SAR TEST REPORT

Equipment Under Test	Tablet PC
Model Number of Host	i500
Module Model No.	6200ANHMW
Mode of Operation	WLAN 802.11 a/b/g/n(20M,40M) band
Company Name	Tabletkiosk
Company Address	2832 Columbia Street, Torrance, California 90503
Date of Receipt	2010.01.28
Date of Test(s)	2011.03.17
Date of Issue	2011.06.02

Standards:

FCC OET 65 supplement C,
IEEE /ANSI C95.1, C95.3, IEEE 1528
RSS-102

In the configuration tested, the EUT complied with the standards specified above.

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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Tested by : **Antony Wu** **Date** : **2011.06.02**
Sr. Engineer

Approved by : **Kelly Tsai** **Date** : **2011.06.02**
Supervisor

Version

Version No.	Date	Description
1.0	Mar. 30, 2011	Initial issue of report
1.1	May. 05, 2011	Modufy 1st report
1.2	May. 10, 2011	2nd modification
1.3	Jun. 02, 2011	3nd modification

Contents

1. General Information

1.1 Testing Laboratory

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1.2 Details of Applicant

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1.3 Description of EUT

EUT Name	Tablet PC
Model Number of Host	i500
Series Model	TS500,SlimBook 240 Series
Module Model No.	6200ANHMW
Brand Name.	Sahara, Tabletkiosk, PaceBlade

FCC ID	XHFTK500ABGNTS500		
IC ID	8434A-500TS500		
Definition	Production unit		
Mode of Operation	WLAN 802.11 a/b/g/n(20M & 40M)band		
Duty Cycle	WLAN 802.11 a/b/g/n(20M & 40M)		
	1		
TX Frequency range (MHz)	WLAN802.11 b/g	WLAN802.11 n (20M)	WLAN802.11n (40M)
	2412-2462	2412-2462	2422-2452
	WLAN 802.11a	WLAN802.11n (20M) 5G	WLAN802.11n (40M) 5G
	5180-5825	5180-5825	5190-5795
Channel Number (ARFCN)	WLAN802.11 b/g	WLAN802.11 n (20M)	WLAN802.11n (40M)
	1-11	1-11	3-9
	WLAN 802.11a	WLAN802.11n (20M) 5G	WLAN802.11n (40M) 5G
	36-165	36-165	38-159
Max. SAR Measured (1g)	**MAIN Antenna**		
	WLAN802.11a		
	0.521 W/kg (WLAN802.11a_WLAN MAIN Antenna _ CH120_ Configuration 6)		
	WLAN802.11b		
	0.071 W/kg (WLAN802.11b_WLAN MAIN Antenna _ CH11_ Configuration 6)		
	WLAN802.11n (20M)5G		
	0.437 W/kg (WLAN802.11n(20M)_ WLAN MAIN Antenna _ CH149_ Configuration 6)		

Max. SAR Measured (1g)	WLAN802.11n (40M)5G
	0.499 W/kg (WLAN802.11n(40M) _ WLAN MAIN Antenna _ CH118_ Configuration 6)
	AUX Antenna
	WLAN802.11a
	0.065 W/kg (WLAN802.11a_WLAN AUX Antenna _ CH157_ Configuration 2)
	WLAN802.11b
	0.015 W/kg (WLAN802.11b_WLAN AUX Antenna _ CH11_ Configuration 2)
	WLAN802.11n (20M)5G
	0.067 W/kg (WLAN802.11n(20M)_ WLAN AUX Antenna _ CH100_ Configuration 2)
	WLAN802.11n (40M)5G
	0.065 W/kg (WLAN802.11n(40M) _ WLAN AUX Antenna _ CH118_ Configuration 2)

Note:

1. The 1-g SAR for the highest output channel is less than 0.8 W/kg, where the transmission band corresponding to all channels is ≤ 100 MHz, testing for the other channels is not required.
2. The 1-g SAR for the highest output channel is less than 0.4 W/kg, where the transmission band corresponding to all channels is ≤ 200 MHz, testing for the other channels is not required.

Conducted Power

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11b	2412	1	16.56	2412	1	16.74
	2437	6	16.42	2437	6	16.58
	2462	11	16.65	2462	11	16.76

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11g	2412	1	15.43	2412	1	15.72
	2437	6	16.69	2437	6	16.54
	2462	11	15.51	2462	11	15.63

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 20M	2412	1	14.86	2412	1	14.62
	2437	6	16.67	2437	6	16.55
	2462	11	14.54	2462	11	14.46

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 40M	2422	3	12.38	2422	3	12.31
	2437	6	16.48	2437	6	16.45
	2452	9	12.41	2452	9	12.39

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 20M(5.2G)	5180	36	16.31	5180	36	16.24
	5260	52	16.42	5260	52	16.36
	5320	64	16.28	5320	64	16.22

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 20M(5.5G)	5500	100	16.71	5500	100	16.64
	5600	120	16.31	5600	120	16.24
	5700	140	16.51	5700	140	16.43

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 20M(5.8G)	5745	149	16.62	5745	149	16.68
	5785	157	16.48	5785	157	15.52
	5825	165	16.59	5825	165	16.64

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 40M(5.2G)	5190	38	16.67	5190	38	16.62
	5270	54	16.78	5270	54	16.72
	5310	62	16.79	5310	62	16.74

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 40M(5.5G)	5510	102	16.61	5510	102	16.53
	5590	118	16.64	5590	118	16.58
	5670	134	16.61	5670	134	16.57

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11n 40M(5.8G)	5755	151	16.74	5755	151	16.69
	5795	159	16.68	5795	159	16.63

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11a (5.2G)	5180	36	16.57	5180	36	16.48
	5200	40	16.31	5200	40	16.22
	5240	44	16.24	5240	44	16.18
	5240	48	16.27	5240	48	16.21
	5260	52	16.25	5260	52	16.18
	5280	56	16.42	5280	56	16.35
	5300	60	16.23	5300	60	16.16
	5320	64	16.24	5320	64	16.19

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11a (5.5G)	5500	100	16.51	5500	100	16.46
	5520	104	16.52	5520	104	16.49
	5540	108	16.45	5540	108	16.43
	5560	112	16.58	5560	112	16.54
	5560	116	16.61	5560	116	16.58
	5600	120	16.79	5600	120	16.65
	5620	124	16.53	5620	124	16.61
	5640	128	16.48	5640	128	16.41
	5660	132	16.41	5660	132	16.37
	5680	136	16.51	5680	136	16.49
	5700	140	16.47	5700	140	16.41

	Main Antenna			AUX Antenna		
EUT Mode	Frequency (MHz)	CH	AVG. Power (dBm)	Frequency (MHz)	CH	AVG. Power (dBm)
WLAN802.11a (5.8G)	5745	149	16.68	5745	149	16.64
	5765	153	16.65	5765	153	16.60
	5785	157	16.88	5785	157	16.81
	5805	161	16.75	5805	161	16.71
	5825	165	16.52	5825	165	16.44

1.4 Test Environment

Ambient Temperature：22±2° C

Tissue Simulating Liquid: 22±2° C

1.5 Operation description

Use chipset specific software to control the EUT, and makes it transmit in maximum power. Measurements are performed respectively on the lowest, middle and highest channels of the operating band(s).
The EUT is set to maximum power level during all tests, and at the beginning of each test the battery is fully charged.

We will test it with 2 configurations:

Configuration 1: Lap-held mode. (WLAN/Main & WLAN/AUX –to-user separation distance is 4mm) (Appendix-Fig.4)

Configuration 2: Primary portrait mode. (WLAN/main-to-edge of screen distance is 236mm; WLAN/AUX-to-edge of screen distance is 125mm. But SW not disable, SAR test is not required.) (Appendix-Fig.5)

Configuration 3: Secondary portrait mode. (WLAN/Main-to-user separation distance is 24 mm; WLAN/AUX-to-user separation distance is 134.5 mm.**) (Appendix-Fig.6)**

Configuration 4: Primary Landscape mode. (WLAN/main & WLAN/AUX –to-edge of screen distance is 220 mm. But SW not disable, SAR test is not required.) (Appendix-Fig.7)

Configuration 5: Secondary landscape mode. (WLAN/main & WLAN/AUX –to-edge of screen distance is 4mm. But SW not disable, SAR test is not required.) (Appendix-Fig.8)

Configuration 3 (WLAN/Aux) This is not the most conservative antenna-to-user distance at edge mode. According to **KDB447498 4)b)ii)(2),** SAR is required only for the edge with the most conservative exposure conditions.

According to **KDB248227**-SAR is not required for 802.11 g/HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.

1. WLAN Main antenna to BT antenna distance is **291.6mm**
   WLAN AUX antenna to BT antenna distance is **223.9mm**
   When the maximum transmitter and antenna output power are ≦ 60/f(GHz) (mW) SAR evaluation is typically not required for FCC or TCB approval
   (BT power= 2.35dBm < 13.8dBm_ (60/fGHz))
2. The maximum SAR value for licensed transmitter happens on WLAN 802.11a 5.5G Main antenna, happens on Secondary Portrait channel 120. The value is **0.521W/kg(1g)**. And the max SAR value for licensed transmitter WLAN 802.11n(20M)5.5G AUX antenna happens on Lap-held channel 100,.The SAR value is **0.067W/kg (1g)** . The summation of the 1g SAR is 0.521+0.067 = **0.588 W/kg < 1.6 W/kg.** According to **KDB648474/KDB447498**, Simultaneous SAR evaluation is not required.

1.6 The SAR Measurement System

A photograph of the SAR measurement System is given in Fig. a. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY 5 professional system). A Model EX3DV4 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ ($|Ei|^2$)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant.

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
- 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.
- 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.

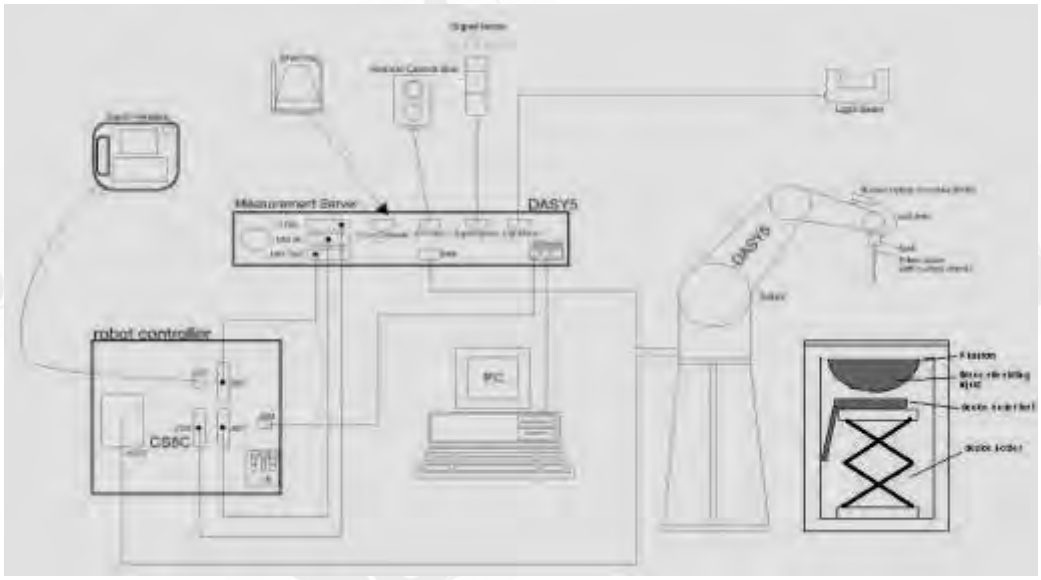


Fig.a The block diagram of SAR system

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
  - A computer operating Windows 2000 or Windows XP.
  - DASY5 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
  - The SAM twin phantom enabling testing left-hand and right-hand usage.
  - The device holder for handheld mobile phones.
  - Tissue simulating liquid mixed according to the given recipes.
  - Validation dipole kits allowing to validate the proper functioning of the system.

1.7 System Components

EX3DV4 E-Field Probe

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for MSL2450/5200/5500/5800 MHZ Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to > 6 GHz, Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

SAM PHANTOM V4.0C

Construction	The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.	
Shell Thickness	2 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Height: 850 mm; Length: 1000 mm; Width: 500 mm	

DEVICE HOLDER

Construction	The device holder (Supporter) for Notebook is made by POM (polyoxymethylene resin) , which is non-metal and non-conductive. The height can be adjusted to fit varies kind of notebooks.	 Device Holder

1.8 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. b. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 5% from the target SAR values. These tests were done at 2450/5200/5500/5800 MHz. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1 (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range 22.1°C, the relative humidity was in the range 62% and the liquid depth above the ear reference points was above 15 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

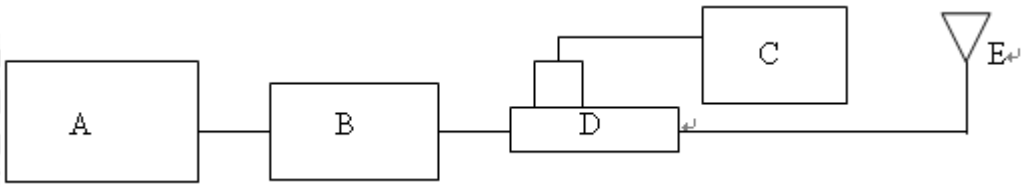
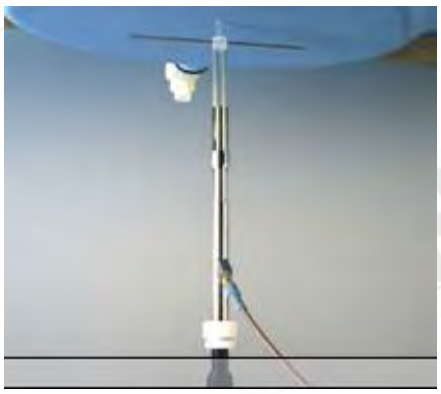


Fig.b The block diagram of system verification

A. Agilent Model 8648D Signal Generator
B. Mini circuits Model ZHL-42 Amplifier
C. Agilent Model U2001B Power Sensor
D. Agilent Model 777D Dual directional coupling
E. Reference dipole antenna



Photograph of the dipole Antenna

Validation Kit	Frequency Hz	Target SAR (1g) (Pin=250mW)	Measured SAR (1g)	Measured Date
D2450V2 S/N: 727	2450 MHz (Body)	13.4 mW/g	13.6 mW/g	2011-03-17
D5200V2 S/N:1040	5200 MHz (Body)	7.57 mW/g	7.22 mW/g	2011-03-17
D5500V2 S/N: 1040	5500 MHz (Body)	8.04 mW/g	7.95 mW/g	2011-03-17
D5800V2 S/N: 1040	5800 MHz (Body)	6.93 mW/g	6.97 mW/g	2011-03-17

Table 1. Results of system validation

1.9 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this body-simulant fluid were measured by using the Agilent Model 85070D Dielectric Probe (rates frequency band 200 MHz to 20 GHz) in conjunction with HP 8753D Network Analyzer (30 KHz-6000 MHz) by using a procedure detailed in Section V.

All dielectric parameters of tissue simulates were measured within 24 hours of SAR measurements. The depth of the tissue timulant in the ear reference point of the phantom was 15cm±5mm during all tests. (Fig .2)

Frequency (MHz)	Tissue type	Measurement date/ Limits	Dielectric Parameters		
			ρ	σ (S/m)	Simulated Tissue Temperature(° C)
2450	Body	Measured, 2011.03.17	52.5	1.96	21.7
		Recommended Limits	51.49-56.91	1.91-2.11	20-24
5200	Body	Measured, 2011.03.17	48.32	5.29	21.7
		Recommended Limits	45.13-49.88	5.24-5.80	20-24
5500	Body	Measured, 2011.03.17	47.59	5.75	21.7
		Recommended Limits	44.46-49.14	5.60-6.18	20-24
5800	Body	Measured, 2011.03.17	46.65	6.21	21.7
		Recommended Limits	43.80-48.41	5.95-6.57	20-24

Table 2. Dielectric Parameters of Tissue Simulant Fluid

1.10 Evaluation Procedures

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 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

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

The probe is calibrated at the center of the dipole sensors that is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated. The angle between the probe axis and the surface normal line is less than 30 degree.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extreme of the SAR distribution. The uncertainty on the locations of the extreme is less than 1/20 of the grid size. Only local maximum within –2 dB of the global maximum are searched and passed for the Cube Scan measurement. In the Cube Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). 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 5mm.

The maximum search is automatically performed after each area scan measurement. It is based on splines in two or three dimensions. The procedure can find the maximum for most SAR distributions even with relatively large grid spacing. After the area scanning measurement, the probe is automatically moved to a position at the interpolated maximum. The following scan can directly use this position for reference, e.g., for a finer resolution grid or the cube evaluations. The 1g and 10g peak evaluations are only available for the predefined cube 7x7x7 scans. The routines are verified and optimized for the grid dimensions used in these cube measurements.
The measured volume of 30x30x30mm contains about 30g of tissue.
The first procedure is an extrapolation (incl. Boundary correction) to get the points between the lowest measured plane and the surface. The next step uses 3D interpolation to get all points within the measured volume. In the last step, a 1g cube is placed numerically into the volume and its averaged SAR is calculated. This cube is the moved around until the highest averaged SAR is found. If the highest SAR is found at the edge of the measured volume, the system will issue a warning: higher SAR values might be found outside of the measured volume. In that case the cube measurement can be repeated, using the new interpolated maximum as the center.

1.11 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (“SAR”) in Section 4.2 of “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” ANSI/IEEE C95.1–1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in “Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields,” NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814.

SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube).

(2) Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(3) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.(Table .4)

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR (Brain)	1.60 m W/g	8.00 m W/g
Spatial Average SAR (Whole Body)	0.08 m W/g	0.40 m W/g
Spatial Peak SAR (Hands/Feet/Ankle/Wrist)	4.00 m W/g	20.00 m W/g

Table .3 RF exposure limits

Notes:

1. Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.
2. Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.

2. Summary of Results

WLAN802.11 b_ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
2450MHz	11	2462	16.65dBm	0.032	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
2450MHz	11	2462	16.65dBm	0.071	22.1	21.7

WLAN802.11 b_ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
2450MHz	11	2462	16.76dBm	0.015	22.1	21.7

WLAN802.11 n (20M) 5.2G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	52	5260	16.42dBm	0.080	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	52	5260	16.42dBm	0.112	22.1	21.7

WLAN802.11 n (20M) 5.2G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	52	5260	16.36dBm	0.049	22.1	21.7

WLAN802.11 n (20M) 5.5G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	100	5500	16.71dBm	0.107	22.1	21.7
Configuration 3: Secondary landscape mode.						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	100	5500	16.71dBm	0.339	22.1	21.7

WLAN802.11 n (20M) 5.5G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	100	5500	16.64dBm	**0.067**	22.1	21.7

WLAN802.11 n (20M) 5.8G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	149	5745	16.62dBm	0.113	22.1	21.7

Configuration 3: Secondary landscape mode.						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	149	5745	16.62dBm	0.437	22.1	21.7

WLAN802.11 n (20M) 5.8G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	149	5745	16.68dBm	0.064	22.1	21.7

WLAN802.11 n (40M) 5.2G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	62	5310	16.79dBm	0.084	22.1	21.7
Configuration 3: Secondary landscape mode.						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	62	5310	16.79dBm	0.166	22.1	21.7

WLAN802.11 n (40M) 5.2G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	62	5310	16.74dBm	0.055	22.1	21.7

WLAN802.11 n (40M) 5.5G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	118	5590	16.64dBm	0.115	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	118	5590	16.64dBm	0.499	22.1	21.7

WLAN802.11 n(40M) 5.5G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	118	5590	16.58dBm	0.065	22.1	21.7

WLAN802.11 n(40M) 5.8G _ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	151	5755	16.74dBm	0.117	22.1	21.7
Configuration 3: Secondary landscape mode.						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	151	5755	16.74dBm	0.395	22.1	21.7

WLAN802.11 n(40M) 5.8G _ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	151	5755	16.69dBm	0.056	22.1	21.7

WLAN802.11 a 5.2G_ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	36	5180	16.57dBm	0.051	22.1	21.7
	56	5280	16.42dBm	0.078	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	36	5180	16.57dBm	0.134	22.1	21.7
	56	5280	16.42dBm	0.187	22.1	21.7

WLAN802.11 a 5.2G_ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5200MHz	36	5180	16.48dBm	0.048	22.1	21.7
	56	5280	16.35dBm	0.054	22.1	21.7

WLAN802.11 a 5.5G_ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	116	5580	16.61dBm	0.075	22.1	21.7
	120	5600	16.79dBm	0.119	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	100	5500	16.51dBm	0.292	22.1	21.7
	104	5520	16.52dBm	0.359	22.1	21.7
	108	5540	16.45dBm	0.432	22.1	21.7
	112	5560	16.58dBm	0.473	22.1	21.7
	116	5580	16.61dBm	0.464	22.1	21.7
	120	5600	16.79dBm	**0.521**	22.1	21.7
	124	5620	16.53dBm	0.510	22.1	21.7
	128	5640	16.48dBm	0.488	22.1	21.7
	132	5660	16.41dBm	0.493	22.1	21.7
	136	5680	16.51dBm	0.468	22.1	21.7
	140	5700	16.47dBm	0.431	22.1	21.7

WLAN802.11 a 5.5G_ WLAN AUX Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5500MHz	116	5580	16.58dBm	0.058	22.1	21.7
	120	5600	16.65dBm	0.061	22.1	21.7

WLAN802.11 a 5.8G_ WLAN MAIN Antenna

Configuration 1: Lap-held mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	157	5785	16.88dBm	0.108	22.1	21.7
	161	5805	16.75dBm	0.122	22.1	21.7
Configuration 3: Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	157	5785	16.88dBm	0.340	22.1	21.7
	161	5805	16.75dBm	0.275	22.1	21.7

WLAN802.11 a 5.8G_ WLAN AUX Antenna

Configuration 1: Lap-held Secondary landscape mode						
Frequency	Channel	MHz	Conducted Output Power (Average)	Measured(W/kg) 1g	Amb. Temp[˚C]	Liquid Temp[˚C]
5800MHz	157	5785	16.81dBm	0.065	22.1	21.7
	161	5805	16.71dBm	0.064	22.1	21.7

Note: The SAR measurement results with transmitter at maximum output power.

3. Instruments List

Manufacturer	Device	Type	Serial number	Date of last calibration
Schmid & Partner Engineering AG	Dosimetric E-Field Probe	EX3DV4	3703	Jan.24.2011
Schmid & Partner Engineering AG	2450/5200/5500/5800 MHz System Validation Dipole	D2450V2	727	Apr.29.2010
		D5GHzV2	1040	Jun.23.2010
Schmid & Partner Engineering AG	Data acquisition Electronics	DAE4	856	May.20.2010
Schmid & Partner Engineering AG	Software	DASY 5 V5.0 Build125	N/A	Calibration not required
Schmid & Partner Engineering AG	Phantom	SAM	N/A	Calibration not required
Agilent	Network Analyzer	8753D	3410A05547	Mar.16.2011
Agilent	Dielectric Probe Kit	85070D	US01440168	Calibration not required
Agilent	Dual-directional coupler	777D	50114	Aug.25.2010
Agilent	RF Signal Generator	8648D	3847M00432	Jun.04.2010
Agilent	Power Sensor	U2001B	MY48100169	Apr.30.2010

4. Measurements

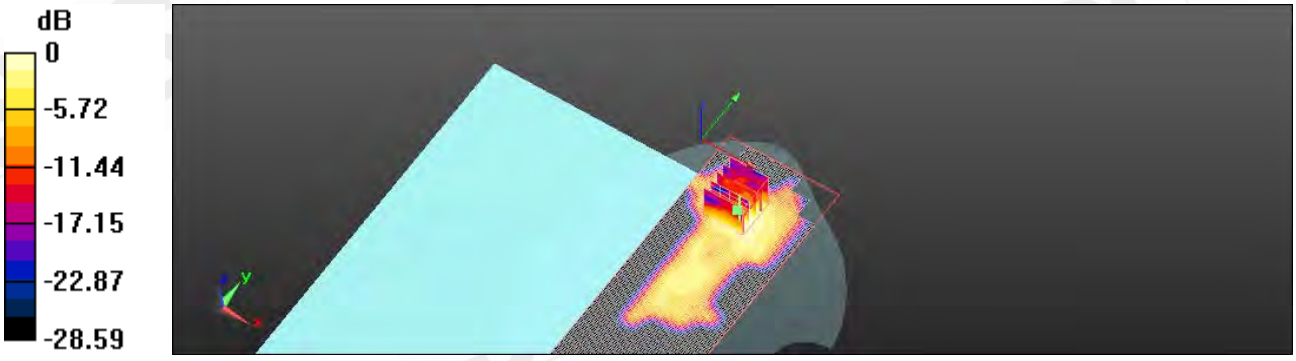
Date: 3/17/2011

Configuration 1_WLAN802.11b_CH11_Main Antenna

DUT: i500
Communication System: WLAN802.11 b & g & n(20M)(40M); Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 1.975 mho/m; ε_r = 52.215; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(6.82, 6.82, 6.82); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.034 mW/g
Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.940 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.069 W/kg
SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.015 mW/g
Maximum value of SAR (measured) = 0.033 mW/g



0 dB = 0.030mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11b_CH11_Main Antenna

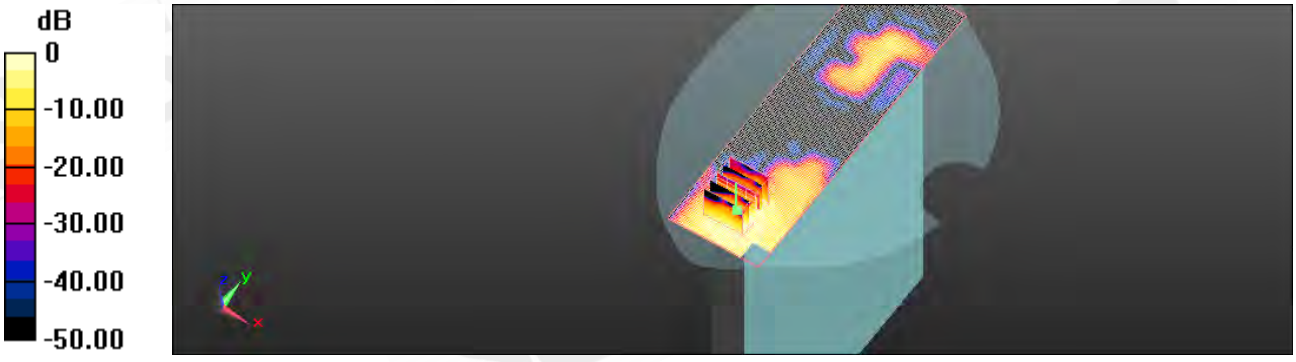
DUT: i500
Communication System: WLAN802.11 b & g & n(20M)(40M); Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 1.975 mho/m; ε_r = 52.215; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(6.82, 6.82, 6.82); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.093 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.381 V/m; Power Drift = 5.97 dB
Peak SAR (extrapolated) = 0.165 W/kg

SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.031 mW/g
Maximum value of SAR (measured) = 0.082 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11b_CH11_AUX Antenna

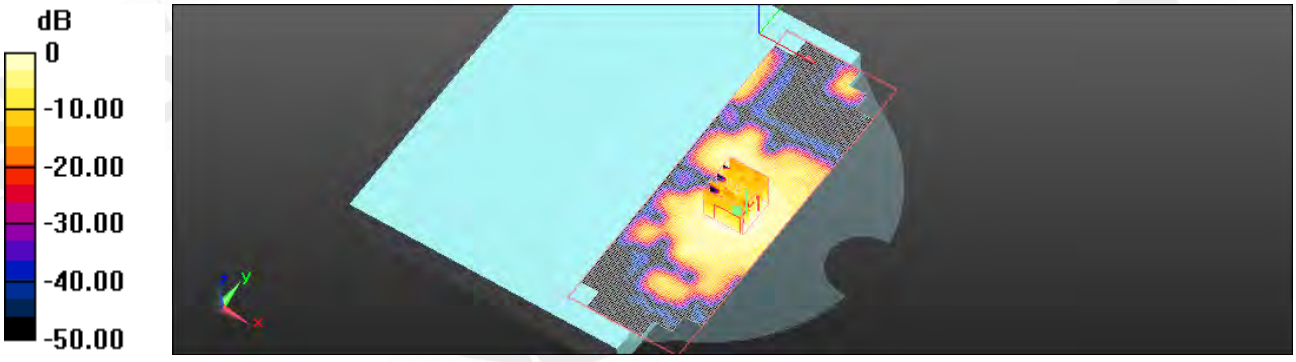
DUT: i500
Communication System: WLAN802.11 b & g & n(20M)(40M); Frequency: 2462 MHz
Medium parameters used: f = 2462 MHz; σ = 1.975 mho/m; ε_r = 52.215; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(6.82, 6.82, 6.82); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.019 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.696 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.025 W/kg

SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00805 mW/g
Maximum value of SAR (measured) = 0.017 mW/g



0 dB = 0.020mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.2G_CH52_Main Antenna

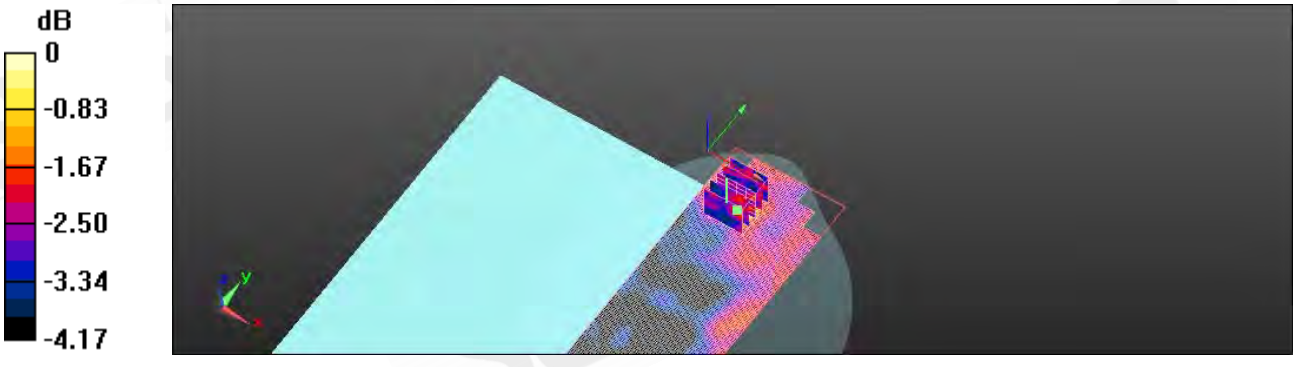
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5260 MHz
Medium parameters used: f = 5260 MHz; σ = 5.422 mho/m; ε_r = 48.196; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.102 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.325 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.133 W/kg

SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.096 mW/g



0 dB = 0.100mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(20M)5.2G_CH52_Main Antenna

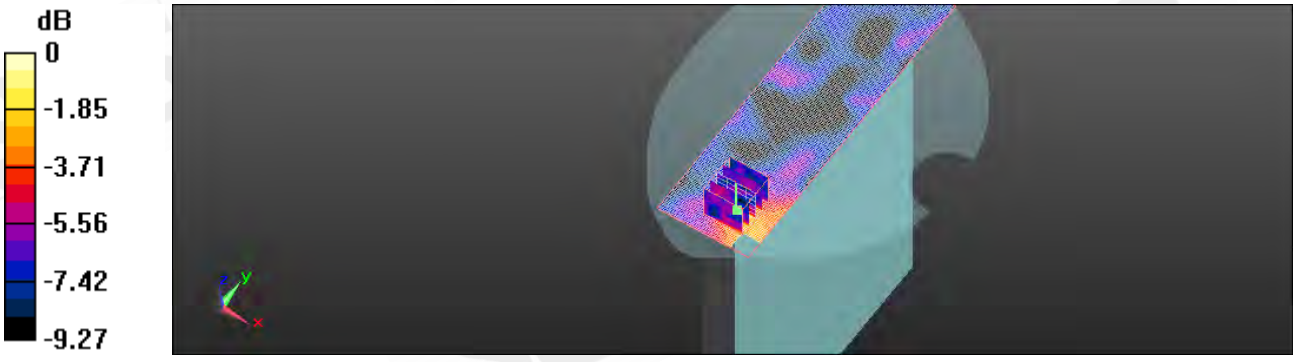
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5260 MHz
Medium parameters used: f = 5260 MHz; σ = 5.422 mho/m; ε_r = 48.196; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.124 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.486 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.253 W/kg

SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.060 mW/g
Maximum value of SAR (measured) = 0.137 mW/g



0 dB = 0.140mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.2G_CH52_AUX Antenna

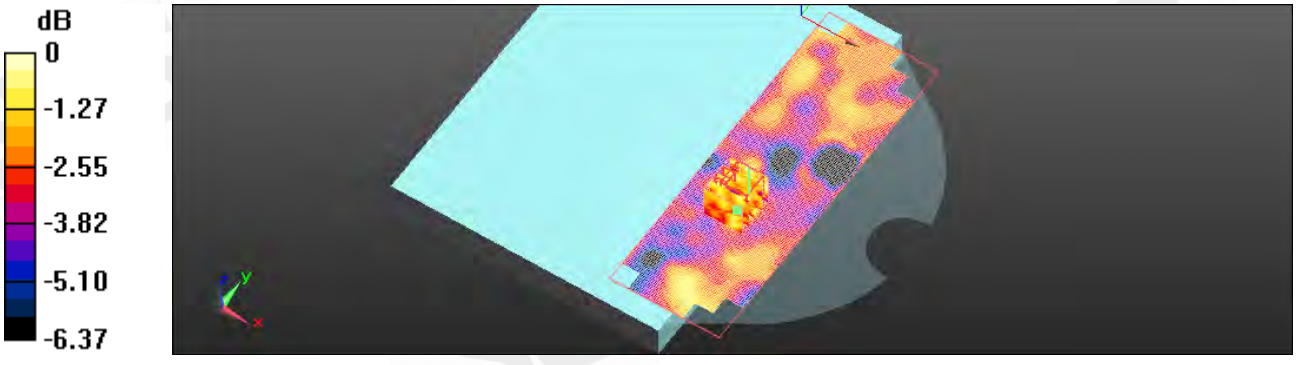
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5260 MHz
Medium parameters used: f = 5260 MHz; σ = 5.422 mho/m; ε_r = 48.196; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.053 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.694 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.137 W/kg

SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.041 mW/g
Maximum value of SAR (measured) = 0.062 mW/g



0 dB = 0.060mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.5G_CH100_Main Antenna

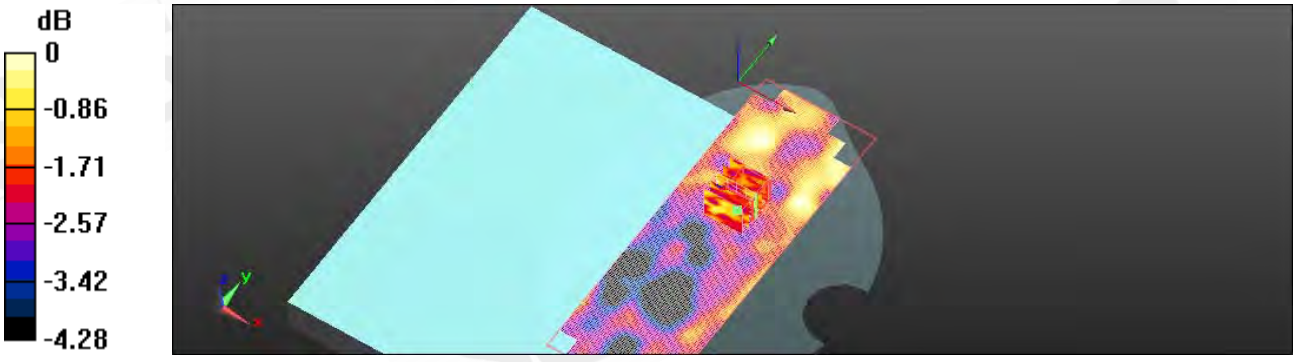
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.757 mho/m; ε_r = 47.595; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.0897 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.298 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.619 W/kg

SAR(1 g) = 0.107 mW/g; SAR(10 g) = 0.071 mW/g
Maximum value of SAR (measured) = 0.066 mW/g



0 dB = 0.070mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(20M)5.5G_CH100_Main Antenna

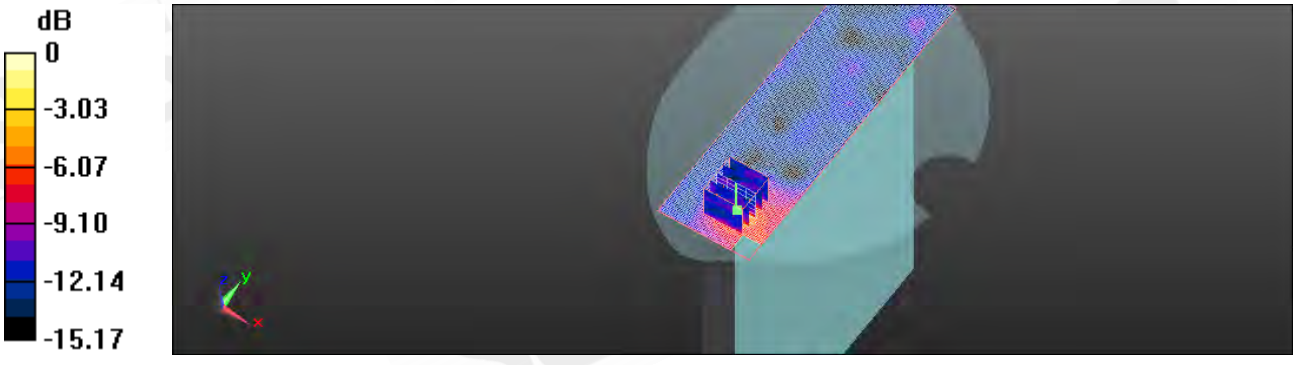
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.757 mho/m; ε_r = 47.595; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.416 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.521 V/m; Power Drift = 0.21 dB
Peak SAR (extrapolated) = 0.912 W/kg

SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.130 mW/g
Maximum value of SAR (measured) = 0.479 mW/g



0 dB = 0.480mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.5G_CH100_AUX Antenna

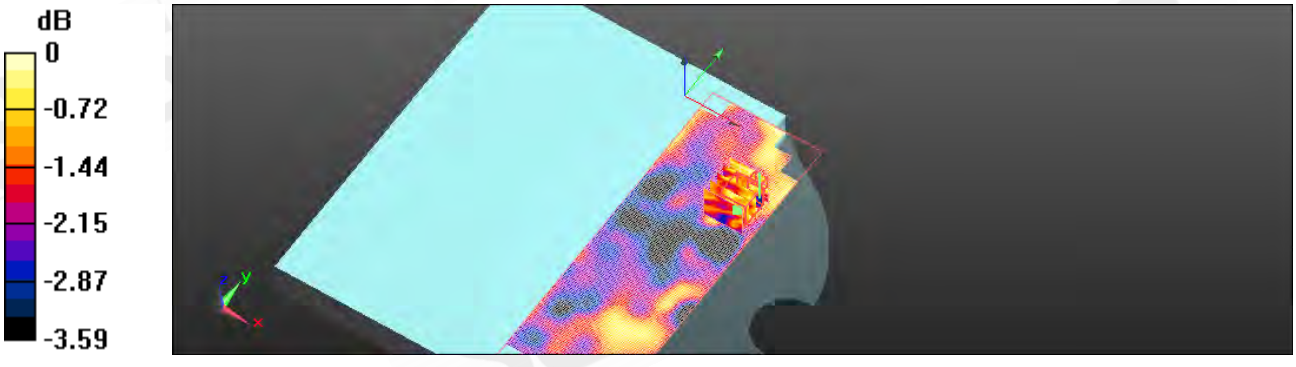
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.757 mho/m; ε_r = 47.595; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.083 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.419 V/m; Power Drift = 0.041 dB
Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.082 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.8G_CH149_Main Antenna

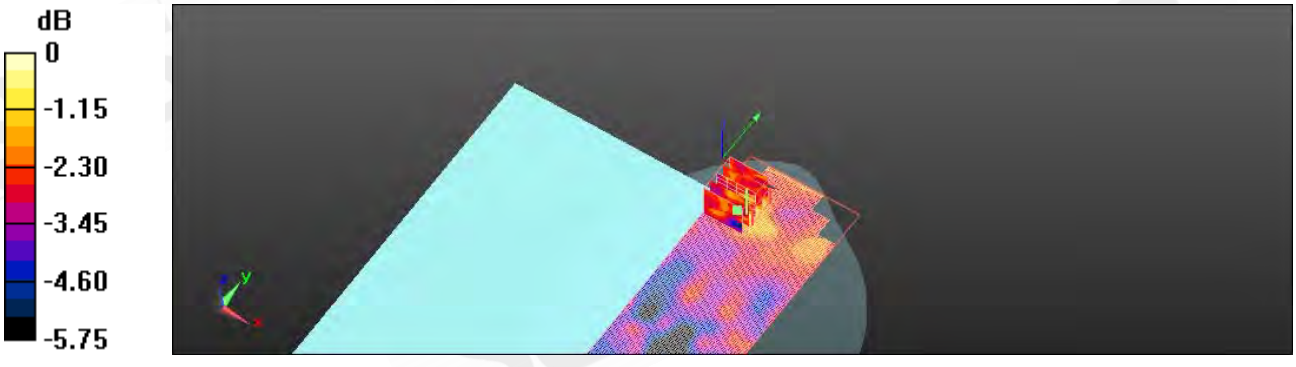
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 6.107 mho/m; ε_r = 46.867; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.107 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.914 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.202 W/kg

SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.078 mW/g
Maximum value of SAR (measured) = 0.150 mW/g



0 dB = 0.150mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(20M)5.8G_CH149_Main Antenna

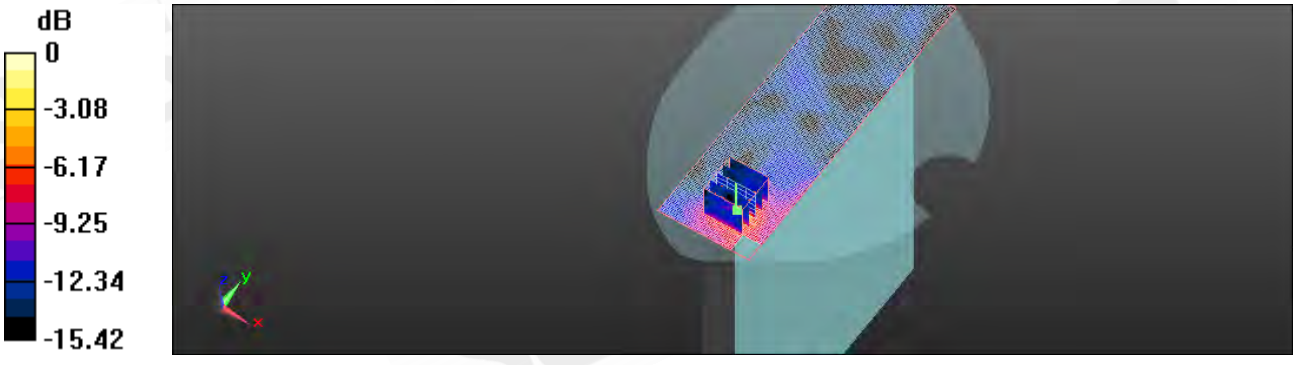
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 6.107 mho/m; ε_r = 46.867; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.620 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.522 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.255 W/kg

SAR(1 g) = 0.437 mW/g; SAR(10 g) = 0.156 mW/g
Maximum value of SAR (measured) = 0.631 mW/g



0 dB = 0.630mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(20M)5.8G_CH149_AUX Antenna

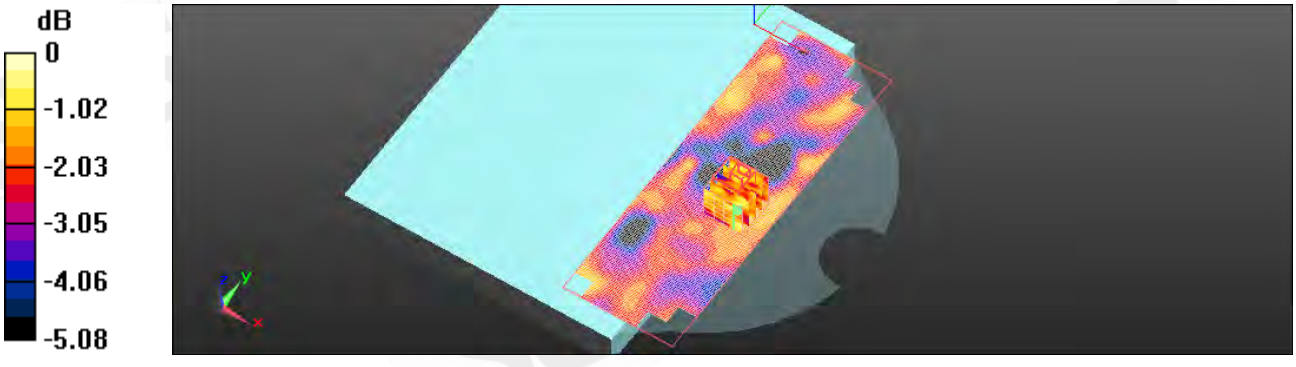
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5745 MHz
Medium parameters used: f = 5745 MHz; σ = 6.107 mho/m; ε_r = 46.867; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.065 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.030 V/m; Power Drift = 0.045 dB
Peak SAR (extrapolated) = 0.100 W/kg

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.056 mW/g
Maximum value of SAR (measured) = 0.076 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.2G_CH62_Main Antenna

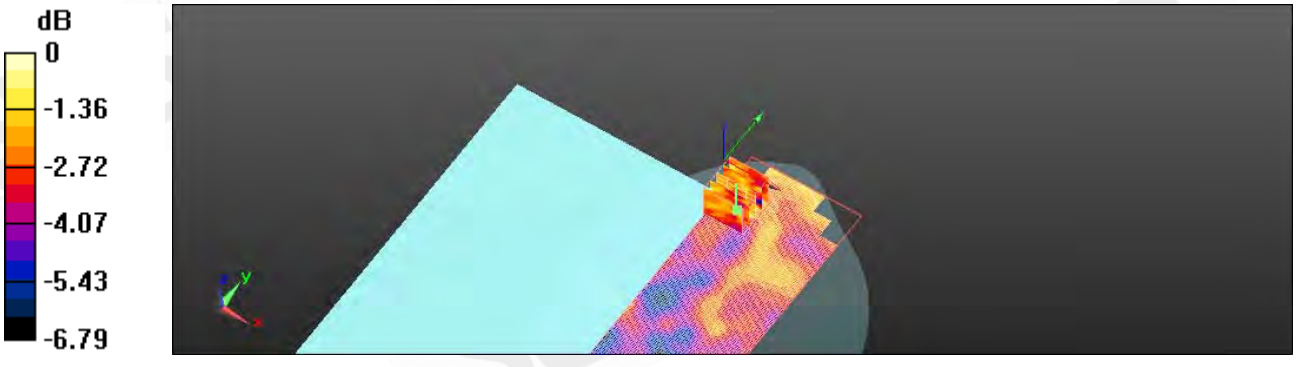
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 5.509 mho/m; ε_r = 48.067; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.075 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.576 V/m; Power Drift = 0.136 dB
Peak SAR (extrapolated) = 0.222 W/kg

SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.059 mW/g
Maximum value of SAR (measured) = 0.086 mW/g



0 dB = 0.090mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(40M)5.2G_CH62_Main Antenna

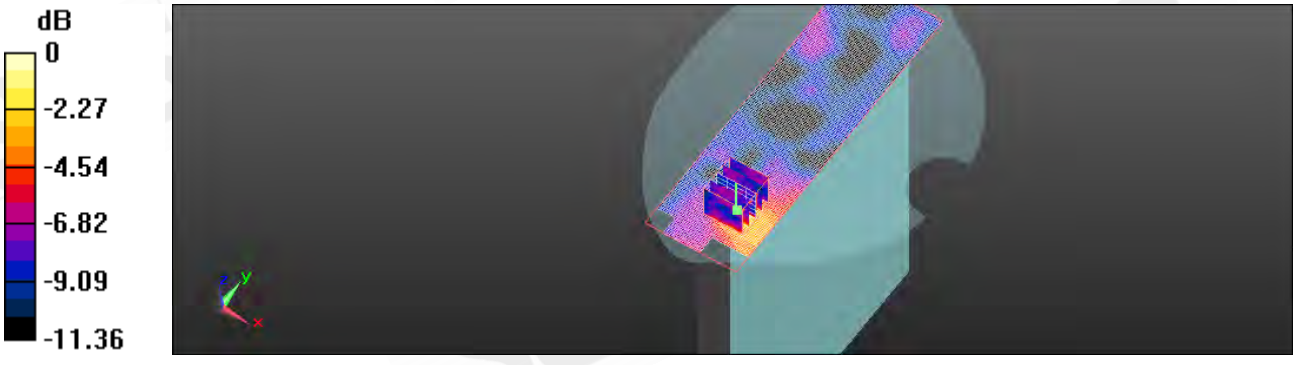
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 5.509 mho/m; ε_r = 48.067; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.191 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.505 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.395 W/kg

SAR(1 g) = 0.166 mW/g; SAR(10 g) = 0.079 mW/g
Maximum value of SAR (measured) = 0.205 mW/g



0 dB = 0.210mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.2G_CH62_AUX Antenna

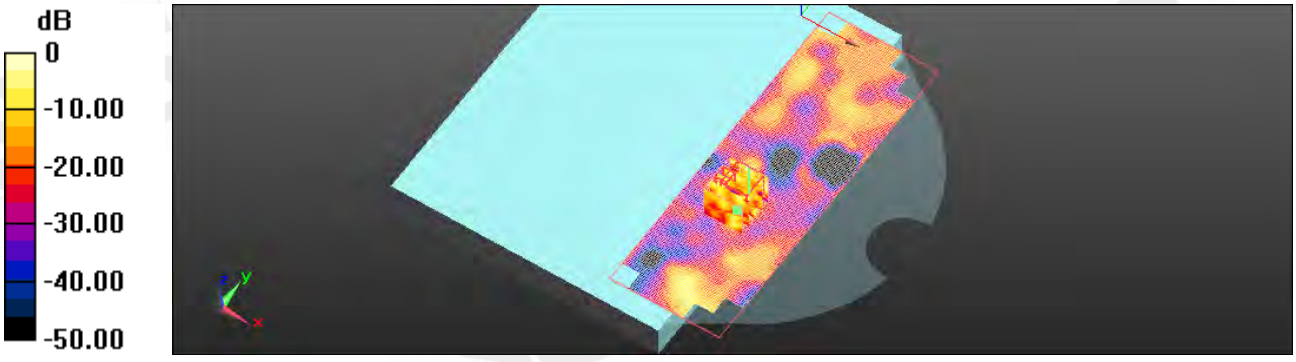
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5310 MHz
Medium parameters used: f = 5310 MHz; σ = 5.509 mho/m; ε_r = 48.067; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.053 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.515 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.069 W/kg

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.064 mW/g



0 dB = 0.060mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.5G_CH118_Main Antenna

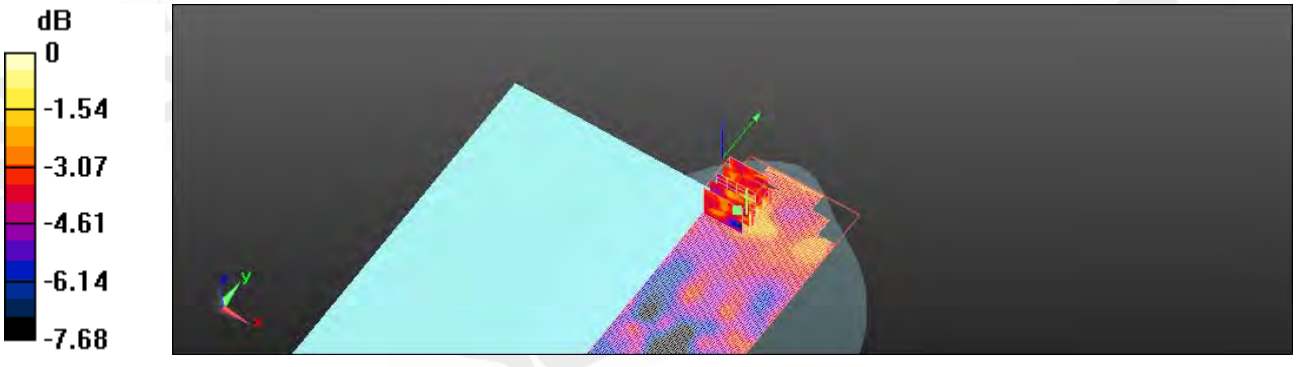
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5590 MHz
Medium parameters used: f = 5590 MHz; σ = 5.903 mho/m; ε_r = 47.426; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.094 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.221 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.354 W/kg

SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.126 mW/g



0 dB = 0.130mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(40M)5.5G_CH118_Main Antenna

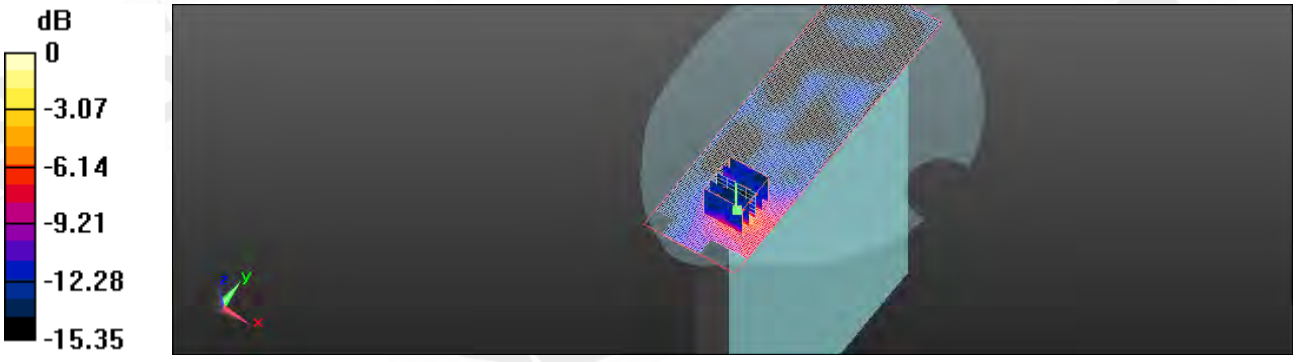
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5590 MHz
Medium parameters used: f = 5590 MHz; σ = 5.903 mho/m; ε_r = 47.426; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.717 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.655 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 1.420 W/kg

SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.183 mW/g
Maximum value of SAR (measured) = 0.712 mW/g



0 dB = 0.710mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.5G_CH118_AUX Antenna

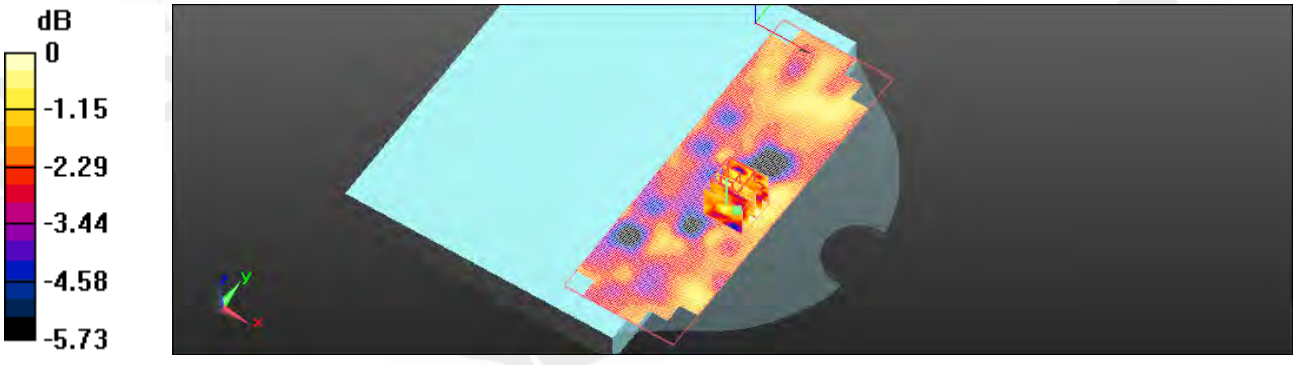
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5590 MHz
Medium parameters used: f = 5590 MHz; σ = 5.903 mho/m; ε_r = 47.426; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.064 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.981 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.084 W/kg

SAR(1 g) = 0.065 mW/g; SAR(10 g) = 0.056 mW/g
Maximum value of SAR (measured) = 0.084 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.8G_CH151_Main Antenna

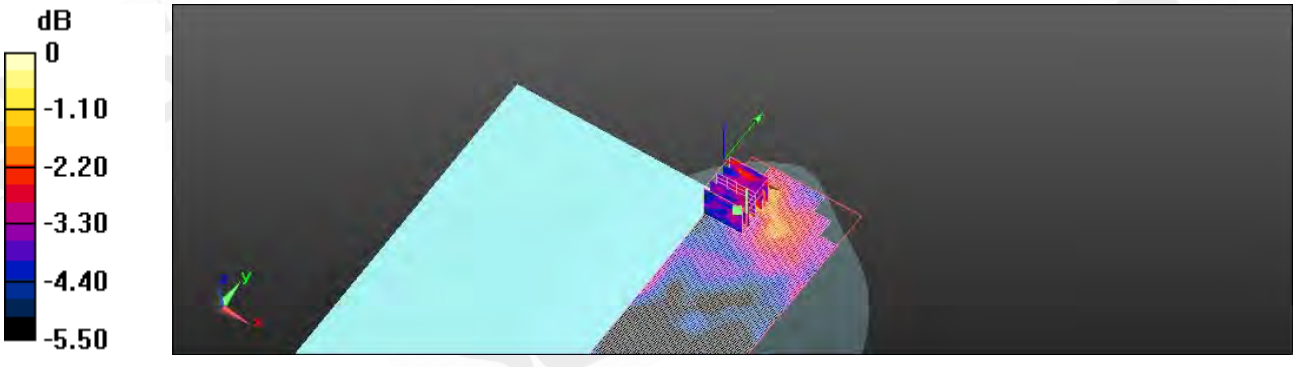
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5755 MHz
Medium parameters used: f = 5755 MHz; σ = 6.125 mho/m; ε_r = 46.806; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.103 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.604 V/m; Power Drift = 0.141 dB
Peak SAR (extrapolated) = 0.213 W/kg

SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.076 mW/g
Maximum value of SAR (measured) = 0.130 mW/g



0 dB = 0.130mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11n(40M) 5.8G_CH151_Main Antenna

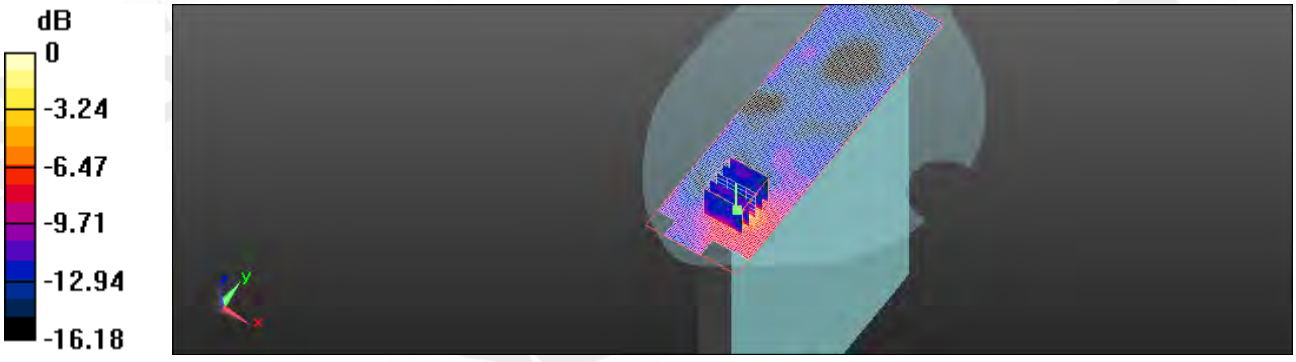
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5755 MHz
Medium parameters used: f = 5755 MHz; σ = 6.125 mho/m; ε_r = 46.806; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.646 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.829 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 1.135 W/kg

SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.144 mW/g
Maximum value of SAR (measured) = 0.607 mW/g



0 dB = 0.610mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11n(40M)5.8G_CH151_AUX Antenna

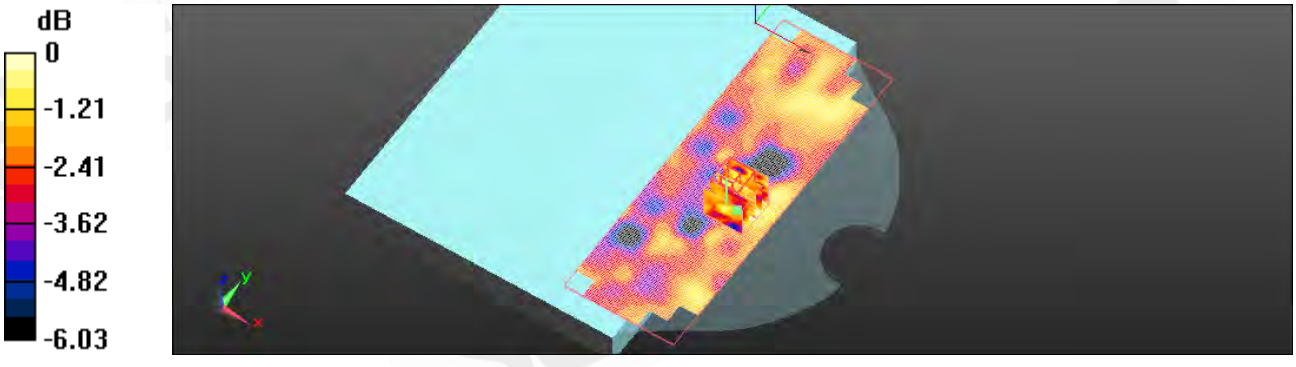
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5755 MHz
Medium parameters used: f = 5755 MHz; σ = 6.125 mho/m; ε_r = 46.806; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.062 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.621 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.067 W/kg

SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.048 mW/g
Maximum value of SAR (measured) = 0.067 mW/g



0 dB = 0.070mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.2G_CH36_Main Antenna

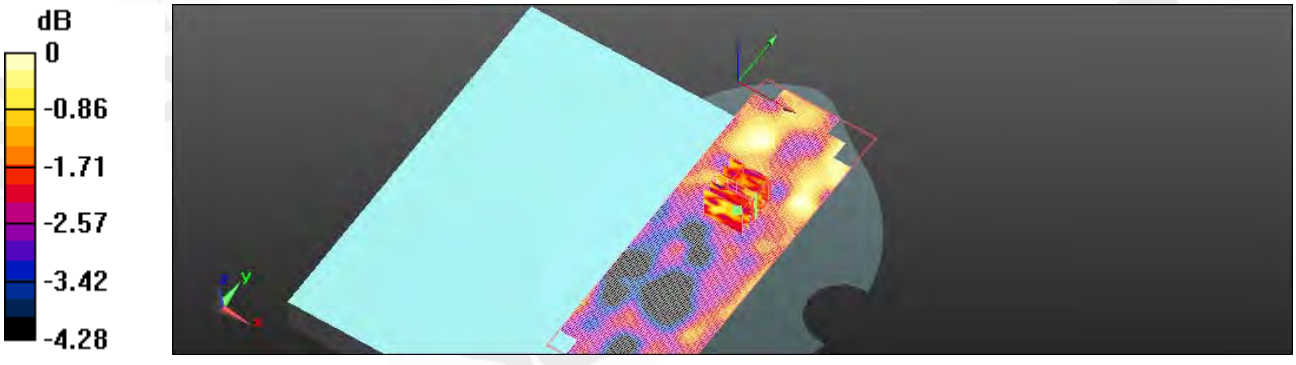
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5180 MHz
Medium parameters used: f = 5180 MHz; σ = 5.273 mho/m; ε_r = 48.384; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(4, 4, 4); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.115 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.177 V/m; Power Drift = -0.085 dB
Peak SAR (extrapolated) = 0.069 W/kg

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.047 mW/g
Maximum value of SAR (measured) = 0.066 mW/g



0 dB = 0.070mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.2G_CH56_Main Antenna

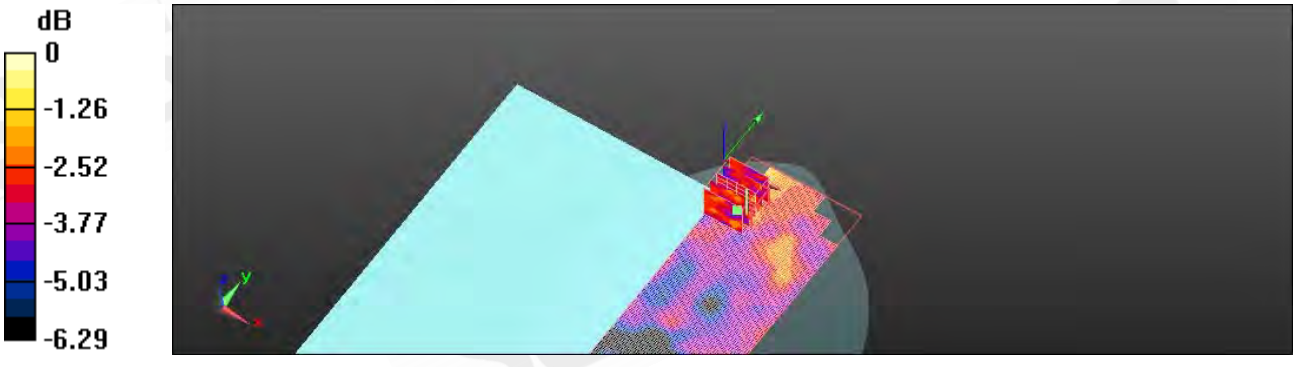
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.452 mho/m; ε_r = 48.115; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.073 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.553 V/m; Power Drift = 0.165 dB
Peak SAR (extrapolated) = 0.139 W/kg

SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.057 mW/g
Maximum value of SAR (measured) = 0.095 mW/g



0 dB = 0.100mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.2G_CH36_Main Antenna

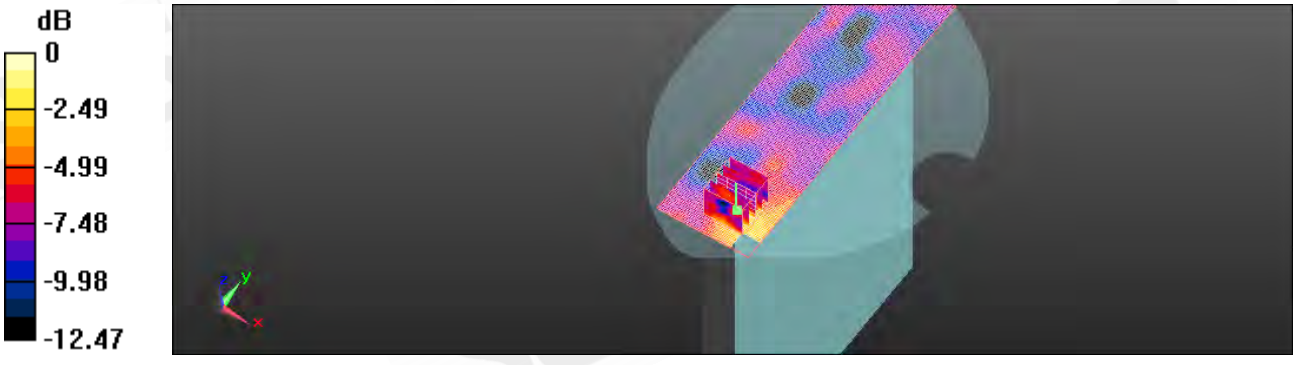
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5180 MHz
Medium parameters used: f = 5180 MHz; σ = 5.273 mho/m; ε_r = 48.384; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(4, 4, 4); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.134 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.494 V/m; Power Drift = -0.124 dB
Peak SAR (extrapolated) = 0.650 W/kg

SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.062 mW/g
Maximum value of SAR (measured) = 0.142 mW/g



0 dB = 0.140mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.2G_CH56_Main Antenna

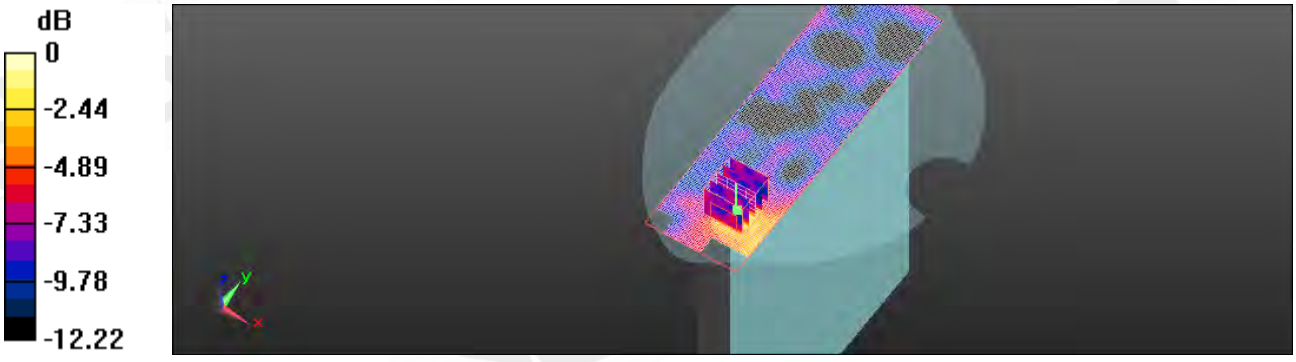
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.452 mho/m; ε_r = 48.115; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.182 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.256 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.864 W/kg

SAR(1 g) = 0.187 mW/g; SAR(10 g) = 0.081 mW/g
Maximum value of SAR (measured) = 0.185 mW/g



0 dB = 0.190mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.2G_CH36_AUX Antenna

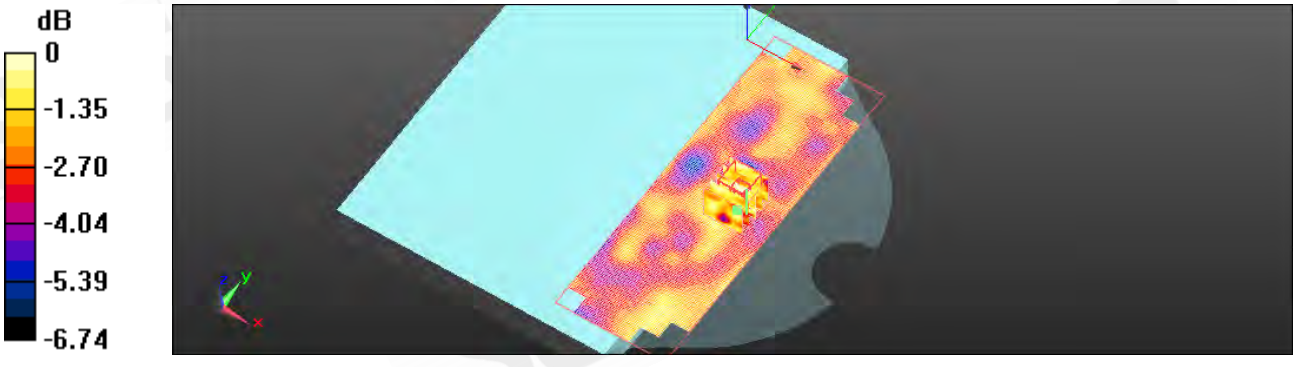
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5180 MHz
Medium parameters used: f = 5180 MHz; σ = 5.273 mho/m; ε_r = 48.384; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(4, 4, 4); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.054 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.317 V/m; Power Drift = 0.170 dB
Peak SAR (extrapolated) = 0.058 W/kg

SAR(1 g) = 0.048 mW/g; SAR(10 g) = 0.042 mW/g
Maximum value of SAR (measured) = 0.058 mW/g



0 dB = 0.060mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.2G_CH56_AUX Antenna

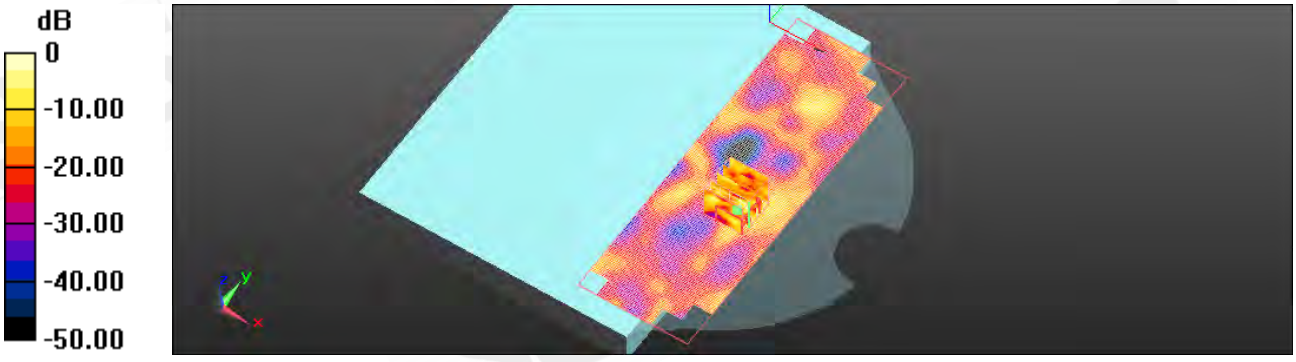
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5280 MHz
Medium parameters used: f = 5280 MHz; σ = 5.452 mho/m; ε_r = 48.115; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.050 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.402 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.161 W/kg

SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.043 mW/g
Maximum value of SAR (measured) = 0.063 mW/g



0 dB = 0.060mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.5G_CH116_Main Antenna

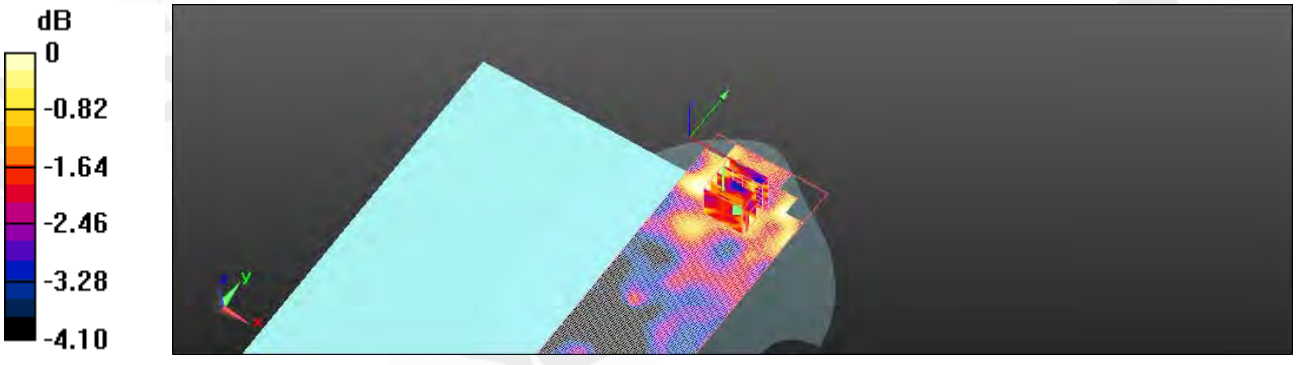
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5580 MHz
Medium parameters used: f = 5580 MHz; σ = 5.896 mho/m; ε_r = 47.456; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.100 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.155 V/m; Power Drift = 0.134 dB
Peak SAR (extrapolated) = 0.152 W/kg

SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.063 mW/g
Maximum value of SAR (measured) = 0.092 mW/g



0 dB = 0.090mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.5G_CH120_Main Antenna

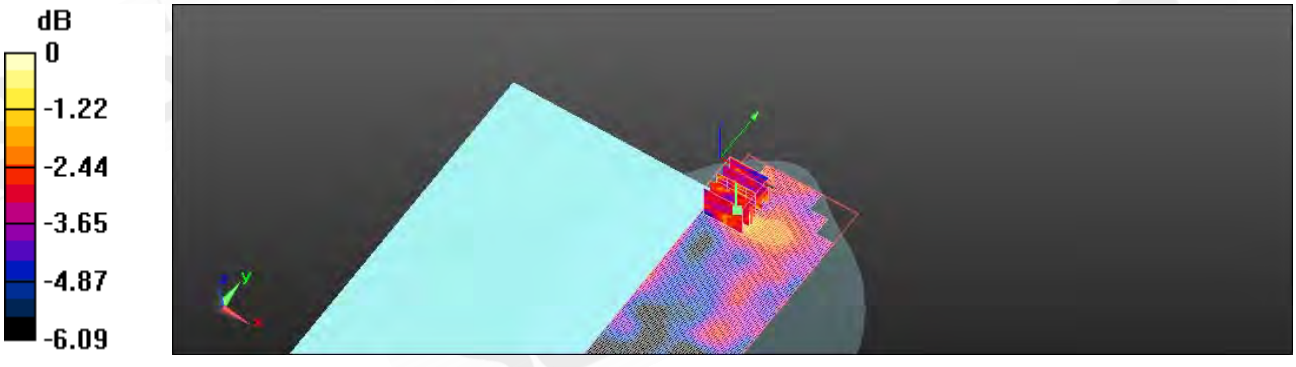
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.911 mho/m; ε_r = 47.396; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.096 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.867 V/m; Power Drift = 0.058 dB
Peak SAR (extrapolated) = 0.297 W/kg

SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.130 mW/g



0 dB = 0.130mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH100_Main Antenna

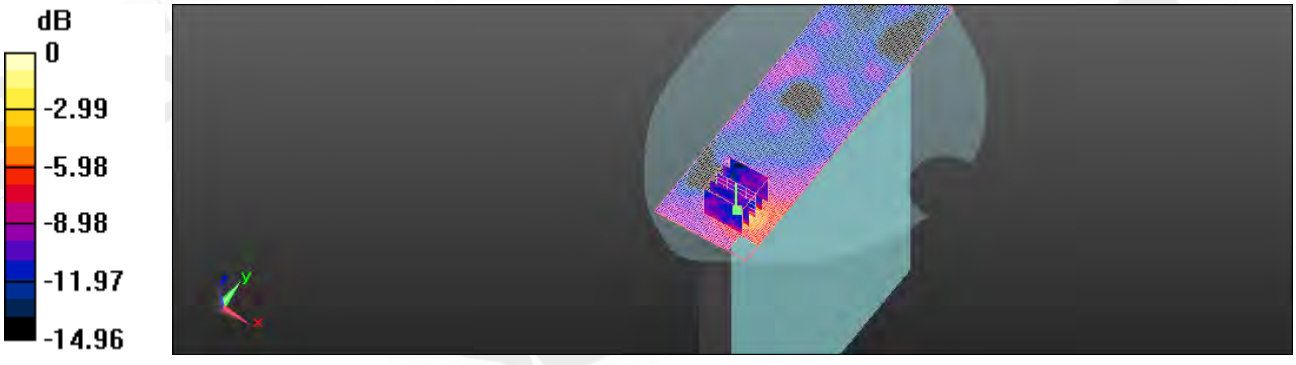
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.757 mho/m; ε_r = 47.595; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.385 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.152 V/m; Power Drift = 0.160 dB
Peak SAR (extrapolated) = 0.791 W/kg

SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.116 mW/g
Maximum value of SAR (measured) = 0.408 mW/g



0 dB = 0.410mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH104_Main Antenna

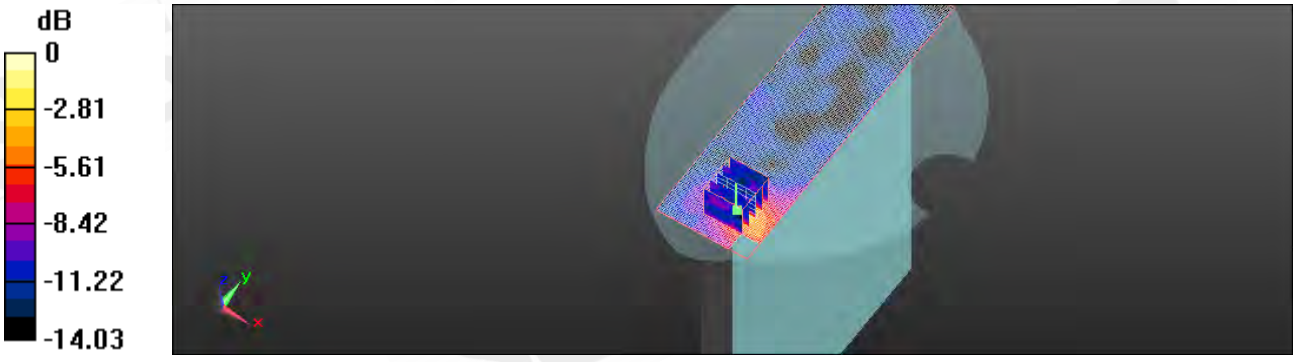
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5520 MHz
Medium parameters used: f = 5520 MHz; σ = 5.786 mho/m; ε_r = 47.573; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.474 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.983 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.957 W/kg

SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.143 mW/g
Maximum value of SAR (measured) = 0.458 mW/g



0 dB = 0.460mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH108_Main Antenna

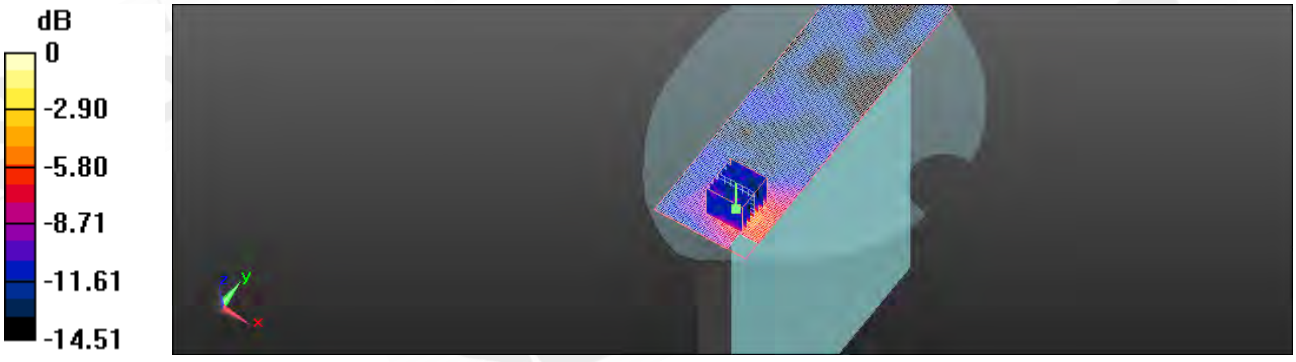
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5540 MHz
Medium parameters used: f = 5540 MHz; σ = 5.827 mho/m; ε_r = 47.534; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.491 mW/g

Configuration/Body/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.224 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 1.357 W/kg

SAR(1 g) = 0.432 mW/g; SAR(10 g) = 0.153 mW/g
Maximum value of SAR (measured) = 0.525 mW/g



0 dB = 0.520mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH112_Main Antenna

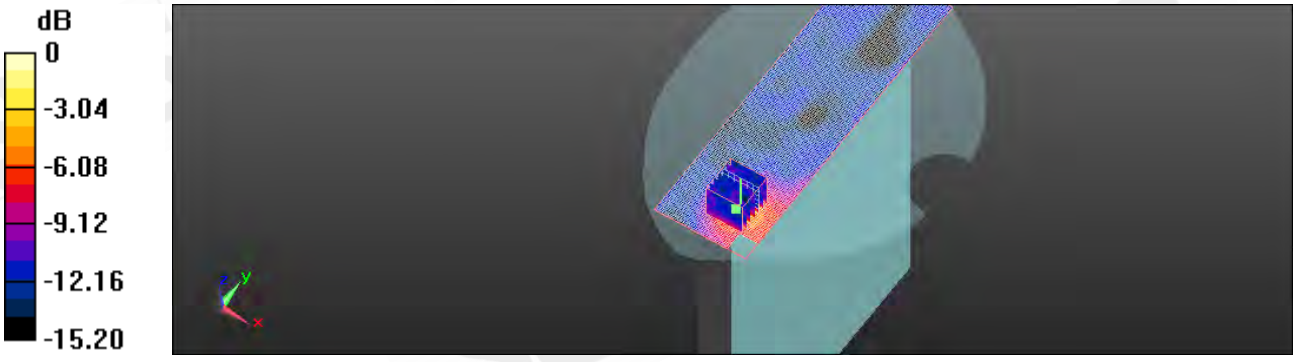
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5560 MHz
Medium parameters used: f = 5560 MHz; σ = 5.907 mho/m; ε_r = 47.502; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.550 mW/g

Configuration/Body/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.130 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.468 W/kg

SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.167 mW/g
Maximum value of SAR (measured) = 0.553 mW/g



0 dB = 0.550mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH116_Main Antenna

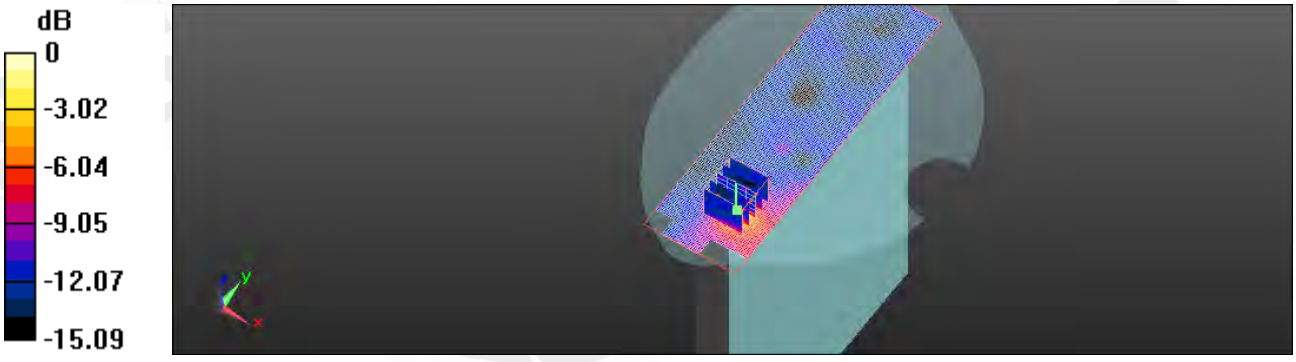
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5580 MHz
Medium parameters used: f = 5580 MHz; σ = 5.896 mho/m; ε_r = 47.456; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.759 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.098 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 1.274 W/kg

SAR(1 g) = 0.464 mW/g; SAR(10 g) = 0.179 mW/g
Maximum value of SAR (measured) = 0.627 mW/g



0 dB = 0.630mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH120_Main Antenna

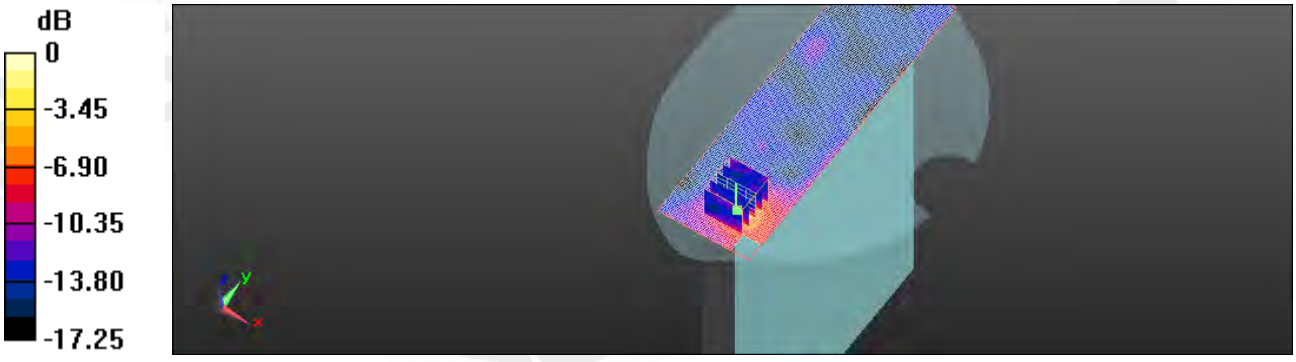
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.911 mho/m; ε_r = 47.396; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

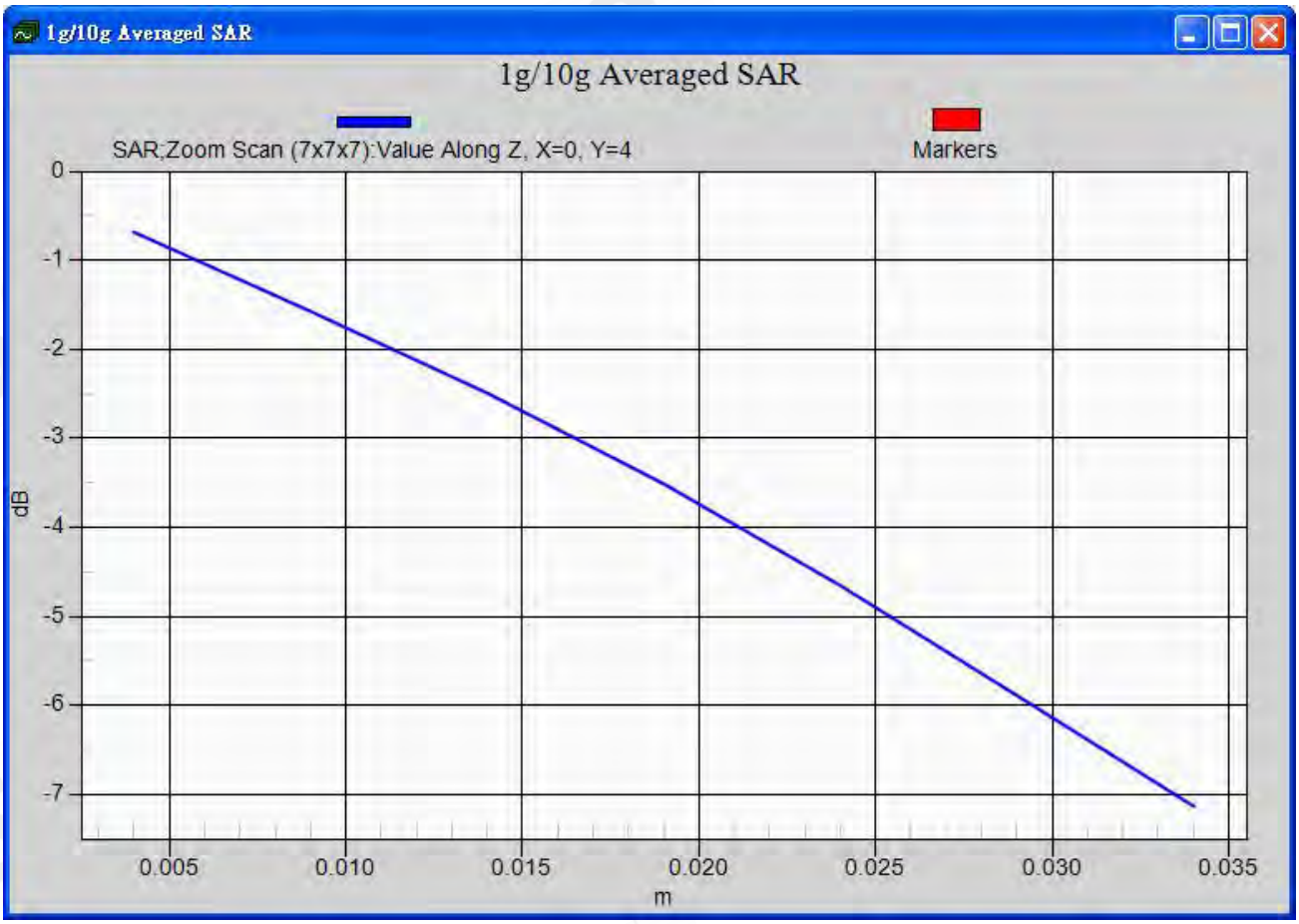
Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.724 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.215 V/m; Power Drift = 0.105 dB
Peak SAR (extrapolated) = 1.487 W/kg

SAR(1 g) = 0.521 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.749 mW/g



0 dB = 0.750mW/g



Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH124_Main Antenna

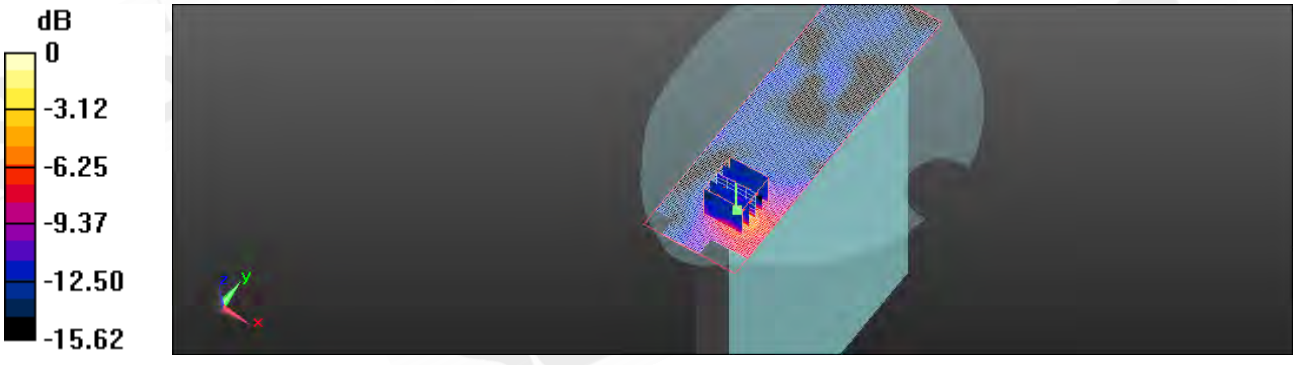
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5620 MHz
Medium parameters used: f = 5620 MHz; σ = 5.932 mho/m; ε_r = 47.233; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.773 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.775 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.474 W/kg

SAR(1 g) = 0.510 mW/g; SAR(10 g) = 0.187 mW/g
Maximum value of SAR (measured) = 0.718 mW/g



0 dB = 0.720mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH128_Main Antenna

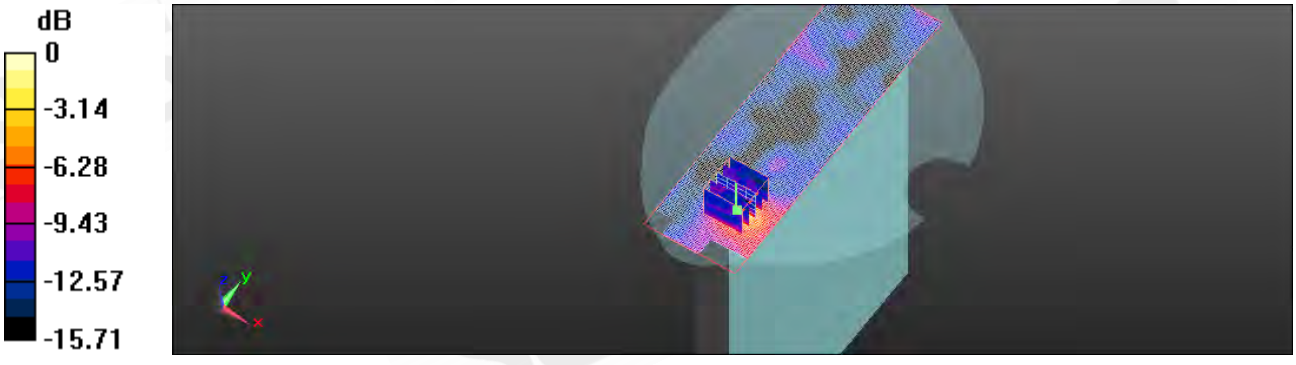
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5640 MHz
Medium parameters used: f = 5640 MHz; σ = 5.968 mho/m; ε_r = 47.114; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.789 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.989 V/m; Power Drift = 0.133 dB
Peak SAR (extrapolated) = 1.381 W/kg

SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.182 mW/g
Maximum value of SAR (measured) = 0.688 mW/g



0 dB = 0.690mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH132_Main Antenna

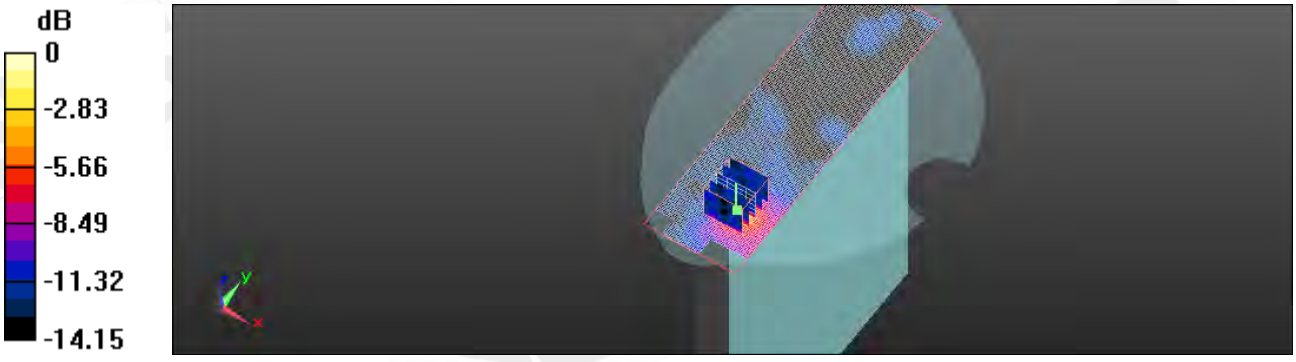
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5660 MHz
Medium parameters used: f = 5660 MHz; σ = 6.004 mho/m; ε_r = 47.063; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.782 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.715 V/m; Power Drift = 0.198 dB
Peak SAR (extrapolated) = 1.383 W/kg

SAR(1 g) = 0.493 mW/g; SAR(10 g) = 0.182 mW/g
Maximum value of SAR (measured) = 0.707 mW/g



0 dB = 0.710mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH136_Main Antenna

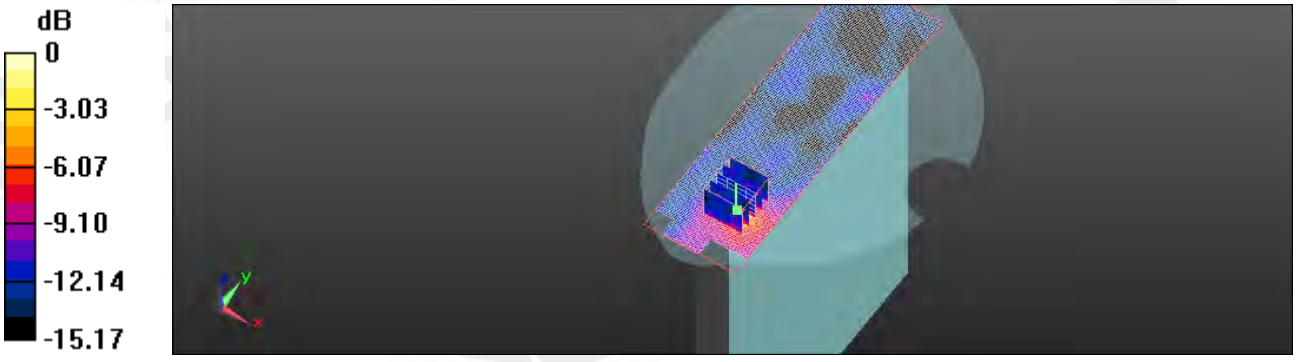
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5680 MHz
Medium parameters used: f = 5680 MHz; σ = 6.035 mho/m; ε_r = 46.913; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.727 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.566 V/m; Power Drift = -0.034 dB
Peak SAR (extrapolated) = 1.359 W/kg

SAR(1 g) = 0.468 mW/g; SAR(10 g) = 0.172 mW/g
Maximum value of SAR (measured) = 0.695 mW/g



0 dB = 0.700mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.5G_CH140_Main Antenna

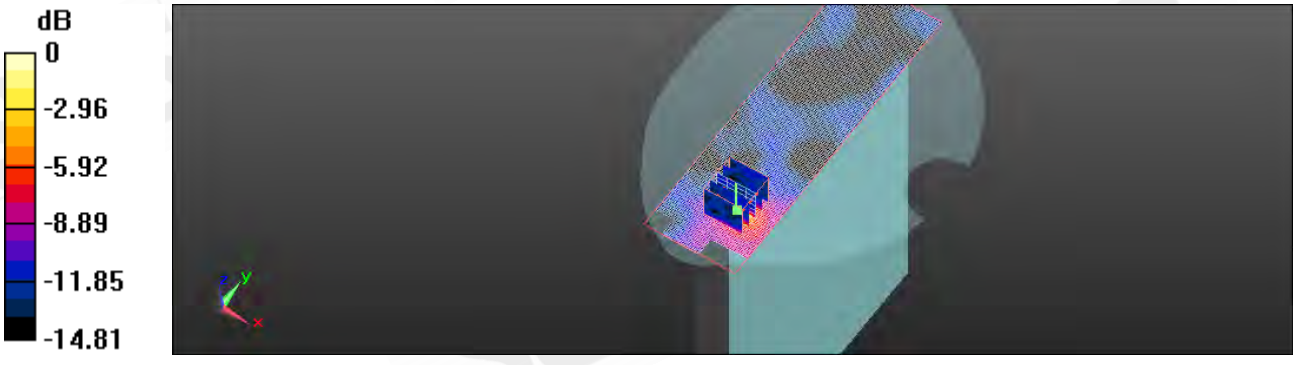
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5700 MHz
Medium parameters used: f = 5700 MHz; σ = 6.059 mho/m; ε_r = 46.989; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.683 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.016 V/m; Power Drift = -0.166 dB
Peak SAR (extrapolated) = 1.244 W/kg

SAR(1 g) = 0.431 mW/g; SAR(10 g) = 0.155 mW/g
Maximum value of SAR (measured) = 0.644 mW/g



0 dB = 0.640mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.5G_CH116_AUX Antenna

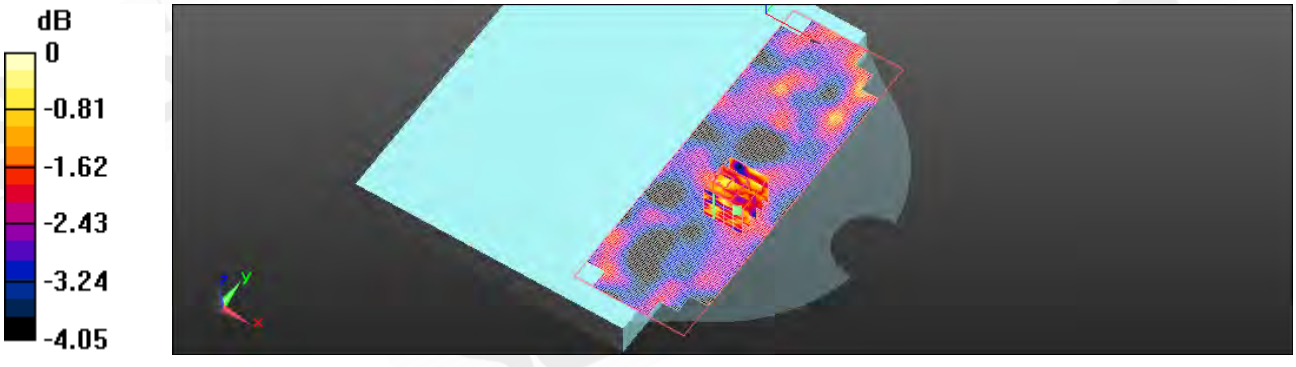
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5580 MHz
Medium parameters used: f = 5580 MHz; σ = 5.896 mho/m; ε_r = 47.456; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.063 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.837 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.085 W/kg

SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.051 mW/g
Maximum value of SAR (measured) = 0.078 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.5G_CH120_AUX Antenna

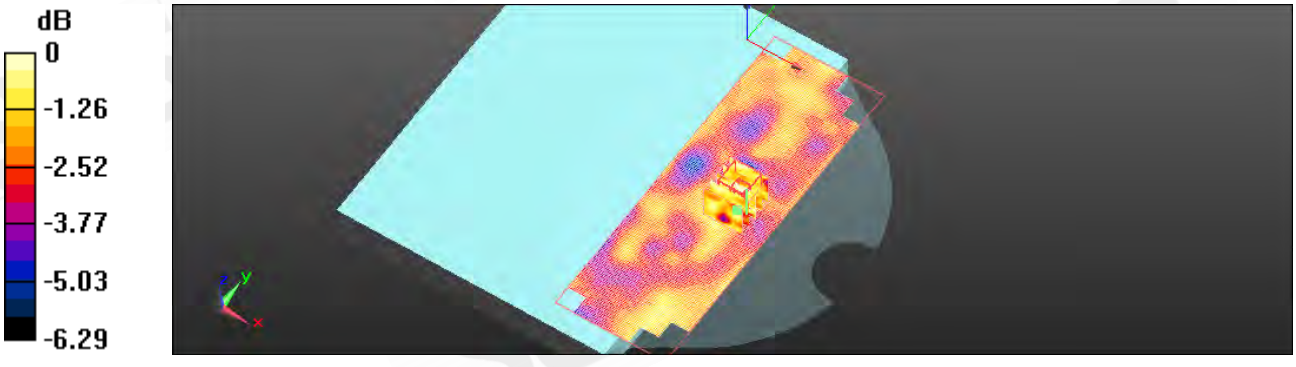
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5600 MHz
Medium parameters used: f = 5600 MHz; σ = 5.911 mho/m; ε_r = 47.396; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.064 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.342 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 0.233 W/kg

SAR(1 g) = 0.061 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.070 mW/g



0 dB = 0.070mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.8G_CH157_Main Antenna

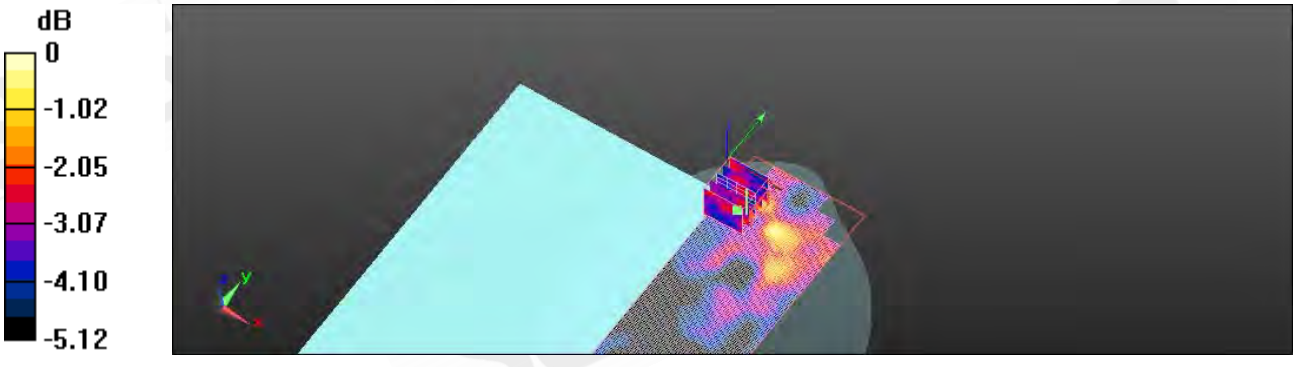
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5785 MHz
Medium parameters used: f = 5785 MHz; σ = 6.186 mho/m; ε_r = 46.693; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.107 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.160 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 0.195 W/kg

SAR(1 g) = 0.108 mW/g; SAR(10 g) = 0.072 mW/g
Maximum value of SAR (measured) = 0.125 mW/g



0 dB = 0.120mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.8G_CH161_Main Antenna

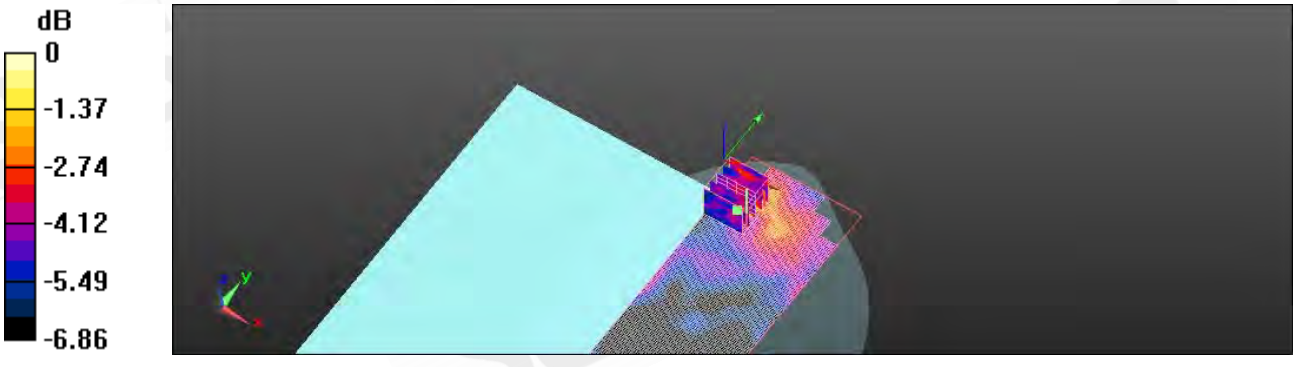
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5805 MHz
Medium parameters used: f = 5805 MHz; σ = 6.213 mho/m; ε_r = 46.622; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.110 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.027 V/m; Power Drift = -0.107 dB
Peak SAR (extrapolated) = 0.223 W/kg

SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.080 mW/g
Maximum value of SAR (measured) = 0.150 mW/g



0 dB = 0.150mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.8G_CH157_Main Antenna

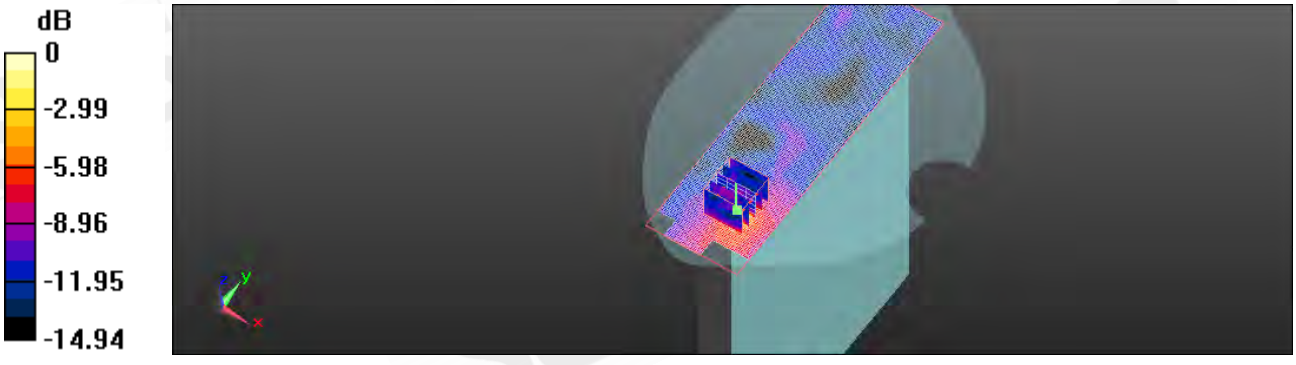
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5785 MHz
Medium parameters used: f = 5785 MHz; σ = 6.186 mho/m; ε_r = 46.693; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.555 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.267 V/m; Power Drift = 0.217 dB
Peak SAR (extrapolated) = 0.947 W/kg

SAR(1 g) = 0.340 mW/g; SAR(10 g) = 0.130 mW/g
Maximum value of SAR (measured) = 0.515 mW/g



0 dB = 0.510mW/g

Date: 3/17/2011

Configuration 3_WLAN802.11a 5.8G_CH161_Main Antenna

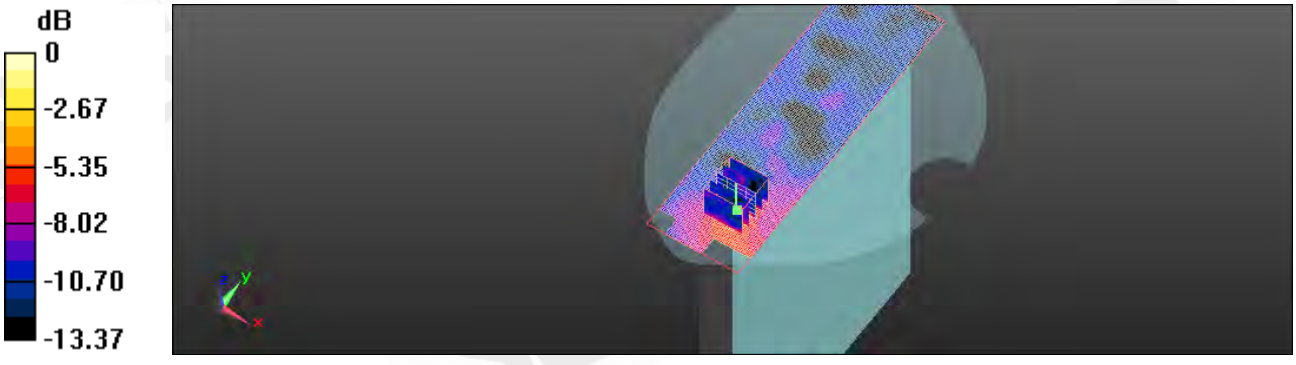
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5805 MHz
Medium parameters used: f = 5805 MHz; σ = 6.213 mho/m; ε_r = 46.622; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (51x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.447 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.175 V/m; Power Drift = -0.127 dB
Peak SAR (extrapolated) = 0.766 W/kg

SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.110 mW/g
Maximum value of SAR (measured) = 0.386 mW/g



0 dB = 0.390mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.8G_CH157_AUX Antenna

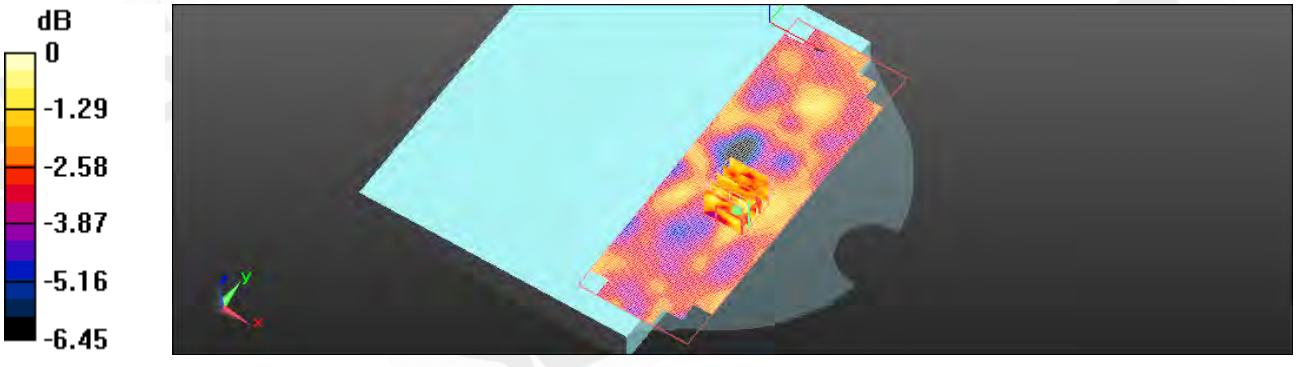
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5785 MHz
Medium parameters used: f = 5785 MHz; σ = 6.186 mho/m; ε_r = 46.693; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.069 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.837 V/m; Power Drift = 0.102 dB
Peak SAR (extrapolated) = 0.109 W/kg

SAR(1 g) = 0.065 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.081 mW/g



0 dB = 0.080mW/g

Date: 3/17/2011

Configuration 1_WLAN802.11a 5.8G_CH161_AUX Antenna

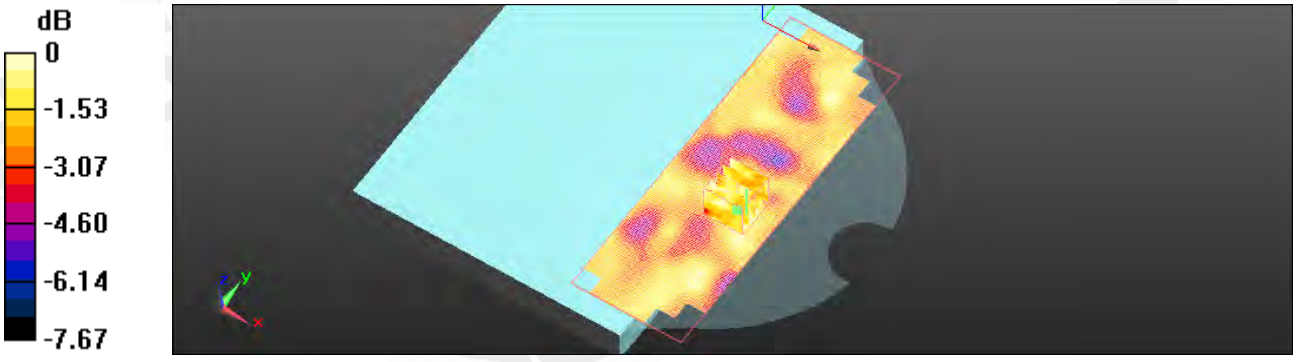
DUT: i500
Communication System: WLAN 802.11n/a(5G) FCC; Frequency: 5805 MHz
Medium parameters used: f = 5805 MHz; σ = 6.213 mho/m; ε_r = 46.622; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/Body/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.081 mW/g

Configuration/Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.511 V/m; Power Drift = 0.00038 dB
Peak SAR (extrapolated) = 0.100 W/kg

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.054 mW/g
Maximum value of SAR (measured) = 0.075 mW/g



0 dB = 0.070mW/g

5. SAR System Performance Verification

Date: 3/17/2011

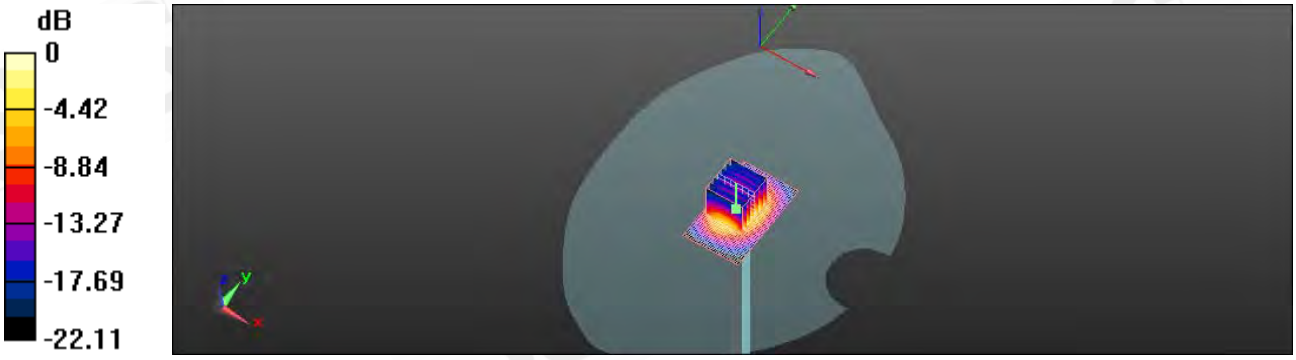
DUT: Dipole 2450 MHz
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.964 mho/m; ε_r = 52.513; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(6.82, 6.82, 6.82); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 16.198 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.781 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 29.041 W/kg

SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.28 mW/g
Maximum value of SAR (measured) = 15.247 mW/g



0 dB = 15.250mW/g

Date: 3/17/2011

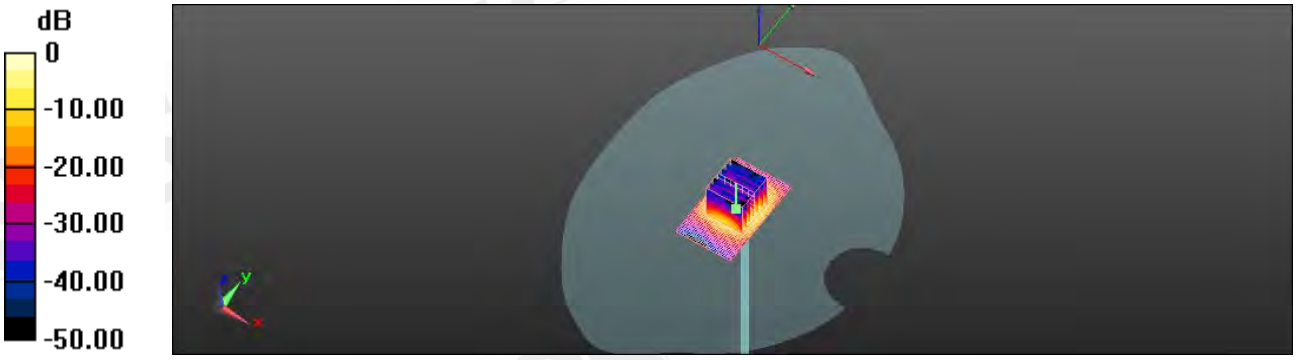
DUT: Dipole 5200MHz
Communication System: CW; Frequency: 5200 MHz
Medium parameters used: f = 5200 MHz; σ = 5.299 mho/m; ε_r = 48.322; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.73, 3.73, 3.73); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.685 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=5mm, dy=5mm, dz=5mm
Reference Value = 49.840 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 32.074 W/kg

SAR(1 g) = 7.22 mW/g; SAR(10 g) = 2.18 mW/g
Maximum value of SAR (measured) = 8.920 mW/g



0 dB = 8.920mW/g

Date: 3/17/2011

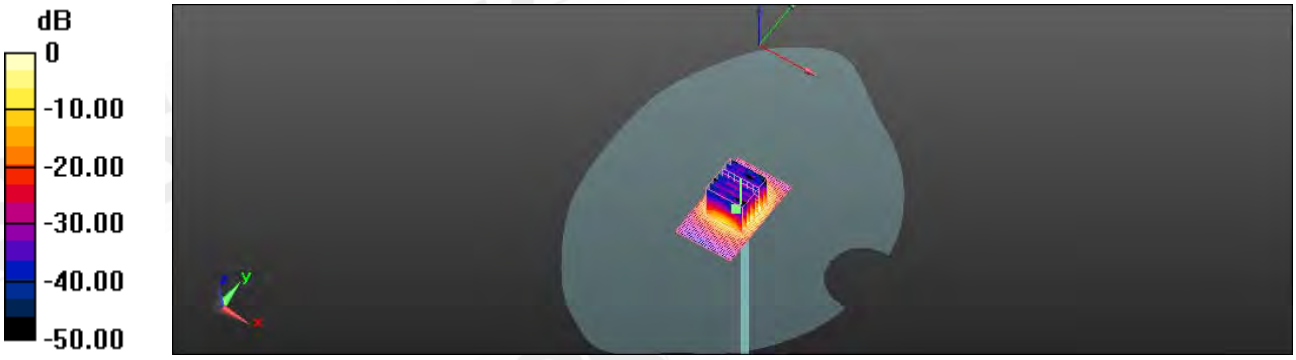
DUT: Dipole 5500MHz
Communication System: CW; Frequency: 5500 MHz
Medium parameters used: f = 5500 MHz; σ = 5.757 mho/m; ε_r = 47.595; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.42, 3.42, 3.42); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.807 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.200 V/m; Power Drift = -1.36 dB
Peak SAR (extrapolated) = 34.772 W/kg

SAR(1 g) = 7.95 mW/g; SAR(10 g) = 2.41 mW/g
Maximum value of SAR (measured) = 9.872 mW/g



0 dB = 9.870mW/g

Date: 3/17/2011

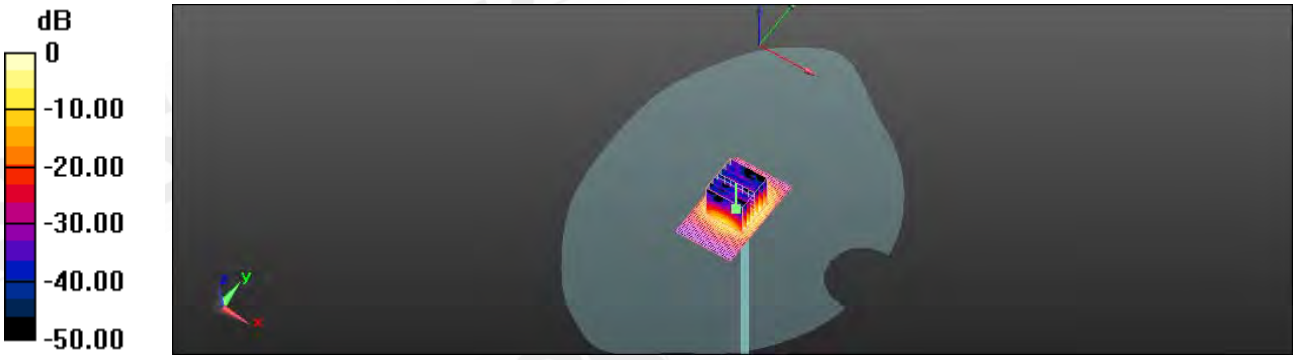
DUT: Dipole 5800MHz
Communication System: CW; Frequency: 5800 MHz
Medium parameters used: f = 5800 MHz; σ = 6.209 mho/m; ε_r = 46.65; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN3703; ConvF(3.67, 3.67, 3.67); Calibrated: 1/24/2011
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn856; Calibrated: 5/20/2010
- Phantom: SAM with CRP Left; Type: SAM;
- Measurement SW: DASY52, Version 52.6 (1); SEMCAD X Version 14.4.2 (2595)

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.502 mW/g

Configuration/d=10mm, Pin=250mW, dist=4mm: Measurement grid:
dx=5mm, dy=5mm, dz=5mm
Reference Value = 45.018 V/m; Power Drift = -1.33 dB
Peak SAR (extrapolated) = 30.532 W/kg

SAR(1 g) = 6.97 mW/g; SAR(10 g) = 2.12 mW/g
Maximum value of SAR (measured) = 8.642 mW/g



0 dB = 8.640mW/g

6. DAE & Probe Calibration certificate

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Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: DAE4-856_May10

CALIBRATION CERTIFICATE

Object: DAE4 - SD 000 D04 BJ - SN: 856

Calibration procedure(s): QA CAL-06.v21
Calibration procedure for the data acquisition electronics (DAE)

Calibration date: May 20, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Keithley Multimeter Type 2001	SN: 0810278	1-Oct-09 (No: 9055)	Oct-10
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V1.1	SE UMS 006 AB 1004	05-Jun-09 (in house check)	In house check: Jun-10

	Name	Function	Signature
Calibrated by:	Dominique Steffen	Technician	
Approved by:	Fin Bomholt	R&D Director	

Issued: May 20, 2010

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: DAE4-856_May10 Page 1 of 5

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Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: EX3-3703_Jan11

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3703

Calibration procedure(s) QA CAL-01.v7, QA CAL-14.v3, QA CAL-23.v4 and QA CAL-25.v3
Calibration procedure for dosimetric E-field probes

Calibration date: January 24, 2011

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41495277	1-Apr-10 (No. 217-01136)	Apr-11
Power sensor E4412A	MY41498087	1-Apr-10 (No. 217-01136)	Apr-11
Reference 3 dB Attenuator	SN: S5054 (3c)	30-Mar-10 (No. 217-01159)	Mar-11
Reference 20 dB Attenuator	SN: S5086 (20b)	30-Mar-10 (No. 217-01161)	Mar-11
Reference 30 dB Attenuator	SN: S5129 (30b)	30-Mar-10 (No. 217-01160)	Mar-11
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 660	20-Apr-10 (No. DAE4-660_Apr10)	Apr-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bomholt	R&D Director	

Issued: January 25, 2011

Calibration Laboratory of
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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV4

SN:3703

Manufactured:	July 21, 2009
Last calibrated:	December 30, 2009
Recalibrated:	January 24, 2011

Calibrated for DASY/EASY Systems

(Note: non-compatible with DASY2 system!)

EX3DV4 SN:3703 January 24, 2011

DASY/EASY - Parameters of Probe: EX3DV4 SN:3703

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.52	0.52	0.54	± 10.1%
DCP (mV)[B]	98.8	94.8	99.6	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc[E] (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	154.8	± 3.1 %
			Y	0.00	0.00	1.00	118.0	
			Z	0.00	0.00	1.00	156.4	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).

[B] Numerical linearization parameter: uncertainty not required.

[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

EX3DV4 SN:3703 January 24, 2011

DASY/EASY - Parameters of Probe: EX3DV4 SN:3703

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
750	± 50 / ± 100	41.9 ± 5%	0.89 ± 5%	9.21	9.21	9.21	0.73	0.65 ± 11.0%
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	8.83	8.83	8.83	0.79	0.61 ± 11.0%
900	± 50 / ± 100	41.5 ± 5%	0.97 ± 5%	8.78	8.78	8.78	0.73	0.63 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	8.02	8.02	8.02	0.50	0.71 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	7.67	7.67	7.67	0.39	0.82 ± 11.0%
2000	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	7.63	7.63	7.63	0.35	0.86 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	7.00	7.00	7.00	0.32	0.91 ± 11.0%
2600	± 50 / ± 100	39.0 ± 5%	1.96 ± 5%	6.75	6.75	6.75	0.30	1.02 ± 11.0%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

DASY/EASY - Parameters of Probe: EX3DV4 SN:3703

Calibration Parameter Determined in Body Tissue Simulating Media

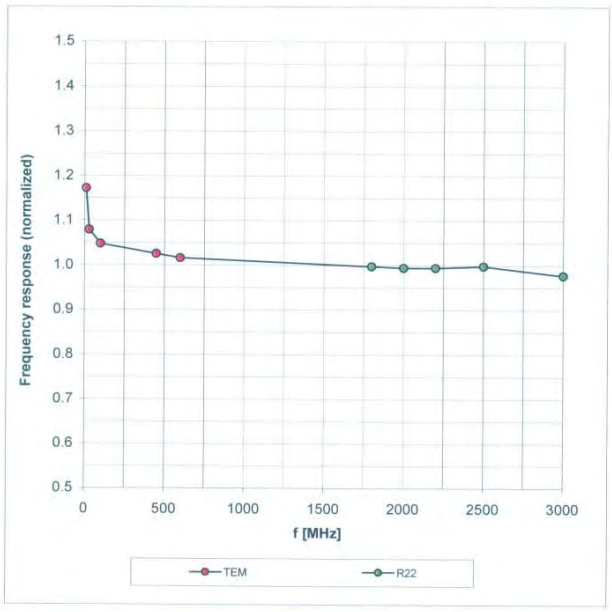
f [MHz]	Validity [MHz][C]	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
750	± 50 / ± 100	55.5 ± 5%	0.96 ± 5%	9.06	9.06	9.06	0.57	0.73 ± 11.0%
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	8.85	8.85	8.85	0.46	0.83 ± 11.0%
900	± 50 / ± 100	55.0 ± 5%	1.05 ± 5%	8.74	8.74	8.74	0.45	0.83 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	7.26	7.26	7.26	0.58	0.70 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	7.04	7.04	7.04	0.44	0.82 ± 11.0%
2000	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	7.13	7.13	7.13	0.61	0.70 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	6.82	6.82	6.82	0.41	0.82 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	6.78	6.78	6.78	0.33	0.89 ± 11.0%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	4.00	4.00	4.00	0.50	1.95 ± 13.1%
5300	± 50 / ± 100	48.9 ± 5%	5.42 ± 5%	3.73	3.73	3.73	0.55	1.95 ± 13.1%
5600	± 50 / ± 100	48.5 ± 5%	5.77 ± 5%	3.42	3.42	3.42	0.65	1.95 ± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.67	3.67	3.67	0.65	1.95 ± 13.1%

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

EX3DV4 SN:3703 January 24, 2011

Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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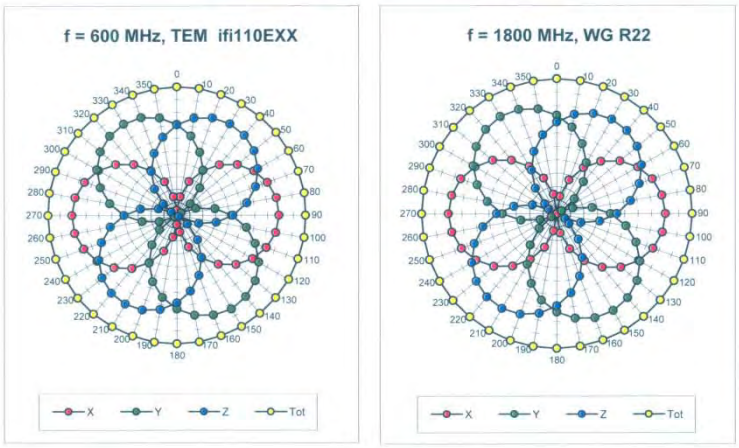
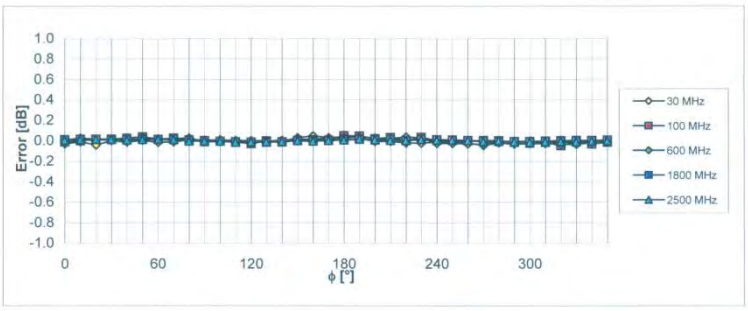
EX3DV4 SN:3703 January 24, 2011

Receiving Pattern (ϕ), ϑ = 0°



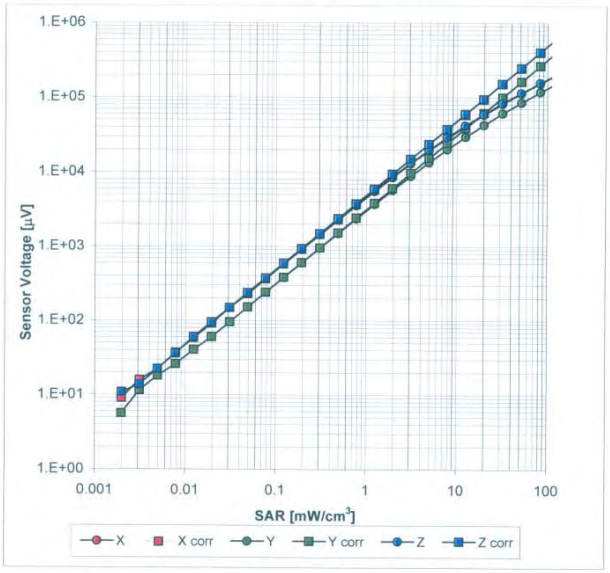


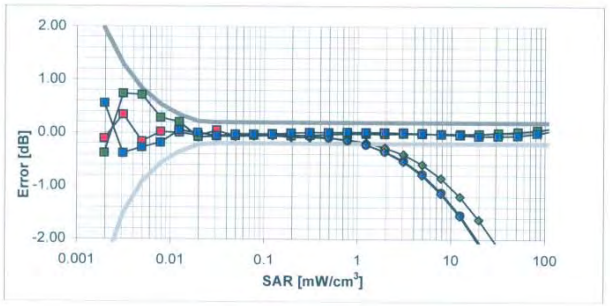
Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

EX3DV4 SN:3703 January 24, 2011

Dynamic Range f(SAR_{head})

(TEM cell, f = 900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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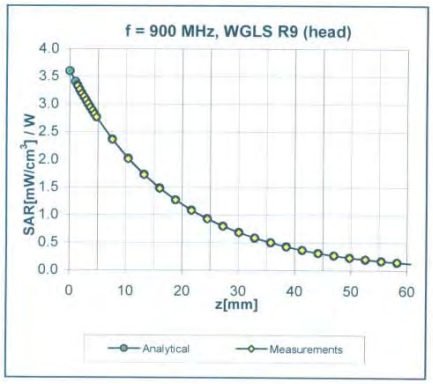
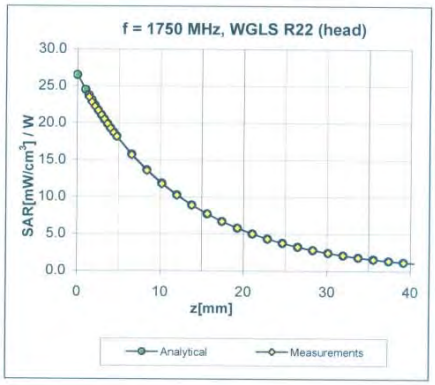
EX3DV4 SN:3703 January 24, 2011

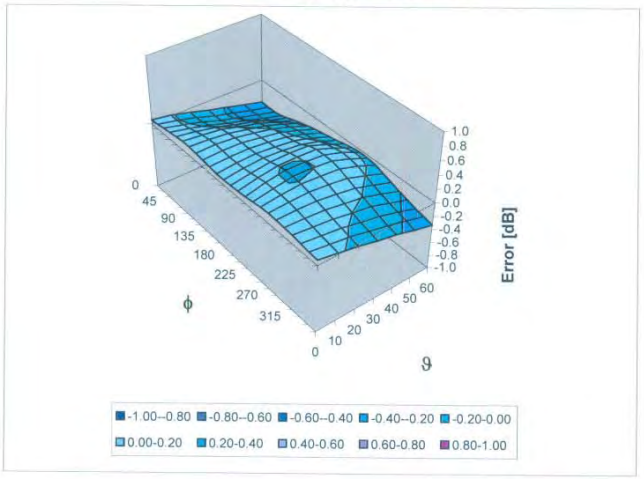
Conversion Factor Assessment





Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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EX3DV4 SN:3703 Januarv 24. 2011

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm

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7. Uncertainty Budget

DASY5 Uncertainty Budget
According to IEEE 1528 [1]

Error Description	Uncertainty value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±5.9%	N	1	1	1	±5.9%	±5.9%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom Uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (target)	±5.0%	R	$\sqrt{3}$	0.64	0.43	±1.8%	±1.2%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.64	0.43	±1.6%	±1.1%	∞
Liquid Permittivity (target)	±5.0%	R	$\sqrt{3}$	0.6	0.49	±1.7%	±1.4%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.6	0.49	±1.5%	±1.2%	∞
Combined Std. Uncertainty						±10.9%	±10.7%	387
Expanded STD Uncertainty						±21.9%	±21.4%	

Table 19.6: Worst-Case uncertainty budget for DASY5 assessed according to IEEE 1528 [1]. The budget is valid for the frequency range 300 MHz - 3 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerable smaller.

8. Phantom Description

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info@speag.com, http://www.speag.com

s p e a g

Certificate of Conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 C
Series No	TP-1150 and higher
Manufacturer	SPEAG Zeughausstrasse 43 CH-8004 Zürich Switzerland

Tests
The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series items (called samples) or are tested at each item.

Test	Requirement	Details	Units tested
Dimensions	Compliant with the geometry according to the CAD model	IT'IS CAD File (*)	First article, Samples
Material thickness of shell	Compliant with the requirements according to the standards	2mm +/- 0.2mm in flat and specific areas of head section	First article, Samples, TP-1314 ff.
Material thickness at ERP	Compliant with the requirements according to the standards	6mm +/- 0.2mm at ERP	First article, All items
Material parameters	Dielectric parameters for required frequencies	300 MHz – 6 GHz: Relative permittivity < 5, Loss tangent < 0.05	Material samples
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards if handled and cleaned according to the instructions. Observe technical Note for material compatibility	DEGMBE based simulating liquids	Pre-series, First article, Material samples
Sagging	Compliant with the requirements according to the standards. Sagging of the flat section when filled with tissue simulating liquid	< 1% typical < 0.8% if filled with 155mm of HSL900 and without OUT below	Prototypes, Sample testing

Standards
[1] CENELEC EN 50361
[2] IEEE Std 1528-2003
[3] IEC 62209 Part I
[4] FCC OET Bulletin 65, Supplement C, Edition 01-01
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of the other documents.

Conformity
Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standards [1] to [4].

Date 07.07.2005

Signature / Stamp

s p e a g
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Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

9. System Validation from Original equipment supplier

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Engineering AG
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Accreditation No.: SCS 108

Client SGS-TW (Auden)

Certificate No: D2450V2-727_Apr10

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 727
Calibration procedure(s)	QA CAL-05.v7 Calibration procedure for dipole validation kits
Calibration date:	April 29, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	02-Mar-10 (No. DAE4-601_Mar10)	Mar-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 29, 2010

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Certificate No: D2450V2-727_Apr10 Page 1 of 9

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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.8 ± 6 %	1.78 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.2 mW / g
SAR normalized	normalized to 1W	52.8 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**53.2 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.22 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**25.0 mW /g ± 16.5 % (k=2)**

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Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.4 mW / g
SAR normalized	normalized to 1W	53.6 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**53.2 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.23 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**24.9 mW / g ± 16.5 % (k=2)**

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Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.3 Ω + 1.7 jΩ
Return Loss	- 28.9 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	50.3 Ω + 3.6 jΩ
Return Loss	- 29.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.150 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	January 09, 2003

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DASY5 Validation Report for Head TSL

Date/Time: 22.04.2010 16:30:51

Test Laboratory: SPEAG, Zurich, Switzerland

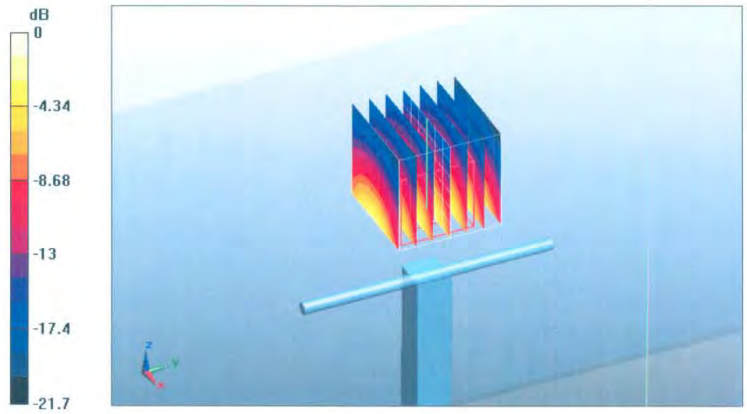
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 1.78 mho/m; ε_r = 39.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

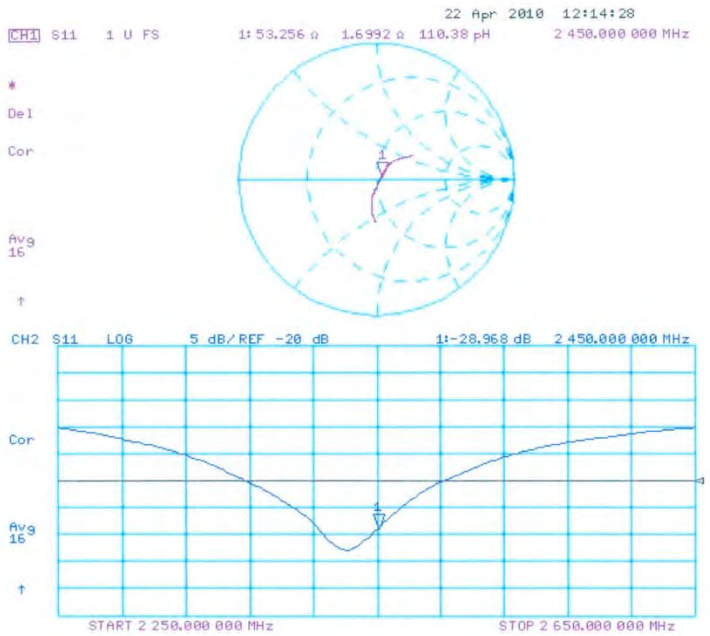
- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin=250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 101.0 V/m; Power Drift = 0.064 dB
Peak SAR (extrapolated) = 26.8 W/kg
SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.22 mW/g
Maximum value of SAR (measured) = 16.9 mW/g



0 dB = 16.9mW/g

Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body

Date/Time: 29.04.2010 14:57:43

Test Laboratory: SPEAG, Zurich, Switzerland

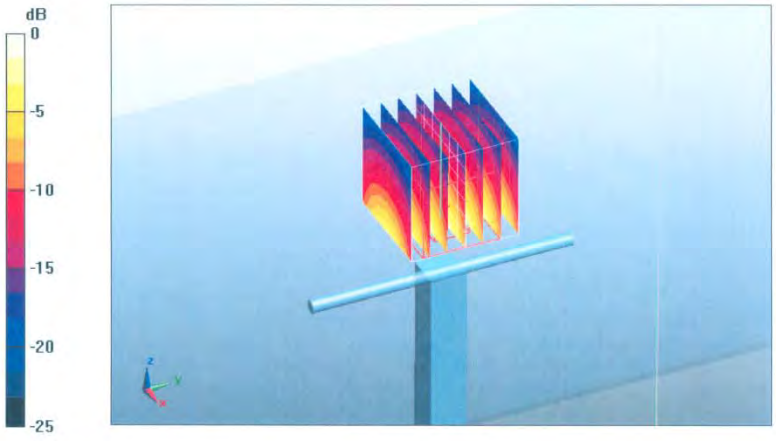
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:727

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U11 BB
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.03.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 57

Pin250 mW /d=10mm, dist=3.0mm (ES-Probe)/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.1 V/m; Power Drift = 0.00929 dB
Peak SAR (extrapolated) = 27.7 W/kg
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.23 mW/g
Maximum value of SAR (measured) = 17.6 mW/g



0 dB = 17.6mW/g

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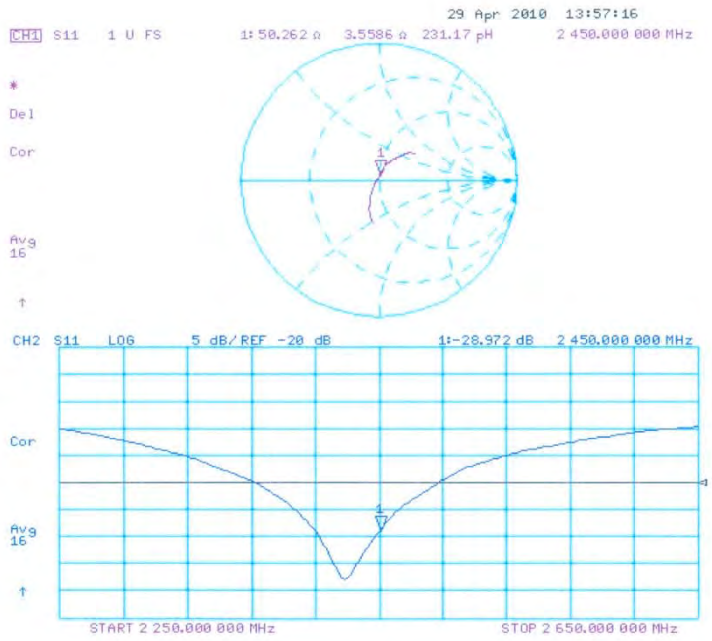
Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client: Auden

Certificate No: D5GHzV2-1040_Jun10

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1040
Calibration procedure(s)	QA CAL-22.v1 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date	June 23, 2010

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	06-Oct-09 (No. 217-01086)	Oct-10
Power sensor HP 8481A	US37292783	06-Oct-09 (No. 217-01086)	Oct-10
Reference 20 dB Attenuator	SN: 5086 (20g)	30-Mar-10 (No. 217-01158)	Mar-11
Type-N mismatch combination	SN: 5047.2 / 06327	30-Mar-10 (No. 217-01162)	Mar-11
Reference Probe EX3DV4	SN: 3503	05-Mar-10 (No. EX3-3503_Mar10)	Mar-11
DAE4	SN: 601	10-Jun-10 (No. DAE4-601_Jun10)	Jun-11

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-09)	In house check: Oct-10

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 23, 2010

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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC Std 62209 Part 2, "Evaluation of Human Exposure to Radio Frequency Fields from Handheld and Body-Mounted Wireless Communication Devices in the Frequency Range of 30 MHz to 6 GHz: Human models, Instrumentation, and Procedures", Part 2: "Procedure to determine the Specific Absorption Rate (SAR) for including accessories and multiple transmitters", Draft Version 0.9, December 2004

b) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

c) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.2
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Area Scan resolution	dx, dy = 10 mm	
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 2.5 mm	
Frequency	5200 MHz ± 1 MHz 5500 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.5 ± 6 %	4.57 mho/m ± 6 %
Head TSL temperature during test	(22.5 ± 0.2) °C	—	—

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	condition	
SAR measured	100 mW input power	8.23 mW / g
SAR normalized	normalized to 1W	82.3 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**82.5 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 mW / g
SAR normalized	normalized to 1W	23.5 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**23.5 mW / g ± 19.5 % (k=2)**

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Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.9 ± 6 %	4.84 mho/m ± 6 %
Head TSL temperature during test	(22.5 ± 0.2) °C	—	—

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	100 mW input power	8.79 mW / g
SAR normalized	normalized to 1W	87.9 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**88.0 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.48 mW / g
SAR normalized	normalized to 1W	24.8 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**24.8 mW / g ± 19.5 % (k=2)**

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.4 ± 6 %	5.09 mho/m ± 6 %
Head TSL temperature during test	(22.5 ± 0.2) °C	—	—

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	100 mW input power	8.13 mW / g
SAR normalized	normalized to 1W	81.3 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**81.2 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.30 mW / g
SAR normalized	normalized to 1W	23.0 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**23.0 mW / g ± 19.5 % (k=2)**

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Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	49.0 ± 6 %	5.47 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	—	—

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	condition	
SAR measured	100 mW input power	7.57 mW / g
SAR normalized	normalized to 1W	7.57 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**75.7 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.11 mW / g
SAR normalized	normalized to 1W	21.1 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**21.1 mW / g ± 19.5 % (k=2)**

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	48.3 ± 6 %	5.83 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	—	—

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	condition	
SAR measured	100 mW input power	8.04 mW / g
SAR normalized	normalized to 1W	80.4 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**80.3 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.23 mW / g
SAR normalized	normalized to 1W	22.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**22.3 mW / g ± 19.5 % (k=2)**

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.7 ± 6 %	6.18 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	condition	
SAR measured	100 mW input power	6.93 mW / g
SAR normalized	normalized to 1W	69.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**69.2 mW / g ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	1.92 mW / g
SAR normalized	normalized to 1W	19.2 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**19.2 mW / g ± 19.5 % (k=2)**

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Appendix

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	49.9 Ω - 7.6 jΩ
Return Loss	-22.4 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	52.5 Ω - 5.4 jΩ
Return Loss	-24.8 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.9 Ω -1.7 jΩ
Return Loss	-24.7 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	51.0 Ω - 4.9 jΩ
Return Loss	-26.1 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	53.9 Ω - 3.4 jΩ
Return Loss	-26.1 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.9 Ω - 2.2 jΩ
Return Loss	-23.4 dB

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General Antenna Parameters and Design

Electrical Delay (one direction)	1.211 ns

After long term use with 40 W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	December 30, 2005

DASY5 Validation Report for Head TSL

Date/Time: 22.06.2010 12:12:25

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1040

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: HSL 5000
Medium parameters used: f = 5200 MHz; σ = 4.56 mho/m; ε_r = 36.5; ρ = 1000 kg/m^3, Medium parameters used: f = 5500 MHz; σ = 4.82 mho/m; ε_r = 35.9; ρ = 1000 kg/m^3, Medium parameters used: f = 5800 MHz; σ = 5.07 mho/m; ε_r = 35.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY5 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.36, 5.36, 5.36); ConvF(4.85, 4.85, 4.85); ConvF(4.74, 4.74, 4.74); Calibrated: 05.08.2010
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.08.2010
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY52, V52.2 Build 0; Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

D5GHzV2 Dipole (Head)/d=10mm, Pin=100mW, f=5200 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 62.2 V/m; Power Drift = 0.079 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 8.23 mW/g; SAR(10 g) = 2.35 mW/g
Maximum value of SAR (measured) = 16 mW/g

D5GHzV2 Dipole (Head)/d=10mm, Pin=100mW, f=5500 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 62.7 V/m; Power Drift = 0.090 dB
Peak SAR (extrapolated) = 35.2 W/kg
SAR(1 g) = 8.79 mW/g; SAR(10 g) = 2.48 mW/g
Maximum value of SAR (measured) = 17.3 mW/g

D5GHzV2 Dipole (Head)/d=10mm, Pin=100mW, f=5800 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 59.6 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 33.7 W/kg
SAR(1 g) = 8.13 mW/g; SAR(10 g) = 2.3 mW/g
Maximum value of SAR (measured) = 16.2 mW/g

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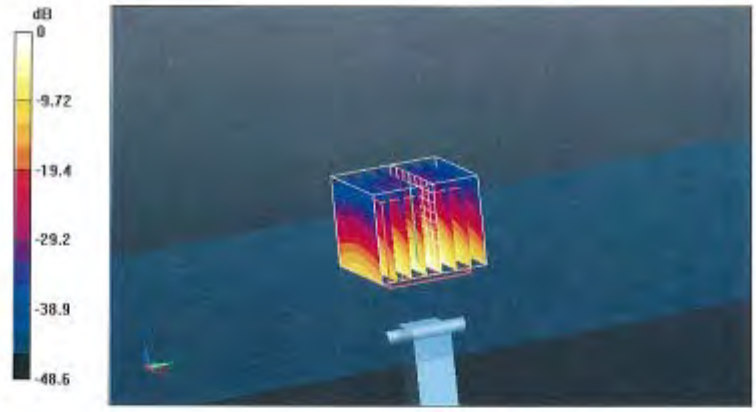

0 dB = 16.2mW/g

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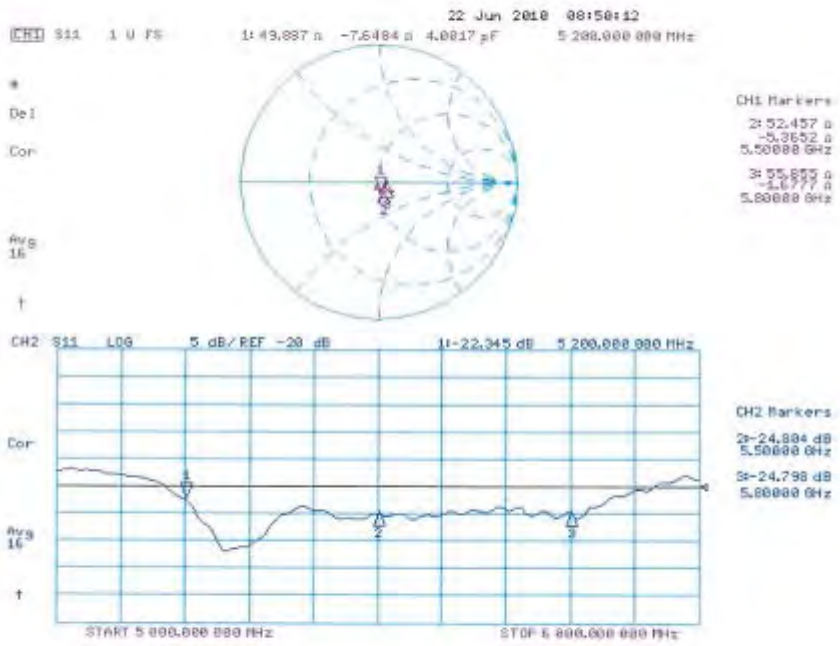
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date/Time: 23.06.2010 12:48:48

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN:1040

Communication System: CW; Frequency: 5200 MHz, Frequency: 5500 MHz, Frequency: 5800 MHz; Duty Cycle: 1:1
Medium: MSL 5000 MHz
Medium parameters used: f = 5200 MHz; σ = 5.44 mho/m; ε_r = 49; ρ = 1000 kg/m^3 , Medium parameters used: f = 5500 MHz; σ = 5.8 mho/m; ε_r = 48.3; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 6.14 mho/m; ε_r = 47.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

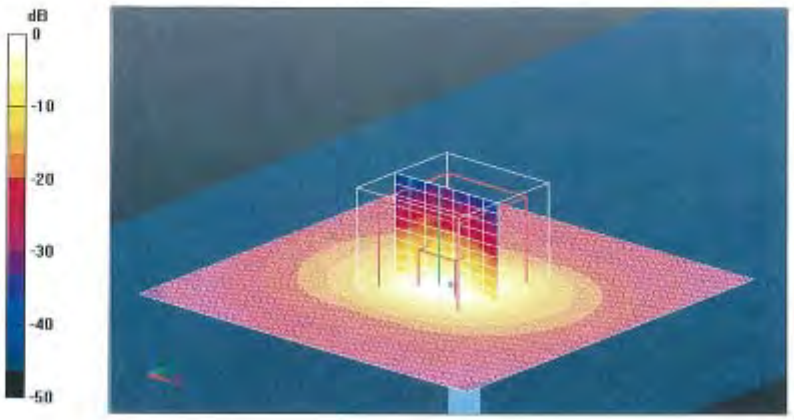
DASY5 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.88, 4.88, 4.88); ConvF(4.37, 4.37, 4.37); ConvF(4.37, 4.37, 4.37); Calibrated: 05.03.2010
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 10.06.2010
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY52, V52.2 Build 0, Version 52.2.0 (163)
- Postprocessing SW: SEMCAD X, V14.2 Build 2, Version 14.2.2 (1685)

D5GHzV2 Dipole (Body)/d=10mm, Pin=100mW, f=5200 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 58.4 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 7.57 mW/g; SAR(10 g) = 2.11 mW/g
Maximum value of SAR (measured) = 14.8 mW/g

D5GHzV2 Dipole (Body)/d=10mm, Pin=100mW, f=5500 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 58.9 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 8.04 mW/g; SAR(10 g) = 2.23 mW/g
Maximum value of SAR (measured) = 15.9 mW/g

D5GHzV2 Dipole (Body)/d=10mm, Pin=100mW, f=5800 MHz/Zoom Scan (4x4x2.5mm), dist=2mm (8x8x10)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2.5mm
Reference Value = 53.2 V/m; Power Drift = -0.037 dB
Peak SAR (extrapolated) = 29.8 W/kg
SAR(1 g) = 6.93 mW/g; SAR(10 g) = 1.92 mW/g
Maximum value of SAR (measured) = 14 mW/g



0 dB = 14mW/g

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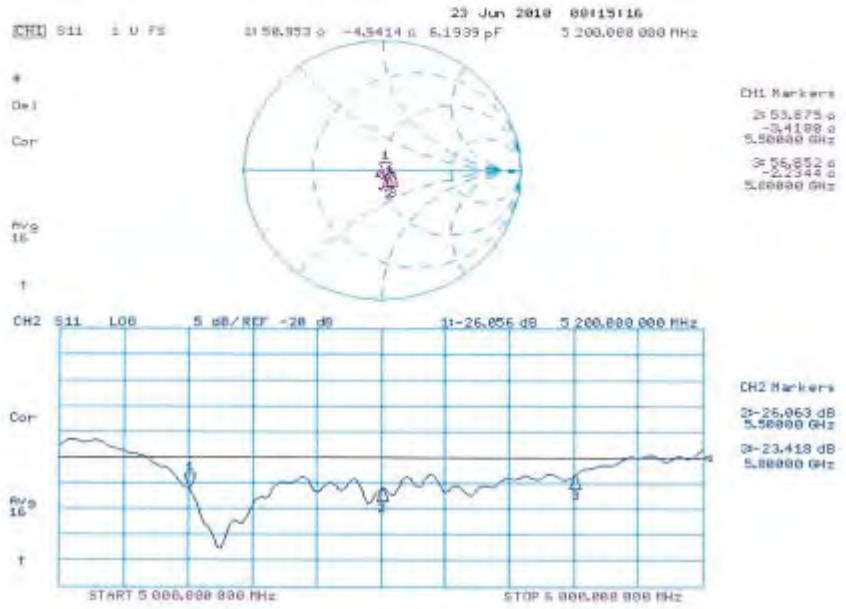
Impedance Measurement Plot for Body TSL



End of 1st part of report

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