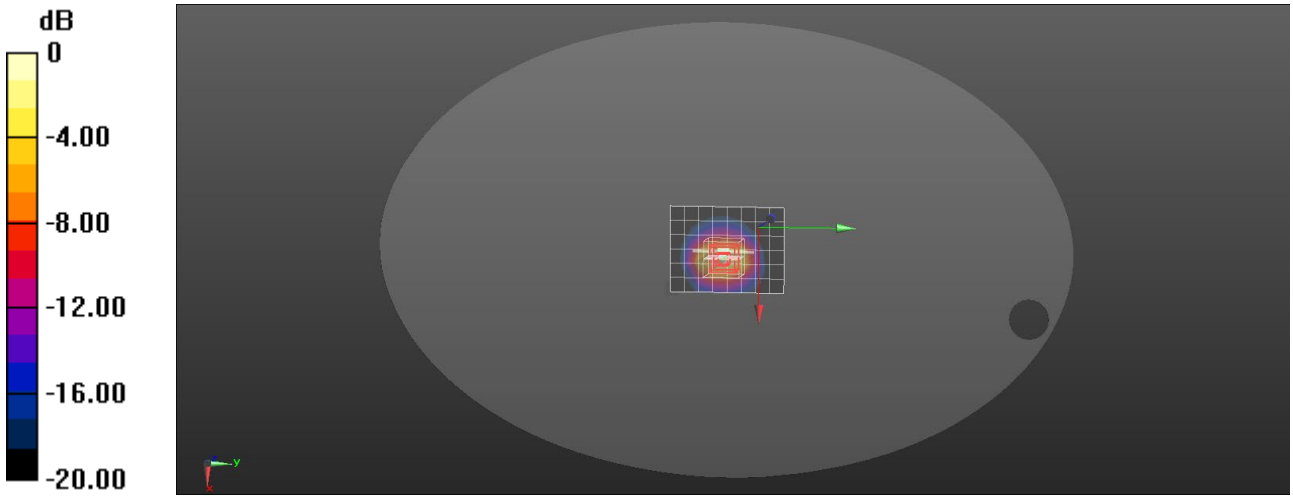
Peak SAR (extrapolated) = 26.2 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.05 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 49.2%

Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

Test Date: 2023/12/03

SystemPerformanceCheck-SAM2-D2600HSL

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2

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

Medium parameters used: f = 2600 MHz; σ = 1.97 S/m; ε_r = 39.85; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.23, 7.23, 7.23) @ 2600 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe)/Area Scan (7x9x1): Measurement grid: dx=12mm, dy=12mm; Maximum value of SAR (measured) = 23.1 W/kg

configuration/d=10mm, Pin=250mW, dist=1.4mm (EX-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm; Reference Value = 104.4 V/m; Power Drift = 0.02 dB

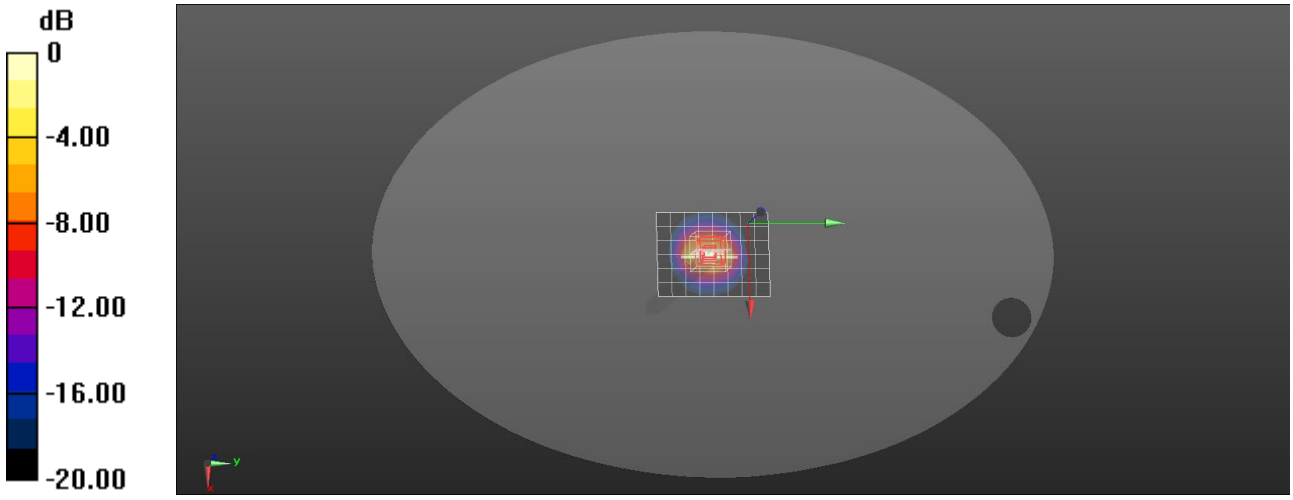
Peak SAR (extrapolated) = 30.4 W/kg

SAR(1 g) = 14.2 W/kg; SAR(10 g) = 6.44 W/kg

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

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

Maximum value of SAR (measured) = 24.3 W/kg



0 dB = 24.3 W/kg = 13.86 dBW/kg

Test Date: 2023/12/06

SystemPerformanceCheck-SAM2-D5250HSL

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5250 MHz; σ = 4.62 S/m; ε_r = 35.13; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(5.37, 5.37, 5.37) @ 5250 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/d=10mm, Pin=100mW, dist=1.4mm (EX-Probe)/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 17.3 W/kg

Configuration/d=10mm, Pin=100mW, dist=1.4mm (EX-Probe)/Zoom Scan (8x8x8) (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 59.37 V/m; Power Drift = 0.04 dB

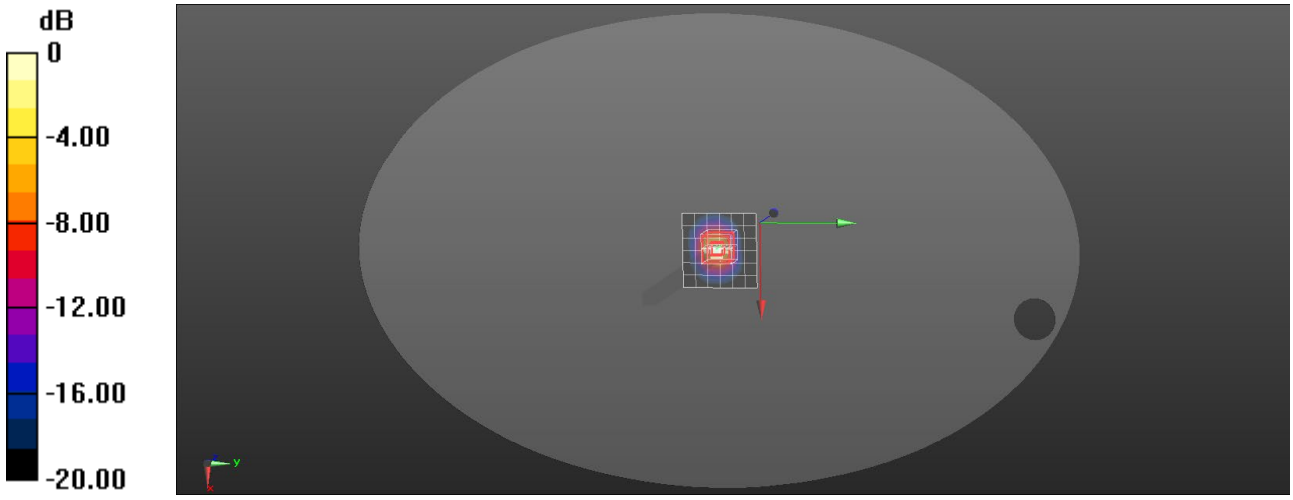
Peak SAR (extrapolated) = 31.3 W/kg

SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.26 W/kg

Smallest distance from peaks to all points 3 dB below = 7.5 mm

Ratio of SAR at M2 to SAR at M1 = 64.9%

Maximum value of SAR (measured) = 19.8 W/kg



0 dB = 19.8 W/kg = 12.97 dBW/kg

Test Date: 2023/12/07

SystemPerformanceCheck-SAM2-D5600HSL

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5600 MHz; σ = 5.02 S/m; ε_r = 34.49; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(4.68, 4.68, 4.68) @ 5600 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/d=10mm, Pin=100mW, dist=1.4mm (EX-Probe)/Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 18.9 W/kg

Configuration/d=10mm, Pin=100mW, dist=1.4mm (EX-Probe)/Zoom Scan (8x8x8) (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 59.02 V/m; Power Drift = 0.09 dB

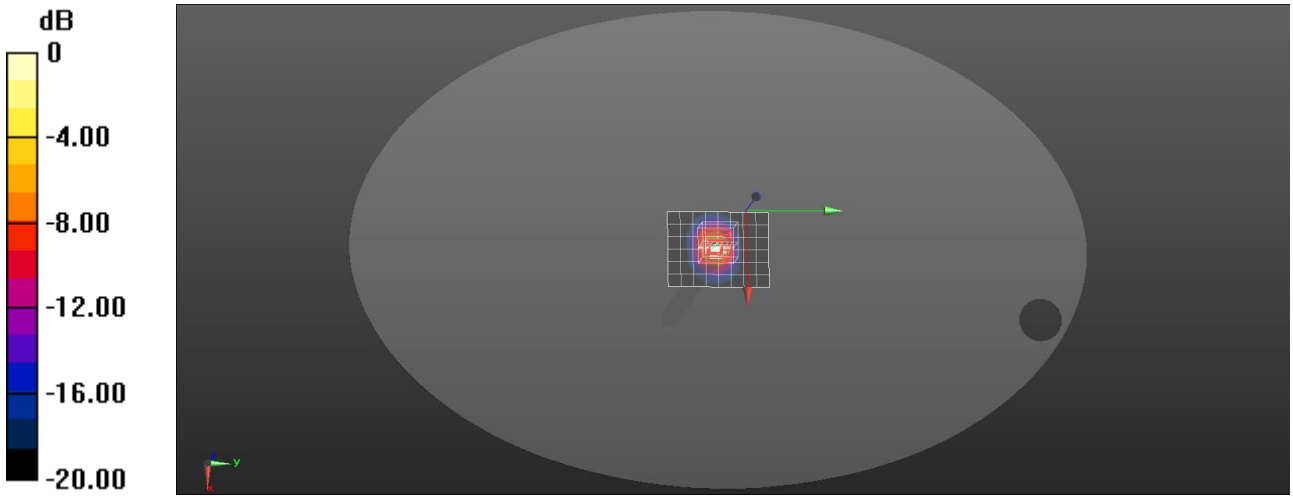
Peak SAR (extrapolated) = 35.9 W/kg

SAR(1 g) = 8.25 W/kg; SAR(10 g) = 2.35 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 62.2%

Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

Test Date: 2023/12/07

SystemPerformanceCheck-SAM2-D5750HSL

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5750 MHz; σ = 5.19 S/m; ε_r = 34.21; ρ = 1000 kg/m^3

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(4.78, 4.78, 4.78) @ 5750 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/d=10mm, Pin=100 mW, dist=1.4mm (EX-Probe)/Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 17.6 W/kg

Configuration/d=10mm, Pin=100 mW, dist=1.4mm (EX-Probe)/Zoom Scan (8x8x8) (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 55.79 V/m; Power Drift = 0.06 dB

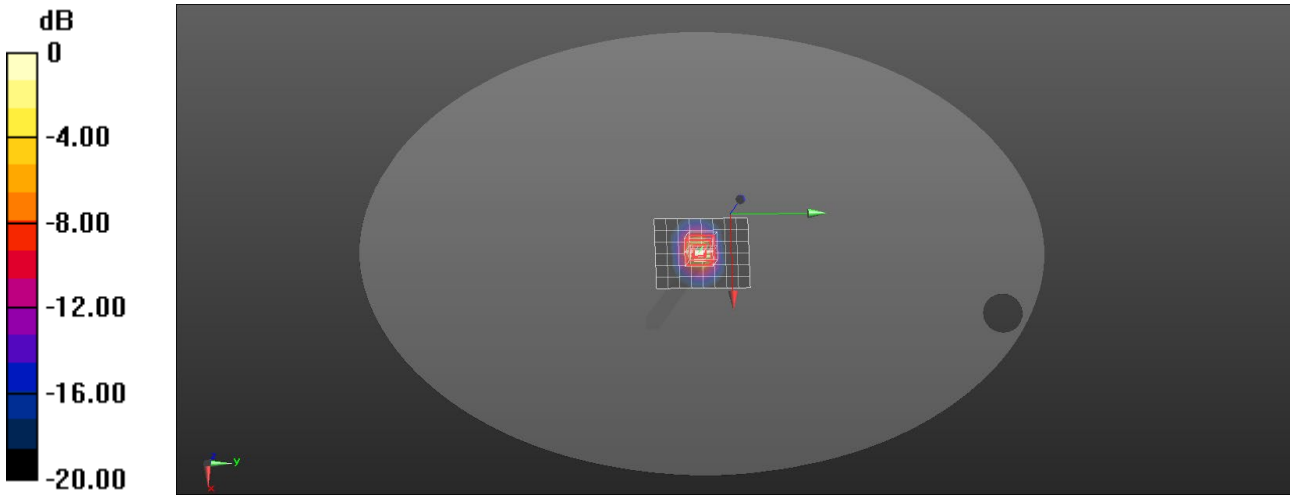
Peak SAR (extrapolated) = 34.4 W/kg

SAR(1 g) = 7.53 W/kg; SAR(10 g) = 2.14 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 60.7%

Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 20.0 W/kg = 13.01 dBW/kg

Annex B - Test Data Plots

Plot 1#

Test Date: 2023/12/01

DUT: Smart module; Type: SLM500

Procedure Name: GPRS850_2 Slot High Extremity Front

Communication System: GPRS-FDD; Frequency: 848.8 MHz; Duty Cycle: 1:4.53211

Medium parameters used: f = 848.8 MHz; σ = 0.92 S/m; ε_r = 42.82; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.23, 9.23, 9.23) @ 848.8 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/GPRS850_2 Slot High Extremity Front/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.02 W/kg

Configuration/GPRS850_2 Slot High Extremity Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 7.561 V/m; Power Drift = 0.09 dB

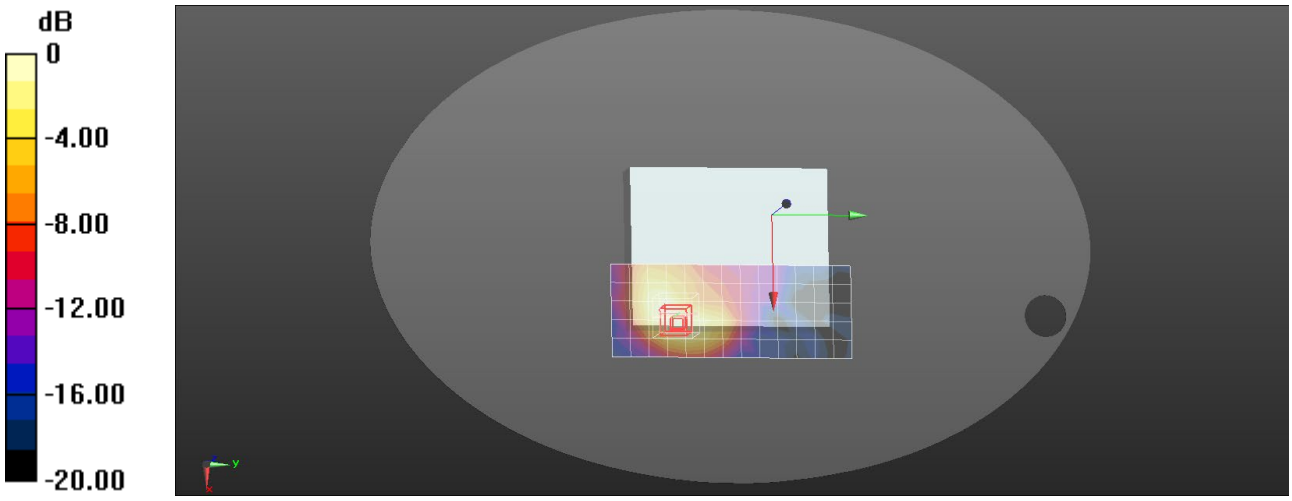
Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.728 W/kg; SAR(10 g) = 0.445 W/kg

Smallest distance from peaks to all points 3 dB below = 11.5 mm

Ratio of SAR at M2 to SAR at M1 = 57.3%

Maximum value of SAR (measured) = 1.03 W/kg



0 dB = 1.03 W/kg = 0.13 dBW/kg

Plot 2#

Test Date: 2023/12/02

DUT: Smart module; Type: SLM500

Procedure Name: GPRS1900_4 Slot Low Extremity Front

Communication System: GPRS-FDD; Frequency: 1850.2 MHz; Duty Cycle: 1:2.26569

Medium parameters used: f = 1850.2 MHz; σ = 1.43 S/m; ε_r = 40.98; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.55, 7.55, 7.55) @ 1850.2 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/GPRS1900_4 Slot Low Extremity Front/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.09 W/kg

Configuration/GPRS1900_4 Slot Low Extremity Front/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 5.733 V/m; Power Drift = 0.13 dB

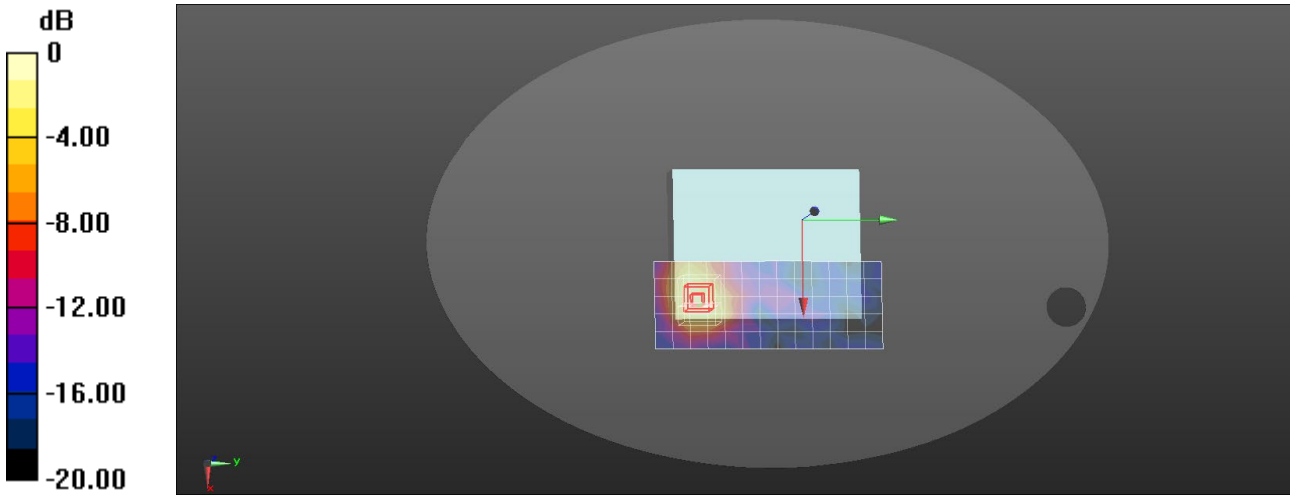
Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.592 W/kg

Smallest distance from peaks to all points 3 dB below = 14.3 mm

Ratio of SAR at M2 to SAR at M1 = 58.2%

Maximum value of SAR (measured) = 1.45 W/kg



0 dB = 1.45 W/kg = 1.61 dBW/kg

Plot 3#

Test Date: 2023/12/02

DUT: Smart module; Type: SLM500

Procedure Name: WCDMA Band 2 High Extremity Left

Communication System: WCDMA; Frequency: 1907.6 MHz

Medium parameters used: f = 1907.6 MHz; σ = 1.42 S/m; ε_r = 40.88; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.55, 7.55, 7.55) @ 1907.6 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/WCDMA Band 2 High Extremity Left/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.08 W/kg

Configuration/WCDMA Band 2 High Extremity Left/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 17.39 V/m; Power Drift = -0.00 dB

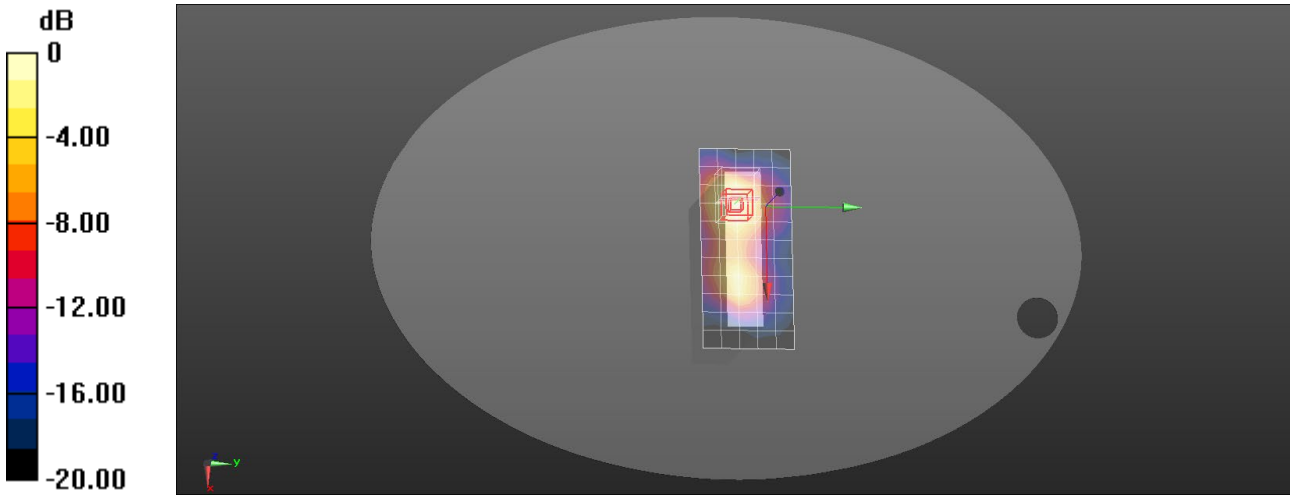
Peak SAR (extrapolated) = 2.45 W/kg

SAR(1 g) = 1.47 W/kg; SAR(10 g) = 0.823 W/kg

Smallest distance from peaks to all points 3 dB below = 13.7 mm

Ratio of SAR at M2 to SAR at M1 = 60.4%

Maximum value of SAR (measured) = 2.11 W/kg



0 dB = 2.11 W/kg = 3.24 dBW/kg

Plot 4#

Test Date: 2023/12/04

DUT: Smart module; Type: SLM500

Procedure Name: WCDMA Band 4 Mid Extremity Front

Communication System: WCDMA; Frequency: 1732.6 MHz

Medium parameters used: f = 1732.6 MHz; σ = 1.35 S/m; ε_r = 41.22; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.88, 7.88, 7.88) @ 1732.6 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/WCDMA Band 4 Mid Extremity Front/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.10 W/kg

Configuration/WCDMA Band 4 Mid Extremity Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 6.157 V/m; Power Drift = 0.10 dB

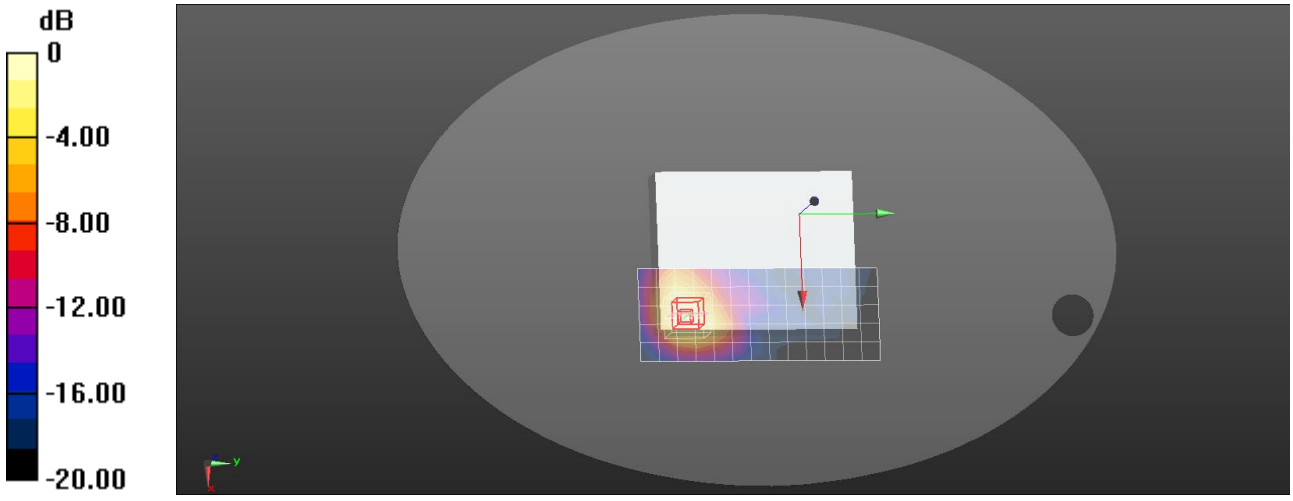
Peak SAR (extrapolated) = 2.78 W/kg

SAR(1 g) = 1.65 W/kg; SAR(10 g) = 0.963 W/kg

Smallest distance from peaks to all points 3 dB below = 14.5 mm

Ratio of SAR at M2 to SAR at M1 = 59.5%

Maximum value of SAR (measured) = 2.36 W/kg



0 dB = 2.36 W/kg = 3.73 dBW/kg

Plot 5#

Test Date: 2023/12/01

DUT: Smart module; Type: SLM500

Procedure Name: WCDMA Band 5 Mid Extremity Front

Communication System: WCDMA; Frequency: 836.6 MHz

Medium parameters used: f = 836.6 MHz; σ = 0.92 S/m; ε_r = 42.85; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.23, 9.23, 9.23) @ 836.6 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/WCDMA Band 5 Mid Extremity Front/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.80 W/kg

Configuration/WCDMA Band 5 Mid Extremity Front/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 12.05 V/m; Power Drift = -0.07 dB

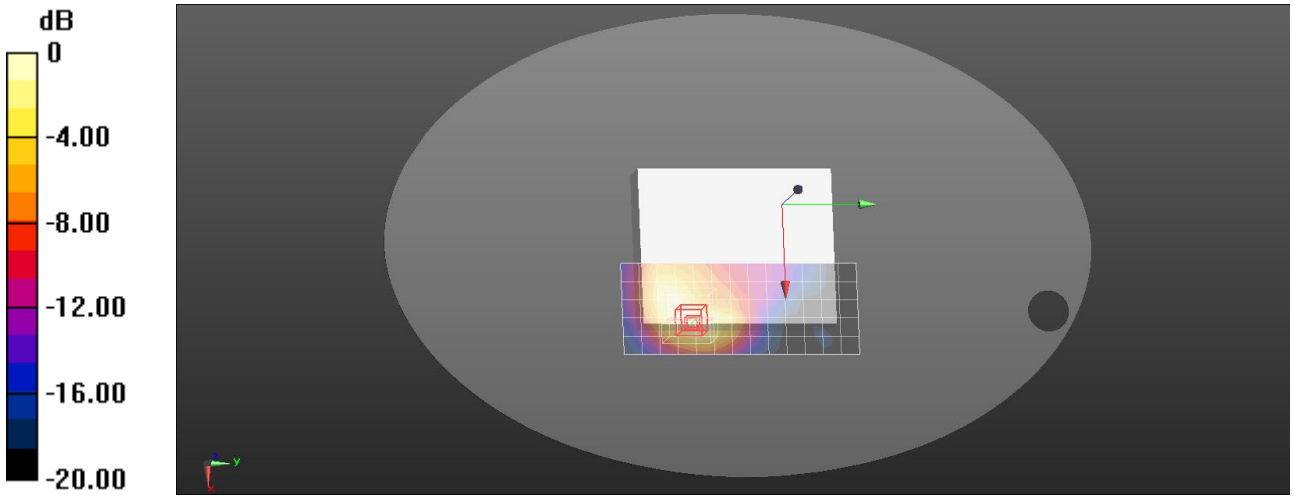
Peak SAR (extrapolated) = 2.19 W/kg

SAR(1 g) = 1.27 W/kg; SAR(10 g) = 0.747 W/kg

Smallest distance from peaks to all points 3 dB below = 10.7 mm

Ratio of SAR at M2 to SAR at M1 = 59.9%

Maximum value of SAR (measured) = 1.85 W/kg



0 dB = 1.85 W/kg = 2.67 dBW/kg

Plot 6#

Test Date: 2023/12/03

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 7 High QPSK_20M_1RB_OS49 Extremity Bottom

Communication System: LTE-FDD; Frequency: 2560 MHz

Medium parameters used: f = 2560 MHz; σ = 1.94 S/m; ε_r = 35.93; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.23, 7.23, 7.23) @ 2560 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 7 High QPSK_20M_1RB_OS49 Extremity Bottom/Area Scan (17x7x1):

Measurement grid: dx=12mm, dy=12mm; Maximum value of SAR (measured) = 7.11 W/kg

Configuration/LTE Band 7 High QPSK_20M_1RB_OS49 Extremity Bottom/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm; Reference Value = 14.92 V/m; Power Drift = 0.11 dB

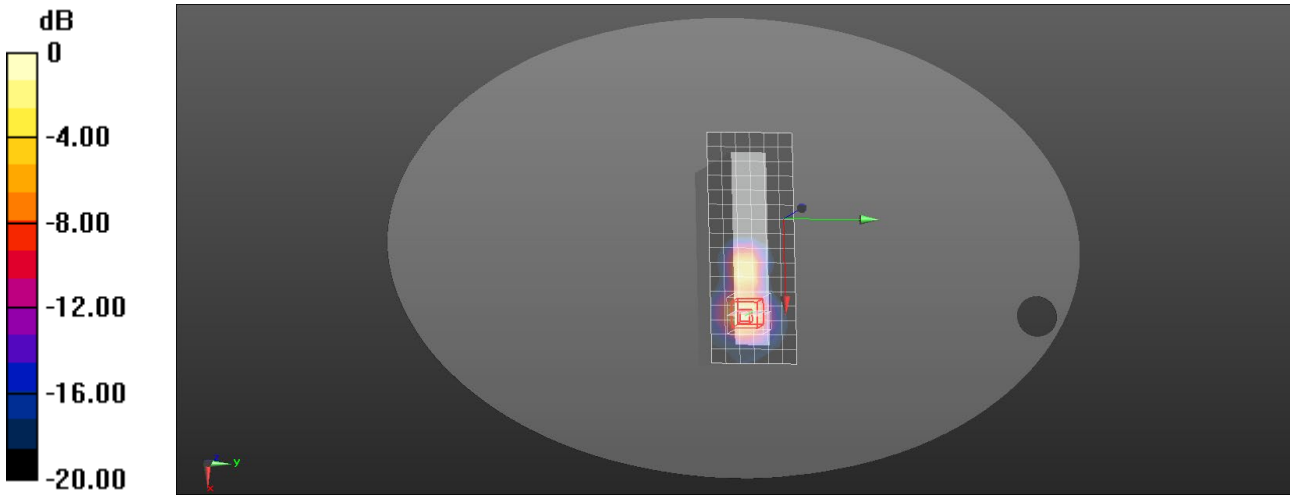
Peak SAR (extrapolated) = 11.6 W/kg

SAR(1 g) = 4.7 W/kg; SAR(10 g) = 1.97 W/kg

Smallest distance from peaks to all points 3 dB below = 7.3 mm

Ratio of SAR at M2 to SAR at M1 = 40.4%

Maximum value of SAR (measured) = 8.43 W/kg



0 dB = 8.43 W/kg = 9.26 dBW/kg

Plot 7#

Test Date: 2023/11/30

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 12 Mid QPSK_10M_25RB_OS0 Extremity Front

Communication System: LTE-FDD; Frequency: 707.5 MHz

Medium parameters used: f = 707.5 MHz; σ = 0.88 S/m; ε_r = 43.23; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.45, 9.45, 9.45) @ 707.5 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 12 Mid QPSK_10M_25RB_OS0 Extremity Front/Area Scan (6x14x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.21 W/kg

Configuration/LTE Band 12 Mid QPSK_10M_25RB_OS0 Extremity Front/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 12.20 V/m; Power Drift = 0.03 dB

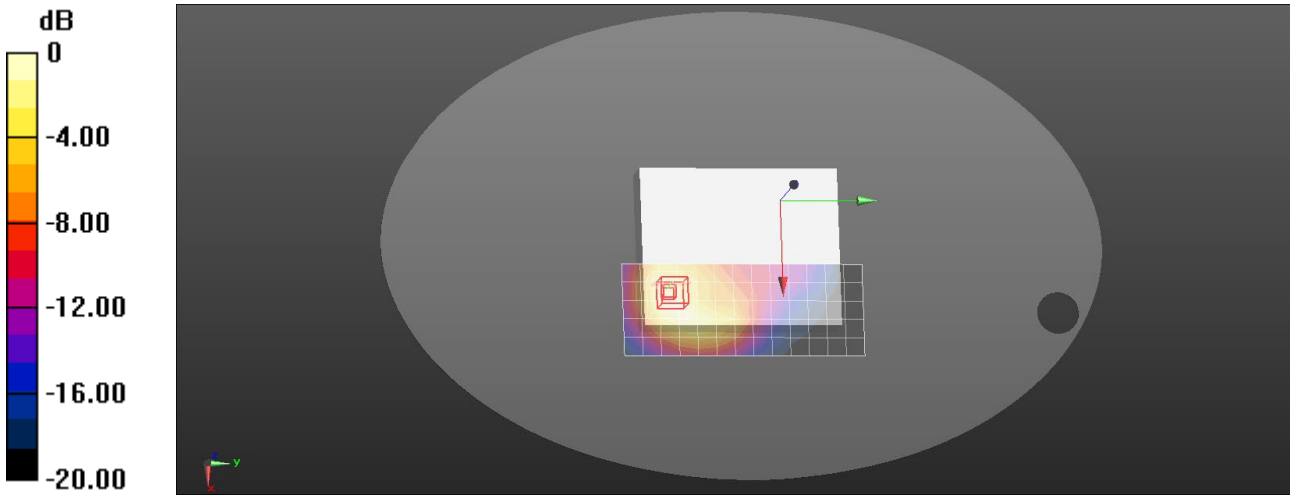
Peak SAR (extrapolated) = 1.88 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.671 W/kg

Smallest distance from peaks to all points 3 dB below = 13.7 mm

Ratio of SAR at M2 to SAR at M1 = 58.6%

Maximum value of SAR (measured) = 1.56 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

Plot 8#

Test Date: 2023/11/30

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 13 Mid QPSK_10M_1RB_OS24 Extremity Front

Communication System: LTE-FDD; Frequency: 782 MHz

Medium parameters used: f = 782 MHz; σ = 0.9 S/m; ε_r = 42.99; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.45, 9.45, 9.45) @ 782 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 13 Mid QPSK_10M_1RB_OS24 Extremity Front/Area Scan (6x14x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.06 W/kg

Configuration/LTE Band 13 Mid QPSK_10M_1RB_OS24 Extremity Front/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 15.17 V/m; Power Drift = -0.02 dB

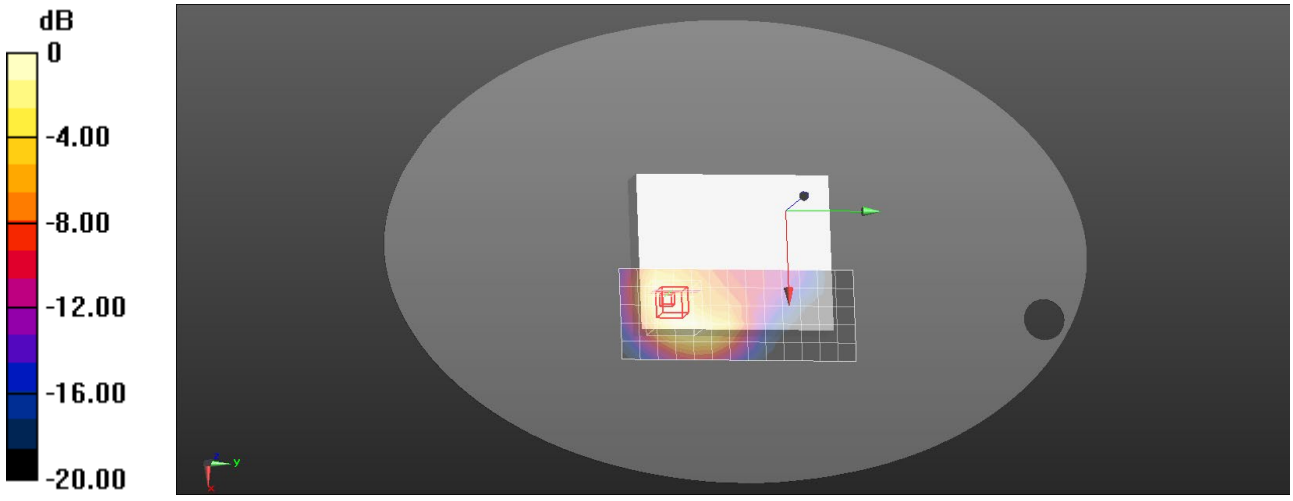
Peak SAR (extrapolated) = 2.79 W/kg

SAR(1 g) = 1.6 W/kg; SAR(10 g) = 0.989 W/kg

Smallest distance from peaks to all points 3 dB below = 14.4 mm

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

Maximum value of SAR (measured) = 2.32 W/kg



0 dB = 2.32 W/kg = 3.65 dBW/kg

Plot 9#

Test Date: 2023/12/02

DUT: POS Terminal; Type: SLM500

Procedure Name: LTE Band 25 Mid QPSK_20M_1RB_OS49 Body Front

Communication System: LTE-FDD; Frequency: 1882.5 MHz

Medium parameters used: f = 1882.5 MHz; σ = 1.4 S/m; ε_r = 40.92; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.55, 7.55, 7.55) @ 1882.5 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 25 Mid QPSK_20M_1RB_OS49 Body Front/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.99 W/kg

Configuration/LTE Band 25 Mid QPSK_20M_1RB_OS49 Body Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 4.954 V/m; Power Drift = 0.17 dB

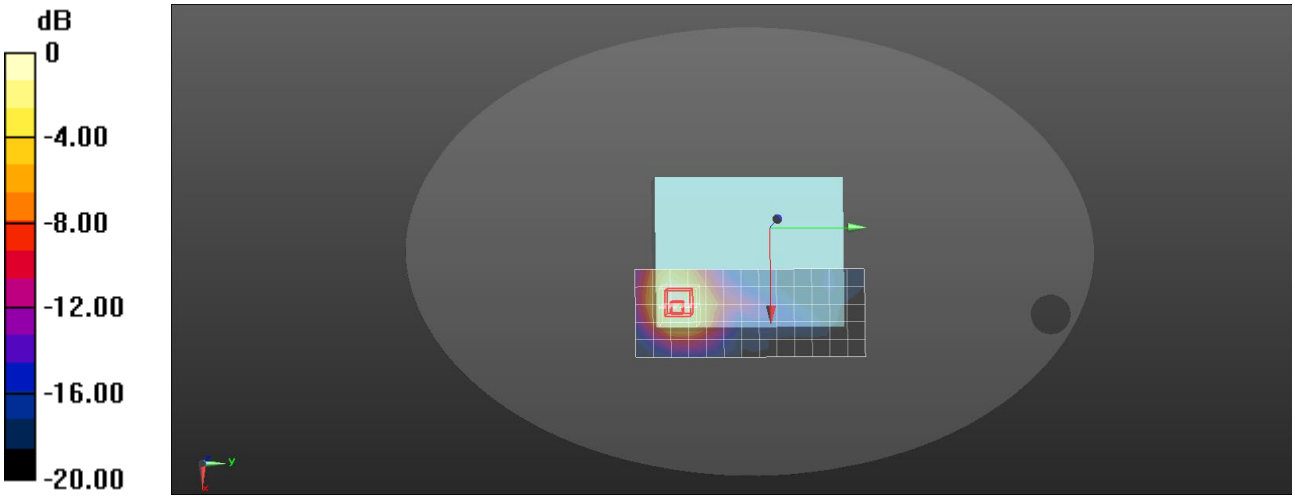
Peak SAR (extrapolated) = 2.30 W/kg

SAR(1 g) = 1.3 W/kg; SAR(10 g) = 0.735 W/kg

Smallest distance from peaks to all points 3 dB below = 15.1 mm

Ratio of SAR at M2 to SAR at M1 = 58.7%

Maximum value of SAR (measured) = 1.94 W/kg



0 dB = 1.94 W/kg = 2.88 dBW/kg

Plot 10#

Test Date: 2023/12/01

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 26 Low QPSK_10M_25RB_OS12 Extremity Front

Communication System: LTE-FDD; Frequency: 819 MHz

Medium parameters used: f = 819 MHz; σ = 0.91 S/m; ε_r = 42.89; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.23, 9.23, 9.23) @ 819 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 26 Low QPSK_10M_25RB_OS12 Extremity Front/Area Scan (6x14x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.18 W/kg

Configuration/LTE Band 26 Low QPSK_10M_25RB_OS12 Extremity Front/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 13.55 V/m; Power Drift = -0.01 dB

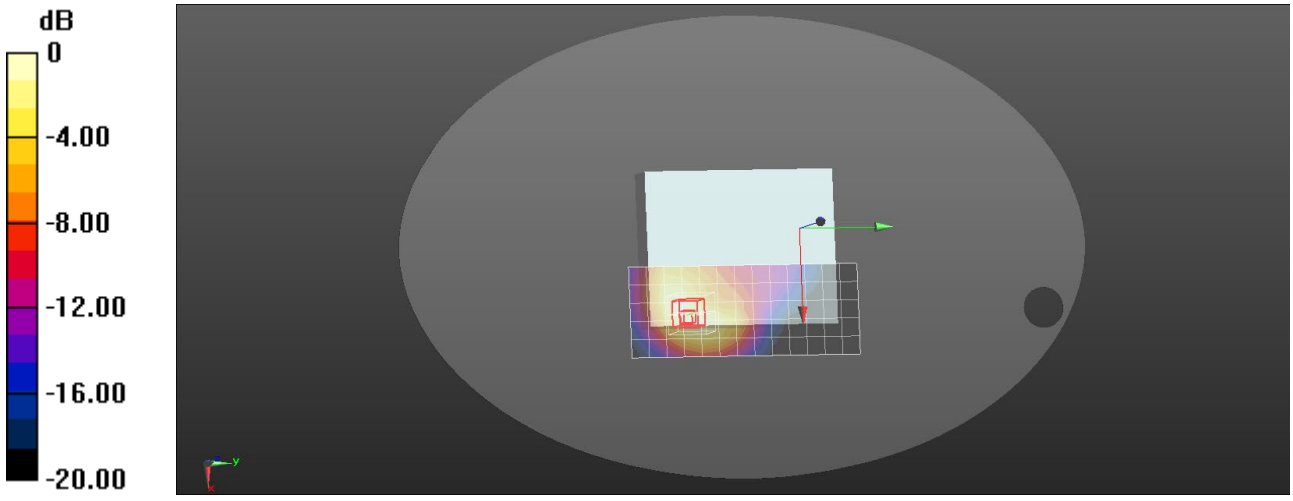
Peak SAR (extrapolated) = 2.93 W/kg

SAR(1 g) = 1.73 W/kg; SAR(10 g) = 1.05 W/kg

Smallest distance from peaks to all points 3 dB below = 14.3 mm

Ratio of SAR at M2 to SAR at M1 = 58.6%

Maximum value of SAR (measured) = 2.48 W/kg



0 dB = 2.48 W/kg = 3.94 dBW/kg

Plot 11#

Test Date: 2023/12/01

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 26 High QPSK_15M_36RB_OS39 Extremity Front

Communication System: LTE-FDD; Frequency: 841.5 MHz

Medium parameters used: f = 841.5 MHz; σ = 0.92 S/m; ε_r = 42.84; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(9.23, 9.23, 9.23) @ 841.5 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 26 High QPSK_15M_36RB_OS39 Extremity Front/Area Scan (6x14x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 1.89 W/kg

Configuration/LTE Band 26 High QPSK_15M_36RB_OS39 Extremity Front/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 12.55 V/m; Power Drift = -0.01 dB

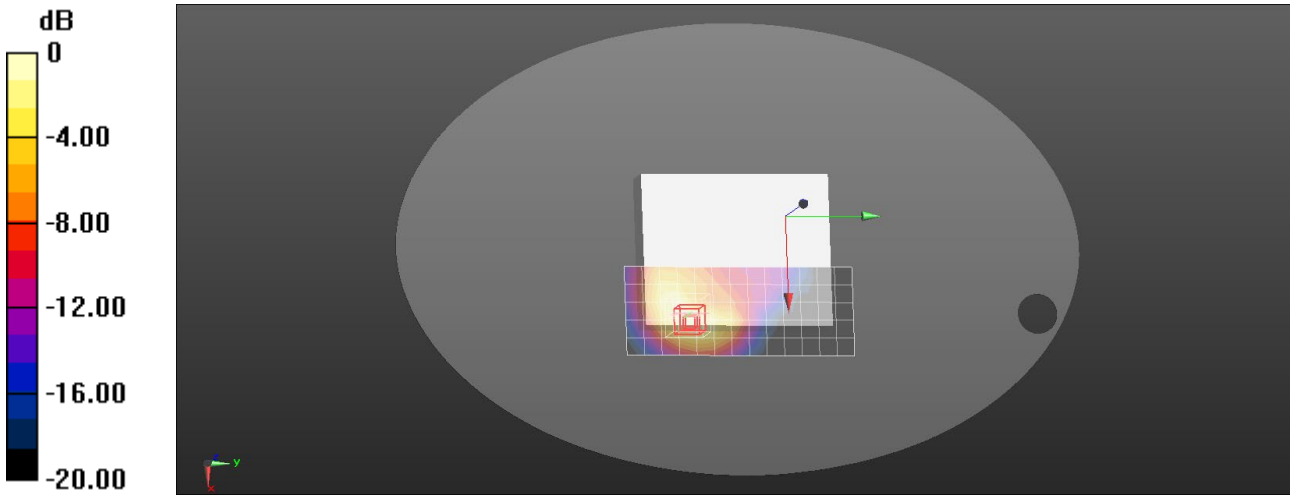
Peak SAR (extrapolated) = 2.61 W/kg

SAR(1 g) = 1.52 W/kg; SAR(10 g) = 0.908 W/kg

Smallest distance from peaks to all points 3 dB below = 11.5 mm

Ratio of SAR at M2 to SAR at M1 = 58.2%

Maximum value of SAR (measured) = 2.18 W/kg



0 dB = 2.18 W/kg = 3.38 dBW/kg

Plot 12#

Test Date: 2023/12/04

DUT: Smart module; Type: SLM500

Procedure Name: LTE Band 66 Low QPSK_20M_1RB_OS0 Extremity Front

Communication System: LTE-FDD; Frequency: 1720 MHz

Medium parameters used: f = 1720 MHz; σ = 1.34 S/m; ε_r = 41.23; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.88, 7.88, 7.88) @ 1720 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/LTE Band 66 Low QPSK_20M_1RB_OS0 Extremity Front/Area Scan (6x14x1):

Measurement grid: dx=15mm, dy=15mm; Maximum value of SAR (measured) = 2.32 W/kg

Configuration/LTE Band 66 Low QPSK_20M_1RB_OS0 Extremity Front/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm; Reference Value = 5.695 V/m; Power Drift = 0.10 dB

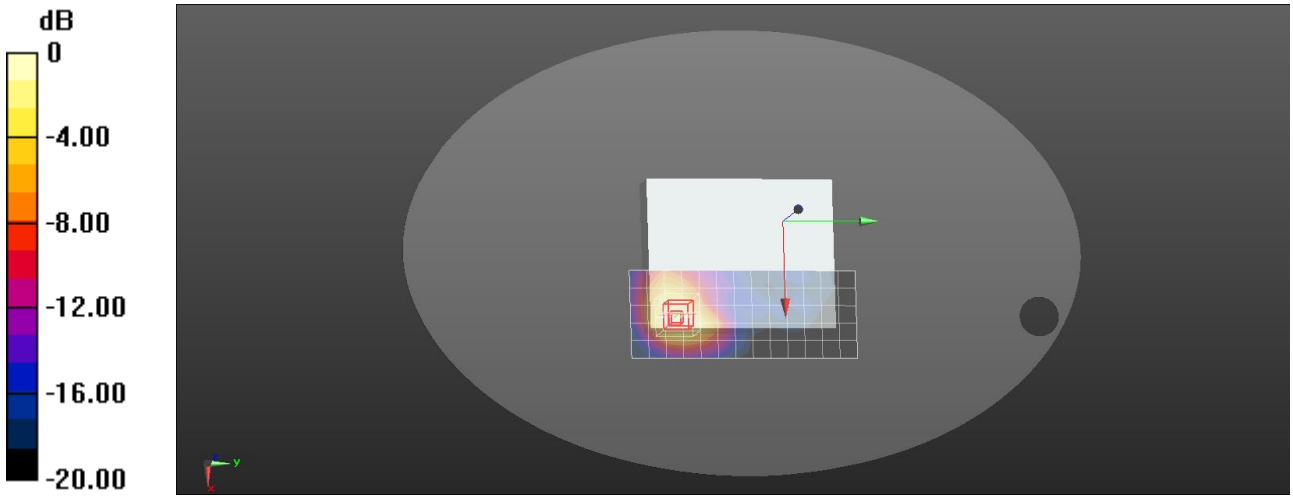
Peak SAR (extrapolated) = 2.88 W/kg

SAR(1 g) = 1.72 W/kg; SAR(10 g) = 0.999 W/kg

Smallest distance from peaks to all points 3 dB below = 13.2 mm

Ratio of SAR at M2 to SAR at M1 = 60.5%

Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.89 dBW/kg

Plot 13#

Test Date: 2023/12/05

DUT: Smart module; Type: SLM500

Procedure Name: 802.11b 2412MHz Extremity Back

Communication System: 802.11b; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.81 S/m; ε_r = 40.19; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.37, 7.37, 7.37) @ 2412 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/802.11b 2412MHz Extremity Back/Area Scan (9x7x1): Measurement grid: dx=12mm, dy=12mm; Maximum value of SAR (measured) = 1.81 W/kg

Configuration/802.11b 2412MHz Extremity Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm; Reference Value = 1.420 V/m; Power Drift = 0.12 dB

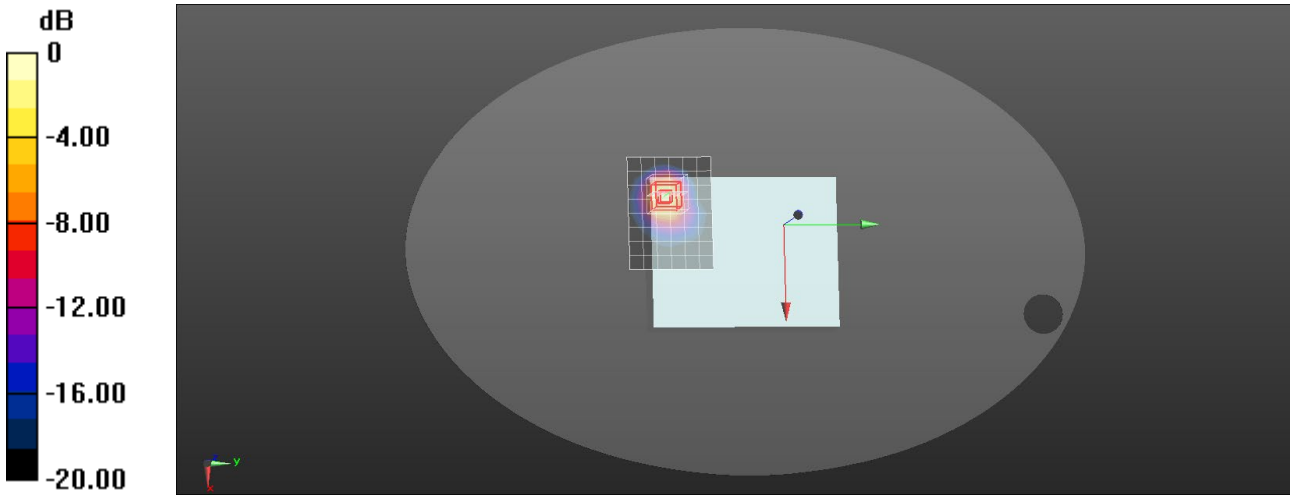
Peak SAR (extrapolated) = 2.87 W/kg

SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.556 W/kg

Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 47.3%

Maximum value of SAR (measured) = 2.29 W/kg



0 dB = 2.29 W/kg = 3.60 dBW/kg

Plot 14#

Test Date: 2023/12/06

DUT: Smart module; Type: SLM500

Procedure Name: 802.11a 5260MHz Extremity Top

Communication System: 802.11a; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5260 MHz; σ = 4.63 S/m; ε_r = 35.11; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(5.37, 5.37, 5.37) @ 5260 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/802.11a 5260MHz Extremity Top/Area Scan (11x7x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 1.91 W/kg

Configuration/802.11a 5260MHz Extremity Top/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 3.292 V/m; Power Drift = 0.09 dB

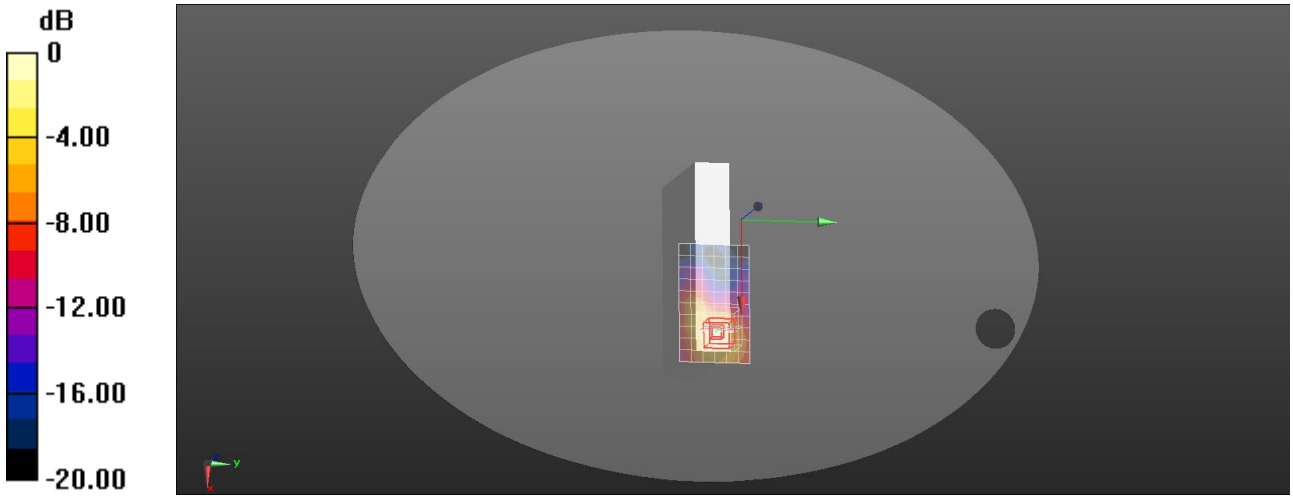
Peak SAR (extrapolated) = 3.77 W/kg

SAR(1 g) = 0.945 W/kg; SAR(10 g) = 0.348 W/kg

Smallest distance from peaks to all points 3 dB below = 8.6 mm

Ratio of SAR at M2 to SAR at M1 = 62.3%

Maximum value of SAR (measured) = 2.24 W/kg



0 dB = 2.24 W/kg = 3.50 dBW/kg

Plot 15#

Test Date: 2023/12/07

DUT: Smart module; Type: SLM500

Procedure Name: 802.11n-HT40 5550MHz Extremity Top

Communication System: 802.11n; Frequency: 5550 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5550 MHz; σ = 4.96 S/m; ε_r = 34.58; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(4.68, 4.68, 4.68) @ 5550 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/802.11n-HT40 5550MHz Extremity Top/Area Scan (11x7x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 1.66 W/kg

Configuration/802.11n-HT40 5550MHz Extremity Top/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 2.600 V/m; Power Drift = 0.13 dB

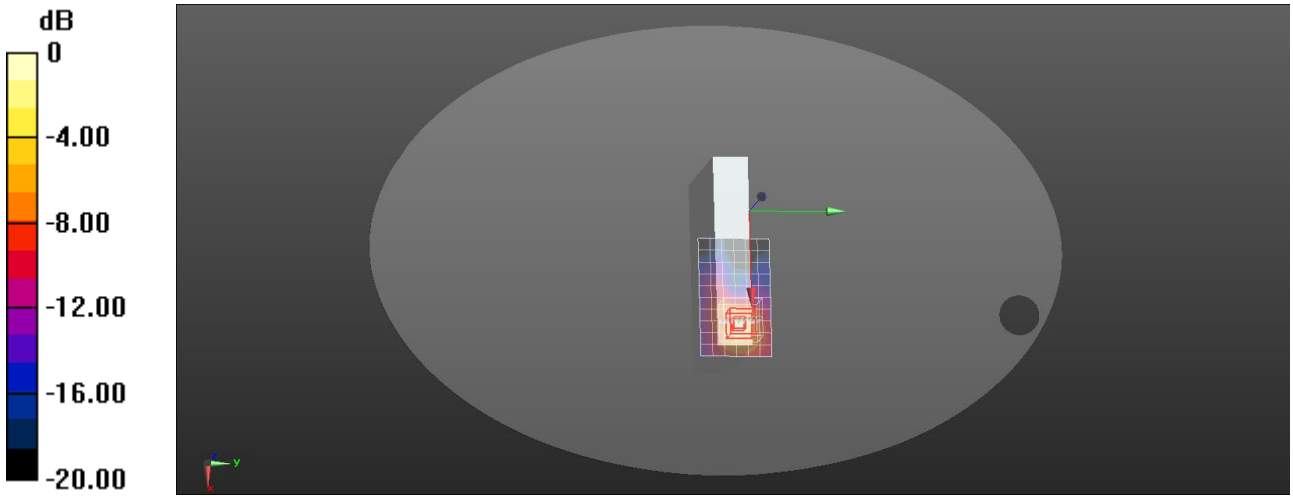
Peak SAR (extrapolated) = 3.24 W/kg

SAR(1 g) = 0.715 W/kg; SAR(10 g) = 0.236 W/kg

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 60.1%

Maximum value of SAR (measured) = 1.84 W/kg



0 dB = 1.84 W/kg = 2.65 dBW/kg

Plot 16#

Test Date: 2023/12/07

DUT: Smart module; Type: SLM500

Procedure Name: 802.11n-HT40 5755MHz Extremity Top

Communication System: 802.11n; Frequency: 5755 MHz; Duty Cycle: 1:1

Medium parameters used: f = 5755 MHz; σ = 5.2 S/m; ε_r = 34.2; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(4.78, 4.78, 4.78) @ 5755 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/802.11n-HT40 5755MHz Extremity Top/Area Scan (11x7x1): Measurement grid: dx=10mm, dy=10mm; Maximum value of SAR (measured) = 3.17 W/kg

Configuration/802.11n-HT40 5755MHz Extremity Top/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Reference Value = 2.932 V/m; Power Drift = 0.12 dB

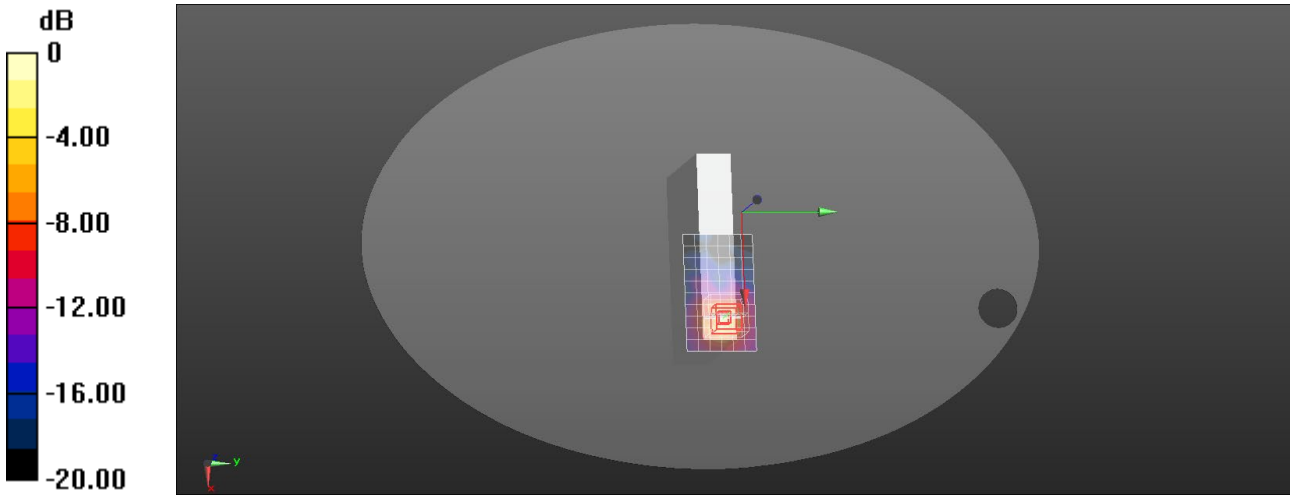
Peak SAR (extrapolated) = 6.55 W/kg

SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.406 W/kg

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 58.3%

Maximum value of SAR (measured) = 3.58 W/kg



0 dB = 3.58 W/kg = 5.54 dBW/kg

Plot 17#

Test Date: 2023/12/05

DUT: Smart module; Type: SLM500

Procedure Name: Bluetooth 2DH5 2441MHz Extremity Back

Communication System: Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2441 MHz; σ = 1.83 S/m; ε_r = 40.15; ρ = 1000 kg/m^3; Tissue Temp (celsius)-22.5°C; Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3820; ConvF(7.37, 7.37, 7.37) @ 2441 MHz; Calibrated: 2023/6/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1552; Calibrated: 2023/5/17
- Phantom: SAM2; Type: QD OVA 004 AA; Serial: 2089
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Configuration/Bluetooth 2DH5 2441MHz Extremity Back/Area Scan (9x7x1): Measurement grid: dx=12mm, dy=12mm; Maximum value of SAR (measured) = 0.482 W/kg

Configuration/Bluetooth 2DH5 2441MHz Extremity Back/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm; Reference Value = 2.554 V/m; Power Drift = 0.12 dB

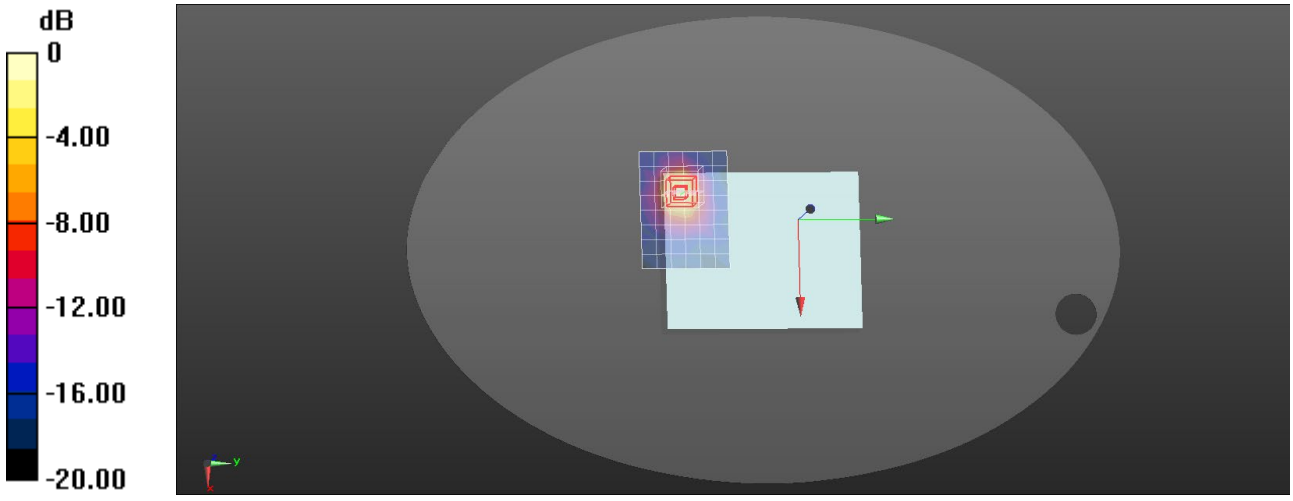
Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.329 W/kg; SAR(10 g) = 0.146 W/kg

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

Ratio of SAR at M2 to SAR at M1 = 48.5%

Maximum value of SAR (measured) = 0.553 W/kg



0 dB = 0.553 W/kg = -2.57 dBW/kg

Annex C - SAR Test Setup Photograph

Please refer to document “2311RSU065-UT”.

Annex D - EUT Photograph

Please refer to EUT Photograph.

Annex E - Equipment Calibration Report

Please refer to document “Annex E - Equipment Calibration Report.pdf”.

The End