

Test report No:

NIE: 70437RAN.003

Test report

IEEE Std 1528™-2013

(*) Identification of item tested	AirCurve 11
(*) Trademark	ResMed
(*) Model and /or type reference	39428 AirCurve 11
(*) Derived model not tested	For USA: AirCurve 11 ASV (39491), AirCurve 11 S (39492), AirCurve 11 ST (39493), AirCurve 11 V Auto (39494), For Canada: AirCurve 11 VAuto (39495), AirCurve 11 S (39496), AirCurve 11 ST (39497), AirCurve 11 ASV (39498). For USA & Canada: AirCurve 11 ST (51400)
(*) Other identification of the product	HW Version: 1.0 SW Version: SW04600 FCC ID: 2ACHL-AIR11M1B IC: 9103A-AIR11M1B
(*) Features	LTE Cat-M1, BLE
Applicant	RESMED Pty Ltd 1 Elizabeth Macarthur Drive, BELLA VISTA, NSW, 2153, AUSTRALIA
Test method requested, standard	1. IEEE Std 1528™-2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. 2. FCC 47 CFR Part 2.1093. (10-1-15 Edition) Radiofrequency radiation exposure evaluation: portable devices.
Summary	Considering the results of the performed test, the item under test is IN COMPLIANCE with FCC 47CFR Part 2.1093 exposure limits. The maximum 1-g SAR found during this test has been 0.077 W/kg, for LTE CAT M1 Band 66.
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager
Date of issue	2022-03-16
Report template No	FDT08_23 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification S.A.U. is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the following documents:

1. DEKRA Testing and Certification S.A.U. internal document PODT000.
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested", "Other identification of the product", "Features" and "Test sample description").
2. Maximum output power and testing distance.
3. Derived model not tested. These models have been declared by the supplier of the sample as being the same as the model under test.



Date: 01 Dec 2021

DECLARATION OF EQUIVALENCE

This document declares that the following designated products are equivalent to the unit under test **39428**.

For USA:

Model Name / Product Code	Marketing Name
39491	AIRCURVE 11 ASV USA
39492	AIRCURVE 11 S USA
39493	AIRCURVE 11 ST USA
39494	AIRCURVE 11 VAUTO USA

For Canada:

Model Name / Product Code	Marketing Name
39495	AIRCURVE 11 VAUTO CAN
39496	AIRCURVE 11 S CAN
39497	AIRCURVE 11 ST CAN
39498	AIRCURVE 11 ASV CAN

For USA & Canada:

Model Name / Product Code	Marketing Name
51400	AIRCURVE 11 ST NORTH AMERICA

All the above stated products have the same hardware, cellular firmware and Bluetooth firmware.

Applicant:

Company Name: ResMed Pty Ltd
Address: 1 Elizabeth Macarthur Drive,
Bella Vista NSW 2153
Australia

By,



Christopher Jenkins

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ResMed.com

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
70437/001	Bilevel device with integrated cellular and Bluetooth connectivity	39428 AirCurve 11	22211762277	2021/11/24

Sample M/02 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
70437/003	Bilevel device with integrated cellular and Bluetooth connectivity	39428 AirCurve 11	22211762279	2021/11/24

1. Sample M/01 has undergone the test(s) specified in subclause "Test method requested": Conducted average output power.
2. Sample M/02 has undergone the test(s) specified in subclause "Test method requested": SAR evaluation for LTE Cat-M1.

Test sample description

Description of product	Bilevel device with integrated cellular and Bluetooth connectivity		
Software version.....	SW04600		
Hardware version	1.0		
Mounting position	☒	Table top equipment	
	☐	Wall/Ceiling mounted equipment	
	☐	Floor standing equipment	
	☐	Hand-held equipment	
	☐	Other: -	
Accessories (not part of the test item).....	Description	Type	Manufacturer
	Charging adapter	---	
Copy of marking plate:			

Identification of the client

ResMed Pty Ltd.

1 Elizabeth Macarthur Drive, Bella Vista, NSW 2153 Australia

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2022-01-05
Date (finish)	2022-01-26

Document history

Report number	Date	Description
70437RAN.003	2022-03-16	First release

Environmental conditions

Date	Max. Temp.	Min. Temp.	Max. Hum.	Min. Hum.	Limit
	°C	°C	%	%	
From 2022-01-05 to 2022-01-26	22.59	20.01	50.35	38.50	18-25 °C, 30-70%

Remarks and comments

1: Zoom scan is not required according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06, paragraph "4.4.2. Area scan based 1-g estimation"

2: Bottom edge of the device has not been tested due to testing reduction. The device is a top-table device, therefore this side will be always facing a table and the transmitting antenna is located on the opposite device edge (Top edge).

3: Zoom scan and/or power drifts measurements have not been able to be performed by the measurement system due to very low SAR values close or under the noise level.

4: Only the plots of the highest reported SAR for each test position and mode/band are included in appendix C.

5: The tests have been performed by the technical personnel: Francisco J. Sánchez and Ismael Gamarro.

6: References

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093 and the following FCC Published RF exposure KDB procedures:

1. FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
2. FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
3. FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
4. FCC OET KDB 941225 D05 SAR for LTE Devices v02r05 (October 2015).

7: The instrumentation utilized to perform the tests covered in this test report is listed in the following table:

Equipment	NC
Dosimetric E-field probe SPEAG EX3DV4	6125
Dosimetric E-field probe SPEAG ES3DV3	3052
Data acquisition device SPEAG DAE4	3430
Data acquisition device SPEAG DAE4	8876
SPEAG Mounting Device for Laptop and Body-Worn Transmitters	3526
Oval flat phantom SPEAG ELI 4	3525
Electro-optical converter SPEAG SE UMS 018 BB	8902
Robot Stäubli RX60BL, Robot controller STÄUBLI CS8CSpeag-TX60	8867
Measurement server SPEAG DASY6 SE UMS 028 CA	8895
SAR measurement software SPEAG cDASY6 16.0.0.116	8898
Head Tissue Equivalent Liquid for 750 MHz band	3920
Body Tissue Equivalent Liquid for 750 MHz band	3921
Head Tissue Equivalent Liquid for 850 MHz band	3631
Body Tissue Equivalent Liquid for 850 MHz band	3632
Head Tissue Equivalent Liquid for 1700 MHz band	6028
Body Tissue Equivalent Liquid for 1700 MHz band	6029
Head Tissue Equivalent Liquid for 1900 MHz band	8844
Body Tissue Equivalent Liquid for 1900 MHz band	8845
750 MHz dipole validation kit SPEAG D750V3	3919
900 MHz dipole validation kit SPEAG D900V2	3426
1800 MHz dipole validation kit SPEAG D1800V2	3427
Vector network analyzer Agilent FieldFox N9923A	4482
Dielectric probe kit SPEAG DAK-3.5	4171
RF Generator R&S SMU200	3346
Power amplifier MITEQ AMF-4D-00400600-50-30P	3485
DC Power supply Agilent U8002A	4835
Dual directional coupler HP 778D	1084
Dual directional coupler NARDA 4227-16	3630
Power sensor Agilent E9300A	4391
Power sensor Agilent E9300A	4392
Power meter Agilent E4419B	4393
Power sensor DC 50 MHz to 18 GHz R&S model NRP-Z81	4164
Digital thermometer LKM Electronics model DTM300-Spezial	4170
Temperature and humidity probe HUMIDIPROBE Pico Technology	3453
Universal Radio Communication Tester R&S CMW 500	8849

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

FCC 47CFR Part 2.1093	VERDICT			
	N/A	P	F	NM
LTE CAT M1 Band 2		P		
LTE CAT M1 Band 4		P		
LTE CAT M1 Band 5		P		
LTE CAT M1 Band 12		P		
LTE CAT M1 Band 13		P		
LTE CAT M1 Band 25		P		
LTE CAT M1 Band 26		P		
LTE CAT M1 Band 66		P		
Bluetooth		P ¹		
1: Technology not subject to testing. Verdict has been determined through RF Exposure assessment (see Appendix B, 2.2. of this document for more details).				

Appendix A: Test configuration

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1. GENERAL INTRODUCTION

1.1. Application Standard

The Federal Communications Commission (FCC) sets the limits for General Population/Uncontrolled exposure to radio frequency electromagnetic fields for transmitting devices designed to be used within 20 centimetres of the body of the user under FCC 47 CFR Part 2.1093 - "Radiofrequency radiation exposure evaluation: portable devices", paragraph (d)(2).

1.2. General requirements

The SAR measurement has been performed continuing the following considerations and environment conditions:

- The ambient temperature shall be in the range of 18°C to 25°C and the variation shall not exceed +/- 2°C during the test.
- The ambient humidity shall be in the range of and 30% - 70%.
- The device battery shall be fully charged before each measurement.

1.3. Measurement system requirements

The measurement system used for SAR tests fulfils the procedural and technical requirements described at the reference standards used.

1.4. Phantom requirements

The phantom model for body measurements is an elliptical open-top container with a flat bottom, with the following shape and dimensions:

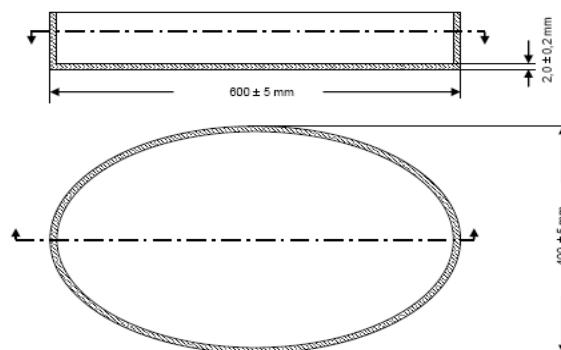


Figure 1: Proportions and shape of Phantom shell

1.5. Measurement Liquids requirements.

The liquids used to simulate the human tissues, must fulfil the requirements of the dielectric properties required. These target dielectric properties per FCC OET KDB 865664 D01 instructions come from the dipole and probe calibration data which are included in Appendix B, Section 3, of this document.

To minimize the effect of reflections on peak spatial-average SAR values, from the upper surface of the tissue-equivalent liquid, the depth of the liquid should be at least 15 cm.

2. MEASUREMENT SYSTEM

2.1. Measurement System

The DASY6 system for performing compliance tests consists of the following items:

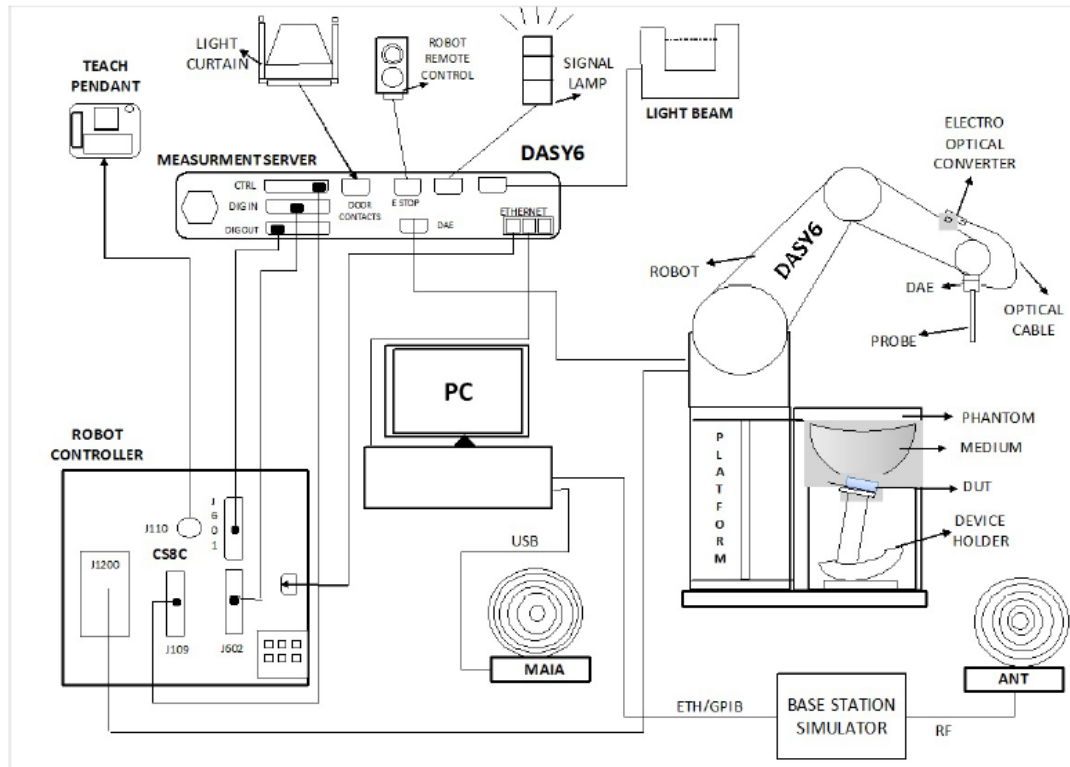


Figure 2: SAR Measurement system

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

	Model	EX3DV4
	Construction	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	Frequency	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 6 GHz)
	Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
	Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/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: 1.0 mm

	Model	ES3DV3
	Construction	Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
	Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
	Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)
	Dynamic Range	5 μ W/g to > 100 mW/g Linearity: ± 0.2 dB
	Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm

	Model	DAE4
	Construction	Signal amplifier, multiplexer, A/D converter, and control logic. Serial optical link communication with DASY4/5 embedded system (fully remote controlled). Two-step probe touch detector for mechanical surface detection and emergency robot stop.
	Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
	Input Offset Voltage	< 5 μ V (with auto zero)
	Input Resistance	200 MOhm
	Input Bias Current	< 50 fA

	Model	Mounting Device for Laptop and Body-Worn Transmitters
	Construction	In combination with the Twin SAM V5.0/V5.0c or ELI Phantoms, the Mounting Device (Body-worn) enables testing of transmitters devices according to IEC 62209-2 specifications. The device holder can be locked for positioning at flat phantom section.
	Material	Polyoxymethylene (POM), PET-G, Foam

	Model	ELI
	Construction	Phantom 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.
	Material	Vinylester, glass fiber reinforced (VE-GF)
	Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
	Shell Thickness	2 ± 0.2 mm (bottom plate)
	Dimensions	Major axis: 600 mm Minor axis: 400 mm
	Filling Volume	Approx. 30 liters
	Wooden Support	SPEAG standard phantom table

	Model	System Validations Kits 450 MHz – 6 GHz		
	Construction	Symmetrical dipole with I/4 balun. Enables measurement of feedpoint impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions.		
	Frequency	450 MHz to 5800 MHz		
	Return Loss	20 dB at specified validation position		
	Dimensions (length and overall height in mm)	Product	Dipole length	Overall height
		D450V3	290.0	330.0
		D750V3	179.0	330.0
		D900V2	148.5	340.0
		D1800V2	72.5	300.0
		D2000V2	65.0	300.0
		D2300V2	56.3	290.0
		D2450V2	52.0	290.0
		D2600V2	49.2	290.0
		D3300V2	38.0	285.0
		D3500V2	37.0	285.0
		D3700V2	34.7	285.0
		D3900V2	32.0	280.0
		D4200V2	30.1	280.0
		D4600V2	27.0	280.0
		D4900V2	25.0	280.0
		D5GHzV2	20.6	300.0

2.2. Test Positions of device relative to head and body

The device under test consists of a continuous Positive Airway Pressure (CPAP) Device which could be used near the head and body of the user placed on a bedside table.

Although it will be used normally at higher distance from users, according to the manufacturer request, SAR testing has been performed at a conservative test separation distance of 15 mm.

All device edges have been tested facing the flat phantom at 15 mm test distance, except the back face of the device, measured at 45 mm due to mains cord and the bottom edge of the device due to testing reduction based on device use and tests results found for the rest of device's sides.

2.3. Test to be performed

Test shall be performed for each test position previously described, using the channel producing the highest rated output power. Additionally the other applicable test frequency channels must be measure for the test configuration providing the highest SAR for each applicable transmitting band.

2.4. Description of interpolation/extrapolation scheme

The local SAR inside the Phantom is measured using small dipole sensing elements inside a probe element. The probe tip must not be in contact with the Phantoms surface in order to minimise measurement errors, but the highest local SAR is obtained from measurements at a certain distances from the shell trough extrapolation. The accurate assessment of the maximum SAR averaged over 1 gr and 10 gr. requires a very fine resolution in the three dimensional scanned data array. Since the measurements have to be performed over a limited time, the measured data have to be interpolated to provide an array of sufficient resolution.

The interpolation of 2D area scan is used after the initial area scan, at a fixed distance from the Phantom shell wall. The initial scan data is collected with approx. 15 mm spatial resolution and this interpolation is used to find the location of the local maximum for positioning the subsequent 3D scanning within a 1 mm resolution.

For the 3D scan, data is collected on a spatially regular 3D grid having 5 mm steps in both directions. After the data collection by the SAR probe, the data are extrapolated in the depth direction to assign values to points in the 3D array closer to the shell wall. A notional extrapolation value is also assigned to the first point outside the shell wall so that subsequent interpolation schemes will be applicable right up to the shell wall boundary.

2.5. Determination of the largest peak spatial-average SAR

To determine the maximum value of the peak spatial-average SAR of a DUT, all device positions, configurations and operational modes should be tested for each frequency band.

The averaging volume shall be chosen as 1gr. of contiguous tissue. The cubic volumes, over which the SAR measurements are averaged after extrapolation and interpolation, are chosen in order to include the highest values of local SAR.

The maximum SAR level for the DUT will be the maximum level obtained of the performed measurements, and indicated in the previous points.

2.6. System Validation

Prior to the SAR measurements, system verification is done to verify the system accuracy. A complete SAR evaluation is done using a half-wavelength dipole as source with the frequency of the mid-band channel of the operating band, or within 10% of this channel.

The measured 1 gr. and 10 gr. SAR should be within 10% of the expected target values specified in the calibration certificate of the dipole, for the specific tissue and frequency used.

3. UNCERTAINTY

According to FCC OET KDB 865664 D01, if the highest measured 1-g SAR is < 1.5 W/kg, SAR measurement uncertainty analysis is not required to be included into SAR report, but it has been included for ISO 17025 accreditation.

ERROR SOURCES (source of uncertainty)	Uncertainty value (%)	Prob. Dist.	Div.	<i>c_i</i> (1g)	<i>c_i</i> (10g)	Standard uncertainty (1g) (%)	Standard uncertainty (10g) (%)
Measurement Equipment							
Probe Calibration	13.30%	N	2	1	1	6.65%	6.65%
Probe calibration drift	11.35%	R	√3	1	1	6.55%	6.55%
Axial Isotropy	4.70%	R	√3	0.7	0.7	1.90%	1.90%
Hemisfericall Isotropy	9.60%	R	√3	0.7	0.7	3.88%	3.88%
Boundary effect	1.00%	R	√3	1	1	0.58%	0.58%
Linearity	4.70%	R	√3	1	1	2.71%	2.71%
System Detection limits	0.25%	R	√3	1	1	0.14%	0.14%
Probe modulation response	4.80%	N	1	1	1	4.80%	4.80%
Readout electronics	0.30%	N	1	1	1	0.30%	0.30%
Response time	1.01%	R	√3	1	1	0.58%	0.58%
Integration time	2.60%	R	√3	1	1	1.50%	1.50%
RF Ambient noise	3.00%	R	√3	1	1	1.73%	1.73%
RF Ambient reflections	3.00%	R	√3	1	1	1.73%	1.73%
Probe positioner mech. restrictions	0.40%	R	√3	1	1	0.23%	0.23%
Probe positioning with respect to phantom shell	2.90%	R	√3	1	1	1.67%	1.67%
Max. SAR Eval.	2.00%	R	√3	1	1	1.15%	1.15%
Test Sample Related							
Device holder uncertainty	3.60%	N	1	1	1	3.60%	3.60%
Test sample positioning	2.90%	N	1	1	1	2.90%	2.90%
Drift of output power	2.50%	N	1	1	1	2.50%	2.50%
System Validation source (dipole)							
Deviation of experimental dipole from numerical dipole	0.00%	N	1	0	0	0.00%	0.00%
Input power and SAR drift measurement	2.00%	R	√3	1	1	1.15%	1.15%
Dipole axis to liquid distance	3.40%	R	√3	1	1	1.96%	1.96%
Phantom and Setup							
Phantom uncertainty (shape and thickness tolerances)	6.10%	R	√3	1	1	3.52%	3.52%
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.90%	N	1	1	0.84	1.90%	1.60%
Liquid conductivity (meas.)	2.45%	N	1	0.78	0.71	1.91%	1.74%
Liquid permittivity (meas.)	2.45%	N	1	0.26	0.26	0.64%	0.64%
Liquid conductivity – temperature uncertainty	2.30%	R	√3	0.78	0.71	1.04%	0.94%
Liquid permittivity – temperature uncertainty	0.36%	R	√3	0.23	0.26	0.05%	0.05%
Combined standard uncertainty (Validation antenna)	$u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$					11.62%	11.54%
Expanded uncertainty (confidence interval of 95%)	$u_e = 2.00 u_c$					23.25%	23.09%
Combined standard uncertainty (DUT)	$u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$					14.08%	14.01%
Expanded uncertainty (confidence interval of 95%)	$u_e = 2.00 u_c$					28.16%	28.03%

Table 1: Uncertainty Assessment for 300 MHz - 3 GHz.

4. SAR LIMIT

Having a worst case measurement, the SAR limit is valid for general population/uncontrolled exposure.

The SAR values have to be averaged over a mass of 1 gr. (SAR 1 gr.) with the shape of a cube and averaged over a mass of 10 gr (Extremity SAR 10 gr). These levels could not exceed the values indicated in the application Standard:

Standard	Exposure	SAR	SAR Limit (W/kg)
FCC 47 CFR Part 1.1310, Paragraph (c)	General population/Uncontrolled	SAR 1-g.	1.6
FCC 47 CFR Part 1.1310, Paragraph (c)	General population/Uncontrolled Extremity	SAR 10-g.	4.0

Table 2: SAR limit

5. DEVICE UNDER TEST

5.1. Dimensions

Dimensions	Millimetres
Length x Width x Height	95.0 x 235.0 x 125.0

Table 3: Dimensions

5.2. Wireless Technology

Technology	SAR Testing	Frequency Bands	Modes
LTE CAT-M1	Required	2/4/5/12/13/25/26/66	QPSK and 16-QAM (Rel. 9)
Bluetooth	Not Required*	2.4 GHz	Bluetooth

Table 4: Supported modes

* See Appendix B, section 2.2 Bluetooth of this document for more details

5.3. Simultaneous Transmission

Simultaneous transmission evaluation was performed according to FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015). The detailed simultaneous transmission combination is:

RF Exposure Condition	Capable Transmit Configurations
Head & Body	LTE CAT-M1 + Bluetooth

Table 5: Simultaneous transmission

5.4. Antenna Location

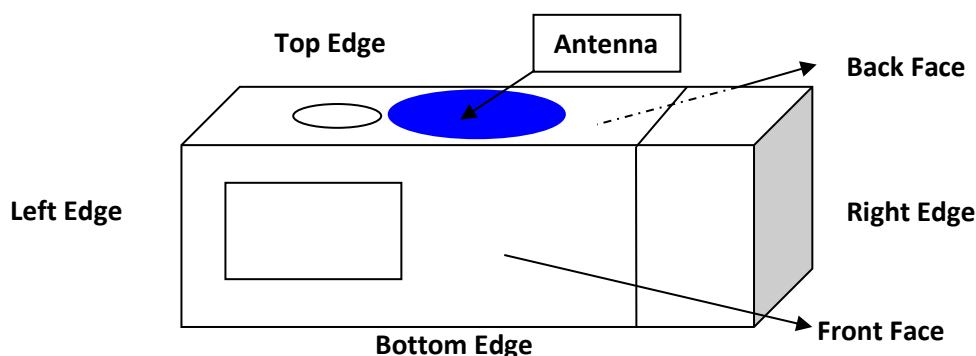


Figure 3: Antenna diagram location sketch (front face view)

Appendix B: Test results

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1. TEST CONDITIONS

1.1. Power supply (V):

Type of power supply = 90W AC Adapter.

1.2. Temperature (°C):

$T_n = +20.00$ to $+25.00$

The subscript n indicates normal test conditions.

1.3. Test signal, Output Power and Frequencies

The sample was put into operation by using an R&S CMW 500 as base station simulator for the LTE Cat-M1 operational modes.

The actual SAR sample does not have accessible antenna connectors for conducted measurements, so the conducted average output power was measured using others identical samples (M/01) provided by the manufacturer with auxiliary external connectors that makes the measurements representative and applicable for all the tested samples. See 'usage of samples' paragraph of this report.

The maximum conducted time-averaged power of the device for each mode was measured with a power sensor R&S NRP-Z81.

The target power alignments, including tune-up tolerance, for RF components declared by the manufacturer for each supported technology are:

Output Power (dBm)	CAT M1 Transmission Mode							
	LTE B2	LTE B4	LTE B5	LTE B12	LTE B13	LTE B25	LTE B26	LTE B66
Maximum Burst	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0
Maximum Averaged	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

Output Power (dBm)	Transmission Mode
	Bluetooth
Maximum	3.0

1.4. DUT and test-site configurations

For all supported modes, the DUT was placed with each face and edge position against the flat phantom surface, except the bottom edge of the device due to testing reduction.

The separation distance between DUT and flat phantom surface was 45 mm for the back face of the device due to mains cord, and 15 mm for the remaining faces/edges.

2. CONDUCTED AVERAGE POWER MEASUREMENTS

2.1. LTE Bands.

LTE MPR is permanently implemented for the device. The following power reductions are used for the different RB allocations and modulations:

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

- LTE CAT M1 B2

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1860.0 MHz	1880.0 MHz	1900.0 MHz
LTE CAT M1 B2	20 MHz	QPSK	1RB Low	0	10.41	10.42	10.58
			1RB Mid	0	10.42	10.41	10.47
			1RB High	0	10.88	10.79	10.94
			50% Low	1	10.40	10.40	10.63
			50% Mid	1	10.46	10.38	10.43
			50% High	1	10.44	10.36	10.45
			100%	1	10.52	10.38	10.46
		16-QAM	1RB Low	1	10.50	10.36	10.57
			1RB Mid	1	10.49	10.32	10.56
			1RB High	1	10.83	10.70	10.87
			50% Low	2	10.45	10.39	10.47
			50% Mid	2	10.43	10.37	10.45
			50% High	2	10.40	10.39	10.44
			100%	2	10.44	10.36	10.44
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1857.5 MHz	1880.0 MHz	1902.5 MHz
LTE CAT M1 B2	15 MHz	QPSK	1RB Low	0	10.58	10.46	10.58
			1RB Mid	0	10.54	10.39	10.48
			1RB High	0	10.46	10.40	10.52
			50% Low	1	10.51	10.43	10.61
			50% Mid	1	10.49	10.39	10.46
			50% High	1	10.53	10.36	10.49
			100%	1	10.53	10.41	10.57
		16-QAM	1RB Low	1	10.56	10.37	10.47
			1RB Mid	1	10.48	10.38	10.45
			1RB High	1	10.48	10.35	10.48
			50% Low	2	10.49	10.40	10.51
			50% Mid	2	10.48	10.37	10.53
			50% High	2	10.45	10.35	10.50
			100%	2	10.51	10.39	10.55

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1855.0 MHz	1880.0MHz	1905.0 MHz
LTE CAT M1 B2	10 MHz	QPSK	1RB Low	0	10.55	10.41	10.58
			1RB Mid	0	10.58	10.44	10.54
			1RB High	0	10.49	10.29	10.41
			50% Low	1	10.57	10.36	10.53
			50% Mid	1	10.49	10.40	10.53
			50% High	1	10.51	10.35	10.50
			100%	1	10.16	9.98	10.20
		16-QAM	1RB Low	1	10.54	10.46	10.51
			1RB Mid	1	10.52	10.39	10.55
			1RB High	1	10.50	10.38	10.47
			50% Low	2	10.55	10.35	10.52
			50% Mid	2	10.48	10.39	10.49
			50% High	2	10.45	10.36	10.47
			100%	2	10.11	9.96	10.11
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1852.5 MHz	1880.0 MHz	1907.5 MHz
LTE CAT M1 B2	5 MHz	QPSK	1RB Low	0	10.59	10.35	10.57
			1RB Mid	0	10.62	10.38	10.54
			1RB High	0	10.53	10.27	10.49
			50% Low	1	10.61	10.31	10.62
			50% Mid	1	10.58	10.42	10.52
			50% High	1	10.50	10.35	10.51
			100%	1	9.92	9.95	10.21
		16-QAM	1RB Low	1	10.57	10.33	10.55
			1RB Mid	1	10.60	10.35	10.53
			1RB High	1	10.55	10.30	10.47
			50% Low	2	10.58	10.28	10.58
			50% Mid	2	10.56	10.30	10.57
			50% High	2	10.57	10.26	10.56
			100%	2	9.84	9.61	9.84

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1851.5 MHz	1880.0 MHz	1908.5 MHz
LTE CAT M1 B2	3 MHz	QPSK	1RB Low	0	10.62	10.37	10.58
			1RB Mid	0	10.54	10.31	10.61
			1RB High	0	10.55	10.33	10.50
			50% Low	1	10.17	9.95	10.26
			50% Mid	1	10.13	9.90	10.22
			50% High	1	10.13	9.88	10.20
			100%	1	9.78	9.57	9.88
		16-QAM	1RB Low	1	10.19	9.87	10.11
			1RB Mid	1	10.15	9.91	10.03
			1RB High	1	10.16	9.88	10.02
			50% Low	2	9.83	9.61	9.97
			50% Mid	2	9.84	9.62	9.95
			50% High	2	9.80	9.53	9.91
			100%	2	9.79	9.55	9.93
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1850.7 MHz	1880.0 MHz	1909.3 MHz
LTE CAT M1 B2	1.4 MHz	QPSK	1RB Low	1	10.04	9.86	10.18
			1RB Mid	1	10.06	9.84	10.16
			1RB High	1	9.97	9.78	10.14
			50% Low	1	9.62	9.32	9.75
			50% Mid	1	9.56	9.33	9.70
			50% High	1	9.54	9.44	9.77
			100%	1	9.28	9.04	9.39
		16-QAM	1RB Low	1	9.56	9.43	9.68
			1RB Mid	1	9.52	9.36	9.59
			1RB High	1	9.52	9.32	9.63
			50% Low	1	9.20	9.02	9.33
			50% Mid	1	9.25	8.99	9.30
			50% High	1	9.21	9.06	9.31
			100%	2	9.20	8.93	9.42

- **LTE CAT M1 B4**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1720.0 MHz	1732.5 MHz	1745.0 MHz
LTE CAT M1 B4	20 MHz	QPSK	1RB Low	0	10.72	10.62	10.52
			1RB Mid	0	10.71	10.64	10.61
			1RB High	0	11.13	11.00	10.88
			50% Low	1	10.69	10.64	10.55
			50% Mid	1	10.73	10.62	10.52
			50% High	1	10.65	10.58	10.51
			100%	1	10.65	10.66	10.52
		16-QAM	1RB Low	0	10.74	10.65	10.57
			1RB Mid	1	10.72	10.64	10.64
			1RB High	1	11.01	10.93	10.84
			50% Low	1	10.44	10.60	10.49
			50% Mid	2	10.61	10.58	10.51
			50% High	2	10.53	10.61	10.49
			100%	2	10.57	10.59	10.50
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE CAT M1 B4	15 MHz	QPSK	1RB Low	0	10.80	10.64	10.62
			1RB Mid	0	10.74	10.59	10.52
			1RB High	0	10.73	10.58	10.55
			50% Low	1	10.76	10.64	10.53
			50% Mid	1	10.73	10.62	10.50
			50% High	1	10.77	10.61	10.44
			100%	1	10.83	10.67	10.47
		16-QAM	1RB Low	0	10.74	10.63	10.57
			1RB Mid	1	10.72	10.56	10.53
			1RB High	1	10.76	10.60	10.54
			50% Low	2	10.71	10.47	10.41
			50% Mid	2	10.74	10.48	10.40
			50% High	2	10.76	10.54	10.43
			100%	2	10.77	10.64	10.54

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1715.0 MHz	1732.5MHz	1750.0 MHz
LTE CAT M1 B4	10 MHz	QPSK	1RB Low	0	10.79	10.57	10.53
			1RB Mid	0	10.77	10.57	10.50
			1RB High	0	10.68	10.53	10.52
			50% Low	1	10.82	10.56	10.56
			50% Mid	1	10.80	10.58	10.46
			50% High	1	10.77	10.54	10.47
			100%	1	10.30	10.20	10.11
		16-QAM	1RB Low	1	10.70	10.56	10.48
			1RB Mid	1	10.67	10.54	10.49
			1RB High	1	10.71	10.55	10.46
			50% Low	2	10.77	10.52	10.51
			50% Mid	2	10.75	10.56	10.49
			50% High	2	10.68	10.55	10.53
			100%	2	10.28	10.13	10.04
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1712.5 MHz	1732.5MHz	1752.5 MHz
LTE CAT M1 B4	5 MHz	QPSK	1RB Low	0	10.84	10.65	10.63
			1RB Mid	0	10.82	10.63	10.57
			1RB High	0	10.75	10.64	10.53
			50% Low	1	10.84	10.61	10.67
			50% Mid	1	10.86	10.67	10.63
			50% High	1	10.88	10.62	10.60
			100%	1	10.45	10.17	10.15
		16-QAM	1RB Low	1	10.80	10.60	10.52
			1RB Mid	1	10.87	10.46	10.53
			1RB High	1	10.78	10.52	10.49
			50% Low	2	10.88	10.41	10.51
			50% Mid	2	10.86	10.49	10.44
			50% High	2	10.87	10.37	10.51
			100%	2	10.08	9.85	9.72

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1711.5 MHz	1732.5MHz	1753.5 MHz
LTE CAT M1 B4	3 MHz	QPSK	1RB Low	0	10.86	10.75	10.62
			1RB Mid	0	10.79	10.57	10.55
			1RB High	0	10.81	10.62	10.46
			50% Low	1	10.40	10.22	10.13
			50% Mid	1	10.37	10.17	10.09
			50% High	1	10.38	10.16	10.09
			100%	1	9.97	9.85	9.75
		16-QAM	1RB Low	1	10.40	10.16	10.12
			1RB Mid	1	10.20	10.04	10.06
			1RB High	1	10.29	10.16	10.09
			50% Low	2	10.05	9.71	9.76
			50% Mid	2	10.00	9.76	9.68
			50% High	2	10.04	9.75	9.71
			100%	2	9.95	9.78	9.81
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1710.7 MHz	1732.5MHz	1754.3 MHz
LTE CAT M1 B4	1.4 MHz	QPSK	1RB Low	0	10.34	10.09	10.14
			1RB Mid	0	10.42	10.05	10.08
			1RB High	0	10.36	10.15	10.01
			50% Low	0	9.90	9.65	9.67
			50% Mid	0	9.84	9.68	9.60
			50% High	0	9.81	9.58	9.54
			100%	1	9.45	9.22	9.14
		16-QAM	1RB Low	1	9.84	9.60	9.60
			1RB Mid	1	9.89	9.61	9.52
			1RB High	1	9.85	9.58	9.56
			50% Low	1	9.38	9.12	9.09
			50% Mid	1	9.39	9.25	9.08
			50% High	1	9.45	9.22	9.05
			100%	2	9.42	9.23	9.11

- **LTE CAT M1 B5**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					829.0 MHz	836.5 MHz	844.0 MHz
LTE CAT M1 B5	10 MHz	QPSK	1RB Low	0	10.69	10.70	10.83
			1RB Mid	0	10.61	10.65	10.72
			1RB High	0	10.59	10.67	10.77
			50% Low	1	10.56	10.64	10.73
			50% Mid	1	10.57	10.54	10.78
			50% High	1	10.51	10.58	10.74
			100%	1	10.12	10.33	10.32
		16-QAM	1RB Low	1	10.60	10.60	10.65
			1RB Mid	1	10.65	10.56	10.72
			1RB High	1	10.54	10.50	10.69
			50% Low	2	10.54	10.59	10.58
			50% Mid	2	10.52	10.60	10.60
			50% High	2	10.53	10.58	10.62
			100%	2	10.11	10.16	10.11
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					826.5 MHz	836.5 MHz	846.5 MHz
LTE CAT M1 B5	5 MHz	QPSK	1RB Low	0	10.63	10.80	10.66
			1RB Mid	0	10.65	10.74	10.69
			1RB High	0	10.59	10.75	10.60
			50% Low	1	10.63	10.68	10.66
			50% Mid	1	10.60	10.66	10.63
			50% High	1	10.56	10.60	10.64
			100%	1	10.23	10.31	10.26
		16-QAM	1RB Low	1	10.59	10.70	10.62
			1RB Mid	1	10.61	10.69	10.57
			1RB High	1	10.54	10.66	10.61
			50% Low	2	10.55	10.63	10.61
			50% Mid	2	10.60	10.60	10.64
			50% High	2	10.60	10.55	10.63
			100%	2	9.78	9.98	9.88

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					825.5 MHz	836.5 MHz	847.4 MHz
LTE CAT M1 B5	3 MHz	QPSK	1RB Low	0	10.65	10.80	10.68
			1RB Mid	0	10.66	10.77	10.55
			1RB High	0	10.55	10.76	10.50
			50% Low	1	10.07	10.30	10.14
			50% Mid	1	10.21	10.26	10.18
			50% High	1	10.19	10.22	10.16
			100%	1	9.82	9.96	9.87
		16-QAM	1RB Low	1	10.08	10.34	10.22
			1RB Mid	1	10.05	10.40	10.13
			1RB High	1	10.01	10.37	10.08
			50% Low	2	9.72	9.95	9.88
			50% Mid	2	9.74	9.97	9.77
			50% High	2	9.68	9.90	9.84
			100%	2	9.95	9.88	9.72
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					824.7 MHz	836.5 MHz	848.2 MHz
LTE CAT M1 B5	1.4 MHz	QPSK	1RB Low	0	10.11	10.22	10.15
			1RB Mid	0	9.99	10.19	10.11
			1RB High	0	10.09	10.14	10.06
			50% Low	0	9.59	9.73	9.60
			50% Mid	0	9.55	9.66	9.58
			50% High	0	9.58	9.63	9.66
			100%	1	9.26	9.30	9.24
		16-QAM	1RB Low	1	10.09	9.59	9.62
			1RB Mid	1	10.00	9.67	9.69
			1RB High	1	10.03	9.62	9.61
			50% Low	2	9.61	9.35	9.17
			50% Mid	2	9.58	9.28	9.23
			50% High	2	9.62	9.25	9.19
			100%	2	9.17	9.23	9.17

- **LTE CAT M1 B12**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	707.5 MHz	-
LTE CAT M1 B12	10 MHz	QPSK	1RB Low	0	-	10.97	-
			1RB Mid	0	-	11.00	-
			1RB High	0	-	10.89	-
			50% Low	1	-	10.95	-
			50% Mid	1	-	10.91	-
			50% High	1	-	10.89	-
			100%	1	-	10.47	-
		16-QAM	1RB Low	1	-	10.97	-
			1RB Mid	1	-	10.94	-
			1RB High	1	-	10.95	-
			50% Low	2	-	10.89	-
			50% Mid	2	-	10.90	-
			50% High	2	-	10.86	-
			100%	2	-	10.42	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
LTE CAT M1 B12	5 MHz	QPSK	1RB Low	0	701.5 MHz	707.5 MHz	713.5 MHz
			1RB Mid	0	11.09	10.91	10.91
			1RB High	0	11.01	10.82	10.96
			50% Low	1	11.04	10.87	10.93
			50% Mid	1	11.04	10.88	11.00
			50% High	1	11.03	10.93	10.99
			100%	1	10.99	10.90	10.97
		16-QAM	1RB Low	1	10.63	10.45	10.28
			1RB Mid	1	11.04	10.88	10.89
			1RB High	1	10.98	10.79	10.95
			50% Low	1	11.01	10.83	10.92
			50% Mid	2	11.00	10.85	10.89
			50% High	2	11.01	10.91	10.86
			100%	2	10.97	10.82	10.75
			100%	2	10.23	10.00	10.10

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE CAT M1 Bands that do not support at least three non-overlapping channels in certain channel bandwidths test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					700.5 MHz	707.5 MHz	714.5 MHz
LTE CAT M1 B12	3 MHz	QPSK	1RB Low	0	11.11	10.99	11.04
			1RB Mid	0	11.02	10.77	11.00
			1RB High	0	11.08	10.90	10.97
			50% Low	1	10.60	10.45	10.56
			50% Mid	1	10.59	10.47	10.51
			50% High	1	10.64	10.46	10.53
			100%	1	10.14	10.03	10.09
		16-QAM	1RB Low	0	10.54	10.33	10.98
			1RB Mid	0	10.51	10.38	10.97
			1RB High	0	10.49	10.28	10.95
			50% Low	2	10.23	10.02	10.51
			50% Mid	2	10.19	10.04	10.47
			50% High	2	10.22	10.07	10.50
			100%	2	10.05	9.93	10.13
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					699.7 MHz	707.5 MHz	715.3 MHz
LTE CAT M1 B12	1.4 MHz	QPSK	1RB Low	0	10.67	10.40	10.50
			1RB Mid	0	10.60	10.35	10.43
			1RB High	0	10.64	10.37	10.46
			50% Low	0	10.07	9.87	9.90
			50% Mid	0	10.08	9.94	9.95
			50% High	0	10.13	9.85	9.95
			100%	1	9.71	9.36	9.44
		16-QAM	1RB Low	1	10.02	9.77	9.96
			1RB Mid	1	10.12	9.77	9.91
			1RB High	1	10.07	9.78	9.90
			50% Low	1	9.67	9.32	9.55
			50% Mid	1	9.73	9.30	9.45
			50% High	1	9.64	9.33	9.47
			100%	1	9.62	9.33	9.46

- **LTE CAT M1 B13**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	782.0 MHz	-
LTE CAT M1 B13	10 MHz	QPSK	1RB Low	0	-	11.06	-
			1RB Mid	0	-	10.91	-
			1RB High	0	-	11.04	-
			50% Low	1	-	10.93	-
			50% Mid	1	-	10.84	-
			50% High	1	-	10.89	-
			100%	1	-	10.44	-
		16-QAM	1RB Low	1	-	10.99	-
			1RB Mid	1	-	10.97	-
			1RB High	1	-	10.87	-
			50% Low	2	-	10.88	-
			50% Mid	2	-	10.84	-
			50% High	2	-	10.89	-
			100%	2	-	10.38	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					779.5 MHz	782.0 MHz	784.5 MHz
LTE CAT M1 B13	5 MHz	QPSK	1RB Low	0	-	10.90	-
			1RB Mid	0	-	10.83	-
			1RB High	0	-	10.85	-
			50% Low	1	-	10.84	-
			50% Mid	1	-	10.88	-
			50% High	1	-	10.85	-
			100%	1	-	10.44	-
		16-QAM	1RB Low	1	-	10.82	-
			1RB Mid	1	-	10.81	-
			1RB High	1	-	10.79	-
			50% Low	2	-	10.77	-
			50% Mid	2	-	10.83	-
			50% High	2	-	10.84	-
			100%	2	-	10.03	-

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE CAT M1 Bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

- **LTE CAT M1 B25**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1860.0 MHz	1882.5 MHz	1905.0 MHz
LTE CAT M1 B25	20 MHz	QPSK	1RB Low	0	10.41	10.52	10.57
			1RB Mid	0	10.40	10.46	10.47
			1RB High	0	10.85	10.86	10.84
			50% Low	1	10.41	10.67	10.49
			50% Mid	1	10.43	10.44	10.48
			50% High	1	10.38	10.41	10.44
			100%	1	10.38	10.45	10.44
		16-QAM	1RB Low	1	10.41	10.43	10.46
			1RB Mid	1	10.40	10.41	10.47
			1RB High	1	10.80	10.82	10.78
			50% Low	2	10.38	10.42	10.37
			50% Mid	2	10.40	10.44	10.41
			50% High	2	10.41	10.45	10.37
			100%	2	10.33	10.39	10.42
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1857.5 MHz	1882.5 MHz	1907.5 MHz
LTE CAT M1 B25	15 MHz	QPSK	1RB Low	0	10.45	10.41	10.53
			1RB Mid	0	10.46	10.34	10.44
			1RB High	0	10.44	10.33	10.50
			50% Low	1	10.43	10.40	10.48
			50% Mid	1	10.42	10.43	10.46
			50% High	1	10.41	10.39	10.47
			100%	1	10.34	10.38	10.49
		16-QAM	1RB Low	1	10.46	10.35	10.48
			1RB Mid	1	10.40	10.30	10.39
			1RB High	1	10.43	10.32	10.45
			50% Low	2	10.41	10.35	10.40
			50% Mid	2	10.36	10.40	10.41
			50% High	2	10.30	10.37	10.37
			100%	2	10.29	10.34	10.46

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1855.0 MHz	1882.5 MHz	1910.0 MHz
LTE CAT M1 B25	10 MHz	QPSK	1RB Low	0	10.43	10.50	10.44
			1RB Mid	0	10.38	10.41	10.46
			1RB High	0	10.40	10.48	10.40
			50% Low	1	10.39	10.46	10.46
			50% Mid	1	10.38	10.55	10.37
			50% High	1	10.32	10.49	10.41
			100%	1	9.96	10.11	10.02
		16-QAM	1RB Low	1	10.36	10.36	10.40
			1RB Mid	1	10.32	10.29	10.39
			1RB High	1	10.27	10.28	10.32
			50% Low	2	10.35	10.39	10.28
			50% Mid	2	10.28	10.36	10.35
			50% High	2	10.30	10.32	10.25
			100%	2	9.93	9.95	9.98
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1852.5 MHz	1882.2 MHz	1912.5 MHz
LTE CAT M1 B25	5 MHz	QPSK	1RB Low	0	10.47	10.45	10.46
			1RB Mid	0	10.50	10.40	10.45
			1RB High	0	10.49	10.32	10.41
			50% Low	1	10.49	10.39	10.44
			50% Mid	1	10.48	10.44	10.43
			50% High	1	10.40	10.37	10.42
			100%	1	10.04	9.97	10.08
		16-QAM	1RB Low	1	10.46	10.39	10.43
			1RB Mid	1	10.44	10.34	10.42
			1RB High	1	10.45	10.33	10.41
			50% Low	2	10.46	10.35	10.39
			50% Mid	2	10.37	10.40	10.37
			50% High	2	10.38	10.36	10.38
			100%	2	10.02	9.55	9.66

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1851.5 MHz	1882.5 MHz	1913.5 MHz
LTE CAT M1 B25	3 MHz	QPSK	1RB Low	0	10.48	10.34	10.44
			1RB Mid	0	10.43	10.30	10.38
			1RB High	0	10.33	10.27	10.31
			50% Low	1	9.99	9.93	10.04
			50% Mid	1	9.96	9.92	9.97
			50% High	1	9.94	9.90	10.00
			100%	1	9.58	9.55	9.64
		16-QAM	1RB Low	1	10.01	9.86	9.98
			1RB Mid	1	9.89	9.89	9.92
			1RB High	1	9.98	9.86	9.94
			50% Low	2	9.64	9.54	9.61
			50% Mid	2	9.62	9.64	9.64
			50% High	2	9.68	9.53	9.59
			100%	2	9.59	9.50	9.62
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1850.7 MHz	1882.5 MHz	1914.3 MHz
LTE CAT M1 B25	1.4 MHz	QPSK	1RB Low	0	10.05	9.90	10.05
			1RB Mid	0	9.97	9.93	9.97
			1RB High	0	9.87	9.84	9.94
			50% Low	1	9.54	9.42	9.50
			50% Mid	1	9.45	9.34	9.54
			50% High	1	9.47	9.38	9.50
			100%	1	9.10	8.89	9.01
		16-QAM	1RB Low	1	9.47	9.50	9.67
			1RB Mid	1	9.49	9.41	9.59
			1RB High	1	9.44	9.30	9.60
			50% Low	2	9.18	8.96	9.10
			50% Mid	2	9.09	9.01	9.01
			50% High	2	9.10	8.93	9.07
			100%	2	9.06	8.93	8.95

- **LTE CAT M1 B26**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	831.5 MHz	-
LTE CAT M1 B26	15 MHz	QPSK	1RB Low	0	-	10.81	-
			1RB Mid	0	-	10.88	-
			1RB High	0	-	10.84	-
			50% Low	1	-	10.75	-
			50% Mid	1	-	10.83	-
			50% High	1	-	10.76	-
			100%	1	-	10.83	-
		16-QAM	1RB Low	1	-	10.72	-
			1RB Mid	1	-	10.74	-
			1RB High	1	-	10.73	-
			50% Low	2	-	10.70	-
			50% Mid	2	-	10.72	-
			50% High	2	-	10.71	-
			100%	2	-	10.75	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					819.0 MHz	831.5 MHz	844.0 MHz
LTE CAT M1 B26	10 MHz	QPSK	1RB Low	0	10.85	10.81	10.86
			1RB Mid	0	10.83	10.83	10.67
			1RB High	0	10.82	10.79	10.75
			50% Low	1	10.80	10.78	10.65
			50% Mid	1	10.75	10.77	10.64
			50% High	1	10.80	10.76	10.64
			100%	1	10.38	10.32	10.23
		16-QAM	1RB Low	1	10.81	10.76	10.58
			1RB Mid	1	10.75	10.74	10.65
			1RB High	1	10.71	10.77	10.51
			50% Low	2	10.74	10.82	10.61
			50% Mid	2	10.62	10.79	10.62
			50% High	2	10.72	10.79	10.62
			100%	2	10.35	10.35	10.21

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE CAT M1 Bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					816.5 MHz	831.5 MHz	846.5 MHz
LTE CAT M1 B26	5 MHz	QPSK	1RB Low	0	10.89	10.81	10.83
			1RB Mid	0	10.84	10.79	10.80
			1RB High	0	10.81	10.83	10.63
			50% Low	1	10.80	10.90	10.79
			50% Mid	1	10.82	10.84	10.75
			50% High	1	10.77	10.86	10.74
			100%	1	10.38	10.42	10.37
		16-QAM	1RB Low	1	10.86	10.78	10.74
			1RB Mid	1	10.80	10.76	10.71
			1RB High	1	10.81	10.81	10.61
			50% Low	2	10.77	10.84	10.74
			50% Mid	2	10.78	10.78	10.72
			50% High	2	10.75	10.81	10.73
			100%	2	9.95	10.04	9.86
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					815.5 MHz	831.5 MHz	847.5 MHz
LTE CAT M1 B26	3 MHz	QPSK	1RB Low	0	10.92	10.86	10.74
			1RB Mid	0	10.89	10.74	10.62
			1RB High	0	10.85	10.80	10.61
			50% Low	1	10.40	10.35	10.22
			50% Mid	1	10.42	10.31	10.20
			50% High	1	10.38	10.22	10.17
			100%	1	10.04	9.78	9.78
		16-QAM	1RB Low	1	10.40	10.23	10.29
			1RB Mid	1	10.37	10.28	10.26
			1RB High	1	10.35	10.22	10.23
			50% Low	2	10.02	9.95	9.87
			50% Mid	2	9.95	9.97	9.84
			50% High	2	10.00	9.94	9.85
			100%	2	10.01	9.80	9.75
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					814.5 MHz	831.5 MHz	848.3 MHz
LTE CAT M1 B26	1.4 MHz	QPSK	1RB Low	0	10.31	10.38	10.25
			1RB Mid	0	10.28	10.34	10.22
			1RB High	0	10.30	10.27	10.22
			50% Low	1	9.77	9.78	9.71
			50% Mid	1	9.80	9.85	9.67
			50% High	1	9.78	9.79	9.70
			100%	1	9.38	9.28	9.30
		16-QAM	1RB Low	1	9.82	9.88	9.70
			1RB Mid	1	9.74	9.84	9.69
			1RB High	1	9.82	9.81	9.63
			50% Low	2	9.36	9.40	9.23
			50% Mid	2	9.38	9.37	9.21
			50% High	2	9.34	9.31	9.28
			100%	2	9.34	9.31	9.21

- **LTE CAT M1 B66**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1720.0 MHz	1745.0 MHz	1770.0 MHz
LTE CAT M1 B66	20 MHz	QPSK	1RB Low	0	10.67	10.26	10.05
			1RB Mid	0	10.65	10.28	10.01
			1RB High	0	11.00	10.63	10.68
			50% Low	1	10.61	10.28	9.98
			50% Mid	1	10.54	10.25	9.91
			50% High	1	10.55	10.27	9.97
			100%	1	10.65	10.29	9.92
		16-QAM	1RB Low	1	10.61	10.27	10.03
			1RB Mid	1	10.56	10.25	10.00
			1RB High	1	10.94	10.56	10.34
			50% Low	2	10.53	10.19	9.93
			50% Mid	2	10.48	10.18	9.94
			50% High	2	10.53	10.20	9.88
			100%	2	10.59	10.22	9.87
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1717.5 MHz	1745.0 MHz	1772.5 MHz
LTE CAT M1 B66	15 MHz	QPSK	1RB Low	0	10.59	10.33	10.15
			1RB Mid	0	10.62	10.28	9.98
			1RB High	0	10.63	10.27	10.02
			50% Low	1	10.58	10.34	10.06
			50% Mid	1	10.65	10.26	10.05
			50% High	1	10.54	10.31	10.01
			100%	1	10.56	10.31	10.03
		16-QAM	1RB Low	1	10.00	10.25	10.05
			1RB Mid	1	10.55	10.27	9.99
			1RB High	1	10.58	10.26	9.95
			50% Low	2	10.46	10.19	9.97
			50% Mid	2	10.45	10.27	9.99
			50% High	2	10.46	10.29	9.96
			100%	2	10.53	10.30	9.74

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1715.0 MHz	1745.0 MHz	1775.0 MHz
LTE CAT M1 B66	10 MHz	QPSK	1RB Low	0	10.56	10.33	9.95
			1RB Mid	0	10.58	10.31	9.98
			1RB High	0	10.47	10.25	9.93
			50% Low	1	10.61	10.39	9.94
			50% Mid	1	10.62	10.30	9.91
			50% High	1	10.59	10.34	9.89
			100%	1	10.13	9.91	9.57
		16-QAM	1RB Low	1	10.43	10.27	9.89
			1RB Mid	1	10.51	10.24	9.95
			1RB High	1	10.49	10.29	9.91
			50% Low	2	10.52	10.24	9.87
			50% Mid	2	10.57	10.22	9.88
			50% High	2	10.58	10.28	9.92
			100%	2	10.11	9.90	9.53
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1712.5 MHz	1745.0 MHz	1777.5 MHz
LTE CAT M1 B66	5 MHz	QPSK	1RB Low	0	10.64	10.41	10.15
			1RB Mid	0	10.59	10.36	10.08
			1RB High	0	10.56	10.20	10.06
			50% Low	1	10.64	10.36	10.03
			50% Mid	1	10.58	10.33	10.07
			50% High	1	10.62	10.28	10.04
			100%	1	10.18	9.94	9.63
		16-QAM	1RB Low	1	10.59	10.37	9.92
			1RB Mid	1	10.51	10.26	9.94
			1RB High	1	10.56	10.17	9.90
			50% Low	2	10.55	10.33	9.98
			50% Mid	2	10.57	10.29	10.00
			50% High	2	10.60	10.31	9.97
			100%	2	10.12	9.62	9.60

2.2. Bluetooth

Band	Mode	Channel / Freq (MHz)	Maximum Output Power (dBm)
ISM 2.4 GHz	Bluetooth LE	0 / 2402	3.0
		39 / 2441	
		78 / 2480	

Based on paragraph “4.3.1 Standalone SAR test exclusion considerations” of the KDB 447498 D01 - General RF Exposure Guidance, for a minimum separation distance of 15mm:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

Protocol	Max. Output Power		Min. Test Distance (mm)	Freq. (GHz)	Result	Test Exclusion
	(dBm)	(mW)				
Bluetooth LE	3.0	2.0	30	2.48	0.63	√

The computed value for Bluetooth is < 3.0, so Bluetooth LE mode qualifies for Standalone SAR test exclusion for 1-g SAR and 10-g SAR.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}/x] \leq 1.0 \text{ W/kg for test separation distances } \leq 50 \text{ mm; where } x = 7.5 \text{ for 1-g SAR and } x = 18.75 \text{ for 10-g extremity SAR.}$$

Estimated SAR						
Protocol	Max. Output Power		Min. Test separation distance (mm)	Frequency (GHz)	Estimated 1-g SAR	Estimated 10-g SAR
	(dBm)	(mW)				
Bluetooth LE	3.0	2.0	15.0	2.48	0.0279	0.011

3. TISSUE PARAMETERS MEASUREMENTS

Frequency (MHz)	Target Head Tissue		Measured Head Tissue		Deviation %		Measured Date
	Permittivity ϵ	Conductivity σ [S/m]	Permittivity ϵ	Conductivity σ [S/m]	Permittivity ϵ	Conductivity σ [S/m]	
750	41.94	0.89	41.86	0.90	-0.19	0.50	2022-01-17
835	41.50	0.90	41.08	0.89	-1.01	-0.87	2022-01-20
900	41.50	0.97	40.30	0.96	-2.89	-0.90	2022-01-20
1750	40.07	1.37	40.44	1.39	0.93	1.69	2022-01-24
1800	40.00	1.40	40.21	1.44	0.53	2.75	2022-01-24
1800	40.00	1.40	38.94	1.37	-2.65	-2.33	2022-01-25
1900	40.07	1.40	38.60	1.45	-3.50	3.33	2022-01-25

Frequency (MHz)	Target Body Tissue		Measured Body Tissue		Deviation %		Measured Date
	Permittivity ϵ	Conductivity σ [S/m]	Permittivity ϵ	Conductivity σ [S/m]	Permittivity ϵ	Conductivity σ [S/m]	
750	55.53	0.96	57.66	0.96	3.84	-0.35	2022-01-18
835	55.20	0.97	53.77	0.96	-2.60	-2.43	2022-01-21
900	55.00	1.05	53.27	1.03	-3.15	-2.01	2022-01-21
1750	53.43	1.49	54.98	1.45	2.89	-2.67	2022-01-25
1800	53.30	1.52	54.80	1.49	2.82	-1.95	2022-01-25
1800	53.30	1.52	51.66	1.47	-3.08	-3.02	2022-01-26
1900	53.30	1.52	51.235	1.56	-3.66	2.43	2022-01-26

Note: The dielectric properties have been measured by the contact probe method at 22° C.

- Composition / Information on ingredients

Head and Muscle Tissue Simulation Liquids HSL750V2/MSL750V2

H ₂ O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1 – 0.7%

Head and Muscle Tissue Simulation Liquids HSL900/MSL900

H ₂ O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone, 0.1 – 0.7%

Head and Muscle Tissue Simulation Liquids HBBL1350-1850V3/M HBBL1350-1850V3

H ₂ O	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients:	
CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

Head and Muscle Tissue Simulation Liquids HBBL1550-1900V3/MBBL1550-1900V3

Water	50 – 73 %
Non-ionic detergents	27 – 50 % polyoxyethylenesorbitan monolaurate
NaCl	0 – 2 %
Preservative	0.05 – 0.1% Preventol-D7
Safety relevant ingredients:	
CAS-No. 55965-84-9	< 0.1 % aqueous preparation, containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyl-3(2H)-isothiazolone
CAS-No. 9005-64-5	<50 % polyoxyethylenesorbitan monolaurate

4. SYSTEM CHECK MEASUREMENTS

4.1. Validation results for Head TSL

Date	Frequency (MHz)	SAR over	Fast SAR (W/kg)	SAR (W/kg)	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2022-01-17	750	1 gr.	2.24	2.19	8.43	8.76	3.91
		10 gr.	1.49	1.43	5.51	5.72	3.81
2022-01-20	900	1 gr.	2.84	2.80	11.10	11.20	0.90
		10 gr.	1.85	1.78	7.07	7.12	0.71
2022-01-24	1800	1 gr.	10.20	9.99	39.30	39.96	1.68
		10 gr.	5.38	5.07	20.40	20.28	-0.59
2022-01-25	1800	1 gr.	9.49	9.45	39.30	37.80	-3.82
		10 gr.	4.98	4.88	20.40	19.52	-4.31

4.2. Validation results for Body TSL

Date	Frequency (MHz)	SAR over	Fast SAR (W/kg)	SAR (W/kg)	1 W Target SAR (W/kg)	1 W Norm. SAR (W/kg)	Drift (%)
2022-01-18	750	1 gr.	2.22	2.19	8.78	8.76	-0.23
		10 gr.	1.47	1.45	5.81	5.80	-0.17
2022-01-21	900	1 gr.	2.84	2.80	11.30	11.20	-0.88
		10 gr.	1.84	1.81	7.29	7.24	-0.69
2022-01-25	1800	1 gr.	9.66	9.60	38.80	38.40	-1.03
		10 gr.	5.02	5.08	20.40	20.32	-0.39
2022-01-26	1800	1 gr.	9.06	8.86	38.80	35.93	-7.39
		10 gr.	4.70	4.59	20.40	18.62	-8.75

5. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE)

5.1. Summary maximum results for 1-g Head SAR measurements.

Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
LTE CAT M1 Band 2	Top edge/15 mm	CH 19100 (1900 MHz)	0.069	1.6
LTE CAT M1 Band 12	Top edge/15 mm	CH 23095 (707.5 MHz)	0.029	1.6
LTE CAT M1 Band 13	Top edge/15 mm	CH 23230 (782 MHz)	0.033	1.6
LTE CAT M1 Band 25	Top edge/15 mm	CH 26590 (1905.0 MHz)	0.069	1.6
LTE CAT M1 Band 26	Top edge/15 mm	CH 26865 (831.5 MHz)	0.026	1.6
LTE CAT M1 Band 66	Top edge/15 mm	CH 132322 (1745.0 MHz)	0.077	1.6

5.2. Summary maximum results for 1-g Body SAR measurements.

Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
LTE CAT M1 Band 2	Top edge/15 mm	CH 18700 (1860 MHz)	0.057	1.6
LTE CAT M1 Band 12	Top edge/15 mm	CH 23095 (707.5 MHz)	0.027	1.6
LTE CAT M1 Band 13	Top edge/15 mm	CH 23230 (782 MHz)	0.023	1.6
LTE CAT M1 Band 25	Top edge/15 mm	CH 26590 (1905.0 MHz)	0.057	1.6
LTE CAT M1 Band 26	Top edge/15 mm	CH 26865 (831.5 MHz)	0.026	1.6
LTE CAT M1 Band 66	Top edge/15 mm	CH 132322 (1745.0 MHz)	0.071	1.6

5.3. Maximum 1g simultaneous multi-band transmission

Transmission Mode	Band	Max SAR 1-g (W/kg)	Σ SAR _i (W/kg)	Limit SAR 1-g (W/kg)	Verdict
LTE CAT M1 Band 66 (Head Exposure)	1800 MHz	0.077	0.105	1.6	Pass
Bluetooth LE (Estimated SAR)	2.4 GHz	0.028			

5.5. Results for LTE CAT M1 Band 2 (1 RB, 20 MHz, QPSK)

• Head measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 19100 (1900 MHz)	0.014	0.014	0.040	1.432	0.020	
Back Face	40	CH 19100 (1900 MHz)	0.002	NM ¹	0.000 ³	1.431	0.003	
Left Edge	15	CH 19100 (1900 MHz)	0.005	NM ¹	0.000 ³	1.431	0.007	
Right Edge	15	CH 19100 (1900 MHz)	0.004	NM ¹	0.000 ³	1.431	0.006	
Top Edge	15	CH 19100 (1900 MHz)	0.045	0.044	-0.150	1.431	0.064	
Bottom Edge	15	CH 19100 (1900 MHz)	NM ²					
Top Edge	15	CH 18700 (1860 MHz)	0.043	0.041	-0.120	1.451	0.059	
Top Edge	15	CH 18900 (1880 MHz)	0.043	0.041	-0.090	1.481	0.061	

1, 2 and 3: See remarks and comments

• Body measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 19100 (1900 MHz)	0.013	NM ¹	0.050	1.432	0.019	
Back Face	40	CH 19100 (1900 MHz)	0.000	NM ¹	0.000 ³	1.431	0.000	
Left Edge	15	CH 19100 (1900 MHz)	0.004	NM ¹	0.000 ³	1.431	0.006	
Right Edge	15	CH 19100 (1900 MHz)	0.003	NM ¹	0.000 ³	1.431	0.004	
Top Edge	15	CH 19100 (1900 MHz)	0.038	0.041	-0.070	1.431	0.059	
Bottom Edge	15	CH 19100 (1900 MHz)	NM ²					
Top Edge	15	CH 18700 (1860 MHz)	0.038	0.039	0.000	1.451	0.057	1
Top Edge	15	CH 18900 (1880 MHz)	0.037	0.038	-0.140	1.481	0.056	

1, 2 and 3: See remarks and comments

5.6. Results for LTE CAT M1 Band 2 (50% RB, 20 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 19100 (1900 MHz)	0.048	0.045	0.000	1.537	0.069	2

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 19100 (1900 MHz)	0.036	0.037	-0.130	1.537	0.057	

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.7. Results for LTE CAT M1 Band 4

SAR for LTE CAT M1 Band 4 has not been measured because it is covered by LTE CAT M1 Band 66 due to overlapping frequency range (LTE CAT M1 Band 4 frequency range: 1710 – 1755 MHz, LTE CAT M1 Band 66 frequency range: 1710 – 1780 MHz) and same maximum tune-up and channel bandwidth.

5.8. Results for LTE CAT M1 Band 5

SAR for LTE CAT M1 Band 5 has not been measured because it is covered by LTE CAT M1 Band 26 due to overlapping frequency range (LTE CAT M1 Band 5 frequency range: 824 – 849 MHz, LTE CAT M1 Band 26 frequency range: 814 – 849 MHz) and same maximum tune-up and channel bandwidth.

5.9. Results for LTE CAT M1 Band 12 (1 RB, 10 MHz, QPSK)

- Head measurements**

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 23095 (707.5 MHz)	0.002	NM ¹	0.000 ³	1.411	0.003	
Back Face	40	CH 23095 (707.5 MHz)	0.007	NM ¹	0.000 ³	1.411	0.010	
Left Edge	15	CH 23095 (707.5 MHz)	0.001	NM ¹	0.000 ³	1.411	0.001	
Right Edge	15	CH 23095 (707.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.411	0.000	
Top Edge	15	CH 23095 (707.5 MHz)	0.020	0.020	0.290	1.411	0.028	
Bottom Edge	15	CH 23095 (707.5 MHz)	NM ²					

1, 2 and 3: See remarks and comments

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 23095 (707.5 MHz)	0.002	NM ¹	0.000 ³	1.411	0.003	
Back Face	40	CH 23095 (707.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.411	0.000	
Left Edge	15	CH 23095 (707.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.411	0.000	
Right Edge	15	CH 23095 (707.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.411	0.000	
Top Edge	15	CH 23095 (707.5 MHz)	0.018	0.019	-0.040	1.411	0.027	3
Bottom Edge	15	CH 23095 (707.5 MHz)	NM ²					

1, 2 and 3: See remarks and comments

5.10. Results for LTE CAT M1 Band 12 (50% RB, 10 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 23095 (707.5 MHz)	0.019	0.020	0.030	1.428	0.029	4

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 23095 (707.5 MHz)	0.018	0.018	0.250	1.428	0.026	

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.11. Results for LTE CAT M1 Band 13 (1 RB, 10 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

• Head measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 23230 (782 MHz)	0.001	NM ¹	0.000 ³	1.392	0.001	
Back Face	40	CH 23230 (782 MHz)	0.003	NM ¹	0.000 ³	1.392	0.004	
Left Edge	15	CH 23230 (782 MHz)	0.000 ³	NM ¹	0.000 ³	1.392	0.000	
Right Edge	15	CH 23230 (782 MHz)	0.000 ³	NM ¹	0.000 ³	1.392	0.000	
Top Edge	15	CH 23230 (782 MHz)	0.018	0.018	0.280	1.392	0.025	
Bottom Edge	15	CH 23230 (782 MHz)	NM ²					

1, 2 and 3: See remarks and comments

• Body measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 23230 (782 MHz)	0.001	NM ¹	0.000 ³	1.392	0.001	
Back Face	40	CH 23230 (782 MHz)	0.002	NM ¹	0.000 ³	1.392	0.003	
Left Edge	15	CH 23230 (782 MHz)	0.000 ³	NM ¹	0.000 ³	1.392	0.000	
Right Edge	15	CH 23230 (782 MHz)	0.000 ³	NM ¹	0.000 ³	1.392	0.000	
Top Edge	15	CH 23230 (782 MHz)	0.016	0.016	0.190	1.392	0.022	
Bottom Edge	15	CH 23230 (782 MHz)	NM ²					

1, 2 and 3: See remarks and comments

5.12. Results for LTE CAT M1 Band 13 (50% RB, 10 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 23230 (782 MHz)	0.022	0.023	0.090	1.434	0.033	5

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 23230 (782 MHz)	0.017	0.016	0.240	1.434	0.023	6

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.13. Results for LTE CAT M1 Band 25 (1 RB, 20 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 26365 (1882.5 MHz)	0.014	0.014	0.020	1.457	0.020	
Back Face	40	CH 26365 (1882.5 MHz)	0.003	0.003	0.000 ³	1.457	0.004	
Left Edge	15	CH 26365 (1882.5 MHz)	0.005	0.005	0.000 ³	1.457	0.007	
Right Edge	15	CH 26365 (1882.5 MHz)	0.005	0.005	0.000 ³	1.457	0.007	
Top Edge	15	CH 26365 (1882.5 MHz)	0.040	0.039	-0.150	1.457	0.057	
Bottom Edge	15	CH 26365 (1882.5 MHz)	NM ²					
Top Edge	15	CH 26140 (1860.0 MHz)	0.039	0.038	-0.230	1.461	0.056	
Top Edge	15	CH 26590 (1905.0 MHz)	0.047	0.047	-0.130	1.464	0.069	7

1, 2 and 3: See remarks and comments

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 26365 (1882.5 MHz)	0.012	0.012	0.150	1.457	0.017	
Back Face	40	CH 26365 (1882.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.457	0.000	
Left Edge	15	CH 26365 (1882.5 MHz)	0.003	NM ¹	0.000 ³	1.457	0.004	
Right Edge	15	CH 26365 (1882.5 MHz)	0.002	NM ¹	0.000 ³	1.457	0.003	
Top Edge	15	CH 26365 (1882.5 MHz)	0.034	0.036	-0.050	1.457	0.052	
Bottom Edge	15	CH 26365 (1882.5 MHz)	NM ²					
Top Edge	15	CH 26140 (1860.0 MHz)	0.034	0.036	-0.080	1.461	0.053	
Top Edge	15	CH 26590 (1905.0 MHz)	0.037	0.039	0.020	1.464	0.057	8

1, 2 and 3: See remarks and comments

5.14. Results for LTE CAT M1 Band 25 (50% RB, 20 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 26365 (1882.5 MHz)	0.040	0.038	-0.270	1.523	0.058	

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 26365 (1882.5 MHz)	0.031	0.032	-0.110	1.523	0.049	

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.15. Results for LTE CAT M1 Band 26 (1 RB, 15 MHz, QPSK)

Note: According to KDB941225 D05 SAR for LTE Devices, for LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, the middle channel of the group of overlapping channels should be selected for testing.

• Head measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 26865 (831.5 MHz)	0.002	0.002	0.000 ³	1.451	0.003	
Back Face	40	CH 26865 (831.5 MHz)	0.002	0.002	0.000 ³	1.451	0.003	
Left Edge	15	CH 26865 (831.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.451	0.000	
Right Edge	15	CH 26865 (831.5 MHz)	0.000 ³	NM ¹	0.000 ³	1.451	0.000	
Top Edge	15	CH 26865 (831.5 MHz)	0.016	0.018	-0.280	1.451	0.026	9
Bottom Edge	15	CH 26865 (831.5 MHz)	NM ²					

1, 2 and 3: See remarks and comments

• Body measurements

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 26865 (831.5 MHz)	0.000 ³	0.000 ³	0.000 ³	1.451	0.000	
Back Face	40	CH 26865 (831.5 MHz)	0.002	0.002	0.000 ³	1.451	0.003	
Left Edge	15	CH 26865 (831.5 MHz)	0.000 ³	0.000 ³	0.000 ³	1.451	0.000	
Right Edge	15	CH 26865 (831.5 MHz)	0.000 ³	0.000 ³	0.000 ³	1.451	0.000	
Top Edge	15	CH 26865 (831.5 MHz)	0.016	0.018	-0.060	1.451	0.026	10
Bottom Edge	15	CH 26865 (831.5 MHz)	NM ²					

1, 2 and 3: See remarks and comments

5.16. Results for LTE CAT M1 Band 26 (50% RB, 15 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 26865 (831.5 MHz)	0.015	0.017	-0.120	1.468	0.025	

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 26865 (831.5 MHz)	0.016	0.018	-0.090	1.468	0.026	

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.17. Results for LTE CAT M1 Band 66 (1 RB, 20 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 132072 (1720.0 MHz)	0.012	0.012	0.210	1.411	0.017	
Back Face	40	CH 132072 (1720.0 MHz)	0.002	NM ¹	0.000 ³	1.411	0.003	
Left Edge	15	CH 132072 (1720.0 MHz)	0.001	0.001	0.000 ³	1.411	0.001	
Right Edge	15	CH 132072 (1720.0 MHz)	0.003	0.003	0.000 ³	1.411	0.004	
Top Edge	15	CH 132072 (1720.0 MHz)	0.048	0.050	-0.220	1.411	0.071	
Bottom Edge	15	CH 132072 (1720.0 MHz)	NM ²					
Top Edge	15	CH 132322 (1745.0 MHz)	0.050	0.050	-0.250	1.537	0.077	11
Top Edge	15	CH 132572 (1770.0 MHz)	0.050	0.050	-0.250	1.519	0.076	

1, 2 and 3: See remarks and comments

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Front Face	15	CH 132072 (1720.0 MHz)	0.011	0.011	0.070	1.411	0.016	
Back Face	40	CH 132072 (1720.0 MHz)	0.002	0.002	0.000 ³	1.411	0.003	
Left Edge	15	CH 132072 (1720.0 MHz)	0.002	0.002	0.000 ³	1.411	0.003	
Right Edge	15	CH 132072 (1720.0 MHz)	0.002	0.002	0.000 ³	1.411	0.003	
Top Edge	15	CH 132072 (1720.0 MHz)	0.045	0.046	-0.010	1.411	0.065	
Bottom Edge	15	CH 132072 (1720.0 MHz)	NM ²					
Top Edge	15	CH 132322 (1745.0 MHz)	0.044	0.046	-0.190	1.537	0.071	12
Top Edge	15	CH 132572 (1770.0 MHz)	0.045	0.044	-0.020	1.519	0.067	

1, 2 and 3: See remarks and comments

5.18. Results for LTE CAT M1 Band 66 (50% RB, 20 MHz, QPSK)

- Head measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 132072 (1720.0 MHz)	0.046	0.046	-0.240	1.544	0.071	

- Body measurements**

Position	Dist (mm)	Channel (Frequency)	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
Top Edge	15	CH 132072 (1720.0 MHz)	0.040	0.041	-0.100	1.544	0.063	

Testing of additional LTE configurations is not required due to the SAR test procedures mentioned in FCC OET KDB 941225 D05 – SAR for LTE Devices v02r05.

5.19. Variability results.

According to KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, paragraph “2.8.1. SAR measurement variability”, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements.

Repeated measurements are required only when the measured 1-g SAR is ≥ 0.80 W/kg, or 10-g SAR is ≥ 2.0 W/kg, using the highest measured SAR configuration for that tissue-equivalent medium.

As all measured SAR values are below these values, no Variability measurements are needed for this device.

Appendix C: Measurement Reports

Plot N° 1

Measurement Report for RESMED, EDGE TOP, Band 2, E-UTRA/FDD, UID 10169 CAE, Channel 19100 (1900.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP device

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 2, E-UTRA/FDD	LTE-FDD, 10169-CAE	1900.0, 19100	5.17	1.56	51.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MBBL1550-1950V3-26-01-2022 , -	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

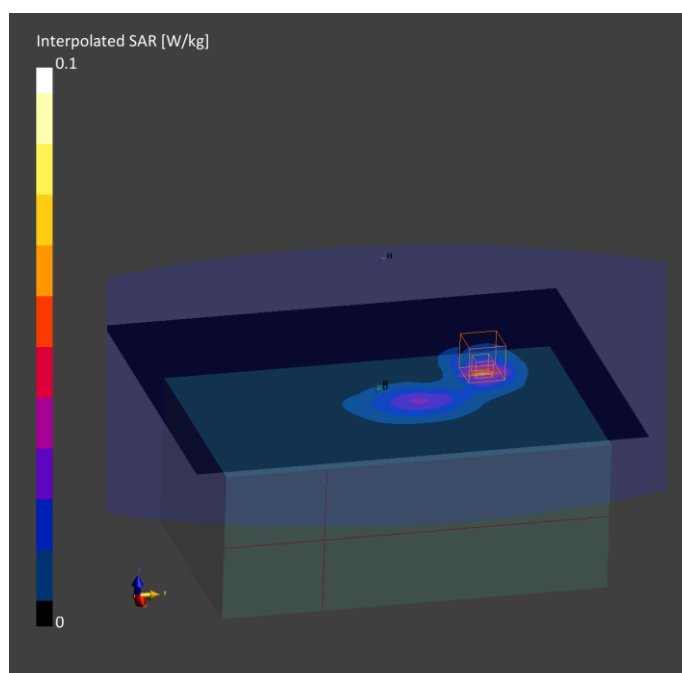
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-26, 13:19	2022-01-26, 13:25
psSAR1g [W/kg]	0.038	0.041
psSAR10g [W/kg]	0.022	0.023
Power Drift [dB]	0.04	-0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		85.9
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 2

Measurement Report for RESMED, EDGE TOP, Band 2, E-UTRA/FDD, UID 10297 AAD, Channel 19100 (1900.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 2, E-UTRA/FDD	LTE-FDD, 10297-AAD	1900.0, 19100	5.28	1.45	38.6

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-01-25 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

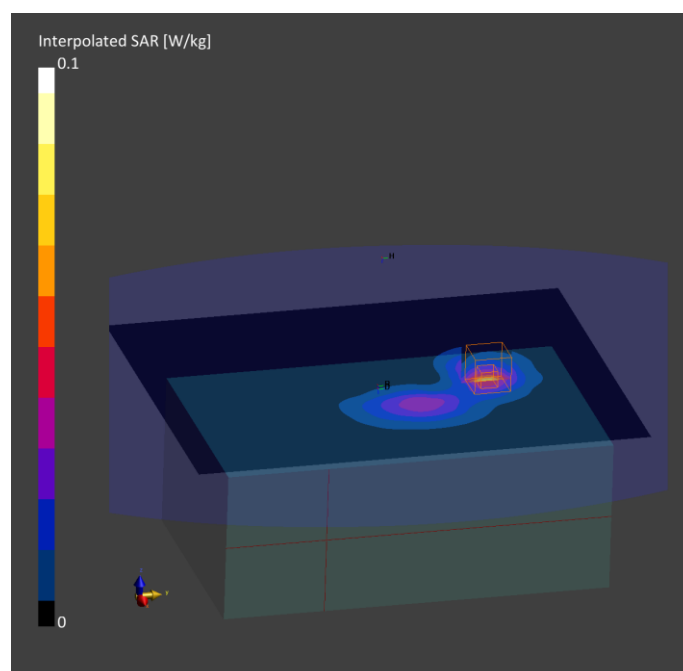
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-26, 08:33	2022-01-26, 08:40
psSAR1g [W/kg]	0.048	0.045
psSAR10g [W/kg]	0.027	0.018
Power Drift [dB]	0.01	n/a
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.4
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 3

Measurement Report for RESMED, EDGE TOP, Band 12, E-UTRA/FDD, UID 10175 CAG, Channel 23095 (707.5MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 12, E-UTRA/FDD	LTE-FDD, 10175-CAG	707.5, 23095	10.0	0.920	58.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MSL750V2-2022-01-18 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

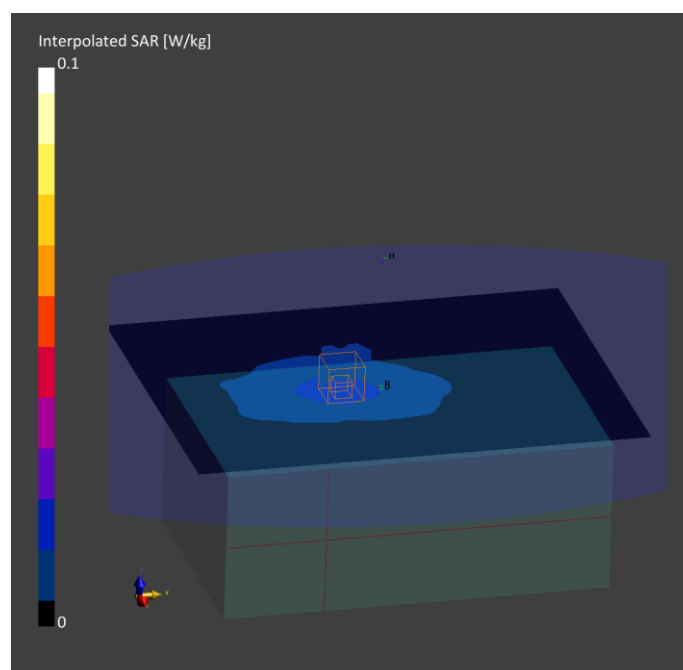
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-19, 07:48	2022-01-19, 07:55
psSAR1g [W/kg]	0.018	0.019
psSAR10g [W/kg]	0.013	0.015
Power Drift [dB]	-0.10	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		91.7
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 4

Measurement Report for RESMED, EDGE TOP, Band 12, E-UTRA/FDD, UID 10154 CAG, Channel 23095 (707.5MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 12, E-UTRA/FDD	LTE-FDD, 10154-CAG	707.5, 23095	9.84	0.880	42.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2-2022-01-17 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

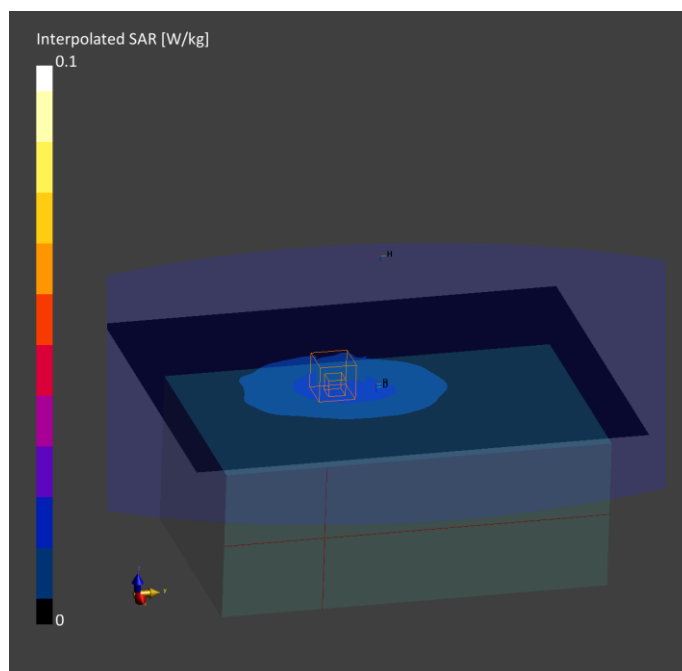
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-18, 09:53	2022-01-18, 10:06
psSAR1g [W/kg]	0.019	0.020
psSAR10g [W/kg]	0.014	0.015
Power Drift [dB]	-0.26	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		91.3
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 5

Measurement Report for RESMED, EDGE TOP, Band 13, E-UTRA/FDD, UID 10154 CAG, Channel 23230 (782.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 13, E-UTRA/FDD	LTE-FDD, 10154-CAG	782.0, 23230	9.84	0.910	41.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2-2022-01-17 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

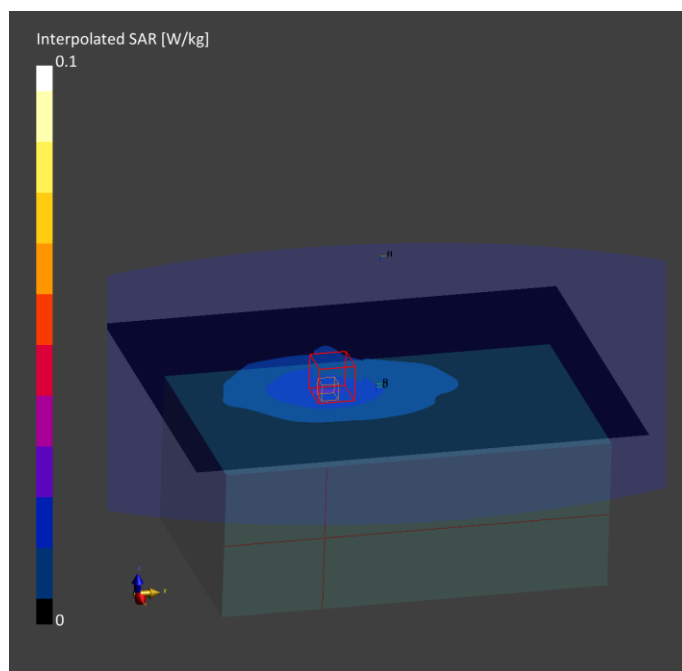
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	All points
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-18, 12:02	2022-01-18, 12:14
psSAR1g [W/kg]	0.022	0.023
psSAR10g [W/kg]	0.015	0.017
Power Drift [dB]	-0.14	0.09
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.3
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 6

Measurement Report for RESMED, EDGE TOP, Band 13, E-UTRA/FDD, UID 10154 CAG, Channel 23230 (782.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 13, E-UTRA/FDD	LTE-FDD, 10154-CAG	782.0, 23230	10.0	0.990	57.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MSL750V2-2022-01-18 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

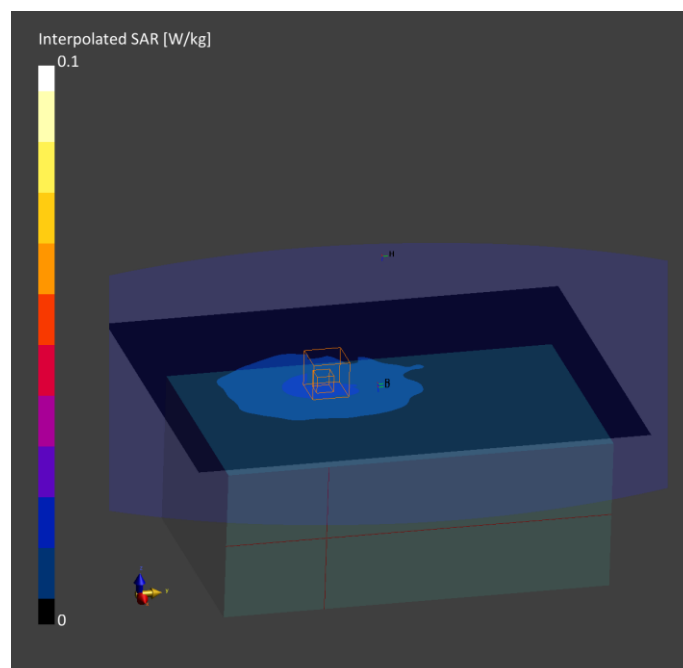
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-19, 08:24	2022-01-19, 08:31
psSAR1g [W/kg]	0.017	0.016
psSAR10g [W/kg]	0.012	0.012
Power Drift [dB]	0.13	0.24
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		89.6
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 7

Measurement Report for RESMED, EDGE TOP, Band 25, E-UTRA/FDD, UID 10169 CAE, Channel 26590 (1905.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP device

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 25, E-UTRA/FDD	LTE-FDD, 10169-CAE	1905.0, 26590	5.28	1.46	38.6

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-01-25 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

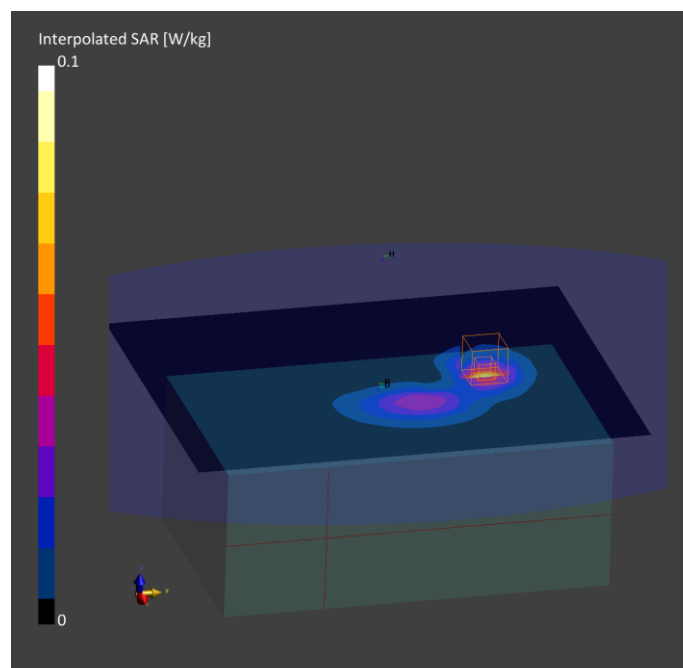
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-26, 08:15	2022-01-26, 08:21
psSAR1g [W/kg]	0.047	0.047
psSAR10g [W/kg]	0.027	0.026
Power Drift [dB]	0.07	-0.13
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.2
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 8

Measurement Report for RESMED, EDGE TOP, Band 25, E-UTRA/FDD, UID 10169 CAE, Channel 26590 (1905.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 25, E-UTRA/FDD	LTE-FDD, 10169-CAE	1905.0, 26590	5.17	1.57	51.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MBBL1550-1950V3-26-01-2022 , -	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

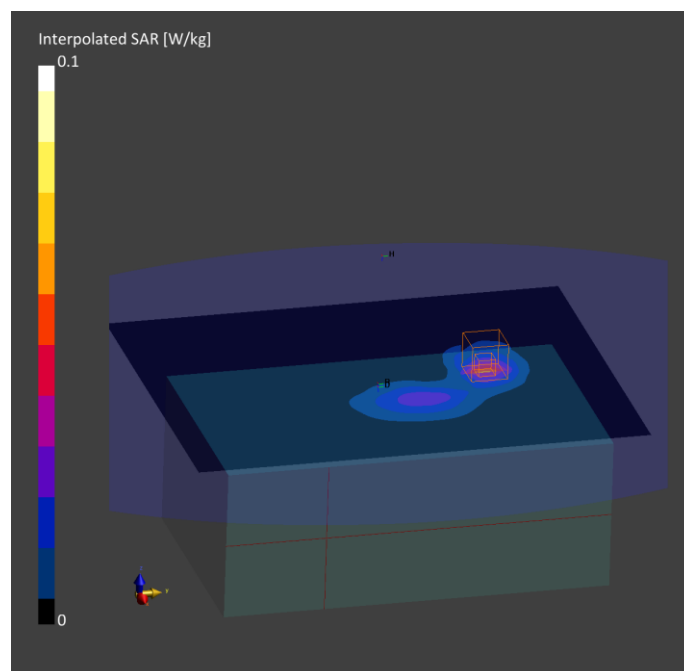
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-26, 15:13	2022-01-26, 15:19
psSAR1g [W/kg]	0.037	0.039
psSAR10g [W/kg]	0.021	0.022
Power Drift [dB]	-0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		89.7
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 9

Measurement Report for RESMED, EDGE TOP, Band 26 E-UTRA/FDD, UID 10181 CAE, Channel 26865 (831.5MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP device

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 26 E-UTRA/FDD	LTE-FDD, 10181-CAE	831.5, 26865	6.12	0.890	41.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2-2022-01-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

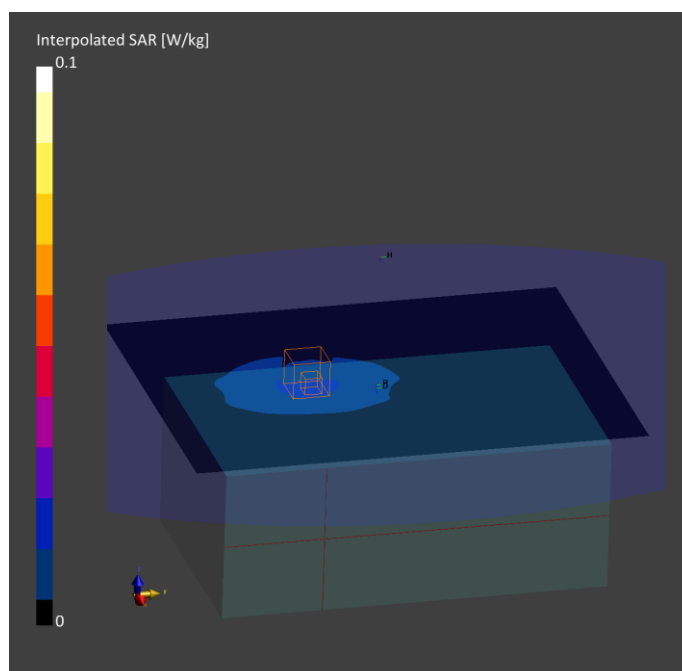
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-20, 10:36	2022-01-20, 10:42
psSAR1g [W/kg]	0.016	0.018
psSAR10g [W/kg]	0.011	0.013
Power Drift [dB]	-0.01	-0.28
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.7
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 10

Measurement Report for RESMED, EDGE TOP, Band 26 E-UTRA/FDD, UID 10181 CAE, Channel 26865 (831.5MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 26 E-UTRA/FDD	LTE-FDD, 10181-CAE	831.5, 26865	6.11	0.953	53.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MSL900V2-2022-01-21 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

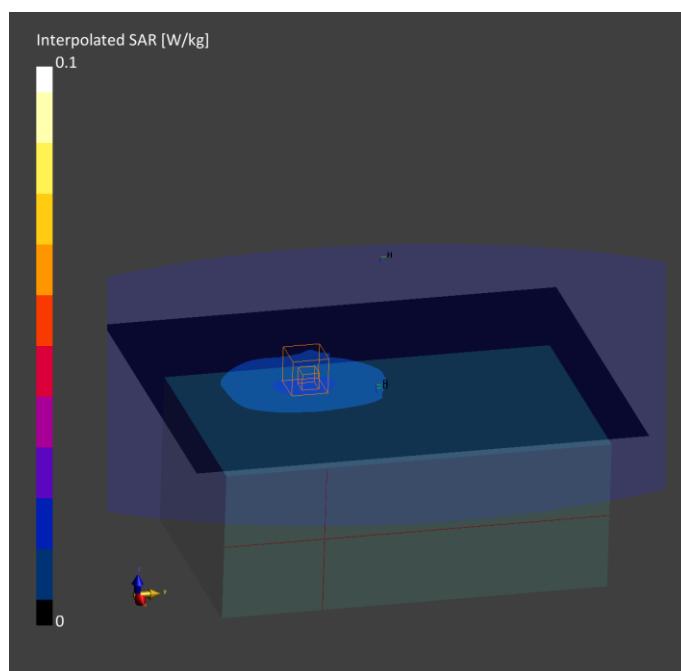
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-21, 12:55	2022-01-21, 13:02
psSAR1g [W/kg]	0.016	0.018
psSAR10g [W/kg]	0.012	0.014
Power Drift [dB]	0.13	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		91.4
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 11

Measurement Report for RESMED, EDGE TOP, Band 66, E-UTRA/FDD, UID 10169 CAE, Channel 132322 (1745.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	CPAP devie

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE TOP, 15.00	Band 66, E-UTRA/FDD	LTE-FDD, 10169-CAE	1745.0, 132322	5.28	1.39	40.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz-2022-01-24 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

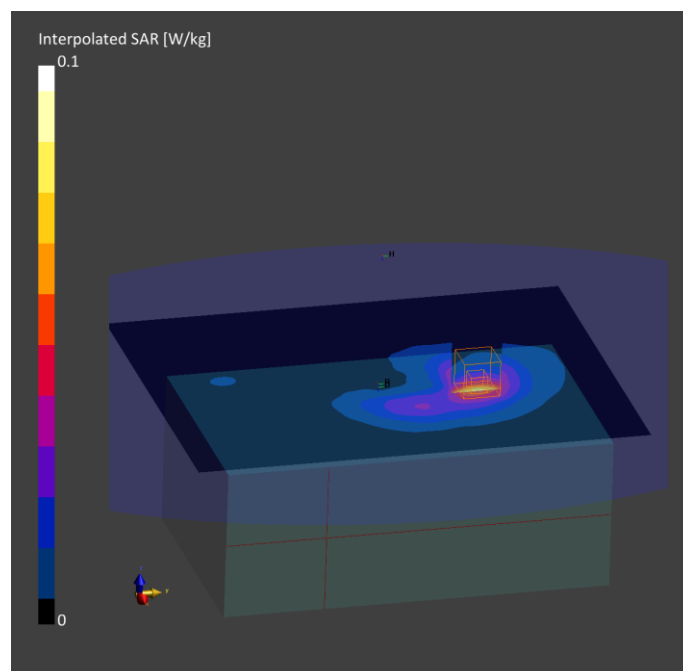
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-24, 14:18	2022-01-24, 14:24
psSAR1g [W/kg]	0.050	0.050
psSAR10g [W/kg]	0.031	0.031
Power Drift [dB]	0.03	-0.25
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.0
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N° 12.

Measurement Report for RESMED, EDGE TOP, Band 66, E-UTRA/FDD, UID 10169 CAE, Channel 132322 (1745.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	230.0 x 90.0 x 140.0	354040470005107	Tablet

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	EDGE TOP, 15.00	Band 66, E-UTRA/FDD	LTE-FDD, 10169-CAE	1745.0, 132322	5.17	1.44	55.0

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MBBL1350-1850V3-1700MHz-2022-01-25 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

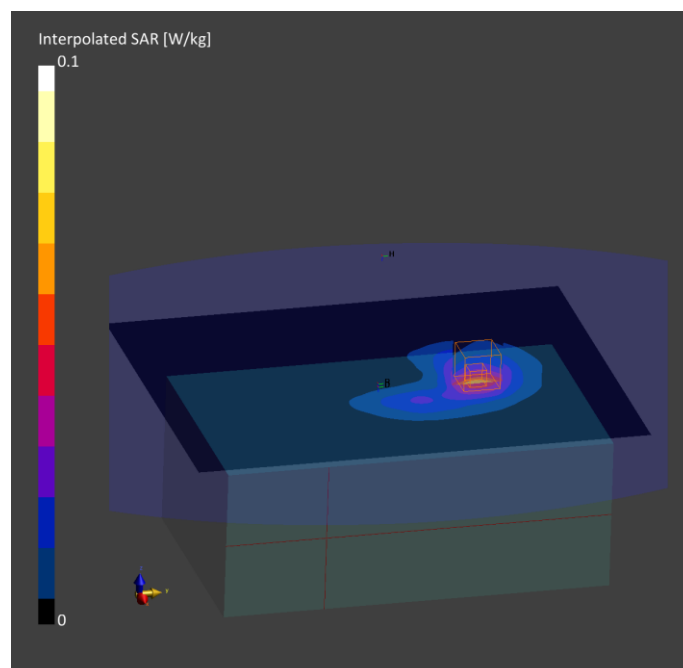
	Area Scan	Zoom Scan
Grid Extents [mm]	210.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-25, 11:25	2022-01-25, 11:31
psSAR1g [W/kg]	0.044	0.046
psSAR10g [W/kg]	0.027	0.029
Power Drift [dB]	0.01	-0.19
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.7
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Appendix D: System Validation Reports

Validation results in 750 MHz Band for Head TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (750.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470010453	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	750.0, 0	9.84	0.900	41.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2-2022-01-17 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

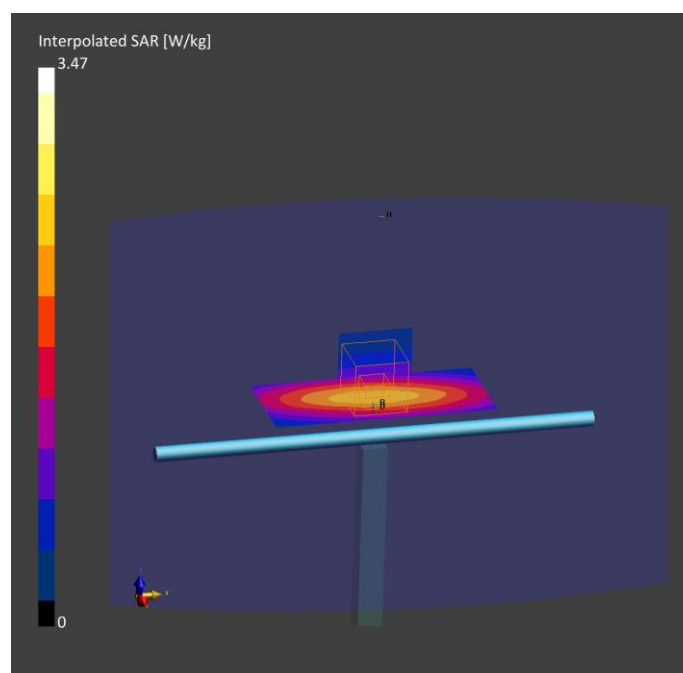
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-17, 13:40	2022-01-17, 13:45
psSAR1g [W/kg]	2.24	2.19
psSAR10g [W/kg]	1.49	1.43
Power Drift [dB]	-0.00	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.5
Dist 3dB Peak [mm]		17.7

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 750 MHz Band for Body TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (750.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	750.0, 0	10.0	0.960	57.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MSL750V2-2022-01-18 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

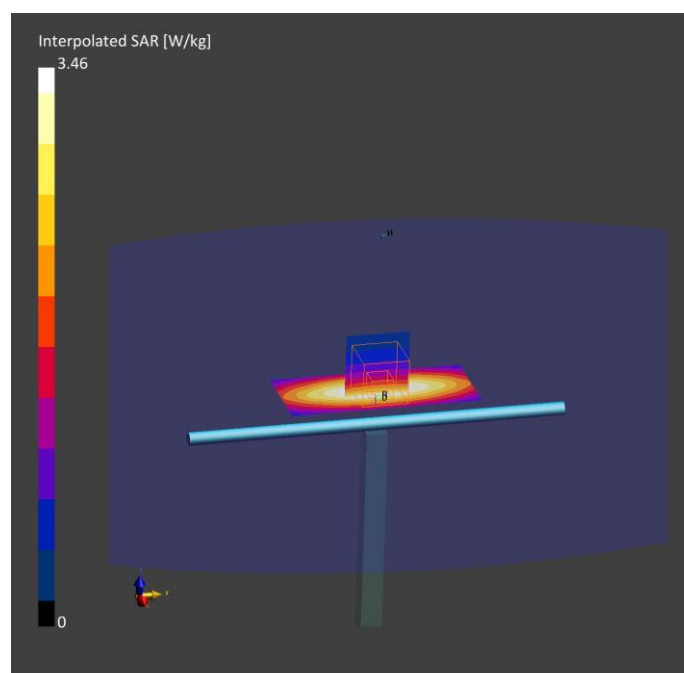
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-18, 14:22	2022-01-18, 14:27
psSAR1g [W/kg]	2.22	2.19
psSAR10g [W/kg]	1.47	1.45
Power Drift [dB]	-0.00	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.7
Dist 3dB Peak [mm]		20.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (900.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		0--	900.0, 0	6.12	0.960	40.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2-2022-01-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

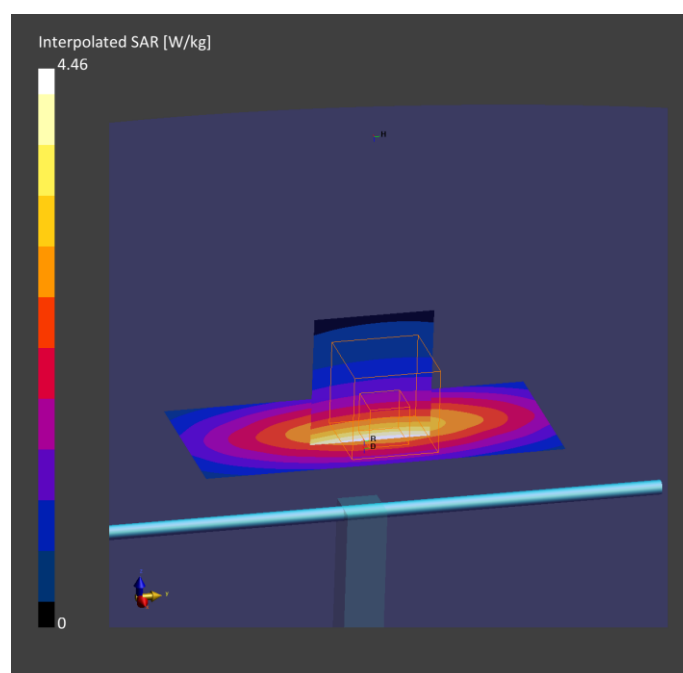
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-20, 09:29	2022-01-20, 09:34
psSAR1g [W/kg]	2.84	2.80
psSAR10g [W/kg]	1.85	1.78
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.5
Dist 3dB Peak [mm]		22.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Body TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (900.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	900.0, 0	6.11	1.03	53.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MSL900V2-2022-01-21 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

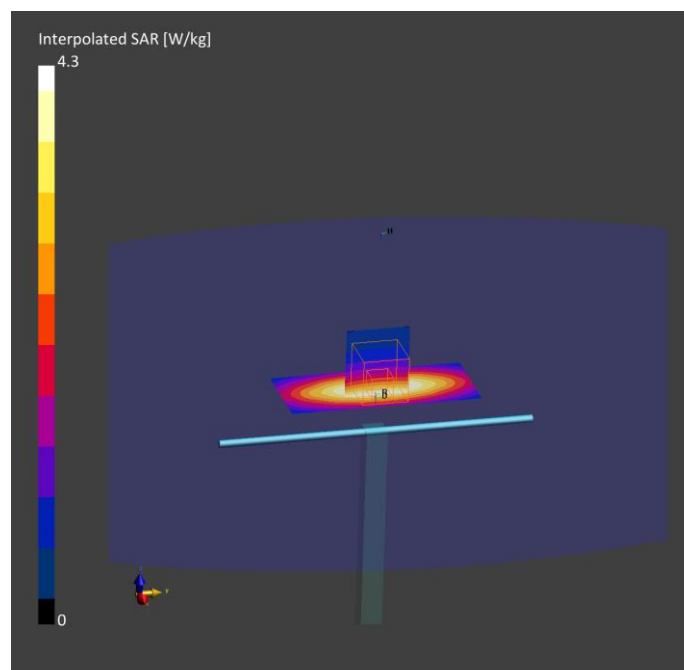
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-21, 10:44	2022-01-21, 10:49
psSAR1g [W/kg]	2.84	2.80
psSAR10g [W/kg]	1.84	1.81
Power Drift [dB]	0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.9
Dist 3dB Peak [mm]		19.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (1800.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470010453	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.44	40.2

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz- 2022-01-24 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

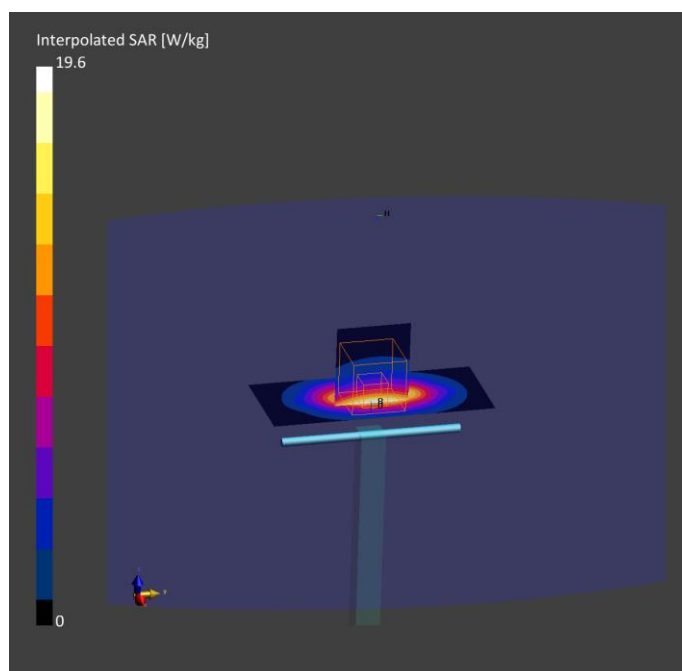
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-24, 10:56	2022-01-24, 11:01
psSAR1g [W/kg]	10.2	9.99
psSAR10g [W/kg]	5.38	5.07
Power Drift [dB]	0.03	-0.13
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.7
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Body TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (1800.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1800.0, 0	5.17	1.49	54.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MBBL1350-1850V3-1700MHz-2022-01-25 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

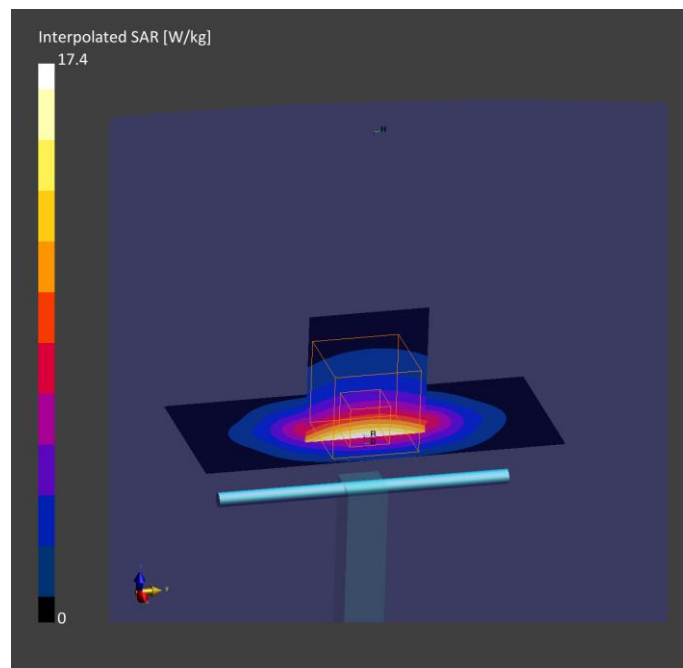
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-25, 10:15	2022-01-25, 10:20
psSAR1g [W/kg]	9.66	9.60
psSAR10g [W/kg]	5.02	5.08
Power Drift [dB]	0.02	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.8
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Measurement Report for RESMED, , , UID 0 -, Channel 0 (1800.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.37	38.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz- 2022-01-25 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

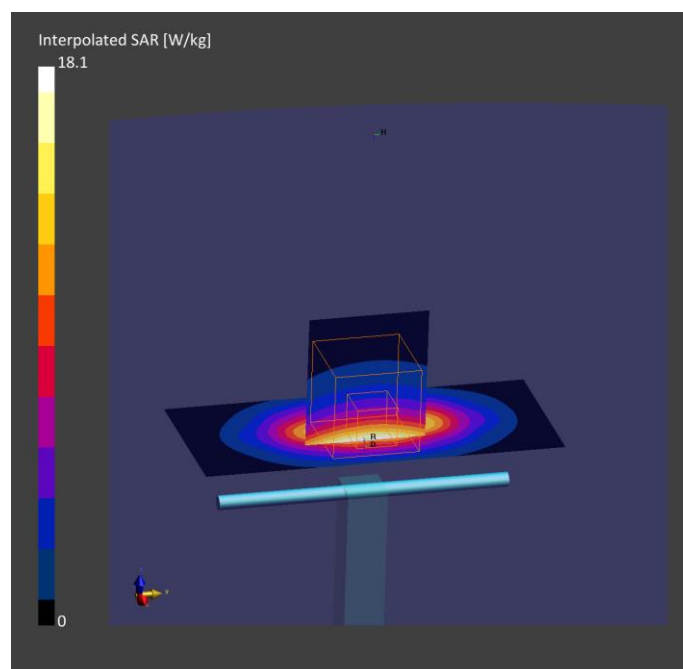
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-25, 15:14	2022-01-25, 15:19
psSAR1g [W/kg]	9.49	9.45
psSAR10g [W/kg]	4.98	4.88
Power Drift [dB]	0.00	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.3
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Body TSL.

Measurement Report for RESMED, , , UID 0 -, Channel 0 (1800.0MHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
RESMED,	50.0 x 10.0 x 140.0	354040470005107	Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1800.0, 0	5.17	1.47	51.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	MBBL1550-1950V3-26-01-2022 , -	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-01-26, 12:04	2022-01-26, 12:09
psSAR1g [W/kg]	9.06	8.86
psSAR10g [W/kg]	4.70	4.59
Power Drift [dB]	-0.00	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.7
Dist 3dB Peak [mm]		10.7

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		

