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SAR EVALUATION REPORT

Test Report No.	: 1601FS11
Applicant	: Omnitrac, LLC
Applicant Address	: 10182 Telesis Court Suite 100 San Diego, CA. 92121
Product Type	: Intelligent Vehicle Gateway
Trade Name	: Omnitrac
Model Number	: CV90-JC339
Date of Received	: Oct. 27, 2015
Test Period	: Dec. 03 ~ Dec. 31, 2015
Date of Issued	: Jan. 12, 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 865664 D01 v01r04 / KDB 865664 D02 v01r02 KDB 447498 D01 v06 / KDB 941225 v03r01 KDB 941225 D05 v02r05 / KDB 616217 D04 v01r02 KDB 248227 D01 v02r02
Test Lab Location	: Chang-an Lab



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1. Summary of Maximum Reported SAR Value

Equipment Class	Mode	Highest Reported	
		Body stand alone SAR _{1g} (W/kg)	Limbs stand alone SAR _{10g} (W/kg)
PCB	GPRS 850	0.62	0.34
	GPRS 1900	1.15	0.56
	WCDMA Band II	1.25	0.62
	WCDMA Band V	0.45	0.38
	1xEVDO 850 Rev A	0.65	0.30
	1xRTT 1900	1.26	0.68
DTS	WLAN 2.4GHz	0.13	N/A
DSS	Bluetooth	N/A	N/A
Highest Simultaneous Transmission SAR		Body SAR_{1g} (W/kg)	Limbs SAR_{10g} (W/kg)
PCB+DTS+DSS at test position side2		1.51	3

- Note:1. The SAR limit (Body: SAR_{1g} 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
2. The SAR limit (Limbs: SAR_{10g} 4.0 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.
3. N/A, please reference Stand-alone SAR Evaluate.



2. Description of Equipment under Test (EUT)

Applicant	Omnitracs, LLC 10182 Telesis Court Suite 100 San Diego, CA. 92121		
Manufacture	PCI Limited 35 Pioneer Road North Singapore 628475		
Product Type	Intelligent Vehicle Gateway		
Trade Name	Omnitracs		
Model Number	CV90-JC339		
FCC ID	2AE8ZIVG		
IMEI No.	990002189589003		
Cellular Module	PXS8		
Cellular Module FCC ID	2AE8ZIVG01		
RF Function	GPRS/EGPRS 850 GPRS/EGPRS 1900 WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II WCDMA(RMC 12.2K) / HSDPA / HSUPA Band V 1xRTT/1xEV-DO 850 (BC0) 1xRTT/1xEV-DO 1900 (BC1) IEEE 802.11b / 802.11g / 802.11n 2.4GHz 20MHz IEEE 802.11n 2.4GHz 40MHz Bluetooth BR/EDR		
Tx Frequency	Band	Operate Frequency (MHz)	
	GPRS/EGPRS 850	824.2 - 848.8	
	GPRS/EGPRS 1900	1850.2 - 1909.8	
	WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II	1852.4 - 1907.6	
	WCDMA (RMC 12.2K) / HSDPA / HSUPA Band V	826.4 - 846.6	
	1xRTT/1xEV-DO 850 (BC0)	824.70 - 848.31	
	1xRTT/1xEV-DO 1900 (BC1)	1851.25 - 1908.75	
	IEEE 802.11b / 802.11g / 802.11n 2.4GHz 20MHz	2412 - 2462	
	IEEE 802.11n 2.4GHz 40MHz	2422 - 2452	
	Bluetooth BR/EDR	2402 - 2480	
	*GPRS Multi Class: 10		
RF Conducted Power	Band	Power	
		W	dBm
(Avg.)	GPRS/EGPRS 850	2.218	33.46
	GPRS/EGPRS 1900	1.117	30.48
	WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II	0.281	24.48
	WCDMA (RMC 12.2K) / HSDPA / HSUPA Band V	0.277	24.43
	1xRTT/1xEV-DO 850 (BC0)	0.277	24.43
	1xRTT/1xEV-DO 1900 (BC1)	0.281	24.48
	IEEE 802.11b	0.059	17.68
	IEEE 802.11g	0.028	14.41
	IEEE 802.11n 2.4GHz 20MHz	0.007	8.47
	IEEE 802.11n 2.4GHz 40MHz	0.007	8.17
	Bluetooth BR/EDR	0.010	10.04



Antenna Type	GPRS/EGPRS/WCDMA/CDMA 1xRTT : Inverted-F Antenna WLAN : Ceramic Chip Antenna Bluetooth : Ceramic Chip Antenna
Device Category	Portable Device
RF Exposure Environment	General population / Uncontrolled environment
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

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)

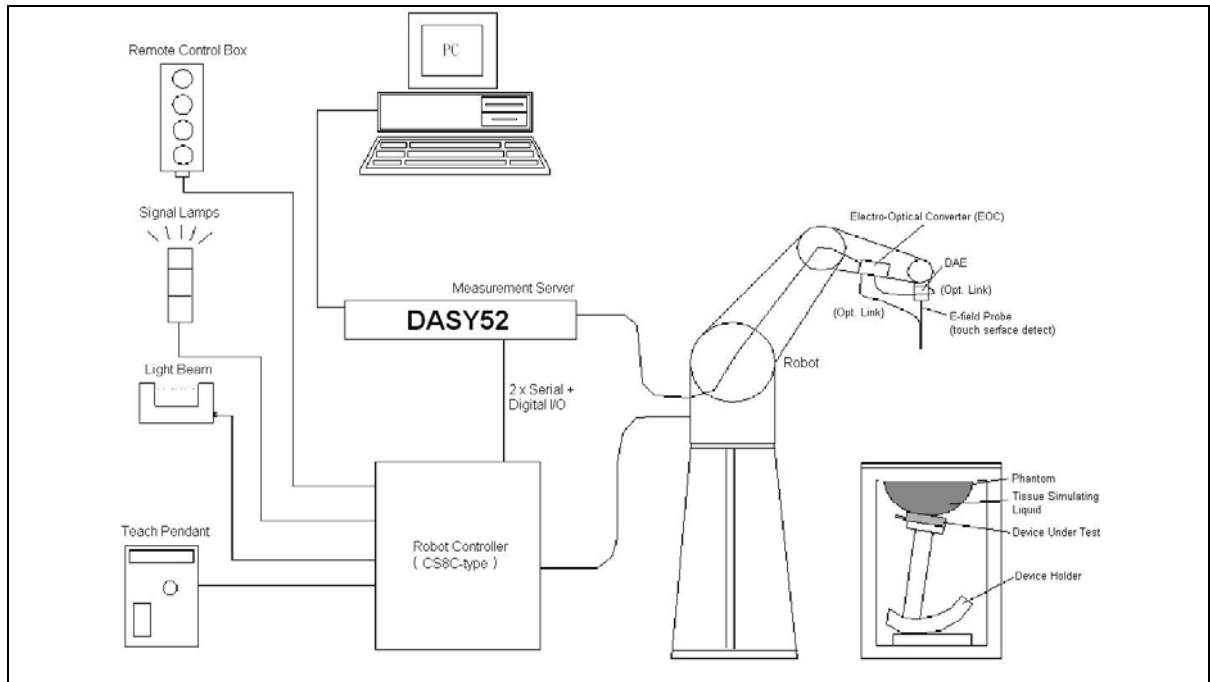
ρ = mass density of the tissue (kg/m³)

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 DASYS 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 DASYS 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

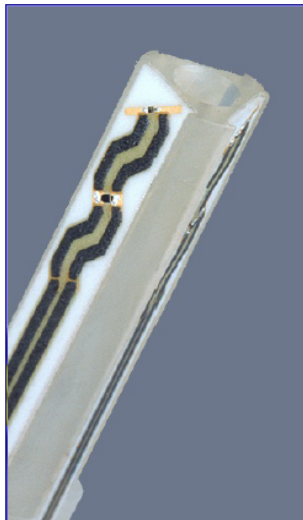


Figure 3. E-field Probe



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.

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

Where :

Δt = Exposure time (30 seconds),

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

ΔT = Temperature increase due to RF exposure.

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

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

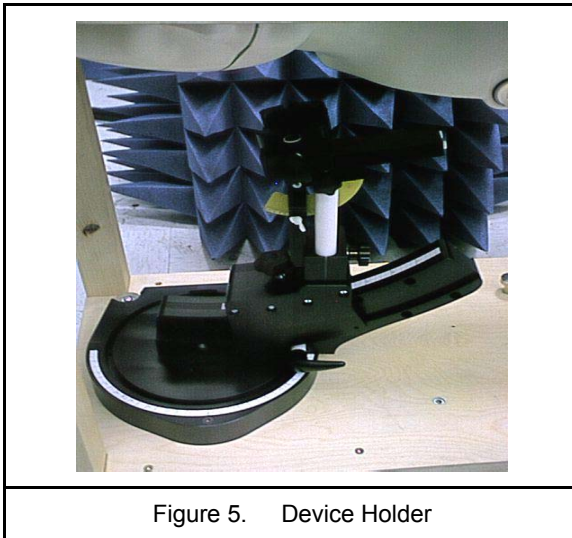
Positioner : Stäubli Unimation Corp. Robot Model: TX90XL
Repeatability : ± 0.02 mm
No. of Axis : 6

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 5.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (Oval Flat) phantom defined in IEEE 1528-2013, CENELEC 50361 and IEC 62209-2. 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 5.0	

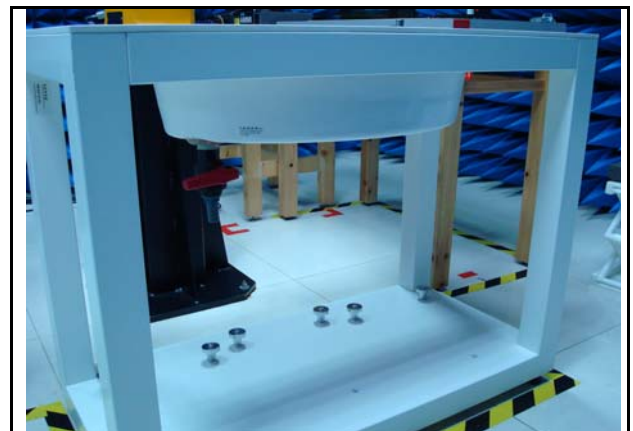


Figure 6. Oval Flat Phantom



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



$$H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

H-field probes :

- with V_i = compensated signal of channel i (i = x, y, z)
Normi = 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 $\rho = 1000$ 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 ≥ 16 M Ω -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 ±5% for ε and ±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 M Ω⁺ 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 GPRS/EGPRS Transmitters

Configure the basestation to support GMSK and 8PSK call respectively, and set timeslot transmission for GMSK GPRS and 8PSK EDGE. Measure and record power outputs for both modulations, that test is applicable.

6.2 SAR Testing with WCDMA Transmitters

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

- Step 1: set a Test Mode 1 loop back with a 12.2kbps Reference Measurement Channel (RMC).
- Step 2: set and send continuously up power control commands to the device.
- Step 3: measure the power at the device antenna connector using the power meter with average detector and test SAR

6.3 SAR Testing with HSDPA Transmitters

HSDPA Date Devices setup for SAR Measurement

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

Setup for Release 5 HSDPA							
Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1,2)}$	$CM^{(3)}$ (dB)	$MRP^{(3)}$ (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15(4)	15/15(4)	64	12/15(4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note

1. Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$
2. For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1A and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and $\Delta_{NACK} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$ and $\Delta_{CQI} = 24/15$ with $\beta_{hs} = 24/15 * \beta_c$
3. $CM = 1$ for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
4. For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.



HSPA Data Devices setup for SAR Measurement.

The following procedures are applicable to HSPA (HSUPA/HSDPA) data devices operating under 3GPP Release 6. Body exposure conditions generally apply to these devices, including handsets and data modems operating in various electronic devices. HSUPA operates in conjunction with WCDMA and HSDPA. SAR is initially measured in WCDMA test configurations without HSPA. The default test configuration is to establish a radio link between the DUT and a communication test set to configure a 12.2 kbps RMC (reference measurement channel) in Test Loop Mode 1. SAR for HSPA is selectively measured with HS-DPCCH, EDPCCH and E-DPDCH, all enabled, along with a 12.2 kbps RMC using the highest SAR configuration in WCDMA with 12.2 kbps RMC only. An FRC is configured according to HSDPCCH Sub-test 1 using H-set 1 and QPSK. HSPA is configured according to E-DCH Subtest 5 requirements. SAR for other HSPA sub-test configurations is also confirmed selectively according to output power, exposure conditions and E-DCH UE Category. Maximum output power is verified according to procedures in applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. The UE Categories for HSDPCCH and HSPA should be clearly identified in the SAR report. The following procedures are applicable only if Maximum Power Reduction (MPR) is implemented according to Cubic Metric (CM) requirements.

When voice transmission and head exposure conditions are applicable to a WCDMA/HSPA data device, head exposure is measured according to the 'Head SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. SAR for body exposure configurations are measured according to the 'Body SAR Measurements' procedures in the 'WCDMA Handsets' section of this document. In addition, body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP is applicable for head exposure, SAR is not required when the maximum output of each RF channel with HSPA is less than ¼ dB higher than that measured using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurements should be used to test for head exposure.

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the 'WCDMA Handset' and 'Release 5 HSDPA Data Devices' sections of this document.



The highest body SAR measured in Antenna Extended & Retracted configurations on a channel in 12.2 kbps RMC. The possible channels are the High, Middle & Low channel. Contact the FCC Laboratory for test and approval requirements if the maximum output power measured in E-DCH Sub-test 2 - 4 is higher than Sub-test 5.

Setup for Release 6 HSPA / Release 7 HSPA+													
Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	β_{ec}	β_{ed}	Bed (SF)	Bed (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note

- $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.
- CM = 1 for $\beta_c/\beta_d = 12/15, \beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
- For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.
- For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.
- Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g.
- β_{ed} can not be set directly; it is set by Absolute Grant Value.



6.4 SAR Testing with CDMA2000 Transmitters

The following procedures were performed according to FCC “3G SAR Procedures” v03, October 2014.

Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by “3G SAR Procedures” v03, October 2014. Maximum output power is verified on the High, Middle and Low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in the “All Up” condition.

1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 6. parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 7 was applied.
5. FCHs were configured at full rate for maximum SAR with “All Up” power control bits.

Parameter	Units	Value
I_{or}	dBm/1.23MHz	-104
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4
Table 3. Parameters for Max. Power for RC1		

Parameter	Units	Value
I_{or}	dBm/1.23MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4
Table 4. Parameters for Max. Power for RC3		



Body SAR Measurements

SAR for body exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. SAR for multiple code channels (FCH + SCHn) is not required when the maximum average output of each RF channel is less than ¼ dB higher than that measured with FCH only. Otherwise, SAR is measured on the maximum output channel (FCH + SCHn) with FCH at full rate and SCH0 enabled at 9600 bps using the exposure configuration that results in the highest SAR for that channel with FCH only. When multiple code channels are enabled, the DUT output may shift by more than 0.5 dB and lead to higher SAR drifts and SCH dropouts. Body SAR was measured using TDSO / SO32 with power control bits in the “All Up”

Body SAR in RC1 is not required when the maximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1; with Loopback Service Option SO55, at full rate, using the body exposure configuration that results in the highest SAR for that channel in RC3.

1xEVDO

SAR is measured using FTAP/RTAP and FETAP/RETAP respectively for Rev. 0 and Rev. A devices. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations; and a Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots in Subtype 2 Physical Layer configurations. Both FTAP and FETAP are configured with a Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with the ACK Channel transmitting in all slots. AT power control should be in “All Bits Up” conditions for TAP/ETAP.



6.5 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.



6.6 Conducted Power

Band	Modulation	Data Rate	CH	Frequency (MHz)	Average Power (dBm)				
					w/o Surce-Time Avg	w/o Avg	w/ Surce-Time Avg	w/ Avg	Power Reduction
GPRS 850 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up Duty factor 1/8	Lowest	824.2	24.39	33.42	21.35	30.38	3.04
			Middle	836.6	24.43	33.46	21.33	30.36	3.10
			Highest	848.8	24.34	33.37	21.26	30.29	3.08
		3Down2Up Duty factor 2/8	Lowest	824.2	27.34	33.36	21.20	30.23	3.13
			Middle	836.6	27.40	33.42	21.18	30.21	3.21
			Highest	848.8	27.29	33.31	21.09	30.12	3.19
EGPRS 850 Multi Class :10 Max Up:2 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	824.2	18.61	27.64	---	---	---
			Middle	836.6	18.56	27.59	---	---	---
			Highest	848.8	18.43	27.46	---	---	---
		3Down2Up Duty factor 2/8	Lowest	824.2	21.53	27.55	---	---	---
			Middle	836.6	21.47	27.49	---	---	---
			Highest	848.8	21.33	27.35	---	---	---
GPRS 1900 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up Duty factor 1/8	Lowest	1850.2	21.45	30.48	13.80	22.83	7.65
			Middle	1880.0	21.34	30.37	13.43	22.46	7.91
			Highest	1909.8	21.18	30.21	12.59	21.62	8.59
		3Down2Up Duty factor 2/8	Lowest	1850.2	24.40	30.42	13.56	22.59	7.83
			Middle	1880.0	24.29	30.31	13.19	22.22	8.09
			Highest	1909.8	24.11	30.13	13.03	22.06	8.07
EGPRS 1900 Multi Class :10 Max Up:2 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	1850.2	17.60	26.63	13.76	22.79	4.16
			Middle	1880.0	17.35	26.38	13.44	22.47	4.17
			Highest	1909.8	17.08	26.11	16.08	25.11	1.08
		3Down2Up Duty factor 2/8	Lowest	1850.2	20.50	26.52	13.61	22.64	4.10
			Middle	1880.0	20.23	26.25	13.30	22.33	4.11
			Highest	1909.8	19.94	25.96	12.83	21.86	4.09

Note: 1. Time Average power slot duty cycle factor calculate:

1up: Average burst power+10*LOG(1/8)

2up: Average burst power+10*LOG(2/8)

3up: Average burst power+10*LOG(3/8)

4up: Average burst power+10*LOG(4/8)



Band	Modulation	Sub-test	CH	Frequency (MHz)	w/o Average Power (dBm)	w/ Average Power (dBm)	Power Reduction (dBm)
WCDMA Band II (RMC12.2K)	QPSK	---	Lowest	1852.4	24.48	15.43	9.15
			Middle	1880.0	24.21	15.32	9.19
			Highest	1907.6	24.14	15.42	8.82
HSDPA Band II	QPSK	1	Lowest	1852.4	24.25	15.16	9.09
			Middle	1880.0	23.98	14.96	9.02
			Highest	1907.6	24.07	15.17	8.90
		2	Lowest	1852.4	24.17	15.08	8.69
			Middle	1880.0	23.94	15.04	8.90
			Highest	1907.6	24.01	15.09	8.92
		3	Lowest	1852.4	24.10	14.92	9.18
			Middle	1880.0	23.53	14.44	9.09
			Highest	1907.6	23.57	14.57	9.00
		4	Lowest	1852.4	23.99	14.88	9.11
			Middle	1880.0	23.51	14.47	9.04
			Highest	1907.6	23.52	14.52	9.00
HSUPA Band II	QPSK	1	Lowest	1852.4	23.00	13.70	9.30
			Middle	1880.0	23.20	14.05	9.15
			Highest	1907.6	23.15	14.12	9.03
		2	Lowest	1852.4	21.87	15.15	6.72
			Middle	1880.0	22.21	15.28	6.93
			Highest	1907.6	21.96	15.11	6.85
		3	Lowest	1852.4	22.45	14.72	7.73
			Middle	1880.0	22.85	14.57	8.28
			Highest	1907.6	22.64	14.63	8.01
		4	Lowest	1852.4	22.11	14.92	7.19
			Middle	1880.0	22.68	15.14	7.54
			Highest	1907.6	22.55	14.87	7.68
		5	Lowest	1852.4	22.77	14.84	7.93
			Middle	1880.0	23.00	14.89	8.11
			Highest	1907.6	22.81	14.95	7.86



Band	Modulation	Sub-test	CH	Frequency (MHz)	w/o Average Power (dBm)	w/ Average Power (dBm)	Power Reduction (dBm)
WCDMA Band V (RMC12.2K)	QPSK	---	Lowest	826.4	24.37	---	---
			Middle	836.6	24.43	---	---
			Highest	846.6	24.43	---	---
HSDPA Band V	QPSK	1	Lowest	826.4	24.26	---	---
			Middle	836.6	24.39	---	---
			Highest	846.6	24.41	---	---
		2	Lowest	826.4	24.17	---	---
			Middle	836.6	24.23	---	---
			Highest	846.6	24.24	---	---
		3	Lowest	826.4	23.83	---	---
			Middle	836.6	23.84	---	---
			Highest	846.6	23.94	---	---
		4	Lowest	826.4	23.79	---	---
			Middle	836.6	23.81	---	---
			Highest	846.6	23.81	---	---
HSUPA Band V	QPSK	1	Lowest	826.4	24.10	---	---
			Middle	836.6	24.12	---	---
			Highest	846.6	23.98	---	---
		2	Lowest	826.4	22.19	---	---
			Middle	836.6	22.68	---	---
			Highest	846.6	22.03	---	---
		3	Lowest	826.4	22.92	---	---
			Middle	836.6	22.81	---	---
			Highest	846.6	22.15	---	---
		4	Lowest	826.4	22.60	---	---
			Middle	836.6	22.43	---	---
			Highest	846.6	22.93	---	---
		5	Lowest	826.4	24.11	---	---
			Middle	836.6	24.08	---	---
			Highest	846.6	23.74	---	---



Band	Modulation	RC/TAP (REV)	CH	Frequency (MHz)	w/o Average Power (dBm)	w/ Average Power (dBm)	Power Reduction (dBm)
1xRTT 850 (BC0)	QPSK	RC1/SO55	Lowest	824.70	24.43	---	---
			Middle	836.52	24.35	---	---
			Highest	848.31	24.23	---	---
		RC3/SO55	Lowest	824.70	24.41	---	---
			Middle	836.52	24.34	---	---
			Highest	848.31	24.22	---	---
		RC3/SO32	Lowest	824.70	24.42	---	---
			Middle	836.52	24.35	---	---
			Highest	848.31	24.23	---	---
1xEV-DO 850 (BC0)	QPSK	RTAP(kbps) 153.6 Rev.0	Lowest	824.70	24.24	---	---
			Middle	836.52	24.38	---	---
			Highest	848.31	24.43	---	---
		RETAP Payload size 4096 bits Rev.A	Lowest	824.70	24.17	---	---
			Middle	836.52	24.27	---	---
			Highest	848.31	24.20	---	---

Band	Modulation	RC/TAP (REV)	CH	Frequency (MHz)	w/o Average Power (dBm)	w/ Average Power (dBm)	Power Reduction (dBm)
1xRTT 1900 (BC1)	QPSK	RC1/SO55	Lowest	1851.25	24.48	14.47	10.01
			Middle	1880.00	24.43	15.21	9.22
			Highest	1908.75	24.47	14.74	9.73
		RC3/SO55	Lowest	1851.25	24.41	14.15	10.26
			Middle	1880.00	24.43	15.02	9.41
			Highest	1908.75	24.37	14.61	9.76
		RC3/SO32	Lowest	1851.25	24.47	14.27	10.20
			Middle	1880.00	24.43	15.14	9.29
			Highest	1908.75	24.37	14.66	9.71
1xEV-DO 1900 (BC1)	QPSK	RTAP(kbps) 153.6 Rev.0	Lowest	1851.25	24.48	15.04	9.44
			Middle	1880.00	24.41	15.78	8.63
			Highest	1908.75	24.23	15.47	8.76
		RETAP Payload size 4096 bits Rev.A	Lowest	1851.25	24.42	15.28	9.14
			Middle	1880.00	24.33	15.98	8.35
			Highest	1908.75	24.28	15.57	8.71

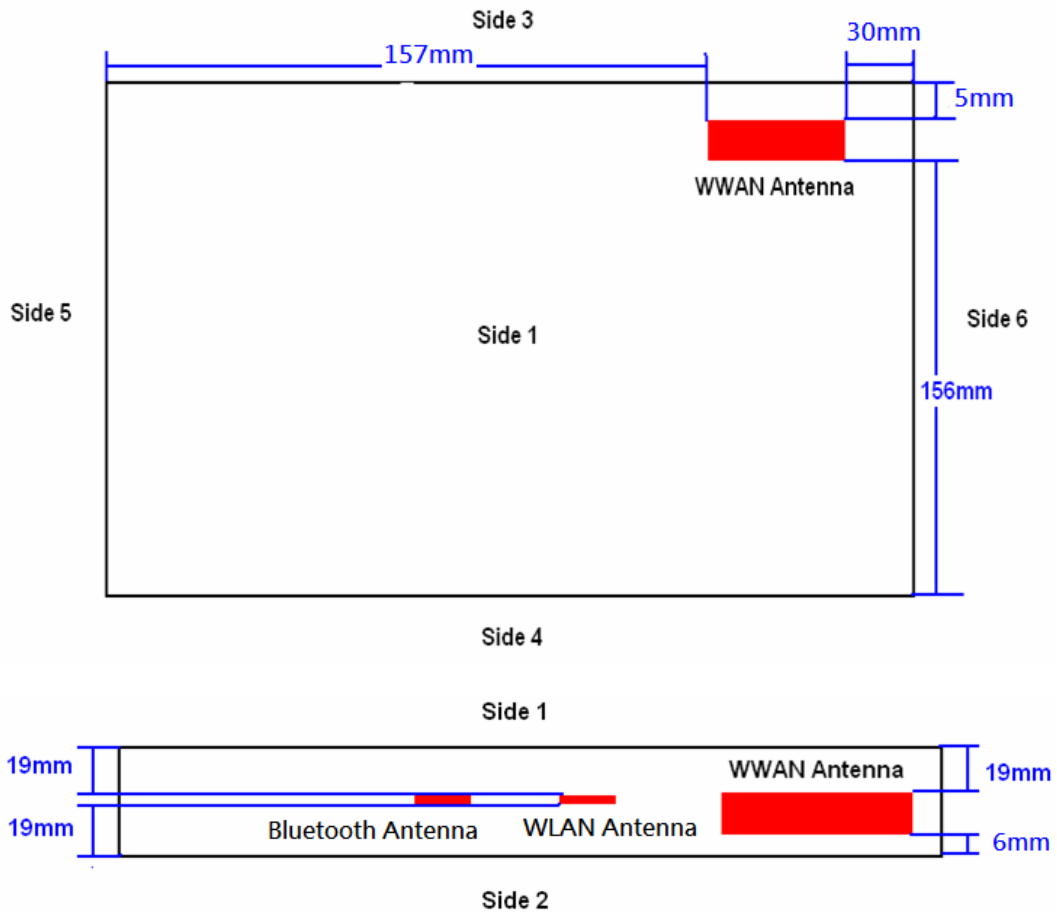


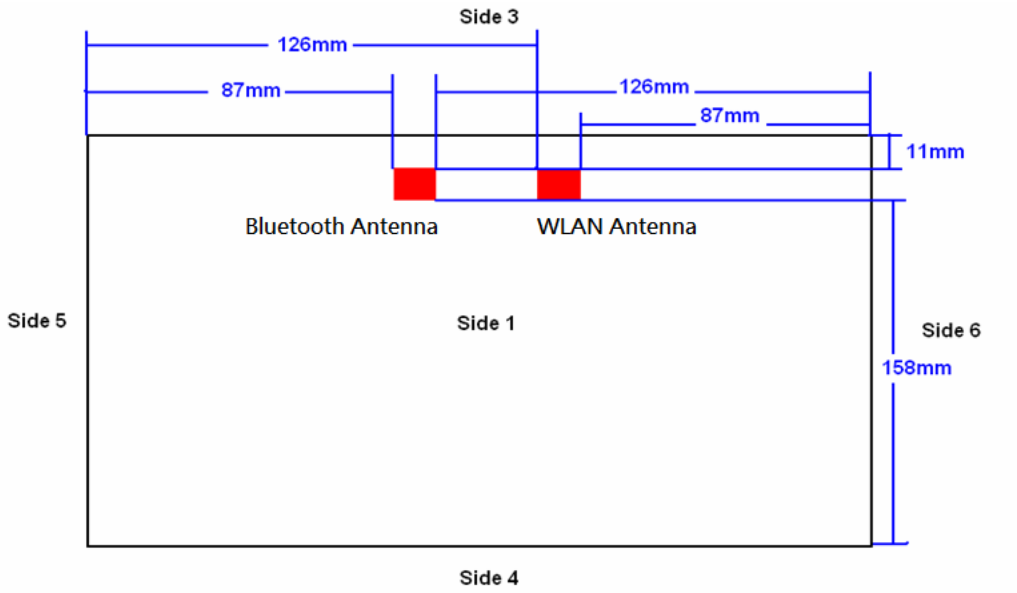
Band	Data Rate	CH	Frequency (MHz)	Average Power (dBm)
IEEE 802.11b	1M	1	2412.0	17.68
		6	2437.0	17.53
		11	2462.0	17.22
	2M	6	2437.0	17.46
	5.5M	6	2437.0	17.42
	11M	6	2437.0	17.31
IEEE 802.11g	6M	1	2412.0	14.41
		6	2437.0	14.32
		11	2462.0	14.36
	9M	6	2437.0	14.23
	12M	6	2437.0	14.22
	18M	6	2437.0	14.19
	24M	6	2437.0	14.16
	36M	6	2437.0	14.12
	48M	6	2437.0	14.08
	54M	6	2437.0	14.03
IEEE 802.11n 2.4 GHz 20MHz	6.5M	1	2412.0	8.47
		6	2437.0	8.19
		11	2462.0	7.83
	13M	6	2437.0	8.18
	19.5M	6	2437.0	8.15
	26M	6	2437.0	8.13
	39M	6	2437.0	8.11
	52M	6	2437.0	8.06
	58.5M	6	2437.0	8.02
	65M	6	2437.0	7.66
IEEE 802.11n 2.4 GHz 40MHz	13.5M	3	2422.0	7.74
		6	2437.0	8.17
		9	2452.0	7.81
	27M	6	2437.0	8.16
	40.5M	6	2437.0	8.13
	54M	6	2437.0	8.13
	81M	6	2437.0	8.07
	108M	6	2437.0	7.72
	121.5M	6	2437.0	7.69
	135M	6	2437.0	7.67

Band	CH	Frequency (MHz)	Packet Type	Average Power (dBm)
Bluetooth BR GFSK	0	2402	DH1	10.00
			DH3	9.99
			DH5	9.98
	39	2441	DH1	10.02
			DH3	10.00
			DH5	9.99
	78	2480	DH1	10.04
			DH3	10.03
			DH5	10.02
Bluetooth EDR $\pi/4$ -DQPSK	0	2402	2DH1	10.01
			2DH3	10.00
			2DH5	9.99
	39	2441	2DH1	10.01
			2DH3	9.99
			2DH5	9.98
	78	2480	2DH1	10.03
			2DH3	10.01
			2DH5	10.00
Bluetooth EDR 8DPSK	0	2402	3DH1	10.03
			3DH3	10.02
			3DH5	10.01
	39	2441	3DH1	10.00
			3DH3	9.99
			3DH5	9.98
	78	2480	3DH1	10.02
			3DH3	10.01
			3DH5	10.00

6.7 Antenna location

Antenna-User					
Distance of WWAN Antenna to edge (mm)		Distance of WLAN Antenna to edge (mm)		Distance of Bluetooth Antenna to edge (mm)	
WWAN Antenna to Side 1	19	WLAN Antenna 1 to Side 1	19	WLAN Antenna 2 to Side 1	19
WWAN Antenna to Side 2	6	WLAN Antenna 1 to Side 2	19	WLAN Antenna 2 to Side 2	19
WWAN Antenna to Side 3	5	WLAN Antenna 1 to Side 3	11	WLAN Antenna 2 to Side 3	11
WWAN Antenna to Side 4	156	WLAN Antenna 1 to Side 4	158	WLAN Antenna 2 to Side 4	158
WWAN Antenna to Side 5	157	WLAN Antenna 1 to Side 5	126	WLAN Antenna 2 to Side 5	87
WWAN Antenna to Side 6	30	WLAN Antenna 1 to Side 6	87	WLAN Antenna 2 to Side 6	126







6.8 Stand-alone SAR Evaluate

Transmitter and antenna implementation as below:

Band	WWAN Antenna	WLAN Antenna	Bluetooth Antenna
WWAN	V	-	-
WLAN	-	V	-
Bluetooth	-	-	V

Stand-alone transmission configurations as below:

Band	Side 1		Side 2		Side 3		Side 4		Side 5		Side 6	
	Body	Limbs	Body	Limbs	Body	Limbs	Body	Limbs	Body	Limbs	Body	Limbs
GPRS 850	-	-	V	-	-	V	V	-	-	V	-	V
GPRS 1900	-	-	V	-	-	V	-	-	-	-	-	V
WCDMA/HSDPA/HSUPA Band II	-	-	V	-	-	V	-	-	-	-	-	V
WCDMA/HSDPA/HSUPA Band V	-	-	V	-	-	V	-	-	-	-	-	V
1xRTT 850	-	-	V	-	-	V	-	-	-	-	-	V
1xEVDO 850	-	-	V	-	-	V	-	-	-	-	-	V
1xRTT 1900	-	-	V	-	-	V	-	-	-	-	-	V
1xEVDO 1900	-	-	V	-	-	V	-	-	-	-	-	V
IEEE 802.11b	-	-	V	-	-	V	-	-	-	-	-	-
IEEE 802.11g	-	-	-	-	-	-	-	-	-	-	-	-
IEEE 802.11n 2.4GHz 20MHz	-	-	-	-	-	-	-	-	-	-	-	-
IEEE 802.11n 2.4GHz 40MHz	-	-	-	-	-	-	-	-	-	-	-	-
Bluetooth	-	-	-	-	-	-	-	-	-	-	-	-

Note: The "-" on behalf of Stand-alone SAR is not required (Refer to KDB447498 D01 v06 4.3.1 for the Standalone SAR test exclusion considerations)



Body SAR test reduction										
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	distance(mm)					
					Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	6	-	-	156	-	-
GPRS 1900	661	1.88	30.5	1122	6	-	-	156	-	-
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	6	-	-	156	-	-
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	6	-	-	156	-	-
1xRTT 850	384	0.83652	24.5	282	6	-	-	156	-	-
1xEVDO 850	384	0.83652	24.5	282	6	-	-	156	-	-
1xRTT 1900	600	1.88	24.5	282	6	-	-	156	-	-
1xEVDO 1900	600	1.88	24.5	282	6	-	-	156	-	-
IEEE 802.11b	1	2.412	18	63	19	-	-	158	-	-
IEEE 802.11g	1	2.412	15	32	19	-	-	158	-	-
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	19	-	-	158	-	-
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	19	-	-	158	-	-
Bluetooth	78	2.48	10.5	11	19	-	-	158	-	-
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	Calculated Threshold Value					
					Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	-	341.3 MEASURE	-	755.2mW MEASURE	-	-
GPRS 1900	661	1.88	30.5	1122	-	256.4 MEASURE	-	1169.4mW EXEMPT	-	-
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	-	64.4 MEASURE	-	1169.4mW EXEMPT	-	-
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	-	43 MEASURE	-	755.2mW EXEMPT	-	-
1xRTT 850	384	0.83652	24.5	282	-	43 MEASURE	-	755.1mW EXEMPT	-	-
1xEVDO 850	384	0.83652	24.5	282	-	43 MEASURE	-	755.1mW EXEMPT	-	-
1xRTT 1900	600	1.88	24.5	282	-	64.4 MEASURE	-	1169.4mW EXEMPT	-	-
1xEVDO 1900	600	1.88	24.5	282	-	64.4 MEASURE	-	1169.4mW EXEMPT	-	-
IEEE 802.11b	1	2.412	18	63	-	5.1 MEASURE	-	1176.6mW EXEMPT	-	-
IEEE 802.11g	1	2.412	15	32	-	2.6 EXEMPT	-	1176.6mW EXEMPT	-	-
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	-	0.7 EXEMPT	-	1176.6mW EXEMPT	-	-
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	-	0.7 EXEMPT	-	1176.1mW EXEMPT	-	-
Bluetooth	78	2.48	10.5	11	-	0.9 EXEMPT	-	1175.3mW EXEMPT	-	-



Limbs SAR test reduction										
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	distance(mm)					
					Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	-	-	5	156	150	27
GPRS 1900	661	1.88	30.5	1122	-	-	5	156	150	27
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	-	-	5	156	150	27
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	-	-	5	156	150	27
1xRTT 850	384	0.83652	24.5	282	-	-	5	156	150	27
1xEVDO 850	384	0.83652	24.5	282	-	-	5	156	150	27
1xRTT 1900	600	1.88	24.5	282	-	-	5	156	150	27
1xEVDO 1900	600	1.88	24.5	282	-	-	5	156	150	27
IEEE 802.11b	1	2.412	18	63	-	-	11	158	87	87
IEEE 802.11g	1	2.412	15	32	-	-	11	158	87	87
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	-	-	11	158	87	87
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	-	-	11	158	87	87
Bluetooth	78	2.48	10.5	11	-	-	11	158	87	87
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	Calculated Threshold Value					
					Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	-	-	409.6 MEASURE	-	967.7mW MEASURE	75.8 MEASURE
GPRS 1900	661	1.88	30.5	1122	-	-	307.7 MEASURE	-	1273.5mW EXEMPT	57 MEASURE
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	-	-	77.3 MEASURE	-	1273.5mW EXEMPT	14.3 MEASURE
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	-	-	51.6 MEASURE	-	967.7mW EXEMPT	9.6 MEASURE
1xRTT 850	384	0.83652	24.5	282	-	-	51.6 MEASURE	-	967.7mW EXEMPT	9.6 MEASURE
1xEVDO 850	384	0.83652	24.5	282	-	-	51.6 MEASURE	-	967.7mW EXEMPT	9.6 MEASURE
1xRTT 1900	600	1.88	24.5	282	-	-	77.3 MEASURE	-	1273.5mW EXEMPT	14.3 MEASURE
1xEVDO 1900	600	1.88	24.5	282	-	-	77.3 MEASURE	-	1273.5mW EXEMPT	14.3 MEASURE
IEEE 802.11b	1	2.412	18	63	-	-	8.9 MEASURE	-	611.5mW EXEMPT	611.5mW EXEMPT
IEEE 802.11g	1	2.412	15	32	-	-	4.5 EXEMPT	-	611.5mW EXEMPT	611.5mW EXEMPT
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	-	-	1.1 EXEMPT	-	611.5mW EXEMPT	611.5mW EXEMPT
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	-	-	1.1 EXEMPT	-	466.1mW EXEMPT	466.1mW EXEMPT
Bluetooth	78	2.48	10.5	11	-	-	1.6 EXEMPT	-	465.3mW EXEMPT	465.3mW EXEMPT



- Note: 1. The tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary.
2. The device's software is not android or windows system. Tablets can not use various sensing mechanisms to rotation display ,the device display is positioned in fixed orientations. therefore,the standalone 1g body SAR evaluation for side 2 and side 4, The standalone 10g extremity SAR evaluation for side 3,side 5 and side 6.
3. The test reduction for distance less than 50mm and more than 50mm. Use the max power to make sure minimum distance by evaluated for SAR testing.
4. For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1g and 10g SAR test exclusion thresholds are determined by the following:According to KDB 447498, if the calculated threshold value are >3 then Body SAR and >7.5 then Limbs SAR testing are required.
5. For 100 MHz to 6 GHz and test separation distances > 50 mm,According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required

6.9 Simultaneous Transmitting Evaluate

Simultaneous transmission configurations as below:

Condition	Side	Frequency Band		
		WWAN Antenna	WLAN Antenna	Bluetooth Antenna
1	1	V	V	V
2	2	V	V	V
3	3	V	V	V
4	4	V	V	V
5	5	V	V	V
6	6	V	V	V



6.9.1 Estimated SAR

Body SAR 1g										
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	-	-	-	-	-	-
GPRS 1900	661	1.88	30.5	1122	-	-	-	0.4	-	-
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	-	-	-	0.4	-	-
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	-	-	-	0.4	-	-
1xRTT 850	384	0.83652	24.5	282	-	-	-	0.4	-	-
1xEVDO 850	384	0.83652	24.5	282	-	-	-	0.4	-	-
1xRTT 1900	600	1.88	24.5	282	-	-	-	0.4	-	-
1xEVDO 1900	600	1.88	24.5	282	-	-	-	0.4	-	-
IEEE 802.11b	1	2.412	18	63	-	-	-	0.4	-	-
IEEE 802.11g	1	2.412	15	32	-	0.35	-	0.4	-	-
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	-	0.09	-	0.4	-	-
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	-	0.09	-	0.4	-	-
Bluetooth	78	2.48	10.5	11	-	0.12	-	0.4	-	-
Limbs SAR 10g										
Band	Channel	Frequency (GHz)	Power (dBm)	Power (mW)	Side 1	Side 2	Side 3	Side 4	Side 5	Side 6
GPRS 850	190	0.8366	33.5	2239	-	-	-	-	-	-
GPRS 1900	661	1.88	30.5	1122	-	-	-	-	1	-
WCDMA/HSDPA/HSUPA Band II	9400	1.88	24.5	282	-	-	-	-	1	-
WCDMA/HSDPA/HSUPA Band V	4183	0.8366	24.5	282	-	-	-	-	1	-
1xRTT 850	384	0.83652	24.5	282	-	-	-	-	1	-
1xEVDO 850	384	0.83652	24.5	282	-	-	-	-	1	-
1xRTT 1900	600	1.88	24.5	282	-	-	-	-	1	-
1xEVDO 1900	600	1.88	24.5	282	-	-	-	-	1	-
IEEE 802.11b	1	2.412	18	63	-	-	-	-	1	1
IEEE 802.11g	1	2.412	15	32	-	-	0.24	-	1	1
IEEE 802.11n 2.4GHz 20MHz	1	2.412	9	8	-	-	0.06	-	1	1
IEEE 802.11n 2.4GHz 40MHz	6	2.437	9	8	-	-	0.06	-	1	1
Bluetooth	78	2.48	10.5	11	-	-	0.08	-	1	1



6.9.2 Sum of 1g/10g SAR of all simultaneously transmitting

When the sum of 1g/10g 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 1g SAR of summary as below:

Phantom Position	Spacing (mm)	ASSY	WWAN Antenna		WLAN Antenna		Bluetooth Antenna		Σ SAR _{1g} (W/kg)	Event	
			Band	SAR _{1g} (W/kg)	Band	SAR _{1g} (W/kg)	Band	SAR _{1g} (W/kg)			
Flat	Side 2	0	N/A	GPRS 850	0.57	IEEE 802.11b	0.13	Bluetooth	*0.12	0.82	<1.6
		0	N/A	GPRS 1900	1.15	IEEE 802.11b	0.13	Bluetooth	*0.12	1.4	<1.6
		0	N/A	WCDMA/HSDPA/HSUPA Band II	1.25	IEEE 802.11b	0.13	Bluetooth	*0.12	1.5	<1.6
		0	N/A	WCDMA/HSDPA/HSUPA Band V	0.45	IEEE 802.11b	0.13	Bluetooth	*0.12	0.7	<1.6
		0	N/A	1xEVDO 850	0.65	IEEE 802.11b	0.13	Bluetooth	*0.12	0.9	<1.6
		0	N/A	1xRTT 1900	1.26	IEEE 802.11b	0.13	Bluetooth	*0.12	1.51	<1.6
Flat	Side 4	0	N/A	GPRS 850	0.01	IEEE 802.11b	**0.4	Bluetooth	**0.4	0.81	<1.6
		0	N/A	GPRS 1900	**0.4	IEEE 802.11b	**0.4	Bluetooth	**0.4	1.2	<1.6
		0	N/A	WCDMA/HSDPA/HSUPA Band II	**0.4	IEEE 802.11b	**0.4	Bluetooth	**0.4	1.2	<1.6
		0	N/A	WCDMA/HSDPA/HSUPA Band V	**0.4	IEEE 802.11b	**0.4	Bluetooth	**0.4	1.2	<1.6
		0	N/A	1xEVDO 850	**0.4	IEEE 802.11b	**0.4	Bluetooth	**0.4	1.2	<1.6
		0	N/A	1xRTT 1900	**0.4	IEEE 802.11b	**0.4	Bluetooth	**0.4	1.2	<1.6



Sum of 10g SAR of summary as below:

Phantom Position	Spacing (mm)	ASSY	WWAN Antenna		WLAN Antenna		Bluetooth Antenna		Σ SAR _{10g} (W/kg)	Event	
			Band	SAR _{10g} (W/kg)	Band	SAR _{10g} (W/kg)	Band	SAR _{10g} (W/kg)			
Flat	Side 3	0	N/A	GPRS 850	0.32	IEEE 802.11b	0.15	Bluetooth	*0.08	0.55	<4.0
		0	N/A	GPRS 1900	0.56	IEEE 802.11b	0.15	Bluetooth	*0.08	0.79	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band II	0.62	IEEE 802.11b	0.15	Bluetooth	*0.08	0.85	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band V	0.23	IEEE 802.11b	0.15	Bluetooth	*0.08	0.46	<4.0
		0	N/A	1xEVDO 850	0.3	IEEE 802.11b	0.15	Bluetooth	*0.08	0.53	<4.0
		0	N/A	1xEVDO 1900	0.68	IEEE 802.11b	0.15	Bluetooth	*0.08	0.91	<4.0
Flat	Side 5	0	N/A	GPRS 850	0.06	IEEE 802.11b	**1	Bluetooth	**1	2.06	<4.0
		0	N/A	GPRS 1900	**1	IEEE 802.11b	**1	Bluetooth	**1	3	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band II	**1	IEEE 802.11b	**1	Bluetooth	**1	3	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band V	**1	IEEE 802.11b	**1	Bluetooth	**1	3	<4.0
		0	N/A	1xEVDO 850	**1	IEEE 802.11b	**1	Bluetooth	**1	3	<4.0
		0	N/A	1xRTT 1900	**1	IEEE 802.11b	**1	Bluetooth	**1	3	<4.0
Flat	Side 6	0	N/A	GPRS 850	0.34	IEEE 802.11b	**1	Bluetooth	**1	2.34	<4.0
		0	N/A	GPRS 1900	0.06	IEEE 802.11b	**1	Bluetooth	**1	2.06	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band II	0.06	IEEE 802.11b	**1	Bluetooth	**1	2.06	<4.0
		0	N/A	WCDMA/HSDPA/HSUPA Band V	0.38	IEEE 802.11b	**1	Bluetooth	**1	2.38	<4.0
		0	N/A	1xEVDO 850	0.36	IEEE 802.11b	**1	Bluetooth	**1	2.36	<4.0
		0	N/A	1xEVDO 1900	0.06	IEEE 802.11b	**1	Bluetooth	**1	2.06	<4.0

Note :1. *=Estimated SAR

2. **The Estimated SAR 0.4W/Kg for 1g · 1.0W/Kg for 10g , test separation distances is > 50 mm
3. When the sum of 1g and 10g 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.



6.9.3 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 1g SAR test exclusion.

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

6.10 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 941225:

- In order to qualify for the above test reduction, the maximum burst-averaged output power for each mode (GMS/GPRS/EDGE) and the corresponding multi-slot class must be clearly identified in the SAR report for each frequency band. We perform worst case SAR with maximum time-average power on GMS/GPRS/EDGE mode.
- When HSDPA & (HSUPA / HSPA+ uplink with QPSK) power are not more than WCDMA 12.2K RMC 0.25dB and the SAR value of WCDMA BII/BV < 1.2 mW/g, therefore HSDPA & HSUPA / HSPA+ Stand-alone SAR is not required.
- SAR for EVDO Rev. A is not required when the maximum average output of each RF channels is less than that measured in Subtype 0/1 Physical layer configurations.
- For 1xRTT SAR is not required when the maximum average output of each channel is less than 1/4 dB higher than that measured in EVDO Rev.0.

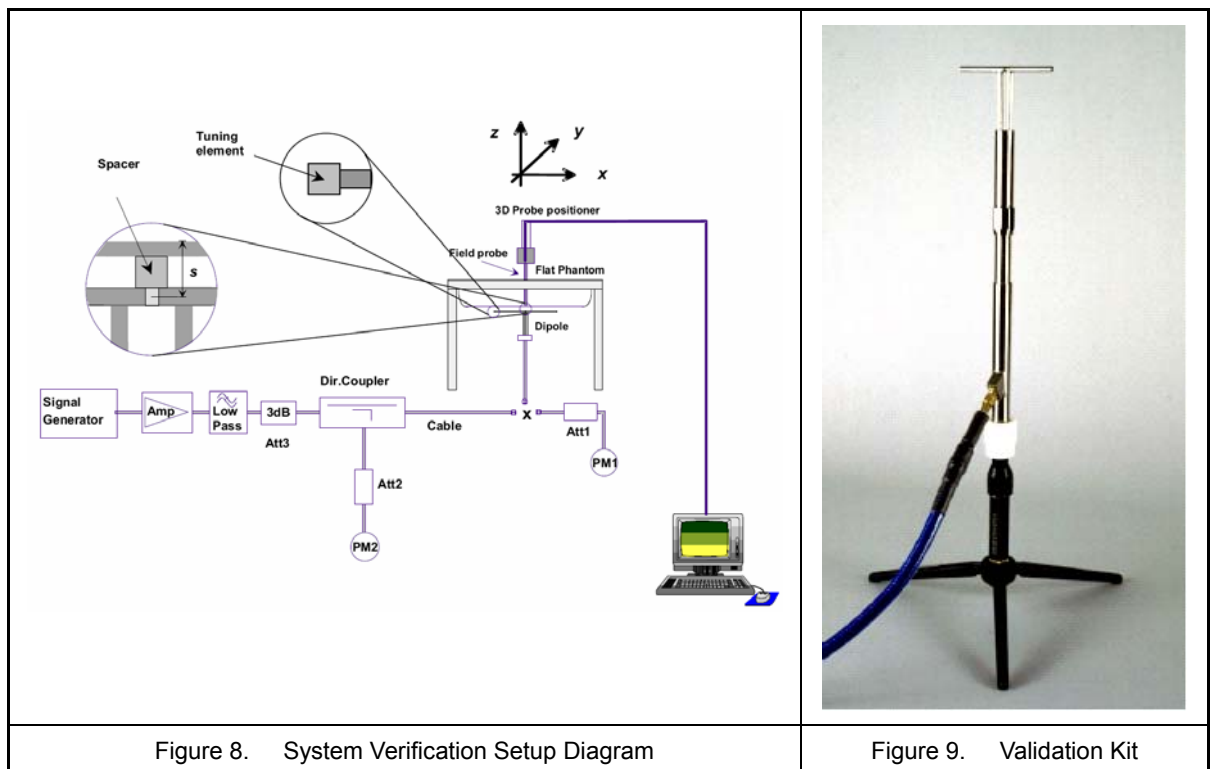
KDB 248227:

- Refer 6.5 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	835, 1900 and 2450 MHz
Return Loss	> 20 dB at specified verification position
Power Capability	> 100 W (f < 1GHz); > 40 W (f > 1GHz)
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request
Dimensions	D835V2: dipole length 161 mm; overall height 340 mm D1900V2: dipole length 67.7 mm; overall height 300 mm D2450V2: dipole length 51.5 mm; overall height 300 mm





7.2 Liquid Parameters

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
835MHz (Body)	835MHz	22.0	ϵ_r	55.20	54.85	-0.63%	± 5	2015/12/7
			σ	0.970	0.979	0.93%	± 5	
	837MHz	22.0	ϵ_r	55.19	54.87	-0.58%	± 5	
			σ	0.972	0.981	0.93%	± 5	
835MHz (Body)	835MHz	22.0	ϵ_r	55.20	54.85	-0.63%	± 5	2015/12/8
			σ	0.970	0.979	0.93%	± 5	
	837MHz	22.0	ϵ_r	55.19	54.87	-0.58%	± 5	
			σ	0.972	0.981	0.93%	± 5	
835MHz (Body)	835MHz	22.0	ϵ_r	55.20	54.85	-0.63%	± 5	2015/12/30
			σ	0.970	0.979	0.93%	± 5	
	837MHz	22.0	ϵ_r	55.19	54.87	-0.58%	± 5	
			σ	0.972	0.981	0.93%	± 5	
1900MHz (Body)	1851MHz	22.0	ϵ_r	53.30	54.17	1.63%	± 5	2015/12/24
			σ	1.520	1.465	-3.62%	± 5	
	1852MHz	22.0	ϵ_r	53.30	54.18	1.65%	± 5	
			σ	1.520	1.465	-3.62%	± 5	
	1880MHz	22.0	ϵ_r	53.30	54.13	1.56%	± 5	
			σ	1.520	1.479	-2.70%	± 5	
	1900MHz	22.0	ϵ_r	53.30	53.97	1.26%	± 5	
			σ	1.520	1.507	-0.86%	± 5	
	1908MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.520	0.00%	± 5	
	1909MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.521	0.07%	± 5	
1900MHz (Body)	1880MHz	22.0	ϵ_r	53.30	54.13	1.56%	± 5	2015/12/25
			σ	1.520	1.479	-2.70%	± 5	
	1900MHz	22.0	ϵ_r	53.30	53.97	1.26%	± 5	
			σ	1.520	1.507	-0.86%	± 5	

Table 5. 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
1900MHz (Body)	1850MHz	22.0	ϵ_r	53.30	54.16	1.61%	± 5	2015/12/27
			σ	1.520	1.465	-3.62%	± 5	
	1851MHz	22.0	ϵ_r	53.30	54.17	1.63%	± 5	
			σ	1.520	1.465	-3.62%	± 5	
	1880MHz	22.0	ϵ_r	53.30	54.13	1.56%	± 5	
			σ	1.520	1.479	-2.70%	± 5	
	1900MHz	22.0	ϵ_r	53.30	53.97	1.26%	± 5	
			σ	1.520	1.507	-0.86%	± 5	
	1909MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.521	0.07%	± 5	
	1910MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.522	0.13%	± 5	
1900MHz (Body)	1852MHz	22.0	ϵ_r	53.30	54.18	1.65%	± 5	2015/12/28
			σ	1.520	1.465	-3.62%	± 5	
	1880MHz	22.0	ϵ_r	53.30	54.13	1.56%	± 5	
			σ	1.520	1.479	-2.70%	± 5	
	1900MHz	22.0	ϵ_r	53.30	53.97	1.26%	± 5	
			σ	1.520	1.507	-0.86%	± 5	
	1908MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.520	0.00%	± 5	
	1909MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.521	0.07%	± 5	
1900MHz (Body)	1851MHz	22.0	ϵ_r	53.30	54.17	1.63%	± 5	2015/12/29
			σ	1.520	1.465	-3.62%	± 5	
	1880MHz	22.0	ϵ_r	53.30	54.13	1.56%	± 5	
			σ	1.520	1.479	-2.70%	± 5	
	1900MHz	22.0	ϵ_r	53.30	53.97	1.26%	± 5	
			σ	1.520	1.507	-0.86%	± 5	
	1909MHz	22.0	ϵ_r	53.30	53.95	1.22%	± 5	
			σ	1.520	1.521	0.07%	± 5	

Table 6. Measured Tissue dielectric parameters for body phantoms -2



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
2450MHz (Body)	2412MHz	22.0	ϵ_r	52.75	51.19	-2.96%	± 5	2015/12/3
			σ	1.914	1.901	-0.68%	± 5	
	2450MHz	22.0	ϵ_r	52.70	51.18	-2.88%	± 5	
			σ	1.950	1.962	0.62%	± 5	

Table 7. 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 835, 1900 and 2450MHz.

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
						SAR _{1g}	SAR _{10g}			SAR _{1g} (W/g)	SAR _{10g} (W/g)	
Body	835	250 mW	2.41	1.58	-0.07	-1.30%	-2.20%	EX3DV4 SN3847	D835V2 SN4d082	9.77	6.46	Dec. 07 ,2015
		Normalize to 1 Watt	9.64	6.32								
Body	835	250 mW	2.39	1.57	-0.07	-2.10%	-2.80%	EX3DV4 SN3847	D835V2 SN4d082	9.77	6.46	Dec. 08 ,2015
		Normalize to 1 Watt	9.56	6.28								
Body	835	250 mW	2.46	1.61	-0.04	0.70%	-0.30%	EX3DV4 SN3847	D835V2 SN4d082	9.77	6.46	Dec. 30 ,2015
		Normalize to 1 Watt	9.84	6.44								
Body	1900	250 mW	9.98	5.24	-0.1	-0.40%	-0.70%	EX3DV4 SN3847	D1900V2 SN5d111	40.10	21.10	Dec. 24 ,2015
		Normalize to 1 Watt	39.92	20.96								
Body	1900	250 mW	10.4	5.44	-0.11	3.70%	3.10%	EX3DV4 SN3847	D1900V2 SN5d111	40.10	21.10	Dec. 25 ,2015
		Normalize to 1 Watt	41.60	21.76								
Body	1900	250 mW	9.79	5.11	-0.09	-2.30%	-3.10%	EX3DV4 SN3847	D1900V2 SN5d111	40.10	21.10	Dec. 27 ,2015
		Normalize to 1 Watt	39.16	20.44								
Body	1900	250 mW	10.1	5.3	-0.1	0.70%	0.50%	EX3DV4 SN3847	D1900V2 SN5d111	40.10	21.10	Dec. 28 ,2015
		Normalize to 1 Watt	40.40	21.20								
Body	1900	250 mW	10.2	5.3	-0.1	1.70%	0.50%	EX3DV4 SN3847	D1900V2 SN5d111	40.10	21.10	Dec. 29 ,2015
		Normalize to 1 Watt	40.80	21.20								
Body	2450	250 mW	13.3	6.25	-0.07	0.60%	2.50%	EX3DV4 SN3847	D2450V2 SN712	52.90	24.40	Dec. 03 ,2015
		Normalize to 1 Watt	53.20	25.00								



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- SN3847	835	Body	54.85	0.979	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 07 ,2015
EX3DV4- SN3847	837	Body	54.87	0.981							
EX3DV4- SN3847	835	Body	54.85	0.979	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 08 ,2015
EX3DV4- SN3847	837	Body	54.87	0.981							
EX3DV4- SN3847	835	Body	54.85	0.979	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 30 ,2015
EX3DV4- SN3847	837	Body	54.87	0.981							
EX3DV4- SN3847	1851	Body	54.17	1.465	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 24 ,2015
EX3DV4- SN3847	1852	Body	54.18	1.465							
EX3DV4- SN3847	1880	Body	54.13	1.479							
EX3DV4- SN3847	1900	Body	53.97	1.507							
EX3DV4- SN3847	1908	Body	53.95	1.520							
EX3DV4- SN3847	1909	Body	53.95	1.521							
EX3DV4- SN3847	1880	Body	54.13	1.479	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 25 ,2015
EX3DV4- SN3847	1900	Body	53.97	1.507							



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 SN3847	1850	Body	54.16	1.465	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 27 ,2015
EX3DV4 SN3847	1851	Body	54.17	1.465							
EX3DV4 SN3847	1880	Body	54.13	1.479							
EX3DV4 SN3847	1900	Body	53.97	1.507							
EX3DV4 SN3847	1909	Body	53.95	1.521							
EX3DV4 SN3847	1910	Body	53.95	1.522							
EX3DV4 SN3847	1852	Body	54.18	1.465	Pass	Pass	Pass	GMSK , QPSK , CDMA	Pass	N/A	Dec. 28 ,2015
EX3DV4 SN3847	1880	Body	54.13	1.479							
EX3DV4 SN3847	1900	Body	53.97	1.507							
EX3DV4 SN3847	1908	Body	53.95	1.520							
EX3DV4 SN3847	1909	Body	53.95	1.521							
EX3DV4 SN3847	1851	Body	54.17	1.465	Pass	Pass	Pass	GMSK , QPSK , CDMA	N/A	Pass	Dec. 29 ,2015
EX3DV4 SN3847	1880	Body	54.13	1.479							
EX3DV4 SN3847	1900	Body	53.97	1.507							
EX3DV4 SN3847	1909	Body	53.95	1.521							
EX3DV4 SN3847	2412	Body	51.19	1.901	Pass	Pass	Pass	DSSS	Pass	N/A	Dec. 03 ,2015
EX3DV4 SN3847	2450	Body	51.18	1.962							



8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	835MHz System Validation Kit	D835V2	4d082	Jul. 06, 2015	Jul. 06, 2016
SPEAG	1900MHz System Validation Kit	D1900V2	5d142	Jun. 23, 2015	Jun. 23, 2016
SPEAG	2450MHz System Validation Kit	D2450V2	712	Mar. 12, 2015	Mar. 12, 2016
SPEAG	Dosimetric E-Field Probe	EX3DV4	3847	Jan. 30, 2015	Jan. 30, 2016
SPEAG	Data Acquisition Electronics	DAE4	541	Feb. 03, 2015	Feb. 03, 2016
SPEAG	Device Holder	N/A	N/A	NCR	
SPEAG	Measurement Server	SE UMS 011 AA	1025	NCR	
SPEAG	Phantom	QDOVA002AA	TP-1133	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. 10, 2015	Apr. 10, 2016
R&S	Power Sensor	NRP-Z22	100179	Jun. 01, 2015	Jun. 01, 2016
Agilent	Power Sensor	8481H	3318A20779	Jun. 15, 2015	Jun. 15, 2016
Agilent	Power Meter	EDM Series E4418B	GB40206143	Jun. 15, 2015	Jun. 15, 2016
Anritsu	Power Meter	ML2495A	1135009	Aug. 24, 2015	Aug. 24, 2016
Agilent	MXF-G-B RF Vector Signal Generator	N5182B	MY53050382	May 28, 2015	May 28, 2016
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 8. 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 ± 21.76 % for 300MHz ~3GHz.

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_{10g} to be less than ± 21.31 % for 300MHz ~3GHz.

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. (1g)	Std. Unc. (10g)	v_i or V_{eff}
Measurement System									
u1	Probe Calibration ($k=1$)	±6.0%	Normal	1	1	1	±6.0%	±6.0%	∞
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	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
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	±0.3%	Normal	1	1	1	±0.3%	±0.3%	∞
u8	Response Time	±0.8%	Rectangular	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
u9	Integration Time	±1.9%	Rectangular	$\sqrt{3}$	1	1	±1.1%	±1.1%	∞
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	±0.4%	Rectangular	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
u13	Probe Positioning with respect to Phantom Shell	±2.9%	Rectangular	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
u14	Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	±1.0%	Rectangular	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
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				±10.88%	±10.66%	313
Expanded uncertainty (95% CONFIDENCE LEVEL)			$k=2$				±21.76%	±21.31%	

Table 9. Uncertainty Budget for frequency range 300MHz to 3GHz



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	≤ 3GHz	≤ 2GHz	≤ 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 - 6GHz	3 - 4GHz	≤ 5	≤ 5	≤ 4	7*7*8	30	30	28	5	5	4
		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 DASYS, 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 DASYS 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.



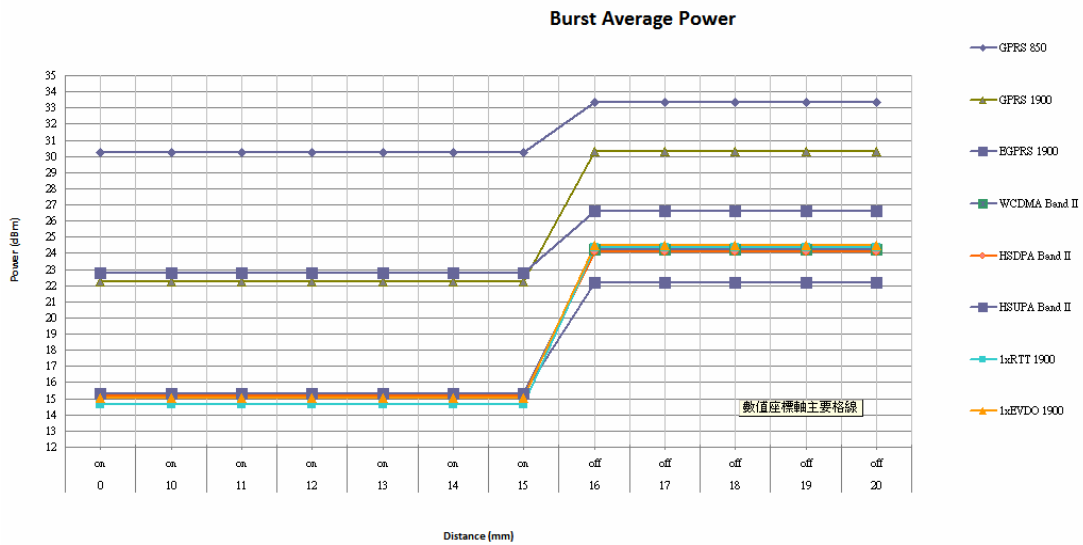
11. Sensor distance and coverage

11.1 Sensor distance

1. According to the procedures noticed in KDB 616217 D04, the proximity sensor triggering distance is 15 mm for EUT Rear Face(Side2), 19 mm for Top Side(Side3) and 11 mm for Right Side(Side6).
2. Device and Test Conditions
 - (1)The device is vehicle tablet PC which supports WWAN, WLAN and Bluetooth capabilities. Because of the SAR issue, this device has designed with a proximity sensor which can trigger/not trigger power reduction for GPRS 850/1900 with EDGE 1900, WCDMA Band II and CDMA PCS on EUT Rear Face(Side 2) , Top Side(Side3) and Right Side(Side6)orientations for SAR compliance.Others RF capabilities (WCDMA Band V,CDMA 850,WLAN and BT) have no power reduction. The power levels for all wireless technologies and the power reduction please refer to section 4.6.1(Maximum Conducted Power) of this report.
 - (2)The power vs distance plots for EUT Rear Face and Top Side and power chart for tilt angle influence are shown as below.
3. Rear Rear 20° Tilt testing justification

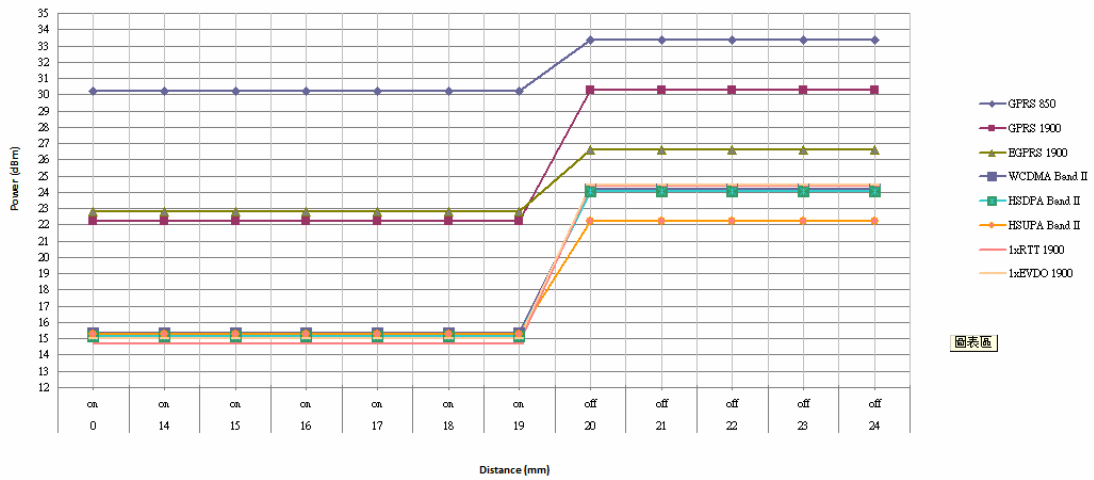
The rear of the DUT has a 20° bevel along each edge. As a result the most conservative antenna-to-user distance occurs when the beveled edge is placed directly against the user's body. Testing with the beveled edge placed directly against the phantom was considered necessary to ensure compliance.

Power vs Distance for EUT Side 2												
Distance(mm)	0	10	11	12	13	14	15	16	17	18	19	20
Proximity sensor with reduced power activation	on	on	on	on	on	on	on	off	off	off	off	off
GPRS 850	30.21	30.21	30.21	30.21	30.21	30.21	30.21	33.34	33.34	33.34	33.34	33.34
GPRS 1900	22.22	22.22	22.22	22.22	22.22	22.22	22.22	30.31	30.31	30.31	30.31	30.31
EGPRS 1900	22.79	22.79	22.79	22.79	22.79	22.79	22.79	26.63	26.63	26.63	26.63	26.63
WCDMA Band II	15.32	15.32	15.32	15.32	15.32	15.32	15.32	24.21	24.21	24.21	24.21	24.21
HSDPA Band II	15.17	15.17	15.17	15.17	15.17	15.17	15.17	24.07	24.07	24.07	24.07	24.07
HSUPA Band II	15.28	15.28	15.28	15.28	15.28	15.28	15.28	22.21	22.21	22.21	22.21	22.21
1xRTT 1900	14.66	14.66	14.66	14.66	14.66	14.66	14.66	24.37	24.37	24.37	24.37	24.37
1xEVDO 1900	15.04	15.04	15.04	15.04	15.04	15.04	15.04	24.48	24.48	24.48	24.48	24.48



Power vs Distance for EUT Side 3												
Distance(mm)	0	14	15	16	17	18	19	20	21	22	23	24
Proximity sensor with reduced power activation	on	on	on	on	on	on	on	off	off	off	off	off
GPRS 850	30.21	30.21	30.21	30.21	30.21	30.21	30.21	33.34	33.34	33.34	33.34	33.34
GPRS 1900	22.22	22.22	22.22	22.22	22.22	22.22	22.22	30.31	30.31	30.31	30.31	30.31
EGPRS 1900	22.79	22.79	22.79	22.79	22.79	22.79	22.79	26.63	26.63	26.63	26.63	26.63
WCDMA Band II	15.32	15.32	15.32	15.32	15.32	15.32	15.32	24.21	24.21	24.21	24.21	24.21
HSDPA Band II	15.17	15.17	15.17	15.17	15.17	15.17	15.17	24.07	24.07	24.07	24.07	24.07
HSUPA Band II	15.28	15.28	15.28	15.28	15.28	15.28	15.28	22.21	22.21	22.21	22.21	22.21
1xRTT 1900	14.66	14.66	14.66	14.66	14.66	14.66	14.66	24.37	24.37	24.37	24.37	24.37
1xEVDO 1900	15.04	15.04	15.04	15.04	15.04	15.04	15.04	24.48	24.48	24.48	24.48	24.48

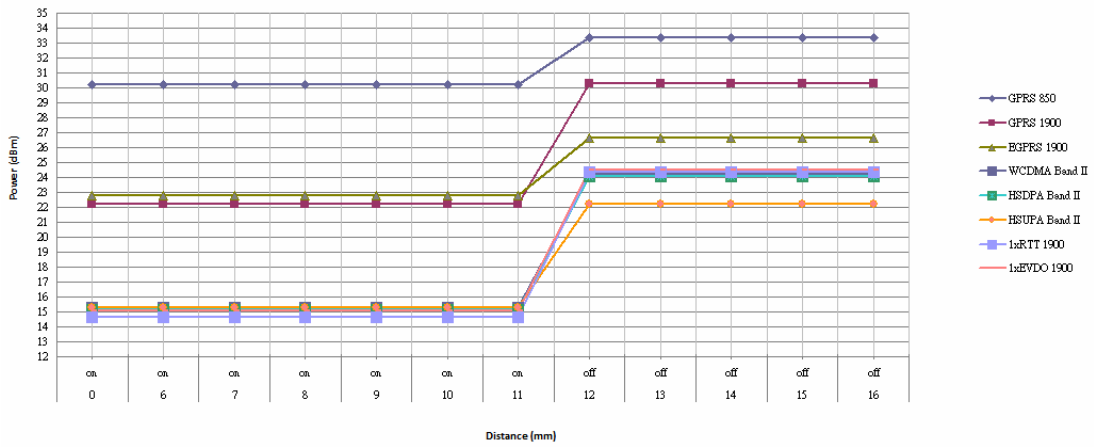
Burst Average Power



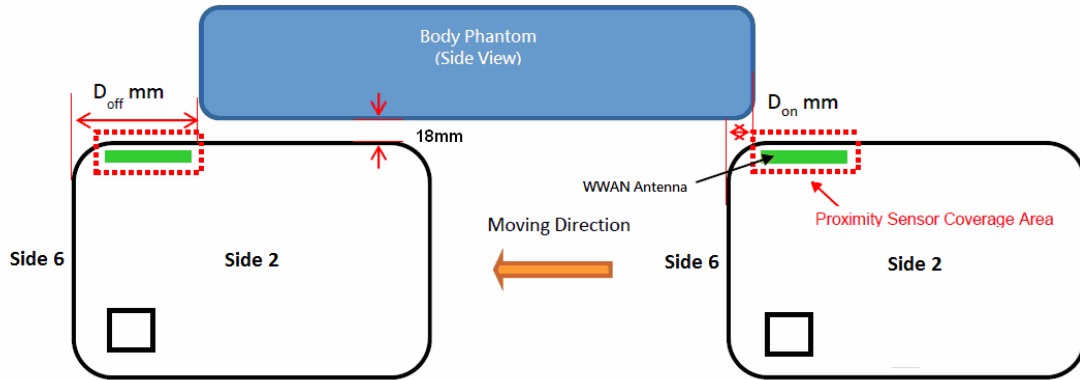


Power vs Distance for EUT Side 6												
Distance(mm)	0	6	7	8	9	10	11	12	13	14	15	16
Proximity sensor with reduced power activation	on	on	on	on	on	on	on	off	off	off	off	off
GPRS 850	30.21	30.21	30.21	30.21	30.21	30.21	30.21	33.34	33.34	33.34	33.34	33.34
GPRS 1900	22.22	22.22	22.22	22.22	22.22	22.22	22.22	30.31	30.31	30.31	30.31	30.31
EGPRS 1900	22.79	22.79	22.79	22.79	22.79	22.79	22.79	26.63	26.63	26.63	26.63	26.63
WCDMA Band II	15.32	15.32	15.32	15.32	15.32	15.32	15.32	24.21	24.21	24.21	24.21	24.21
HSDPA Band II	15.17	15.17	15.17	15.17	15.17	15.17	15.17	24.07	24.07	24.07	24.07	24.07
HSUPA Band II	15.28	15.28	15.28	15.28	15.28	15.28	15.28	22.21	22.21	22.21	22.21	22.21
1xRTT 1900	14.66	14.66	14.66	14.66	14.66	14.66	14.66	24.37	24.37	24.37	24.37	24.37
1xEVDO 1900	15.04	15.04	15.04	15.04	15.04	15.04	15.04	24.48	24.48	24.48	24.48	24.48

Burst Average Power

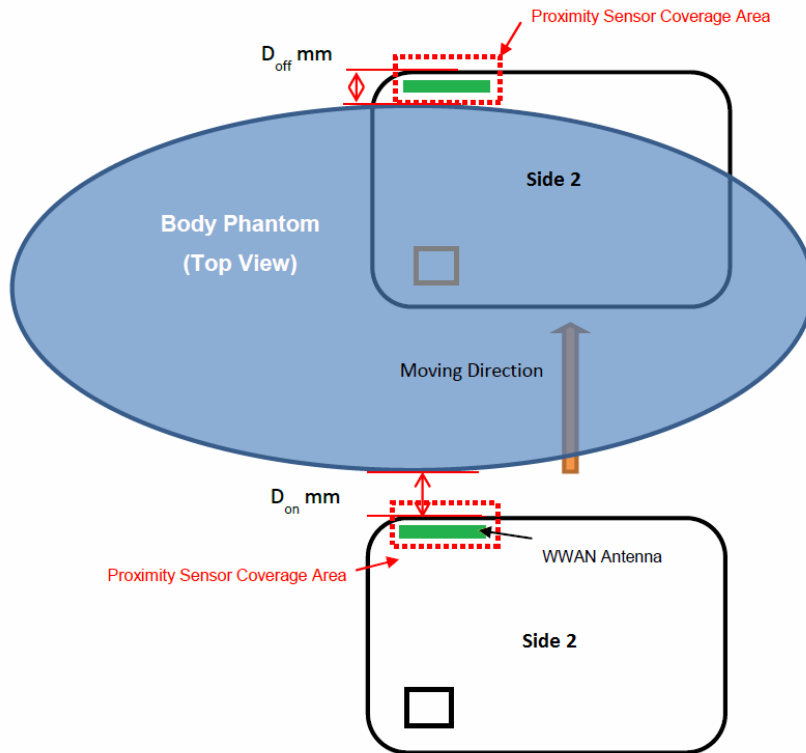


11.2 Sensor distance



The DUT is positioned perpendicular to the phantom with the test separation distance, 18 mm, away from the phantom. The DUT is moved laterally to find the distance of triggering sensor on and off.

- The minimum distance from the secondary portrait (Side 6) to the edge of body phantom to trigger proximity sensor on, D_{on} , is 15 mm.
- The minimum distance from the secondary portrait (Side 6) to the edge of body phantom to trigger proximity sensor off, D_{off} , is 29 mm.



The DUT is positioned under the phantom with the test separation distance, 14 mm, away from the phantom. The DUT is moved laterally to find the distance of triggering sensor on and off

- The minimum distance from the secondary landscape (Side 2) to the edge of body phantom to trigger proximity sensor on, D_{on} , is 20 mm.
- The minimum distance from the secondary landscape (Side 2) to the edge of body phantom to trigger proximity sensor off, D_{off} , is 26 mm.



12. SAR Test Results Summary

1. The tablets are not expected to exceed the extremity SAR limit; therefore, SAR evaluation for the front surface of tablet display screens are generally not necessary.
2. The device's software is not android or windows system. Tablets can not use various sensing mechanisms to rotation display, the device display is positioned in fixed orientations. Therefore, the standalone 1g body SAR evaluation for side 2 and side 4, the standalone 10g extremity SAR evaluation for side 3, side 5 and side 6.
3. If the WWAN Band Channel's Reported SAR_{1g} of the position is > 0.8 W/Kg, low, middle and high channel are supposed to be tested (2G/3G).
4. Require the middle channel to be tested first, if the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.
5. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.
6. For Ev-Do data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with Ev-Do Rev. 0 and Rev. A as the respective primary modes.
7. When the reported SAR of the highest measured maximum output power channel is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS.
8. When KDB Publication 447498 SAR test exclusion is applies, SAR is not required for 2.4GHz OFDM configuration.
9. 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, SAR is not required for 2.4GHz OFDM configuration.
10. SAR for the initial test configuration is measured using the highest maximum output power channel.

12.1 Head Measurement SAR

Evaluated head SAR is not available.



12.2 Body Measurement SAR

Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#84	Flat	GPRS 850	190	3D2U	2	14	w/o	0.612	-0.02	33.42	33.5	0.62
#83	Flat		190	3D2U	2	0	w/	0.535	0.19	30.21	30.5	0.57
#86	Flat		190	3D2U	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.518	0.06	30.21	30.5	0.55
#108	Flat		190	3D2U	4	0	w/o	0.00477	0.01	33.42	33.5	0.01
#53	Flat	GPRS 1900	661	3D2U	2	14	w/o	0.65	-0.04	30.31	30.5	0.68
#52	Flat		661	3D2U	2	0	w/	0.386	-0.12	22.22	23	0.46
#15	Flat		512	3D2U	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.05	-0.14	22.59	23	1.15
#14	Flat		661	3D2U	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.963	-0.09	22.22	23	1.15
#16	Flat	810	3D2U	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.929	0.06	22.06	23	1.15	



Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#2	Flat	WC DMA Band II	9262	RMC12.2K	2	14	w/o	0.828	-0.12	24.48	24.5	0.83
#1	Flat		9400	RMC12.2K	2	14	w/o	0.933	-0.11	24.21	24.5	1.00
#3	Flat		9538	RMC12.2K	2	14	w/o	0.8	0.04	24.14	24.5	0.87
#24	Flat		9400	RMC12.2K	2	0	w/	0.373	0.18	15.32	15.5	0.39
#47	Flat		9262	RMC12.2K	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.751	0.05	15.43	15.5	0.76
#46	Flat		9400	RMC12.2K	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.2	0.03	15.32	15.5	1.25
#48	Flat		9538	RMC12.2K	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.14	-0.14	15.42	15.5	1.16
#50	Flat		9262	QPSK_ Sub test1	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.801	0.01	15.16	15.5	0.87
#51	Flat		9400	QPSK_ Sub test1	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.701	-0.06	14.96	15.5	0.79
#49	Flat		9538	QPSK_ Sub test1	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.932	-0.09	15.17	15.5	1.01
#90	Flat	WCDMA Band V	4183	RMC12.2K	2	14	w/o	0.828	-0.02	24.43	24.5	0.45



Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#72	Flat	1xEVDO	384	Rev 0	2	0	w/o	0.557	-0.03	24.38	24.5	0.57
#105	Flat	850 (BC0)	384	Rev A	2	0	w/o	0.62	-0.18	24.27	24.5	0.65
#94	Flat	1xEV-DO 1900 (BC1)	25	Rev 0	2	14	w/o	1.01	-0.05	24.48	24.5	1.02
#93	Flat		600	Rev 0	2	14	w/o	0.986	-0.05	24.41	24.5	1.01
#95	Flat		1175	Rev 0	2	14	w/o	1.08	-0.16	24.23	24.5	1.15
#97	Flat		600	Rev 0	2	0	w/	0.448	0.18	15.78	16	0.47
#9	Flat		25	Rev 0	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.744	0.14	15.04	16	0.93
#8	Flat		600	Rev 0	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.19	-0.16	15.78	16	1.25
#10	Flat		1175	Rev 0	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.1	0.18	15.47	16	1.24
#30	Flat		25	Rev A	2	14	w/o	1.01	0.05	24.42	24.5	1.03
#29	Flat		600	Rev A	2	14	w/o	1.04	-0.11	24.33	24.5	1.08
#31	Flat		1175	Rev A	2	14	w/o	1.12	0.04	24.28	24.5	1.18
#102	Flat		600	Rev A	2	0	w/	0.451	-0.14	15.98	16	0.45
#12	Flat		25	Rev A	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.703	0.19	15.28	16	0.83
#11	Flat		600	Rev A	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.09	0.18	15.98	16	1.10
#13	Flat		1175	Rev A	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.07	0.13	15.57	16	1.18



Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#18	Flat	1xRTT 1900 (BC1)	25	RC1/SO55	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.686	-0.18	14.47	15.5	0.87
#17	Flat		600	RC1/SO55	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.06	0.15	15.21	15.5	1.13
#19	Flat		1175	RC1/SO55	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.06	0.19	14.74	15.5	1.26
#21	Flat		25	RC3/SO32	2 (Side2 @ Side3) _Rear 20 deg	0	w/	0.685	-0.11	14.27	15.5	0.91
#20	Flat		600	RC3/SO32	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.04	0.12	15.14	15.5	1.13
#23	Flat		1175	RC3/SO32	2 (Side2 @ Side3) _Rear 20 deg	0	w/	1.04	0.13	14.66	15.5	1.26

Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	Power Drift	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)
#69	Flat	IEEE 802.11b	01	1M	2	0	0.12	-0.08	17.68	18	0.13



12.3 Hot-spot mode Measurement SAR

Evaluated Hot-spot mode Measurement SAR is not available.

12.4 Extremity Measurement SAR

Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{10g} (W/kg)	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{10g} (W/kg)
#85	Flat	GPRS 850	190	3D2U	3	18	w/o	0.113	14.09	33.42	33.5	0.12
#81	Flat		190	3D2U	3	0	w/	0.301	29.21	30.21	30.5	0.32
#87	Flat		190	3D2U	3 (Side3 @ Side2) _Rear 20 deg	0	w/	0.203	26.82	30.21	30.5	0.22
#89	Flat		190	3D2U	6	10	w/o	0.225	19.84	33.42	33.5	0.23
#82	Flat		190	3D2U	6	0	w/	0.321	24.39	30.21	30.5	0.34
#88	Flat		190	3D2U	6 (Side6 @ Side2) _Rear 20 deg	0	w/	0.179	18.67	30.21	30.5	0.19
#109	Flat		190	3D2U	5	0	w/o	0.057	10.29	33.42	33.5	0.06
#25	Flat	GPRS 1900	661	3D2U	3	18	w/o	0.438	25.19	30.31	30.5	0.46
#28	Flat		661	3D2U	3	0	w/	0.446	22.74	22.22	23	0.53
#54	Flat		661	3D2U	3 (Side3 @ Side2) _Rear 20 deg	0	w/	0.464	33.4	22.22	23	0.56
#7	Flat		661	3D2U	6	10	w/o	0.055	8.523	30.31	30.5	0.06
#6	Flat		661	3D2U	6	0	w/	0.016	5.366	22.22	23	0.02
#59	Flat		661	3D2U	6 (Side6 @ Side2) _Rear 20 deg	0	w/	0.018	5.209	22.22	23	0.02

Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{10g} (W/kg)	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{10g} (W/kg)
#22	Flat	WC DMA Band II	9400	RMC12.2K	3	18	w/o	0.582	29.21	24.21	24.5	0.62
#26	Flat		9400	RMC12.2K	3	0	w/	0.445	22.94	15.32	15.5	0.46
#55	Flat		9400	RMC12.2K	3 (Side3 @ Side2) _Rear 20 deg	0	w/	0.442	32.58	15.32	15.5	0.46
#4	Flat		9400	RMC12.2K	6	10	w/o	0.059	8.806	24.21	24.5	0.06
#5	Flat		9400	RMC12.2K	6	0	w/	0.021	5.19	15.32	15.5	0.02
#58	Flat		9400	RMC12.2K	Side6 (Side6 @ Side2) _Rear 20 deg	0	w/	0.015	4.227	15.32	15.5	0.02
#91	Flat	WCDMA Band V	4183	RMC12.2K	3	0	w/o	0.225	25.34	24.43	24.5	0.23
#92	Flat	4183	RMC12.2K	6	0	w/o	0.372	26.59	24.43	24.5	0.38	



Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	Note	SAR _{10g} (W/kg)	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{10g} (W/kg)
#73	Flat	1xEVDO 850 (BC0)	384	Rev 0	3	0	w/o	0.262	27.33	24.38	24.5	0.27
#74	Flat		384	Rev 0	6	0	w/o	0.353	24.97	24.38	24.5	0.36
#106	Flat		384	Rev A	3	0	w/o	0.281	28.23	24.27	24.5	0.30
#107	Flat		384	Rev A	6	0	w/o	0.284	23.23	24.27	24.5	0.30
#96	Flat	1xEV-DO 1900 (BC1)	600	Rev 0	3	18	w/o	0.666	30.72	24.41	24.5	0.68
#103	Flat		600	Rev 0	3	0	w/	0.5	24.72	15.78	16	0.53
#34	Flat		600	Rev 0	3 (Side3 @ Side2) _Rear 20 deg	0	w/	0.524	30.52	15.78	16	0.55
#98	Flat		600	Rev 0	6	10	w/o	0.056	8.665	24.41	24.5	0.06
#104	Flat		600	Rev 0	6	0	w/	0.013	5.28	15.78	16	0.01
#36	Flat		600	Rev 0	6 (Side6 @ Side2) _Rear 20 deg	0	w/	0.015	2.742	15.78	16	0.02
#32	Flat		600	Rev A	3	18	w/o	0.648	30.51	24.33	24.5	0.67
#100	Flat		600	Rev A	3	0	w/	0.462	25	15.98	16	0.46
#33	Flat		600	Rev A	3 (Side3 @ Side2) _Rear 20 deg	0	w/	0.52	29.35	15.98	16	0.52
#99	Flat		600	Rev A	6	10	w/o	0.057	8.857	24.33	24.5	0.06
#101	Flat		600	Rev A	6	0	w/	0.015	4.673	15.98	16	0.02
#35	Flat		600	Rev A	6 (Side6 @ Side2) _Rear 20 deg	0	w/	0.017	3.008	15.98	16	0.02

Index.	Position	Band	Ch.	Data Rate or Sub-Test	Test Position	Spacing (mm)	SAR _{10g} (W/kg)	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{10g} (W/kg)
#70	Flat	IEEE 802.11b	01	1M	3	0	0.135	14.92	17.68	18	0.15



12.5 SAR Measurement Variability

Detailed evaluations please refer KDB 865664 on "SAR test reduction according to KDB" section.

Index.	Position	Band	Ch.	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	SAR _{10g} (W/kg)	Power Drift	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)	Repeated measurement Ratio
#37	Flat	GPRS 1900 (3D2U)	512	2 (Side2 @ Side3) _Rear 20 deg	0	1.04	0.464	-0.14	28.48	22.59	23	1.143	1.01 < 1.2

Note: original 15_w/_measurement once

Index.	Position	Band	Ch.	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	SAR _{10g} (W/kg)	Power Drift	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)	Repeated measurement Ratio
#57	Flat	WC DMA Band II (RMC12.2K)	9400	2 (Side2 @ Side3) _Rear 20 deg	0	1.18	0.522	0.03	31.63	15.32	15.5	1.23	1.02 < 1.2

Note: original 46_w/_measurement once

Index.	Position	Band	Ch.	Test Position	Spacing (mm)	SAR _{1g} (W/kg)	SAR _{10g} (W/kg)	Power Drift	Power Ref.	Burst Avg Power	Max tune-up	Reported SAR _{1g} (W/kg)	Repeated measurement Ratio
#27	Flat	1xRTT 1900 (RC1/SO55)	512	2 (Side2 @ Side3) _Rear 20 deg	0	1.15	0.508	0.17	28.65	14.74	15.5	1.37	1.1 < 1.2

Note: original 19_w/_measurement once

- Note:
1. The original highest measured Reported SAR_{1g} is ≥ 0.80 W/kg, repeat that measurement once.
 2. Perform a second repeated measurement the ratio of largest to smallest SAR for the original and first repeated measurements is < 1.2 , the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1g SAR limit).
 3. 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 .



12.6 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 10. 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).



13. References

- [1] Std. C95.1-1992, "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.
- [5] K. Pokovi^c, T. Schmid, and N. Kuster, "E-field probe with improved isotropy in brain simulating liquids", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.
- [6] N. Kuster, and Q. Balzano, "Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz", IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.
- [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: 2015/12/7 Time: PM 08:01:00

System Performance Check at 835MHz_20151207_Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.979 \text{ S/m}$; $\epsilon_r = 54.845$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 835MHz/Area Scan (61x121x1):

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

Maximum value of SAR (interpolated) = 2.90 W/kg

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

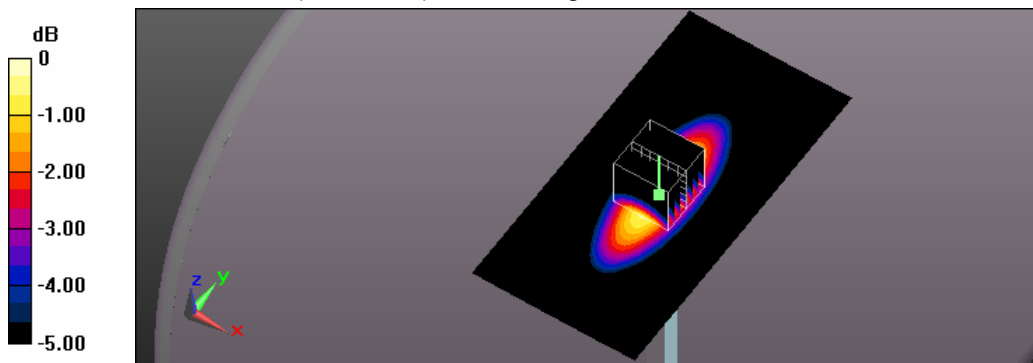
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.57 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 3.59 W/kg

SAR(1 g) = 2.41 W/kg; SAR(10 g) = 1.58 W/kg

Maximum value of SAR (measured) = 3.05 W/kg



0 dB = 3.05 W/kg = 4.84 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 08:34:15

System Performance Check at 835MHz_20151208_Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.979 \text{ S/m}$; $\epsilon_r = 54.845$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 835MHz/Area Scan (61x121x1):

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

Maximum value of SAR (interpolated) = 3.05 W/kg

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

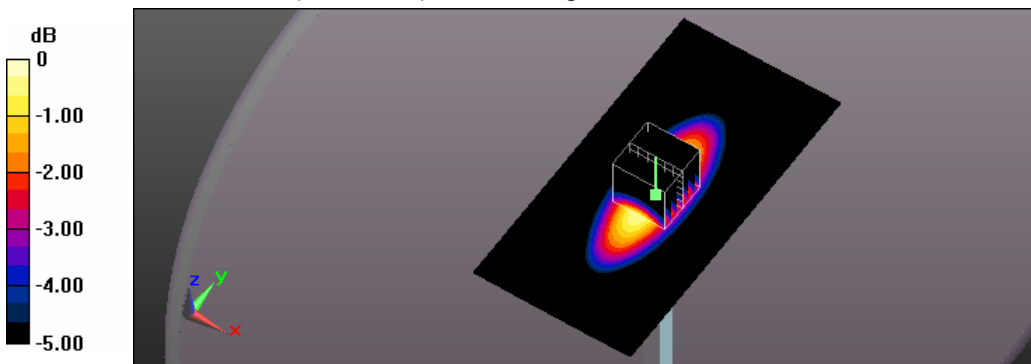
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 56.74 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.57 W/kg

Maximum value of SAR (measured) = 3.04 W/kg



0 dB = 3.04 W/kg = 4.83 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 01:13:40

System Performance Check at 835MHz_20151230_Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.979 \text{ S/m}$; $\epsilon_r = 54.845$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 835MHz/Area Scan (61x121x1):

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

Maximum value of SAR (interpolated) = 3.12 W/kg

System Performance Check at 835MHz/Zoom Scan (7x7x7)/Cube 0:

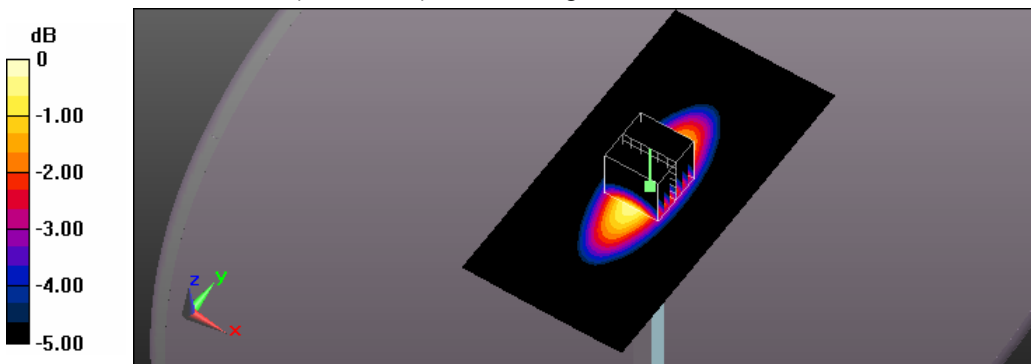
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 57.65 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.61 W/kg

Maximum value of SAR (measured) = 3.12 W/kg



0 dB = 3.12 W/kg = 4.94 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: AM 11:34:33

System Performance Check at 1900MHz_20151224_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.507 \text{ S/m}$; $\epsilon_r = 53.969$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 14.1 W/kg

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

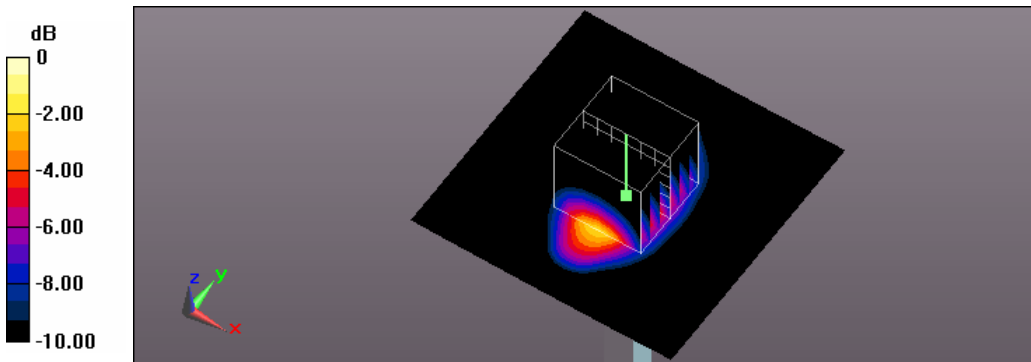
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.75 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.98 W/kg; SAR(10 g) = 5.24 W/kg

Maximum value of SAR (measured) = 14.2 W/kg



0 dB = 14.2 W/kg = 11.52 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 04:41:13

System Performance Check at 1900MHz_20151225_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.507$ S/m; $\epsilon_r = 53.969$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 14.6 W/kg

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

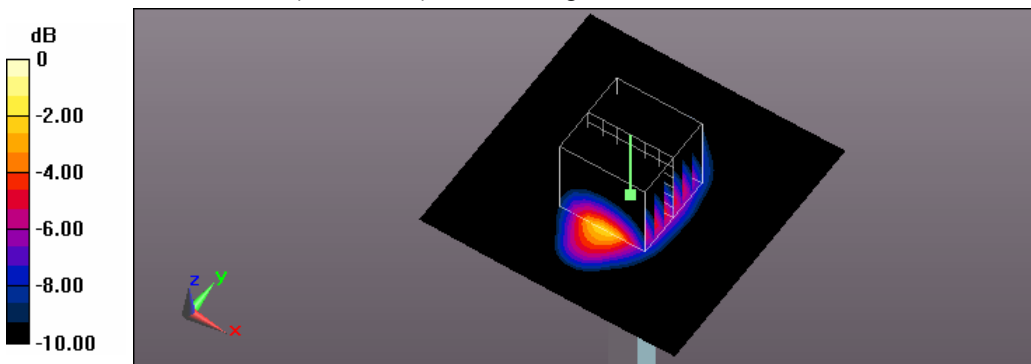
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 99.10 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 18.6 W/kg

SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.44 W/kg

Maximum value of SAR (measured) = 14.8 W/kg



0 dB = 14.8 W/kg = 11.70 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: AM 09:33:03

System Performance Check at 1900MHz_20151227_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.507 \text{ S/m}$; $\epsilon_r = 53.969$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1):

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

Maximum value of SAR (interpolated) = 14.6 W/kg

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

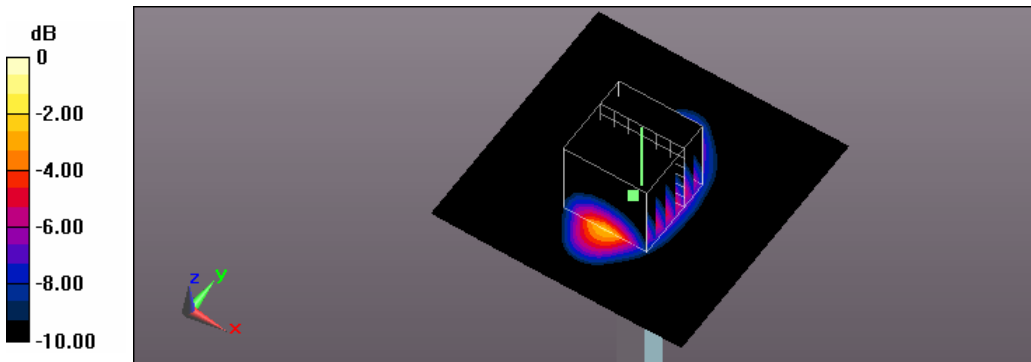
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.29 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 17.6 W/kg

SAR(1 g) = 9.79 W/kg; SAR(10 g) = 5.11 W/kg

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



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

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: AM 09:16:44

System Performance Check at 1900MHz_20151228_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.507 \text{ S/m}$; $\epsilon_r = 53.969$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1):

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

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

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

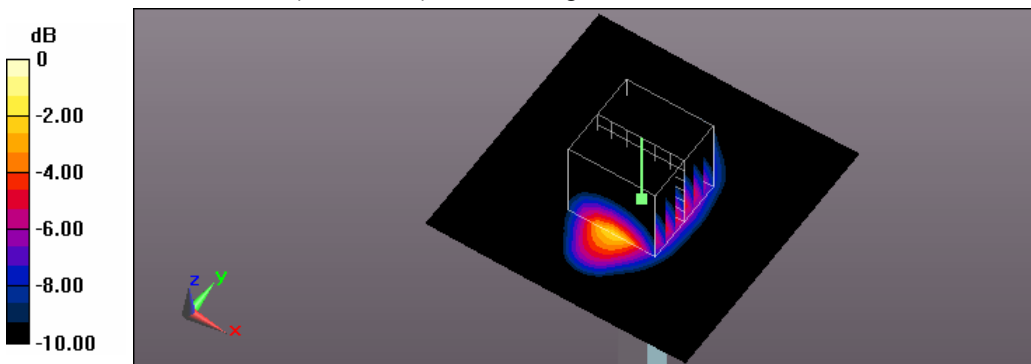
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 97.93 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.3 W/kg

Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.6 W/kg = 11.64 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 09:58:11

System Performance Check at 1900MHz_20151229_Body

DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.507 \text{ S/m}$; $\epsilon_r = 53.969$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1):

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

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

System Performance Check at 1900MHz/Zoom Scan (7x7x7)/Cube 0:

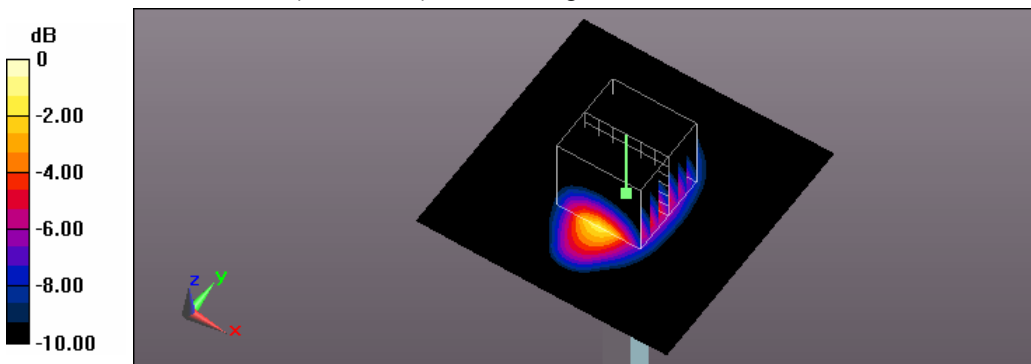
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 98.46 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 18.3 W/kg

SAR(1 g) = 10.2 W/kg; SAR(10 g) = 5.3 W/kg

Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.6 W/kg = 11.64 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/3 Time: PM 07:55:09

System Performance Check at 2450MHz_20151203_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: $f = 2450 \text{ MHz}$; $\sigma = 1.962 \text{ S/m}$; $\epsilon_r = 51.178$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.29, 7.29, 7.29); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

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

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

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

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

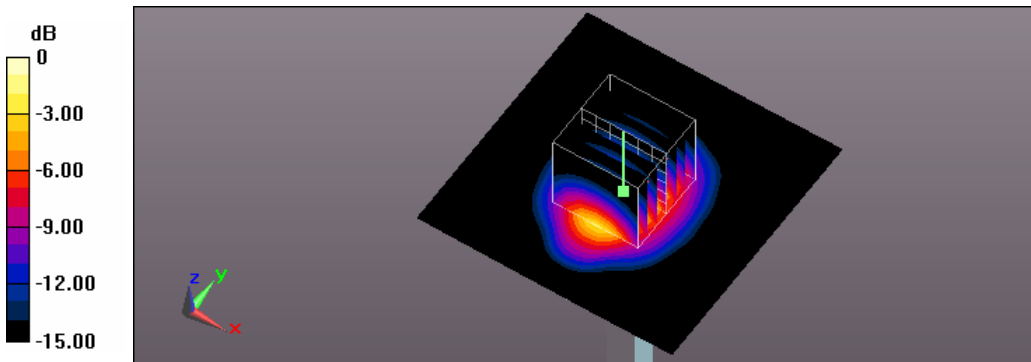
Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 102.5 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 25.9 W/kg

SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.25 W/kg

Maximum value of SAR (measured) = 19.9 W/kg



0 dB = 19.9 W/kg = 12.99 dBW/kg

Appendix B - SAR Measurement Data

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 08:27:15

84_GPRS 850 CH190_3D2U_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4
Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x111x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.738 W/kg

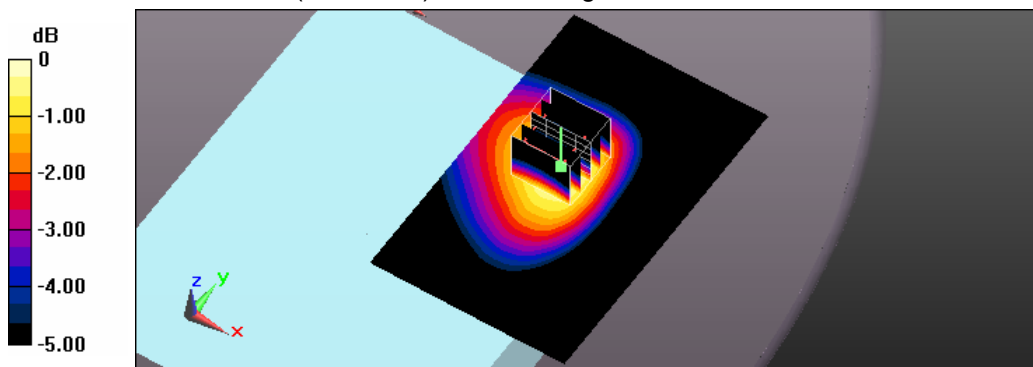
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.79 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.444 W/kg

Maximum value of SAR (measured) = 0.733 W/kg



0 dB = 0.733 W/kg = -1.35 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 01:35:50

83_GPRS 850 CH190_3D2U_side 2_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.604 W/kg

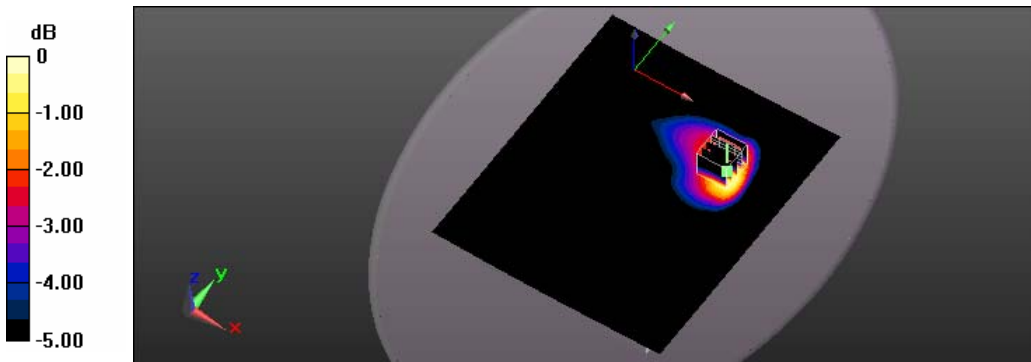
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.56 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.744 W/kg

SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.381 W/kg

Maximum value of SAR (measured) = 0.643 W/kg



0 dB = 0.643 W/kg = -1.92 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 05:12:08

86_GPRS 850 CH190_3D2U_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.494 W/kg

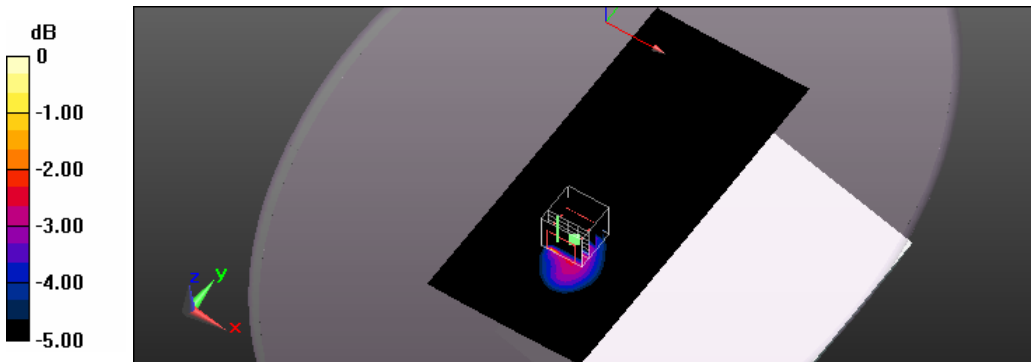
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.60 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.518 W/kg; SAR(10 g) = 0.300 W/kg

Maximum value of SAR (measured) = 0.785 W/kg



0 dB = 0.785 W/kg = -1.05 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 02:15:55

108_GPRS 850 CH190_3D2U_side 4_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.00624 W/kg

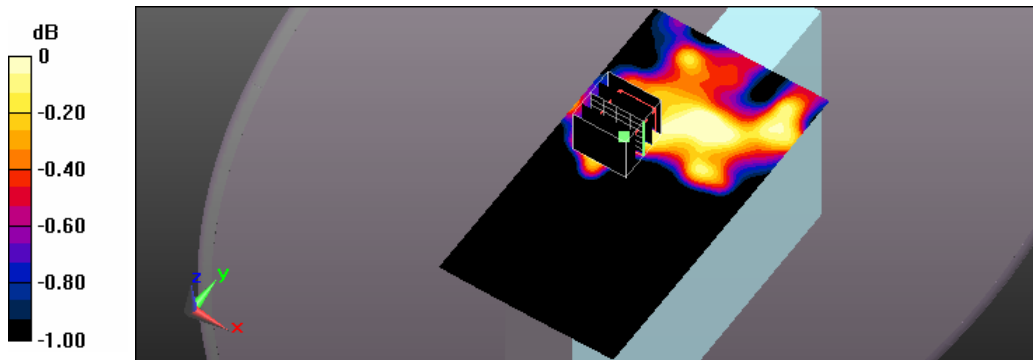
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.261 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.00707 W/kg

SAR(1 g) = 0.00477 W/kg; SAR(10 g) = 0.00364 W/kg

Maximum value of SAR (measured) = 0.00582 W/kg



0 dB = 0.00582 W/kg = -22.35 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 04:54:53

53_GPRS 1900 CH661_3D2U_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.854 W/kg

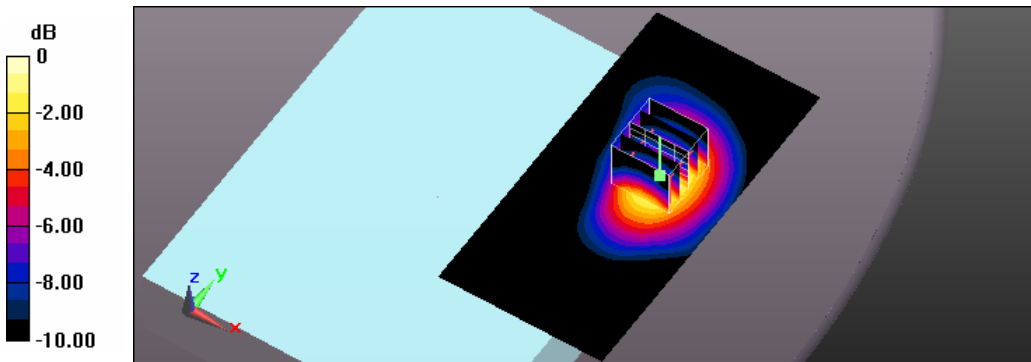
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.06 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.983 W/kg

SAR(1 g) = 0.650 W/kg; SAR(10 g) = 0.401 W/kg

Maximum value of SAR (measured) = 0.829 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: AM 12:09:19

52_GPRS 1900 CH661_3D2U_side 2_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.718 W/kg

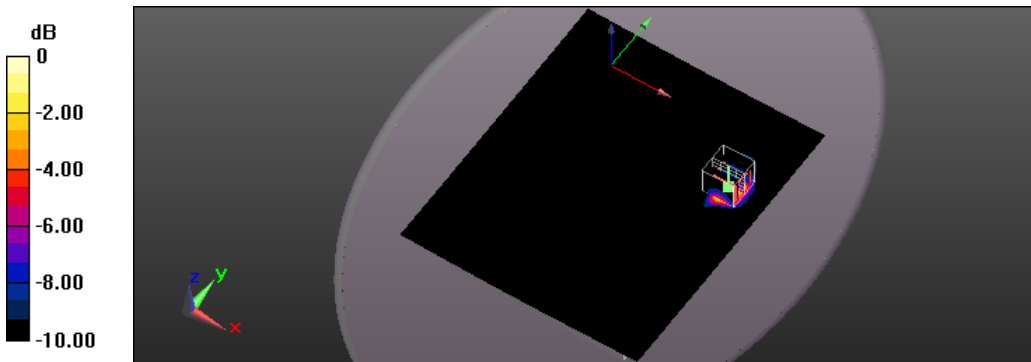
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.69 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.644 W/kg

SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.206 W/kg

Maximum value of SAR (measured) = 0.522 W/kg



0 dB = 0.522 W/kg = -2.82 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 01:29:43

15_GPRS 1900 CH512_3D2U_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1850.2 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.163$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.55 W/kg

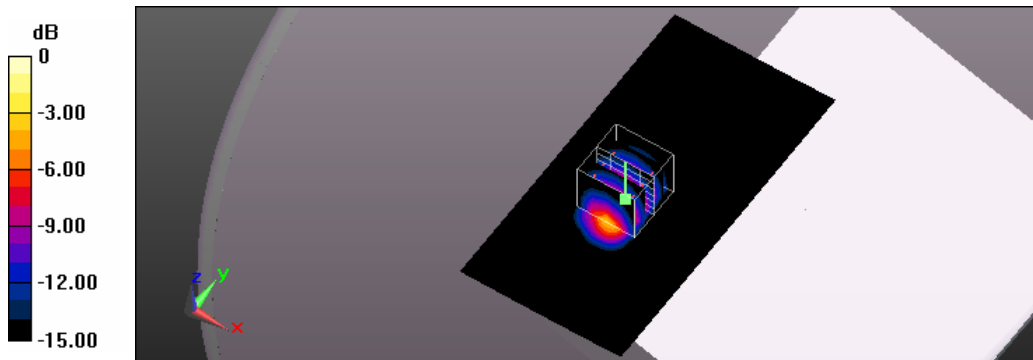
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 28.48 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 2.04 W/kg

SAR(1 g) = 1.05 W/kg; SAR(10 g) = 0.469 W/kg

Maximum value of SAR (measured) = 1.60 W/kg



0 dB = 1.60 W/kg = 2.04 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 12:57:09

14_GPRS 1900 CH661_3D2U_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (101x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.92 W/kg

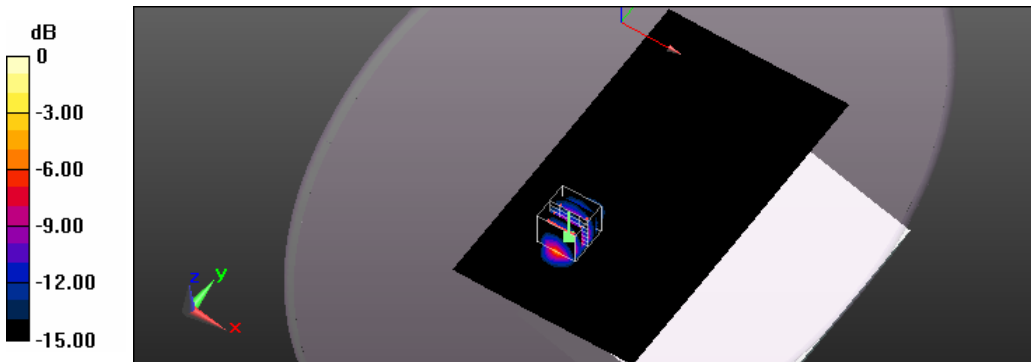
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.26 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.963 W/kg; SAR(10 g) = 0.427 W/kg

Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 01:47:45

16_GPRS 1900 CH810_3D2U_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.522$ S/m; $\epsilon_r = 53.951$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

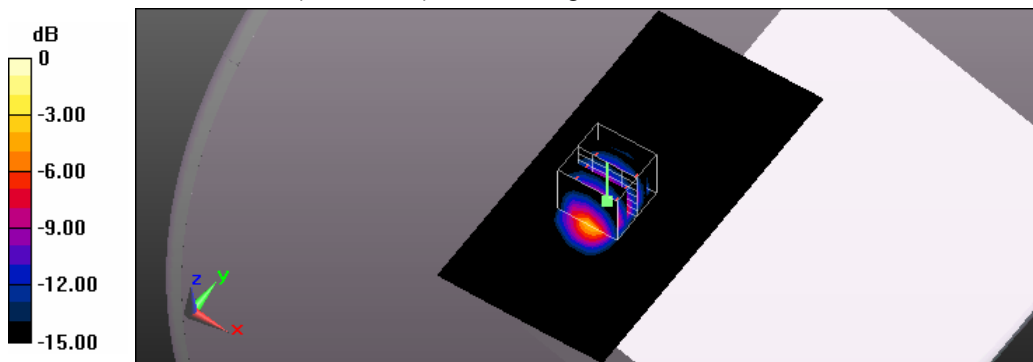
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.44 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 0.929 W/kg; SAR(10 g) = 0.409 W/kg

Maximum value of SAR (measured) = 1.42 W/kg



0 dB = 1.42 W/kg = 1.52 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: AM 08:59:29

37_GPRS 1900 CH512_3D2U_side2 (side2 @ side3)_Rear 20 deg_0mm_original 15_w/_measurement once

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1850.2 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1850.2 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.163$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.54 W/kg

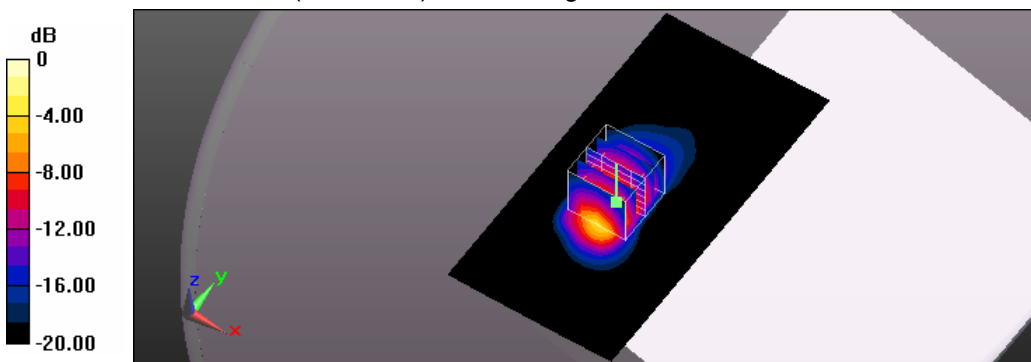
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 28.48 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 2.01 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.464 W/kg

Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 04:13:37

2_WCDMA BandII CH9262_RMC-12.2K_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

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

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 54.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.09 W/kg

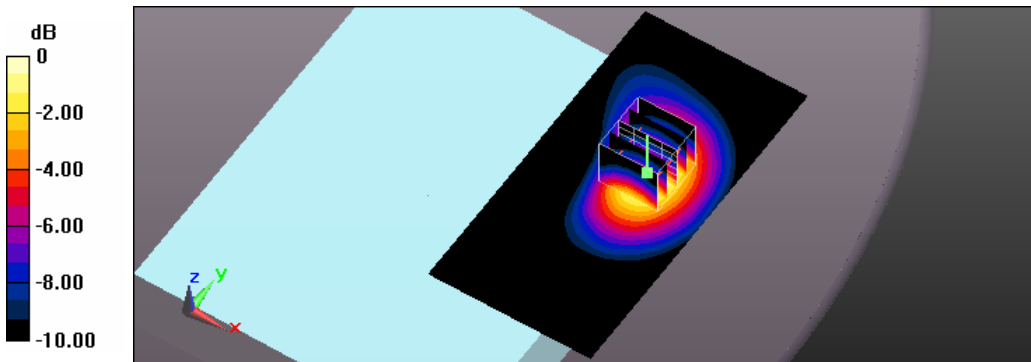
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.15 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.828 W/kg; SAR(10 g) = 0.511 W/kg

Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 03:50:57

1_WCDMA BandII CH9400_RMC-12.2K_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.26 W/kg

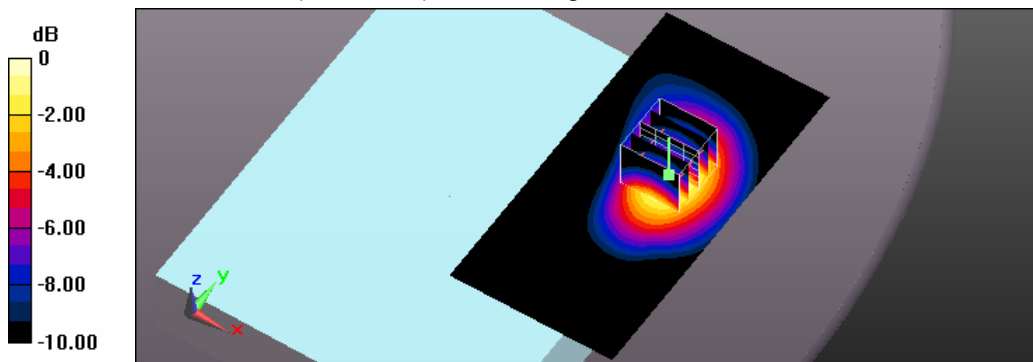
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.58 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.933 W/kg; SAR(10 g) = 0.571 W/kg

Maximum value of SAR (measured) = 1.20 W/kg



0 dB = 1.20 W/kg = 0.79 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 04:31:27

3_WCDMA BandII CH9538_RMC-12.2K_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.52 \text{ S/m}$; $\epsilon_r = 53.947$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

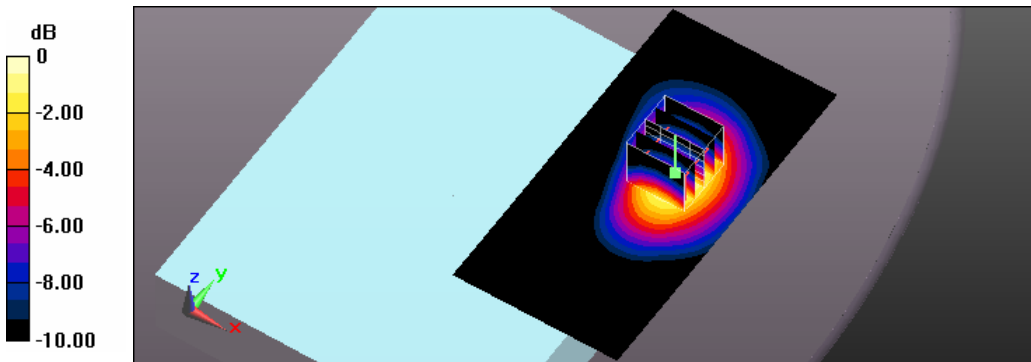
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.40 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.800 W/kg; SAR(10 g) = 0.485 W/kg

Maximum value of SAR (measured) = 1.04 W/kg



0 dB = 1.04 W/kg = 0.17 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 10:07:44

24_WCDMA BandII CH9400_RMC-12.2K_side 2_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.836 W/kg

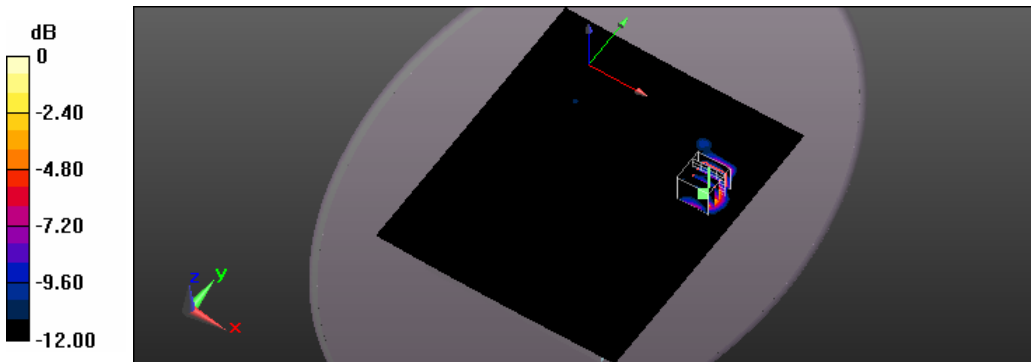
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.30 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.630 W/kg

SAR(1 g) = 0.373 W/kg; SAR(10 g) = 0.192 W/kg

Maximum value of SAR (measured) = 0.516 W/kg



0 dB = 0.516 W/kg = -2.87 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: AM 11:36:30

47_WCDMA BandII CH9262_RMC-12.2K_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

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

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 54.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 2.17 W/kg

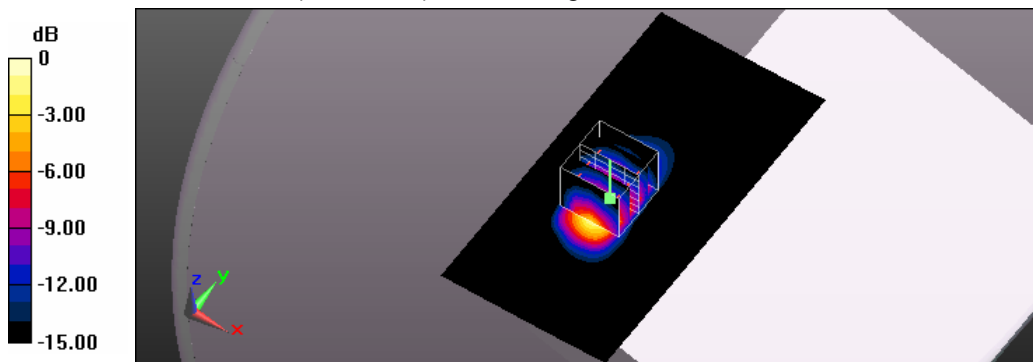
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.88 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.48 W/kg

SAR(1 g) = 0.751 W/kg; SAR(10 g) = 0.336 W/kg

Maximum value of SAR (measured) = 1.15 W/kg



0 dB = 1.15 W/kg = 0.61 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: AM 10:59:39

46_WCDMA BandII CH9400_RMC-12.2K_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.75 W/kg

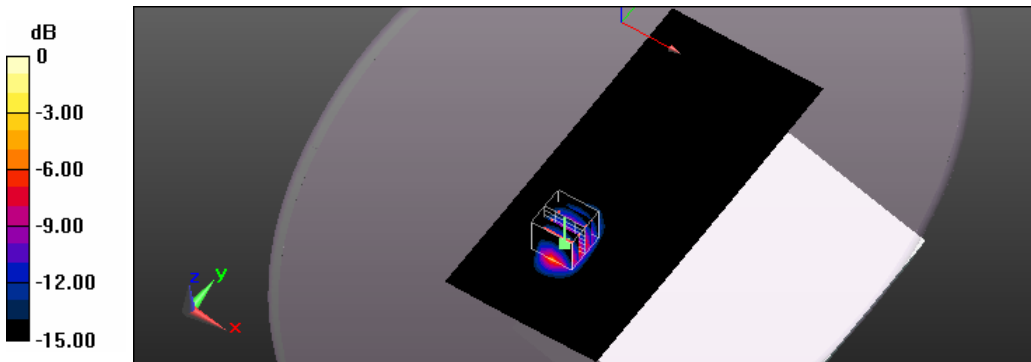
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 31.63 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.37 W/kg

SAR(1 g) = 1.2 W/kg; SAR(10 g) = 0.529 W/kg

Maximum value of SAR (measured) = 1.78 W/kg



0 dB = 1.78 W/kg = 2.50 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: PM 01:43:28

48_WCDMA BandII CH9538_RMC-12.2K_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.52 \text{ S/m}$; $\epsilon_r = 53.947$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.81 W/kg

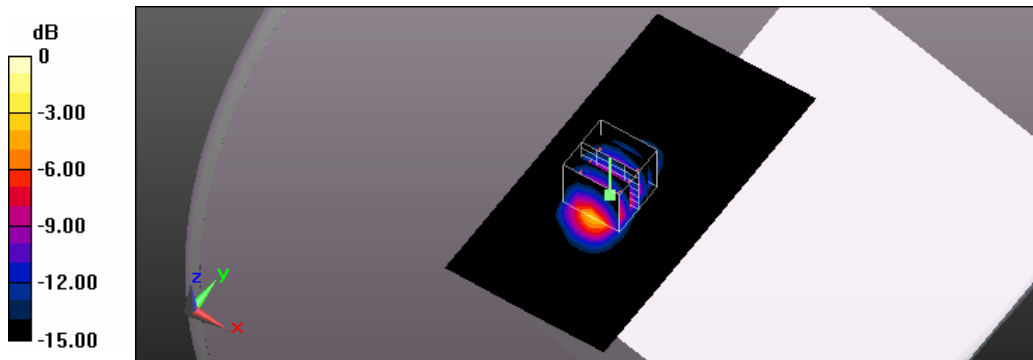
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.42 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 2.17 W/kg

SAR(1 g) = 1.14 W/kg; SAR(10 g) = 0.522 W/kg

Maximum value of SAR (measured) = 1.71 W/kg



0 dB = 1.71 W/kg = 2.33 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: PM 03:27:17

50_HSDPA BandII CH9262_QPSK_Sub test1_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, HSDPA Band II (0); Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1852.4$ MHz; $\sigma = 1.465$ S/m; $\epsilon_r = 54.183$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.20 W/kg

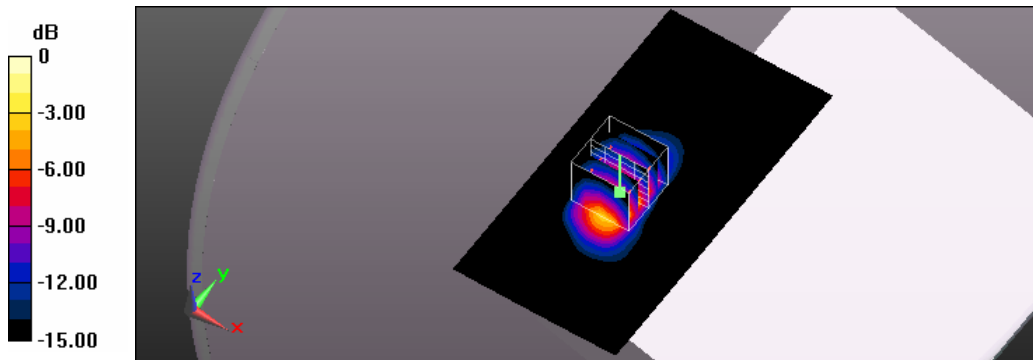
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.84 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.801 W/kg; SAR(10 g) = 0.384 W/kg

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



0 dB = 1.14 W/kg = 0.57 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: PM 03:52:22

51_HSDPA BandII CH9400_QPSK_Sub test1_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, HSDPA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

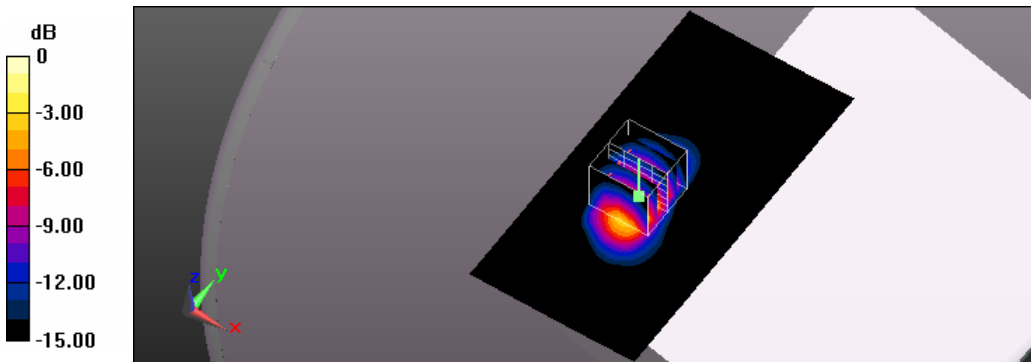
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.18 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.701 W/kg; SAR(10 g) = 0.334 W/kg

Maximum value of SAR (measured) = 1.00 W/kg



0 dB = 1.00 W/kg = 0.00 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: PM 03:07:28

49_HSDPA BandII CH9538_QPSK_Sub test1_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, HSDPA Band II (0); Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908 \text{ MHz}$; $\sigma = 1.52 \text{ S/m}$; $\epsilon_r = 53.947$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.38 W/kg

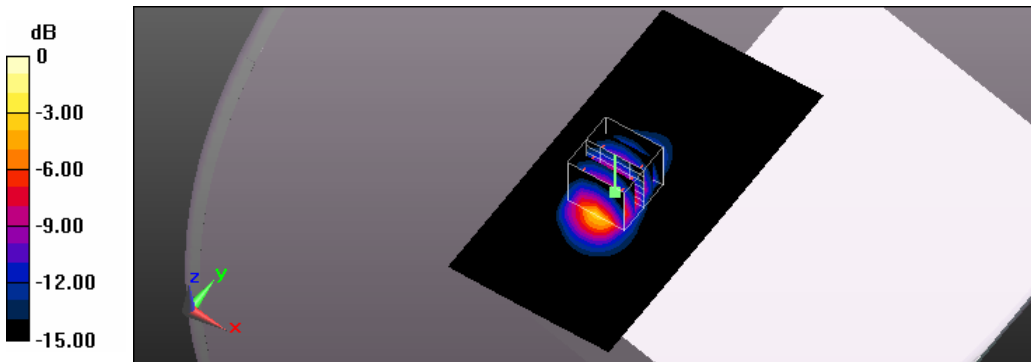
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.50 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.72 W/kg

SAR(1 g) = 0.932 W/kg; SAR(10 g) = 0.442 W/kg

Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/9 Time: AM 12:13:25

90_WCDMA Band V CH4183_RMC-12.2K_side 2_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.575 W/kg

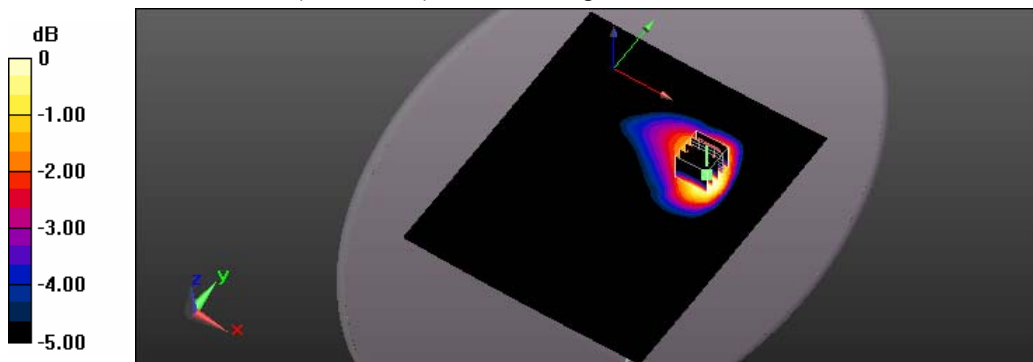
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 23.64 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.615 W/kg

SAR(1 g) = 0.445 W/kg; SAR(10 g) = 0.315 W/kg

Maximum value of SAR (measured) = 0.540 W/kg



0 dB = 0.540 W/kg = -2.68 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/7 Time: PM 08:53:03

72_1xEVDO 850 CH384_Rev 0_side 2_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.684 W/kg

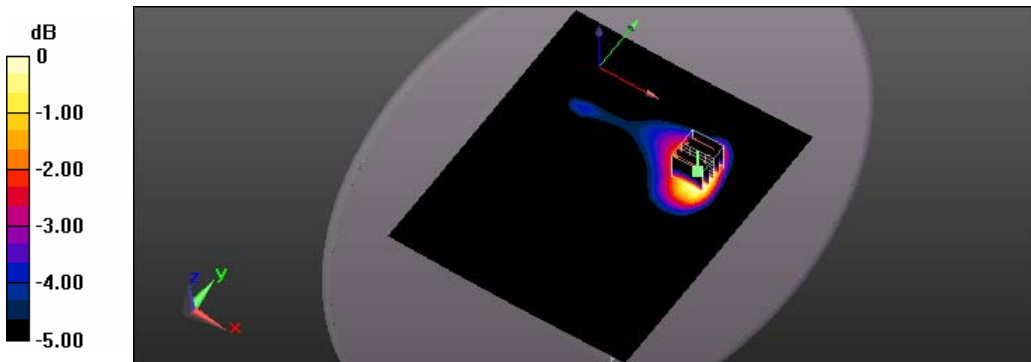
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.66 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.771 W/kg

SAR(1 g) = 0.557 W/kg; SAR(10 g) = 0.391 W/kg

Maximum value of SAR (measured) = 0.675 W/kg



0 dB = 0.675 W/kg = -1.71 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 10:47:59

105_1xEVDO 850 CH384_Rev A_side 2_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x111x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.778 W/kg

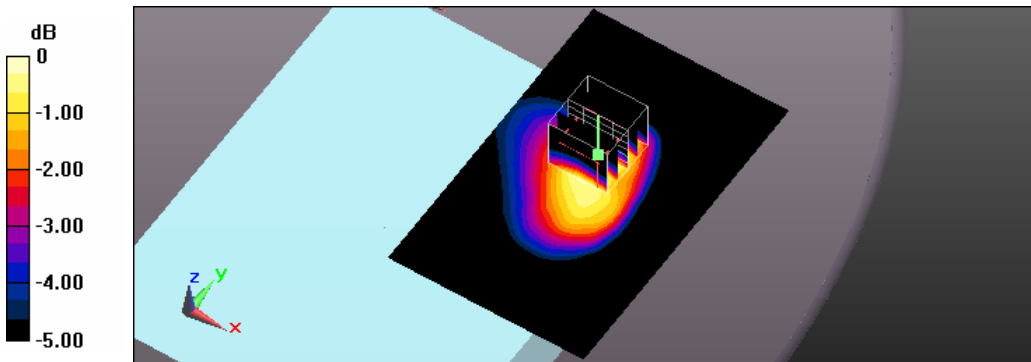
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.91 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.868 W/kg

SAR(1 g) = 0.620 W/kg; SAR(10 g) = 0.422 W/kg

Maximum value of SAR (measured) = 0.752 W/kg



0 dB = 0.752 W/kg = -1.24 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 01:45:17

94_1xEVDO 1900 CH25_Rev.0_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.32 W/kg

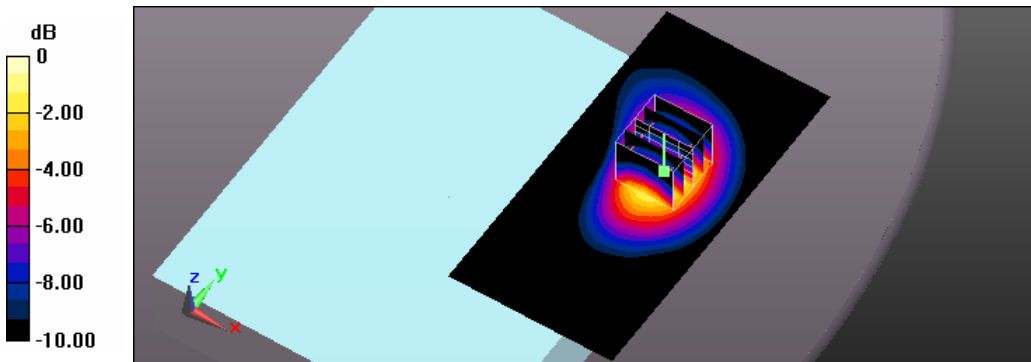
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.66 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.54 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.620 W/kg

Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 01:25:54

93_1xEVDO 1900 CH600_Rev.0_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.30 W/kg

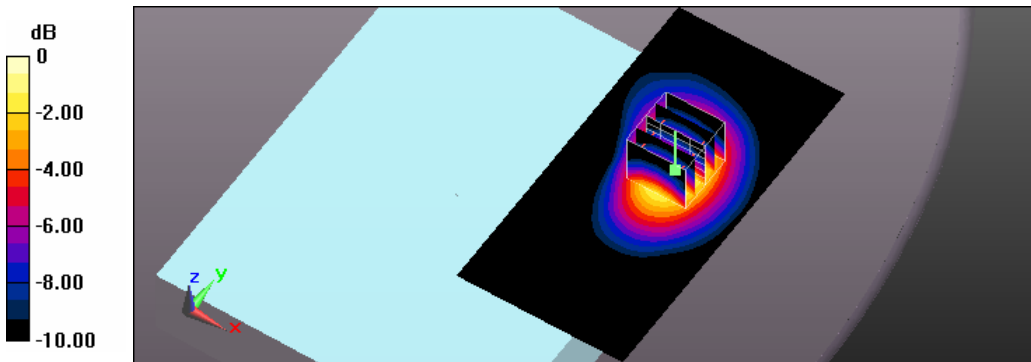
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.39 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.50 W/kg

SAR(1 g) = 0.986 W/kg; SAR(10 g) = 0.605 W/kg

Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 02:02:50

95_1xEVDO 1900 CH1175_Rev.0_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.521$ S/m; $\epsilon_r = 53.949$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.44 W/kg

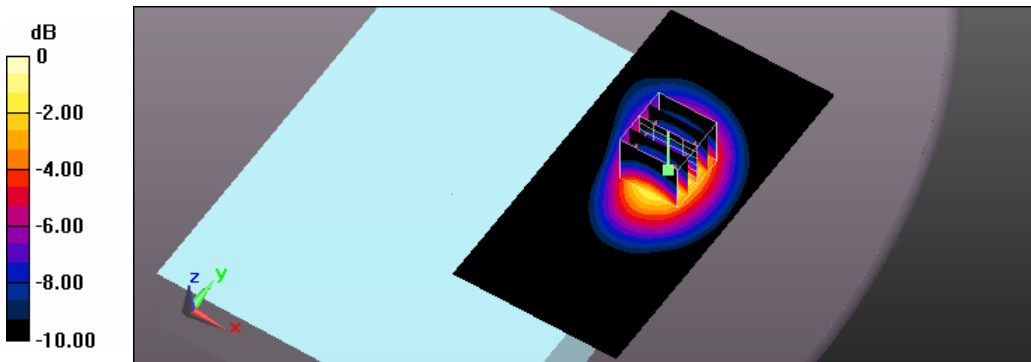
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.66 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.660 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 07:41:33

97_1xEVDO 1900 CH600_Rev.0_side 2_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (161x191x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.734 W/kg

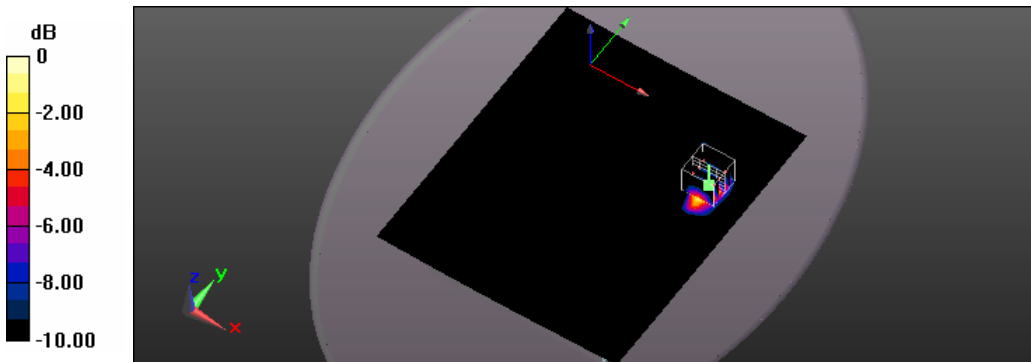
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.11 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.760 W/kg

SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.233 W/kg

Maximum value of SAR (measured) = 0.623 W/kg



0 dB = 0.623 W/kg = -2.06 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: AM 11:05:06

9_1xEVDO 1900 CH25_Rev.0_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.13 W/kg

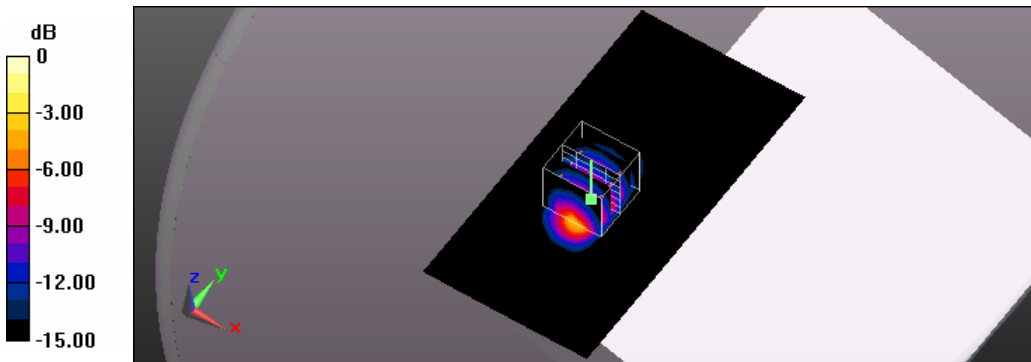
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.06 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.744 W/kg; SAR(10 g) = 0.332 W/kg

Maximum value of SAR (measured) = 1.13 W/kg



0 dB = 1.13 W/kg = 0.53 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: AM 10:13:11

8_1xEVDO 1900 CH600_Rev.0_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (101x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.03 W/kg

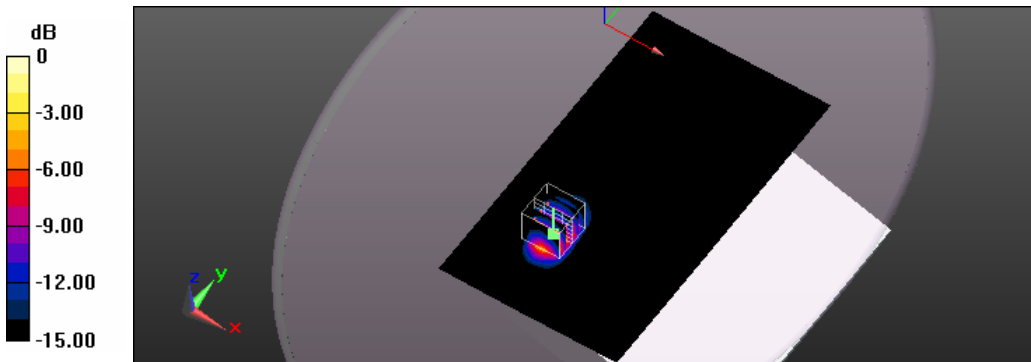
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.18 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 2.36 W/kg

SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.527 W/kg

Maximum value of SAR (measured) = 1.76 W/kg



0 dB = 1.76 W/kg = 2.46 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: AM 11:23:13

10_1xEVDO 1900 CH1175_Rev.0_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.521$ S/m; $\epsilon_r = 53.949$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.72 W/kg

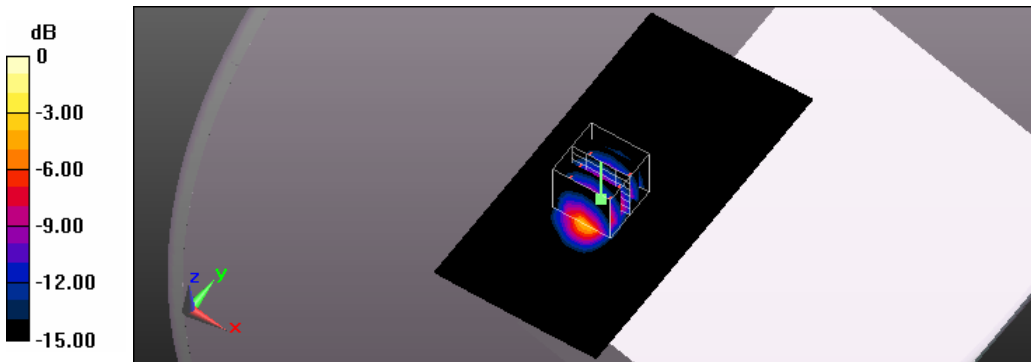
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 30.12 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 2.18 W/kg

SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.486 W/kg

Maximum value of SAR (measured) = 1.70 W/kg



0 dB = 1.70 W/kg = 2.30 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 11:04:27

30_1xEVDO 1900 CH25_Rev.A_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.35 W/kg

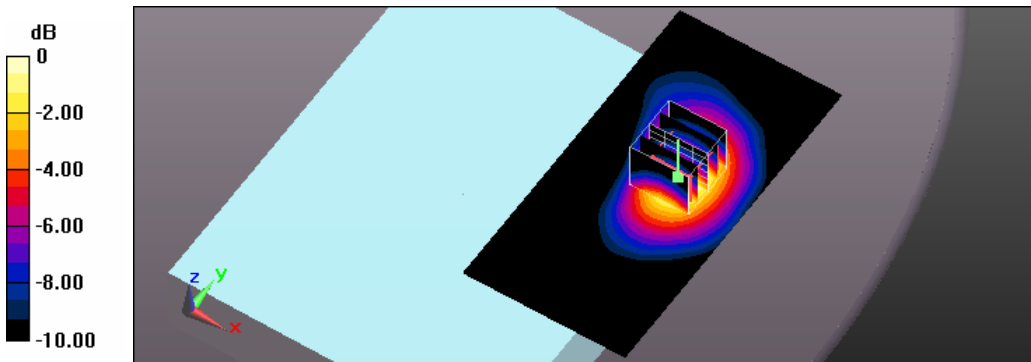
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 28.66 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.617 W/kg

Maximum value of SAR (measured) = 1.29 W/kg



0 dB = 1.29 W/kg = 1.11 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 10:45:56

29_1xEVDO 1900 CH600_Rev.A_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.38 W/kg

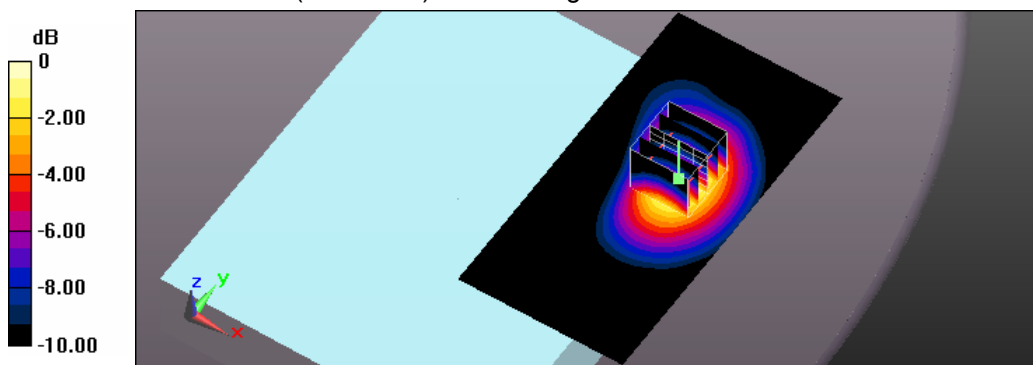
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.07 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.61 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.627 W/kg

Maximum value of SAR (measured) = 1.35 W/kg



0 dB = 1.35 W/kg = 1.30 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 11:22:34

31_1xEVDO 1900 CH1175_Rev.A_side 2_14mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.521$ S/m; $\epsilon_r = 53.949$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.44 W/kg

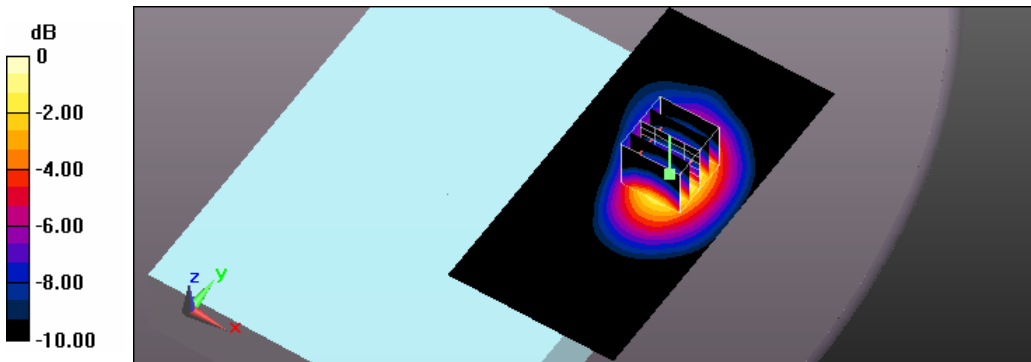
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.23 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.675 W/kg

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



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

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 09:41:35

102_1xEVDO 1900 CH600_Rev.A_side 2_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.672 W/kg

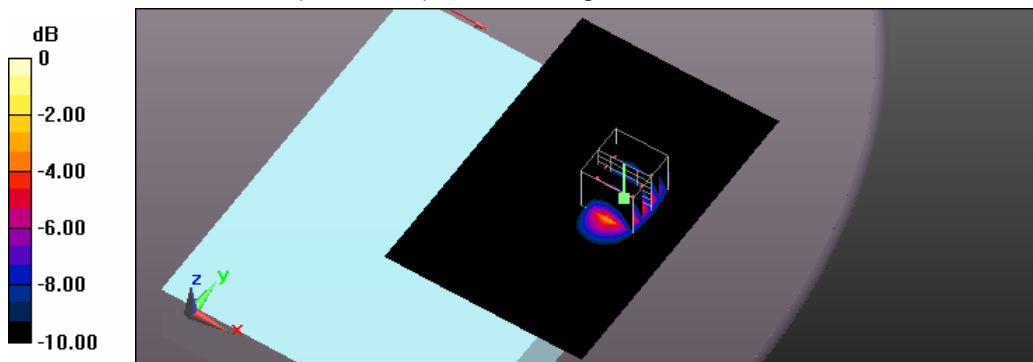
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.73 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.778 W/kg

SAR(1 g) = 0.451 W/kg; SAR(10 g) = 0.232 W/kg

Maximum value of SAR (measured) = 0.631 W/kg



0 dB = 0.631 W/kg = -2.00 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 12:03:44

12_1xEVDO 1900 CH25_Rev.A_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.06 W/kg

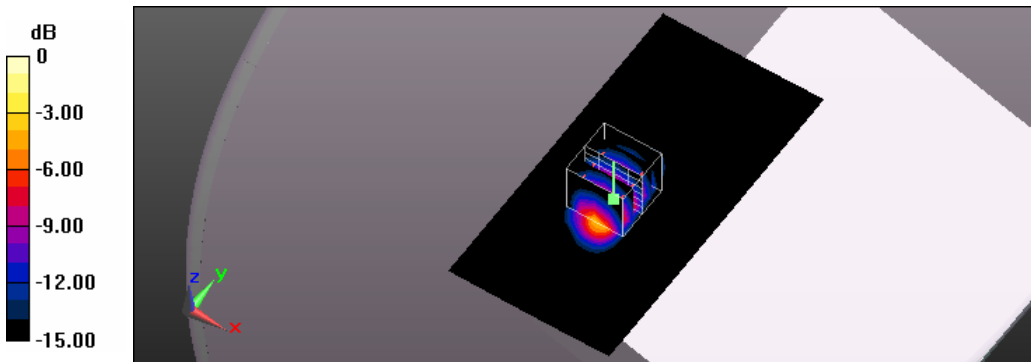
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.35 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.703 W/kg; SAR(10 g) = 0.313 W/kg

Maximum value of SAR (measured) = 1.07 W/kg



0 dB = 1.07 W/kg = 0.29 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: AM 11:44:02

11_1xEVDO 1900 CH600_Rev.A_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.60 W/kg

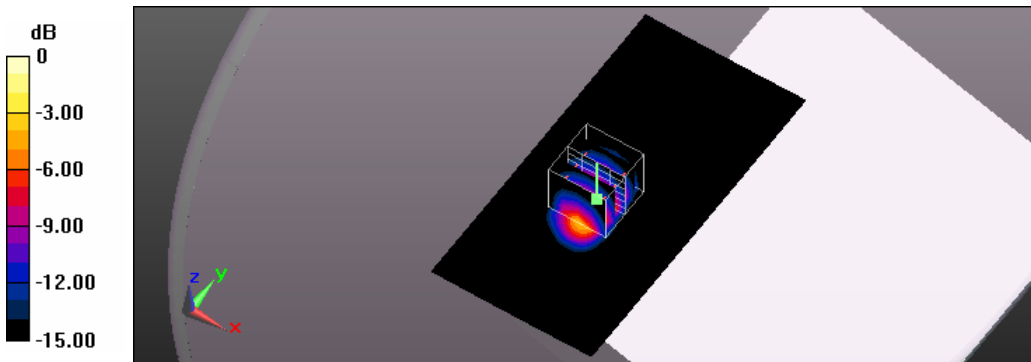
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 30.27 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 2.13 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.482 W/kg

Maximum value of SAR (measured) = 1.67 W/kg



0 dB = 1.67 W/kg = 2.23 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 12:28:01

13_1xEVDO 1900 CH1175_Rev.A_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909 \text{ MHz}$; $\sigma = 1.521 \text{ S/m}$; $\epsilon_r = 53.949$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.58 W/kg

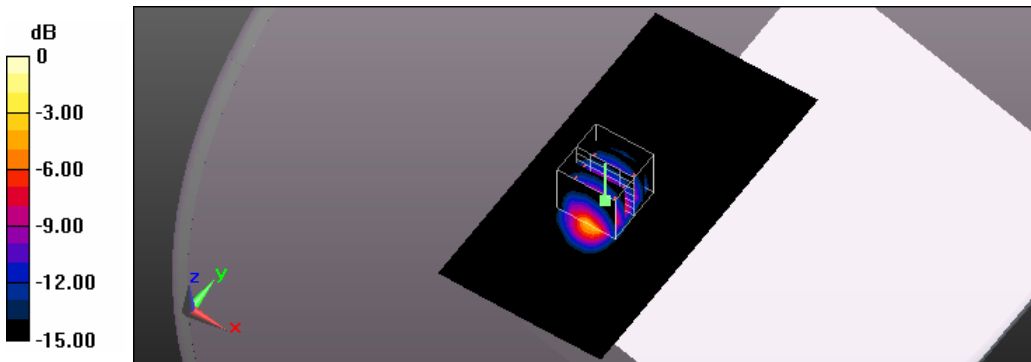
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.64 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 2.11 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.471 W/kg

Maximum value of SAR (measured) = 1.65 W/kg



0 dB = 1.65 W/kg = 2.17 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 02:55:16

18_1xRTT 1900 CH25_RC1-SO55_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

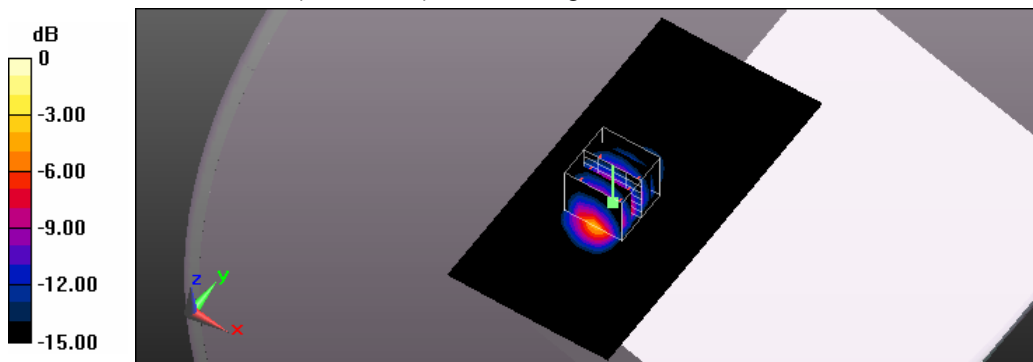
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 22.56 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.686 W/kg; SAR(10 g) = 0.306 W/kg

Maximum value of SAR (measured) = 1.04 W/kg



0 dB = 1.04 W/kg = 0.17 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 02:34:24

17_1xRTT 1900 CH600_RC1-SO55_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.63 W/kg

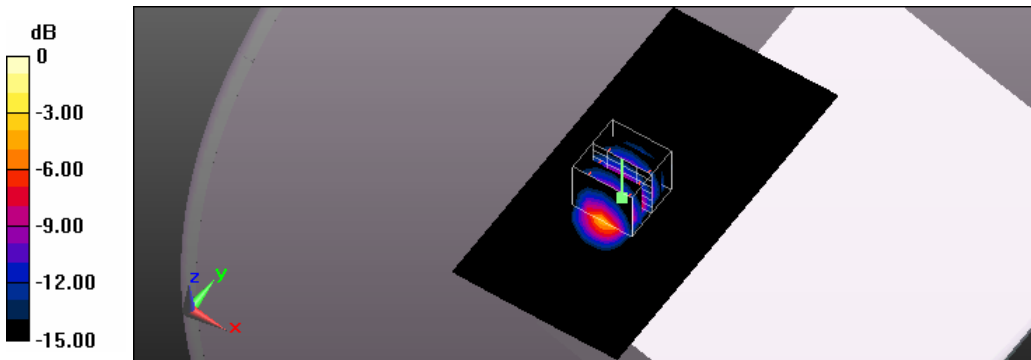
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.99 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 2.07 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.471 W/kg

Maximum value of SAR (measured) = 1.63 W/kg



0 dB = 1.63 W/kg = 2.12 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 03:18:54

19_1xRTT 1900 CH1175_RC1-SO55_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909 \text{ MHz}$; $\sigma = 1.521 \text{ S/m}$; $\epsilon_r = 53.949$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

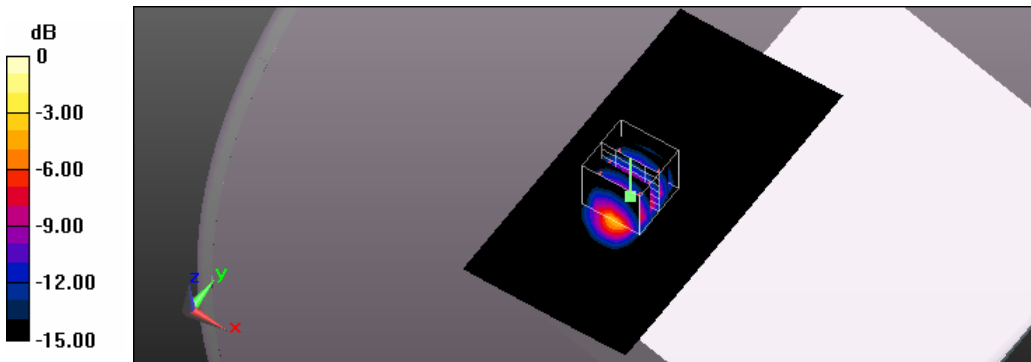
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.80 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 2.09 W/kg

SAR(1 g) = 1.06 W/kg; SAR(10 g) = 0.466 W/kg

Maximum value of SAR (measured) = 1.63 W/kg



0 dB = 1.63 W/kg = 2.12 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 04:02:45

21_1xRTT 1900 CH25_RC3-SO32_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1851.25 \text{ MHz}$; $\sigma = 1.465 \text{ S/m}$; $\epsilon_r = 54.172$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.09 W/kg

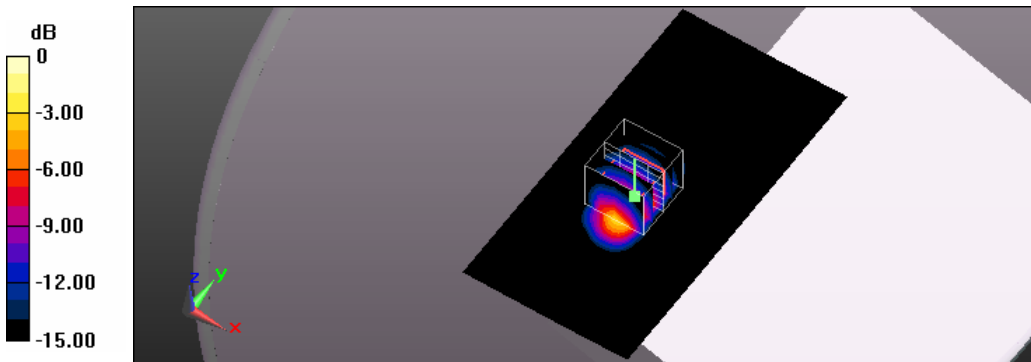
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.16 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.685 W/kg; SAR(10 g) = 0.305 W/kg

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



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

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 03:43:02

20_1xRTT 1900 CH600_RC3-SO32_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.57 W/kg

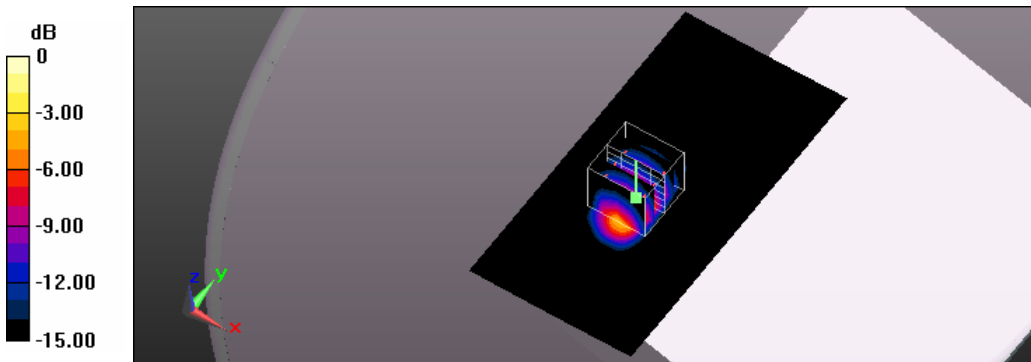
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.81 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.460 W/kg

Maximum value of SAR (measured) = 1.59 W/kg



0 dB = 1.59 W/kg = 2.01 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/27 Time: PM 04:25:25

23_1xRTT 1900 CH1175_RC3-SO32_side2 (side2 @ side3)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.521$ S/m; $\epsilon_r = 53.949$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.49 W/kg

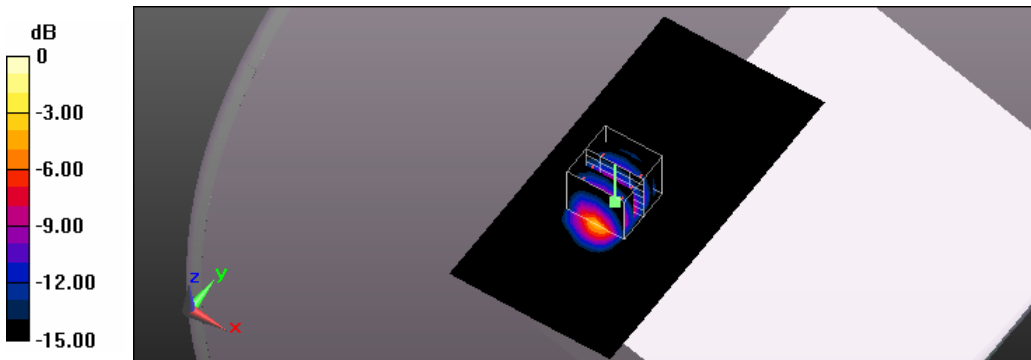
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.01 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.457 W/kg

Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 01:34:52

**57_WCDMA BandII CH9400_RMC-12.2K_side2 (side2 @ side3)_Rear 20 deg_0mm_original
46_w/_measurement once**

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.72 W/kg

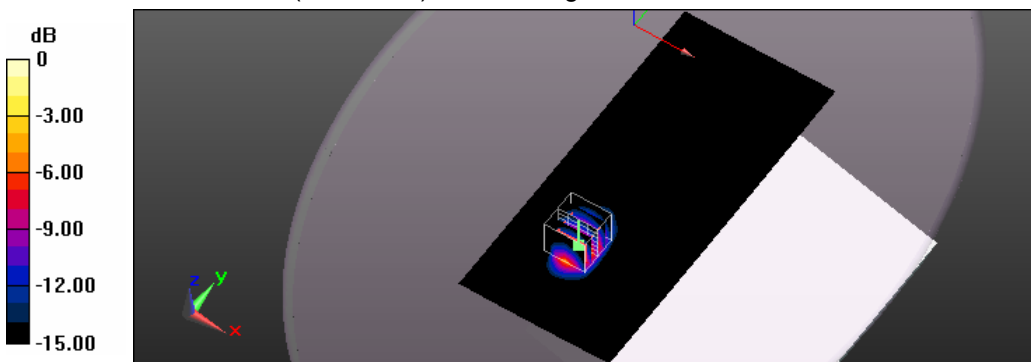
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 31.63 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 2.33 W/kg

SAR(1 g) = 1.18 W/kg; SAR(10 g) = 0.522 W/kg

Maximum value of SAR (measured) = 1.75 W/kg



0 dB = 1.75 W/kg = 2.43 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/28 Time: AM 10:29:50

**27_1xRTT 1900 CH1175_RC1-SO55_side2 (side2 @ side3)_Rear 20 deg_0mm_original
19_w/_measurement once**

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, CDMA 1xRTT PCS (0); Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.521$ S/m; $\epsilon_r = 53.949$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS2, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.79 W/kg

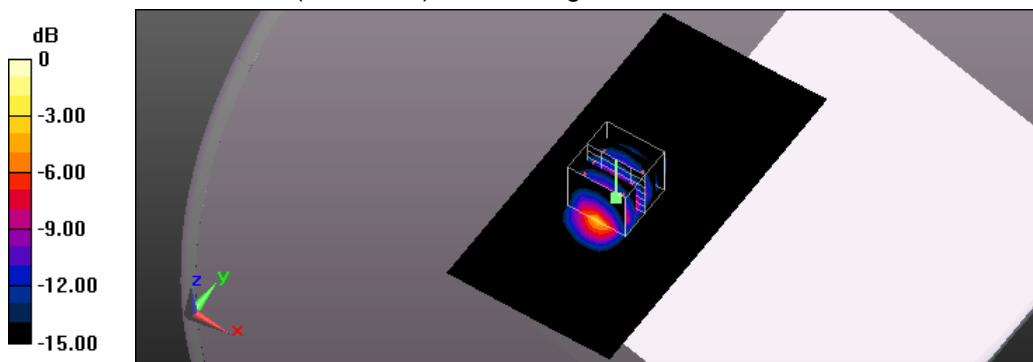
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.65 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 2.26 W/kg

SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.508 W/kg

Maximum value of SAR (measured) = 1.76 W/kg



0 dB = 1.76 W/kg = 2.46 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/3 Time: PM 10:14:06

69_802.11b CH1_1M_side 2_0mm

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.901 \text{ S/m}$; $\epsilon_r = 51.185$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.29, 7.29, 7.29); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (241x281x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.273 W/kg

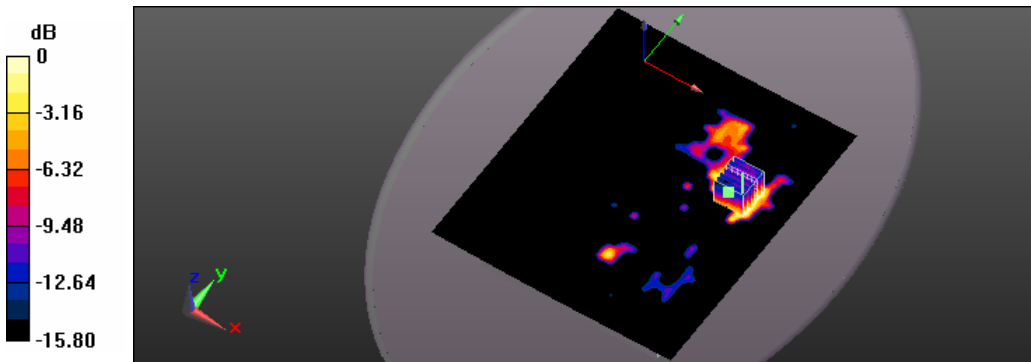
Flat/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.101 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.197 W/kg

SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.161 W/kg



0 dB = 0.161 W/kg = -7.93 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 07:46:37

85_GPRS 850 CH190_3D2U_side 3_18mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.194 W/kg

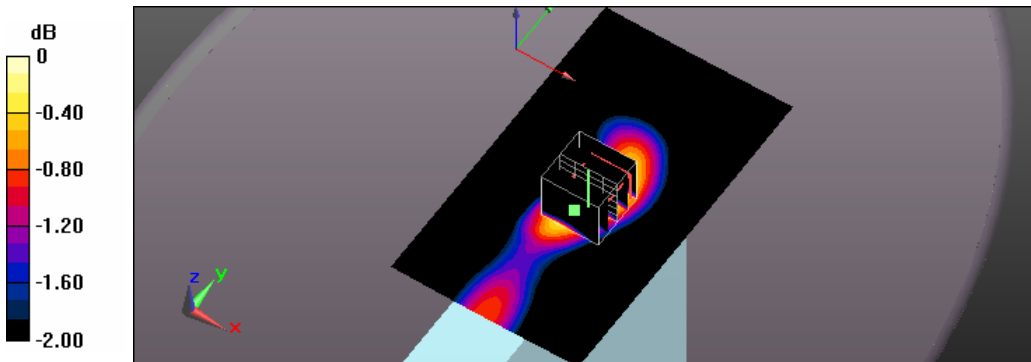
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.09 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.226 W/kg

SAR(1 g) = 0.160 W/kg; SAR(10 g) = 0.113 W/kg

Maximum value of SAR (measured) = 0.195 W/kg



0 dB = 0.195 W/kg = -7.10 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: AM 11:55:50

81_GPRS 850 CH190_3D2U_side 3_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.857 W/kg

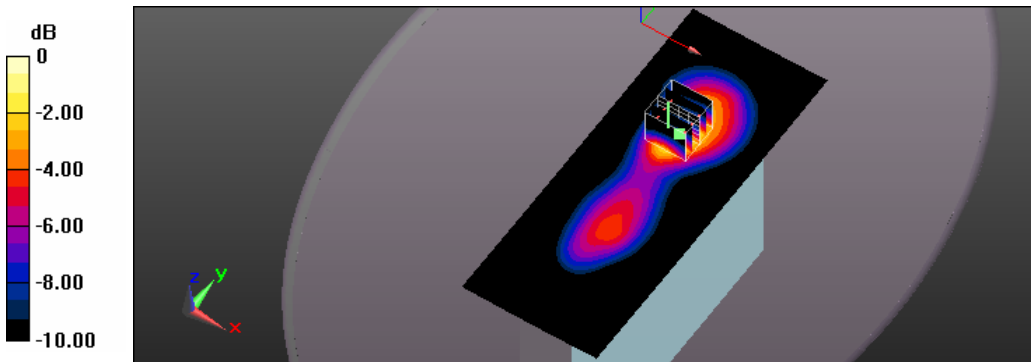
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.21 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.564 W/kg; SAR(10 g) = 0.301 W/kg

Maximum value of SAR (measured) = 0.782 W/kg



0 dB = 0.782 W/kg = -1.07 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 06:15:36

87_GPRS 850 CH190_3D2U_side3(side3 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.714 W/kg

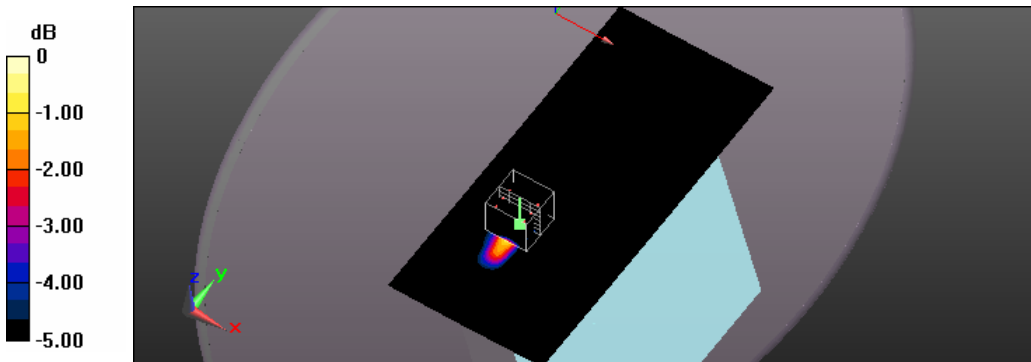
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.82 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.927 W/kg

SAR(1 g) = 0.400 W/kg; SAR(10 g) = 0.203 W/kg

Maximum value of SAR (measured) = 0.649 W/kg



0 dB = 0.649 W/kg = -1.88 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 06:53:27

89_GPRS 850 CH190_3D2U_side 6_10mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x151x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.366 W/kg

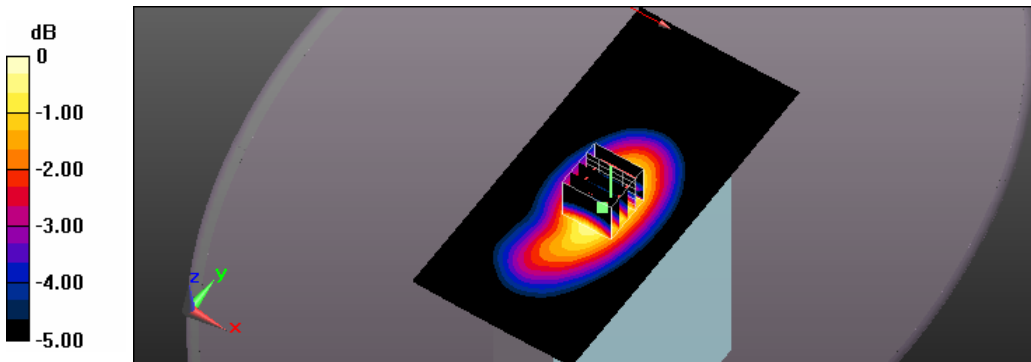
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 19.84 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.419 W/kg

SAR(1 g) = 0.310 W/kg; SAR(10 g) = 0.225 W/kg

Maximum value of SAR (measured) = 0.370 W/kg



0 dB = 0.370 W/kg = -4.32 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 01:06:27

82_GPRS 850 CH190_3D2U_side 6_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x151x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.572 W/kg

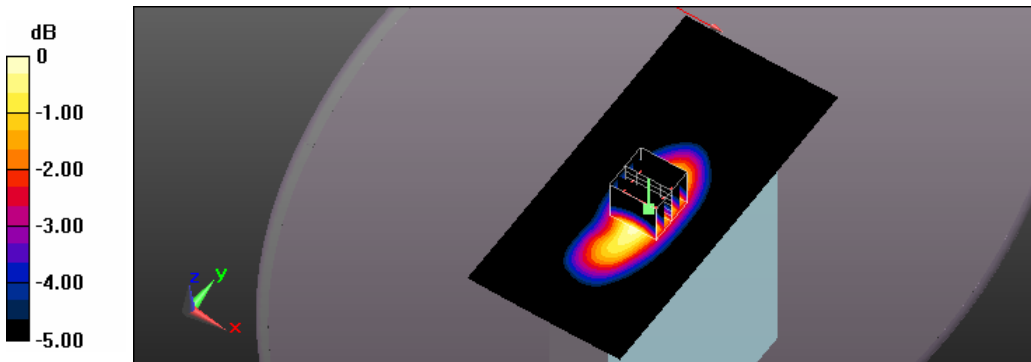
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.39 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.460 W/kg; SAR(10 g) = 0.321 W/kg

Maximum value of SAR (measured) = 0.565 W/kg



0 dB = 0.565 W/kg = -2.48 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 09:29:54

88_GPRS 850 CH190_3D2U_side6 (side6 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x161x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.356 W/kg

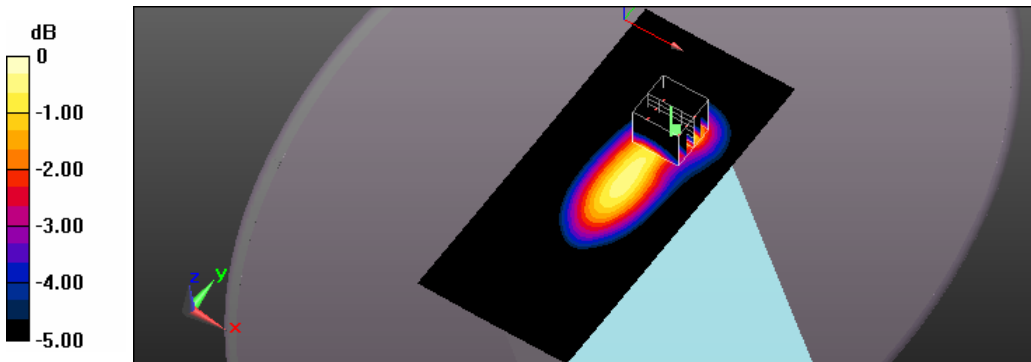
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.67 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.478 W/kg

SAR(1 g) = 0.290 W/kg; SAR(10 g) = 0.179 W/kg

Maximum value of SAR (measured) = 0.385 W/kg



0 dB = 0.385 W/kg = -4.15 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 06:02:33

109_GPRS 850 CH190_3D2U_side 5_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS 850 (3Down, 2Up) (0); Frequency: 836.6 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

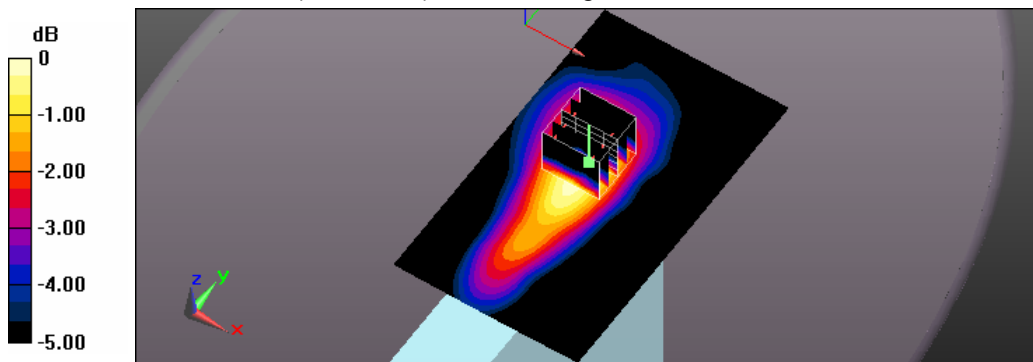
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.29 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.126 W/kg

SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.057 W/kg

Maximum value of SAR (measured) = 0.105 W/kg



0 dB = 0.105 W/kg = -9.79 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 05:18:38

25_GPRS 1900 CH661_3D2U_side 3_18mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.891 W/kg

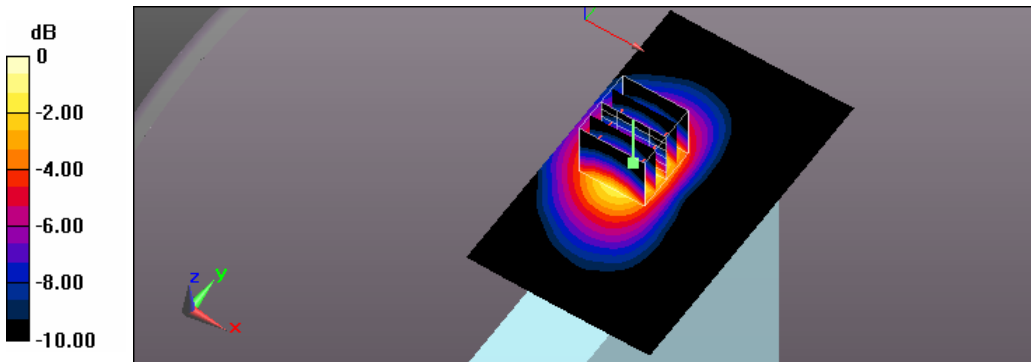
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.19 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.714 W/kg; SAR(10 g) = 0.438 W/kg

Maximum value of SAR (measured) = 0.918 W/kg



0 dB = 0.918 W/kg = -0.37 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: AM 01:05:18

28_GPRS 1900 CH661_3D2U_side 3_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.38 W/kg

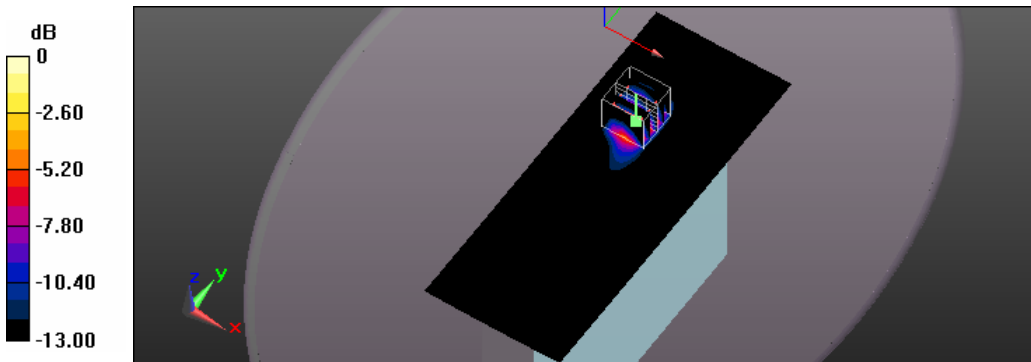
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.74 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 1.82 W/kg

SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.446 W/kg

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



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

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 09:21:48

54_GPRS 1900 CH661_3D2U_side 3_(side3 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.98 W/kg

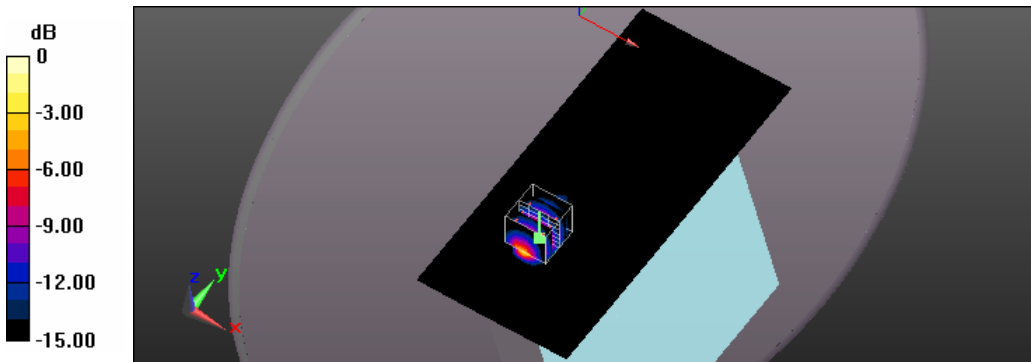
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 33.40 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 2.05 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.464 W/kg

Maximum value of SAR (measured) = 1.44 W/kg



0 dB = 1.44 W/kg = 1.58 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 05:31:25

7_GPRS 1900 CH661_3D2U_side 6_10mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x161x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

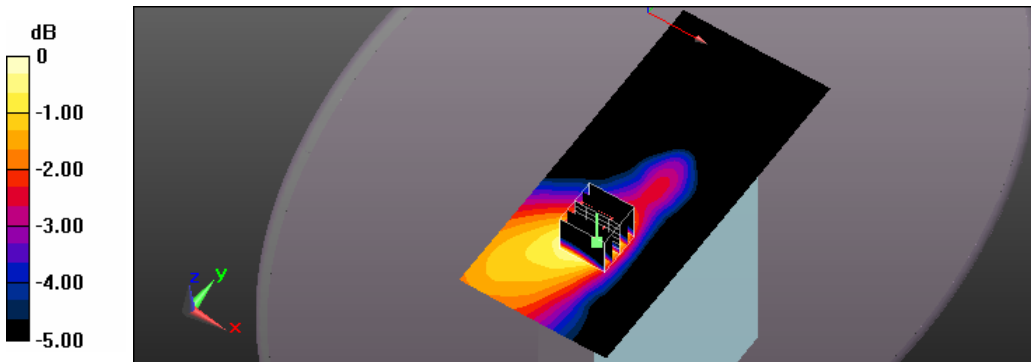
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.523 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.130 W/kg

SAR(1 g) = 0.085 W/kg; SAR(10 g) = 0.055 W/kg

Maximum value of SAR (measured) = 0.108 W/kg



0 dB = 0.108 W/kg = -9.67 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/26 Time: AM 01:28:59

6_GPRS 1900 CH661_3D2U_side 6_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0778 W/kg

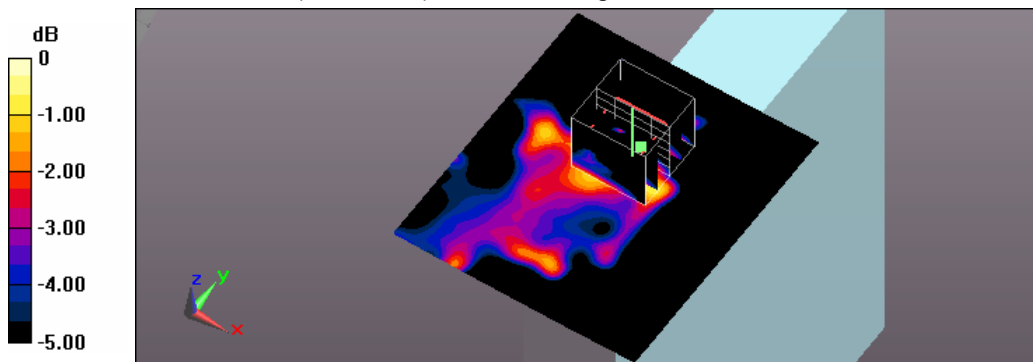
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.366 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.0720 W/kg

SAR(1 g) = 0.036 W/kg; SAR(10 g) = 0.016 W/kg

Maximum value of SAR (measured) = 0.0483 W/kg



0 dB = 0.0483 W/kg = -13.16 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 07:35:24

59_GPRS 1900 CH661_3D2U_side6 (side6 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, GPRS PCS (3Down,2Up) (0); Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x161x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

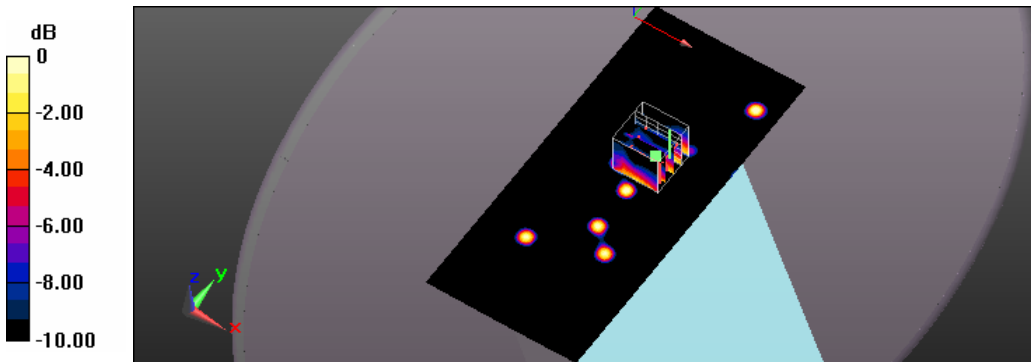
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.209 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.0540 W/kg

SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.018 W/kg

Maximum value of SAR (measured) = 0.0425 W/kg



Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 05:40:25

22_WCDMA BandII CH9400_RMC-12.2K_side 3_18mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.23 W/kg

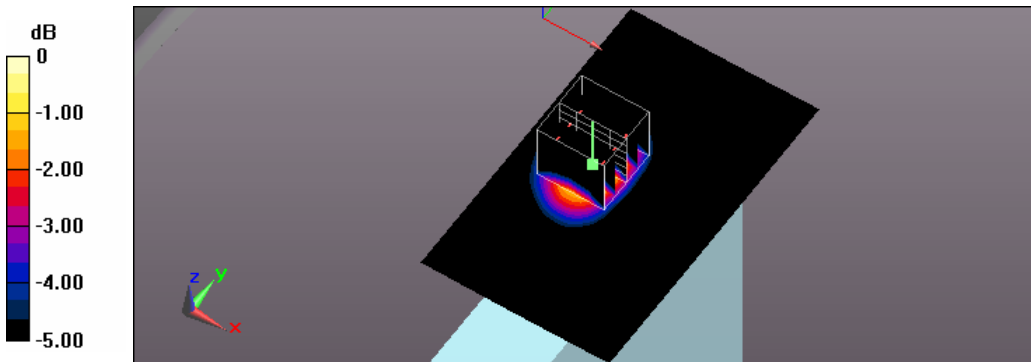
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.21 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.45 W/kg

SAR(1 g) = 0.951 W/kg; SAR(10 g) = 0.582 W/kg

Maximum value of SAR (measured) = 1.22 W/kg



0 dB = 1.22 W/kg = 0.86 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: AM 01:52:47

26_WCDMA BandII CH9400_RMC-12.2K_side 3_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.44 W/kg

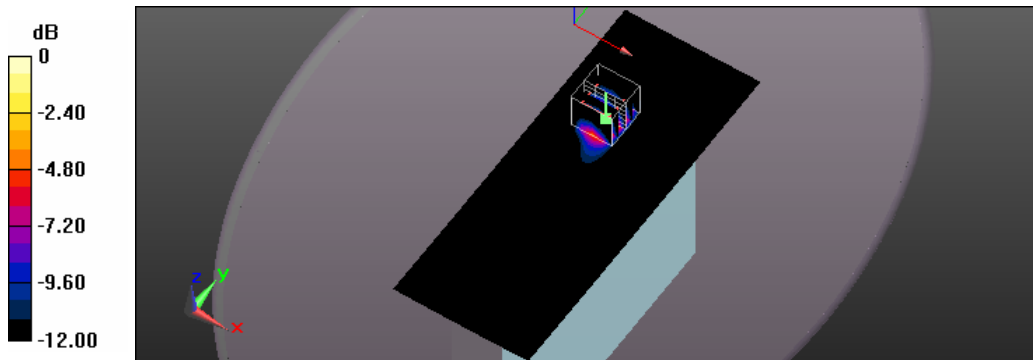
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.94 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.83 W/kg

SAR(1 g) = 0.974 W/kg; SAR(10 g) = 0.445 W/kg

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



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

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 08:51:54

55_WCDMA BandII CH9400_RMC-12.2K_side 3_(side3 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASYS52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.53 W/kg

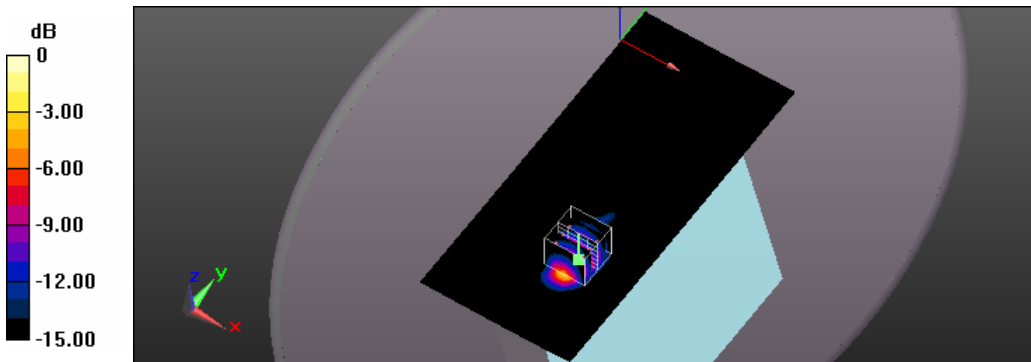
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 32.58 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.90 W/kg

SAR(1 g) = 0.988 W/kg; SAR(10 g) = 0.442 W/kg

Maximum value of SAR (measured) = 1.47 W/kg



0 dB = 1.47 W/kg = 1.67 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 06:00:55

4_WCDMA BandII CH9400_RMC-12.2K_side 6_10mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.118 W/kg

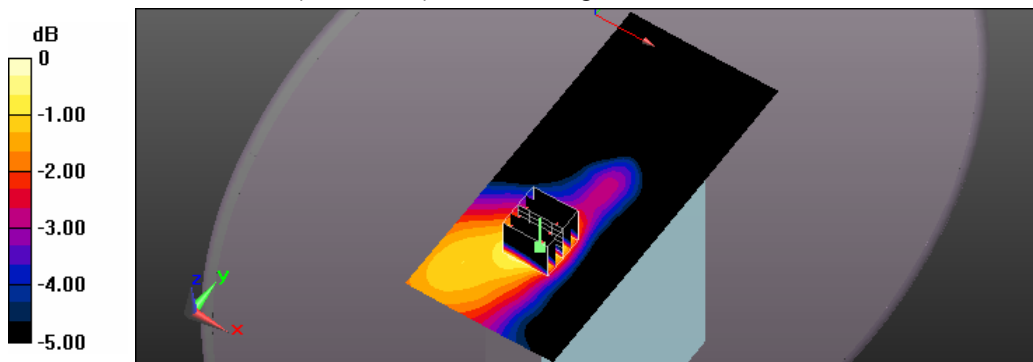
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.806 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.140 W/kg

SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.059 W/kg

Maximum value of SAR (measured) = 0.117 W/kg



0 dB = 0.117 W/kg = -9.32 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/26 Time: AM 12:46:39

5_WCDMA BandII CH9400_RMC-12.2K_side 6_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x81x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0463 W/kg

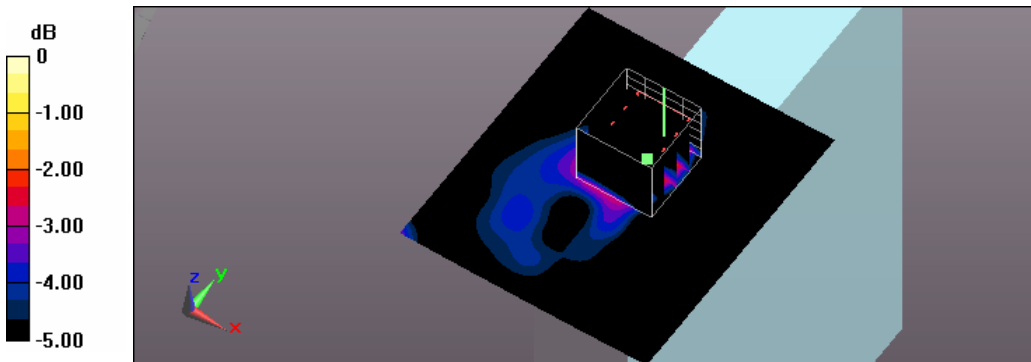
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.190 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.0580 W/kg

SAR(1 g) = 0.035 W/kg; SAR(10 g) = 0.021 W/kg

Maximum value of SAR (measured) = 0.0503 W/kg



0 dB = 0.0503 W/kg = -12.98 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 05:16:25

58_WCDMA BandII CH9400_RMC-12.2K_side6(side6 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, WCDMA Band II (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x141x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.164 W/kg

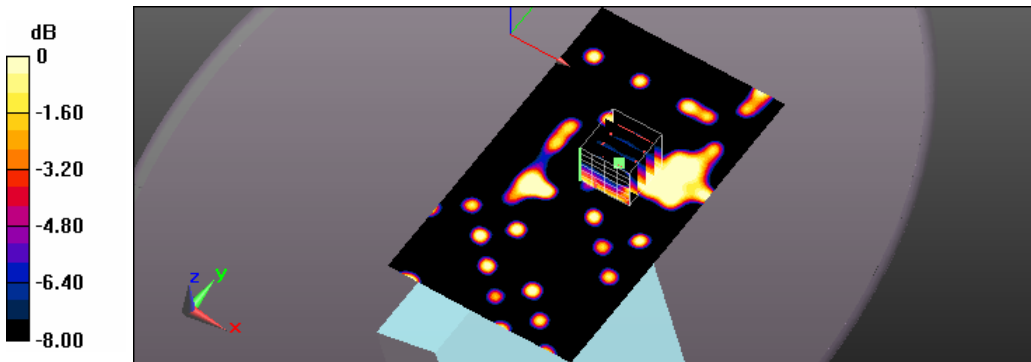
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.227 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.0380 W/kg

SAR(1 g) = 0.025 W/kg; SAR(10 g) = 0.015 W/kg

Maximum value of SAR (measured) = 0.0344 W/kg



0 dB = 0.0344 W/kg = -14.63 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 11:12:03

91_WCDMA Band V CH4183_RMC-12.2K_side 3_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

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

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

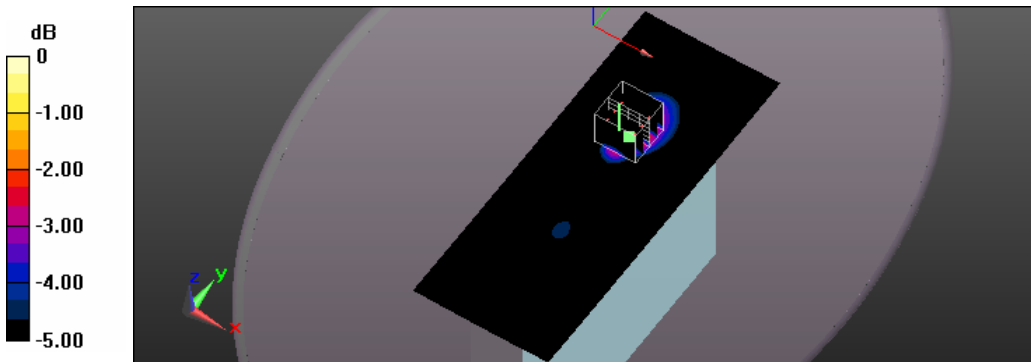
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.34 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.941 W/kg

SAR(1 g) = 0.419 W/kg; SAR(10 g) = 0.225 W/kg

Maximum value of SAR (measured) = 0.603 W/kg



0 dB = 0.603 W/kg = -2.20 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/8 Time: PM 10:43:32

92_WCDMA Band V CH4183_RMC-12.2K_side 6_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

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

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x151x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.683 W/kg

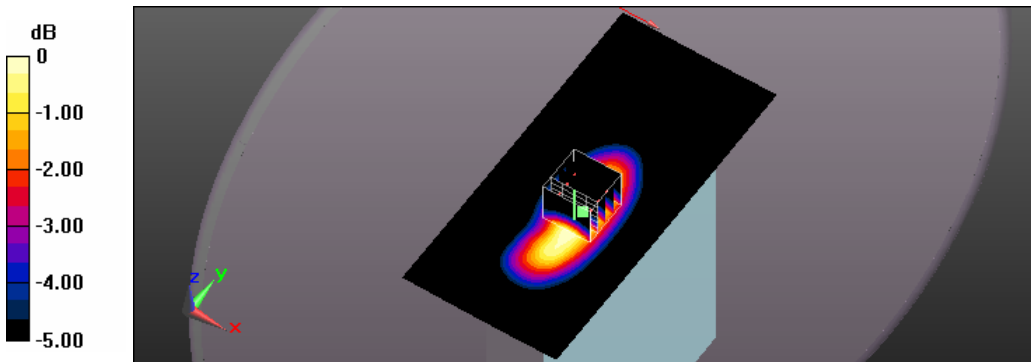
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 26.59 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.771 W/kg

SAR(1 g) = 0.538 W/kg; SAR(10 g) = 0.372 W/kg

Maximum value of SAR (measured) = 0.663 W/kg



0 dB = 0.663 W/kg = -1.78 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/7 Time: PM 09:41:05

73_1xEVDO 850 CH384_Rev 0_side 3_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.697 W/kg

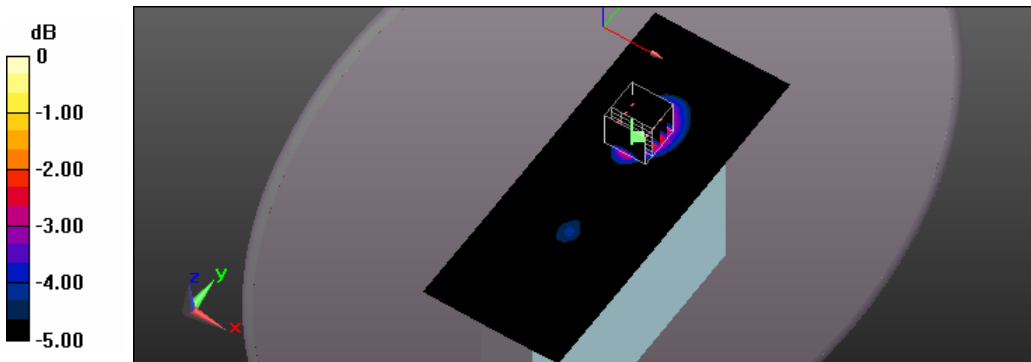
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 27.33 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.490 W/kg; SAR(10 g) = 0.262 W/kg

Maximum value of SAR (measured) = 0.667 W/kg



0 dB = 0.667 W/kg = -1.76 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/7 Time: PM 10:08:28

74_1xEVDO 850 CH384_Rev 0_side 6_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x151x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.618 W/kg

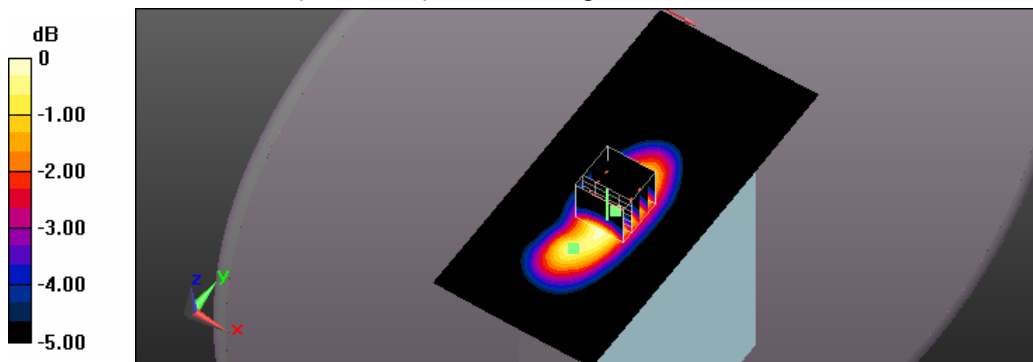
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.97 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.725 W/kg

SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.353 W/kg

Maximum value of SAR (measured) = 0.627 W/kg



0 dB = 0.627 W/kg = -2.03 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/30 Time: PM 11:58:12

106_1xEVDO 850 CH384_Rev A_side 3_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837$ MHz; $\sigma = 0.981$ S/m; $\epsilon_r = 54.873$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.821 W/kg

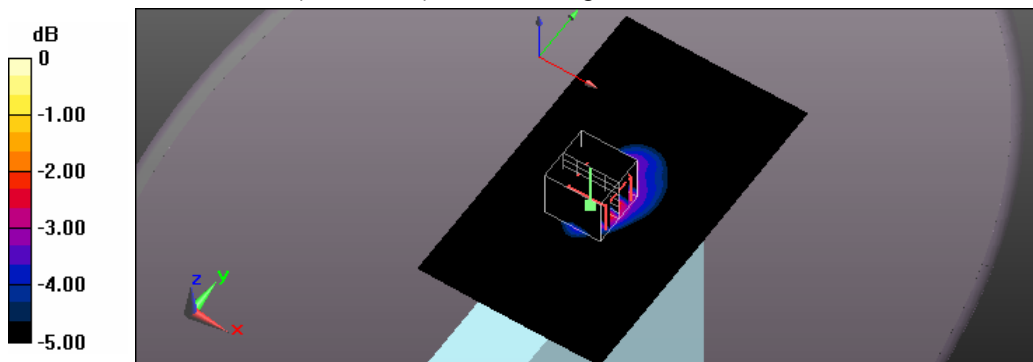
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.23 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.511 W/kg; SAR(10 g) = 0.281 W/kg

Maximum value of SAR (measured) = 0.769 W/kg



0 dB = 0.769 W/kg = -1.14 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/31 Time: AM 12:19:27

107_1xEVDO 850 CH384_Rev A_side 6_0mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO Cellular (0); Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 837 \text{ MHz}$; $\sigma = 0.981 \text{ S/m}$; $\epsilon_r = 54.873$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(9.42, 9.42, 9.42); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x151x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.548 W/kg

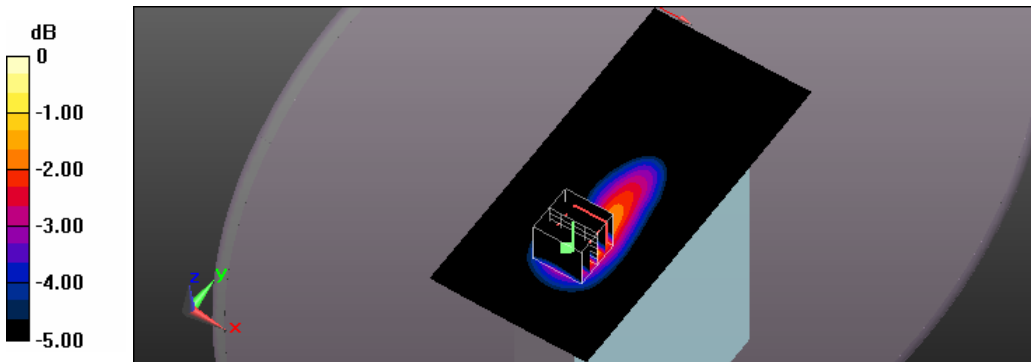
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 23.23 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.831 W/kg

SAR(1 g) = 0.474 W/kg; SAR(10 g) = 0.284 W/kg

Maximum value of SAR (measured) = 0.647 W/kg



0 dB = 0.647 W/kg = -1.89 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/24 Time: PM 07:13:13

96_1xEVDO 1900 CH600_Rev.0_side 3_18mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.42 W/kg

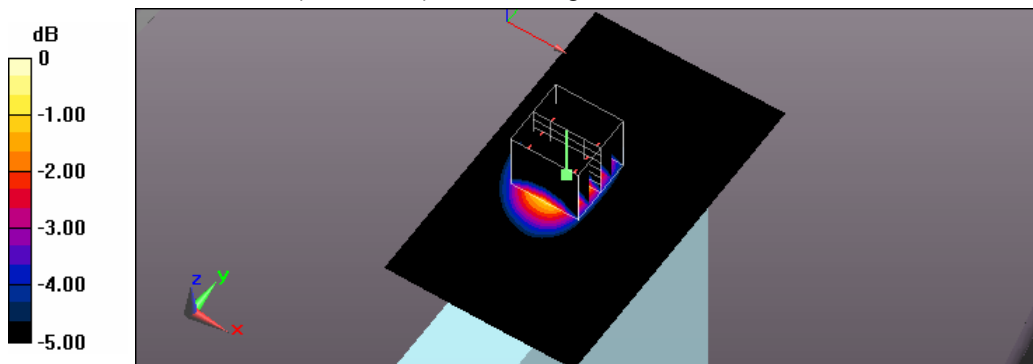
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 30.72 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 1.09 W/kg; SAR(10 g) = 0.666 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 10:10:40

103_1xEVDO 1900 CH600_Rev.0_side 3_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.54 W/kg

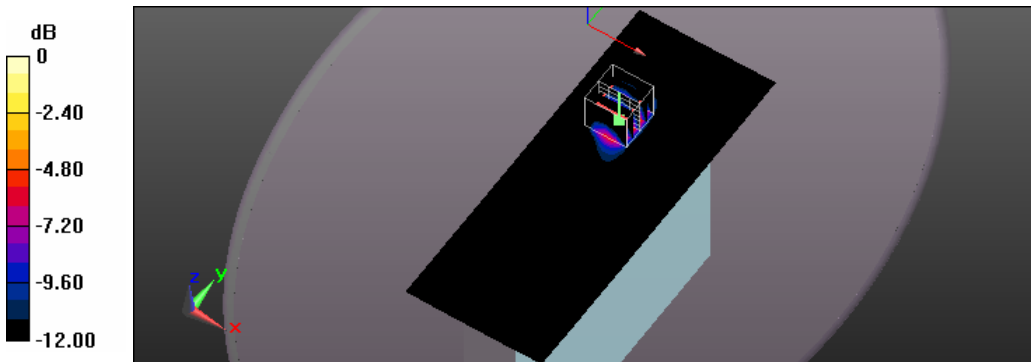
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.72 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 2.01 W/kg

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.500 W/kg

Maximum value of SAR (measured) = 1.58 W/kg



0 dB = 1.58 W/kg = 1.99 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 01:39:42

34_1xEVDO 1900 CH600_Rev.0_side3(side3 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 2.00 W/kg

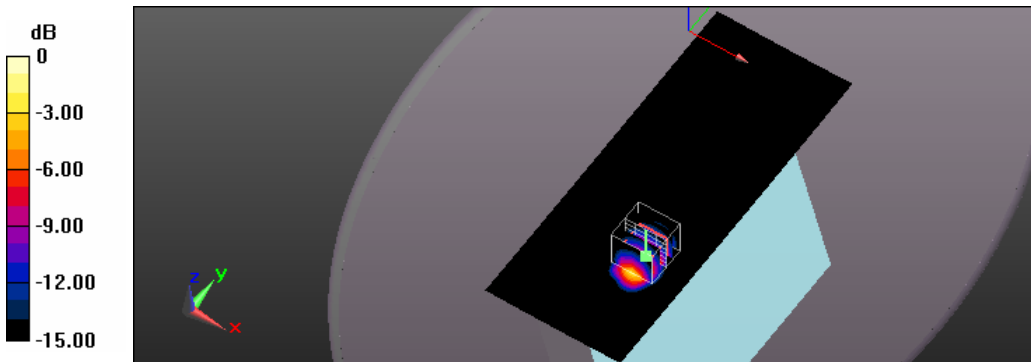
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 30.52 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 2.27 W/kg

SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.524 W/kg

Maximum value of SAR (measured) = 1.76 W/kg



0 dB = 1.76 W/kg = 2.46 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 06:52:40

98_1xEVDO 1900 CH600_Rev.0_side 6_10mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.110 W/kg

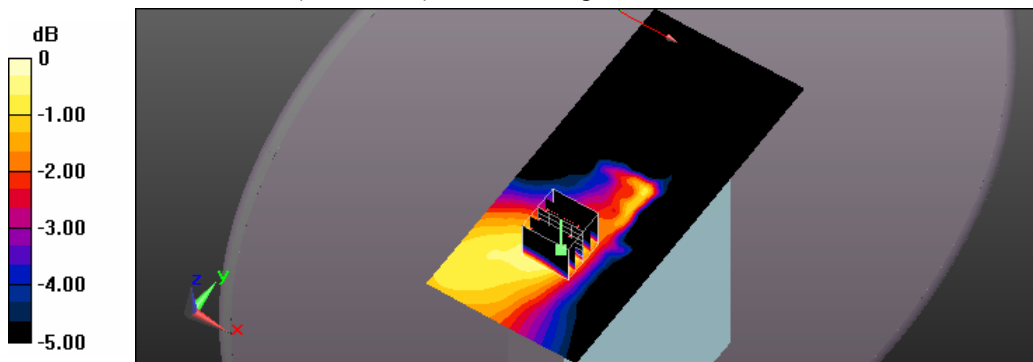
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.665 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.133 W/kg

SAR(1 g) = 0.086 W/kg; SAR(10 g) = 0.056 W/kg

Maximum value of SAR (measured) = 0.110 W/kg



0 dB = 0.110 W/kg = -9.59 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/26 Time: AM 12:11:46

104_1xEVDO 1900 CH600_Rev.0_side 6_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x81x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0478 W/kg

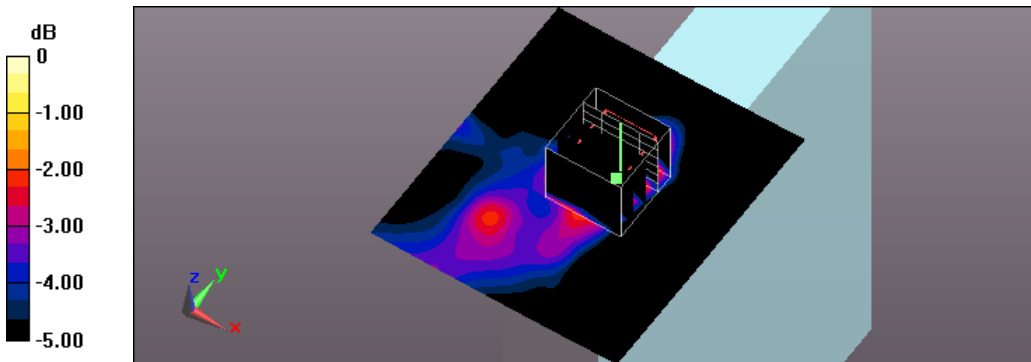
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 5.280 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.0570 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.013 W/kg

Maximum value of SAR (measured) = 0.0431 W/kg



0 dB = 0.0431 W/kg = -13.66 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 02:31:34

36_1xEVDO 1900 CH600_Rev.0_side6(side6 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x141x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0567 W/kg

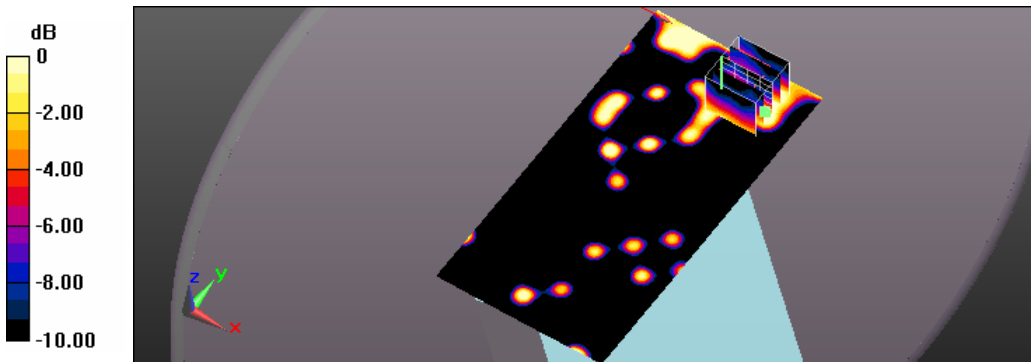
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 2.742 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.0410 W/kg

SAR(1 g) = 0.022 W/kg; SAR(10 g) = 0.015 W/kg

Maximum value of SAR (measured) = 0.0311 W/kg



0 dB = 0.0311 W/kg = -15.07 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: AM 11:49:09

32_1xEVDO 1900 CH600_Rev.A_side 3_18mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.39 W/kg

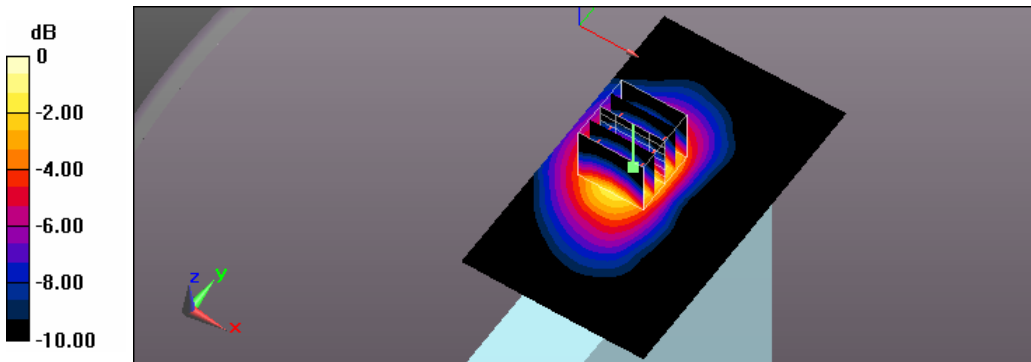
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 30.51 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.64 W/kg

SAR(1 g) = 1.07 W/kg; SAR(10 g) = 0.648 W/kg

Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 08:44:12

100_1xEVDO 1900 CH600_Rev.A_side 3_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x181x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.35 W/kg

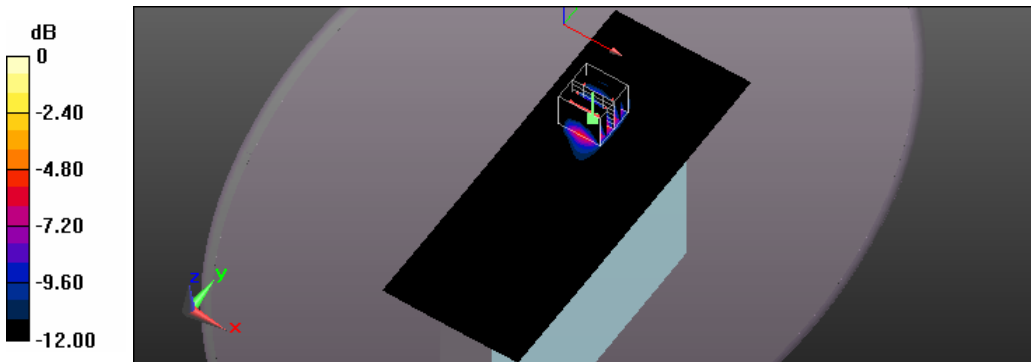
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.00 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.84 W/kg

SAR(1 g) = 0.994 W/kg; SAR(10 g) = 0.462 W/kg

Maximum value of SAR (measured) = 1.46 W/kg



0 dB = 1.46 W/kg = 1.64 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 01:20:07

33_1xEVDO 1900 CH600_Rev.A_side3(side3 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (61x121x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 1.59 W/kg

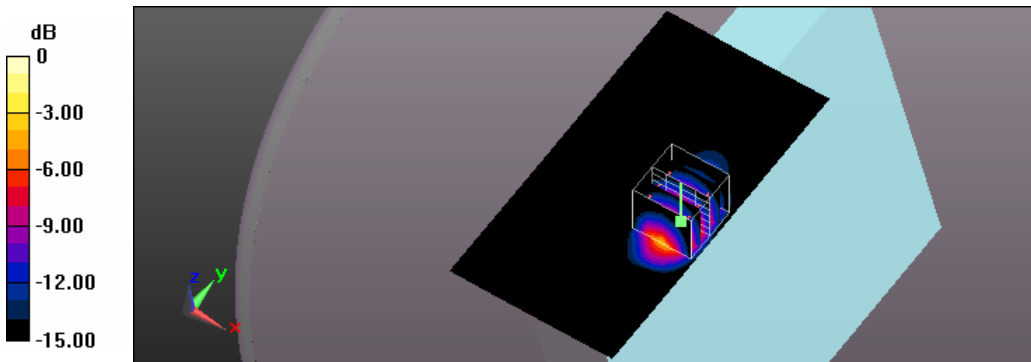
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 29.35 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 2.23 W/kg

SAR(1 g) = 1.16 W/kg; SAR(10 g) = 0.520 W/kg

Maximum value of SAR (measured) = 1.73 W/kg



0 dB = 1.73 W/kg = 2.38 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 07:51:52

99_1xEVDO 1900 CH600_Rev.A_side 6_10mm_w/o

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x81x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

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

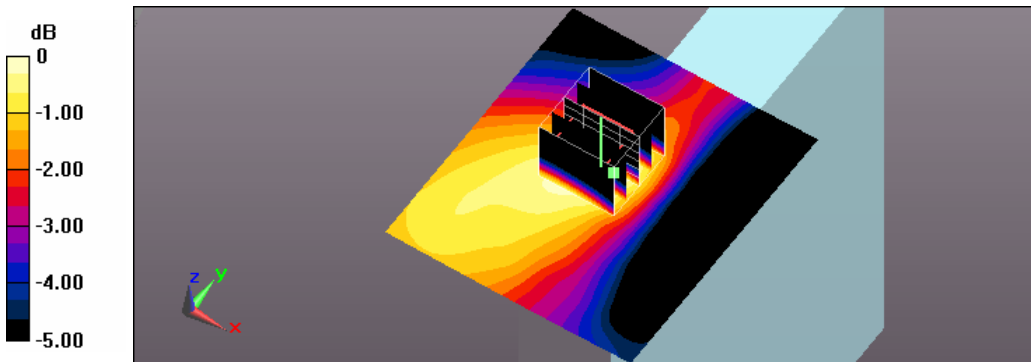
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.857 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 0.134 W/kg

SAR(1 g) = 0.087 W/kg; SAR(10 g) = 0.057 W/kg

Maximum value of SAR (measured) = 0.111 W/kg



0 dB = 0.111 W/kg = -9.55 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/25 Time: PM 09:13:02

101_1xEVDO 1900 CH600_Rev.A_side 6_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.479$ S/m; $\epsilon_r = 54.13$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (71x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0593 W/kg

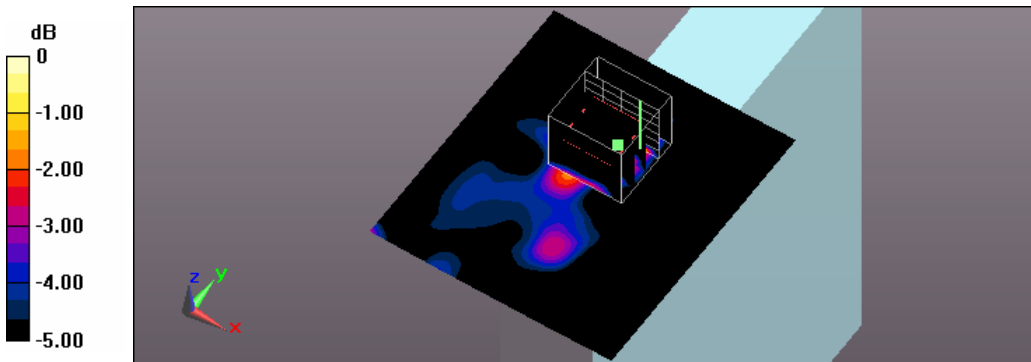
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.673 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.0950 W/kg

SAR(1 g) = 0.037 W/kg; SAR(10 g) = 0.015 W/kg

Maximum value of SAR (measured) = 0.0576 W/kg



0 dB = 0.0576 W/kg = -12.40 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/29 Time: PM 03:57:17

35_1xEVDO 1900 CH600_Rev.A_side6(side6 @ side2)_Rear 20 deg_0mm_w/

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, 1xEVDO PCS (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.479 \text{ S/m}$; $\epsilon_r = 54.13$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.46, 7.46, 7.46); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (81x111x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.0873 W/kg

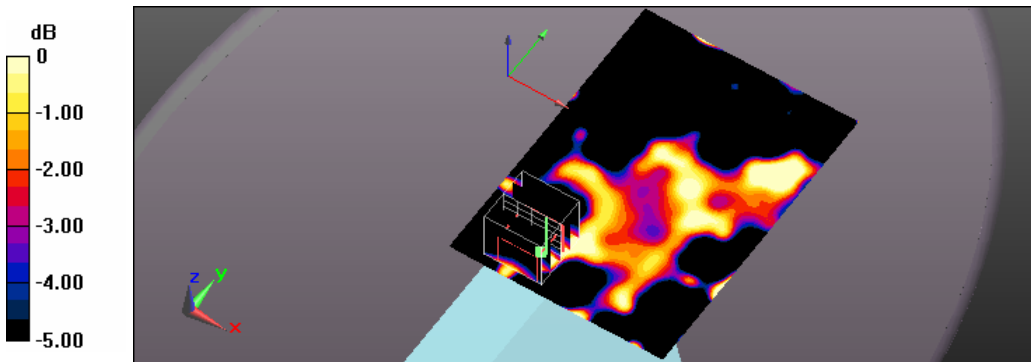
Flat/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 3.008 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.0520 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.017 W/kg

Maximum value of SAR (measured) = 0.0404 W/kg



0 dB = 0.0404 W/kg = -13.94 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2015/12/4 Time: AM 12:28:07

70_802.11b CH1_1M_side 3_0mm

DUT: CV90-JC339; Type: Intelligent Vehicle Gateway; Serial: 990002189589003

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.901 \text{ S/m}$; $\epsilon_r = 51.185$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

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

DASY Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3847; ConvF(7.29, 7.29, 7.29); Calibrated: 2015/1/30;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn541; Calibrated: 2015/2/3
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1133
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Flat/Area Scan (101x271x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.408 W/kg

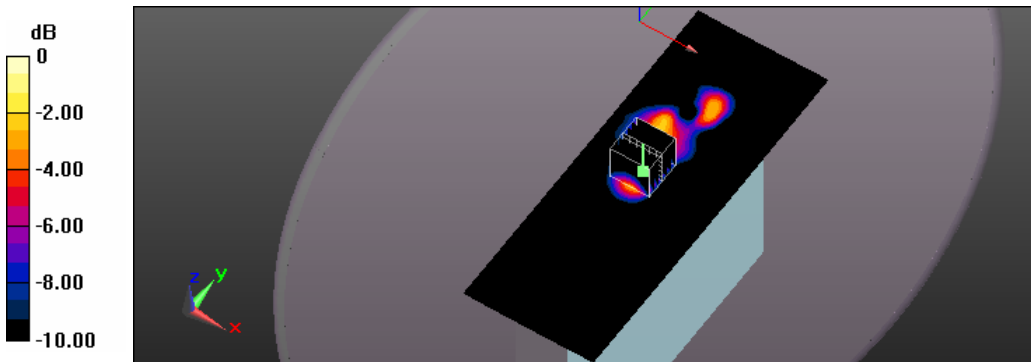
Flat/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.92 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.554 W/kg

SAR(1 g) = 0.287 W/kg; SAR(10 g) = 0.135 W/kg

Maximum value of SAR (measured) = 0.430 W/kg



0 dB = 0.430 W/kg = -3.67 dBW/kg