FCC OET BULLETIN 65 SUPPLEMENT C 01-01
IEEE STD 1528:2003

SAR EVALUATION REPORT

For
802.11b/g/n 1T1R WLAN Mini Card
(Tested inside of Lenovo Notebook PC Lenovo Ideapad S205s, model: 2090 and 20127)

MODEL NUMBER: RT3090
FCC ID: VQF-RT3090-1T1R

REPORT NUMBER: 11U13741-1B

ISSUE DATE: August 25, 2011

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	August 10, 2011,	Initial Issue	--
A	August 22, 2011	Updated SAR report based on reviewer's comments. 1. Added host device's model number and model different description on cover page and section 5. 2. Updated E-field probe's serial number in section 4.1 3. Added simultaneous transmission information in section 5	Sunny Shih
B	August 25, 2011	Update SAR report based on reviewer's comments. 1. Update host model difference description on section 5. 2. Add simultaneous WWAN and Wimax combo card FCC ID in section 5	Sunny Shih

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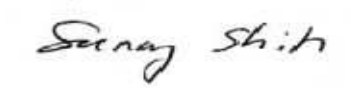
1. ATTESTATION OF TEST RESULTS

Applicant name:	Ralink Technology Corporation.		
EUT description:	802.11b/g/n 1T1R WLAN Mini Card		
Model number:	RT3090		
Device category:	Portable		
Exposure category:	General Population/Uncontrolled Exposure		
Date tested:	July 11, 2011		
FCC Rule Parts	Freq. Range[MHz]	The Highest 1g SAR mW/g	Limit (mW/g)
15.247	2412 – 2462	0.004 mW/g	1.6
Applicable Standards			Test Results
FCC OET Bulletin 65 Supplement C 01-01, IEEE STD 1528: 2003,			Pass

Compliance Certification Services, Inc. (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released For CCS By:	Tested By:
	
Sunny Shih Engineering Team Leader Compliance Certification Services (UL CCS)	Chakrit Thammanavarat SAR Engineer Compliance Certification Services (UL CCS)

2. TEST METHODOLOGY

FCC OET Bulletin 65 Supplement C 01-01, IEEE STD 1528: 2003, and the following KDBs test procedures:

- 248227 SAR measurement procedures for 802.11a/b/g transmitters
- 616217 D03 SAR Supp Note and Netbook Laptop V01

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due date		
				MM	DD	Year
Robot - Six Axes	Stäubli	RX90BL	N/A	N/A		
Robot Remote Control	Stäubli	CS7MB	S-0396	N/A		
DASY4 Measurement Server	SPEAG	SEUMS001BA	1246	N/A		
Probe Alignment Unit	SPEAG	LB5/ 80	SE UKS 030 AA	N/A		
SAM Twin Phantom	SPEAG	QDOOOP40CD	1629	N/A		
Oval Flat Phantom (ELI 5.0) A	SPEAG	QDOVA001BB	1120	N/A		
Oval Flat Phantom (ELI 5.0) B	SPEAG	QDOVA001BB	1118	N/A		
Dielectric Probe kit	HP	85070C	N/A	N/A		
ESA Series Network Analyzer	Agilent	E5071B	MY42100131	8	2	2011
Synthesized Signal Generator	HP	83732B	US34490599	7	14	2012
E-Field Probe	SPEAG	EX3DV4	3686	1	24	2012
Thermometer	ERTCO	639-1S	1718	8	19	2011
Data Acquisition Electronics	SPEAG	DAE4	1258	5	2	2012
System Validation Dipole	SPEAG	*D2450V2	706	4	19	2012
Power Meter	Giga-tronics	8651A	8651404	3	13	2012
Power Sensor	Giga-tronics	80701A	1834588	3	13	2012
Amplifier	Mini-Circuits	ZVE-8G	90606	N/A		
Amplifier	Mini-Circuits	ZHL-42W	D072701-5	N/A		
Simulating Liquid	SPEAG	M2450	N/A	Within 24 hrs of first test		

Note:

* Per KDB 450824 D02 requirements for dipole calibration, UL CCS has adopted two year calibration intervals. On an annual basis each measurement dipole is evaluated for compliance with the following criteria:

1. There is no physical damage to the dipole.
2. System validation with a specific dipole is within 10% of calibrated value.
3. Return-loss is within 20% of calibrated measurement (Verification data include with dipole D2450V2 calibration certificate)
4. Impedance is within 5Ω of calibrated measurement (Verification data include with dipole D2450V2 calibration certificate)

4.2. MEASUREMENT UNCERTAINTY

Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram

Component	error, %	Probe Distribution	Divisor	Sensitivity	U (Xi), %
Measurement System					
Probe Calibration (k=1) @ Body 2450 MHz	5.50	Normal	1	1	5.50
Axial Isotropy	1.15	Rectangular	1.732	0.7071	0.47
Hemispherical Isotropy	2.30	Rectangular	1.732	0.7071	0.94
Boundary Effect	0.90	Rectangular	1.732	1	0.52
Probe Linearity	3.45	Rectangular	1.732	1	1.99
System Detection Limits	1.00	Rectangular	1.732	1	0.58
Readout Electronics	0.30	Normal	1	1	0.30
Response Time	0.80	Rectangular	1.732	1	0.46
Integration Time	2.60	Rectangular	1.732	1	1.50
RF Ambient Conditions - Noise	3.00	Rectangular	1.732	1	1.73
RF Ambient Conditions - Reflections	3.00	Rectangular	1.732	1	1.73
Probe Positioner Mechanical Tolerance	0.40	Rectangular	1.732	1	0.23
Probe Positioning with respect to Phantom	2.90	Rectangular	1.732	1	1.67
Extrapolation, Interpolation and Integration	1.00	Rectangular	1.732	1	0.58
Test Sample Related					
Test Sample Positioning	2.90	Normal	1	1	2.90
Device Holder Uncertainty	3.60	Normal	1	1	3.60
Output Power Variation - SAR Drift	5.00	Rectangular	1.732	1	2.89
Phantom and Tissue Parameters					
Phantom Uncertainty (shape and thickness)	4.00	Rectangular	1.732	1	2.31
Liquid Conductivity - deviation from target	5.00	Rectangular	1.732	0.64	1.85
Liquid Conductivity - measurement	3.72	Normal	1	0.64	2.38
Liquid Permittivity - deviation from target	5.00	Rectangular	1.732	0.6	1.73
Liquid Permittivity - measurement uncertainty	-3.22	Normal	1	0.6	-1.93
				Combined Standard Uncertainty Uc(y) =	9.93
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 19.85	%
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 1.57	dB

5. EQUIPMENT UNDER TEST

802.11b/g/n 1T1R WLAN Mini Card installed into Lenovo Ideapad S205s, model: 2090 and 20127
Model different description between model 2090 and 20127:

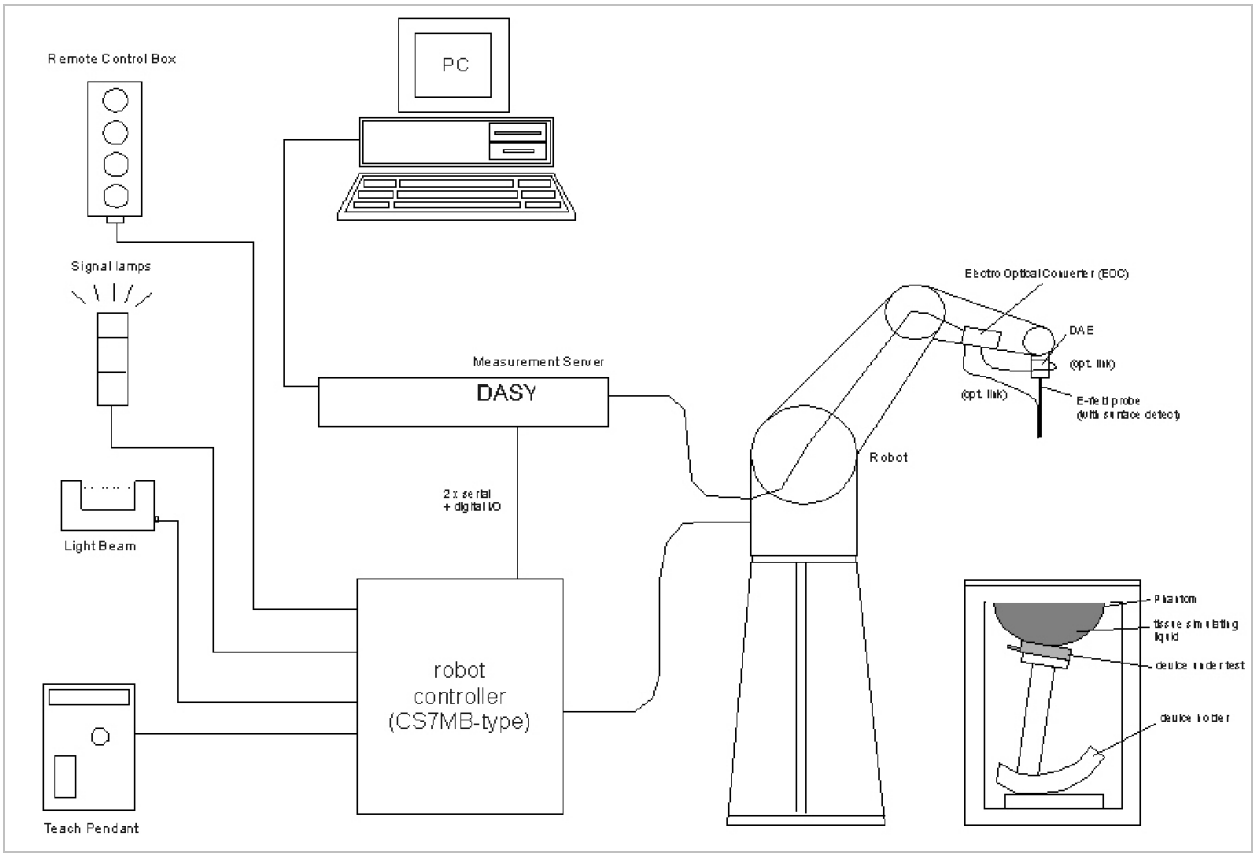
20127 is LC MT (Lenovo China Machine Type), LC MT is used for EM (Emerging market), in EM, GEO use 59PN to load forecast.
2090 is LI MT (Lenovo International Machine Type), LI MT is used for MM (Mature market), now, only US, WE, Canada, ANZ (Australia and New Zealand), Japan use this MTM to load forecast.

All the design, including layout, components, RF modules and antenna locations are all the same for both models.

Note: The model 2090 for US market was used for SAR testing.

Normal operation:	Laptop mode (display open at 90° to the keyboard)
Antenna tested:	Manufacturer / Part number / 2.4 Gain ACON / ☒ Main: APP6P-700520 / 2.0 ☒ Aux: APP60-700521 / 3.3 **Note:** All SAR testing done on main antenna as auxiliary does not transmit 802.11b/g/n.
Antenna-to-antenna/user separation distances:	See Section 16 for details of antenna locations and separation distances
Simultaneous transmission:	**WiFi & BT** WiFi can transmit simultaneously with Bluetooth (Bluetooth - FCC ID: QDS-BRCM1043) **WiFi & WiMax** The 802.16e WiMAX and WiFi radio cannot transmit simultaneously. (Wimax - FCC ID: XHG-M600A) **WiFi & WWAN** WiFi and WWAN can transmit simultaneously. (WWAN - FCC ID: XHG-M600A) *Note: FCC ID: XHG-M600A is a WWAN and Wimax combo card
Assessment for SAR evaluation for Simultaneous transmission:	**WiFi and BT** The Bluetooth's output power is ≤ 60/f(GHz) mW and stand-alone SAR evaluation is not required. Thus, simultaneous transmission SAR evaluation is not required for the WiFi and Bluetooth antenna pair. WWAN/Wimax RF exposure assessment will be addressed in a separate FCC application filed under WWAN/Wimax application.

6. SYSTEM SPECIFICATIONS



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

- A standard high precision 6-axis robot (Stäubli RX family) with controller, teach pendant and software. An arm extension 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.
- 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.
- DASY software.
- Remote controls 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 validating the proper functioning of the system.

7. COMPOSITION OF INGREDIENTS FOR TISSUE SIMULATING LIQUIDS

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% by weight)	Frequency (MHz)									
	450		835		900		1800 - 1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

8. SIMULATING LIQUID PARAMETERS

The simulating liquids are checked at the beginning of a series of SAR measurements to determine if the dielectric parameters are within the tolerances of the specified target values. For frequencies in 300 MHz to just under 2 GHz, the measured conductivity and relative permittivity were within ± 5% of the target values. For frequencies above 2 GHz the measured conductivity was within ± 5% of the target values. The measured relative permittivity tolerance was within ± 10% of the target value.

Reference Values of Tissue Dielectric Parameters for Head & Body Phantom

The body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations and extrapolated according to the head parameters specified in IEEE Standard 1528.

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.8
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.9	55.2	0.97
900	41.5	0.97	55	1.05
915	41.5	0.98	55	1.06
1450	40.5	1.2	54	1.3
1610	40.3	1.29	53.8	1.4
1800 – 2000	40	1.4	53.3	1.52
2450	39.2	1.8	52.7	1.95
3000	38.5	2.4	52	2.73
5800	35.3	5.27	48.2	6

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

9. SIMULATING LIQUID CHECK RESULTS

Measured by: Art Tham

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
7/11/2011	Body 2450	e'	51.0054	Relative Permittivity (ϵ_r):	51.01	52.70	-3.22	5
		e"	14.8472	Conductivity (σ):	2.02	1.95	3.72	5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C; Relative humidity = 40%
July 11, 2011 06:39 PM

Frequency	e'	e"
2400000000.	51.1986	14.6422
2405000000.	51.1814	14.6661
2410000000.	51.1643	14.6887
2415000000.	51.1464	14.7092
2420000000.	51.1280	14.7255
2425000000.	51.1080	14.7459
2430000000.	51.0872	14.7653
2435000000.	51.0668	14.7851
2440000000.	51.0447	14.8059
2445000000.	51.0244	14.8281
2450000000.	**51.0054**	**14.8472**
2455000000.	50.9846	14.8672
2460000000.	50.9663	14.8888
2465000000.	50.9471	14.9095
2470000000.	50.9311	14.9317
2475000000.	50.9117	14.9533
2480000000.	50.8952	14.9738
2485000000.	50.8777	14.9971
2490000000.	50.8618	15.0184
2495000000.	50.8476	15.0430
2500000000.	50.8324	15.0641

The conductivity (σ) can be given as:

$$\sigma = \omega \varepsilon_0 e'' = 2 \pi f \varepsilon_0 e''$$

where f = target f * 10^6

$\varepsilon_0 = 8.854 * 10^{-12}$

10. SYSTEM VERIFICATION

The system performance check is performed prior to any usage of the system in order to verify SAR system accuracy. The system performance check verifies that the system operates within its specifications of ±10%.

System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the SAM twin phantom filled with Body simulating liquid of the following parameters.
- The DASY system with an Isotropic E-Field Probe EX3DV4-SN: 3886 was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 5x5x7 (2.4 GHz) fine cube was chosen for cube integration and Special 8x8x10 (5 GHz) fine cube was chosen for cube integration
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input powers (forward power) were 100 mW.
- The results are normalized to 1 W input power.

Reference SAR Values for HEAD & BODY-tissue from calibration certificate of SPEAG.

System validation dipole	Cal. certificate #	Cal. date	Cal. Freq. (GHz)	SAR Avg (mW/g)		
				Tissue:	Head	Body
D2450V2	D2450V2-706_Apr10	4/19/10	2.4	1g SAR:	51.6	52.4
				10g SAR:	24.4	24.5

10.1. SYSTEM CHECK RESULTS

System validation dipole	Date Tested	Measured (Normalized to 1 W)		Target	Delta (%)	Tolerance (%)
		Tissue:	Body			
D2450V2 Body	07/11/11	1g SAR:	51.7	52.4	-1.34	±10
		10g SAR:	23.9	24.5	-2.45	

11. SAR MEASUREMENT PROCEDURES

Step 1: Power Reference Measurement
The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties (for example, 1.2 mm for an EX3DV4 probe type).

Step 2: Area Scan
The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Step 3: Zoom Scan
Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures ≥ 7x7x9 (above 4.5 GHz) or 5x5x7 (below 3 GHz) points within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Step 4: Power drift measurement
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan
The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation, the extrapolated distance should not be larger than the step size in Z-direction.

12. OUTPUT POWER VERIFICATION

The following procedures had been used to prepare the EUT for the SAR test.
The client provided a special driver and program, QA_RT3x9x V1.5.7.6 which enabled to control the frequency and output power of the module.

12.1. RF OUTPUT POWER

Frequency and conducted average output power of the module.

2.4 GHz Band			
Mode	Ch. #	Freq. (MHz)	Measured Pwr (dBm)
802.11b	1	2412	18.10
	6	2437	18.23
	11	2462	18.13
802.11g	1	2412	8.47
	6	2437	9.12
	11	2462	8.39
802.11n HT20	1	2412	9.26
	6	2437	10.03
	11	2462	10.13
802.11n HT40	3	2422	8.69
	6	2437	8.89
	9	2450	9.10

Note:

1. The modes with highest output power channel were chosen for the conducted output power.

13. SAR TEST RESULTS

Lap-held

Mode	Channel	f (MHz)	Antenna	Measured Pwr (dBm)		Results (mW/g)	
				Peak	Average	1g-SAR	10g-SAR
802.11b	1	2412	Main	19.86	18.10		
	6	2437	Main	21.15	18.23	0.004	0.003
	11	2462	Main	20.41	18.13		

Note:

1. The modes with highest output power channel were chosen for the conducted output power.
2. SAR is not required for 802.11g/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.

14. SAR TEST PLOTS

Date: 7/12/2011

Test Laboratory: UL CCS SAR Lab A

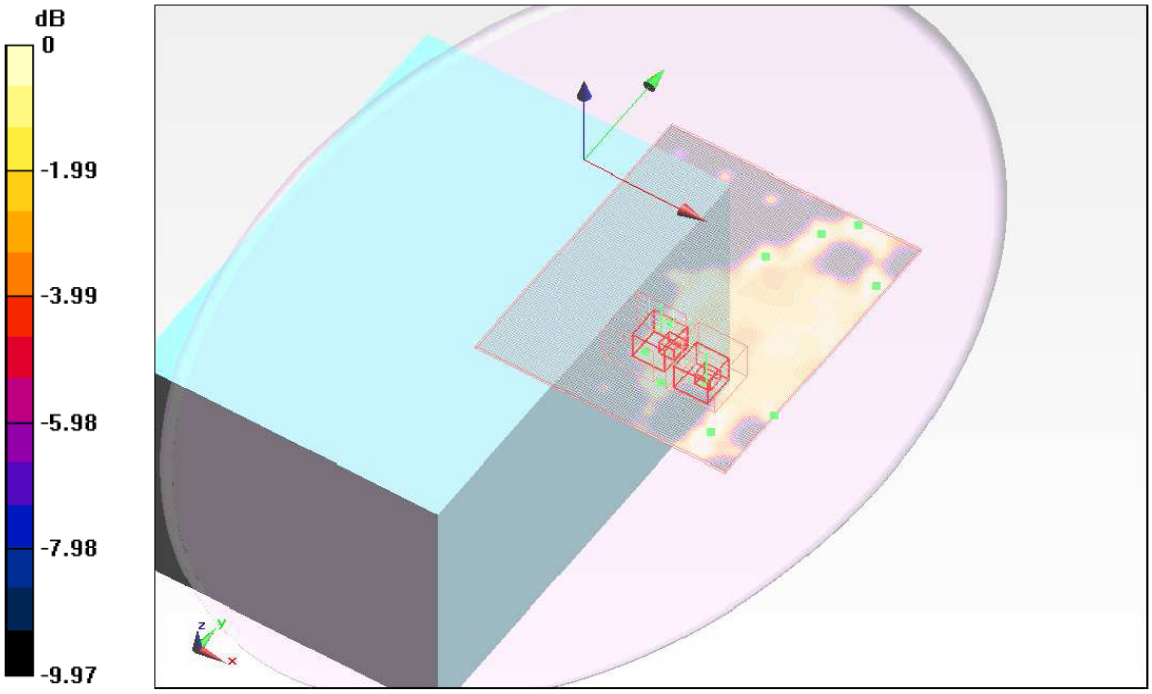
001 Lap Held 802.11b_CH6_Ant_Main

Communication System: IEEE 802.11b WiFi 2.4GHz ; Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.006 mho/m; ε_r = 51.058; ρ = 1000 kg/m^3
Phantom section: Flat Section Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C
DASY5 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3686; ConvF(6.86, 6.86, 6.86); Calibrated: 1/24/2011
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1239; Calibrated: 11/17/2010
- Phantom: ELI v5.0 (A); Type: QDOVA001BB; Serial: 1119
- Measurement SW: DASY52, Version 52.6 (2);SEMCAD X Version 14.4.5 (3634)

802.11b_Ant Main/ch 6/Area Scan (111x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.00864 mW/g

802.11b_Ant Main/ch 6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.340 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.012 W/kg
SAR(1 g) = 0.00369 mW/g; SAR(10 g) = 0.0014 mW/g
Maximum value of SAR (measured) = 0.00574 mW/g

802.11b_Ant Main/ch 6/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.340 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.010 W/kg
SAR(1 g) = 0.00413 mW/g; SAR(10 g) = 0.00263 mW/g
Maximum value of SAR (measured) = 0.00552 mW/g



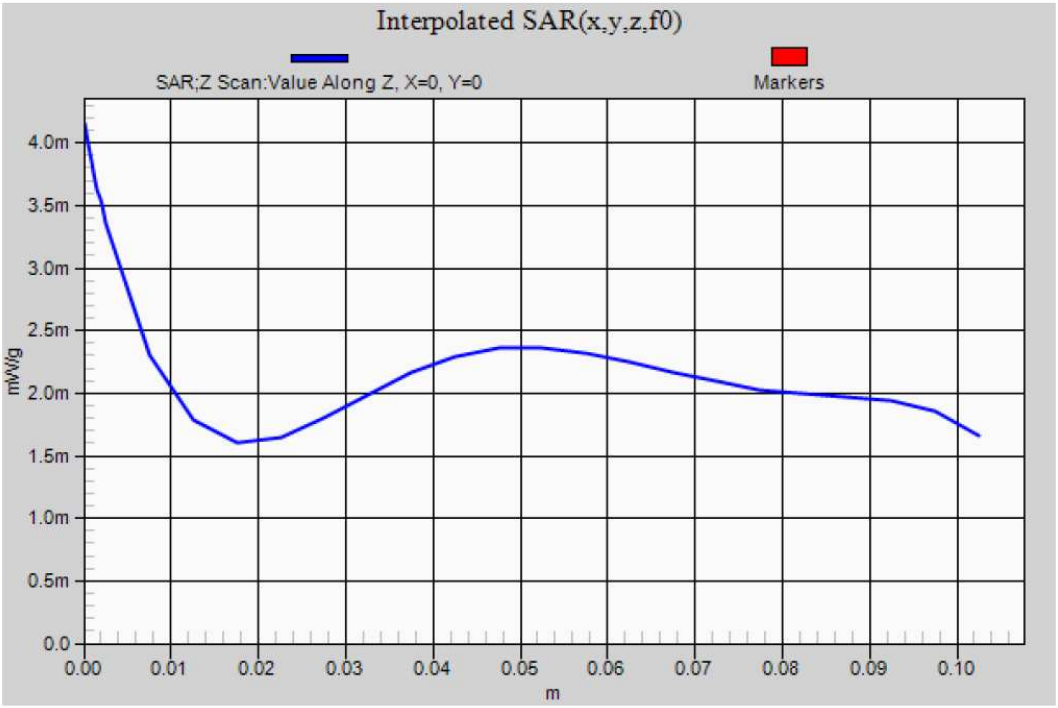
0 dB = 0.0055mW/g

Date: 7/12/2011

Test Laboratory: UL CCS SAR Lab A

Communication System: IEEE 802.11b WiFi 2.4GHz; Frequency: 2437 MHz; Duty Cycle: 1:1

802.11b_Ant Main/ch 6/Z Scan (1x1x32): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Maximum value of SAR (interpolated) = 0.00415 mW/g



15. APPENDIXES

Refer to separated files for the following appendixes.

15.1. Appendix A: System Check Plots

15.2. Appendix B: Certificate of E-Field Probe - EX3DV4 SN 3686

15.3. Appendix C: Calibration Certificate for D2450V2 SN 706 with extended cal. data