

Test report No:
 NIE: 62486RAN.006A2

Test report

IEEE Std 1528™-2013

(*) Identification of item tested	Telematic control unit with wireless technologies, used in automotive industry
(*) Trademark	BMW
(*) Model and /or type reference tested	WAVE-11-HIGH-R1
(*) Other identification of the product	HW version: D3 SW version: 20512H.001_047_009 Contains FCC ID: T8GSAN9000 Contains IC: 6434A- SAN9000 Contains FCC ID: T8GSAN9001 Contains IC:6434A- SAN9001
(*) Features	GSM, UMTS, LTE, 5G, GNSS
Manufacturer	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY
Test method requested, standard	<ol style="list-style-type: none"> 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. Radiofrequency radiation exposure evaluation: portable devices. 3. ISED RSS-102 Issue 5 (2015-03) – Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
Summary	<p>Considering the results of the performed test according to IEEE Std 1528™-2013, the item under test is IN COMPLIANCE with FCC 47CFR Part 2.1093 and IC RSS-102 Issue 5 exposure limits.</p> <p>The maximum 1-g SAR found during this test has been 0.577 W/kg, for WCDMA Band II.</p>
Approved by (name / position & signature)	Miguel Lacave Antennas Lab Manager

Date of issue	2021-10-29
Report template No	FDT08_23 (* "Data provided by the client")

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Competences and guarantees

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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" and "Features").
2. Maximum output power, 5G conducted output power values and testing distance.

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 Nº	Description	Model	Serial Nº	Date of reception
62486/11	DA WAVE HIGH 5G-ROW	DA04DI20	-	2020/09/22
62486/15	DA WAVE HIGH 5G US	DA05DI20	-	2020/09/22
62486/260	TCU ROOF High ECE	WAVE-11-HIGH-R1	B393160I4902525	2020/09/30

1. Sample M/01 has undergone the test(s) specified in subclause "Test method requested": Conducted average output power and SAR evaluation for 2G, 3G, LTE and 5G modes.

Test sample description

Description of product	Telematic control unit with wireless technologies.		
Software version.....	20512H.001_047_009		
Hardware version	D3		
Mounting position	<input type="checkbox"/>	Table top equipment	
	<input type="checkbox"/>	Wall/Ceiling mounted equipment	
	<input type="checkbox"/>	Floor standing equipment	
	<input type="checkbox"/>	Hand-held equipment	
	<input checked="" type="checkbox"/>	Other: Vehicular environment equipment (Car Roof)	
Accessories (not part of the test item).....	Description	Type	Manufacturer
	Charging adapter	---	
	USB cable	---	

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
 BECKER-GOERING-STR. 16; 76307 KARLSBAD GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-11-13
Date (finish)	2021-04-24

Document history

Report number	Date	Description
62486RAN.006	2021-07-27	First release
62486RAN.006 ^{a1}	2021-08-11	Second release. LTE CA UL combinations updated according to module certification report.
62486RAN.006A2	2021-10-29	Third release. LTE Band 38 information updated. This modification test report cancels and replaces the test report 62486RAN.006A1.

Environmental conditions

Date	Max. Temp.	Min. Temp.	Max. Hum.	Min. Hum.	Limit
	°C	°C	%	%	
From 2020-11-13 to 2021-04-24	24.99	20.06	66.58	30.12	18-25 °C, 30-70%

Remarks and comments

1: Testing of GPRS EDGE mode is not required according to test reductions mentioned in FCC OET KDB 941225 D01 3G SAR Procedures, paragraph "5. GSM, GPRS and EDGE".

2: Testing of HSDPA/HSPA/HSPA+/DC-HSPA modes are not required according to paragraph "2.1 3G SAR test reduction procedure" mentioned in FCC OET KDB 941225 D01 3G SAR Procedures.

3: Only the plots of the highest reported SAR for each mode/band are included in appendix C.

4: According to ISED requirements, the low, mid and high frequency channels for the configuration with the highest SAR value has been tested regardless of the measured SAR value.

5: 5G Bands n38 and n78 are only supported for Canadian market.

6: The tests have been performed by the technical personnel: Francisco J. Sánchez.

7: References:

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IC RSS-102 Issue 5 (2015-03) – Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) and the following FCC Published RF exposure KDB procedures:

- FCC OET KDB 447498 D01 General RF Exposure Guidance v06 (October 2015)
- FCC OET KDB 865664 D01 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015).
- FCC OET KDB 865664 D02 RF Exposure Reporting v01r02 (October 2015)
- FCC OET KDB 941225 D01 3G SAR Procedures v03r01 (October 2015).
- FCC OET KDB 941225 D05 SAR for LTE Devices v02r05 (October 2015).
- FCC OET KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 (October 2015).
- TCB Workshop Nov. 2017, TCB Workshop October 2018, TCB Workshop October 2020 and TCB Workshop February 2021

8: LTE Rel.10 and 5G NR FR1 testing method and procedure was consulted and approved through FCC KDB inquiry.

9: 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
Data acquisition device SPEAG DAE4	3430
Electro-optical converter SPEAG EOC3	3438
Robot Stäubli RX60BL, Robot controller Stäubli CS7MB	3420
Measurement server SPEAG DASY5 SE UMS 011 BS	3847
Oval flat phantom SPEAG ELI 4	3525
SAR measurement software SPEAG DASY52 V52.10.4.1527	3423
SAR postprocessing software SPEAG SEMCAD X	3423
750 MHz dipole validation kit SPEAG D750V3	3919
900 MHz dipole validation kit SPEAG D900V2	3426
1800 MHz dipole validation kit SPEAG D1800V2	3427
2600 MHz dipole validation kit SPEAG D2600V2	3527
3300 MHz dipole validation kit SPEAG D3300V2	8761
3500 MHz dipole validation kit SPEAG D3500V2	8762
3700 MHz dipole validation kit SPEAG D3700V2	8763
4200 MHz dipole validation kit SPEAG D4200V2	8765
Head Tissue Equivalent Liquids for 750 MHz band	3920
Head Tissue Equivalent Liquids for 835 MHz band	3631
Head Tissue Equivalent Liquids for 900 MHz band	3631
Head Tissue Equivalent Liquids for 1700 MHz band	6028
Head Tissue Equivalent Liquids for 1900 MHz band	3633
Head Tissue Equivalent Liquids for 2600 MHz band	4173
Head Tissue Equivalent Liquids for 3300 MHz band	3636
Head Tissue Equivalent Liquids for 3500 MHz band	3636
Head Tissue Equivalent Liquids for 3700 MHz band	3636
Head Tissue Equivalent Liquids for 4200 MHz band	3636
Universal Radio Communication Tester R&S CMW 500	3934
Universal Radio Communication Tester R&S CMW 500	4804
Wideband Radio Communication Tester Keysight E7515A UXM	8066
Wideband Radio Communication Tester ROHDE & SCHWARZ CMX500	N.A.
Vector network analyzer Agilent FieldFox N9923A	4482
Dielectric probe kit SPEAG DAK-3.5	4171
Power meter Agilent E4419B	4393
RF Generator R&S SMU200	3346
DC Power supply Agilent U8002A	4835
Dual directional coupler HP 778D	1084
Dual directional coupler NARDA 4227-16	3630
Power amplifier MITEQ AMF-4D-00400600-50-30P	3485
6 dB attenuator Weinschel 75 A-6-11	2400
SPEAG Mounting Device for Laptop and Body-Worn Transmitters	3526
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

Testing verdicts

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

FCC 47CFR Part 2.1093 & ISSED RSS-102 Issue 5	VERDICT			
	N/A	P	F	NM
GSM 850		P		
GSM 1900		P		
WCDMA II		P		
WCDMA IV		P		
WCDMA V		P		
LTE 2		P		
LTE 4		P		
LTE 5		P		
LTE 7		P		
LTE 12		P		
LTE 13		P		
LTE 17		P		
LTE 25		P		
LTE 26		P		
LTE 38		P		
LTE 41		P		
LTE 42		P		
LTE 66		P		
LTE 71		P		
n2		P		
n5		P		
n7		P		
n25		P		
n38		P		
n41		P		
n66		P		
n71		P		
n77		P		
n78		P		

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).

Industry of Canada (ISED) sets the limits for General Population/Uncontrolled environment when the exposure occurs at a distance of 0.2 m or less into the RSS-102 Issue 5, paragraph 4 "Exposure Limits", Table 3.

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 fulfills 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:

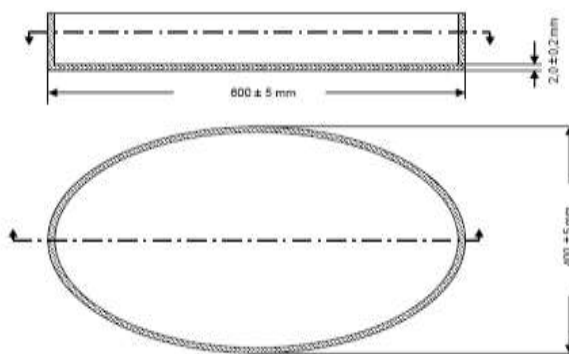


Figure 1: Proportions and shape of Phantom shell

1.5. Measurement Liquids requirements.

The liquids used to simulate the human tissues, must fulfill 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 DASY5 system for performing compliance tests consists of the following items:

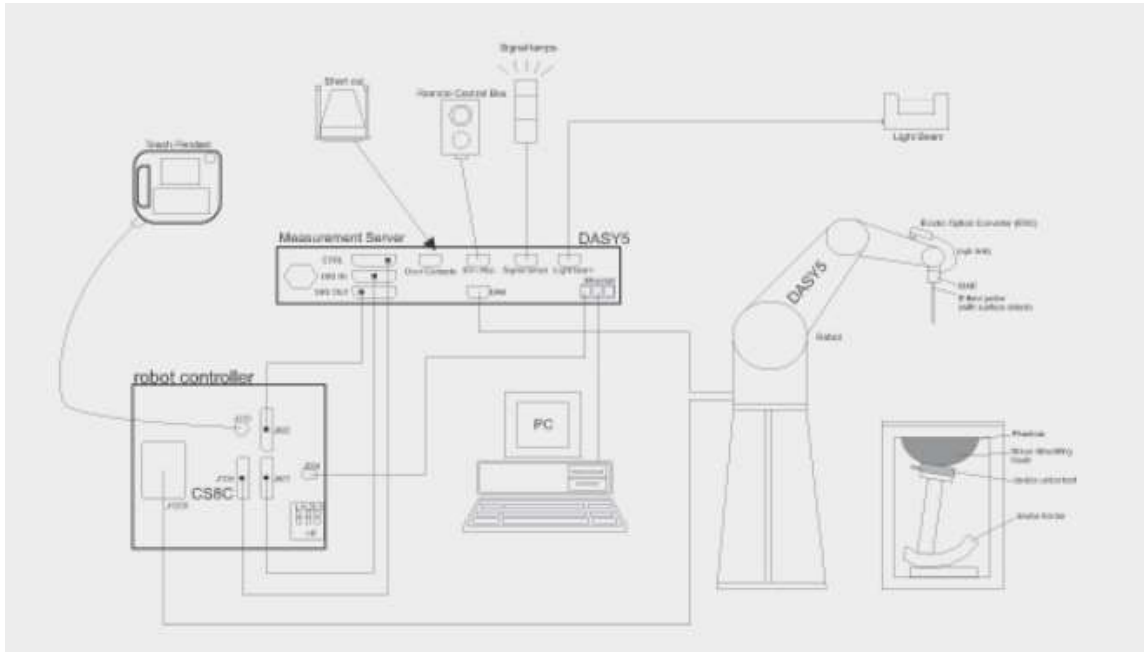


Figure 2: SAR Measurement system

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 DASY5 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	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	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 \pm 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	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, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at flat phantom section.
	Material	Polyoxymethylene (POM), PET-G, Foam

	Model	System Validations Kits 450 MHz – 6 GHz			
	Construction	Symmetrical dipole with 1/4 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 body

The device under test consists of a Telematics Control Unit, which will be installed into car roofs. It supports two cellular modules and multiple antennas that can be used for transmission. It supports different configurations where different antennas can be used for different purposes and to transmit simultaneously.

The list of cellular modules and antennas supported by the device are:

- Cellular modules: “NAD1 (OEM, model SA-N9000)” and “NAD2 (Customer, model OEM:SA-N9001)”
- Antennas: “MIMO1 RoW”, “MIMO2 RoW”, “DSDA1 FSA”, “DSDA2 FSA”, “DSDA1 Antennenbox”, “DSDA2 Antennenbox” and “Int BuA”

Only three antennas will be installed close to car passengers at a distance minor to 20 cm, these antennas will be named as “MIMO1 RoW/MIMO2 RoW (both on the external Shark antenna)” and “Int BuA (TCU internal)” antennas.

The main antenna “MIMO1 RoW/MIMO2 RoW (External Shark antenna)” will be placed outside the car cabin, and the back-up antenna “Int BuA (TCU internal)” will be placed oriented to the car roof, inspite being inside the TCU.

During normal device function the “MIMO1 RoW/MIMO2 Row (External Shark antenna)” will be used to operate normally and if this antenna has any functionality problems, “Int BuA (TCU internal)” could be used for emergency calls.

According to the manufacturer once installed the minimum distance from the TCU to any car passenger will be 37.92mm.

The device was tested placed at the centre of the flat phantom with its backside facing the flat phantom surface simulating the normal use conditions, and due to low SAR results at the declared installation distance, test distance was set to 0 mm and 10 mm for Internal and External antennas.

2.3. Test to be performed

Test shall be performed at test position previously described, using the centre frequency, the low-end and the high-end frequencies of each transmitting band supported by the device under test.

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 - SAR Measurement Requirements for 100 MHz to 6 GHz v01r04 (August 2015), as the highest measured 1-g SAR has been < 1.5 W/kg, SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in the actual SAR report, but it has been included for ISO 17025 accreditation.

Uncertainty for 300 MHz – 3 GHz

ERROR SOURCES	Uncertainty value (± %)	Probability distribution	Divisor	(c _i) 1g	(c _i) 10g	Standard uncertainty (1g) (± %)	Standard uncertainty (10g) (± %)
Measurement Equipment							
Probe Calibration	6.650	6.650	N	1	1	1	6.650
Axial Isotropy	3.500	3.500	R	√3	0.7	0.7	1.415
Hemisfericall Isotropy	2.320	2.320	R	√3	0.7	0.7	0.938
Boundary effect	1.000	1.000	R	√3	1	1	0.577
Linearity	4.700	4.700	R	√3	1	1	2.714
System Detection limits	0.250	0.250	R	√3	1	1	0.144
Probe modulation response	4.800	4.800	N	1	1	1	4.800
Readout electronics	0.300	0.300	N	1	1	1	0.300
Response time	1.010	1.010	R	√3	1	1	0.583
Integration time	2.600	2.600	R	√3	1	1	1.501
RF Ambient noise	3.000	3.000	R	√3	1	1	1.732
RF Ambient reflections	3.000	3.000	R	√3	1	1	1.732
Probe positioner mech. restrictions	0.400	0.400	R	√3	1	1	0.231
Probe positioning with respect to phantom shell	2.900	2.900	R	√3	1	1	1.674
Max. SAR Eval.	2.000	2.000	R	√3	1	1	1.155
Test Sample Related							
Device holder uncertainty	2.900	N	1	1	1	2.900	2.900
Test sample positioning	3.600	N	1	1	1	3.600	3.600
Drift of output power	5.000	R	√3	1	1	2.887	2.887
Phantom and Setup							
Phantom uncertainty (shape and thickness tolerances)	6.100	R	√3	1	1	3.522	3.522
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.900	R	√3	1	0.84	1.097	0.921
Liquid conductivity (meas.)	2.454	N	1	0.78	0.71	1.914	1.742
Liquid permittivity (meas.)	2.454	N	1	0.26	0.26	0.638	0.638
Liquid conductivity – temperature uncertainty	5.220	R	√3	0.78	0.71	2.351	2.140
Liquid permittivity – temperature uncertainty	0.840	R	√3	0.23	0.26	0.112	0.126
Combined standard uncertainty	$u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$					12.00	11.92
Expanded uncertainty (confidence interval of 95%)	$ue = 2.00 u_c$					24.00	23.84

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

Uncertainty for 3 GHz – 6 GHz

ERROR SOURCES	Uncertainty value (± %)	Probability distribution	Divisor	(c _i) 1g	(c _i) 10g	Standard uncertainty (1g) (± %)	Standard uncertainty (10g) (± %)
Measurement Equipment							
Probe Calibration	7.000	N	1	1	1	7.000	7.000
Axial Isotropy	3.500	R	√3	0.7	0.7	1.415	1.415
Hemisfericall Isotropy	2.320	R	√3	0.7	0.7	0.938	0.938
Boundary effect	2.000	R	√3	1	1	1.155	1.155
Linearity	4.700	R	√3	1	1	2.714	2.714
System Detection limits	0.250	R	√3	1	1	0.144	0.144
Probe modulation response	4.800	N	1	1	1	4.800	4.800
Readout electronics	0.300	N	1	1	1	0.300	0.300
Response time	1.010	R	√3	1	1	0.583	0.583
Integration time	2.600	R	√3	1	1	1.501	1.501
RF Ambient noise	3.000	R	√3	1	1	1.732	1.732
RF Ambient reflections	3.000	R	√3	1	1	1.732	1.732
Probe positioner mech. restrictions	0.400	R	√3	1	1	0.231	0.231
Probe positioning with respect to phantom shell	6.700	R	√3	1	1	3.868	3.868
Max. SAR Eval.	4.000	R	√3	1	1	2.309	2.309
Test Sample Related							
Device holder uncertainty	2.900	N	1	1	1	2.900	2.900
Test sample positioning	3.600	N	1	1	1	3.600	3.600
Drift of output power	5.000	R	√3	1	1	2.887	2.887
Phantom and Setup							
Phantom uncertainty (shape and thickness tolerances)	6.600	R	√3	1	1	3.811	3.811
Algorithm for correcting SAR for deviations in permittivity and conductivity	1.900	R	√3	1	0.84	1.097	0.921
Liquid conductivity (meas.)	2.454	N	1	0.78	0.71	1.914	1.742
Liquid permittivity (meas.)	2.454	N	1	0.26	0.26	0.638	0.638
Liquid conductivity – temperature uncertainty	3.360	R	√3	0.78	0.71	1.513	1.377
Liquid permittivity – temperature uncertainty	0.780	R	√3	0.23	0.26	0.104	0.117
Combined standard uncertainty	$u_c = \sqrt{\sum_{i=1}^m c_i^2 \cdot u_i^2}$					12.84	12.79
Expanded uncertainty (confidence interval of 95%)	$u_e = 2.00 u_c$					25.68	25.57

Table 2: Uncertainty Assessment for 3 GHz - 6 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 2.1093, Paragraph (d)(2) RSS-102 Issue 5 (2015-03), Paragraph 4	General population/Uncontrolled	SAR 1-g.	1.6
FCC 47 CFR Part 2.1093, Paragraph (d)(2) RSS-102 Issue 5 (2015-03), Paragraph 4	General population/Uncontrolled Extremity	SAR 10-g.	4.0

Table 3: SAR limit

5. DEVICE UNDER TEST

5.1. Dimensions

Dimensions	Millimetres
Length x Width x Height	160.0 x 110.0 x 17.0
Length x Width x Height (including ext antenna)	160.0 x 140.0 x 55.0

Table 4: Dimensions

5.2. Wireless Technology

Wireless Technology	Frequency Bands	Modes
GSM	850 / 1900	- Voice (GMSK) - GPRS (GMSK, Multi-slot class 33) - EGPRS (8PSK, Multi-slot class 33)
W-CDMA	II/IV/V	- UMTS Rel. 99 - HSDPA (Rel. 5) - HSPA (Rel. 6) - HSPA+ (Rel. 7)
LTE	2/4/5/7/12/13/17/25/26/38/41/42/66/71	- FDD and TDD Bands - CA Downlink - CA Uplink Intra-Band - CA Uplink Inter-Band
5G	n2/n5/n7/n25/n38/n41/n66/n71/n77/n78	- FDD and TDD Bands - SA mode - NSA-EN-DC mode

Table 5: Supported modes

The supported transmitting technology for each antenna combination is:

Module	Port	Antenna	Technology	Tx Bands
NAD#1	MIMO1	MIMO1 Antenna (External shark fin antenna)	2G	850 / 1900 MHz
NAD#1	MIMO1	MIMO1 Antenna (External shark fin antenna)	3G	II, IV, V
NAD#1	MIMO1	MIMO1 Antenna (External shark fin antenna)	LTE	2, 4, 5, 7, 12, 13, 17, 25, 26, 38, 41, 66, 71
NAD#1	MIMO1	MIMO1 Antenna (External shark fin antenna)	5G	n2, n5, n7, n25, n38, n41, n66, n71
NAD#1	MIMO2	MIMO2 Antenna (External shark fin antenna)	LTE	42
NAD#1	MIMO2	MIMO2 Antenna (External shark fin antenna)	5G	n77, n78
NAD#1	MIMO1	Int BuA Antenna (TCU internal)	2G	850 / 1900 MHz
NAD#1	MIMO1	Int BuA Antenna (TCU internal)	3G	II, IV, V
NAD#2	DSDA2	Int BuA Antenna (TCU internal)	LTE	42
NAD#2	DSDA2	Int BuA Antenna (TCU internal)	5G	n77, n78

Table 6: Antenna supported transmitting modes

5.3. Simultaneous Transmission

“MIMO1/MIMO2 antenna” (External shark fin antenna) is not able to transmit simultaneously with “Int BuA Antenna” (TCU internal).

5.4. Antenna Location

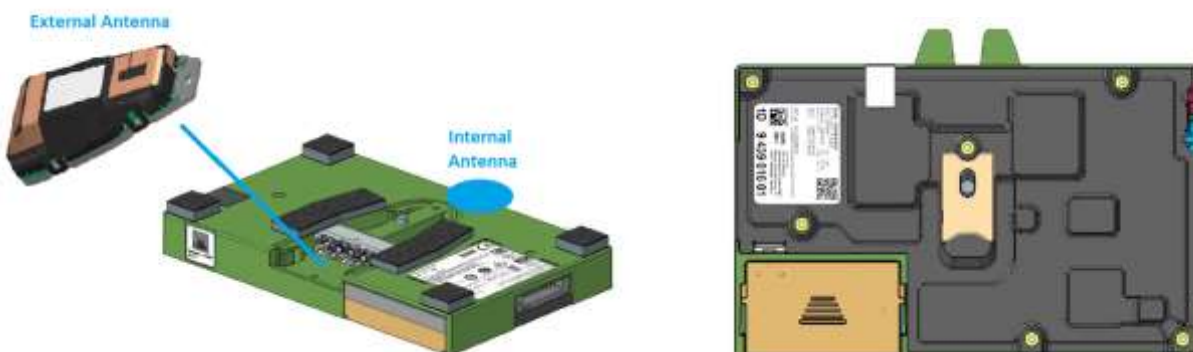


Figure 3: Antenna diagram location sketch

Appendix B: Test results

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1. TEST CONDITIONS

1.1. Power supply (V):

$V_n = 12.0 \text{ V}$

Type of power supply = DC Voltage from power supply.

1.2. Temperature (°C):

$T_n = +20.00 \text{ to } +25.00$

The subscript n indicates normal test conditions.

1.3. Test signal, Output Power and Frequencies

The sample was put into operation by using a R&S CMW 500 as base station simulator for 2G, 3G and LTE transmitting technologies and a Keysight UXM E7515A and a R&S CMX500 were used to perform measurements for 5G transmitting technologies.

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

The output power of the device was set to Power Control Level (PCL) maximum for all tests.

In all operating bands and test positions, the measurements were performed on middle, lowest and highest channels.

The target power alignments for RF components declared by the manufacturer for each supported technology are:

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
GSM	850	824 - 849	34.0
GPRS 1TX	850	824 - 849	33.5
GPRS 2TX	850	824 - 849	31.5
GPRS 3TX	850	824 - 849	29.5
GPRS 4TX	850	824 - 849	28.5
EGPRS 1TX	850	824 - 849	27.5
EGPRS 2TX	850	824 - 849	26.5
EGPRS 3TX	850	824 - 849	24.5
EGPRS 4TX	850	824 - 849	23.5
GSM	1900	1850 - 1910	31.0
GPRS 1TX	1900	1850 - 1910	30.5
GPRS 2TX	1900	1850 - 1910	27.5
GPRS 3TX	1900	1850 - 1910	26.5
GPRS 4TX	1900	1850 - 1910	24.5
EGPRS 1TX	1900	1850 - 1910	26.5
EGPRS 2TX	1900	1850 - 1910	25.0
EGPRS 3TX	1900	1850 - 1910	23.0
EGPRS 4TX	1900	1850 - 1910	22.0

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
UMTS	II	1850 - 1910	24.5
UMTS	IV	1710 - 1755	24.0
UMTS	V	824 - 849	25.0

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
LTE	2	1850 - 1910	24.5
LTE	4	1710 - 1755	25.0
LTE	5	824 - 849	24.5
LTE	7	2500 - 2570	25.0
LTE	12	699 - 716	24.5
LTE	13	777 - 787	24.5
LTE	17	704 - 716	24.5
LTE	25	1850 - 1915	24.5
LTE	26	814 - 849	25.0
LTE	38	2570 - 2620	24.5
LTE	41	2496 - 2690	24.5
LTE	42	3400 - 3600	24.5
LTE	66	1710 - 1780	24.5
LTE	71	663 - 698	24.5

LTE CA Uplink Combination	PCC Band	Maximum Output Power (Incl. Tune-Up) (dBm)
2A-5A	LTE 2	24.5-24.5
2A-12A	LTE 2	24.5-24.5
2A-13A	LTE 2	24.5-24.5
4A-5A	LTE4	25.0-24.5
4A-12A	LTE4	25.0-24.5
4A-13A	LTE4	25.0-24.5
4A-17A	LTE4	25.0-24.5
5A-7A	LTE 5	24.5-25.0
5A-66A	LTE 5	24.5-24.5
5B	LTE 5	24.5
7C	LTE 7	25.0
38C	LTE 38	24.5
41C	LTE 41	24.5
42C	LTE 42	24.5
66B	LTE 66	24.5
66C	LTE 66	24.5

Technology / Mode	Band	Frequency (MHz)	Maximum Output Power (Incl. Tune-Up) (dBm)
5G SA	n2	1850 - 1910	24.5
	n5	824 - 849	25.0
	n7	2500 - 2570	25.0
	n25	1850 - 1915	24.5
	n38	2570 - 2620	24.5
	n41	2496 - 2690	24.5
	n66	1710 - 1780	24.5
	n71	663 - 698	24.5
	n77	3450 - 3980	24.5
	n78	3300 - 3800	24.5

Technology / Mode	Band	Maximum Output Power (Incl. Tune-Up) (dBm)
5G NSA	2A-n5A	24.5-25.0
	66A-n5A	24.5-25.0
	26A-n41A	25.0-24.5
	5A-n66A	24.5-24.5
	12A-n66A	24.5-24.5
	2A-n71A	24.5-24.5
	66A-n71A	24.5-24.5

1.4. DUT and test-site configurations

For all supported modes, the back face of the DUT was place facing the flat phantom surface using 0-10 mm test separation distance for measurements with the “External shark fin antenna” and using 0 mm test separation distance for measurements with the “TCU internal antenna”.

2. CONDUCTED AVERAGE POWER MEASUREMENTS

2.1. MIMO1 port: MIMO1 ANT (Shark fin antenna) and Int BuA ANT (TCU internal)

2.1.1. GSM/GPRS/EGPRS Bands

- GSM 850: For voice mode PCL 5 was set to allow max power transmission.

GSM 900 - Average Output Power					
Channel Number	Frequency (MHz)	Frame Average Output Power (dBm)	Average Burst Output Power (dBm)	PCL	Modulation
128	824.2	22.8	31.9	5	GMSK
190	836.6	23.5	32.5	5	GMSK
251	848.8	23.7	32.8	5	GMSK

- GPRS 850: For data mode. PCL 5, CS1 coding scheme and Gamma 3 were set to allow DUT's max power transmission for each slot.

GPRS 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	22.6	23.2	22.9	22.3	5	GMSK-CS1
190	836.6	23.1	23.7	23.2	22.7	5	GMSK-CS1
251	848.8	23.3	24.0	23.4	22.9	5	GMSK-CS1

GPRS 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	31.7	29.2	27.2	25.3	5	GMSK-CS1
190	836.6	32.1	29.7	27.5	25.7	5	GMSK-CS1
251	848.8	32.4	30.0	27.7	25.9	5	GMSK-CS1

- EGPRS 850: For data mode. PCL 8, MCS5 coding scheme and Gamma 6 were set to allow DUT's max power transmission for each slot.

EDGE 850 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	16.7	18.5	18.1	17.8	8	8PSK-MCS5
190	836.6	17.3	19.0	18.6	18.3	8	8PSK-MCS5
251	848.8	17.6	19.1	18.8	18.6	8	8PSK-MCS5

EDGE 850 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
128	824.2	25.7	24.5	22.4	20.8	8	8PSK-MCS5
190	836.6	26.3	25.0	22.8	21.4	8	8PSK-MCS5
251	848.8	26.6	25.1	23.1	21.6	8	8PSK-MCS5

- GSM 1900: For voice mode PCL 0 was set to allow max power transmission.

GSM 1800 - Average Output Power					
Channel Number	Frequency (MHz)	Frame Average Output Power (dBm)	Average Burst OutputPower (dBm)	PCL	Modulation
512	1850.2	19.4	28.4	0	GMSK
661	1880.0	19.3	28.3	0	GMSK
810	1909.8	18.6	27.6	0	GMSK

- GPRS1900: For data mode. PCL 0, CS1 coding scheme and Gamma 3 were set to allow max power transmission for each slot.

GPRS 1900 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	19.1	19.0	19.9	20.2	0	GMSK-CS1
661	1880.0	19.0	18.3	18.9	19.4	0	GMSK-CS1
810	1909.8	18.3	17.1	17.5	18.6	0	GMSK-CS1

GPRS 1900 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	28.2	25.0	24.2	23.2	0	GMSK-CS1
661	1880.0	28.0	24.3	23.2	22.4	0	GMSK-CS1
810	1909.8	27.3	23.1	21.7	21.6	0	GMSK-CS1

- EGPRS 1900: For data mode, PCL 2, MCS5 coding scheme and Gamma 5 were set to allow max power transmission for each slot.

EDGE 1900 - Frame Average Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	15.3	16.4	16.5	16.2	2	8PSK-MCS5
661	1880.0	14.7	15.5	15.5	15.2	2	8PSK-MCS5
810	1909.8	13.6	14.3	14.3	13.9	2	8PSK-MCS5

EDGE 1900 - Average Burst Output Power							
Channel Number	Frequency (MHz)	Power (dBm) 1 Slot	Power (dBm) 2 Slots	Power (dBm) 3 Slots	Power (dBm) 4 Slots	PCL	Modulation
512	1850.2	24.4	22.4	20.8	19.2	2	8PSK-MCS5
661	1880.0	23.7	21.5	19.8	18.2	2	8PSK-MCS5
810	1909.8	22.6	20.3	18.5	16.9	2	8PSK-MCS5

2.1.2. WCDMA/HSDPA/HSPA/HSPA+ Bands

- **WCDMA**: The DUT supports power Class 3, with a nominal maximum output power of 24 dBm. Tests were completed according to 3GPP TS34.121, section 5.

Mode	Subtest	Rel99
WCDMA	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2Kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	WCDMA	9262	1852.4	23.00
FDD II 1900	WCDMA	9400	1880.0	22.42
FDD II 1900	WCDMA	9538	1907.6	22.60

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	WCDMA	1312	1712.4	23.98
FDD IV 1700	WCDMA	1412	1732.6	23.52
FDD IV 1700	WCDMA	1512	1752.6	23.08

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	WCDMA	4132	826.4	23.36
FDD V 850	WCDMA	4182	836.4	23.35
FDD V 850	WCDMA	4233	846.6	23.16

- HSDPA:

Mode	Subtest	1	2	3	4
HSDPA	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2Kbps RMC			
	HSDPA FRC	H-Set1			
	HSUPA Test	HSUPA Loopback			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64	64	64	64
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
	MPR	0	0	0.5	0.5
	Dack	8			
	Dnak	8			
	Ack-Nack repetition factor	3			
	DCQI	8			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
$A_{hs} = \beta_{hs}/\beta_c$	30/15				

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD II 1900	HSDPA	9262	1852.4	23.03	22.32	22.07	21.08
FDD II 1900	HSDPA	9400	1880.0	22.39	21.65	21.41	20.42
FDD II 1900	HSDPA	9538	1907.6	22.58	21.84	21.52	20.59

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD IV 1700	HSDPA	1312	1712.4	23.99	23.12	22.87	21.91
FDD IV 1700	HSDPA	1412	1732.6	23.52	22.64	22.41	21.47
FDD IV 1700	HSDPA	1512	1752.6	23.48	22.67	22.42	21.46

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)			
				Subtest			
				1	2	3	4
FDD V 850	HSDPA	4132	826.4	23.36	22.64	22.38	21.41
FDD V 850	HSDPA	4182	836.4	23.35	22.60	22.35	21.37
FDD V 850	HSDPA	4233	846.6	23.14	22.38	22.12	21.67

- HSPA:

Mode	Subtest	1	2	3	4	5
HSPA	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2Kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm 2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	15/15
	β_{ec}	209/225	12/15	30/15	2/15	24/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	β_{hs}	22/15	12/15	30/15	4/15	30/15
	β_{ed}	1309/225	94/75	47/15	56/75	134/15
	MPR (dB)	0	2	1	2	0
	Dack	8				
	Dnak	8				
	Ack-Nack repetition factor	3				
	DCQI	8				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs = β_{hs}/β_c	30/15				
	AG Index	20	12	15	17	21
ETFCI	75	67	92	71	81	
Associated Max UL DataRate Kbps	242.1	174.9	482.8	205.8	308.9	

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD II 1900	HSPA	9262	1852.4	23.08	22.17	23.11	22.14	23.13
FDD II 1900	HSPA	9400	1880.0	22.51	21.58	22.53	21.55	22.57
FDD II 1900	HSPA	9538	1907.6	22.63	21.72	22.64	21.69	22.69

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD IV 1700	HSPA	1312	1712.4	23.98	22.84	23.97	22.81	23.93
FDD IV 1700	HSPA	1412	1732.6	23.51	22.39	23.50	22.31	23.48
FDD IV 1700	HSPA	1512	1752.6	23.49	22.28	23.49	22.23	23.47

Band	Mode	CH	Frequency (MHz)	Average Output Power (dBm)				
				Subtest				
				1	2	3	4	5
FDD V 850	HSPA	4132	826.4	23.37	21.42	23.38	21.42	23.38
FDD V 850	HSPA	4182	836.4	23.31	21.39	23.37	21.39	23.33
FDD V 850	HSPA	4233	846.6	23.13	21.17	23.13	21.18	23.12

- HSPA+

Mode	Subtest	1
HSPA+	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2Kbps RMC
	HSDPA FRC	H-Set1
	HSUPA Test	HSUPA Loopback
	Power Control Algorithm	Algorithm 2
	β_c	1
	β_d	0
	β_{ec}	30/15
	β_{hs}	30/15
	β_{ed} (2xSF2)	β_{ed1} : 30/15 β_{ed2} : 30/15
	β_{ed} (2xSF4)	β_{ed3} : 24/15 β_{ed4} : 24/15
	CM (dB)	3.5
	MPR (dB)	2.5
	D E-DPCCH	7
	AG Index	14
	ETFCI	105

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD II 1900	HSPA+	9262	1852.4	23.07
FDD II 1900	HSPA+	9400	1880.0	22.41
FDD II 1900	HSPA+	9538	1907.6	22.61

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD IV 1700	HSPA+	1312	1712.4	23.97
FDD IV 1700	HSPA+	1412	1732.6	23.48
FDD IV 1700	HSPA+	1512	1752.6	23.49

Band	Mode	Channel Number	Frequency (MHz)	Average Output Power (dBm)
FDD V 850	HSPA+	4132	826.4	23.34
FDD V 850	HSPA+	4182	836.4	23.32
FDD V 850	HSPA+	4233	846.6	23.11

2.1.3. LTE Bands

LTE MPR is permanently implemented for the device. A-MPR was disable for SAR measurements.

Maximum Power Reductions are specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

- LTE 2

Band	BW	Modulation	Mode		Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1860.0 MHz	1880.0 MHz	1900.0 MHz
LTE B2	20 MHz	QPSK	1RB Low	0	22.46	22.36	22.45
			1RB Mid	0	22.20	22.27	22.34
			1RB High	0	22.44	22.13	22.22
			50% Low	1	21.44	21.39	21.43
			50% Mid	1	21.43	21.33	21.35
			50% High	1	21.47	21.27	21.30
			100%	1	21.45	21.31	21.34
		16-QAM	1RB Low	1	21.74	21.55	21.60
			1RB Mid	1	21.65	21.38	21.59
			1RB High	1	21.72	21.31	21.34
			50% Low	2	20.45	20.45	20.54
			50% Mid	2	20.41	20.35	20.43
			50% High	2	20.49	20.28	20.38
			100%	2	20.46	20.33	20.45
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1857.5 MHz	1880.0 MHz	1902.5 MHz
LTE B2	15 MHz	QPSK	1RB Low	0	22.43	22.33	22.23
			1RB Mid	0	22.20	22.16	21.99
			1RB High	0	22.37	22.06	21.99
			50% Low	1	21.42	21.32	21.19
			50% Mid	1	21.42	21.32	21.15
			50% High	1	21.43	21.26	21.13
			100%	1	21.42	21.34	21.24
		16-QAM	1RB Low	1	21.94	21.80	21.39
			1RB Mid	1	21.63	21.54	21.04
			1RB High	1	21.73	21.48	21.11
			50% Low	2	20.38	20.40	20.25
			50% Mid	2	20.37	20.34	20.16
			50% High	2	20.38	20.29	20.15
			100%	2	20.46	20.35	20.26

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1855.0 MHz	1880.0MHz	1905.0 MHz
LTE B2	10 MHz	QPSK	1RB Low	0	22.39	22.30	22.26
			1RB Mid	0	22.33	22.01	22.20
			1RB High	0	22.43	22.13	22.18
			50% Low	1	21.43	21.34	21.23
			50% Mid	1	21.42	21.28	21.16
			50% High	1	21.44	21.29	21.18
			100%	1	21.44	21.28	21.18
		16-QAM	1RB Low	1	21.90	21.63	21.38
			1RB Mid	1	21.78	21.36	21.29
			1RB High	1	21.82	21.39	21.22
			50% Low	2	20.50	20.36	20.29
			50% Mid	2	20.49	20.31	20.23
			50% High	2	20.44	20.26	20.23
100%	2	20.45	20.35	20.25			
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1852.5 MHz	1880.0 MHz	1907.5 MHz
LTE B2	5 MHz	QPSK	1RB Low	0	22.45	22.22	22.09
			1RB Mid	0	22.41	22.10	22.05
			1RB High	0	22.49	22.17	22.13
			50% Low	1	21.46	21.32	21.18
			50% Mid	1	21.47	21.32	21.16
			50% High	1	21.45	21.29	21.18
			100%	1	21.45	21.30	21.14
		16-QAM	1RB Low	1	21.46	21.50	21.51
			1RB Mid	1	21.32	21.29	21.27
			1RB High	1	21.41	21.40	21.38
			50% Low	2	20.45	20.33	20.16
			50% Mid	2	20.42	20.28	20.14
			50% High	2	20.47	20.27	20.16
100%	2	20.45	20.33	20.14			

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 B2	3 MHz	QPSK	1RB Low	0	22.36	22.24	22.13
			1RB Mid	0	22.12	22.20	22.02
			1RB High	0	22.30	22.32	22.25
			50% Low	1	21.47	21.34	21.18
			50% Mid	1	21.40	21.28	21.08
			50% High	1	21.45	21.29	21.15
			100%	1	21.46	21.27	21.15
		16-QAM	1RB Low	1	21.69	21.41	21.37
			1RB Mid	1	21.53	21.17	21.14
			1RB High	1	21.72	21.20	21.20
			50% Low	2	20.50	20.34	20.25
			50% Mid	2	20.50	20.25	20.29
			50% High	2	20.52	20.29	20.23
			100%	2	20.49	20.31	20.21
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1850.7 MHz	1880.0 MHz	1909.3 MHz
LTE B2	1.4 MHz	QPSK	1RB Low	0	22.34	22.20	22.07
			1RB Mid	0	22.46	22.14	22.11
			1RB High	0	22.43	22.25	22.12
			50% Low	0	22.43	22.22	22.06
			50% Mid	0	22.44	22.18	22.06
			50% High	0	22.38	22.18	22.00
			100%	1	21.33	21.25	21.09
		16-QAM	1RB Low	1	21.54	21.27	21.00
			1RB Mid	1	21.55	21.16	21.01
			1RB High	1	21.47	21.31	21.18
			50% Low	1	21.58	21.25	21.12
			50% Mid	1	21.54	21.24	21.17
			50% High	1	21.57	21.26	21.12
			100%	2	20.45	20.28	20.23

- **LTE 4**

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 B4	20 MHz	QPSK	1RB Low	0	23.73	23.42	23.15
			1RB Mid	0	23.25	22.90	23.36
			1RB High	0	23.20	23.46	23.68
			50% Low	1	22.61	22.36	22.33
			50% Mid	1	22.43	22.33	22.48
			50% High	1	22.50	22.37	22.61
			100%	1	22.66	22.35	22.43
		16-QAM	1RB Low	1	22.59	22.51	22.42
			1RB Mid	1	23.02	22.53	22.66
			1RB High	1	22.60	22.55	23.00
			50% Low	2	21.56	21.46	21.38
			50% Mid	2	21.76	21.38	21.51
			50% High	2	21.56	21.42	21.73
			100%	2	21.72	21.46	21.48
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE B4	15 MHz	QPSK	1RB Low	0	24.03	23.32	23.42
			1RB Mid	0	23.65	23.05	23.58
			1RB High	0	23.45	23.39	23.81
			50% Low	1	22.62	22.31	22.51
			50% Mid	1	22.76	22.27	22.63
			50% High	1	22.59	22.32	22.72
			100%	1	22.76	22.32	22.59
		16-QAM	1RB Low	1	22.52	22.64	22.36
			1RB Mid	1	22.68	22.39	22.50
			1RB High	1	22.50	22.60	22.77
			50% Low	2	21.65	21.30	21.54
			50% Mid	2	21.77	21.31	21.67
			50% High	2	21.61	21.33	21.78
			100%	2	21.79	21.39	21.63

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1715.0 MHz	1732.5MHz	1750.0 MHz
LTE B4	10 MHz	QPSK	1RB Low	0	23.92	23.22	23.54
			1RB Mid	0	23.82	23.16	23.61
			1RB High	0	23.67	23.28	23.77
			50% Low	1	22.87	22.27	22.63
			50% Mid	1	22.75	22.29	22.72
			50% High	1	22.69	22.31	22.73
			100%	1	22.77	22.30	22.69
		16-QAM	1RB Low	1	22.99	22.57	22.65
			1RB Mid	1	22.78	22.50	22.92
			1RB High	1	22.63	22.55	22.85
			50% Low	2	21.85	21.31	21.65
			50% Mid	2	21.77	21.31	21.74
			50% High	2	21.70	21.29	21.78
			100%	2	21.79	21.36	21.76
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1712.5 MHz	1732.5MHz	1752.5 MHz
LTE B4	5 MHz	QPSK	1RB Low	0	23.95	23.29	23.81
			1RB Mid	0	23.78	23.31	23.82
			1RB High	0	23.81	23.33	23.84
			50% Low	1	22.92	22.30	22.76
			50% Mid	1	22.89	22.30	22.78
			50% High	1	22.88	22.28	22.81
			100%	1	22.89	22.29	22.82
		16-QAM	1RB Low	1	23.15	22.52	22.93
			1RB Mid	1	23.01	22.43	22.75
			1RB High	1	23.04	22.50	22.92
			50% Low	2	21.92	21.34	21.78
			50% Mid	2	21.90	21.33	21.82
			50% High	2	21.86	21.32	21.85
			100%	2	21.90	21.34	21.92

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					1711.5 MHz	1732.5MHz	1753.5 MHz
LTE B4	3 MHz	QPSK	1RB Low	0	24.00	23.33	23.72
			1RB Mid	0	23.87	23.18	23.55
			1RB High	0	23.97	23.40	23.71
			50% Low	1	23.01	22.30	22.84
			50% Mid	1	22.94	22.27	22.79
			50% High	1	22.95	22.33	22.81
			100%	1	22.95	22.28	22.83
		16-QAM	1RB Low	1	23.07	22.48	22.94
			1RB Mid	1	22.92	22.37	22.83
			1RB High	1	22.92	22.38	22.98
			50% Low	2	22.06	21.41	21.90
			50% Mid	2	21.97	21.35	21.92
			50% High	2	21.99	21.38	21.88
			100%	2	21.94	21.33	21.85
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1710.7 MHz	1732.5MHz	1754.3 MHz
LTE B4	1.4 MHz	QPSK	1RB Low	0	23.87	23.17	23.67
			1RB Mid	0	23.70	23.22	23.78
			1RB High	0	23.90	23.21	23.74
			50% Low	0	23.89	23.22	23.77
			50% Mid	0	23.88	23.17	23.75
			50% High	0	23.81	23.17	23.74
			100%	1	22.91	22.23	22.70
		16-QAM	1RB Low	1	23.13	22.15	22.80
			1RB Mid	1	23.08	22.21	22.72
			1RB High	1	23.12	22.16	22.85
			50% Low	1	22.82	22.39	22.89
			50% Mid	1	22.85	22.36	22.92
			50% High	1	22.85	22.29	22.89
			100%	2	21.85	21.25	21.75

- **LTE 5**

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 B5	10 MHz	QPSK	1RB Low	0	23.52	23.67	23.70
			1RB Mid	0	23.55	23.52	23.65
			1RB High	0	23.58	23.65	23.61
			50% Low	1	22.50	22.61	22.66
			50% Mid	1	22.52	22.61	22.61
			50% High	1	22.52	22.63	22.58
			100%	1	22.52	22.66	22.60
		16-QAM	1RB Low	1	22.62	22.96	22.81
			1RB Mid	1	22.60	22.82	22.75
			1RB High	1	22.80	22.89	22.75
			50% Low	2	21.49	21.68	21.67
			50% Mid	2	21.51	21.66	21.62
			50% High	2	21.54	21.66	21.58
			100%	2	21.49	21.68	21.64
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					826.5 MHz	836.5 MHz	846.5 MHz
LTE B5	5 MHz	QPSK	1RB Low	0	23.49	23.62	23.58
			1RB Mid	0	23.46	23.50	23.49
			1RB High	0	23.48	23.63	23.53
			50% Low	1	22.40	22.63	22.56
			50% Mid	1	22.40	22.60	22.47
			50% High	1	22.48	22.62	22.49
			100%	1	22.50	22.67	22.57
		16-QAM	1RB Low	1	22.63	22.86	22.75
			1RB Mid	1	22.44	22.78	22.52
			1RB High	1	22.66	22.86	22.70
			50% Low	2	21.45	21.65	21.59
			50% Mid	2	21.43	21.66	21.55
			50% High	2	21.51	21.66	21.59
			100%	2	21.48	21.69	21.58

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 B5	3 MHz	QPSK	1RB Low	0	23.38	23.60	23.63
			1RB Mid	0	23.22	23.52	23.45
			1RB High	0	23.38	23.68	23.63
			50% Low	1	22.47	22.61	22.55
			50% Mid	1	22.41	22.54	22.47
			50% High	1	22.45	22.56	22.53
			100%	1	22.41	22.57	22.55
		16-QAM	1RB Low	1	22.56	22.76	22.70
			1RB Mid	1	22.39	22.57	22.51
			1RB High	1	22.67	22.67	22.60
			50% Low	2	21.44	21.56	21.60
			50% Mid	2	21.45	21.57	21.52
			50% High	2	21.46	21.51	21.54
			100%	2	21.43	21.57	21.59
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
LTE B5	1.4 MHz	QPSK	1RB Low	0	23.59	23.51	23.43
			1RB Mid	0	23.67	23.58	23.28
			1RB High	0	23.58	23.52	23.45
			50% Low	0	23.51	23.58	23.46
			50% Mid	0	23.47	23.57	23.39
			50% High	0	23.41	23.55	23.40
			100%	1	22.53	22.52	22.42
		16-QAM	1RB Low	1	22.50	22.60	22.55
			1RB Mid	1	22.51	22.56	22.43
			1RB High	1	22.52	22.60	22.51
			50% Low	1	22.55	22.58	22.38
			50% Mid	1	22.49	22.58	22.42
			50% High	1	22.49	22.59	22.43
			100%	2	21.53	21.48	21.44

- **LTE 7**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2510.0 MHz	2535.0 MHz	2560.0 MHz
LTE B7	20 MHz	QPSK	1RB Low	0	22.77	22.70	22.28
			1RB Mid	0	22.68	22.51	22.07
			1RB High	0	22.80	22.45	22.20
			50% Low	1	21.85	21.68	21.18
			50% Mid	1	21.84	21.61	21.14
			50% High	1	21.82	21.57	21.18
			100%	1	21.81	21.61	21.18
		16-QAM	1RB Low	1	22.11	21.86	21.53
			1RB Mid	1	22.12	21.80	21.37
			1RB High	1	22.17	21.60	21.58
			50% Low	2	20.85	20.66	20.18
			50% Mid	2	20.89	20.65	20.12
			50% High	2	20.90	20.60	20.19
			100%	2	20.93	20.62	20.18
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					2507.5 MHz	2535.0 MHz	2562.5 MHz
LTE B7	15 MHz	QPSK	1RB Low	0	22.86	22.67	22.30
			1RB Mid	0	22.62	22.48	22.08
			1RB High	0	22.86	22.43	22.28
			50% Low	1	21.95	21.67	21.30
			50% Mid	1	21.93	21.64	21.27
			50% High	1	21.94	21.58	21.29
			100%	1	21.98	21.67	21.32
		16-QAM	1RB Low	1	22.01	21.94	21.36
			1RB Mid	1	21.91	21.81	21.16
			1RB High	1	22.00	21.89	21.42
			50% Low	2	20.88	20.69	20.28
			50% Mid	2	20.87	20.65	20.22
			50% High	2	20.90	20.62	20.28
			100%	2	20.93	20.65	20.28

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2505.0 MHz	2535.0 MHz	2565.0 MHz
LTE B7	10 MHz	QPSK	1RB Low	0	22.89	22.62	22.08
			1RB Mid	0	22.94	22.59	21.93
			1RB High	0	22.96	22.56	22.20
			50% Low	1	21.91	21.62	21.20
			50% Mid	1	21.92	21.60	21.16
			50% High	1	21.95	21.60	21.22
			100%	1	21.91	21.58	21.17
		16-QAM	1RB Low	1	22.01	21.75	21.25
			1RB Mid	1	21.95	21.65	21.23
			1RB High	1	22.08	21.74	21.34
			50% Low	2	20.95	20.68	20.21
			50% Mid	2	20.97	20.64	20.21
			50% High	2	20.97	20.59	20.25
			100%	2	20.96	20.64	20.26
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					2502.5 MHz	2535.0 MHz	2567.5 MHz
LTE B7	5 MHz	QPSK	1RB Low	0	22.80	22.59	22.12
			1RB Mid	0	22.73	22.51	22.03
			1RB High	0	22.80	22.54	22.20
			50% Low	1	21.81	21.61	21.22
			50% Mid	1	21.84	21.54	21.23
			50% High	1	21.81	21.57	21.24
			100%	1	21.82	21.58	21.25
		16-QAM	1RB Low	1	21.96	21.84	21.45
			1RB Mid	1	21.70	21.67	21.31
			1RB High	1	21.93	21.88	21.45
			50% Low	2	20.87	20.63	20.22
			50% Mid	2	20.86	20.61	20.21
			50% High	2	20.88	20.62	20.24
			100%	2	20.83	20.61	20.32

- **LTE 12**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
LTE B12	10 MHz	QPSK	1RB Low	0	-	707.5 MHz	-
			1RB Mid	0	-	23.29	-
			1RB High	0	-	23.23	-
			50% Low	1	-	23.26	-
			50% Mid	1	-	22.42	-
			50% High	1	-	22.38	-
			100%	1	-	22.34	-
		16-QAM	1RB Low	1	-	22.26	-
			1RB Mid	1	-	22.46	-
			1RB High	1	-	22.51	-
			50% Low	2	-	22.54	-
			50% Mid	2	-	21.29	-
			50% High	2	-	21.25	-
			100%	2	-	21.27	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					701.5 MHz	707.5 MHz	713.5 MHz
LTE B12	5 MHz	QPSK	1RB Low	0	23.44	23.39	23.26
			1RB Mid	0	23.32	23.27	23.16
			1RB High	0	23.40	23.38	23.19
			50% Low	1	22.39	22.32	22.18
			50% Mid	1	22.33	22.31	22.13
			50% High	1	22.31	22.31	22.14
			100%	1	22.36	22.32	22.16
		16-QAM	1RB Low	1	22.57	22.50	22.24
			1RB Mid	1	22.33	22.33	22.01
			1RB High	1	22.55	22.47	22.15
			50% Low	2	21.33	21.24	21.17
			50% Mid	2	21.33	21.21	21.13
			50% High	2	21.31	21.21	21.13
			100%	2	21.35	21.26	21.18

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, 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 B12	3 MHz	QPSK	1RB Low	0	23.27	23.25	23.26
			1RB Mid	0	23.09	23.22	23.10
			1RB High	0	23.25	23.36	23.24
			50% Low	1	22.33	22.28	22.24
			50% Mid	1	22.26	22.25	22.13
			50% High	1	22.25	22.23	22.19
			100%	1	22.29	22.27	22.19
		16-QAM	1RB Low	1	22.36	22.38	22.33
			1RB Mid	1	22.24	22.24	22.22
			1RB High	1	22.47	22.23	22.27
			50% Low	2	21.33	21.30	21.24
			50% Mid	2	21.32	21.26	21.26
			50% High	2	21.29	21.25	21.25
			100%	2	21.35	21.26	21.21
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					699.7 MHz	707.5 MHz	715.3 MHz
LTE B12	1.4 MHz	QPSK	1RB Low	0	23.28	23.28	23.09
			1RB Mid	0	23.17	23.34	23.16
			1RB High	0	23.32	23.30	23.13
			50% Low	0	23.26	23.21	23.17
			50% Mid	0	23.21	23.19	23.12
			50% High	0	23.19	23.16	23.08
			100%	1	22.28	22.27	22.03
		16-QAM	1RB Low	1	22.51	22.26	22.13
			1RB Mid	1	22.45	22.25	21.97
			1RB High	1	22.40	22.20	22.15
			50% Low	1	22.23	22.31	22.24
			50% Mid	1	22.21	22.28	22.23
			50% High	1	22.20	22.26	22.17
			100%	2	21.22	21.19	21.08

- **LTE 13**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	782.0 MHz	-
LTE B13	10 MHz	QPSK	1RB Low	0	-	23.39	-
			1RB Mid	0	-	23.38	-
			1RB High	0	-	23.36	-
			50% Low	1	-	22.33	-
			50% Mid	1	-	22.32	-
			50% High	1	-	22.32	-
			100%	1	-	22.31	-
		16-QAM	1RB Low	1	-	22.40	-
			1RB Mid	1	-	22.37	-
			1RB High	1	-	22.49	-
			50% Low	2	-	21.31	-
			50% Mid	2	-	21.33	-
			50% High	2	-	21.35	-
			100%	2	-	21.34	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					779.5 MHz	782.0 MHz	784.5 MHz
LTE B13	5 MHz	QPSK	1RB Low	0	-	23.37	-
			1RB Mid	0	-	23.31	-
			1RB High	0	-	23.42	-
			50% Low	1	-	22.40	-
			50% Mid	1	-	22.41	-
			50% High	1	-	22.42	-
			100%	1	-	22.42	-
		16-QAM	1RB Low	1	-	22.59	-
			1RB Mid	1	-	22.53	-
			1RB High	1	-	22.71	-
			50% Low	2	-	21.39	-
			50% Mid	2	-	21.39	-
			50% High	2	-	21.46	-
			100%	2	-	21.44	-

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, 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 17**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	710.0 MHz	-
LTE B17	10 MHz	QPSK	1RB Low	0	-	23.32	-
			1RB Mid	0	-	23.25	-
			1RB High	0	-	23.22	-
			50% Low	1	-	22.29	-
			50% Mid	1	-	22.26	-
			50% High	1	-	22.21	-
			100%	1	-	22.27	-
		16-QAM	1RB Low	1	-	22.46	-
			1RB Mid	1	-	22.45	-
			1RB High	1	-	22.51	-
			50% Low	2	-	21.23	-
			50% Mid	2	-	21.15	-
			50% High	2	-	21.17	-
			100%	2	-	21.20	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					-	710.0 MHz	-
LTE B17	5 MHz	QPSK	1RB Low	0	-	23.26	-
			1RB Mid	0	-	23.11	-
			1RB High	0	-	23.29	-
			50% Low	1	-	22.25	-
			50% Mid	1	-	22.22	-
			50% High	1	-	22.21	-
			100%	1	-	22.23	-
		16-QAM	1RB Low	1	-	22.39	-
			1RB Mid	1	-	22.23	-
			1RB High	1	-	22.40	-
			50% Low	2	-	21.19	-
			50% Mid	2	-	21.18	-
			50% High	2	-	21.18	-
			100%	2	-	21.20	-

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, 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 25**

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 B25	20 MHz	QPSK	1RB Low	0	22.50	22.59	22.50
			1RB Mid	0	22.20	22.41	22.42
			1RB High	0	22.49	22.35	22.43
			50% Low	1	21.47	21.57	21.46
			50% Mid	1	21.45	21.50	21.39
			50% High	1	21.45	21.39	21.41
			100%	1	21.48	21.46	21.38
		16-QAM	1RB Low	1	21.71	21.78	21.75
			1RB Mid	1	21.53	21.56	21.59
			1RB High	1	21.55	21.47	21.72
			50% Low	2	20.46	20.59	20.51
			50% Mid	2	20.43	20.50	20.41
			50% High	2	20.48	20.43	20.43
			100%	2	20.51	20.47	20.45
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1857.5 MHz	1882.5 MHz	1907.5 MHz
LTE B25	15 MHz	QPSK	1RB Low	0	22.48	22.54	22.33
			1RB Mid	0	22.24	22.34	22.17
			1RB High	0	22.44	22.23	22.28
			50% Low	1	21.48	21.53	21.35
			50% Mid	1	21.46	21.47	21.31
			50% High	1	21.53	21.42	21.33
			100%	1	21.51	21.53	21.35
		16-QAM	1RB Low	1	21.85	21.87	21.62
			1RB Mid	1	21.50	21.59	21.27
			1RB High	1	21.71	21.53	21.56
			50% Low	2	20.44	20.58	20.34
			50% Mid	2	20.43	20.48	20.31
			50% High	2	20.45	20.42	20.39
			100%	2	20.49	20.51	20.36

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 B25	10 MHz	QPSK	1RB Low	0	22.46	22.56	22.35
			1RB Mid	0	22.41	22.32	22.39
			1RB High	0	22.50	22.32	22.48
			50% Low	1	21.48	21.51	21.29
			50% Mid	1	21.52	21.48	21.33
			50% High	1	21.52	21.43	21.33
			100%	1	21.50	21.47	21.32
		16-QAM	1RB Low	1	21.90	21.95	21.62
			1RB Mid	1	21.72	21.79	21.62
			1RB High	1	21.83	21.69	21.64
			50% Low	2	20.59	20.51	20.32
			50% Mid	2	20.55	20.48	20.34
			50% High	2	20.51	20.43	20.38
			100%	2	20.53	20.48	20.35
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1852.5 MHz	1882.2 MHz	1912.5 MHz
LTE B25	5 MHz	QPSK	1RB Low	0	22.51	22.49	22.26
			1RB Mid	0	22.46	22.31	22.26
			1RB High	0	22.50	22.39	22.33
			50% Low	1	21.51	21.50	21.30
			50% Mid	1	21.47	21.44	21.32
			50% High	1	21.50	21.44	21.33
			100%	1	21.51	21.47	21.35
		16-QAM	1RB Low	1	21.55	21.74	21.41
			1RB Mid	1	21.34	21.62	21.29
			1RB High	1	21.51	21.62	21.45
			50% Low	2	20.55	20.53	20.36
			50% Mid	2	20.51	20.47	20.40
			50% High	2	20.54	20.46	20.42
			100%	2	20.59	20.51	20.37

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 B25	3 MHz	QPSK	1RB Low	0	22.48	22.59	22.27
			1RB Mid	0	22.42	22.42	22.14
			1RB High	0	22.58	22.54	22.27
			50% Low	1	21.54	21.54	21.37
			50% Mid	1	21.49	21.44	21.29
			50% High	1	21.51	21.46	21.30
			100%	1	21.50	21.48	21.35
		16-QAM	1RB Low	1	21.76	21.65	21.57
			1RB Mid	1	21.56	21.46	21.40
			1RB High	1	21.59	21.46	21.68
			50% Low	2	20.59	20.55	20.42
			50% Mid	2	20.56	20.54	20.38
			50% High	2	20.57	20.50	20.44
			100%	2	20.60	20.49	20.41
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1850.7 MHz	1882.5 MHz	1914.3 MHz
LTE B25	1.4 MHz	QPSK	1RB Low	0	22.51	22.36	22.25
			1RB Mid	0	22.56	22.43	22.21
			1RB High	0	22.53	22.38	22.31
			50% Low	0	22.52	22.45	22.29
			50% Mid	0	22.42	22.40	22.24
			50% High	0	22.43	22.41	22.20
			100%	1	21.42	21.40	21.27
		16-QAM	1RB Low	1	21.51	21.52	21.40
			1RB Mid	1	21.66	21.45	21.32
			1RB High	1	21.52	21.38	21.45
			50% Low	1	21.59	21.42	21.34
			50% Mid	1	21.61	21.49	21.35
			50% High	1	21.56	21.40	21.34
			100%	2	20.52	20.45	20.28

- **LTE 26**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					-	831.5 MHz	-
LTE B26	15 MHz	QPSK	1RB Low	0	-	23.60	-
			1RB Mid	0	-	23.35	-
			1RB High	0	-	23.58	-
			50% Low	1	-	22.63	-
			50% Mid	1	-	22.64	-
			50% High	1	-	22.65	-
			100%	1	-	22.60	-
		16-QAM	1RB Low	1	-	22.84	-
			1RB Mid	1	-	22.65	-
			1RB High	1	-	22.93	-
			50% Low	2	-	21.56	-
			50% Mid	2	-	21.53	-
			50% High	2	-	21.65	-
			100%	2	-	21.66	-
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					819.0 MHz	831.5 MHz	844.0 MHz
LTE B26	10 MHz	QPSK	1RB Low	0	23.52	23.60	23.63
			1RB Mid	0	23.51	23.42	23.66
			1RB High	0	23.60	23.60	23.62
			50% Low	1	22.55	22.59	22.61
			50% Mid	1	22.53	22.57	22.59
			50% High	1	22.60	22.62	22.60
			100%	1	22.54	22.58	22.60
		16-QAM	1RB Low	1	22.80	22.79	22.88
			1RB Mid	1	22.66	22.70	22.86
			1RB High	1	22.75	22.89	22.75
			50% Low	2	21.49	21.57	21.60
			50% Mid	2	21.47	21.55	21.53
			50% High	2	21.55	21.61	21.58
			100%	2	21.48	21.58	21.62

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, 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 B26	5 MHz	QPSK	1RB Low	0	23.45	23.56	23.57
			1RB Mid	0	23.39	23.46	23.54
			1RB High	0	23.49	23.60	23.59
			50% Low	1	22.40	22.59	22.62
			50% Mid	1	22.42	22.59	22.56
			50% High	1	22.44	22.58	22.61
			100%	1	22.40	22.56	22.57
		16-QAM	1RB Low	1	22.43	22.81	22.64
			1RB Mid	1	22.20	22.67	22.52
			1RB High	1	22.40	22.86	22.63
			50% Low	2	21.41	21.59	21.70
			50% Mid	2	21.40	21.57	21.67
			50% High	2	21.44	21.63	21.68
			100%	2	21.43	21.57	21.63
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					815.5 MHz	831.5 MHz	847.5 MHz
LTE B26	3 MHz	QPSK	1RB Low	0	23.37	23.65	23.71
			1RB Mid	0	23.23	23.61	23.50
			1RB High	0	23.36	23.79	23.69
			50% Low	1	22.49	22.68	22.64
			50% Mid	1	22.41	22.65	22.52
			50% High	1	22.40	22.66	22.59
			100%	1	22.41	22.60	22.55
		16-QAM	1RB Low	1	22.64	22.69	22.80
			1RB Mid	1	22.45	22.63	22.59
			1RB High	1	22.78	22.61	22.67
			50% Low	2	21.53	21.71	21.65
			50% Mid	2	21.48	21.63	21.60
			50% High	2	21.49	21.67	21.60
			100%	2	21.47	21.64	21.55
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					814.5 MHz	831.5 MHz	848.3 MHz
LTE B26	1.4 MHz	QPSK	1RB Low	0	23.53	23.55	23.49
			1RB Mid	0	23.54	23.67	23.30
			1RB High	0	23.52	23.56	23.52
			50% Low	0	23.45	23.55	23.49
			50% Mid	0	23.41	23.42	23.50
			50% High	0	23.33	23.51	23.38
			100%	1	22.48	22.57	22.54
		16-QAM	1RB Low	1	22.46	22.55	22.57
			1RB Mid	1	22.45	22.52	22.50
			1RB High	1	22.38	22.54	22.59
			50% Low	1	22.52	22.53	22.54
			50% Mid	1	22.53	22.51	22.47
			50% High	1	22.49	22.44	22.47
			100%	2	21.52	21.54	21.54

- LTE Band 38

To perform LTE TDD measurements, CMW LTE TDD options “Uplink Downlink Configuration” was set to “0” and “Special Subframe” was set to “7”.

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2580.0 MHz	2595.0 MHz	2610.0 MHz
LTE B38	20 MHz	QPSK	1RB Low	0	20.75	20.91	20.24
			1RB Mid	0	20.59	20.38	19.86
			1RB High	0	20.83	20.24	20.11
			50% Low	1	19.71	19.79	19.10
			50% Mid	1	19.73	19.53	19.00
			50% High	1	19.78	19.40	19.01
			100%	1	19.77	19.63	19.06
		16-QAM	1RB Low	1	19.89	20.14	19.60
			1RB Mid	1	19.94	19.80	19.22
			1RB High	1	20.06	19.54	19.52
			50% Low	2	18.70	18.71	18.13
			50% Mid	2	18.75	18.49	18.08
			50% High	2	18.82	18.36	18.10
			100%	2	18.68	18.57	18.08
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					2577.5 MHz	2595.0 MHz	2612.5 MHz
LTE B38	15 MHz	QPSK	1RB Low	0	20.76	20.94	20.17
			1RB Mid	0	20.95	20.84	20.30
			1RB High	0	20.83	20.38	20.13
			50% Low	1	19.79	19.73	19.06
			50% Mid	1	19.85	19.63	18.97
			50% High	1	19.84	19.43	18.99
			100%	1	19.83	19.63	19.04
		16-QAM	1RB Low	1	19.93	19.85	19.28
			1RB Mid	1	19.77	19.26	18.45
			1RB High	1	20.04	19.38	19.28
			50% Low	2	18.79	18.68	18.01
			50% Mid	2	18.81	18.54	17.98
			50% High	2	18.84	18.40	18.03
			100%	2	18.79	18.63	18.05

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					2575.0 MHz	2595.0 MHz	2615.0 MHz
LTE B38	10 MHz	QPSK	1RB Low	0	20.64	20.84	20.07
			1RB Mid	0	20.50	20.23	20.09
			1RB High	0	20.86	20.49	20.13
			50% Low	1	19.63	19.71	19.03
			50% Mid	1	19.69	19.61	19.04
			50% High	1	19.73	19.48	19.11
			100%	1	19.67	19.56	19.06
		16-QAM	1RB Low	1	19.59	19.69	19.03
			1RB Mid	1	19.72	19.37	19.04
			1RB High	1	19.82	19.33	19.12
			50% Low	2	18.58	18.66	18.04
			50% Mid	2	18.62	18.56	18.09
			50% High	2	18.67	18.50	18.10
			100%	2	18.66	18.56	18.15
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					2572.5 MHz	2595.0 MHz	2617.5 MHz
LTE B38	5 MHz	QPSK	1RB Low	0	20.59	20.73	20.09
			1RB Mid	0	20.67	20.41	20.40
			1RB High	0	20.63	20.46	20.16
			50% Low	1	19.55	19.60	19.09
			50% Mid	1	19.52	19.53	19.13
			50% High	1	19.57	19.51	19.18
			100%	1	19.54	19.55	19.18
		16-QAM	1RB Low	1	19.78	19.77	19.28
			1RB Mid	1	19.76	19.82	19.70
			1RB High	1	19.79	19.68	19.35
			50% Low	2	18.45	18.62	18.18
			50% Mid	2	18.45	18.59	18.19
			50% High	2	18.51	18.57	18.20
			100%	2	18.43	18.56	18.18

- LTE 41

To perform LTE TDD measurements, CMW LTE TDD options “Uplink Downlink Configuration” was set to “0” and “Special Subframe” was set to “7”.

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)				
					Low CH	Low/Mid CH	Mid CH	Mid/High CH	High CH
					2506.0 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2680.0 MHz
LTE B41	20 MHz	QPSK	1RB Low	0	22.13	22.23	21.94	21.30	20.66
			1RB Mid	0	22.05	21.82	21.80	20.72	20.45
			1RB High	0	21.93	21.97	21.35	20.77	20.40
			50% Low	1	21.11	20.77	20.81	20.27	19.62
			50% Mid	1	21.03	20.86	20.62	20.16	19.56
			50% High	1	20.99	20.80	20.51	19.95	19.49
			100%	1	21.03	20.87	20.64	20.10	19.58
		16-QAM	1RB Low	1	21.34	21.10	21.25	20.59	19.90
			1RB Mid	1	21.10	21.01	20.91	20.42	19.75
			1RB High	1	21.14	21.08	20.67	20.03	19.57
			50% Low	2	20.04	19.80	19.75	19.25	18.53
			50% Mid	2	19.97	19.94	19.60	19.11	18.47
			50% High	2	19.97	19.81	19.46	18.93	18.41
			100%	2	20.03	19.87	19.61	19.11	18.53
Band	BW	Modulation	Mode	MPR	Low CH	Low/Mid CH	Mid CH	Mid/High CH	High CH
					2503.5 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2682.5 MHz
LTE B41	15 MHz	QPSK	1RB Low	0	22.56	22.07	21.93	21.31	21.61
			1RB Mid	0	22.45	22.04	21.93	21.33	21.55
			1RB High	0	22.21	21.70	21.43	20.82	21.42
			50% Low	1	21.44	20.98	20.84	20.25	20.61
			50% Mid	1	21.40	20.92	20.69	20.09	20.59
			50% High	1	21.31	20.78	20.55	19.92	20.57
			100%	1	21.38	20.94	20.73	20.13	20.55
		16-QAM	1RB Low	1	21.90	20.98	20.79	20.25	21.07
			1RB Mid	1	21.62	20.60	20.30	20.00	20.86
			1RB High	1	21.60	20.61	20.33	19.79	20.81
			50% Low	2	20.46	19.96	19.79	19.22	19.95
			50% Mid	2	20.43	19.87	19.68	19.11	19.93
			50% High	2	20.34	19.76	19.54	18.97	19.85
			100%	2	20.35	19.93	19.71	19.18	19.83

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)				
					Low CH	Low/Mid CH	Mid CH	Mid/High CH	High CH
					2501.0 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2682.5 MHz
LTE B41	10 MHz	QPSK	1RB Low	0	22.35	22.01	21.78	21.20	20.66
			1RB Mid	0	22.06	21.51	21.21	20.86	20.11
			1RB High	0	22.22	21.78	21.44	20.84	20.33
			50% Low	1	21.30	20.91	20.70	20.19	19.61
			50% Mid	1	21.25	20.86	20.62	20.12	19.50
			50% High	1	21.21	20.83	20.52	20.04	19.43
			100%	1	21.23	20.91	20.63	20.14	19.51
		16-QAM	1RB Low	1	21.47	21.17	20.77	19.82	19.57
			1RB Mid	1	21.30	20.94	20.51	19.59	19.39
			1RB High	1	21.28	20.86	20.41	19.50	19.29
			50% Low	2	20.28	19.99	19.76	19.26	18.62
			50% Mid	2	20.27	19.95	19.71	19.14	18.54
			50% High	2	20.24	19.89	19.61	19.09	18.46
			100%	2	20.21	19.85	19.59	19.19	18.43
Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)				
					Low CH	Low/Mid CH	Mid CH	Mid/High CH	High CH
					2498.5 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2682.5 MHz
LTE B41	5 MHz	QPSK	1RB Low	0	22.49	21.98	21.73	21.27	20.57
			1RB Mid	0	22.45	21.79	21.53	21.11	20.54
			1RB High	0	22.35	21.77	21.52	21.02	20.33
			50% Low	1	21.33	20.89	20.65	20.15	19.42
			50% Mid	1	21.32	20.87	20.62	20.07	19.37
			50% High	1	21.30	20.88	20.60	20.09	19.32
			100%	1	21.32	20.86	20.58	20.08	19.35
		16-QAM	1RB Low	1	21.34	21.14	20.62	20.30	19.40
			1RB Mid	1	21.39	21.11	20.76	20.55	19.45
			1RB High	1	21.35	20.89	20.52	20.24	19.29
			50% Low	2	20.40	20.05	19.68	19.25	18.45
			50% Mid	2	20.33	19.98	19.65	19.22	18.39
			50% High	2	20.36	19.98	19.62	19.19	18.40
			100%	2	20.33	19.88	19.60	19.14	18.36

- **LTE 66**

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 B66	20 MHz	QPSK	1RB Low	0	23.44	23.41	23.47
			1RB Mid	0	23.14	23.40	23.23
			1RB High	0	23.14	23.42	23.00
			50% Low	1	22.51	22.46	22.40
			50% Mid	1	22.41	22.49	22.26
			50% High	1	22.31	22.47	22.12
			100%	1	22.38	22.44	22.28
		16-QAM	1RB Low	1	22.63	22.46	22.69
			1RB Mid	1	22.70	22.66	22.42
			1RB High	1	22.40	22.50	22.25
			50% Low	2	21.52	21.48	21.40
			50% Mid	2	21.45	21.53	21.28
			50% High	2	21.35	21.49	21.12
			100%	2	21.44	21.50	21.28
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1717.5 MHz	1745.0 MHz	1772.5 MHz
LTE B66	15 MHz	QPSK	1RB Low	0	23.52	23.38	23.42
			1RB Mid	0	23.39	23.36	22.97
			1RB High	0	23.28	23.38	23.04
			50% Low	1	22.53	22.45	22.39
			50% Mid	1	22.48	22.48	22.28
			50% High	1	22.39	22.48	22.18
			100%	1	22.48	22.48	22.33
		16-QAM	1RB Low	1	22.84	22.62	22.83
			1RB Mid	1	22.63	22.50	22.41
			1RB High	1	22.58	22.49	22.35
			50% Low	2	21.53	21.48	21.33
			50% Mid	2	21.49	21.47	21.23
			50% High	2	21.39	21.52	21.16
			100%	2	21.45	21.49	21.29

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 B66	10 MHz	QPSK	1RB Low	0	23.47	23.37	23.32
			1RB Mid	0	23.36	23.48	23.11
			1RB High	0	23.36	23.46	23.05
			50% Low	1	22.47	22.46	22.26
			50% Mid	1	22.45	22.46	22.20
			50% High	1	22.43	22.47	22.16
			100%	1	22.43	22.47	22.21
		16-QAM	1RB Low	1	22.61	22.56	22.40
			1RB Mid	1	22.59	22.54	22.30
			1RB High	1	22.50	22.56	22.20
			50% Low	2	21.50	21.56	21.31
			50% Mid	2	21.46	21.56	21.23
			50% High	2	21.44	21.54	21.19
			100%	2	21.42	21.53	21.21
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					1712.5 MHz	1745.0 MHz	1777.5 MHz
LTE B66	5 MHz	QPSK	1RB Low	0	23.49	23.40	23.29
			1RB Mid	0	23.36	23.41	23.17
			1RB High	0	23.45	23.44	23.19
			50% Low	1	22.51	22.45	22.25
			50% Mid	1	22.47	22.48	22.19
			50% High	1	22.49	22.50	22.20
			100%	1	22.50	22.48	22.24
		16-QAM	1RB Low	1	22.65	22.65	22.29
			1RB Mid	1	22.65	22.58	22.14
			1RB High	1	22.71	22.71	22.21
			50% Low	2	21.42	21.53	21.22
			50% Mid	2	21.43	21.52	21.20
			50% High	2	21.40	21.52	21.19
			100%	2	21.47	21.53	21.27

- **LTE 71**

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					673.0 MHz	680.5 MHz	688.0 MHz
LTE B71	20 MHz	QPSK	1RB Low	0	23.84	23.76	23.70
			1RB Mid	0	23.86	23.50	23.53
			1RB High	0	23.86	23.66	23.53
			50% Low	1	22.78	22.79	22.65
			50% Mid	1	22.81	22.80	22.62
			50% High	1	22.80	22.78	22.60
			100%	1	22.83	22.75	22.60
		16-QAM	1RB Low	1	23.03	23.12	23.03
			1RB Mid	1	23.11	23.10	23.08
			1RB High	1	23.06	23.13	22.77
			50% Low	2	21.82	22.83	21.74
			50% Mid	2	21.82	21.85	21.70
			50% High	2	21.80	21.84	21.58
			100%	2	21.77	21.75	21.62
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					670.5 MHz	680.5 MHz	690.5 MHz
LTE B71	15 MHz	QPSK	1RB Low	0	23.89	23.74	23.60
			1RB Mid	0	23.72	23.55	23.40
			1RB High	0	23.85	23.70	23.46
			50% Low	1	22.90	22.76	22.56
			50% Mid	1	22.90	22.78	22.52
			50% High	1	22.91	22.68	22.52
			100%	1	22.95	22.74	22.52
		16-QAM	1RB Low	1	23.10	22.98	22.92
			1RB Mid	1	23.02	22.80	22.71
			1RB High	1	23.16	22.98	22.69
			50% Low	2	21.96	21.75	21.65
			50% Mid	2	21.90	21.73	21.60
			50% High	2	21.93	21.74	21.50
			100%	2	21.95	21.77	21.58

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					668.0 MHz	680.5 MHz	693.0 MHz
LTE B71	10 MHz	QPSK	1RB Low	0	23.92	23.67	23.44
			1RB Mid	0	23.97	23.62	23.35
			1RB High	0	23.91	23.60	23.39
			50% Low	1	22.91	22.62	22.43
			50% Mid	1	22.90	22.67	22.43
			50% High	1	22.87	22.67	22.38
			100%	1	22.84	22.61	22.38
		16-QAM	1RB Low	1	23.10	22.84	22.79
			1RB Mid	1	23.28	22.95	22.81
			1RB High	1	23.10	22.98	22.70
			50% Low	2	21.86	21.63	21.50
			50% Mid	2	21.87	21.67	21.40
			50% High	2	21.90	21.68	21.40
			100%	2	21.91	21.64	21.38
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					665.5 MHz	680.5 MHz	695.5 MHz
LTE B71	5 MHz	QPSK	1RB Low	0	24.08	23.66	23.37
			1RB Mid	0	23.99	23.66	23.31
			1RB High	0	24.14	23.70	23.34
			50% Low	1	23.10	22.65	22.40
			50% Mid	1	23.09	22.68	22.34
			50% High	1	23.06	22.67	22.31
			100%	1	23.10	22.69	22.35
		16-QAM	1RB Low	1	23.44	22.85	22.58
			1RB Mid	1	23.23	22.75	22.46
			1RB High	1	23.49	21.65	22.56
			50% Low	2	22.10	21.70	21.42
			50% Mid	2	22.10	21.63	21.39
			50% High	2	22.07	21.67	21.34
			100%	2	22.10	21.62	21.37

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					3405.0 MHz	3500.0 MHz	3595.0 MHz
LTE B71	10 MHz	QPSK	1RB Low	0	24.41	23.28	23.13
			1RB Mid	0	24.39	22.89	22.82
			1RB High	0	24.04	23.36	22.90
			50% Low	1	24.06	22.27	21.95
			50% Mid	1	23.53	22.23	21.86
			50% High	1	23.42	22.27	21.80
			100%	1	23.27	22.14	21.85
		16-QAM	1RB Low	1	24.33	22.10	22.15
			1RB Mid	1	23.72	22.13	22.03
			1RB High	1	23.36	22.19	21.92
			50% Low	2	23.16	21.21	20.93
			50% Mid	2	22.81	21.24	20.88
			50% High	2	22.56	21.23	20.79
			100%	2	22.84	21.23	20.80
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					3402.5 MHz	3500.0 MHz	3597.5 MHz
LTE B71	5 MHz	QPSK	1RB Low	0	24.74	23.16	22.95
			1RB Mid	0	24.45	23.37	23.15
			1RB High	0	24.22	23.22	22.86
			50% Low	1	23.95	22.20	21.82
			50% Mid	1	23.79	22.15	21.75
			50% High	1	23.67	22.20	21.71
			100%	1	23.77	22.17	21.77
		16-QAM	1RB Low	1	24.08	22.36	22.20
			1RB Mid	1	23.82	22.60	22.00
			1RB High	1	23.60	22.41	22.03
			50% Low	2	23.06	21.14	20.76
			50% Mid	2	22.90	21.13	20.70
			50% High	2	22.79	21.14	20.68
			100%	2	22.83	21.15	20.72

2.1.4. LTE Donwlink.

Covered by higher CA combination
Measurement needed

DL 2CA		DL 3CA		DL 4CA		DL 5CA	
Combination	UL Band	Combination	UL Band	Combination	UL Band	Combination	UL Band
2-2	2	2-2-4	2	2-2-4-4	2	2-2-4-4-5	2
2C	2	2-2-4	4	2-2-4-4	4	2-2-4-4-5	4
2-4	2	2-2-5	2	2-2-4-5	2	2-2-4-4-5	5
2-4	4	2-2-5	5	2-2-4-5	4	2-2-4-5B	2
2-5	2	2C-5	2	2-2-4-5	5	2-2-4-5B	4
2-5	5	2C-5	5	2-2-4-12	2	2-2-4-5B	5
2-12	2	2-2-12	2	2-2-4-12	4	2-2-5-66-66	2
2-12	12	2-2-12	12	2-2-4-12	12	2-2-5-66-66	5
2-13	2	2C-12	2	2C-5B	2	2-2-5-66-66	66
2-13	13	2C-12	12	2C-5B	5	2-2-5-66C	2
2-17	2	2-2-13	2	2-2-5-30	2	2-2-5-66C	5
2-17	17	2-2-13	13	2-2-5-30	5	2-2-5-66C	66
2-29	2	2-2-29	2	2C-5-30	2	2-2-5-66B	2
2-30	2	2C-29	2	2C-5-30	5	2-2-5-66B	5
2-66	2	2-2-30	2	2-2-5-66	2	2-2-5-66B	66
2-66	66	2C-30	2	2-2-5-66	5	2-2-12B-66	2
2-71	2	2-2-66	2	2-2-5-66	66	2-2-12B-66	12
2-71	71	2-2-66	66	2-2-12-12	2	2-2-12B-66	66
4-4	4	2C-66	2	2-2-12-12	12	2-2-12-66-66	2
4-5	4	2C-66	66	2-2-12B	2	2-2-12-66-66	12
4-5	5	2-2-71	2	2-2-12B	12	2-2-12-66-66	66
4-12	4	2-2-71	71	2-2-12-30	2	2-2-66D	2
4-12	12	2-4-4	2	2-2-12-30	12	2-2-66D	66
4-13	4	2-4-4	4	2-2-12-66	2	2-2-66-66C	2
4-13	13	2-4-5	2	2-2-12-66	12	2-2-66-66C	66
4-17	4	2-4-5	4	2-2-12-66	66	2-2-66-66C	66
4-17	17	2-4-5	5	2-2-13-66	2	2-2-66-66B	2
4-29	4	2-4-12	2	2-2-13-66	13	2-2-66-66B	66
4-30	4	2-4-12	4	2-2-13-66	66	2-2-66-66B	66
4-71	4	2-4-12	12	2-2-30-66	2	2-4-4-5B	2
4-71	71	2-4-13	2	2-2-30-66	66	2-4-4-5B	4
5-5	5	2-4-13	4	2-2-66-66	2	2-4-4-5B	5
5B	5	2-4-13	13	2-2-66-66	66	2-5B-66-66	2
5-7	5	2-4-29	2	2-2-66C	2	2-5B-66-66	5

5-7	7	2-4-29	4	2-2-66C	66	2-5B-66-66	66
5-25	5	2-4-30	2	2C-66-66	2	2-5B-66C	2
5-25	25	2-4-30	4	2C-66-66	66	2-5B-66C	5
5-30	5	2-4-71	2	2-2-66B	2	2-5B-66C	66
5-40	5	2-4-71	4	2-2-66B	66	2-5B-66B	2
5-40	40	2-4-71	71	2-2-66-71	2	2-5B-66B	5
5-41	5	2-5B	2	2-2-66-71	66	2-5B-66B	66
5-41	41	2-5B	5	2-2-66-71	71	2-5-66D	2
5-66	5	2-5-30	2	2-4-4-5	2	2-5-66D	5
5-66	66	2-5-30	5	2-4-4-5	4	2-5-66D	66
7-7	7	2-5-66	2	2-4-4-5	5	2-12B-66-66	2
7B	7	2-5-66	5	2-4-4-12	2	2-12B-66-66	12
7C	7	2-5-66	66	2-4-4-12	4	2-12B-66-66	66
7-8	7	2-12-12	2	2-4-4-12	12	2-13-66D	2
7-8	8	2-12-12	12	2-4-5B	2	2-13-66D	13
7-12	7	2-12B	2	2-4-5B	4	2-13-66D	66
7-12	12	2-12B	12	2-4-5B	5	2-13-66-66C	2
7-20	7	2-12-30	2	2-4-5-30	2	2-13-66-66C	13
7-20	20	2-12-30	12	2-4-5-30	4	2-13-66-66C	66
7-26	7	2-12-66	2	2-4-5-30	5	2-13-66-66C	66
7-26	26	2-12-66	12	2-4-12-12	2	2-13-66-66B	2
7-42	7	2-12-66	66	2-4-12-12	4	2-13-66-66B	13
7-42	42	2-13-66	2	2-4-12-12	12	2-13-66-66B	66
7-66	7	2-13-66	13	2-4-12B	2	2-13-66-66B	66
12-12	12	2-13-66	66	2-4-12B	4	5-5-66D	5
12B	12	2-29-30	2	2-4-12B	12	5-5-66D	66
12-25	12	2-29-66	2	2-4-12-30	2	5-5-66-66C	5
12-25	25	2-29-66	66	2-4-12-30	4	5-5-66-66C	66
12-30	12	2-30-66	2	2-4-12-30	12	5-5-66-66C	66
12-66	12	2-30-66	66	2-4-29-30	2	5-5-66-66B	5
12-66	66	2-66-66	2	2-4-29-30	4	5-5-66-66B	66
13-66	13	2-66-66	66	2-5B-30	2	5-5-66-66B	66
13-66	66	2-66B	2	2-5B-30	5	5B-66-66C	5
25-25	25	2-66B	66	2-5B-66	2	5B-66-66C	66
25-26	25	2-66C	2	2-5B-66	5	5B-66-66C	66
25-26	26	2-66C	66	2-5B-66	66	5B-66-66B	5
26-41	26	2-66-71	2	2-5-30-66	2	5B-66-66B	66
26-41	41	2-66-71	66	2-5-30-66	5	5B-66-66B	66
41-41	41	2-66-71	71	2-5-30-66	66		
41C	41	4-4-5	4	2-5-66-66	2		
41-42	41	4-4-5	5	2-5-66-66	5		
41-42	42	4-4-12	4	2-5-66-66	66		

42-42	42	4-4-12	12	2-5-66C	2
42C	42	4-4-13	4	2-5-66C	5
66-29	66	4-4-13	13	2-5-66C	66
66-30	66	4-4-29	4	2-5-66B	2
66-66	66	4-4-30	4	2-5-66B	5
66B	66	4-4-71	4	2-5-66B	66
66C	66	4-4-71	71	2-12B-66	2
66-71	66	4-5B	4	2-12B-66	12
66-71	71	4-5B	5	2-12B-66	66
		4-5-30	4	2-12-30-66	2
		4-5-30	5	2-12-30-66	12
		4-12-12	4	2-12-30-66	66
		4-12-12	12	2-12-66-66	2
		4-12B	4	2-12-66-66	12
		4-12B	12	2-12-66-66	66
		4-12-30	4	2-12-66C	2
		4-12-30	12	2-12-66C	12
		4-29-30	4	2-12-66C	66
		5B-30	5	2-13-66-66	2
		5-5-66	5	2-13-66-66	13
		5-5-66	66	2-13-66-66	66
		5B-66	5	2-13-66C	2
		5B-66	66	2-13-66C	13
		5-7C	5	2-13-66C	66
		5-7C	7	2-13-66B	2
		5-7-7	5	2-13-66B	13
		5-7-7	7	2-13-66B	66
		5-30-66	5	2-29-30-66	2
		5-30-66	66	2-29-30-66	66
		5-66-66	5	2-30-66-66	2
		5-66-66	66	2-30-66-66	66
		5-66B	5	2-66-66-66	2
		5-66B	66	2-66-66-66	66
		5-66C	5	2-66D	2
		5-66C	66	2-66D	66
		7-7-26	7	2-66-66C	2
		7-7-26	26	2-66-66C	66
		7-7-66	7	2-66-66C	66
		7C-66	7	2-66-66B	2
		7-12B	7	2-66-66B	66
		7-12B	12	2-66-66B	66
		7-12-66	7	2-66-66-71	2

	7-12-66	12		2-66-66-71	66	
	7-42-42	42		2-66-66-71	71	
	7-66-66	7		2-66C-71	2	
	12B-66	12		2-66C-71	66	
	12B-66	66		2-66C-71	71	
	12-30-66	12		4-4-5B	4	
	12-30-66	66		4-4-5B	5	
	12-66-66	12		4-4-5-30	4	
	12-66-66	66		4-4-5-30	5	
	12-66C	12		4-4-12-12	4	
	12-66C	66		4-4-12-12	12	
	13-66-66	13		4-4-12B	4	
	13-66-66	66		4-4-12B	12	
	13-66B	13		5B-30-66	5	
	13-66B	66		5B-30-66	66	
	13-66C	13		5-5-66-66	5	
	13-66C	66		5-5-66-66	66	
	25-25-25	25		5-5-66C	5	
	25-25-26	25		5-5-66C	66	
	25-25-26	26		5-5-66B	5	
	26-41C	26		5B-66-66	5	
	26-41C	41		5B-66-66	66	
	41-41C	41		5B-66-66	66	
	41-41C	41		5B-66C	5	
	41-41-41	41		5B-66C	66	
	41D	41		5B-66B	5	
	41-42C	41		5B-66B	66	
	41-42C	42		5-30-66-66	5	
	42-42C	42		5-30-66-66	66	
	42-42C	42		5-66D	5	
	42D	42		5-66D	66	
	66-29-30	66		5-66-66C	5	
	66-66-29	66		5-66-66C	66	
	66C-29	66		5-66-66C	66	
	66-66-30	66		5-66-66B	5	
	66-66B	66		5-66-66B	66	
	66-66B	66		5-66-66B	66	
	66-66C	66		7-7-66-66	7	
	66-66C	66		7C-66-66	7	
	66-66-66	66		7-12B-66	7	
	66D	66		7-12B-66	12	
	66-66-71	66		12B-66-66	12	

	66-66-71	71	12B-66-66	66	
	66C-71	66	12-30-66-66	12	
	66C-71	71	12-30-66-66	66	
			13-66-66-66	13	
			13-66-66-66	66	
			13-66D	13	
			13-66D	66	
			13-66-66C	13	
			13-66-66C	66	
			13-66-66C	66	
			13-66-66B	13	
			13-66-66B	66	
			13-66-66B	66	
			41-41D	41	
			41-41D	41	
			41-41-41C	41	
			41-41-41C	41	
			41C-41C	41	
			41D-42	41	
			41D-42	42	
			41C-42C	41	
			41C-42C	42	
			42-42D	42	
			42-42D	42	
			42C-42C	42	

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02, output power measurements have been performed to qualify for UL SAR test exclusion using the configuration with the largest aggregated BW.

Uplink maximum output power is measured with downlink carrier aggregation active, only for the channel with highest measured maximum output power when downlink carrier aggregation is inactive to check if with the DL CA active the maximum output power remains within the tune-up tolerance limits and/or the maximum output power increases less than 0.25 dB.

All Downlink CA fulfills with this statements, please check the measured combinations:

DL SCA																					
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3			SCC4		
						BW	CH	FREQ	RB	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ
2-2-4-4-5	2	22.46																			
2-2-4-4-5	4	23.73	23.71	-0.02	90	20	20050	1720	1LOW	20	700	1940	20	900	1960	20	2175	2132.5	10	2600	889
2-2-4-4-5	5	23.7																			
2-2-4-5B	2	22.46																			
2-2-4-5B	4	23.73	23.76	0.03	80	20	20050	1720	1LOW	20	700	1940	20	900	1960	10	2476	876.6	10	2575	886.5
2-2-4-5B	5	23.7																			
2-2-5-66-66	2	22.46																			
2-2-5-66-66	5	23.7	23.72	0.02	90	10	20600	844	1LOW	20	700	1940	20	900	1960	20	67039	2170.3	20	66886	2155
2-2-5-66-66	66	23.47																			
2-2-5-66C	2	22.46																			
2-2-5-66C	5	23.7	23.68	-0.02	90	10	20600	844	1LOW	20	700	1940	20	900	1960	20	66787	2145.1	20	66985	2164
2-2-5-66C	66	23.47																			
2-2-5-66B	2	22.46																			
2-2-5-66B	5	23.7	23.73	0.03	70	10	20600	844	1LOW	20	700	1940	20	900	1960	10	66787	2145.1	10	66985	2164.9
2-2-5-66B	66	23.47																			
2-2-12B-66	2	22.46																			
2-2-12B-66	12	23.29																			
2-2-12B-66	66	23.47	23.44	-0.03	75	20	132575	1770	1LOW	20	700	1940	20	900	1960	5	5048	732.8	10	5120	740
2-2-12-66-66	2	22.46																			
2-2-12-66-66	12	23.29																			
2-2-12-66-66	66	23.47	23.49	0.02	90	20	132575	1770	1LOW	20	700	1940	20	900	1960	10	5095	737.5	20	66886	2155
2-2-66D	2	22.46																			
2-2-66D	66	23.47	23.44	-0.03	100	20	132072	1720	1LOW	20	66734	2139.8	20	66932	2159.6	20	700	1940	20	900	1960
2-2-66-66C	2	22.46																			
2-2-66-66C	66	23.47	23.51	0.04	100	20	132575	1770	1LOW	20	700	1940	20	900	1960	20	66536	2120	20	66734	2139.8
2-2-66-66B	2	22.46																			
2-2-66-66B	66	23.47	23.52	0.05	80	20	132575	1770	1LOW	20	700	1940	20	900	1960	10	66486	2115	10	66585	2124.9
2-4-4-5B	2	22.46																			
2-4-4-5B	4	23.73	23.77	0.04	80	20	20050	1720	1LOW	20	700	1940	20	2175	2132.5	10	2476	876.6	10	2575	886.5
2-4-4-5B	5	23.7																			
2-5B-66-66	2	22.46																			
2-5B-66-66	5	23.7	23.67	-0.03	80	10	20600	844	1LOW	10	2501	879.1	20	700	1940	20	67039	2170.3	20	66886	2155
2-5B-66-66	66	23.47																			
2-5B-66C	2	22.46																			
2-5B-66C	5	23.7	23.73	0.03	80	10	20600	844	1LOW	10	2501	879.1	20	700	1940	20	66536	2120	20	66734	2139.8
2-5B-66C	66	23.47																			
2-5B-66B	2	22.46																			
2-5B-66B	5	23.7	23.66	-0.04	60	10	20600	844	1LOW	10	2501	879.1	20	700	1940	10	66486	2115	10	66585	2124.9
2-5B-66B	66	23.47																			
2-5-66D	2	22.46																			
2-5-66D	5	23.7	23.72	0.02	90	10	20600	844	1LOW	20	700	1940	20	132072	1720	20	66734	2139.8	20	66932	2160
2-5-66D	66	23.47																			
2-12B-66-66	2	22.46																			
2-12B-66-66	12	23.29																			
2-12B-66-66	66	23.47	23.49	0.02	65	10	132575	1770	1LOW	20	700	1940	5	5048	732.8	10	5120	740	20	67039	2170.3
2-13-66D	2	22.46																			
2-13-66D	13	23.39																			
2-13-66D	66	23.47	23.43	-0.04	100	20	132072	1720	1LOW	20	66734	2139.8	20	66932	2160	20	700	1940	20	5230	751
2-13-66-66C	2	22.46																			
2-13-66-66C	13	23.39																			
2-13-66-66C	66	23.47	23.49	0.02	90	10	132575	1770	1LOW	20	700	1940	20	5230	751	20	66536	2120	20	66734	2139.8
2-13-66-66B	2	22.46																			
2-13-66-66B	13	23.39																			
2-13-66-66B	66	23.47	23.53	0.06	70	10	132575	1770	1LOW	20	700	1940	20	5230	751	10	66486	2115	10	66585	2124.9
5-5-66D	5	23.7	23.66	-0.04	80	10	20600	844	1LOW	10	2450	874	20	132072	1720	20	66734	2139.8	20	66932	2160
5-5-66D	66	23.47																			
5-5-66-66C	5	23.7	23.67	-0.03	80	10	20600	844	1LOW	10	2450	874	20	67039	2170.3	20	66536	2120	20	66734	2139.8
5-5-66-66C	66	23.47																			
5-5-66-66B	5	23.7	23.75	0.05	60	10	20600	844	1LOW	10	2450	874	20	67039	2170.3	10	66486	2115	10	66585	2124.9
5-5-66-66B	66	23.47																			
5B-66-66C	5	23.7	23.73	0.03	80	10	20600	844	1LOW	10	2501	879.1	20	67039	2170.3	20	66536	20120	20	66734	2139.8
5B-66-66C	66	23.47																			
5B-66-66B	5	23.7	23.72	0.02	60	10	20600	844	1LOW	10	2501	879.1	20	67039	2170.3	10	66486	2115	10	66585	2124.9
5B-66-66B	66	23.47																			

DL 4CA																		
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2			SCC3		
						BW	CH	FREQ	RB	BW	CH	FREQ	BW	CH	FREQ	BW	CH	FREQ
2-2-4-12	2	22.46																
2-2-4-12	4	23.73	23.77	0.04	70	20	20050	1720	1LOW	20	700	1940	20	900	1960	10	5095	737.5
2-2-4-12	12	23.29																
2-2-12-12	2	22.46																
2-2-12-12	12	23.29	23.32	0.03	60	10	23095	707.5	1LOW	20	700	1940	20	900	1960	10	5010	729
2-2-13-66	2	22.46																
2-2-13-66	13	23.39																
2-2-13-66	66	23.47	23.42	-0.05	80	20	132575	1770	1LOW	20	700	1940	20	900	1960	20	5230	751
2C-66-66	2	22.46																
2C-66-66	66	23.47	23.45	-0.02	70	10	132575	1770	1LOW	20	801	1950.1	20	999	1969.9	20	66536	2120
2-2-66-71	2	22.46																
2-2-66-71	66	23.73																
2-2-66-71	71	23.84	23.86	0.02	80	20	13322	673	1LOW	20	700	1940	20	900	1960	20	66536	2120
2-4-4-12	2	22.46																
2-4-4-12	4	23.73																
2-4-4-12	12	23.29	23.27	-0.02	70	10	23095	707.5	1LOW	20	700	1940	20	2050	2120	20	2300	2132.5
2-4-12-12	2	22.46																
2-4-12-12	4	23.73	23.75	0.02	60	20	20050	1720	1LOW	20	700	1940	10	5095	737.5	10	5060	734
2-4-12-12	12	23.29																
2-4-12B	2	22.46																
2-4-12B	4	23.73	23.78	0.05	55	20	20050	1720	1LOW	20	700	1940	5	5048	732.8	10	5120	740
2-4-12B	12	23.29																
2-12-66C	2	22.46																
2-12-66C	12	23.29																
2-12-66C	66	23.47	23.44	-0.03	60	10	132575	1770	1LOW	20	66838	2150.2	20	700	1940	10	5095	737.5
2-66-66-66	2	22.46																
2-66-66-66	66	23.47	23.43	-0.04	80	20	132575	1770	1LOW	20	700	1940	20	67039	2170.3	20	66886	2155
2-66-66-71	2	22.46																
2-66-66-71	66	23.47																
2-66-66-71	71	23.84	23.76	-0.08	80	20	13322	673	1LOW	20	700	1940	20	67039	2170.3	20	66886	2155
2-66C-71	2	22.46																
2-66C-71	66	23.47																
2-66C-71	71	23.84	23.76	-0.08	80	20	13322	673	1LOW	20	700	1940	20	66536	20120	20	66734	2139.8
4-4-12-12	4	23.73	23.75	0.02	60	20	20050	1720	1LOW	20	2300	2132.5	10	5095	737.5	10	5060	734
4-4-12-12	12	23.29																
4-4-12B	4	23.73	23.66	-0.07	55	20	20050	1720	1LOW	20	2300	2132.5	5	5048	732.8	10	5120	740
4-4-12B	12	23.29																
7-7-66-66	7	22.8	22.83	0.03	80	20	20850	2510	1HIGH	20	3350	2680	20	67039	2170.3	20	66886	2155
7C-66-66	7	22.8	22.83	0.03	80	20	20850	2510	1HIGH	20	3048	2649.8	20	67039	2170.3	20	66886	2155
7-12B-66	7	22.8																
7-12B-66	12	23.29	23.33	0.04	55	5	5058	733.8	1LOW	10	5130	741	20	3350	2680	20	67039	2170.3
12B-66-66	12	23.29																
12B-66-66	66	23.47	23.44	-0.03	45	10	132575	1770	1LOW	5	5048	732.8	10	5120	740	20	67039	2170.3
13-66-66-66	13	23.39																
13-66-66-66	66	23.47	23.55	0.08	70	10	132575	1770	1LOW	20	5230	751	20	67039	2170.3	20	66886	2155
13-66D	13	23.39																
13-66D	66	23.47	23.44	-0.03	80	20	132072	1720	1LOW	20	66734	2139.8	20	66932	2159.6	20	5230	751
13-66-66C	13	23.39																
13-66-66C	66	23.47	23.51	0.04	70	10	132575	1770	1LOW	20	5230	751	20	66536	20120	20	66734	2139.8
13-66-66B	13	23.39																
13-66-66B	66	23.47	23.56	0.09	50	10	132575	1770	1LOW	20	5230	751	10	66486	2115	10	66585	2124.9
42-42D	42	24.07	24.09	0.02	80	20	41690	3410	1LOW	20	43094	3550.4	20	43292	3570.2	20	43490	3590
42C-42C	42	24.07	24.08	0.01	80	20	41690	3410	1LOW	20	41888	3429.8	20	43292	3570.2	20	43490	3590

DL 3CA															
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1			SCC2		
						BW	CH	FREQ	RB	BW	CH	FREQ	BW	CH	FREQ
2-4-13	2	22.46													
2-4-13	4	23.73	23.79	0.06	60	20	20050	1720	1LOW	20	700	1940	20	5230 751	
2-4-13	13	23.39													
2-4-71	2	22.46													
2-4-71	4	23.73													
2-4-71	71	23.84	23.81	-0.03	60	20	13322	673	1LOW	20	700	1940	20	2175 2132.5	
2-29-66	2	22.46													
2-29-66	66	23.47	23.39	-0.08	50	20	132575	1770	1LOW	20	700	1940	10	9715 722.5	
4-4-13	4	23.73	23.7	-0.03	60	20	20050	1720	1LOW	20	2300	2132.5	20	5230 751	
4-4-13	13	23.39													
4-4-29	4	23.73	23.76	0.03	50	20	20050	1720	1LOW	20	2175	2132.5	10	9715 722.5	
4-4-71	4	23.73													
4-4-71	71	23.84	23.9	0.06	60	20	13322	673	1LOW	20	2050	2120	20	2300 2132.5	
5-7C	5	23.7	23.74	0.04	50	10	20600	844	1LOW	20	2850	2630	20	3048 2649.8	
5-7C	7	22.8													
5-7-7	5	23.7	23.68	-0.02	50	10	20600	844	1LOW	20	2850	2630	20	3350 2680	
5-7-7	7	22.8													
7-7-26	7	22.8													
7-7-26	26	23.6	23.62	0.02	55	15	26865	831.5	1LOW	20	2850	2630	20	3350 2680	
7-42-42	42	24.07	24.11	0.04	60	20	41690	3410	1LOW	20	2850	2630	20	43490 3590	
12-66C	12	23.29													
12-66C	66	23.47	23.5	0.03	50	20	66536	20120	1LOW	20	66734	2139.8	10	5095 737.5	
25-25-25	25	21.89	21.83	-0.06	60	20	26865	1882.5	1LOW	20	8140	1940	20	8590 1985	
25-25-26	25	22.59													
25-25-26	26	23.6	23.65	0.05	55	15	26865	831.5	1LOW	20	8140	1940	20	8590 1985	
26-41C	26	23.6	23.55	-0.05	55	15	26865	831.5	1LOW	20	40842	2615.2	20	41040 2635	
26-41C	41	22.23													
66C-29	66	23.47	23.52	0.05	50	20	66536	20120	1LOW	20	66734	2139.8	10	9715 722.5	
66-66B	66	23.47	23.5	0.03	30	10	132575	1770	1LOW	10	66486	2115	10	66585 2124.9	
66-66C	66	23.47	23.45	-0.02	50	10	132575	1770	1LOW	20	66536	20120	20	66734 2139.8	
66-66-66	66	23.47	23.58	0.11	50	10	132575	1770	1LOW	20	67039	2170.3	20	66886 2155	
66D	66	23.47	23.47	0	60	20	132072	1720	1LOW	20	66734	2140	20	66932 2160	
66-66-71	66	23.47													
66-66-71	71	23.84	23.85	0.01	60	20	13322	673	1LOW	20	67039	2170.3	20	66886 2155	
66C-71	66	23.47													
66C-71	71	23.84	23.85	0.01	60	20	13322	673	1LOW	20	66536	20120	20	66734 2139.8	

DL 2CA												
Combination	UL Band	PCC (dBm)	PCC+SCCs (dBm)	Delta	Aggr. BW	PCC1				SCC1		
						BW	CH	FREQ	RB	BW	CH	FREQ
2C	2	22.46	22.47	0.01	40	20	18700	1860	1HIGH	20	898	1959.8
2-17	2	22.46										
2-17	17	23.32	23.33	0.01	30	10	23790	710	1LOW	20	700	1940
2-71	2	22.46										
2-71	71	23.84	23.86	0.02	40	20	133222	673	1LOW	20	700	1940
4-5	4	23.73	23.77	0.04	30	20	20050	1720	1LOW	10	2600	889
4-5	5	23.7										
4-13	4	23.73	23.85	0.12	40	20	20050	1720	1LOW	20	5230	751
4-13	13	23.39										
4-17	4	23.73	23.8	0.07	30	20	20050	1720	1LOW	10	5790	740
4-17	17	23.32										
5-25	5	23.7	23.67	-0.03	30	10	20600	844	1LOW	20	8140	1940
5-25	25	22.59										
5-41	5	23.7	0.07	-23.63	30	10	20600	844	1LOW	20	40175	2549.5
5-41	41	22.23										
7-26	7	22.8										
7-26	26	23.6	23.62	0.02	35	15	26865	831.5	1LOW	20	2850	2630
12-12	12	23.29	23.31	0.02	20	10	23095	707.5	1LOW	10	5060	734
12-25	12	23.29	23.23	-0.06	30	10	23095	707.5	1LOW	20	8140	1940
12-25	25	22.59										

2.1.5. LTE CA Uplink Inter-Band.

LTE CA UPLINK	PCC Band
2A-5A	LTE 2
2A-12A	LTE 2
2A-13A	LTE 2
4A-5A	LTE4
4A-12A	LTE4
4A-13A	LTE4
4A-17A	LTE4
5A-7A	LTE 5
5A-66A	LTE 5

Following guidance from TCB Workshop October 2018:

- Provide the single uplink SAR values you have obtained for the SAR configurations and frequency bands that employ inter-band uplink carrier aggregation.
- If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg no additional measurements need to be performed.
- If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures found in FCC KDB Publication 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04.
- If the algebraic sum of the 1-g SAR values is > 1.45 W/kg additional measurements may have to be made. Submit a KDB inquiry for additional guidance.

CA UL maximum output power is reduced by 3 dBm from the single carrier maximum output power value. Reported SAR for the CA UL maximum output power have been calculated using worst-case single carrier SAR values for each CC:

LTE CA UPLINK	CC1			CC2			CA				
	Band	Tune-up limit	Reported SAR	Band	Tune-up limit	Reported SAR	CC1 Tune-up limit	CC2 Tune-up limit	CC1 Reported SAR	CC2 Reported SAR	CA sum
2A-5A	2A	24.5	0.063	5A	24.5	0.192	21.5	21.5	0.032	0.096	0.128
2A-12A	2A	24.5	0.063	12A	24.5	0.135	21.5	21.5	0.032	0.068	0.100
2A-13A	2A	24.5	0.063	13A	24.5	0.216	21.5	21.5	0.032	0.108	0.140
4A-5A	4A	25.0	0.093	5A	24.5	0.192	22.0	21.5	0.047	0.096	0.143
4A-12A	4A	25.0	0.093	12A	24.5	0.135	22.0	21.5	0.047	0.068	0.115
4A-13A	4A	25.0	0.093	13A	24.5	0.216	22.0	21.5	0.047	0.108	0.155
4A-17A	4A	25.0	0.093	17A	24.5	0.135	22.0	21.5	0.047	0.068	0.115
5A-7A	5A	24.5	0.192	7A	25.0	0.106	21.5	22.0	0.096	0.053	0.149
5A-66A	5A	24.5	0.192	66A	24.5	0.080	21.5	21.5	0.096	0.040	0.136

2.1.6. LTE CA Uplink Intra-Band

LTE CA UPLINK	PCC Band
5B	LTE 5
7C	LTE 7
38C	LTE 38
41C	LTE 41
42C	LTE 42
66B	LTE 66
66C	LTE 66

Following KDB 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02 and TCB Workshop Nov. 2017

- SAR for UL CA is required in each exposure condition (highest standalone head test position, body, etc.) and frequency band combination.
- When the maximum output for UL CA is \leq standalone LTE mode (without CA)
 - PCC is configured according to the highest standalone SAR configuration tested
 - SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC
- Reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels(PCC based)
- UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level

All measured SAR values for the bands that supports Uplink CA Intraband are lower than, 1,2 W/kg, therefore all Uplink CA intraband combinations values are also < 1.2 W/kg.

LTE CA UPLINK BAND	Band	BW (MHz)	Channel	Frequency (MHz)	Configuration	Output power W/O CA	Output power with CA	Delta CA off/on
5B	LTE 5	10	20525	836.5	1Rb Low	23.7	23.66	-0.04
7C	LTE 7	20	20850	2510	1Rb High	22.8	21.97	-0.83
38C	LTE 38	20	37850	2580	1 Rb High	20,83	20.76	-0.07
41C	LTE 41	20	39750	2506	1Rb Low	22.23	22.10	-0.13
42C	LTE 42	20	42565	3497.5	1Rb High	24.07	23.88	-0.19
66B	LTE 66	20	132575	1770	1Rb Low	23.47	22.98	-0.49
66C	LTE 66	20	132575	1770	1Rb Low	23.47	23.06	-0.41

LTE CA UPLINK BAND	PCC				SCC				Reported SAR
	BW (MHz)	CH	FREQ	RB	BW (MHz)	CH	FREQ	RB	
5B	5	20528	836.8	1Rb High	10	20600	844.0	1Rb Low	0.211
7C	20	20850	2510.0	1Rb High	20	21048	2529.8	1Rb Low	0.087
41C	20	39750	2506.0	1Rb High	5	39867	2517.7	1Rb Low	0.055
42C	20	42565	3497.5	1Rb High	5	42682	3509.2	1Rb Low	0.011
66B	10	132575	1770.0	1Rb High	5	132644	1777.2	1Rb Low	0.082
66C	20	132522	1765.0	1Rb High	5	132639	1776.7	1Rb Low	0.143

2.1.7. 5G Stand-Alone Bands

MPR is permanently implemented for the device. A-MPR was disabled for SAR measurements.

Maximum Power Reductions are specified in Table 6.2.3-1 of the 3GPP TS138.521-1.

Table 6.2.2.3-1: Maximum Power Reduction (MPR) for Power 3

Modulation	MPR (dB)		
	Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM PI/2 BPSK	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
	$\leq 0.5^2$		0^2
DFT-s-OFDM QPSK	≤ 1		0
DFT-s-OFDM 16 QAM	≤ 2		≤ 1
DFT-s-OFDM 64 QAM		≤ 2.5	
DFT-s-OFDM 256 QAM		≤ 4.5	
CP-OFDM QPSK	≤ 3		≤ 1.5
CP-OFDM 16 QAM	≤ 3		≤ 2
CP-OFDM 64 QAM		≤ 3.5	
CP-OFDM 256 QAM		≤ 6.5	
NOTE 1: Applicable for UE operating in TDD mode with PI/2 BPSK modulation and UE indicates support for UE capability <i>powerBoosting-pi2BPSK</i> and if the IE <i>powerBoostPi2BPSK</i> is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm. NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE <i>powerBoostPi2BPSK</i> is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.			

- n2

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		372000	376000	380000
		Frequency (MHz)		1860	1880	1900
20 MHz	pi/2 BPSK	1	0	23.69	23.67	23.65
		1	53	23.79	23.71	23.75
		1	105	23.79	23.78	23.74
		53	0	23.69	23.64	23.64
		53	27	23.67	23.62	23.63
		53	53	23.65	23.68	23.63
		106	0	23.51	23.50	23.50
	QPSK	1	0	20.77	20.80	20.80
		1	53	20.90	20.87	20.85
		1	105	20.87	20.83	20.83
		53	0	20.80	20.71	20.75
		53	27	20.72	20.75	20.71
		53	53	20.74	20.78	20.77
		106	0	20.65	20.64	20.68
	16QAM	1	0	20.61	20.61	20.65
		1	53	20.75	20.79	20.70
		1	105	20.77	20.70	20.77
		53	0	20.61	20.60	20.64
		53	27	20.66	20.60	20.65
		53	53	20.68	20.65	20.60
		106	0	20.60	20.52	20.57
	64QAM	1	0	20.27	20.21	20.27
		1	53	20.35	20.37	20.30
		1	105	20.30	20.40	20.39
		53	0	20.29	20.29	20.29
		53	27	20.22	20.30	20.21
		53	53	20.21	20.28	20.29
		106	0	20.16	20.10	20.18
	256QAM	1	0	17.30	17.26	17.27
		1	53	17.39	17.30	17.40
1		105	17.31	17.31	17.39	
53		0	17.27	17.26	17.21	
53		27	17.27	17.25	17.29	
53		53	17.27	17.22	17.21	
106		0	17.14	17.18	17.11	

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371500	376000	380500
		Frequency (MHz)		1857.5	1880	1902.5
15 MHz	pi/2 BPSK	1	0	23.67	23.62	23.65
		1	39	23.70	23.79	23.73
		1	78	23.78	23.71	23.70
		39	0	23.69	23.68	23.62
		39	19	23.69	23.60	23.60
		39	40	23.62	23.63	23.68
		79	0	23.56	23.54	23.55
	QPSK	1	0	20.74	20.74	20.76
		1	39	20.80	20.86	20.81
		1	78	20.85	20.90	20.86
		39	0	20.75	20.76	20.79
		39	19	20.72	20.77	20.70
		39	40	20.72	20.73	20.76
		79	0	20.69	20.70	20.60
	16QAM	1	0	20.67	20.66	20.67
		1	39	20.72	20.71	20.70
		1	78	20.73	20.74	20.77
		39	0	20.63	20.65	20.63
		39	19	20.60	20.68	20.65
		39	40	20.68	20.67	20.68
		79	0	20.52	20.50	20.53
	64QAM	1	0	20.29	20.23	20.29
		1	39	20.33	20.35	20.36
		1	78	20.34	20.37	20.40
		39	0	20.25	20.22	20.30
		39	19	20.25	20.22	20.28
		39	40	20.28	20.22	20.20
		79	0	20.10	20.18	20.18
	256QAM	1	0	17.26	17.22	17.23
		1	39	17.40	17.36	17.37
1		78	17.38	17.38	17.34	
39		0	17.24	17.28	17.29	
39		19	17.27	17.23	17.22	
39		40	17.25	17.20	17.27	
79		0	17.12	17.20	17.15	

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371000	376000	381000
		Frequency (MHz)		1855	1880	1905
10 MHz	pi/2 BPSK	1	0	23.65	23.63	23.67
		1	26	23.79	23.79	23.72
		1	51	23.77	23.70	23.77
		26	0	23.63	23.61	23.62
		26	13	23.64	23.63	23.66
		26	26	23.66	23.67	23.64
		52	0	23.58	23.59	23.53
	QPSK	1	0	20.74	20.71	20.79
		1	26	20.90	20.89	20.88
		1	51	20.90	20.88	20.86
		26	0	20.75	20.72	20.75
		26	13	20.75	20.75	20.78
		26	26	20.80	20.77	20.71
		52	0	20.61	20.65	20.69
	16QAM	1	0	20.70	20.60	20.65
		1	26	20.75	20.77	20.80
		1	51	20.74	20.74	20.77
		26	0	20.64	20.68	20.65
		26	13	20.69	20.70	20.64
		26	26	20.69	20.64	20.70
		52	0	20.50	20.60	20.55
	64QAM	1	0	20.30	20.28	20.30
		1	26	20.31	20.36	20.36
		1	51	20.40	20.30	20.39
		26	0	20.28	20.23	20.29
		26	13	20.30	20.29	20.30
		26	26	20.27	20.22	20.28
		52	0	20.18	20.11	20.18
	256QAM	1	0	17.28	17.28	17.28
		1	26	17.36	17.40	17.36
		1	51	17.38	17.30	17.32
		26	0	17.21	17.28	17.21
26		13	17.21	17.23	17.26	
26		26	17.21	17.25	17.21	
52		0	17.11	17.15	17.16	

NR Band 2 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		370500	376000	381500
		Frequency (MHz)		1852.5	1880	1907.5
5 MHz	pi/2 BPSK	1	0	23.63	23.62	23.60
		1	12	23.71	23.71	23.75
		1	24	23.73	23.71	23.75
		12	0	23.64	23.63	23.67
		12	6	23.66	23.61	23.67
		12	13	23.64	23.61	23.66
		25	0	23.55	23.58	23.54
	QPSK	1	0	20.80	20.71	20.73
		1	12	20.84	20.82	20.87
		1	24	20.81	20.86	20.83
		12	0	20.79	20.77	20.78
		12	6	20.71	20.72	20.74
		12	13	20.78	20.80	20.71
		25	0	20.67	20.66	20.70
	16QAM	1	0	20.60	20.67	20.69
		1	12	20.73	20.70	20.74
		1	24	20.72	20.73	20.74
		12	0	20.68	20.66	20.60
		12	6	20.67	20.60	20.69
		12	13	20.70	20.67	20.61
		25	0	20.55	20.52	20.56
	64QAM	1	0	20.20	20.30	20.27
		1	12	20.31	20.35	20.35
		1	24	20.33	20.31	20.33
		12	0	20.21	20.23	20.29
		12	6	20.27	20.28	20.26
		12	13	20.21	20.27	20.29
		25	0	20.18	20.12	20.18
	256QAM	1	0	17.23	17.26	17.29
		1	12	17.37	17.32	17.37
1		24	17.35	17.34	17.35	
12		0	17.27	17.30	17.28	
12		6	17.20	17.22	17.25	
12		13	17.29	17.20	17.28	
25		0	17.11	17.14	17.10	

- n5

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166800	167300	167800
		Frequency (MHz)		834	836.5	839
20 MHz	pi/2 BPSK	1	0	24.44	24.50	24.35
		1	53	24.40	24.36	24.21
		1	105	24.40	24.31	24.44
		53	0	24.38	24.32	24.21
		53	27	24.32	24.31	24.24
		53	53	24.23	24.39	24.36
		106	0	24.28	24.27	24.26
	QPSK	1	0	21.45	21.35	21.44
		1	53	21.25	21.37	21.20
		1	105	21.45	21.34	21.31
		53	0	21.38	21.21	21.21
		53	27	21.36	21.36	21.38
		53	53	21.31	21.40	21.23
		106	0	21.22	21.25	21.28
	16QAM	1	0	21.32	21.31	21.48
		1	53	21.30	21.20	21.21
		1	105	21.47	21.34	21.32
		53	0	21.25	21.34	21.30
		53	27	21.25	21.35	21.35
		53	53	21.31	21.36	21.38
		106	0	21.14	21.20	21.30
	64QAM	1	0	20.74	20.87	20.77
		1	53	20.74	20.79	20.79
		1	105	20.86	20.72	20.83
		53	0	20.70	20.69	20.72
		53	27	20.70	20.71	20.60
		53	53	20.65	20.67	20.75
		106	0	20.56	20.52	20.54
	256QAM	1	0	17.76	17.86	17.89
		1	53	17.65	17.74	17.75
1		105	17.73	17.80	17.90	
53		0	17.78	17.67	17.72	
53		27	17.63	17.72	17.79	
53		53	17.60	17.77	17.73	
106		0	17.58	17.68	17.52	

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		166300	167300	168300
		Frequency (MHz)		831.5	836.5	841.5
15 MHz	pi/2 BPSK	1	0	24.41	24.49	24.35
		1	39	24.39	24.32	24.40
		1	78	24.47	24.43	24.49
		39	0	24.26	24.36	24.22
		39	19	24.38	24.27	24.24
		39	40	24.22	24.38	24.26
		79	0	24.14	24.29	24.12
	QPSK	1	0	21.32	21.35	21.32
		1	39	21.35	21.20	21.30
		1	78	21.34	21.34	21.40
		39	0	21.23	21.28	21.33
		39	19	21.33	21.23	21.23
		39	40	21.24	21.34	21.34
		79	0	21.19	21.11	21.13
	16QAM	1	0	21.30	21.37	21.30
		1	39	21.29	21.40	21.23
		1	78	21.45	21.48	21.31
		39	0	21.20	21.31	21.20
		39	19	21.39	21.29	21.22
		39	40	21.21	21.34	21.33
		79	0	21.11	21.19	21.23
	64QAM	1	0	20.86	20.81	20.78
		1	39	20.72	20.72	20.62
		1	78	20.73	20.90	20.78
		39	0	20.65	20.68	20.66
		39	19	20.70	20.64	20.60
		39	40	20.68	20.68	20.66
		79	0	20.57	20.60	20.66
256QAM	1	0	17.87	17.81	17.75	
	1	39	17.62	17.66	17.69	
	1	78	17.89	17.83	17.88	
	39	0	17.80	17.74	17.65	
	39	19	17.61	17.61	17.66	
	39	40	17.75	17.63	17.69	
	79	0	17.62	17.57	17.58	

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165800	167300	168800
		Frequency (MHz)		829	836.5	844
10 MHz	pi/2 BPSK	1	0	24.35	24.50	24.39
		1	26	24.32	24.24	24.20
		1	51	24.40	24.48	24.50
		26	0	24.20	24.32	24.21
		26	13	24.21	24.33	24.40
		26	26	24.21	24.30	24.33
		52	0	24.20	24.11	24.24
	QPSK	1	0	21.40	21.50	21.30
		1	26	21.30	21.31	21.37
		1	51	21.49	21.33	21.36
		26	0	21.33	21.29	21.27
		26	13	21.20	21.24	21.36
		26	26	21.40	21.39	21.37
		52	0	21.17	21.21	21.27
	16QAM	1	0	21.41	21.39	21.30
		1	26	21.30	21.23	21.35
		1	51	21.34	21.38	21.36
		26	0	21.27	21.23	21.30
		26	13	21.32	21.36	21.20
		26	26	21.39	21.40	21.34
		52	0	21.23	21.24	21.23
	64QAM	1	0	20.80	20.78	20.83
		1	26	20.66	20.70	20.77
		1	51	20.82	20.72	20.80
		26	0	20.78	20.80	20.65
		26	13	20.64	20.74	20.73
		26	26	20.60	20.74	20.62
		52	0	20.63	20.52	20.58
	256QAM	1	0	17.90	17.75	17.70
		1	26	17.64	17.74	17.76
1		51	17.76	17.88	17.87	
26		0	17.68	17.66	17.64	
26		13	17.65	17.75	17.74	
26		26	17.69	17.64	17.70	
52		0	17.66	17.54	17.66	

NR Band 5 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		165300	167300	169300
		Frequency (MHz)		826.5	836.5	846.5
5 MHz	pi/2 BPSK	1	0	24.36	24.48	24.30
		1	12	24.39	24.21	24.36
		1	24	24.41	24.47	24.35
		12	0	24.32	24.20	24.27
		12	6	24.23	24.30	24.29
		12	13	24.35	24.39	24.25
		25	0	24.29	24.20	24.10
	QPSK	1	0	21.36	21.50	21.37
		1	12	21.24	21.21	21.21
		1	24	21.32	21.31	21.49
		12	0	21.35	21.31	21.38
		12	6	21.40	21.37	21.24
		12	13	21.34	21.40	21.29
		25	0	21.27	21.17	21.12
	16QAM	1	0	21.39	21.35	21.50
		1	12	21.24	21.20	21.32
		1	24	21.47	21.46	21.30
		12	0	21.28	21.20	21.29
		12	6	21.38	21.33	21.27
		12	13	21.30	21.25	21.38
		25	0	21.26	21.29	21.16
	64QAM	1	0	20.85	20.76	20.79
		1	12	20.64	20.62	20.64
		1	24	20.79	20.83	20.83
		12	0	20.62	20.72	20.74
		12	6	20.73	20.61	20.60
		12	13	20.60	20.79	20.69
		25	0	20.63	20.56	20.65
	256QAM	1	0	17.81	17.81	17.82
		1	12	17.75	17.79	17.79
1		24	17.81	17.83	17.80	
12		0	17.80	17.67	17.63	
12		6	17.61	17.66	17.61	
12		13	17.77	17.60	17.67	
25		0	17.60	17.61	17.55	

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NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		502000	507000	512000
		Frequency (MHz)		2510	2535	2560
20 MHz	pi/2 BPSK	1	0	24.00	24.09	23.91
		1	53	24.05	23.99	23.98
		1	105	23.51	23.50	23.61
		53	0	23.96	23.89	23.94
		53	27	23.98	23.99	23.84
		53	53	23.70	23.74	23.74
		106	0	23.85	23.78	23.89
	QPSK	1	0	20.93	21.07	21.06
		1	53	20.90	21.00	20.96
		1	105	20.63	20.68	20.57
		53	0	20.98	20.94	20.98
		53	27	20.90	20.81	20.90
		53	53	20.71	20.72	20.75
		106	0	20.74	20.71	20.85
	16QAM	1	0	20.90	21.06	20.97
		1	53	20.92	20.96	20.97
		1	105	20.65	20.64	20.60
		53	0	20.99	20.92	20.91
		53	27	20.97	20.84	20.82
		53	53	20.70	20.75	20.82
		106	0	20.76	20.88	20.71
	64QAM	1	0	20.31	20.49	20.49
		1	53	20.49	20.45	20.40
		1	105	20.09	20.00	19.95
		53	0	20.37	20.26	20.39
		53	27	20.24	20.20	20.20
		53	53	20.13	20.14	20.17
		106	0	20.18	20.24	20.26
	256QAM	1	0	17.50	17.30	17.44
		1	53	17.39	17.41	17.49
1		105	16.95	17.06	17.07	
53		0	17.37	17.27	17.35	
53		27	17.28	17.24	17.21	
53		53	17.14	17.14	17.15	
106		0	17.30	17.28	17.10	

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501500	507000	512500
		Frequency (MHz)		2507.5	2535	2562.5
15 MHz	pi/2 BPSK	1	0	23.90	23.94	23.90
		1	39	23.99	24.04	23.92
		1	78	23.70	23.52	23.67
		39	0	23.86	23.92	23.99
		39	19	23.96	23.81	23.83
		39	40	23.77	23.83	23.70
		79	0	23.89	23.72	23.89
	QPSK	1	0	21.06	21.03	20.93
		1	39	20.92	20.99	20.93
		1	78	20.68	20.68	20.55
		39	0	20.94	21.00	20.92
		39	19	20.87	20.86	20.97
		39	40	20.82	20.78	20.79
		79	0	20.70	20.70	20.77
	16QAM	1	0	20.90	21.00	21.00
		1	39	20.93	21.03	21.08
		1	78	20.57	20.59	20.66
		39	0	20.82	20.85	20.96
		39	19	20.93	20.92	20.97
		39	40	20.70	20.86	20.70
		79	0	20.71	20.78	20.90
	64QAM	1	0	20.45	20.34	20.48
		1	39	20.31	20.35	20.47
		1	78	20.03	19.90	19.99
		39	0	20.34	20.25	20.20
		39	19	20.35	20.22	20.21
		39	40	20.12	20.13	20.27
		79	0	20.18	20.12	20.12
	256QAM	1	0	17.38	17.32	17.32
		1	39	17.44	17.48	17.44
1		78	16.96	17.06	16.95	
39		0	17.40	17.39	17.27	
39		19	17.35	17.26	17.30	
39		40	17.23	17.29	17.24	
79		0	17.18	17.26	17.10	

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501000	507000	513000
		Frequency (MHz)		2505	2535	2565
10 MHz	pi/2 BPSK	1	0	24.00	23.92	24.03
		1	26	24.01	24.01	24.00
		1	51	23.60	23.66	23.55
		26	0	23.80	23.98	23.81
		26	13	23.98	23.94	23.90
		26	26	23.87	23.85	23.86
		52	0	23.89	23.77	23.88
	QPSK	1	0	21.06	21.08	20.92
		1	26	20.95	21.01	20.92
		1	51	20.69	20.58	20.69
		26	0	20.97	20.86	20.91
		26	13	20.83	20.91	20.80
		26	26	20.76	20.77	20.86
		52	0	20.80	20.78	20.84
	16QAM	1	0	20.91	20.92	20.96
		1	26	20.92	20.91	21.05
		1	51	20.51	20.59	20.59
		26	0	20.85	20.96	20.94
		26	13	20.84	20.87	21.00
		26	26	20.80	20.77	20.79
		52	0	20.71	20.89	20.81
	64QAM	1	0	20.39	20.43	20.44
		1	26	20.38	20.34	20.45
		1	51	19.98	19.95	20.06
		26	0	20.33	20.24	20.28
		26	13	20.36	20.20	20.25
		26	26	20.25	20.19	20.10
		52	0	20.12	20.18	20.30
	256QAM	1	0	17.35	17.43	17.41
		1	26	17.47	17.37	17.34
1		51	16.99	17.09	17.09	
26		0	17.38	17.21	17.30	
26		13	17.28	17.24	17.38	
26		26	17.19	17.20	17.12	
52		0	17.27	17.22	17.23	

NR Band 7 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500500	507000	513500
		Frequency (MHz)		2502.5	2535	2567.5
5 MHz	pi/2 BPSK	1	0	24.07	24.10	24.06
		1	12	23.90	23.93	24.08
		1	24	23.60	23.61	23.65
		12	0	23.82	24.00	23.93
		12	6	23.81	23.87	23.92
		12	13	23.87	23.89	23.73
		25	0	23.84	23.88	23.77
	QPSK	1	0	20.92	20.96	20.96
		1	12	21.00	20.98	21.05
		1	24	20.61	20.60	20.69
		12	0	20.87	20.87	20.85
		12	6	20.95	20.86	20.85
		12	13	20.80	20.73	20.72
		25	0	20.87	20.83	20.80
	16QAM	1	0	20.90	21.01	21.03
		1	12	21.09	20.94	20.91
		1	24	20.61	20.53	20.56
		12	0	20.99	20.85	20.94
		12	6	20.96	20.84	20.83
		12	13	20.73	20.75	20.90
		25	0	20.85	20.72	20.89
	64QAM	1	0	20.35	20.33	20.47
		1	12	20.40	20.32	20.40
		1	24	19.98	20.10	20.04
		12	0	20.29	20.40	20.30
		12	6	20.21	20.20	20.35
		12	13	20.12	20.13	20.13
		25	0	20.21	20.12	20.12
	256QAM	1	0	17.35	17.32	17.46
		1	12	17.40	17.37	17.44
1		24	17.06	17.10	17.00	
12		0	17.21	17.22	17.35	
12		6	17.27	17.26	17.36	
12		13	17.23	17.17	17.26	
25		0	17.30	17.16	17.30	

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NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		374000	376500	379000
		Frequency (MHz)		1870	1882.5	1895
20 MHz	pi/2 BPSK	1	0	23.98	24.09	24.02
		1	53	23.92	23.97	24.10
		1	105	24.00	23.94	23.92
		53	0	24.02	24.06	23.91
		53	27	24.04	23.91	24.05
		53	53	23.98	23.97	23.89
		106	0	23.82	23.82	23.89
	QPSK	1	0	21.00	20.96	21.02
		1	53	21.03	21.02	21.08
		1	105	20.84	20.88	20.93
		53	0	21.05	20.90	20.98
		53	27	20.92	21.07	20.94
		53	53	20.93	20.80	20.95
		106	0	20.87	20.88	20.85
	16QAM	1	0	21.09	20.92	20.97
		1	53	21.10	20.91	20.95
		1	105	20.95	20.96	20.93
		53	0	21.10	20.97	21.03
		53	27	20.91	21.08	21.06
		53	53	20.83	20.90	20.97
		106	0	20.98	20.94	20.83
	64QAM	1	0	20.59	20.49	20.40
		1	53	20.40	20.43	20.45
		1	105	20.43	20.45	20.43
		53	0	20.47	20.52	20.52
		53	27	20.44	20.40	20.52
		53	53	20.39	20.49	20.45
		106	0	20.42	20.46	20.42
	256QAM	1	0	17.54	17.54	17.57
		1	53	17.45	17.48	17.46
1		105	17.35	17.30	17.41	
53		0	17.48	17.58	17.41	
53		27	17.48	17.53	17.58	
53		53	17.33	17.43	17.44	
106		0	17.38	17.38	17.32	

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371500	376500	381500
		Frequency (MHz)		1857.5	1882.5	1907.5
15 MHz	pi/2 BPSK	1	0	24.03	23.90	23.94
		1	39	23.94	23.90	24.07
		1	78	23.84	23.97	23.98
		39	0	24.06	24.04	24.08
		39	19	24.07	23.99	23.94
		39	40	23.89	23.87	23.90
		79	0	23.92	23.88	23.81
	QPSK	1	0	21.10	20.97	20.94
		1	39	20.91	21.08	20.94
		1	78	20.84	20.83	20.90
		39	0	20.91	21.03	20.95
		39	19	21.04	21.05	20.96
		39	40	20.86	20.80	20.81
		79	0	20.83	20.84	20.81
	16QAM	1	0	20.92	20.90	21.06
		1	39	21.00	21.01	21.00
		1	78	20.91	20.90	20.97
		39	0	21.10	20.98	21.01
		39	19	21.05	21.03	20.98
		39	40	20.80	20.87	20.88
		79	0	20.89	20.80	20.82
	64QAM	1	0	20.44	20.51	20.50
		1	39	20.57	20.42	20.53
		1	78	20.34	20.47	20.46
		39	0	20.43	20.42	20.57
		39	19	20.60	20.51	20.59
		39	40	20.47	20.35	20.35
		79	0	20.36	20.50	20.45
	256QAM	1	0	17.53	17.58	17.57
		1	39	17.50	17.59	17.40
1		78	17.47	17.50	17.36	
39		0	17.57	17.47	17.43	
39		19	17.49	17.44	17.43	
39		40	17.32	17.38	17.42	
79		0	17.42	17.34	17.49	

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		371000	376500	382000
		Frequency (MHz)		1855	1882.5	1910
10 MHz	pi/2 BPSK	1	0	24.09	23.95	23.98
		1	26	24.04	24.03	24.09
		1	51	23.84	23.83	23.96
		26	0	23.93	24.00	23.95
		26	13	23.91	24.06	23.91
		26	26	23.85	23.85	23.95
		52	0	23.86	23.87	23.84
	QPSK	1	0	21.02	20.92	21.07
		1	26	20.95	21.03	21.06
		1	51	20.81	20.86	20.81
		26	0	20.90	21.10	21.01
		26	13	20.98	21.08	20.91
		26	26	20.91	20.89	20.86
		52	0	20.82	20.85	20.97
	16QAM	1	0	20.99	20.95	21.01
		1	26	20.93	20.95	20.94
		1	51	21.00	20.91	20.84
		26	0	21.10	20.99	20.91
		26	13	21.04	20.95	20.91
		26	26	20.86	20.95	20.90
		52	0	20.81	20.85	20.91
	64QAM	1	0	20.51	20.43	20.53
		1	26	20.53	20.40	20.44
		1	51	20.46	20.31	20.47
		26	0	20.42	20.45	20.46
		26	13	20.56	20.59	20.43
		26	26	20.43	20.42	20.40
		52	0	20.50	20.41	20.30
	256QAM	1	0	17.58	17.50	17.43
		1	26	17.51	17.55	17.52
1		51	17.36	17.43	17.47	
26		0	17.55	17.51	17.43	
26		13	17.43	17.51	17.57	
26		26	17.43	17.39	17.38	
52		0	17.44	17.36	17.45	

NR Band 25 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		370500	376500	382500
		Frequency (MHz)		1852.5	1882.5	1912.5
5 MHz	pi/2 BPSK	1	0	24.04	23.93	24.04
		1	12	23.93	24.00	24.10
		1	24	23.85	23.83	23.81
		12	0	23.99	23.96	23.96
		12	6	23.95	24.00	24.10
		12	13	23.94	23.93	23.93
		25	0	23.87	23.96	23.94
	QPSK	1	0	21.01	21.09	21.05
		1	12	20.92	21.07	20.91
		1	24	20.89	20.95	20.86
		12	0	20.93	21.05	21.01
		12	6	21.04	21.09	20.97
		12	13	20.81	20.82	20.97
		25	0	20.84	20.87	20.80
	16QAM	1	0	21.01	20.93	21.05
		1	12	21.05	21.09	21.00
		1	24	20.99	20.85	20.82
		12	0	21.10	20.93	20.95
		12	6	20.90	20.99	21.05
		12	13	20.95	20.87	20.89
		25	0	20.92	20.92	20.80
	64QAM	1	0	20.45	20.60	20.42
		1	12	20.47	20.45	20.45
		1	24	20.39	20.50	20.49
		12	0	20.55	20.56	20.46
		12	6	20.52	20.56	20.44
		12	13	20.42	20.46	20.34
		25	0	20.45	20.33	20.46
	256QAM	1	0	17.48	17.53	17.53
		1	12	17.50	17.42	17.42
1		24	17.36	17.49	17.38	
12		0	17.42	17.51	17.50	
12		6	17.59	17.45	17.53	
12		13	17.34	17.47	17.50	
25		0	17.49	17.46	17.43	

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NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		516000	519000	522000
		Frequency (MHz)		2580	2595	2610
20 MHz	pi/2 BPSK	1	0	22.91	22.94	22.89
		1	53	22.74	22.76	22.73
		1	105	22.67	22.69	22.64
		53	0	22.51	22.54	22.49
		53	27	22.45	22.48	22.41
		53	53	22.43	22.46	22.41
		106	0	22.38	22.40	22.35
	QPSK	1	0	22.69	22.46	22.28
		1	53	22.81	22.56	22.59
		1	105	22.37	22.32	22.58
		53	0	22.48	22.45	22.41
		53	27	22.64	22.76	22.75
		53	53	22.17	22.48	22.56
		106	0	22.19	22.80	22.21
	16QAM	1	0	21.59	21.78	21.07
		1	53	21.51	21.70	21.05
		1	105	21.15	21.51	21.39
		53	0	21.75	21.75	21.56
		53	27	21.19	21.38	21.58
		53	53	21.62	21.53	21.27
		106	0	21.19	21.43	21.39
	64QAM	1	0	20.02	20.87	20.78
		1	53	20.32	20.35	20.45
		1	105	20.88	20.88	20.32
		53	0	20.03	20.33	20.41
		53	27	20.34	20.56	20.53
		53	53	20.58	20.76	20.57
		106	0	20.57	20.64	20.29
	256QAM	1	0	19.81	19.84	19.82
		1	53	19.65	19.74	19.70
1		105	19.58	19.62	19.56	
53		0	19.49	19.55	19.50	
53		27	19.43	19.44	19.40	
53		53	19.38	19.42	19.37	
106		0	19.29	19.31	19.26	

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		515500	519000	522500
		Frequency (MHz)		2577.5	2595	2612.5
15 MHz	pi/2 BPSK	1	0	22.75	22.85	22.72
		1	39	22.64	22.67	22.60
		1	78	22.50	22.52	22.46
		39	0	22.43	22.50	22.40
		39	19	22.39	22.41	22.34
		39	40	22.37	22.39	22.34
		79	0	22.29	22.30	22.26
	QPSK	1	0	22.31	22.47	22.72
		1	39	22.53	22.22	22.56
		1	78	22.25	22.34	22.14
		39	0	22.56	22.80	22.28
		39	19	22.74	22.81	22.34
		39	40	22.55	22.59	22.16
		79	0	22.75	22.48	22.14
	16QAM	1	0	21.46	21.53	21.40
		1	39	21.42	21.33	21.67
		1	78	21.20	21.67	21.46
		39	0	21.52	21.31	21.37
		39	19	21.52	21.54	21.45
		39	40	21.57	21.26	21.08
		79	0	21.23	21.35	21.63
	64QAM	1	0	20.15	20.47	20.31
		1	39	20.13	20.82	20.76
		1	78	20.60	20.85	20.16
		39	0	20.68	20.67	20.19
		39	19	20.03	20.60	20.48
		39	40	20.36	20.38	20.32
		79	0	20.55	20.33	20.60
	256QAM	1	0	19.68	19.73	19.66
		1	39	19.56	19.60	19.53
1		78	19.48	19.55	19.45	
39		0	19.41	19.43	19.37	
39		19	19.26	19.32	19.25	
39		40	19.29	19.33	19.27	
79		0	19.16	19.17	19.13	

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		515000	523000	515500
		Frequency (MHz)		2575	2595	2615
10 MHz	pi/2 BPSK	1	0	22.63	22.90	22.61
		1	26	22.59	22.60	22.56
		1	51	22.48	22.50	22.44
		26	0	22.36	22.39	22.34
		26	13	22.26	22.29	22.24
		26	26	22.25	22.27	22.21
		52	0	22.15	22.19	22.13
	QPSK	1	0	22.46	22.87	22.81
		1	26	22.23	22.49	22.77
		1	51	22.71	22.13	22.22
		26	0	22.51	22.46	22.68
		26	13	22.72	22.89	22.29
		26	26	22.15	22.28	22.09
		52	0	22.44	22.41	22.12
	16QAM	1	0	21.60	21.53	21.15
		1	26	21.64	21.68	21.07
		1	51	21.76	21.71	21.14
		26	0	21.45	21.25	21.55
		26	13	21.43	21.68	21.03
		26	26	21.70	21.75	21.23
		52	0	21.14	21.59	21.28
	64QAM	1	0	20.08	20.70	20.56
		1	26	20.47	20.37	20.50
		1	51	20.80	20.47	20.58
		26	0	20.58	20.42	20.46
		26	13	20.76	20.26	20.14
		26	26	20.55	20.42	20.25
		52	0	20.11	20.52	20.46
	256QAM	1	0	19.51	19.53	19.50
		1	26	19.40	19.43	19.36
1		51	19.26	19.28	19.23	
26		0	19.17	19.26	19.21	
26		13	19.09	19.11	19.07	
26		26	19.13	19.15	19.10	
52		0	19.01	19.04	18.97	

NR Band 38 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		514500	519000	523500
		Frequency (MHz)		2572.5	2595	2617.5
5 MHz	pi/2 BPSK	1	0	22.53	22.71	22.55
		1	12	22.42	22.47	22.40
		1	24	22.34	22.36	22.33
		12	0	22.20	22.24	22.23
		12	6	22.16	22.18	22.15
		12	13	22.14	22.19	22.16
		25	0	22.09	22.12	22.07
	QPSK	1	0	22.57	22.40	22.08
		1	12	22.60	22.86	22.69
		1	24	22.34	22.17	22.73
		12	0	22.35	22.79	22.11
		12	6	22.61	22.29	22.14
		12	13	22.21	22.72	22.70
		25	0	22.59	22.19	22.25
	16QAM	1	0	21.26	21.47	21.31
		1	12	21.06	21.72	21.62
		1	24	21.68	21.74	21.34
		12	0	21.73	21.25	21.05
		12	6	21.63	21.40	21.18
		12	13	21.73	21.58	21.04
		25	0	21.28	21.43	21.31
	64QAM	1	0	20.70	20.58	20.58
		1	12	20.31	20.62	20.40
		1	24	20.51	20.81	20.69
		12	0	20.71	20.45	20.33
		12	6	20.14	20.56	20.36
		12	13	20.35	20.54	20.70
		25	0	20.07	20.23	20.63
256QAM	1	0	19.50	19.54	19.52	
	1	12	19.37	19.44	19.40	
	1	24	19.25	19.28	19.23	
	12	0	19.19	19.22	19.16	
	12	6	19.08	19.13	19.09	
	12	13	19.09	19.10	19.07	
	25	0	18.97	19.01	18.99	

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NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		509202	518598	528000
		Frequency (MHz)		2546.01	2592.99	2640
100 MHz	pi/2 BPSK	1	0	23.61	23.79	23.75
		1	136	23.37	23.22	23.12
		1	272	23.31	23.45	23.62
		136	0	23.34	23.51	23.49
		136	68	23.13	23.56	23.67
		136	136	23.23	23.24	23.52
		273	0	23.34	23.75	23.28
	QPSK	1	0	22.29	22.83	22.72
		1	136	22.15	22.52	22.65
		1	272	22.64	22.59	22.19
		136	0	22.36	22.39	22.09
		136	68	22.72	22.50	22.47
		136	136	22.56	22.41	22.58
		273	0	22.68	22.60	22.35
	16QAM	1	0	21.38	21.85	21.81
		1	136	21.26	21.76	21.51
		1	272	21.56	21.68	21.60
		136	0	21.64	21.51	21.83
		136	68	21.74	21.45	21.52
		136	136	21.68	21.83	21.03
		273	0	21.17	21.48	21.14
	64QAM	1	0	20.19	20.79	20.28
		1	136	20.73	20.76	20.72
		1	272	20.47	20.58	20.80
		136	0	20.01	20.56	20.18
		136	68	20.31	20.29	20.74
		136	136	20.25	20.41	20.21
		273	0	20.14	20.35	20.82
	256QAM	1	0	19.43	19.64	19.19
		1	136	19.62	19.82	19.54
1		272	19.74	19.71	19.45	
136		0	19.32	19.31	19.71	
136		68	19.70	19.80	19.52	
136		136	19.41	19.98	19.15	
273		0	19.68	19.87	19.38	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		508200	518598	528996
		Frequency (MHz)		2541	2592.99	2644.98
90 MHz	pi/2 BPSK	1	0	23.69	23.18	23.50
		1	122	23.52	23.16	23.37
		1	244	23.20	23.22	23.28
		122	0	23.43	23.10	23.39
		122	61	23.77	23.63	23.30
		122	122	23.73	23.25	23.22
		245	0	23.47	23.21	23.12
	QPSK	1	0	22.12	22.64	22.60
		1	122	22.44	22.69	22.66
		1	244	22.25	22.53	22.69
		122	0	22.18	22.37	22.13
		122	61	22.57	22.57	22.77
		122	122	22.48	22.59	22.27
		245	0	22.39	22.66	22.12
	16QAM	1	0	21.25	21.52	21.45
		1	122	21.30	21.98	21.46
		1	244	21.31	21.27	21.49
		122	0	21.69	21.49	21.07
		122	61	21.13	21.55	21.16
		122	122	21.64	21.71	21.57
		245	0	21.42	21.76	21.66
	64QAM	1	0	20.07	20.56	20.55
		1	122	20.18	20.53	20.21
		1	244	20.36	20.21	20.24
		122	0	20.36	20.16	20.62
		122	61	20.69	20.58	20.41
		122	122	20.28	20.31	20.24
		245	0	20.45	20.85	20.33
	256QAM	1	0	19.50	19.30	19.28
		1	122	19.39	19.85	19.37
1		244	19.65	19.30	19.36	
122		0	19.61	19.57	19.57	
122		61	19.67	19.85	19.65	
122		122	19.28	19.74	19.66	
245		0	19.60	19.78	19.38	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		507204	518598	529998
		Frequency (MHz)		2536.02	2592.99	2649.99
80 MHz	pi/2 BPSK	1	0	23.18	23.36	23.21
		1	108	23.40	23.66	23.58
		1	216	23.74	23.76	23.61
		108	0	23.45	23.58	23.76
		108	54	23.28	23.55	23.13
		108	108	23.25	23.65	23.12
		217	0	23.68	23.49	23.53
	QPSK	1	0	22.75	22.58	22.17
		1	108	22.62	22.10	22.50
		1	216	22.14	22.33	22.22
		108	0	22.71	22.80	22.45
		108	54	22.14	22.07	22.51
		108	108	22.38	22.48	22.22
		217	0	22.21	22.69	22.16
	16QAM	1	0	21.35	21.97	21.15
		1	108	21.53	21.19	21.53
		1	216	21.51	21.17	21.21
		108	0	21.42	21.18	21.66
		108	54	21.44	21.72	21.44
		108	108	21.16	21.46	21.24
		217	0	21.62	21.37	21.09
	64QAM	1	0	20.69	20.35	20.11
		1	108	20.36	20.50	20.54
		1	216	20.46	20.81	20.71
		108	0	20.50	20.30	20.19
		108	54	20.48	20.55	20.86
		108	108	20.18	20.56	20.13
		217	0	20.61	20.48	20.94
	256QAM	1	0	19.30	19.44	19.62
		1	108	19.82	19.79	19.33
1		216	19.39	19.26	19.15	
108		0	19.34	19.80	19.12	
108		54	19.32	19.97	19.21	
108		108	19.62	19.99	19.70	
217		0	19.44	19.70	19.21	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
60 MHz	pi/2 BPSK	1	0	23.60	23.27	23.67
		1	81	23.21	23.27	23.62
		1	161	23.14	23.51	23.24
		81	0	23.29	23.40	23.35
		81	40	23.20	23.20	23.48
		81	81	23.47	23.22	23.74
		162	0	23.40	23.16	23.45
	QPSK	1	0	22.30	22.34	22.28
		1	81	22.55	22.13	22.43
		1	161	22.59	22.79	22.27
		81	0	22.12	22.21	22.34
		81	40	22.40	22.11	22.30
		81	81	22.49	22.13	22.34
		162	0	22.11	22.35	22.07
	16QAM	1	0	21.41	21.34	21.46
		1	81	21.26	21.68	21.21
		1	161	21.61	21.72	21.79
		81	0	21.61	21.44	21.10
		81	40	21.64	21.79	21.12
		81	81	21.53	21.43	21.56
		162	0	21.28	21.66	21.80
	64QAM	1	0	20.55	20.73	20.66
		1	81	20.54	20.79	20.68
		1	161	20.04	20.41	20.98
		81	0	20.31	20.74	20.78
		81	40	20.23	20.17	20.15
		81	81	20.46	20.57	20.70
		162	0	20.13	20.14	20.89
256QAM	1	0	19.57	19.55	19.14	
	1	81	19.36	19.97	19.58	
	1	161	19.76	19.92	19.44	
	81	0	19.76	19.37	19.46	
	81	40	19.56	19.60	19.24	
	81	81	19.66	19.75	19.61	
	162	0	19.42	19.63	19.71	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		504204	518598	532998
		Frequency (MHz)		2521.02	2592.99	2664.99
50 MHz	pi/2 BPSK	1	0	23.49	23.26	23.53
		1	66	23.28	23.37	23.27
		1	132	23.24	23.43	23.21
		66	0	23.12	23.49	23.10
		66	33	23.39	23.53	23.35
		66	66	23.37	23.45	23.42
		133	0	23.18	23.25	23.31
	QPSK	1	0	22.54	22.47	22.33
		1	66	22.80	22.68	22.12
		1	132	22.52	22.60	22.40
		66	0	22.27	22.38	22.76
		66	33	22.65	22.46	22.69
		66	66	22.34	22.84	22.22
		133	0	22.24	22.21	22.30
	16QAM	1	0	21.28	21.19	21.45
		1	66	21.51	21.32	21.23
		1	132	21.26	21.81	21.65
		66	0	21.30	21.80	21.05
		66	33	21.54	21.18	21.69
		66	66	21.24	21.53	21.76
		133	0	21.73	21.56	21.84
	64QAM	1	0	20.23	20.75	20.70
		1	66	20.30	20.75	20.27
		1	132	20.36	20.40	20.74
		66	0	20.47	20.67	20.42
		66	33	20.41	20.43	20.15
		66	66	20.64	20.48	20.52
		133	0	20.26	20.73	20.17
	256QAM	1	0	19.65	19.50	19.36
		1	66	19.64	19.49	19.37
1		132	19.54	19.66	19.14	
66		0	19.28	19.94	19.64	
66		33	19.29	19.50	19.70	
66		66	19.41	19.73	19.58	
133		0	19.24	19.55	19.50	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		503202	518598	534000
		Frequency (MHz)		2516.01	2592.99	2670
40 MHz	pi/2 BPSK	1	0	23.73	23.32	23.55
		1	53	23.61	23.59	23.18
		1	105	23.15	23.15	23.43
		53	0	23.21	23.11	23.55
		53	26	23.53	23.18	23.67
		53	53	23.15	23.19	23.18
		106	0	23.12	23.51	23.15
	QPSK	1	0	22.26	22.40	22.49
		1	53	22.73	22.08	22.21
		1	105	22.53	22.75	22.51
		53	0	22.52	22.20	22.33
		53	26	22.35	22.13	22.24
		53	53	22.47	22.65	22.08
		106	0	22.26	22.22	22.67
	16QAM	1	0	21.28	21.16	21.78
		1	53	21.46	21.36	21.35
		1	105	21.18	21.47	21.59
		53	0	21.51	21.85	21.51
		53	26	21.39	21.39	21.66
		53	53	21.51	21.18	21.33
		106	0	21.49	21.92	21.74
	64QAM	1	0	20.72	20.22	20.34
		1	53	20.20	20.25	20.16
		1	105	20.51	20.22	20.59
		53	0	20.21	20.43	20.45
		53	26	20.62	20.46	20.57
		53	53	20.14	20.52	20.43
		106	0	20.24	20.17	20.77
	256QAM	1	0	19.69	19.48	19.14
		1	53	19.62	19.33	19.35
1		105	19.64	19.95	19.23	
53		0	19.46	19.95	19.58	
53		26	19.81	19.92	19.34	
53		53	19.37	19.42	19.69	
106		0	19.67	19.30	19.30	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		501204	518598	535998
		Frequency (MHz)		2506.02	2592.99	2679.99
20 MHz	pi/2 BPSK	1	0	23.30	23.13	23.13
		1	25	23.38	23.36	23.59
		1	50	23.54	23.43	23.28
		25	0	23.32	23.46	23.38
		25	12	23.33	23.46	23.57
		25	25	23.42	23.21	23.26
		51	0	23.14	23.49	23.67
	QPSK	1	0	22.34	22.64	22.23
		1	25	22.71	22.09	22.61
		1	50	22.67	22.41	22.50
		25	0	22.72	22.73	22.72
		25	12	22.44	22.25	22.28
		25	25	22.45	22.67	22.60
		51	0	22.22	22.51	22.71
	16QAM	1	0	21.15	21.92	21.55
		1	25	21.66	21.69	21.48
		1	50	21.15	21.63	21.24
		25	0	21.25	21.46	21.53
		25	12	21.43	21.82	21.11
		25	25	21.45	21.93	21.28
		51	0	21.59	21.41	21.30
	64QAM	1	0	20.51	20.57	20.62
		1	25	20.15	20.41	20.78
		1	50	20.57	20.23	20.32
		25	0	20.20	20.37	20.14
		25	12	20.16	20.80	20.34
		25	25	20.43	20.43	20.87
		51	0	20.54	20.45	20.19
	256QAM	1	0	19.66	19.69	19.47
		1	25	19.39	19.81	19.62
1		50	19.64	19.54	19.32	
25		0	19.47	19.61	19.24	
25		12	19.31	19.30	19.15	
25		25	19.37	19.61	19.56	
51		0	19.47	19.61	19.49	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		505200	518598	531996
		Frequency (MHz)		2526	2592.99	2659.98
15 MHz	pi/2 BPSK	1	0	23.19	23.55	23.21
		1	19	23.23	23.52	23.42
		1	37	23.68	23.21	23.36
		19	0	23.43	23.60	23.58
		19	9	23.64	23.62	23.24
		19	20	23.29	23.76	23.22
		38	0	23.48	23.50	23.61
	QPSK	1	0	22.57	22.47	22.60
		1	19	22.51	22.06	22.18
		1	37	22.16	22.23	22.16
		19	0	22.46	22.28	22.28
		19	9	22.41	22.14	22.61
		19	20	22.66	22.21	22.42
		38	0	22.70	22.39	22.51
	16QAM	1	0	21.14	21.45	21.55
		1	19	21.27	21.20	21.12
		1	37	21.29	21.73	21.12
		19	0	21.75	21.33	21.48
		19	9	21.29	21.92	21.08
		19	20	21.14	21.58	21.32
		38	0	21.70	21.48	21.36
	64QAM	1	0	20.16	20.26	20.48
		1	19	20.50	20.32	20.16
		1	37	20.47	20.83	20.14
		19	0	20.69	20.82	20.56
		19	9	20.33	20.69	20.94
		19	20	20.08	20.14	20.21
		38	0	20.70	20.24	20.90
	256QAM	1	0	19.60	19.26	19.41
		1	19	19.29	19.49	19.64
1		37	19.83	19.35	19.29	
19		0	19.42	19.28	19.63	
19		9	19.59	19.47	19.22	
19		20	19.32	19.62	19.24	
38		0	19.29	19.34	19.68	

NR Band 41 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		500202	518598	537000
		Frequency (MHz)		2501.01	2592.99	2685
10 MHz	pi/2 BPSK	1	0	23.59	23.39	23.59
		1	12	23.67	23.63	23.25
		1	23	23.40	23.71	23.50
		12	0	23.13	23.26	23.38
		12	6	23.54	23.72	23.40
		12	12	23.69	23.33	23.65
		24	0	23.65	23.80	23.40
	QPSK	1	0	22.47	22.74	22.59
		1	12	22.16	22.56	22.66
		1	23	22.17	22.09	22.62
		12	0	22.53	22.32	22.51
		12	6	22.28	22.36	22.13
		12	12	22.51	22.23	22.21
		24	0	22.32	22.45	22.69
	16QAM	1	0	21.49	21.22	21.45
		1	12	21.72	21.68	21.70
		1	23	21.57	21.95	21.33
		12	0	21.28	21.81	21.16
		12	6	21.37	21.87	21.25
		12	12	21.69	21.82	21.66
		24	0	21.74	21.84	21.35
	64QAM	1	0	20.41	20.15	20.14
		1	12	20.07	20.60	20.72
		1	23	20.51	20.24	20.66
		12	0	20.63	20.64	20.93
		12	6	20.72	20.36	20.75
		12	12	20.74	20.83	20.86
		24	0	20.72	20.16	20.60
256QAM	1	0	19.66	19.34	19.67	
	1	12	19.78	19.73	19.35	
	1	23	19.39	19.54	19.49	
	12	0	19.85	19.72	19.69	
	12	6	19.76	19.48	19.51	
	12	12	19.40	19.29	19.51	
	24	0	19.75	19.58	19.81	

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NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		346000	349000	352000
		Frequency (MHz)		1730	1745	1760
40 MHz	pi/2 BPSK	1	0	23.64	23.59	23.65
		1	108	24.08	24.00	23.95
		1	215	24.01	23.93	24.10
		108	0	23.94	23.92	23.95
		108	53	23.87	23.82	23.98
		108	107	23.93	23.81	23.87
		216	0	23.95	23.96	23.89
	QPSK	1	0	20.53	20.66	20.53
		1	108	21.09	20.94	21.04
		1	215	21.00	20.93	21.01
		108	0	21.00	20.98	20.91
		108	53	20.98	20.86	20.87
		108	107	20.98	20.88	20.85
		216	0	20.94	20.90	20.86
	16QAM	1	0	20.65	20.63	20.59
		1	108	21.06	21.08	21.07
		1	215	21.09	20.92	21.01
		108	0	20.91	20.91	20.80
		108	53	20.93	20.93	20.83
		108	107	20.97	21.00	20.92
		216	0	20.97	20.88	20.98
	64QAM	1	0	20.19	20.19	20.07
		1	108	20.41	20.54	20.50
		1	215	20.44	20.59	20.60
		108	0	20.35	20.31	20.32
		108	53	20.46	20.48	20.31
		108	107	20.38	20.50	20.37
		216	0	20.35	20.50	20.43
	256QAM	1	0	17.00	17.16	17.04
		1	108	17.57	17.60	17.60
1		215	17.56	17.47	17.47	
108		0	17.46	17.35	17.37	
108		53	17.32	17.48	17.30	
108		107	17.44	17.30	17.45	
216		0	17.32	17.41	17.34	

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		344000	349000	354000
		Frequency (MHz)		1720	1745	1770
20 MHz	pi/2 BPSK	1	0	23.69	23.67	23.58
		1	53	24.10	23.92	23.97
		1	105	23.99	24.02	23.90
		53	0	23.89	23.93	23.81
		53	27	23.98	23.81	23.93
		53	53	23.97	23.82	23.92
		106	0	23.80	23.99	23.99
	QPSK	1	0	20.54	20.60	20.64
		1	53	20.95	20.95	21.08
		1	105	21.02	20.92	20.95
		53	0	20.92	20.85	20.81
		53	27	20.84	20.99	20.97
		53	53	20.95	20.97	20.93
		106	0	20.98	20.90	20.98
	16QAM	1	0	20.55	20.53	20.54
		1	53	20.93	20.99	20.93
		1	105	21.07	20.91	20.94
		53	0	20.83	20.80	20.98
		53	27	20.86	21.00	20.82
		53	53	20.81	20.95	20.80
		106	0	20.98	20.97	20.87
	64QAM	1	0	20.17	20.16	20.08
		1	53	20.41	20.44	20.49
		1	105	20.47	20.51	20.53
		53	0	20.33	20.48	20.50
		53	27	20.46	20.48	20.33
		53	53	20.49	20.35	20.47
		106	0	20.37	20.50	20.31
	256QAM	1	0	17.12	17.05	17.13
		1	53	17.45	17.41	17.51
1		105	17.60	17.40	17.52	
53		0	17.41	17.45	17.37	
53		27	17.44	17.31	17.37	
53		53	17.39	17.48	17.44	
106		0	17.35	17.44	17.42	

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343500	349000	354500
		Frequency (MHz)		1717.5	1745	1772.5
15 MHz	pi/2 BPSK	1	0	23.57	23.66	23.68
		1	39	24.05	23.96	23.94
		1	78	24.04	23.93	23.96
		39	0	23.97	23.81	23.89
		39	19	23.88	23.87	23.83
		39	40	23.81	23.84	23.94
		79	0	23.81	23.88	23.82
	QPSK	1	0	20.56	20.54	20.68
		1	39	20.95	21.08	21.09
		1	78	21.06	21.03	20.90
		39	0	20.92	20.96	20.89
		39	19	20.93	20.88	20.89
		39	40	20.93	20.91	20.85
		79	0	20.97	20.88	20.85
	16QAM	1	0	20.70	20.64	20.60
		1	39	21.06	20.95	21.08
		1	78	20.91	21.09	20.98
		39	0	20.83	20.98	20.85
		39	19	20.86	20.92	20.81
		39	40	21.00	20.83	20.96
		79	0	20.81	20.85	20.92
	64QAM	1	0	20.17	20.03	20.02
		1	39	20.54	20.48	20.40
		1	78	20.58	20.60	20.41
		39	0	20.40	20.49	20.34
		39	19	20.31	20.48	20.46
		39	40	20.43	20.49	20.41
		79	0	20.49	20.44	20.45
256QAM	1	0	17.11	17.01	17.01	
	1	39	17.57	17.59	17.43	
	1	78	17.49	17.52	17.58	
	39	0	17.43	17.42	17.35	
	39	19	17.31	17.46	17.40	
	39	40	17.32	17.46	17.42	
	79	0	17.30	17.37	17.46	

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		343000	349000	355000
		Frequency (MHz)		1715	1745	1775
10 MHz	pi/2 BPSK	1	0	23.59	23.56	23.62
		1	26	24.01	23.98	24.06
		1	51	24.06	23.99	23.92
		26	0	23.97	23.88	23.80
		26	13	23.89	23.89	23.92
		26	26	23.89	23.94	23.86
		52	0	23.97	23.85	23.92
	QPSK	1	0	20.70	20.63	20.60
		1	26	21.03	20.90	20.99
		1	51	20.96	20.90	20.98
		26	0	20.89	20.83	20.86
		26	13	20.97	20.94	20.81
		26	26	20.92	20.92	20.96
		52	0	20.81	21.00	20.85
	16QAM	1	0	20.57	20.55	20.59
		1	26	21.05	21.09	20.94
		1	51	20.92	21.10	20.96
		26	0	20.91	20.82	20.90
		26	13	20.92	20.92	20.96
		26	26	20.99	20.93	20.90
		52	0	20.84	20.88	20.90
	64QAM	1	0	20.05	20.11	20.08
		1	26	20.47	20.48	20.49
		1	51	20.43	20.44	20.49
		26	0	20.40	20.42	20.45
		26	13	20.30	20.43	20.32
		26	26	20.35	20.33	20.47
		52	0	20.49	20.38	20.46
	256QAM	1	0	17.08	17.12	17.01
		1	26	17.56	17.54	17.57
1		51	17.40	17.53	17.50	
26		0	17.41	17.43	17.36	
26		13	17.45	17.42	17.35	
26		26	17.35	17.41	17.50	
52		0	17.41	17.34	17.42	

NR Band 66 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		342500	349000	355500
		Frequency (MHz)		1712.5	1745	1777.5
5 MHz	pi/2 BPSK	1	0	23.70	23.59	23.52
		1	12	23.98	23.90	23.97
		1	24	23.93	23.92	24.07
		12	0	23.92	23.87	23.99
		12	6	23.91	23.96	23.87
		12	13	23.85	23.90	23.80
		25	0	23.89	23.80	23.97
	QPSK	1	0	20.61	20.67	20.58
		1	12	20.95	20.99	21.04
		1	24	20.99	21.02	20.92
		12	0	20.82	20.88	20.84
		12	6	20.92	20.90	20.94
		12	13	20.93	20.92	20.84
		25	0	21.00	20.95	20.87
	16QAM	1	0	20.52	20.68	20.62
		1	12	20.93	20.99	20.94
		1	24	20.93	21.10	21.09
		12	0	20.89	20.93	20.82
		12	6	20.80	20.96	20.81
		12	13	20.84	20.92	20.93
		25	0	20.82	20.96	20.83
	64QAM	1	0	20.19	20.19	20.14
		1	12	20.59	20.40	20.43
		1	24	20.55	20.41	20.57
		12	0	20.36	20.35	20.39
		12	6	20.41	20.45	20.35
		12	13	20.37	20.46	20.31
		25	0	20.50	20.36	20.37
	256QAM	1	0	17.20	17.06	17.14
		1	12	17.40	17.43	17.51
1		24	17.52	17.54	17.59	
12		0	17.39	17.40	17.43	
12		6	17.49	17.33	17.32	
12		13	17.47	17.41	17.46	
25		0	17.48	17.35	17.48	

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NR Band 71(SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134600	136100	137600
		Frequency (MHz)		673	680.5	688
20 MHz	pi/2 BPSK	1	0	24.26	24.24	24.27
		1	53	23.96	23.97	24.06
		1	105	23.92	24.08	23.95
		53	0	24.05	24.09	24.10
		53	27	24.09	23.95	24.09
		53	53	23.91	24.02	24.03
		106	0	24.01	23.92	24.10
	QPSK	1	0	21.19	21.24	21.22
		1	53	20.90	21.05	21.03
		1	105	21.01	21.10	20.95
		53	0	21.01	20.95	20.97
		53	27	20.98	21.10	20.96
		53	53	20.92	21.08	20.95
		106	0	20.90	20.99	21.06
	16QAM	1	0	21.28	21.10	21.16
		1	53	21.09	21.01	21.09
		1	105	20.94	21.04	20.98
		53	0	20.96	21.04	20.97
		53	27	20.99	21.10	20.93
		53	53	20.90	21.10	21.00
		106	0	21.04	21.05	20.91
	64QAM	1	0	20.62	20.62	20.63
		1	53	20.41	20.48	20.45
		1	105	20.44	20.41	20.52
		53	0	20.56	20.50	20.46
		53	27	20.60	20.59	20.51
		53	53	20.40	20.44	20.57
		106	0	20.47	20.40	20.57
	256QAM	1	0	17.75	17.75	17.78
		1	53	17.52	17.52	17.47
1		105	17.45	17.47	17.49	
53		0	17.48	17.41	17.48	
53		27	17.57	17.54	17.41	
53		53	17.45	17.59	17.56	
106		0	17.45	17.45	17.59	

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		134100	136100	138100
		Frequency (MHz)		670.5	680.5	690.5
15 MHz	pi/2 BPSK	1	0	24.19	24.28	24.14
		1	39	24.08	24.06	24.02
		1	78	24.01	23.95	24.04
		39	0	24.10	24.06	23.97
		39	19	24.09	24.04	24.09
		39	40	24.04	23.92	23.99
		79	0	24.02	23.97	24.06
	QPSK	1	0	21.23	21.28	21.28
		1	39	20.96	21.05	21.07
		1	78	20.99	20.99	20.92
		39	0	20.99	21.09	21.08
		39	19	21.01	20.93	20.96
		39	40	20.91	20.98	21.08
		79	0	21.08	20.90	20.98
	16QAM	1	0	21.10	21.14	21.27
		1	39	21.05	21.08	21.01
		1	78	21.02	21.02	20.93
		39	0	20.91	20.99	20.98
		39	19	21.03	20.97	21.05
		39	40	21.10	21.01	20.94
		79	0	20.93	20.91	20.90
	64QAM	1	0	20.73	20.64	20.70
		1	39	20.50	20.44	20.52
		1	78	20.54	20.54	20.42
		39	0	20.50	20.49	20.54
		39	19	20.46	20.42	20.49
		39	40	20.46	20.55	20.53
		79	0	20.45	20.46	20.53
	256QAM	1	0	17.63	17.73	17.67
		1	39	17.58	17.46	17.41
1		78	17.51	17.43	17.43	
39		0	17.60	17.47	17.50	
39		19	17.60	17.54	17.48	
39		40	17.46	17.46	17.44	
79		0	17.49	17.58	17.56	

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133600	136100	138600
		Frequency (MHz)		668	680.5	693
10 MHz	pi/2 BPSK	1	0	24.10	24.24	24.17
		1	26	24.10	24.05	23.97
		1	51	24.08	23.91	23.90
		26	0	24.07	23.99	23.97
		26	13	23.96	24.04	23.96
		26	26	23.93	23.96	24.04
		52	0	24.08	24.05	23.92
	QPSK	1	0	21.18	21.30	21.25
		1	26	21.03	20.92	20.98
		1	51	20.92	20.91	20.92
		26	0	21.07	20.92	20.91
		26	13	21.06	21.00	20.91
		26	26	20.96	21.09	21.09
		52	0	21.07	20.94	20.90
	16QAM	1	0	21.22	21.29	21.10
		1	26	20.92	21.06	20.96
		1	51	20.95	20.95	20.98
		26	0	21.01	20.98	21.09
		26	13	20.92	21.08	20.90
		26	26	20.95	20.95	21.03
		52	0	20.94	21.00	20.92
	64QAM	1	0	20.72	20.60	20.77
		1	26	20.60	20.53	20.53
		1	51	20.41	20.60	20.47
		26	0	20.44	20.54	20.53
		26	13	20.44	20.45	20.42
		26	26	20.44	20.53	20.58
		52	0	20.48	20.43	20.54
	256QAM	1	0	17.65	17.60	17.63
		1	26	17.50	17.60	17.52
1		51	17.44	17.48	17.40	
26		0	17.40	17.44	17.57	
26		13	17.57	17.50	17.55	
26		26	17.59	17.52	17.54	
52		0	17.57	17.46	17.45	

NR Band 71 (SCS 15kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		133100	136100	139100
		Frequency (MHz)		665.5	680.5	695.5
5 MHz	pi/2 BPSK	1	0	24.13	24.13	24.21
		1	12	23.98	23.95	23.97
		1	24	24.09	23.92	24.00
		12	0	24.07	24.09	23.93
		12	6	24.10	24.09	24.06
		12	13	23.99	23.91	23.91
		25	0	23.94	23.98	24.08
	QPSK	1	0	21.30	21.21	21.17
		1	12	20.93	20.97	21.07
		1	24	21.04	21.00	21.06
		12	0	21.10	20.93	20.91
		12	6	20.93	20.93	20.93
		12	13	20.96	21.03	20.97
		25	0	21.09	21.10	20.97
	16QAM	1	0	21.18	21.15	21.11
		1	12	20.97	21.06	21.10
		1	24	21.00	21.07	21.07
		12	0	21.01	21.08	20.90
		12	6	21.03	20.93	20.91
		12	13	21.01	20.91	20.93
		25	0	21.08	20.96	21.08
	64QAM	1	0	20.71	20.72	20.62
		1	12	20.55	20.47	20.47
		1	24	20.58	20.54	20.56
		12	0	20.46	20.50	20.48
		12	6	20.42	20.40	20.54
		12	13	20.45	20.45	20.44
		25	0	20.54	20.40	20.52
	256QAM	1	0	17.76	17.64	17.69
		1	12	17.50	17.43	17.43
1		24	17.51	17.47	17.60	
12		0	17.51	17.51	17.47	
12		6	17.50	17.54	17.58	
12		13	17.60	17.57	17.59	
25		0	17.53	17.47	17.53	

According to February 2021 TCB Workshop:

- For 5G-FR1 SAR evaluations are being generally based on adapting the existing LTE SAR procedures (KDB 941225 D05A)

SAR testing has been performed based on FCC KDB 941225 D05, Paragraph 5.2 guidance, adapting LTE SAR procedure to 5G-FR1:

- 1RB allocation:
Start with the largest channel bandwidth then measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle, and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
- 50% RB allocation
The procedures required for 1 RB allocation are applied to measure the SAR for PI/2 BPSK with 50% RB allocation.
- 100% RB allocation
For PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations, and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg.
Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
- Higher order modulations
SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.
- Other channel bandwidth standalone SAR test requirements
Measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration, or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

2.1.8. 5G NSA Bands

According to February 2021 TCB Workshop:

- For non-stand-alone configurations, both LTE and 5G-NR are added to derive a total SAR.

Following guidance from TCB Workshop October 2020:

- SAR testing for LTE and NR will be performed separately, and applying FCC KDB 447498 techniques for simultaneous LTE+NR:
 - If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg, additional measurements are not needed.

NSA	CC1			CC2			NSA
	Band	Tune-up limit	Reported SAR	Band	Tune-up limit	Reported SAR	CA Summation
2A-n5A	2A	24.5	0.063	n5A	25.0	0.016	0.079
66A-n5A	66A	24.5	0.080	n5A	25.0	0.079	0.159
26A-n41A	26A	25.0	0.224	n41A	24.5	0.017	0.241
5A-n66A	5A	24.5	0.192	n66A	24.5	0.042	0.234
12A-n66A	12A	24.5	0.135	n66A	24.5	0.042	0.177
2A-n71A	2A	24.5	0.063	n71A	24.5	0.025	0.088
66A-n71A	66A	24.5	0.080	n71A	24.5	0.025	0.105

2.2. MIMO2 port: MIMO 2 Antenna (External Shark fin)

2.2.1. LTE Bands

- LTE 42

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					3410.0 MHz	3500.0 MHz	3590.0 MHz
LTE B42	20 MHz	QPSK	1RB Low	0	24.21	23.16	23.32
			1RB Mid	0	23.99	23.01	22.98
			1RB High	0	24.15	22.98	23.25
			50% Low	1	23.09	21.97	22.29
			50% Mid	1	23.05	21.85	22.21
			50% High	1	23.01	21.86	22.25
			100%	1	23.06	21.93	22.29
		16-QAM	1RB Low	1	23.21	22.06	22.65
			1RB Mid	1	23.08	21.83	22.59
			1RB High	1	23.08	21.87	22.56
			50% Low	2	21.99	20.97	21.29
			50% Mid	2	21.92	20.92	21.24
			50% High	2	21.94	20.87	21.24
			100%	2	22.01	20.90	21.20
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					3407.5 MHz	3500.0 MHz	3592.5 MHz
LTE B42	15 MHz	QPSK	1RB Low	0	24.27	23.01	23.31
			1RB Mid	0	24.41	23.10	23.09
			1RB High	0	23.84	22.88	23.25
			50% Low	1	23.29	22.01	22.37
			50% Mid	1	23.27	21.97	22.34
			50% High	1	23.24	21.92	22.31
			100%	1	23.29	21.99	22.36
		16-QAM	1RB Low	1	23.13	21.91	22.34
			1RB Mid	1	22.87	21.32	22.48
			1RB High	1	22.85	21.78	22.23
			50% Low	2	22.25	20.91	21.30
			50% Mid	2	22.18	20.82	21.27
			50% High	2	22.17	20.82	21.25
			100%	2	22.17	20.90	21.25

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					3405.0 MHz	3500.0 MHz	3595.0 MHz
LTE B42	10 MHz	QPSK	1RB Low	0	24.22	23.01	23.32
			1RB Mid	0	24.08	22.84	23.02
			1RB High	0	24.00	22.89	23.18
			50% Low	1	23.17	21.89	22.20
			50% Mid	1	23.15	21.87	22.23
			50% High	1	23.14	21.85	22.18
			100%	1	23.15	21.86	22.21
		16-QAM	1RB Low	1	23.37	22.15	22.36
			1RB Mid	1	23.15	21.98	22.00
			1RB High	1	23.31	22.04	22.27
			50% Low	2	22.18	20.92	21.23
			50% Mid	2	22.13	20.87	21.23
			50% High	2	22.11	20.87	21.16
100%	2	22.10	20.84	21.17			
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					3402.5 MHz	3500.0 MHz	3597.5 MHz
LTE B42	5 MHz	QPSK	1RB Low	0	24.33	22.89	23.29
			1RB Mid	0	24.08	22.91	23.42
			1RB High	0	24.24	22.85	23.22
			50% Low	1	23.18	21.85	22.17
			50% Mid	1	23.17	21.80	22.10
			50% High	1	23.20	21.79	22.11
			100%	1	23.17	21.80	22.15
		16-QAM	1RB Low	1	23.22	21.96	22.45
			1RB Mid	1	23.25	22.18	22.48
			1RB High	1	23.25	21.90	22.32
			50% Low	2	22.17	20.85	21.12
			50% Mid	2	22.13	20.79	21.06
			50% High	2	22.14	20.78	21.05
100%	2	22.14	20.81	21.13			

2.2.2. 5G SA Bands

- n77

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623334	650000	676666
		Frequency (MHz)		3350.01	3750	4149.99
100 MHz	pi/2 BPSK	1	0	21.91	22.87	22.25
		1	136	22.04	22.66	22.22
		1	272	22.25	22.17	22.21
		136	0	22.25	22.82	22.15
		136	68	22.10	22.02	22.13
		136	136	21.95	22.79	22.33
		273	0	22.17	22.13	22.33
	QPSK	1	0	21.12	21.14	21.01
		1	136	21.45	21.31	21.30
		1	272	21.19	21.10	21.55
		136	0	21.20	21.43	20.98
		136	68	21.37	21.25	21.27
		136	136	21.31	21.39	21.16
		273	0	21.45	21.28	21.34
	16QAM	1	0	20.18	20.15	20.23
		1	136	20.30	20.12	20.70
		1	272	20.54	20.20	20.57
		136	0	20.41	20.02	20.62
		136	68	20.28	20.39	20.64
		136	136	20.55	20.17	20.37
		273	0	20.29	20.56	20.48
	64QAM	1	0	19.43	19.13	19.18
		1	136	19.65	19.14	19.29
		1	272	19.28	19.26	19.55
		136	0	19.35	19.18	19.58
		136	68	19.42	19.18	19.31
		136	136	19.24	19.26	19.30
		273	0	19.43	19.15	19.33
	256QAM	1	0	18.33	18.60	18.60
		1	136	18.39	18.64	18.41
1		272	18.72	18.64	18.27	
136		0	18.83	18.78	18.37	
136		68	18.26	18.43	18.27	
136		136	18.34	18.27	18.57	
273		0	18.22	18.59	18.33	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	650000	67700
		Frequency (MHz)		3345	3750	4155
90 MHz	pi/2 BPSK	1	0	21.99	22.20	21.98
		1	122	21.94	22.39	22.07
		1	244	22.37	22.08	22.01
		122	0	22.28	22.74	22.28
		122	61	22.37	22.45	22.27
		122	122	22.38	22.31	22.06
		245	0	22.14	22.01	22.27
	QPSK	1	0	21.31	21.56	21.17
		1	122	21.31	21.28	21.11
		1	244	21.44	21.44	21.13
		122	0	21.18	21.26	21.09
		122	61	21.50	21.60	21.23
		122	122	21.17	21.34	21.32
		245	0	21.39	21.21	21.39
	16QAM	1	0	20.54	20.46	20.46
		1	122	20.51	20.12	20.28
		1	244	20.52	20.68	20.58
		122	0	20.51	20.38	20.17
		122	61	20.35	20.44	20.62
		122	122	20.32	20.32	20.43
		245	0	20.14	20.21	20.62
	64QAM	1	0	19.45	19.58	19.69
		1	122	19.36	19.01	19.52
		1	244	19.20	19.33	19.09
		122	0	19.62	19.26	19.65
		122	61	19.62	19.08	19.69
		122	122	19.23	19.55	19.61
		245	0	19.66	19.43	19.56
	256QAM	1	0	18.65	18.36	18.84
		1	122	18.74	18.34	18.26
1		244	18.80	18.69	18.80	
122		0	18.42	18.72	18.89	
122		61	18.66	18.23	18.51	
122		122	18.86	18.31	18.77	
245		0	18.32	18.65	18.84	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622668	650000	677332
		Frequency (MHz)		3340.02	3750	4159.98
80 MHz	pi/2 BPSK	1	0	22.08	22.57	22.07
		1	108	22.14	22.72	22.32
		1	216	22.04	22.09	22.08
		108	0	22.14	21.99	22.38
		108	54	22.37	22.03	22.38
		108	108	22.24	22.30	22.00
		217	0	22.00	22.39	21.99
	QPSK	1	0	21.32	21.60	21.49
		1	108	21.25	21.56	21.00
		1	216	21.52	21.19	21.34
		108	0	21.41	21.32	21.23
		108	54	21.46	21.20	21.34
		108	108	21.51	21.33	20.96
		217	0	21.23	21.37	21.09
	16QAM	1	0	20.37	20.15	20.48
		1	108	20.56	20.05	20.16
		1	216	20.63	20.05	20.54
		108	0	20.39	20.47	20.40
		108	54	20.24	20.44	20.64
		108	108	20.09	20.38	20.10
		217	0	20.07	20.19	20.68
	64QAM	1	0	19.21	19.40	19.33
		1	108	19.37	19.41	19.32
		1	216	19.50	19.07	19.36
		108	0	19.64	19.30	19.42
		108	54	19.46	19.44	19.67
		108	108	19.21	19.02	19.15
		217	0	19.48	19.25	19.12
	256QAM	1	0	18.48	18.83	18.32
		1	108	18.56	18.76	18.67
1		216	18.55	18.67	18.59	
108		0	18.82	18.55	18.81	
108		54	18.86	18.55	18.87	
108		108	18.59	18.88	18.48	
217		0	18.60	18.82	18.78	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	650000	678000
		Frequency (MHz)		3330	3750	4170
60 MHz	pi/2 BPSK	1	0	22.37	22.48	21.97
		1	81	22.33	22.31	22.03
		1	161	22.29	22.76	22.38
		81	0	22.00	22.03	22.24
		81	40	22.25	22.03	22.32
		81	81	22.27	22.49	22.35
		162	0	22.41	22.32	21.97
	QPSK	1	0	21.21	21.34	21.40
		1	81	21.18	21.35	21.16
		1	161	21.29	21.38	21.25
		81	0	21.50	21.27	21.18
		81	40	21.40	21.07	21.34
		81	81	21.36	21.55	21.33
		162	0	21.54	21.38	21.42
	16QAM	1	0	20.22	20.42	20.68
		1	81	20.16	20.28	20.15
		1	161	20.32	20.45	20.31
		81	0	20.25	20.32	20.51
		81	40	20.55	20.01	20.47
		81	81	20.08	20.55	20.43
		162	0	20.37	20.15	20.53
	64QAM	1	0	19.49	19.45	19.15
		1	81	19.27	19.25	19.34
		1	161	19.56	19.34	19.27
		81	0	19.58	19.10	19.43
		81	40	19.12	19.57	19.06
		81	81	19.33	19.10	19.42
		162	0	19.23	19.56	19.57
	256QAM	1	0	18.45	18.26	18.75
		1	81	18.27	18.47	18.64
1		161	18.71	18.42	18.41	
81		0	18.36	18.26	18.40	
81		40	18.67	18.42	18.61	
81		81	18.35	18.76	18.23	
162		0	18.21	18.40	18.23	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	650000	678332
		Frequency (MHz)		3325.02	3750	4174.98
50 MHz	pi/2 BPSK	1	0	22.07	22.46	22.37
		1	66	22.04	22.39	22.37
		1	132	22.13	22.06	22.07
		66	0	22.17	22.54	22.27
		66	33	22.37	22.26	21.97
		66	66	22.07	22.70	22.17
		133	0	22.37	22.45	22.24
	QPSK	1	0	21.54	21.27	21.10
		1	66	21.47	21.13	21.07
		1	132	21.13	21.24	21.05
		66	0	21.36	21.31	21.55
		66	33	21.47	21.32	21.56
		66	66	21.22	21.40	21.43
		133	0	21.54	21.32	20.96
	16QAM	1	0	20.56	20.72	20.62
		1	66	20.16	20.68	20.38
		1	132	20.35	20.76	20.12
		66	0	20.50	20.24	20.44
		66	33	20.46	20.68	20.47
		66	66	20.49	20.02	20.22
		133	0	20.31	20.19	20.64
	64QAM	1	0	19.65	19.53	19.69
		1	66	19.51	19.21	19.42
		1	132	19.26	19.03	19.22
		66	0	19.30	19.12	19.35
		66	33	19.53	19.35	19.64
		66	66	19.14	19.05	19.64
		133	0	19.67	19.01	19.41
	256QAM	1	0	18.78	18.50	18.27
		1	66	18.64	18.78	18.75
1		132	18.78	18.78	18.82	
66		0	18.80	18.70	18.51	
66		33	18.49	18.53	18.67	
66		66	18.47	18.37	18.87	
133		0	18.73	18.72	18.85	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621334	650000	678666
		Frequency (MHz)		3320.01	3750	4179.99
40 MHz	pi/2 BPSK	1	0	22.38	22.53	22.29
		1	53	22.27	22.40	22.02
		1	105	22.47	22.54	22.20
		53	0	22.19	22.56	22.12
		53	26	22.01	22.24	22.26
		53	53	21.99	22.21	22.14
		106	0	21.93	22.07	22.31
	QPSK	1	0	21.13	21.15	21.59
		1	53	21.34	21.20	21.17
		1	105	21.39	21.58	21.04
		53	0	21.14	21.43	21.53
		53	26	21.18	21.16	21.48
		53	53	21.25	21.51	21.57
		106	0	21.41	21.53	21.04
	16QAM	1	0	20.22	20.52	20.37
		1	53	20.52	20.19	20.46
		1	105	20.37	20.06	20.49
		53	0	20.11	20.09	20.16
		53	26	20.19	20.59	20.69
		53	53	20.06	20.74	20.32
		106	0	20.43	20.62	20.43
	64QAM	1	0	19.13	19.14	19.11
		1	53	19.35	19.40	19.66
		1	105	19.55	19.24	19.68
		53	0	19.11	19.36	19.54
		53	26	19.60	19.35	19.47
		53	53	19.16	19.54	19.19
		106	0	19.61	19.58	19.19
	256QAM	1	0	18.73	18.76	18.24
		1	53	18.89	18.82	18.34
1		105	18.33	18.73	18.67	
53		0	18.70	18.83	18.22	
53		26	18.72	18.56	18.61	
53		53	18.48	18.75	18.79	
106		0	18.24	18.33	18.67	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	650000	679332
		Frequency (MHz)		3310.02	3750	4189.98
20 MHz	pi/2 BPSK	1	0	22.39	22.19	22.30
		1	25	22.18	22.39	22.36
		1	50	22.10	22.34	22.04
		25	0	22.15	22.46	21.97
		25	12	21.93	22.03	22.03
		25	25	22.27	22.85	22.29
		51	0	22.25	22.47	22.18
	QPSK	1	0	21.54	21.02	20.98
		1	25	21.49	21.13	21.34
		1	50	21.44	21.03	21.49
		25	0	21.49	21.16	21.49
		25	12	21.17	21.43	21.18
		25	25	21.46	21.10	21.01
		51	0	21.47	21.46	21.37
	16QAM	1	0	20.57	20.17	20.47
		1	25	20.25	20.19	20.48
		1	50	20.06	20.78	20.13
		25	0	20.63	20.58	20.12
		25	12	20.53	20.51	20.47
		25	25	20.08	20.21	20.53
		51	0	20.05	20.23	20.17
	64QAM	1	0	19.18	19.13	19.14
		1	25	19.48	19.54	19.15
		1	50	19.17	19.00	19.05
		25	0	19.53	19.48	19.39
		25	12	19.61	19.43	19.48
		25	25	19.68	19.20	19.29
		51	0	19.13	19.56	19.66
	256QAM	1	0	18.69	18.69	18.89
		1	25	18.36	18.47	18.72
1		50	18.24	18.58	18.36	
25		0	18.28	18.55	18.23	
25		12	18.60	18.31	18.33	
25		25	18.66	18.36	18.35	
51		0	18.81	18.55	18.73	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	650000	679500
		Frequency (MHz)		3307.5	3750	4192.5
15 MHz	pi/2 BPSK	1	0	21.91	22.49	22.31
		1	19	21.98	22.78	22.01
		1	37	22.24	22.27	22.23
		19	0	21.99	22.73	22.17
		19	9	22.41	22.31	22.26
		19	20	22.46	22.01	22.03
		38	0	22.37	22.53	22.35
	QPSK	1	0	21.53	21.35	21.26
		1	19	21.46	21.42	21.46
		1	37	21.21	21.29	20.99
		19	0	21.47	21.32	21.21
		19	9	21.24	21.07	21.11
		19	20	21.39	21.17	21.02
		38	0	21.25	21.37	21.55
	16QAM	1	0	20.48	20.67	20.55
		1	19	20.57	20.49	20.31
		1	37	20.51	20.77	20.66
		19	0	20.40	20.58	20.25
		19	9	20.62	20.53	20.49
		19	20	20.23	20.69	20.50
		38	0	20.19	20.67	20.63
	64QAM	1	0	19.44	19.06	19.39
		1	19	19.58	19.20	19.12
		1	37	19.45	19.30	19.70
		19	0	19.32	19.14	19.38
		19	9	19.27	19.04	19.17
		19	20	19.17	19.13	19.57
		38	0	19.29	19.27	19.40
256QAM	1	0	18.74	18.76	18.50	
	1	19	18.57	18.35	18.50	
	1	37	18.42	18.44	18.23	
	19	0	18.81	18.56	18.24	
	19	9	18.78	18.83	18.31	
	19	20	18.51	18.70	18.22	
	38	0	18.34	18.38	18.84	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	650000	679666
		Frequency (MHz)		3305.01	3750	4194.99
10 MHz	pi/2 BPSK	1	0	22.06	22.68	22.35
		1	12	22.20	22.54	22.11
		1	23	22.32	22.63	22.16
		12	0	22.16	22.32	22.15
		12	6	22.38	22.21	22.28
		12	12	21.99	22.59	22.29
		24	0	22.04	22.43	22.17
	QPSK	1	0	21.26	21.43	21.39
		1	12	21.39	21.04	21.28
		1	23	21.35	21.21	21.50
		12	0	21.49	21.05	21.21
		12	6	21.36	21.39	21.46
		12	12	21.27	21.56	21.31
		24	0	21.45	21.46	21.53
	16QAM	1	0	20.39	20.50	20.52
		1	12	20.16	20.36	20.42
		1	23	20.08	20.75	20.52
		12	0	20.35	20.26	20.22
		12	6	20.22	20.07	20.11
		12	12	20.39	20.17	20.47
		24	0	20.06	20.52	20.21
	64QAM	1	0	19.63	19.18	19.26
		1	12	19.17	19.22	19.51
		1	23	19.13	19.38	19.05
		12	0	19.38	19.06	19.28
		12	6	19.57	19.19	19.06
		12	12	19.61	19.27	19.20
		24	0	19.35	19.26	19.09
	256QAM	1	0	18.38	18.36	18.51
		1	12	18.58	18.48	18.24
1		23	18.74	18.63	18.56	
12		0	18.30	18.33	18.73	
12		6	18.29	18.86	18.69	
12		12	18.25	18.49	18.49	
24		0	18.25	18.77	18.69	

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NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623334	636666	650000
		Frequency (MHz)		3350.01	3549.99	3750
100 MHz	pi/2 BPSK	1	0	22.69	22.90	22.69
		1	136	22.49	22.15	22.81
		1	272	22.25	22.61	22.88
		136	0	22.37	22.54	22.49
		136	68	22.21	22.75	22.62
		136	136	22.26	22.62	22.40
		273	0	22.76	22.65	22.86
	QPSK	1	0	21.33	21.08	21.09
		1	136	21.18	21.21	21.23
		1	272	21.54	21.09	21.56
		136	0	21.11	21.57	21.57
		136	68	21.17	21.49	21.21
		136	136	21.32	21.19	21.12
		273	0	21.11	21.37	21.31
	16QAM	1	0	20.45	20.58	20.27
		1	136	20.06	20.73	20.54
		1	272	20.39	20.26	20.45
		136	0	20.24	20.46	20.29
		136	68	20.33	20.39	20.69
		136	136	20.44	20.75	20.13
		273	0	20.55	20.17	20.54
	64QAM	1	0	19.60	19.58	19.06
		1	136	19.27	19.01	19.38
		1	272	19.16	19.30	19.10
		136	0	19.10	19.35	19.10
		136	68	19.30	19.03	19.11
		136	136	19.11	19.39	19.27
		273	0	19.62	19.29	19.24
	256QAM	1	0	18.39	18.33	18.50
		1	136	18.84	18.25	18.55
1		272	18.25	18.24	18.41	
136		0	18.77	18.79	18.69	
136		68	18.36	18.35	18.33	
136		136	18.85	18.82	18.51	
273		0	18.63	18.54	18.58	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	636666	650332
		Frequency (MHz)		3345	3549.99	3754.98
90 MHz	pi/2 BPSK	1	0	22.84	22.19	22.69
		1	122	22.09	22.42	22.80
		1	244	22.37	22.41	22.31
		122	0	22.47	22.56	22.62
		122	61	22.54	22.77	22.47
		122	122	22.54	22.60	22.50
		245	0	22.04	22.54	22.83
	QPSK	1	0	21.38	21.11	21.07
		1	122	21.42	21.08	21.30
		1	244	21.41	21.08	21.17
		122	0	21.43	21.40	21.29
		122	61	21.47	21.33	21.47
		122	122	21.27	21.31	21.24
		245	0	21.50	21.46	21.03
	16QAM	1	0	20.50	20.50	20.31
		1	122	20.11	20.25	20.49
		1	244	20.28	20.26	20.61
		122	0	20.16	20.21	20.11
		122	61	20.43	20.32	20.56
		122	122	20.13	20.04	20.70
		245	0	20.66	20.07	20.48
	64QAM	1	0	19.54	19.23	19.24
		1	122	19.55	19.44	19.28
		1	244	19.32	19.04	19.21
		122	0	19.20	19.56	19.53
		122	61	19.30	19.20	19.43
		122	122	19.40	19.54	19.54
		245	0	19.19	19.48	19.46
	256QAM	1	0	18.79	18.33	18.71
		1	122	18.83	18.69	18.53
1		244	18.56	18.67	18.80	
122		0	18.88	18.69	18.48	
122		61	18.89	18.40	18.62	
122		122	18.62	18.45	18.77	
245		0	18.59	18.71	18.33	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622668	636666	650666
		Frequency (MHz)		3340.02	3549.99	3759.99
80 MHz	pi/2 BPSK	1	0	22.31	22.73	22.58
		1	108	22.55	22.47	22.31
		1	216	22.33	22.81	22.22
		108	0	22.75	22.69	22.61
		108	54	22.55	22.39	22.39
		108	108	22.77	22.65	22.75
		217	0	22.81	22.39	22.20
	QPSK	1	0	21.35	21.20	21.44
		1	108	21.30	21.02	21.19
		1	216	21.53	21.24	21.04
		108	0	21.31	21.24	21.20
		108	54	21.27	21.48	20.98
		108	108	21.45	21.11	21.30
		217	0	21.35	21.58	21.01
	16QAM	1	0	20.13	20.28	20.31
		1	108	20.12	20.34	20.59
		1	216	20.59	20.46	20.61
		108	0	20.37	20.07	20.14
		108	54	20.51	20.06	20.14
		108	108	20.44	20.17	20.61
		217	0	20.23	20.41	20.16
	64QAM	1	0	19.25	19.13	19.19
		1	108	19.13	19.31	19.21
		1	216	19.21	19.59	19.58
		108	0	19.34	19.12	19.37
		108	54	19.67	19.31	19.16
		108	108	19.33	19.08	19.63
		217	0	19.42	19.09	19.45
	256QAM	1	0	18.37	18.23	18.40
		1	108	18.22	18.57	18.52
1		216	18.51	18.87	18.80	
108		0	18.75	18.58	18.67	
108		54	18.25	18.62	18.65	
108		108	18.28	18.46	18.76	
217		0	18.37	18.83	18.69	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	636666	651332
		Frequency (MHz)		3330	3549.99	3769.98
60 MHz	pi/2 BPSK	1	0	22.27	22.22	22.48
		1	81	22.37	22.51	22.29
		1	161	22.50	22.13	22.63
		81	0	22.09	22.15	22.68
		81	40	22.87	22.61	22.87
		81	81	22.56	22.10	22.80
		162	0	22.19	22.82	22.87
	QPSK	1	0	21.23	21.22	21.44
		1	81	21.51	21.58	20.97
		1	161	21.15	21.10	21.44
		81	0	21.21	21.53	21.19
		81	40	21.21	21.13	21.20
		81	81	21.26	21.45	21.53
		162	0	21.35	21.50	21.46
	16QAM	1	0	20.30	20.61	20.69
		1	81	20.15	20.09	20.20
		1	161	20.53	20.13	20.26
		81	0	20.44	20.61	20.45
		81	40	20.09	20.68	20.55
		81	81	20.12	20.22	20.64
		162	0	20.14	20.08	20.29
	64QAM	1	0	19.16	19.38	19.26
		1	81	19.41	19.01	19.67
		1	161	19.11	19.32	19.61
		81	0	19.44	19.41	19.38
		81	40	19.50	19.29	19.05
		81	81	19.13	19.05	19.07
		162	0	19.33	19.38	19.61
	256QAM	1	0	18.61	18.57	18.27
		1	81	18.29	18.77	18.23
1		161	18.83	18.54	18.35	
81		0	18.67	18.39	18.48	
81		40	18.77	18.55	18.83	
81		81	18.44	18.32	18.67	
162		0	18.72	18.82	18.53	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	636666	651666
		Frequency (MHz)		3325.02	3549.99	3774.99
50 MHz	pi/2 BPSK	1	0	22.78	22.24	22.69
		1	66	22.80	22.42	22.76
		1	132	22.07	22.61	22.47
		66	0	22.79	22.61	22.26
		66	33	22.21	22.77	22.52
		66	66	22.13	22.77	22.80
		133	0	22.06	22.21	22.73
	QPSK	1	0	21.22	21.07	21.06
		1	66	21.14	21.12	21.54
		1	132	21.47	21.32	21.54
		66	0	21.24	21.12	21.22
		66	33	21.42	21.36	21.04
		66	66	21.55	21.59	21.47
		133	0	21.49	21.06	21.40
	16QAM	1	0	20.40	20.60	20.48
		1	66	20.36	20.63	20.22
		1	132	20.21	20.61	20.67
		66	0	20.33	20.76	20.52
		66	33	20.20	20.22	20.65
		66	66	20.19	20.54	20.53
		133	0	20.38	20.02	20.14
	64QAM	1	0	19.67	19.45	19.40
		1	66	19.61	19.60	19.05
		1	132	19.53	19.15	19.31
		66	0	19.15	19.29	19.63
		66	33	19.66	19.01	19.50
		66	66	19.13	19.55	19.21
		133	0	19.20	19.58	19.52
	256QAM	1	0	18.80	18.59	18.25
		1	66	18.72	18.59	18.36
1		132	18.63	18.76	18.30	
66		0	18.67	18.83	18.67	
66		33	18.44	18.71	18.40	
66		66	18.80	18.34	18.57	
133		0	18.24	18.54	18.79	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621334	636666	652000
		Frequency (MHz)		3320.01	3549.99	3780
40 MHz	pi/2 BPSK	1	0	22.37	22.12	22.46
		1	53	22.41	22.29	22.85
		1	105	22.09	22.37	22.63
		53	0	22.31	22.21	22.42
		53	26	22.48	22.23	22.75
		53	53	22.49	22.51	22.55
		106	0	22.13	22.51	22.52
	QPSK	1	0	21.18	21.36	21.13
		1	53	21.25	21.28	21.08
		1	105	21.23	21.11	21.12
		53	0	21.39	21.30	21.28
		53	26	21.49	21.47	21.10
		53	53	21.35	21.00	21.42
		106	0	21.29	21.26	21.42
	16QAM	1	0	20.58	20.41	20.56
		1	53	20.51	20.04	20.55
		1	105	20.60	20.11	20.16
		53	0	20.52	20.29	20.69
		53	26	20.66	20.14	20.22
		53	53	20.32	20.33	20.14
		106	0	20.57	20.48	20.44
	64QAM	1	0	19.60	19.49	19.49
		1	53	19.11	19.04	19.48
		1	105	19.32	19.41	19.55
		53	0	19.14	19.42	19.53
		53	26	19.52	19.54	19.14
		53	53	19.55	19.11	19.65
		106	0	19.18	19.05	19.46
	256QAM	1	0	18.83	18.26	18.83
		1	53	18.69	18.76	18.27
1		105	18.33	18.25	18.56	
53		0	18.41	18.74	18.62	
53		26	18.67	18.35	18.57	
53		53	18.68	18.28	18.30	
106		0	18.23	18.82	18.74	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	636666	652666
		Frequency (MHz)		3310.02	3549.99	3789.99
20 MHz	pi/2 BPSK	1	0	22.74	22.14	22.33
		1	25	22.86	22.46	22.35
		1	50	22.21	22.35	22.70
		25	0	22.22	22.61	22.89
		25	12	22.22	22.48	22.73
		25	25	22.09	22.61	22.24
		51	0	22.48	22.70	22.67
	QPSK	1	0	21.55	21.08	21.12
		1	25	21.53	21.12	21.39
		1	50	21.20	21.24	21.35
		25	0	21.32	21.35	21.19
		25	12	21.33	21.17	21.03
		25	25	21.39	21.17	21.45
		51	0	21.13	21.52	21.53
	16QAM	1	0	20.18	20.11	20.35
		1	25	20.12	20.30	20.49
		1	50	20.48	20.51	20.25
		25	0	20.06	20.76	20.68
		25	12	20.41	20.54	20.39
		25	25	20.11	20.13	20.32
		51	0	20.50	20.16	20.48
	64QAM	1	0	19.13	19.17	19.40
		1	25	19.39	19.52	19.45
		1	50	19.21	19.54	19.67
		25	0	19.54	19.59	19.60
		25	12	19.13	19.24	19.39
		25	25	19.39	19.10	19.67
		51	0	19.57	19.42	19.42
256QAM	1	0	18.70	18.65	18.22	
	1	25	18.37	18.71	18.45	
	1	50	18.42	18.24	18.40	
	25	0	18.22	18.37	18.62	
	25	12	18.26	18.59	18.66	
	25	25	18.86	18.62	18.57	
	51	0	18.72	18.50	18.61	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	636666	652832
		Frequency (MHz)		3307.5	3549.99	3792.48
15 MHz	pi/2 BPSK	1	0	22.80	22.19	22.61
		1	19	22.24	22.54	22.46
		1	37	22.74	22.69	22.53
		19	0	22.63	22.35	22.86
		19	9	22.59	22.37	22.54
		19	20	22.61	22.42	22.15
		38	0	22.44	22.38	22.89
	QPSK	1	0	21.31	21.26	21.51
		1	19	21.51	21.43	21.57
		1	37	21.34	21.41	21.56
		19	0	21.50	21.58	21.37
		19	9	21.28	21.01	21.10
		19	20	21.38	21.58	21.12
		38	0	21.26	21.24	20.98
	16QAM	1	0	20.22	20.49	20.17
		1	19	20.10	20.52	20.52
		1	37	20.54	20.37	20.64
		19	0	20.29	20.71	20.36
		19	9	20.06	20.22	20.59
		19	20	20.23	20.42	20.69
		38	0	20.42	20.31	20.56
	64QAM	1	0	19.35	19.55	19.34
		1	19	19.50	19.56	19.12
		1	37	19.49	19.21	19.33
		19	0	19.64	19.35	19.48
		19	9	19.57	19.36	19.37
		19	20	19.11	19.19	19.59
		38	0	19.49	19.17	19.06
	256QAM	1	0	18.73	18.65	18.75
		1	19	18.29	18.79	18.29
1		37	18.30	18.78	18.38	
19		0	18.54	18.38	18.62	
19		9	18.50	18.53	18.44	
19		20	18.50	18.44	18.81	
38		0	18.25	18.71	18.50	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	636666	653000
		Frequency (MHz)		3305.01	3549.99	3795
10 MHz	pi/2 BPSK	1	0	22.03	22.78	22.36
		1	12	22.06	22.61	22.55
		1	23	22.72	22.41	22.68
		12	0	22.05	22.74	22.22
		12	6	22.01	22.21	22.44
		12	12	22.01	22.35	22.38
		24	0	22.65	22.80	22.23
	QPSK	1	0	21.36	21.31	21.25
		1	12	21.54	21.43	21.05
		1	23	21.35	21.19	21.21
		12	0	21.10	21.13	21.33
		12	6	21.30	21.58	21.50
		12	12	21.49	21.59	21.38
		24	0	21.33	21.58	20.99
	16QAM	1	0	20.52	20.26	20.25
		1	12	20.09	20.72	20.34
		1	23	20.14	20.30	20.34
		12	0	20.17	20.53	20.57
		12	6	20.06	20.29	20.42
		12	12	20.28	20.53	20.26
		24	0	20.65	20.04	20.51
	64QAM	1	0	19.12	19.40	19.16
		1	12	19.59	19.05	19.60
		1	23	19.21	19.48	19.29
		12	0	19.54	19.38	19.22
		12	6	19.38	19.24	19.48
		12	12	19.22	19.37	19.67
		24	0	19.62	19.26	19.15
	256QAM	1	0	18.25	18.55	18.77
		1	12	18.44	18.39	18.57
1		23	18.38	18.37	18.77	
12		0	18.25	18.49	18.61	
12		6	18.26	18.43	18.73	
12		12	18.29	18.45	18.59	
24		0	18.87	18.40	18.41	

2.3. DSDA2 port: Int Bua antenna (TCU internal)

2.3.1. LTE Bands

- LTE 42

Band	BW	Modulation	Mode	MPR	Average Output Power (dBm)		
					Low CH	Mid CH	High CH
					3410.0 MHz	3500.0 MHz	3590.0 MHz
LTE B42	20 MHz	QPSK	1RB Low	0	24.07	23.02	23.18
			1RB Mid	0	23.85	22.87	22.84
			1RB High	0	24.01	22.84	23.11
			50% Low	1	22.95	21.83	22.15
			50% Mid	1	22.91	21.71	22.07
			50% High	1	22.87	21.72	22.11
			100%	1	22.92	21.79	22.15
		16-QAM	1RB Low	1	23.07	21.92	22.51
			1RB Mid	1	22.94	21.69	22.45
			1RB High	1	22.94	21.73	22.42
			50% Low	2	21.85	20.83	21.15
			50% Mid	2	21.78	20.78	21.10
			50% High	2	21.80	20.73	21.10
			100%	2	21.87	20.76	21.06
Band	BW	Modulation	Mode	MPR	Low CH	Mid CH	High CH
					3407.5 MHz	3500.0 MHz	3592.5 MHz
LTE B42	15 MHz	QPSK	1RB Low	0	24.05	23.39	23.27
			1RB Mid	0	24.15	23.33	22.89
			1RB High	0	23.91	23.31	22.99
			50% Low	1	24.14	22.44	22.27
			50% Mid	1	23.90	22.40	22.11
			50% High	1	23.52	22.48	22.05
			100%	1	23.83	22.45	22.15
		16-QAM	1RB Low	1	24.22	22.23	22.17
			1RB Mid	1	23.86	22.11	21.69
			1RB High	1	22.89	22.35	21.77
			50% Low	2	23.24	21.31	21.09
			50% Mid	2	23.00	21.27	20.98
			50% High	2	22.60	21.33	20.89
			100%	2	22.90	21.36	21.02

2.3.2. 5G Bands

- n77

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623334	650000	676666
		Frequency (MHz)		3350.01	3750	4149.99
100 MHz	pi/2 BPSK	1	0	21.91	22.87	22.25
		1	136	22.04	22.66	22.22
		1	272	22.25	22.17	22.21
		136	0	22.25	22.82	22.15
		136	68	22.10	22.02	22.13
		136	136	21.95	22.79	22.33
		273	0	22.17	22.13	22.33
	QPSK	1	0	21.12	21.14	21.01
		1	136	21.45	21.31	21.30
		1	272	21.19	21.10	21.55
		136	0	21.20	21.43	20.98
		136	68	21.37	21.25	21.27
		136	136	21.31	21.39	21.16
		273	0	21.45	21.28	21.34
	16QAM	1	0	20.18	20.15	20.23
		1	136	20.30	20.12	20.70
		1	272	20.54	20.20	20.57
		136	0	20.41	20.02	20.62
		136	68	20.28	20.39	20.64
		136	136	20.55	20.17	20.37
		273	0	20.29	20.56	20.48
	64QAM	1	0	19.43	19.13	19.18
		1	136	19.65	19.14	19.29
		1	272	19.28	19.26	19.55
		136	0	19.35	19.18	19.58
		136	68	19.42	19.18	19.31
		136	136	19.24	19.26	19.30
		273	0	19.43	19.15	19.33
	256QAM	1	0	18.33	18.60	18.60
		1	136	18.39	18.64	18.41
		1	272	18.72	18.64	18.27
		136	0	18.83	18.78	18.37
		136	68	18.26	18.43	18.27
		136	136	18.34	18.27	18.57
		273	0	18.22	18.59	18.33

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	650000	67700
		Frequency (MHz)		3345	3750	4155
90 MHz	pi/2 BPSK	1	0	21.99	22.20	21.98
		1	122	21.94	22.39	22.07
		1	244	22.37	22.08	22.01
		122	0	22.28	22.74	22.28
		122	61	22.37	22.45	22.27
		122	122	22.38	22.31	22.06
		245	0	22.14	22.01	22.27
	QPSK	1	0	21.31	21.56	21.17
		1	122	21.31	21.28	21.11
		1	244	21.44	21.44	21.13
		122	0	21.18	21.26	21.09
		122	61	21.50	21.60	21.23
		122	122	21.17	21.34	21.32
		245	0	21.39	21.21	21.39
	16QAM	1	0	20.54	20.46	20.46
		1	122	20.51	20.12	20.28
		1	244	20.52	20.68	20.58
		122	0	20.51	20.38	20.17
		122	61	20.35	20.44	20.62
		122	122	20.32	20.32	20.43
		245	0	20.14	20.21	20.62
	64QAM	1	0	19.45	19.58	19.69
		1	122	19.36	19.01	19.52
		1	244	19.20	19.33	19.09
		122	0	19.62	19.26	19.65
		122	61	19.62	19.08	19.69
		122	122	19.23	19.55	19.61
		245	0	19.66	19.43	19.56
	256QAM	1	0	18.65	18.36	18.84
		1	122	18.74	18.34	18.26
		1	244	18.80	18.69	18.80
		122	0	18.42	18.72	18.89
		122	61	18.66	18.23	18.51
		122	122	18.86	18.31	18.77
		245	0	18.32	18.65	18.84

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622668	650000	677332
		Frequency (MHz)		3340.02	3750	4159.98
80 MHz	pi/2 BPSK	1	0	22.08	22.57	22.07
		1	108	22.14	22.72	22.32
		1	216	22.04	22.09	22.08
		108	0	22.14	21.99	22.38
		108	54	22.37	22.03	22.38
		108	108	22.24	22.30	22.00
		217	0	22.00	22.39	21.99
	QPSK	1	0	21.32	21.60	21.49
		1	108	21.25	21.56	21.00
		1	216	21.52	21.19	21.34
		108	0	21.41	21.32	21.23
		108	54	21.46	21.20	21.34
		108	108	21.51	21.33	20.96
		217	0	21.23	21.37	21.09
	16QAM	1	0	20.37	20.15	20.48
		1	108	20.56	20.05	20.16
		1	216	20.63	20.05	20.54
		108	0	20.39	20.47	20.40
		108	54	20.24	20.44	20.64
		108	108	20.09	20.38	20.10
		217	0	20.07	20.19	20.68
	64QAM	1	0	19.21	19.40	19.33
		1	108	19.37	19.41	19.32
		1	216	19.50	19.07	19.36
		108	0	19.64	19.30	19.42
		108	54	19.46	19.44	19.67
		108	108	19.21	19.02	19.15
		217	0	19.48	19.25	19.12
	256QAM	1	0	18.48	18.83	18.32
		1	108	18.56	18.76	18.67
		1	216	18.55	18.67	18.59
		108	0	18.82	18.55	18.81
		108	54	18.86	18.55	18.87
		108	108	18.59	18.88	18.48
		217	0	18.60	18.82	18.78

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	650000	678000
		Frequency (MHz)		3330	3750	4170
60 MHz	pi/2 BPSK	1	0	22.37	22.48	21.97
		1	81	22.33	22.31	22.03
		1	161	22.29	22.76	22.38
		81	0	22.00	22.03	22.24
		81	40	22.25	22.03	22.32
		81	81	22.27	22.49	22.35
		162	0	22.41	22.32	21.97
	QPSK	1	0	21.21	21.34	21.40
		1	81	21.18	21.35	21.16
		1	161	21.29	21.38	21.25
		81	0	21.50	21.27	21.18
		81	40	21.40	21.07	21.34
		81	81	21.36	21.55	21.33
		162	0	21.54	21.38	21.42
	16QAM	1	0	20.22	20.42	20.68
		1	81	20.16	20.28	20.15
		1	161	20.32	20.45	20.31
		81	0	20.25	20.32	20.51
		81	40	20.55	20.01	20.47
		81	81	20.08	20.55	20.43
		162	0	20.37	20.15	20.53
	64QAM	1	0	19.49	19.45	19.15
		1	81	19.27	19.25	19.34
		1	161	19.56	19.34	19.27
		81	0	19.58	19.10	19.43
		81	40	19.12	19.57	19.06
		81	81	19.33	19.10	19.42
		162	0	19.23	19.56	19.57
	256QAM	1	0	18.45	18.26	18.75
		1	81	18.27	18.47	18.64
		1	161	18.71	18.42	18.41
		81	0	18.36	18.26	18.40
		81	40	18.67	18.42	18.61
		81	81	18.35	18.76	18.23
		162	0	18.21	18.40	18.23

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	650000	678332
		Frequency (MHz)		3325.02	3750	4174.98
50 MHz	pi/2 BPSK	1	0	22.07	22.46	22.37
		1	66	22.04	22.39	22.37
		1	132	22.13	22.06	22.07
		66	0	22.17	22.54	22.27
		66	33	22.37	22.26	21.97
		66	66	22.07	22.70	22.17
		133	0	22.37	22.45	22.24
	QPSK	1	0	21.54	21.27	21.10
		1	66	21.47	21.13	21.07
		1	132	21.13	21.24	21.05
		66	0	21.36	21.31	21.55
		66	33	21.47	21.32	21.56
		66	66	21.22	21.40	21.43
		133	0	21.54	21.32	20.96
	16QAM	1	0	20.56	20.72	20.62
		1	66	20.16	20.68	20.38
		1	132	20.35	20.76	20.12
		66	0	20.50	20.24	20.44
		66	33	20.46	20.68	20.47
		66	66	20.49	20.02	20.22
		133	0	20.31	20.19	20.64
	64QAM	1	0	19.65	19.53	19.69
		1	66	19.51	19.21	19.42
		1	132	19.26	19.03	19.22
		66	0	19.30	19.12	19.35
		66	33	19.53	19.35	19.64
		66	66	19.14	19.05	19.64
		133	0	19.67	19.01	19.41
	256QAM	1	0	18.78	18.50	18.27
		1	66	18.64	18.78	18.75
1		132	18.78	18.78	18.82	
66		0	18.80	18.70	18.51	
66		33	18.49	18.53	18.67	
66		66	18.47	18.37	18.87	
133		0	18.73	18.72	18.85	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621334	650000	678666
		Frequency (MHz)		3320.01	3750	4179.99
40 MHz	pi/2 BPSK	1	0	22.38	22.53	22.29
		1	53	22.27	22.40	22.02
		1	105	22.47	22.54	22.20
		53	0	22.19	22.56	22.12
		53	26	22.01	22.24	22.26
		53	53	21.99	22.21	22.14
		106	0	21.93	22.07	22.31
	QPSK	1	0	21.13	21.15	21.59
		1	53	21.34	21.20	21.17
		1	105	21.39	21.58	21.04
		53	0	21.14	21.43	21.53
		53	26	21.18	21.16	21.48
		53	53	21.25	21.51	21.57
		106	0	21.41	21.53	21.04
	16QAM	1	0	20.22	20.52	20.37
		1	53	20.52	20.19	20.46
		1	105	20.37	20.06	20.49
		53	0	20.11	20.09	20.16
		53	26	20.19	20.59	20.69
		53	53	20.06	20.74	20.32
		106	0	20.43	20.62	20.43
	64QAM	1	0	19.13	19.14	19.11
		1	53	19.35	19.40	19.66
		1	105	19.55	19.24	19.68
		53	0	19.11	19.36	19.54
		53	26	19.60	19.35	19.47
		53	53	19.16	19.54	19.19
		106	0	19.61	19.58	19.19
	256QAM	1	0	18.73	18.76	18.24
		1	53	18.89	18.82	18.34
1		105	18.33	18.73	18.67	
53		0	18.70	18.83	18.22	
53		26	18.72	18.56	18.61	
53		53	18.48	18.75	18.79	
106		0	18.24	18.33	18.67	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	650000	679332
		Frequency (MHz)		3310.02	3750	4189.98
20 MHz	pi/2 BPSK	1	0	22.39	22.19	22.30
		1	25	22.18	22.39	22.36
		1	50	22.10	22.34	22.04
		25	0	22.15	22.46	21.97
		25	12	21.93	22.03	22.03
		25	25	22.27	22.85	22.29
		51	0	22.25	22.47	22.18
	QPSK	1	0	21.54	21.02	20.98
		1	25	21.49	21.13	21.34
		1	50	21.44	21.03	21.49
		25	0	21.49	21.16	21.49
		25	12	21.17	21.43	21.18
		25	25	21.46	21.10	21.01
		51	0	21.47	21.46	21.37
	16QAM	1	0	20.57	20.17	20.47
		1	25	20.25	20.19	20.48
		1	50	20.06	20.78	20.13
		25	0	20.63	20.58	20.12
		25	12	20.53	20.51	20.47
		25	25	20.08	20.21	20.53
		51	0	20.05	20.23	20.17
	64QAM	1	0	19.18	19.13	19.14
		1	25	19.48	19.54	19.15
		1	50	19.17	19.00	19.05
		25	0	19.53	19.48	19.39
		25	12	19.61	19.43	19.48
		25	25	19.68	19.20	19.29
		51	0	19.13	19.56	19.66
	256QAM	1	0	18.69	18.69	18.89
		1	25	18.36	18.47	18.72
1		50	18.24	18.58	18.36	
25		0	18.28	18.55	18.23	
25		12	18.60	18.31	18.33	
25		25	18.66	18.36	18.35	
51		0	18.81	18.55	18.73	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	650000	679500
		Frequency (MHz)		3307.5	3750	4192.5
15 MHz	pi/2 BPSK	1	0	21.91	22.49	22.31
		1	19	21.98	22.78	22.01
		1	37	22.24	22.27	22.23
		19	0	21.99	22.73	22.17
		19	9	22.41	22.31	22.26
		19	20	22.46	22.01	22.03
		38	0	22.37	22.53	22.35
	QPSK	1	0	21.53	21.35	21.26
		1	19	21.46	21.42	21.46
		1	37	21.21	21.29	20.99
		19	0	21.47	21.32	21.21
		19	9	21.24	21.07	21.11
		19	20	21.39	21.17	21.02
		38	0	21.25	21.37	21.55
	16QAM	1	0	20.48	20.67	20.55
		1	19	20.57	20.49	20.31
		1	37	20.51	20.77	20.66
		19	0	20.40	20.58	20.25
		19	9	20.62	20.53	20.49
		19	20	20.23	20.69	20.50
		38	0	20.19	20.67	20.63
	64QAM	1	0	19.44	19.06	19.39
		1	19	19.58	19.20	19.12
		1	37	19.45	19.30	19.70
		19	0	19.32	19.14	19.38
		19	9	19.27	19.04	19.17
		19	20	19.17	19.13	19.57
		38	0	19.29	19.27	19.40
256QAM	1	0	18.74	18.76	18.50	
	1	19	18.57	18.35	18.50	
	1	37	18.42	18.44	18.23	
	19	0	18.81	18.56	18.24	
	19	9	18.78	18.83	18.31	
	19	20	18.51	18.70	18.22	
	38	0	18.34	18.38	18.84	

NR Band 77 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	650000	679666
		Frequency (MHz)		3305.01	3750	4194.99
10 MHz	pi/2 BPSK	1	0	22.06	22.68	22.35
		1	12	22.20	22.54	22.11
		1	23	22.32	22.63	22.16
		12	0	22.16	22.32	22.15
		12	6	22.38	22.21	22.28
		12	12	21.99	22.59	22.29
		24	0	22.04	22.43	22.17
	QPSK	1	0	21.26	21.43	21.39
		1	12	21.39	21.04	21.28
		1	23	21.35	21.21	21.50
		12	0	21.49	21.05	21.21
		12	6	21.36	21.39	21.46
		12	12	21.27	21.56	21.31
		24	0	21.45	21.46	21.53
	16QAM	1	0	20.39	20.50	20.52
		1	12	20.16	20.36	20.42
		1	23	20.08	20.75	20.52
		12	0	20.35	20.26	20.22
		12	6	20.22	20.07	20.11
		12	12	20.39	20.17	20.47
		24	0	20.06	20.52	20.21
	64QAM	1	0	19.63	19.18	19.26
		1	12	19.17	19.22	19.51
		1	23	19.13	19.38	19.05
		12	0	19.38	19.06	19.28
		12	6	19.57	19.19	19.06
		12	12	19.61	19.27	19.20
		24	0	19.35	19.26	19.09
	256QAM	1	0	18.38	18.36	18.51
		1	12	18.58	18.48	18.24
1		23	18.74	18.63	18.56	
12		0	18.30	18.33	18.73	
12		6	18.29	18.86	18.69	
12		12	18.25	18.49	18.49	
24		0	18.25	18.77	18.69	

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NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623334	636666	650000
		Frequency (MHz)		3350.01	3549.99	3750
100 MHz	pi/2 BPSK	1	0	22.69	22.90	22.69
		1	136	22.49	22.15	22.81
		1	272	22.25	22.61	22.88
		136	0	22.37	22.54	22.49
		136	68	22.21	22.75	22.62
		136	136	22.26	22.62	22.40
		273	0	22.76	22.65	22.86
	QPSK	1	0	21.33	21.08	21.09
		1	136	21.18	21.21	21.23
		1	272	21.54	21.09	21.56
		136	0	21.11	21.57	21.57
		136	68	21.17	21.49	21.21
		136	136	21.32	21.19	21.12
		273	0	21.11	21.37	21.31
	16QAM	1	0	20.45	20.58	20.27
		1	136	20.06	20.73	20.54
		1	272	20.39	20.26	20.45
		136	0	20.24	20.46	20.29
		136	68	20.33	20.39	20.69
		136	136	20.44	20.75	20.13
		273	0	20.55	20.17	20.54
	64QAM	1	0	19.60	19.58	19.06
		1	136	19.27	19.01	19.38
		1	272	19.16	19.30	19.10
		136	0	19.10	19.35	19.10
		136	68	19.30	19.03	19.11
		136	136	19.11	19.39	19.27
		273	0	19.62	19.29	19.24
	256QAM	1	0	18.39	18.33	18.50
		1	136	18.84	18.25	18.55
1		272	18.25	18.24	18.41	
136		0	18.77	18.79	18.69	
136		68	18.36	18.35	18.33	
136		136	18.85	18.82	18.51	
273		0	18.63	18.54	18.58	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		623000	636666	650332
		Frequency (MHz)		3345	3549.99	3754.98
90 MHz	pi/2 BPSK	1	0	22.84	22.19	22.69
		1	122	22.09	22.42	22.80
		1	244	22.37	22.41	22.31
		122	0	22.47	22.56	22.62
		122	61	22.54	22.77	22.47
		122	122	22.54	22.60	22.50
		245	0	22.04	22.54	22.83
	QPSK	1	0	21.38	21.11	21.07
		1	122	21.42	21.08	21.30
		1	244	21.41	21.08	21.17
		122	0	21.43	21.40	21.29
		122	61	21.47	21.33	21.47
		122	122	21.27	21.31	21.24
		245	0	21.50	21.46	21.03
	16QAM	1	0	20.50	20.50	20.31
		1	122	20.11	20.25	20.49
		1	244	20.28	20.26	20.61
		122	0	20.16	20.21	20.11
		122	61	20.43	20.32	20.56
		122	122	20.13	20.04	20.70
		245	0	20.66	20.07	20.48
	64QAM	1	0	19.54	19.23	19.24
		1	122	19.55	19.44	19.28
		1	244	19.32	19.04	19.21
		122	0	19.20	19.56	19.53
		122	61	19.30	19.20	19.43
		122	122	19.40	19.54	19.54
		245	0	19.19	19.48	19.46
	256QAM	1	0	18.79	18.33	18.71
		1	122	18.83	18.69	18.53
1		244	18.56	18.67	18.80	
122		0	18.88	18.69	18.48	
122		61	18.89	18.40	18.62	
122		122	18.62	18.45	18.77	
245		0	18.59	18.71	18.33	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622668	636666	650666
		Frequency (MHz)		3340.02	3549.99	3759.99
80 MHz	pi/2 BPSK	1	0	22.31	22.73	22.58
		1	108	22.55	22.47	22.31
		1	216	22.33	22.81	22.22
		108	0	22.75	22.69	22.61
		108	54	22.55	22.39	22.39
		108	108	22.77	22.65	22.75
		217	0	22.81	22.39	22.20
	QPSK	1	0	21.35	21.20	21.44
		1	108	21.30	21.02	21.19
		1	216	21.53	21.24	21.04
		108	0	21.31	21.24	21.20
		108	54	21.27	21.48	20.98
		108	108	21.45	21.11	21.30
		217	0	21.35	21.58	21.01
	16QAM	1	0	20.13	20.28	20.31
		1	108	20.12	20.34	20.59
		1	216	20.59	20.46	20.61
		108	0	20.37	20.07	20.14
		108	54	20.51	20.06	20.14
		108	108	20.44	20.17	20.61
		217	0	20.23	20.41	20.16
	64QAM	1	0	19.25	19.13	19.19
		1	108	19.13	19.31	19.21
		1	216	19.21	19.59	19.58
		108	0	19.34	19.12	19.37
		108	54	19.67	19.31	19.16
		108	108	19.33	19.08	19.63
		217	0	19.42	19.09	19.45
	256QAM	1	0	18.37	18.23	18.40
		1	108	18.22	18.57	18.52
1		216	18.51	18.87	18.80	
108		0	18.75	18.58	18.67	
108		54	18.25	18.62	18.65	
108		108	18.28	18.46	18.76	
217		0	18.37	18.83	18.69	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		622000	636666	651332
		Frequency (MHz)		3330	3549.99	3769.98
60 MHz	pi/2 BPSK	1	0	22.27	22.22	22.48
		1	81	22.37	22.51	22.29
		1	161	22.50	22.13	22.63
		81	0	22.09	22.15	22.68
		81	40	22.87	22.61	22.87
		81	81	22.56	22.10	22.80
		162	0	22.19	22.82	22.87
	QPSK	1	0	21.23	21.22	21.44
		1	81	21.51	21.58	20.97
		1	161	21.15	21.10	21.44
		81	0	21.21	21.53	21.19
		81	40	21.21	21.13	21.20
		81	81	21.26	21.45	21.53
		162	0	21.35	21.50	21.46
	16QAM	1	0	20.30	20.61	20.69
		1	81	20.15	20.09	20.20
		1	161	20.53	20.13	20.26
		81	0	20.44	20.61	20.45
		81	40	20.09	20.68	20.55
		81	81	20.12	20.22	20.64
		162	0	20.14	20.08	20.29
	64QAM	1	0	19.16	19.38	19.26
		1	81	19.41	19.01	19.67
		1	161	19.11	19.32	19.61
		81	0	19.44	19.41	19.38
		81	40	19.50	19.29	19.05
		81	81	19.13	19.05	19.07
		162	0	19.33	19.38	19.61
	256QAM	1	0	18.61	18.57	18.27
		1	81	18.29	18.77	18.23
1		161	18.83	18.54	18.35	
81		0	18.67	18.39	18.48	
81		40	18.77	18.55	18.83	
81		81	18.44	18.32	18.67	
162		0	18.72	18.82	18.53	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621668	636666	651666
		Frequency (MHz)		3325.02	3549.99	3774.99
50 MHz	pi/2 BPSK	1	0	22.78	22.24	22.69
		1	66	22.80	22.42	22.76
		1	132	22.07	22.61	22.47
		66	0	22.79	22.61	22.26
		66	33	22.21	22.77	22.52
		66	66	22.13	22.77	22.80
		133	0	22.06	22.21	22.73
	QPSK	1	0	21.22	21.07	21.06
		1	66	21.14	21.12	21.54
		1	132	21.47	21.32	21.54
		66	0	21.24	21.12	21.22
		66	33	21.42	21.36	21.04
		66	66	21.55	21.59	21.47
		133	0	21.49	21.06	21.40
	16QAM	1	0	20.40	20.60	20.48
		1	66	20.36	20.63	20.22
		1	132	20.21	20.61	20.67
		66	0	20.33	20.76	20.52
		66	33	20.20	20.22	20.65
		66	66	20.19	20.54	20.53
		133	0	20.38	20.02	20.14
	64QAM	1	0	19.67	19.45	19.40
		1	66	19.61	19.60	19.05
		1	132	19.53	19.15	19.31
		66	0	19.15	19.29	19.63
		66	33	19.66	19.01	19.50
		66	66	19.13	19.55	19.21
		133	0	19.20	19.58	19.52
	256QAM	1	0	18.80	18.59	18.25
		1	66	18.72	18.59	18.36
1		132	18.63	18.76	18.30	
66		0	18.67	18.83	18.67	
66		33	18.44	18.71	18.40	
66		66	18.80	18.34	18.57	
133		0	18.24	18.54	18.79	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		621334	636666	652000
		Frequency (MHz)		3320.01	3549.99	3780
40 MHz	pi/2 BPSK	1	0	22.37	22.12	22.46
		1	53	22.41	22.29	22.85
		1	105	22.09	22.37	22.63
		53	0	22.31	22.21	22.42
		53	26	22.48	22.23	22.75
		53	53	22.49	22.51	22.55
		106	0	22.13	22.51	22.52
	QPSK	1	0	21.18	21.36	21.13
		1	53	21.25	21.28	21.08
		1	105	21.23	21.11	21.12
		53	0	21.39	21.30	21.28
		53	26	21.49	21.47	21.10
		53	53	21.35	21.00	21.42
		106	0	21.29	21.26	21.42
	16QAM	1	0	20.58	20.41	20.56
		1	53	20.51	20.04	20.55
		1	105	20.60	20.11	20.16
		53	0	20.52	20.29	20.69
		53	26	20.66	20.14	20.22
		53	53	20.32	20.33	20.14
		106	0	20.57	20.48	20.44
	64QAM	1	0	19.60	19.49	19.49
		1	53	19.11	19.04	19.48
		1	105	19.32	19.41	19.55
		53	0	19.14	19.42	19.53
		53	26	19.52	19.54	19.14
		53	53	19.55	19.11	19.65
		106	0	19.18	19.05	19.46
	256QAM	1	0	18.83	18.26	18.83
		1	53	18.69	18.76	18.27
1		105	18.33	18.25	18.56	
53		0	18.41	18.74	18.62	
53		26	18.67	18.35	18.57	
53		53	18.68	18.28	18.30	
106		0	18.23	18.82	18.74	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620668	636666	652666
		Frequency (MHz)		3310.02	3549.99	3789.99
20 MHz	pi/2 BPSK	1	0	22.74	22.14	22.33
		1	25	22.86	22.46	22.35
		1	50	22.21	22.35	22.70
		25	0	22.22	22.61	22.89
		25	12	22.22	22.48	22.73
		25	25	22.09	22.61	22.24
		51	0	22.48	22.70	22.67
	QPSK	1	0	21.55	21.08	21.12
		1	25	21.53	21.12	21.39
		1	50	21.20	21.24	21.35
		25	0	21.32	21.35	21.19
		25	12	21.33	21.17	21.03
		25	25	21.39	21.17	21.45
		51	0	21.13	21.52	21.53
	16QAM	1	0	20.18	20.11	20.35
		1	25	20.12	20.30	20.49
		1	50	20.48	20.51	20.25
		25	0	20.06	20.76	20.68
		25	12	20.41	20.54	20.39
		25	25	20.11	20.13	20.32
		51	0	20.50	20.16	20.48
	64QAM	1	0	19.13	19.17	19.40
		1	25	19.39	19.52	19.45
		1	50	19.21	19.54	19.67
		25	0	19.54	19.59	19.60
		25	12	19.13	19.24	19.39
		25	25	19.39	19.10	19.67
		51	0	19.57	19.42	19.42
	256QAM	1	0	18.70	18.65	18.22
		1	25	18.37	18.71	18.45
1		50	18.42	18.24	18.40	
25		0	18.22	18.37	18.62	
25		12	18.26	18.59	18.66	
25		25	18.86	18.62	18.57	
51		0	18.72	18.50	18.61	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620500	636666	652832
		Frequency (MHz)		3307.5	3549.99	3792.48
15 MHz	pi/2 BPSK	1	0	22.80	22.19	22.61
		1	19	22.24	22.54	22.46
		1	37	22.74	22.69	22.53
		19	0	22.63	22.35	22.86
		19	9	22.59	22.37	22.54
		19	20	22.61	22.42	22.15
		38	0	22.44	22.38	22.89
	QPSK	1	0	21.31	21.26	21.51
		1	19	21.51	21.43	21.57
		1	37	21.34	21.41	21.56
		19	0	21.50	21.58	21.37
		19	9	21.28	21.01	21.10
		19	20	21.38	21.58	21.12
		38	0	21.26	21.24	20.98
	16QAM	1	0	20.22	20.49	20.17
		1	19	20.10	20.52	20.52
		1	37	20.54	20.37	20.64
		19	0	20.29	20.71	20.36
		19	9	20.06	20.22	20.59
		19	20	20.23	20.42	20.69
		38	0	20.42	20.31	20.56
	64QAM	1	0	19.35	19.55	19.34
		1	19	19.50	19.56	19.12
		1	37	19.49	19.21	19.33
		19	0	19.64	19.35	19.48
		19	9	19.57	19.36	19.37
		19	20	19.11	19.19	19.59
		38	0	19.49	19.17	19.06
256QAM	1	0	18.73	18.65	18.75	
	1	19	18.29	18.79	18.29	
	1	37	18.30	18.78	18.38	
	19	0	18.54	18.38	18.62	
	19	9	18.50	18.53	18.44	
	19	20	18.50	18.44	18.81	
	38	0	18.25	18.71	18.50	

NR Band 78 (SCS 30kHz)				Average Output Power (dBm)		
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		620334	636666	653000
		Frequency (MHz)		3305.01	3549.99	3795
10 MHz	pi/2 BPSK	1	0	22.03	22.78	22.36
		1	12	22.06	22.61	22.55
		1	23	22.72	22.41	22.68
		12	0	22.05	22.74	22.22
		12	6	22.01	22.21	22.44
		12	12	22.01	22.35	22.38
		24	0	22.65	22.80	22.23
	QPSK	1	0	21.36	21.31	21.25
		1	12	21.54	21.43	21.05
		1	23	21.35	21.19	21.21
		12	0	21.10	21.13	21.33
		12	6	21.30	21.58	21.50
		12	12	21.49	21.59	21.38
		24	0	21.33	21.58	20.99
	16QAM	1	0	20.52	20.26	20.25
		1	12	20.09	20.72	20.34
		1	23	20.14	20.30	20.34
		12	0	20.17	20.53	20.57
		12	6	20.06	20.29	20.42
		12	12	20.28	20.53	20.26
		24	0	20.65	20.04	20.51
	64QAM	1	0	19.12	19.40	19.16
		1	12	19.59	19.05	19.60
		1	23	19.21	19.48	19.29
		12	0	19.54	19.38	19.22
		12	6	19.38	19.24	19.48
		12	12	19.22	19.37	19.67
		24	0	19.62	19.26	19.15
256QAM	1	0	18.25	18.55	18.77	
	1	12	18.44	18.39	18.57	
	1	23	18.38	18.37	18.77	
	12	0	18.25	18.49	18.61	
	12	6	18.26	18.43	18.73	
	12	12	18.29	18.45	18.59	
	24	0	18.87	18.40	18.41	

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	40.46	0.90	-3.52	1.08	2020-11-30
750	41.94	0.89	40.81	0.90	-2.69	0.40	2021-03-16
835	41.50	0.90	42.36	0.89	2.06	-1.14	2020-12-01
900	41.50	0.97	41.23	0.95	-0.64	-1.80	2020-12-01
835	41.50	0.90	42.43	0.91	2.24	0.90	2020-12-21
900	41.50	0.97	41.67	0.97	0.41	0.40	2020-12-21
835	41.50	0.90	42.09	0.91	1.43	0.86	2021-03-17
900	41.50	0.97	41.27	0.97	-0.54	0.31	2021-03-17
1750	40.07	1.37	41.63	1.41	3.89	2.75	2020-12-03
1800	40.00	1.40	41.42	1.46	3.55	4.06	2020-12-03
1750	40.07	1.37	40.73	1.39	1.64	1.20	2021-01-12
1800	40.00	1.40	40.63	1.41	1.57	1.06	2021-01-12
1750	40.07	1.37	40.97	1.39	2.25	1.34	2021-03-18
1800	40.00	1.40	40.82	1.44	2.04	2.77	2021-03-18
1750	40.07	1.37	40.80	1.40	1.81	1.87	2021-03-22
1800	40.00	1.40	40.74	1.45	1.85	3.68	2021-03-22
1800	40.00	1.40	41.64	1.38	4.09	-1.43	2020-12-03
1900	40.00	1.40	41.42	1.44	3.55	2.76	2020-12-03
1800	40.00	1.40	41.46	1.36	3.65	-2.87	2021-01-13
1900	40.00	1.40	41.19	1.45	2.97	3.59	2021-01-13
1800	40.00	1.40	41.12	1.37	2.79	-2.06	2021-03-23
1900	40.00	1.40	40.75	1.41	1.87	0.98	2021-03-23
2000	40.00	1.40	40.45	1.46	1.11	4.38	2021-01-14
2600	39.00	1.96	40.12	2.03	2.87	3.78	2020-12-09
2600	39.00	1.96	40.26	1.98	3.22	0.98	2021-03-24
3300	38.14	2.71	39.08	2.83	2.48	4.63	2021-04-12
3300	38.14	2.71	38.94	2.81	2.12	3.99	2021-04-20
3500	37.90	2.91	39.15	2.80	3.30	-3.70	2021-02-16
3500	37.90	2.91	38.87	2.93	2.57	1.77	2021-04-12
3500	37.90	2.91	38.64	2.94	1.96	2.23	2021-04-20
3700	37.70	3.12	38.26	3.14	1.49	0.55	2021-04-20

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 HSL1800/MSL1800

H ₂ O	Water, 52 – 75%
C8H18O3	Diethylene glycol monobutyl ether (DGBE), 25 – 48% (CAS-No. 112-34-5, EC-No. 203-961-6, EC-index-No. 603-096-00-8)
NaCl	Sodium Chloride, <1.0%

Head and Muscle Tissue Simulation Liquids HBBL1900-3800V3/M HBBL1900-3800V3

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 HBBL5GHZV2

H ₂ O	76 – 80 %
Mineral Oil	10 – 12 %
Emulsifiers	8 – 10 %
Additives and Salt	1 – 3%

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 (%)
2020-11-30	750	1 gr.	2.16	2.13	8.64	8.52	-1.39
		10 gr.	1.46	1.40	5.65	5.60	-0.88
2021-03-16	750	1 gr.	2.16	2.07	8.64	8.28	-4.17
		10 gr.	1.46	1.37	5.65	5.48	-3.01
2020-12-01	900	1 gr.	2.78	2.82	11.3	11.15	-1.32
		10 gr.	1.86	1.82	7.23	7.20	-0.46
2020-12-21	900	1 gr.	2.70	2.68	11.3	10.72	-5.13
		10 gr.	1.81	1.72	7.23	6.88	-4.84
2021-03-17	900	1 gr.	2.72	2.77	11.3	11.09	-1.83
		10 gr.	1.82	1.78	7.23	7.13	-1.41
2020-12-03	1800	1 gr.	9.95	9.74	38.8	38.96	0.41
		10 gr.	5.25	5.01	20.2	20.04	-0.79
2021-01-12	1800	1 gr.	9.72	9.52	38.8	38.52	-0.72
		10 gr.	5.14	4.85	20.2	19.62	-2.85
2021-03-18	1800	1 gr.	10.10	9.99	38.8	39.52	1.85
		10 gr.	5.37	5.15	20.2	20.37	0.85
2021-03-22	1800	1 gr.	9.46	9.44	38.8	37.98	-2.12
		10 gr.	5.01	4.83	20.2	19.43	-3.80
2020-12-03	1800	1 gr.	9.63	9.50	38.8	37.83	-2.51
		10 gr.	5.06	4.84	20.2	19.27	-4.60
2021-01-13	1800	1 gr.	9.49	9.31	38.8	37.33	-3.80
		10 gr.	4.97	4.72	20.2	18.92	-6.32
2021-03-23	1800	1 gr.	9.92	9.68	38.8	38.45	-0.89
		10 gr.	5.18	4.94	20.2	19.62	-2.85
2020-12-09	2600	1 gr.	15.20	15.10	57.6	59.92	4.02
		10 gr.	6.77	6.50	25.7	25.79	0.36
2021-03-24	2600	1 gr.	15.30	15.10	57.6	60.82	5.59
		10 gr.	6.90	6.50	25.7	26.18	1.87
2021-04-12	3300	1 gr.	6.70	6.53	65.9	65.30	-0.91
		10 gr.	2.59	2.51	25.0	25.10	0.40
2021-04-20	3300	1 gr.	6.65	6.52	65.9	64.90	-1.52
		10 gr.	2.57	2.49	25.0	24.79	-0.86

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 (%)
2021-02-16	3500	1 gr.	6.21	6.11	66.7	62.24	-6.69
		10 gr.	2.35	2.27	25.1	23.12	-7.88
2021-04-12	3500	1 gr.	6.52	6.40	66.7	64.44	-3.38
		10 gr.	2.47	2.40	25.1	24.17	-3.72
2021-04-20	3500	1 gr.	6.53	6.36	66.7	64.04	-3.99
		10 gr.	2.48	2.38	25.1	23.96	-4.52
2021-04-12	3700	1 gr.	6.29	6.25	67.7	63.01	-6.93
		10 gr.	2.31	2.27	24.5	22.88	-6.60
2021-04-20	3700	1 gr.	6.43	6.18	67.7	62.59	-7.55
		10 gr.	2.33	2.24	24.5	22.69	-7.41
2021-04-22	4200	1 gr.	6.78	6.50	65.5	65.45	-0.08
		10 gr.	2.32	2.18	22.2	21.95	-1.12

5. MEASUREMENT RESULTS FOR SAR (SPECIFIC ABSORPTION RATE)

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

Mode	Side / Position	Channel (Frequency)	Reported SAR 1-g (W/kg)	Limit SAR 1-g (W/kg)
GPRS 4 slots 850 MHz	Back face/10 mm	CH 128 (824.2 MHz)	0.515	1.6
GPRS 4 slots 1900 MHz	Back face/10 mm	CH 512 (1850.2 MHz)	0.205	1.6
WCDMA Band II	Back face/0 mm	CH 9538 (1907.6 MHz)	0.577	1.6
WCDMA Band IV	Back face/0 mm	CH 1512 (1752.6 MHz)	0.361	1.6
WCDMA Band V	Back face/10 mm	CH 4132 (826.4 MHz)	0.191	1.6
LTE Band 4	Back face/10 mm	CH 20300 (1745 MHz)	0.093	1.6
LTE Band 5	Back face/10 mm	CH 20525 (836.5 MHz)	0.192	1.6
LTE Band 7	Back face/10 mm	CH 20525 (836.5 MHz)	0.106	1.6
LTE Band 12	Back face/10 mm	CH 23095 (707.5 MHz)	0.135	1.6
LTE Band 13	Back face/10 mm	CH 23230 (782 MHz)	0.216	1.6
LTE Band 25	Back face/10 mm	CH 26140 (1860.0 MHz)	0.063	1.6
LTE Band 26	Back face/10 mm	CH 26865 (831.5 MHz)	0.224	1.6
LTE Band 41	Back face/10 mm	CH 39750 (2506.0 MHz)	0.074	1.6
LTE Band 42	Back face/0 mm	CH 41690 (3410.0 MHz)	0.024	1.6
LTE Band 66	Back face/10 mm	CH 132575 (1770.0 MHz)	0.080	1.6
LTE Band 71	Back face/10 mm	CH 133297 (680.5 MHz)	0.063	1.6
5G NR Band n5	Back face/10 mm	CH 166800 (834.0 MHz)	0.079	1.6
5G NR Band n7	Back face/10 mm	CH 502000 (2510 MHz)	0.040	1.6
5G NR Band n25	Back face/10 mm	CH 379000 (1895.0 MHz)	0.016	1.6
5G NR Band n38	Back face/0 mm	CH 522000 (2610.0 MHz)	0.022	1.6
5G NR Band n41	Back face/0 mm	CH 509202 (2546.0 MHz)	0.017	1.6
5G NR Band n66	Back face/0 mm	CH 349000 (1745.0 MHz)	0.042	1.6
5G NR Band n71	Back face/0 mm	CH 136100 (680.5 MHz)	0.025	1.6
5G NR Band n77	Back face/0 mm	CH 650000 (3750.0 MHz)	0.017	1.6

5.2. Results for GPRS 850 MHz Band – 4 slots.

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 190 (836.6 MHz)	0.130	0.136	1.274	3.373	0.459	
Back face	10	CH 128 (824.2 MHz)	0.131	0.136	-0.115	3.784	0.515	1
Back face	10	CH 251 (848.8 MHz)	0.128	0.131	1.274	3.148	0.412	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 190 (836.6 MHz)	0	0	0	0	0	
Back face	0	CH 128 (824.2 MHz)	0	0	0	0	0	
Back face	0	CH 251 (848.8 MHz)	0	0	0	0	0	

5.3. Results for GPRS 1900 MHz Band – 4 slots.

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 661 (1880 MHz)	0.023	0.013	2.920	9.099	0.122	
Back face	10	CH 512 (1850.2 MHz)	0.029	0.027	3.872	7.568	0.205	2
Back face	10	CH 810 (1909.8 MHz)	0.007	0.004	2.920	10.940	0.039	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 661 (1880 MHz)	0	0	0	0	0	
Back face	0	CH 512 (1850.2 MHz)	0	0	0	0	0	
Back face	0	CH 810 (1909.8 MHz)	0	0	0	0	0	

5.4. Results for WCDMA Band II

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 9400 (1880 MHz)	0.040	0.024	4.232	1.811	0.044	
Back face	10	CH 9262 (1852.4 MHz)	0.039	0.035	3.395	1.585	0.055	3
Back face	10	CH 9538 (1907.6 MHz)	0.034	0.022	2.802	1.738	0.038	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 9400 (1880 MHz)	0.365	0.304	-0.115	1.811	0.551	
Back face	0	CH 9262 (1852.4 MHz)	0.290	0.284	-1.599	1.585	0.450	
Back face	0	CH 9538 (1907.6 MHz)	0.340	0.332	1.391	1.738	0.577	4

5.5. Results for WCDMA Band IV

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 1412 (1732.6 MHz)	0.050	0.049	2.212	1.406	0.069	
Back face	10	CH 1312 (1712.4 MHz)	0.043	0.042	4.232	1.265	0.053	
Back face	10	CH 1512 (1752.6 MHz)	0.053	0.051	2.565	1.556	0.079	5

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 1412 (1732.6 MHz)	0.254	0.249	-0.230	1.406	0.350	
Back face	0	CH 1312 (1712.4 MHz)	0.260	0.258	-0.459	1.265	0.326	
Back face	0	CH 1512 (1752.6 MHz)	0.235	0.232	0.115	1.556	0.361	6

5.6. Results for WCDMA Band V

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 4183 (836.6 MHz)	0.118	0.123	1.625	1.462	0.180	
Back face	10	CH 4132 (826.4 MHz)	0.124	0.131	-0.459	1.459	0.191	7
Back face	10	CH 4233 (846.6 MHz)	0.112	0.113	1.625	1.528	0.173	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 4183 (836.6 MHz)	0.082	0.084	2.447	1.462	0.123	
Back face	0	CH 4132 (826.4 MHz)	0.110	0.105	0.809	1.459	0.153	
Back face	0	CH 4233 (846.6 MHz)	0.109	0.104	0.925	1.528	0.159	8

5.7. Results for LTE Band 2 (1 RB, 20 MHz, QPSK)

SAR for LTE Band 2 has not been measured because it is covered by LTE Band 25 due to overlapping frequency range (LTE Band 2 frequency range: 1850 – 1910 MHz, LTE Band 25 frequency range: 1850 – 1915 MHz) and same maximum tune-up and channel bandwidth.

5.8. Results for LTE Band 4 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20050 (1720 MHz)	0.049	0.052	3.157	1.340	0.069	
Back face	10	CH 20175 (1732.5 MHz)	0.065	0.065	3.276	1.426	0.093	
Back face	10	CH 20300 (1745 MHz)	0.071	0.069	2.920	1.355	0.093	9

5.9. Results for LTE Band 4 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20175 (1732.5 MHz)	0.049	0.048	2.565	1.377	0.066	

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.

5.10. Results for LTE Band 5 (1 RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20600 (844.0 MHz)	0.116	0.121	1.158	1.349	0.163	
Back face	10	CH 20450 (829 MHz)	0.132	0.138	0.925	1.387	0.191	
Back face	10	CH 20525 (836.5 MHz)	0.135	0.141	1.274	1.358	0.192	10

5.11. Results for LTE Band 5 (50% RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20600 (844.0 MHz)	0.085	0.088	0.462	1.361	0.120	

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.

5.12. Results for LTE Band 7 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20850 (2510.0 MHz)	0.071	0.064	3.514	1.660	0.106	11
Back face	10	CH 21100 (2535.0 MHz)	0.049	0.039	1.625	1.698	0.066	
Back face	10	CH 21350 (2560.0 MHz)	0.038	0.034	1.158	1.871	0.064	

5.13. Results for LTE Band 7 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 20850 (2510.0 MHz)	0.054	0.047	1.625	1.641	0.078	

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.

5.14. Results for LTE Band 12 (1 RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 23095 (707.5 MHz)	0.087	0.091	0.809	1.483	0.135	12

5.15. Results for LTE Band 12 (50% RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 23095 (707.5 MHz)	0.072	0.074	-1.031	1.439	0.107	

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.

5.16. Results for LTE Band 13 (1 RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 23230 (782 MHz)	0.143	0.149	2.802	1.449	0.216	13

5.17. Results for LTE Band 13 (50% RB, 10 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 23230 (782 MHz)	0.113	0.116	3.039	1.849	0.215	

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.

5.18. Results for LTE Band 17 (1 RB, 10 MHz, QPSK)

SAR for LTE Band 17 has not been measured because it is covered by LTE Band 12 due to overlapping frequency range (LTE Band 17 frequency range: 704 – 716 MHz, LTE Band 12 frequency range: 699 – 716 MHz) and same maximum tune-up and channel bandwidth.

5.19. Results for LTE Band 25 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 26365 (1882.5 MHz)	0.034	0.026	3.514	1.742	0.044	
Back face	10	CH 26140 (1860.0 MHz)	0.037	0.035	3.514	1.778	0.063	14
Back face	10	CH 26590 (1905 MHz)	0.033	0.021	4.472	1.778	0.037	

5.20. Results for LTE Band 25 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 26365 (1882.5 MHz)	0.023	0.019	4.954	1.750	0.032	

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.

5.21. Results for LTE Band 26 (1 RB, 15 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 26865 (831.5 MHz)	0.157	0.162	1.976	1.380	0.224	15

5.22. Results for LTE Band 26 (50% RB, 15 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 26865 (831.5 MHz)	0.109	0.112	1.274	1.365	0.153	

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.

5.23. Results for LTE Band 38 (1 RB, 20 MHz, QPSK)

SAR for LTE Band 38 has not been measured because it is covered by LTE Band 41 due to overlapping frequency range (LTE Band 41 frequency range: 2496 – 2690 MHz, LTE Band 38 frequency range: 2570 – 2620 MHz) and same maximum tune-up and channel bandwidth.

5.24. Results for LTE Band 41 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 40185 (2549.5 MHz)	0.039	0.030	3.633	1.892	0.058	
Back face	10	CH 39750 (2506.0 MHz)	0.046	0.038	2.094	1.936	0.074	16
Back face	10	CH 40620 (2593.0 MHz)	0.031	0.021	3.872	2.023	0.041	
Back face	10	CH 41055 (2636.5 MHz)	0.021	0.015	0.809	2.344	0.035	
Back face	10	CH 41190 (2680.0 MHz)	0.037	0.023	0.346	2.716	0.061	

5.25. Results for LTE Band 41 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 39750 (2506.0 MHz)	0.014	0.009	4.713	1.945	0.018	

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.

5.26. Results for LTE Band 42 (1 RB, 20 MHz, QPSK)

- MIMO2 Antenna (Shark fin antenna)

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.
Back face	0	CH 41690 (3410.0 MHz)	0.027	0.020	0.693	1.239	0.024	17
Back face	0	CH 42590 (3500.0 MHz)	0.012	0.006	1.859	1.578	0.010	
Back face	0	CH 43490 (3590.0 MHz)	0.012	0.006	1.274	1.521	0.009	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 41690 (3410.0 MHz)	0.045	0.016	-0.115	1.239	0.019	
Back face	0	CH 42590 (3500.0 MHz)	0.016	0.013	-3.506	1.578	0.020	18
Back face	0	CH 43490 (3590.0 MHz)	0.016	0.010	2.329	1.521	0.015	

5.27. Results for LTE Band 42 (50% RB, 20 MHz, QPSK)

- MIMO2 Antenna (Shark fin antenna)

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.
Back face	0	CH 41690 (3410.0 MHz)	0.012	0.004	-0.230	1.274	0.005	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 41690 (3410.0 MHz)	0.017	0.011	-2.725	1.274	0.014	

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.

5.28. Results for LTE Band 66 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 132575 (1770.0 MHz)	0.058	0.056	4.112	1.422	0.080	19
Back face	10	CH 132072 (1720.0 MHz)	0.038	0.038	2.920	1.432	0.055	
Back face	10	CH 132322 (1745.0 MHz)	0.055	0.054	2.212	1.439	0.077	

5.29. Results for LTE Band 66 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 132072 (1720.0 MHz)	0.031	0.030	3.157	1.409	0.042	

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.

5.30. Results for LTE Band 71 (1 RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 133222 (673.0 MHz)	0.038	0.039	0.115	1.306	0.051	
Back face	10	CH 133297 (680.5 MHz)	0.045	0.047	0.925	1.330	0.063	20
Back face	10	CH 133372 (688.0 MHz)	0.042	0.045	4.112	1.349	0.061	

5.31. Results for LTE Band 71 (50% RB, 20 MHz, QPSK)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 133297 (680.5 MHz)	0.038	0.042	3.276	1.321	0.055	

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.

5.32. Results for LTE Carrier Aggregation inter-band

- MIMO1 Antenna (Shark fin antenna)

CA MODE	Position	Dist (mm)	PCC Config	SCC Config	Estimated SAR 1-g (W/kg)	SAR 1-g (W/kg)	Power Drift (%)	Scale factor	Reported SAR 1-g (W/kg)	Plot No.
5B	Back face	10	1RB High CH 20528 836.8 MHz 5MHz BW	1RB Low CH 20600 844.0 MHz 10MHz BW	0.109	0.110	-1.486	1.914	0.211	21
7C	Back face	10	1RB High CH 20850 2510 MHz 20MHz BW	1RB Low CH 21048 2529.8 MHz 20MHz BW	0.036	0.024	3.992	3.565	0.087	22
41C	Back face	10	1RB High CH 39750 2506.0 MHz 20MHz BW	1RB Low CH 39867 2517.7 MHz 5MHz BW	0.031	0.012	4.232	4.603	0.055	23
42C	Back face	0	1RB High CH 42565 3497.5 MHz 20MHz BW	1RB Low CH 42682 3509.2 MHz 5MHz BW	0.011	0.007	0.000	1.479	0.011	24
66B	Back face	10	1RB High CH 132575 1770.0 MHz 10MHz BW	1RB Low CH 132644 1777.2 MHz 5MHz BW	0.049	0.048	1.859	1.698	0.082	25
66C	Back face	10	1RB High CH 132522 1765.0 MHz 20MHz BW	1RB Low CH 132639 1776.7 MHz 5MHz BW	0.048	0.047	1.042	3.027	0.143	26

5.33. Results for n2 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

SAR for n2 Band has not been measured because it is covered by n25 Band due to overlapping frequency range (n2 Band frequency range: 1850 – 1910 MHz, n25 Band frequency range: 1850 – 1915 MHz) and same maximum tune-up and channel bandwidth.

5.34. Results for n5 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 167300 (836.5 MHz)	0.065	0.066	1.042	1.122	0.074	
Back face	10	CH 166800 (834.0 MHz)	0.067	0.069	3.157	1.138	0.079	27
Back face	10	CH 16800 (839.0 MHz)	0.057	0.063	0.925	1.138	0.072	

5.35. Results for n5 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 167300 (836.5 MHz)	0.057	0.058	1.158	1.000	0.058	

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.

5.36. Results for n7 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 507000 (2535 MHz)	0.042	0.028	2.920	1.233	0.034	
Back face	10	CH 502000 (2510 MHz)	0.039	0.032	3.039	1.245	0.040	28
Back face	10	CH 512000 (2560 MHz)	0.029	0.018	0.693	1.265	0.022	

5.37. Results for n7 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 507000 (2535 MHz)	0.038	0.025	3.872	1.002	0.025	

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.

5.38. Results for n25 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 379000 (1895.0 MHz)	0.020	0.013	0.231	1.230	0.016	29
Back face	10	CH 374000 (1870.0 MHz)	0.014	0.011	-2.725	1.259	0.014	
Back face	10	CH 376500 (1882.5 MHz)	0.014	0.007	1.158	1.233	0.009	

5.39. Results for n25 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 376500 (1882.5 MHz)	0.014	0.011	2.212	1.000	0.011	

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.

5.40. Results for n38 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	0	CH 519000 (2595.0 MHz)	0.003	0.011	-0.803	1.607	0.017	
Back face	0	CH 516000 (2480.0 MHz)	0.006	0.012	-0.115	1.618	0.019	
Back face	0	CH 522000 (2610.0 MHz)	0.012	0.013	2.802	1.626	0.022	30

5.41. Results for n38 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	0	CH 519000 (2595.0 MHz)	0.003	0.012	0.577	1.400	0.017	

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.

5.42. Results for n41 Band (1 RB, 100 MHz, $\pi/2$ BPSK, SCS 30 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	0	CH 528000 (2640.0 MHz)	0.010	0.013	0.462	1.334	0.013	
Back face	0	CH 509202 (2546.0 MHz)	0.011	0.013	1.042	1.361	0.017	31
Back face	0	CH 518598 (2593.0 MHz)	0.010	0.011	2.802	1.361	0.015	

5.43. Results for n41 Band (50% RB, 100 MHz, $\pi/2$ BPSK, SCS 30 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	0	CH 518598 (2593.0 MHz)	0.096	0.012	-0.230	1.047	0.013	

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.

5.44. Results for n66 Band (1 RB, 40 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 352000 (1760.0 MHz)	0.029	0.024	4.112	1.230	0.029	
Back face	10	CH 346000 (1730.0 MHz)	0.028	0.027	2.447	1.236	0.034	
Back face	10	CH 349000 (1745.0 MHz)	0.034	0.033	2.565	1.259	0.042	32

5.45. Results for n66 Band (50% RB, 40 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 352000 (1760.0 MHz)	0.024	0.025	3.872	1.005	0.025	

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.

5.46. Results for n71 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 137600 (688.0 MHz)	0.018	0.020	1.508	1.183	0.024	
Back face	10	CH 134600 (673.0 MHz)	0.020	0.021	3.039	1.186	0.025	
Back face	10	CH 136100 (680.5 MHz)	0.021	0.021	2.920	1.191	0.025	33

5.47. Results for n71 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 15 kHz)

- MIMO1 Antenna (Shark fin antenna)

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.
Back face	10	CH 137600 (688.0 MHz)	0.020	0.020	2.565	1.000	0.020	

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.

5.48. Results for n77 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 30 kHz)

- MIMO2 Antenna (Shark fin antenna)

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.
Back face	0	CH 650000 (3750.0 MHz)	0.010	0.011	-3.506	1.633	0.017	34
Back face	0	CH 623334 (3350.0 MHz)	0.009	0.009	-4.391	1.884	0.017	
Back face	0	CH 676666 (4149.99.0 MHz)	0.012	0.010	-3.949	1.884	0.018	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 650000 (3750.0 MHz)	0.011	0.005	3.872	1.633	0.009	35
Back face	0	CH 623334 (3350.0 MHz)	0.007	0.004	2.565	1.884	0.008	
Back face	0	CH 676666 (4149.99.0 MHz)	0.002	0.005	0.000	1.884	0.009	

5.49. Results for n77 Band (50% RB, 20 MHz, $\pi/2$ BPSK, SCS 30 kHz)

- MIMO2 Antenna (Shark fin antenna)

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.
Back face	0	CH 650000 (3750.0 MHz)	0.002	0.004	0.000	1.312	0.005	

- Int Bua antenna (TCU internal)

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.
Back face	0	CH 650000 (3750.0 MHz)	0.001	0.001	0.000	1.312	0.001	

5.50. Results for n78 Band (1 RB, 20 MHz, $\pi/2$ BPSK, SCS 30 kHz)

SAR for n78 Band has not been measured because it is covered by n77 Band due to overlapping frequency range (n77 Band frequency range: 3300 – 4200 MHz, n78 Band frequency range: 3300 – 3800MHz) and same maximum tune-up and channel bandwidth.

5.51. 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.

No variability measurements are required.

5.52. SPOT-CHECK results.

A spot-check measurement for the antenna model DA05DI20 has been performed into the highest SAR measured configuration band found for the antenna model DA04DI20 between bands with same tissue-equivalent liquid.

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 4	DA04DI20	Back face	10	CH 20300 (1745 MHz)	0.071	0.069	2.920	9
LTE 4	DA05DI20	Back face	10	CH 20300 (1745 MHz)	0.067	0.067	2.683	36

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 7	DA04DI20	Back face	10	CH 20850 (2510.0 MHz)	0.071	0.064	3.514	11
LTE 7	DA05DI20	Back face	10	CH 20850 (2510.0 MHz)	0.052	0.045	4.352	37

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 13	DA04DI20	Back face	10	CH 23230 (782 MHz)	0.143	0.149	2.802	13
LTE 13	DA05DI20	Back face	10	CH 20300 (1745 MHz)	0.145	0.144	-0.459	38

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 25	DA04DI20	Back face	10	CH 26140 (1860.0 MHz)	0.037	0.035	3.514	14
LTE 25	DA05DI20	Back face	10	CH 26140 (1860.0 MHz)	0.034	0.033	2.212	39

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 26	DA04DI20	Back face	10	CH 26865 (831.5 MHz)	0.157	0.162	1.976	15
LTE 26	DA05DI20	Back face	10	CH 26865 (831.5 MHz)	0.113	0.116	3.992	40

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
LTE 42	DA04DI20	Back face	0	CH 41690 (3410.0 MHz)	0.027	0.020	0.693	17
LTE 42	DA05DI20	Back face	0	CH 41690 (3410.0 MHz)	0.041	0.013	-1.486	41

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n5	DA04DI20	Back face	10	CH 166800 (834.0 MHz)	0.067	0.069	3.157	27
n5	DA05DI20	Back face	10	CH 166800 (834.0 MHz)	0.056	0.058	1.158	42

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n7	DA04DI20	Back face	10	CH 502000 (2510 MHz)	0.039	0.032	3.039	28
n7	DA05DI20	Back face	10	CH 502000 (2510 MHz)	0.026	0.020	2.920	43

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n25	DA04DI20	Back face	10	CH 379000 (1895.0 MHz)	0.020	0.013	0.231	29
n25	DA05DI20	Back face	10	CH 379000 (1895.0 MHz)	0.015	0.012	2.329	44

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n66	DA04DI20	Back face	10	CH 349000 (1745.0 MHz)	0.034	0.033	2.565	32
n66	DA05DI20	Back face	10	CH 349000 (1745.0 MHz)	0.029	0.028	2.683	45

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n71	DA04DI20	Back face	10	CH 136100 (680.5 MHz)	0.021	0.021	2.920	33
n71	DA05DI20	Back face	10	CH 502000 (2510 MHz)	0.018	0.019	2.683	46

Band	Antenna Model	Position	Dist (mm)	Channel (Frequency)	Estimated SAR 10-g (W/kg)	SAR 10-g (W/kg)	Power Drift (%)	Plot No.
n77	DA04DI20	Back face	10	CH 650000 (3750.0 MHz)	0.010	0.011	-3.506	34
n77	DA05DI20	Back face	10	CH 650000 (3750.0 MHz)	0.010	0.009	-3.839	47

Appendix C: Measurement Reports

Plot N° 1

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 01/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10028 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2-3); Frequency: 824.2 MHz; Duty Cycle: 1:2.26464

Medium parameters used: $f = 825 \text{ MHz}$; $\sigma = 0.88 \text{ S/m}$; $\epsilon_r = 42.59$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 824.2 MHz; Calibrated: 28/08/2020

- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 19/08/2020

- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060

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

Flat Phantom, Ext Ant, d=10mm/GPRS 850, 2 slots, Low CH, Back face/Area Scan (111x141x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.156 W/kg

Flat Phantom, Ext Ant, d=10mm/GPRS 850, 2 slots, Low CH, Back face/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.76 V/m; Power Drift = -0.01 dB

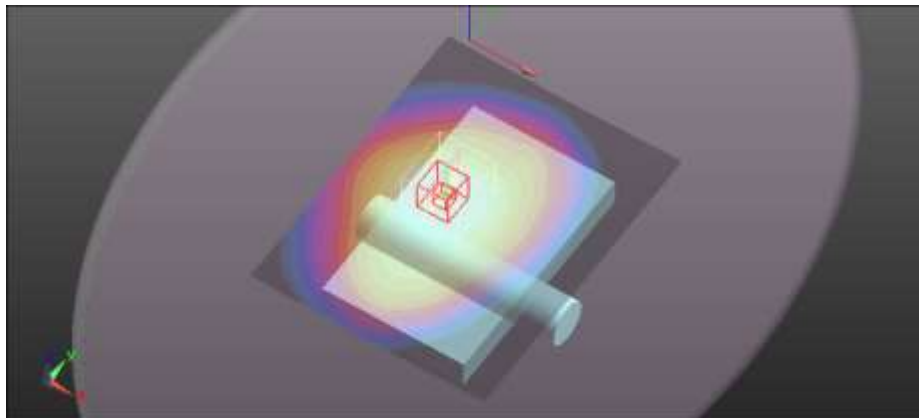
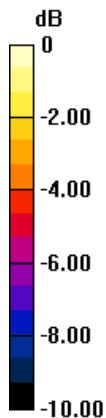
Peak SAR (extrapolated) = 0.172 W/kg

SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.102 W/kg (SAR corrected for target medium)

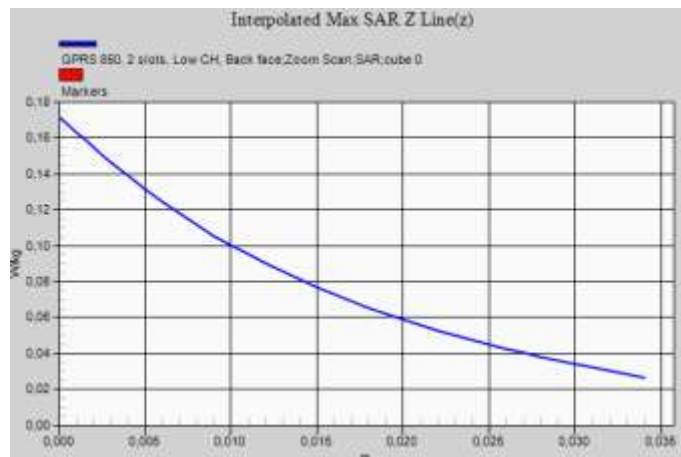
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 75.8%

Maximum value of SAR (measured) = 0.138 W/kg



0 dB = 0.138 W/kg = -8.60 dBW/kg



Plot Nº 2

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10028 - DAC, GPRS-FDD (TDMA, GMSK, TN 0-1-2-3); Frequency: 1850.2 MHz;
 Duty Cycle: 1:2.26464

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.39$ S/m; $\epsilon_r = 41.539$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1850.2 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/GPRS 1900 4 slots, Low CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0414 W/kg

Flat Phantom, d=10mm/GPRS 1900 4 slots, Low CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.140 V/m; Power Drift = 0.33 dB

Peak SAR (extrapolated) = 0.0940 W/kg

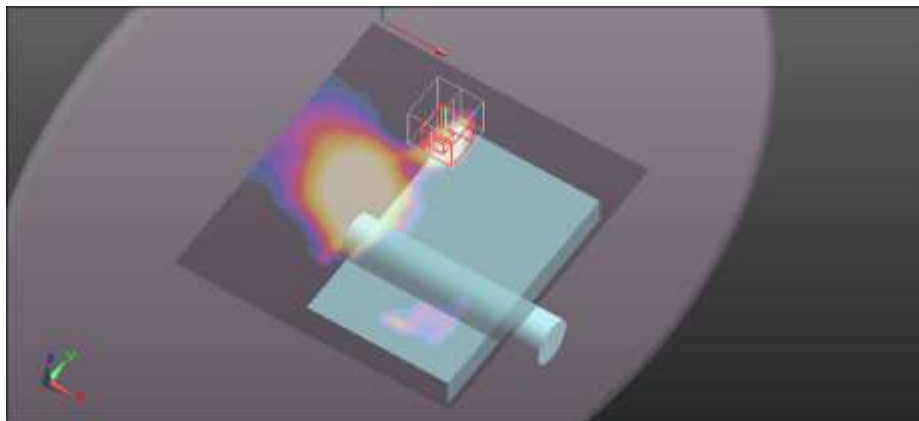
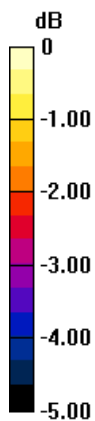
SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.011 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

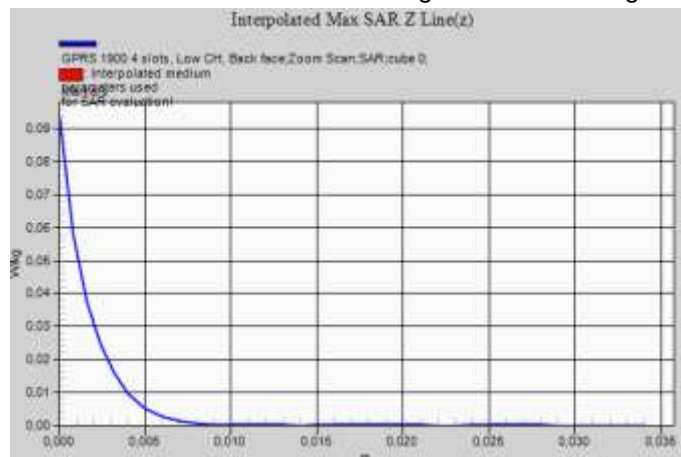
Ratio of SAR at M2 to SAR at M1 = 52.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0253 W/kg



0 dB = 0.0253 W/kg = -15.97 dBW/kg



Plot Nº 3

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1852.4 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.392$ S/m; $\epsilon_r = 41.533$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1852.4 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/WCDMA II, Low CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0513 W/kg

Flat Phantom, d=10mm/WCDMA II, Low CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.206 V/m; Power Drift = 0.29 dB

Peak SAR (extrapolated) = 0.0620 W/kg

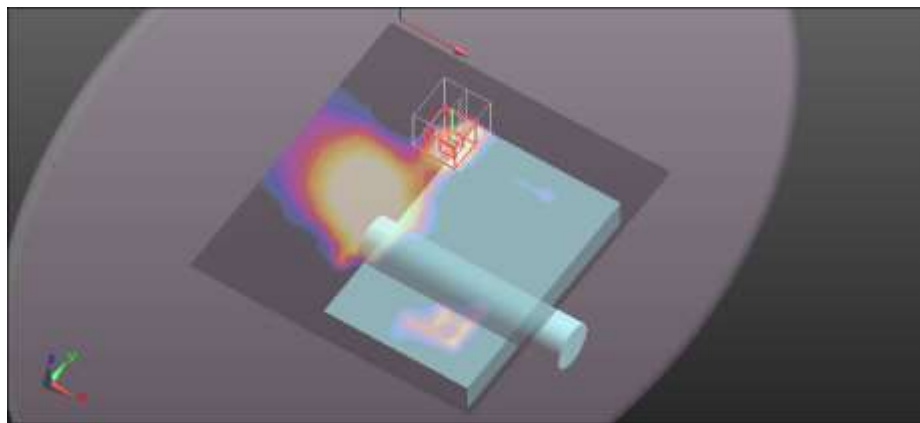
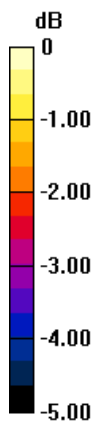
SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.017 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

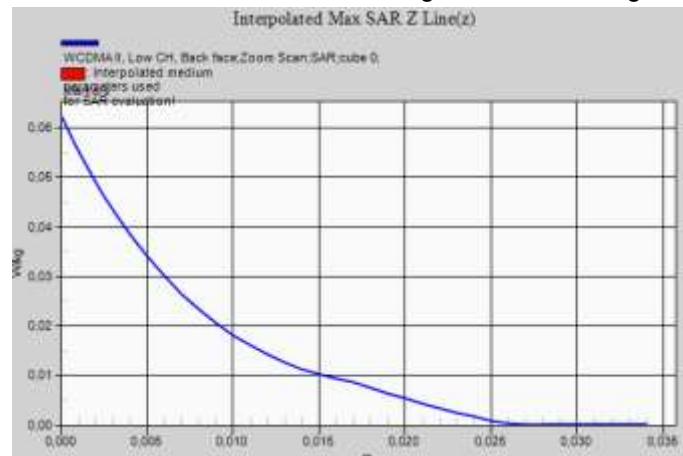
Ratio of SAR at M2 to SAR at M1 = 54.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0372 W/kg



0 dB = 0.0372 W/kg = -14.29 dBW/kg



Plot Nº 4

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 23/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 1907.6$ MHz; $\sigma = 1.418$ S/m; $\epsilon_r = 40.712$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1907.6 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0mm, Internal/WCDMA II, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.477 W/kg

Flat Phantom, d=0mm, Internal/WCDMA II, High CH, Back face/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.90 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.643 W/kg

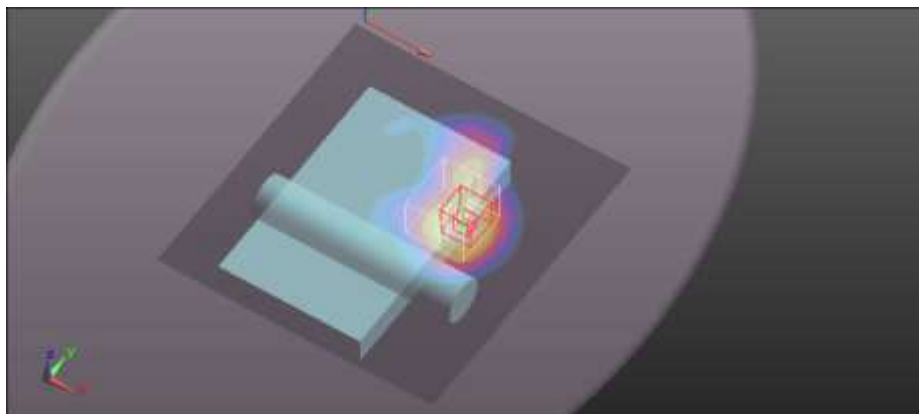
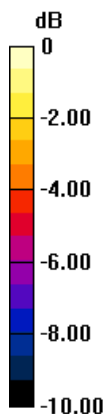
SAR(1 g) = 0.332 W/kg; SAR(10 g) = 0.171 W/kg (SAR corrected for target medium)

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

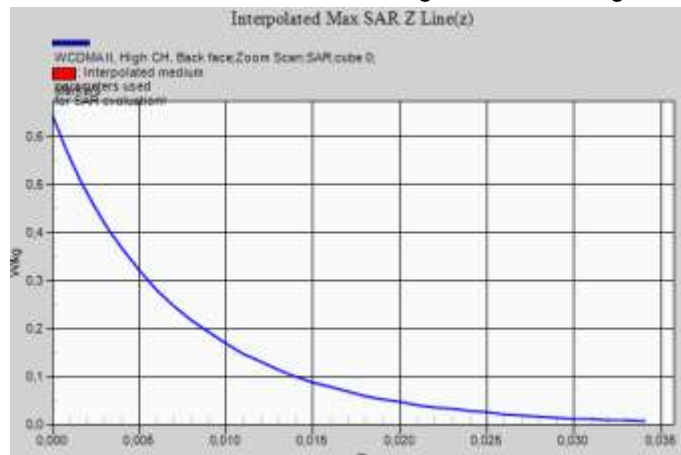
Ratio of SAR at M2 to SAR at M1 = 52%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.367 W/kg



0 dB = 0.367 W/kg = -4.35 dBW/kg



Plot N° 5

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 1752.6$ MHz; $\sigma = 1.413$ S/m; $\epsilon_r = 41.62$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1752.6 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm/WCDMA IV, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0694 W/kg

Flat Phantom, Faces, d=10mm/WCDMA IV, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.008 V/m; Power Drift = 0.22 dB

Peak SAR (extrapolated) = 0.0820 W/kg

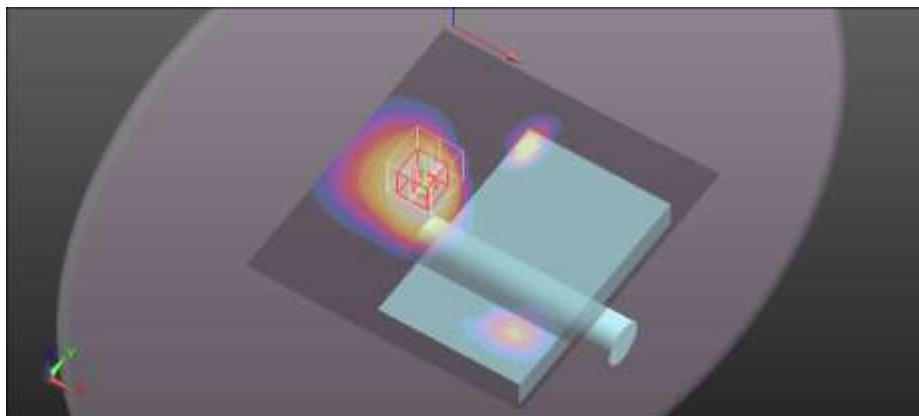
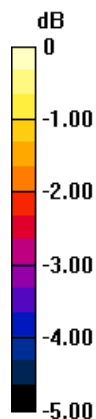
SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.032 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

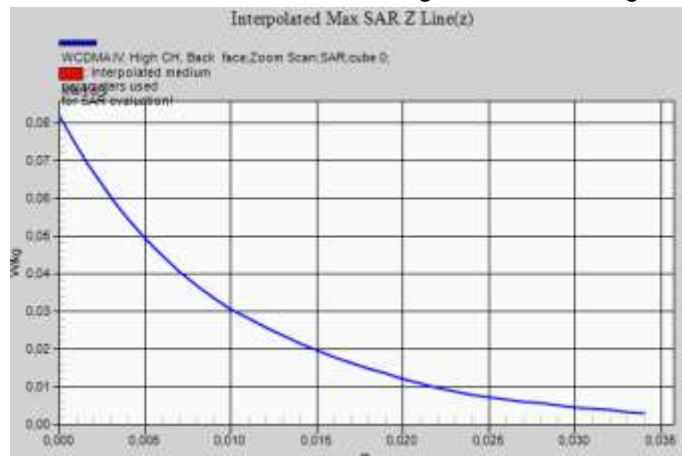
Ratio of SAR at M2 to SAR at M1 = 61.3%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0547 W/kg



0 dB = 0.0547 W/kg = -12.62 dBW/kg



Plot Nº 6

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 1752.6$ MHz; $\sigma = 1.403$ S/m; $\epsilon_r = 40.79$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1752.6 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=0mm, Internal/WCDMA IV, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.328 W/kg

Flat Phantom, Faces, d=0mm, Internal/WCDMA IV, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.74 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.501 W/kg

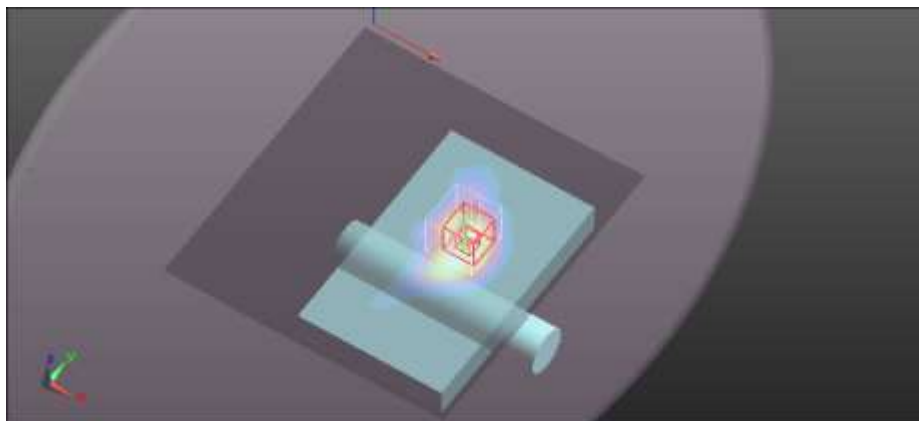
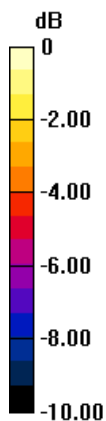
SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.110 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 8 mm

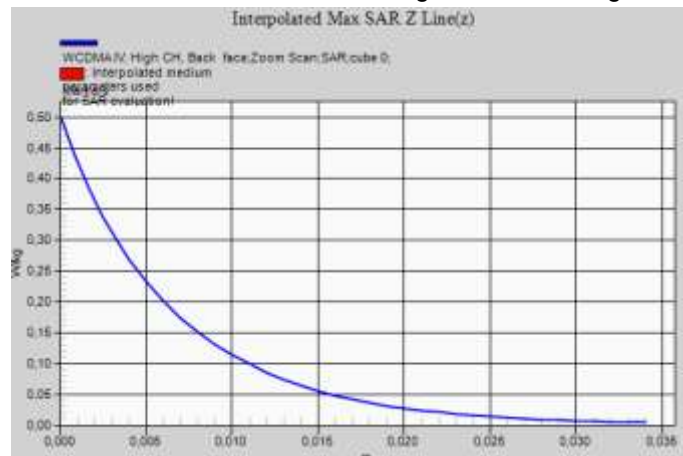
Ratio of SAR at M2 to SAR at M1 = 47.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.263 W/kg



0 dB = 0.263 W/kg = -5.80 dBW/kg



Plot N° 7

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 01/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 826.4 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 826.4$ MHz; $\sigma = 0.883$ S/m; $\epsilon_r = 42.554$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 826.4 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/WCDMA V, Low CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.148 W/kg

Flat Phantom, Ext Ant, d=10mm/WCDMA V, Low CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.50 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.166 W/kg

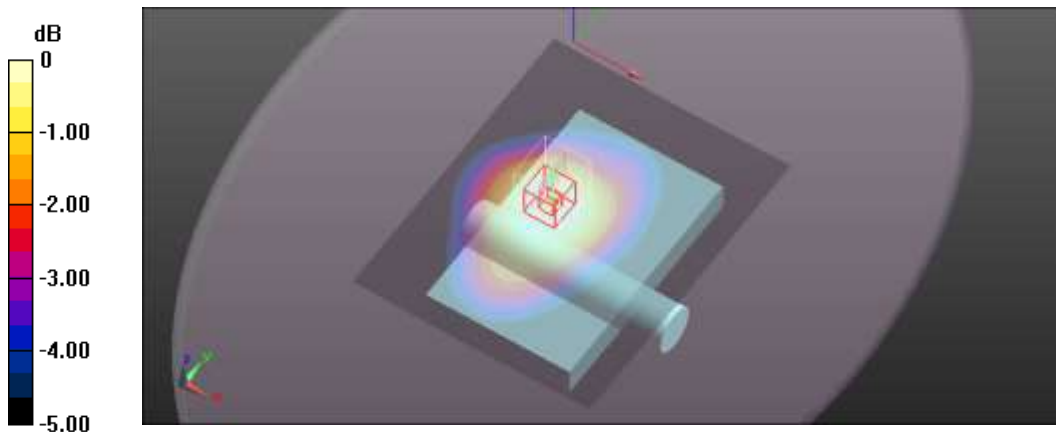
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.097 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 75.9%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.134 W/kg



0 dB = 0.134 W/kg = -8.73 dBW/kg



Plot Nº 8

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 846.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 846.6$ MHz; $\sigma = 0.923$ S/m; $\epsilon_r = 42.288$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 846.6 MHz; Calibrated: 28/08/2020

- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface:

4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn669; Calibrated: 19/08/2020

- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060

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

Flat Phantom, Int Ant, d=0mm/WCDMA V, High CH, Back face/Area Scan (111x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.139 W/kg

Flat Phantom, Int Ant, d=0mm/WCDMA V, High CH, Back face/Zoom Scan (6x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 10.39 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.178 W/kg

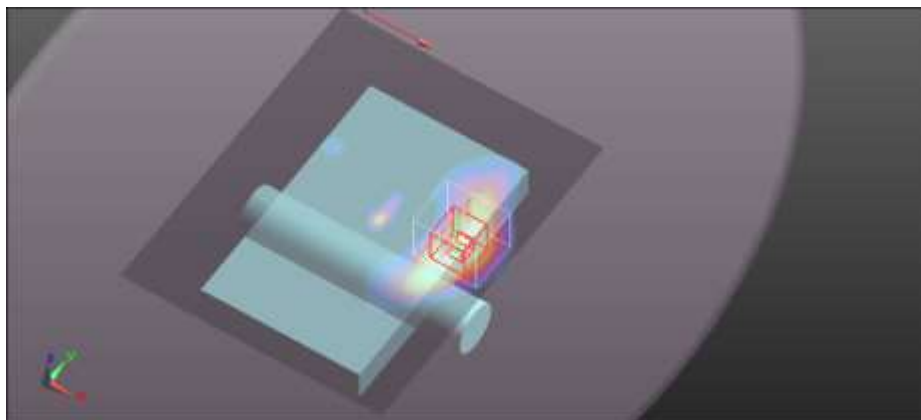
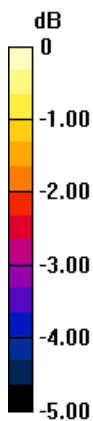
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.062 W/kg (SAR corrected for target medium)

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

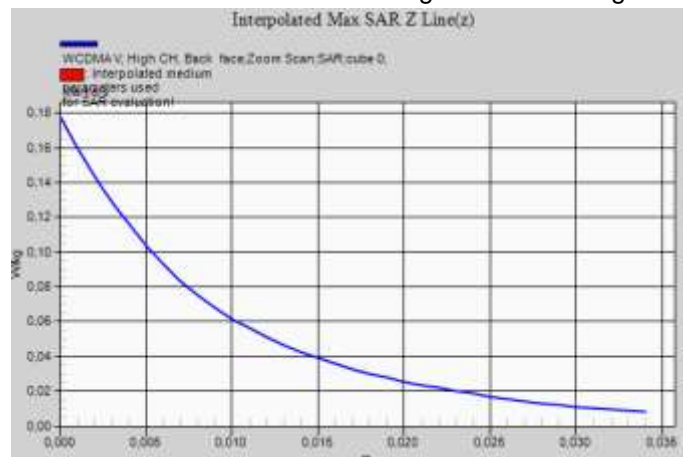
Ratio of SAR at M2 to SAR at M1 = 58.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.115 W/kg



0 dB = 0.115 W/kg = -9.39 dBW/kg



Plot Nº 9

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 08/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1744.9 MHz;
 Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 1744.9$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 40.895$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1744.9 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm - LTE Band 4/LTE 4, 1 RB High, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0930 W/kg

Flat Phantom, Faces, d=10mm - LTE Band 4/LTE 4, 1 RB High, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.196 V/m; Power Drift = 0.25 dB

Peak SAR (extrapolated) = 0.109 W/kg

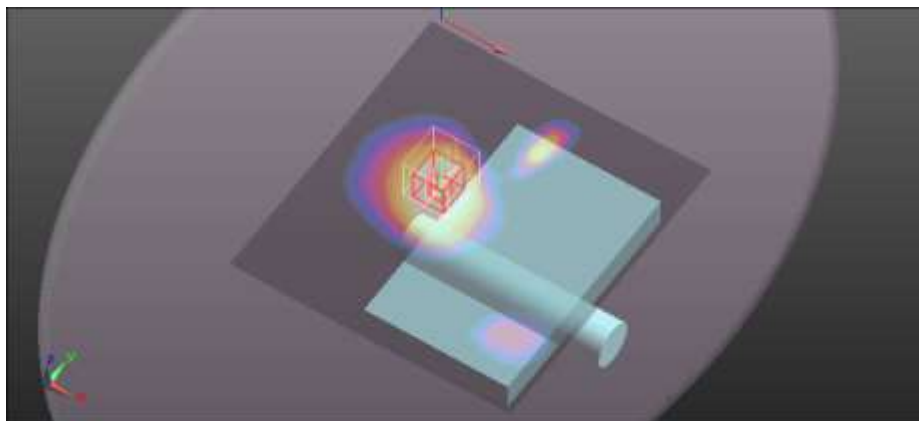
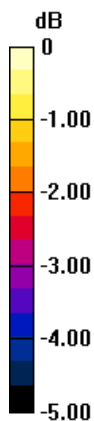
SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.043 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

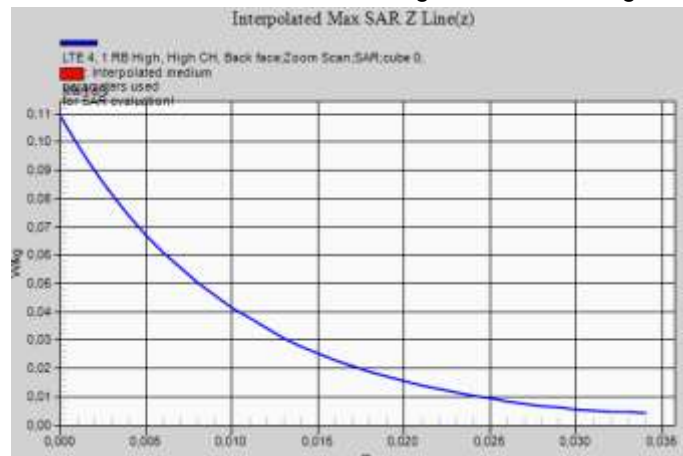
Ratio of SAR at M2 to SAR at M1 = 61.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0741 W/kg



0 dB = 0.0741 W/kg = -11.30 dBW/kg



Plot N° 10

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 02/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 836.5 MHz;
 Duty Cycle: 1:3.7325

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.89$ S/m; $\epsilon_r = 42.327$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 836.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 5, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.163 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 5, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 11.33 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.181 W/kg

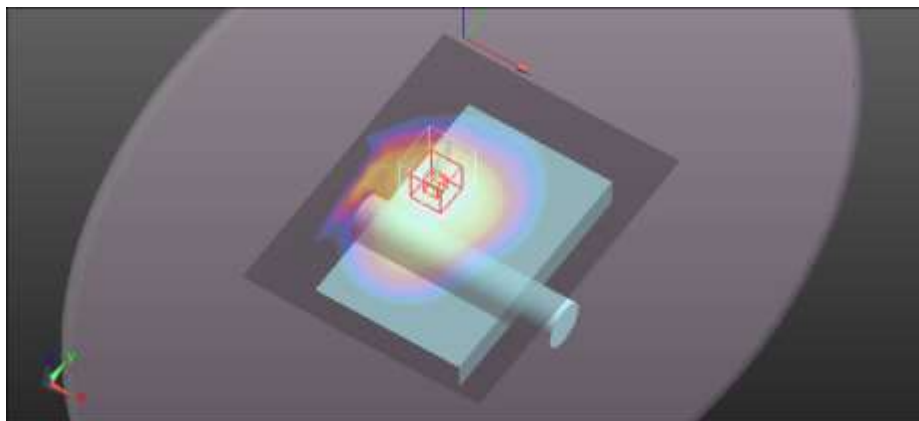
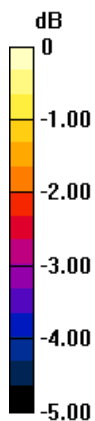
SAR(1 g) = 0.141 W/kg; SAR(10 g) = 0.104 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

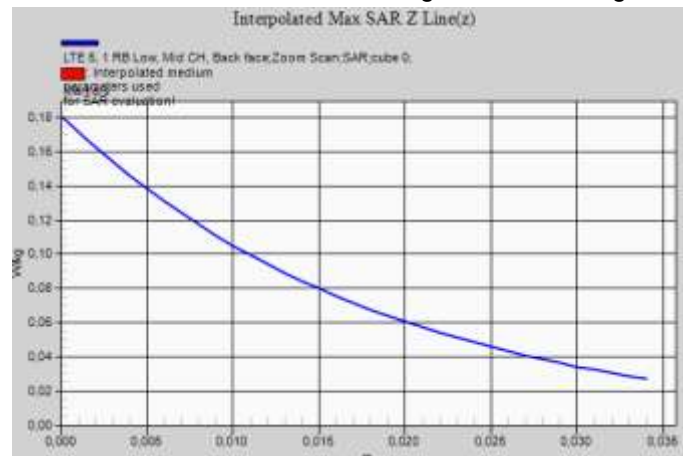
Ratio of SAR at M2 to SAR at M1 = 76.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.146 W/kg



0 dB = 0.146 W/kg = -8.36 dBW/kg



Plot Nº 11

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 09/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2510 MHz;
 Duty Cycle: 1:3.74111

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.94$ S/m; $\epsilon_r = 40.47$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2510 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/LTE 7, 1 RB High, Low CH, Back face/Area Scan (131x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0990 W/kg

Flat Phantom, d=10 mm/LTE 7, 1 RB High, Low CH, Back face/Zoom Scan (8x9x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.626 V/m; Power Drift = 0.30 dB

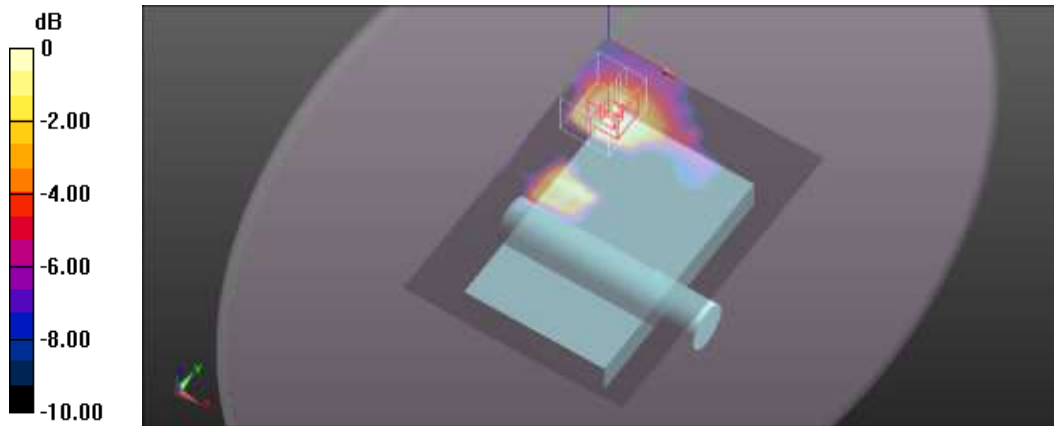
Peak SAR (extrapolated) = 0.124 W/kg

SAR(1 g) = 0.064 W/kg; SAR(10 g) = 0.033 W/kg (SAR corrected for target medium)

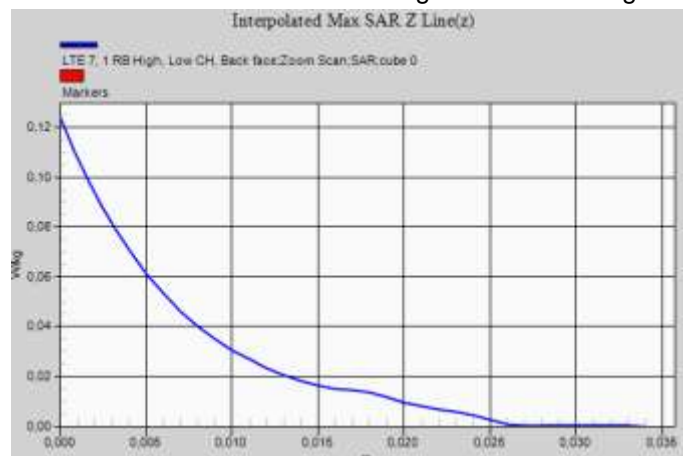
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 49.1%

Maximum value of SAR (measured) = 0.0709 W/kg



0 dB = 0.0709 W/kg = -11.49 dBW/kg



Plot N° 12

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 30/11/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10175 - CAE, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 707.5 MHz; Duty Cycle: 1:3.7325

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 41.455$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 707.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 12, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.103 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 12, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.096 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.112 W/kg

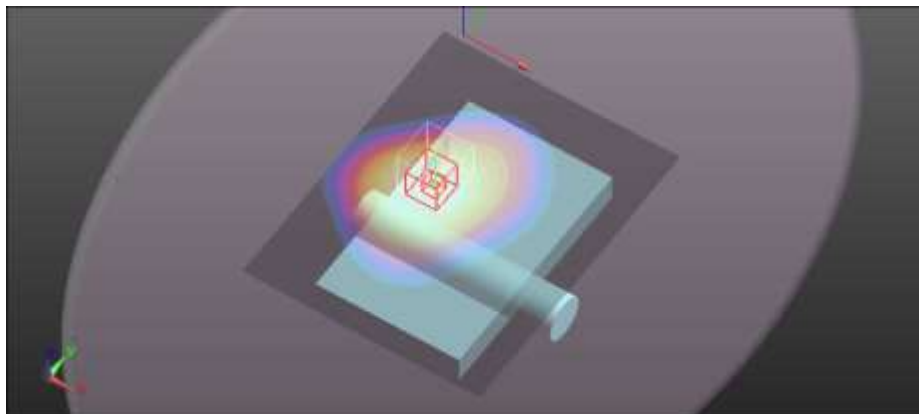
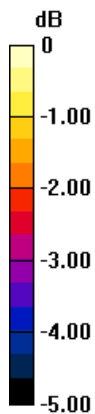
SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.069 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 78.4%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0923 W/kg



0 dB = 0.0923 W/kg = -10.35 dBW/kg



Plot N° 13

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 30/11/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;
 Duty Cycle: 1:3.73594

Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.43$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 782 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 13, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.173 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 13, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.40 V/m; Power Drift = 0.24 dB

Peak SAR (extrapolated) = 0.196 W/kg

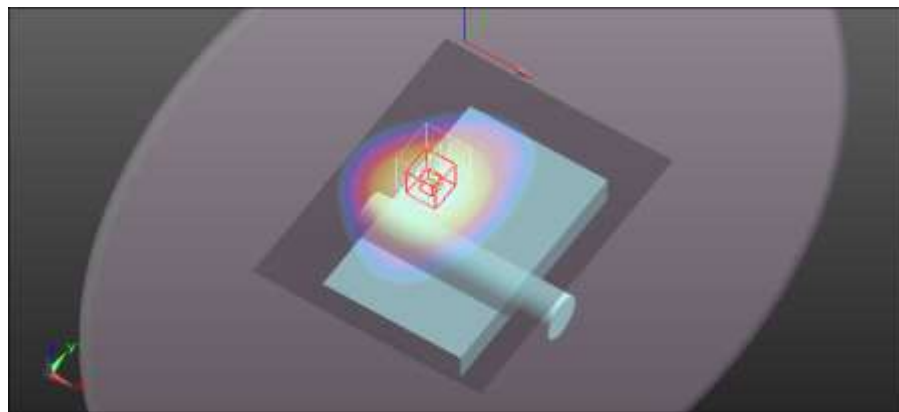
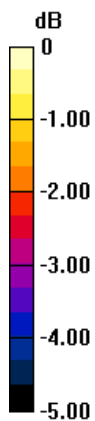
SAR(1 g) = 0.149 W/kg; SAR(10 g) = 0.110 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

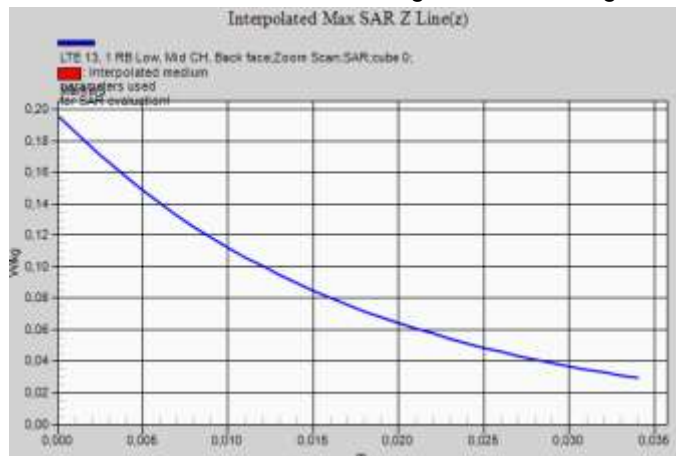
Ratio of SAR at M2 to SAR at M1 = 75.3%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.157 W/kg



0 dB = 0.157 W/kg = -8.04 dBW/kg



Plot Nº 14

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz;
 Duty Cycle: 1:3.73852

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 41.51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1860 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/LTE 25, 1 RB Low, Low CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0484 W/kg

Flat Phantom, d=10mm/LTE 25, 1 RB Low, Low CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.025 V/m; Power Drift = 0.30 dB

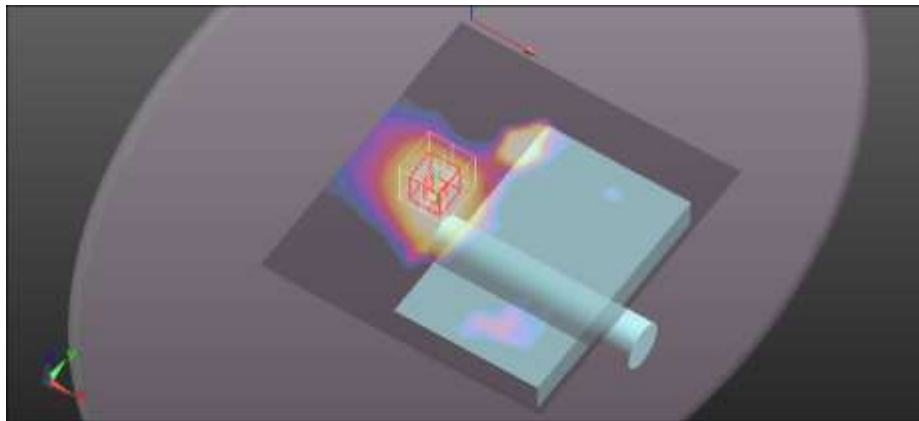
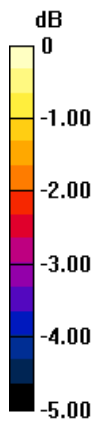
Peak SAR (extrapolated) = 0.0580 W/kg

SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.021 W/kg (SAR corrected for target medium)

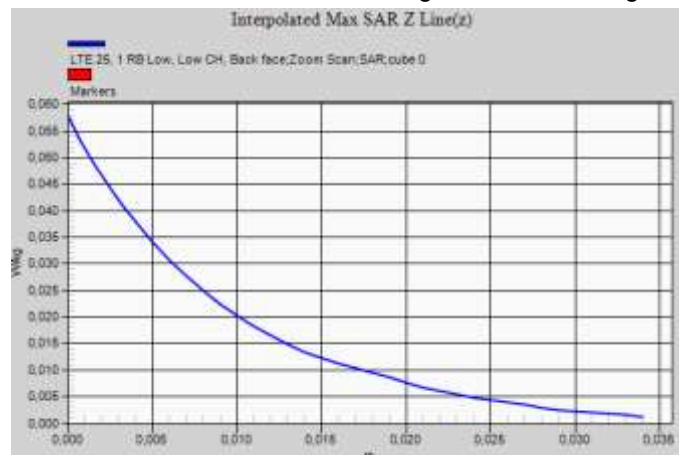
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 58.9%

Maximum value of SAR (measured) = 0.0380 W/kg



0 dB = 0.0380 W/kg = -14.20 dBW/kg



Plot N° 15

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 02/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10181 - CAE, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK); Frequency: 831.5 MHz;
 Duty Cycle: 1:3.7368

Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.89$ S/m; $\epsilon_r = 42.43$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 831.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 26, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.189 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 26, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.31 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.206 W/kg

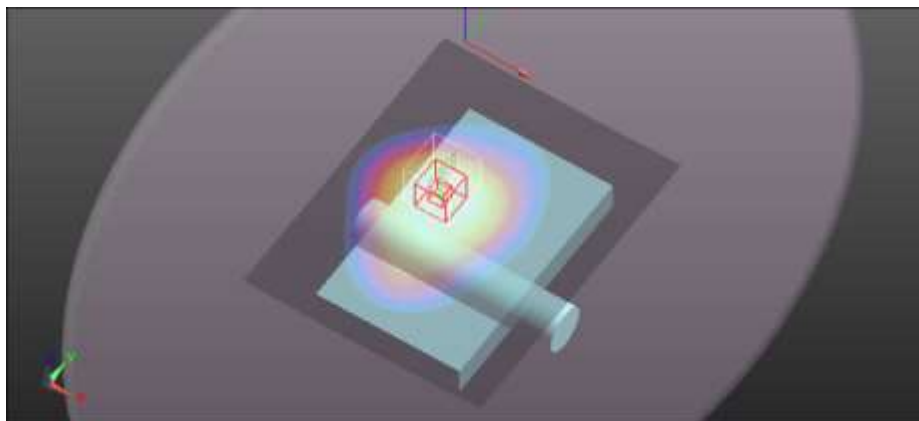
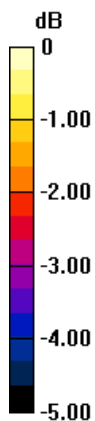
SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.120 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

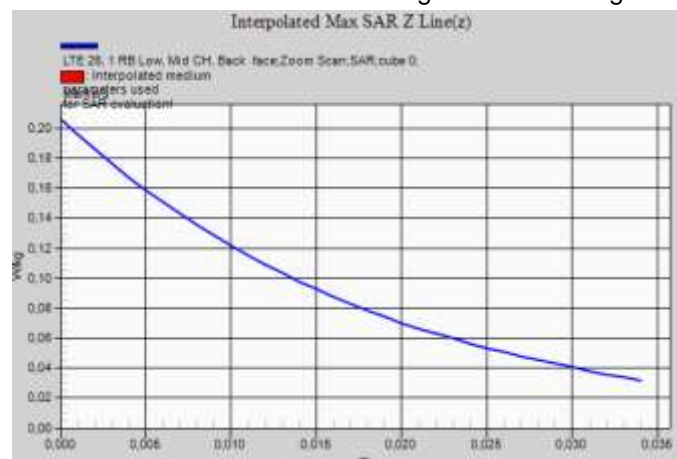
Ratio of SAR at M2 to SAR at M1 = 77.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.167 W/kg



0 dB = 0.167 W/kg = -7.77 dBW/kg



Plot Nº 16

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 09/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2506 MHz;
 Duty Cycle: 1:8.33105

Medium parameters used (interpolated): $f = 2506$ MHz; $\sigma = 1.936$ S/m; $\epsilon_r = 40.482$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2506 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/LTE 41, 1 RB Low, Low CH, Back face/Area Scan (131x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0603 W/kg

Flat Phantom, d=10 mm/LTE 41, 1 RB Low, Low CH, Back face/Zoom Scan (9x9x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.126 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.0770 W/kg

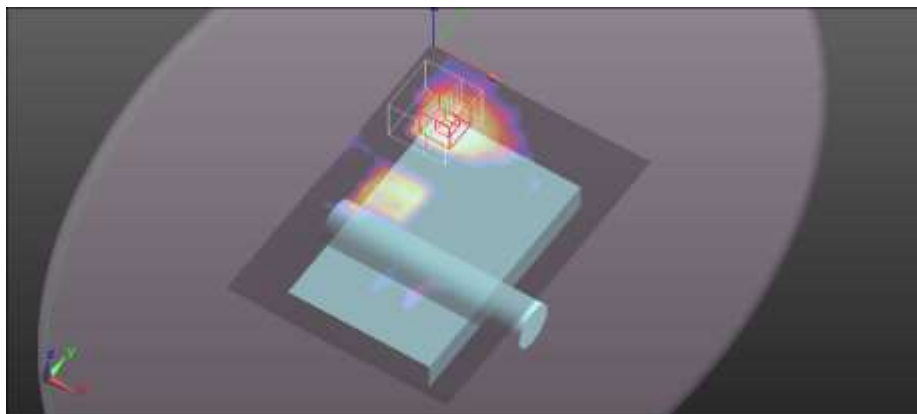
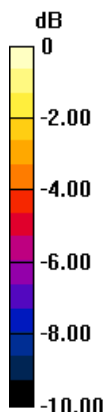
SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.017 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

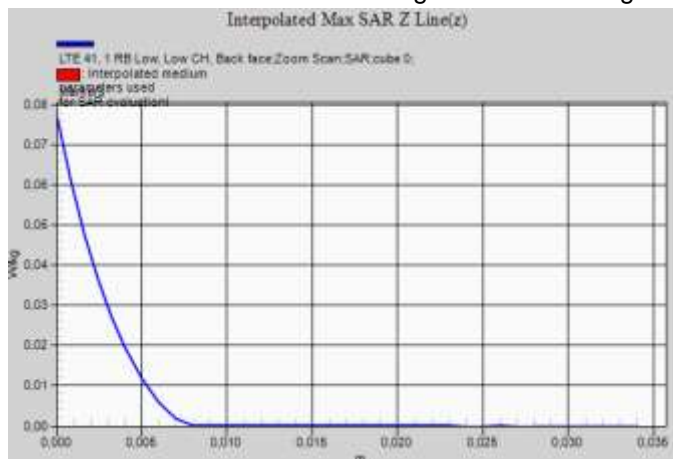
Ratio of SAR at M2 to SAR at M1 = 48.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0449 W/kg



0 dB = 0.0449 W/kg = -13.48 dBW/kg



Plot N° 17

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 16/02/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3410 MHz;
 Duty Cycle: 1:8.33105

Medium parameters used: $f = 3410$ MHz; $\sigma = 2.73$ S/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3410 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, External Ant/LTE 42, 1 RB Low, Low CH, Back face/Area Scan (131x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0460 W/kg

Flat Phantom, d=0 mm, External Ant/LTE 42, 1 RB Low, Low CH, Back face/Zoom Scan (8x8x8)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=4mm

Reference Value = 3.579 V/m; Power Drift = 0.06 dB

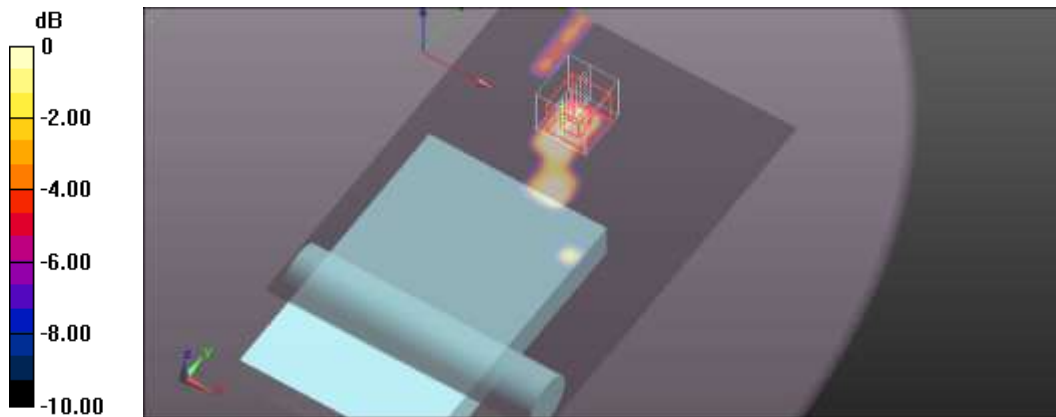
Peak SAR (extrapolated) = 0.0560 W/kg

SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00859 W/kg (SAR corrected for target medium)

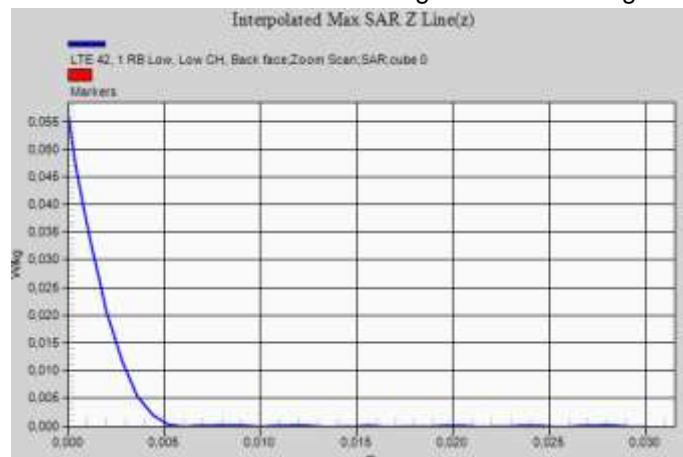
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 39.7%

Maximum value of SAR (measured) = 0.0340 W/kg



0 dB = 0.0340 W/kg = -14.69 dBW/kg



Plot Nº 18

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 18/02/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3500 MHz;
 Duty Cycle: 1:8.33105

Medium parameters used: $f = 3500$ MHz; $\sigma = 2.8$ S/m; $\epsilon_r = 39.15$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3500 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, Internal Ant/LTE 42, 1 RB Low, Mid CH, Back face/Area Scan (131x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0275 W/kg

Flat Phantom, d=0 mm, Internal Ant/LTE 42, 1 RB Low, Mid CH, Back face/Zoom Scan (10x10x8)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=4mm

Reference Value = 1.790 V/m; Power Drift = -0.30 dB

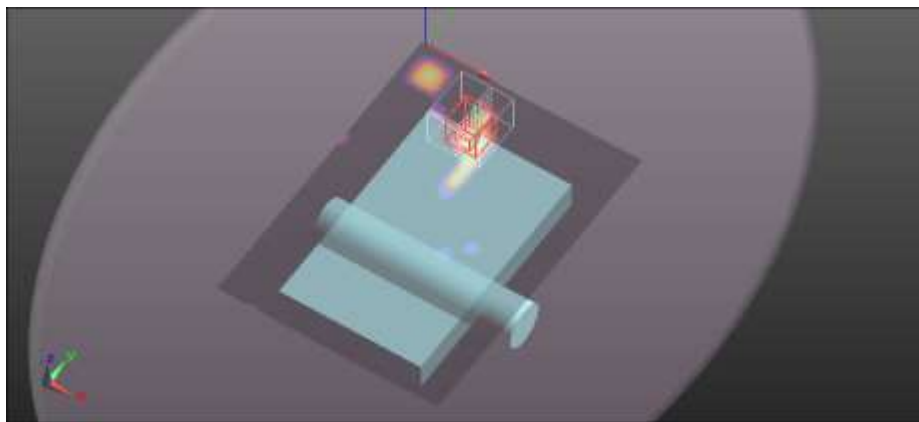
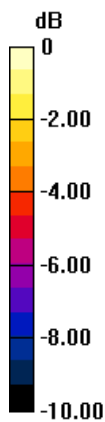
Peak SAR (extrapolated) = 0.0580 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00521 W/kg (SAR corrected for target medium)

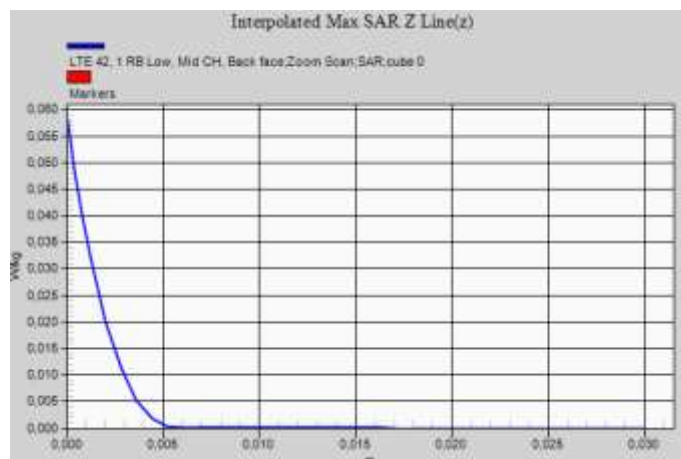
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 41.5%

Maximum value of SAR (measured) = 0.0244 W/kg



0 dB = 0.0244 W/kg = -16.13 dBW/kg



Plot N° 19

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1770 MHz;
 Duty Cycle: 1:3.73852

Medium parameters used: $f = 1770$ MHz; $\sigma = 1.43$ S/m; $\epsilon_r = 41.54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1770 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm/LTE 66, 1 RB Low, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.0755 W/kg

Flat Phantom, Faces, d=10mm/LTE 66, 1 RB Low, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 5.100 V/m; Power Drift = 0.35 dB

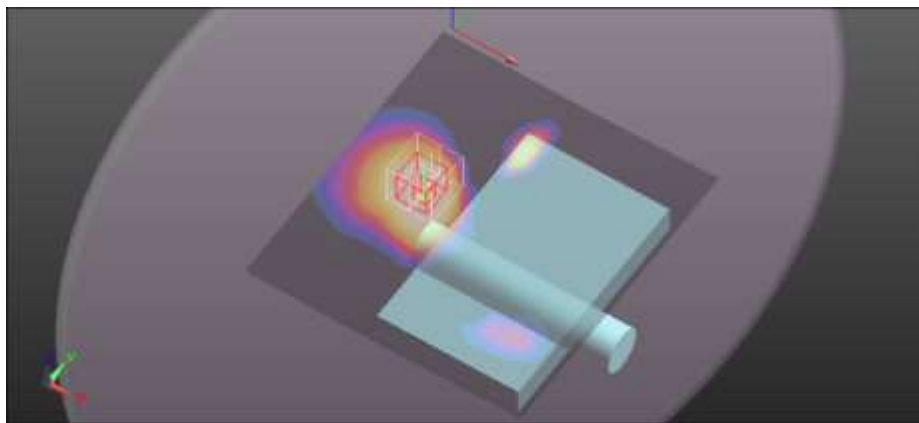
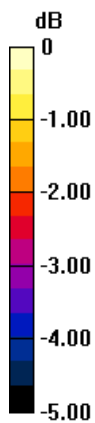
Peak SAR (extrapolated) = 0.0910 W/kg

SAR(1 g) = 0.056 W/kg; SAR(10 g) = 0.035 W/kg (SAR corrected for target medium)

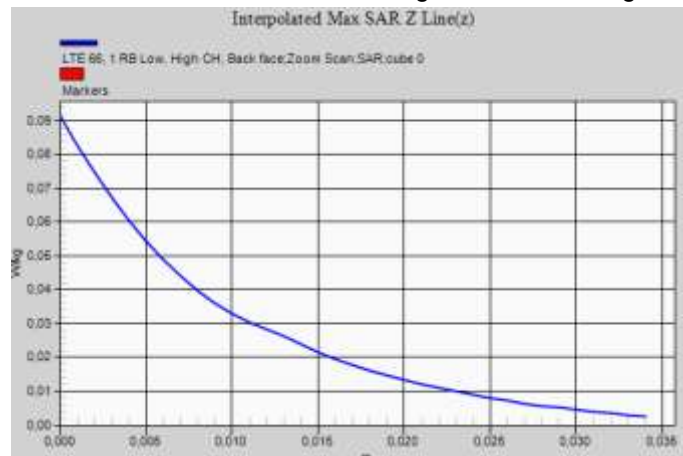
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 59.6%

Maximum value of SAR (measured) = 0.0606 W/kg



0 dB = 0.0606 W/kg = -12.18 dBW/kg



Plot Nº 20

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 30/11/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 680.5 MHz; Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.86$ S/m; $\epsilon_r = 42.27$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 680.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 71, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0533 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 71, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.146 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0580 W/kg

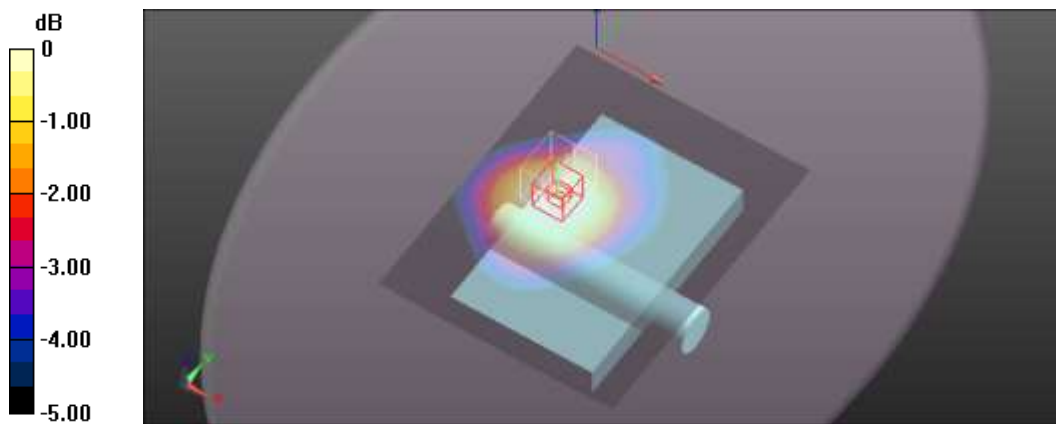
SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.036 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 78.1%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0482 W/kg



0 dB = 0.0482 W/kg = -13.17 dBW/kg



Plot Nº 21

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 18/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10177 - CAI, LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK); Frequency: 836 MHz; Duty Cycle: 1:3.74024

Medium parameters used (interpolated): $f = 836$ MHz; $\sigma = 0.91$ S/m; $\epsilon_r = 42.074$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 836 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE_UL_CA_5B, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.133 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE_UL_CA_5B, Back face/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.344 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.151 W/kg

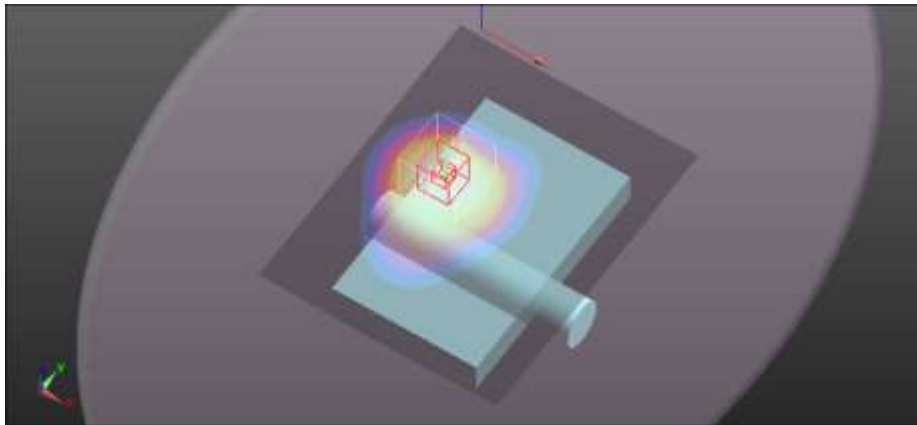
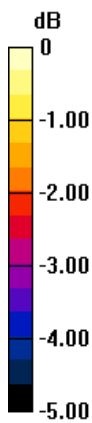
SAR(1 g) = 0.110 W/kg; SAR(10 g) = 0.079 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

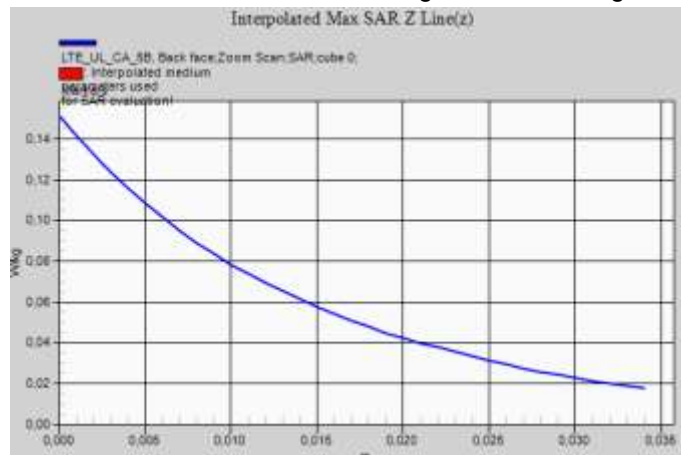
Ratio of SAR at M2 to SAR at M1 = 72.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.116 W/kg



0 dB = 0.116 W/kg = -9.36 dBW/kg



Plot N° 22

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 24/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2510 MHz;
 Duty Cycle: 1:3.74111

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.89$ S/m; $\epsilon_r = 40.52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2510 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/LTE 7C, 1 RB High, Low CH, Back face/Area Scan (161x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0498 W/kg

Flat Phantom, d=10 mm/LTE 7C, 1 RB High, Low CH, Back face/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.402 V/m; Power Drift = 0.34 dB

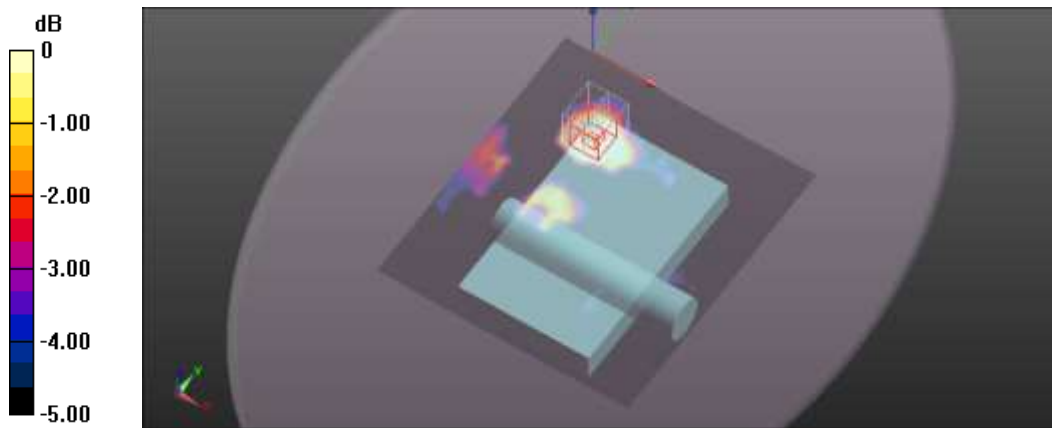
Peak SAR (extrapolated) = 0.0430 W/kg

SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.011 W/kg (SAR corrected for target medium)

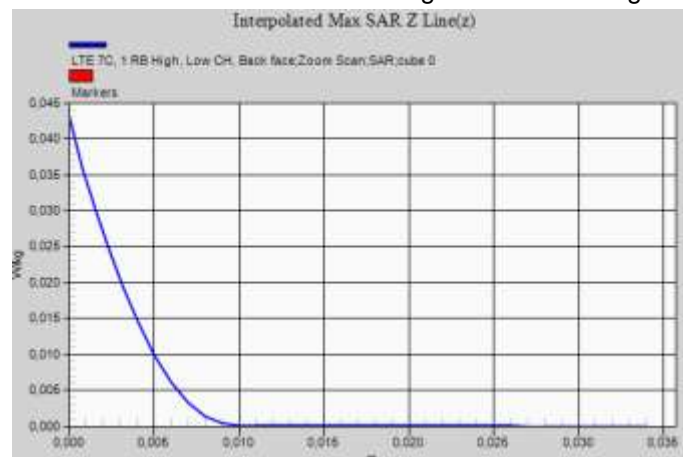
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 41.2%

Maximum value of SAR (measured) = 0.0283 W/kg



0 dB = 0.0283 W/kg = -15.48 dBW/kg



Plot Nº 23

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 24/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2506 MHz;
 Duty Cycle: 1:8.33105

Medium parameters used (interpolated): $f = 2506$ MHz; $\sigma = 1.886$ S/m; $\epsilon_r = 40.54$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2506 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/LTE 41C, 1 RB Low, Low CH, Back face/Area Scan (161x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0515 W/kg

Flat Phantom, d=10 mm/LTE 41C, 1 RB Low, Low CH, Back face/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.082 V/m; Power Drift = 0.36 dB

Peak SAR (extrapolated) = 0.0430 W/kg

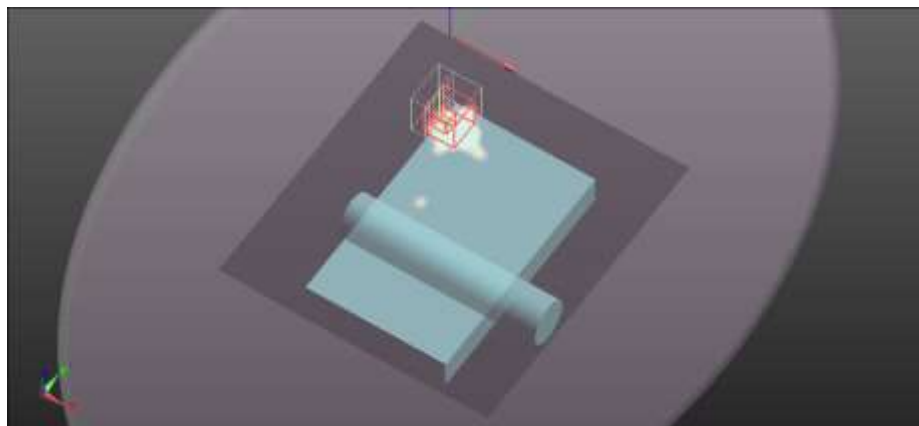
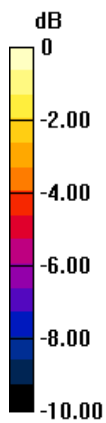
SAR(1 g) = 0.012 W/kg; SAR(10 g) = 0.0052 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

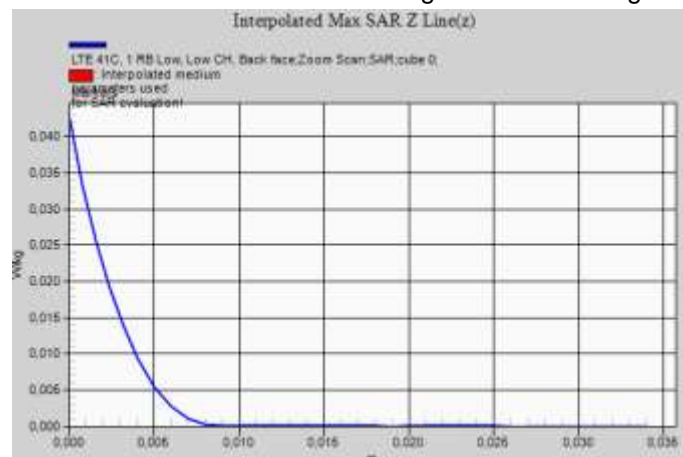
Ratio of SAR at M2 to SAR at M1 = 47.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0141 W/kg



0 dB = 0.0141 W/kg = -18.51 dBW/kg



Plot Nº 24

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 13/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3497.5 MHz;
 Duty Cycle: 1:8.33105

Medium parameters used (interpolated): $f = 3497.5$ MHz; $\sigma = 2.958$ S/m; $\epsilon_r = 38.875$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3497.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, External Ant/LTE 42C, 1 RB Low, Low CH, Back face 2 2 2 2/Area Scan (131x181x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0184 W/kg

Flat Phantom, d=0 mm, External Ant/LTE 42C, 1 RB Low, Low CH, Back face 2 2 2 2/Zoom Scan (10x11x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm

Reference Value = 0 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.0520 W/kg

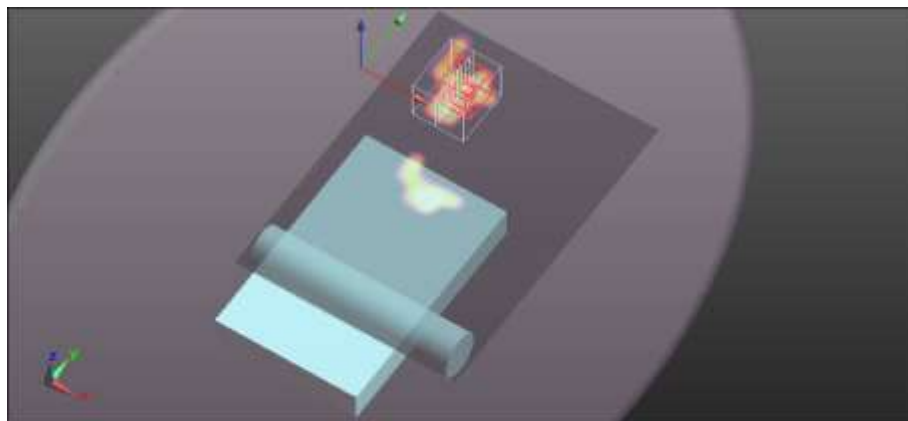
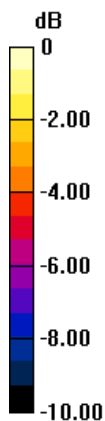
SAR(1 g) = 0.00711 W/kg; SAR(10 g) = 0.00275 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

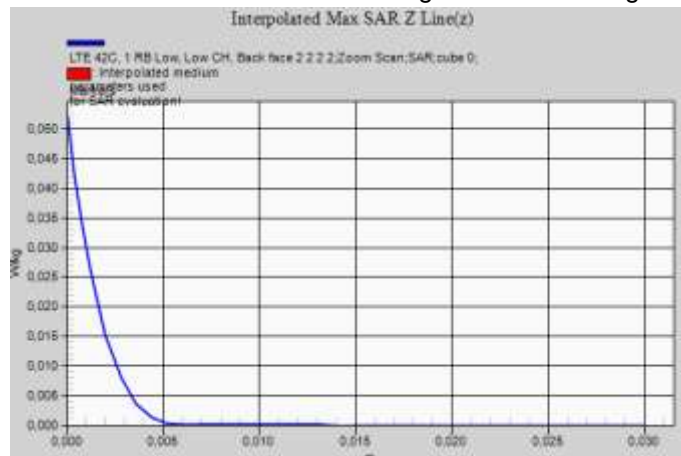
Ratio of SAR at M2 to SAR at M1 = 20.7%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0155 W/kg



0 dB = 0.0155 W/kg = -18.10 dBW/kg



Plot Nº 25

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 1770 MHz;
 Duty Cycle: 1:3.73594

Medium parameters used: $f = 1770$ MHz; $\sigma = 1.43$ S/m; $\epsilon_r = 40.75$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1770 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm 2021-03-22/LTE 66B, 1 RB Low, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0637 W/kg

Flat Phantom, Faces, d=10mm 2021-03-22/LTE 66B, 1 RB Low, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.870 V/m; Power Drift = 0.16 dB

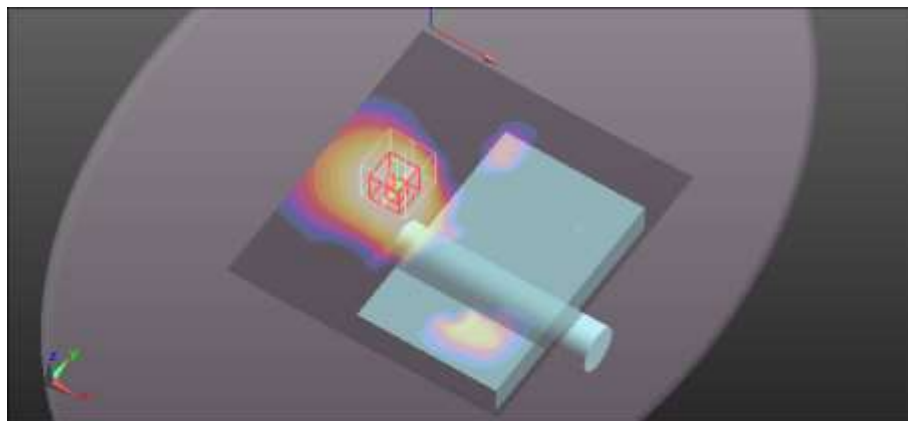
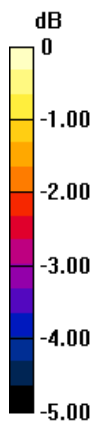
Peak SAR (extrapolated) = 0.0780 W/kg

SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.030 W/kg (SAR corrected for target medium)

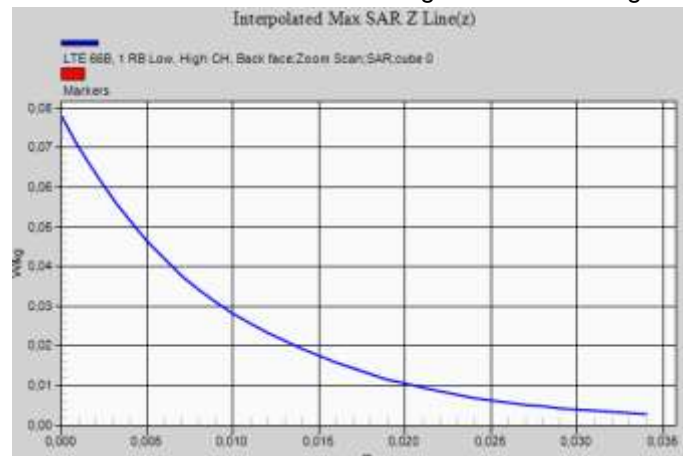
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 59.7%

Maximum value of SAR (measured) = 0.0516 W/kg



0 dB = 0.0516 W/kg = -12.87 dBW/kg



Plot Nº 26

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1765 MHz;
 Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 1765$ MHz; $\sigma = 1.42$ S/m; $\epsilon_r = 40.755$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1765 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm 2021-03-22/LTE 66C, 1 RB Low, High CH, Back face/Area Scan (131x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0625 W/kg

Flat Phantom, Faces, d=10mm 2021-03-22/LTE 66C, 1 RB Low, High CH, Back face/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.949 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0750 W/kg

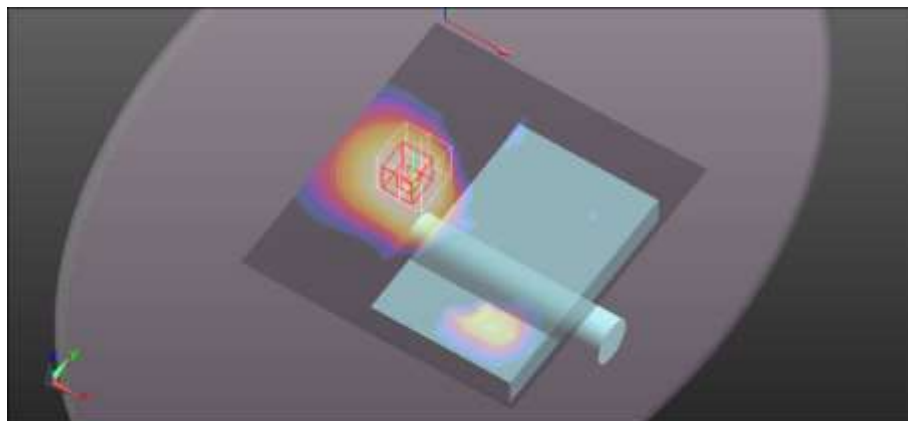
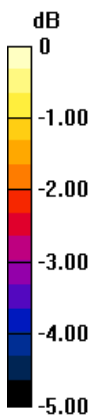
SAR(1 g) = 0.047 W/kg; SAR(10 g) = 0.030 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

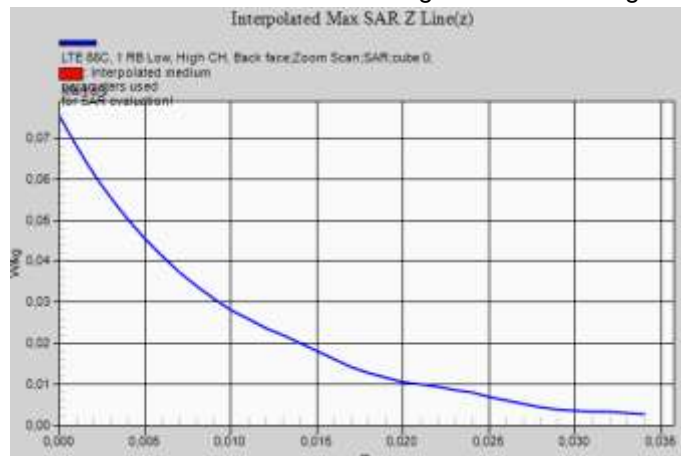
Ratio of SAR at M2 to SAR at M1 = 61.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0501 W/kg



0 dB = 0.0501 W/kg = -13.00 dBW/kg



Plot Nº 27

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 17/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 0, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) (0); Frequency: 834 MHz; Duty Cycle: 1:3.55795

Medium parameters used (interpolated): $f = 834$ MHz; $\sigma = 0.908$ S/m; $\epsilon_r = 42.102$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 834 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/n5, 1 RB Low, Low CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0813 W/kg

Flat Phantom, Ext Ant, d=10mm/n5, 1 RB Low, Low CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.885 V/m; Power Drift = 0.27 dB

Peak SAR (extrapolated) = 0.0940 W/kg

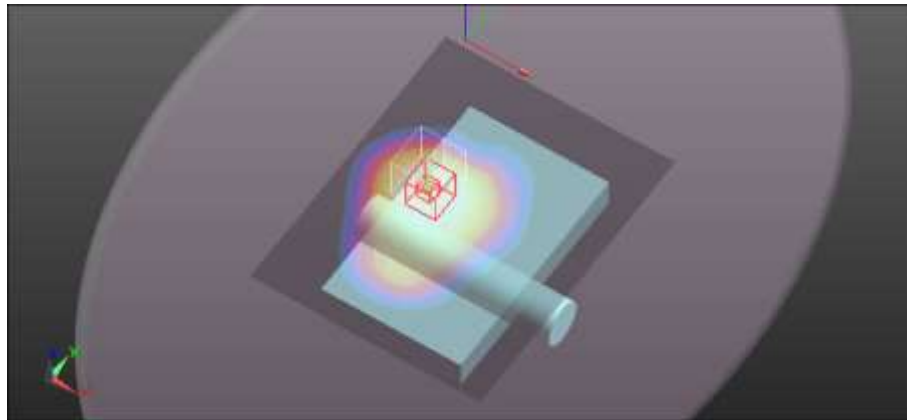
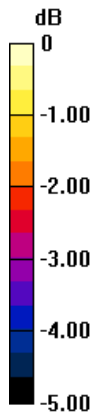
SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.050 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

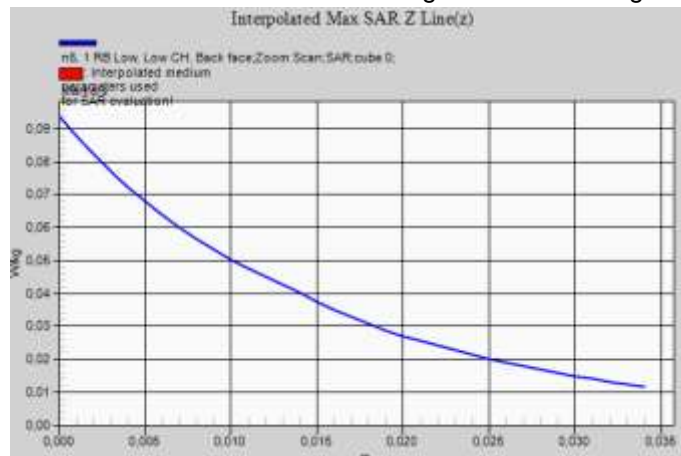
Ratio of SAR at M2 to SAR at M1 = 73.9%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0728 W/kg



0 dB = 0.0728 W/kg = -11.38 dBW/kg



Plot N° 28

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 25/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10931 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz); Frequency: 2510 MHz; Duty Cycle: 1:3.55795

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.89$ S/m; $\epsilon_r = 40.52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2510 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/n7, 1 RB Low, Low CH, Back face/Area Scan (161x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0617 W/kg

Flat Phantom, d=10 mm/n7, 1 RB Low, Low CH, Back face/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.342 V/m; Power Drift = 0.26 dB

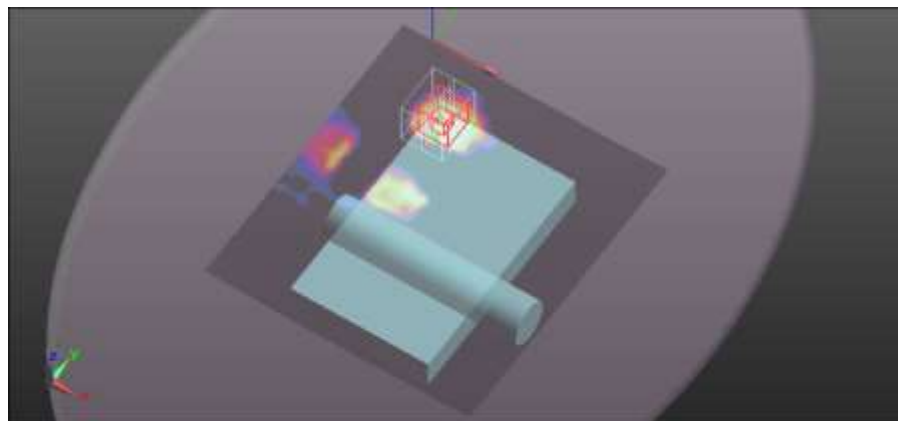
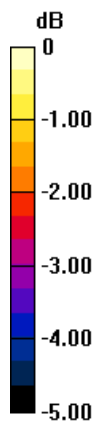
Peak SAR (extrapolated) = 0.0590 W/kg

SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.014 W/kg (SAR corrected for target medium)

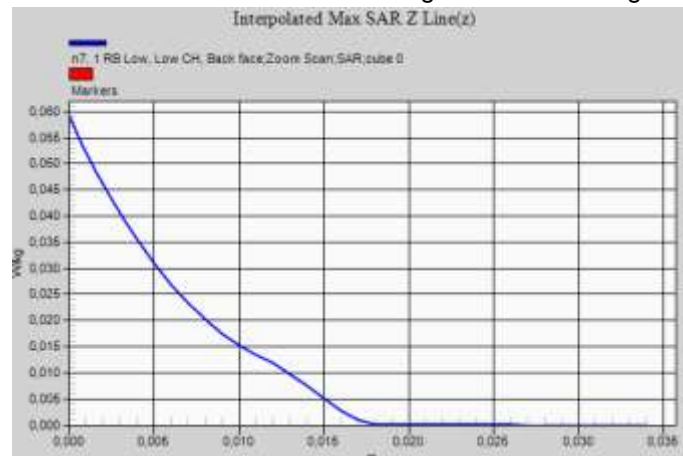
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 50.2%

Maximum value of SAR (measured) = 0.0353 W/kg



0 dB = 0.0353 W/kg = -14.52 dBW/kg



Plot Nº 29

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 23/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10931 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz); Frequency: 1895 MHz; Duty Cycle: 1:3.55795

Medium parameters used (interpolated): $f = 1895$ MHz; $\sigma = 1.41$ S/m; $\epsilon_r = 40.765$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1895 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/n25, 1 RB Mid, High CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0190 W/kg

Flat Phantom, d=10mm/n25, 1 RB Mid, High CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.084 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.0240 W/kg

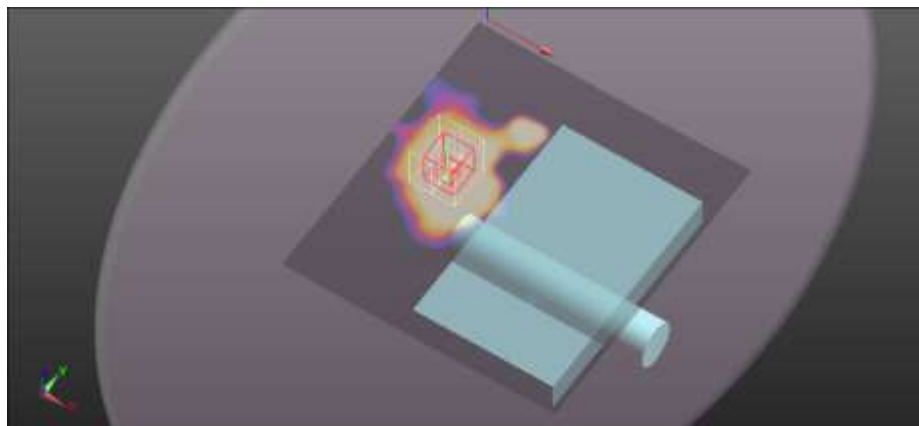
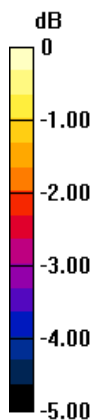
SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00735 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

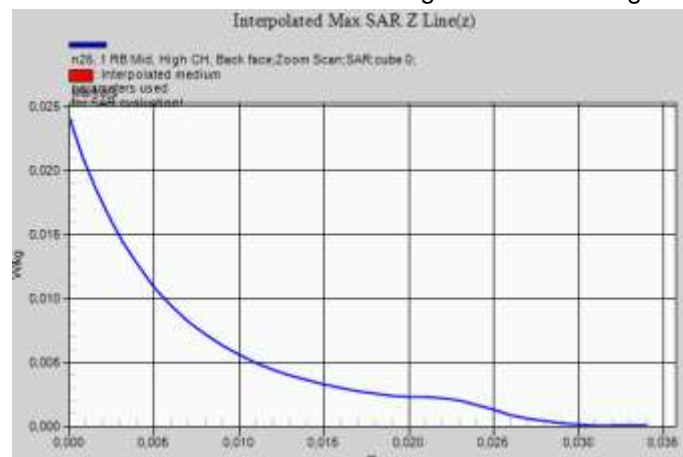
Ratio of SAR at M2 to SAR at M1 = 58.7%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0137 W/kg



0 dB = 0.0137 W/kg = -18.63 dBW/kg



Plot Nº 30

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 26/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10770 - AAC, 5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz); Frequency: 2610 MHz; Duty Cycle: 1:6.3387

Medium parameters used: $f = 2610$ MHz; $\sigma = 1.99$ S/m; $\epsilon_r = 40.21$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2610 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm,/n38, 1 RB Low, High CH, Back face/Area Scan (161x181x1): Interpolated grid:

$dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.0409 W/kg

Flat Phantom, d=10 mm,/n38, 1 RB Low, High CH, Back face/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

$dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.456 V/m; Power Drift = 0.23 dB

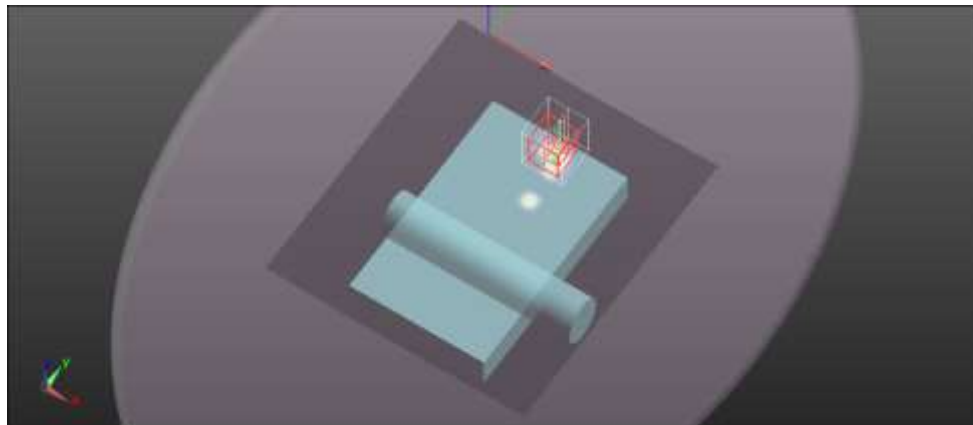
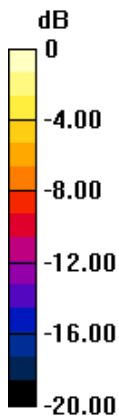
Peak SAR (extrapolated) = 0.0670 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00344 W/kg (SAR corrected for target medium)

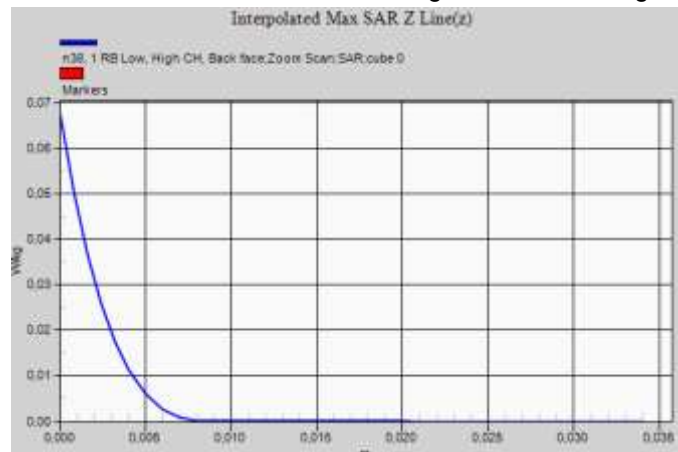
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 36.1%

Maximum value of SAR (measured) = 0.0109 W/kg



0 dB = 0.0109 W/kg = -19.63 dBW/kg



Plot N° 31

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 26/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10866 - AAC, 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz); Frequency: 2546.01 MHz; Duty Cycle: 1:3.69913

Medium parameters used (interpolated): $f = 2546.01$ MHz; $\sigma = 1.936$ S/m; $\epsilon_r = 40.424$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2546.01 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/n41, 1 RB Low, Low CH, Back face/Area Scan (161x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0390 W/kg

Flat Phantom, d=10 mm/n41, 1 RB Low, Low CH, Back face/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.430 V/m; Power Drift = 0.23 dB

Peak SAR (extrapolated) = 0.0640 W/kg

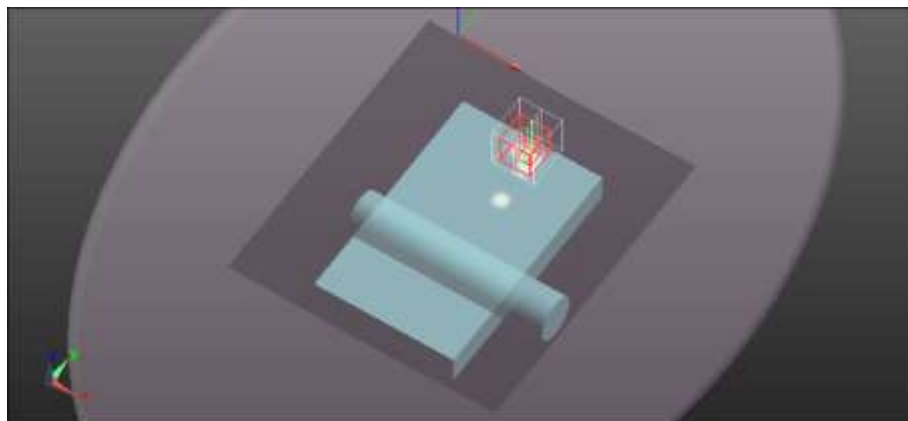
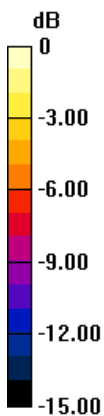
SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00328 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

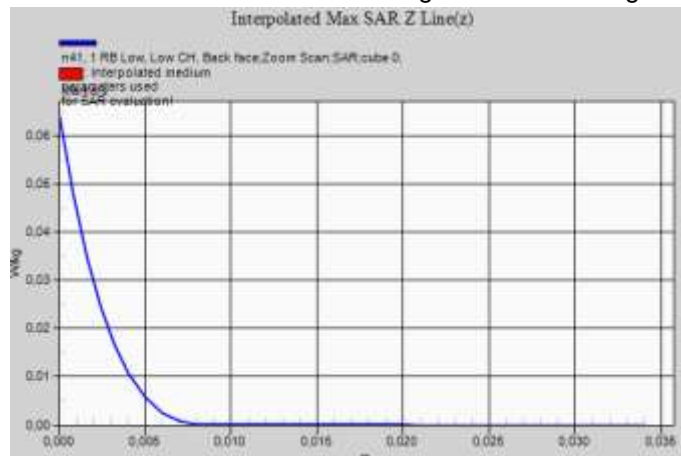
Ratio of SAR at M2 to SAR at M1 = 36.1%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0104 W/kg



0 dB = 0.0104 W/kg = -19.83 dBW/kg



Plot N° 32

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 19/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10934 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz); Frequency: 1745 MHz; Duty Cycle: 1:3.55877

Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.385$ S/m; $\epsilon_r = 40.995$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1745 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm/n66, 1 RB Mid, Mid CH, Back face/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0440 W/kg

Flat Phantom, Faces, d=10mm/n66, 1 RB Mid, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.900 V/m; Power Drift = 0.22 dB

Peak SAR (extrapolated) = 0.0520 W/kg

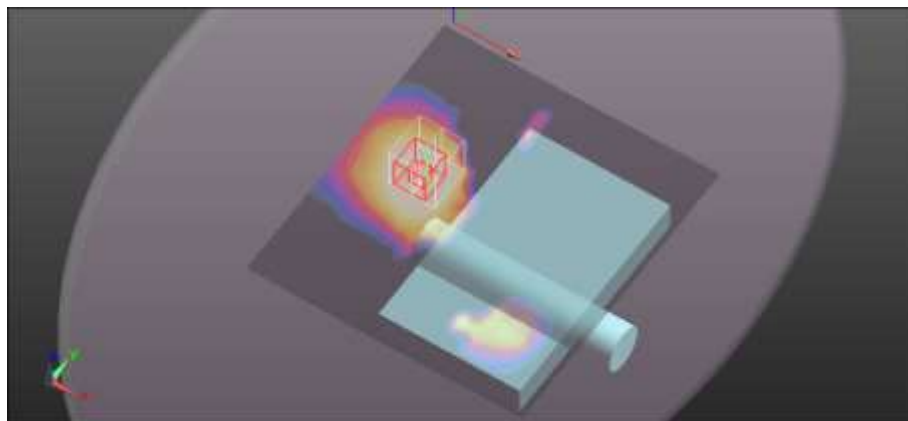
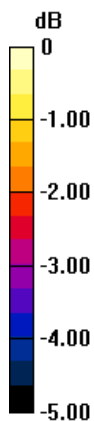
SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.021 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

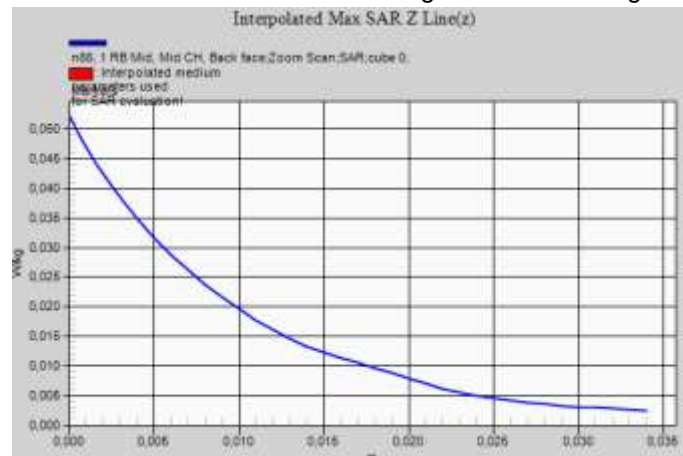
Ratio of SAR at M2 to SAR at M1 = 62.2%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0349 W/kg



0 dB = 0.0349 W/kg = -14.57 dBW/kg



Plot N° 33

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 16/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 0, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) (0); Frequency: 680.5 MHz;
 Duty Cycle: 1:3.55795

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 42.004$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 680.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/n71, 1 RB Low, Mid CH, Back face/Area Scan (111x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0246 W/kg

Flat Phantom, Ext Ant, d=10mm/n71, 1 RB Low, Mid CH, Back face/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.229 V/m; Power Drift = 0.26 dB

Peak SAR (extrapolated) = 0.0270 W/kg

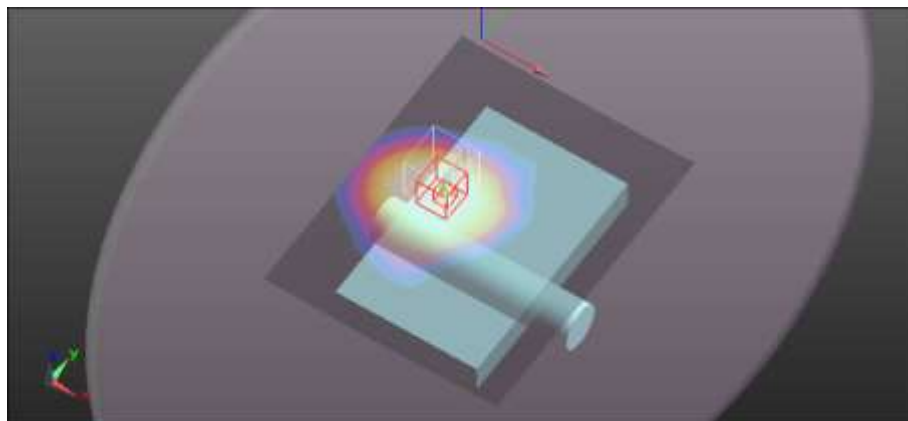
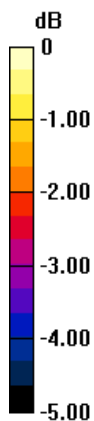
SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.016 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

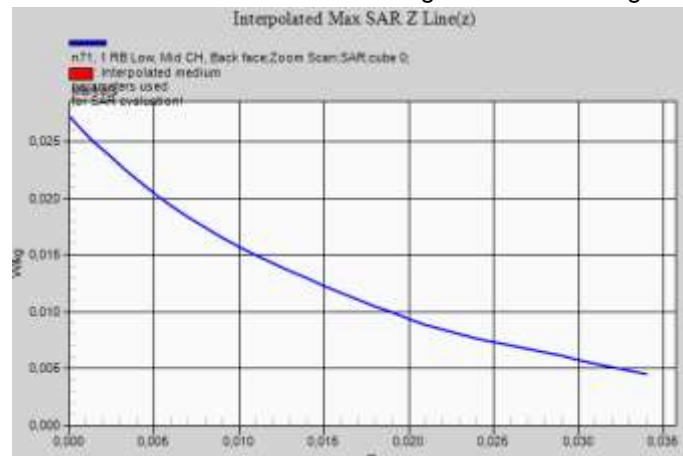
Ratio of SAR at M2 to SAR at M1 = 76.1%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0214 W/kg



0 dB = 0.0214 W/kg = -16.70 dBW/kg



Plot N° 34

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 21/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10866 - AAC, 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz); Frequency: 3750 MHz; Duty Cycle: 1:3.69913

Medium parameters used: $f = 3750$ MHz; $\sigma = 3.18$ S/m; $\epsilon_r = 38.39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7, 7, 7) @ 3750 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, External Ant CMX/n77, 1 RB Low, Mid CH, Back face/Area Scan (161x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0358 W/kg

Flat Phantom, d=0 mm, External Ant CMX/n77, 1 RB Low, Mid CH, Back face/Zoom Scan (16x15x7)/Cube

0: Measurement grid: dx=2mm, dy=2mm, dz=2mm

Reference Value = 2.349 V/m; Power Drift = -0.31 dB

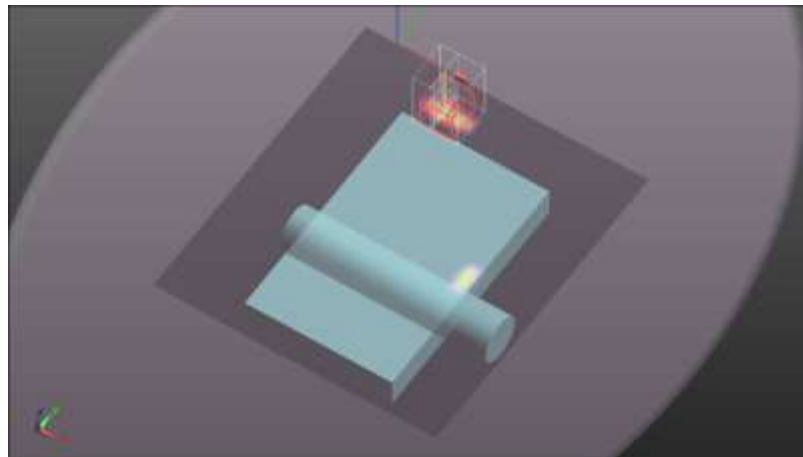
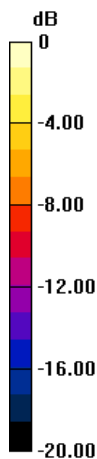
Peak SAR (extrapolated) = 0.105 W/kg

SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.00177 W/kg (SAR corrected for target medium)

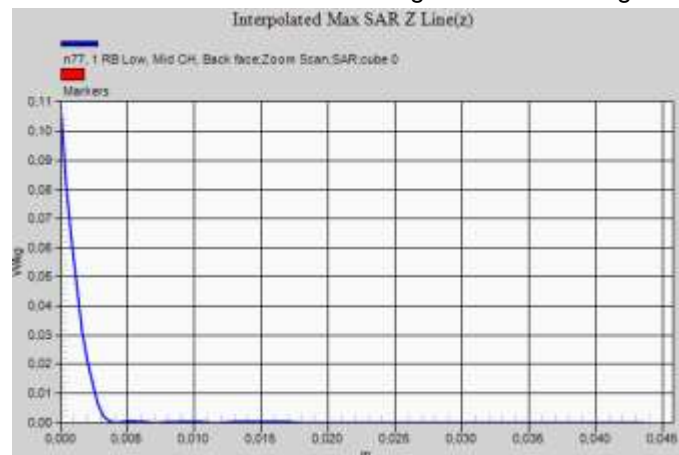
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 44.8%

Maximum value of SAR (measured) = 0.0294 W/kg



0 dB = 0.0294 W/kg = -15.32 dBW/kg



Plot Nº 35

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 21/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10866 - AAC, 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz); Frequency: 3750 MHz; Duty Cycle: 1:3.69913

Medium parameters used: $f = 3750$ MHz; $\sigma = 3.18$ S/m; $\epsilon_r = 38.39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7, 7, 7) @ 3750 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, Internal Ant CMX/n78, 1 RB Mid, High CH, Back face/Area Scan

(161x181x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0182 W/kg

Flat Phantom, d=0 mm, Internal Ant CMX/n78, 1 RB Mid, High CH, Back face/Zoom Scan (9x10x8)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 1.475 V/m; Power Drift = 0.33 dB

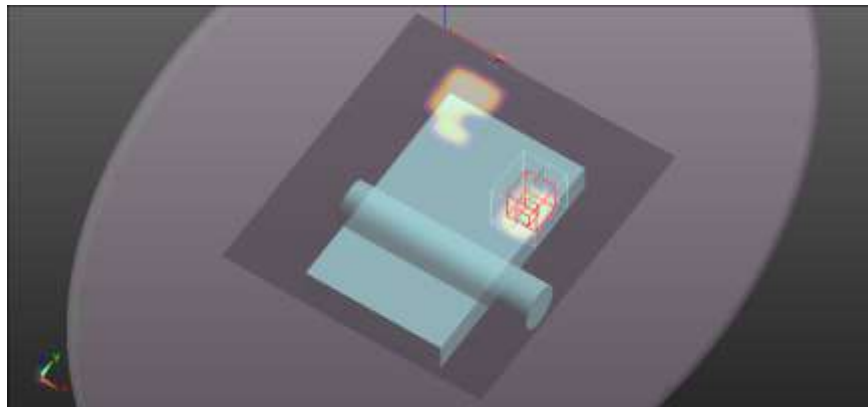
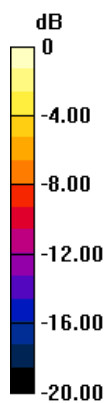
Peak SAR (extrapolated) = 0.0820 W/kg

SAR(1 g) = 0.00544 W/kg; SAR(10 g) = 0.00146 W/kg (SAR corrected for target medium)

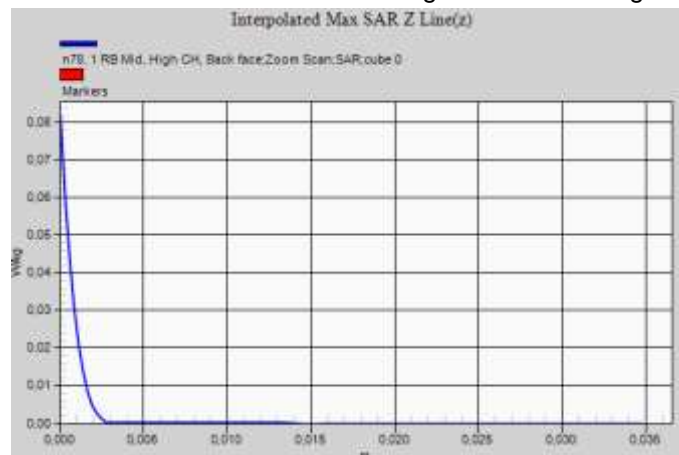
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 50.6%

Maximum value of SAR (measured) = 0.0138 W/kg



0 dB = 0.0138 W/kg = -18.60 dBW/kg



Plot Nº 36

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 08/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1744.9 MHz; Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 1744.9$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 40.895$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1744.9 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm - LTE Band 4/LTE 4, 1 RB High, High CH, Back face - SPOTCHECK/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0864 W/kg

Flat Phantom, Faces, d=10mm - LTE Band 4/LTE 4, 1 RB High, High CH, Back face - SPOTCHECK/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.613 V/m; Power Drift = 0.23 dB

Peak SAR (extrapolated) = 0.108 W/kg

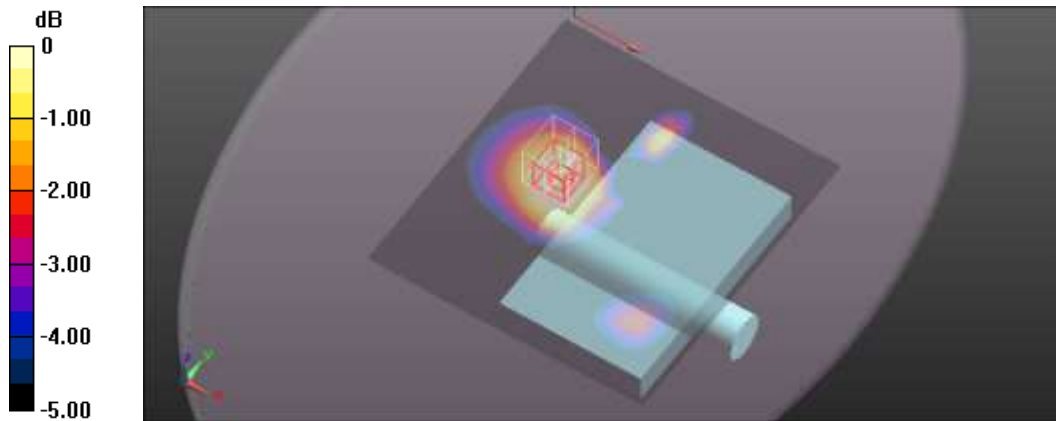
SAR(1 g) = 0.067 W/kg; SAR(10 g) = 0.042 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

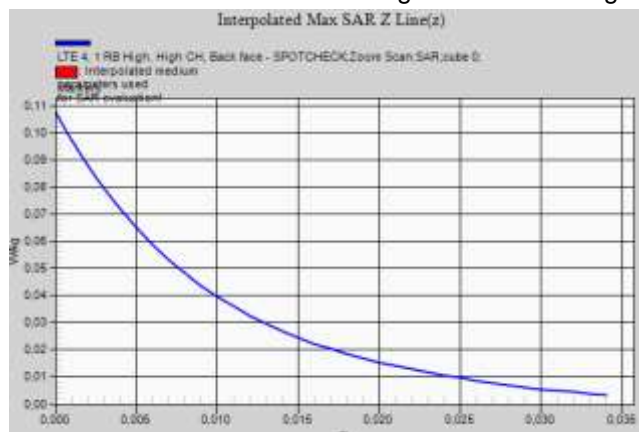
Ratio of SAR at M2 to SAR at M1 = 61.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0718 W/kg



0 dB = 0.0718 W/kg = -11.44 dBW/kg



Plot Nº 37

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 10/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2510 MHz;
 Duty Cycle: 1:3.74111

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.94$ S/m; $\epsilon_r = 40.47$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2510 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/LTE 7, 1 RB High, Low CH, Back face - SPOT CHECK/Area Scan (131x181x1):

Interpolated grid: $dx=1.200$ mm, $dy=1.200$ mm

Maximum value of SAR (interpolated) = 0.0630 W/kg

Flat Phantom, d=10 mm/LTE 7, 1 RB High, Low CH, Back face - SPOT CHECK/Zoom Scan (12x10x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.001 V/m; Power Drift = 0.37 dB

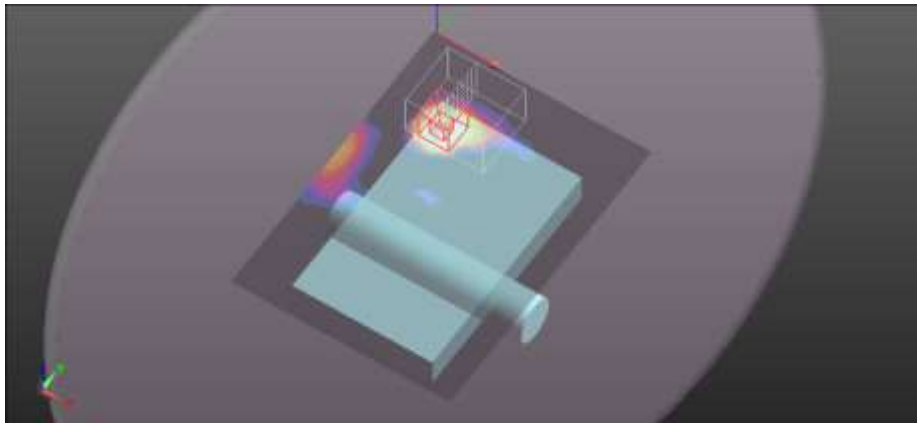
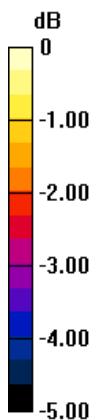
Peak SAR (extrapolated) = 0.0810 W/kg

SAR(1 g) = 0.045 W/kg; SAR(10 g) = 0.021 W/kg (SAR corrected for target medium)

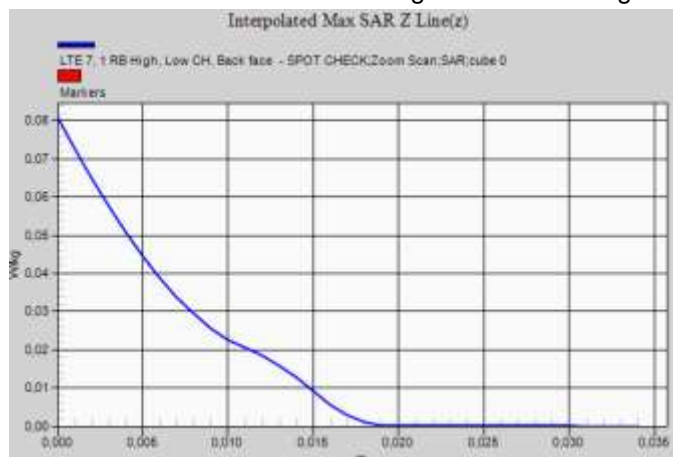
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 48.7%

Maximum value of SAR (measured) = 0.0506 W/kg



0 dB = 0.0506 W/kg = -12.96 dBW/kg



Plot Nº 38

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 01/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10175 - CAG, LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK); Frequency: 782 MHz;
 Duty Cycle: 1:3.73594

Medium parameters used (interpolated): $f = 782 \text{ MHz}$; $\sigma = 0.92 \text{ S/m}$; $\epsilon_r = 40.43$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 782 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 13, 1 RB Low, Mid CH, Back face - SPOTCHECK - ANT High/Area Scan (111x141x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.176 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 13, 1 RB Low, Mid CH, Back face - SPOTCHECK - ANT High/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.40 V/m ; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.182 W/kg

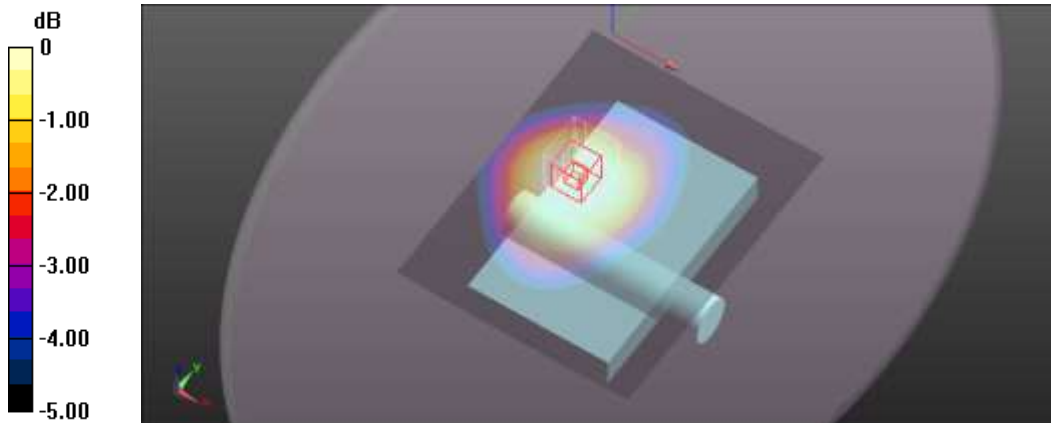
SAR(1 g) = 0.144 W/kg ; SAR(10 g) = 0.109 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 77.7%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.149 W/kg



0 dB = 0.149 W/kg = -8.27 dBW/kg



Plot N° 39

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 04/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz;
 Duty Cycle: 1:3.73852

Medium parameters used: $f = 1860$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 41.51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1860 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/LTE 25, 1 RB Low, Low CH, Back face - SPOTCHECK ANT High/Area Scan (131x141x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0445 W/kg

Flat Phantom, d=10mm/LTE 25, 1 RB Low, Low CH, Back face - SPOTCHECK ANT High/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.693 V/m; Power Drift = 0.19 dB

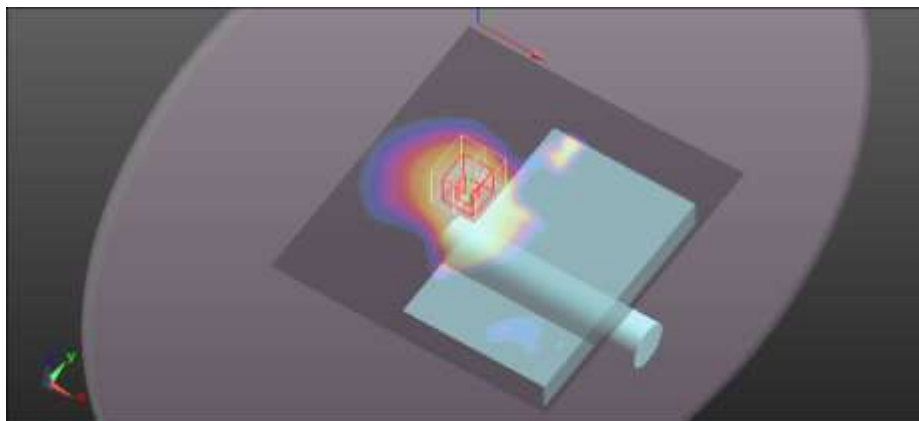
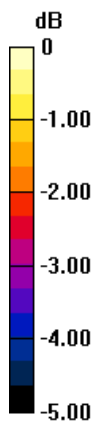
Peak SAR (extrapolated) = 0.0560 W/kg

SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.020 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

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

Maximum value of SAR (measured) = 0.0347 W/kg



0 dB = 0.0347 W/kg = -14.60 dBW/kg



Plot Nº 40

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 02/12/2020

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10181 - CAE, LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK); Frequency: 831.5 MHz;
 Duty Cycle: 1:3.7368

Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.89$ S/m; $\epsilon_r = 42.43$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 831.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/LTE 26, 1 RB Low, Mid CH, Back face - SPOTCHECK - ANT High/Area Scan (111x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.136 W/kg

Flat Phantom, Ext Ant, d=10mm/LTE 26, 1 RB Low, Mid CH, Back face - SPOTCHECK - ANT High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.13 V/m; Power Drift = 0.34 dB

Peak SAR (extrapolated) = 0.155 W/kg

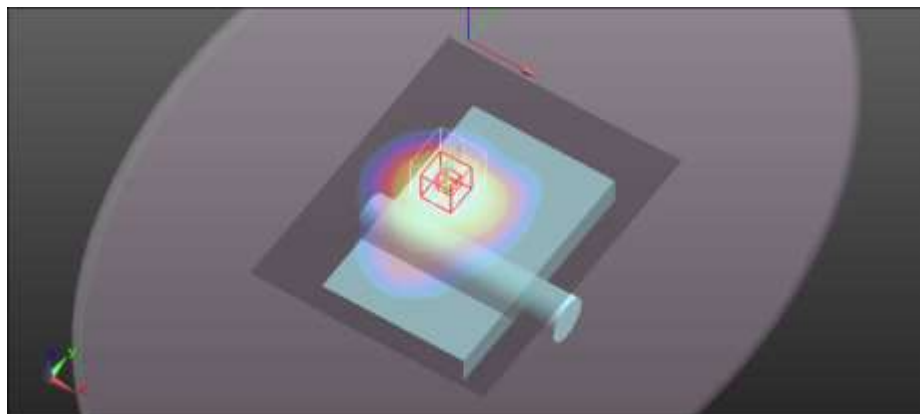
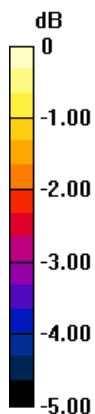
SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.084 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

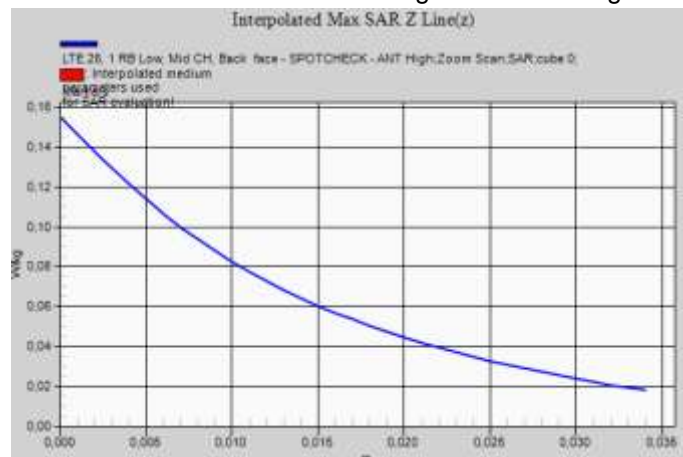
Ratio of SAR at M2 to SAR at M1 = 75.4%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.121 W/kg



0 dB = 0.121 W/kg = -9.17 dBW/kg



Plot Nº 41

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 18/02/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10172 - CAG, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3410 MHz;

Duty Cycle: 1:8.33105

Medium parameters used: $f = 3410$ MHz; $\sigma = 2.73$ S/m; $\epsilon_r = 39.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3410 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, External Ant/LTE 42, 1 RB Low, Low CH, Back face SPOTCHECK/Area Scan (131x181x1):

Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0381 W/kg

Flat Phantom, d=0 mm, External Ant/LTE 42, 1 RB Low, Low CH, Back face SPOTCHECK/Zoom Scan (9x9x8)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=4mm

Reference Value = 2.729 V/m; Power Drift = -0.13 dB

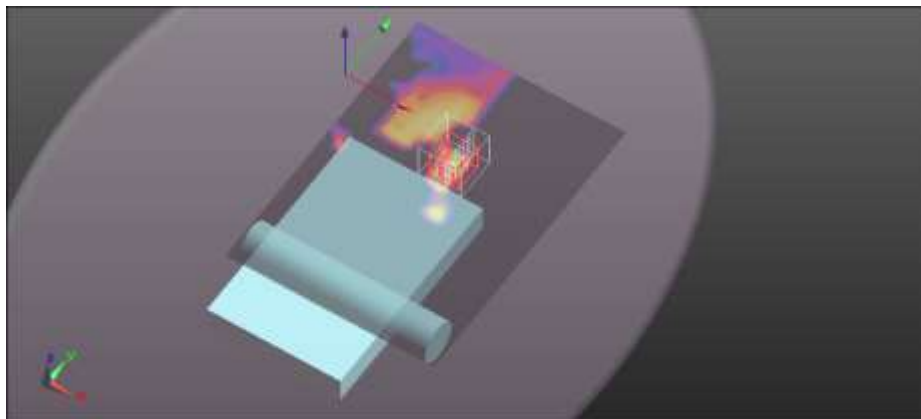
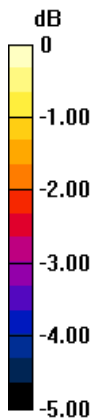
Peak SAR (extrapolated) = 0.0920 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00532 W/kg (SAR corrected for target medium)

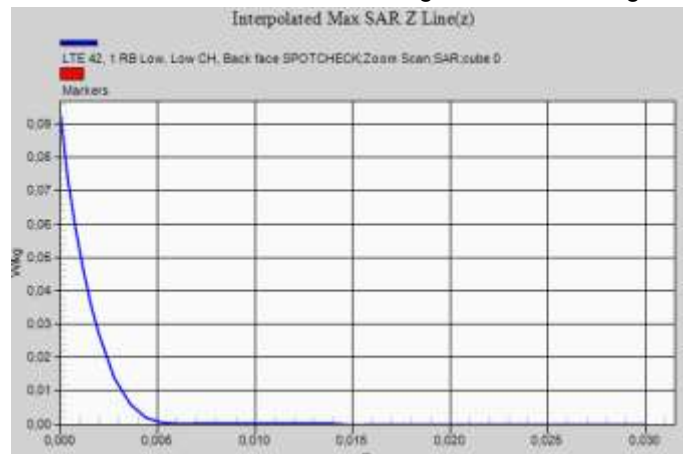
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 32.9%

Maximum value of SAR (measured) = 0.0271 W/kg



0 dB = 0.0271 W/kg = -15.67 dBW/kg



Plot N° 42

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 18/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 0, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz) (0); Frequency: 834 MHz; Duty Cycle: 1:3.55795

Medium parameters used (interpolated): $f = 834 \text{ MHz}$; $\sigma = 0.908 \text{ S/m}$; $\epsilon_r = 42.102$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 834 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/SPOT-CHECKING-n5, 1 RB Low, Low CH, Back face 2/Area Scan (111x141x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0685 W/kg

Flat Phantom, Ext Ant, d=10mm/SPOT-CHECKING-n5, 1 RB Low, Low CH, Back face 2/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 6.649 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.0770 W/kg

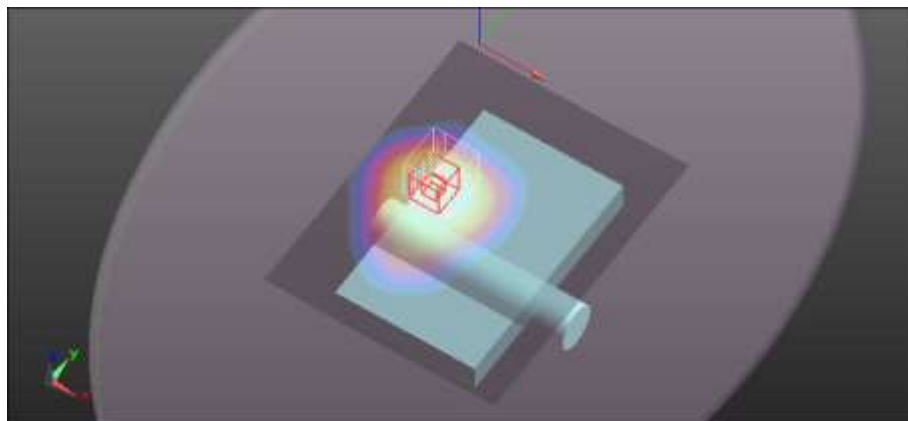
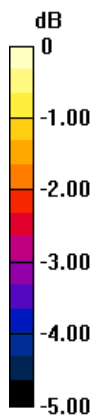
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.042 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

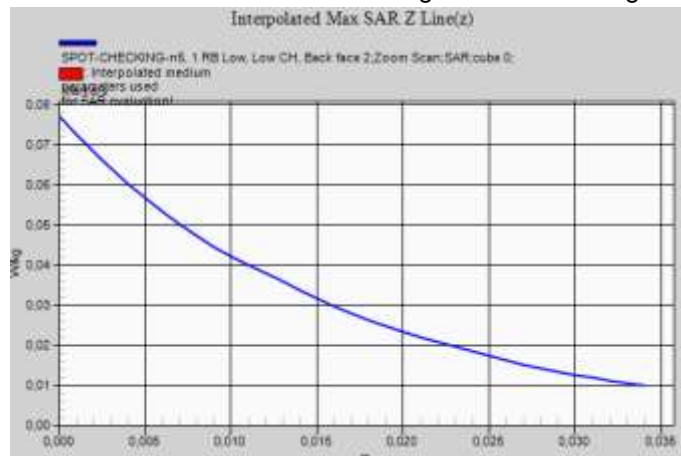
Ratio of SAR at M2 to SAR at M1 = 74.8%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0603 W/kg



0 dB = 0.0603 W/kg = -12.20 dBW/kg



Plot N° 43

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 27/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10931 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz); Frequency: 2510 MHz; Duty Cycle: 1:3.55795

Medium parameters used: $f = 2510$ MHz; $\sigma = 1.89$ S/m; $\epsilon_r = 40.52$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2510 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm/n7, 1 RB Low, Low CH, Back face - SPOTCHECK ANT HIGH/Area Scan

(161x181x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0350 W/kg

Flat Phantom, d=10 mm/n7, 1 RB Low, Low CH, Back face - SPOTCHECK ANT HIGH/Zoom Scan

(11x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.355 V/m; Power Drift = 0.25 dB

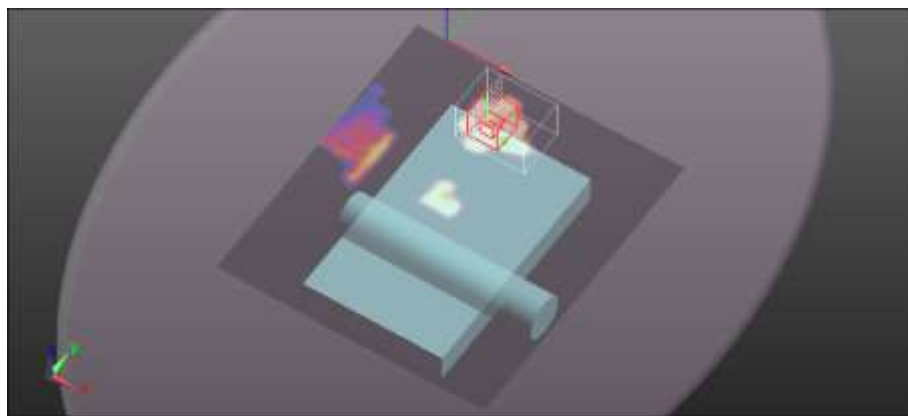
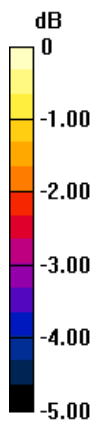
Peak SAR (extrapolated) = 0.0510 W/kg

SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00862 W/kg (SAR corrected for target medium)

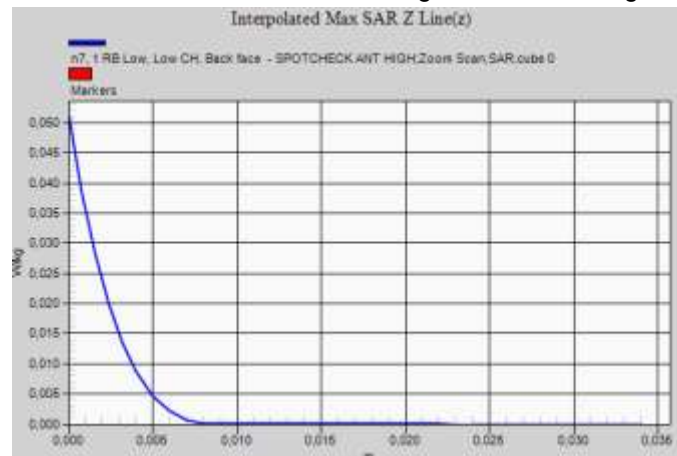
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 42.8%

Maximum value of SAR (measured) = 0.0241 W/kg



0 dB = 0.0241 W/kg = -16.18 dBW/kg



Plot N° 44

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 23/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10931 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz); Frequency: 1895 MHz; Duty Cycle: 1:3.55795

Medium parameters used (interpolated): $f = 1895$ MHz; $\sigma = 1.41$ S/m; $\epsilon_r = 40.765$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1895 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10mm/n25, 1 RB Mid, High CH, Back face - SPOTCHECK ANTHIGH/Area Scan (131x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0203 W/kg

Flat Phantom, d=10mm/n25, 1 RB Mid, High CH, Back face - SPOTCHECK ANTHIGH/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.251 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.0330 W/kg

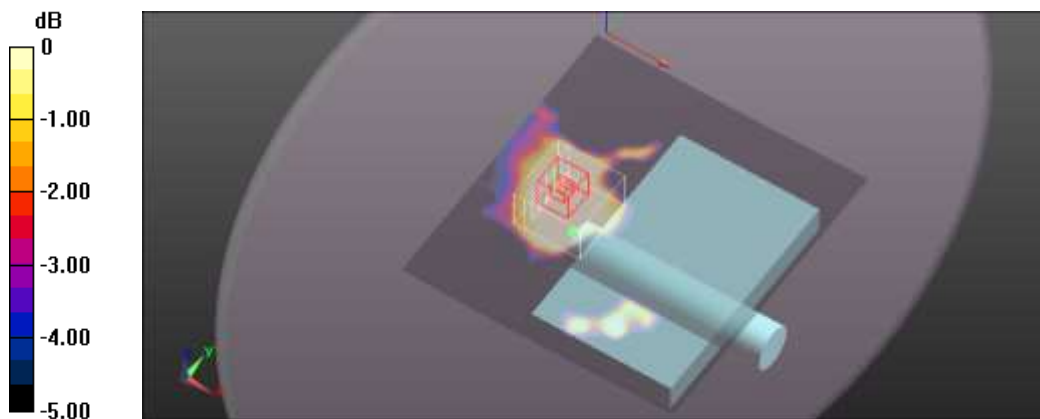
SAR(1 g) = 0.012 W/kg; SAR(10 g) = 0.00702 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

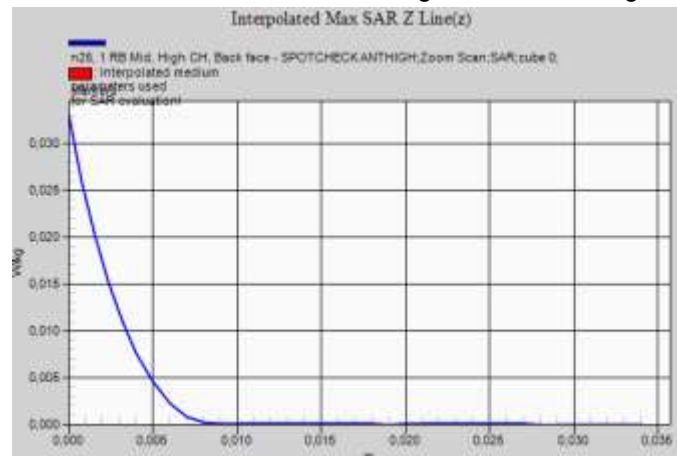
Ratio of SAR at M2 to SAR at M1 = 55.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0134 W/kg



0 dB = 0.0134 W/kg = -18.73 dBW/kg



Plot Nº 45

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10934 - AAA, 5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz); Frequency: 1745 MHz; Duty Cycle: 1:3.55877

Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.39$ S/m; $\epsilon_r = 40.83$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1745 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Faces, d=10mm 2021-03-22/n66, 1 RB Mid, Mid CH, Back face - SPOT CHECKING/Area Scan (131x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0374 W/kg

Flat Phantom, Faces, d=10mm 2021-03-22/n66, 1 RB Mid, Mid CH, Back face - SPOT CHECKING/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.581 V/m; Power Drift = 0.23 dB

Peak SAR (extrapolated) = 0.0460 W/kg

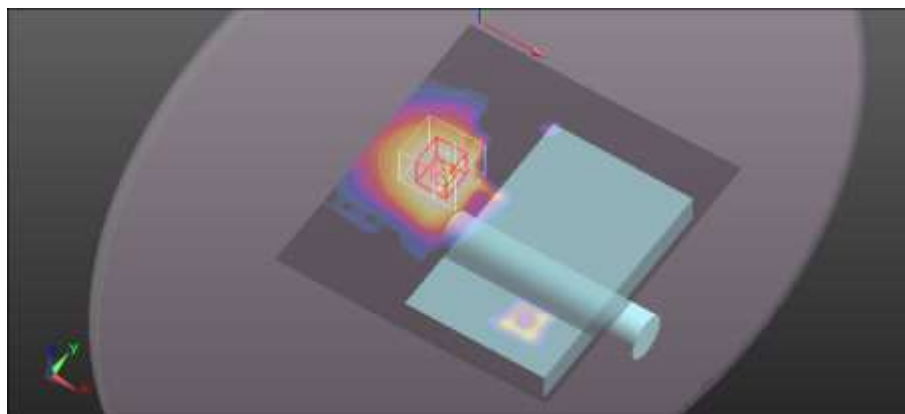
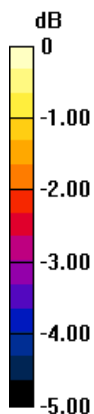
SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.017 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

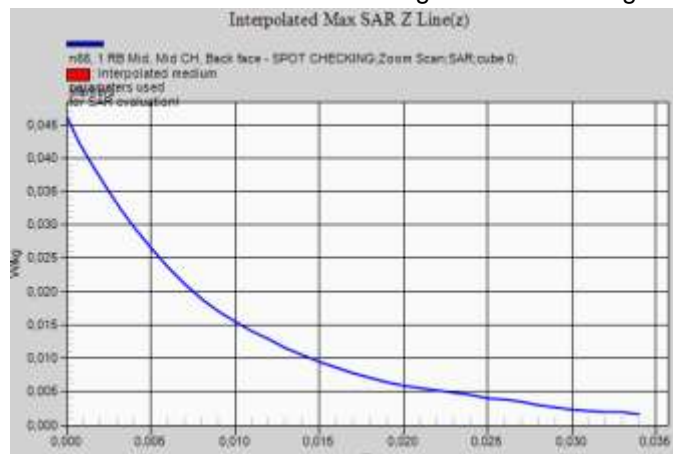
Ratio of SAR at M2 to SAR at M1 = 56.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0294 W/kg



0 dB = 0.0294 W/kg = -15.32 dBW/kg



Plot Nº 46

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 17/03/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 0, 5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz) (0); Frequency: 680.5 MHz; Duty Cycle: 1:3.81768

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.85$ S/m; $\epsilon_r = 42.004$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 680.5 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, Ext Ant, d=10mm/n71, 1 RB Low, Mid CH, Back face - Spot Checking ANT HIGH/Area Scan (111x141x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0211 W/kg

Flat Phantom, Ext Ant, d=10mm/n71, 1 RB Low, Mid CH, Back face - Spot Checking ANT HIGH/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.797 V/m; Power Drift = -0.34 dB

Peak SAR (extrapolated) = 0.0250 W/kg

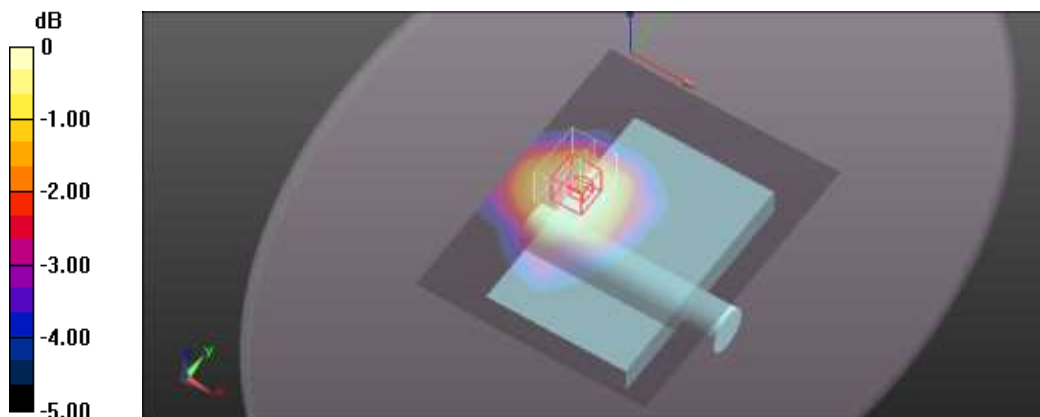
SAR(1 g) = 0.019 W/kg; SAR(10 g) = 0.015 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

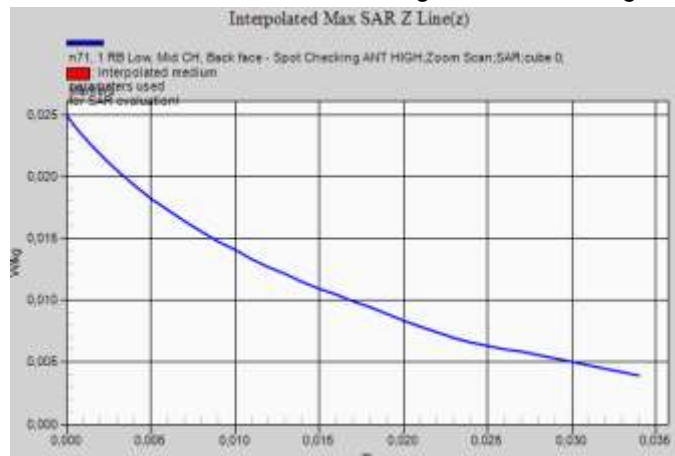
Ratio of SAR at M2 to SAR at M1 = 76%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0197 W/kg



0 dB = 0.0197 W/kg = -17.06 dBW/kg



Plot Nº 47

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 21/04/2021

DUT: Harman Wave; Type: Shark fin Antenna; Serial: IMEI:350117360015455

Communication System: UID 10866 - AAC, 5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz); Frequency: 3750 MHz; Duty Cycle: 1:3.69913

Medium parameters used: $f = 3750$ MHz; $\sigma = 3.18$ S/m; $\epsilon_r = 38.39$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7, 7, 7) @ 3750 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=0 mm, External Ant CMX/n77, 1 RB Low, Mid CH, Back face, SPOTCHECK/Area Scan (161x181x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0341 W/kg

Flat Phantom, d=0 mm, External Ant CMX/n77, 1 RB Low, Mid CH, Back face, SPOTCHECK/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 2.293 V/m; Power Drift = -0.34 dB

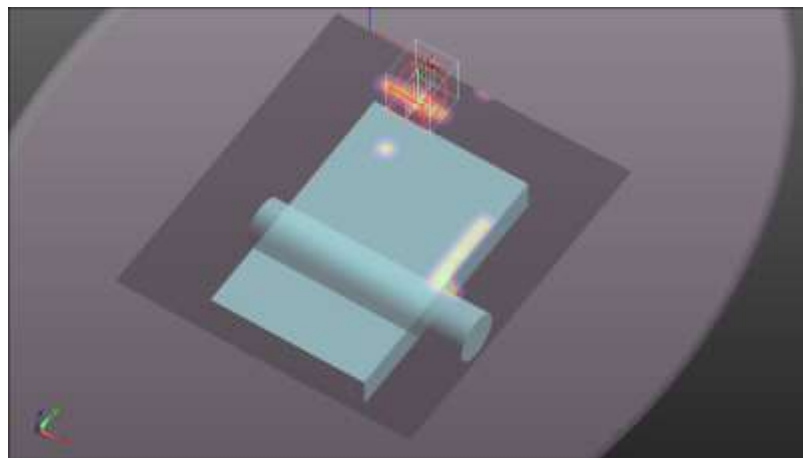
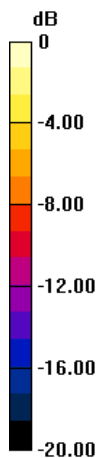
Peak SAR (extrapolated) = 0.0760 W/kg

SAR(1 g) = 0.00892 W/kg; SAR(10 g) = 0.00154 W/kg (SAR corrected for target medium)

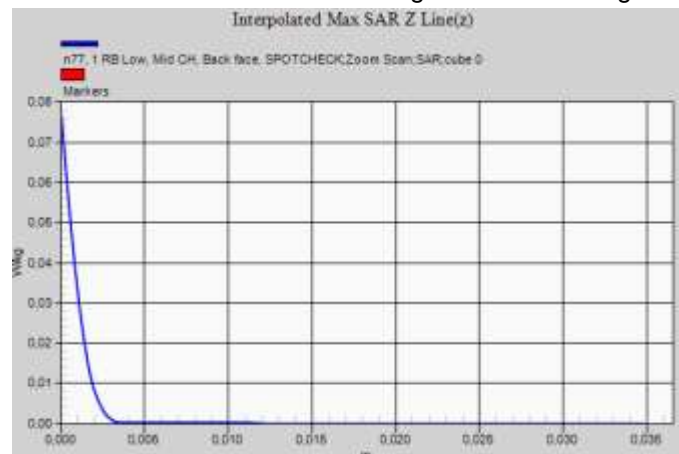
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 51.7%

Maximum value of SAR (measured) = 0.0323 W/kg



0 dB = 0.0323 W/kg = -14.91 dBW/kg



Appendix D: System Validation Reports

Validation results in 750 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 30/11/2020

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.9 \text{ S/m}$; $\epsilon_r = 40.46$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 750 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 750MHz, 2020-11-30/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
 Maximum value of SAR (interpolated) = 2.64 W/kg

Configuration 750MHz, 2020-11-30/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

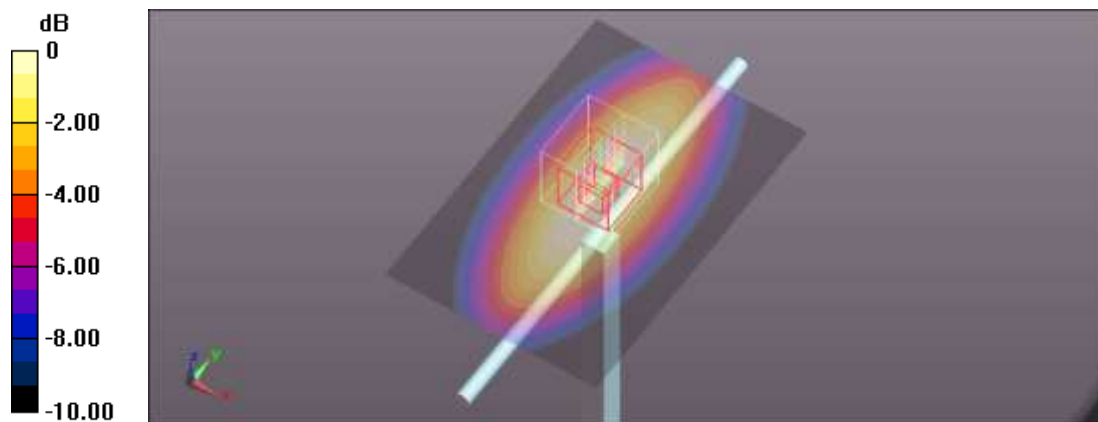
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 52.76 V/m ; Power Drift = 0.01 dB
 Peak SAR (extrapolated) = 3.19 W/kg

SAR(1 g) = 2.13 W/kg; SAR(10 g) = 1.4 W/kg (SAR corrected for target medium)

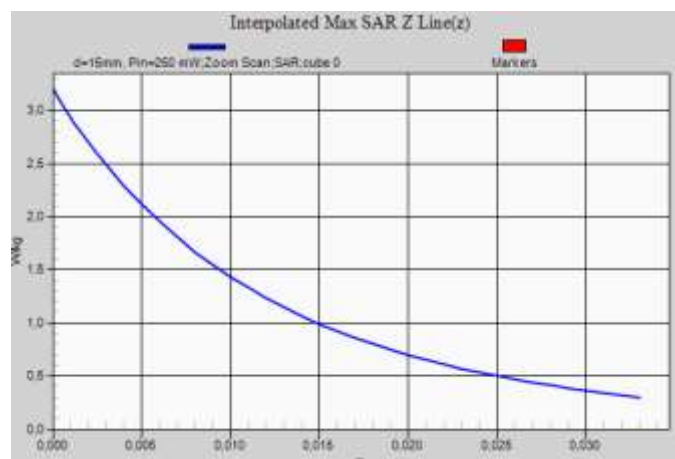
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 67%

Maximum value of SAR (measured) = 2.49 W/kg



0 dB = 2.49 W/kg = 3.96 dBW/kg



Validation results in 750 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 16/03/2021

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1036

Communication System: UID 0, CW (0); Frequency: 750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.9 \text{ S/m}$; $\epsilon_r = 40.81$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.84, 9.84, 9.84) @ 750 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 750MHz, 2021-03-16/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.63 W/kg

Configuration 750MHz, 2021-03-16/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 52.24 V/m ; Power Drift = -0.06 dB

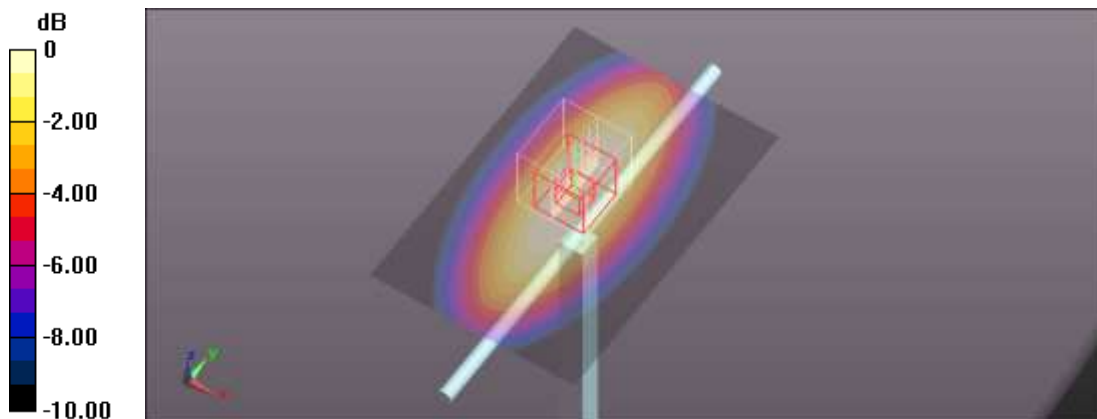
Peak SAR (extrapolated) = 3.12 W/kg

SAR(1 g) = 2.07 W/kg ; SAR(10 g) = 1.37 W/kg (SAR corrected for target medium)

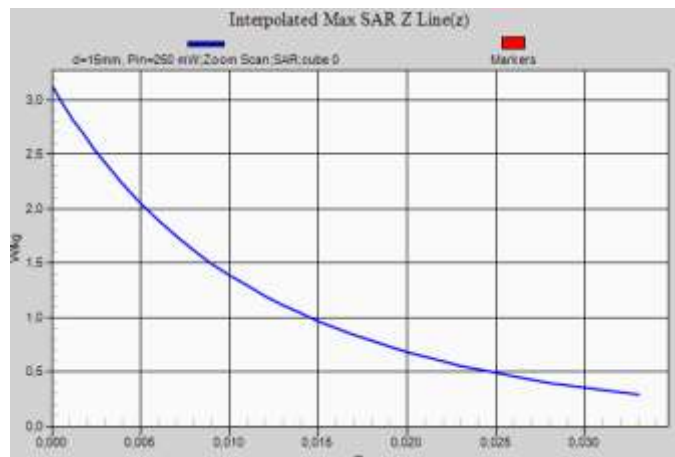
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 66.7%

Maximum value of SAR (measured) = 2.42 W/kg



0 dB = $2.42 \text{ W/kg} = 3.84 \text{ dBW/kg}$



Validation results in 900 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 01/12/2020

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007

Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.95 \text{ S/m}$; $\epsilon_r = 41.23$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 900 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 900MHz, 2020-12-01/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 3.39 W/kg

Configuration 900MHz, 2020-12-01/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.49 V/m ; Power Drift = 0.34 dB

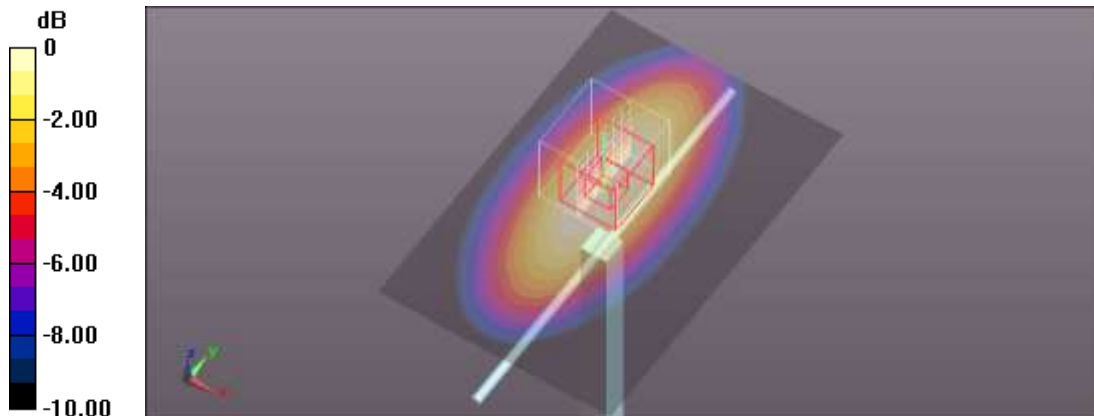
Peak SAR (extrapolated) = 4.21 W/kg

SAR(1 g) = 2.82 W/kg ; SAR(10 g) = 1.82 W/kg (SAR corrected for target medium)

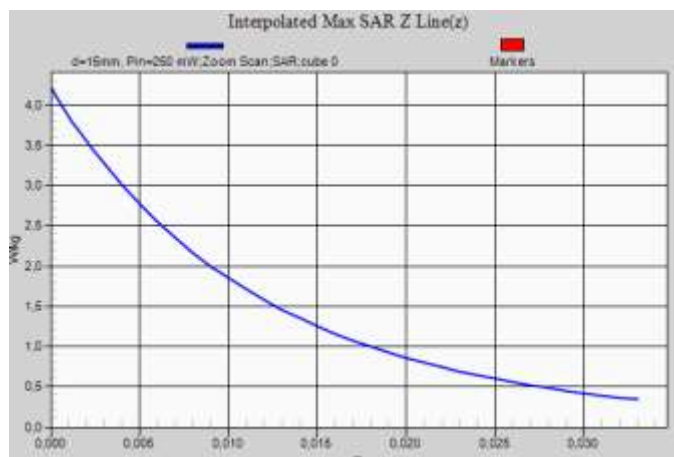
Smallest distance from peaks to all points 3 dB below = 21.2 mm

Ratio of SAR at M2 to SAR at M1 = 66.2%

Maximum value of SAR (measured) = 3.27 W/kg



0 dB = 3.27 W/kg = 5.15 dBW/kg



Validation results in 900 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 21/12/2020

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007

Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.97 \text{ S/m}$; $\epsilon_r = 41.67$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 900 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 900MHz, 2020-12-21/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 3.33 W/kg

Configuration 900MHz, 2020-12-21/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.03 V/m ; Power Drift = 0.06 dB

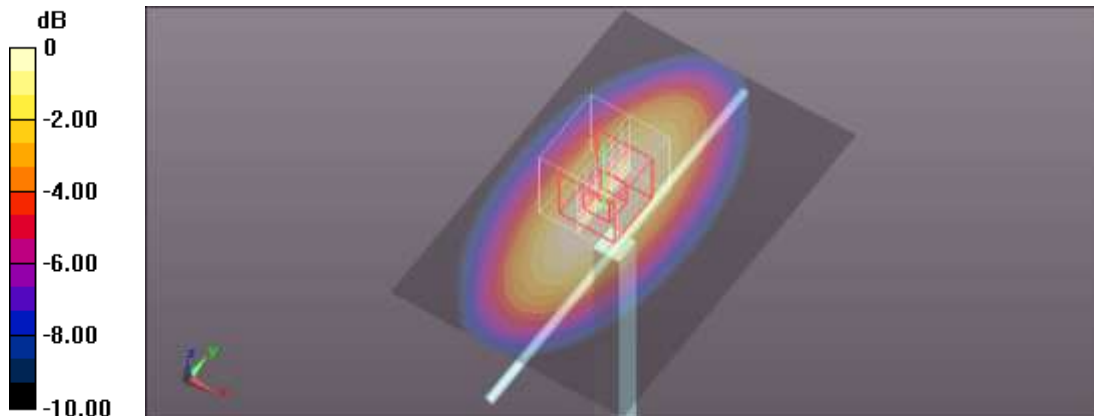
Peak SAR (extrapolated) = 4.08 W/kg

SAR(1 g) = 2.68 W/kg ; SAR(10 g) = 1.72 W/kg (SAR corrected for target medium)

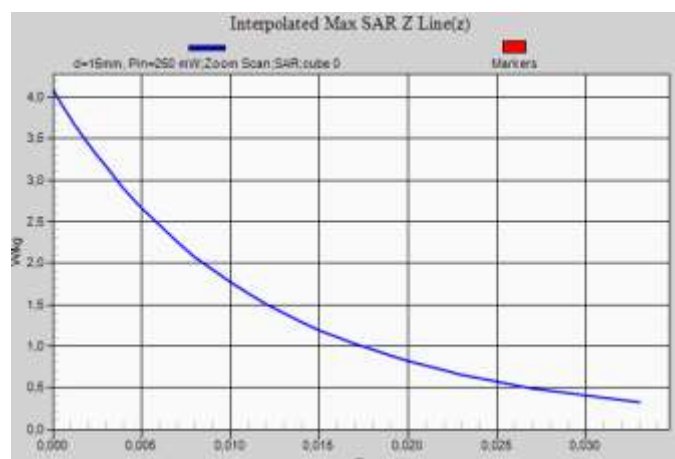
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 65.9%

Maximum value of SAR (measured) = 3.16 W/kg



0 dB = 3.16 W/kg = 5.00 dBW/kg



Validation results in 900 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 17/03/2021

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d007

Communication System: UID 0, CW; Frequency: 900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 900$ MHz; $\sigma = 0.97$ S/m; $\epsilon_r = 41.27$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(9.43, 9.43, 9.43) @ 900 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 900MHz, 2021-03-17/d=15mm, Pin=250 mW/Area Scan (61x91x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

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

Configuration 900MHz, 2021-03-17/d=15mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 57.55 V/m; Power Drift = 0.01 dB

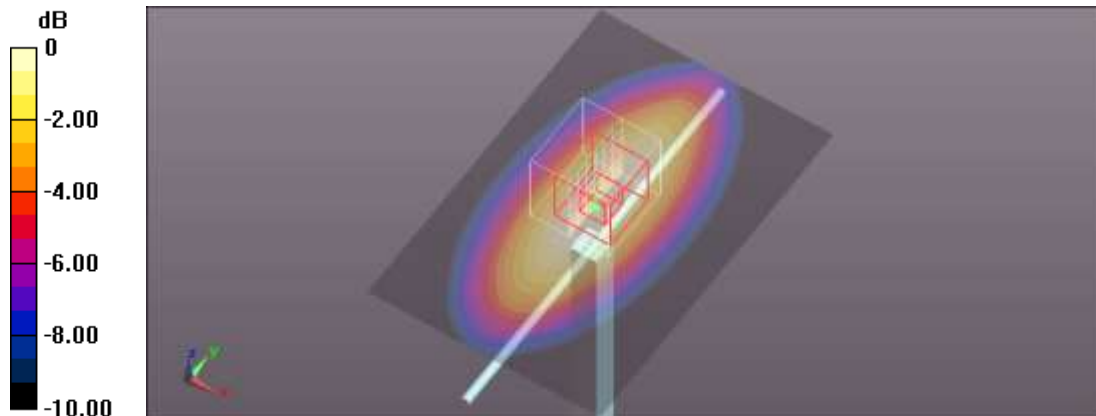
Peak SAR (extrapolated) = 4.22 W/kg

SAR(1 g) = 2.77 W/kg; SAR(10 g) = 1.78 W/kg (SAR corrected for target medium)

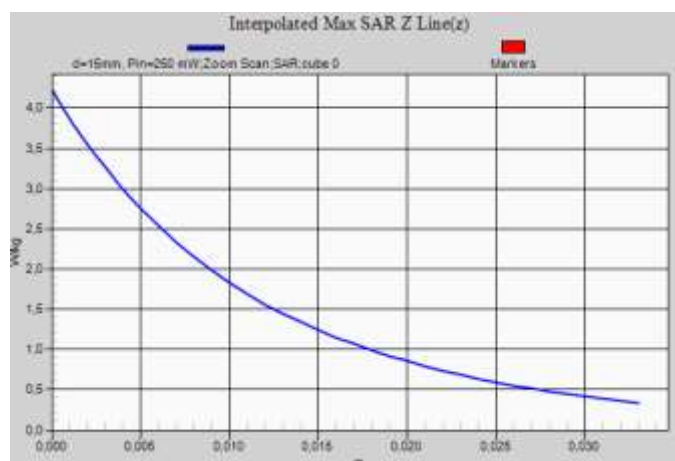
Smallest distance from peaks to all points 3 dB below = 18.8 mm

Ratio of SAR at M2 to SAR at M1 = 65.9%

Maximum value of SAR (measured) = 3.25 W/kg



0 dB = 3.25 W/kg = 5.12 dBW/kg



Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 03/12/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1800$ MHz; $\sigma = 1.46$ S/m; $\epsilon_r = 41.42$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY5 Configuration:

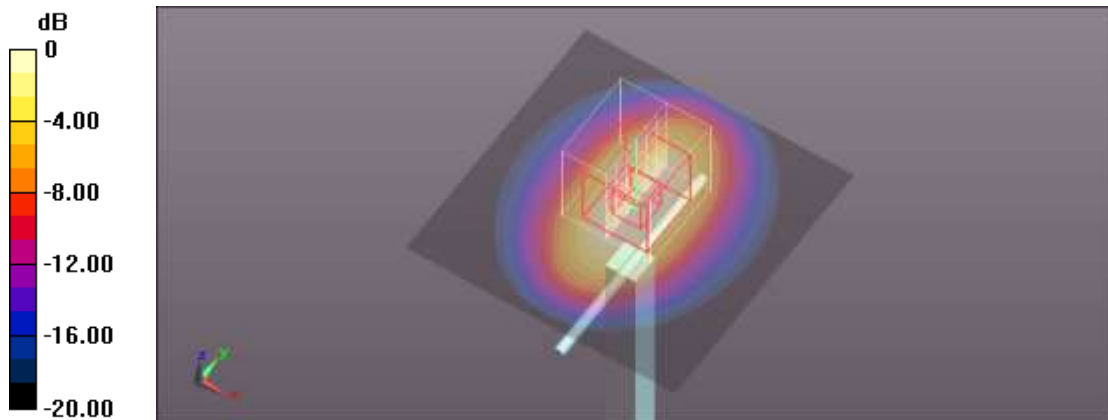
- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1700), 2020-12-03/d=10mm, Pin=250 mW/Area Scan (91x91x1):

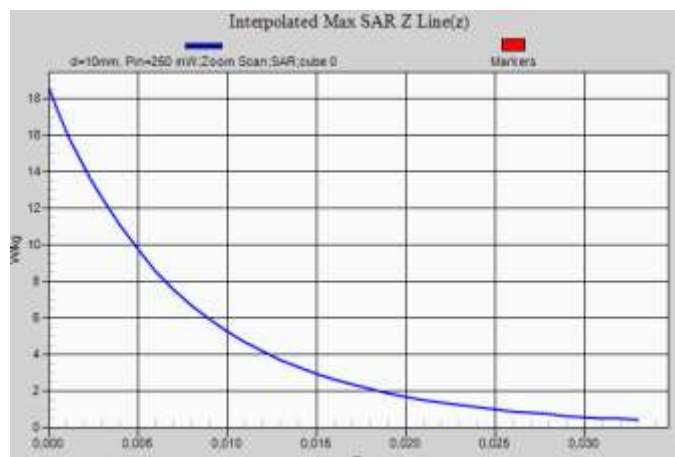
Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
 Maximum value of SAR (interpolated) = 13.7 W/kg

Configuration 1800MHz(1700), 2020-12-03/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
 Reference Value = 91.99 V/m; Power Drift = 0.03 dB
 Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 9.74 W/kg; SAR(10 g) = 5.01 W/kg (SAR corrected for target medium)
 Smallest distance from peaks to all points 3 dB below = 11 mm
 Ratio of SAR at M2 to SAR at M1 = 53.3%
 Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg



Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 12/01/2021

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.41$ S/m; $\epsilon_r = 40.63$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1700), 2020-01-12/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 13.3 W/kg

Configuration 1800MHz(1700), 2020-01-12/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.94 V/m; Power Drift = -0.00 dB

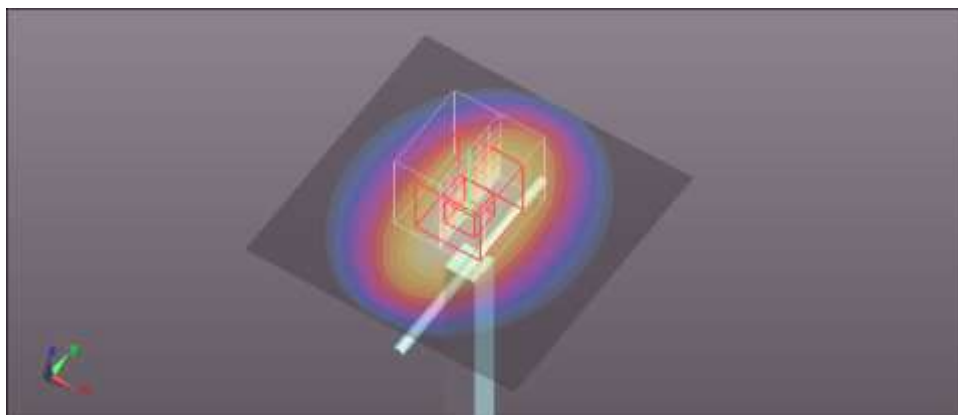
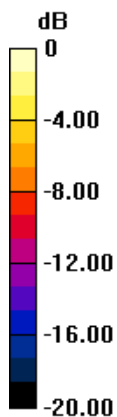
Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 9.52 W/kg; SAR(10 g) = 4.85 W/kg (SAR corrected for target medium)

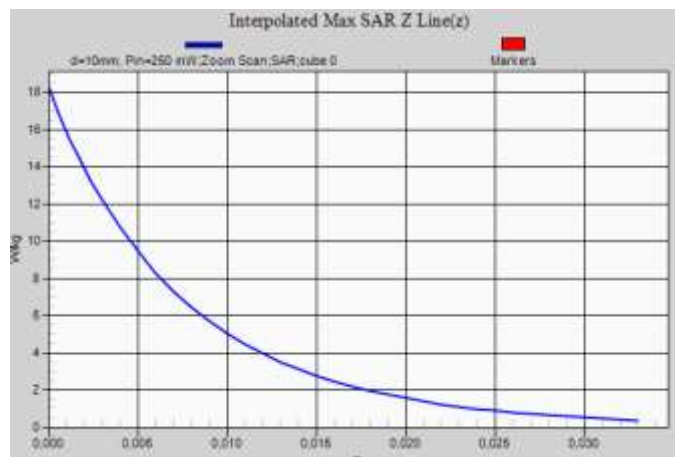
Smallest distance from peaks to all points 3 dB below = 11 mm

Ratio of SAR at M2 to SAR at M1 = 52.7%

Maximum value of SAR (measured) = 12.2 W/kg



0 dB = 12.2 W/kg = 10.86 dBW/kg

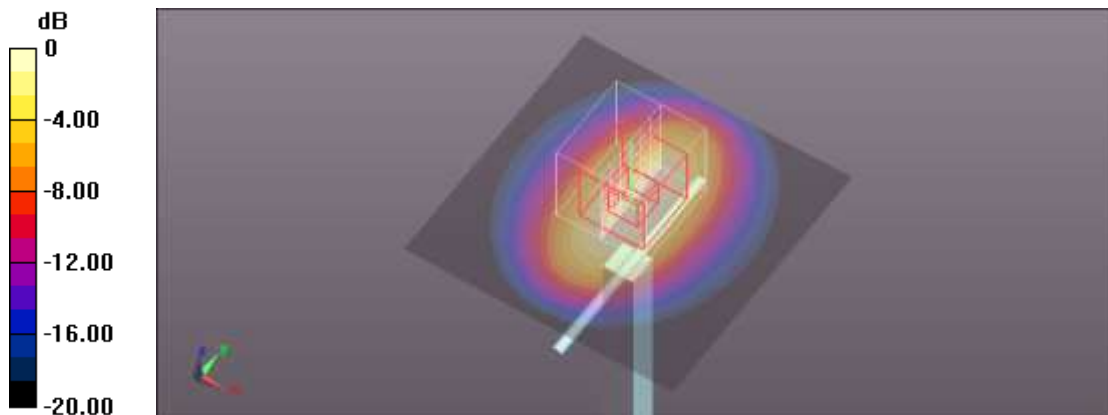


Validation results in 1800 MHz Band for Head TSL

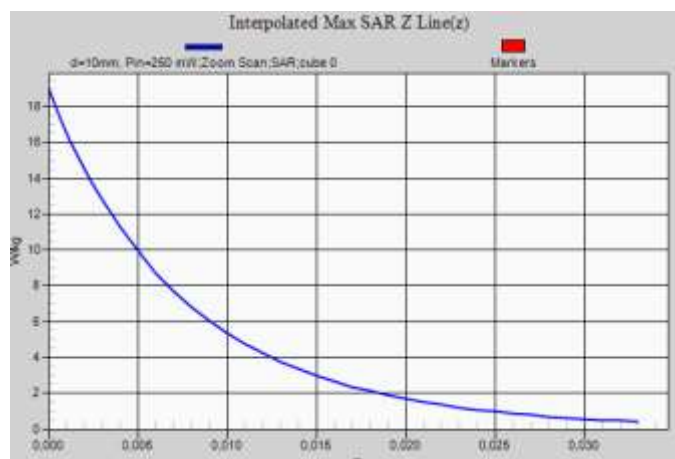
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 18/03/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
 Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1800$ MHz; $\sigma = 1.44$ S/m; $\epsilon_r = 40.82$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section
 DASY5 Configuration:
 - Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
 - Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
 - Electronics: DAE4 Sn669; Calibrated: 19/08/2020
 - Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
 - Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1700), 2021-03-18/d=10mm, Pin=250 mW/Area Scan (91x91x1):
 Interpolated grid: dx=1.000 mm, dy=1.000 mm
 Maximum value of SAR (interpolated) = 13.9 W/kg

Configuration 1800MHz(1700), 2021-03-18/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
 Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 94.18 V/m; Power Drift = -0.01 dB
 Peak SAR (extrapolated) = 18.9 W/kg
SAR(1 g) = 9.99 W/kg; SAR(10 g) = 5.15 W/kg (SAR corrected for target medium)
 Smallest distance from peaks to all points 3 dB below = 11 mm
 Ratio of SAR at M2 to SAR at M1 = 53.3%
 Maximum value of SAR (measured) = 12.8 W/kg



0 dB = 12.8 W/kg = 11.07 dBW/kg

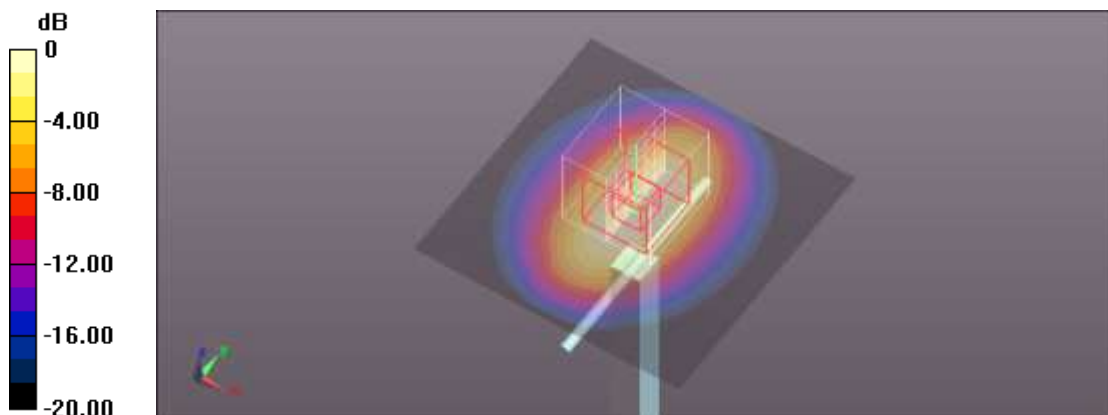


Validation results in 1800 MHz Band for Head TSL

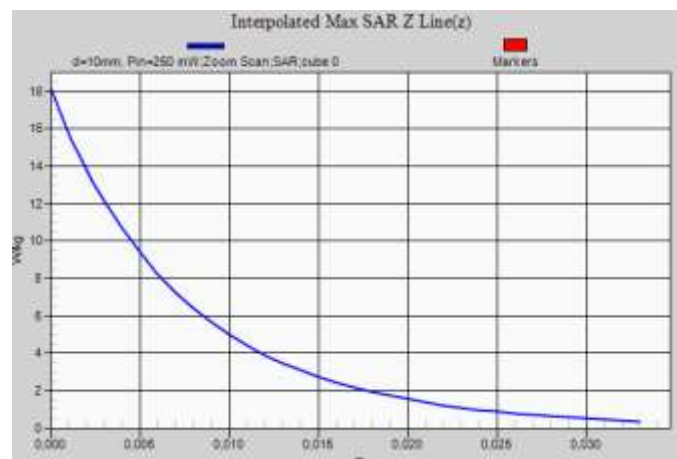
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/03/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
 Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1800$ MHz; $\sigma = 1.45$ S/m; $\epsilon_r = 40.74$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section
 DASY5 Configuration:
 - Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
 - Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
 - Electronics: DAE4 Sn669; Calibrated: 19/08/2020
 - Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
 - Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1700), 2021-03-22/d=10mm, Pin=250 mW/Area Scan (91x91x1):
 Interpolated grid: dx=1.000 mm, dy=1.000 mm
 Maximum value of SAR (interpolated) = 13.0 W/kg

Configuration 1800MHz(1700), 2021-03-22/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
 Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 92.74 V/m; Power Drift = -0.13 dB
 Peak SAR (extrapolated) = 18.1 W/kg
SAR(1 g) = 9.44 W/kg; SAR(10 g) = 4.83 W/kg (SAR corrected for target medium)
 Smallest distance from peaks to all points 3 dB below = 11 mm
 Ratio of SAR at M2 to SAR at M1 = 52.6%
 Maximum value of SAR (measured) = 12.2 W/kg



0 dB = 12.2 W/kg = 10.86 dBW/kg



Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 03/12/2020

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.38$ S/m; $\epsilon_r = 41.64$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1900), 2020-12-03/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 13.0 W/kg

Configuration 1800MHz(1900), 2020-12-03/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 92.75 V/m; Power Drift = 0.05 dB

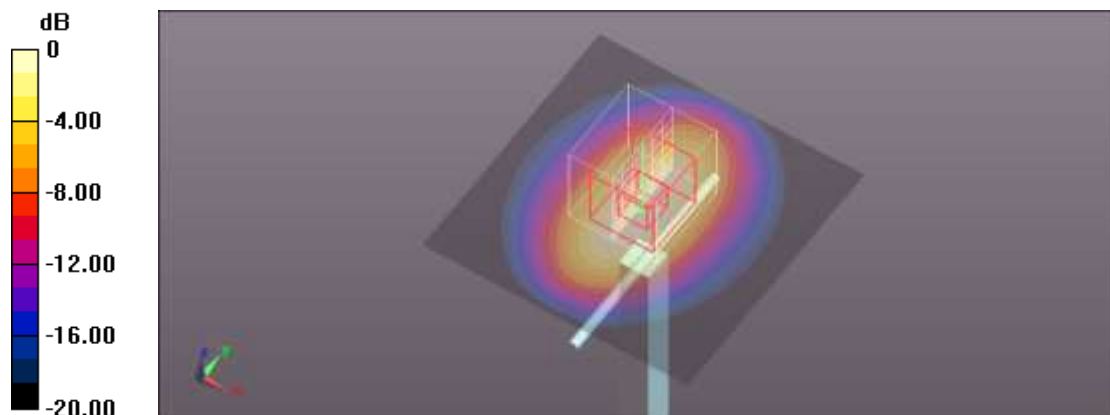
Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.5 W/kg; SAR(10 g) = 4.84 W/kg (SAR corrected for target medium)

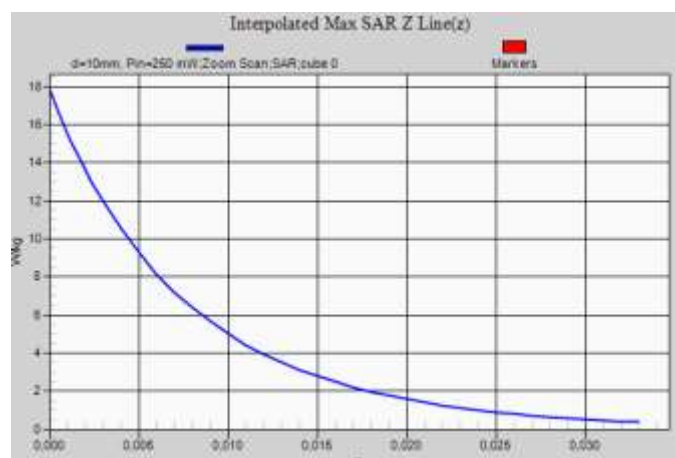
Smallest distance from peaks to all points 3 dB below = 11 mm

Ratio of SAR at M2 to SAR at M1 = 53.1%

Maximum value of SAR (measured) = 12.0 W/kg



0 dB = 12.0 W/kg = 10.79 dBW/kg

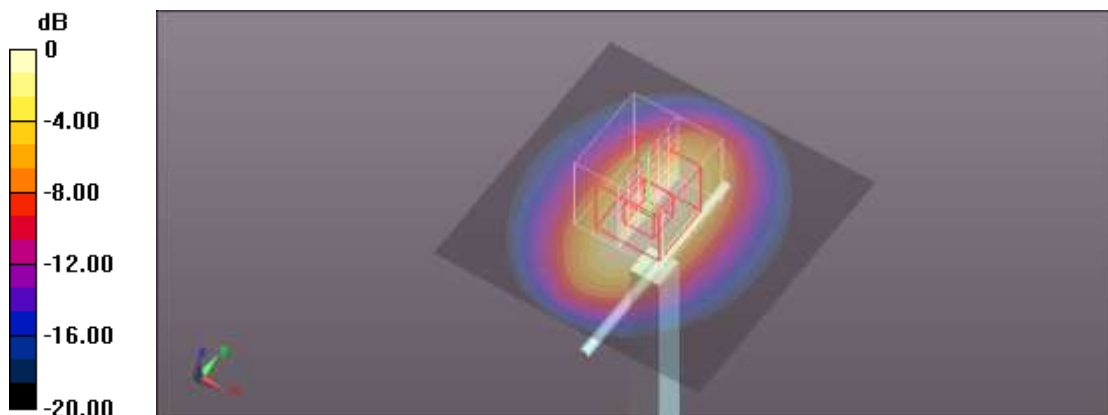


Validation results in 1800 MHz Band for Head TSL

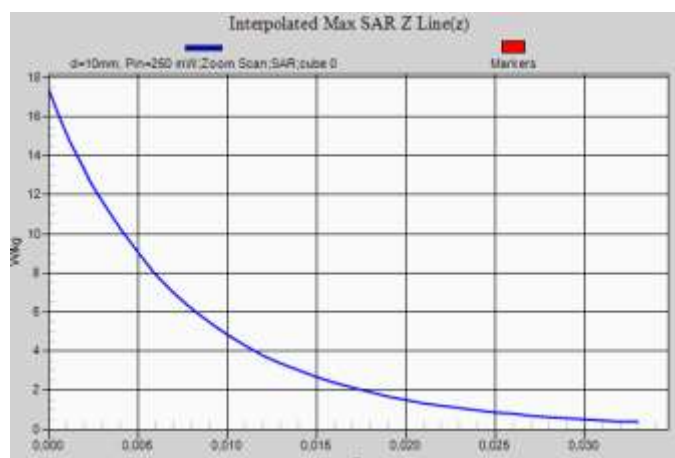
Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 13/01/2021
DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099
 Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1800$ MHz; $\sigma = 1.36$ S/m; $\epsilon_r = 41.46$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section
 DASY5 Configuration:
 - Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
 - Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
 - Electronics: DAE4 Sn669; Calibrated: 19/08/2020
 - Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
 - Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1900), 2020-01-13/d=10mm, Pin=250 mW/Area Scan (91x91x1):
 Interpolated grid: dx=1.000 mm, dy=1.000 mm
 Maximum value of SAR (interpolated) = 12.7 W/kg

Configuration 1800MHz(1900), 2020-01-13/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:
 Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 91.51 V/m; Power Drift = 0.09 dB
 Peak SAR (extrapolated) = 17.3 W/kg
SAR(1 g) = 9.31 W/kg; SAR(10 g) = 4.72 W/kg (SAR corrected for target medium)
 Smallest distance from peaks to all points 3 dB below = 10.9 mm
 Ratio of SAR at M2 to SAR at M1 = 52.8%
 Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 11.7 W/kg = 10.68 dBW/kg



Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 23/03/2021

DUT: Dipole 1800 MHz D1800V2; Type: D1800V2; Serial: D1800V2 - SN:2d099

Communication System: UID 0, CW (0); Frequency: 1800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.37$ S/m; $\epsilon_r = 41.12$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(8.25, 8.25, 8.25) @ 1800 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz(1900), 2021-03-23/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 13.5 W/kg

Configuration 1800MHz(1900), 2021-03-23/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 90.50 V/m; Power Drift = 0.10 dB

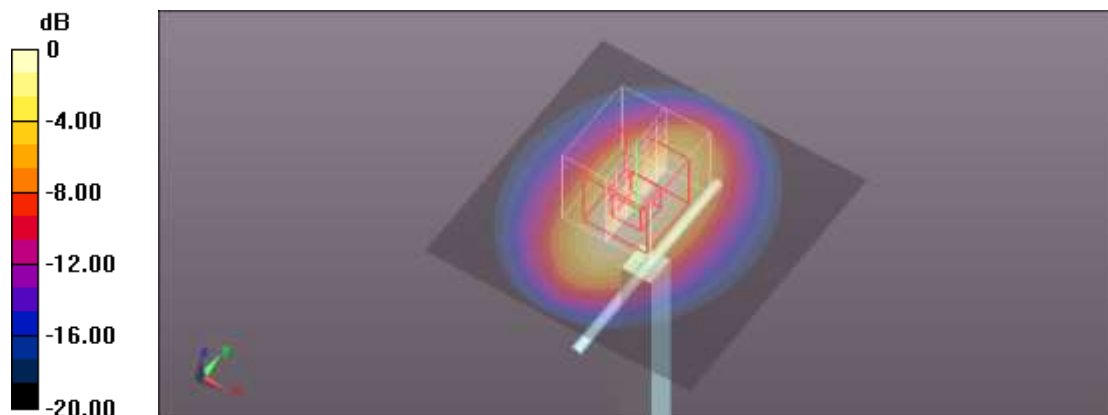
Peak SAR (extrapolated) = 18.0 W/kg

SAR(1 g) = 9.68 W/kg; SAR(10 g) = 4.94 W/kg (SAR corrected for target medium)

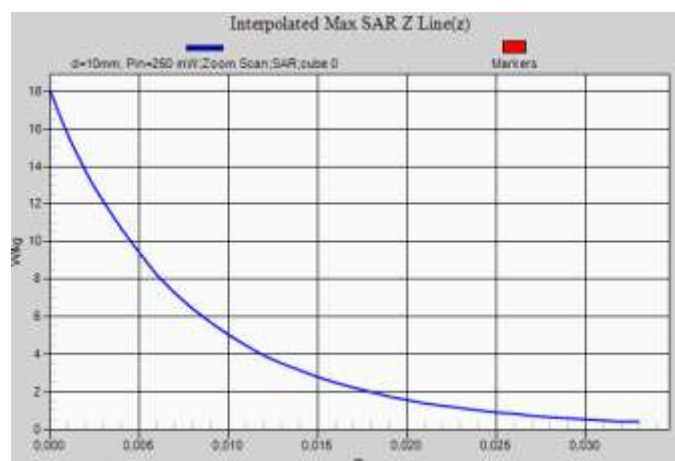
Smallest distance from peaks to all points 3 dB below = 11 mm

Ratio of SAR at M2 to SAR at M1 = 52.9%

Maximum value of SAR (measured) = 12.1 W/kg



0 dB = 12.1 W/kg = 10.83 dBW/kg



Validation results in 2600 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 09/12/2020

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1023

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.03$ S/m; $\epsilon_r = 40.12$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2600 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 2600MHz, 2020-12-09/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 22.9 W/kg

Configuration 2600MHz, 2020-12-09/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.42 V/m; Power Drift = 0.08 dB

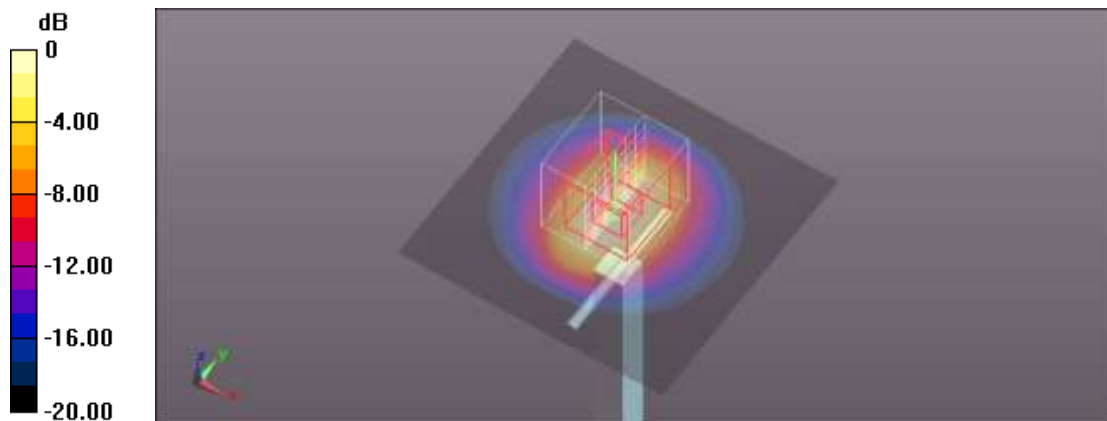
Peak SAR (extrapolated) = 34.4 W/kg

SAR(1 g) = 15.1 W/kg; SAR(10 g) = 6.5 W/kg (SAR corrected for target medium)

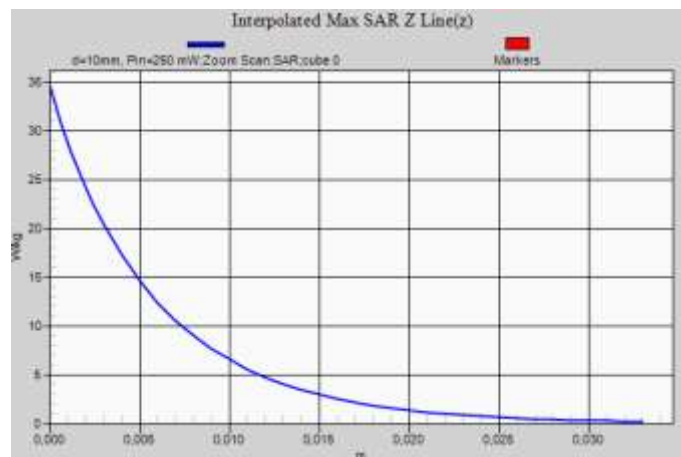
Smallest distance from peaks to all points 3 dB below = 9.8 mm

Ratio of SAR at M2 to SAR at M1 = 44%

Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg = 13.10 dBW/kg



Validation results in 2600 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 24/03/2021

DUT: Dipole 2600 MHz D2600V2; Type: D2600V2; Serial: D2600V2 - SN:1023

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 1.98$ S/m; $\epsilon_r = 40.26$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2600 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 2600MHz, 2021-03-24/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 23.0 W/kg

Configuration 2600MHz, 2021-03-24/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 102.6 V/m; Power Drift = -0.05 dB

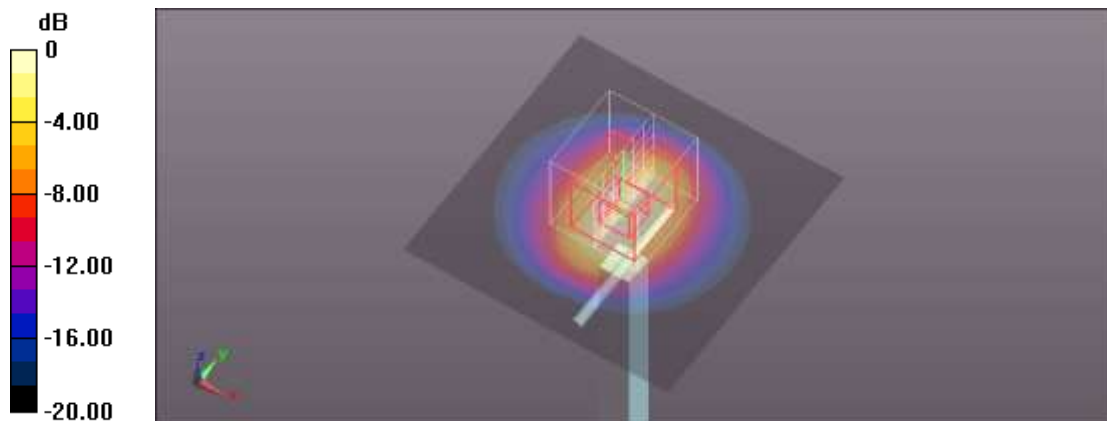
Peak SAR (extrapolated) = 34.3 W/kg

SAR(1 g) = 15.1 W/kg; SAR(10 g) = 6.55 W/kg (SAR corrected for target medium)

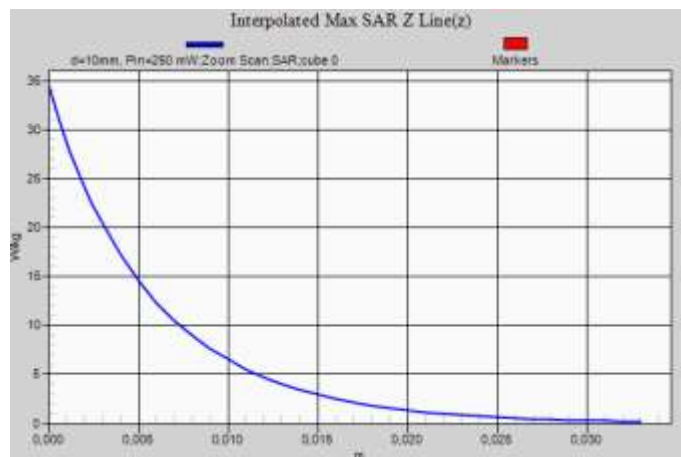
Smallest distance from peaks to all points 3 dB below = 9.8 mm

Ratio of SAR at M2 to SAR at M1 = 43.9%

Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg = 13.10 dBW/kg



Validation results in 3300 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 12/04/2021

DUT: Dipole 3300 MHz D3300V2; Type: D3300V2; Serial: D3300V2 - SN:1024

Communication System: UID 0, CW (0); Frequency: 3300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3300$ MHz; $\sigma = 2.83$ S/m; $\epsilon_r = 39.08$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.16, 7.16, 7.16) @ 3300 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3300MHz, 2021-04-12/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 11.1 W/kg

Configuration 3300MHz, 2021-04-12/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.00 V/m; Power Drift = -0.03 dB

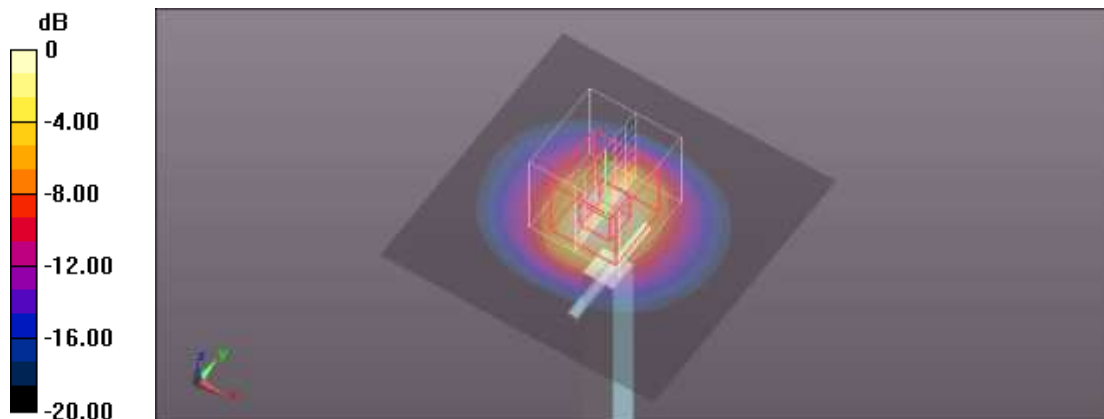
Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 6.53 W/kg; SAR(10 g) = 2.51 W/kg (SAR corrected for target medium)

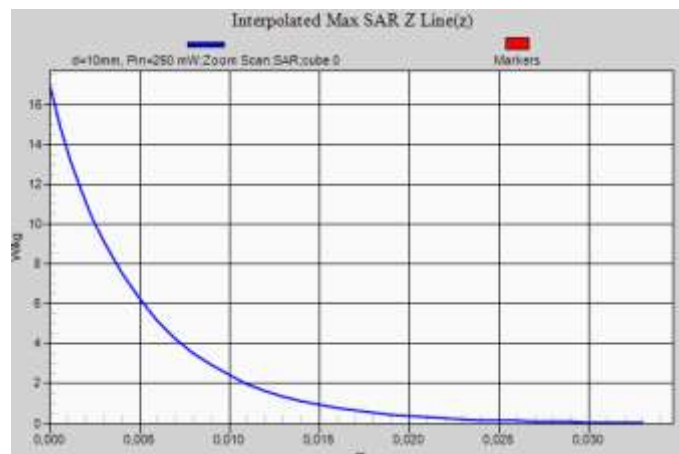
Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 38.5%

Maximum value of SAR (measured) = 9.16 W/kg



0 dB = 9.16 W/kg = 9.62 dBW/kg



Validation results in 3300 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 20/04/2021

DUT: Dipole 3300 MHz D3300V2; Type: D3300V2; Serial: D3300V2 - SN:1024

Communication System: UID 0, CW (0); Frequency: 3300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3300$ MHz; $\sigma = 2.81$ S/m; $\epsilon_r = 38.94$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.16, 7.16, 7.16) @ 3300 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3300MHz, 2021-04-20/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 11.0 W/kg

Configuration 3300MHz, 2021-04-20/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 58.06 V/m; Power Drift = -0.02 dB

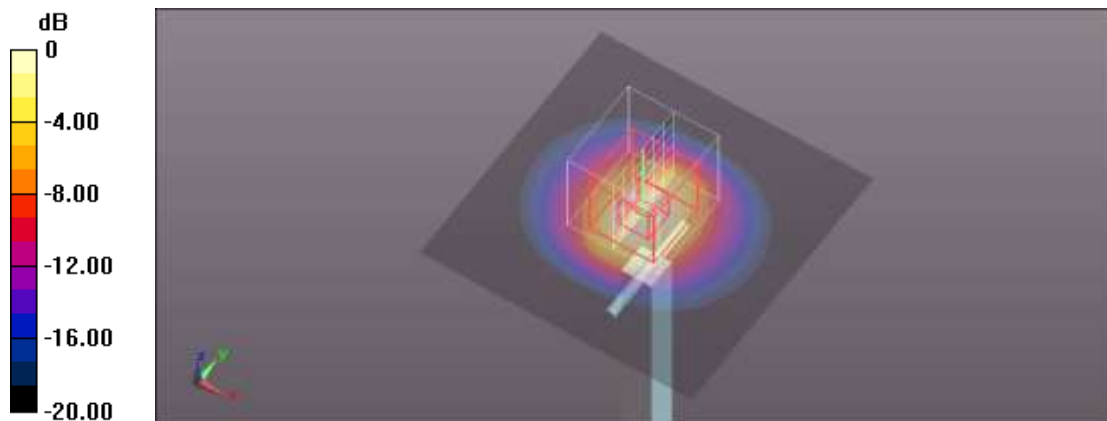
Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 6.52 W/kg; SAR(10 g) = 2.49 W/kg (SAR corrected for target medium)

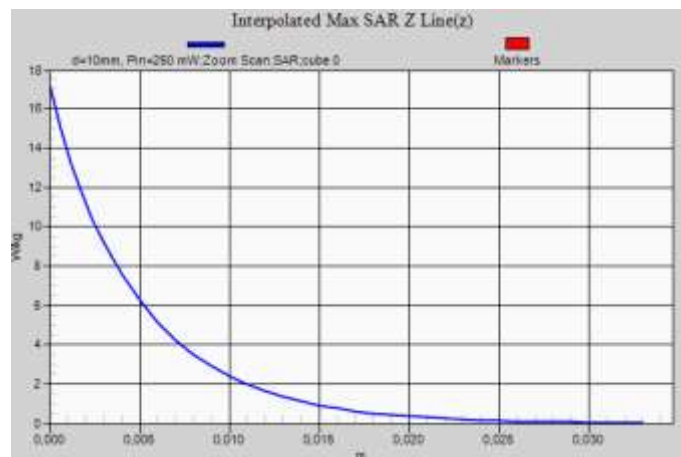
Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 38.1%

Maximum value of SAR (measured) = 9.22 W/kg



0 dB = 9.22 W/kg = 9.65 dBW/kg



Validation results in 3500 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 16/02/2021

DUT: Dipole 3500 MHz D3500V2; Type: D3500V2; Serial: D3500V2 - SN:1117

Communication System: UID 0, CW (0); Frequency: 3500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3500$ MHz; $\sigma = 2.8$ S/m; $\epsilon_r = 39.15$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3500 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3500MHz, 2020-/d=10mm, Pin=100 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 10.3 W/kg

Configuration 3500MHz, 2020-/d=10mm, Pin=100 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 54.95 V/m; Power Drift = 0.01 dB

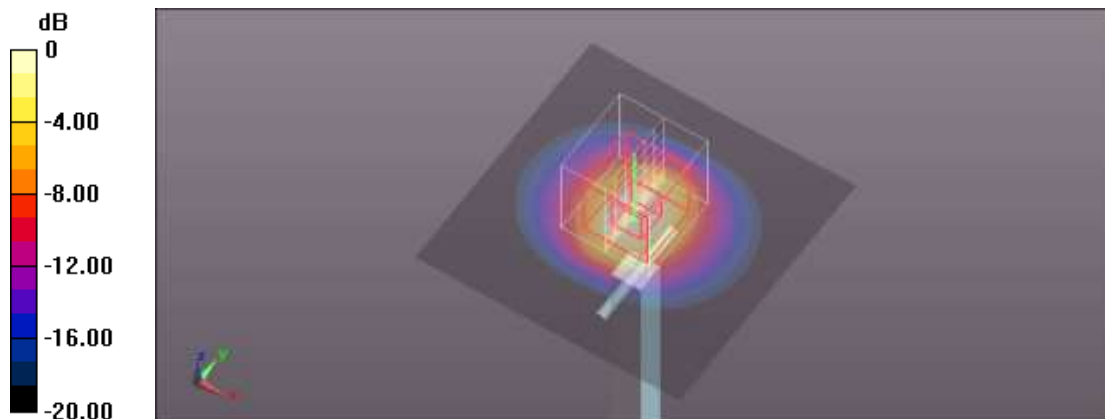
Peak SAR (extrapolated) = 16.3 W/kg

SAR(1 g) = 6.11 W/kg; SAR(10 g) = 2.27 W/kg (SAR corrected for target medium)

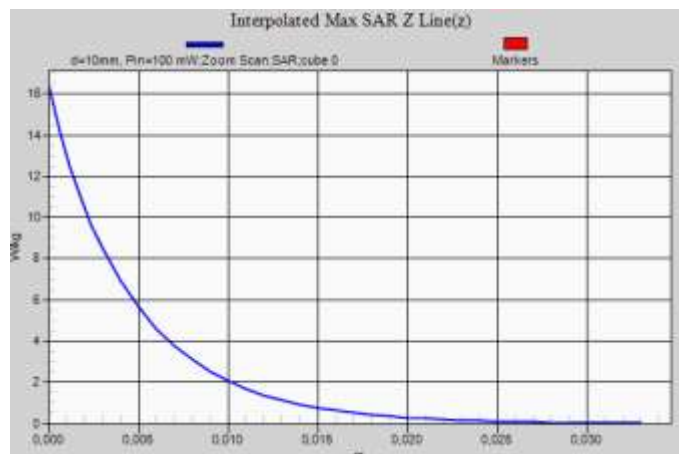
Smallest distance from peaks to all points 3 dB below = 8.9 mm

Ratio of SAR at M2 to SAR at M1 = 36.4%

Maximum value of SAR (measured) = 8.45 W/kg



0 dB = 8.45 W/kg = 9.27 dBW/kg



Validation results in 3500 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 12/04/2021

DUT: Dipole 3500 MHz D3500V2; Type: D3500V2; Serial: D3500V2 - SN:1117

Communication System: UID 0, CW (0); Frequency: 3500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3500$ MHz; $\sigma = 2.96$ S/m; $\epsilon_r = 38.87$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3500 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3500MHz, 2021-04-12/d=10mm, Pin=100 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 11.0 W/kg

Configuration 3500MHz, 2021-04-12/d=10mm, Pin=100 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.33 V/m; Power Drift = 0.05 dB

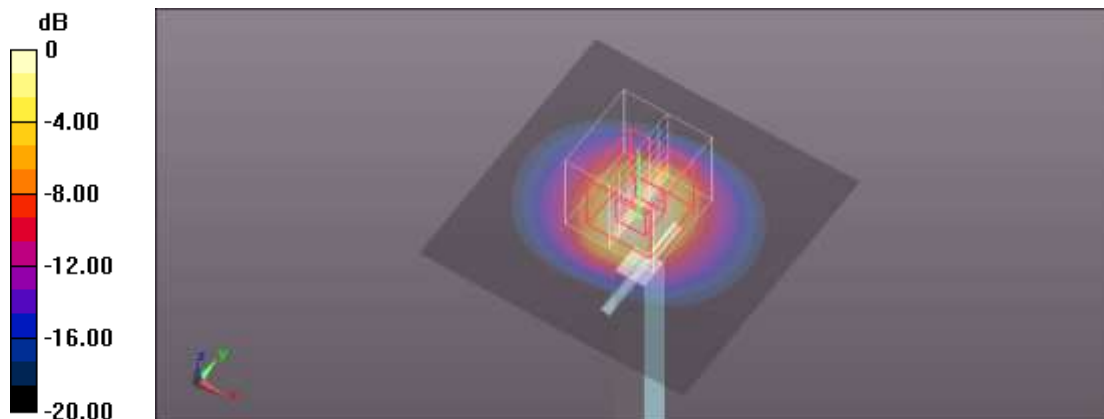
Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 6.4 W/kg; SAR(10 g) = 2.4 W/kg (SAR corrected for target medium)

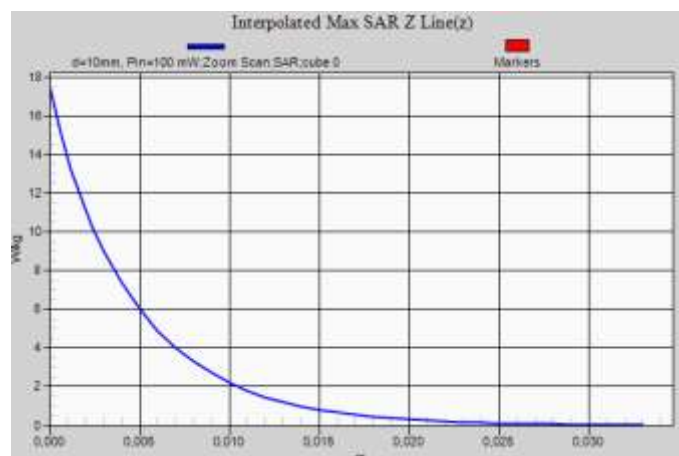
Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 36.5%

Maximum value of SAR (measured) = 9.02 W/kg



0 dB = 9.02 W/kg = 9.55 dBW/kg



Validation results in 3500 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 20/04/2021

DUT: Dipole 3500 MHz D3500V2; Type: D3500V2; Serial: D3500V2 - SN:1117

Communication System: UID 0, CW (0); Frequency: 3500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3500$ MHz; $\sigma = 2.98$ S/m; $\epsilon_r = 38.64$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.1, 7.1, 7.1) @ 3500 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3500MHz, 2021-04-20/d=10mm, Pin=100 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 11.1 W/kg

Configuration 3500MHz, 2021-04-20/d=10mm, Pin=100 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.63 V/m; Power Drift = -0.06 dB

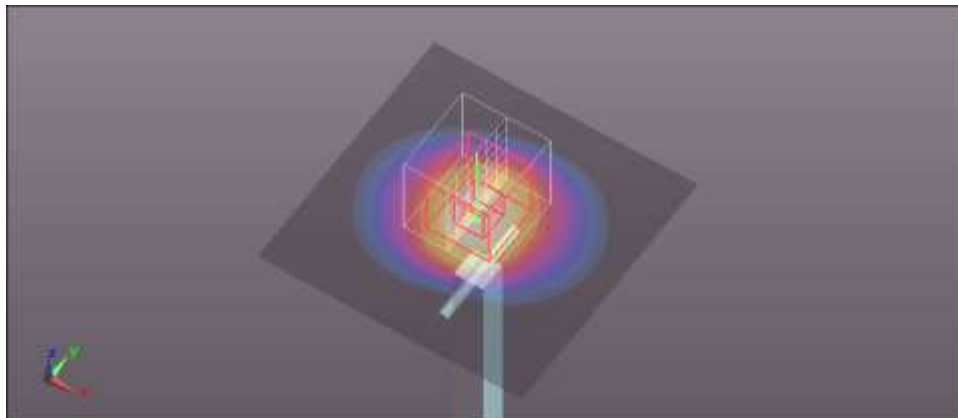
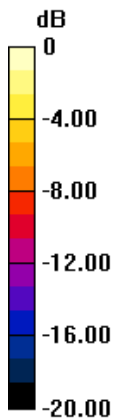
Peak SAR (extrapolated) = 17.4 W/kg

SAR(1 g) = 6.36 W/kg; SAR(10 g) = 2.38 W/kg (SAR corrected for target medium)

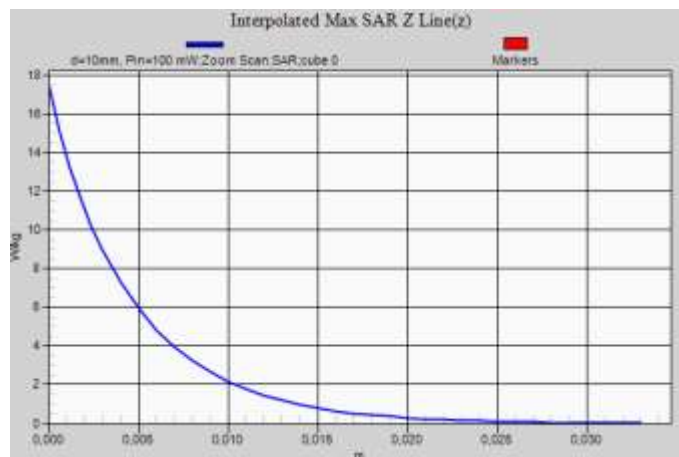
Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 36.2%

Maximum value of SAR (measured) = 8.94 W/kg



0 dB = 8.94 W/kg = 9.51 dBW/kg



Validation results in 3700 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 12/04/2021
DUT: Dipole 3700 MHz D3700V2; Type: D3700V2; Serial: D3700V2 - SN:1088
 Communication System: UID 0, CW (0); Frequency: 3700 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 3700$ MHz; $\sigma = 3.11$ S/m; $\epsilon_r = 38.7$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY5 Configuration:

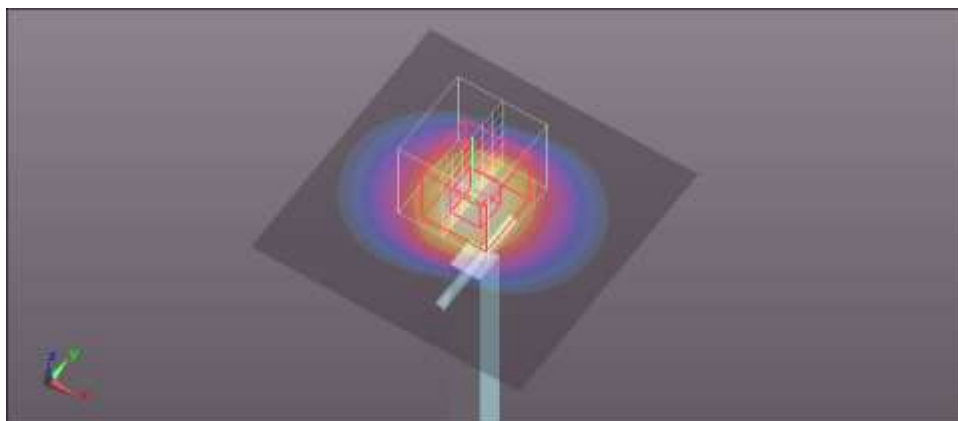
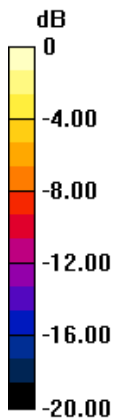
- Probe: EX3DV4 - SN7461; ConvF(7, 7, 7) @ 3700 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3700MHz, 2021-04-12/d=10mm, Pin=250 mW/Area Scan (91x91x1):

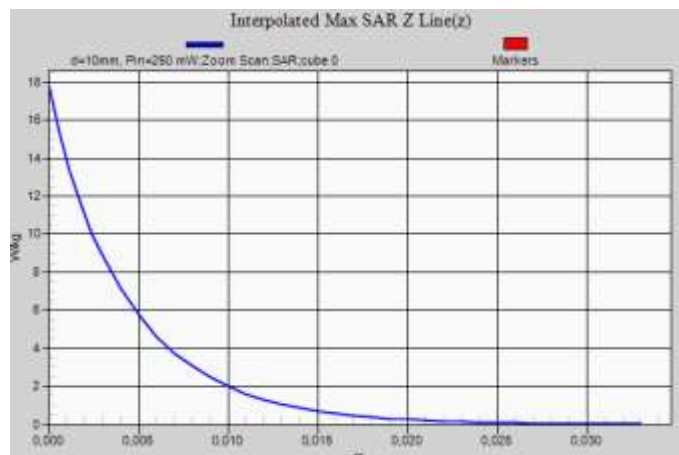
Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
 Maximum value of SAR (interpolated) = 10.8 W/kg

Configuration 3700MHz, 2021-04-12/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
 Reference Value = 52.71 V/m; Power Drift = 0.05 dB
 Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 6.25 W/kg; SAR(10 g) = 2.27 W/kg (SAR corrected for target medium)
 Smallest distance from peaks to all points 3 dB below = 8.9 mm
 Ratio of SAR at M2 to SAR at M1 = 34.6%
 Maximum value of SAR (measured) = 8.81 W/kg



0 dB = 8.81 W/kg = 9.45 dBW/kg



Validation results in 3700 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 20/04/2021

DUT: Dipole 3700 MHz D3700V2; Type: D3700V2; Serial: D3700V2 - SN:1088

Communication System: UID 0, CW (0); Frequency: 3700 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3700$ MHz; $\sigma = 3.14$ S/m; $\epsilon_r = 38.26$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7, 7, 7) @ 3700 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 3700MHz, 2021-04-20/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 11.3 W/kg

Configuration 3700MHz, 2021-04-20/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 53.51 V/m; Power Drift = -0.09 dB

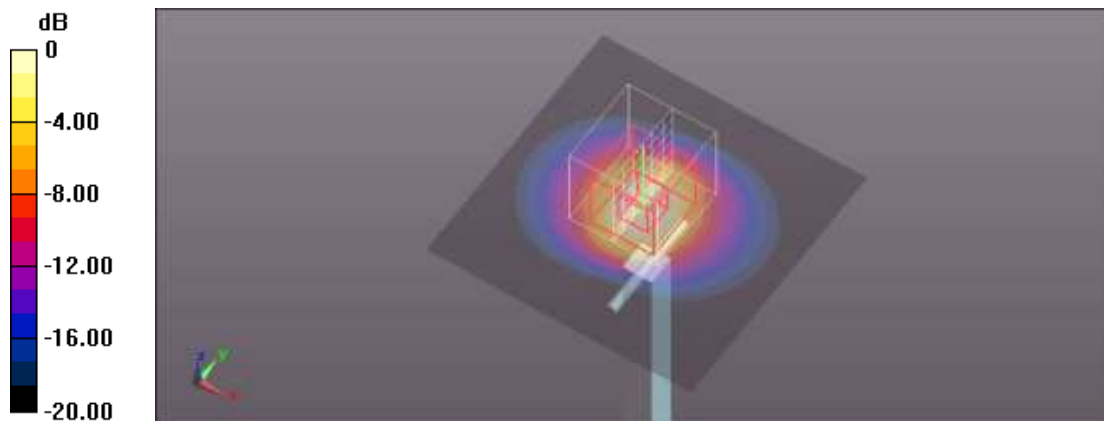
Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 6.18 W/kg; SAR(10 g) = 2.24 W/kg (SAR corrected for target medium)

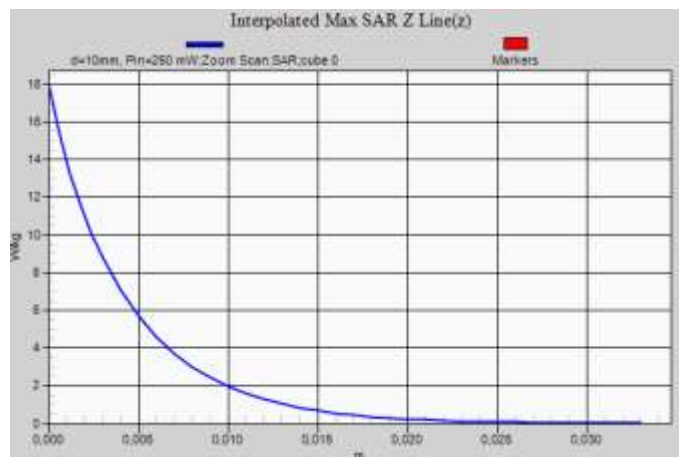
Smallest distance from peaks to all points 3 dB below = 8.6 mm

Ratio of SAR at M2 to SAR at M1 = 34.1%

Maximum value of SAR (measured) = 8.81 W/kg



0 dB = 8.81 W/kg = 9.45 dBW/kg



Validation results in 4200 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 22/04/2021

DUT: Dipole 4200 MHz D4200V2; Type: D4200V2; Serial: D4200V2 - SN:1021

Communication System: UID 0, CW (0); Frequency: 3900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 3900$ MHz; $\sigma = 3.29$ S/m; $\epsilon_r = 38.14$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(6.45, 6.45, 6.45) @ 3900 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 19/08/2020
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1060
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 4200MHz, 2021-04-22/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 12.3 W/kg

Configuration 4200MHz, 2021-04-22/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 52.17 V/m; Power Drift = 0.24 dB

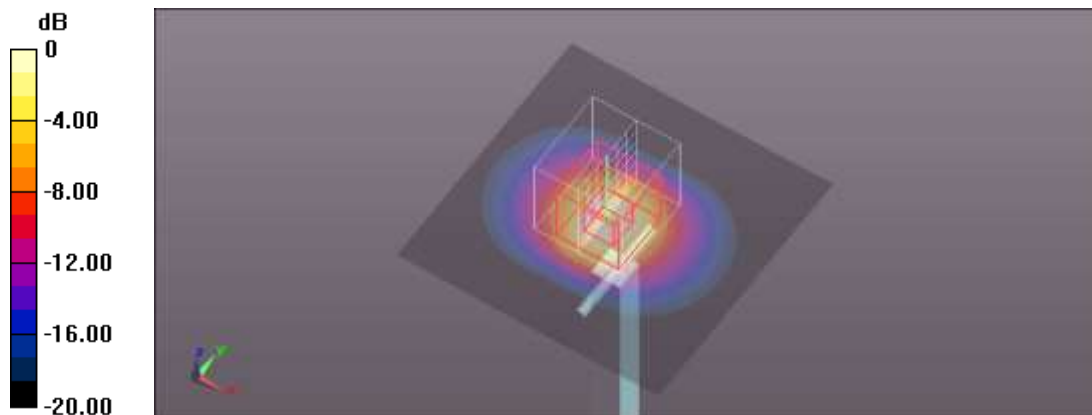
Peak SAR (extrapolated) = 21.0 W/kg

SAR(1 g) = 6.5 W/kg; SAR(10 g) = 2.18 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 8.2 mm

Ratio of SAR at M2 to SAR at M1 = 30.3%

Maximum value of SAR (measured) = 9.28 W/kg



0 dB = 9.28 W/kg = 9.68 dBW/kg

