FCC OET BULLETIN 65 SUPPLEMENT C
CLASS II PERMISSIVE CHANGE

SAR EVALUATION REPORT

For

802.11 bgn 1x2 mini card
(Tested inside of Toshiba Portable Netbook)

MODEL: PA3758U-1MPC

FCC ID: CJ6UPA3758WL

REPORT NUMBER: 10U13159-1

ISSUE DATE: April 23. 2010

Prepared for

TOSHIBA AMERICA INFORMATION SYSTEMS, INC.
9740 IRVINE BLVD. IRVINE,
CA 92618, USA

Prepared by

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	April 23, 2010	Initial Issue	--

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	TOSHIBA AMERICA INFORMATION SYSTEMS, INC. 9740 IRVINE BLVD. IRVINE, CA 92618, USA
EUT DESCRIPTION:	802.11 bgn 1x2 mini card (Tested inside of Toshiba Portable Netbook)
MODEL NUMBER:	PA3758U-1MPC
DEVICE CATEGORY:	Portable
EXPOSURE CATEGORY:	General Population/Uncontrolled Exposure
DATE TESTED:	April 15 , 2010

FCC Rule Parts	Freq. Range [MHz]	The Highest 1g SAR mW/g)	Limit (mW/g)
15.247	2400 – 2483.5	0.018 mW/g	1.6

Applicable Standards	Test Results
FCC OET Bulletin 65 Supplement C 01-01 and the following specific FCC test procedures: - KDB 248227 SAR measurement procedures for 802.11a/b/g transmitters - KDB 447498 D01 Mobile Portable RF Exposure v04, suppl. to KDB 616217 D03	Pass

Compliance Certification Services, Inc. (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 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by 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	DEVIN CHANG
ENGINEERING SUPERVISOR	EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES	COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C 01-01 and the following specific FCC test procedures:

- KDB 248227 SAR Measurement procedures for 802.11a/b/g transmitters
- KDB 447498 D01 Mobile Portable RF Exposure v04, supplement to KDB 616217 D03

3. FACILITIES AND ACCREDITATION

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

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	3403-91535	N/A		
DASY4 Measurement Server	SPEAG	SEUMS001BA	1041	N/A		
Probe Alignment Unit	SPEAG	LB (V2)	261	N/A		
SAM Phantom (SAM1)	SPEAG	QD000P40CA	1185	N/A		
SAM Phantom (SAM2)	SPEAG	QD000P40CA	1050	N/A		
Oval Flat Phantom (ELI 4.0)	SPEAG	QD OVA001 B	1003	N/A		
Electronic Probe kit	HP	85070C	N/A	N/A		
S-Parameter Network Analyzer	Agilent	8753ES-6	MY40001647	11	22	2010
Signal Generator	Agilent	8753ES-6	MY40001647	11	22	2010
E-Field Probe	SPEAG	EX3DV3	3531	2	23	2011
Data Acquisition Electronics	SPEAG	DAE3 V1	500	9	15	2010
System Validation Dipole	SPEAG	D2450V2	748	4	13	2011
ESG Vector Signal Generator	Agilent	E4438C	US44271090	9	17	2010
Amplifier	Mini-Circuits	ZVE-8G	90606	N/A		
Amplifier	Mini-Circuits	ZHL-42W	D072701-5	N/A		
Simulating Liquid	SPAEG	H2450	N/A	Within 24 hrs of first test		
Simulating Liquid	SPAEG	M2450	N/A	Within 24 hrs of first test		

Note : Per KDB 450824 D02 requirements for dipole calibration, CCS has adopted three years calibration intervals. On annual basis, each measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole
2. System validation with specific dipole is within 10% of calibrated value.
3. Return-loss is within 20% of calibrated measurement (test data on file in CCS)
4. Impedance is within 5Ω of calibrated measurement (test data on file in CCS)

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	1.92	Normal	1	0.64	1.23
Liquid Permittivity - deviation from target	5.00	Rectangular	1.732	0.6	1.73
Liquid Permittivity - measurement	-2.18	Normal	1	0.6	-1.31
				Combined Standard Uncertainty Uc(y) =	9.61
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 19.22 %	
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 1.53 dB	

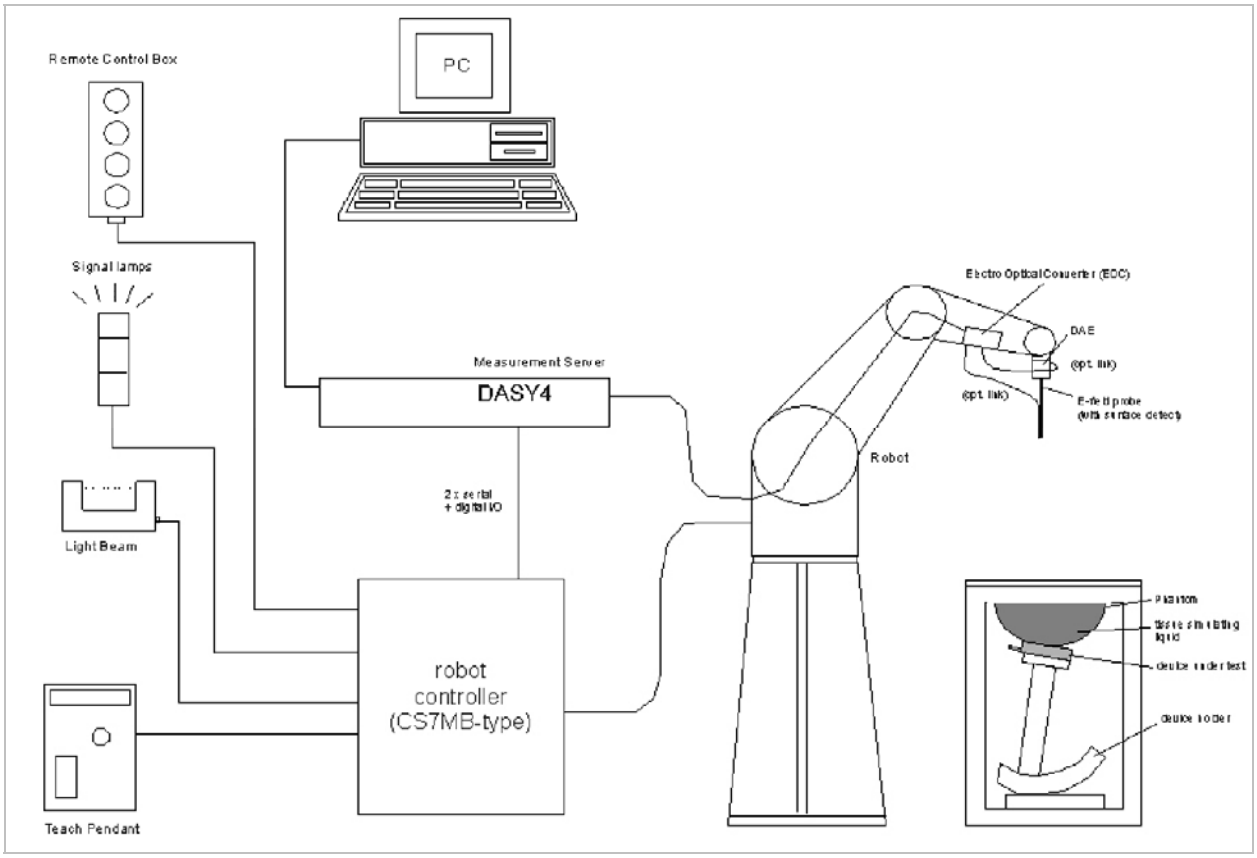
Measurement uncertainty for 300 MHz to 3 GHz averaged over 10 gram

Component	error, %	Probe Distribution	Divisor	Sensitivity	U (Xi), %
Measurement System					
Probe Calibration (k=1) @ 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	0.43	1.24
Liquid Conductivity - measurement	1.92	Normal	1	0.43	0.83
Liquid Permittivity - deviation from target	5.00	Rectangular	1.732	0.49	1.41
Liquid Permittivity - measurement uncertainty	-2.18	Normal	1	0.49	-1.07
				Combined Standard Uncertainty Uc(y), % =	9.38
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 18.77 %	
				Expanded Uncertainty U, Coverage Factor = 2, > 95 % Confidence = 1.49 dB	

5. EQUIPMENT UNDER TEST

802.11 bgn 1x2 mini card (Tested inside of Toshiba Portable Netbook)	
LCD Sizes:	10.1"
Normal operation:	Laptop - Laptop mode (display open at 90° to the keyboard),
Antenna tested:	Vendor / Antenna / Part number Hitachi / TX 1 / HFT60-CP43W
Antenna-to-user separation distances:	10 cm from Main (A) Antennas-to-user
Antenna-to-antenna separation distances:	See section 13 antenna-to-antenna/user separation distances. 7.0 cm from WiFi Main antenna-to-3G main antenna
Assessment for SAR evaluation for Simultaneous transmission:	WWAN co-located RF exposure assessment will be addressed in a separate FCC application filed under WWAN application.

6. SYSTEM SPECIFICATIONS



The DASY4 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.
- DASY4 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. TISSUE DIELECTRIC PARAMETERS CHECK

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameters are within the tolerances of the specified target values. For frequencies in 300 MHz to 2 GHz, the measured conductivity and relative permittivity should be within ± 5% of the target values. For frequencies in the range of 2–3 GHz and above the measured conductivity should be within ± 5% of the target values. The measured relative permittivity tolerance can be relaxed to no more than ± 10%.

Reference Values of Tissue Dielectric Parameters for Body (for 300 – 3000 MHz and 5800 MHz)
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)	Body (Supplement C 01-01)	
	ε_r	σ (S/m)
300	58.20	0.92
450	56.70	0.94
835	55.20	0.97
900	55.00	1.05
915	55.00	1.06
1450	54.00	1.30
1610	53.80	1.40
1800 – 2000	53.30	1.52
2450	52.70	1.95
3000	52.00	2.73
5800	48.20	6.00

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

Reference Values of Tissue Dielectric Parameters for Body (for 3000 MHz – 5800 MHz)

In the current guidelines and draft standards for compliance testing of mobile phones (i.e., IEEE P1528, OET 65 Supplement C), the dielectric parameters suggested for head and body tissue simulating liquid are given only at 3.0 GHz and 5.8 GHz. As an intermediate solution, dielectric parameters for the frequencies between 5 to 5.8 GHz were obtained using linear interpolation (see table below).

SPEAG has developed suitable head and body tissue simulating liquids consisting of the following ingredients: de-ionized water, salt and a special composition including mineral oil and an emulgators. Dielectric parameters of these liquids were measured suing a HP 8570C Dielectric Probe Kit in conjunction with HP 8753ES Network Analyzer (30 kHz – 6G Hz). The differences with respect to the interpolated values were well within the desired ±5% for the whole 5 to 5.8 GHz range.

f (MHz)	Body Tissue		Reference
	rel. permitivity	conductivity	
3000	52.0	2.73	Standard
5100	49.1	5.18	Interpolated
5200	49.0	5.30	Interpolated
5300	48.9	5.42	Interpolated
5400	48.7	5.53	Interpolated
5500	48.6	5.65	Interpolated
5600	48.5	5.77	Interpolated
5700	48.3	5.88	Interpolated
5800	48.2	6.00	Standard

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

7.1. TISSUE PARAMETERS CHECK RESULTS FOR 2450 MHZ

Simulating Liquid Dielectric Parameters for Body 2450 MHz
Room Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Devin Chang

f (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit (%)
2450	e'	51.55	Relative Permittivity (ϵ_r):	51.549	52.7	-2.18	± 5
	e''	14.56	Conductivity (σ):	1.985	1.95	1.79	± 5

Liquid Check
Ambient temperature: 24 deg. C; Liquid temperature: 23 deg. C
April 14, 2010 10:42 AM

Frequency	e'	e''
2400000000.	51.6951	14.3407
2405000000.	51.6683	14.3728
2410000000.	51.6531	14.4052
2415000000.	51.6174	14.4123
2420000000.	51.6154	14.4317
2425000000.	51.6053	14.4337
2430000000.	51.5963	14.4701
2435000000.	51.5745	14.4893
2440000000.	51.5602	14.5024
2445000000.	51.5522	14.5225
2450000000.	**51.5494**	**14.5628**
2455000000.	51.5013	14.5925
2460000000.	51.4898	14.6012
2465000000.	51.4365	14.5919
2470000000.	51.4377	14.5829
2475000000.	51.4030	14.5948
2480000000.	51.4060	14.6089
2485000000.	51.3979	14.6070
2490000000.	51.3905	14.6524
2495000000.	51.3811	14.6810
2500000000.	51.3574	14.7394

The conductivity (σ) can be given as:

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

where f = target f * 10^6

ε_0 = 8.854 * 10^{-12}

Simulating Liquid Dielectric Parameters for Body 2450 MHz
Room Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Devin Chang

f (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit (%)
2450	e'	51.58	Relative Permittivity (ϵ_r):	51.582	52.7	-2.12	± 5
	e"	14.58	Conductivity (σ):	1.987	1.95	1.92	± 5

Liquid Check
Ambient temperature: 24 deg. C; Liquid temperature: 23 deg. C
April 15, 2010 10:33 AM

Frequency	e'	e"
2400000000.	51.7292	14.3515
2405000000.	51.7025	14.3836
2410000000.	51.6888	14.4280
2415000000.	51.6556	14.4293
2420000000.	51.6442	14.4491
2425000000.	51.6346	14.4604
2430000000.	51.6288	14.4845
2435000000.	51.6051	14.5028
2440000000.	51.6001	14.5153
2445000000.	51.5965	14.5464
2450000000.	**51.5821**	**14.5817**
2455000000.	51.5248	14.6119
2460000000.	51.5128	14.6112
2465000000.	51.4715	14.6160
2470000000.	51.4650	14.6038
2475000000.	51.4377	14.6143
2480000000.	51.4361	14.6286
2485000000.	51.4376	14.6306
2490000000.	51.4276	14.6659
2495000000.	51.4097	14.7044
2500000000.	51.3860	14.7628

The conductivity (σ) can be given as:

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

where f = target f * 10^6

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

8. SYSTEM VERIFICATION

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

Measurement Conditions

- The measurements were performed in the flat section of the SAM twin phantom filled with Head or Body simulating liquid of the following parameters.
- The DASY4 system with an Isotropic E-Field Probe EX3DV4 SN3686 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 7x7x7 fine cube was chosen for cube
- 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 power (forward power) was 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. due date	SAR Avg (mW/g)		
			Tissue:	Head	Body
D2450V2	D2450V2-748_Apr08	04/13/11	SAR_{1g}:		50.8
			SAR_{10g}:		23.7

8.1. SYSTEM CHECK RESULTS FOR D2450V2

Ambient Temperature = 24°C; Relative humidity = 38% Measured by: Devin Chang

System validation dipole	Date Tested	Measured (Normalized to 1 W)		Target	Delta (%)	Tolerance (%)
		Tissue:	Body			
D2450V2	04/14/10	SAR_{1g}:	52.7	50.8	3.74	±10
		SAR_{10g}:	24.7	23.7	4.22	

SYSTEM CHECK PLOT

Date/Time: 4/14/2010 10:53:05 AM

Test Laboratory: Compliance Certification Services

System Performance Check - D2450V2

DUT: Dipole ; Type: D2450V2; Serial: 748

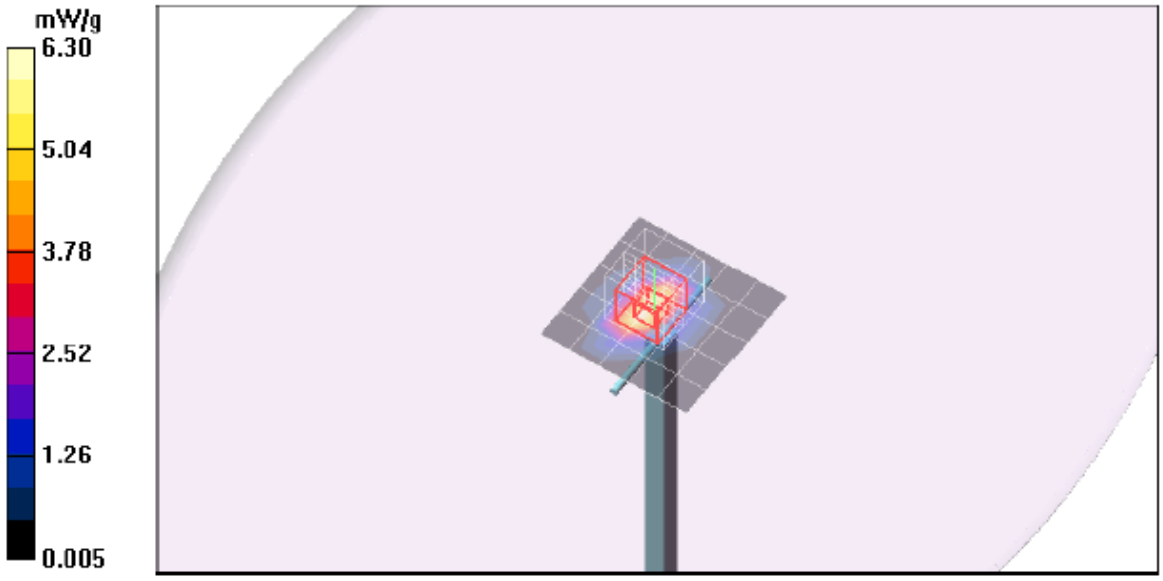
Communication System: System Check Signal - CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.98 mho/m; ε_r = 51.5; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV3 - SN3531; ConvF(7.58, 7.58, 7.58); Calibrated: 2/23/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn500; Calibrated: 9/15/2009
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1003
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=100mW/Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 6.30 mW/g

d=10mm, Pin=100mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 58.3 V/m; Power Drift = 0.093 dB
Peak SAR (extrapolated) = 10.7 W/kg
SAR(1 g) = 5.27 mW/g; SAR(10 g) = 2.47 mW/g
Maximum value of SAR (measured) = 6.90 mW/g



SYSTEM CHECK – Z Plot

Date/Time: 4/14/2010 11:33:58 AM

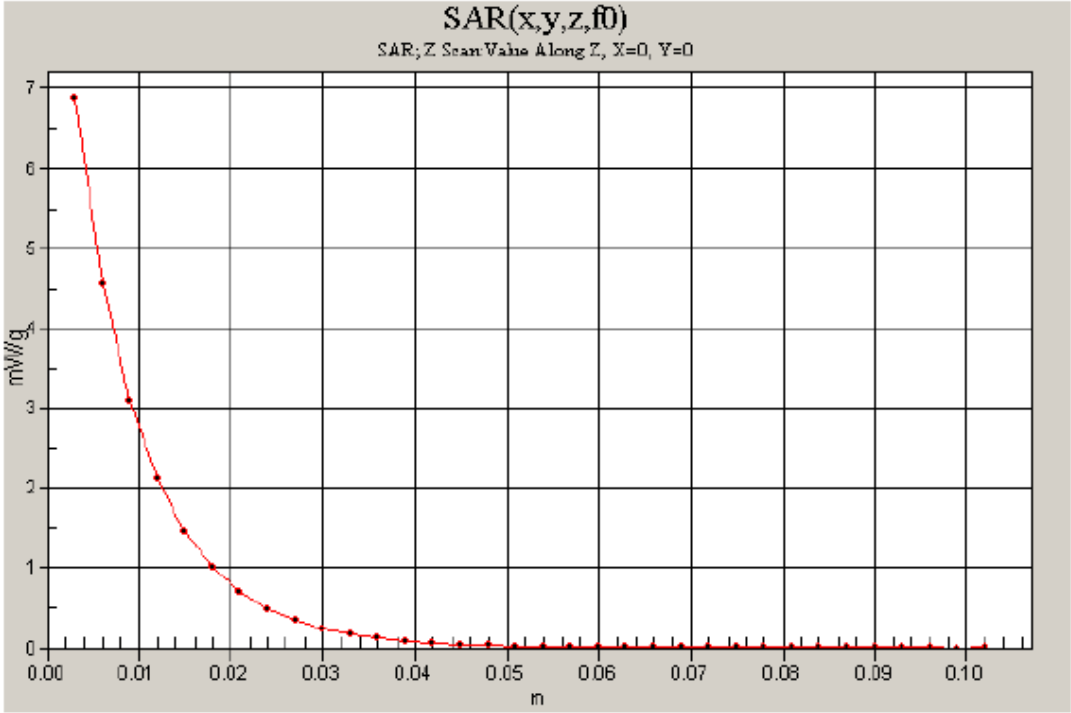
Test Laboratory: Compliance Certification Services

System Performance Check - D2450V2

DUT: Dipole ; Type: D2450V2; Serial: 748

Communication System: System Check Signal - CW; Frequency: 2450 MHz;Duty Cycle: 1:1

d=10mm, Pin=100mW/Z Scan (1x1x34): Measurement grid: dx=20mm, dy=20mm, dz=3mm
Maximum value of SAR (measured) = 6.87 mW/g



9. 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, REALTEK version 0.0, which enable a user to control the frequency and output power of the module.

Results

802.11b

Channel #	Freq. (MHz)	Avg Power (dBm)
Low	2412	18.3
Middle	2437	18.3
High	2462	18.0
802.11g		
Low	2412	16.7
Middle	2437	16.6
High	2462	15.5
802.11n HT20		
Low	2412	16.5
Middle	2437	16.8
High	2462	15.2
802.11n HT40		
Low	2422	16.6
Middle	2437	16.6
High	2452	16.7

Note: KDB 248227 - 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.

10. SAR TEST RESULT

Laptop Mode: Lap-held with the display open at 90° to the keyboard
10 cm from main antenna-to-user

Mode	Channel	f (MHz)	Antenna	Results (mW/g)	
				1g-SAR	10g-SAR
802.11b	6	2437	A	0.018	0.013

Note: KDB 248227 - 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.

11. SAR TEST PLOTS

SAR PLOT FOR 2.4 GHZ

Date/Time: 4/15/2010 11:37:21 AM

Test Laboratory: Compliance Certification Services

Laptop Mode

DUT: Toshiba; Type: NA; Serial: NA

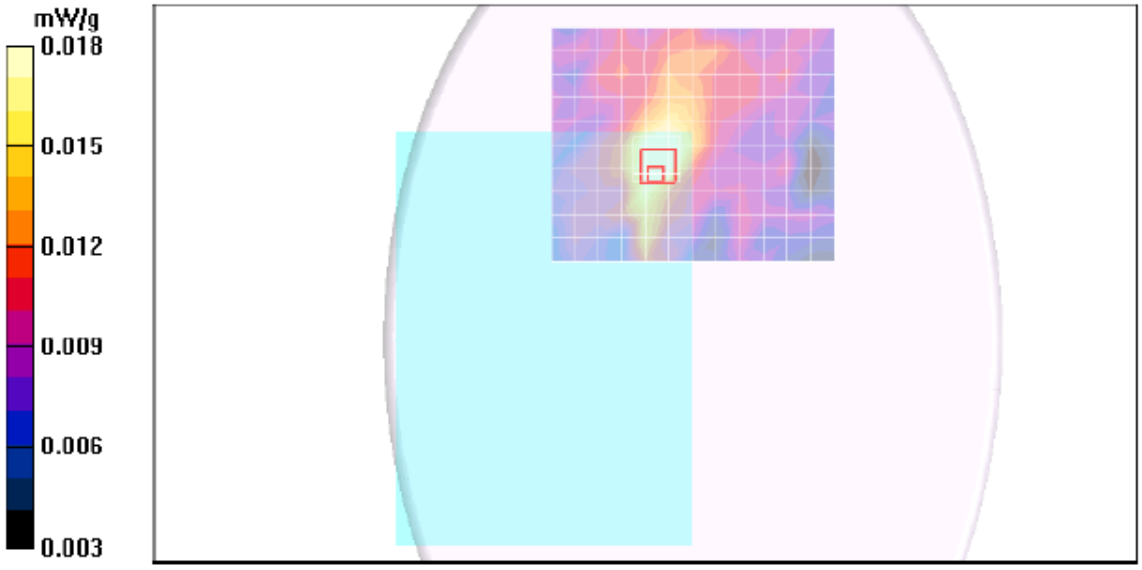
Communication System: 802.11bgn; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.97 mho/m; ε_r = 51.6; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV3 - SN3531; ConvF(7.58, 7.58, 7.58); Calibrated: 2/23/2010
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn500; Calibrated: 9/15/2009
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:1003
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

802.11b_Main ant_ch6/Area Scan (13x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.018 mW/g

802.11b_Main ant_ch6/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.83 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.037 W/kg
SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.013 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.020 mW/g



12. ATTACHMENTS

No.	Contents	No. of page (s)
1	Certificate of E-Field Probe - EX3DV3 SN 3531	11
2	Certificate of System Validation Dipole D2450V2 SN 748	6