



A Test Lab Techno Corp.

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SAR EVALUATION REPORT

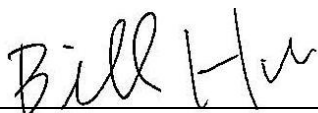


Test Report No.	: 1611FS17
Applicant	: EDIMAX TECHNOLOGY CO., LTD.
Applicant Address	: No.3,Wu-Chuan 3rd Road,Wu-Ku Industrial Park, New Taipei City, Taiwan
Product Type	: 11ac Wireless Dual-Band Selectable USB Adapter
Trade Name	: EDIMAX
Model Number	: EW-7822UNC, EW-7822ULC
Date of Received	: Jul. 27, 2016
Test Period	: Sep. 05, Oct. 21, 2016
Date of Issued	: Dec. 05, 2016
Test Environment	: Ambient Temperature : $22 \pm 2^{\circ}\text{C}$ Relative Humidity : 40 - 70 %
Standard	: ANSI/IEEE C95.1-1992 / IEEE Std. 1528-2013 47 CFR Part §2.1093 / KDB 248227 D01 v02r02 KDB 865664 D01 v01r04 / KDB 865664 D02 v01r02 KDB 447498 D01 v06 / KDB 447498 D02 v02r01
Test Lab Location	: Chang-an Lab



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Approved By :


(Bill Hu)

Tested By :


(Mark Duan)



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1. Summary of Maximum Reported SAR Value

Equipment Class	Mode	Highest Reported			
		Head SAR _{1g} (W/kg)	Body-Worn SAR _{1g} (1.0 cm) (W/kg)	Body-Worn stand alone SAR _{1g} (1.0 cm) (W/kg)	Hotspot SAR _{1g} (1.0 cm Gap) (W/kg)
DTS	2.4GHz WLAN	N/A	N/A	0.05	N/A
NII	5GHz WLAN U-NII-1	N/A	N/A	0.64	N/A
	5GHz WLAN U-NII-3	N/A	N/A	0.74	N/A
Highest Simultaneous Transmission SAR		Head (W/kg)	Body-Worn (W/kg)	Body-Worn Stand alone (W/kg)	Hotspot (W/kg)
NII (ANT-0+ANT-1)		N/A	N/A	1.03	N/A

NOTE: 1. The N/A is EUT not apply to the assessment of the exposure conditions.

- The test procedures, as described in American National Standards, Institute ANSI/IEEE C95.1 were employed and they specify the maximum exposure limit of Body is SAR_{1g} 1.6 W/kg of tissue for portable devices being used within 20cm between user and EUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.
- For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance of 10 mm between this device and the body of the user. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

2. Description of Equipment under Test (EUT)

Applicant	EDIMAX TECHNOLOGY CO., LTD. No.3,Wu-Chuan 3rd Road,Wu-Ku Industrial Park, New Taipei City, Taiwan		
Manufacture	EDIMAX TECHNOLOGY CO., LTD. No.3,Wu-Chuan 3rd Road,Wu-Ku Industrial Park, New Taipei City, Taiwan		
Product Type	11ac Wireless Dual-Band Selectable USB Adapter		
Trade Name	EDIMAX		
Model Number	EW-7822UNC, EW-7822ULC		
Model Different Description	Those model numbers differ from each other in selling region.		
FCC ID	NDD9578221607		
RF Function	IEEE 802.11b / 802.11g / 802.11n 2.4GHz 20MHz / 802.11n 2.4GHz 40MHz IEEE 802.11a / 802.11n 5GHz 20MHz / 802.11n 5GHz 40MHz IEEE 802.11ac 20MHz / 40MHz / 80MHz		
Tx Frequency	Band	Operate Frequency (MHz)	
	IEEE 802.11b / 802.11g / 802.11n 2.4GHz 20MHz	2412 - 2462	
	IEEE 802.11n 2.4GHz 40MHz	2422 - 2452	
	IEEE 802.11a / 802.11n 5GHz 20MHz / 802.11ac 20MHz U-NII Band I	5180 - 5240	
	IEEE 802.11n 5GHz 40MHz / 802.11ac 40MHz U-NII Band I	5190 - 5230	
	IEEE 802.11ac 80MHz U-NII Band I	5210	
	IEEE 802.11a / 802.11n 5GHz 20MHz / 802.11ac 20MHz U-NII Band III	5745 - 5825	
	IEEE 802.11n 5GHz 40MHz / 802.11ac 40MHz U-NII Band III	5755 - 5795	
	IEEE 802.11ac 80MHz U-NII Band III	5775	
RF Conducted Power (Avg.)	Band	Power	
		W	dBm
	IEEE 802.11b	0.028	14.45
	IEEE 802.11g	0.042	16.26
	IEEE 802.11n 2.4GHz 20MHz	0.081	19.07
	IEEE 802.11n 2.4GHz 40MHz	0.070	18.48
	IEEE 802.11a U-NII Band I	0.032	15.08
	IEEE 802.11ac 20MHz U-NII Band I	0.057	17.59
	IEEE 802.11ac 40MHz U-NII Band I	0.052	17.18
	IEEE 802.11ac 80MHz U-NII Band I	0.041	16.12
	IEEE 802.11a U-NII Band III	0.027	14.32
	IEEE 802.11ac 20MHz U-NII Band III	0.051	17.08
	IEEE 802.11ac 40MHz U-NII Band III	0.054	17.29
	IEEE 802.11ac 80MHz U-NII Band III	0.040	16.03
Antenna Type	Monopole Antenna		
Device Category	Portable Device		
Application Type	Certification		

Note:The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. Introduction

The A Test Lab Techno Corp. has performed measurements of the maximum potential exposure to the user of **EDIMAX TECHNOLOGY CO., LTD. Trade Name : EDIMAX Model(s) : EW-7822UNC, EW-7822ULC**. The test procedures, as described in American National Standards, Institute C95.1-1999 [1] were employed and they specify the maximum exposure limit of 1.6mW/g as averaged over any 1 gram of tissue for portable devices being used within 20cm between user and EUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.

3.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Figure 2).

$$\text{SAR} = \frac{d}{dt} \left(\frac{dw}{dm} \right) = \frac{d}{dt} \left(\frac{dw}{\rho dv} \right)$$

Figure 2. SAR Mathematical Equation

SAR is expressed in units of Watts per kilogram (W/kg)

$$\text{SAR} = \frac{\sigma E^2}{\rho}$$

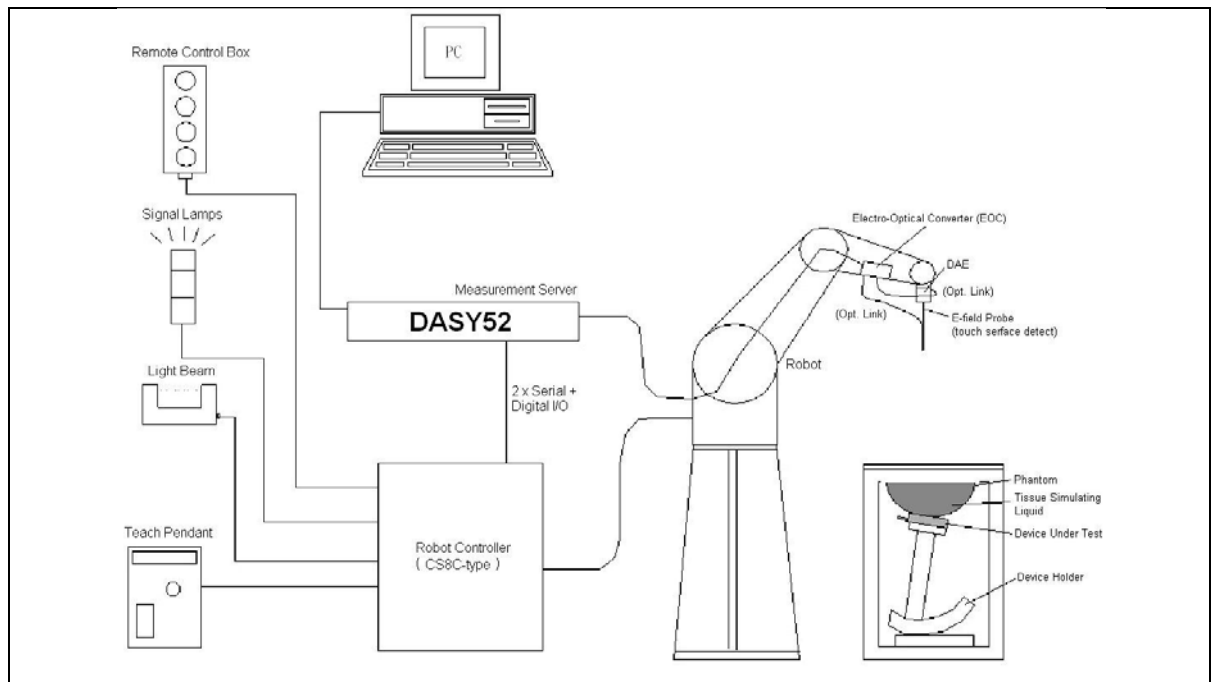
Where :

- σ = conductivity of the tissue (S/m)
- ρ = mass density of the tissue (kg/m³)
- E = RMS electric field strength (V/m)

* Note :

The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane [2]

4. SAR Measurement Setup



The DASY52 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli TX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. 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.
4. 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.
5. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
6. A computer operating Windows 2000 or Windows XP.
7. DASY52 software.
8. Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
9. The SAM twin phantom enabling testing left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. Validation dipole kits allowing validating the proper functioning of the system.



4.1 DASY E-Field Probe System

The SAR measurements were conducted with the dosimetric probe (manufactured by SPEAG), designed in the classical triangular configuration [3] and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

4.1.1 E-Field Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in brain tissue (rotation around probe axis) ± 0.5 dB in brain tissue (rotation normal probe axis)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm

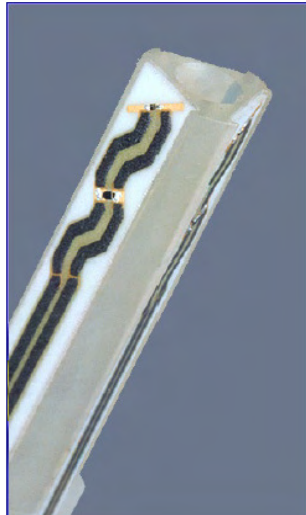


Figure 3. E-field Probe

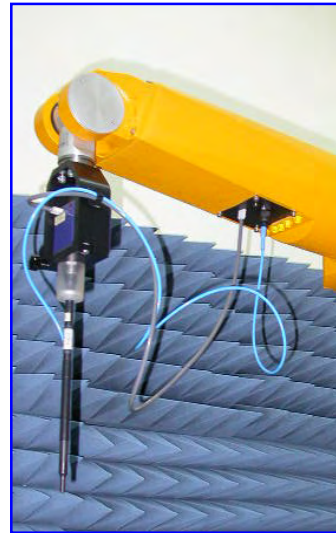


Figure 4. Probe setup on robot



4.1.2 E-Field Probe Calibration process

Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm²) using an RF Signal generator, TEM cell, and RF Power Meter.

Free Space Assessment

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm².

Temperature Assessment

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

$$SAR = C \frac{\Delta T}{\Delta t}$$

Where :

Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (head or body),

ΔT = Temperature increase due to RF exposure.

$$\text{Or } SAR = \frac{|E|^2 \sigma}{\rho}$$

Where :

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m³).



4.2 Data Acquisition Electronic (DAE) System

Model : DAE3, DAE4
Construction : Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for 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 Bias Current : < 50 fA
Dimensions : 60 x 60 x 68 mm

4.3 Robot

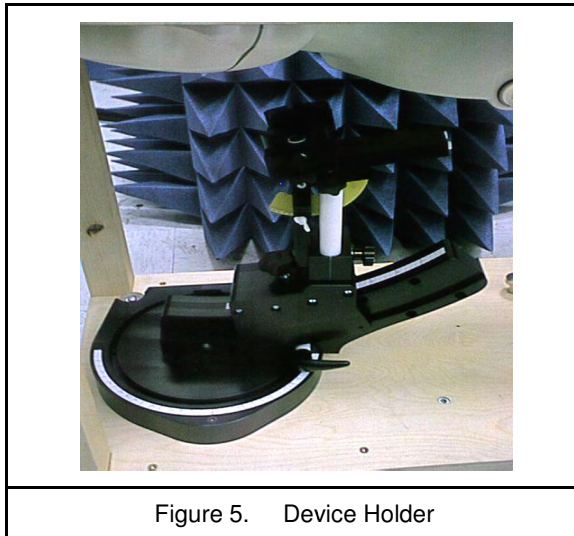
Positioner : Stäubli Unimation Corp. Robot Model: TX90XL
Repeatability : ± 0.02 mm
No. of Axis : 6

4.4 Measurement Server

Processor : PC/104 with a 400MHz intel ULV Celeron
I/O-board : Link to DAE4 (or DAE3)
16-bit A/D converter for surface detection system
Digital I/O interface
Serial link to robot
Direct emergency stop output for robot

4.5 Device Holder

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon=3$ and loss tangent $\delta=0.02$. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



4.6 Oval Flat Phantom - ELI 4.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (Oval Flat) phantom defined in IEEE 1528-2013, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of wireless portable device usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Shell Thickness	2 ± 0.2 mm
Filling Volume	Approx. 30 liters
Dimensions	190×600×400 mm (H×L×W)
Table 1. Specification of ELI 4.0	

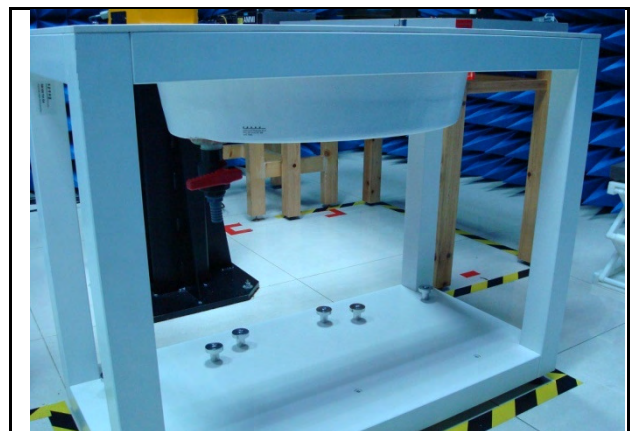


Figure 6. Oval Flat Phantom

4.7 Data Storage and Evaluation

4.7.1 Data Storage

The DASY software stores the assessed data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all the necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension DA4 or DA5. The post processing software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of erroneous parameter settings. For example, if a measurement has been performed with an incorrect crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be reevaluated.

4.7.2 Data Evaluation

The DASY post processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software :

- Probe parameters :
- Sensitivity $Norm_i, ai0, ai1, ai2$
 - Conversion factor $ConvFi$
 - Diode compression point dcp_i
- Device parameters :
- Frequency f
 - Crest factor cf
- Media parameters :
- Conductivity σ
 - Density ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as :

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

- With
- V_i = compensated signal of channel i (i = x, y, z)
 - U_i = input signal of channel i (i = x, y, z)
 - cf = crest factor of exciting field (DASY parameter)
 - dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated :

$$E\text{-field probes : } E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

$$H\text{-field probes : } H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

with V_i = compensated signal of channel i (i = x, y, z)
 $Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
 $\mu V/(V/m)^2$ for *E-field Probes*
 $ConvF$ = sensitivity enhancement in solution
 a_{ij} = sensor sensitivity factors for H-field probes
 f = carrier frequency [GHz]
 E_i = electric field strength of channel i in V/m
 H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude) :

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with SAR = local specific absorption rate in mW/g
 E_{tot} = total field strength in V/m
 σ = conductivity in [mho/m] or [Siemens/m]
 ρ = equivalent tissue density in g/cm³

* Note : That the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = \frac{H_{tot}^2}{37.7}$$

with P_{pwe} = equivalent power density of a plane wave in mW/cm²
 E_{tot} = total electric field strength in V/m
 H_{tot} = total magnetic field strength in A/m

5. Tissue Simulating Liquids

The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the tissue.

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an 85070C Dielectric Probe Kit and an E5071B Network Analyzer.

IEEE SCC-34/SC-2 in 1528 recommended Tissue Dielectric Parameters

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified in 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equation and extrapolated according to the head parameter specified in 1528.

Target Frequency	Head		Body	
(MHz)	ϵ_r	σ (S/m)	ϵ_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 - 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00
(ϵ_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m ³)				

Table 2. Tissue dielectric parameters for head and body phantoms



5.1 Ingredients

The following ingredients are used:

- Water: deionized water (pure H₂O), resistivity $\geq 16 \text{ M } \Omega$ -as basis for the liquid
- Sugar: refined white sugar (typically 99.7 % sucrose, available as crystal sugar in food shops)
-to reduce relative permittivity
- Salt: pure NaCl -to increase conductivity
- Cellulose: Hydroxyethyl-cellulose, medium viscosity (75-125 mPa.s, 2% in water, 20 °C), CAS # 54290 -to increase viscosity and to keep sugar in solution.
- Preservative: Preventol D-7 Bayer AG, D-51368 Leverkusen, CAS # 55965-84-9 -to prevent the spread of bacteria and molds
- DGBE: Diethylenglycol-monobutyl ether (DGBE), Fluka Chemie GmbH, CAS # 112-34-5 -to reduce relative permittivity

5.2 Recipes

The following tables give the recipes for tissue simulating liquids to be used in different frequency bands.

Note: The goal dielectric parameters (at 22 °C) must be achieved within a tolerance of $\pm 5\%$ for ϵ and $\pm 5\%$ for σ .

Ingredients (% by weight)	Frequency (MHz)												Frequency (GHz)	
	750		835		1750		1900		2450		2600		5GHz	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	39.28	51.30	41.45	52.40	54.50	40.20	54.90	40.40	62.70	73.20	60.30	71.40	65.5	78.6
Salt (NaCl)	1.47	1.42	1.45	1.50	0.17	0.49	0.18	0.50	0.50	0.10	0.60	0.20	0.00	0.00
Sugar	58.15	46.18	56.00	45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEC	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bactericide	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.2	10.7
DGBE	0.00	0.00	0.00	0.00	45.33	59.31	44.92	59.10	36.80	26.70	39.10	28.40	0.00	0.00
Dielectric Constant	41.88	54.60	42.54	56.10	40.10	53.60	39.90	54.00	39.80	52.50	39.80	52.50	0.00	0.00
Conductivity (S/m)	0.90	0.97	0.91	0.95	1.39	1.49	1.42	1.45	1.88	1.78	1.88	1.78	0.00	0.00
Diethylene Glycol Mono-hexlether	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.3	10.7

Salt: 99+% Pure Sodium Chloride

Sugar: 98+% Pure Sucrose

Water: De-ionized, $16 \text{ M } \Omega$ resistivity

HEC: Hydroxyethyl Cellulose

DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

5.3 Liquid Depth

According to KDB865664 ,the depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm with $\leq \pm 0.5$ cm variation for SAR measurements ≤ 3 GHz and ≥ 10.0 cm with $\leq \pm 0.5$ cm variation for measurements > 3 GHz.



Figure 7. Body-Position



6. SAR Testing with RF Transmitters

6.1 SAR Testing with 802.11 Transmitters

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

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

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closest/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
 - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
 - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

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



6.2 Conducted Power

Test Mode	Data Rate (Mbps)	Frequency (MHz)	Average Output Power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11b	1	2412	14.25	---	---
		2437	14.23	---	---
		2462	14.45	---	---
	2	2437	14.20	---	---
	5.5	2437	14.19	---	---
	11	2437	14.15	---	---
IEEE 802.11g	6	2412	14.62	---	---
		2437	16.26	---	---
		2462	14.20	---	---
	9	2437	16.25	---	---
	12	2437	16.20	---	---
	18	2437	16.24	---	---
	24	2437	16.19	---	---
	36	2437	16.22	---	---
	48	2437	16.20	---	---
	54	2437	16.18	---	---
IEEE 802.11n 2.4GHz, 20MHz	13	2412	15.41	15.49	18.46
		2437	15.46	15.48	18.48
		2462	15.44	15.42	18.44
	26	2437	15.26	15.18	18.23
	39	2437	15.40	15.45	18.44
	52	2437	15.45	15.47	18.47
	78	2437	15.43	15.40	18.43
	104	2437	15.39	15.42	18.42
	117	2437	15.37	15.41	18.40
	130	2437	15.44	15.46	18.46
	156	2437	15.41	15.38	18.41
IEEE 802.11n 2.4GHz, 40MHz	27	2422	15.26	15.39	18.34
		2437	15.37	15.47	18.43
		2452	15.45	15.48	18.48
	54	2437	15.35	15.41	18.39
	81	2437	15.30	15.39	18.36
	108	2437	15.36	15.45	18.42
	162	2437	15.34	15.44	18.40
	216	2437	15.29	15.38	18.35
	243	2437	15.36	15.42	18.40
	135	2437	15.32	15.40	18.37
	324	2437	15.31	15.36	18.35
	360	2437	15.33	15.38	18.37

Test Mode	Data Rate (Mbps)	Frequency (MHz)	Average Output Power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11a	6	5180	14.70	---	---
		5200	15.08	---	---
		5220	14.96	---	---
		5240	14.66	---	---
		5745	13.67	---	---
		5765	14.32	---	---
		5785	14.21	---	---
		5805	13.99	---	---
		5825	14.27	---	---
	54	5180	14.65	---	---
		5200	15.04	---	---
		5220	14.91	---	---
		5240	14.63	---	---
		5745	13.63	---	---
		5765	14.28	---	---
		5785	14.17	---	---
		5805	13.95	---	---
		5825	14.23	---	---
IEEE 802.11ac 20MHz	13	5180	13.58	13.77	16.69
		5200	13.53	15.43	17.59
		5220	13.75	15.27	17.59
		5240	13.65	15.20	17.50
		5745	14.24	13.55	16.92
		5765	14.19	13.94	17.08
		5785	14.12	13.87	17.01
		5805	14.30	13.79	17.06
		5825	14.03	13.74	16.90
	156	5180	13.56	13.72	16.65
		5200	13.50	15.38	17.55
		5220	13.71	15.23	17.55
		5240	13.63	15.18	17.48
		5745	14.21	13.52	16.89
		5765	14.16	13.92	17.05
		5785	14.10	13.82	16.97
		5805	14.26	13.77	17.03
		5825	13.98	13.69	16.85



Test Mode	Data Rate (Mbps)	Frequency (MHz)	Average Output Power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 40MHz	27	5190	13.39	13.48	16.45
		5230	14.22	14.11	17.18
		5755	14.23	14.33	17.29
		5795	14.34	14.22	17.29
	360	5190	13.33	13.46	16.41
		5230	14.20	14.06	17.14
		5755	14.20	14.28	17.25
		5795	14.30	14.19	17.26
IEEE 802.11ac 80MHz	58.6	5290	13.06	13.15	16.12
		5775	12.68	13.33	16.03
	780	5290	13.04	13.10	16.08
		5775	12.67	13.30	16.01

Beamforming on					
Test Mode	Data Rate (Mbps)	Frequency (MHz)	Average Output Power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11n 2.4GHz, 20MHz	13	2412	14.05	14.17	17.12
		2437	15.73	16.36	19.07
		2462	14.94	15.02	17.99
	26	2437	15.60	16.27	18.96
	39	2437	15.57	16.32	18.97
	52	2437	15.70	16.30	19.02
	78	2437	15.68	16.25	18.98
	104	2437	15.65	16.20	18.94
	117	2437	15.71	16.29	19.02
	130	2437	15.66	16.22	18.96
	156	2437	15.63	16.25	18.96
IEEE 802.11n 2.4GHz, 40MHz	27	2422	13.84	13.98	16.92
		2437	15.26	15.02	18.15
		2452	12.39	12.37	15.39
	54	2437	15.20	15.00	18.11
	81	2437	15.23	14.95	18.10
	108	2437	15.17	14.97	18.08
	162	2437	15.12	14.98	18.06
	216	2437	15.15	14.92	18.05
	243	2437	15.21	14.99	18.11
	135	2437	15.19	14.99	18.10
	324	2437	15.13	14.95	18.05
	360	2437	15.12	14.91	18.03

Beamforming on					
Test Mode	Data Rate (Mbps)	Frequency (MHz)	Average Output Power (dBm)		
			ANT-0	ANT-1	ANT-0+1
IEEE 802.11ac 20MHz	13	5180	13.22	13.17	16.21
		5200	14.65	14.21	17.45
		5220	14.14	14.13	17.15
		5240	14.15	14.12	17.15
		5745	14.20	13.96	17.09
		5765	14.36	14.22	17.30
		5785	14.39	14.26	17.34
		5805	14.43	13.57	17.03
		5825	14.01	12.62	16.38
	156	5180	13.20	13.13	16.18
		5200	14.60	14.14	17.39
		5220	14.10	14.08	17.10
		5240	14.09	14.07	17.09
		5745	14.17	13.94	17.07
		5765	14.33	14.13	17.24
		5785	14.34	14.21	17.29
		5805	14.38	13.51	16.98
		5825	13.99	12.60	16.36
IEEE 802.11ac 40MHz	27	5190	11.82	11.03	14.45
		5230	14.24	13.61	16.95
		5755	14.01	13.91	16.97
		5795	14.04	13.60	16.84
	360	5190	11.81	11.00	14.43
		5230	14.20	13.57	16.91
		5755	13.99	13.88	16.95
		5795	14.00	13.52	16.78
IEEE 802.11ac 80MHz	58.6	5290	10.25	10.18	13.23
		5775	14.24	13.53	16.91
	780	5290	10.23	10.10	13.18
		5775	14.18	13.50	16.86



6.3 Antenna location

Antenna-User (mm)		
Side	WLAN_ANT-0	WLAN_ANT-1
Horizontal-UP	5	5
Horizontal-Down	5	5
Vertical-Front	5	5
Vertical-Back	5	5

6.4 Stand-alone SAR Evaluate

Stand-alone transmission configurations as below:

Band	Horizontal-UP	Horizontal-Down	Vertical-Front	Vertical-Back
IEEE 802.11b	V	V	V	V
IEEE 802.11g	-	-	-	-
IEEE 802.11n 2.4GHz 20MHz	V	V	V	V
IEEE 802.11n 2.4GHz 40MHz	V	V	V	V
IEEE 802.11a	V	V	V	V
IEEE 802.11ac 20MHz	V	V	V	V
IEEE 802.11ac 40MHz	V	V	V	V
IEEE 802.11ac 80MHz	V	V	V	V

Antenna	Operate Band	Channel	Frequency (GHz)	Tune-Power		Calculated value and evaluated result (mm)			
				(dBm)	(mW)	Horizontal-UP	Horizontal-Down	Vertical-Front	Vertical-Back
WLAN ANT-0	IEEE 802.11 b	11	2.462	14.5	28	8.8	8.8	8.8	8.8
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11 g	11	2.462	16.5	45	14.1	14.1	14.1	14.1
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11 n 2.4GHz, 20MHz	11	2.462	16	40	12.6	12.6	12.6	12.6
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11 n 2.4GHz, 40MHz	11	2.462	15.5	35	11	11	11	11
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11a Band I	48	5.24	15.5	35	16	16	16	16
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11a Band III	165	5.825	15.5	35	16.9	16.9	16.9	16.9
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 20MHz, Band I	48	5.24	15	32	14.7	14.7	14.7	14.7
						MEASURE	MEASURE	MEASURE	MEASURE
WLAN ANT-1	IEEE 802.11ac 20MHz, Band III	165	5.825	15	32	15.4	15.4	15.4	15.4
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 40MHz, Band I	46	5.23	14.5	28	12.8	12.8	12.8	12.8
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 40MHz, Band III	159	5.795	14.5	28	13.5	13.5	13.5	13.5
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 80MHz, Band I	42	5.21	14.5	28	12.8	12.8	12.8	12.8
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 80MHz, Band III	155	5.775	14.5	28	13.5	13.5	13.5	13.5
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11 n 2.4GHz, 20MHz	11	2.462	16.5	45	14.1	14.1	14.1	14.1
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11 n 2.4GHz, 40MHz	11	2.462	15.5	35	11	11	11	11
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 20MHz, Band I	48	5.24	15.5	35	16	16	16	16
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 20MHz, Band III	165	5.825	15.5	35	16.9	16.9	16.9	16.9
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 40MHz, Band I	46	5.23	14.5	28	12.8	12.8	12.8	12.8
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 40MHz, Band III	159	5.795	14.5	28	13.5	13.5	13.5	13.5
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 80MHz, Band I	42	5.21	14	25	11.4	11.4	11.4	11.4
						MEASURE	MEASURE	MEASURE	MEASURE
	IEEE 802.11ac 80MHz, Band III	155	5.775	14	25	12	12	12	12
						MEASURE	MEASURE	MEASURE	MEASURE

- Note: 1. Calculated Value include string "mW", that is mean through comapre output power with threshold, if the output power more than threshold value the SAR test should be perform. Otherwise, the SAR test could be exempt. (> 50mm).
2. Calculated Value only include number format, that is mean through comapre output power with threshold, if the Calculated value more than 3 the SAR test should be perform. Otherwise, the SAR test could be exempt. (<50mm).

3. When an antenna qualifies for the standalone SAR test exclusion of KDB 447498 section 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to KDB 447498 section "4.3.2. Simultaneous transmission SAR test exclusion considerations b) ".
4. The ch and frequency used highest frequency, that result should be evaluated the worst case.
5. Power and distance are rounded to the nearest mW and mm before calculation.
6. The result is rounded to one decimal place for comparison.

6.5 Simultaneous Transmitting Evaluate

Simultaneous transmission configurations as below:

Condition	Side	Frequency Band	
		WLAN_ANT-0	WLAN_ANT-1
1	Horizontal-UP	V	V
2	Horizontal-Down	V	V
3	Vertical-Front	V	V
4	Vertical-Back	V	V

6.5.1 Sum of 1-g SAR of all simultaneously transmitting

When the sum of 1-g SAR of all simultaneously transmitting antennas in and operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

Sum of 1-g SAR of summary as below:

Phantom Position		Spacing (mm)	ASSY	WLAN_ANT-0		WLAN_ANT-1		Σ SAR ^{1g} (W/kg)	Event
				Band	SAR ^{1g} (W/kg)	Band	SAR ^{1g} (W/kg)		
Flat	Horizontal-UP	5	N/A	IEEE 802.11ac	0.33	IEEE 802.11ac	0.34	0.67	<1.6
Flat	Horizontal-Down	5	USB cable	IEEE 802.11ac	0.29	IEEE 802.11ac	0.74	1.03	<1.6
Flat	Vertical-Front	5	USB cable	IEEE 802.11ac	0.18	IEEE 802.11ac	0.48	0.66	<1.6
Flat	Vertical-Back	5	N/A	IEEE 802.11ac	0.32	IEEE 802.11ac	0.3	0.62	<1.6

Note :1. *=Estimated SAR

2. **The Estimated SAR 0.4W/Kg , test separation distances is > 50 mm



6.5.2 SAR to peak location separation ratio (SPLSR)

When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by $(SAR1 + SAR2)^{1.5}/R_i$, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

All of sum of SAR < 1.6 W/kg, therefore SPLSR is not required.

6.6 SAR test reduction according to KDB

General:

- The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to FCC, Supplement C [June 2001], IEEE1528-2013.
- All modes of operation were investigated, and worst-case results are reported.
- Tissue parameters and temperatures are listed on the SAR plots.
- Batteries are fully charged for all readings.
- When the Channel's SAR 1g of maximum conducted power is > 0.8 mW/g, low, middle and high channel are supposed to be tested.

KDB 447498:

- The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to IEEE1528-2013.

KDB 865664:

- Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.
- When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg.
- Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

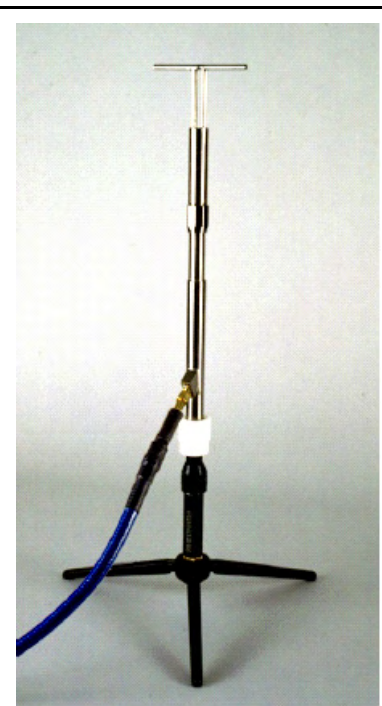
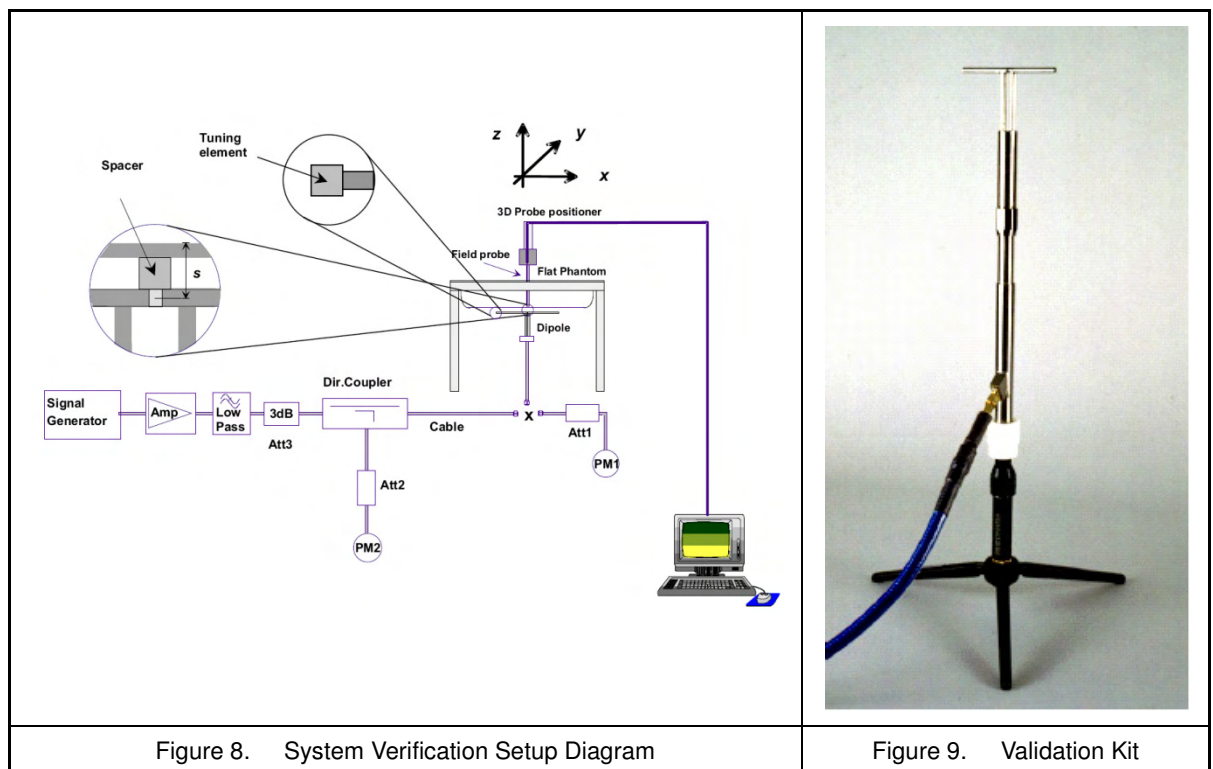
KDB 248227:

- Refer 6.1 SAR Testing with 802.11 Transmitters.

7. System Verification and Validation

7.1 Symmetric Dipoles for System Verification

Construction	Symmetrical dipole with 1/4 balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.
Frequency	2450, 5200 and 5800 MHz
Return Loss	> 20 dB at specified verification position
Power Capability	> 100 W ($f < 1\text{GHz}$); > 40 W ($f > 1\text{GHz}$)
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request
Dimensions	D2450V2: dipole length 51.5 mm; overall height 300 mm D5GHzV2: dipole length 20.6 mm; overall height 300 mm



7.2 Liquid Parameters

Liquid Verify								
Ambient Temperature : 22 $\pm$ 2 $^{\circ}$ C ; Relative Humidity : 40 -70%								
Liquid Type	Frequency	Temp ($^{\circ}$ C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
2450MHz (Body)	2400MHz	22.0	ϵ_r	52.77	52.71	-0.19	$\pm$ 5	Sep. 05, 2016
			σ	1.902	1.919	1.05	$\pm$ 5	
	2450MHz	22.0	ϵ_r	52.70	52.40	-0.57	$\pm$ 5	
			σ	1.950	1.964	0.51	$\pm$ 5	
	2500MHz	22.0	ϵ_r	52.64	52.42	-0.38	$\pm$ 5	
			σ	2.021	2.049	1.49	$\pm$ 5	
2450MHz (Body)	2400MHz	22.0	ϵ_r	52.77	52.71	-0.19	$\pm$ 5	Oct. 21, 2016
			σ	1.902	1.919	1.05	$\pm$ 5	
	2450MHz	22.0	ϵ_r	52.70	52.40	-0.57	$\pm$ 5	
			σ	1.950	1.964	0.51	$\pm$ 5	
	2500MHz	22.0	ϵ_r	52.64	52.42	-0.38	$\pm$ 5	
			σ	2.021	2.049	1.49	$\pm$ 5	
5200MHz (Body)	5150MHz	22.0	ϵ_r	49.08	48.80	-0.61	$\pm$ 5	Sep. 06, 2016
			σ	5.241	5.167	-1.34	$\pm$ 5	
	5200MHz	22.0	ϵ_r	49.01	48.77	-0.41	$\pm$ 5	
			σ	5.299	5.245	-0.94	$\pm$ 5	
	5250MHz	22.0	ϵ_r	48.95	48.59	-0.61	$\pm$ 5	
			σ	5.358	5.304	-1.12	$\pm$ 5	
5200MHz (Body)	5150MHz	22.0	ϵ_r	49.08	48.80	-0.61	$\pm$ 5	Sep. 07, 2016
			σ	5.241	5.167	-1.34	$\pm$ 5	
	5200MHz	22.0	ϵ_r	49.01	48.77	-0.41	$\pm$ 5	
			σ	5.299	5.245	-0.94	$\pm$ 5	
	5250MHz	22.0	ϵ_r	48.95	48.59	-0.61	$\pm$ 5	
			σ	5.358	5.304	-1.12	$\pm$ 5	
5200MHz (Body)	5150MHz	22.0	ϵ_r	49.08	48.80	-0.61	$\pm$ 5	Sep. 08, 2016
			σ	5.241	5.167	-1.34	$\pm$ 5	
	5200MHz	22.0	ϵ_r	49.01	48.77	-0.41	$\pm$ 5	
			σ	5.299	5.245	-0.94	$\pm$ 5	
	5250MHz	22.0	ϵ_r	48.95	48.59	-0.61	$\pm$ 5	
			σ	5.358	5.304	-1.12	$\pm$ 5	

Table 3. Measured Tissue dielectric parameters for body phantoms -1

Liquid Verify								
Ambient Temperature : 22 ± 2 °C ; Relative Humidity : 40 -70%								
Liquid Type	Frequency	Temp (°C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
5200MHz (Body)	5150MHz	22.0	ϵ_r	49.08	48.80	-0.61	± 5	Oct. 20, 2016
			σ	5.241	5.167	-1.34	± 5	
	5200MHz	22.0	ϵ_r	49.01	48.77	-0.41	± 5	
			σ	5.299	5.245	-0.94	± 5	
	5250MHz	22.0	ϵ_r	48.95	48.59	-0.61	± 5	
			σ	5.358	5.304	-1.12	± 5	
5800MHz (Body)	5750MHz	22.0	ϵ_r	48.27	47.46	-1.66	± 5	Sep. 06, 2016
			σ	5.942	6.036	1.68	± 5	
	5800MHz	22.0	ϵ_r	48.20	47.28	-1.87	± 5	
			σ	6.000	6.131	2.17	± 5	
	5850MHz	22.0	ϵ_r	48.20	47.23	-2.08	± 5	
			σ	6.000	6.202	3.33	± 5	
5800MHz (Body)	5750MHz	22.0	ϵ_r	48.27	47.46	-1.66	± 5	Sep. 07, 2016
			σ	5.942	6.036	1.68	± 5	
	5800MHz	22.0	ϵ_r	48.20	47.28	-1.87	± 5	
			σ	6.000	6.131	2.17	± 5	
	5850MHz	22.0	ϵ_r	48.20	47.23	-2.08	± 5	
			σ	6.000	6.202	3.33	± 5	
5800MHz (Body)	5750MHz	22.0	ϵ_r	48.27	47.46	-1.66	± 5	Sep. 08, 2016
			σ	5.942	6.036	1.68	± 5	
	5800MHz	22.0	ϵ_r	48.20	47.28	-1.87	± 5	
			σ	6.000	6.131	2.17	± 5	
	5850MHz	22.0	ϵ_r	48.20	47.23	-2.08	± 5	
			σ	6.000	6.202	3.33	± 5	
5800MHz (Body)	5750MHz	22.0	ϵ_r	48.27	47.46	-1.66	± 5	Oct. 19, 2016
			σ	5.942	6.036	1.68	± 5	
	5800MHz	22.0	ϵ_r	48.20	47.28	-1.87	± 5	
			σ	6.000	6.131	2.17	± 5	
	5850MHz	22.0	ϵ_r	48.20	47.23	-2.08	± 5	
			σ	6.000	6.202	3.33	± 5	

Table 4. Measured Tissue dielectric parameters for body phantoms -2

Liquid Verify								
Ambient Temperature : 22 $\pm$ 2 $^{\circ}$ C ; Relative Humidity : 40 -70%								
Liquid Type	Frequency	Temp ($^{\circ}$ C)	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)	Measured Date
5800MHz (Body)	5750MHz	22.0	ϵ_r	48.27	47.46	-1.66	$\pm$ 5	Oct. 20, 2016
			σ	5.942	6.036	1.68	$\pm$ 5	
	5800MHz	22.0	ϵ_r	48.20	47.28	-1.87	$\pm$ 5	
			σ	6.000	6.131	2.17	$\pm$ 5	
	5850MHz	22.0	ϵ_r	48.20	47.23	-2.08	$\pm$ 5	
			σ	6.000	6.202	3.33	$\pm$ 5	

Table 5. Measured Tissue dielectric parameters for body phantoms -3

7.3 Verification Summary

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of $\pm 7\%$. The verification was performed at 2450MHz, 5200MHz and 5800MHz.

Mixture Type	Frequency (MHz)	Power	SAR _{1g} (W/Kg)	SAR _{10g} (W/Kg)	Drift (dB)	Difference percentage		Probe Model / Serial No.	Dipole Model / Serial No.	1W Target		Date
						1g	10g			SAR _{1g} (mW/g)	SAR _{10g} (mW/g)	
Body	2450	250 mW	12.8	5.98	0	-1.7%	-2.4%	EX3DV4 SN:3977	D2450V2 SN:712	52.10	24.50	Sep. 05, 2016
		Normalize to 1 Watt	51.20	23.92								
Body	2450	250 mW	13.1	6.05	0	0.6%	-1.2%	EX3DV4 SN:3977	D2450V2 SN:712	52.10	24.50	Oct. 21, 2016
		Normalize to 1 Watt	52.40	24.20								
Body	5200	100 mW	7.45	2.12	0.06	-1.6%	-0.9%	EX3DV4 SN:3977	D5200V2 SN:1021	75.70	21.40	Sep. 06, 2016
		Normalize to 1 Watt	74.50	21.20								
Body	5200	100 mW	7.51	2.13	0.07	-0.8%	-0.5%	EX3DV4 SN:3977	D5200V2 SN:1021	75.70	21.40	Sep. 07, 2016
		Normalize to 1 Watt	75.10	21.30								
Body	5200	100 mW	7.53	2.13	0.04	-0.5%	-0.5%	EX3DV4 SN:3977	D5200V2 SN:1021	75.70	21.40	Sep. 08, 2016
		Normalize to 1 Watt	75.30	21.30								
Body	5200	100 mW	7.89	2.23	0.17	4.2%	4.2%	EX3DV4 SN:3977	D5200V2 SN:1021	75.70	21.40	Oct. 20, 2016
		Normalize to 1 Watt	78.90	22.30								
Body	5800	100 mW	7.52	2.11	-0.18	-2.7%	-1.4%	EX3DV4 SN:3977	D5800V2 SN:1021	77.30	21.40	Sep. 06, 2016
		Normalize to 1 Watt	75.20	21.10								
Body	5800	100 mW	7.46	2.07	-0.03	-3.5%	-3.3%	EX3DV4 SN:3977	D5800V2 SN:1021	77.30	21.40	Sep. 07, 2016
		Normalize to 1 Watt	74.60	20.70								
Body	5800	100 mW	7.65	2.13	0.06	-1.0%	-0.5%	EX3DV4 SN:3977	D5800V2 SN:1021	77.30	21.40	Sep. 08, 2016
		Normalize to 1 Watt	76.50	21.30								
Body	5800	100 mW	7.8	2.16	0.05	0.9%	0.9%	EX3DV4 SN:3977	D5800V2 SN:1021	77.30	21.40	Oct. 19, 2016
		Normalize to 1 Watt	78.00	21.60								
Body	5800	100 mW	7.81	2.16	0.07	1.0%	0.9%	EX3DV4 SN:3977	D5800V2 SN:1021	77.30	21.40	Oct. 20, 2016
		Normalize to 1 Watt	78.10	21.60								



7.4 Validation Summary

Per FCC KDB 865664 D02 v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2013 and FCC KDB 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters as below.

Probe Type Model / Serial No.	Prob Cal. Point (MHz)	Head / Body	Cond.	Perm.	CW Validation			Mod. Validation			Date
			ϵ_r	σ	Sensitivity	Probe	Probe	Mod. Type	Duty Factor	PAR	
						Linearity	Isotropy				
EX3DV4 SN:3977	2450	Body	52.40	1.964	Pass	Pass	Pass	DSSS/OFDM	N/A	Pass	Sep. 05, 2016
EX3DV4 SN:3977	2450	Body	52.40	1.964	Pass	Pass	Pass	DSSS/OFDM	N/A	Pass	Oct. 21, 2016
EX3DV4 SN:3977	5200	Body	48.77	5.245	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 06, 2016
EX3DV4 SN:3977	5200	Body	48.77	5.245	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 07, 2016
EX3DV4 SN:3977	5200	Body	48.77	5.245	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 08, 2016
EX3DV4 SN:3977	5200	Body	48.77	5.245	Pass	Pass	Pass	OFDM	N/A	Pass	Oct. 20, 2016
EX3DV4 SN:3977	5800	Body	47.28	6.131	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 06, 2016
EX3DV4 SN:3977	5800	Body	47.28	6.131	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 07, 2016
EX3DV4 SN:3977	5800	Body	47.28	6.131	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 08, 2016
EX3DV4 SN:3977	5800	Body	47.28	6.131	Pass	Pass	Pass	OFDM	N/A	Pass	Oct. 19, 2016
EX3DV4 SN:3977	5800	Body	47.28	6.131	Pass	Pass	Pass	OFDM	N/A	Pass	Oct. 20, 2016



8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	2450MHz System Validation Kit	D2450V2	712	Apr. 01, 2016	Apr. 01, 2017
SPEAG	5GHz System Validation Kit	D5GHZV2	1021	Apr. 08, 2016	Apr. 08, 2017
SPEAG	Dosimetric E-Field Probe	EX3DV4	3977	Mar. 09, 2016	Mar. 09, 2017
SPEAG	Data Acquisition Electronics	DAE4	779	Mar. 02, 2016	Mar. 02, 2017
SPEAG	Device Holder	N/A	N/A	NCR	
SPEAG	Measurement Server	SE UMS 011 AA	1025	NCR	
SPEAG	Phantom (ELI V4.0)	QDOVA001BB	1036	NCR	
SPEAG	Robot	Staubli TX90XL	F07/564ZA1/C/01	NCR	
SPEAG	Software	DASY52 V52.8 (8)	N/A	NCR	
SPEAG	Software	SEMCAD X V14.6.10 (7331)	N/A	NCR	
Agilent	Dielectric Probe Kit	85070C	US99360094	NCR	
Agilent	ENA Series Network Analyzer	E5071B	MY42404655	Apr. 13, 2016	Apr. 13, 2017
R&S	Power Sensor	NRP-Z22	100179	NCR	
Agilent	Power Sensor	8481H	3318A20779	Jun. 06, 2016	Jun. 06, 2017
Agilent	Power Meter	EDM Series E4418B	GB40206143	Jun. 06, 2016	Jun. 06, 2017
Anritsu	Power Meter	ML2495A	1135009	Aug. 24, 2016	Aug. 24, 2017
Agilent	MXF-G-B RF Vector Signal Generator	N5182B	MY53050382	May 20, 2016	May 20, 2017
Agilent	Dual Directional Coupler	778D	50334	NCR	
Mini-Circuits	Power Amplifier	ZHL-42W-SMA	D111103#5	NCR	
Mini-Circuits	Power Amplifier	ZVE-8G-SMA	D042005 671800514	NCR	
Aisi	Attenuator	IEAT 3dB	N/A	NCR	

Table 6. Test Equipment List



9. Measurement Uncertainty

Measurement uncertainties in SAR measurements are difficult to quantify due to several variables including biological, physiological, and environmental. However, we estimate the measurement uncertainties in SAR_{1g} to be less than $\pm 21.76\%$ for 300MHz ~3GHz and 3GHz ~ 6GHz $\pm 25.68\%$ [8] .

According to Std. C95.3[9], the overall uncertainties are difficult to assess and will vary with the type of meter and usage situation. However, accuracy's of ± 1 to 3 dB can be expected in practice, with greater uncertainties in near-field situations and at higher frequencies (shorter wavelengths), or areas where large reflecting objects are present. Under optimum measurement conditions, SAR measurement uncertainties of at least ± 2 dB can be expected.

Uncertainty of a Measure SAR of EUT with DASY System

Item	Uncertainty Component	Uncertainty Value	Prob. Dist	Div.	c_i (1g)	c_i (10g)	Std. Unc. (1-g)	Std. Unc. (10-g)	v_i or V_{eff}
Measurement System									
u1	Probe Calibration ($k=1$)	$\pm 6.0\%$	Normal	1	1	1	$\pm 6.0\%$	$\pm 6.0\%$	∞
u2	Axial Isotropy	$\pm 4.7\%$	Rectangular	$\sqrt{3}$	0.7	0.7	$\pm 1.9\%$	$\pm 1.9\%$	∞
u3	Hemispherical Isotropy	$\pm 9.6\%$	Rectangular	$\sqrt{3}$	0.7	0.7	$\pm 3.9\%$	$\pm 3.9\%$	
u4	Boundary Effect	$\pm 1.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
u5	Linearity	$\pm 4.7\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 2.7\%$	$\pm 2.7\%$	∞
u6	System Detection Limit	$\pm 1.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
u7	Readout Electronics	$\pm 0.3\%$	Normal	1	1	1	$\pm 0.3\%$	$\pm 0.3\%$	∞
u8	Response Time	$\pm 0.8\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 0.5\%$	$\pm 0.5\%$	∞
u9	Integration Time	$\pm 1.9\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 1.1\%$	$\pm 1.1\%$	∞
u10	RF Ambient Conditions	$\pm 3.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	∞
u11	RF Ambient Reflections	$\pm 3.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	∞
u12	Probe Positioner Mechanical Tolerance	$\pm 0.4\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 0.2\%$	$\pm 0.2\%$	∞
u13	Probe Positioning with respect to Phantom Shell	$\pm 2.9\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	∞
u14	Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	$\pm 1.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
Test sample Related									
u15	Test sample Positioning	$\pm 3.6\%$	Normal	1	1	1	$\pm 3.6\%$	$\pm 3.6\%$	89
u16	Device Holder Uncertainty	$\pm 2.7\%$	Normal	1	1	1	$\pm 2.7\%$	$\pm 2.7\%$	5
u17	Output Power Variation - SAR drift measurement	$\pm 5.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 2.9\%$	$\pm 2.9\%$	∞
Phantom and Tissue Parameters									
u18	Phantom Uncertainty (shape and thickness tolerances)	$\pm 4.0\%$	Rectangular	$\sqrt{3}$	1	1	$\pm 2.3\%$	$\pm 2.3\%$	∞
u19	Liquid Conductivity - deviation from target values	$\pm 5.0\%$	Rectangular	$\sqrt{3}$	0.64	0.43	$\pm 1.8\%$	$\pm 1.2\%$	∞
u20	Liquid Conductivity - measurement uncertainty	$\pm 2.5\%$	Normal	1	0.64	0.43	$\pm 1.6\%$	$\pm 1.08\%$	69
u21	Liquid Permittivity - deviation from target values	$\pm 5.0\%$	Rectangular	$\sqrt{3}$	0.6	0.49	$\pm 1.7\%$	$\pm 1.4\%$	∞
u22	Liquid Permittivity - measurement uncertainty	$\pm 2.5\%$	Normal	1	0.6	0.49	$\pm 1.5\%$	$\pm 1.23\%$	69
Combined standard uncertainty			RSS				$\pm 10.88\%$	$\pm 10.66\%$	313
Expanded uncertainty (95% CONFIDENCE LEVEL)			$k=2$				$\pm 21.76\%$	$\pm 21.31\%$	

Table 7. Uncertainty Budget for frequency range 300MHz to 3GHz

Uncertainty of a Measure SAR of EUT with DASY System

Item	Uncertainty Component	Uncertainty Value	Prob. Dist	Div.	c_i (1g)	c_i (10g)	Std. Unc. (1-g)	Std. Unc. (10-g)	V_i or V_{eff}
Measurement System									
u1	Probe Calibration ($k=1$)	±6.5%	Normal	1	1	1	±6.5%	±6.5%	∞
u2	Axial Isotropy	±4.7%	Rectangular	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
u3	Hemispherical Isotropy	±9.6%	Rectangular	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	
u4	Boundary Effect	±2.0%	Rectangular	$\sqrt{3}$	1	1	±1.2%	±1.2%	∞
u5	Linearity	±4.7%	Rectangular	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
u6	System Detection Limit	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
u7	Readout Electronics	±0.0%	Normal	1	1	1	±0.0%	±0.0%	∞
u8	Response Time	±0.8%	Rectangular	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
u9	Integration Time	±2.8%	Rectangular	$\sqrt{3}$	1	1	±2.8%	±2.8%	∞
u10	RF Ambient Conditions	±3.0%	Rectangular	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
u11	RF Ambient Reflections	±3.0%	Rectangular	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
u12	Probe Positioner Mechanical Tolerance	±0.7%	Rectangular	$\sqrt{3}$	1	1	±0.7%	±0.7%	∞
u13	Probe Positioning with respect to Phantom Shell	±9.9%	Rectangular	$\sqrt{3}$	1	1	±5.7%	±5.7%	∞
u14	Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	±3.0%	Rectangular	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Test sample Related									
u15	Test sample Positioning	±3.6%	Normal	1	1	1	±3.6%	±3.6%	89
u16	Device Holder Uncertainty	±2.7%	Normal	1	1	1	±2.7%	±2.7%	5
u17	Output Power Variation - SAR drift measurement	±5.0%	Rectangular	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Tissue Parameters									
u18	Phantom Uncertainty (shape and thickness tolerances)	±4.0%	Rectangular	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
u19	Liquid Conductivity - deviation from target values	±5.0%	Rectangular	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
u20	Liquid Conductivity - measurement uncertainty	±2.5%	Normal	1	0.64	0.43	±1.6%	±1.08%	69
u21	Liquid Permittivity - deviation from target values	±5.0%	Rectangular	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
u22	Liquid Permittivity - measurement uncertainty	±2.5%	Normal	1	0.6	0.49	±1.5%	±1.23%	69
Combined standard uncertainty			RSS				±12.84%	±12.65%	313
Expanded uncertainty (95% CONFIDENCE LEVEL)			$k=2$				±25.68%	±25.29%	

Table 8. Uncertainty Budget for frequency range 3GHz to 6GHz

10. Measurement Procedure

The measurement procedures are as follows:

1. For WLAN function, engineering testing software installed on Notebook can provide continuous transmitting signal.
2. Measure output power through RF cable and power meter
3. Set scan area, grid size and other setting on the DASY software
4. Find out the largest SAR result on these testing positions of each band
5. Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

1. Power reference measurement
2. Area scan
3. Zoom scan
4. Power drift measurement

10.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages

1. Extraction of the measured data (grid and values) from the Zoom Scan
2. Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. Generation of a high-resolution mesh within the measured volume
4. Interpolation of all measured values from the measurement grid to the high-resolution grid
5. Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. Calculation of the averaged SAR within masses of 1g and 10g



10.2 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures points and step size follow as below. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

Grid Type	Frequency		Step size (mm)			X*Y*Z (Point)	Cube size			Step size		
			X	Y	Z		X	Y	Z	X	Y	Z
uniform grid	$\leq 3\text{GHz}$	$\leq 2\text{GHz}$	≤ 8	≤ 8	≤ 5	5*5*7	32	32	30	8	8	5
		2G - 3G	≤ 5	≤ 5	≤ 5	7*7*7	30	30	30	5	5	5
		3 - 4GHz	≤ 5	≤ 5	≤ 4	7*7*8	30	30	28	5	5	4
	3 - 6GHz	4 - 5GHz	≤ 4	≤ 4	≤ 3	8*8*10	28	28	27	4	4	3
		5 - 6GHz	≤ 4	≤ 4	≤ 2	8*8*12	28	28	22	4	4	2

(Our measure settings are refer KDB Publication 865664 D01v01r04)

10.3 Volume Scan Procedures

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

10.4 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation. Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

10.5 Power Drift Monitoring

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



11. SAR Test Results Summary

1. According KDB 447498 D01 V06 section 4.1.4, the “Reported” explanation as below:
“When SAR or MPE is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported.”
2. If actual power less than tune-up power that Scaling SAR is required.
3. The formula of Reported SAR, that represent as below:
$$\text{Reported SAR} = \text{Original SAR} * 10^{[(\text{Tune-up power} - \text{Actual power})/10]}$$
4. When the reported SAR of the highest measured maximum output power channel is ≤ 0.8 W/kg, no further SAR testing is required for IEEE 802.11b DSSS.
5. When SAR measurement is required for 2.4 GHz IEEE 802.11g OFDM configurations, the measurement and test reduction procedures for OFDM are applied. SAR is not required for the following 2.4 GHz OFDM conditions.
 - (a) When KDB Publication 447498 D01 SAR test exclusion applies to the OFDM configuration.
 - (b) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
6. Considering the sum of simultaneous transmission, so the n/ac mode must perform the test.
7. The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the IEEE 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band.
8. SAR is measured using the highest measured maximum output power channel.
9. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration.
10. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
11. We used the worst-case position to test TX BF ON configurations with highest power. The results show that all SAR1g are smaller than TX BF OFF.

11.1 Head Measurement SAR

Evaluated head SAR is not available.



11.2 Body Measurement SAR

WLAN ANT-0 test results											
Index.	Position	Band	Ch.	Data Rate (Mbps)	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#1	Flat	IEEE 802.11b	11	1	Horizontal-UP	5	0.023	-0.16	14.45	14.5	0.02
#2	Flat	IEEE 802.11b	11	1	Horizontal-Down (with USB cable)	5	0.046	0.16	14.45	14.5	0.05
#3	Flat	IEEE 802.11b	11	1	Vertical-Front (with USB cable)	5	0.014	0.04	14.45	14.5	0.01
#4	Flat	IEEE 802.11b	11	1	Vertical-Back	5	0.039	0.02	14.45	14.5	0.04
#5	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Horizontal-UP	5	0.017	-0.03	15.46	15.5	0.02
#87	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Horizontal-Down (with USB cable)	5	0.04	-0.13	15.46	15.5	0.04
#7	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Vertical-Front (with USB cable)	5	0.00889	0.14	15.46	15.5	0.01
#8	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Vertical-Back	5	0.026	0.15	15.46	15.5	0.03
#6	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Horizontal-Down (with USB cable) BF ON	5	0.028	-0.11	15.73	16	0.03
#17	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Horizontal-UP	5	0.017	0.12	15.45	15.5	0.02
#18	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Horizontal-Down (with USB cable)	5	0.041	0	15.45	15.5	0.04
#19	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Vertical-Front (with USB cable)	5	0.033	0.08	15.45	15.5	0.03
#20	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Vertical-Back	5	0.022	0.09	15.45	15.5	0.02
#88	Flat	IEEE 802.11n 2.4GHz 40MHz	6	13.5	Horizontal-Down (with USB cable) BF ON	5	0.039	-0.12	15.26	15.5	0.04

WLAN ANT-0 test results											
Index.	Position	Band	Ch.	Data Rate (Mbps)	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#53	Flat	IEEE 802.11a	40	6	Horizontal-UP	5	0.04	0.13	15.08	15.5	0.04
#54	Flat	IEEE 802.11a	40	6	Horizontal-Down (with USB cable)	5	0.056	-0.12	15.08	15.5	0.06
#55	Flat	IEEE 802.11a	40	6	Vertical-Front (with USB cable)	5	0.03	-0.09	15.08	15.5	0.03
#56	Flat	IEEE 802.11a	40	6	Vertical-Back	5	0.024	-0.08	15.08	15.5	0.03
#57	Flat	IEEE 802.11a	153	6	Horizontal-UP	5	0.189	0.04	14.32	15.5	0.25
#58	Flat	IEEE 802.11a	153	6	Horizontal-Down (with USB cable)	5	0.173	-0.01	14.32	15.5	0.23
#59	Flat	IEEE 802.11a	153	6	Vertical-Front (with USB cable)	5	0.085	0.1	14.32	15.5	0.11
#60	Flat	IEEE 802.11a	153	6	Vertical-Back	5	0.093	-0.16	14.32	15.5	0.12
#21	Flat	IEEE 802.11ac 20MHz	44	6.5	Horizontal-UP	5	0.261	-0.04	13.75	14.5	0.31
#22	Flat	IEEE 802.11ac 20MHz	44	6.5	Horizontal-Down (with USB cable)	5	0.038	-0.11	13.75	14.5	0.05
#23	Flat	IEEE 802.11ac 20MHz	44	6.5	Vertical-Front (with USB cable)	5	0.029	-0.02	13.75	14.5	0.03
#24	Flat	IEEE 802.11ac 20MHz	44	6.5	Vertical-Back	5	0.02	0.02	13.75	14.5	0.02
#73	Flat	IEEE 802.11ac 20MHz	40	6.5	Horizontal-UP BF ON	5	0.246	-0.14	14.65	15	0.27
#25	Flat	IEEE 802.11ac 20MHz	161	6.5	Horizontal-UP	5	0.227	-0.04	14.3	14.5	0.24
#26	Flat	IEEE 802.11ac 20MHz	161	6.5	Horizontal-Down (with USB cable)	5	0.063	-0.06	14.3	14.5	0.07
#27	Flat	IEEE 802.11ac 20MHz	161	6.5	Vertical-Front (with USB cable)	5	0.027	-0.16	14.3	14.5	0.03
#28	Flat	IEEE 802.11ac 20MHz	161	6.5	Vertical-Back	5	0.075	-0.18	14.3	14.5	0.08
#74	Flat	IEEE 802.11ac 20MHz	161	6.5	Horizontal-UP BF ON	5	0.21	-0.18	14.43	15	0.24

WLAN ANT-0 test results											
Index.	Position	Band	Ch.	Data Rate (Mbps)	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#37	Flat	IEEE 802.11ac 40MHz	46	13.5	Horizontal-UP	5	0.05	-0.19	14.22	14.5	0.05
#38	Flat	IEEE 802.11ac 40MHz	46	13.5	Horizontal-Down (with USB cable)	5	0.21	0.13	14.22	14.5	0.22
#39	Flat	IEEE 802.11ac 40MHz	46	13.5	Vertical-Front (with USB cable)	5	0.053	-0.14	14.22	14.5	0.06
#40	Flat	IEEE 802.11ac 40MHz	46	13.5	Vertical-Back	5	0.024	-0.03	14.22	14.5	0.03
#75	Flat	IEEE 802.11ac 40MHz	46	13.5	Horizontal-Down (with USB cable) BF ON	5	0.07	-0.15	14.24	14.5	0.07
#41	Flat	IEEE 802.11ac 40MHz	159	13.5	Horizontal-UP	5	0.32	-0.09	14.34	14.5	0.33
#42	Flat	IEEE 802.11ac 40MHz	159	13.5	Horizontal-Down (with USB cable)	5	0.277	-0.06	14.34	14.5	0.29
#43	Flat	IEEE 802.11ac 40MHz	159	13.5	Vertical-Front (with USB cable)	5	0.17	-0.12	14.34	14.5	0.18
#44	Flat	IEEE 802.11ac 40MHz	159	13.5	Vertical-Back	5	0.071	0.1	14.34	14.5	0.07
#76	Flat	IEEE 802.11ac 40MHz	159	13.5	Horizontal-UP BF ON	5	0.244	0.1	14.04	14.5	0.27
#61	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-UP	5	0.049	-0.19	13.06	13.5	0.05
#62	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-Down (with USB cable)	5	0.231	0.13	13.06	13.5	0.26
#63	Flat	IEEE 802.11ac 80MHz	42	29.3	Vertical-Front (with USB cable)	5	0.135	-0.12	13.06	13.5	0.15
#64	Flat	IEEE 802.11ac 80MHz	42	29.3	Vertical-Back	5	0.093	0.1	13.06	13.5	0.10
#65	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-Down (with USB cable) BF ON	5	0.22	-0.06	10.25	10.5	0.23
#91	Flat	IEEE 802.11ac 80MHz	155	29.3	Horizontal-UP	5	0.147	-0.13	12.68	13.5	0.18
#92	Flat	IEEE 802.11ac 80MHz	155	29.3	Horizontal-Down (with USB cable)	5	0.177	0.11	12.68	13.5	0.21
#93	Flat	IEEE 802.11ac 80MHz	155	29.3	Vertical-Front (with USB cable)	5	0.022	-0.07	12.68	13.5	0.03
#94	Flat	IEEE 802.11ac 80MHz	155	29.3	Vertical-Back	5	0.268	0.14	12.68	13.5	0.32
#95	Flat	IEEE 802.11ac 80MHz	155	29.3	Vertical-Back BF ON	5	0.257	0.09	14.24	14.5	0.27



WLAN ANT-1 test results											
Index.	Position	Band	Ch.	Data Rate (Mbps)	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#9	Flat	IEEE 802.11n 2.4GHz 20MHz	1	6.5	Horizontal-UP	5	0.011	0.08	15.49	15.5	0.01
#10	Flat	IEEE 802.11n 2.4GHz 20MHz	1	6.5	Horizontal-Down (with USB cable)	5	0.033	0.12	15.49	15.5	0.03
#11	Flat	IEEE 802.11n 2.4GHz 20MHz	1	6.5	Vertical-Front (with USB cable)	5	0.00245	-0.13	15.49	15.5	0.00
#12	Flat	IEEE 802.11n 2.4GHz 20MHz	1	6.5	Vertical-Back	5	0.013	-0.06	15.49	15.5	0.01
#89	Flat	IEEE 802.11n 2.4GHz 20MHz	6	6.5	Horizontal-Down (with USB cable) BF ON	5	0.028	-0.11	16.36	16.5	0.03
#13	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Horizontal-UP	5	0.00873	-0.06	15.48	15.5	0.01
#14	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Horizontal-Down (with USB cable)	5	0.014	0.07	15.48	15.5	0.01
#15	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Vertical-Front (with USB cable)	5	0.0021	-0.13	15.48	15.5	0.00
#16	Flat	IEEE 802.11n 2.4GHz 40MHz	9	13.5	Vertical-Back	5	0.01	0	15.48	15.5	0.01
#90	Flat	IEEE 802.11n 2.4GHz 40MHz	6	13.5	Horizontal-Down (with USB cable) BF ON	5	0.00224	-0.19	15.02	15.5	0.00
#29	Flat	IEEE 802.11ac 20MHz	40	6.5	Horizontal-UP	5	0.338	0.13	15.43	15.5	0.34
#30	Flat	IEEE 802.11ac 20MHz	40	6.5	Horizontal-Down (with USB cable)	5	0.628	0.11	15.43	15.5	0.64
#31	Flat	IEEE 802.11ac 20MHz	40	6.5	Vertical-Front (with USB cable)	5	0.463	-0.17	15.43	15.5	0.47
#32	Flat	IEEE 802.11ac 20MHz	40	6.5	Vertical-Back	5	0.272	0.18	15.43	15.5	0.28
#77	Flat	IEEE 802.11ac 20MHz	40	6.5	Horizontal-Down (with USB cable) BF ON	5	0.535	-0.15	14.21	14.5	0.57
#33	Flat	IEEE 802.11ac 20MHz	153	6.5	Horizontal-UP	5	0.202	-0.16	13.94	15.5	0.29
#34	Flat	IEEE 802.11ac 20MHz	153	6.5	Horizontal-Down (with USB cable)	5	0.514	0	13.94	15.5	0.74
#35	Flat	IEEE 802.11ac 20MHz	153	6.5	Vertical-Front (with USB cable)	5	0.335	-0.14	13.94	15.5	0.48
#36	Flat	IEEE 802.11ac 20MHz	153	6.5	Vertical-Back	5	0.104	0.19	13.94	15.5	0.15
#78	Flat	IEEE 802.11ac 20MHz	157	6.5	Horizontal-Down (with USB cable) BF ON	5	0.505	-0.16	14.26	14.5	0.53



WLAN ANT-1 test results											
Index.	Position	Band	Ch.	Data Rate (Mbps)	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#45	Flat	IEEE 802.11ac 40MHz	46	13.5	Horizontal-UP	5	0.0042	-0.18	14.11	14.5	0.00
#46	Flat	IEEE 802.11ac 40MHz	46	13.5	Horizontal-Down (with USB cable)	5	0.00716	-0.09	14.11	14.5	0.01
#47	Flat	IEEE 802.11ac 40MHz	46	13.5	Vertical-Front (with USB cable)	5	0.00166	-0.11	14.11	14.5	0.00
#48	Flat	IEEE 802.11ac 40MHz	46	13.5	Vertical-Back	5	0.276	0.07	14.11	14.5	0.30
#79	Flat	IEEE 802.11ac 40MHz	46	13.5	Vertical-Back BF ON	5	0.258	-0.14	13.61	14	0.28
#49	Flat	IEEE 802.11ac 40MHz	151	13.5	Horizontal-UP	5	0.02	0	14.33	14.5	0.02
#50	Flat	IEEE 802.11ac 40MHz	151	13.5	Horizontal-Down (with USB cable)	5	0.021	0.08	14.33	14.5	0.02
#51	Flat	IEEE 802.11ac 40MHz	151	13.5	Vertical-Front (with USB cable)	5	0.029	-0.18	14.33	14.5	0.03
#52	Flat	IEEE 802.11ac 40MHz	151	13.5	Vertical-Back	5	0.114	0.1	14.33	14.5	0.12
#80	Flat	IEEE 802.11ac 40MHz	151	13.5	Vertical-Back BF ON	5	0.101	-0.11	13.91	14	0.10
#96	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-UP	5	0.09	-0.04	13.15	13.5	0.10
#97	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-Down (with USB cable)	5	0.273	-0.14	13.15	13.5	0.30
#98	Flat	IEEE 802.11ac 80MHz	42	29.3	Vertical-Front (with USB cable)	5	0.02	0.16	13.15	13.5	0.02
#99	Flat	IEEE 802.11ac 80MHz	42	29.3	Vertical-Back	5	0.029	-0.04	13.15	13.5	0.03
#100	Flat	IEEE 802.11ac 80MHz	42	29.3	Horizontal-Down (with USB cable) BF ON	5	0.254	-0.18	10.18	10.5	0.27
#101	Flat	IEEE 802.11ac 80MHz	155	29.3	Horizontal-UP	5	0.273	-0.12	13.33	13.5	0.28
#102	Flat	IEEE 802.11ac 80MHz	155	29.3	Horizontal-Down (with USB cable)	5	0.259	0.13	13.33	13.5	0.27
#103	Flat	IEEE 802.11ac 80MHz	155	29.3	Vertical-Front (with USB cable)	5	0.036	-0.11	13.33	13.5	0.04
#104	Flat	IEEE 802.11ac 80MHz	155	29.3	Vertical-Back	5	0.074	-0.08	13.33	13.5	0.08
#105	Flat	IEEE 802.11ac 80MHz	155	29.3	Horizontal-UP BF ON	5	0.241	-0.04	13.53	14	0.27



11.3 Hot-spot mode Measurement SAR

This device is not support Hot-spot function.

11.4 Extremity Measurement SAR

Evaluated extremity SAR is not available.

11.5 Std. C95.1-1992 RF Exposure Limit

Human Exposure	Population Uncontrolled Exposure (W/kg) or (mW/g)	Occupational Controlled Exposure (W/kg) or (mW/g)
Spatial Peak SAR* (head)	1.60	8.00
Spatial Peak SAR** (Whole Body)	0.08	0.40
Spatial Peak SAR*** (Partial-Body)	1.60	8.00
Spatial Peak SAR**** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 9. Safety Limits for Partial Body Exposure

Notes :

- * The Spatial Peak value of the SAR averaged over any 1 gram of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
- ** The Spatial Average value of the SAR averaged over the whole – body.
- *** The Spatial Average value of the SAR averaged over the partial – body.
- **** The Spatial Peak value of the SAR averaged over any 10 grams of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Population / Uncontrolled Environments : are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Occupational / Controlled Environments : are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

12. References

- [1] Std. C95.1-1999, "American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300KHz to 100GHz", New York.
- [2] NCRP, National Council on Radiation Protection and Measurements, "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields", NCRP report NO. 86, 1986.
- [3] T. Schmid, O. Egger, and N. Kuster, "Automatic E-field scanning system for dosimetric assessments", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp, 105-113, Jan. 1996.
- [4] K. Pokovi^c, T. Schmid, and N. Kuster, "Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequency", in ICECOM'97, Dubrovnik, October 15-17, 1997, pp.120-124.
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- [7] Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988 , pp. 139-148.
- [8] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.
- [9] Std. C95.3-1991, "IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave, New York: IEEE, Aug. 1992.
- [10] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10KHz-300GHz, Jan. 1995.
- [11] IEEE Std 1528™-2013 - IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques

Appendix A - System Performance Check

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 AM 09:56:56

System Performance Check at 2450MHz_20160905_Body

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:712

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.964$ S/m; $\epsilon_r = 52.402$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2450MHz/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 19.2 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0:

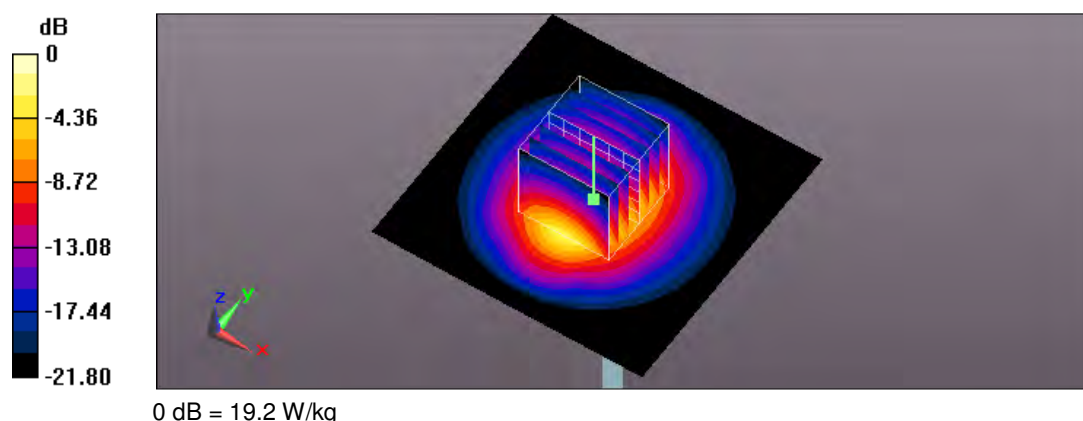
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 102.3 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 24.9 W/kg

SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.98 W/kg

Maximum value of SAR (measured) = 19.2 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 09:42:15

System Performance Check at 2450MHz_20161021_Body

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:712

Communication System: UID 0, CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.964$ S/m; $\epsilon_r = 52.402$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2450MHz/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 20.1 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0:

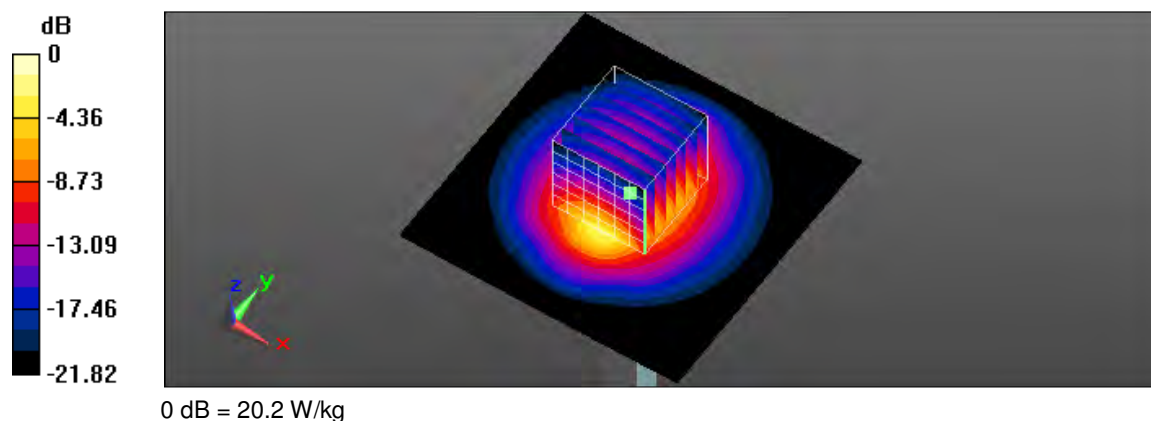
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 102.2 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 27.2 W/kg

SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.05 W/kg

Maximum value of SAR (measured) = 20.2 W/kg



Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2016/9/6 PM 07:32:54

System Performance Check at 5200MHz_20160906_Body
DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

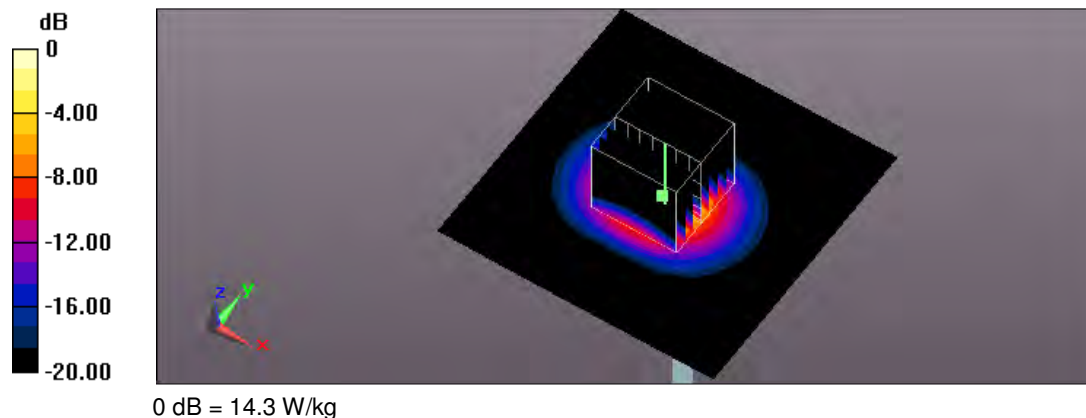
Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5200MHz/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 14.1 W/kg

System Performance Check at 5200MHz/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 57.22 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 29.0 W/kg
SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 14.3 W/kg





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 07:15:21

System Performance Check at 5200MHz_20160907_Body

DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5200MHz/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 14.4 W/kg

System Performance Check at 5200MHz/Zoom Scan (8x8x7)/Cube 0:

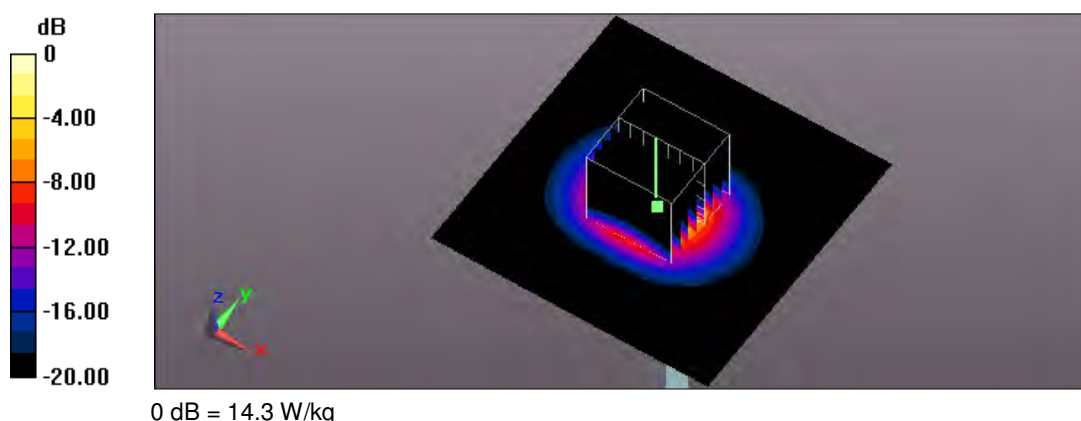
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 57.10 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 30.0 W/kg

SAR(1 g) = 7.51 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 14.3 W/kg





Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 08:47:34

System Performance Check at 5200MHz_20160908_Body

DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5200MHz/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 14.5 W/kg

System Performance Check at 5200MHz/Zoom Scan (8x8x7)/Cube 0:

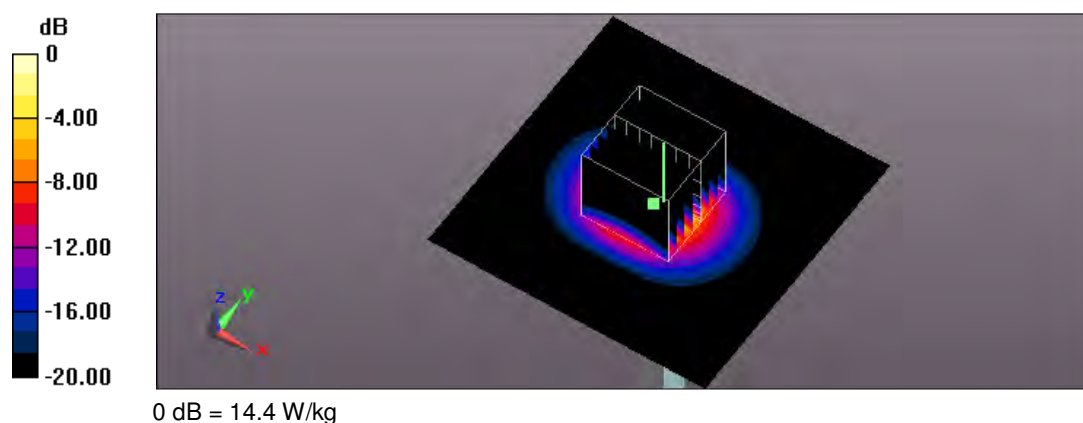
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 57.88 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 30.3 W/kg

SAR(1 g) = 7.53 W/kg; SAR(10 g) = 2.13 W/kg

Maximum value of SAR (measured) = 14.4 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 03:14:58

System Performance Check at 5200MHz_20161020_Body

DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

Communication System: UID 0, CW (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5200MHz/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 15.3 W/kg

System Performance Check at 5200MHz/Zoom Scan (8x8x7)/Cube 0:

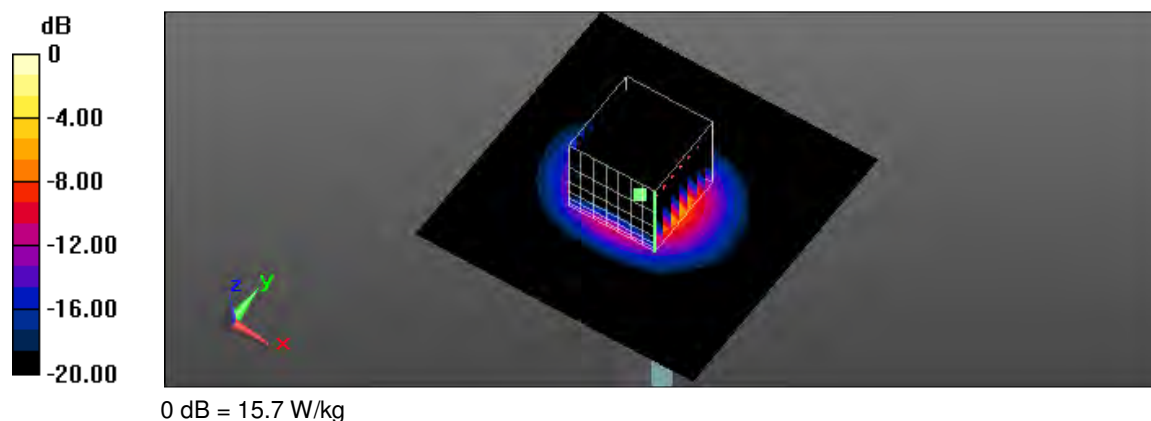
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 59.82 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 30.3 W/kg

SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.23 W/kg

Maximum value of SAR (measured) = 15.7 W/kg



Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2016/9/6 PM 08:55:31

System Performance Check at 5800MHz_20160906_Body
DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

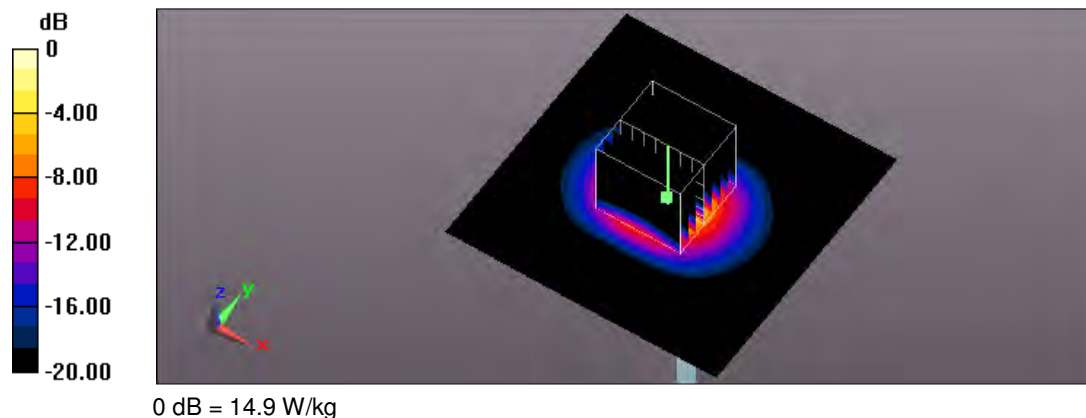
Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 6.131$ S/m; $\epsilon_r = 47.276$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5800MHz/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 15.2 W/kg

System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.25 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 7.52 W/kg; SAR(10 g) = 2.11 W/kg
Maximum value of SAR (measured) = 14.9 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 08:12:19

System Performance Check at 5800MHz_20160907_Body

DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.131$ S/m; $\epsilon_r = 47.276$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5800MHz/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 14.5 W/kg

System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:

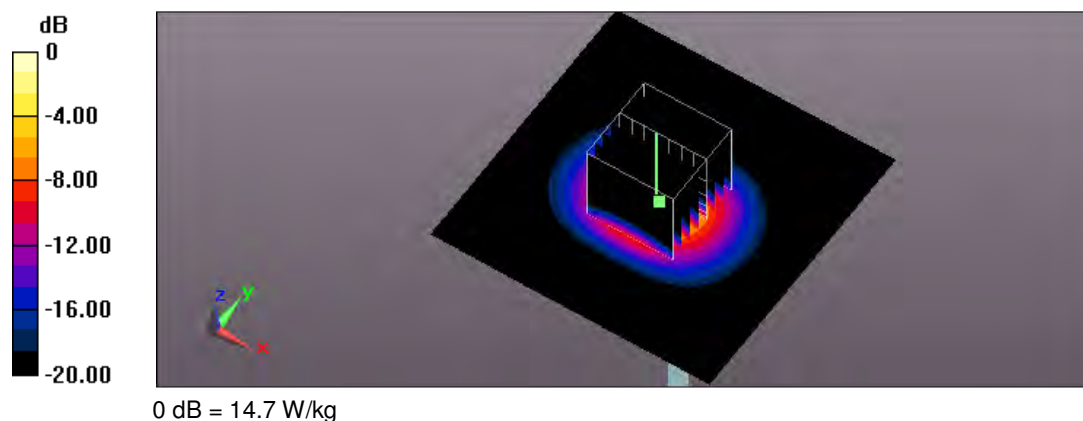
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 54.20 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 33.5 W/kg

SAR(1 g) = 7.46 W/kg; SAR(10 g) = 2.07 W/kg

Maximum value of SAR (measured) = 14.7 W/kg



Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2016/9/8 PM 09:45:33

System Performance Check at 5800MHz_20160908_Body
DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

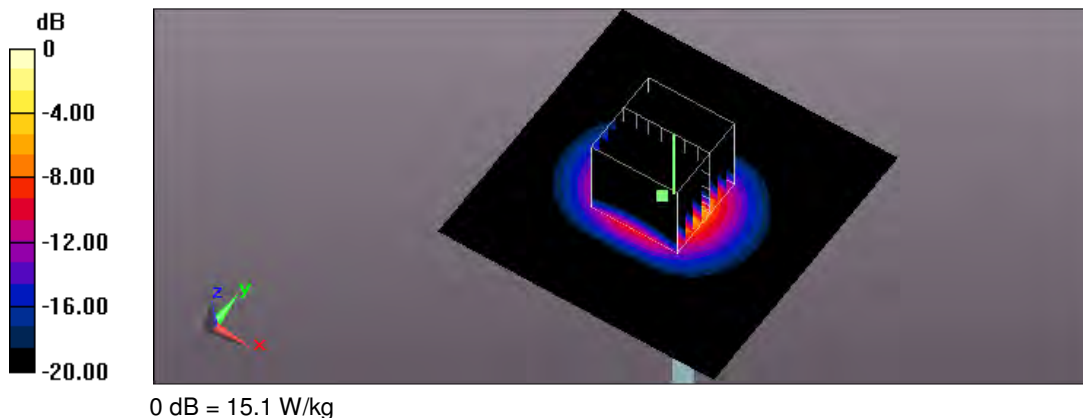
Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 6.131$ S/m; $\epsilon_r = 47.276$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5800MHz/Area Scan (91x91x1):
Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 15.0 W/kg

System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.35 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 34.4 W/kg
SAR(1 g) = 7.65 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 15.1 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/19 PM 03:06:34

System Performance Check at 5800MHz_20161019_Body

DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5800 \text{ MHz}$; $\sigma = 6.131 \text{ S/m}$; $\epsilon_r = 47.276$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5800MHz/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 15.1 W/kg

System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:

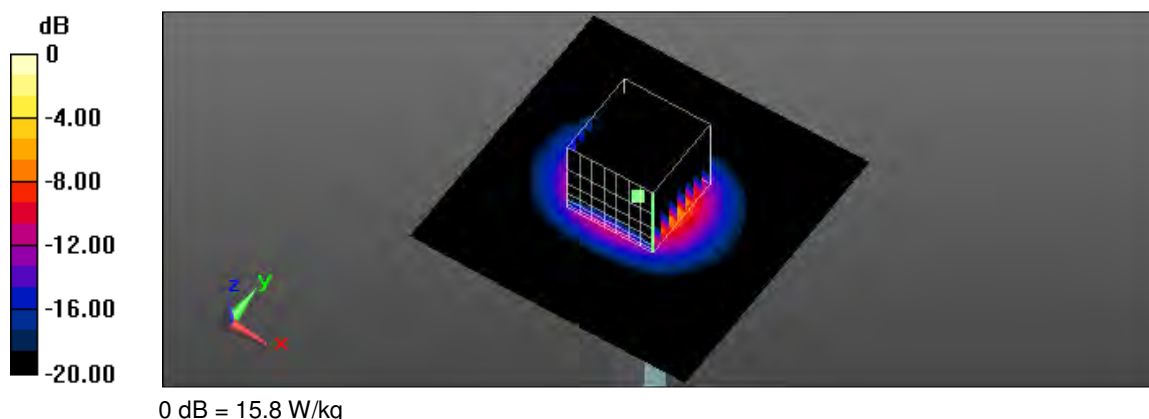
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 57.72 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 33.2 W/kg

SAR(1 g) = 7.8 W/kg; SAR(10 g) = 2.16 W/kg

Maximum value of SAR (measured) = 15.8 W/kg



Test Laboratory: A Test Lab Techno Corp.
Date/Time: 2016/10/20 PM 03:41:57

System Performance Check at 5800MHz_20161020_Body
DUT: Dipole 5GHzV2; Type: D5GHz; Serial: 1021

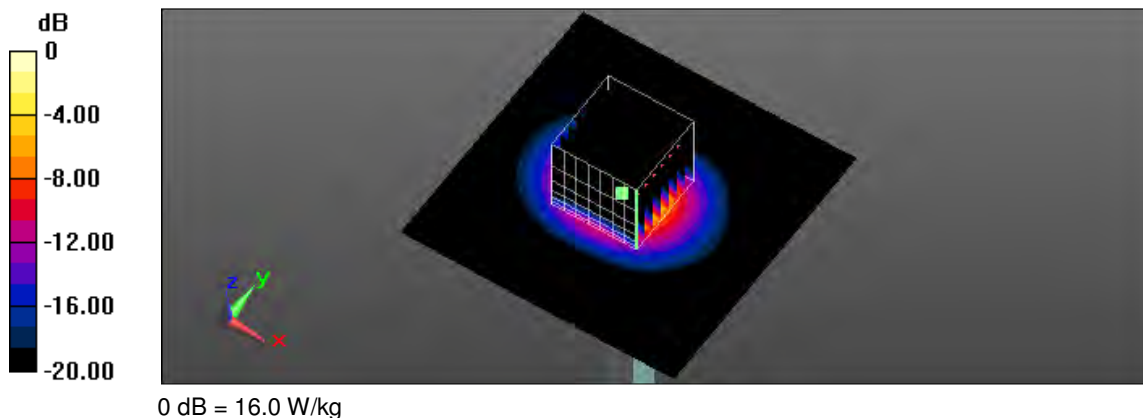
Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5800$ MHz; $\sigma = 6.131$ S/m; $\epsilon_r = 47.276$; $\rho = 1000$ kg/m³
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5800MHz/Area Scan (91x91x1):
Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
Maximum value of SAR (interpolated) = 15.8 W/kg

System Performance Check at 5800MHz/Zoom Scan (8x8x7)/Cube 0:
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm
Reference Value = 57.34 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 33.9 W/kg
 $SAR(1\text{ g}) = 7.81$ W/kg; $SAR(10\text{ g}) = 2.16$ W/kg
Maximum value of SAR (measured) = 16.0 W/kg





Appendix B - SAR Measurement Data

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 01:31:00

1_802.11b CH11_1M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.981$ S/m; $\epsilon_r = 52.329$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0517 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

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

Reference Value = 3.725 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.0450 W/kg

SAR(1 g) = 0.023 W/kg; SAR(10 g) = 0.0087 W/kg

Maximum value of SAR (measured) = 0.0362 W/kg



0 dB = 0.0362 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 02:08:04

2_802.11b CH11_1M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.981$ S/m; $\epsilon_r = 52.329$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0973 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

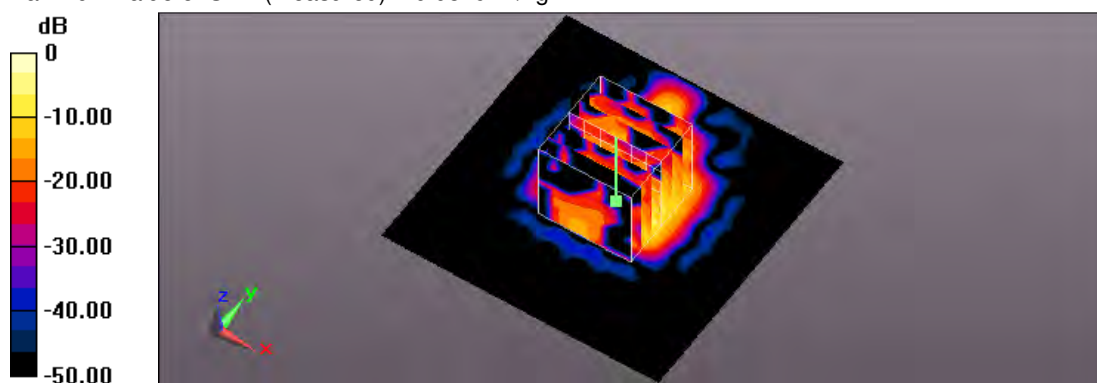
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 6.359 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.114 W/kg

SAR(1 g) = 0.046 W/kg; SAR(10 g) = 0.017 W/kg

Maximum value of SAR (measured) = 0.0819 W/kg



0 dB = 0.0819 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 02:41:17

3_802.11b CH11_1M_Verical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.981$ S/m; $\epsilon_r = 52.329$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0304 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

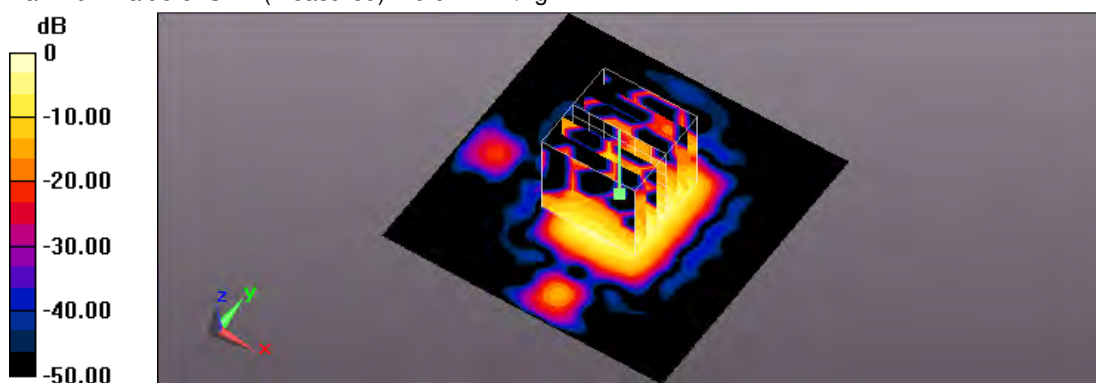
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.272 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.0330 W/kg

SAR(1 g) = 0.014 W/kg; SAR(10 g) = 0.00519 W/kg

Maximum value of SAR (measured) = 0.0221 W/kg



0 dB = 0.0221 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 03:12:04

4_802.11b CH11_1M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.981 \text{ S/m}$; $\epsilon_r = 52.329$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0750 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

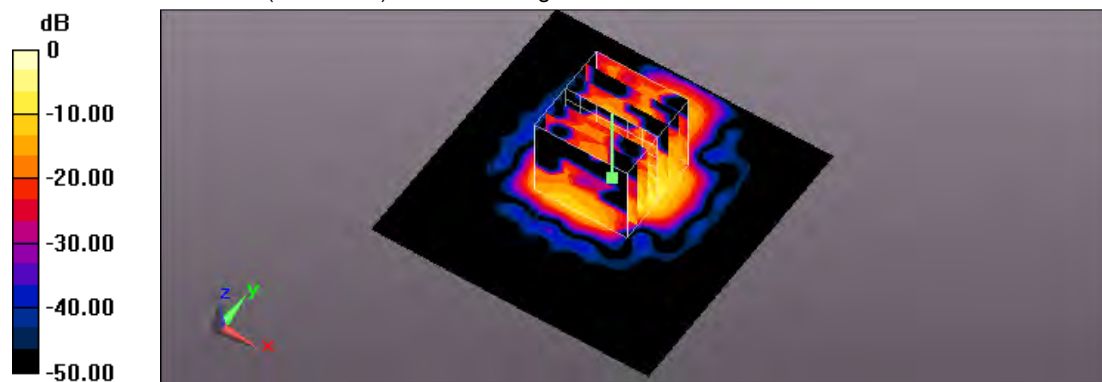
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.440 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.0940 W/kg

SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.014 W/kg

Maximum value of SAR (measured) = 0.0633 W/kg



0 dB = 0.0633 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 05:14:52

5_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0325 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

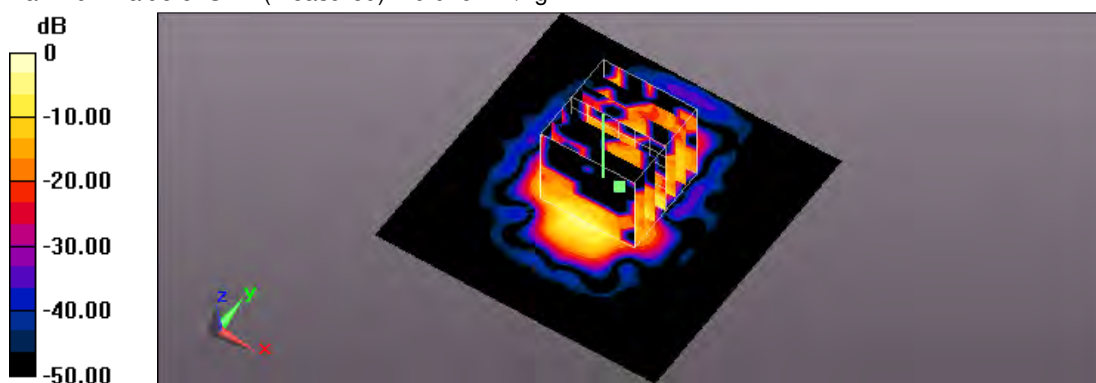
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.333 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.0360 W/kg

SAR(1 g) = 0.017 W/kg; SAR(10 g) = 0.00655 W/kg

Maximum value of SAR (measured) = 0.0262 W/kg



0 dB = 0.0262 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/22 AM 12:10:06

87_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0695 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

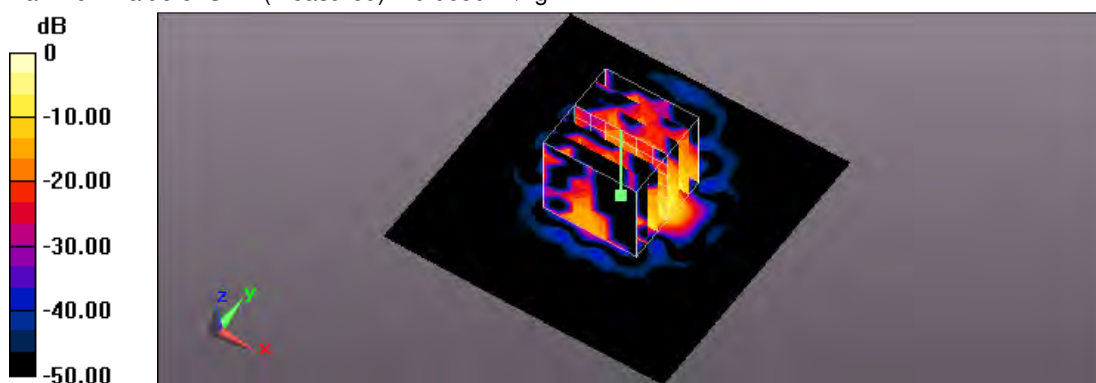
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.429 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.0950 W/kg

SAR(1 g) = 0.040 W/kg; SAR(10 g) = 0.017 W/kg

Maximum value of SAR (measured) = 0.0650 W/kg



0 dB = 0.0650 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 04:16:07

7_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Vetical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0264 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

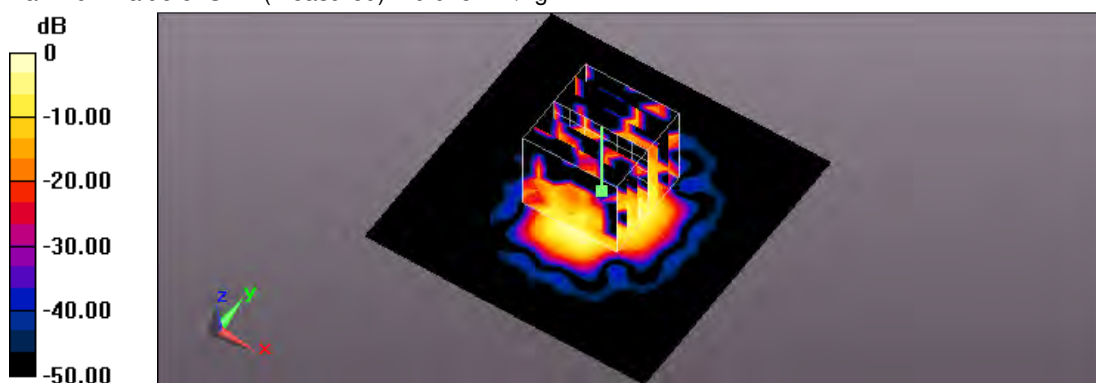
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.666 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.0200 W/kg

SAR(1 g) = 0.00889 W/kg; SAR(10 g) = 0.00286 W/kg

Maximum value of SAR (measured) = 0.0154 W/kg



0 dB = 0.0154 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 03:46:01

8_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Vetical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0562 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

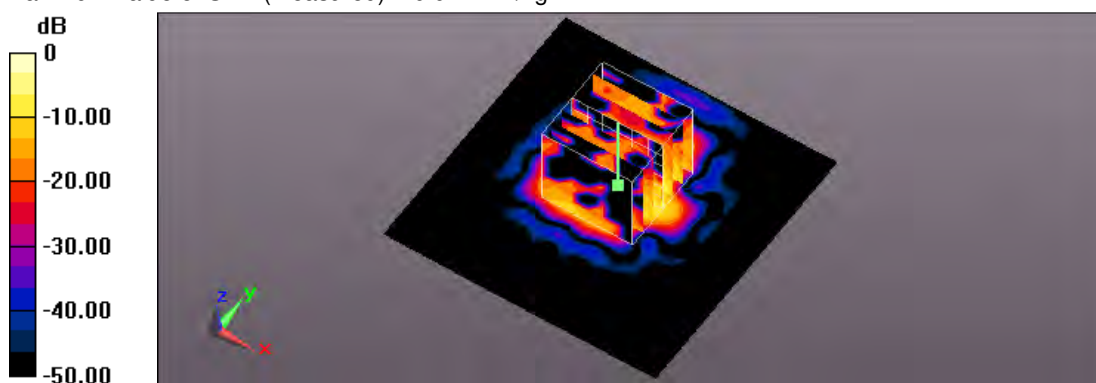
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.369 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.0580 W/kg

SAR(1 g) = 0.026 W/kg; SAR(10 g) = 0.00946 W/kg

Maximum value of SAR (measured) = 0.0421 W/kg



0 dB = 0.0421 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 04:48:12

6_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0787 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

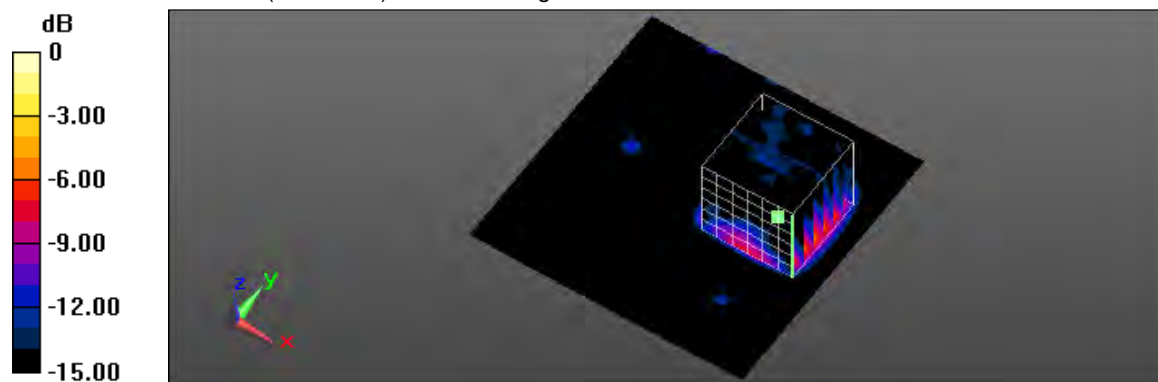
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 5.332 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0700 W/kg

SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.010 W/kg

Maximum value of SAR (measured) = 0.0497 W/kg



0 dB = 0.0497 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/6 AM 12:18:18

17_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0375 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

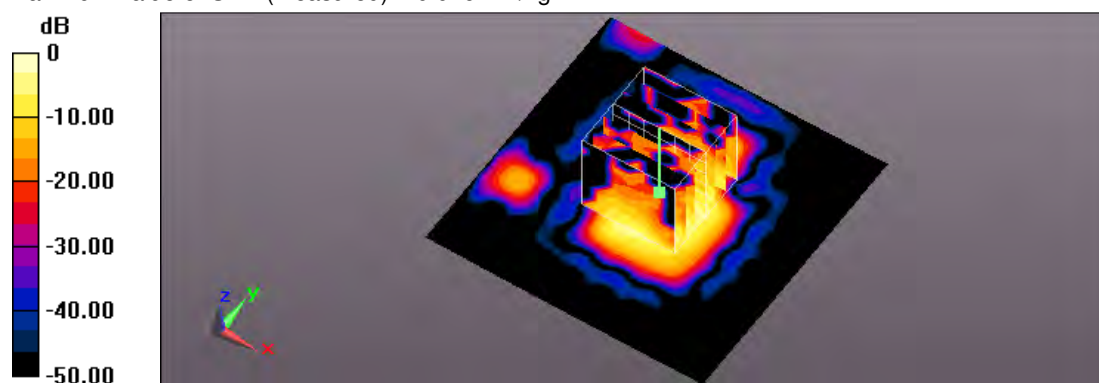
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.576 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.0350 W/kg

SAR(1 g) = 0.017 W/kg; SAR(10 g) = 0.00662 W/kg

Maximum value of SAR (measured) = 0.0262 W/kg



0 dB = 0.0262 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/6 AM 12:44:59

18_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0887 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

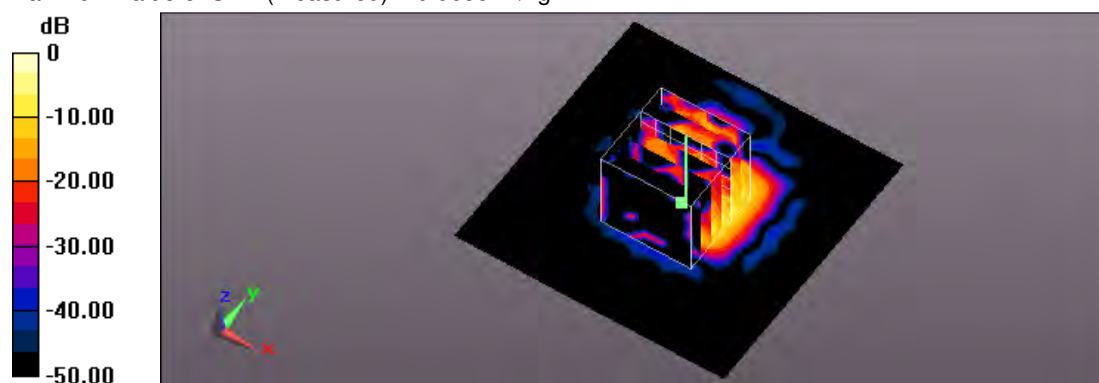
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.988 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.0993 W/kg

SAR(1 g) = 0.041 W/kg; SAR(10 g) = 0.024 W/kg

Maximum value of SAR (measured) = 0.0658 W/kg



0 dB = 0.0658 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/6 AM 09:34:10

19_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Vetical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452 \text{ MHz}$; $\sigma = 1.966 \text{ S/m}$; $\epsilon_r = 52.375$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0579 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

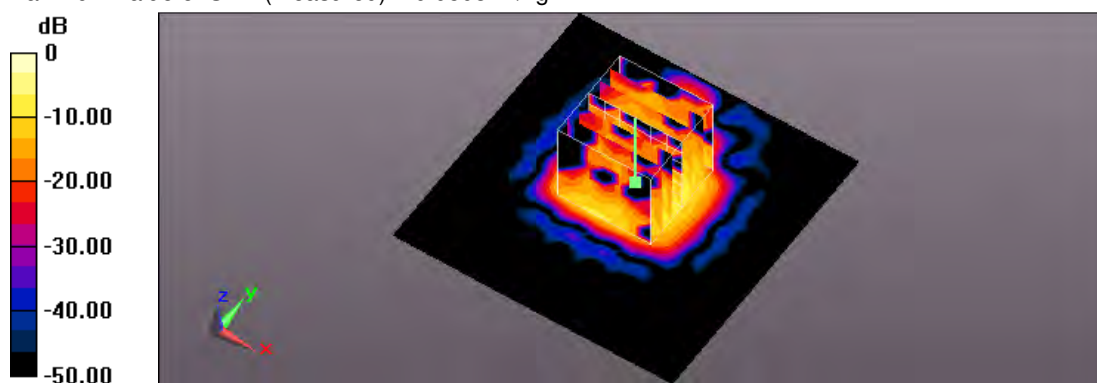
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.862 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0710 W/kg

SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.0508 W/kg



0 dB = 0.0508 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/6 AM 02:10:22

20_IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0452 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

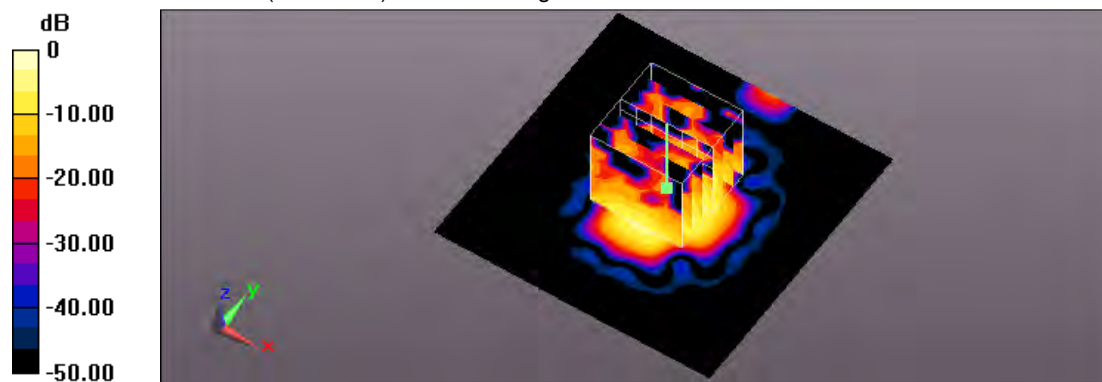
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.595 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0460 W/kg

SAR(1 g) = 0.022 W/kg; SAR(10 g) = 0.00805 W/kg

Maximum value of SAR (measured) = 0.0351 W/kg



0 dB = 0.0351 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 PM 10:16:58

88_ IEEE 802.11n 2.4GHz 40MHz CH6_13.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0691 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

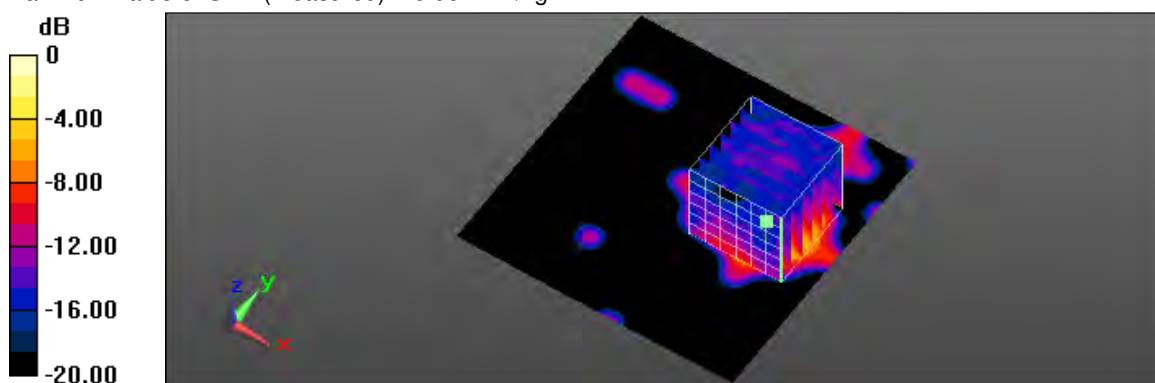
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.492 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.0980 W/kg

SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.016 W/kg

Maximum value of SAR (measured) = 0.0627 W/kg



0 dB = 0.0627 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 06:40:46

53_ IEEE 802.11a CH40_6M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.102 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

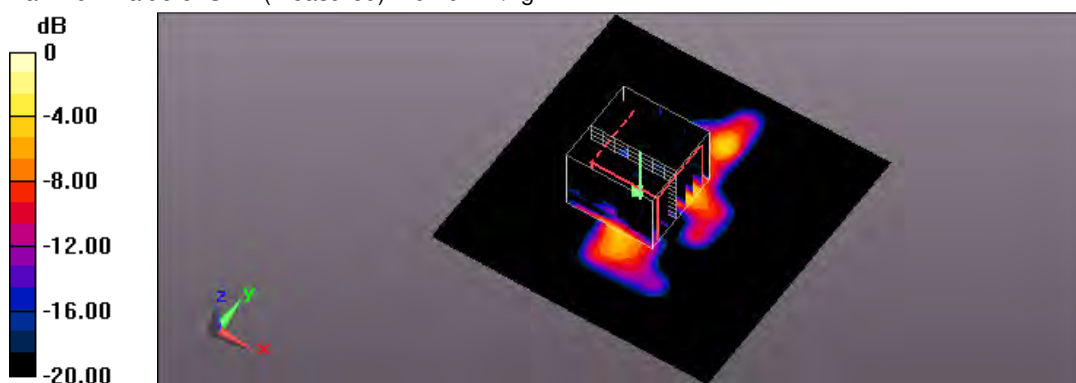
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 3.809 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.180 W/kg

SAR(1 g) = 0.040 W/kg; SAR(10 g) = 0.010 W/kg

Maximum value of SAR (measured) = 0.101 W/kg



0 dB = 0.101 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 05:13:13

54_ IEEE 802.11a CH40_6M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.121 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

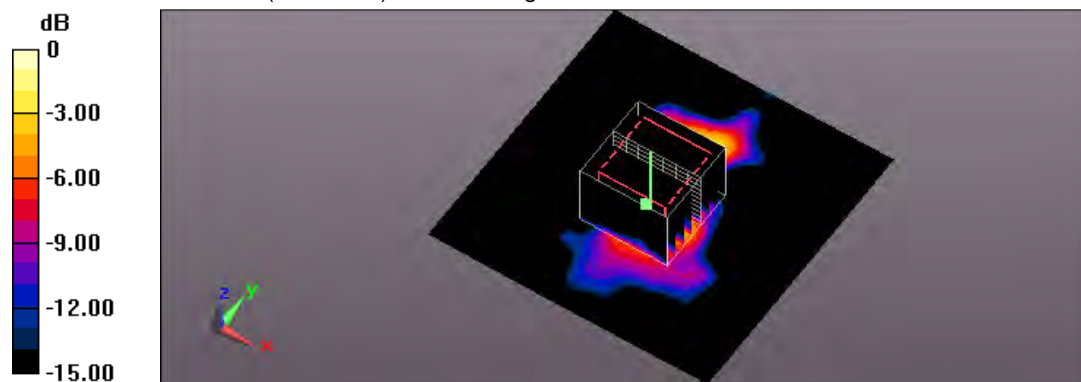
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 5.468 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.056 W/kg; SAR(10 g) = 0.015 W/kg

Maximum value of SAR (measured) = 0.141 W/kg



0 dB = 0.141 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 02:49:25

55_ IEEE 802.11a CH40_6M_Verical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0770 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

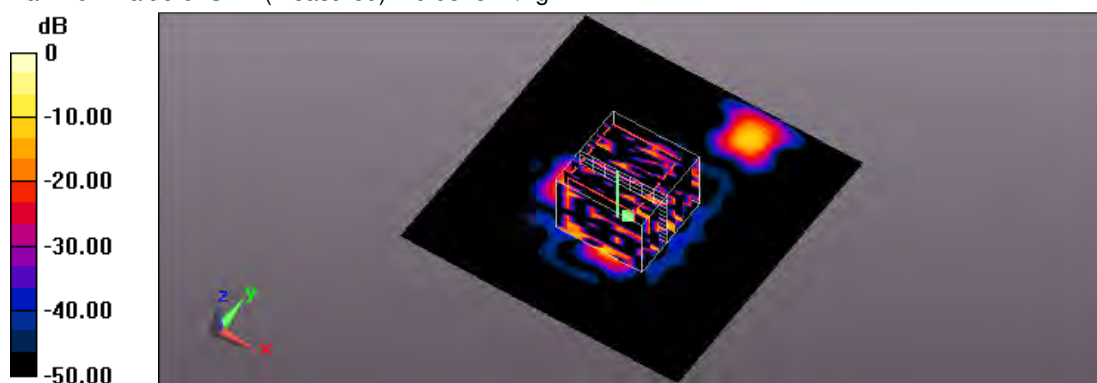
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 2.679 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.143 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.00618 W/kg

Maximum value of SAR (measured) = 0.0828 W/kg



0 dB = 0.0828 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 12:03:13

56_IEEE 802.11a CH40_6M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0955 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

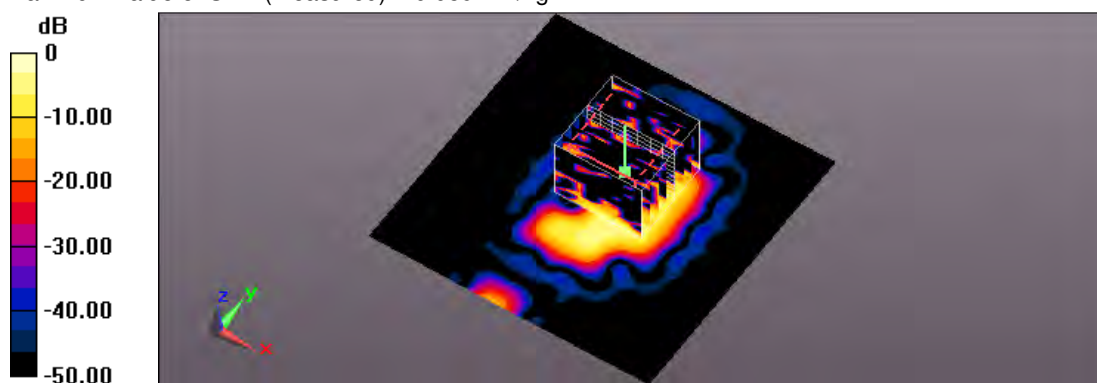
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 2.813 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.182 W/kg

SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.007 W/kg

Maximum value of SAR (measured) = 0.0597 W/kg



0 dB = 0.0597 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 07:32:01

57_ IEEE 802.11a CH153_6M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5765 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.382 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

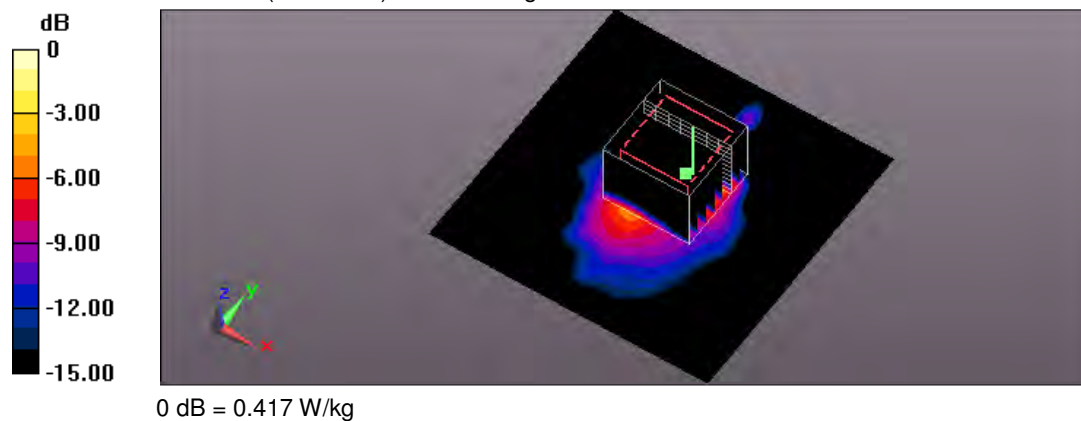
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 5.237 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.772 W/kg

SAR(1 g) = 0.189 W/kg; SAR(10 g) = 0.049 W/kg

Maximum value of SAR (measured) = 0.417 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 04:10:16

58_ IEEE 802.11a CH153_6M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5765 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.332 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

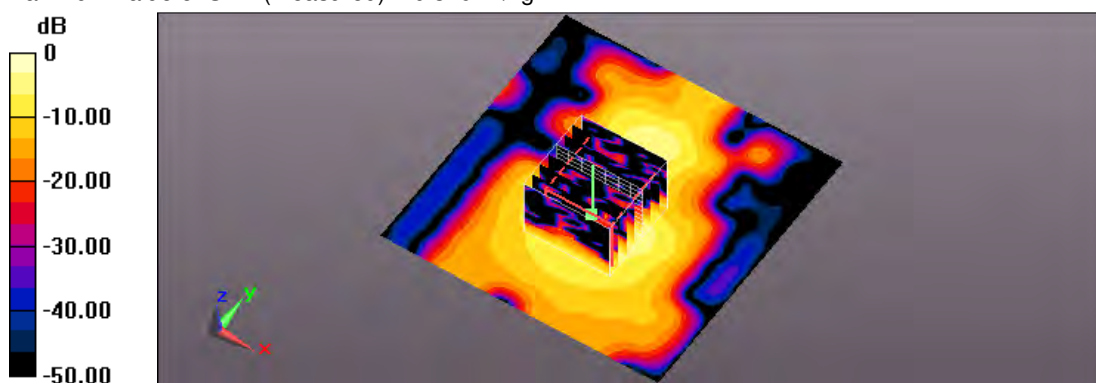
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 7.607 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.741 W/kg

SAR(1 g) = 0.173 W/kg; SAR(10 g) = 0.048 W/kg

Maximum value of SAR (measured) = 0.379 W/kg



0 dB = 0.379 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 03:26:19

59_ IEEE 802.11a CH153_6M_Veritical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5765 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.247 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

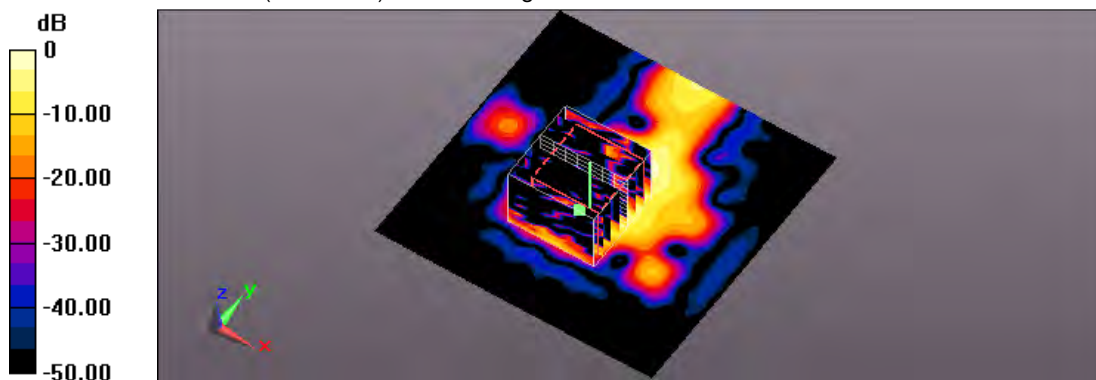
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 4.370 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.400 W/kg

SAR(1 g) = 0.085 W/kg; SAR(10 g) = 0.021 W/kg

Maximum value of SAR (measured) = 0.213 W/kg



0 dB = 0.213 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 11:25:44

60_ IEEE 802.11a CH153_6M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11a (0); Frequency: 5765 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.236 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

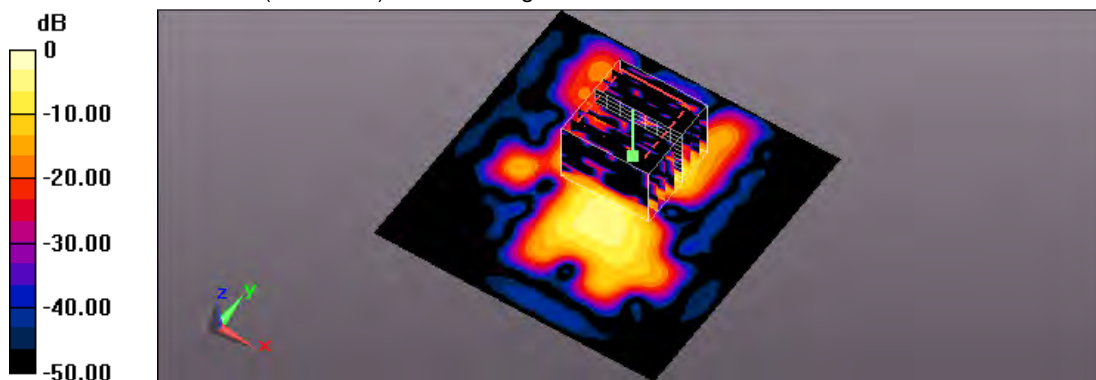
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.771 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.093 W/kg; SAR(10 g) = 0.021 W/kg

Maximum value of SAR (measured) = 0.234 W/kg



0 dB = 0.234 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/6 PM 10:24:52

21_ IEEE 802.11ac 5GHz 20MHz CH44_6.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5220 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5220 \text{ MHz}$; $\sigma = 5.263 \text{ S/m}$; $\epsilon_r = 48.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.578 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

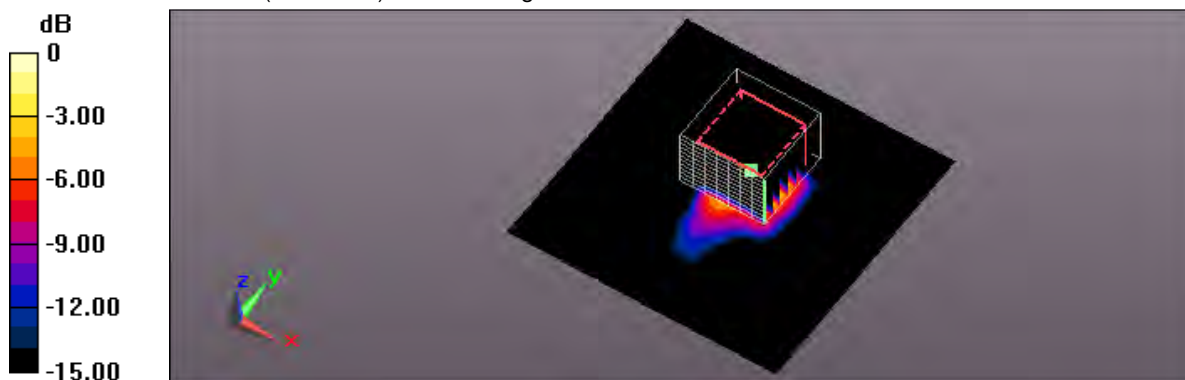
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 6.179 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.994 W/kg

SAR(1 g) = 0.261 W/kg; SAR(10 g) = 0.084 W/kg

Maximum value of SAR (measured) = 0.481 W/kg



0 dB = 0.481 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 12:05:20

22_ IEEE 802.11ac 5GHz 20MHz CH44_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5220 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5220 \text{ MHz}$; $\sigma = 5.263 \text{ S/m}$; $\epsilon_r = 48.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.170 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

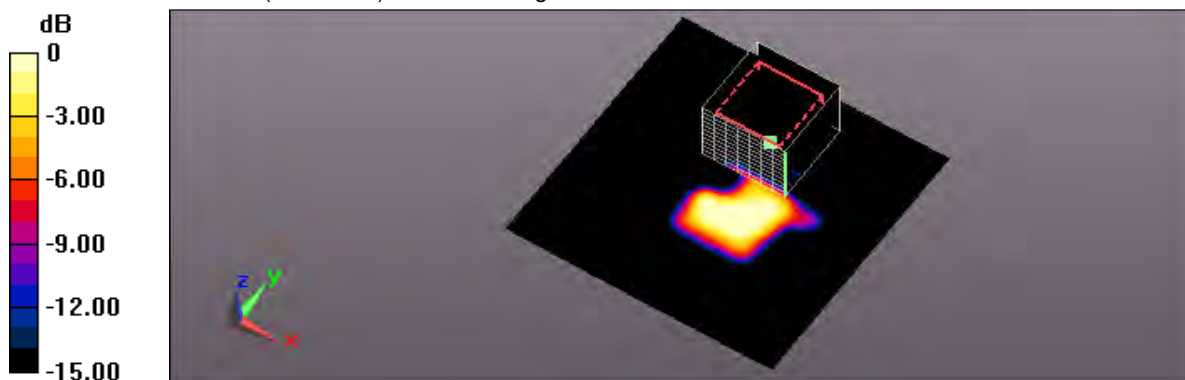
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 3.285 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.206 W/kg

SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.010 W/kg

Maximum value of SAR (measured) = 0.0888 W/kg



0 dB = 0.0888 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 12:53:59

23_ IEEE 802.11ac 5GHz 20MHz CH44_6.5M_Vertical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5220 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5220 \text{ MHz}$; $\sigma = 5.263 \text{ S/m}$; $\epsilon_r = 48.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0835 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

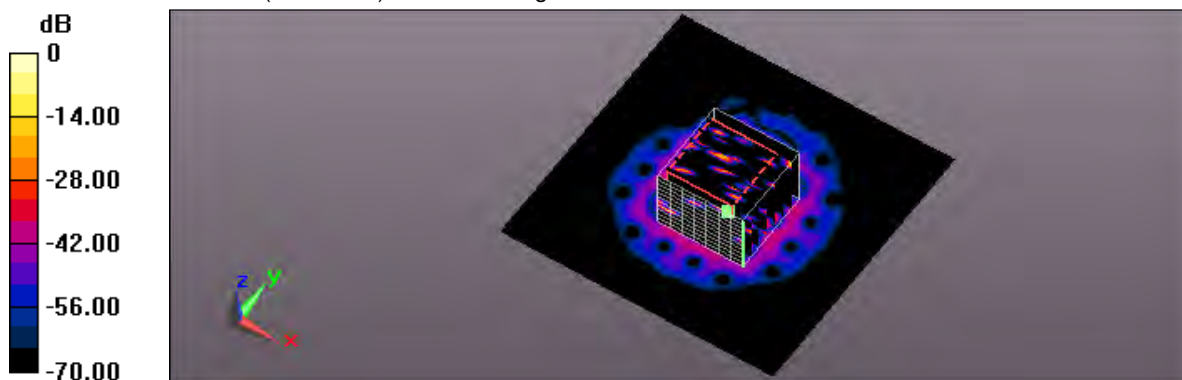
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 2.801 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.254 W/kg

SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.00518 W/kg

Maximum value of SAR (measured) = 0.0756 W/kg



0 dB = 0.0756 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 01:39:53

24_ IEEE 802.11ac 5GHz 20MHz CH44_6.5M_Vertical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5220 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5220 \text{ MHz}$; $\sigma = 5.263 \text{ S/m}$; $\epsilon_r = 48.715$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0862 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

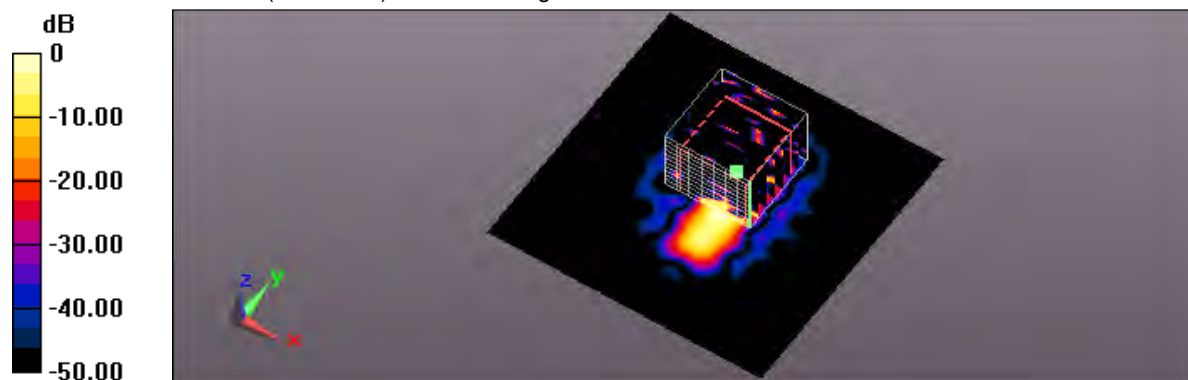
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 1.616 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00334 W/kg

Maximum value of SAR (measured) = 0.0329 W/kg



0 dB = 0.0329 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 08:14:35

73_ IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Horizontal-UP_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.765$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.556 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

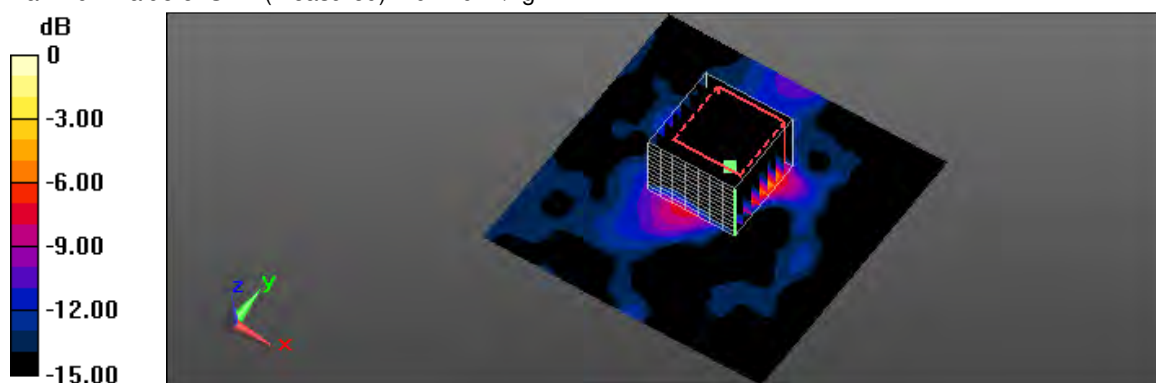
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 6.157 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.926 W/kg

SAR(1 g) = 0.246 W/kg; SAR(10 g) = 0.076 W/kg

Maximum value of SAR (measured) = 0.470 W/kg



0 dB = 0.470 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 09:34:57

25_ IEEE 802.11ac 5GHz 20MHz CH161_6.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5805 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5805$ MHz; $\sigma = 6.143$ S/m; $\epsilon_r = 47.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.336 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

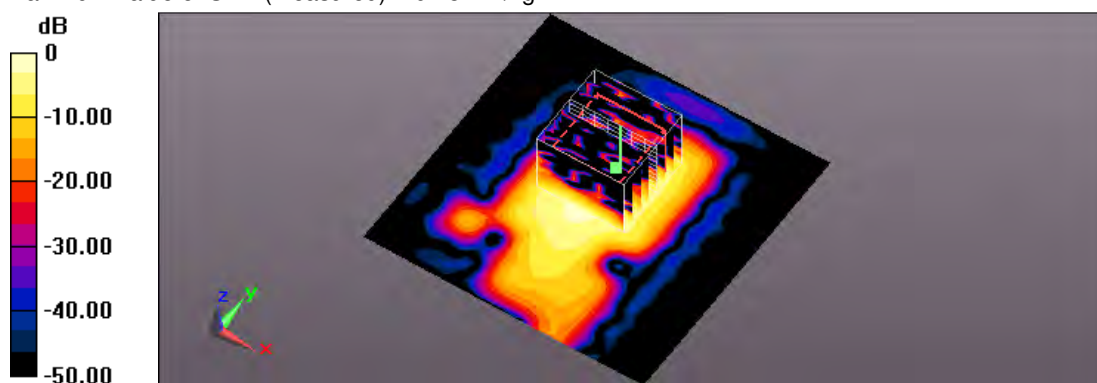
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.843 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.227 W/kg; SAR(10 g) = 0.066 W/kg

Maximum value of SAR (measured) = 0.484 W/kg



0 dB = 0.484 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 10:37:29

26_ IEEE 802.11ac 5GHz 20MHz CH161_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5805 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5805$ MHz; $\sigma = 6.143$ S/m; $\epsilon_r = 47.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

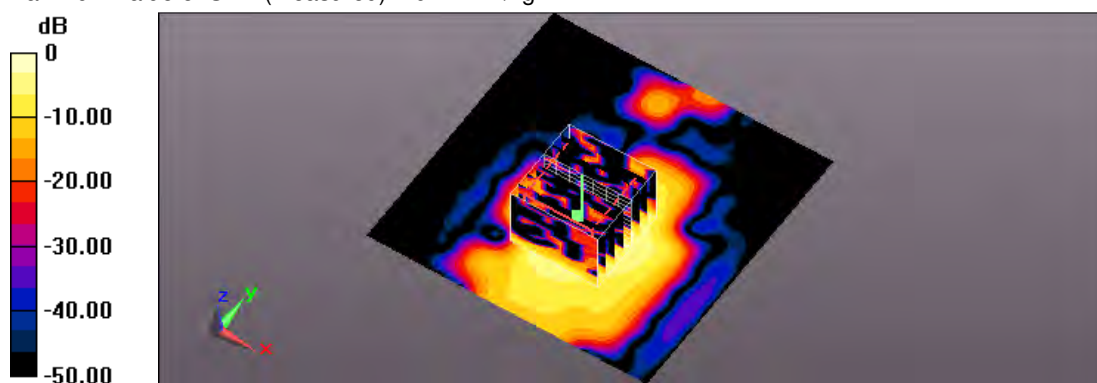
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 3.432 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.278 W/kg

SAR(1 g) = 0.063 W/kg; SAR(10 g) = 0.019 W/kg

Maximum value of SAR (measured) = 0.144 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 AM 11:45:57

27_ IEEE 802.11ac 5GHz 20MHz CH161_6.5M_Vetical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5805 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5805$ MHz; $\sigma = 6.143$ S/m; $\epsilon_r = 47.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

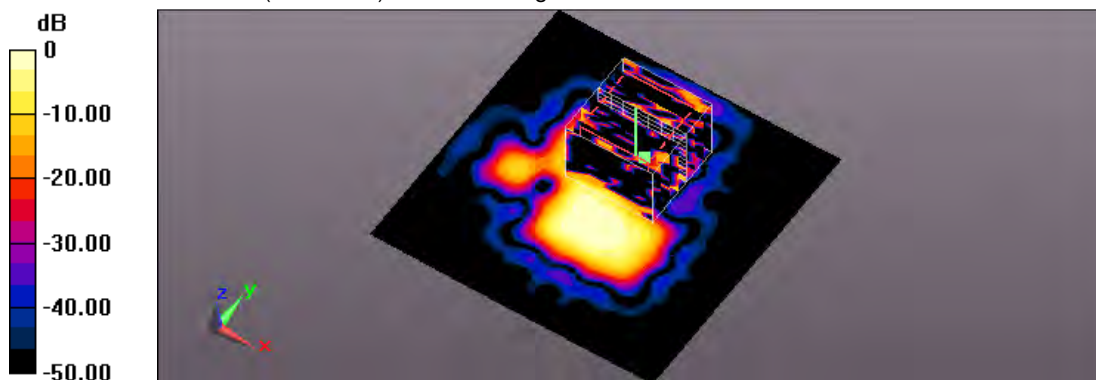
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.404 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.027 W/kg; SAR(10 g) = 0.00597 W/kg

Maximum value of SAR (measured) = 0.0732 W/kg



0 dB = 0.0732 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 01:07:45

28_ IEEE 802.11ac 5GHz 20MHz CH161_6.5M_Vetical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5805 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5805$ MHz; $\sigma = 6.143$ S/m; $\epsilon_r = 47.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.187 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

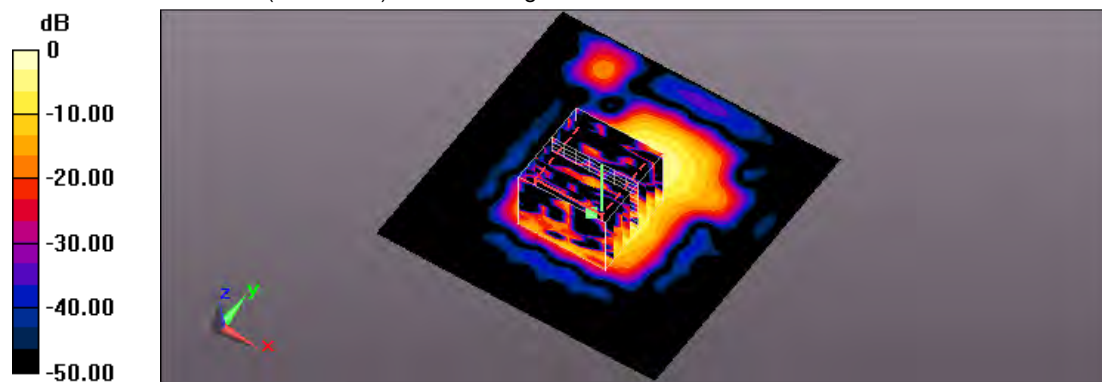
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.769 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.075 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.192 W/kg



0 dB = 0.192 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 06:24:35

74_ IEEE 802.11ac 5GHz 20MHz CH161_6.5M_Horizontal-UP_BF_ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5805 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5805$ MHz; $\sigma = 6.143$ S/m; $\epsilon_r = 47.269$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

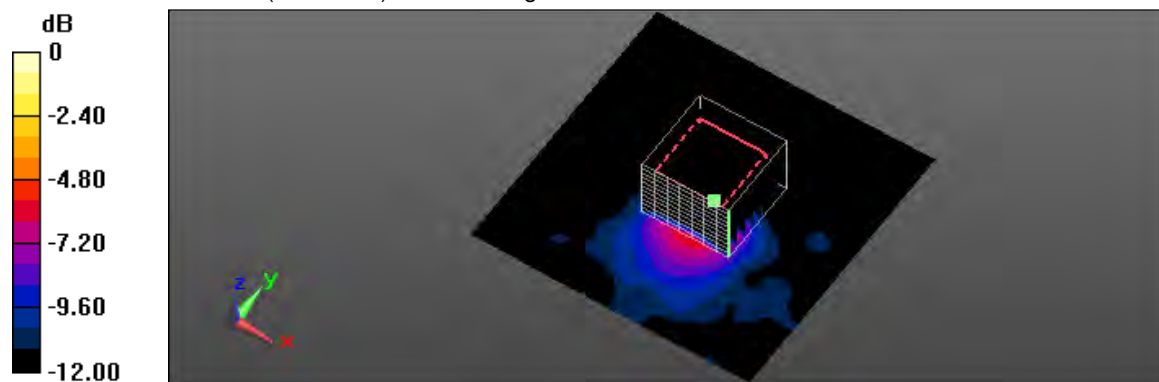
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.579 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.059 W/kg

Maximum value of SAR (measured) = 0.442 W/kg



0 dB = 0.442 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 09:22:11

37_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.129 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

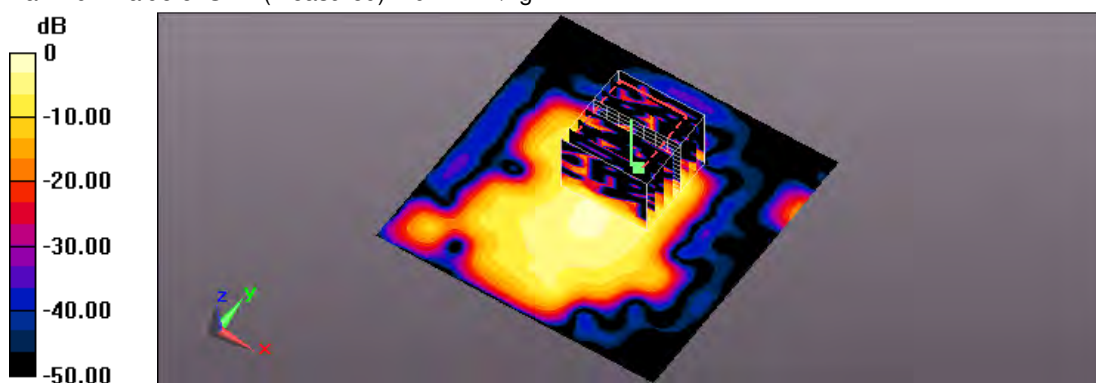
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.137 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.197 W/kg

SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.112 W/kg



0 dB = 0.112 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 06:01:48

38_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230 \text{ MHz}$; $\sigma = 5.274 \text{ S/m}$; $\epsilon_r = 48.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.428 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

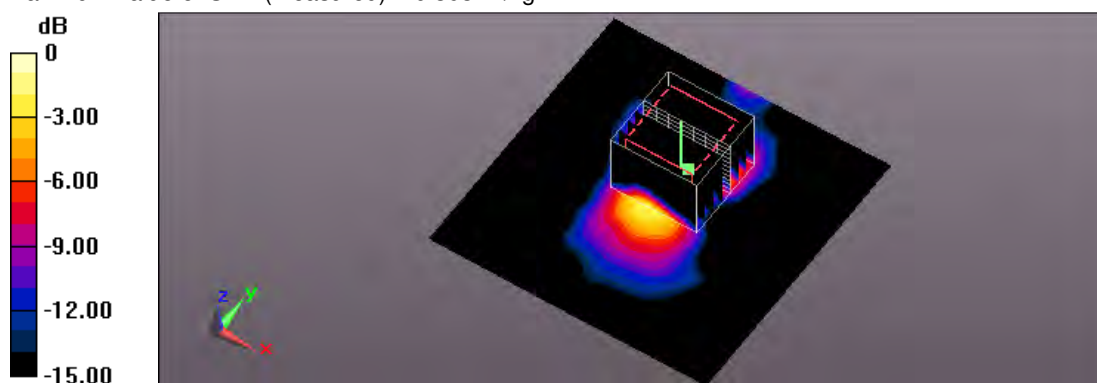
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 7.953 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.806 W/kg

SAR(1 g) = 0.210 W/kg; SAR(10 g) = 0.067 W/kg

Maximum value of SAR (measured) = 0.393 W/kg



0 dB = 0.393 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 10:41:24

39_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Vetical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.113 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

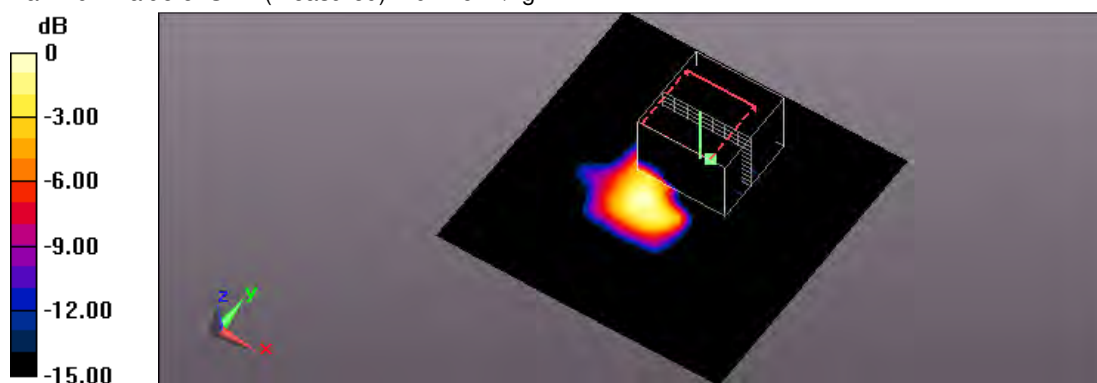
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.105 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.215 W/kg

SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.126 W/kg



0 dB = 0.126 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 10:06:23

40_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Vetical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0773 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

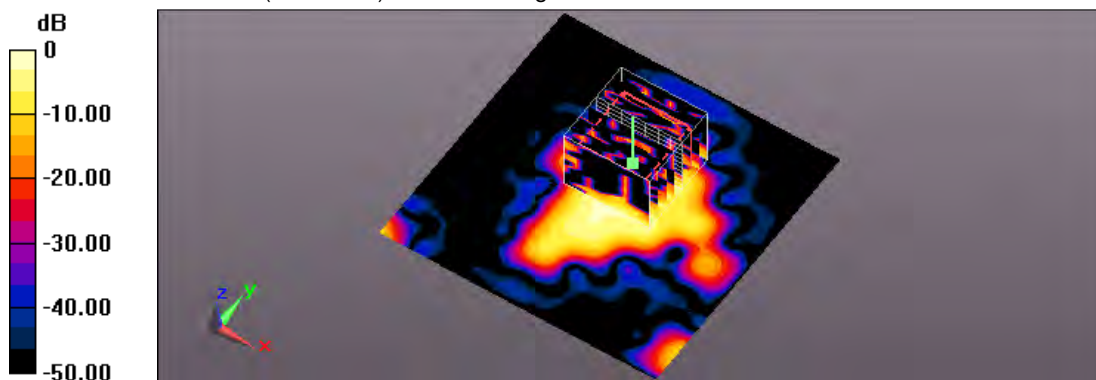
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.431 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.128 W/kg

SAR(1 g) = 0.024 W/kg; SAR(10 g) = 0.0069 W/kg

Maximum value of SAR (measured) = 0.0635 W/kg



0 dB = 0.0635 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 10:11:25

75_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230 \text{ MHz}$; $\sigma = 5.274 \text{ S/m}$; $\epsilon_r = 48.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.135 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

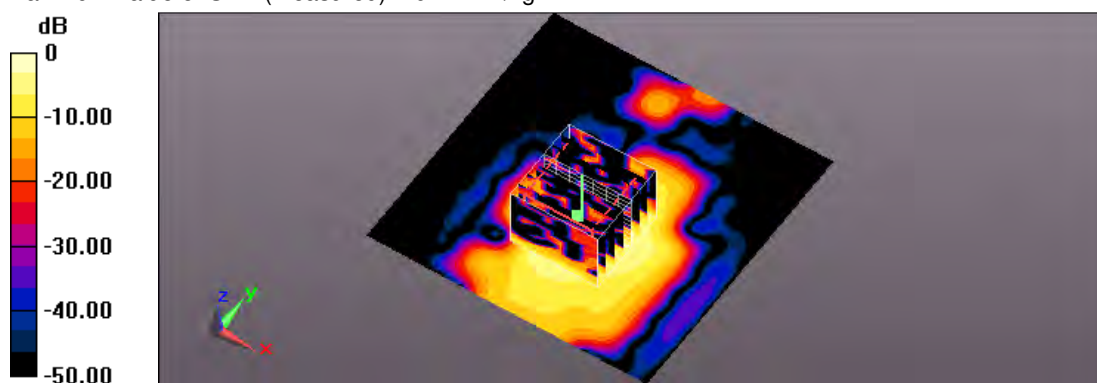
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 4.888 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.362 W/kg

SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.026 W/kg

Maximum value of SAR (measured) = 0.141 W/kg



0 dB = 0.141 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 09:59:30

41_ IEEE 802.11ac 5GHz 40MHz CH159_13.5M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5795 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5795$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 47.292$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.635 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

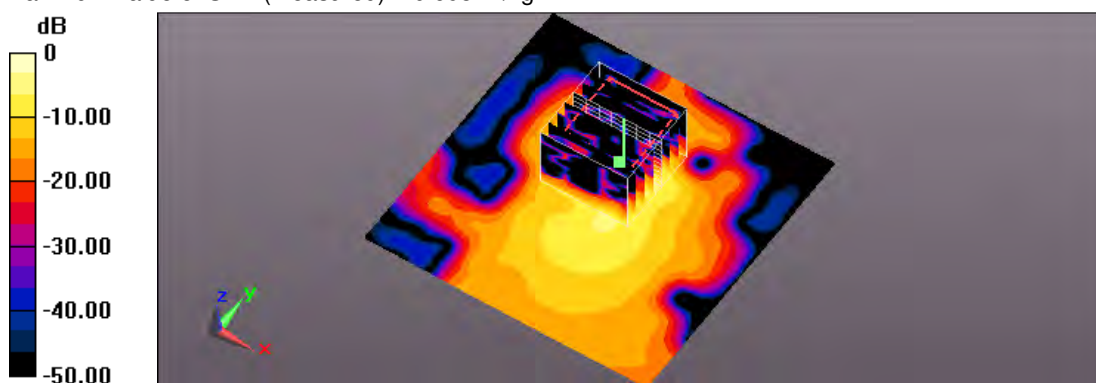
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.079 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.43 W/kg

SAR(1 g) = 0.320 W/kg; SAR(10 g) = 0.079 W/kg

Maximum value of SAR (measured) = 0.698 W/kg



0 dB = 0.698 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 07:20:27

42_ IEEE 802.11ac 5GHz 40MHz CH159_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5795 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5795$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 47.292$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.484 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

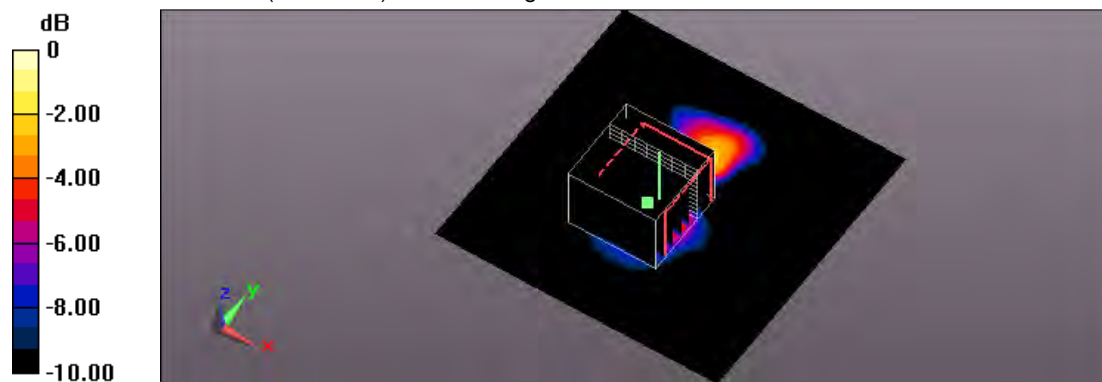
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.397 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.30 W/kg

SAR(1 g) = 0.277 W/kg; SAR(10 g) = 0.075 W/kg

Maximum value of SAR (measured) = 0.600 W/kg



0 dB = 0.600 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 12:06:54

43_ IEEE 802.11ac 5GHz 40MHz CH159_13.5M_Verical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5795 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5795$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 47.292$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.350 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

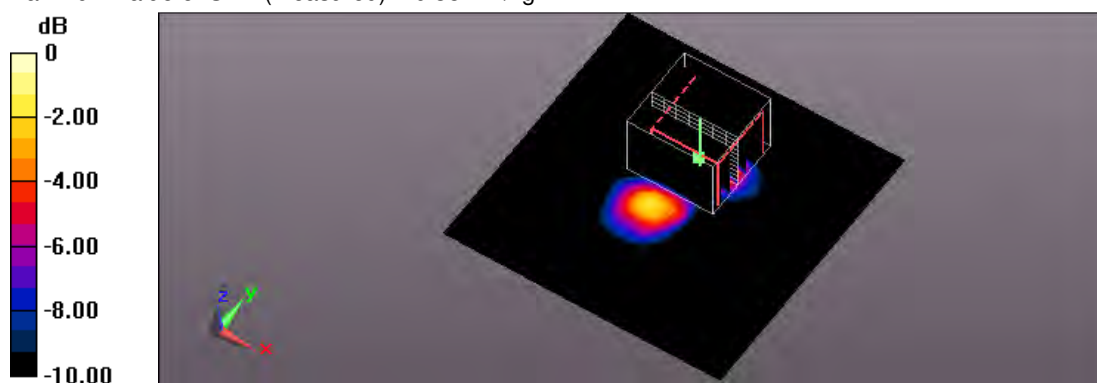
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 4.576 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.736 W/kg

SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.040 W/kg

Maximum value of SAR (measured) = 0.387 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 09:29:26

44_ IEEE 802.11ac 5GHz 40MHz CH159_13.5M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5795 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5795$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 47.292$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.169 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

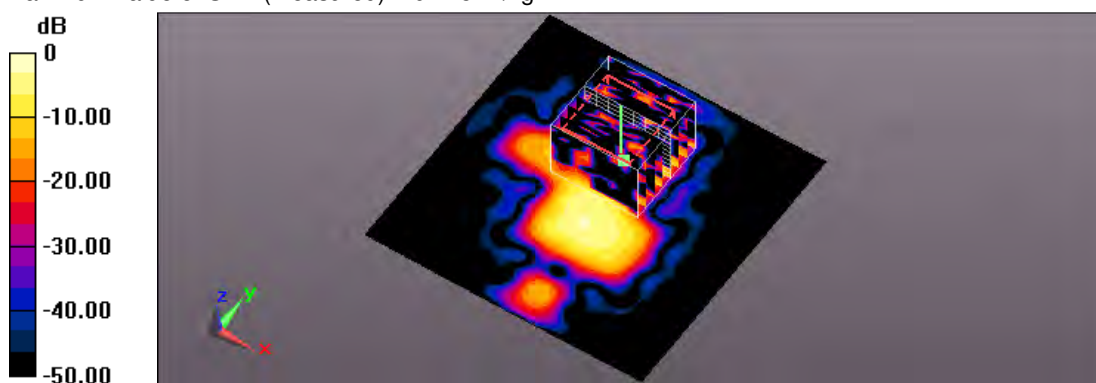
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.692 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.328 W/kg

SAR(1 g) = 0.071 W/kg; SAR(10 g) = 0.017 W/kg

Maximum value of SAR (measured) = 0.175 W/kg



0 dB = 0.175 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 09:24:03

76_ IEEE 802.11ac 5GHz 40MHz CH159_13.5M_Horizontal-UP_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5795 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5795$ MHz; $\sigma = 6.12$ S/m; $\epsilon_r = 47.292$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.461 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

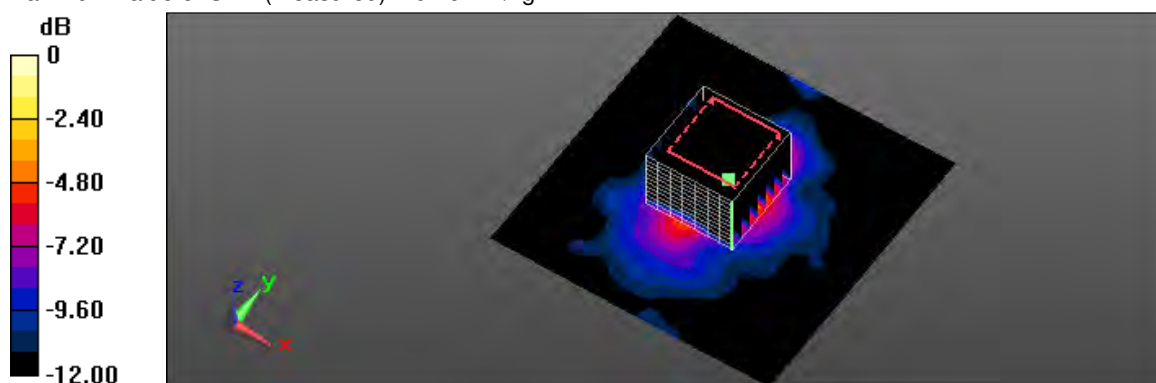
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.292 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.952 W/kg

SAR(1 g) = 0.244 W/kg; SAR(10 g) = 0.082 W/kg

Maximum value of SAR (measured) = 0.464 W/kg



0 dB = 0.464 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 01:13:25

61_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.128 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

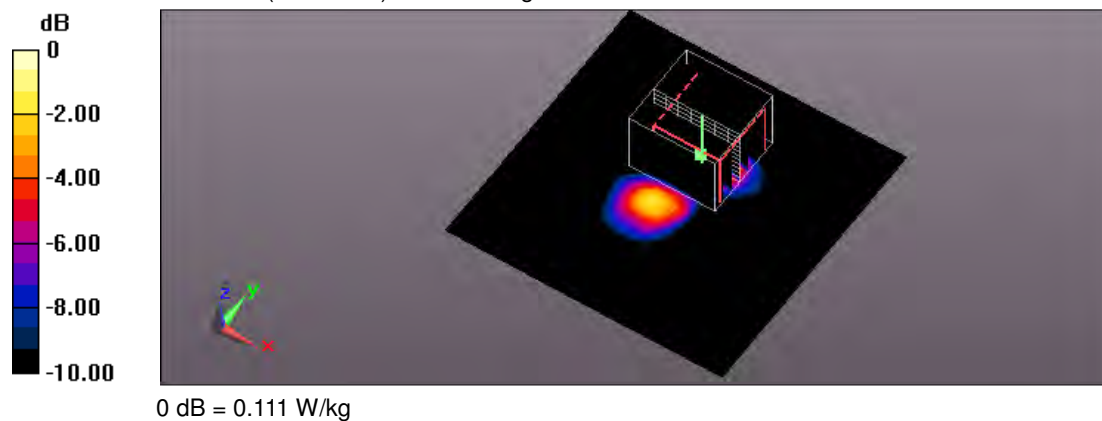
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 2.129 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.195 W/kg

SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.111 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 01:57:43

62_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.423 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

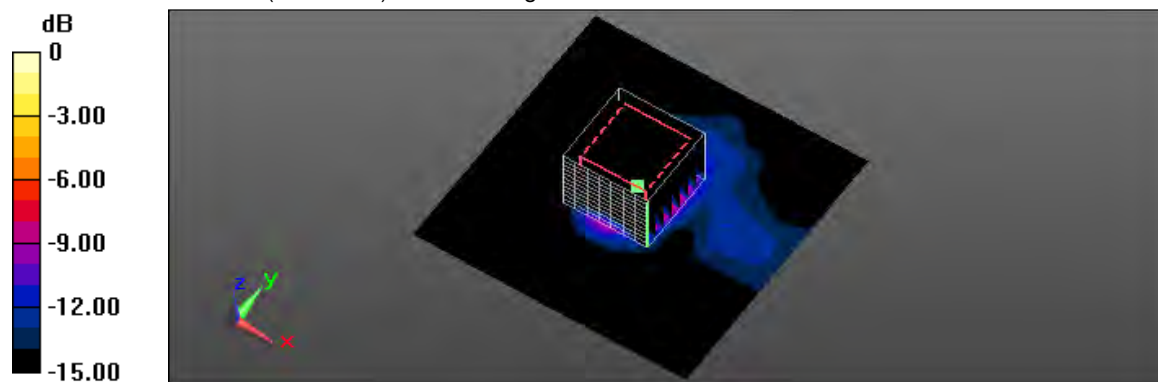
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 9.027 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.231 W/kg; SAR(10 g) = 0.074 W/kg

Maximum value of SAR (measured) = 0.495 W/kg



0 dB = 0.495 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 02:48:55

63_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Vetical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.278 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

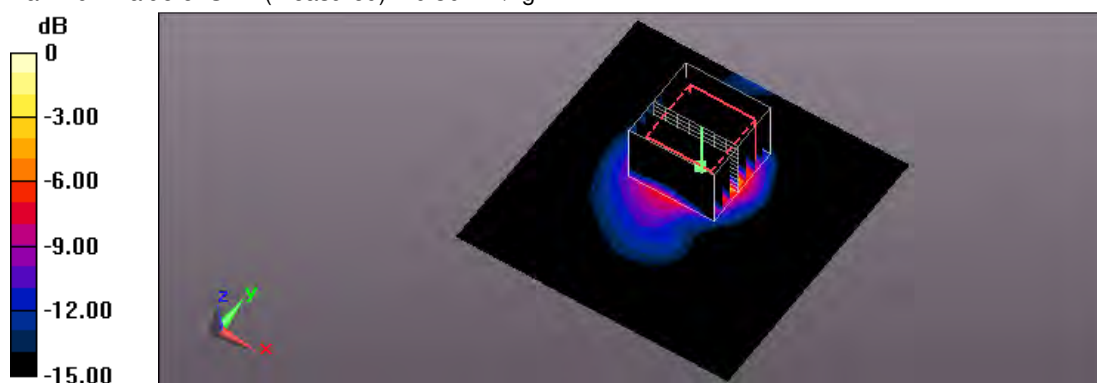
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 4.353 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.593 W/kg

SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.031 W/kg

Maximum value of SAR (measured) = 0.307 W/kg



0 dB = 0.307 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 03:37:12

64_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Vetical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.177 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

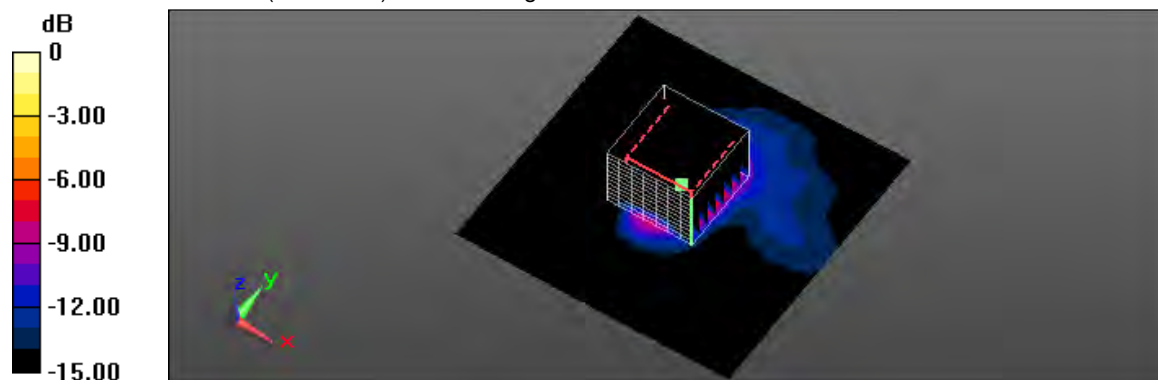
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 6.560 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.093 W/kg; SAR(10 g) = 0.023 W/kg

Maximum value of SAR (measured) = 0.227 W/kg



0 dB = 0.227 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 04:26:39

65_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.384 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

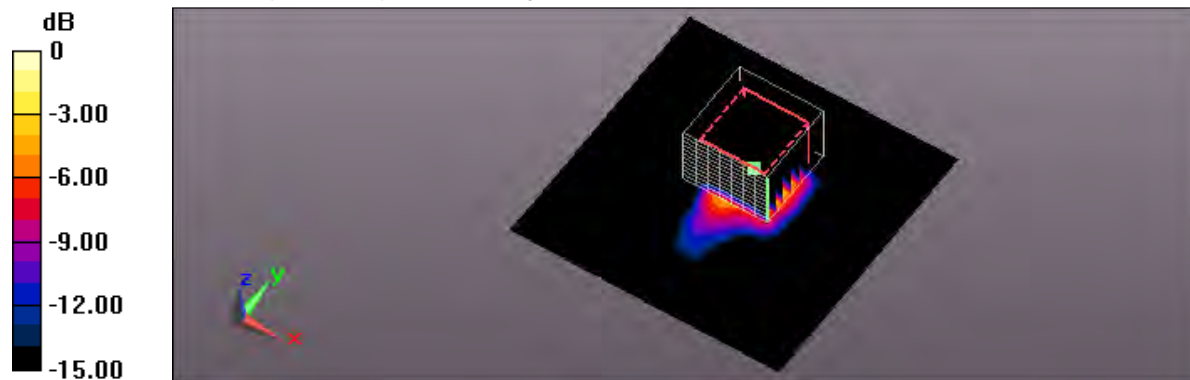
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 8.938 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.220 W/kg; SAR(10 g) = 0.060 W/kg

Maximum value of SAR (measured) = 0.476 W/kg



0 dB = 0.476 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 05:16:03

91_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Horizontal-UP_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.439 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

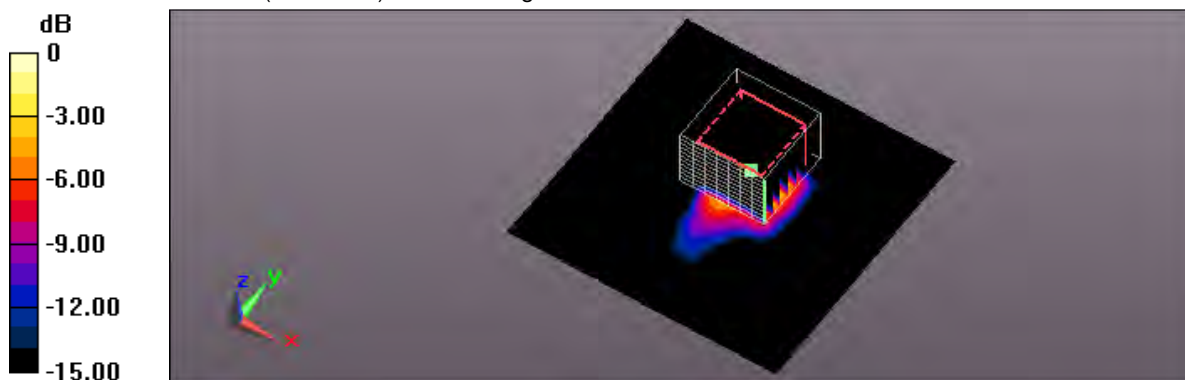
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.109 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.718 W/kg

SAR(1 g) = 0.147 W/kg; SAR(10 g) = 0.044 W/kg

Maximum value of SAR (measured) = 0.381 W/kg



0 dB = 0.381 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 05:58:47

92_ IEEE 802.11ac 5GHz 80MHz_29.3M_Horizontal-Down (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.377 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

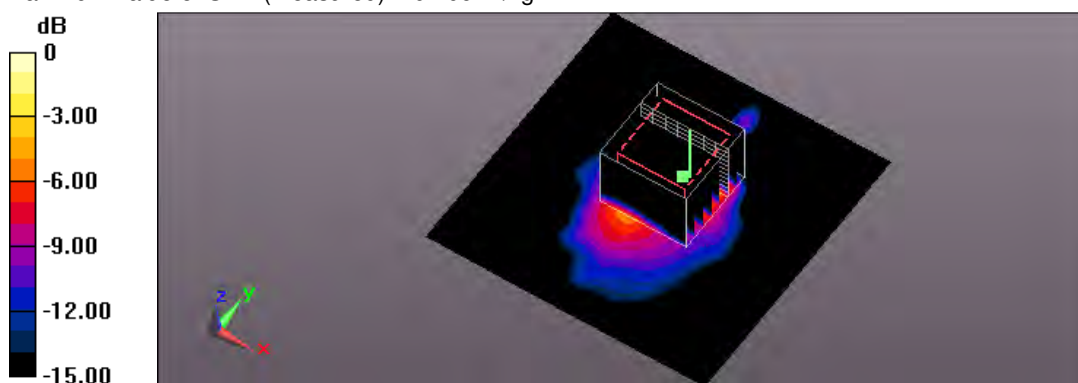
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 5.218 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.763 W/kg

SAR(1 g) = 0.177 W/kg; SAR(10 g) = 0.038 W/kg

Maximum value of SAR (measured) = 0.406 W/kg



0 dB = 0.406 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 06:49:33

93_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Vertical-Front (with USB cable)_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0828 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

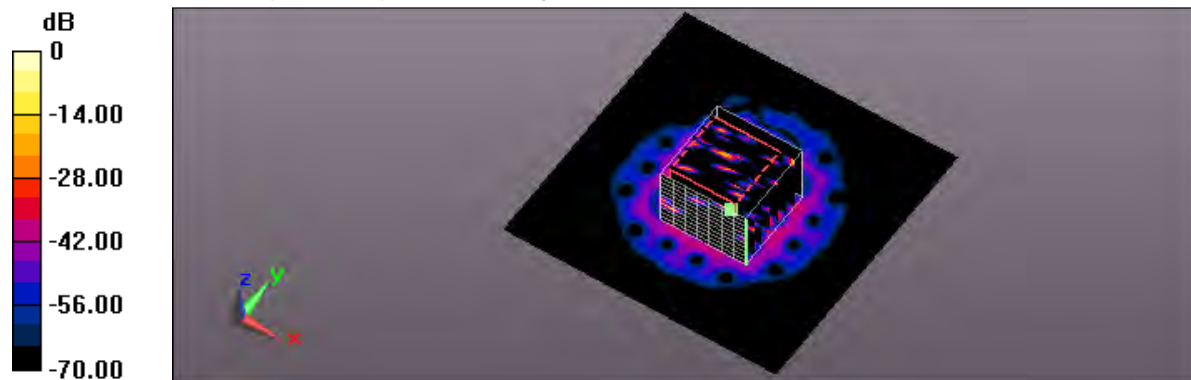
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.784 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.247 W/kg

SAR(1 g) = 0.022 W/kg; SAR(10 g) = 0.00498 W/kg

Maximum value of SAR (measured) = 0.0744 W/kg



0 dB = 0.0744 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 07:47:58

94_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Verical-Back_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.499 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

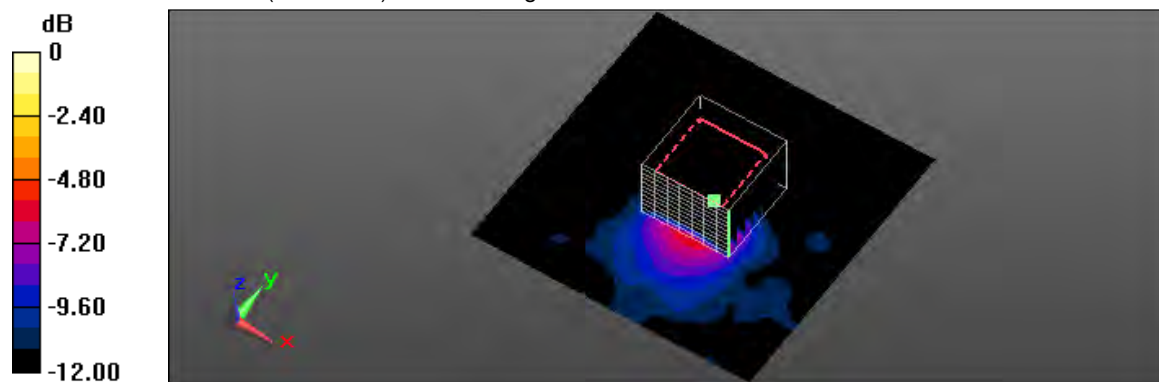
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.922 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.073 W/kg

Maximum value of SAR (measured) = 0.536 W/kg



0 dB = 0.536 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 08:55:34

95_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Verical-Back_BF ON_5mm_ANT-0

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775 \text{ MHz}$; $\sigma = 6.072 \text{ S/m}$; $\epsilon_r = 47.337$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.491 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

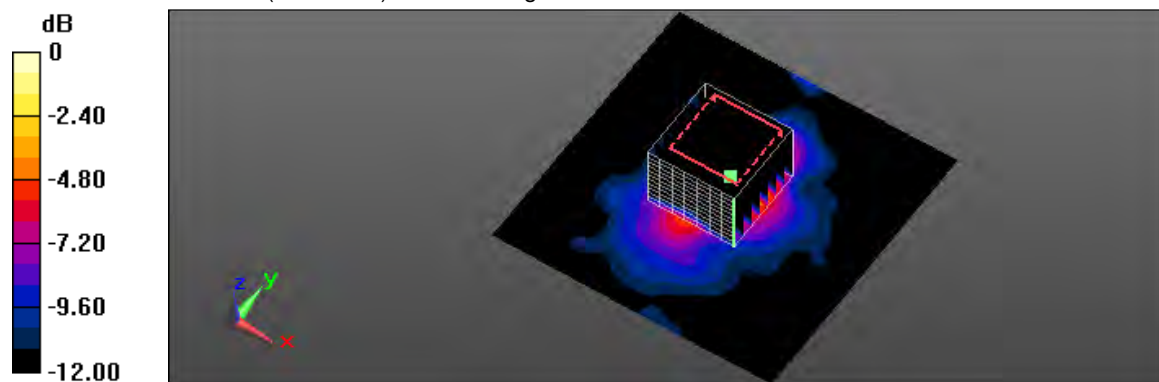
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 7.917 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.983 W/kg

SAR(1 g) = 0.257 W/kg; SAR(10 g) = 0.063 W/kg

Maximum value of SAR (measured) = 0.521 W/kg



0 dB = 0.521 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 05:51:11

9_ IEEE 802.11n 2.4GHz 20MHz CH1_6.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.935 \text{ S/m}$; $\epsilon_r = 52.681$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

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

Flat/Zoom Scan (7x7x7)/Cube 0:

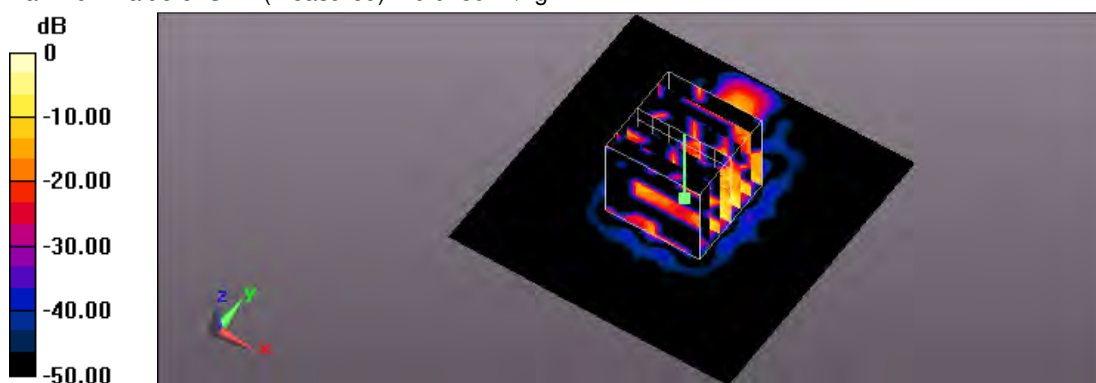
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.243 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0400 W/kg

SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.0031 W/kg

Maximum value of SAR (measured) = 0.0189 W/kg



0 dB = 0.0189 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 06:26:55

10_ IEEE 802.11n 2.4GHz 20MHz CH1_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.935$ S/m; $\epsilon_r = 52.681$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0581 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

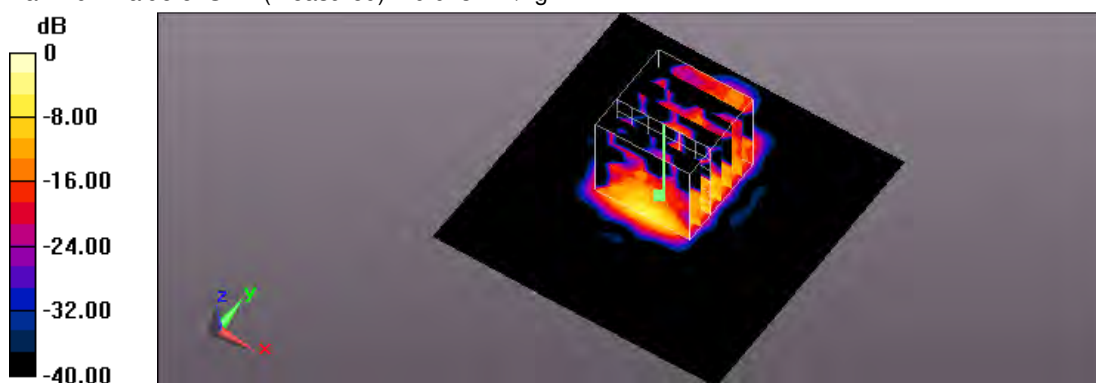
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.687 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.0580 W/kg

SAR(1 g) = 0.033 W/kg; SAR(10 g) = 0.026 W/kg

Maximum value of SAR (measured) = 0.0437 W/kg



0 dB = 0.0437 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 07:48:31

11_ IEEE 802.11n 2.4GHz 20MHz CH1_6.5M_Verical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.935 \text{ S/m}$; $\epsilon_r = 52.681$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0167 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

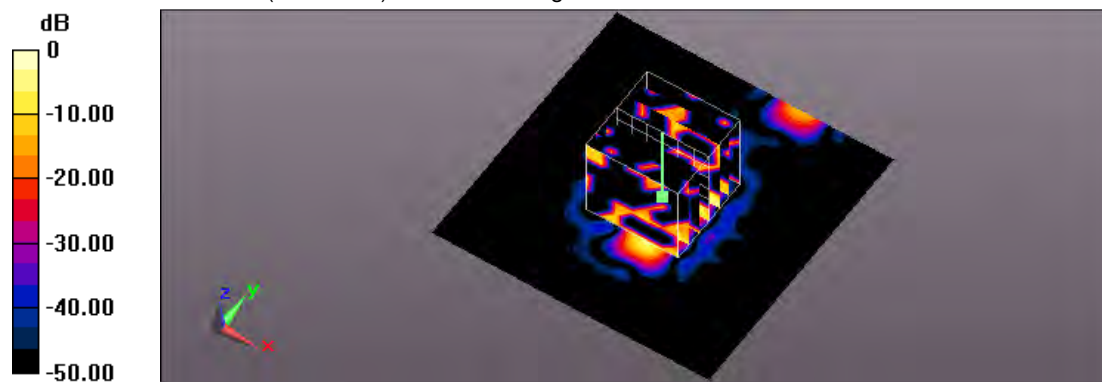
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 1.685 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.0140 W/kg

SAR(1 g) = 0.00245 W/kg; SAR(10 g) = 0.000532 W/kg

Maximum value of SAR (measured) = 0.00569 W/kg



0 dB = 0.00569 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 07:16:28

12_ IEEE 802.11n 2.4GHz 20MHz CH1_6.5M_Veritical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.935 \text{ S/m}$; $\epsilon_r = 52.681$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

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

Flat/Zoom Scan (7x7x7)/Cube 0:

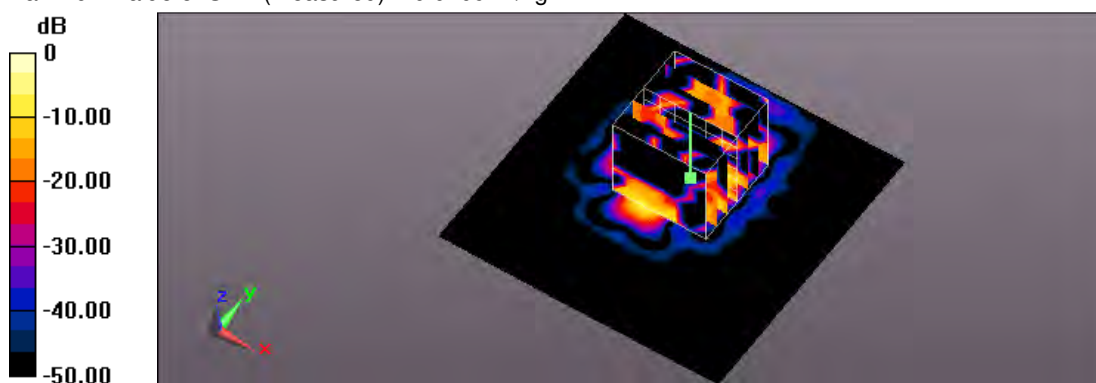
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.590 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.0440 W/kg

SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00393 W/kg

Maximum value of SAR (measured) = 0.0209 W/kg



0 dB = 0.0209 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/22 AM 01:39:49

89_ IEEE 802.11n 2.4GHz 20MHz CH6_6.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.953 \text{ S/m}$; $\epsilon_r = 52.484$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0550 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

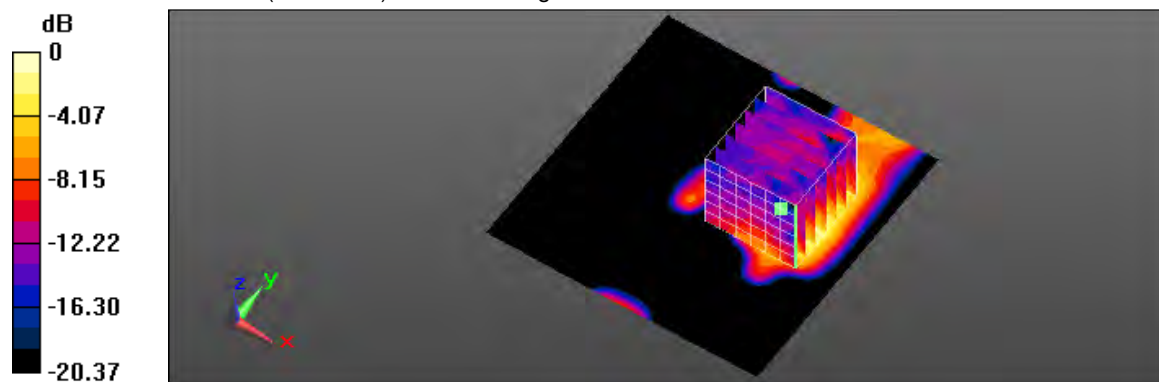
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 1.530 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0550 W/kg

SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.0412 W/kg



0 dB = 0.0412 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 09:00:17

13_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0243 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

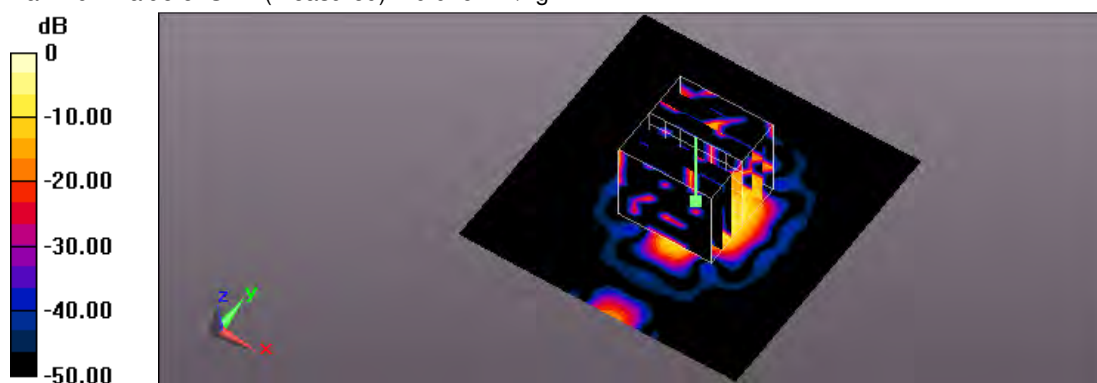
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.690 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.0210 W/kg

SAR(1 g) = 0.00873 W/kg; SAR(10 g) = 0.00238 W/kg

Maximum value of SAR (measured) = 0.0162 W/kg



0 dB = 0.0162 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 09:34:58

14_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0280 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

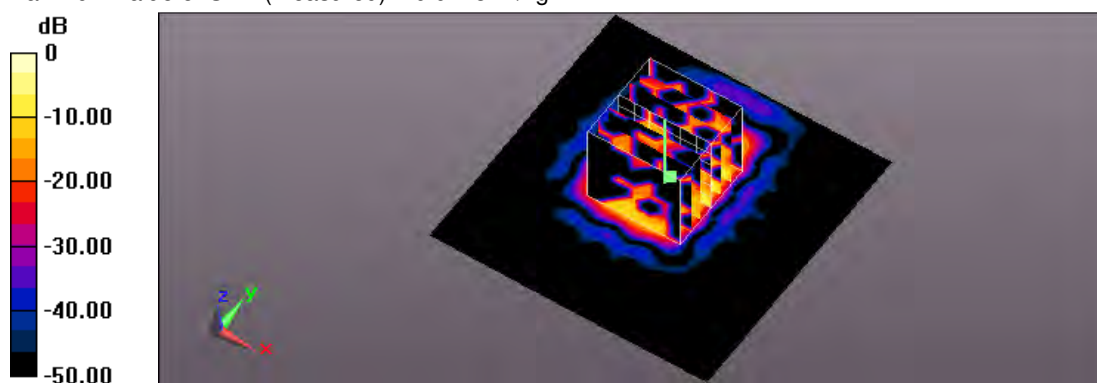
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.155 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.0440 W/kg

SAR(1 g) = 0.014 W/kg; SAR(10 g) = 0.00457 W/kg

Maximum value of SAR (measured) = 0.0218 W/kg



0 dB = 0.0218 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 10:14:45

15_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Vetical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0166 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

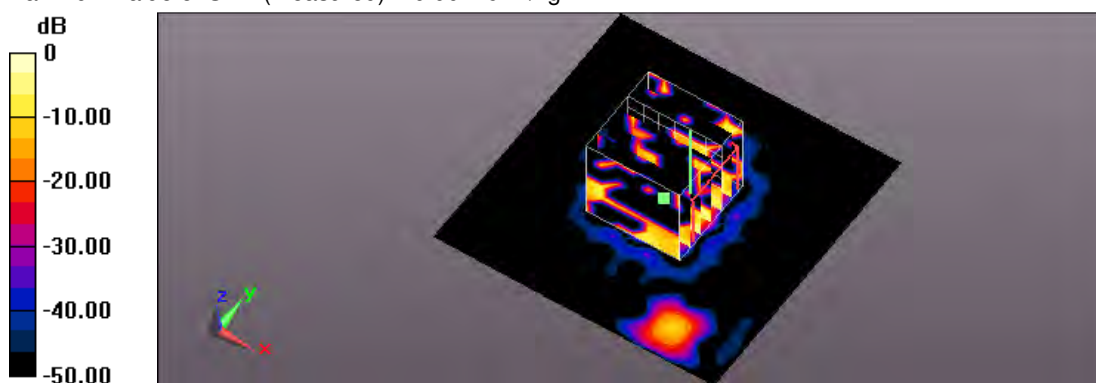
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 1.733 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.0140 W/kg

SAR(1 g) = 0.0021 W/kg; SAR(10 g) = 0.00057 W/kg

Maximum value of SAR (measured) = 0.00479 W/kg



0 dB = 0.00479 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/5 PM 10:42:30

16_ IEEE 802.11n 2.4GHz 40MHz CH9_13.5M_Verical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2452 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 2452$ MHz; $\sigma = 1.966$ S/m; $\epsilon_r = 52.375$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0319 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

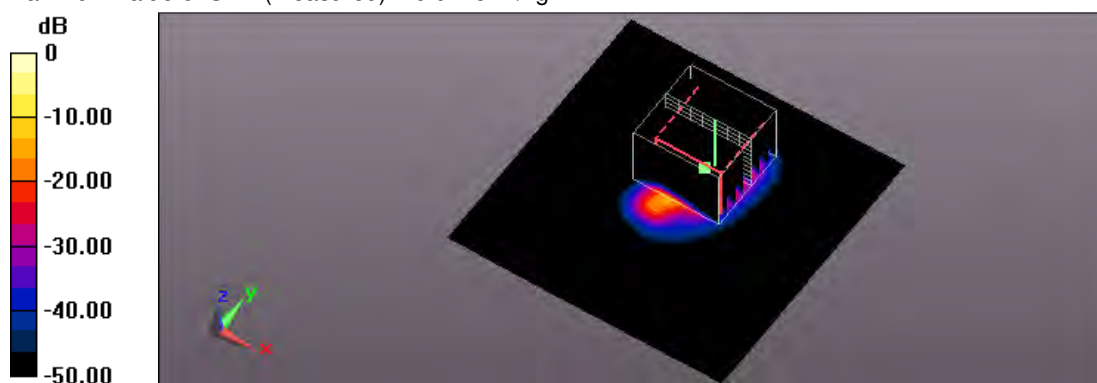
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.993 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.0220 W/kg

SAR(1 g) = 0.010 W/kg; SAR(10 g) = 0.00319 W/kg

Maximum value of SAR (measured) = 0.0175 W/kg



0 dB = 0.0175 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 PM 08:10:16

90_ IEEE 802.11n 2.4GHz 40MHz CH6_13.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11n(2.4GHz) (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437$ MHz; $\sigma = 1.953$ S/m; $\epsilon_r = 52.484$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.3, 7.3, 7.3); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.00773 W/kg

Flat/Zoom Scan (7x7x7)/Cube 0:

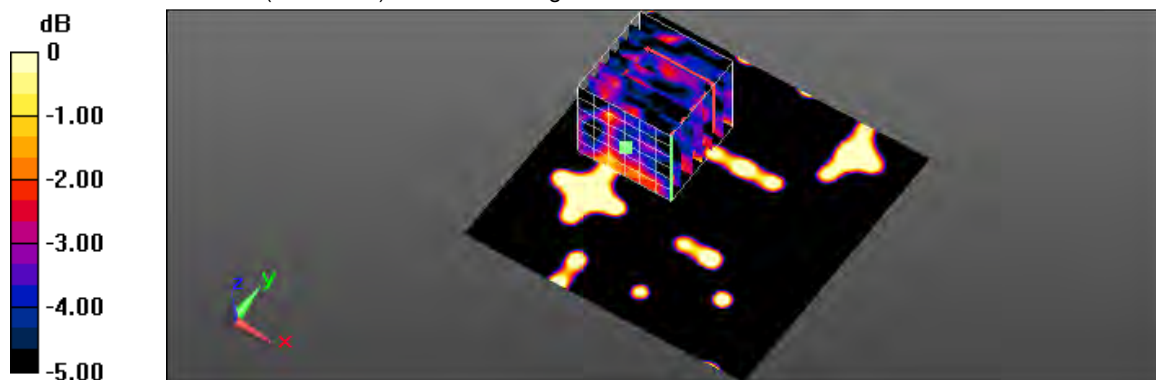
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 1.689 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.00508 W/kg

SAR(1 g) = 0.00224 W/kg; SAR(10 g) = 0.00133 W/kg

Maximum value of SAR (measured) = 0.00397 W/kg



0 dB = 0.00397 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 04:03:54

29_IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.698 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

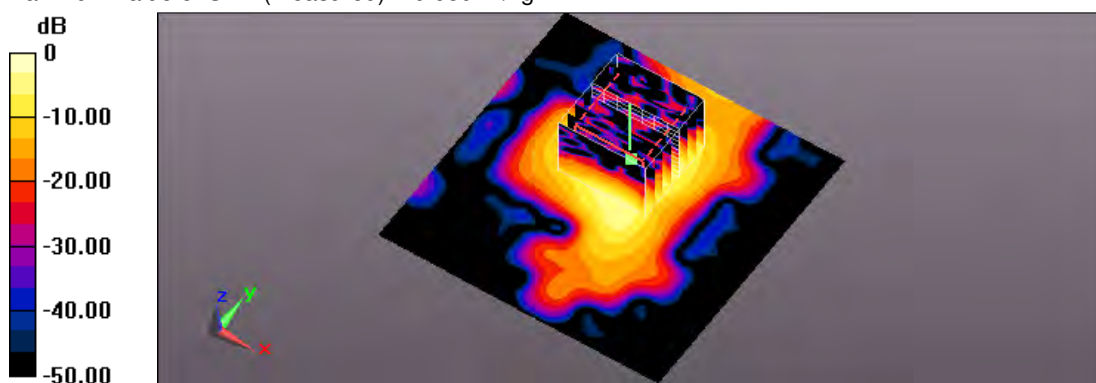
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.613 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.098 W/kg

Maximum value of SAR (measured) = 0.650 W/kg



0 dB = 0.650 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 09:13:04

30_ IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.29 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

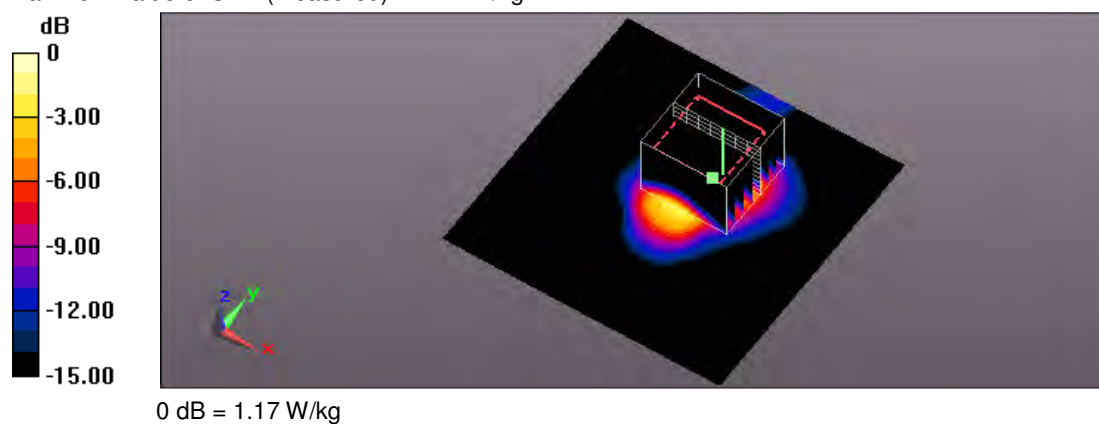
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 14.68 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 2.33 W/kg

SAR(1 g) = 0.628 W/kg; SAR(10 g) = 0.205 W/kg

Maximum value of SAR (measured) = 1.17 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 12:05:57

31_ IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Vertical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.845 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

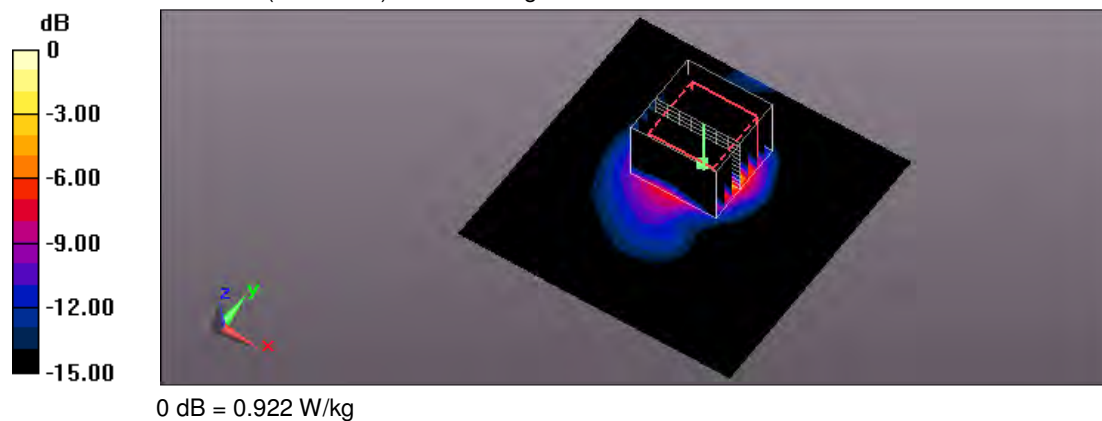
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.187 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 1.93 W/kg

SAR(1 g) = 0.463 W/kg; SAR(10 g) = 0.129 W/kg

Maximum value of SAR (measured) = 0.922 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 12:56:16

32_ IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Vertical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

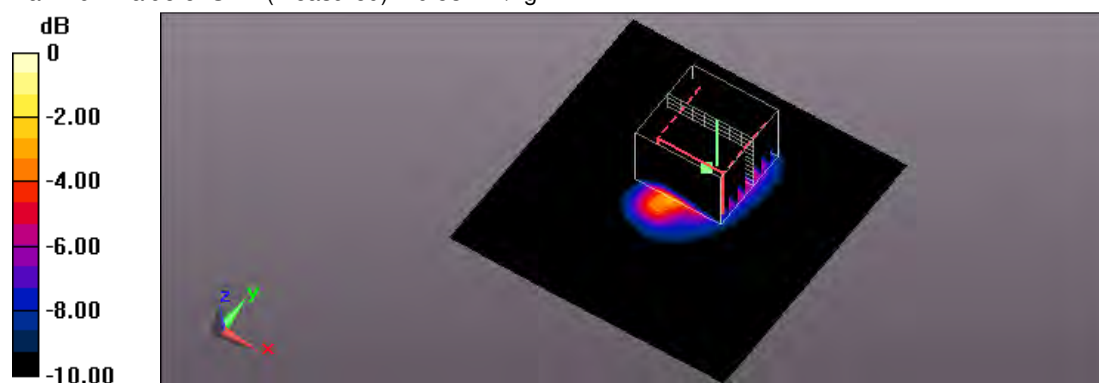
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.950 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.272 W/kg; SAR(10 g) = 0.084 W/kg

Maximum value of SAR (measured) = 0.534 W/kg



0 dB = 0.534 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 04:12:43

77_ IEEE 802.11ac 5GHz 20MHz CH40_6.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5200 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5200$ MHz; $\sigma = 5.245$ S/m; $\epsilon_r = 48.766$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.02 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

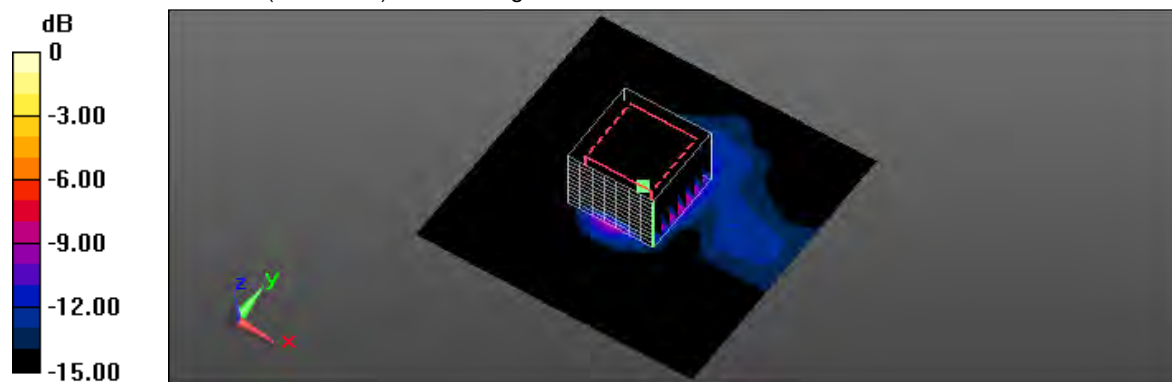
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 15.85 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 2.32 W/kg

SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.140 W/kg

Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 05:06:33

33_IEEE 802.11ac 5GHz 20MHz CH153_6.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5765 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.444 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

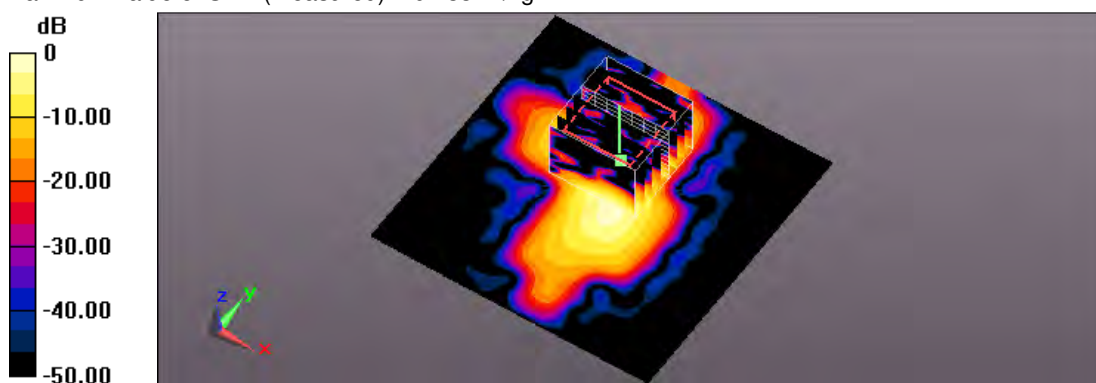
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.828 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.202 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.433 W/kg



0 dB = 0.433 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 09:49:41

34_ IEEE 802.11ac 5GHz 20MHz CH153_6.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5765 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.981 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 15.34 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 2.47 W/kg

SAR(1 g) = 0.514 W/kg; SAR(10 g) = 0.147 W/kg

Maximum value of SAR (measured) = 1.21 W/kg

Flat/Zoom Scan (8x8x12)/Cube 1:

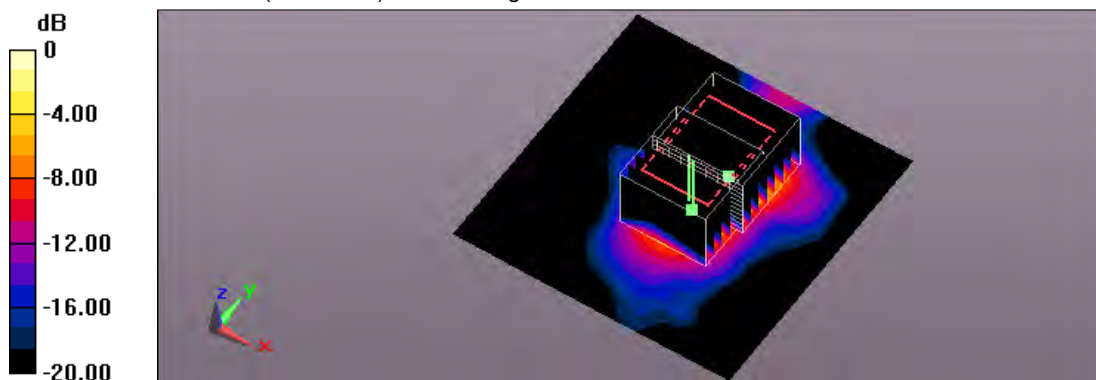
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 15.34 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 2.46 W/kg

SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.138 W/kg

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



0 dB = 1.19 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/7 PM 10:58:50

35_ IEEE 802.11ac 5GHz 20MHz CH153_6.5M_Vetical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5765 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.529 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

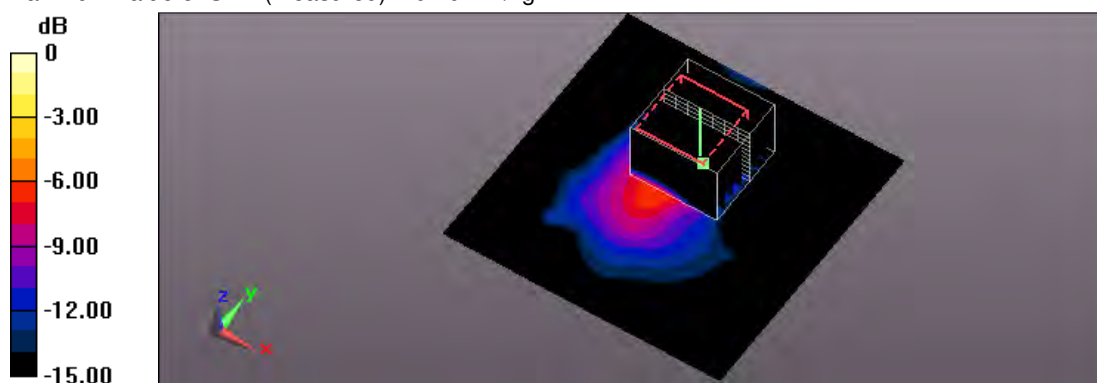
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.854 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.95 W/kg

SAR(1 g) = 0.335 W/kg; SAR(10 g) = 0.082 W/kg

Maximum value of SAR (measured) = 0.702 W/kg



0 dB = 0.702 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 01:35:23

36_ IEEE 802.11ac 5GHz 20MHz CH153_6.5M_Vetical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5765 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5765$ MHz; $\sigma = 6.055$ S/m; $\epsilon_r = 47.374$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.202 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

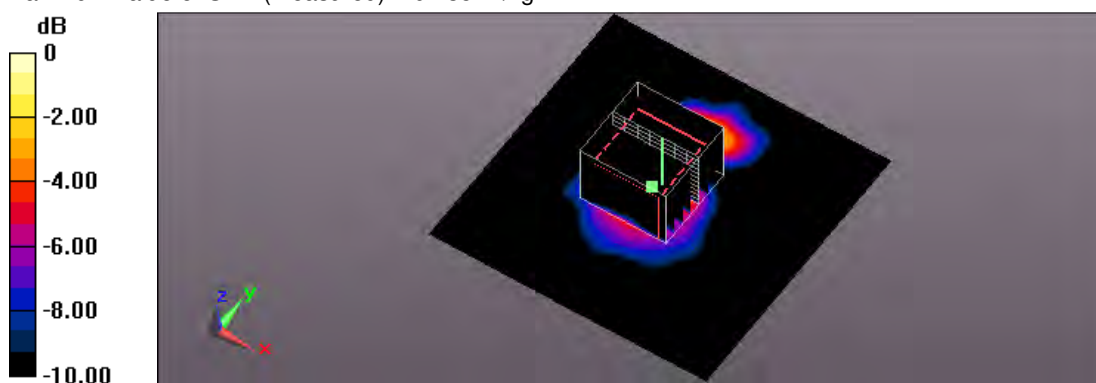
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.250 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.454 W/kg

SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.027 W/kg

Maximum value of SAR (measured) = 0.235 W/kg



0 dB = 0.235 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 04:44:16

78_ IEEE 802.11ac 5GHz 20MHz CH157_6.5M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT20 (0); Frequency: 5785 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 6.094$ S/m; $\epsilon_r = 47.324$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.939 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

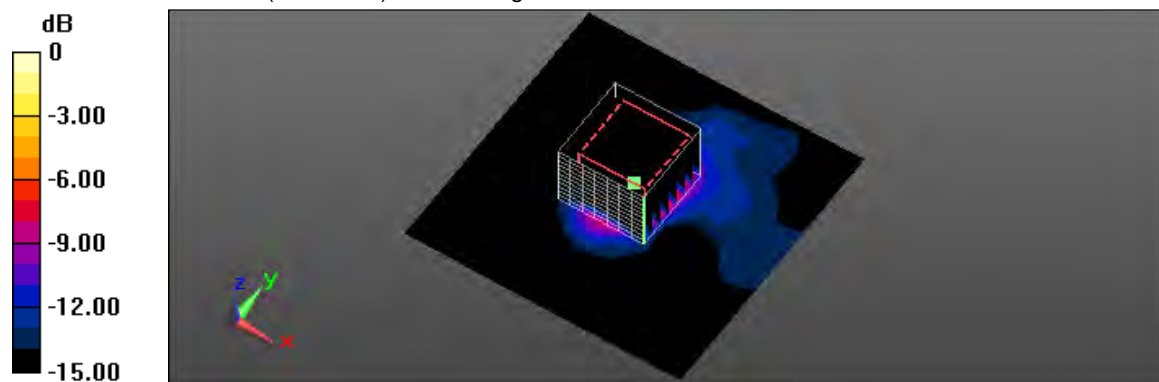
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 15.19 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 2.29 W/kg

SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.132 W/kg

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



0 dB = 1.01 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 AM 11:14:53

45_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.00816 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

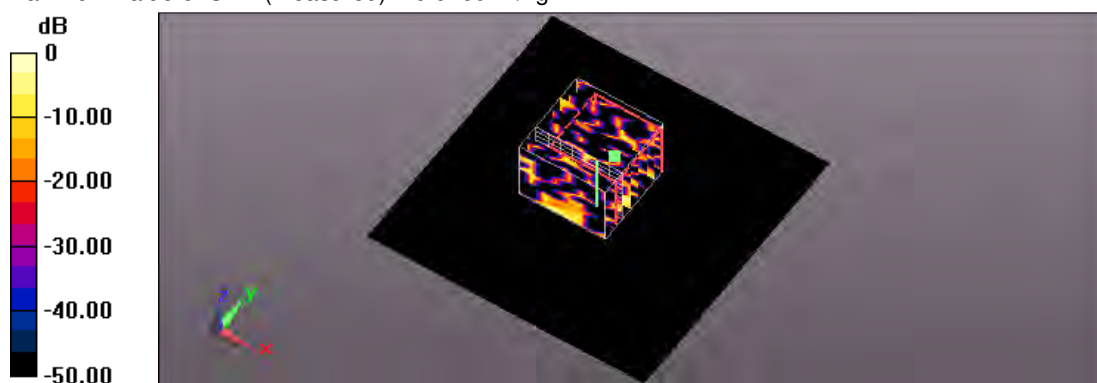
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.346 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.0920 W/kg

SAR(1 g) = 0.0042 W/kg; SAR(10 g) = 0.000668 W/kg

Maximum value of SAR (measured) = 0.0169 W/kg



0 dB = 0.0169 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 04:30:04

46_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0154 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

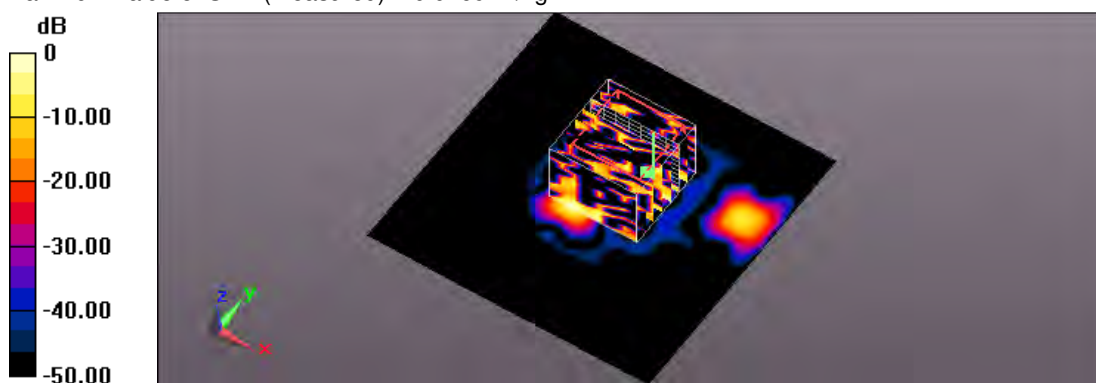
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 0.9100 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.0910 W/kg

SAR(1 g) = 0.00716 W/kg; SAR(10 g) = 0.00114 W/kg

Maximum value of SAR (measured) = 0.0169 W/kg



0 dB = 0.0169 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 12:53:18

47_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Vetical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0182 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

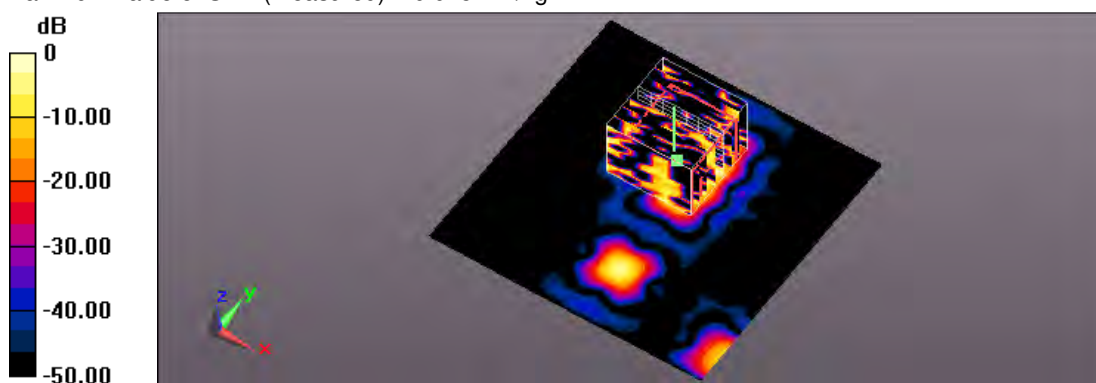
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 0.4560 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0430 W/kg

SAR(1 g) = 0.00166 W/kg; SAR(10 g) = 0.000256 W/kg

Maximum value of SAR (measured) = 0.0152 W/kg



0 dB = 0.0152 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 01:16:54

48_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Vetical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230$ MHz; $\sigma = 5.274$ S/m; $\epsilon_r = 48.678$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.511 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

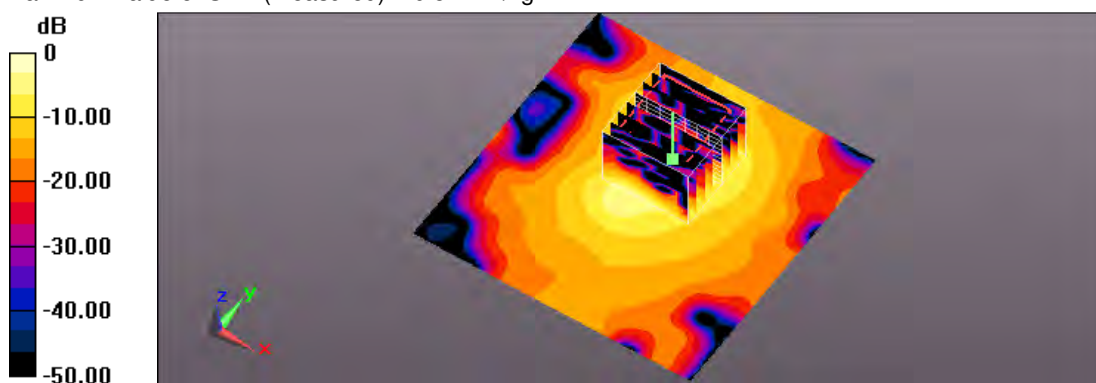
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 7.932 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.276 W/kg; SAR(10 g) = 0.081 W/kg

Maximum value of SAR (measured) = 0.544 W/kg



0 dB = 0.544 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 05:15:40

79_ IEEE 802.11ac 5GHz 40MHz CH46_13.5M_Vetical-Back_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5230 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5230 \text{ MHz}$; $\sigma = 5.274 \text{ S/m}$; $\epsilon_r = 48.678$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.463 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

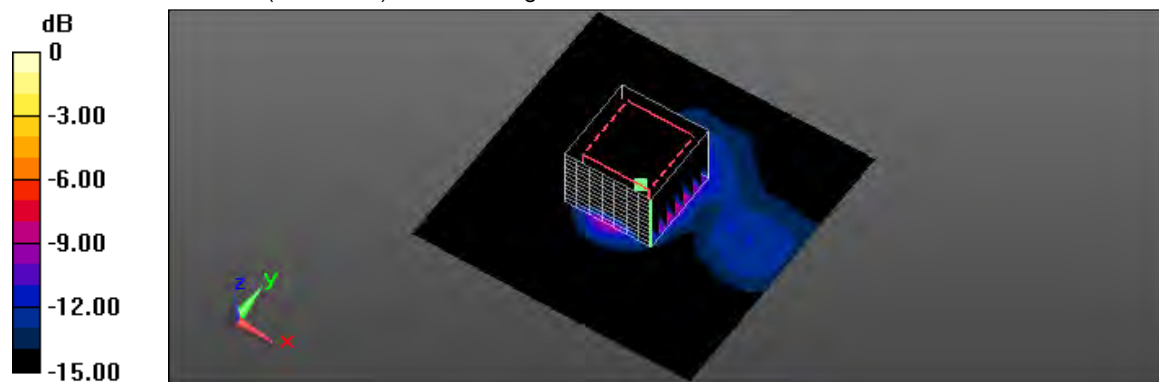
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 7.874 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.981 W/kg

SAR(1 g) = 0.258 W/kg; SAR(10 g) = 0.069 W/kg

Maximum value of SAR (measured) = 0.532 W/kg



0 dB = 0.532 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 01:57:56

49_ IEEE 802.11ac 5GHz 40MHz CH151_13.5M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5755$ MHz; $\sigma = 6.041$ S/m; $\epsilon_r = 47.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0355 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

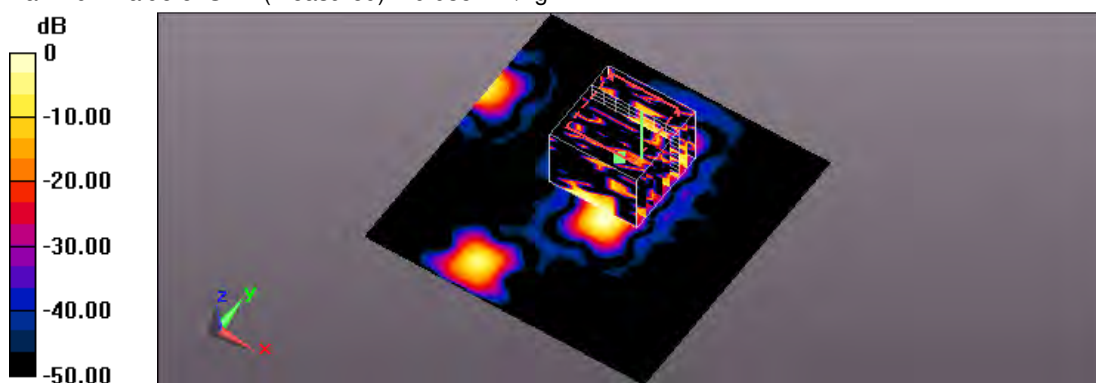
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.612 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00318 W/kg

Maximum value of SAR (measured) = 0.0352 W/kg



0 dB = 0.0352 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/8 PM 03:26:40

50_ IEEE 802.11ac 5GHz 40MHz CH151_13.5M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5755$ MHz; $\sigma = 6.041$ S/m; $\epsilon_r = 47.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0301 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

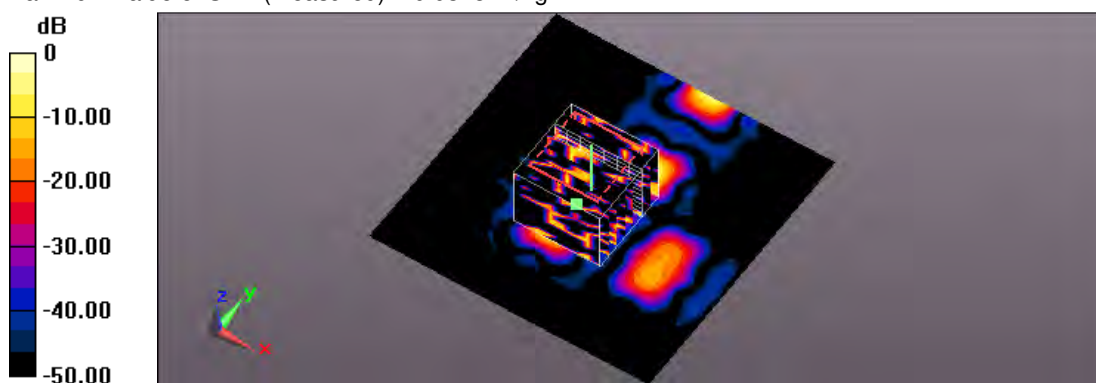
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.799 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.0039 W/kg

Maximum value of SAR (measured) = 0.0348 W/kg



0 dB = 0.0348 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 AM 01:55:46

51_ IEEE 802.11ac 5GHz 40MHz CH151_13.5M_Vertical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5755$ MHz; $\sigma = 6.041$ S/m; $\epsilon_r = 47.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.0461 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

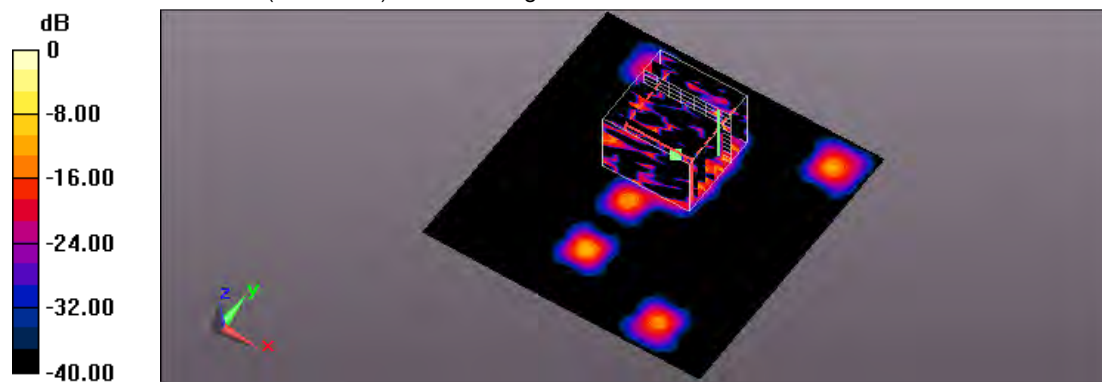
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 1.152 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.00497 W/kg

Maximum value of SAR (measured) = 0.144 W/kg



0 dB = 0.144 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/9/9 PM 01:58:25

52_ IEEE 802.11ac 5GHz 40MHz CH151_13.5M_Verical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5755$ MHz; $\sigma = 6.041$ S/m; $\epsilon_r = 47.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.217 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

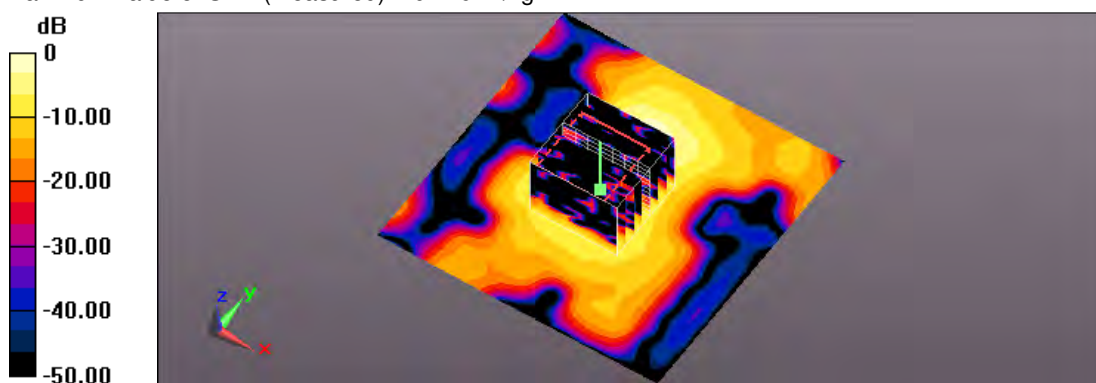
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.852 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.519 W/kg

SAR(1 g) = 0.114 W/kg; SAR(10 g) = 0.028 W/kg

Maximum value of SAR (measured) = 0.279 W/kg



0 dB = 0.279 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 PM 05:46:45

80_ IEEE 802.11ac 5GHz 40MHz CH151_13.5M_Verical-Back_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5755$ MHz; $\sigma = 6.041$ S/m; $\epsilon_r = 47.438$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 2016/3/9;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2016/3/2
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.203 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

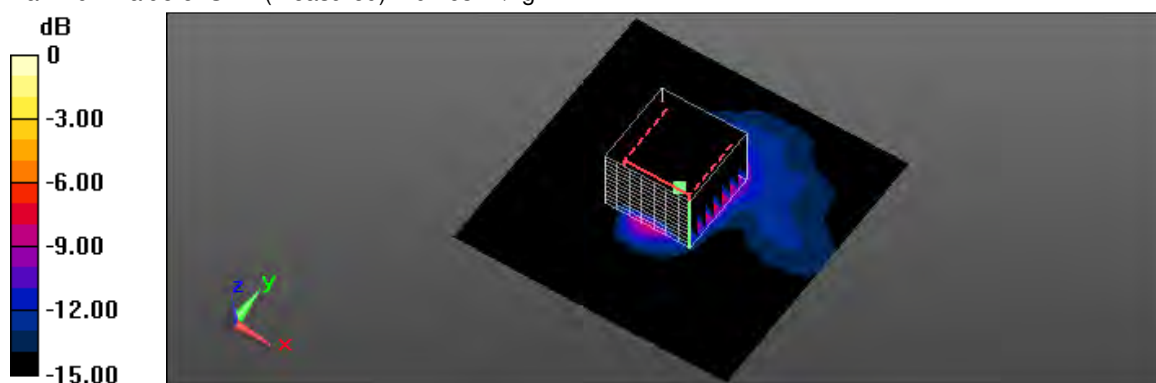
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.774 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.491 W/kg

SAR(1 g) = 0.101 W/kg; SAR(10 g) = 0.021 W/kg

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



0 dB = 0.263 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 09:48:41

96_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.247 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

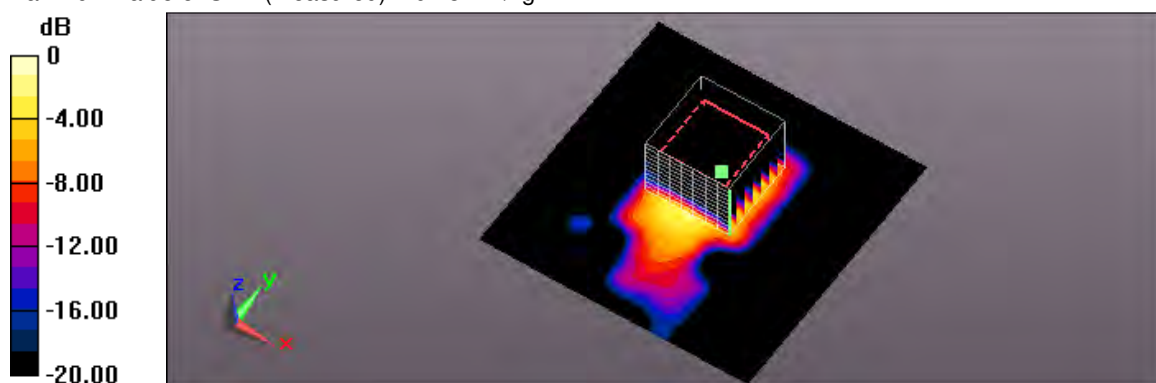
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 5.188 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.352 W/kg

SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.028 W/kg

Maximum value of SAR (measured) = 0.187 W/kg



0 dB = 0.187 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 10:38:53

97_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_ Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.521 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

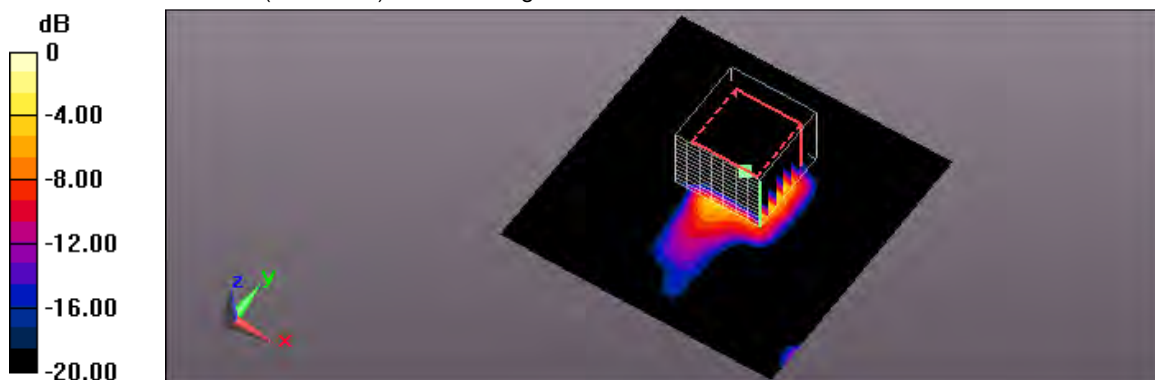
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 6.108 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 1.220 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.074 W/kg

Maximum value of SAR (measured) = 0.584 W/kg



0 dB = 0.584 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 AM 11:42:57

98_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Vetical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210$ MHz; $\sigma = 5.253$ S/m; $\epsilon_r = 48.745$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0857 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

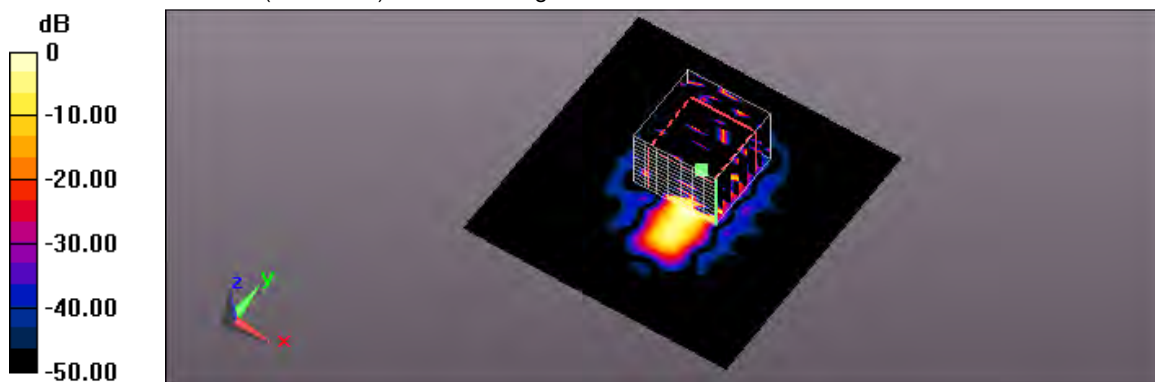
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=2$ mm

Reference Value = 1.613 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.284 W/kg

SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00332 W/kg

Maximum value of SAR (measured) = 0.0328 W/kg



0 dB = 0.0328 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 PM 12:58:44

99_ IEEE 802.11ac 5GHz 80MHz CH36_29.3M_Vetical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0830 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

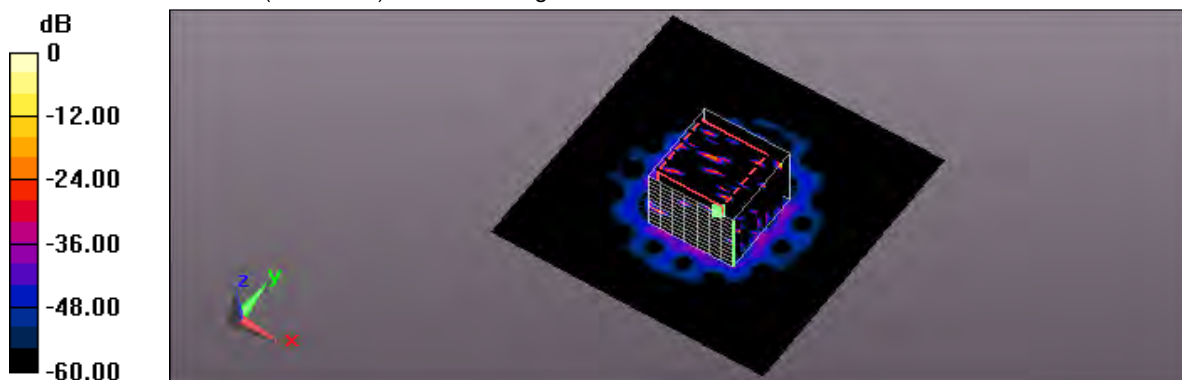
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 2.797 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.253 W/kg

SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.00515 W/kg

Maximum value of SAR (measured) = 0.0752 W/kg



0 dB = 0.0752 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 PM 01:47:25

100_ IEEE 802.11ac 5GHz 80MHz CH42_29.3M_Horizontal-Down (with USB cable)_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used: $f = 5210 \text{ MHz}$; $\sigma = 5.253 \text{ S/m}$; $\epsilon_r = 48.745$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.504 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

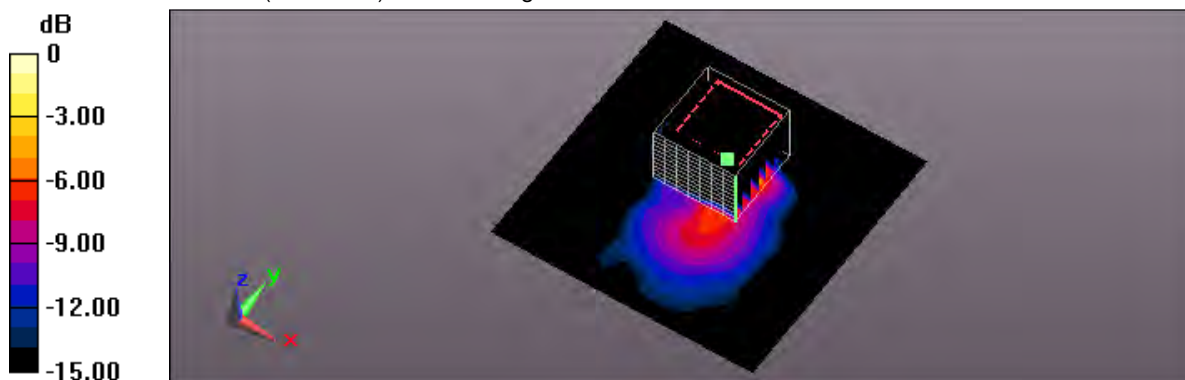
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=2\text{mm}$

Reference Value = 3.879 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.254 W/kg; SAR(10 g) = 0.062 W/kg

Maximum value of SAR (measured) = 0.555 W/kg



0 dB = 0.555 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/21 PM 02:52:26

101_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Horizontal-UP_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

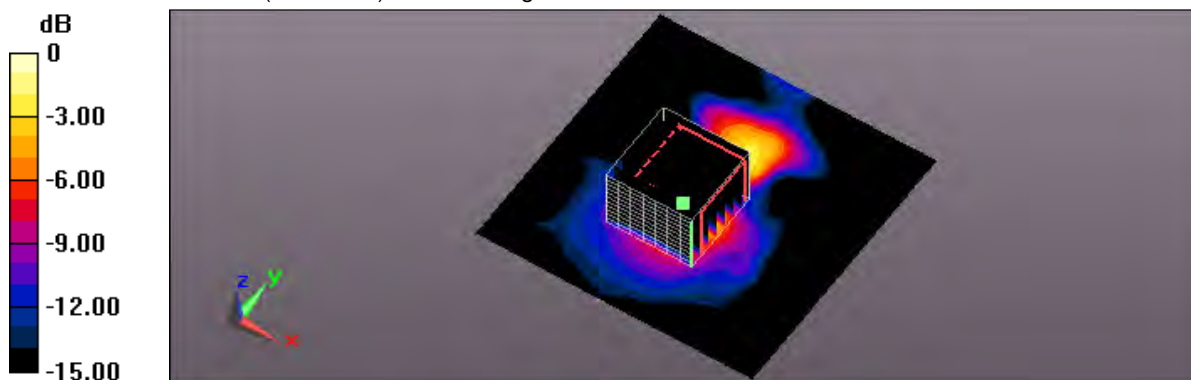
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 9.367 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.074 W/kg

Maximum value of SAR (measured) = 0.591 W/kg



0 dB = 0.591 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 AM 01:48:52

102_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Horizontal-Down (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.525 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

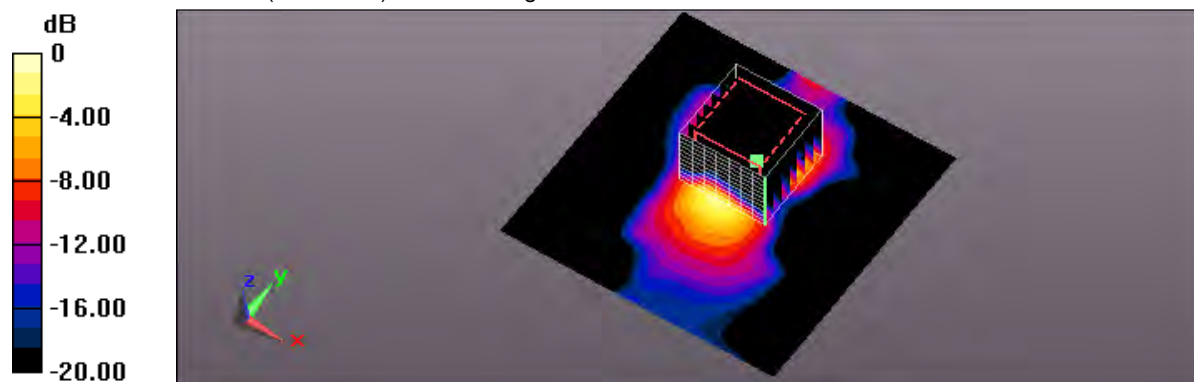
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 8.306 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.958 W/kg

SAR(1 g) = 0.259 W/kg; SAR(10 g) = 0.082 W/kg

Maximum value of SAR (measured) = 0.482 W/kg



0 dB = 0.482 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 AM 02:59:31

103_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Vetical-Front (with USB cable)_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Flat/Zoom Scan (8x8x12)/Cube 0:

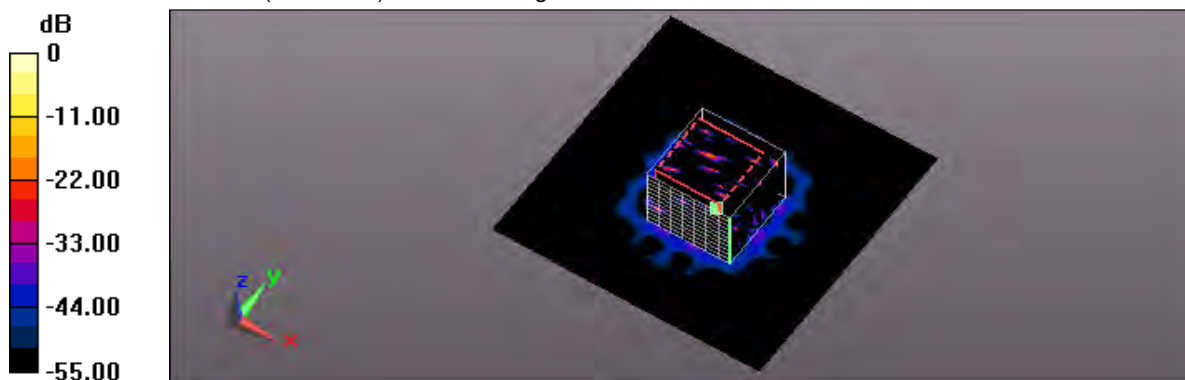
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 2.931 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.312 W/kg

SAR(1 g) = 0.036 W/kg; SAR(10 g) = 0.00638 W/kg

Maximum value of SAR (measured) = 0.0934 W/kg



0 dB = 0.0934 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 AM 03:55:11

104_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Vetical-Back_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.186 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

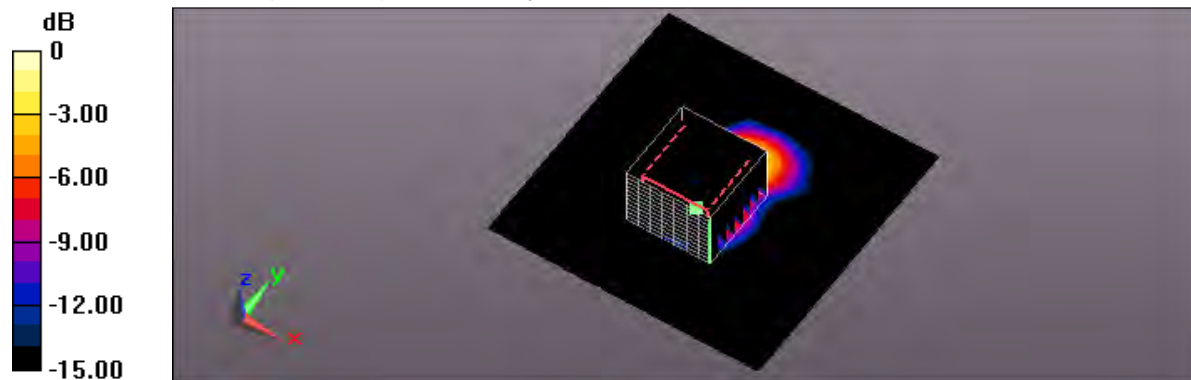
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 3.763 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.349 W/kg

SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.191 W/kg



0 dB = 0.191 W/kg

Test Laboratory: A Test Lab Techno Corp.

Date/Time: 2016/10/20 AM 04:51:16

105_ IEEE 802.11ac 5GHz 80MHz CH155_29.3M_Horizontal-UP_BF ON_5mm_ANT-1

DUT: EW-7822UNC; Type: 11ac Wireless Dual-Band Selectable USB Adapter; FCC ID: NDD9578221607

Communication System: UID 0, IEEE 802.11ac(5GHz)HT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5775$ MHz; $\sigma = 6.072$ S/m; $\epsilon_r = 47.337$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS5 (IEEE/IEC/ANSI C63.19-2011)

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.33, 4.33, 4.33); Calibrated: 3/9/2016;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 3/2/2016
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1036
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

Flat/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.547 W/kg

Flat/Zoom Scan (8x8x12)/Cube 0:

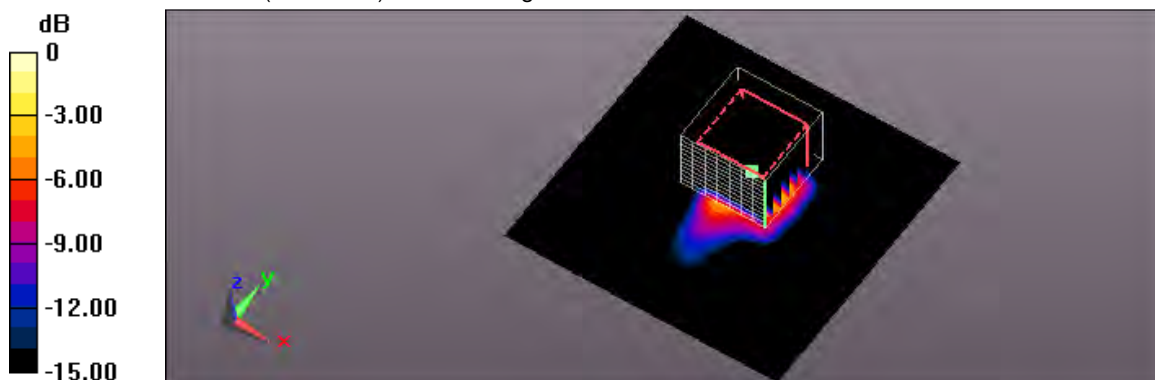
Measurement grid: dx=4mm, dy=4mm, dz=2mm

Reference Value = 6.400 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.876 W/kg

SAR(1 g) = 0.241 W/kg; SAR(10 g) = 0.066 W/kg

Maximum value of SAR (measured) = 0.478 W/kg



0 dB = 0.478 W/kg